

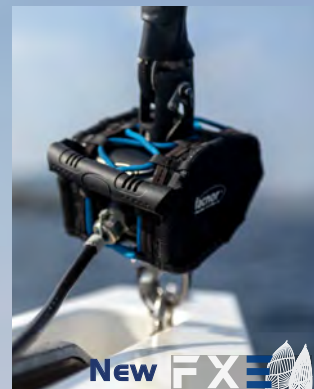
2024

CATALOGUE

facnor[®]
FURLING SYSTEMS



I N N O V A T I V E F U R L I N G S O L U T I O N S



New **FXE**
model **7000**



Anti-twist swivel



Aluminium Locks

New!



NEW!
IB-FXe Electric
bowsprit integrated
Code sail Furler



MANUAL

MOTORIZED



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NEW!



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NEW MODEL
FXe7000!

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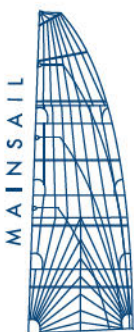


MANUAL

MOTORIZED



NEW!



MAINSAIL



NEW!



THE WICHARD GROUP, MARINE GLOBAL SOLUTIONS



■ **Wichard Group** represents the brands Wichard, Profurl, Facnor, Peguet, Sparcraft, Lorima, Maillard, Courant and since November 2023 **Ronstan**, an company founded in 1953, and Axxon Composites. The acquisition of this

Australian equipment manufacturer, specialized in manufacturing and designing high-performance products for sailing and water sports symbolizes a major and enthousiastic step forward. The company has a strong reputation for high-quality and innovative sailing gears, making it an ideal partner for the Wichard Group.

WICHARD GROUP KEY FIGURES

WICHARD - PÉGUET - PROFURL - FACNOR - RONSTAN - SPARCRAFT - LORIMA - AXXON - COURANT

MARINE GLOBAL SOLUTIONS

Legendary Know-How & Expertise

> Aluminium & Carbone Masts, Booms & Rigging
Expertise In Spars / Standing Rigging

> Quality Hardware
Safe & Reliable Equipment

■ **The Brands of the Wichard Groupe:**

- Wichard : Forged Marine Hardware
- Profurl & Facnor : Furling systems
- Sparcraft : Carbon & Aluminium masts
- Lorima & Axxon Composites : Carbon masts
- Maillard : CNC & plastic injection
- Péguet : Quick links
- Courant : Ropes and ropes accessories
- Ronstan : Deck hardware

> Furling Systems
Passion for Sail Equipment

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

■ 650 employees

■ 12 production sites in Europe, 2 in USA, 1 in Australia, 1 in Indonesia, 1 in Romania.

■ 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

The 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 ... And we are very proud to welcome new working partners - Ronstan & Axxon Composites - who share our same approach to innovation. Welcome on board!

Dominique Yon, Managing director of Facnor
& Wichard Group sales manager



4
years
 of innovation



> Video History



MARINE EXPERIENCE

- 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 in USA (Sparcraft America) and Europe (Sparcraft);
- CNC and traditional machining (France)
- Wide production capacity: plastic processing (Maillard / France), hot forging (Wichard / France) and carbon (Lorima / France & Axxon / Romania)
- Endurance and resistance testing units through validation process by our R&D Department



CUSTOMER SERVICE : FROM SALES TEAM TO DEALER NETWORK

- **Worldwide customer & technical support** carried out by our distributors in more than 40 countries
- **Authorized Economic Operator** : Facnor is recognized as AEO, a partnership programme between the customs authority and the economic operators in Europe, sign of reliability



DISTRIBUTORS IN PHASE WITH THE FACNOR SPIRIT

THEY SPOKE ABOUT US...



"I've been the Facnor Italian importer for Facnor for around 30 years. During the last years I've managed to check the quality of Facnor systems, their reliability and their brightness. What I've always appreciated and has made proud to be part this family, is the constant desire of innovations, tested by ocean racers, with important advantages in the production of furling systems." **Marco Montali, Italian distributor (Settemari Yacht)**

"I've been the Facnor Italian importer for Facnor for around 30 years. During the last years I've managed to check the quality of Facnor systems, their reliability and their brightness. What I've always appreciated and has made proud to be part this family, is the constant desire of innovations, tested by ocean racers, with important advantages in the production of furling systems." **Marco Montali, Italian distributor (Settemari Yacht)**

"Our Collaboration with Facnor started 30+ years ago. From those early days Facnor were innovative and passionate about new design, high quality products, with excellent service. Fast forward and they are now at the cutting edge of award winning sail handling systems. We need not look further than the Facnor range"

Adrian Hood, U.K. Distributor / Eurospars





CUSTOM PROJECTS

The Racing custom projects required high level of quality and always Innovation. From its long experience in Racing custom products, Facnor offers always the right products and services to the racing teams.

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 Prysmian Group



Maxi Banque populaire XI
Structural furler

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.

40 years
of innovation



© Photo Groupe Apicil

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 hardware 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
(See more : <https://voile.groupe-apicil.com>)



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.

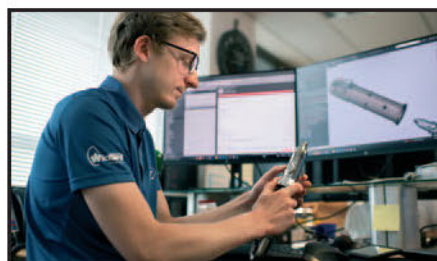
Maintenance and equipment servicing

Built the right products, it is the first phase, and offers the maintenance and servicing, it is also important for all demanding customers.

> Facnor uses technologies as X ray, penetrant tests, load tests...

> To share knowledge and experience, Facnor offers the Racing teams to make the servicing with them in their premises

> Servicing : replacing bearing, seals, damaged equipment's, cleaning for a fast service



© Photo Antoine Soubigou

THEY SPOKE ABOUT US (PARTNER COMPANY)



"Since the early days of Rigging Project, with the Orma. 60' et Open 60' classes, right through the super yachts, we have been always impressed by professionalism and quality that Facnor brings any projects

Miles Amin / Rigging Projects



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' Nomed 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:

STRUCTURAL FURLING SYSTEMS

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HALYARD LOCKS

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GENNAKER & CODE ZERO FURLERS

P32-46

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



Louis Duc onboard
Imoca 60' Fives - Lantana Environnement

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**
- Giancarlo Pedote, Imoca **Prysmian Group**
- Jonas Gerckens, Class 40' **Volvo**
- Aurélien Ducroz, Class 40' **Crosscall**
- Julia Virat, Class 40' **For My Planet**

This cooperation is also a fruitful feedback of knowledge transfer.



THEY SPOKE ABOUT US (TECHNICAL PARTNER)

"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 dis-

masting, 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

<https://www.facebook.com/louisduc.imoca>

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 :



Photo Credit : Team Jibiki

- Estrella Lab (sailing & Disability)
- Barba (Arctic Island expedition)
- Emeraude Solidaire (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>

ZOOM ON ESTRELLA LAB

Facnor was one of the first companies to trust us in the early stages of the project. It was an energizing effect for us at a particularly difficult moment during the refit! Since then, we have taken our brand new jib furlers to the Antilles, the Canaries, Scotland, etc. and carried out numerous discovery outings. Proving that thanks to collective intelligence, solidarity and innovation everything is possible! And it's far from over! Thank you Facnor for joining our Little Floating Humanities Laboratory!



Photo Credit : Voile-Australe



© EVC Cherbourg



HEADSAIL FURLING & REEFING SYSTEMS

JIB GENOA & STAYSAIL

MANUAL



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). These jib furlers systems are compatible with an evolution towards motorized reels. (see motorized chapter P17)

MANUAL

LS/RX CLASSIC DRUM

P8

FD WEBBING DRUM

P12

FURLING LINE RECOMMANDATIONS
& ACCESSORIES

P16



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.



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

Aluminium foil sections (SX & RX)
(see P16)



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 24)

High load Swivel

(waterproof)

Strong sections and connections

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



Bottom telescopic section

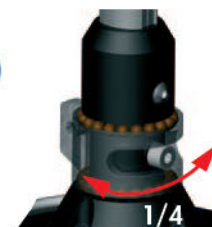
enables to adjust foil section length, no cutting

Internal turnbuckle fitting

provides space inside for the turnbuckle (see page10)

Rotating tack fitting (RX)

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



Synthetic insulation

to prevent electrolysis

360° adjustable furling line

For an optimal running of the furling line





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.

	Ranges	
Features	LS	RX
Removable drum		■
Classic drum	■	
Aluminium feeder	■	■
Rotating tack fitting		■
Fixed tack fitting	■	
Round sections RX	■	
Elliptical sections SX		■

Model	LS 60	LS 70	LS 100	LS 130	LS 165	LS 180	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*
	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" *
max. forestay ø (mm & inch)									
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	C25	C25	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



© Dragonfly

«RACING» RX RANGE- REMOVABLE DRUM

RX racing/cruising program: 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
	5/32"	1/4"	1/4" or 9/32"	5/16"	5/16" or 3/8"	3/8"	1/2"
max. forestay ø (mm & inch)							
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						

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.

1. Unscrew and remove the furling line guide



1

2.Remove the half plates



2

3.Fit the two half protection rings



3

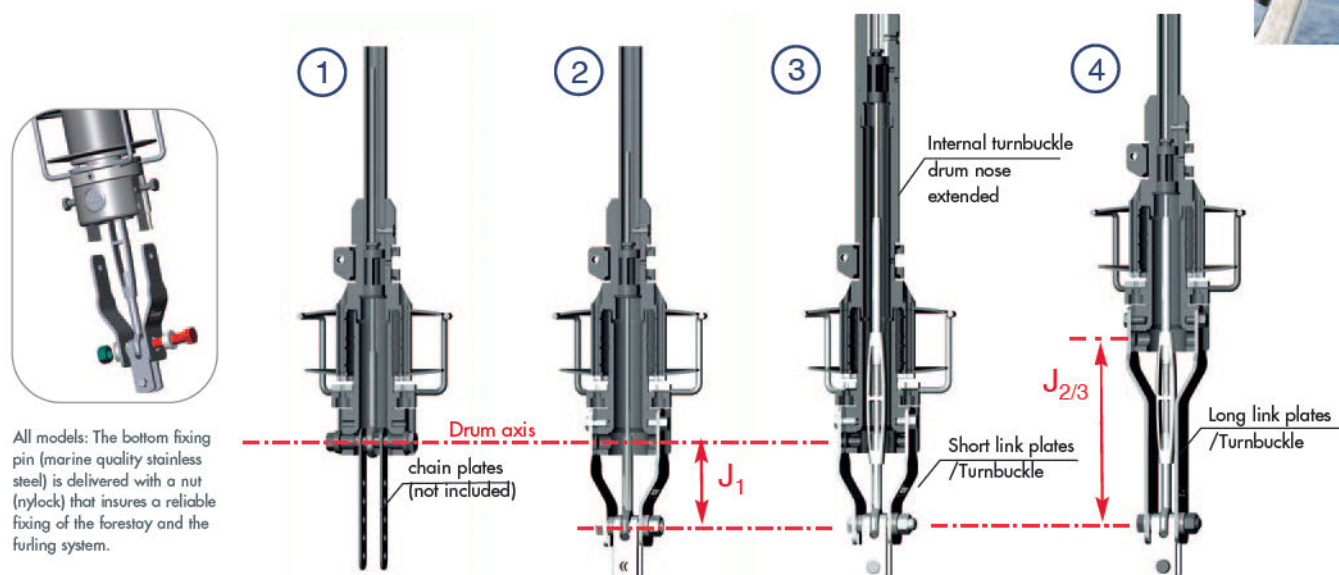
4. Once the half plates are removed, a racing Genoa can be hoisted using the twin groove head foil



4

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

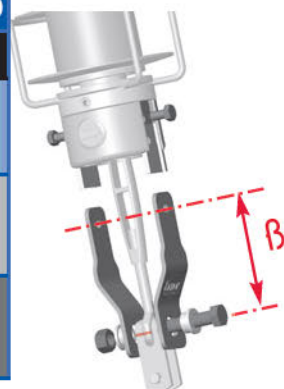
LINK PLATE KITS & INTERNAL TURNBUCKLE FITTINGS

Short link plates option pict② ③: bent stainless steel plate 4 or 5 mm thick. Pin to pin = 100 ou 150 mm

Long link plates option pict④: 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 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 :



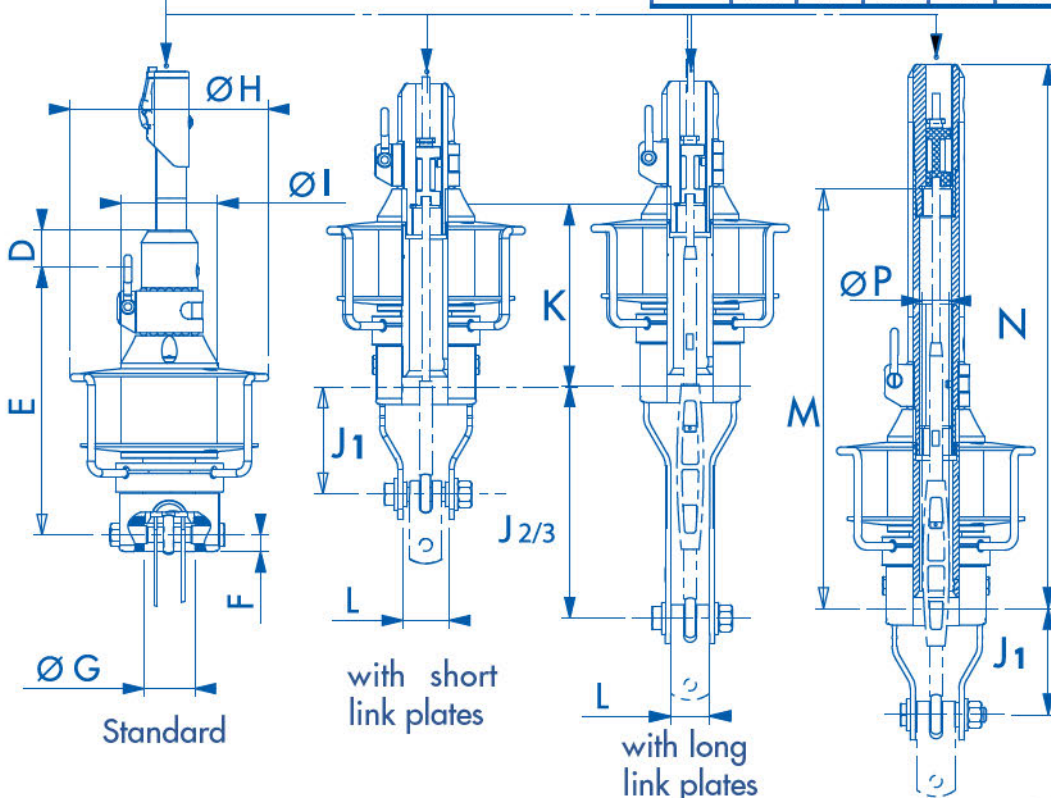
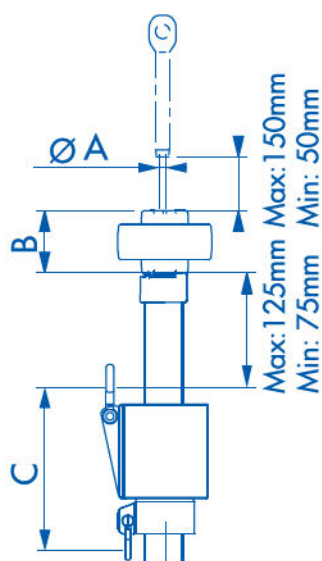
When assembling and servicing during the winter your furling gear, put grease on the screws situated at the bottom telescopic section and the top of the drum link plates. This will simplify the dismantling or turnbuckle access if necessary.

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!



Great torque

since the beginning unlike classic drums (see pict 1)

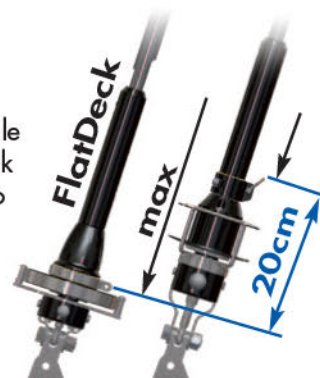
High load Swivel (waterproof)



"R" ou "SX" foil sections
Two types of sections according to navigation. See p. 24

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)

PERFORMANCE & EASY FURLING

- 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

FlatDeck

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

> 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 weight /meter	Elliptical sections R*			
	*necessary to have removable eye or turnbuckle			
	R 14	R 24	R 26	R 34
	451 g	555 g	641 g	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).

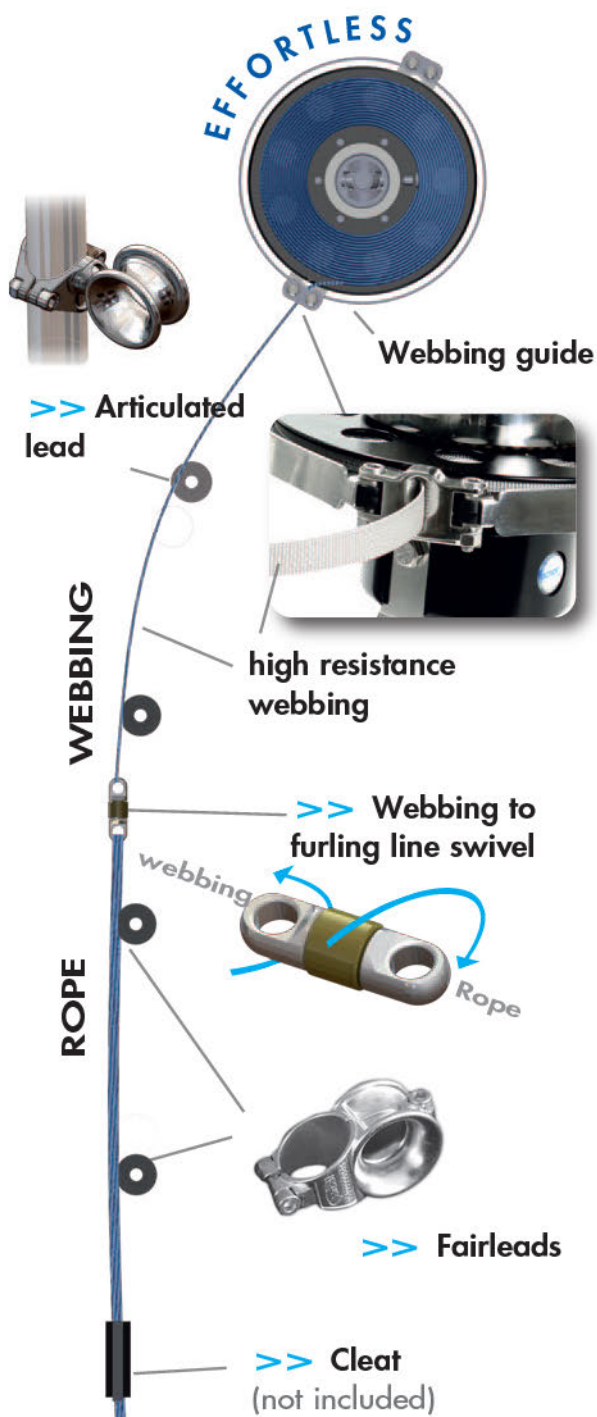
«COMFORT /CRUISING» FD-S RANGE

	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 weight /meter	Rounded sections SX			
	SX 25	SX 33	SX 39	SX 47
	577 g	658 g	914 g	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



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 Marie Haute / Django

Webbing fitting :

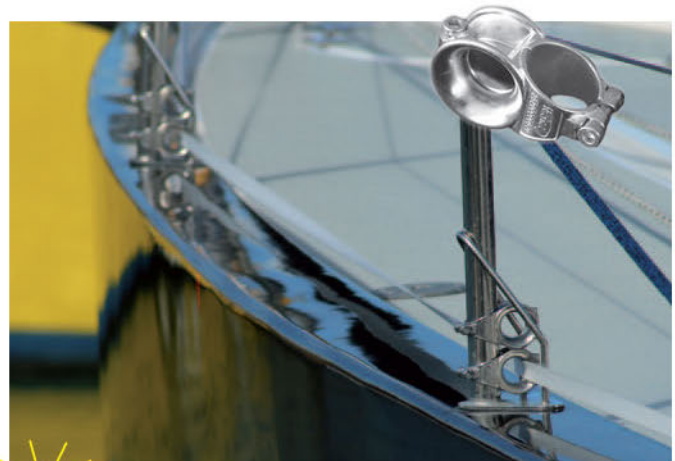
- **efficient and quick installation** : thanks to a complete kit (delivered).
- Furling line circuit : the articulated fairlead and the furling line guide (360° orientation) leaves various possible ways of fittings.
- the F.D. standard kit includes the webbing/furling rope fitted onto the swivel.

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.

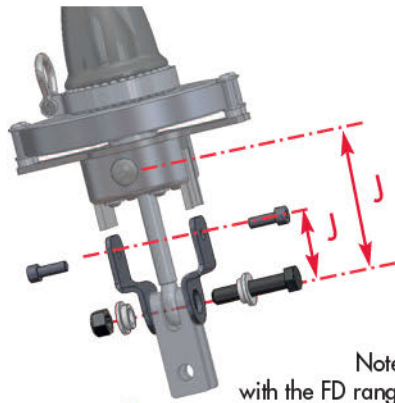
Dimensions : the gain in luff length with low profile FD drum is obvious. To achieve this aim, the base of the drum has been lowered and standard link plates are short (see table against).

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.

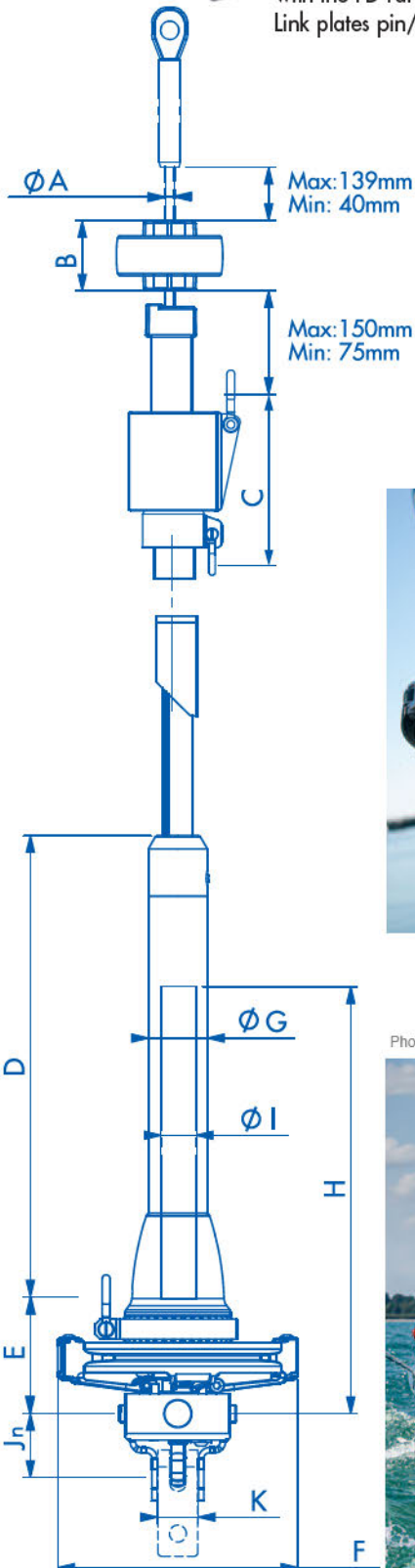


Furling line circuit : Your Facnor agent will suggest you the most adapted solution.

FD LINK PLATES DIMENSIONS



Note :
with the FD range:
Link plates pin/pin
= J



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	lgth 77
		thickness	thk 4	<thk 4	thk 5	thk 5
OPTIONS	medium link plates kit	J2 (mm)	lgth 100	lgth 150	lgth 150*	lgth 150*
		thickness	thk 4	thk 4	thk 5	thk 5
	long link plates kit	J3 (mm)	lgth 200	lgth 250	lgth 250*	lgth 250*
		thickness	thk 4	thk 5	thk 6	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 = Availabe space for the turnbuckle inside the drum



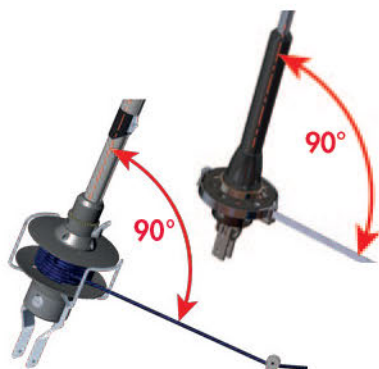
Photo Credit : © Tobias Stoerkle / Heinrichwerft



RECOMMENDATIONS FOR FURLING LINE FITTING

90° for the furling line :

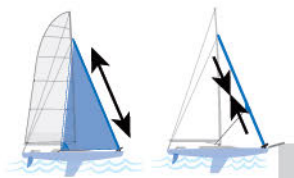
Whatever furling model (LS, RX or FD), the furling line must run with 90° angle from the forestay (see against).

**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.



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.38

SX & R FOIL SECTIONS

All the SX and R sections = aluminium.

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



Aluminium / R foil section	
Section Ref.	Reference
R14	09130128140
R24	09130128240
R26	09130128260
R34)	09130128340

HEADSAIL FURLING & REEFING SYSTEMS

MOTORIZED

GENOA & STAYSAIL

Easy sailing...

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.

EC & EF+ ELECTRIC MOTORIZATION

P16

HF HYDRAULIC MOTORIZATION

P20

RECOMMENDATIONS & ACCESSORIES

P22

SECTIONS

P24

MOTORIZED



In order to furl sails easier, Facnor offers furlers electric motorizations : the range EC (from 9-meter boats)) benefits from an optimized power with multi-motors concept. This innovation is now on board many units. The EF+ complete the range of electric furlers (classic single-motor) and rather for large units.

COMFORT OF THE EC & EF+ ELECTRIC FURLERS

- Wired or radio remote control (see option page 20)
- 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.20)
- International 3-year warranty

Special aluminium cover

Strong drive unit

Anticorrosion surface treatment

increased durability

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

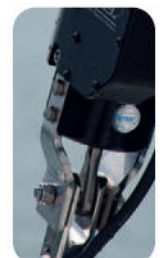
If manual operation is required a winch handle: see page 20, emergency continuous line system.



(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 :

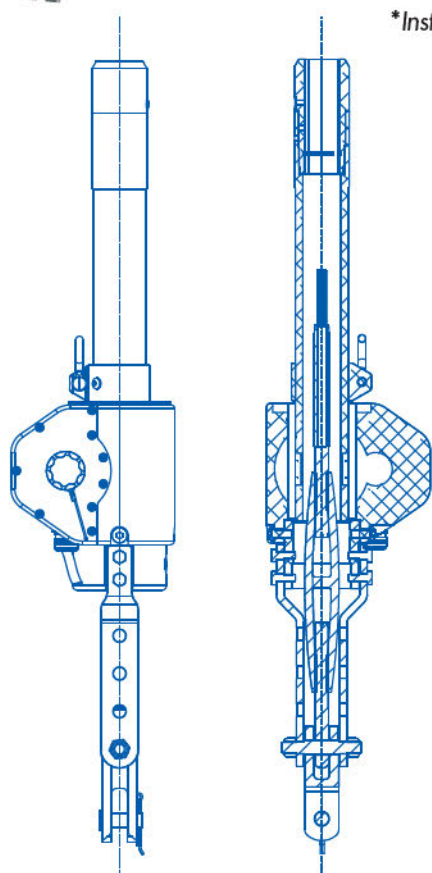
- Remote control option (wired or radio version) : see page 20



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	EC39 (12/24V)	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	EC47 (12/24V)	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 (12/24V)	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 (12/24V)	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 (24V)	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.

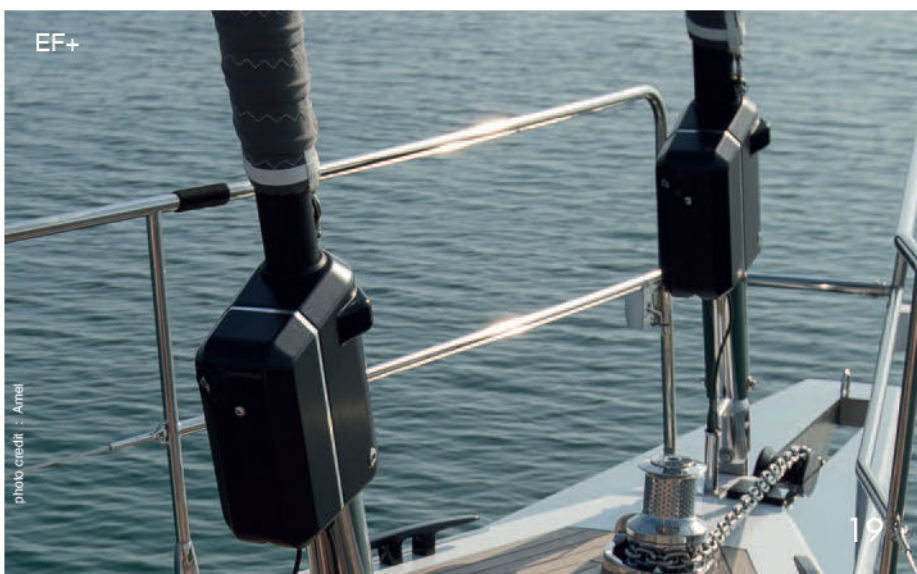
- The large sized connectors guarantee a great torque resistance. The telescopic section prevents any requirement to cut the foil sections when adjusting.
- Option : special part available for «R» foil section adaptation.
- Waterproof swivels, high load resistant :
 - C39 → EC39, C47 → EC47
 - C47 →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

Complete kits :

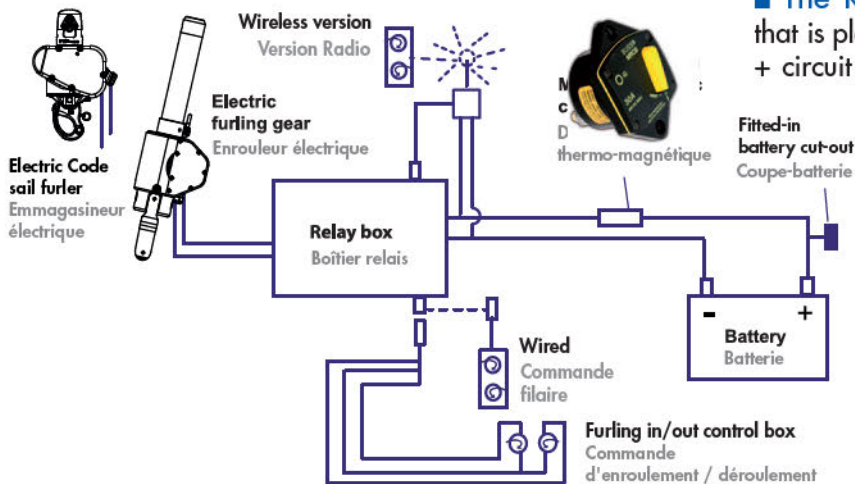
- motorization kit (drive unit, stainless steel link plates, toggle, relay box, circuit breaker)
- foil section kit (see P. 24)
- swivel, halyard deflector wheel

Options (see page 20) :

- wired or radio remote control
- emergency continuous line system



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).



 > **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**

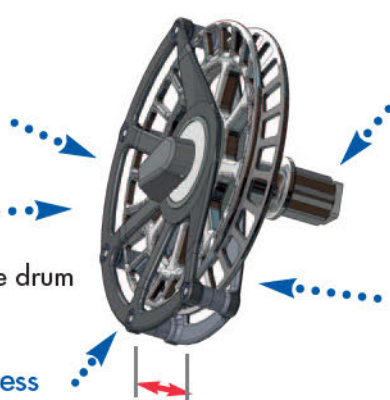
The "FACNOR emergency system" is made up of a notched drive wheel and a continuous line. If an electrical failure were to occur, this device allows the operator to quickly and easily furl in the headsail (standing one meter behind).

Sturdy fitting

corrosion resistant
(stainless steel)

Furling power.....

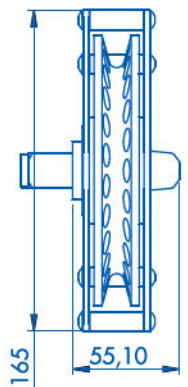
thanks to the torque
of the continuous line drum

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.

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

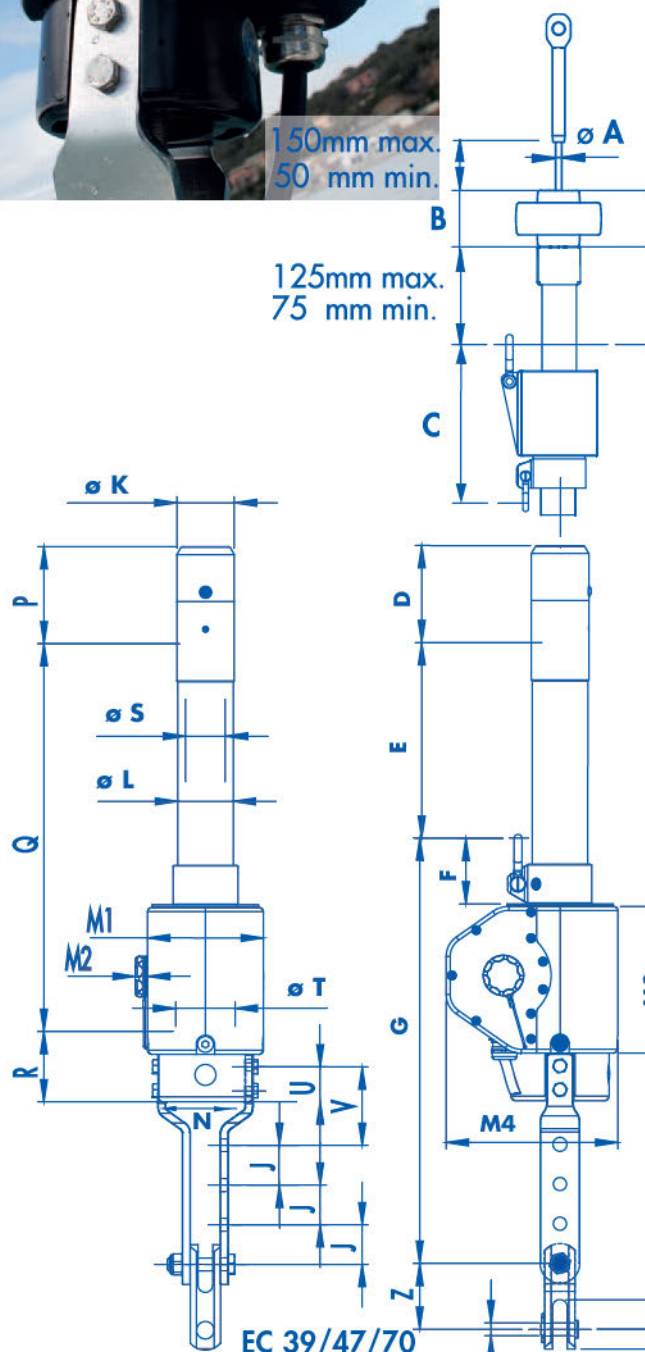


EC & EF+ DIMENSIONS



150mm max.
50 mm min.

125mm max.
75 mm min.



EC 39/47/70

Pin ϕ 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



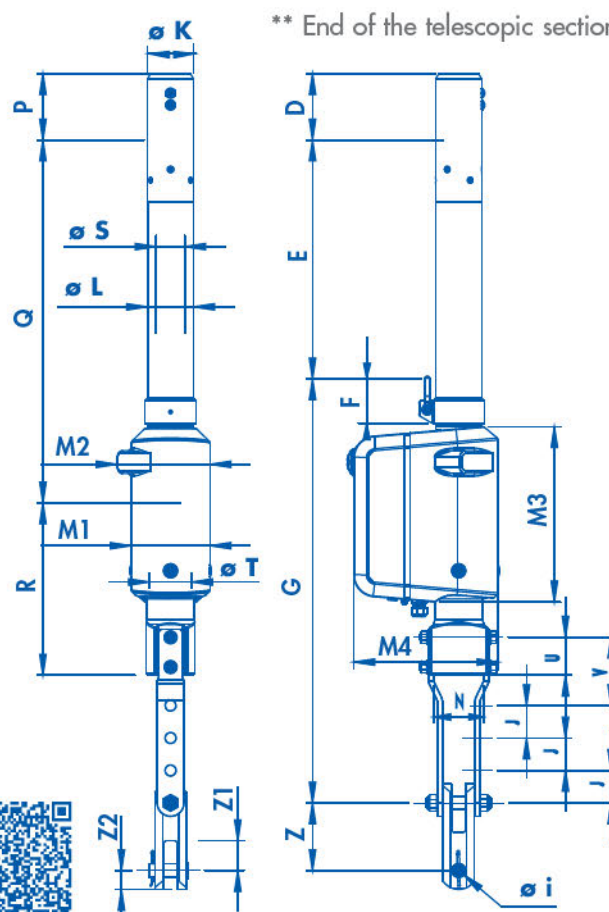
EF+



> EC/EF+ Instructions

MODEL	EC 39	EC 47	EF+ 550	EF+ 600	EC 70
Elec. furler	SX 39	SX 47	SX 47	SX 53	SX 53
Section /Swivel Ref.	SX 39 C39	SX 47 C47	SX 47 CX47	SX 53 C600	SX 53 C600
A = max. forestay ϕ (mm) (* turnbuckle)	ϕ 8 ϕ 10*	ϕ 12 ϕ 12,7*	ϕ 12 ϕ 14*	ϕ 16 ϕ 19*/22*	ϕ 19* ϕ 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
ϕ K	60	72	72	85	85
ϕ 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
ϕ S	42	50	53		64
T	54	75	78		80
U	39	44	70		-
V	105*	104*	126		-

** End of the telescopic section



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

- 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 p20).



(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

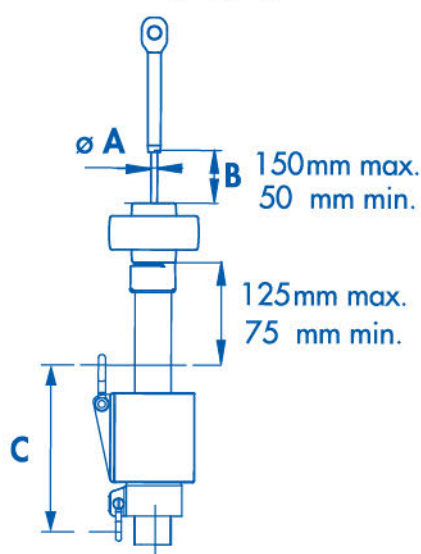
Technical datas :

Option : wired or radio remote control (see page 20)

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*	SX53 / 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
40 → 50 m 131' → 164'	40*	ø 105 / C105	HF950	50 m	G3/8'	(140 max)	60	24

RPM¹ : Rotations per Minute

*Installation with swage rigging screw or "manual"



Stainless steel toggle & link plates

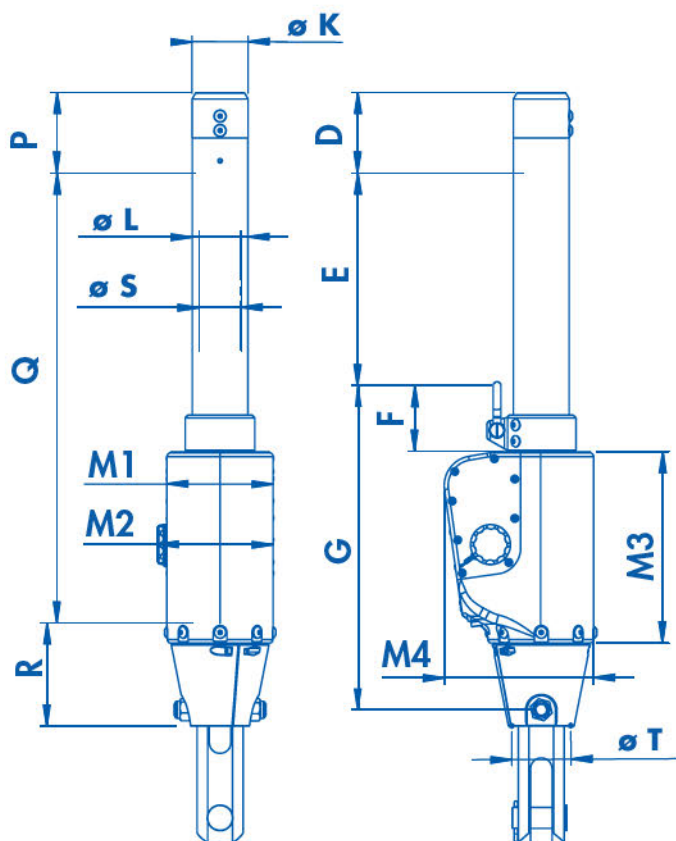
- Fitted according to bottom forestay terminal (turnbuckle + toggle or eye + toggle). Toggle and stainless steel link plates are delivered in the standard kit.

HF Sections :

- Standard SX47 & SX53 foil sections are common to all systems.

HF DIMENSIONS

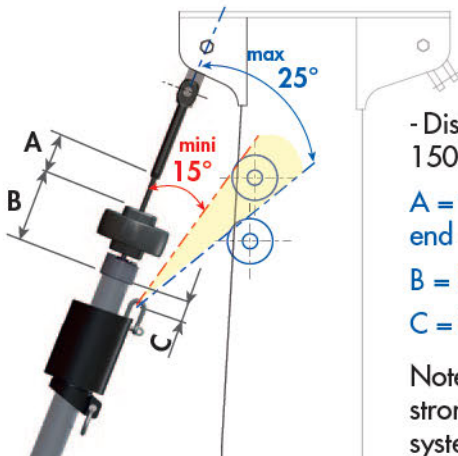
Rep.	HF 550	HF 600	HF 700
Section / Swivel Ref.	SX 47 C47	SX 53 C600	SX 53 C600
A = max. forestay ø (* turnbuckle)	14 mm*	19 mm*	22 mm* /#76*
B	53	53	52
C	220	228	228
D*	106	103	123
E	248	263	325
F	77	82	100
G	536*	770	495
M4	216	267	267
ø K	72	72	85
ø L	70	72	85
M1	146	146	162
M2	16	172	177
M3	185	324	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.



- It must be situated between 15 and 25°

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

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)

Halyard angle with forestay :

SX & R FURLING SECTIONS & CONNECTORS

SX & R

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

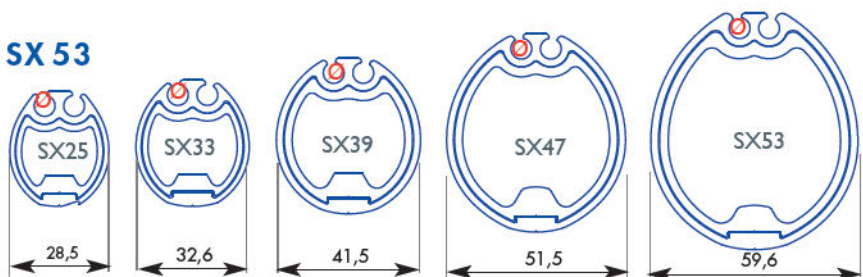
Material : 6000 series
Standard Length : 2 m (6'8")

ROUNDED SECTIONS

SX25 / 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 $\varnothing 5$ mm finished luff tap.

\varnothing = 6 mm inner groove



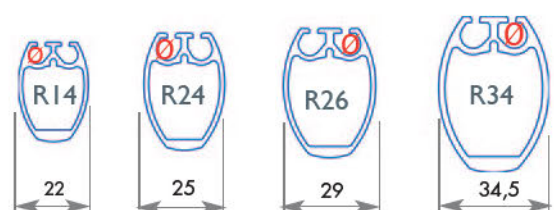
ELLIPTICAL SECTIONS R14 / R24 / R26 / R34

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

We recommend these following finished luff tape:

R14 = $\varnothing 4.5$ mm / R24 & 26 = $\varnothing 6$ mm / R34 = $\varnothing 7$ mm

\varnothing = inner groove = 5,5 mm (R14), 7 mm (R24 & R26), 8 mm (R34)



CONNECTORS : please see dimensions on our web site

> Technical sheet



STRUCTURAL FURLERS & LOCKS GENOA & STAYSAIL



© photo credit : Groupe Apicil



Structural furlers : the "in/out" systems

The structural furler - unlike the Code O furlers - supports both mast and sail loads. The Facnor **STK** systems are fitted with anti-torque cable forestay. Widely tested on ocean races, like the **external and internal halyard locking devices**, reliability made their success. The FLT systems can be fitted with a classic wire forestay from 21 to 34 footers.



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



P26-27

INTERNAL & EXTERNAL LOCKS
2 - 30 T and +



P28-29



STRUCTURAL WIRE FURLERS,
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)
- Single 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)



STRUCTURAL FURLER RANGE 5 → + 35 TONS

Continuous or discontinuous line drum

Parameters / Furler model*	STK 5 T	STK 7 T	STK 9 T	STK 12 T	STK 15 T	STK 20 T	STK 25 T	STK 35 T	STK +35 T
Boat length (feet)	40'	40' ↓ 50'	50'	50' ↓ 60'	60' ↓ 70'	70'	+70'		
Furling line ø (mm)	ø 8	ø 8 ↓ ø 10	ø 8 ↓ ø 10	ø 10 ↓ ø 12	ø 12				
ROD equivalence	-17	-22	-30	-40	-48	-60	-76 & -91	-115 & -150	Contact us
wire 1x19 equivalence (mm)	10	12	14	16	19	22	-	-	
Kevlar wire working loads (safety coefficient x 2)**	5 T	7 T	9 T	12 T	15 T	20 T	25 T	35 T	

* 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.

STK 5T Ultra flat drum

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

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.

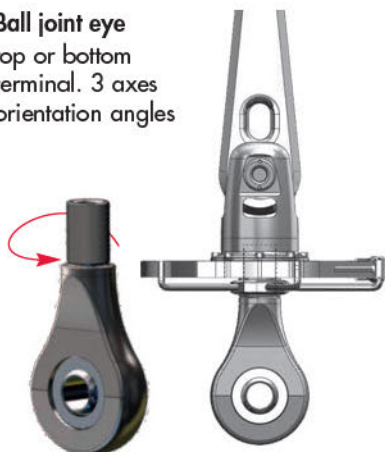


Eye terminal

(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.

New!

BUILT INTO MAST FRONT

HL & HLA

- Halving mast compression loads
- Luff constantly tight (less halyard elasticity)
- Easier foredeck handlings
- Different possibilities of use : Code sails & Staysail
- Reduction of the boat heel/windage (lowered sail)

>> High resistance body : Stainless steel (HL) or aluminium (new HLA)

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).

>> New HLA

- > Aluminium body
- > Lighter (60%)
- > Reliable : bottom/entry of the lock is made of Stainless steel in order to protect this area from the entry of the spigot

>> Halyard /locking control

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

>> 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 "Sensor":

Some models (5T or +) can be specially equipped with fitted-in sensors "upwards stop" and "locked", various terminals available (see page 27)

>> Bullet lock:

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

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

>> Internal halyard HL & HLA locks technical features

HL Lock model*	HL 2T	HL 3T	HLA 5T	HLA 8T	HL 10T	HLA 12T	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)

HL
(stainless steel)

HLA (aluminium)

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.

HE EXTERNAL LOCKS WITH LOOP BODY

>> Fixed locking device & mobile pin :

- Easily fitted : Only minor mast modifications. Can be fixed onto the head attachment with a textile attachment (loop lashings).
- The halyard (small \varnothing) can then run down inside or outside the mast.



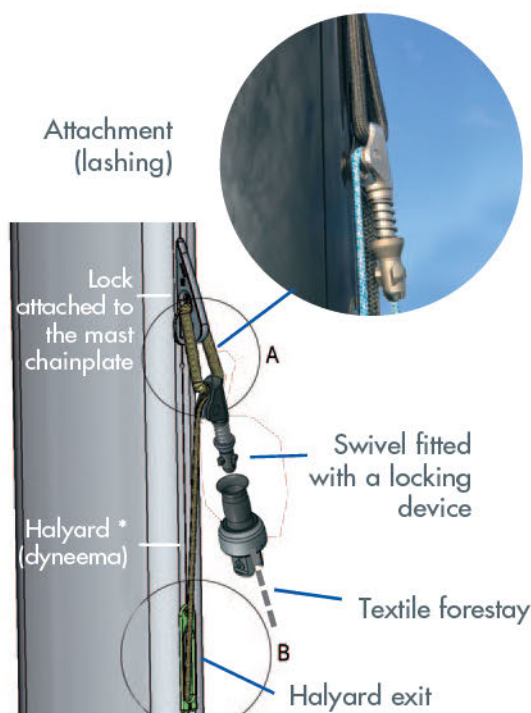
HEL 3T



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 & Facnor technical partner since 30 years

>> Swivel lock : Double function



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

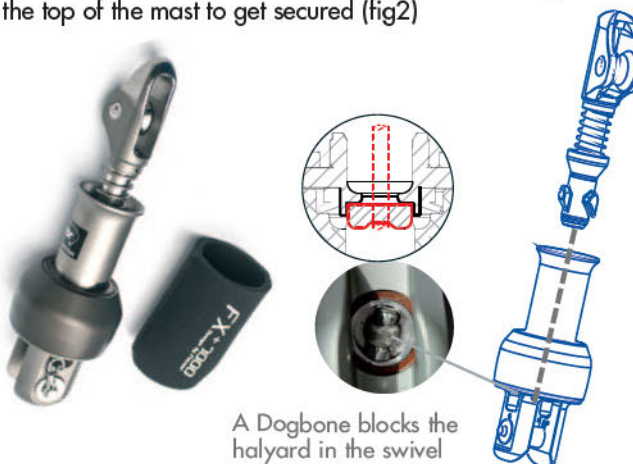
>> HE & HEL Swivel & lock technical features

HE & HEL Lock model*	HEL 3 T	HEL 5 T	HEL 8 T	HEL 10 T	HE 12 T	HE 16 T	HE 24 T	HE 30 T+
Working load	3 T	5 T	7 T	10 T	12 T	16 T	24 T	30 T

EXTERNAL LOCKS : SWIVEL LOCK

>> 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

>> HSW Swivel & lock technical features

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

* HSW 2T5 & 4 T = different model compared to the photo above



STRUCTURAL WIRE FURLERS

FLT

21 to 34 feet units

FLT FLAT DRUM STRUCTURAL FURLERS

FLT advantages

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

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.



Stainless steel wire
ø 5 to ø 7 mm
(not included)

Link plates

Allows adjusting the length of the forestay that is easily removed. Ideal for unstepping operations

Extra Flat drum + carbon housing

Drum jaw & quick pin

Furling line : Vectran with a partially reduced diameter

Stainless steel toggle

Technical datas :

FLT Kit = flat drum + forestay swivel (masthead) + halyard swivel (tensioning swivel) + link plates + toggles

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

*Rod forestays are not adapted

*Wire non delivered





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 various motorized version (p.39) as well as accessories (p.48).

FX+ GENNAKER & CODE ZERO FURLERS



P32

MANUAL



FAST THIMBLES for ASYMMETRIC SPINNAKER FURLERS

P36

FURLING LINES & FAIRLEADS



P38



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 48)

Anti-impact cover for swivel

in neoprene (delivered)

high-visibility marking

Thimbles
see page 48

+ THAN 25 YEARS OF EXPERIENCE IN GENNAKERS FULERS

- 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



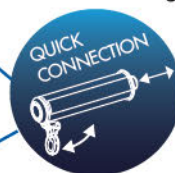
Torque rope

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



Start and Go Rotation option

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



CARBON
LIGHT

Carbon housing

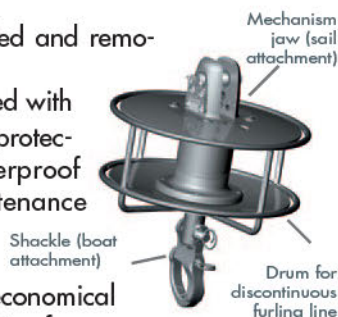
- lighter;
- insures a smooth and perfect run of the furling line (no overriding)

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 (retrofit available on most FX+ models)

video FX+



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 20 ↓ 30	10 ↓ 12 30 ↓ 40	12 ↓ 14 40 ↓ 45	13 ↓ 16 42 ↓ 55	16 ↓ 20 55 ↓ 70	21 ↓ 24 70 ↓ 80	24 ↓ 30 80 ↓ 100	+ 30 ↓ + 100	
Furl. line ø (mm)	ø 6	ø 8	ø 10	ø 10 std	ø 12				
Max Gennaker or Code zero area (m² ft²)	30 m ² 322 ft ²	60 m ² 646 ft ²	100 m ² 1076 ft ²	140 m ² 1500 ft ²	250 m ² 2690 ft ²	350 m ² 3770 ft ²	450 m ² 4844 ft ²	550 m ² 5920 ft ²	+ 550 m ² + 5920 ft ²
Safe Working Load* (tons- lbs)	0,9 T 1984 lbs	1,5 T 3306 lbs	2,5 T 5511 lbs	4,5 T 9920 lbs	7 T 15432 lbs	9 T 19842 lbs	12 T 26455 lbs	15 T 33069 lbs	20 T 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. 48

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 ² 215 ft ²	30 m ² 322 ft ²	50 m ² 538 ft ²	70 m ² 753 ft ²	over 70' boat, If is highly recommended to fit a structural furler (see page 24)
Safe Working Load* (tons)	1,5 T 3306 lbs	2,5 T 5511 lbs	4,5 T 9920 lbs	7 T 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

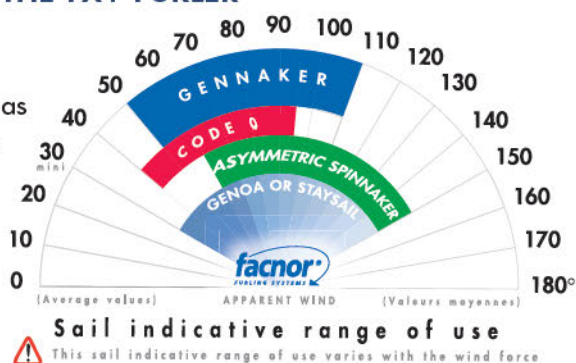


We remind you that an adapted deck attachment must be installed

- 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 front page).



Installation of the FX+ furler



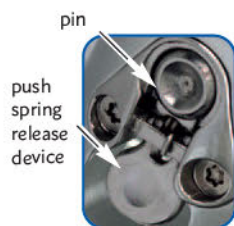
- Lay the furler Gennaker on the deck (fig. 1). Install the furling line round the drum (fig. 2). See below for details;
 - Fasten the upper thimble onto the swivel (fig.3). Attach the drum onto the chain plate or bowsprit (fig. 4). Adjust the bowsprit and secure with a bridle
 - Check that the halyard 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 "Fast thimble" pages.

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

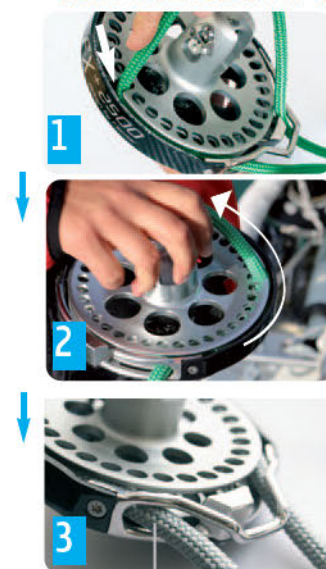
- The sail can be removed from the furler in one "click".
- Smooth push spring release device* with captive quick release pin for FX+ models .

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 (see front page). 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.

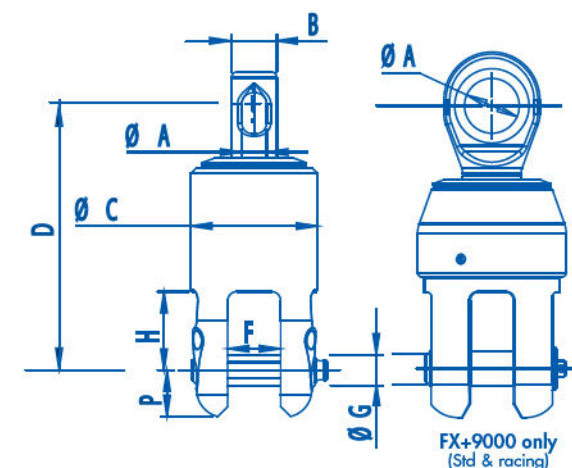
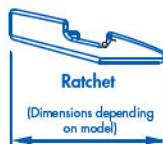


FX+ DIMENSIONS

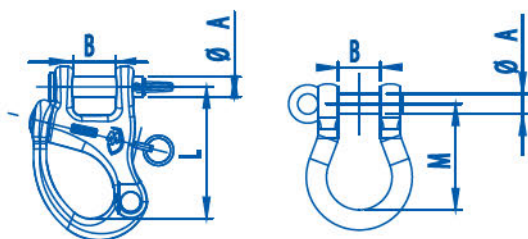
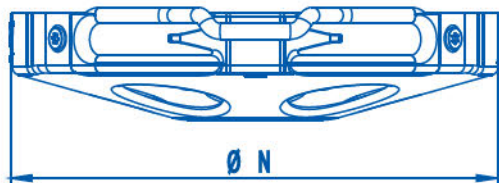
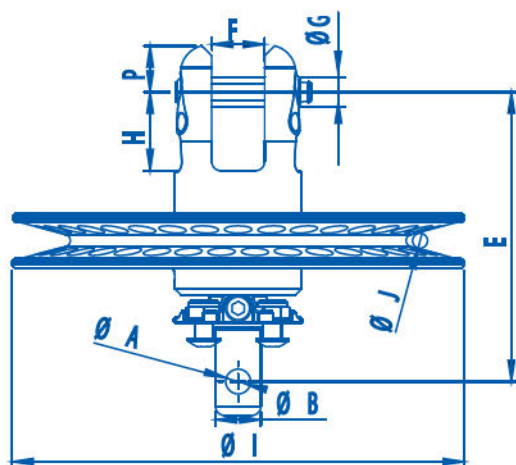
Rep.	FX+ 900	FX+ 1500	FX+ 2500	FX+ 4500	FX+ 7000	FX+ 9000 Std	FX+ 9000 Racing	FX+ 12000	FX+ 20000
Dimensions (mm)									
Ø A	6	8	10	12	28	28		14	20
Ø B	12	15	20	25		30		30	40
Ø C	34	42	49,5	60		76		76	86
D	66	88	100	114	135	135		117	153
E	79	96	108	121		137		130	161
F	15	17,5	19	26	26	22		22	29
Ø G	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)

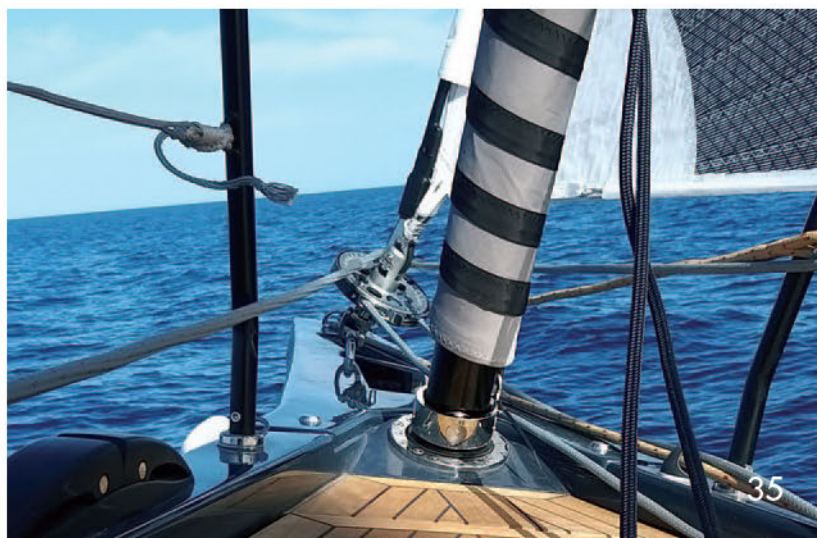
Standard swivel attachment (shackle)



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



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

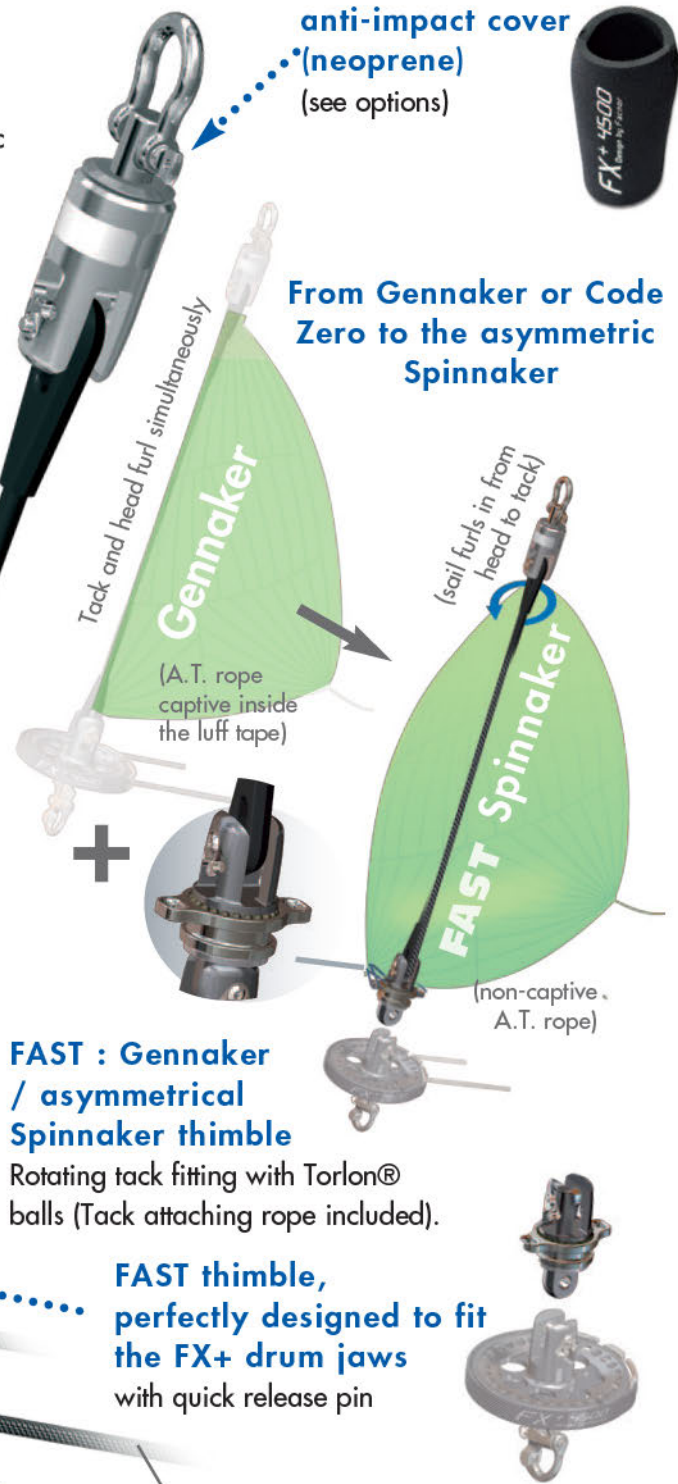
FAST thimble,
perfectly designed to fit the FX+ drum jaws with quick release pin

Removable furling line

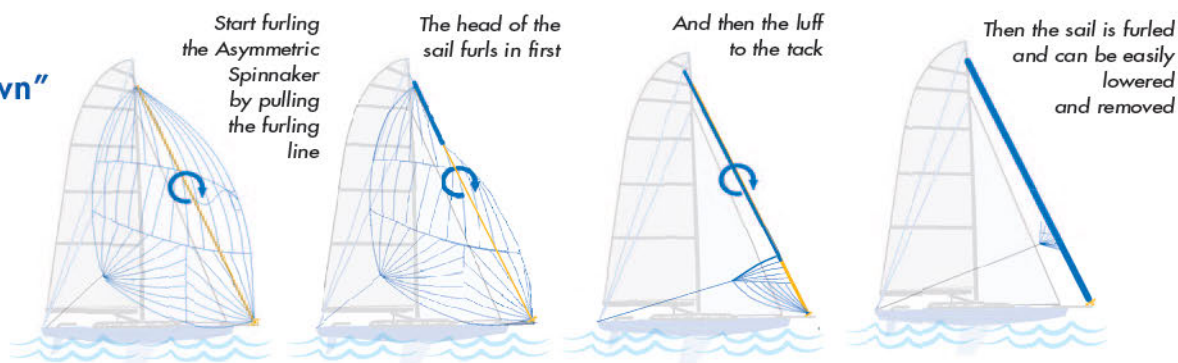
FX+ swivel with anti-impact cover (neoprene)
(see options)



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)	H 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 9000 Std	FX+ 9000	26	142	1915	43230120030
FAST 9000 Rac.		22	142	1915	43230120040
FAST 12000	contact us				
Custom					

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.

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

■ SSH+ solid sheave :

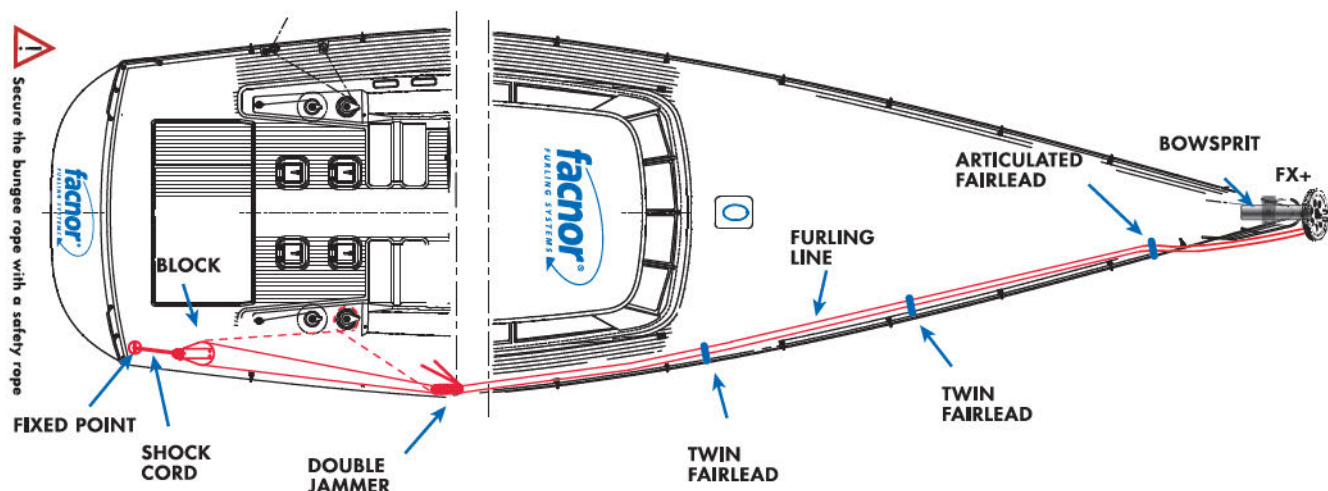
- used to adjust the tack point, with a maximum luff;
- This option is available from 1500 up to 12000 (above models on request).

→ see page 49



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 /braided 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

MOTORIZED FLYING SAILS FURLERS

GENNAKER & ASYMMETRIC SPINNAKER



The range of manual furlers was enlarged to the hydraulic (**FXH** & **IDXH**) version and electric motorization (**FXE**) and now integrated in a bowsprit (**IB-FXE**), in a easy sailing concept approach.

MOTORIZED



New!

FXE ELECTRIC CODE ZERO FURLERS



New!
7000

P40-41

IB-FXE INTEGRATED ELECTRIC CODE ZERO FURLERS

P42-43

FXH HYDRAULIC FURLERS

P44-45



IDXH UNDER DECK

P46-47



ACCESSORIES & BOWSPRIT

P48-P50



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 and now 250 m². The result is a concentrate of energy in a compact, light and particularly efficient furler: just a few seconds to effortlessly furl a Code Sail !



New!
7000

«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 : just a few seconds for furling a 140 m² or 250 m² Code sail just by pressing a button!
85 rpm (FXe4500) and 110 rpm (FXe7000) / -20% rpm / under load
- Contained power consumption : 30-35 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)

Rotation:
85 rpm
(FXe 4500-12V)
110 rpm
(FXe 7000-12V)

3 models

FXe4500 & FXe 7000
(> 250 M²)
& NEXe
(> 300 M²)

> Video FXE



Electric wire
(7 m - included)

Snap shackle
with 90° orientation

Top swivel attachment
(complete pack)

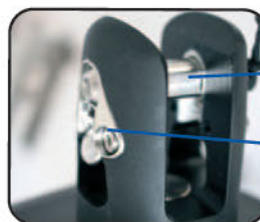


Swivel with neoprene
anti-impact protection
(complete pack)

**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

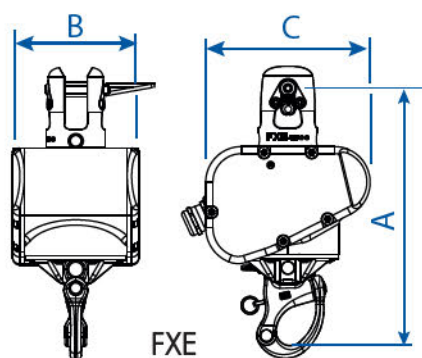


Installation

- Standard : FXE 4500 & 7000 standard kit (with swivel) - 12 or 24 V
- FXE Motorization kit : top swivel not included 12 or 24 V

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 (FXe 4500) or 50A socket (FXe 7000)
- > Integrated snap shackle

■ Easy switch from manual to electric code sail furler

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



■ 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 control or wire control

■ Use :

- The irreversible rotation of the electric unit ensures an controlled unfurling of the sail via remote controller. The rotation of the electric engine upper jaw 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				Volt.	BOAT LENGTH	CODE SAIL AREA	AMPS (circuit breaker)	BOTTOM ATTACH.	DIMENSIONS (mm)		
FXe Standard kit (with swivel)		FXe Morization kit							A	B	C
43720200450	FXe 4500 (400 W)	43720200450	FXe-Mot 4500	12V	38 < 52'	140 m²	40 A	Snap shackle	216	106	138
43720200452		43720200452		24V	11,5 < 16 m		30 A				
43720200750	FXe 7000 (800 W)	43720200750	FXe-Mot 7000	12V	38 < 52'	250 m²	60 A	Snap shackle	270	221	245
43720200752		43720200752		24V	11,5 < 16 m		30 A				
NEXe Model											
43610008240	NEXe 8T (800 W)	43600008240	FXe-Mot 8T	24V	58 < 65' 16 < 20 m	300 m² (Genna.)	30 A (24V)	Snap shackle	278	221	252

* 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)

IB-FXE INTEGRATED ELECTRIC BOWSPRIT FURLER

Facnor has adapted the FXe Code sail electric furler to Catamarans - which require specific needed with the whiskerpole - and has directly integrated the engine block into a bowsprit. This innovative IB-FXe equipment makes Code Sail handling easier, a complete solution for greater use of your sail!



EASY TO INSTAL, EASY TO USE...

IB-FXE

- Two models : 4500 & 7000 (12 & 24 V) perfectly adapted to over 38' catamarans
- Complete customizable kit : options complete a standard kit according to boat configurations
- Easy to install, easy to use (wireless controller) : for Gennakers, asym. Spinnakers, Code sails,...
- Effortless sailing concept : no furling line needed
- Specifically adapted to catamaran
- Integrated motorization in a specially designed bowsprit (whisker pole) supplied at length

Top swivel attachment
(complet pack)



Swivel with neoprene
anti-impact protection
(delivered)

> Video IB-FXE



**Optional Remote
control (wire or wireless)**

- Furling in/out
(see above)



**Concept of electric
multi-motorized power**
(already used on the FXe
electric Code sail furler)

**Quick assembly
Bottom unit & top swivel**

**Integrated
motor unit
in the
bowsprit**

**Textile shackle
(delivered)**



Topping lift
attachment

Aluminium whisker pole
(supplied at length)

**Bowsprit / crossbeam
connection**
various configurations

Soft design
bridles
attachment

**Textile or special
wire bridles
kit (option)**

Electrical wire output
2x6mm² L 7m (bowsprit included)



COMPONENTS, OPERATION & OPTIONS

■ Simple installation :

- > Pre-installation & complete kit : drive unit is integrated in the bowsprit
- > Textile shackle (delivered)
- > options complete a standard kit according to boat configurations

■ Specific relay unit

- for optional wireless remote control or wiring control

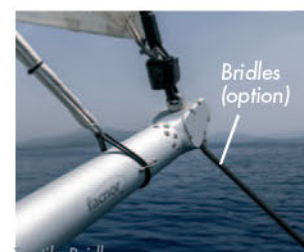


■ Complete pack including :

- Integrated motorization unit
- Top swivel + shackle (complete kit)
- Aluminium Bowsprit (supplied at length)
- Specific relay box
- Circuit breaker
- Wire (7 m)
- Topping lift attachment
- Back ends for bowsprit (various configurations : contact us)

■ Compatible options :

- Textile bridle kit or special option for wire bridles
 - Radio-remote controller
 - Wireless control
- Compatible with our flying sail accessories :
- Fast thimbles (top/down), 2-to-1 blocks, anti-twist rope accessories...



■ Use (idem FXE) :

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



> IB-FXE instructions

Complete customized kit :

- With top swivel (complete kit) or not. See also compatible options
- Available standard kits : Lagoon 42'/46'/51' (IB-FXE4500) and Lagoon 52'/55' (IB-FXE7000)
- Other : contact us



Hannes, happy owner of a Lagoon 42'...



"I love it. It's making sailing with a Gennaker or Code Zero so easy... Don't have to be afraid when Increasing winds, you can furl easy with the remote, even one handed. You could do it.

And we use it probably 60% to 80% more than a regular manual furler that we had before. We're really happy with it."



Complete interview here >

IB-FXE Technical features (Std & motorization kit)

MODEL	LOAD MAXI. SWL*	BOAT LENGTH	CODE SAIL AREA	POWER	FURLING SPEED (rpm)	AMPS/ VOLTAGE	Circuit Breaker	Dimensions	
								ø (mm)	Length
IB-FXe 4500 12V	4,5 tons	38 < 52' 11,5 < 16 m	140 m²	400 W. max.	85 rpm* (*12V)	40 A (12V)	40 A	ø 100	On request
IB-FXe 4500 24V						30 A (24V)	30 A		
IB-FXe 7000 12V	7 tons	58 < 65' 18 < 20 m	250 m²	800 W. max.	110 rpm* (*12V)	60 A (12V)	60 A	ø 115	On request
IB-FXe 7000 24V						30 A (24V)	30 A		

* 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.



«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 46)

FXH hydraulic



Remote control with specific functions

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

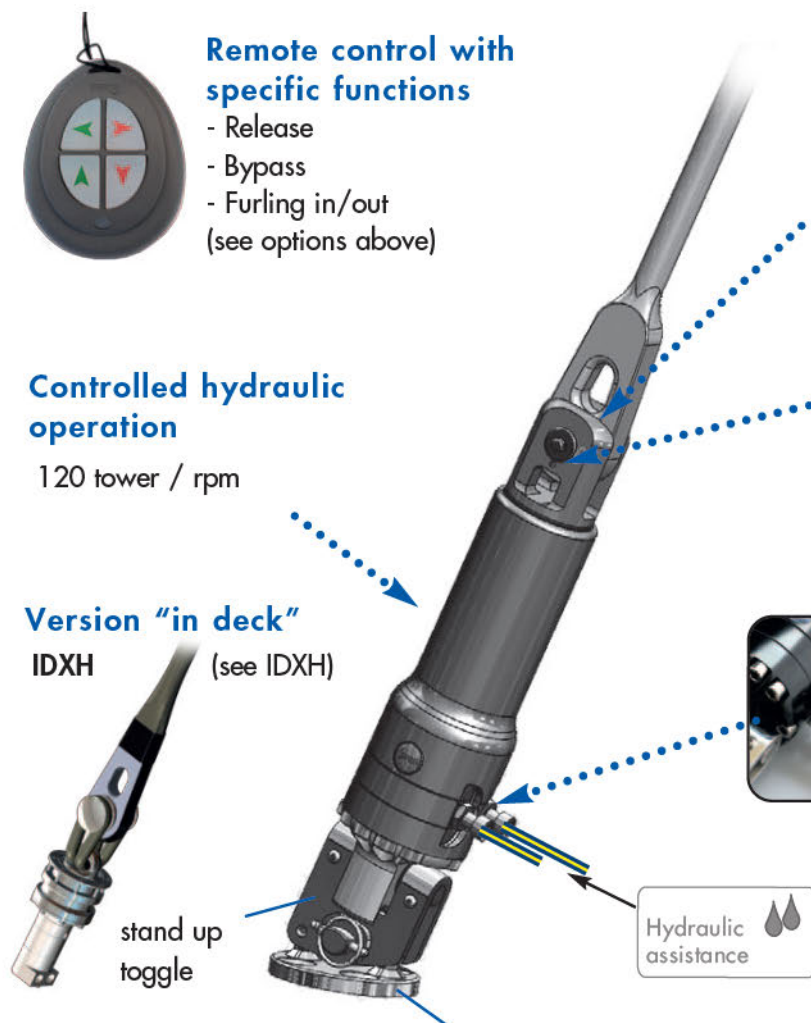


Controlled hydraulic operation

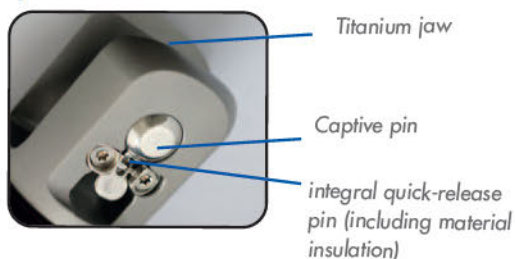
120 tower / rpm

Version "in deck"

IDXH (see IDXH)



Quick assembly jaw & swivel

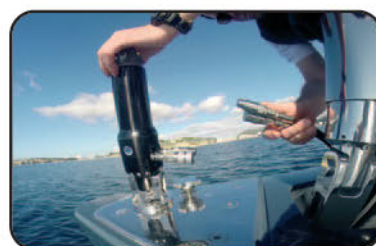


Titanium jaw on drive unit and swivel

Light and resistant. CNC machined mono block

Quick and reliable connections

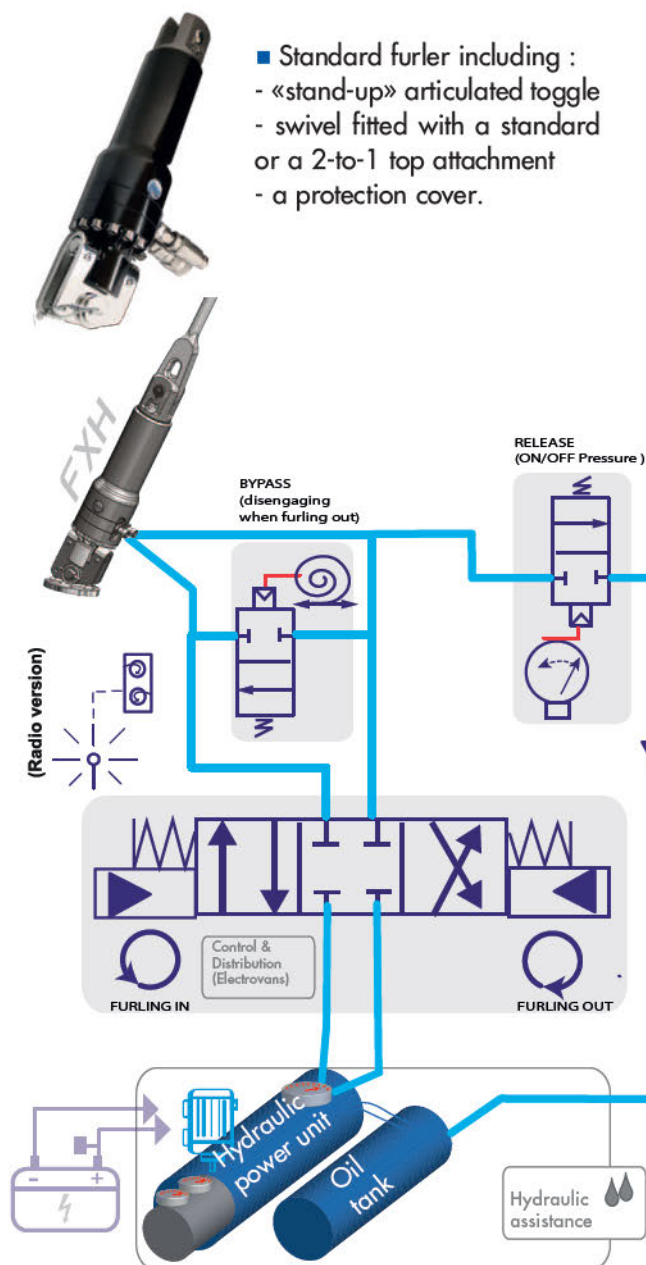
Self-sealing wire plugs



Plugging without oil leak



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



See the video



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

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 46.



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. And above all effortless....

IDXH: THE "INVISIBLE" FURLER

IDXH Hydrau

- 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 case of high speed furl-out
- Adaptable to various deck thicknesses and according to configuration : connection by rear or side port.

SEVERAL SOLUTIONS

- > Versions 72° / 90° : IDXH 12000 & 16000
- > Version inline (inline) : IDXH 12000 inline
- > Other loads : contact us

In-line version



COMPONENTS, OPERATION & OPTIONS

Options :

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

Specific functions :

Disengage – to furl out at high speed (300 to 400 turns/min instead of 120 turns/min)

Release – to reduce pressure and plug the connectors in (less useful function than in the case of the FXH)

*receiver/radio remote control,

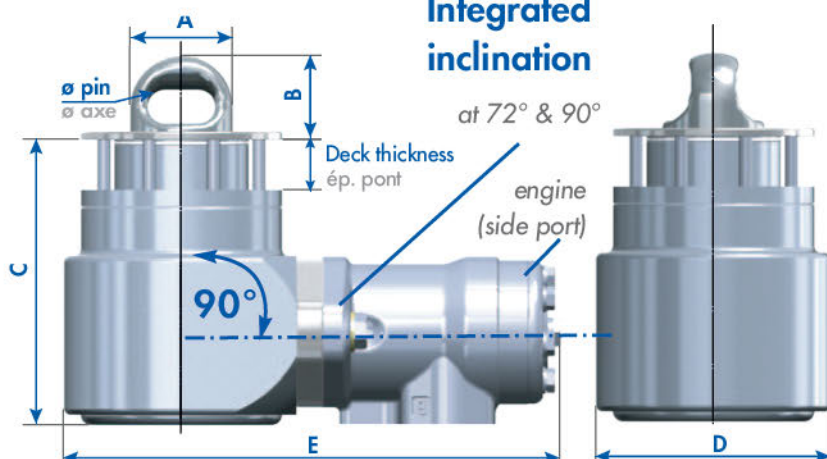


- **4-function control box + micro power unit**

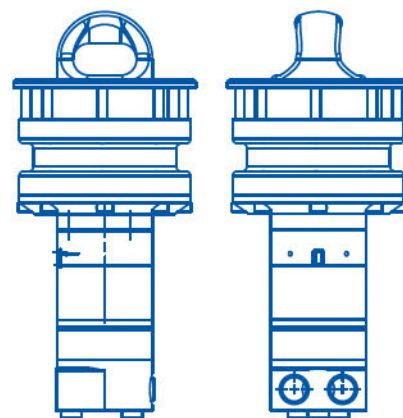
- **Quick plug-in (external) version (FXH) :**

Small dimensions. See page "FXH".

Integrated inclination



Inline version



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
"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	Custom (following your request)	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	Custom (following your request)	20	60	48	188	105	108
IDXH 16000 inline	16 tons	+ 20m +65'	200 cc rear port or side port	100 RPM at 20L/min	250 N.m at 140 bars	Custom (following your request)	20	61	45	107	140	295

* 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)

Hydraulic Connection = G3/8

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**, 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.

Snatch blocks

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

(Example of installation)

Snatch block

Thimble

Luff anti-twist rope

Thimble

Quick fastening



LB LIGHT SNATCH BLOCK

Model	Ø Sheave	SWL	B (mm)	Weight (g)	Reference
LB02T	41	1,5T	59	99	43180402040
LB03T	46	2,5T	64	141	43180403040
LB04T5	55	4,5T	79	249	43180404540
LB07T	70	7T	90	461	43180407040
LB09T	88	9T	110	897	43180403040
LB15T	123	15T	160	2068	43180415040

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)	WAF	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

Spliced furling line

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

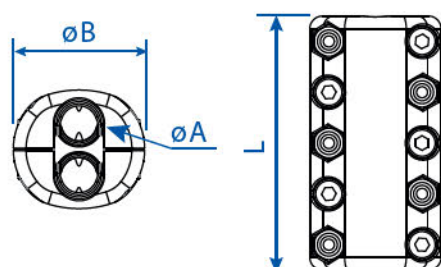
- Plug and lay system. Effort measured in real time via bluetooth. STCM 4500 (for FX+4500). Ref. 43130160450 Contact us

CLAMPS FOR ANTI TWIST ROPE

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) : 4 models fitted from 9,5 mm to 15 mm \varnothing :

- 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)
- Kit including clamp + S/S 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.



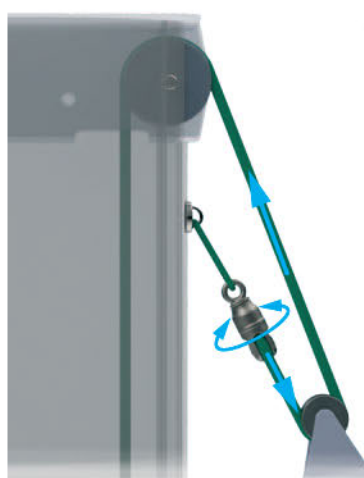
CLAMPS					
Model	References	\varnothing A.T. Rope* (mm)	Dimensions		
			$\varnothing A$ (mm)	$\varnothing B$ (mm)	$\varnothing L$ (mm)
FRC D09 mm	24000091090	9,5	8,5	29	56
FRC D11 mm	24000091110	11	10	31	60
FRC D13 mm	24000091130	13	12	35	62
FRC D15 mm	24000091170	15	15	40	100

Anti-twist swivel for Spinnaker :

For Spinnaker or Mainsail halyards

- Anti-twist
- Simple & compact
- Duplex stainless steel or titanium (4T5 only)
- 1T5 / 2T5 / 4T5

(See also page 56)



ANTI-TWIST SWIVEL



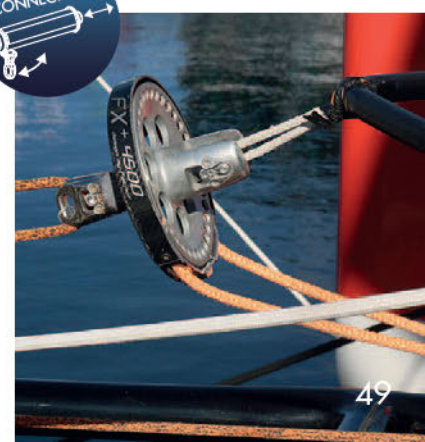
Solid sheaves :

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

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



SOLID SHEAVE



COVERS FOR DRUM & SWIVEL

Continuous line drum covers: 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 from FX+ 2500 up to FX12000.

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



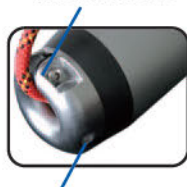
Swivel protection covers (neoprene): an additional benefit of securing the mast and the sailing crew. Delivered in FX+ standard kit : FX+ 2500, FX+ & FXT 4500, FX+ & FXT 7000.

BOWSPRIT FOR GENNAKERS & ASYMETRICAL SPINNAKERS



Fitted-in sheave from 25 up to 57'

Simple and efficient functioning



Bridle attachment



Automatic locking device

■ 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



- 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;
- Integrated line stopper for holding the tackline.



integrated line stopper

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

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.



FULL BATTEN CAR SYSTEMS FACSLIDE⁺

P52-54



GAFF LOCKS FOR SQUARED MAINSAILS

P55

MAINSAIL REEFING LOCKS & RINGS
+ ANTI-TWIST SWIVEL FOR MAINSAIL HALYARDS



P56

New!

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⁺



Tracks fitting to the mast without modification

The tracks are easily fixed with slugs alongside the existing mast without unstepping (see page 54).

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.55)

+ 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)



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 54.

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. 54 or ask to your Facnor dealer)



Salted water at the head...

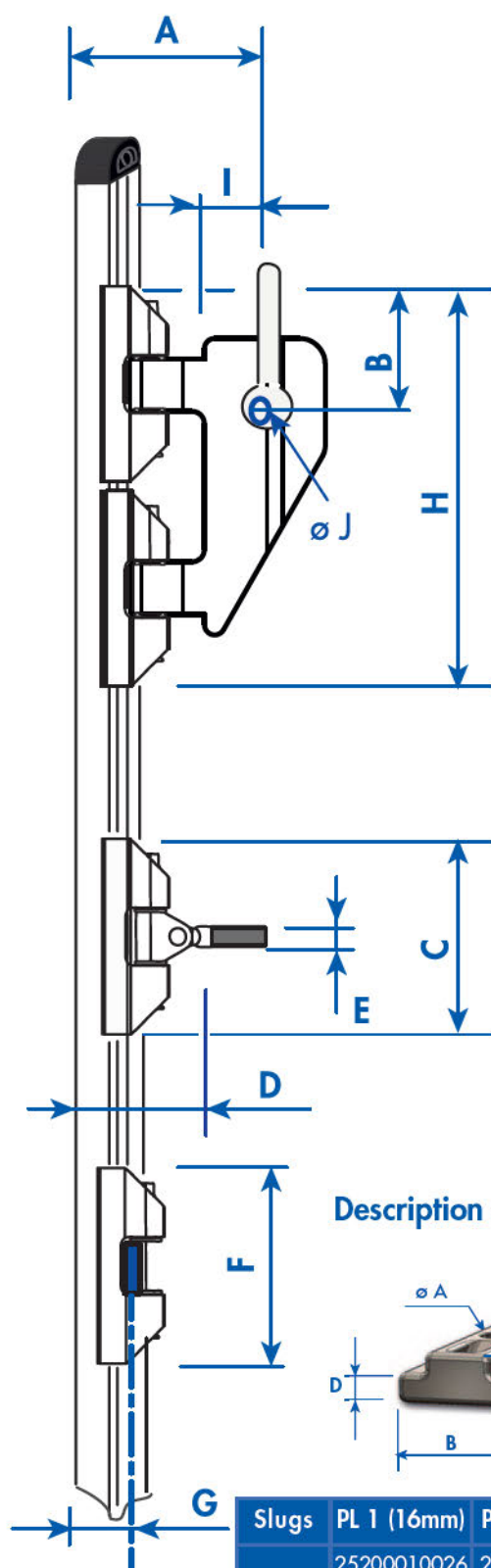
Even though the head cars are positioned 10 meter high, they receive sea water, therefore do not hesitate to rinse the cars with fresh water.

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

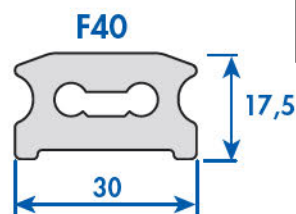
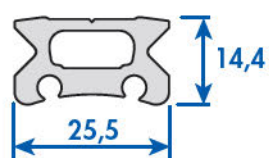


Track ref.	F10+
	FR 25x15
Marks	Dimensions (mm)
A	72
B	45
C	74
D	58
E	M10
F	64
G	26
H	162
I	38
ø J	8

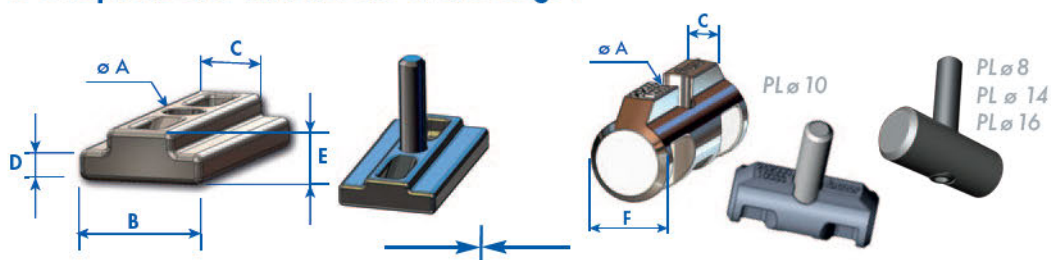
	F20+	F30+
Code Rail	FR 25x15	FR 25x15
Marks	Dimensions (mm)	
A	72	115
B	50	98
C	84	94
D	58	60
E	M10	M10
F	74	94
G	26	28
H	172	197
I	35	40
ø J	8	18

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 :



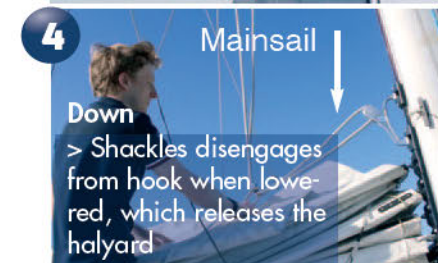
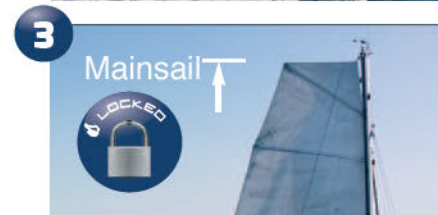
Slugs	PL 1 (16mm)	PL 2 (19mm)	PL 3 (23mm)	PL ø 8	PL ø 10	PL ø 14	PL ø 16
Part N°	25200010026 (M5)	25200010028 (M5)	25200010030 (M5)	51095080000 (M5)	25200010033 (M5)	25200010035 (M5)	28051006160 (M6)
Dim.			25200010032 (M6)				
A	5 mm	5 mm	5-6 mm	5 mm	5 mm	5 mm	6 mm
B	16 mm	19 mm	23,7 mm	-	-	-	-
C	9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

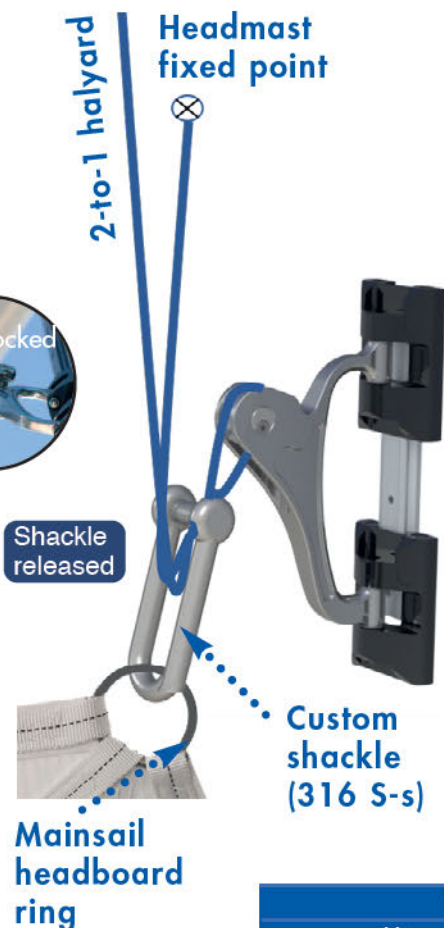
- Catamaran over 40' (F30/ F40)
- Squared mainsail automatically locked
- Mainsail easily folded
- Simple use: long top batten simply hoisted and lowered along side the boom

Gaff Lock
for mainsails



■ Adaptation with other brands of batten cars: contact us

■ Material: duplex



> Video
GAFFLOCK



Build-in sheave
(aluminium)



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 RINGS - HEAD BOARD CARS FT 30/FT 40



■ This ring is fitted onto the headboard of Mainsail and get connected to the headboard car toggle.

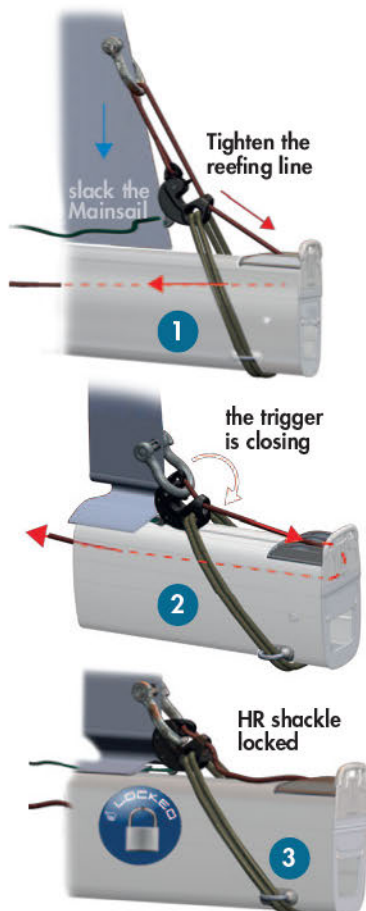
■ Material: Duplex Marine quality stainless steel

■ Optimum design :
The high load points
have been reinforced for
more reliability.



Model	Reference	Max. SWL (tons)	Ø Hole/car (mm)	Dimensions (mm)
Head board cars FT 30 & FT 40				
Head ring D10 ø 50	25200000750	2,5	ø 14	97x74x10
Head ring D12 ø 65	25200000760	4	ø 20	125x94x12

MAINSAIL REEFING LOCKS



High Resistance Main Sail reefing locking system from 35'

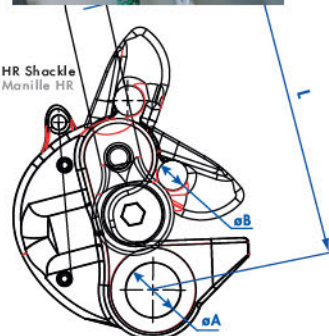
- Protects the boom sheaves and reefing lines, subject to high tensions.
- Reduce the compression on the boom section due to the high tension of the reefing line
- Wide range : 3 Sizes HRC4 / 6 / 9 Tons (SWL)
- Material : Duplex Marine quality S/steel
- Locking : Release the Mainsail halyard in position 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 / 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 / Multi + 65'	1566	27	14	20	143

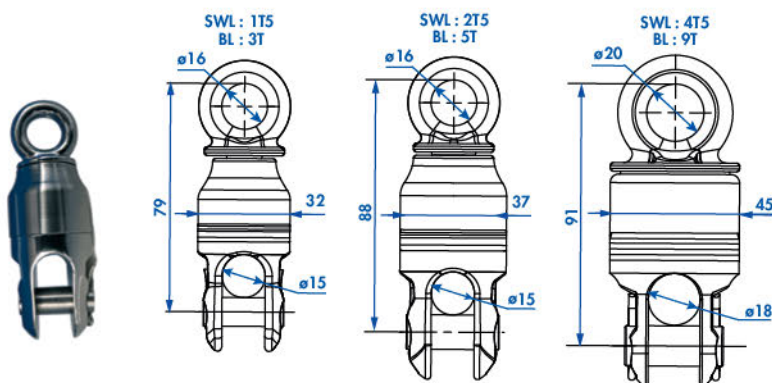
C = ø HR Shackle
C = ø Manille HR



ANTI-TWIST SWIVEL

For Mainsail or Spinnaker halyards

New!



- Anti-twist function : adapted to 2to1 configuration, removes halyard twisting effects
- Simple & compact
- Duplex stainless steel or titanium (4T5 only)
- 1T5 2T5 & 4T5



TECHNICAL SUPPORT

ASSEMBLY & USE INSTRUCTIONS of Facnor equipment, product information : videos on Facnor Youtube channel and www.facnor.com web site

VIDEOS - JOIN US ON

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



FACNOR CHANNEL

Consult the Facnor instructions on our technical support



www.facnor.com



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