



2019 / 2020

antail

INNOVATIVE DESIGN BY ANTAL

Antal has been committed to the design and production of innovative solutions and has introduced into the market products that have established themselves for their effectiveness and reliability:



Speedylock : the speedy way to lock-unlock the winch handle



V-grip : rope-locking system for clutches



Snatch block : a full range of openable blocks with revolving cheekplates



Halyard slider on automatic track : for secure halyard locking even under extreme loads



OPF block : a full range of one-piece-frame blocks



HS slider : Full batten system on fibre guides



Ring : the first on the market with a series production of Low Friction Rings



Roller cleat : the folding cleat with rotating horns



Powered Line Driver : a self-tailing sheave to control a rope loop



Hook : the openable ring with snap loop



Tulip : the sheave done for different lead angles



Anitra 12m SI - Martin Yacht

antal

2019 - 2020 *CATALOGUE*



What we are skilful in, is mechanic.

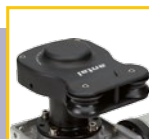
What we are keen on, is the beauty of a silent sailing-boat in the wind: that's why we make sailing equipment in the best possible way, so that you can find in our products the high level of our job.

new products



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WBC: powered winches load control



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Hydraulic powered line driver



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QR series



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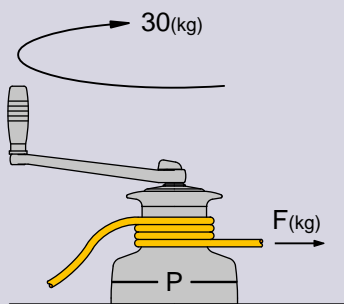
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winches: technical information

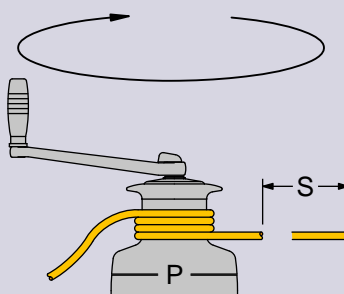


WINCH POWER AND MAXIMUM FORCE

To calculate the maximum force (F), first use the tables to find winch power (P). Assuming the efficiency is 70% and the maximum force exerted on the handle is 30 kg, the maximum force obtainable will be:

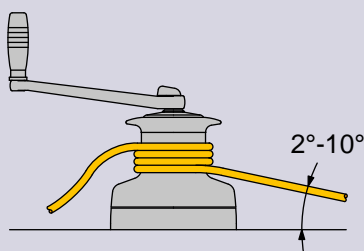
$F = 20 \times P$ (kg) i.e. twenty times the winch power.

For example, for a model with a winch power 50, the maximum force would be $F = 20 \times 50 = 1000$ Kg



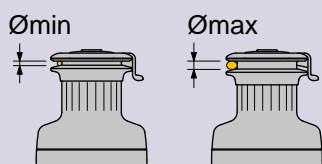
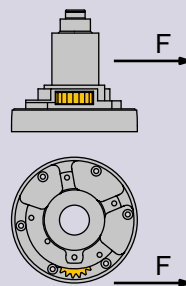
RECOVERY SPEED

The recovery speed (S) is the length of line recovered with one turn of the handle. It is the converse of the winch power (P), and can be calculated using the formula: $S = 1600/P$ (mm) For example, a model with winch power 50 would have a recovery speed of $S = 1600/50 = 32$ mm for each 360° turn of the handle.



WINCH MOUNTING

Line drum lead angle: it is correct to provide an angle of between 2 and 10 degrees. It is advisable for the output gear of 2 speed models to be positioned with respect to pull direction, as shown in the figure (90°).



SPRING-LOADED SELF-TAILING

The new self-tailing winches with spring-loaded disks adapt automatically to even the thinnest lines. We recommend to put three or four wraps of line on the drum, otherwise excessive load on the self-tailing disks could cause the line to slip.



MAINTENANCE

Clean the winch by removing any old grease with a solvent (e.g. using diesel fuel). Spread a thin layer of marine grease on all moving parts. Grease will protect aluminium from corrosion (where contact with dissimilar metal occurs). It is useful to use some grease especially on stainless steel screws, threads and stainless washers.

For a complete documentation ask for the "Winch User's Guide".

LUBRICATION

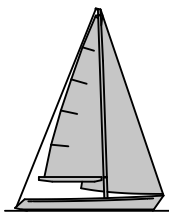
Antal uses HYDROLUB (**mod. HDR**) for winch and gear lubrication.

This grease can be supplied (in 150 gr tubes) on request.

SPARE PARTS

Antal can supply you with a universal repair kit (**mod. XTKIT**) suitable for all winch types, including 4 pawls and 4 pawl springs.

winch selection guide

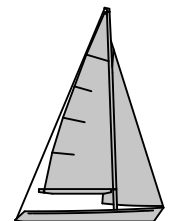


MASTHEAD RIG

LOA up to (m)	7	8	9	10	11	12	13	14	15	16	18	21
LOA up to (ft)	23	26	30	33	36	39	43	46	49	53	60	70
GENOA (m ²)	18	24	32	40	50	63	78	92	110	130	180	230
MAIN (m ²)	12	14	16	18	23	29	35	42	52	65	80	100
SPIN (m ²)	28	40	55	75	92	120	150	185	225	270	360	460

WINCH POWER

GENOA SHEET	8/16	16/30	30/40	40/44	44/48	52	62	66	66/70	70/80	70/80	80
MAIN SHEET	-	-	-	-	16	30	30/40	40	44	52	62	66
SPIN SHEET	7/8	8/16	16/30	30	40	44	48	48	52	62/66	66	70
GENOA HALYARD	7/8	8	16	30	30/40	40/44	44	44	48	52	62	66
MAIN HALYARD	7/8	8	16	30	40	44	44	44/48	48	52	62	66
SPIN HALYARD	7/8	8	16	16	30	40	44	44	48	52	62	66
TOPPING LIFT	-	-	8	8	16	30	30/40	40	44	48	52	62
FOREGUY	-	-	8	8	16	30	30/40	40	44	48	52	62
REEFING	-	8	8	16	30	40	40/44	40/44	48	52	62	66
VANG	-	-	-	8	8	16	30	30	40	44	52	62
RUNNERS	-	-	-	-	8	16	16	30/40	40	44	52	62



FRACTIONAL RIG

LOA up to (m)	7	8	9	10	11	12	13	14	15	16	18	21
LOA up to (ft)	23	26	30	33	36	39	43	46	49	53	60	70
GENOA (m ²)	10	15	23	30	38	47	56	63	72	79	95	120
MAIN (m ²)	14	17	24	32	40	49	57	65	75	82	100	130
SPIN (m ²)	22	34	52	68	88	105	122	140	158	175	210	270

WINCH POWER

GENOA SHEET	8	16	30	40	44	48	52	62	62/66	70	66/70	80
MAIN SHEET	-	-	-	-	16	30	40	44	48	52	66	66
SPIN SHEET	7/8	8	16	30	40	40	44	44/48	48	62	66	66
GENOA HALYARD	7	8	16	16	30	40	44	44	48	52	62	66
MAIN HALYARD	7/8	8	16	30	30/40	40/44	44	48	48	52	62	66
SPIN HALYARD	7/8	8	16	16	30	40	40	44	48	48	62	62
TOPPING LIFT	-	-	8	8	16	16	30	40	44	44	48	52
FOREGUY	-	-	8	8	16	16	30	40	44	44	48	52
REEFING	-	8	16	16	30	40	40	44	48	52	62	66
VANG	-	-	-	8	16	30	30	40	44	44	52	62
RUNNERS	-	16	30	40	40/44	44	48	52	62	66	66	70

standard winches

Tod 33 - Jacopin

STANDARD WINCHES

There are three series of standard winches:
one direct speed winches, small and fast models for boats up to 6-7 m.

two speed winches, direct and reduced: medium size models for boats up to 9-10 m.

two reduced speed winches, medium-large size models for boats up to 12-13 m.

SNUBBING WINCH W5

Basic model, snubbing winch without handle, completely glass-fiber resin made.



Mod. W5

MODEL	W5
BASE (mm)	80
HEIGHT (mm)	66
WEIGHT (gr)	193
SCREWS N x Ø (mm)	4 x Ø 6

ONE DIRECT SPEED WINCHES W6 - W7 - W8

Turn the handle clockwise to engage the single direct gear; the handle turns freely counterclockwise.

Model **W6** is the smallest and lightest in the range, with a glass-fibre resin base and drum and an aluminium central rod.

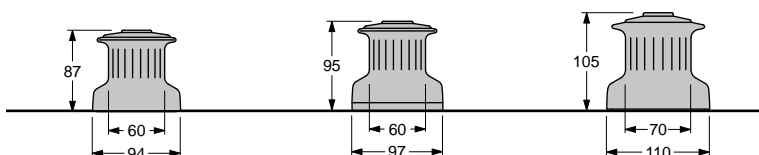
Model **W7** is similar but with a hard black anodized aluminium drum.

Model **W8** has an AISI 316 stainless steel central rod, a bronze base and a black anodized aluminium (AL) or chrome-plated (CH) drum mounted on roller bearings.



Mod. W8 CH

Mod. W8 AL



1 SPEED WINCHES

MODEL	W6	W7	W8
POWER P1	6.7	6.7	7.3
RECOVERY S1 (mm)	188	188	220
WEIGHT AL (kg)	0.43*	0.70	1.60
WEIGHT CH (kg)	-	-	2.10
SCREWS N x Ø (mm)	5 x Ø6	5 x Ø6	5 x Ø6

*Glass fibre resin drum. For mod. W6 and W7 winch power is calculated with short handle (L = 200 mm).

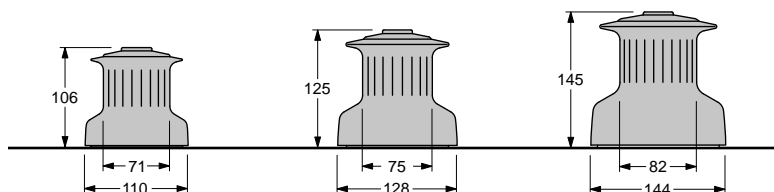


Mod. W42 AL

Mod. W42 CH

TWO SPEED WINCHES: DIRECT, REDUCED W16 - W30 - W42

The first speed is direct (one turn of the drum for each turn of the handle); the second speed is reduced: slower but more powerful. Bronze base and gears, AISI 316 stainless steel central rod and roller bearings, and black anodized aluminium (AL) or chrome-plated (CH) drums.



2 SPEED WINCHES

MODEL	W16	W30	W42
POWER P1-P2	7.3 / 14.5	7.0 / 28.0	6.4 / 42.5
RECOVERY S1-S2 (mm)	220 / 110	235 / 60	250 / 37
WEIGHT AL (kg)	2.00	2.80	4.10
WEIGHT CH (kg)	2.90	3.80	6.00
SCREWS N x Ø (mm)	5 x Ø6	5 x Ø6	5 x Ø8

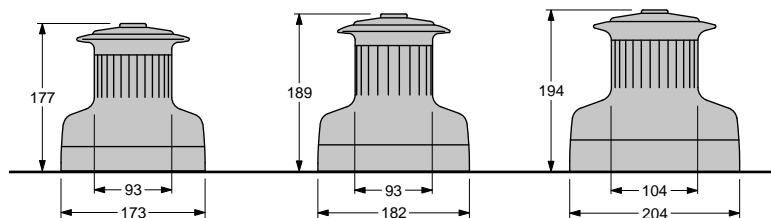


Mod. W52 AL

Mod. W52 CH

TWO REDUCED SPEED WINCH W44 - W48 - W52

Quick and powerful operation is obtainable with the first reduced speed, then with increasing load, simply wind in the opposite direction the second gear and maximum power is automatically selected. Marine bronze is used for gears, AISI 316 stainless steel for central rod and roller bearings, CNC aluminium base, hard black anodized aluminium (AL) or chrome-plated (CH) drum.



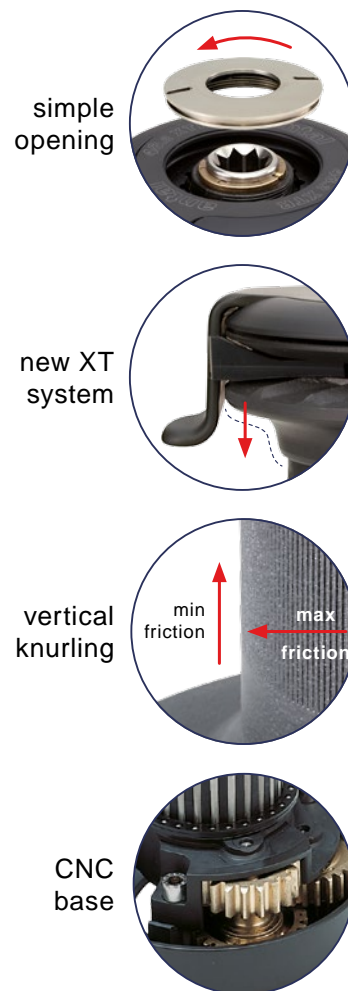
2 SPEED WINCHES

MODEL	W44	W48	W52
POWER P1-P2	20.0 / 43.0	19.0 / 47.4	14.9 / 51.1
RECOVERY S1-S2 (mm)	81 / 38	84 / 34	107 / 31
WEIGHT AL (kg)	5.50	6.30	7.80
WEIGHT CH (kg)	8.50	9.50	11.50
SCREWS N x Ø (mm)	6 x Ø8	6 x Ø8	6 x Ø8

P1,P2 : power with the first (fast) and second (slow) gear.

S1,S2 : recovery speed, the length of line recovered with one turn of the handle in first gear and in second gear.

XT winches



15 new self-tailing winches available in the following versions:

HARD BLACK ALUMINIUM (AL): the aluminium drum is hard black anodized and teflon coated, scratch-proof and very hard-wearing (page 10-11).

CHROME (CH): the drum, ST disks and ST arm are entirely chrome-plated. All chromed parts are highly polished, thickly nickel-plated and finally finished in chrome (pages 10-11).

RACE (R): racing series obtained by lightening the previous series AL (page 22).

CLASSIC (CHC and BNC): entirely made of chromed or natural bronze (page 26).

Moreover an electric and hydraulic powered series are also available. (page 12-18)

Antal winches have a three-year warranty.

SIMPLE OPENING: just unscrew the upper ring to immediately dismantle the winch for an easy

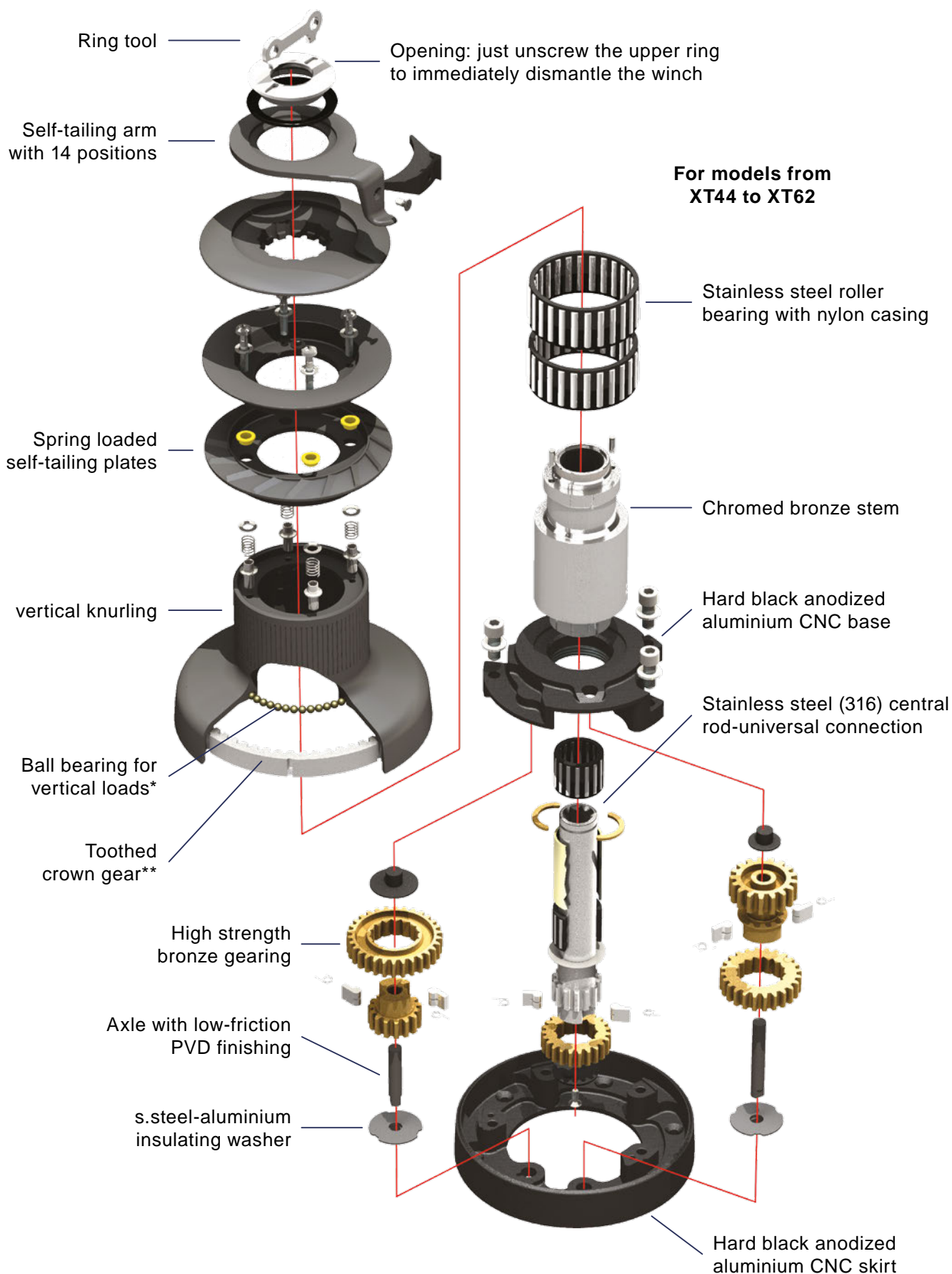
of cleaning and maintenance.

NEW SELF-TAILING XT SYSTEM: fixed upper disk with built in ST arm and self-regulating lower disk on springs. The new self-tailing adapts automatically to a wide range of rope diameters and, if overloading occurs, releases the line to avoid excess force on the ST arm.

KNURLING: the drum vertical knurling offers maximum horizontal friction allowing the rope "slide" upwards.

Differentiated grip (aluminium drums only): minimum friction on the lower part where loads are higher and maximum at the top where loads are minimal: the result is an even grip along the entire drum.

CNC BASE: machined by CNC (computer numeric control machines) is lighter and stronger than normal castings; aluminium made, hard black anodized and teflon coated. Easy removal from the winch makes maintenance a simple affair.



* ball bearing for vertical load: from model XT48, on smaller models it is replaced by a plastic washer.

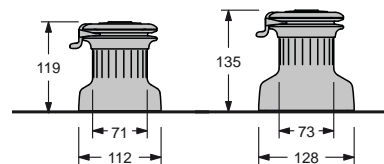
** the aluminium drum fitted with a high strength alloy crown gear is provided on the following XT models: sizes 62, 66 and 70, all racing winches from size 40 to size 70, all electrical and hydraulic versions up to size 62. The electric and hydraulic versions of models XT66, XT70 and XT80 are fitted with AISI 316 s.steel crown gear.

self-tailing XT winches



ONE REDUCED SPEED WINCH XT16 - XT30

The two smallest models (XT16 and XT30) have a single reduced speed, giving a slow but powerful gear. The handle turns freely the other way. Both available in chrome (CH) or hard black alloy (AL).



ONE SPEED WINCHES

MODEL	XT16	XT30
POWER P1	14	28
RECOVERY S1 (mm)	115	58
Ø LINE (mm)	6 / 10	6 / 10
WEIGHT AL (kg)	2.4	2.7
WEIGHT CH (kg)	3.1	3.8
SCREWS N x Ø (mm)	5 x Ø6	5 x Ø6

TWO SPEED WINCHES: DIRECT, REDUCED XT16.2 - XT30.2

The addition of a direct speed to the above described models gives a faster recovery gear, which, combined with reduced weight and an automatic self-tailing for very thin lines, makes these models the best choice for racing.

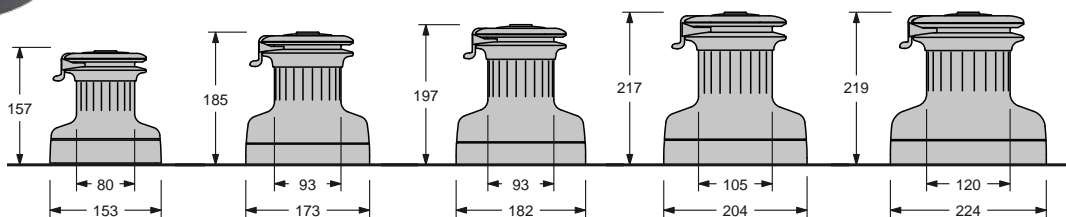
TWO SPEED WINCHES

MODEL	XT16.2	XT30.2
POWER P1-P2	7.0 / 14	7.0 / 28
RECOVERY S1-S2 (mm)	229 / 115	229 / 58
Ø LINE (mm)	6 / 10	6 / 10
WEIGHT AL (kg)	2.6	2.9
WEIGHT CH (kg)	3.0	3.7
SCREWS N x Ø (mm)	5 x Ø6	5 x Ø6



TWO REDUCED SPEED WINCHES XT40 - XT44 - XT48 - XT52 - XT62

Quick and powerful operation is obtainable with the first reduced speed, then with increasing load, simply wind in the opposite direction the second gear and maximum power is automatically selected.



TWO SPEED WINCHES

MODEL	XT40	XT44	XT48	XT52	XT62
POWER P1-P2	12.8 / 40.0	20.0 / 43.0	19.0 / 47.4	15.9 / 52.8	17.8 / 62.1
RECOVERY S1-S2 (mm)	125 / 40	80 / 38	84 / 34	100 / 30	89 / 26
Ø LINE (mm)	6 / 12	8 / 14	8 / 14	8 / 14	8 / 16
WEIGHT AL (kg)	4.4	6.2	6.9	9.2	10.9
WEIGHT CH (kg)	5.9	8.7	9.9	13.0	15.7
SCREWS N x Ø (mm)	5 x Ø8	6 x Ø8	6 x Ø8	6 x Ø8	6 x Ø8

All these models (from size 40) can be powered with electric or hydraulic motors (page 12-17)

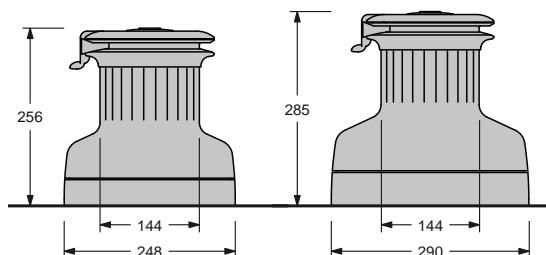


Mod. XT70/AL

Mod. XT70/CH

TWO REDUCED SPEED WINCHES XT66 - XT70

Large drum winches for 15-18 m boats. All the gears are fitted with roller bearings and the drum works on a very wide diameter roller-ball bearings.



TWO SPEED WINCHES

MODEL	XT66	XT70
POWER P1-P2	18.0 / 65.6	27.1 / 69.8
RECOVERY S1-S2 (mm)	89 / 24	59 / 23
Ø LINE (mm)	10 / 18	10 / 18
WEIGHT AL (kg)	14.8	18.5
WEIGHT CH (kg)	24.6	30.0
SCREWS N x Ø (mm)	6 x Ø10	6 x Ø10

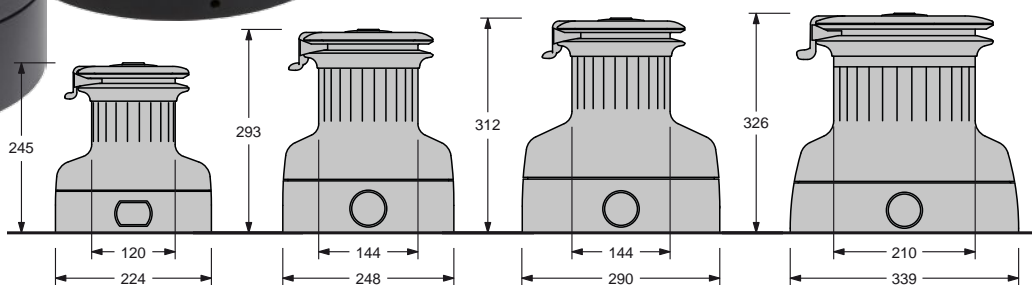


Mod. XT70.3/AL

Mod. XT70.3/CH

THREE REDUCED SPEED WINCHES XT62.3 - XT66.3 - XT70.3 - XT80.3

The push-button on the base starts the first gear (the fastest); second and third gear are automatically selected simply by reversing the rotation of the handle.



THREE SPEED WINCHES

MODEL	XT62.3	XT66.3	XT70.3	XT80.3
POWER P1-P2-P3	6.6 / 17.8 / 62.1	10.7 / 20.8 / 65.3	10.7 / 27.1 / 69.8	11.0 / 30.0 / 81.4
RECOVERY S1-S2-S3 (mm)	241 / 89 / 26	151 / 77 / 24	151 / 59 / 23	147 / 53 / 20
Ø LINE (mm)	8 / 16	10 / 18	10 / 18	12 / 20
WEIGHT AL (kg)	12.8	18.6	22.8	47.0
WEIGHT CH (kg)	17.6	28.4	34.4	52.0
SCREWS N x Ø (mm)	6 x Ø8	6 x Ø10	6 x Ø10	8 x Ø10

P1, P2, P3 : power with the first (fast), second (medium) and third (slow) gear.

S1, S2, S3 : recovery speed, the length of line recovered with one turn of the handle in first, second and third gear.

electric winches



ELECTRIC WINCHES

All Antal winch models, from XT40 to XT80.3, maxi W80.3ST and W90.3ST can be fitted with an electric motor.

All electric winches are available with a chromed drum, now also black aluminium drums with a reinforced crown gear (high resistance alloy or A316 s.steel) are available.

HORIZONTAL AND VERTICAL MOTORS

All the winches may be equipped with a horizontal motor and gearbox with a worm screw.

The largest models may be supplied with a vertical motor which uses a high-efficiency hypocycloid speed reducer.

Both solutions have been studied to ensure particularly compact dimensions and maximum silent operation.

MANUAL USE

Simply insert the handle to disconnect the gearbox-motor unit.

Greater safety: accidental starting of the motor does not affect the winch, avoiding dangerous turning of the handle.

Greater efficiency: the gearbox-motor unit

does not turn in manual use, avoiding needless friction.

SPEED

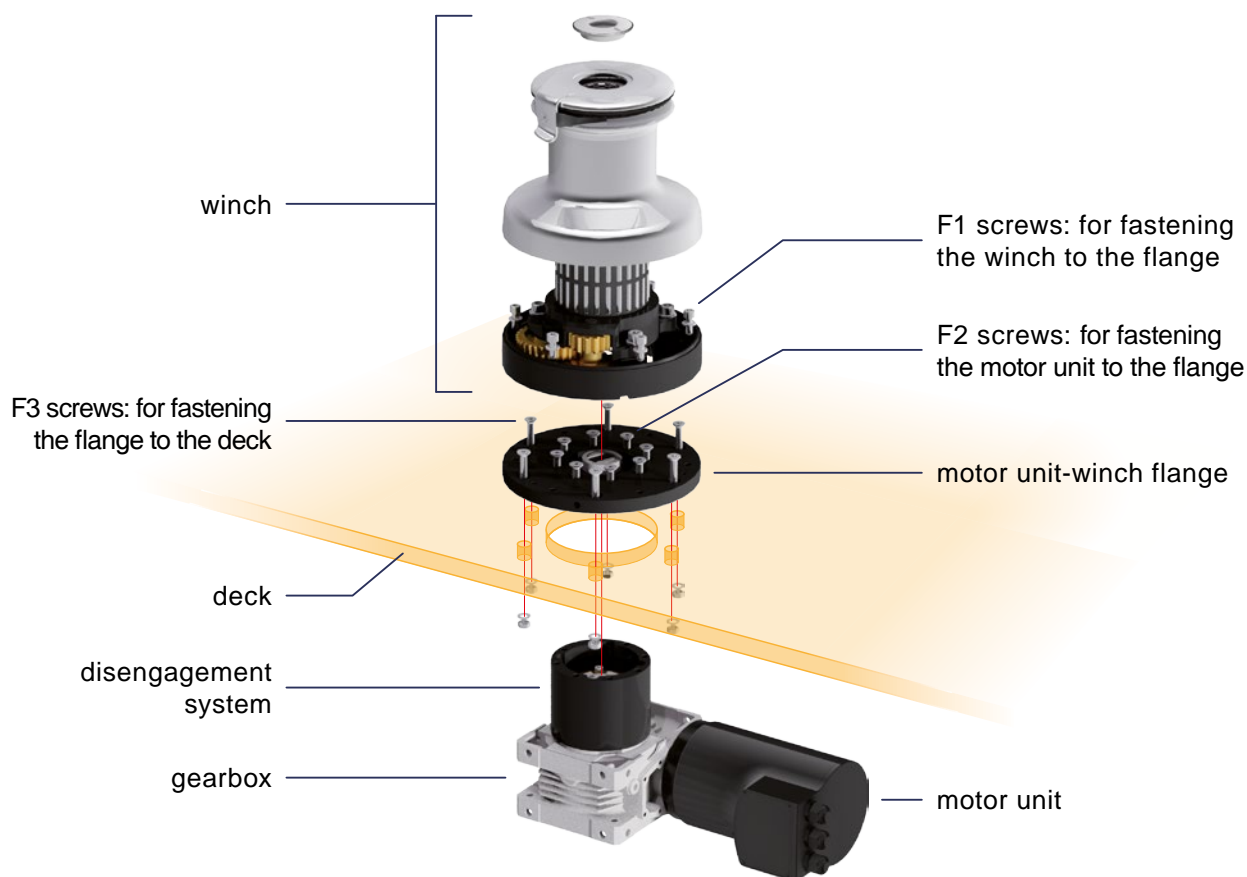
Electric winches maintain two speeds both in manual use (inverting the direction of rotation of the handle) and in electric use (pressing one of the two control buttons).

It is of fundamental importance to be able to choose the most suitable speed for the manoeuvre that you want to perform; this allows fast recovery of the first part of the manoeuvre and more careful regulation in the final stage.

In electric winches the speeds are higher than in manual use.

The recovery speed, indicated in the tables, is measured without a load; in the presence of the maximum load, a speed reduction of up to 30% must be considered.

All our electric winches are self tailing. For more information on these winches see pages 10-11.

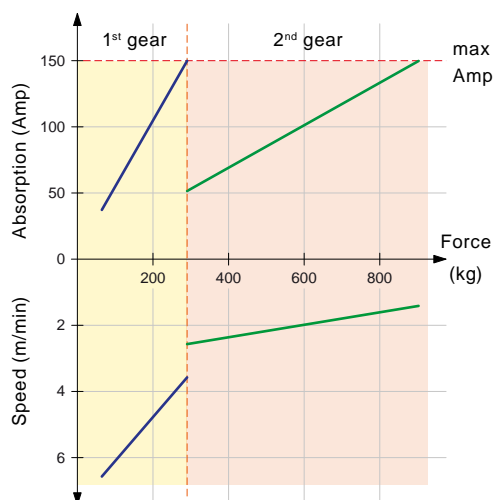


ELECTRIC WINCHES: FORCE - ABSORPTION - SPEED

The **force** of the winch (pulling load), the current **absorption** (Amp) of the motor and the **line recovery speed** are related as shown in the diagrams obtained experimentally with load and recovery tests. These diagrams are available for each model and clearly show the values of the maximum force with the fast and slow gears, the corresponding speed, and maximum electric absorption.



The documentation, including the force-absorption-speed diagrams, is available on request.

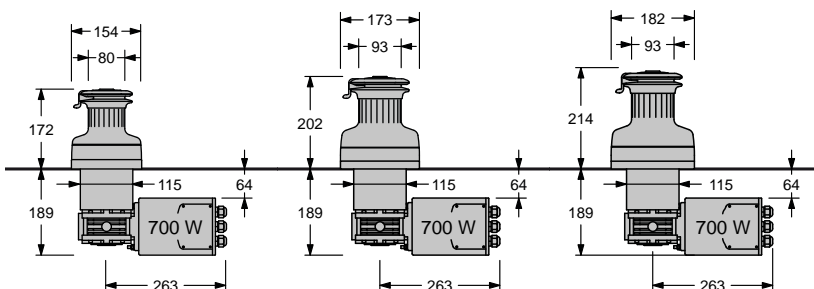


electric winches



HORIZONTAL DRIVE - MOTOR 700 W 12/24 V XT40EH - XT44EH - XT48EH

The three models XT40, XT44 and XT48 are powered with a 700 Watt motor, available in 12 and 24 volt versions. Two switches, one control box and one breaker complete the system.



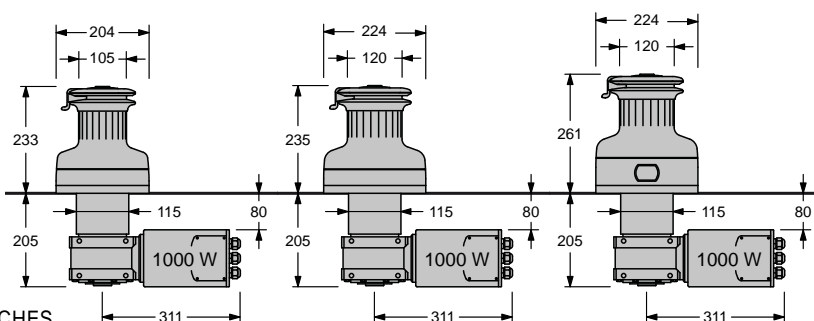
TWO SPEED WINCHES

MODEL	XT40EH	XT44EH	XT48EH
LINE SPEED 1 (m/min)	12.0	11.0	11.0
LINE SPEED 2 (m/min)	4.5	4.0	4.0
WORKING LOAD (kg)	800	900	1000
GLOBAL WEIGHT AL (kg)	16.2	18.2	19.1
GLOBAL WEIGHT CH (kg)	17.7	20.7	22.1



HORIZONTAL DRIVE - MOTOR 1000 W 12/24 V XT52EH - XT62EH - XT62.3EH

Models XT52, XT62 and XT62.3 are powered with a 1000 Watt, 12 or 24 Volt motor. Two switches, one control box and one breaker complete the system.



TWO OR THREE-SPEED WINCHES

MODEL	XT52EH	XT62EH	XT62.3EH
LINE SPEED 1 (m/min)	15.0	14.0	36.0
LINE SPEED 2 (m/min)	4.0	4.0	14.0
LINE SPEED 3 (m/min)	- - -	- - -	4.0
WORKING LOAD (kg)	1200	1500	1500
GLOBAL WEIGHT AL (kg)	26.3	28.3	30.2
GLOBAL WEIGHT CH (kg)	30.1	33.1	35.0

LINE SPEED: the recovery speed is calculated with the winch not under load; at maximum load the figure should be reduced by 30%.

MANUAL USE: the gearbox-motor unit is disengaged simply by inserting the handle.

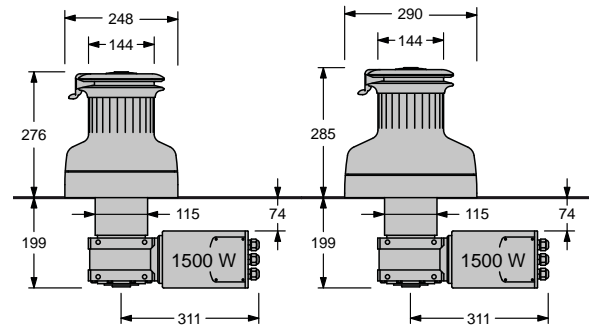
CIRCUIT DIAGRAM: for the circuit diagram and accessories, such as switches, control boxes and breakers, see page 17.

All our electric winches are self-tailing and are available in both versions: with chrome-plated drum or with a reinforced black aluminium drum. For more information on these winches see pages 10-11.



HORIZONTAL DRIVE - MOTOR 1500 W 12/24 V XT66EH - XT70EH

Models XT66 and XT70 are powered with a 1500 Watt, 12 or 24 Volt motor. Two switches, one control box and one breaker complete the system.



For the correct identification of the winch, add after the winch model in the tables the following:

- **12** or **24** for 12 or 24 Volt versions;
- **/AL** for black aluminium drum or **/CH** for chromed drum.

e.g.: XT66EH12/AL is an electric winch size 66 with horizontal drive 12V motor and with black aluminium drum.

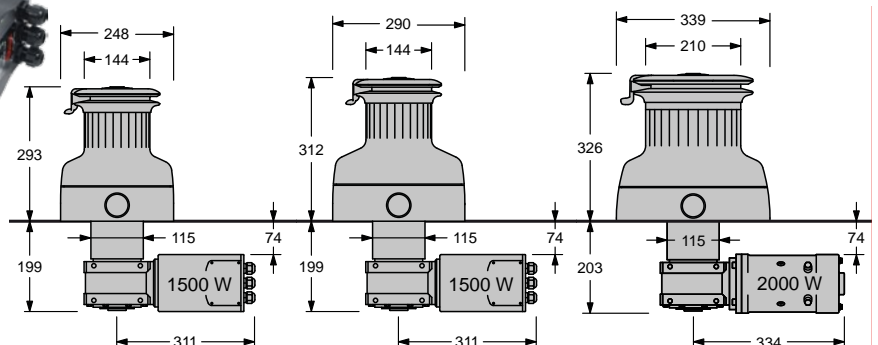
TWO SPEED WINCHES

MODEL	XT66EH	XT70EH
LINE SPEED 1 (m/min)	12.0	9.0
LINE SPEED 2 (m/min)	3.5	3.0
WORKING LOAD (kg)	2500	3000
GLOBAL WEIGHT AL (kg)	31.9	35.9
GLOBAL WEIGHT CH (kg)	41.7	47.4



HORIZONTAL DRIVE - MOTOR 1500/2000 W 12/24 V XT66.3EH - XT70.3EH - XT80.3EH

These models maintain three speeds both in manual and in electric use; the push-button on the base starts the first gear (the fastest), second and third gear are automatically selected simply by reversing the rotation of the handle or pressing one of the two switches, one for the first and the third speed and one for the second.



THREE SPEED WINCHES

MODEL	XT66.3EH	XT70.3EH	XT80.3EH
LINE SPEED 1 (m/min)	22.0	21.0	24.0
LINE SPEED 2 (m/min)	12.0	9.0	9.0
LINE SPEED 3 (m/min)	3.5	3.0	3.0
WORKING LOAD (kg)	2500	3000	4000
GLOBAL WEIGHT AL (kg)	35.7	40.3	59.6
GLOBAL WEIGHT CH (kg)	45.5	51.8	75.0

electric winches



XT70EV12/CH

XT70EV12/AL

For the correct identification of the winch, add after the winch model in the tables the following:

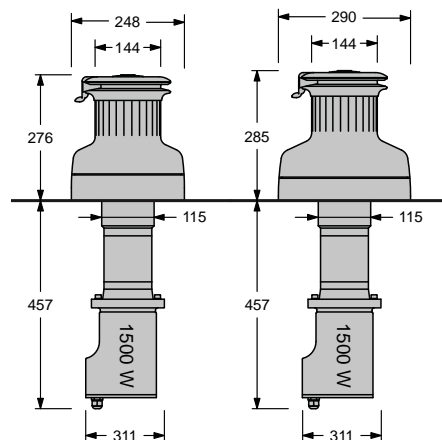
- **12** or **24** for 12 or 24 Volt versions;

- **/AL** for black aluminium drum or **/CH** for chromed drum.

e.g.: XT66EV12/AL is an electric winch size 66 with vertical drive 12V motor and with black aluminium drum.

VERTICAL DRIVE - MOTOR 1500 W 12/24 V XT66EV - XT70EV

This motor-gearbox system is suitable for the largest Antal winches: mod. XT66 and XT70. A special hypocycloidal gearbox gives max efficiency.

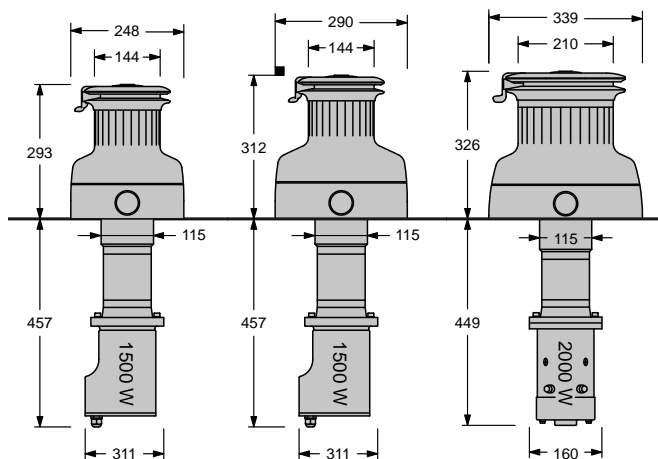


TWO SPEED WINCHES

MODEL	XT66EV	XT70EV
LINE SPEED 1 (m/min)	12.0	9.0
LINE SPEED 2 (m/min)	3.5	3.0
WORKING LOAD (kg)	2500	3000
GLOBAL WEIGHT AL (kg)	35.6	39.1
GLOBAL WEIGHT CH (kg)	45.4	50.6

VERTICAL DRIVE - MOTOR 1500/2000 W 12/24 V XT66.3EV - XT70.3EV - XT80.3EV

The models XT66.3, XT70.3 and XT80.3 maintain three speeds both in manual and in electric use; the push-button on the base starts the first gear (the fastest), second and third gear are automatically selected simply by reversing the rotation of the handle or pressing one of the two switches, one for the first and the third speed and one for the second.



THREE SPEED WINCHES

MODEL	XT66.3EV	XT70.3EV	XT80.3EV
LINE SPEED 1 (m/min)	22.0	21.0	24.0
LINE SPEED 2 (m/min)	12.0	9.0	9.0
LINE SPEED 3 (m/min)	3.5	3.0	3.0
WORKING LOAD (kg)	2500	3000	4000
GLOBAL WEIGHT AL (kg)	38.6	42.1	59.6
GLOBAL WEIGHT CH (kg)	48.4	53.6	75.0

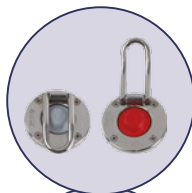
LINE SPEED: the recovery speed is calculated with the winch not under load; at maximum load the figure should be reduced by 30%.

MANUAL USE: the gearbox-motor unit is disengaged simply by inserting the handle.

CIRCUIT DIAGRAM: for the circuit diagram and accessories, such as switches, control boxes and breakers, see page 17.

All our electric winches are self-tailing and are available in both versions: with chrome-plated drum or with a reinforced black aluminium drum. For more information on these winches see pages 10-11.

electric system & accessories



Mod. 251.035/SG S.steel cover, grey button

Mod. 251.035/SR S.steel cover, red button



Mod. 251.035/QG Plastic cover, grey button

Mod. 251.035/QR Plastic cover, red button



Mod. 251.035/AG Aluminium cover, grey button

Mod. 251.035/AR Aluminium cover, red button



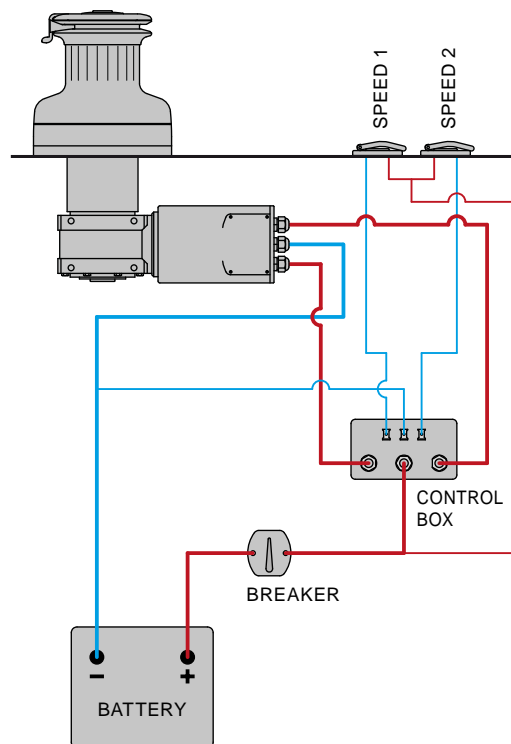
CONTROL BOX

Solenoids are contained in a water tight "control box"; they are available for both 12 and 24 Volt.



BREAKER

A breaker should be mounted to protect the motor against overload.



WINCH MODEL	MOTOR		BREAKER		CONTROL BOX MODEL
	WATT	VOLT	MODEL	AMP	
XT40 XT44 - XT48	700	12	A071	70	T6315/12
		24	A041	40	T6315/24
XT52 - XT62	1000	12	A101	100	T6315/12
		24	A051	50	T6315/24
XT66 - XT70	1500	12	A151	150	T6315/12
		24	A071	70	T6315/24
XT80.3 - W80.3	2000	24	A101	100	T6315/24
W90.3	3000	24	A151	150	T6415/24



NEW

Mod. WBC

POWERED WINCHES LOAD CONTROL

To guarantee complete protection for powered winches, Antal offers the WBC, which keeps the winch from reaching its maximum working load.

The winch is generally activated in the fastest gear. When maximum absorption is reached, this gear is deactivated by the WBC and the slow gear must be used. This reduces the winch stress until maximum absorption (max load) is reached and the WBC also deactivates this slow gear.

Another safety device is the breaker that protects the motor from overheating due to too intensive use. However, it does not protect the winch from sudden excessive loads. Therefore, both are necessary for complete protection.

The WBC is suitable for two-speed Antal winches, with motors up to 2000 W and maximum absorption of 250 amps.

hydraulic winch



HYDRAULIC SYSTEM

Hydraulic motors are available for Antal winches from model XT44 to XT80.3, as well as to maxi W80.3 and W90.3.

The pressure of the system varies from 100 to 120 bars for the larger winches. Connections are to be carried out with 3/8" pipes.

All hydraulic winches are available with a chromed drum, now also black aluminum drum with a reinforced crown gear (high resistance alloy or A316 s.steel) is available.

For more information, see pages 10-11.

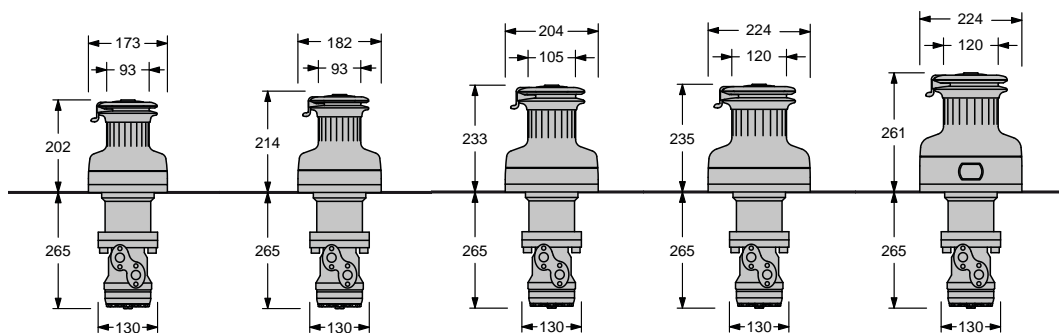
For manual use, the motor unit is released simply by inserting the handle.

LINE SPEED

Line speeds are calculated in absence of load conditions and considering the flow of the lower table. The effective speed will be evaluated according to the actual size of the hydraulic unit.

For the correct identification of the winch, add after the winch model in the tables **/AL** for black aluminium drum or **/CH** for chromed drum.

e.g.: XT66HD/AL is a hydraulic winch size 66 with black aluminium drum.



MODEL	XT44HD	XT48HD	XT52HD	XT62HD	XT62.3HD
LINE SPEED 1 (m/min)	12.0	12.5	16.0	13.0	36.9
LINE SPEED 2 (m/min)	5.5	5.0	4.6	4.0	13.0
LINE SPEED 3 (m/min)	-	-	-	-	4.0
WORKING LOAD (kg)	900	1000	1200	1400	1400
GLOBAL WEIGHT AL (kg)	17.2	18.2	20.4	22.2	24.1
GLOBAL WEIGHT CH (kg)	19.7	21.2	24.2	27.0	28.9

HYDRAULIC MOTOR

SIZE (cc)	50	50	50	50	50
PRESSURE (bar)	100	100	120	120	120
FLOW (l/min)	7.5	7.5	7.5	7.5	7.5

HYDRAULIC UNIT

These units are designed for the different requirements of each boat.

The winch speed is proportional to the flow from the hydraulic unit, the load of the winch is proportional to the pressure.

The hydraulic unit that must work a number of winches at the same time, must guarantee a flow equal to the sum of the flows required from each one.

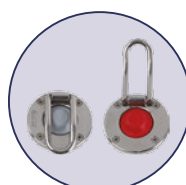
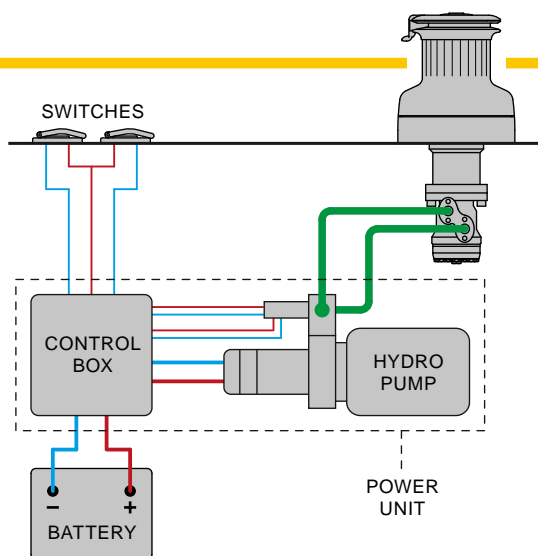
The flow and pressure levels given in the table for each winch must not be exceeded.



All these models are fitted with Danfoss hydraulic motors series OMR or equivalent.

SWITCHES

Two switches with watertight protection must be installed for each winch. To identify the first and the second speed 2 colours are used: gray and red, s.steel, plastic or aluminium version available.



Switches with s.steel cover

Mod. 251.035/SG Grey button

Mod. 251.035/SR Red button



Switches with plastic cover

Mod. 251.035/QG Grey button

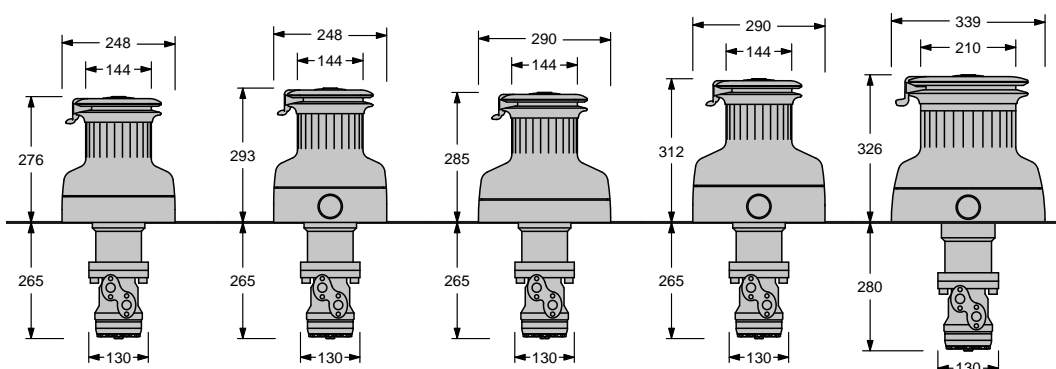
Mod. 251.035/QR Red button



Switches with aluminium cover

Mod. 251.035/AG Grey button

Mod. 251.035/AR Red button



MODEL	XT66HD	XT66.3HD	XT70HD	XT70.3HD	XT80.3HD
LINE SPEED 1 (m/min)	13.0	23.0	9.0	23.0	22.0
LINE SPEED 2 (m/min)	3.6	12.0	3.5	9.0	8.0
LINE SPEED 3 (m/min)	-	3.6	-	3.5	3.0
WORKING LOAD (kg)	2600	2600	2900	2900	4000
GLOBAL WEIGHT AL (kg)	24.5	28.3	28.4	32.7	48.0
GLOBAL WEIGHT CH (kg)	34.3	38.1	39.8	44.2	63.4

HYDRAULIC MOTOR

SIZE (cc)	80	80	100	100	160
PRESSURE (bar)	120	120	120	120	120
FLOW (l/min)	12	12	15	15	24

maxi winches



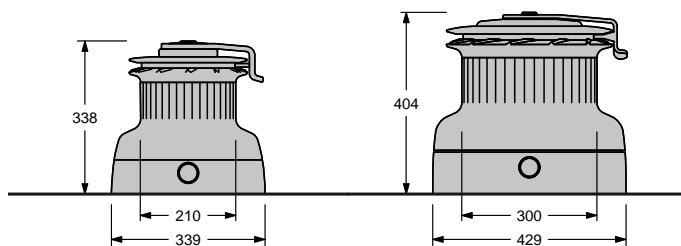
Mod. W80.3 ST

THREE REDUCED SPEED MAXI WINCHES W80.3ST - W90.3ST

Maxi winches for boats more than 20 m long. These models are almost always powered with electric motors or hydraulic motors and available only with a chromed drum (CH).

All the gears are fitted with roller bearings and the drum works on a very wide diameter roller-ball bearings.

The push-button on the base starts the first gear (the fastest); second and third gear are automatically selected simply by reversing the rotation of the handle.

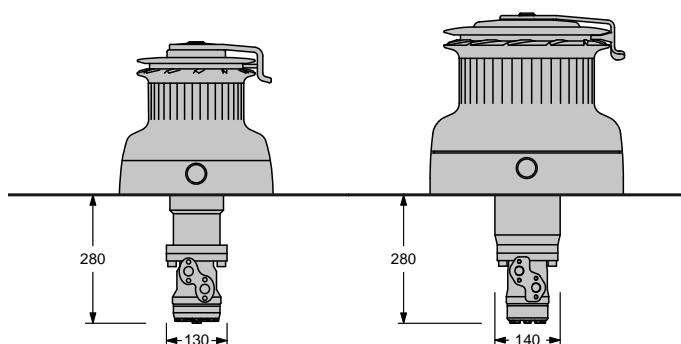


THREE SPEED WINCHES

MODEL	W80.3ST	W90.3ST
POWER P1-P2-P3	11.0 / 30.0 / 81.4	13.7 / 35.8 / 90.2
RECOVERY S1-S2-S3 (mm)	147 / 53 / 20	116 / 45 / 18
Ø LINE (mm)	12 / 22	16 / 30
WEIGHT CH (kg)	52.0	102.0
SCREWS N x Ø (mm)	8 x Ø10	8 x Ø12

HYDRAULIC MOTORS W80.3HD - W90.3HD

The maxi winches W80.3 and W90.3 can be powered by a hydraulic motor.



MODEL	W80.3HD	W90.3HD
LINE SPEED 1 (m/min)	22.0	18.0
LINE SPEED 2 (m/min)	8.0	7.0
LINE SPEED 3 (m/min)	3.0	2.5
WORKING LOAD (kg)	4000	8000
GLOBAL WEIGHT (kg)	63.4	118

HYDRAULIC MOTOR

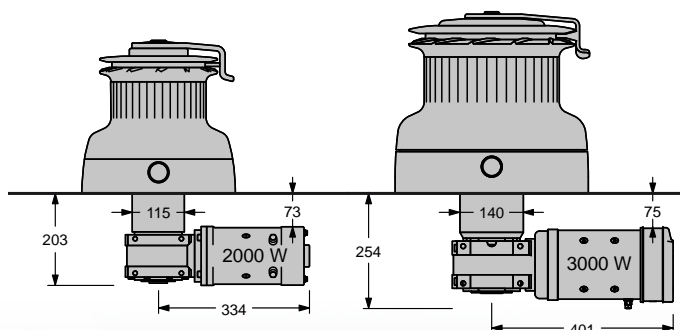
SIZE (cc)	160	200
PRESSURE (bar)	120	120
FLOW (l/min)	24	30

electric maxi winches

HORIZONTAL DRIVE - 2000 or 3000 W - 24 V W80.3EH - W90.3EH

Model W80.3 is fitted with a 2000 W (24 V) motor and model W90.3 with a 3000 W (24 V) motor.

For the circuit diagram and accessories, such as switches, control-boxes and breakers, see page 17.



THREE SPEED WINCHES

MODEL	W80.3EH	W90.3EH
LINE SPEED 1 (m/min)	24.0	18.0
LINE SPEED 2 (m/min)	9.0	7.0
LINE SPEED 3 (m/min)	3.0	2.5
WORKING LOAD (kg)	4000	8000
GLOBAL WEIGHT (kg)	75.0	145.0
MOTOR (W)	2000	3000

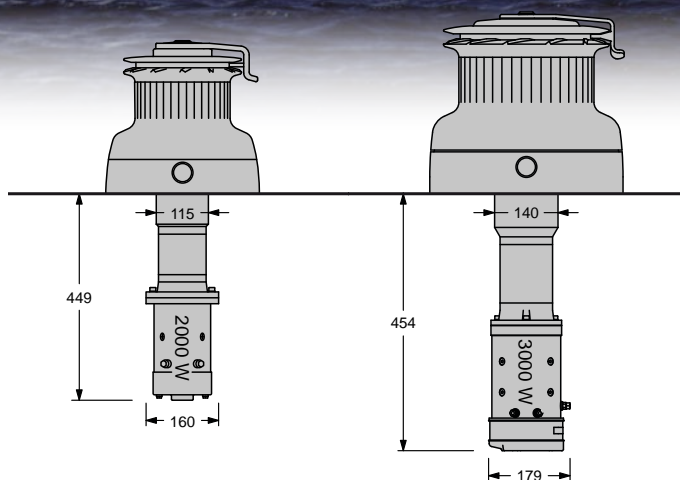


Adriatica 21.37 m

VERTICAL DRIVE - 2000 or 3000 W - 24 V W80.3EV - W90.3EV

Vertical drive version is also available for models W80.3 and W90.3 (2000 W on the 80.3, 3000 W on the 90.3, both 24 V) with a hypocycloidal gearbox.

For the circuit diagram and accessories, such as switches, control-boxes and breakers, see page 17.



THREE SPEED WINCHES

MODEL	W80.3EV	W90.3EV
LINE SPEED 1 (m/min)	24.0	18.0
LINE SPEED 2 (m/min)	9.0	7.0
LINE SPEED 3 (m/min)	3.0	2.5
WORKING LOAD (kg)	4000	8000
GLOBAL WEIGHT (kg)	75.0	145.0
MOTOR (W)	2000	3000

XT race winches

SELF-TAILING WINCHES: XT RACE SERIES

XT R is the racing winch series obtained from the standard XT series, described above:

- self-tailing XT system
- differentiated grip of the drum knurling
- CNC base and skirt
- fast opening screwed ring
- axle with low friction PVD finishing

and in addition to reduce the weight:

- aluminium stem
- peek roller bearings for the drum and the main shaft
- lightened gears and main shaft

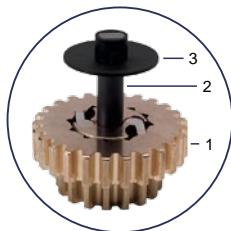


Green Challenge - "Kika" - Cantiere Bert - photo A. Carloni

Photo: Andrea Carloni / CNSM



To reduce weight, XT series winches are mounted on bearings with peek resin roller on an aluminium stem.



antal alloy gears (1) mounted on low-friction and hard wearing PVD treated axles (2); corrosion-proof insulating gaskets (3).



The base, machined by the CNC process (produced with computer numeric control machines with no cast components), is lighter and stronger than normal castings.



XT44R

ONE REDUCED SPEED WINCHES

MODEL	XT16R	XT30R
WEIGHT (kg)	1.95	2.35

TWO REDUCED SPEED WINCHES

MODEL	XT16.2R	XT30.2R	XT40R	XT44R	XT48R	XT52R	XT62R	XT66R	XT70R
WEIGHT (kg)	2.0	2.2	3.6	4.7	5.3	7.1	8.5	13.5	16.2

For all others characteristics see tables on previous page 10-11

3 speed XT race winches

ONE DIRECT AND TWO REDUCED SPEED WINCHES XT52.3RD - XT62.3RD

Two new models XT52.3RD and XT62.3RD with one direct speed for a very fast recovery, plus two reduced speeds for medium and high loads are now available.

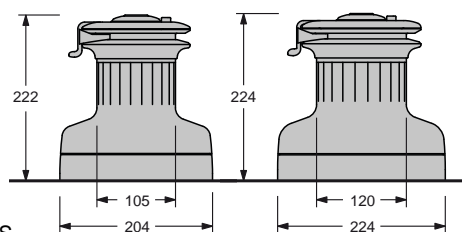
The push button on the top cover starts the first direct gear (the fastest), second and third reduced gears are automatically selected simply by reversing the rotation of the handle.

1st speed push button on the top



XT62.3RD

XT52.3RD



ONE DIRECT AND TWO REDUCED SPEED WINCHES

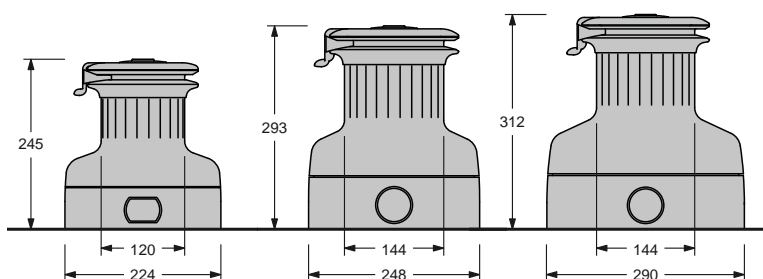
MODEL	XT52.3RD	XT62.3RD
POWER P1-P2-P3	4.8 / 15.9 / 52.8	4.2 / 17.8 / 62.1
RECOVERY S1-S2-S3 (mm)	330 / 100 / 30	377 / 89 / 26
Ø LINE (mm)	8 / 14	8 / 16
WEIGHT (kg)	7.5	9.2
SCREWS N x Ø (mm)	6 x Ø8	6 x Ø8

THREE REDUCED SPEED WINCHES XT62.3R - XT66.3R - XT70.3R

The push-button on the base starts the first gear (the fastest); second and third gear are automatically selected simply by reversing the rotation of the handle.

XT70.3R

XT62.3R



THREE REDUCED SPEED WINCHES

MODEL	XT62.3R	XT66.3R	XT70.3R
POWER P1-P2-P3	6.6 / 17.8 / 62.1	10.7 / 20.8 / 65.3	10.7 / 27.1 / 69.8
RECOVERY S1-S2-S3 (mm)	241 / 89 / 26	151 / 77 / 24	151 / 59 / 23
Ø LINE (mm)	8 / 16	10 / 18	10 / 18
WEIGHT AL (kg)	10.4	16.2	20.3
SCREWS N x Ø (mm)	6 x Ø8	6 x Ø10	6 x Ø10

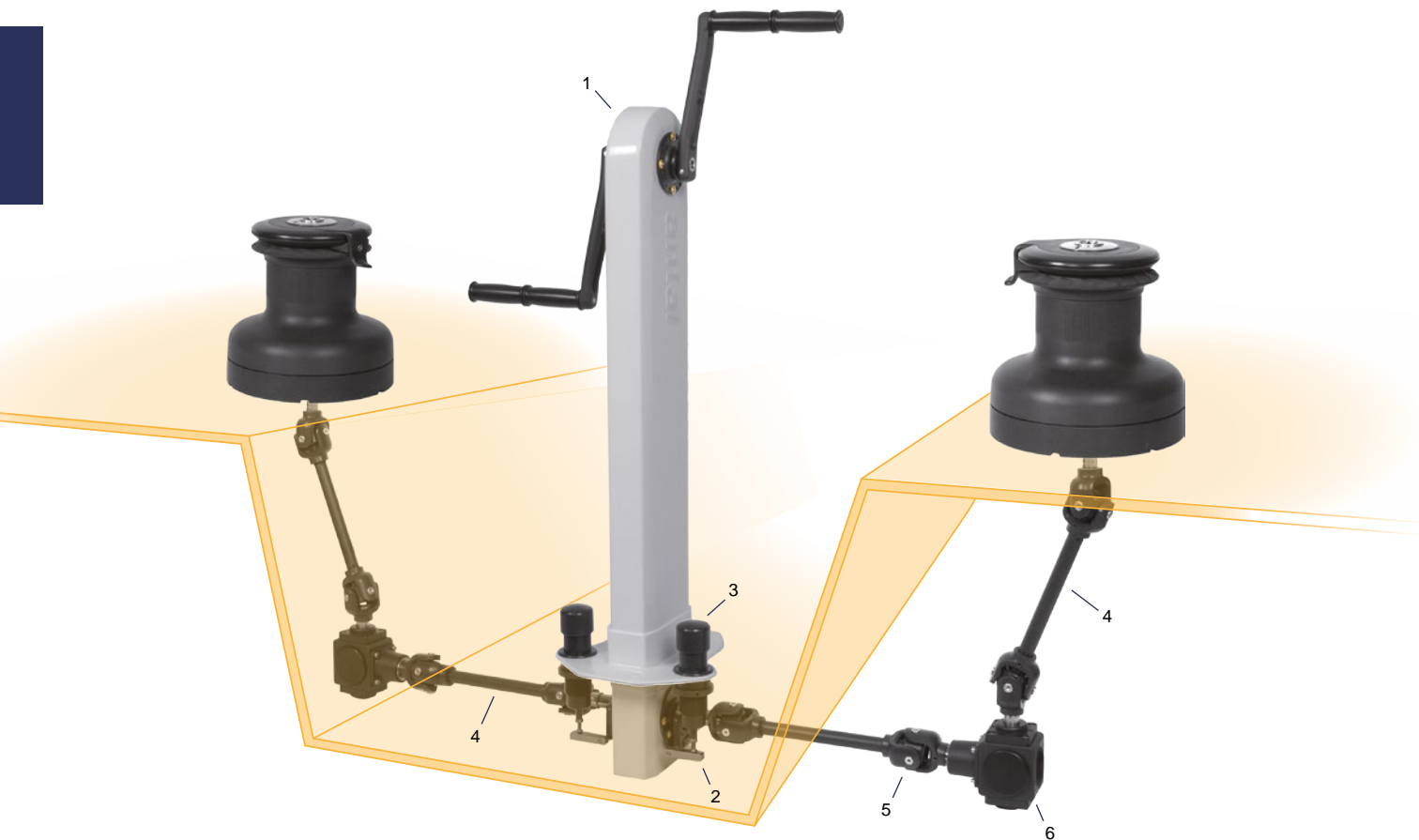
1st speed push button on the base



P1, P2, P3 : power with the first (fast), second (medium) and third (slow) gear.

S1, S2, S3 : recovery speed, the length of line recovered with one turn of the handle in first, second and third gear.

pedestals for winch



RACE SYSTEM

The Antal pedestal in carbon fibre relies on a belt drive that guarantees a light system.

Thanks to the push buttons (no. 3), the person operating the handles can control one, two or more winches independently. Note that the push button does not engage the third speed: this can be still engaged by pushing the winch knob at the base of the winch.

The system also comprises drive shafts (no. 4), in customised lengths on request, and gearboxes (no. 6).

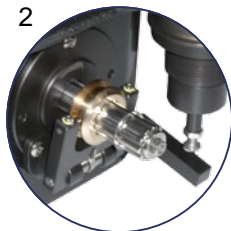
Moreover, the cardan joints (no. 5) allow the drive shafts to be angled even to a large degree, thus enabling them to adapt to any hull design.





Mod. C001

Carbon fibre pedestal, with belt drive on toothed sheaves that are mounted on steel roller bearings.



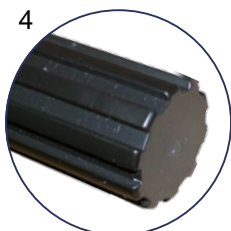
Mod. C002

Drive-box, which transmits the drive from the pedestal to the axle of the single winch.



Mod. C003

Push-button, which turns the drive-box on and off, and permits to choose which winch to work on.



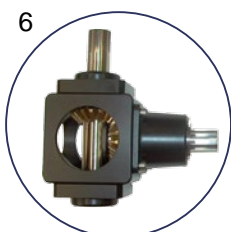
Mod. C004/xx

Aluminium drive shaft with black anodized ribbed end. Customised length on request.



Mod. C005

Aluminium universal joint with HR steel axles, mounted on both ends of the drive shaft, which enables to incline the shaft by large degrees.



Mod. C006

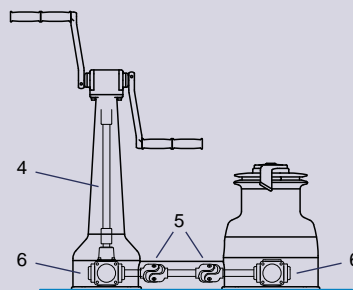
Gear box in right and left hand version, bronze gears on ball/roller bearings, HR steel axles and black anodized aluminium box.



CLASSIC PEDESTAL MECHANICAL DRIVE

This system is entirely run by a mechanical drive: drive shafts and bevel gears.

The classic system includes the same components as the race system but with the following differences: the pedestal is hard black anodized aluminium made, with shaft and bevel transmission.



The classic solution is installed entirely above deck with no components under deck.

The shaft from the pedestal to the winch is protected by s.steel casing.



classic winches



CLASSIC SERIES WINCHES

Classic series winches (CHC) are supplied not only with a chromed drum, ST disks and ST arm, as the chrome series models (CH) described on pages 10-11, but also with a chromed lower skirt, thus being completely chromed.

The chrome-plating is carried out with great care to guarantee maximum durability. First the unit are highly polished, then thickly nickel-plated and finally finished in chrome.

POLISHED BRONZE

On request, Antal classic winches can be supplied (with drum, ST disks, ST arm and skirt) entirely made of polished bronze (add **/BNC** after the winch model).



Natural bronze winch handle with wooden grip.



line driver

TRAVELLER CONTROL SYSTEM

The control system is connected to a traveller on a closed circuit and ensures efficient control and a clean layout.

The system uses a self tailing pulley which operates in both direction with a textile "gripping" system that is efficient even if the circuit is not under strain and causes no wear in the rope.

A clutch pin sets the direction in which the traveller moves, or allows for it to be locked in the required position.

The power ratio obtainable with a normal (250 mm) handle is 8 to 1, which is much better than a tackle can offer; moreover, this system has a very limited size and weight.

MATERIALS: it is made of hard black anodized aluminium, central rod and ball bearing of AISI 316 stainless steel.

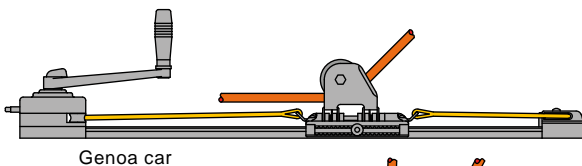
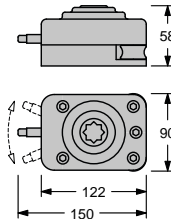
A 10 mm line is strongly recommended.

This model has been designed to control the spi-pool car but can also be useful for the genoa or the main car control.

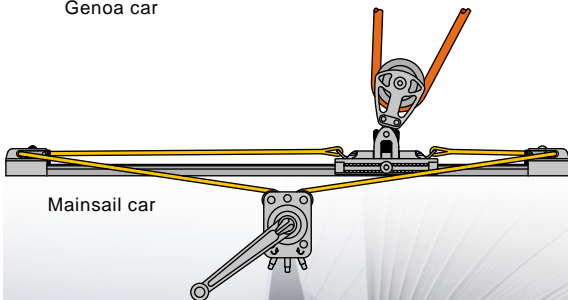
Spy-Pole slider range on page 111



MODEL	240.010
Ø LINE (mm)	10
POWER	8 : 1
WEIGHT (kg)	1.40
SCREWS N x Ø (mm)	3 x Ø8



Genoa car



Mainsail car



Amel 50 - photo JS Evrard

powered line driver

POWERED LINE DRIVER

This is a solution done for the control of the main car with a simple "self-tailing" sheave on the deck, a motor and gearbox under the deck.

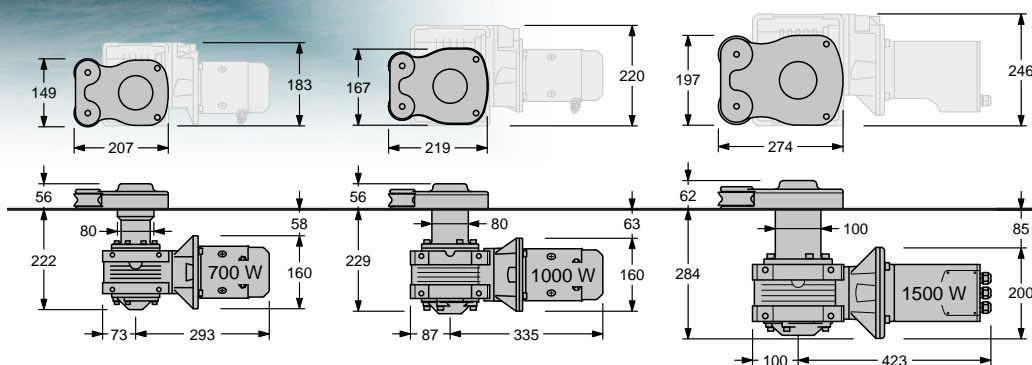
Three sizes available with 700, 1000 and 1500 W motors in 12 or 24 Volt version.

The largest model is also available in the hydraulic version. This model offers a maximum load on the circuit of 900 kg (100 bar pressure) with a line speed according to the flow rate of the hydraulic system.



Mod. LD1000

Courtesy of Fountaine-Pajot - Sanya 57
Photo Gilles Martin-Raget



For the correct identification of the line-driver, add after the LD model in the tables /12 or /24 for 12 or 24 Volt version.

MODEL	LD700	LD1000	LD1500	
MOTOR	Electric 700 W	Electric 1000 W	Electric 1500 W	
Ø LINE (mm)	10 / 12	12 / 14	12 / 14	
WEIGHT (kg)	15	20	22	
SCREWS N x Ø (mm)	4 x Ø8	4 x Ø8	4 x Ø8	

2:1 CAR CONTROL

MAIN CAR SIZE (mm)	47 x 230	47 x 330	47 x 430	
MAIN CAR MODEL	614.219	614.229	614.239	
WORKING LOAD (kg)	800	1260	1600	
CAR SPEED (m/sec)	0.08	0.10	0.12	

The **SPEED** is calculated with the car not under load; at maximum load the figure should be reduced by 30%.

Two switches, for the left and the right car movement, a control-box and a safe circuit breaker to complete the electrical system (on page 17).



SWITCHES



CONTROL-BOX



BREAKER

CAR END STOP CONTROL

Mod. 6320/12 - Mod. 6320/24

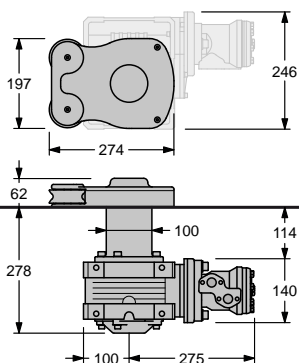
To avoid overloads due to wrong operations, a car end stop control is available on request: two proximity switches - connected to a control unit - stop the car automatically at the track end. A s.steel plate must be attached to the bottom of the car to allow activation of the proximity switches.



END STOP CONTROL UNIT



PROXIMITY SWITCHES



LD1500 HD

Hydraulic 25 cc

12 / 14

22

4 x Ø8

47 x 430

614.239

1800*

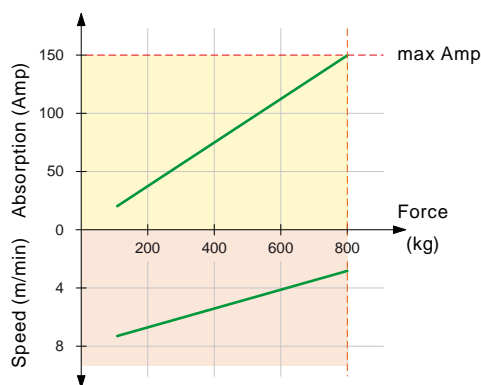
0.10**

* Pressure 100 Bar

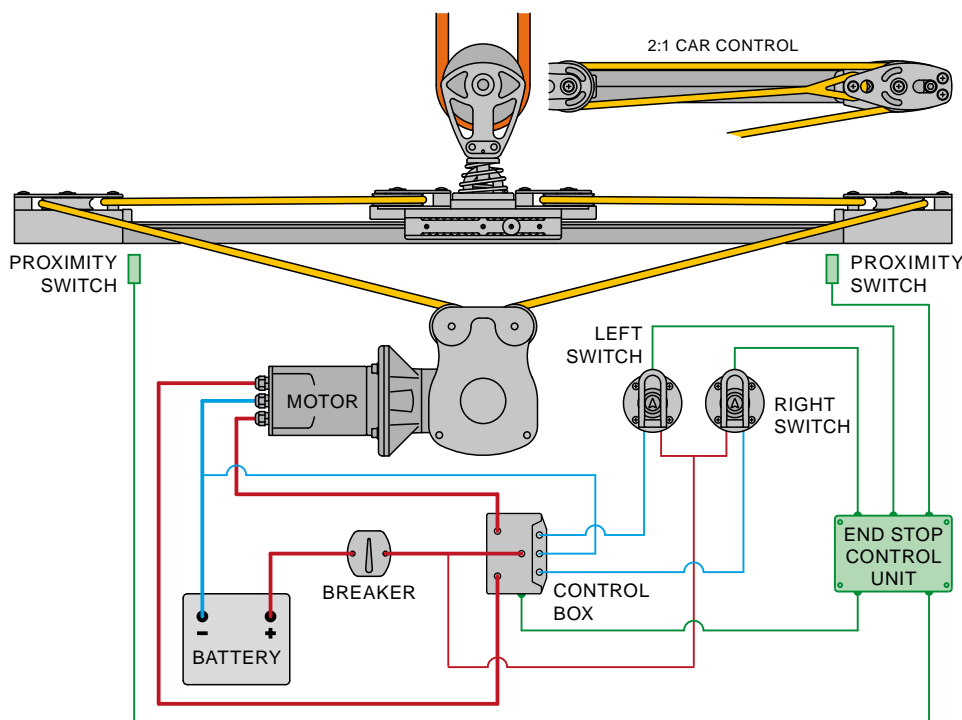
**Flow 25 l/min

POWERED LINE DRIVER: FORCE - ABSORPTION - SPEED

The **force** (pulling load) of the Line Driver, the current **absorption** (Amp) of the motor and the **line speed** are related as shown in the diagrams obtained experimentally with load and recovery tests. For each model, these diagrams clearly show the values of the maximum force, the corresponding speed and the current absorption.



The documentation, including the force-absorption-speed diagrams, is available on request.



Red line } electric diagram
Blue line }
Green line: end stop control system (optional)

winch handles

WINCH HANDLES

In addition to the extremely light black aluminium handles in two sizes: 200 mm (8 inches) and 250 mm (10 inches), there is also the classic chromed or natural polished bronze solution, always 250 mm long.

Three different grips are available: the single, the double and the new "ball-grip".

The handle arm made of forged aluminium with lightening holes is extremely light and resists the heaviest torsion.

The grip is covered with rubber to give a firm hold and runs on two ball bearings to increase its efficiency (single-grip and ball-grip only).

All the models are available with or without **the lock system** which automatically locks the handle on the winch. To refer to the "no lock" version add /NL to the code.



/NL

ALUMINIUM L = 200 mm

MODEL	HAND GRIP	WEIGHT (kg)
2011	single	0.38
2012	ball-grip	0.48
2014	mini ball-grip	0.36



ALUMINIUM L = 250 mm

MODEL	HAND GRIP	WEIGHT (kg)
2021	single	0.43
2022	ball-grip	0.53
2023	double	0.62



CHROMED BRONZE L = 250 mm

MODEL	HAND GRIP	WEIGHT (kg)
2031	single	0.87
2032	ball-grip	0.97
2033	double	1.07



CUSTOM SOLUTIONS



Custom solutions are available on request: wooden grips (model /W), different colours, natural bronze (model /BN), special engravings...

THE SPEEDY WAY TO LOCK-UNLOCK THE WINCH HANDLE

Speedylock is the new Antal winch handle, available with the 250 mm lever with single, ball and double grip.

Hard black anodized forged aluminium lever, rubber grip on two ball bearings (on single-grip and ball-grip version).

ALUMINIUM L = 250 mm

MODEL	HAND GRIP	WEIGHT (kg)
2121	single	0.43
2122	ball-grip	0.53
2123	double	0.62



2123 2122 2121





clutches



Mod. V-Grip Plus

CAM 611 series..... 36



V-CAM 814 series 38



Plus & Maxi series 40



QR series..... 42



DV jammer series 44



V-grip series 46



organizers..... 47



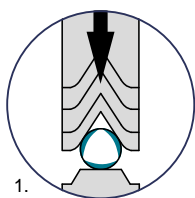
swivelling cam-cleat..... 48



stopper deck blocks..... 49



clutch selection guide



1.
Pressure on
3 sides



2.
Load
distribution



3.
Line retrieval with
closed lever



4.
Emergency
opening



LINE DIAMETER	CAM 611	CAM 611/V		V-GRIP			V-CAM 814			V-GRIP PLUS			
		6	8	10	12	14	10	12	14	12	14	16	
Ø = 6 mm	250	400											
Ø = 8 mm	380		600	500			600						
Ø = 10 mm	500			700	700		850	850		1050			
Ø = 12 mm				1000	1000	1000		1200	1200	1400	1400		
Ø = 14 mm					1300	1300			1500		1700	1700	
Ø = 16 mm						1600						2100	
Ø = 18 mm													
Ø = 20 mm													
Ø = 22 mm													
CLUTCH MAX LOAD (kg)													

* These models are fitted with the V-GRIP system that is internationally patented.

V-GRIP SYSTEM CLUTCHES

The V-Grip is an Antal patented system for rope locking. It works with a pressure exerted on 3 sides of the line with a higher friction and, consequently, with a lower pressure, in order not to damage manoeuvres.

All Antal clutches, except the Cam 611, are fitted with the V-Grip system.

The V-Grip system has the following characteristics:

- 1. Pressure on three sides.** Unlike the usual flat cam, V-Grip is fitted with a V-shaped cam that improves the holding strength without damaging the line cover.
- 2. Load distribution.** The curved base-V-Cam pair increases the bearing surface, preventing the load from being concentrated at a critical point.
- 3. Line retrieval with closed lever.** Line retrieval can be achieved with the lever closed. The line stops automatically in the new position with no slippage.
- 4. Emergency opening.** The line can be released under load without the use of a winch because the Antal mechanism guarantees easy opening even under heavy conditions.

CLUTCH RANGE

A complete range with 7 different models for lines from 6 to 22 mm.

All Antal models, except the Maxi, the QR and the DV-Jammer, are available in single, double, triple and quadruple versions.

The Cam 611 and Cam 814 are also available in a silver version with the new ergonomic aluminium lever.

CLUTCH SELECTION

Max loads of the lower table for each model and for different line diameters have been obtained from extensive tests.

Tests reveal best results on Dyneema with composite Kevlar/Polyester covers, while traditional pure-Polyester covers over a Dyneema core prove to have poor resistance. Also "all-Polyester" core/cover versions give excellent results.



LINE DIAMETER	V-GRIP MAXI					QR		DV JAMMERS					
	14	16	18	20	22	10	12	8	10	12	14	16	18
Ø = 6 mm													
Ø = 8 mm								1500					
Ø = 10 mm						1600			2000				
Ø = 12 mm	1400						2200			3000			
Ø = 14 mm	1700	1700									4000		
Ø = 16 mm		2100	2100									5000	
Ø = 18 mm			2600	2600									6000
Ø = 20 mm				3000	3000								
Ø = 22 mm					3400								

cam 611 series



CAM 611 mod. 513.110
V-CAM 611 mod. 500.110

CAM 611 Silver mod. 543.110
V-CAM 611 Silver mod. 540.110

CAM 611 WITH FLAT CAM



Cam 611 for line 6 to 10 mm is available in single, double and triple, as well as horizontal. CAM 611 has a box structure in UV-resistant resin with steel reinforcements, an extruded aluminium base, wear-resistant bronze cam mechanism, and stainless steel aligning bushing.

The clutch can be completely dismantled for simple maintenance.

Line retrieval can be achieved with the lever closed, and the cam mechanism guarantees easy opening even under heavy load.

V-CAM 611 WITH V-CAM



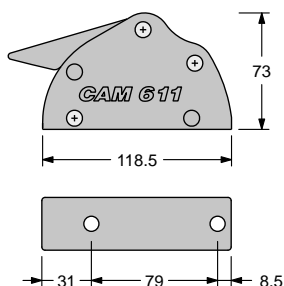
V-Cam 611 is a new model with a V-Cam, for lines from 6 to 8 mm. This new version supports much higher loads: 400 kg on the 6 mm line and 600 kg on the 8 mm. All the features are the same of CAM 611, as shown in the following table.



V-CAM 611 SILVER

Both CAM 611 and V-CAM 611 clutches are now available in the “silver series”: with a new ergonomic, polished and silver anodized aluminium lever. All the characteristics remain the same as shown in the following table.





Heinrich Yunikon



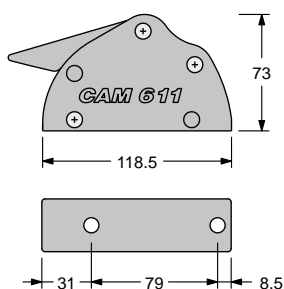
 						
MODEL	MODEL	Ø LINE mm	TYPE	WIDTH mm	WEIGHT kg	SCREWS N° x Ø mm
513.110	543.110	6 - 10	SINGLE	33	0.37	2 x Ø6
513.120	543.120		DOUBLE	62	0.74	4 x Ø6
513.130	543.130		TRIPLE	91	1.10	6 x Ø6
513.210	543.210		HORIZONTAL	33	0.51	2 x Ø6 + 1 x Ø5

WITH FLAT CAM



 						
MODEL	MODEL	Ø LINE mm	TYPE	WIDTH mm	WEIGHT kg	SCREWS N° x Ø mm
500.110	540.110	6	SINGLE	33	0.37	2 x Ø6
500.120	540.120		DOUBLE	62	0.74	4 x Ø6
500.130	540.130		TRIPLE	91	1.10	6 x Ø6
500.210	540.210		HORIZONTAL	33	0.51	2 x Ø6 + 1 x Ø5
501.110	541.110	8	SINGLE	33	0.37	2 x Ø6
501.120	541.120		DOUBLE	62	0.74	4 x Ø6
501.130	541.130		TRIPLE	91	1.10	6 x Ø6
501.210	541.210		HORIZONTAL	33	0.51	2 x Ø6 + 1 x Ø5

WITH V-CAM



Single



Double



Triple



Horizontal

DOUBLE SHEAVE ORGANIZER

This solution has been designed for the new double and triple CAM 611: mounted at the back of the clutch battery guiding the line towards the winch.

For more information see page 47.



mod. 522.031

STICKERS FOR CAM 611 AND CAM 814

A set of 54 stickers is provided for an easy indication of manoeuvres; colours: red, green and black.



MODEL	VERSION
513 / E	ENGLISH
513 / F	FRENCH
513 / I	ITALIAN

V-cam 814 series



V-CAM 814
mod. 509.111

V-CAM 814 Silver
mod. 549.111

V-CAM 814

Three models for 8-10 mm, 10-12 mm and 12-14 mm lines; available in single, double, triple and quadruple. V-CAM814 has a box-structure in UV-resistant resin with s.steel reinforcements, aluminium base, V-Cam and aligning bushing in Aisi 316.

It can be completely dismantled for simple maintenance and repairing.

Line retrieval can be achieved with the lever closed.

This model is fitted with a large “V” shaped cam that offers higher holding strength than model V-Grip (page 46) and a new mechanism that guarantees easy opening even under heavy load.

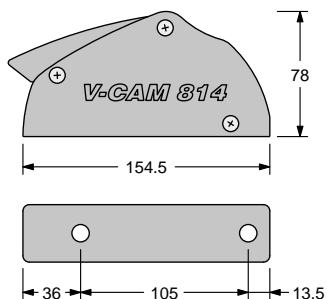
V-CAM 814 SILVER

V-CAM 814 clutches are now available in “silver series”: with a new ergonomic, polished and silver anodized aluminium lever.

All the characteristics remain the same as shown in the following table.



J111 J-Boat



MODEL	MODEL	Ø LINE mm	TYPE	WIDTH mm	WEIGHT kg	SCREWS N° x Ø mm
509.111	549.111	8 - 10	SINGLE	36	0.60	2 x Ø6
509.121	549.121		DOUBLE	65	1.10	4 x Ø6
509.131	549.131		TRIPLE	94	1.60	6 x Ø6
509.141	549.141		QUADRUPLE	123	2.10	8 x Ø6
509.111/H	549.111/H		HORIZONTAL	36	0.72	2 x Ø8 + 1 x Ø5
509.112	549.112	10 - 12	SINGLE	36	0.60	2 x Ø8
509.122	549.122		DOUBLE	65	1.10	4 x Ø8
509.132	549.132		TRIPLE	94	1.60	6 x Ø8
509.142	549.142		QUADRUPLE	123	2.10	8 x Ø8
509.112/H	549.112/H		HORIZONTAL	36	0.72	2 x Ø8 + 1 x Ø5
509.113	549.113	12 - 14	SINGLE	36	0.60	2 x Ø8
509.123	549.123		DOUBLE	65	1.10	4 x Ø8
509.133	549.133		TRIPLE	94	1.60	6 x Ø8
509.143	549.143		QUADRUPLE	123	2.10	8 x Ø8
509.113/H	549.113/H		HORIZONTAL	36	0.72	2 x Ø8 + 1 x Ø5



Single



Double



Triple



Quadruple



Horizontal

V-CAM 814 CLUTCH ORGANIZER

This solution allows manoeuvres to be guided from the clutches to the winch.
For more information see page 47.



MODEL	N° SHEAVES
513.032	3
514.032	4
515.032	5
516.032	6

MULTI RING ORGANIZER

The low friction Multi Ring Organizer without sheaves is a very light and small-sized solution that fits lines up to 12 mm.
For more information see page 171.



MODEL	N° HOLES
R3.14	3
R4.14	4
R5.14	5
R6.14	6

Plus & Maxi series



V-GRIP PLUS
mod. 508.141

V-GRIP MAXI
mod. 508.114

V-GRIP PLUS

3 models for lines from 10 to 16 mm available in single, double and triple.

Hard black anodized aluminium structure and AISI 316 s.steel mechanism, "V" shaped cam and lever.

Easy opening under load for line releasing without the use of winch.

Line retrieval can be achieved with the lever closed, the line stops automatically in the new position with no slippage.

V-GRIP MAXI

5 models for lines up to 22 mm, **only single version is available !**

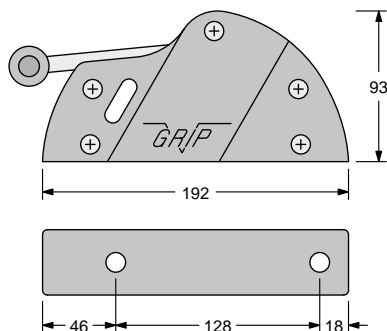
Hard black anodized aluminium structure and AISI 316 s.steel mechanism, "V" shaped cam and lever.

Easy opening under load for line releasing without the use of winch.

Line retrieval can be achieved with the lever closed, the line stops automatically in the new position with no slippage.



Class 40 Leyton France - Arthur Le Vaillant - ph. Christophe Breschi



V-GRIP PLUS

Single



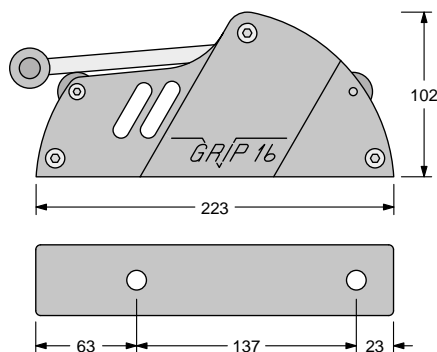
Double



Triple



MODEL	Ø LINE mm	TYPE	WIDTH mm	WEIGHT kg	SCREWS N° x Ø mm
508.121	10 - 12	SINGLE	41	1.10	2 x Ø10
508.122P		DOUBLE	80	2.20	4 x Ø10
508.123		TRIPLE	119	3.30	6 x Ø10
508.141	12 - 14	SINGLE	41	1.10	2 x Ø10
508.142		DOUBLE	80	2.20	4 x Ø10
508.143		TRIPLE	119	3.30	6 x Ø10
508.161	14 - 16	SINGLE	41	1.10	2 x Ø10
508.162		DOUBLE	80	2.20	4 x Ø10
508.163		TRIPLE	119	3.30	6 x Ø10



V-GRIP MAXI

Single



MODEL	Ø LINE mm	WIDTH mm	WEIGHT kg	SCREWS N° x Ø mm
508.114	12 - 14	44	1.40	2 x Ø10
508.116	14 - 16			
508.118	16 - 18			
508.120	18 - 20			
508.122	20 - 22			

V-GRIP PLUS AND MAXI ORGANIZER

This solution allows manoeuvres to be guided from the clutches to the winch.
For more information see page 47.



mod. 524.052

	MODEL	N° SHEAVES
V-GRIP PLUS	523.042	3
	524.042	4
	525.042	5
	526.042	6
V-GRIP MAXI	523.052	3
	524.052	4
	525.052	5
	526.052	6

QR series

NEW



mod. 506.121

mod. 506.101

QUICK RELEASE DOUBLE V-GRIP

QR is the new Antal clutch that offers the highest holding power and allows you to release a line even under the maximum load. QR lets you open the handle and free the line without the aid of a winch.

Two models for 10 and 12 mm line (**SWL = 1600 and 2200 kg**) are available in standard version, with mounting base or for side mounting.

DV - DOUBLE V-GRIP

The DV-grip is a locking system based on two opposing V shaped wedges, the result is a 4 sides grip which provides additional benefits over traditional 2-sided grip line stoppers:

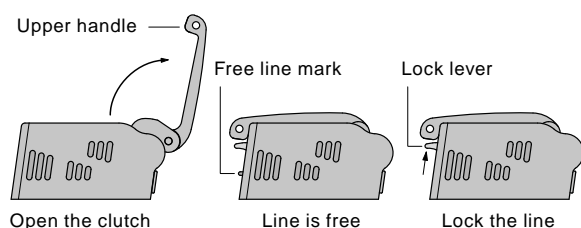
- Less line wear
- Higher holding power
- Smaller sizes and lower weight

OPENING AND LOCKING

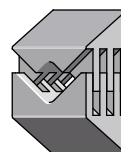
The clutch can be opened by lifting the upper handle, which can then be pushed back down. The free-line mark is exposed and the line runs freely, even with the handle closed.

To move from free to lock, push up the lock lever. The free-line mark will disappear and the line will be locked.

It is possible to recover the line in both the free and locked positions.



DOUBLE
V-GRIP

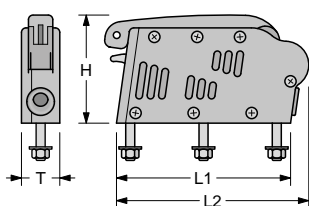


MAXIMUM LOAD

The maximum load values are based on load tests performed on Dyneema™ and polyester lines with different covers. Dyneema™ lines with a Kevlar-polyester cover provided much better results than Dyneema™ lines with a polyester cover, which performed poorly. The test results were even below those of a simple polyester line (polyester core and cover).

The maximum load is a limit for the line, not for the clutch.

Appropriate safety margins must be observed at maximum loads.



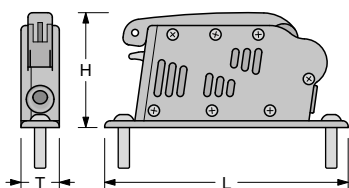
QR STANDARD MODELS

MODEL	Ø LINE mm	L1 mm	L2 mm	H mm	T mm	WEIGHT kg	STUDS N° x Ø mm
506.101	10	154	170	96	34	1.00	3 x Ø8
506.121	12	176	193	101	37	1.35	3 x Ø10

Mounting studs, nuts and washers are included.

QR WITH MOUNTING BASE

When it is not possible to access the mounting studs from the bottom side of the clutch (for example, when mounting on a mast), Antal offers a special base that can be mounted from above with 2 screws (included).

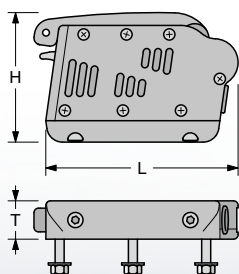


MODEL	Ø LINE mm	L mm	H mm	T mm	WEIGHT kg	FASTENERS N° x Ø mm
506.106	10	216	102	34	1.12	2 x Ø10
506.126	12	249	109	37	1.52	2 x Ø12

QR SIDE-MOUNTING VERSION

QR clutches are also available for side mounting. The same model can be mounted on either the left or the right side.

Screws, washers and nuts in AISI 316 are included.



MODEL	Ø LINE mm	L mm	H mm	T mm	WEIGHT kg	STUDS N° x Ø mm
506.103	10	170	115	34	1.14	3 x Ø8
506.123	12	193	125	37	1.54	3 x Ø10



Ice Yacht 52

DV jammer series



DV JAMMER

The DV Jammer is a line holding device suitable for the extremely high loads of the high-tech Dyneema lines as well as exceptional holding power on polyester ropes.

Six models, for lines ranging from 8 to 18 mm diameter, are available. This covers a wide range of boats up to around 100 ft in length.

DV Jammer sizes 8 and 10 have the same mounting pattern, similarly sizes 12 - 14 and sizes 16 - 18.

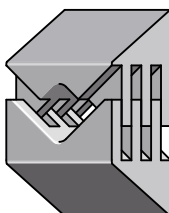
DV - DOUBLE V-GRIP

The DV-grip is a locking system based on two opposing V shaped wedges, the result is a 4 sides grip which provides additional benefits over traditional 2-sided grip line stoppers:

- Less line wear
- Higher holding power
- Smaller sizes and lower weight



DOUBLE
V-GRIP



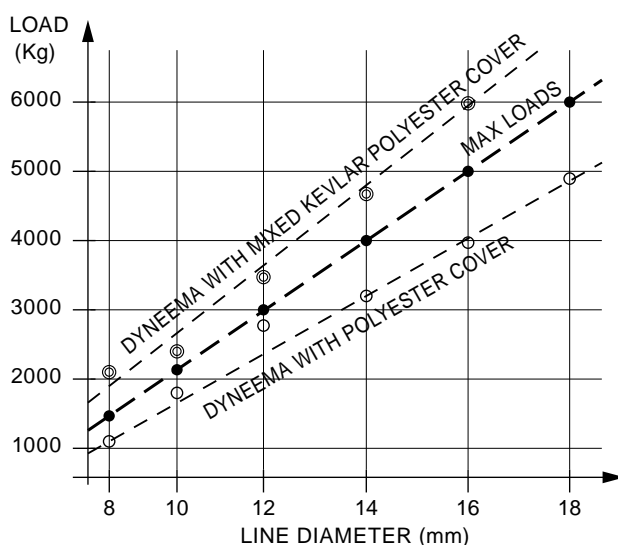
DV is a patent pending product by Antal srl, Padova, Italy.

TEST RESULTS AND MAX LOAD

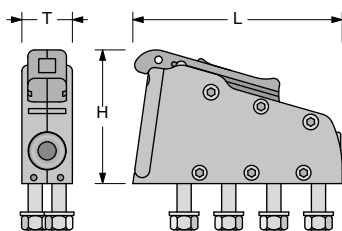
Test values were obtained on Dyneema lines with different covers:

- Dyneema with polyester cover
 - Dyneema with mixed Kevlar-polyester cover
- Results shown in the lower graph correspond to the failure of the cover and the resulting core slippage.

Dyneema line with a Kevlar-Polyester cover provides much better test results than the Dyneema line with a Polyester cover which performed poorly, with results even below the simple polyester line (polyester cover and core).



Appropriate safety margins must be considered for the max loads. The suggested maximum load limit is the limit of the line. Above values for max loads are not valid for Dyneema lines with a polyester cover or for polyester lines with a lower breaking load value than the recommended maximum load value. Tests with polyester lines (polyester core and cover) show that the limits is the breaking load of the line itself, with values close to our max loads.



DV JAMMERS: STANDARD MODELS

Six models, for 8, 10, 12, 14, 16 and 18 mm lines are offered.

DV JAMMERS: REMOTE CONTROL

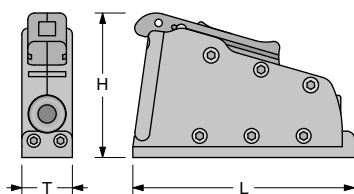
A "remote control" version is also available: this model does not have the upper manual control slider, the opening is done with a control line.

DV STANDARD mod.	REMOTE CONTROL mod.	Ø LINE mm	L mm	H mm	T mm	WEIGHT kg	STUDS N° x Ø mm
505.081	505.082	8	126	86	34	0.60	4 x Ø6
505.101	505.102	10	141	90		0.69	4 x Ø8
505.121	505.122	12	169	108		1.20	4 x Ø10
505.141	505.142	14	185	113	42	1.36	
505.161	505.162	16	209	125		2.20	4 x Ø12
505.181	505.182	18	209	125		2.20	

Mounting studs, nuts and washers are included.

DV JAMMERS WITH MOUNTING BASE

When it is not possible to access the mounting studs/nuts/washers from the bottom side of the jammer (for example when mounting on a mast), Antal offers a special mounting base that can be mounted from above with 4 screws (not included).



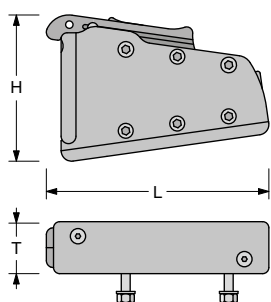
DV STANDARD WITH BASE mod.	REMOTE CONTROL WITH BASE mod.	Ø LINE mm	L mm	H mm	T mm	WEIGHT kg	SCREWS N° x Ø mm
505.086	505.087	8	134	93	34	0.69	4 x Ø6
505.106	505.107	10	149	97		0.79	4 x Ø8
505.126	505.127	12	178	118		1.39	4 x Ø10
505.146	505.147	14	194	123	42	1.57	
505.166	505.167	16	218	135		2.56	4 x Ø12
505.186	505.187	18	218	135		2.56	

The 4 lower base mounting screws are not included.

DV JAMMER: SIDE-MOUNTING VERSION

DV Jammers are also available for side-mounting; the same model can be mounted on either left or right side.

Screws, washers and nuts in AISI 316 are included.



DV STANDARD SIDE-MOUNTING mod.	REMOTE CONTROL SIDE-MOUNTING mod.	Ø LINE mm	L mm	H mm	T mm	WEIGHT kg	SCREWS N° x Ø mm
505.083	505.085	8	135	95	34	0.63	4 x Ø6
505.103	505.105	10	150	99		0.72	5 x Ø6
505.123	505.125	12	179	118		1.22	4 x Ø8
505.143	505.145	14	195	122	42	1.35	5 x Ø8
505.163	505.165	16	213	135		2.47	6 x Ø8
505.183	505.185	18	213	135		2.47	8 x Ø8

Mounting screws, nuts and washers are included.

V-grip clutch

CLUTCHES V-GRIP

Aisi 316 s.steel mechanism and lever, bronze "V" shaped cam and black anodized aluminium structure.

3 models are available for 8-12, 10-14, and 12-16 mm lines in single, double and triple version.

This is the best solution when minimum sizes are required: it is only 6.8 cm high.



mod. 507.111

Single

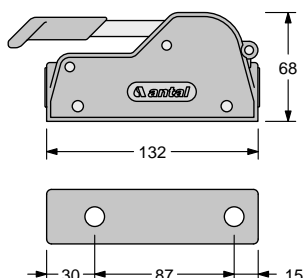
Double

Triple



V-GRIP

MODEL	Ø LINE mm	TYPE	WIDTH mm	WEIGHT kg	SCREWS N° x Ø mm
507.111	8 - 10 - 12	SINGLE	34	0.55	2 x Ø6
507.121		DOUBLE	67	1.10	4 x Ø6
507.131		TRIPLE	101	1.45	6 x Ø6
507.112	10 - 12 - 14	SINGLE	34	0.55	2 x Ø8
507.122		DOUBLE	67	1.10	4 x Ø8
507.132		TRIPLE	101	1.45	6 x Ø8
507.113	12 - 14 - 16	SINGLE	34	0.55	2 x Ø8



mod. 534.032

V-GRIP ORGANIZER

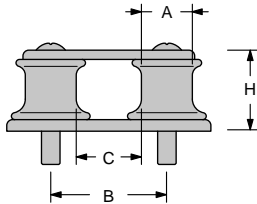
This solution allows manoeuvres to be guided from the clutches to the winch. For more information see page 47.



DOUBLE SHEAVE ORGANIZER

This solution has been designed for the new double and triple CAM 611: mounted at the

back of the clutch battery guiding the line towards the winch.

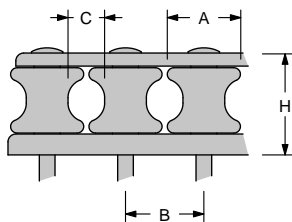


mod. 522.031

	MODEL	N°	SHEAVES	LENGTH mm	WEIGHT kg	A mm	B mm	C mm	H mm	SCREWS N° x Ø mm
			material							
CAM611	522.031	2	RESIN	88	0.16	22	50	28	36	2 x Ø8

V-GRIP ORGANIZER

This solution allows manoeuvres to be guided from the clutches to the winch.



mod. 525.052

	MODEL	N°	SHEAVES material	LENGTH mm	WEIGHT kg	A mm	B mm	C mm	H mm	SCREWS N° x Ø mm
V-CAM 814	513.032	3	RESIN	90	0.18	28	30	14	39	3 x Ø6
	514.032	4		120	0.22					4 x Ø6
	515.032	5		150	0.27					5 x Ø6
	516.032	6		180	0.32					6 x Ø6
V-GRIP PLUS	523.042	3	ALUMINIUM	125	0.43	38	39	16	46	3 x Ø8
	524.042	4		165	0.57					4 x Ø8
	525.042	5		205	0.71					5 x Ø8
	526.042	6		245	0.85					6 x Ø8
V-GRIP MAXI	523.052	3	ALUMINIUM	133	0.50	43	44	20	46	3 x Ø8
	524.052	4		177	0.65					4 x Ø8
	525.052	5		221	0.83					5 x Ø8
	526.052	6		265	1.00					6 x Ø8
V-GRIP	533.032	3	RESIN	100	0.19	28	35	19	38	3 x Ø6
	534.032	4		135	0.24					4 x Ø6
	535.032	5		170	0.30					5 x Ø6
	536.032	6		205	0.35					6 x Ø6

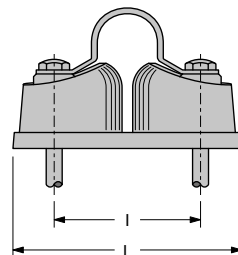
swivelling cleat

SERVO CLEAT



The particular stainless and plastic cam teeth conformation is designed to make line inserting between cams easy. Made of plastic with s. steel "ribs". Screws are included.

MODEL	Ø LINE mm.	I mm	L mm	SCREWS N° x Ø mm.
502.011	3 - 7	27	48	2 x Ø4
502.22/37	6 - 10	37	64	2 x Ø5
502.022	6 - 12	42	70	2 x Ø5
502.033	10 - 14	52	86	2 x Ø6



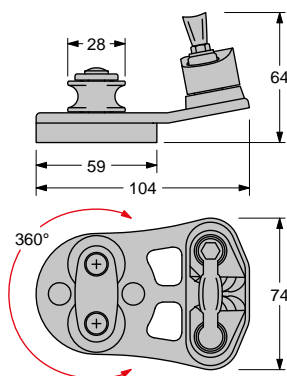
Mod. 522.022 SWIVELLING CLEAT

The aluminium base swivels through 360° on single races of Torlon ball bearings. The system is fitted with 2 x 28 mm sheaves for Lines up to 10 mm

Fixing: 3 x 5 mm screws (included)

Weight: 0.23 kg

SWL on the cam cleat: 150 kg



Mod. 522.140 BLOCK AND SERVO CLEAT

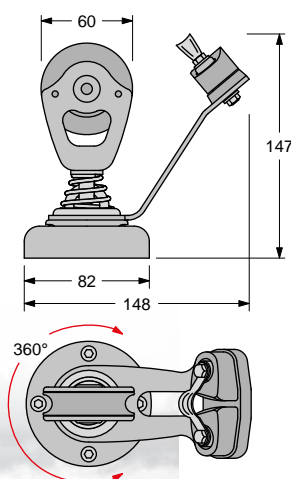
The aluminium base swivels through 360° on double races of Torlon ball bearings.

The system is completed with a 60 mm block for Lines up to 12 mm

Fixing: 3 x Ø6 mm screws (included)

Weight: 0.82 kg

SWL on the cam cleat: 200 kg



stopper deck block

The sheaves are made of high strength resin, fitted with composite fibre bush and side ball-bearings. No maintenance or lubrication is required.

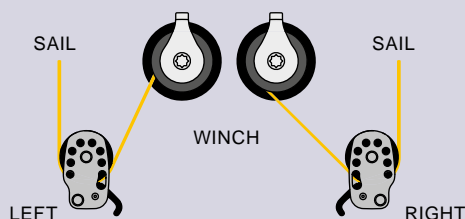
The machined side plates are made of high strength alloy, hard black anodized for wear and corrosion proofing and with all the edges smoothed off.

The aluminium locking cam is fitted on an automatic opening spring: relaxing the sheet is sufficient to open the jammer.

Compact design with the lever fully concealed within the side plates and with recessed fasteners.

The cam cannot be locked under high loads. It's intended to hold the line temporarily and not under heavy loads.

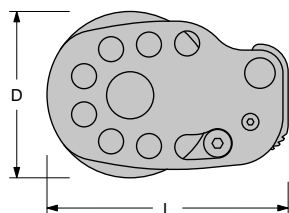
Left and right versions are available.



Mounting screws, nuts and washers are included.



DIAMETER 65, 80, 100, 125 mm



Left and right versions are available, just add **/LEFT** or **/RIGHT** to the model code when ordering.

MODEL	Ø LINE mm	D mm	L mm	SWL kg	WEIGHT kg	SCREWS N° x Ø mm
SINGLE						
851.065*	6 - 12	65	116	800	0.23	2 x Ø8
851.080	6 - 14	80	131	1000	0.33	2 x Ø8
851.100	8 - 16	100	152	2000	0.65	2 x Ø10
851.125	10 - 18	125	174	3500	1.10	1 x Ø12 + 2 x Ø10
DOUBLE						
852.065*	6 - 12	65	116	800	0.38	2 x Ø8
852.080	6 - 14	80	131	1000	0.56	2 x Ø8
852.100	8 - 16	100	152	2000	1.50	2 x Ø10
852.125	10 - 18	125	174	3500	1.85	1 x Ø12 + 2 x Ø10

* In the smallest model (D=65) there is no spring for the cam opening.





mini s.steel blocks 52



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Tulip series 90



mainsail blocks 92



special blocks 93



mini snatch blocks 96



Dynablock..... 97



snatch blocks..... 98



snatch looper 100



mini s.steel blocks

MINI BLOCKS 34x6 AND 40x8 SERIES

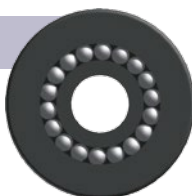
This series offers extremely high working loads (SWL: 34x6 = 400 kg, 40x8 = 500 kg) while still compact and lightweight. The sheave is made of resin with a double lateral ball-bearing. Cheekplates are made of perfectly polished AISI 316 stainless steel. The high quality materials guarantee a maintenance-free product.



Mod. 00301

SHEAVE

Resin sheave with double self-captive ball bearings.



Mod. 03411/M

Ø = 34 mm
line = 6 mm
SWL = 400 kg

Mod. 04013/M

Ø = 40 mm
line = 8 mm
SWL = 500 kg

CAM CLEAT

All models can be supplied with cam cleat. Just add **/C** to the model code when ordering.



Mod. 003XX/C

Size 34x6
Weight = + 42 gr
Max load = 80 kg

Mod. 004XX/C

Size 40x8
Weight = + 42 gr
Max load = 80 kg

SWIVEL HEAD

All models are available with swivel head, just add **/SW** to the model code when ordering.



Mod. 003XX/SW

Size 34x6
Weight = + 15 gr
Max load = 400 kg

Mod. 004XX/SW

Size 40x8
Weight = + 20 gr
Max load = 500 kg



The vertical blocks (mod. 00323 and 00324 on page 53 mod. 00423 and 00424 on page 54) can be grouped in battery, joined by a central pivot. Add the number of elements to the model code, as in the following example: 00323/2, 00323/3, 00323/n respectively for batteries from 2, 3, n pieces.

34 mm sheave for 6 mm line

Safe working load = 400 kg



Mod. 00301

SHACKLE BLOCK
Weight = 44 gr
SWL = 400 kg



Mod. 00320

SINGLE U-HEAD
Weight = 40 gr
SWL = 400 kg



Mod. 03413/M

Ø = 34 mm
line = 8 mm
SWL = 400 kg



Mod. 00323

UPRIGHT
Weight* = 55 gr
SWL = 400 kg
2 x Ø5 mm screws
(included)



Mod. 00324

"OVER THE TOP"
Weight* = 65 gr
SWL = 400 kg
2 x Ø5 mm screws
(included)



Mod. 00302

SINGLE BECKET
Weight = 52 gr
SWL = 400 kg



Mod. 00321

U-HEAD BECKET
Weight = 43 gr
SWL = 400 kg



Mod. 00330

FIDDLE BLOCK
Weight = 65 gr
SWL = 400 kg



Mod. 00303

DOUBLE BLOCK
Weight = 82 gr
SWL = 600 kg



Mod. 00304

DOUBLE BECKET
Weight = 90 gr
SWL = 600 kg



Mod. 00331

FIDDLE BECKET
Weight = 76 gr
SWL = 400 kg



Mod. 00305

TRIPLE BLOCK
Weight = 94 gr
SWL = 600 kg



Mod. 00306

TRIPLE BECKET
Weight = 102 gr
SWL = 600 kg



Mod. 00322

SADDLE BLOCK
Weight* = 46 gr
SWL = 400 kg
2 x Ø4 mm screws
(included)



Mod. 00316

STAND-UP
Weight* = 46 gr
SWL = 400 kg
1 x Ø6 mm screw
(included)



Mod. 00311

FOOT BLOCK
Weight* = 36 gr
SWL = 400 kg
2 x Ø6 mm screws
(included)

* screws not included

antal

- 53 -

40 mm sheave for 8 mm line

Safe working load = 500 kg



Mod. 00401

SHACKLE BLOCK
Weight = 62 gr
SWL = 500 kg



Mod. 00420

SINGLE U-HEAD
Weight = 56 gr
SWL = 500 kg



Mod. 04514/M

Ø = 45 mm
line = 8 mm
SWL = 600 kg



Mod. 00402

SINGLE BECKET
Weight = 73 gr
SWL = 500 kg



Mod. 00421

U-HEAD BECKET
Weight = 60 gr
SWL = 500 kg



Mod. 00423

UPRIGHT
Weight* = 77 gr
SWL = 600 kg
2 x Ø6 mm screws
(included)



Mod. 00424

“OVER THE TOP”
Weight* = 91 gr
SWL = 600 kg
2 x Ø6 mm screws
(included)



Mod. 00430

FIDDLE BLOCK
Weight = 91 gr
SWL = 500 kg



Mod. 00403

DOUBLE BLOCK
Weight = 115 gr
SWL = 600 kg



Mod. 00404

DOUBLE BECKET
Weight = 126 gr
SWL = 600 kg



Mod. 00431

FIDDLE BECKET
Weight = 106 gr
SWL = 500 kg



Mod. 00405

TRIPLE BLOCK
Weight = 132 gr
SWL = 600 kg



Mod. 00406

TRIPLE BECKET
Weight = 143 gr
SWL = 600 kg



Mod. 00422

SADDLE BLOCK
Weight* = 64 gr
SWL = 500 kg
2 x Ø5 mm screws
(included)



Mod. 00416

STAND-UP
Weight* = 64 gr
SWL = 500 kg
1 x Ø6 mm screw
(included)



Mod. 00411

FOOT BLOCK
Weight* = 50 gr
SWL = 500 kg
2 x Ø6 mm screws
(included)

40 mm sheave for 8 mm line

Safe working load = 500 kg

BLOCKS & TACKLES

The heads of these blocks are closed with a removable screw for an easy connection with a spliced line.

Four models: single, single-becket, fiddle and

fiddle-becket, to assemble the tackles with 2:1, 3:1 and 4:1 power ratios.

Lines are not included.

POWER RATIO
2:1

NEW



Mod. 00401/B

SINGLE BLOCK
Weight = 58 gr
SWL = 500 kg

Mod. 00402/B

SINGLE-BECKET
Weight = 68 gr
SWL = 500 kg

POWER RATIO
3:1

NEW



Mod. 00402/B

SINGLE-BECKET
Weight = 68 gr
SWL = 500 kg

Mod. 00430/B

FIDDLE BLOCK
Weight = 80 gr
SWL = 500 kg

POWER RATIO
4:1

NEW



Mod. 00430/B

FIDDLE BLOCK
Weight = 80 gr
SWL = 500 kg

Mod. 00431/B

FIDDLE-BECKET
Weight = 90 gr
SWL = 500 kg



OPF SERIES

New by Antal the “One Piece Frame” block, the block without pins or screws, it is a light and strong solution: simply a hard black anodized and teflon coated aluminium frame in one piece.

A complete range from 50 to 140 mm sheaves in single, double, triple, fiddle, and deck versions, for webbing or shackle connection.

Sizes are based on the range of HR shackles available and on their safe working load (SWL).

THE HR SWIVEL HEAD

Made in high resistance s.steel, with three positions: swivelling head, longitudinal lock and transversal lock.

HR shackles included.



THE ONE PIECE FRAME

The one-piece aluminium extruded body is the strongest and lightest solution, no assembling pin rivets or screws and nuts.

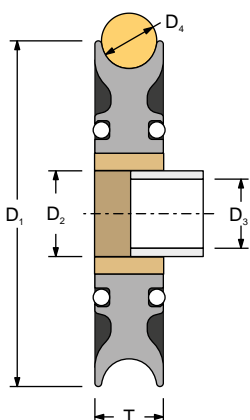
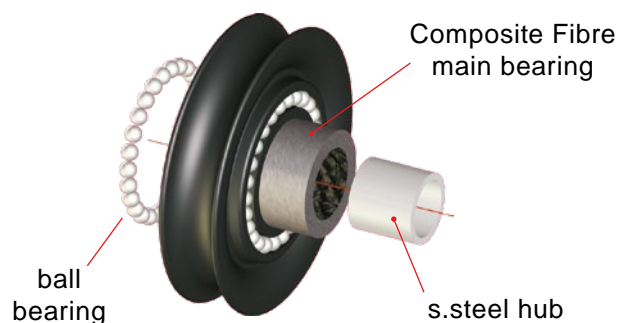
CNC machined - polished - hard black anodized and teflon coated.

THE COMPOSITE FIBRE SHEAVE

The resin (aluminium on larger mod) sheave runs on the main Composite Fibre bearing and on a ground s.steel hub: low friction highloads - no lubricant required.

The self-captive side ball bearing reduces the friction and makes disassembling, cleaning and maintenance very easy.

Sheaves are supplied with the s.steel hub, they are available separately.



SHEAVE MODEL	D ₁ mm	T mm	MATERIAL	D ₂ mm	D ₃ mm	D ₄ mm	SWL kg	WEIGHT gr
04819/F	48	19	RESIN	20	16	14	2200	40
05114/M*	50	14	RESIN	12	8	10	600	30
06016/F	60	16	RESIN	15	12	12	800	46
06421/F	64	21	RESIN	25	20	16	3500	78
07016/F	70	16	RESIN	15	12	12	1300	66
08019/F	80	19	RESIN	20	16	14	2200	98
10021/A	100	21	ALUMINIUM	25	20	16	3500	164
12025/A	120	25	ALUMINIUM	30	24	18	5000	420
14025/A	140	25	ALUMINIUM	40	32	20	7000	580

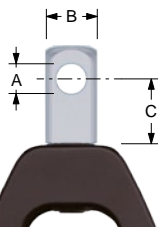
* without composite Fibre main bearing

SPECIAL HEADS

On request Antal blocks are supplied with special head: long head or Wichard HR "snap shackle".

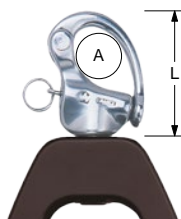
For stand-up connection of ball bearing cars (page 122, 126-129).
To order the block with this special long swivel head, add **/J** to the block model code.

LONG HEAD



MODEL	SINGLE BLOCK Ø mm	A mm	B mm	C mm	B.B. CAR SIZE mm
/J	60	6	12	12	100
/J	70	6	12	12	110
/J1	80	8	14.5	15	150
/J2	80	10	18	17	190
/J1	100	10	18	19	190
/J2	100	10	18	25	260

SNAP SHACKLE



Wichard HR snap shackle*: this solution is available for single and fiddle blocks only. To order the block with this special snap shackle head, add **/SN** to the block model code.

MODEL	SHEAVE Ø mm	A mm	L mm
/SN	50	16	45
	60	16	45
	70	16	45
	80	21	60
	100	26	80

*AISI 316 snap shackle for size 50, Wichard HR snap shackles for all the others.

CAM-CLEAT

It is available for all the 50, 60 and 70 mm diameter models. Adjustable in 3 positions. To order the block with cam-cleat, add **/C** to the block model code.



MODEL	SHEAVE Ø mm	WEIGHT kg
/C	50	0.08
	60	0.13
	70	0.15



50 mm sheave for 10 mm line Safe working load = 600 kg



Mod. 00501

SWIVEL BLOCK
Weight* = 90 gr
SWL = 600 kg
5 mm shackle



Mod. 00502

BECKET BLOCK
Weight* = 104 gr
SWL = 600 kg
5 mm shackle



Mod. 00507

SINGLE FIDDLE
Weight* = 122 gr
SWL = 600 kg
5 mm shackle



Mod. 00508

BECKET FIDDLE
Weight* = 136 gr
SWL = 600 kg
5 mm shackle



In the OPF 50 series sheaves are riveted and not removable.



Mod. 00503

DOUBLE SHEAVE
Weight* = 169 gr
SWL = 800 kg
6 mm shackle



Mod. 00504

DOUBLE BECKET
Weight* = 184 gr
SWL = 800 kg
6 mm shackle



Mod. 00505

TRIPLE SHEAVE
Weight* = 225 gr
SWL = 800 kg
6 mm shackle



Mod. 00506

TRIPLE BECKET
Weight* = 240 gr
SWL = 800 kg
6 mm shackle



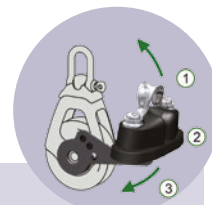
Mod. 00509

SIMPLE WEB
Weight = 64 gr
SWL = 600 kg
For line connection



Mod. 00510

WEB BECKET
Weight = 78 gr
SWL = 600 kg
For line connection



CAM CLEAT

With 3 different positions for single, double and triple.

SWL = 100 kg
Weight = 80 gr

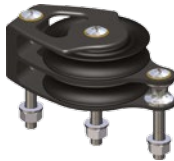
For blocks with cleat add /C to the block model code.



Mod. 00511

Foot Block

Weight** = 71 gr
SWL = 600 kg
2 x Ø6 mm screws
(included)



Mod. 00512

DOUBLE FOOT

Weight** = 141 gr
SWL = 600 kg
3 x Ø6 mm screws
(included)



Mod. 00513

BLOCK U-BOLT

Weight = 129 gr
SWL = 500 kg
2 x Ø5 mm screws
(included)



Mod. 00516

VERTICAL FIX

Weight** = 75 gr
SWL = 600 kg
2 x Ø6 mm screws
(included)



Mod. 00517

UP-DOWN

Weight** = 89 gr
SWL = 600 kg
2 x Ø6 mm screws
(included)



Mod. 7105

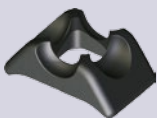
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SY Scho-ka-kola, RP 57, Skagerrak 2Star Race, Norway

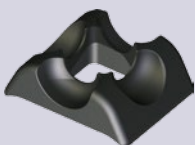
Swivel head locks and shackles are always included, but they are available separately.

Mod. Y-B0746



Longitudinal or transversal head lock for single blocks.

Mod. Y-B0747



Longitudinal or transversal head lock for double and triple blocks.



Mod. 005SS



5 mm shackle (Aisi 316)

For single blocks
SWL = 600 kg
Weight = 15 gr

Mod. 006SS



6 mm shackle (Aisi 316)

For double and triple blocks
SWL = 800 kg
Weight = 26 gr

60 mm sheave for 12 mm line

Safe working load = **800 kg**



Mod. 00601

SWIVEL BLOCK

Weight* = 0.16 kg

SWL = 800 kg

6 mm shackle



Mod. 00602

BECKET BLOCK

Weight* = 0.18 kg

SWL = 800 kg

6 mm shackle



Mod. 00607

SINGLE FIDDLE

Weight* = 0.21 kg

SWL = 800 kg

6 mm shackle



Mod. 00608

BECKET FIDDLE

Weight* = 0.23 kg

SWL = 800 kg

6 mm shackle



Mod. 00603

DOUBLE SHEAVE

Weight* = 0.31 kg

SWL = 1300 kg

8 mm shackle



Mod. 00604

DOUBLE BECKET

Weight* = 0.33 kg

SWL = 1300 kg

8 mm shackle



Mod. 00605

TRIPLE SHEAVE

Weight* = 0.41 kg

SWL = 1300 kg

8 mm shackle



Mod. 00606

TRIPLE BECKET

Weight* = 0.43 kg

SWL = 1300 kg

8 mm shackle



Mod. 00609

SIMPLE WEB

Weight = 0.10 kg

SWL = 800 kg

For line connection



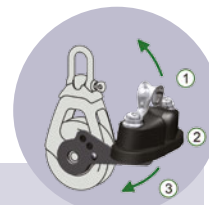
Mod. 00610

WEB BECKET

Weight = 0.12 kg

SWL = 800 kg

For line connection



CAM CLEAT

With 3 different positions for single, double and triple.

SWL = 150 kg

Weight = 0.13 kg

For blocks with cleat add /C to the block model code.



Mod. 00613

BLOCK U-BOLT
Weight = 0.22 kg
SWL = 800 kg
2 x Ø6 mm screws
(included)



Mod. 7106

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Mod. 00614

BLOCK PAD-EYE
Weight = 0.26 kg
SWL = 800 kg
2 x Ø6 mm screws
(not included)



Mod. 7206

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Mod. 00615

BLOCK SCREWED
Weight = 0.32 kg
SWL = 800 kg
2 x Ø6 mm screws
(not included)



Mod. 7306

Page 189



Mod. 00611

FOOT BLOCK
Weight** = 0.13 kg
SWL = 800 kg
2 x Ø6 mm screws
(included)



Mod. 00612

DOUBLE FOOT
Weight** = 0.23 kg
SWL = 800 kg
3 x Ø6 mm screws
(included)



Mod. 00616

VERTICAL FIX
Weight** = 0.14 kg
SWL = 800 kg
2 x Ø6 mm screws
(included)



Mod. 00617

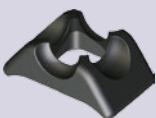
UP-DOWN
Weight** = 0.18 kg
SWL = 800 kg
2 x Ø6 mm screws
(included)



Cantiere Bonin - 31' Cossutti

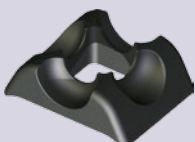
Swivel head locks and shackles are always included, but they are available separately.

Mod. Y-B0748



Longitudinal or transversal head lock for single blocks.

Mod. Y-B0749



Longitudinal or transversal head lock for double and triple blocks.



Mod. 006SS



6 mm shackle (Aisi 316)
For single blocks
SWL = 800 kg
Weight = 26 gr

Mod. 008SS



8 mm shackle (Aisi 316)
For double and triple blocks
SWL = 1300 kg
Weight = 62 gr

70 mm sheave for 12 mm line

Safe working load = **1300 kg**



Mod. 00701

SWIVEL BLOCK

Weight* = 0.20 kg

SWL = 1300 kg

6 mm HR shackle



Mod. 00702

BECKET BLOCK

Weight* = 0.22 kg

SWL = 1300 kg

6 mm HR shackle



Mod. 00707

SINGLE FIDDLE

Weight* = 0.26 kg

SWL = 1300 kg

6 mm HR shackle



Mod. 00708

BECKET FIDDLE

Weight* = 0.28 kg

SWL = 1300 kg

6 mm HR shackle



Mod. 00703

DOUBLE SHEAVE

Weight* = 0.38 kg

SWL = 2200 kg

8 mm HR shackle



Mod. 00704

DOUBLE BECKET

Weight* = 0.40 kg

SWL = 2200 kg

8 mm HR shackle



Mod. 00705

TRIPLE SHEAVE

Weight* = 0.50 kg

SWL = 2200 kg

8 mm HR shackle



Mod. 00706

TRIPLE BECKET

Weight* = 0.52 kg

SWL = 2200 kg

8 mm HR shackle



Mod. 00709

SIMPLE WEB

Weight = 0.14 kg

SWL = 1300 kg

For line connection



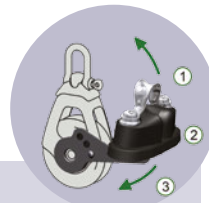
Mod. 00710

WEB BECKET

Weight = 0.16 kg

SWL = 1300 kg

For line connection



CAM CLEAT

With 3 different positions for single, double and triple.

SWL=150 kg

Weight=0.15 kg

For blocks with cleat add **/C** to the block model code.



Mod. 00713

BLOCK U-BOLT
Weight = 0.32 kg
SWL = 1300 kg
2 x Ø8 mm screws
(included)



Mod. 7108

Page 188



Mod. 00714

BLOCK PAD-EYE
Weight = 0.41 kg
SWL = 1300 kg
4 x Ø6 mm screws
(not included)



Mod. 7208

Page 189



Mod. 00715

BLOCK SCREWED
Weight = 0.75 kg
SWL = 1300 kg
4 x Ø6 mm screws
(not included)



Mod. 7308

Page 189



Mod. 00711

Foot BLOCK
Weight** = 0.16 kg
SWL = 1300 kg
2 x Ø8 mm screws
(included)



Mod. 00712

DOUBLE FOOT
Weight** = 0.26 kg
SWL = 1300 kg
3 x Ø8 mm screws
(included)



Mod. 00716

VERTICAL FIX
Weight** = 0.18 kg
SWL = 1300 kg
2 x Ø8 mm screws
(included)



Mod. 00717

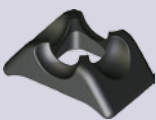
UP-DOWN
Weight** = 0.20 kg
SWL = 1300 kg
2 x Ø8 mm screws
(included)



Saphire - C. Maletto

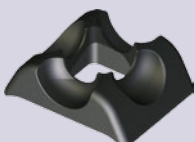
Swivel head locks and shackles are always included, but they are available separately.

Mod. Y-B0748



Longitudinal or transversal head lock for single blocks.

Mod. Y-B0749



Longitudinal or transversal head lock for double and triple blocks.



Mod. 006HR



6 mm HR shackle
For single blocks
SWL = 1300 kg
Weight = 26 gr

Mod. 008HR



8 mm HR shackle
For double and triple blocks
SWL = 2200 kg
Weight = 62 gr

80 mm sheave for 14 mm line

Safe working load = 2200 kg



Mod. 00801

SWIVEL BLOCK
Weight* = 0.34 kg
SWL = 2200 kg
8 mm HR shackle

Swivel head lock
and shackle is
always included.



Mod. 008HR

HR Ø8 mm shackle
SWL = 2200 kg
Weight = 62 gr

Mod. Y-B0750

For longitudinal
or transversal
head lock



Mod. 00802

BECKET BLOCK
Weight* = 0.38 kg
SWL = 2200 kg
8 mm HR shackle



Mod. 00807

SIMPLE FIDDLE
Weight* = 0.44 kg
SWL = 2200 kg
8 mm HR shackle



Mod. 00808

BECKET FIDDLE
Weight* = 0.48 kg
SWL = 2200 kg
8 mm HR shackle



Mod. 00803

full scale

DOUBLE BLOCK
Weight* = 0.54 kg
SWL = 3500 kg
10 mm HR shackle



Mod. 00809

SIMPLE WEB
Weight = 0.22 kg
SWL = 2200 kg
For line connection



Mod. 00810

WEB BECKET
Weight = 0.26 kg
SWL = 2200 kg
For line connection



Mod. 00814

BLOCK PAD-EYE
Weight = 0.61 kg
SWL = 2200 kg
4 x Ø8 mm screws
(not included)



Mod. 00813

BLOCK U-BOLT
Weight = 0.54 kg
SWL = 2200 kg
2 x Ø10 mm screws
(included)



Mod. 00815

BLOCK SCREWED
Weight = 0.93 kg
SWL = 2200 kg
4 x Ø8 mm screws
(not included)



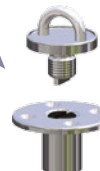
Mod. 7110

Page 188



Mod. 7210

Page 189



Mod. 7310

Page 189



Mod. 00811

FOOT BLOCK
Weight** = 0.29 kg
SWL = 2200 kg
4 x Ø8 mm screws
(included)



Mod. 00812

DOUBLE FOOT
Weight** = 0.57 kg
SWL = 2200 kg
4 x Ø8 mm screws
(included)



Mod. 00816

VERTICAL FIX
Weight** = 0.27 kg
SWL = 2200 kg
2 x Ø10 mm screws
(included)

100 mm sheave for 16 mm line Safe working load = 3500 kg



Mod. 01001

SWIVEL BLOCK
Weight* = 0.63 kg
SWL = 3500 kg
10 mm HR shackle



Mod. 01007

SIMPLE FIDDLE
Weight* = 0.90 kg
SWL = 3500 kg
10 mm HR shackle



Mod. 01009

SIMPLE WEB
Weight = 0.41 kg
SWL = 3500 kg
For line connection



Mod. 01014

BLOCK PAD-EYE
Weight = 1.01 kg
SWL = 3500 kg
4 x Ø8 mm screws
(not included)



Mod. 7212
Page 189



Mod. 01002

BECKET BLOCK
Weight* = 0.70 kg
SWL = 3500 kg
10 mm HR shackle



Mod. 01008

BECKET FIDDLE
Weight* = 0.90 kg
SWL = 3500 kg
10 mm HR shackle



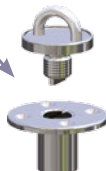
Mod. 01010

WEB BECKET
Weight = 0.48 kg
SWL = 3500 kg
For line connection



Mod. 01015

BLOCK SCREWED
Weight = 1.35 kg
SWL = 3500 kg
4 x Ø10 mm screws
(not included)



Mod. 7312
Page 189



Mod. 01011

FOOT BLOCK
Weight** = 0.56 kg
SWL = 3500 kg
4 x Ø10 mm +
1 x Ø8 mm screws
(included)



Mod. 01012

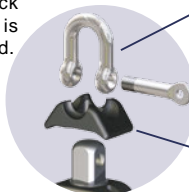
DOUBLE FOOT
Weight** = 1.29 kg
SWL = 3500 kg
4 x Ø10 mm +
1 x Ø8 mm screws
(included)



Mod. 01016

VERTICAL FIX
Weight** = 0.63 kg
SWL = 3500 kg
2 x Ø12 mm screws
(included)

Swivel head lock
and shackle is
always included.



Mod. 010HR

HR Ø10 mm shackle
SWL = 3500 kg
Weight = 114 gr

Mod. Y-B0751

For longitudinal
or transversal
head lock



Mod. 01003

DOUBLE BLOCK
Weight* = 1.02 kg
SWL = 5000 kg
12 mm HR shackle



120 mm sheave for 18 mm line Safe working load = 5000 kg



Mod. 01201

SWIVEL BLOCK

Weight* = 1.08 kg

SWL = 5000 kg

12 mm HR shackle

Swivel head lock and shackle is always included.



Mod. 012HR

HR Ø12 mm shackle

SWL = 5000 kg

Weight = 186 gr

Mod. Y-B0752

For longitudinal or transversal head lock



Mod. 01209

SIMPLE WEB

Weight = 0.74 kg

SWL = 5000 kg

For line connection



Mod. 01202

BECKET BLOCK

Weight* = 1.22 kg

SWL = 5000 kg

12 mm HR shackle



Mod. 01210

WEB BECKET

Weight = 0.88 kg

SWL = 5000 kg

For line connection



Mod. 01214

BLOCK PAD-EYE

Weight = 1.70 kg

SWL = 5000 kg

4 x Ø10 mm screws
(not included)



Mod. 7214

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Mod. 01215

BLOCK SCREWED

Weight = 2.00 kg

SWL = 5000 kg

4 x Ø10 mm screws
(not included)



Mod. 7314

Page 189



Mod. 01211

FOOT BLOCK

Weight** = 0.80 kg

SWL = 5000 kg

5 x Ø10 mm screws
(included)



Mod. 01216

VERTICAL FIX

Weight** = 0.96 kg

SWL = 5000 kg

2 x Ø14 mm screws
(included)



Mod. 01212

DOUBLE FOOT

Weight** = 1.97 kg

SWL = 5000 kg

5 x Ø10 mm screws
(included)



140 mm sheave for 20 mm line

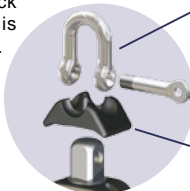
Safe working load = 7000 kg



Mod. 01401

SWIVEL BLOCK
Weight* = 1.50 kg
SWL = 7000 kg
14 mm HR shackle

Swivel head lock
and shackle is
always included.



Mod. 014HR

HR Ø14 mm shackle
SWL = 7000 kg
Weight = 298 gr

Mod. Y-B0846

For longitudinal
or transversal
head lock



Mod. 01409

SIMPLE WEB
Weight = 1.08 kg
SWL = 7000 kg
For line connection



Mod. 01402

BECKET BLOCK
Weight* = 1.70 kg
SWL = 7000 kg
14 mm HR shackle



Mod. 01410

WEB BECKET
Weight = 1.28 kg
SWL = 7000 kg
For line connection



Mod. 01414

BLOCK PAD-EYE
Weight = 2.60 kg
SWL = 7000 kg
6 x Ø10 mm screws
(not included)



Mod. 7216

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Mod. 01415

BLOCK SCREWED
Weight = 3.70 kg
SWL = 7000 kg
6 x Ø10 mm screws
(not included)



Mod. 7316

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Mod. 01411

FOOT BLOCK
Weight** = 1.25 kg
SWL = 7000 kg
5 x Ø12 mm screws
(included)



Mod. 01412

DOUBLE FOOT
Weight** = 2.60 kg
SWL = 7000 kg
5 x Ø12 mm screws
(included)



mainsheet systems

MAINSHEET SYSTEM

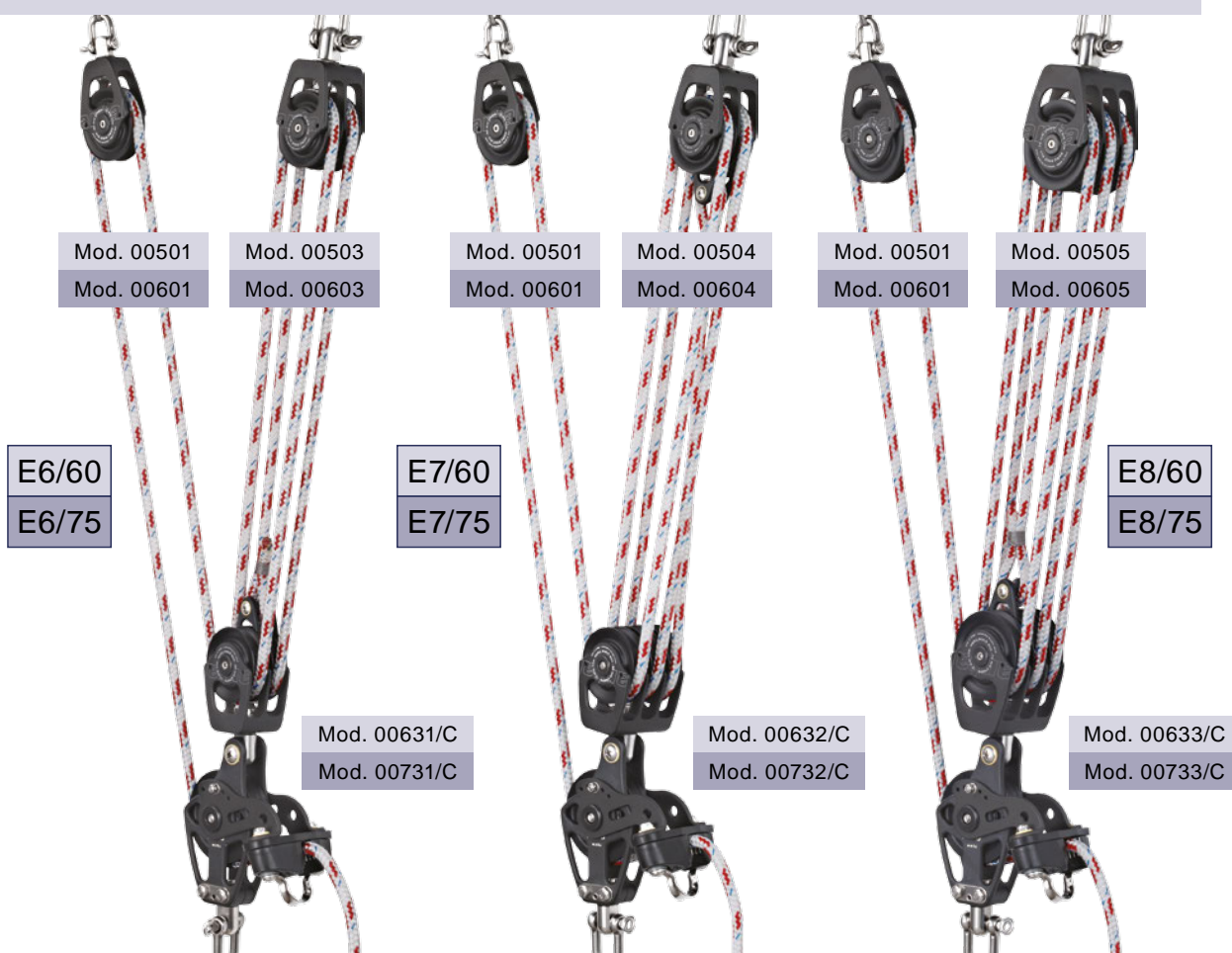
These systems are particularly suitable for the mainsheet control.

2 Sizes are available:

Size 60 for boats up to 36 ft and lines up to Ø=10 mm, main sheave with Cam-Cleat Ø=60 mm, secondary sheave Ø=50 mm, safe working load SWL = 800 kg.

Size 75 for boats up to 40 ft and lines up to Ø=12 mm, main sheave with Cam-Cleat Ø=75 mm, secondary sheave Ø=60 mm, safe working load SWL = 1000 kg.

All sheaves are made of HRM resin with 2 races of ball bearings.



MODEL	E6/60	E6/75	E7/60	E7/75	E8/60	E8/75
POWER	6 : 1	6 : 1	7 : 1	7 : 1	8 : 1	8 : 1
SWL (kg)	800	1000	800	1000	800	1000
PRIMARY SHEAVE Ø (mm)	60	75	60	75	60	75
SECONDARY SHEAVE Ø (mm)	50	60	50	60	50	60

TWO SPEED MAINSHEET TACKLE : 4/8 AND 6/18

The particular configuration adopted permits the use of large diameter sheaves which improve performance of the system; it also ensures maximum block orientation capabilities and therefore the possibility to operate on both sides of the boat. Furthermore,

this reduces the necessary sheet length. The two speeds are controlled by means of two independent lines.

Use 10 mm line for the first speed and 6 mm line for the second speed.

For boats up to 36 ft

For boats up to 40 ft

J80 Breschi - photo - video.com

F4

Mod. 922.602

F6

Mod. 932.652

Mod. 00320

Mod. 00321

8:1

18:1

Mod. 992.602

Mod. 993.653/C

4:1

6:1

F4	MODEL	F6
4 : 1	1 st SPEED	6 : 1
8 : 1	2 st SPEED	18 : 1
800	SWL (Kg)	1000
60	SHEAVE Ø (mm)	65
0.88	TOTAL WEIGHT (Kg)	1.54



XXL blocks

COMPOSITE FIBRE SERIES

The whole “composite fibre” range uses sheaves on composite fibre bearings and double self-captive Delrin ball thrust bearings.

The sheaves are easy to dismantle for cleaning and need no lubrication.

The sides are made of 3571 TA16 light alloy and are thickly anodized to ensure absolute wear-and corrosion proofing, with all the edges smoothed off for better handling.

The nuts and bolts have been replaced with recessed screws and pins, considerably reducing weight and eliminating any projecting parts.

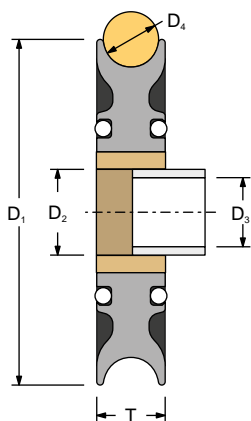
The steel coupling revolves on a fibre washer and can easily be locked in one of two main positions.



HIGH-STRENGTH ALUMINIUM SHEAVES

Sizes 150, 180, 220 and 250 mm use thickly anodized aluminium sheaves. The main bearing is made of high-strength composite fibre impregnated with self-lubricating substances. A double lateral Delrin ball bearing makes the sheaves slide perfectly smoothly.

Sheaves are supplied with the s.steel central hub, they are available separately.



SHEAVE MODEL	D ₁ mm	MATERIAL	T mm	D ₂ mm	D ₃ mm	D ₄ mm	WEIGHT kg	SWL kg
15029/A	150	ALUMINIUM	29	40	34	20	0.90	6500
18035/A	180	ALUMINIUM	35	50	40	24	1.40	9000
21843/A	220	ALUMINIUM	40	50	40	33	3.20	13000
24856/A	250	ALUMINIUM	56	65	48	40	4.70	20000

XXL blocks 150

150 mm sheave for 20 mm line Safe working load = 6500 kg



Mod. 911.154

SINGLE BLOCK

Weight = 1.80 kg

SWL = 6500 kg

Swivel head for
14 mm HR shackle



Mod. 941.154

BLOCK WITH BECKET

Weight = 2.00 kg

SWL = 6500 kg

Swivel head for
14 mm HR shackle



Mod. 981.154

FIDDLE WITH BECKET

Weight = 2.80 kg

SWL = 6500 kg

Swivel head for
14 mm HR shackle



Mod. 910.155/Z

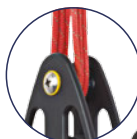
WEB BLOCK

"Strengthened"

Weight = 1.90 kg

SWL = 8000 kg

For line connection



Mod. 940.155/Z

WEB WITH BECKET

"Strengthened"

Weight = 2.02 kg

SWL = 8000 kg

For line connection



Mod. 812.154

BLOCK ON PAD-EYE

Weight = 3.10 kg

SWL = 6500 kg

6 x Ø10 mm screws
(not included)



Mod. 813.154

BLOCK ON SCREWED PAD-EYE

Weight = 4.10 kg

SWL = 6500 kg

6 x Ø10 mm screws
(not included)

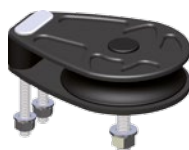
Mod. 7216

Page 189



Mod. 7316

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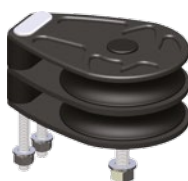
Mod. 831.154

DECK BLOCK

Weight = 1.40 kg

SWL = 6500 kg

Screws = 2 x Ø12 mm
+ 1 x Ø14 mm
(included)



Mod. 832.154

DOUBLE DECK BLOCK

Weight = 2.30 kg

SWL = 6500 kg

Screws = 2 x Ø12 mm
+ 1 x Ø14 mm
(included)



XXL blocks 180

180 mm sheave for 24 mm line Safe working load = 9000 kg



Mod. 911.184

SINGLE BLOCK

Weight = 2.85 kg

SWL = 9000 kg

Swivel head for
16 mm HR shackle



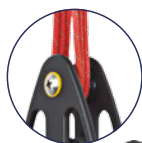
Mod. 941.184

BLOCK WITH BECKET

Weight = 3.20 kg

SWL = 9000 kg

Swivel head for
16 mm HR shackle



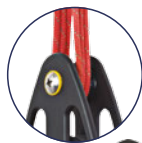
Mod. 910.185

WEB BLOCK

Weight = 2.60 kg

SWL = 9000 kg

For line connection



Mod. 940.185

WEB WITH BECKET

Weight = 2.70 kg

SWL = 9000 kg

For line connection



Mod. 812.184

BLOCK ON PAD-EYE

Weight = 5.25 kg

SWL = 9000 kg

6 x Ø10 mm screws
(not included)



Mod. 813.184

BLOCK ON SCREWED PAD-EYE

Weight = 6.60 kg

SWL = 9000 kg

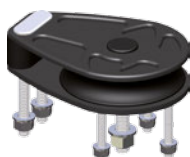
6 x Ø10 mm screws
(not included)

Mod. 7220

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Mod. 7321

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Mod. 831.184

DECK BLOCK

Weight = 2.30 kg

SWL = 9000 kg

Screws = 3 x Ø10 mm
+ 3 x Ø14 mm
(included)



Mod. 832.184

DOUBLE DECK BLOCK

Weight = 3.65 kg

SWL = 9000 kg

Screws = 3 x Ø10 mm
+ 3 x Ø14 mm
(included)

full scale

antal
MADE IN

XXL blocks 220 / 250

220 mm sheave for 30 mm line Safe working load = 13000 kg



Mod. 911.224

SINGLE BLOCK
Weight = 9.60 kg
SWL = 13000 kg
Swivel head for
20 mm HR shackle



Mod. 941.224

BLOCK WITH BECKET
Weight = 10.20 kg
SWL = 13000 kg
Swivel head for
20 mm HR shackle

full scale
220 mm



Mod. 910.225

WEB BLOCK
Weight = 7.65 kg
SWL = 13000 kg
For line connection



Mod. 940.225

WEB WITH BECKET
Weight = 8.25 kg
SWL = 13000 kg
For line connection

250 mm sheave for 40 mm line Safe working load = 20000 kg



Mod. 911.254

SINGLE BLOCK
Weight = 14.35 kg
SWL = 20000 kg
Swivel head for
24 mm HR shackle



Mod. 941.254

BLOCK WITH BECKET
Weight = 15.05 kg
SWL = 20000 kg
Swivel head for
24 mm HR shackle



Mod. 910.255

WEB BLOCK
Weight = 10.35 kg
SWL = 20000 kg
For line connection



Mod. 940.255

WEB WITH BECKET
Weight = 11.05 kg
SWL = 20000 kg
For line connection

looper series

LOOPER is an ultralight one-piece-frame block provided with a dyneema Snap-Loop for fast, easy and safe connections.

Characteristics:

- hard black anodized one-piece-aluminium frame;
- resin sheave on composite fibre bushing and double side ball bearings;
- Dyneema Snap-Loop.

THE ONE PIECE FRAME

The one-piece aluminium extruded body is the strongest and lightest solution, no assembling pin rivets or screws and nuts.
CNC machined - polished - hard black anodized and teflon coated.

THE COMPOSITE FIBRE SHEAVE

The resin (aluminium on larger mod) sheave runs on the main Composite Fibre bearing and on a ground s.steel hub: low friction, high-loads and no lubricant required.

The self-captive side ball bearing reduces the friction and makes disassembling, cleaning and maintenance very easy.

Sheaves are supplied with the s.steel hub, they are available separately.



For a "tied looper" the block without Snap-Loop is also available, the line is not included.

For this version without snap-loop replace **LS** with **LL** in the model number.

For Example:

LS1080 is the 80 mm Looper with Snap-Loop,
LL1080 is the same without Snap-Loop.

SNAP LOOP AND DOG-BONE FASTENINGS

Dyneema Snap Loops including “Dog-Bone” aluminium fastenings are available.

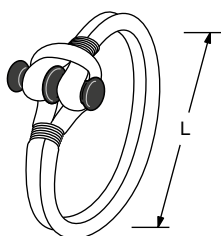
Dog-Bone fastenings are also available separately so that Loops of any length can be prepared.

SNAP LOOP

These snap loops are obtained with a spliced Dyneema line without cover and an aluminium dog-bone.



mod. LS2070

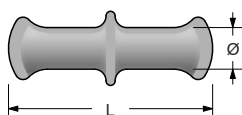


MODEL	DYNEEMA Ø mm	BL kg	SWL* kg	L mm	WEIGHT gr
LS2060	4	3000	1000	100	11
LS2070	5	5200	1600	110	20
LS2080	6	6600	2200	125	44
LS2100	8	11000	3500	160	81

* The Safe Working Load SWL is 1/3 of the breaking load, obtained from traction tests on a new Loop.

DOG-BONE

You can prepare your special snap loop using Antal aluminium dog-bones, separately available.



MODEL	FOR DYNEEMA Ø mm	Ø mm	L mm	WEIGHT gr
LS2062	4	6.5	30	3
LS2072	5	8.0	37	6
LS2082	6	10.0	46	13
LS2102	8	11.5	55	22
LS2122	10	13.5	67	36
LS2142	12	16.0	79	55

DYNEEMA PAD-EYE

Special eye-strap designed for Dyneema Loop, aluminium made, hard black anodizing. For more information, see pag. 174



looper

SIZE 60

sheave diameter = 60 mm
line diameter = 10 mm
SWL = 1000 kg



Mod. LS2060

4 MM DYNEEMA LOOP
Weight = 11 gr



Mod. LS1060

SIMPLE
Weight* = 106 gr



Mod. LS1062

DOUBLE
Weight* = 196 gr



Mod. LS1061

SIMPLE BECKET
Weight* = 116 gr



Mod. LS1063

DOUBLE BECKET
Weight* = 206 gr

SIZE 70

sheave diameter = 70 mm
line diameter = 12 mm
SWL = 1600 kg



Mod. LS2070

5 MM DYNEEMA LOOP
Weight = 20 gr



Mod. LS1070

SIMPLE
Weight* = 155 gr



Mod. LS1072

DOUBLE
Weight* = 285 gr



Mod. LS1071

SIMPLE BECKET
Weight* = 172 gr



Mod. LS1073

DOUBLE BECKET
Weight* = 302 gr

SIZE 80

sheave diameter = 80 mm
line diameter = 14 mm
SWL = 2200 kg



Mod. LS2080

6 MM DYNEEMA LOOP
Weight = 44 gr



Mod. LS1080

SIMPLE
Weight* = 268 gr



Mod. LS1082

DOUBLE
Weight* = 490 gr



Mod. LS1081

SIMPLE BECKET
Weight* = 290 gr

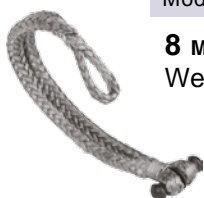


Mod. LS1083

DOUBLE BECKET
Weight* = 510 gr

SIZE 100

sheave diameter = 100 mm
line diameter = 16 mm
SWL = 3500 kg



Mod. LS2100

8 MM DYNEEMA LOOP
Weight = 81 gr



Mod. LS1100

SIMPLE
Weight* = 438 gr



Mod. LS1101

SIMPLE BECKET
Weight* = 473 gr

SIZE 120

sheave diameter = 120 mm
line diameter = 18 mm
SWL = 6000 kg



Mod. LS2120

10 MM DYNEEMA LOOP
Weight = 150 gr



Mod. LS1120

SIMPLE
Weight* = 890 gr



Mod. LS1121

SIMPLE BECKET
Weight* = 925 gr

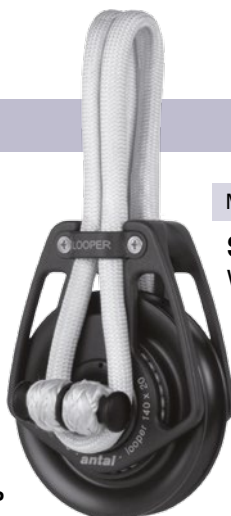
SIZE 140

sheave diameter = 140 mm
line diameter = 20 mm
SWL = 8000 kg



Mod. LS2140

12 MM DYNEEMA LOOP
Weight = 219 gr



Mod. LS1140

SIMPLE
Weight* = 1129 gr



Mod. LS1141

SIMPLE BECKET
Weight* = 1179 gr

A316 s.steel series

CLASSIC LINE

This stainless steel series, with a traditional design, is conceived especially for classic boats.

The line includes 6 different sizes with diameters from 65 to 180 mm and Safe Working Load up to 9000 kg.

Perfectly polished AISI 316 stainless steel cheekplates and accessories, fully rounded corners for greater manageability, nuts and bolts replaced by pins and recessed screws to eliminate any protruding parts.

Each size is available in numerous versions as described in the following pages.



CAM CLEAT

All models can be supplied with cam cleat. Just add **/C** to the model code when ordering.



SHEAVES

Resin or aluminium sheaves in larger models are easy to dismantle and work on a main composite fibre bearing and two side ball bearings (self-captive).



Sphinx 12m SI - Robbe & Berking - Germany

s.steel block 65

65 mm sheave for 12 mm line

Safe working load = 800 kg



Mod. S0601

SINGLE BLOCK
Weight = 0.29 kg
SWL = 800 kg
Swivel head for
6 mm shackle*



Mod. S0602

SINGLE WITH BECKET
Weight = 0.32 kg
SWL = 800 kg
Swivel head for
6 mm shackle*

real size



* shackle not included



CAM-CLEAT

All models are available with
cam-cleat, add **/C** to the
model code.

Weight = + 0.18 kg
Max load = 160 kg



Mod. S0603

DOUBLE BLOCK
Weight = 0.51 kg
SWL = 1200 kg
Fixed head for
8 mm shackle*



Mod. S0604

DOUBLE WITH BECKET
Weight = 0.54 kg
SWL = 1200 kg
Fixed head for
8 mm shackle*



Mod. S0605

TRIPLE BLOCK
Weight = 0.70 kg
SWL = 1200 kg
Fixed head for
8 mm shackle*



Mod. S0606

TRIPLE WITH BECKET
Weight = 0.73 kg
SWL = 1200 kg
Fixed head for
8 mm shackle*



Mod. S0609

WEBBING BLOCK
Weight = 0.25 kg
SWL = 800 kg
For line connection



Mod. S0616

STAND-UP BLOCK
Weight = 0.37 kg
SWL = 800 kg
1 x Ø12 mm screw
(included)



Mod. S0611

DECK BLOCK
Weight = 0.30 kg
SWL = 800 kg
2 x Ø8 mm screws
(included)



Mod. S0612

DOUBLE DECK BLOCK
Weight = 0.46 kg
SWL = 800 kg
2 x Ø8 mm screws
(included)



Mod. S0613

BLOCK ON U-BOLT
Weight = 0.36 kg
SWL = 800 kg
2 x Ø6 mm screws
(included)



Mod. 7106

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Mod. S0614

BLOCK ON PAD-EYE
Weight = 0.38 kg
SWL = 800 kg
2 x Ø6 mm screws
(not included)



Mod. 7206

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Mod. S0615

**BLOCK ON
SCREWED PAD-EYE**
Weight = 0.45 kg
SWL = 800 kg
2 x Ø6 mm screws
(not included)



Mod. 7306

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s.steel block 75

75 mm sheave for 14 mm line

Safe working load = 1500 kg



Mod. S0701

SINGLE BLOCK
Weight = 0.39 kg
SWL = 1500 kg
Swivel head for
8 mm shackle*



Mod. S0702

SINGLE WITH BECKET
Weight = 0.46 kg
SWL = 1500 kg
Swivel head for
8 mm shackle*



Mod. S0703

DOUBLE BLOCK
Weight = 0.68 kg
SWL = 2300 kg
Fixed head for
10 mm shackle*



Mod. S0704

DOUBLE WITH BECKET
Weight = 0.75 kg
SWL = 2300 kg
Fixed head for
10 mm shackle*



Mod. S0705

TRIPLE BLOCK
Weight = 0.91 kg
SWL = 2300 kg
Fixed head for
10 mm shackle*



Mod. S0706

TRIPLE WITH BECKET
Weight = 0.98 kg
SWL = 2300 kg
Fixed head for
10 mm shackle*



Mod. S0711

DECK BLOCK
Weight = 0.35 kg
SWL = 1500 kg
2 x Ø6 mm +
1 x Ø8 mm screws
(included)



Mod. S0712

DOUBLE DECK BLOCK
Weight = 0.62 kg
SWL = 1500 kg
2 x Ø6 mm +
1 x Ø8 mm screws
(included)



Mod. S0731

CLASSIC DECK BLOCK
Weight = 0.86 kg
SWL = 1500 kg
4 x Ø8 mm screws
(included)



Mod. S0732

CLASSIC DOUBLE DECK BLOCK
Weight = 1.32 kg
SWL = 1500 kg
4 x Ø8 mm screws
(included)



Mod. S0713

BLOCK ON U-BOLT
Weight = 0.55 kg
SWL = 1500 kg
2 x Ø8 mm screws
(included)



Mod. S0714

BLOCK ON PAD-EYE
Weight = 0.65 kg
SWL = 1500 kg
4 x Ø6 mm screws
(not included)



Mod. 7108

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Mod. 7208

Page 189



real size

* shackle not included

Deck blocks are available with runner's eyebolt, add /V to the model code.



CAM-CLEAT

All models are available with cam-cleat, add /C to the model code.
Weight = + 0.36 kg
Max load = 160 kg



Mod. S0715

BLOCK ON SCREWED PAD-EYE
Weight = 0.95 kg
SWL = 1500 kg
4 x Ø6 mm screws
(not included)



Mod. 7308

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s.steel block 90

90 mm sheave for 16 mm line

Safe working load = 2500 kg



Mod. S0901

SINGLE BLOCK
Weight = 0.73 kg
SWL = 2500 kg
Swivel head for
10 mm shackle*



Mod. S0902

SINGLE WITH BECKET
Weight = 0.85 kg
SWL = 2500 kg
Swivel head for
10 mm shackle*



Mod. S0903

DOUBLE BLOCK
Weight = 1.13 kg
SWL = 3300 kg
Fixed head for
12 mm shackle*



Mod. S0904

DOUBLE WITH BECKET
Weight = 1.25 kg
SWL = 3300 kg
Fixed head for
12 mm shackle*



Mod. S0905

TRIPLE BLOCK
Weight = 1.70 kg
SWL = 3300 kg
Fixed head for
12 mm shackle*



Mod. S0906

TRIPLE WITH BECKET
Weight = 1.83 kg
SWL = 3300 kg
Fixed head for
12 mm shackle*



Mod. S0911

DECK BLOCK
Weight = 0.70 kg
SWL = 2500 kg
2 x Ø8 mm +
1 x Ø10 mm screws
(included)



Mod. S0912

DOUBLE DECK BLOCK
Weight = 1.18 kg
SWL = 2500 kg
2 x Ø8 mm +
1 x Ø10 mm screws
(included)



Mod. S0931

**CLASSIC
DECK BLOCK**
Weight = 1.40 kg
SWL = 2500 kg
4 x Ø8 mm screws
(included)



Mod. S0932

**CLASSIC
DOUBLE DECK BLOCK**
Weight = 2.18 kg
SWL = 2500 kg
4 x Ø8 mm screws
(included)



Mod. S0914

BLOCK ON PAD-EYE
Weight = 1.05 kg
SWL = 2500 kg
4 x Ø8 mm screws
(not included)



Mod. 7210

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Mod. S0915

**BLOCK ON
SCREWED PAD-EYE**
Weight = 1.33 kg
SWL = 2500 kg
4 x Ø8 mm screws
(not included)



Mod. 7310

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real size



* shackle not included



Deck blocks are available with runner's eyebolt, add /V to the model code.

s.steel block 120

120 mm sheave for 18 mm line Safe working load = 4500 kg



Mod. S1201

SINGLE BLOCK
Weight = 1.28 kg
SWL = 4500 kg
Swivel head for
12 mm HR shackle*



Mod. S1202

SINGLE WITH BECKET
Weight = 1.46 kg
SWL = 4500 kg
Swivel head for
12 mm HR shackle*

real size



Mod. S1203

DOUBLE BLOCK
Weight = 1.95 kg
SWL = 6000 kg
Fixed head for
14 mm HR shackle*



Mod. S1204

DOUBLE WITH BECKET
Weight = 2.13 kg
SWL = 6000 kg
Fixed head for
14 mm HR shackle*



Mod. S1211

DECK BLOCK
Weight = 1.13 kg
SWL = 4500 kg
2 x Ø10 mm +
1 x Ø12 mm screws
(included)



Mod. S1212

DOUBLE DECK BLOCK
Weight = 1.74 kg
SWL = 4500 kg
2 x Ø10 mm +
1 x Ø12 mm screws
(included)

Deck blocks are available with runner's eyebolt, add /V to the model code.



Mod. S1231

CLASSIC DECK BLOCK
Weight = 2.15 kg
SWL = 4500 kg
4 x Ø10 mm screws
(included)



Mod. S1232

CLASSIC DOUBLE DECK BLOCK
Weight = 3.70 kg
SWL = 4500 kg
4 x Ø10 mm screws
(included)



Mod. S1214

BLOCK ON PAD-EYE
Weight = 2.28 kg
SWL = 4500 kg
4 x Ø10 mm screws
(not included)



Mod. S1215

BLOCK ON SCREWED PAD-EYE
Weight = 2.58 kg
SWL = 4500 kg
4 x Ø10 mm screws (not included)



Mod. 7214

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Mod. 7314

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* shackle not included

s.steel block 150

150 mm sheave for 20 mm line Safe working load = 6500 kg

real size



Mod. S1501

SINGLE BLOCK
Weight = 2.74 kg
SWL = 6500 kg
Swivel head for
14 mm HR shackle*



Mod. S1502

SINGLE WITH BECKET
Weight = 3.04 kg
SWL = 6500 kg
Swivel head for
14 mm HR shackle*



Mod. S1511

DECK BLOCK
Weight = 2.13 kg
SWL = 6500 kg
2 x Ø12 mm +
1 x Ø14 mm screws
(included)



Mod. S1512

DOUBLE DECK BLOCK
Weight = 3.50 kg
SWL = 6500 kg
2 x Ø12 mm +
1 x Ø14 mm screws
(included)



Mod. S1531

CLASSIC DECK BLOCK
Weight = 4.57 kg
SWL = 6500 kg
4 x Ø12 mm screws
(included)



Mod. S1532

CLASSIC DOUBLE DECK BLOCK
Weight = 7.91 kg
SWL = 6500 kg
4 x Ø12 mm screws
(included)



Deck blocks are available with runner's eyebolt, add /V to the model code.



Mod. S1514

BLOCK ON PAD-EYE
Weight = 4.71 kg
SWL = 6500 kg
6 x Ø10 mm screws
(not included)



Mod. 7216

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Mod. S1515

BLOCK ON SCREWED PAD-EYE
Weight = 6.24 kg
SWL = 6500 kg
6 x Ø10 mm screws
(not included)



Mod. 7316

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* shackle not included

s.steel block 180

180 mm sheave for 24 mm line Safe working load = 9000 kg



Mod. S1801

SINGLE BLOCK

Weight = 4.11 kg

SWL = 9000 kg

Swivel head for
16 mm HR shackle*



Mod. S1802

SINGLE WITH BECKET

Weight = 4.61 kg

SWL = 9000 kg

Swivel head for
16 mm HR shackle*

real size



Mod. S1811

DECK BLOCK

Weight = 3.31 kg

SWL = 9000 kg

2 x Ø14 mm +
1 x Ø16 mm screws
(included)



Mod. S1812

DOUBLE DECK BLOCK

Weight = 5.26 kg

SWL = 9000 kg

2 x Ø14 mm +
1 x Ø16 mm screws
(included)



Mod. S1831

CLASSIC

DECK BLOCK

Weight = 6.86 kg

SWL = 9000 kg

4 x Ø14 mm screws
(included)



Mod. S1832

**CLASSIC DOUBLE
DECK BLOCK**

Weight = 11.8 kg

SWL = 9000 kg

4 x Ø14 mm screws
(included)



Deck blocks are available with
runner's eyebolt, add **/V** to the
model code.



Mod. S1814

BLOCK ON PAD-EYE

Weight = 7.57 kg

SWL = 9000 kg

6 x Ø10 mm screws
(not included)



Mod. 7220

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Mod. S1815

**BLOCK ON
SCREWED PAD-EYE**

Weight = 9.51 kg

SWL = 9000 kg

6 x Ø10 mm screws
(not included)



Mod. 7321

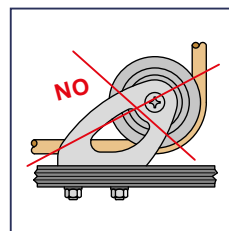
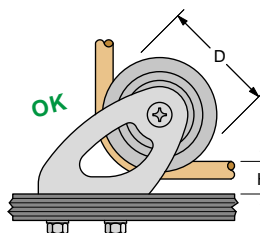
Page 189

* shackle not included

halyard blocks

HALYARD BLOCKS

This solution, designed for halyards at the base of the mast, keeps the line as close to the deck as possible. A-316 s.steel base. All these models are fitted with double side ball bearings. Mounting screws not included.



MODEL	Ø LINE mm	D mm	H mm	SWL kg	WEIGHT kg	BOLTS N° x Ø mm
815.452	10	45	14	450	0.08	2 x Ø5
815.552	12	55	16	600	0.12	2 x Ø6
815.652	12	65	18	800	0.17	2 x Ø8
815.075	14	75	22	1500	0.26	2 x Ø8
815.090	16	90	24	2500	0.39	2 x Ø10
815.120	18	120	32	4500	1.20	4 x Ø10
815.150	20	150	41	6500	3.30	4 x Ø12
815.180	24	180	51	9000	4.70	4 x Ø16

MAXI BLOCK D=300 mm

Working load = **30.000 kg**

Weight = 48,50 kg

Custom made for Perini Navi

AISI 316 CUSTOM PRODUCTS

Custom s.steel products are available on request.



hollow pin deck blocks

HOLLOW PIN DECK BLOCK 75, 90, 120 mm

The sheave rotates on a hollow pin with the line passing through the pin's centre.

This type of arrangement reduces the height of the line off the deck, and the side loads on the block.

The line position and its direction to the winch does not change, even when the sheave is articulated off-centre.

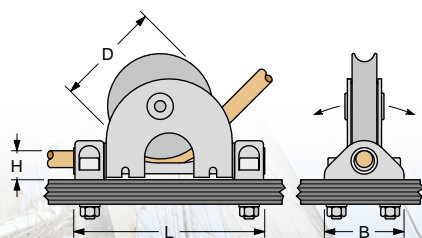
Body completely made in polished s.steel. Sheave on Composite Fibre bearing and two side ball bearing.

Mounting screws, nuts and washers are included.



Mod. 816.075

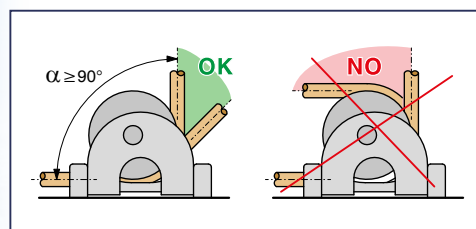
Mod. 816.090



MODEL	Ø LINE mm	D mm	H mm	L mm	B mm	SWL kg	WEIGHT* kg	BOLTS N° x Ø mm
816.075	12	75	20	132	60	1500	0.62	4 x Ø8
816.090	14	90	24	157	66	2500	1.15	4 x Ø10
816.120	18	120	32	190	80	4500	1.95	4 x Ø12



"Nave Italia" onlus



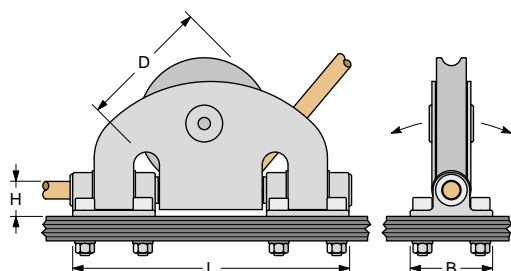
HOLLOW PIN DECK BLOCK 150, 180 mm

The larger models with 150 and 180 mm sheaves are equipped with a double base, where each base is fixed with 4 screws.

Mounting screws, nuts and washers are included.



Mod. 816.150



MODEL	Ø LINE mm	D mm	H mm	L mm	B mm	SWL kg	WEIGHT* kg	BOLTS N° x Ø mm
816.150	20	150	30	315	94	6500	5.70	8 x Ø10
816.180	22	180	33	373	108	9000	8.70	8 x Ø12

opf hollow pin blocks

HOLLOW PIN DECK BLOCK

The sheave rotates on a hollow pin with the line passing through the pin's centre.

This type of arrangement reduces the height of the line off the deck, and the side loads on the block.

The line position and its direction to the winch does not change, even when the sheave is articulated off-centre.

Body completely made in hard black anodized aluminium.

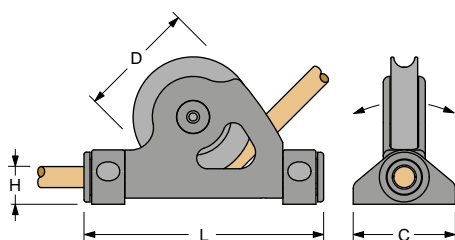
Sheave on Composite Fibre bearing and two side ball bearing.

Insulating washer under the fixing screws.

Mounting screws, nuts and washers are included.



Mod. 00821



MODEL	Ø LINE mm	D mm	H mm	L mm	C mm	SWL kg	WEIGHT* kg	BOLTS N° x Ø mm
00621	12	60	19	121	57	1300	0.28	4 x Ø6
00821	14	80	25	160	68	2200	0.49	4 x Ø8
01021	16	100	29	196	79	3500	0.84	4 x Ø10

HOLLOW PIN DECK BLOCK WITH CAM-CLEAT

The smallest model with 60 mm sheave is also available with a Cam-Cleat, adjustable to three positions.

Mounting screws, nuts and washers are included.



Mod. 00621/C

MODEL	Ø LINE mm	D mm	H mm	L mm	C mm	SWL kg	WEIGHT* kg	BOLTS N° x Ø mm
00621/C	12	60	19	121	57	1300**	0.39	4 x Ø6

** Max load on Cam-Cleat is 150 kg.



mast blocks

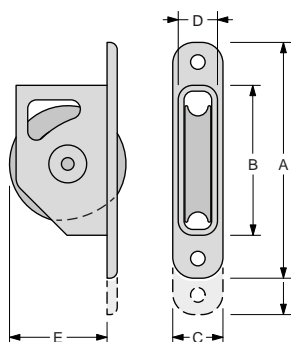
MAST BLOCKS

12 different sizes with diameters from 40 to 140 mm for working loads (SWL) up to 9000 kg.

Hard black anodized aluminium frame with insulating washers for corrosion protection.

Resin sheaves (aluminium sheaves for 100, 120 and 140 mm only) with composite fibre main bearing (not on size 40) and double side self-captive ball bearing.

On request custom models for higher loads are also available.



Mod. 00818/Z

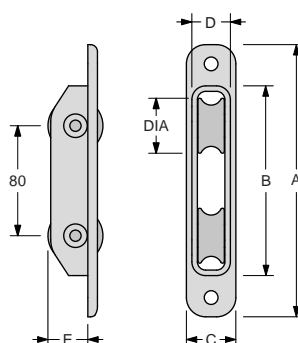
MODEL	DIA mm	Ø LINE mm	A mm	B mm	C mm	D mm	E mm	SWL kg	WEIGHT kg	BOLTS N° x Ø mm
00418	40	8	107	58	24.2	18.2	31.5	400*	0.07	2 x Ø6
00518	50	12	118	69.5	29.5	22.5	37	800*	0.12	2 x Ø6
00618	60	12	130	81.5	29.5	22.5	49	800*	0.15	2 x Ø6
00718	70	12	140	91.5	29.5	22.5	53.5	1300*	0.16	2 x Ø6
00718/Z			158					2000*	0.23	3 x Ø6
00818	80	14	162	103	34.5	27	62.5	2200*	0.24	2 x Ø8
00818/Z			187					3000*	0.34	3 x Ø8
01018	100	16	198	126	39	31	81.5	3500*	0.44	2 x Ø10
01018/Z			226					4500*	0.62	3 x Ø10
01218	120	18	251	151	47	37	103	5000*	0.97	3 x Ø10
01218/Z			263					7000*	1.08	3 x Ø12
01418/Z	140	20	286	174	49	39	120	9000*	1.55	3 x Ø12

* Safe Working Load for the sheave

DUAL SHEAVE MAST BLOCK

The Dual sheave mast block with 2 x 40 mm sheaves for lines up to 16 mm solves the problem of the wear of the halyards coming out of the mast.

This solution is also suitable for running a line from above to below deck.



Mod. 00418/D

00418/D	2 x 40	16	198	138	36	28	29	2500**	0.26	2 x Ø8
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** Safe Working Load for the halyard

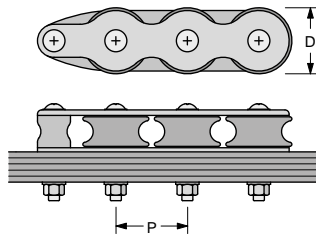
ORGANIZERS D=40, 50, 60 AND 70 mm

Groups of 2 to 6 sheaves in 4 diameters of 40, 50, 60 and 70 mm.

The 40 and 50 mm sheaves are manufactured in high-strength resin with a double side ball bearing. The 60 and 70 mm sheaves are manufactured in aluminium, hard black anodized, with a main composite fibre bearing and 2 side ball bearings.

Mounting screws, nuts and washers are included.

These new organizers do not disassemble after tacking off the screws.



SHEAVE SWL: the maximum Safe Working Load on the single sheave.

ORGANIZER SWL: the maximum Safe Working Load on the organizer.



Double version also available, just add /D to the model number.



D mm	LINE mm	N° SHEAVES	MODEL	LENGTH mm	P mm	WEIGHT* kg	SHEAVE SWL (kg)	ORGANIZER SWL (kg)	BOLTS N° x Ø mm
40	Ø 14	2	D420	111	44	0.13	800	800	3 x Ø6
		3	D430	155		0.19		1200	4 x Ø6
		4	D440	199		0.24		1600	5 x Ø6
		5	D450	243		0.30		2000	6 x Ø6
		6	D460	287		0.35		2400	7 x Ø6
50	Ø 16	2	D520	133	52	0.20	1200	1200	3 x Ø8
		3	D530	185		0.29		1800	4 x Ø8
		4	D540	237		0.37		2400	5 x Ø8
		5	D550	289		0.46		3000	6 x Ø8
		6	D560	341		0.54		3600	7 x Ø8
60	Ø 18	2	D620	163	65	0.48	2200	2200	3 x Ø10
		3	D630	228		0.69		3300	4 x Ø10
		4	D640	293		0.91		4400	5 x Ø10
		5	D650	358		1.13		5500	6 x Ø10
		6	D660	423		1.35		6600	7 x Ø10
NEW 70	Ø 20	2	D720	190	76	0.74	3200	3200	3 x Ø12
		3	D730	266		1.07		4800	4 x Ø12
		4	D740	342		1.40		6400	5 x Ø12
		5	D750	418		1.74		8000	6 x Ø12
		6	D760	494		2.07		9600	7 x Ø12

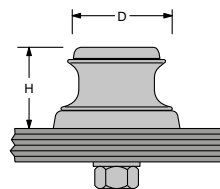
* Weight without screws, washers and nuts.

TURNING SHEAVES

Mounted aft of a set of rope clutches, the turning sheave redirects each line to the most suitable winch.

Mounting screws, nuts and washers are included.

MODEL	D mm	H mm	SWL kg	WEIGHT* kg	BOLTS N° x Ø mm
821.052	50	33	800	0.10	1 x Ø10
821.062	60	38	1200	0.12	1 x Ø12
821.074	70	44	1800	0.45	4 x Ø8



Mod. 821.062

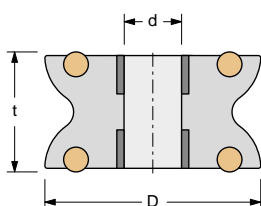
tulip series

TULIP SERIES SHEAVES

The TULIP sheaves are fixed sheaves that do not turn in the direction of manoeuvres since they accept quite different lead angles.

The choice of a Tulip sheave instead of a revolving block comes from the need to reduce bulk and weight.

The sheave, with an axial bearing in composite fibre and large round bearings (self-captive) in Torlon for side loads, is in anodized and Teflon coated aluminium and can handle very high loads.

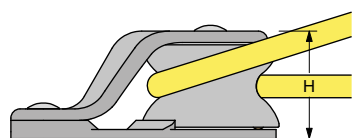
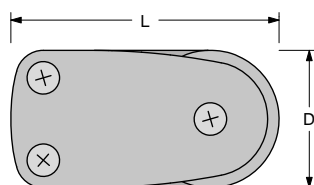


MODEL	D mm	Ø LINE mm	d mm	t mm	SWL kg	WEIGHT kg
801.045*	45	12	12	31	1000	0.04
801.060	60	14	15	38	2200	0.16
801.071	70	14	15	38	3000	0.19
801.090	90	14	20	50	5000	0.45
801.110	110	16	30	60	9000	0.83

* The D=45 mm sheave is resin made with Delrin side ball bearings.

TULIP FOOTBLOCK

Base and cover in hard black aluminium.
Mounting screws, nuts and washers are included.



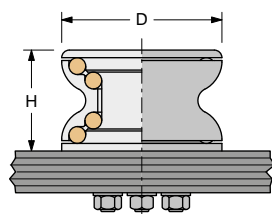
MODEL	D mm	Ø LINE mm	L mm	H mm	SWL kg	WEIGHT*	SCREWS N° x Ø mm
819.045	45	12	92	42	1000	0.19	1xØ8 + 2xØ6
819.060	60	14	116	51	1600	0.43	1xØ10 + 2xØ8
819.070	70	14	132	51	2200	0.60	1xØ10 + 2xØ8
819.090	90	14	163	63	3000	1.10	1xØ12 + 2xØ10

* Weight without screws, washers and nuts.

TURNING TULIP SHEAVE

This sheave is fitted with 4 wide Torlon ball bearings, this is the best solution when it is necessary to redirect the line to any angle.

Mounting screws, nuts and washers are included.



MODEL	D mm	Ø LINE mm	H mm	SWL kg	WEIGHT*	SCREWS N° x Ø mm
821.050	50	10	40	1000	0.14	1 x Ø10
821.070	70	12	52	1400	0.35	1 x Ø12
821.100	100	14	66	3000	0.90	4 x Ø8

* Weight without screws, washers and nuts.

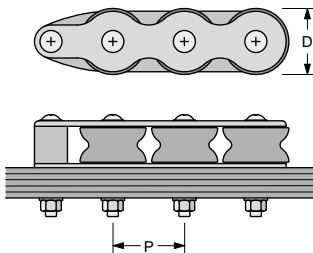
tulip organizers

HORIZONTAL TULIP ORGANIZERS

With “Tulip” sheaves organizers can also be made. Batteries from 2 to 6 sheaves are available, with diameters 45 and 60 mm.

The 45 mm sheaves are in high resistance resin, with a “self-captive” double side ball bearing. The 60 mm sheave, with an axial bearing in composite fibre and large round bearings (self-captive) in Torlon for side loads, is in anodized and Teflon-coated aluminium and can handle very high loads.

Mounting screws, nuts and washers are included.



SHEAVE SWL: the max Safe Working Load on the single sheave.

ORGANIZER SWL: the max Safe Working Load on the organizer.



Mod. T540

Mod. T530

D mm	LINE mm	N° SHEAVES	MODEL	LENGTH mm	P mm	WEIGHT* kg	SHEAVE SWL (kg)	ORGANIZER SWL (kg)	BOLTS N° x Ø mm
45	Ø 12	2	T520	132	52	0.23	1000	1200	3 x Ø8
		3	T530	184		0.33		1800	4 x Ø8
		4	T540	236		0.42		2400	5 x Ø8
		5	T550	288		0.52		3000	6 x Ø8
		6	T560	340		0.61		3600	7 x Ø8
60	Ø 14	2	T620	160	65	0.48	2200	2200	3 x Ø10
		3	T630	225		0.69		3300	4 x Ø10
		4	T640	290		0.91		4400	5 x Ø10
		5	T650	355		1.13		5500	6 x Ø10
		6	T660	420		1.35		6600	7 x Ø10

* Weight without screws, washers and nuts.

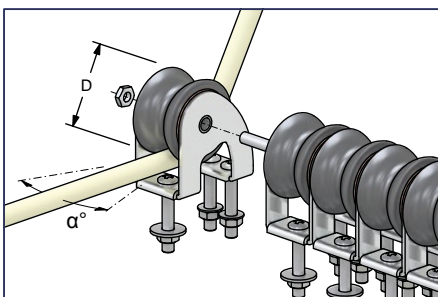
VERTICAL TULIP BLOCKS

These vertical blocks are fitted with Tulip sheaves that accept very different lead angles.

This is a small and light solution that replaces traditional adjustable blocks.

Mounting screws, nuts and washers included.

More vertical blocks can be joined to form a set.



Mod. 817.050
VERTICAL

Mod. 818.050
OVER THE TOP

MODEL	D mm	Ø LINE mm	α°	SWL kg	WEIGHT* kg	SCREWS N° x Ø mm
VERTICAL						
817.050	45**	12	40°	1000	0.16	2 x Ø6
817.060	60	14	40°	2200	0.39	3 x Ø8
OVER THE TOP						
818.050	45**	12	40°	1000	0.16	2 x Ø6
818.060	60	14	40°	2200	0.39	3 x Ø8

* Weight without screws, washers and nuts.

** The D=45 mm sheave is resin made with Delrin side ball bearings.

antal

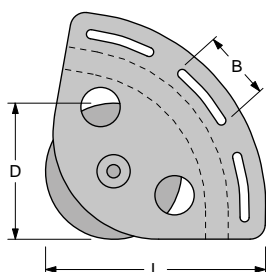
mainsail blocks

CLEW BLOCKS

Solution designed to solve the connection of a sheave to the furling mainsail clew efficiently. The block is contained within the size of the sail, thus allowing a larger surface of the mainsail to be used.

The choice of materials guarantees the least weight as well as a very good mechanical resistance to the environment. Particular care has been taken over the ease of connection which is obtained by normal "webbing". This ensures moreover a very good distribution of the load on the sail.

MATERIALS: Cheek plates are made of anodized aluminium. Also polished s. steel solutions are available on request.



MODEL	Ø LINE mm	D mm	L mm	B mm	SWL kg	WEIGHT kg
991.073	14	70	112	3 x 36	1000	0.23
991.093	16	90	145	3 x 46	2000	0.45
991.124	18	120	190	4 x 46	3000	1.04
991.154	20	150	225	4 x 52	4000	2.05
991.184	24	180	265	5 x 52	8000	2.65

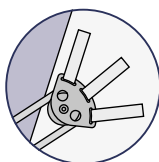
REEF BLOCKS

The blocks are connected to the leech of the mainsail with webbing, and reduce point loading on the mainsail when reefing. The small diameter sheaves are suitable to very high loads.

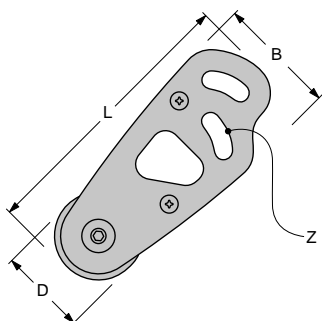
The center hole can be used as a safety connection to the boom when reefed.

The small version (D=50 mm) is for boats to 50 ft, larger (D=120 mm) for boats to 100 ft.

If a larger sheave is required and if higher weight and larger sizes are acceptable, then the clew blocks described above can be considered.



Mod. 994.075



MODEL	Ø LINE mm	D mm	L mm	B mm	Z mm	SWL kg	WEIGHT kg
994.055	14	50	143	65	20	1500	0.22
994.065	16	60	178	79	20	3000	0.37
994.075	18	70	204	88	25	4500	0.70
994.085	20	80	238	112	35	5500	0.90
994.095	24	100	292	140	45	8000	1.30
994.125	28	120	357	170	60	10000	2.90

special blocks

2:1

THB
TWIN HALYARD BLOCKS



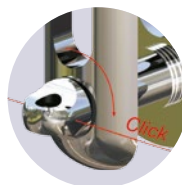
TWIN HALYARD BLOCKS

The "Twin-halyard block" is specially made for a 2 to 1 main halyard.

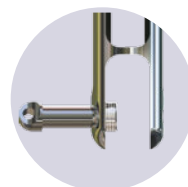
The very small sheave is aluminium made with a Composite Fibre bushing.

The body is completely made in "High-resistance" stainless steel **Nitronic 50**.

4 sizes for **breaking loads from 2600 to 10000 kg**, for boats up to 70 ft.

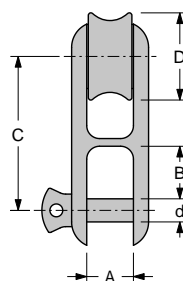


Self-locking pin



Captive pin

MODEL	Ø LINE mm	D mm	d mm	A mm	B mm	C mm	SWL kg	WEIGHT kg
H020	8 - 10	28	8	16	15.5	53.5	1300	0.08
H030	10 - 12	34	10	18	20.5	65.0	2200	0.15
H040	12 - 14	42	12	21	24.5	80.0	3500	0.28
H050	14 - 16	49	14	21	34.0	89.0	5000	0.54



HLB
HIGH LOAD BLOCKS



HIGH LOAD BLOCKS

These small and light blocks are the best solution for very high loads when sliding is not important.

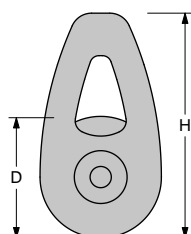
The very small sheave is fitted with a Composite Fibre bushing.

The one piece frame is made for line connection.

The 3 blocks (D=30, 40 and 55 mm) give an 8 to 1 system.

This system is specially designed for the backstay or the boom-vang.

8:1



Set of blocks:
8:1 system

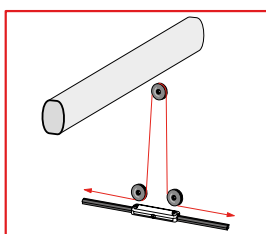
MODEL	Ø LINE mm	D mm	H mm.	SWL kg	WEIGHT kg
H130	6 - 8	30	59	600	0.05
H140	8 - 10	40	74	1200	0.08
H150	10 - 12	55	91	2400	0.18
H160	12 - 16	70	116	3500	0.33

roller bearing sheaves

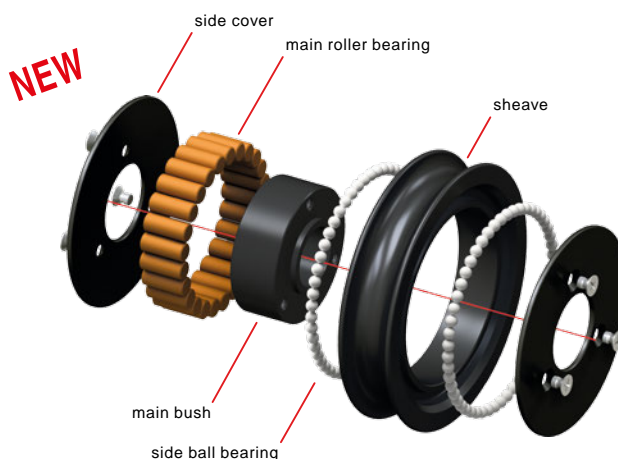
ROLLER BEARING SHEAVES

In some cases, it is important to reduce the friction of the blocks as much as possible, even if this leads to a reduction in the maximum loads. When compared with the composite fibre bushing version, the roller bearing sheaves offer a lower resistance but a greater smoothness.

Antal offers a range of roller sheaves, which can replace the traditional sheaves on the OPF series blocks, and a range for the Loofer series. The main characteristics of these sheaves are described in the following tables.



A situation in which it is advisable to consider blocks with roller sheaves is that of the mainsail sheet with a T shape because, in this case, an excessive friction of the blocks makes the car movement very difficult.



To order OPF or Loofer blocks with roller bearing sheaves just add **R** in front of the model code.

FRL is the Free Rolling Load: for good sliding (low friction), the FRL value must not be exceeded.

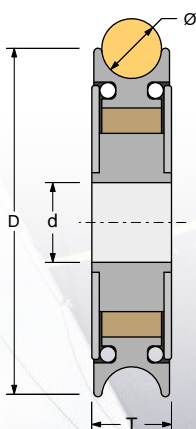
ML is the Maximum Load: loads higher than the ML cause permanent deformations of the rollers and therefore damage the **bearing**.

SHEAVES FOR OPF BLOCKS (Pg. 56)

MODEL	D mm	d mm	T mm	Ø mm	WEIGHT gr	FRL kg	ML kg
07016/R	70	12	16	12	95	1000	1200
08019/R	80	16	19	14	160	1600	2000
10021/R	100	20	21	16	265	2400	3200

SHEAVES FOR LOOPER BLOCKS (Pg. 74)

MODEL	D mm	d mm	T mm	Ø mm	WEIGHT gr	FRL kg	ML kg
07116/R	70	16	16	12	90	1000	1200
08119/R	80	21	19	14	150	1600	2000
10121/R	100	25	21	16	255	2400	3200



blocks & soft links

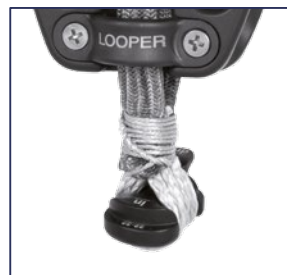
BLOCKS & T-LOCK

Blocks designed to be linked with Dyneema loops as **Looper Blocks** (see page 74) can be tied to a special Antal **swivelling toggle** and then fitted into the new Antal **T-Lock base** (see page 175).

The result is a **removable deck block** that rotates in any direction of the load.



Swivelling toggle



Looper block & toggle



T-Lock base



Swivelling & removable deck block

Looper + Dyneema pad-eye



Snatch Looper + Dyneema pad-eye



BLOCKS & DYNEEMA PAD-EYE

Blocks provided with a Dyneema snap-loop as Looper Blocks (page 74) or Snatch Looper (page 100) may be connected to the proper Dyneema pad-eye (page 174).

An easy and safe way to tie the block down is with multiple wraps of thin Dyneema line (e.g. size 3 mm) then splice the two ends and wrap everything with a thin wire (e.g. size 1 mm).

Consider that 8 wraps of well spliced 3 mm Dyneema without cover reach a breaking load higher than 6 tons.

The link in the picture is obtained with 2.60 m of 3 mm Dyneema line and a block size 80 mm (mod. LL1080).



8 wraps



1st spliced end



2nd spliced end



Wrapping

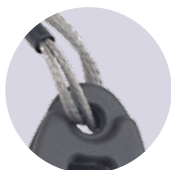
mini snatch blocks

MINI SNATCH BLOCK D=32 mm

It is a very light solution suitable for many riggings, completely made in U-V resistant high strength resin. It can be fastened both with a line or with a shackle.



full scale



Mod. 9030 For line connection

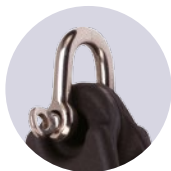
MINI SNATCH BLOCK

Sheave = Ø32 mm

Weight = 39 gr

Max line = Ø8 mm

SWL = 250 kg



Mod. 9031 For 5 mm shackle



black
Mod. 9030



yellow
Mod. 9030/Y

Mod. 9001 SNAP LOOP

It is a simple and original line loop with a snap that offers an easy fastening and avoids accidental opening.

SWL = 250 kg

For more info, see pg. 182



Citroën - Feel Good - Vittorio e Nico Malingri

DYNABLOCK

The new Antal block with revolving resin cheekplates and with a Dyneema snap loop protected by a polyester cover.

A light and reliable solution that offers an easy, fast and safe connection.

Dynablock is also suitable for a lashing with a thin Dyneema line.

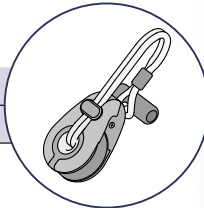
The resin sheave is on composite fibre bushing with two side ball bearings.

Spare snap-loops (DBS04 for size 44 and DBS05 for size 56) available.



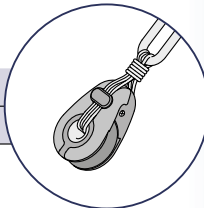
MODEL	SHEAVE Ø mm	Ø LINE mm	SWL kg	WEIGHT gr
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DBS44	44	10	600	90
DBS56	56	12	1000	176



with Dyneema
snap loop

DBL44	44	10	600	80
DBL56	56	12	1000	140



for lashing
(line not included)

Open the block

1

Put the line in

2

Close the block

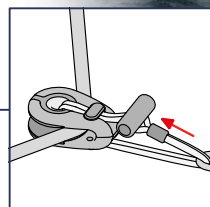
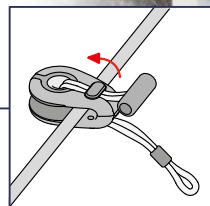
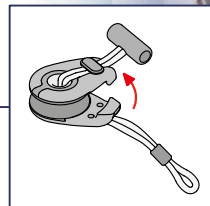
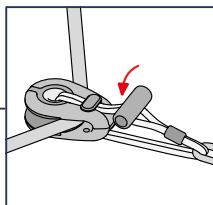
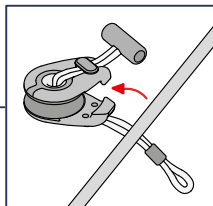
3

Close the loop

4

Lock the knob

5



snatch blocks

SNATCH BLOCKS D=40 and 60 mm

The cheekplate revolves around the sheave axle allowing the block to open; a safety ball stops the block from opening with an adjustable screw to set the ball on locked position.

There is a becket for the "hanging line".

MATERIAL: sheave with composite fibre main bearing and double side ball bearing. Hard anodized and teflon coated aluminium cheekplates with side rubber protections (yellow rubber on the revolving cheekplate).



Standard model can be attached with highly resistant spectra line.



Model /SH is supplied with a shackle.



Model /SN is supplied with a snap-shackle (HR).



MODEL	D mm	Ø LINE mm	SWL kg	WEIGHT kg
9040	40	12	700	0.11
9060	60	14	1300	0.26

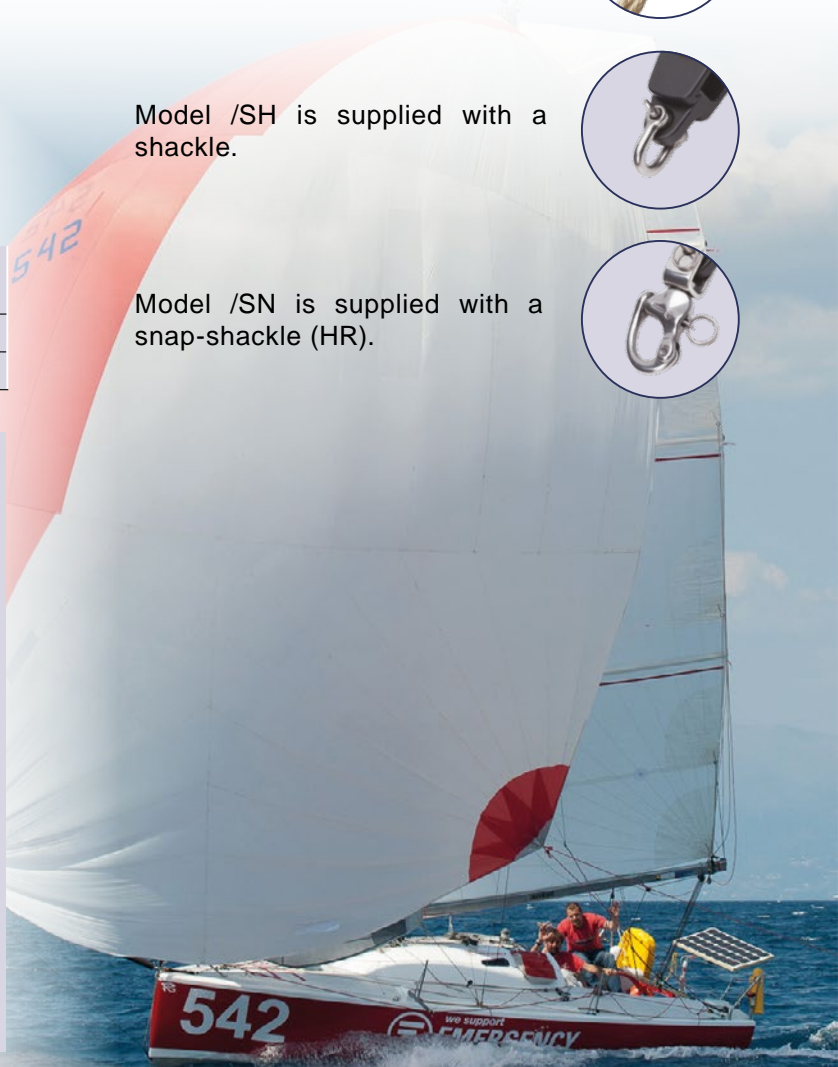


SNAP LOOPS

It is a simple and original line loop with a snap that offers an easy fastening and avoids accidental opening.

Mod. SL4S -- Loop for 9040 block (pg. 182)

Mod. SL5S -- Loop for 9060 block (pg. 182)



barber block

BARBER BLOCK

The new Antal Barber Block is a snatch block with a “ring” head, it provides an immediate entry of the sheet (the cheekplate revolves around the sheave axle allowing the block to open) and an easy 2:1 control (a line through the ring allows the control of the block height).

A safety ball prevents the revolving from accidental opening and an adjustable screw can set the ball in fully locked position.

A small becket to attach a line for hanging the block is present.

Rubber covers to protect the deck from bumps.

Aluminium sheave with composite fibre bushing and two side ball bearings.

MODEL	D mm	Ø LINE mm	SWL kg	WEIGHT kg
BB4012	40	12	1300	0.16
BB6014	60	14	2000	0.36



2:1 height control

TWIN SHEAVE BLOCK

Twin sheave at 90° to link two perpendicular lines.

Aluminium sheave on “Composite Fibre” bushing and hard black anodized one piece body.

Mod. TB4212

TWIN SHEAVE BLOCK
 Sheaves = Ø42 mm
 Max line = Ø12 mm
 Weight = 250 gr
SWL = 2000 kg



snatch looper

SNATCH LOOPER

New Antal Snatch block with a small sheave suitable for high loads, particularly designed for 2:1 main halyards.

Hard black aluminium rotating cheek plates with a Dyneema Snap Loop protected by a polyester cover, aluminium sheave on fibre bearing.

Two sizes are available with and without a Snap Loop. The Dyneema Snap Loop, including the Dog Bone fitting, is also available separately.

MODEL	SHEAVE Ø mm	Ø LINE mm	SWL kg	WEIGHT gr
-------	----------------	--------------	-----------	--------------

WITH DYNEEMA SNAP LOOP

LS046	46	14	2200	230
LS054	54	16	3500	368

WITHOUT DYNEEMA SNAP LOOP

LL046	46	14	2200	170
LL054	54	16	3500	277



- 1 Open the block and put the line in
- 2 Close the block
- 3 Insert the Loop
- 4 Lock the Loop

maxi snatch blocks

SNATCH BLOCKS D=90 and 120 mm

The cheekplate revolves around the sheave axle allowing the block to open; a safety pin, which engages automatically on closing, stops the block from opening accidentally.

Materials: high-strength resin sheaves, hard anodized alloy cheekplates, high-strength stainless steel (17-4-PH) structural pins.



Mod. 908.095



Mod. 908.125



The block can be attached with webbing or better still with a fine highly resistant line made of material such as Kevlar or Spectra.

Model /SN is supplied with a HR Wichard snap shackle.



Model /SH is supplied with a shackle.



MODEL	D mm	Ø LINE mm	SWL kg	WEIGHT kg
908.095	90	16	2500	0.41
908.125	120	20	4500	1.12

SNATCH BLOCK ON PAD-EYE D = 90, 120 AND 150 mm

Three snatch blocks 90, 120 and 150 mm diameter, on pad-eye and stand-up spring are available. The cheekplate revolves to open the block, a safety pin stops the block from opening. Above blocks are available also on screwed pad-eye.



Block on
"4 screws" pad-eye

MODEL	SHEAVE		Ø LINE mm	SWL kg	WEIGHT kg	EYEBOLT mod.
	D mm	WIDTH mm				

"4 SCREWS" PAD-EYES

918.095	90	26	18	2500	0.82	7210
918.125	120	36	20	4500	2.05	7214
918.155	150	46	28	6500	4.20	7216

SCREWED PAD-EYES

928.095	90	26	18	2500	1.14	7310
928.125	120	36	20	4500	2.70	7314
928.155	150	46	28	6500	5.30	7316



“T” track sliders

genoa cars..... 104



spi-pole sliders..... 111



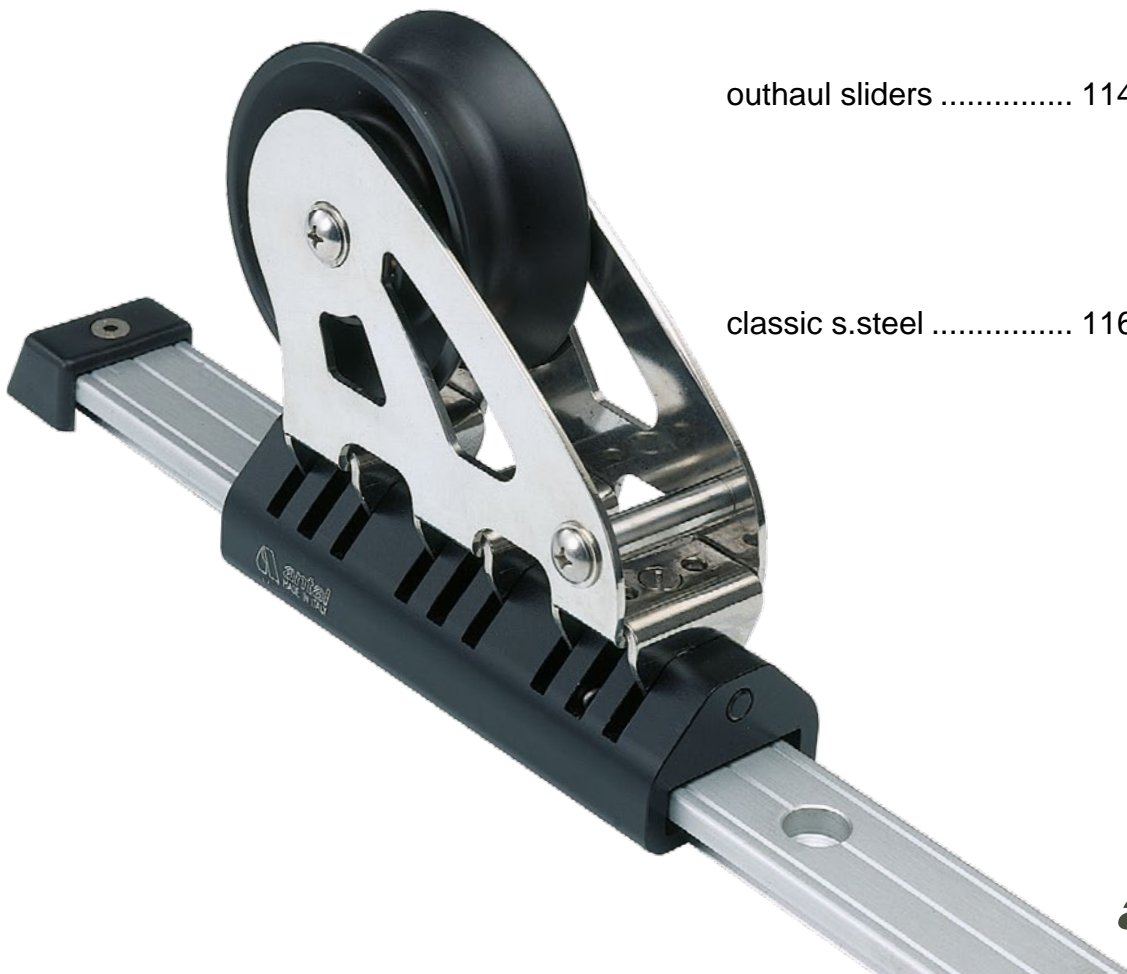
halyard sliders 113



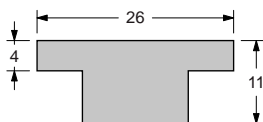
outhaul sliders 114



classic s.steel 116



26x4 genoa cars



Mod. 602.211 "T" TRACK 26x4

High resistance silver anodized light alloy extrusion.
Max length = 3 m Weight = 0.5 kg/m
Fasteners = 5 mm screws Hole spacing = 50 mm

Mod. 691.141 SIMPLE END FITTING

Plastic made, fastened with one 5 mm screw.

Mod. 690.151 END FITTING WITH ONE SHEAVE

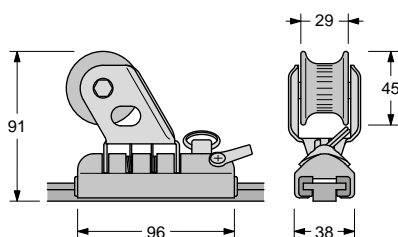
Mod. 690.152 END FITTING WITH TWO SHEAVES

A forward end fitting with one or two sheaves for the slider control is available.
Hard black anodized aluminium base and resin sheave with side ball bearings.
Fasteners = 2 x Ø6 mm screws



Mod. 621.492

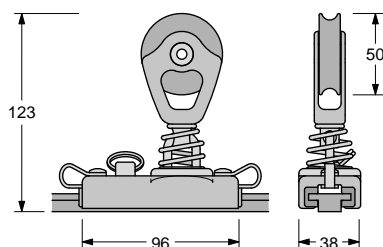
For boats up to 33 ft



Mod. 621.492 GENOA CAR 26x4

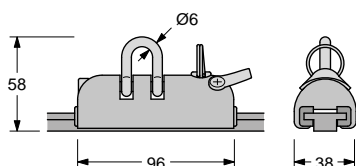
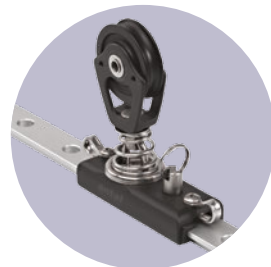
Hard black anodized with A316 stop pin and nylon sliding inserts.
The sheave structure, made in AISI 316 s. steel, turns left and right ($\pm 50^\circ$).
Resin sheave with 2 side ball bearings, wide section for two sheets.
Weight = 0.35 kg **SWL = 800 kg** Stop pin Ø = 8 mm

For boats up to 30 ft



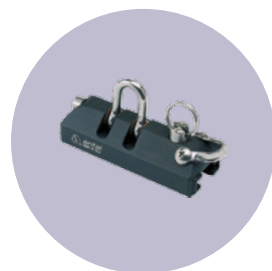
Mod. 621.452 GENOA CAR 26x4

A 50 mm block with spring is fitted on the aluminium slider. Also this model is supplied with the stop pin.
Weight = 0.25 kg **SWL = 500 kg**
Stop pin Ø = 8 mm



Mod. 621.462 SIMPLE SLIDER

A 6 mm shackle is fitted on the hard black anodized slider. AISI 316 s. steel stop pin and nylon sliding inserts.
Weight = 0.21 kg **SWL = 800 kg**
Stop pin Ø = 8 mm

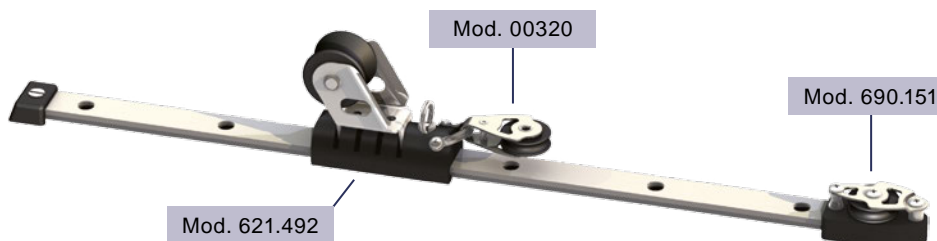


CAR CONTROL

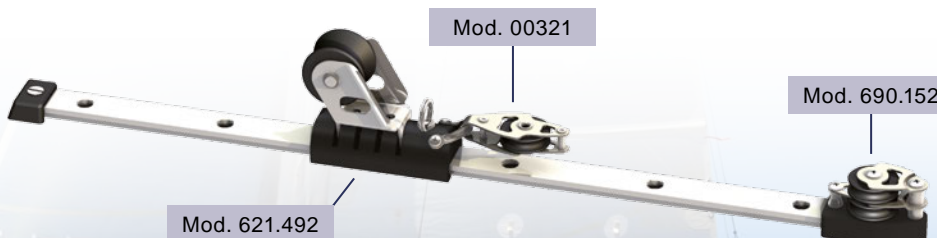
To regulate the car position, tackles with 2:1 and 3:1 purchase can be produced. A special end fitting with 1 or 2 sheaves can be mounted on the track with one block connected to the car.

For the car control, mini blocks have been used (see page 52). Mini Blocks have a 34 mm sheave and are suitable for a 6 mm line.

CAR CONTROL 2:1



CAR CONTROL 3:1



For boats up to 30 ft

RACE GENOA CAR

On an aluminium car a sheet block (Dynablock mod. **DBL44**, see p. 97) is tied with a Dyneema line.

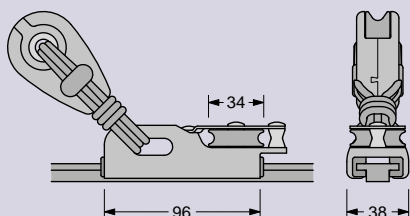
There is a 34 mm block with becket on the car that requires an end-fitting with a double block (Mod. 690.152) for a 3:1 car control.

No stop pin for this solution.

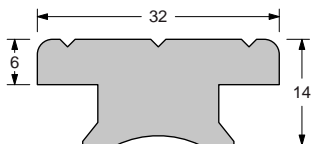
Weight = 0.26 kg **SWL = 600 kg**

Mod. 621.472 slider without sheet block

Mod. 621.472/DBL44 slider with sheet block



32x6 genoa cars



Mod. 602.112 "T" TRACK 32x6 with 100 mm holes-spacing

Mod. 602.212 "T" TRACK 32x6 with 50 mm holes-spacing

High resistance silver anodized light alloy extrusion. Rounded upper edges, larger base with a seat for the silicone. Hard black anodization is also available on request (add /B to the model number).

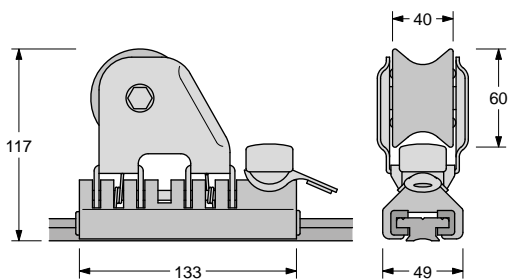
Hole spacing: 100 mm or, for a more accurate positioning, 50 mm. Fasteners: 6 mm screws Weight: 0.8 kg/m
Max length: 6 m



Mod. 691.241 **END FITTING**, made in plastic, or:

mod. 691.241/AL - silver anodized alu
mod. 691.241/B - black anodized alu
mod. 691.241/S - AISI 316 s. steel

For boats up to 44 ft

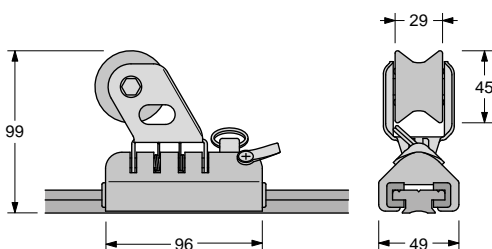


Mod. 622.492 **GENOA CAR 32x6**

Hard black anodized aluminium slider with low-friction nylon sliding inserts. The revolving upper structure ($\pm 50^\circ$) is made of AISI 316 s. steel. The resin sheave is fitted with 2 side ball bearing, wide section for double sheet. AISI 316 s. steel pin with a lock-up position. Bracket for remote control line.

Weight = 0.86 kg **SWL = 2800 kg** Stop pin $\varnothing = 11$ mm

For boats up to 38 ft



Mod. 620.492 **GENOA CAR 32x6**

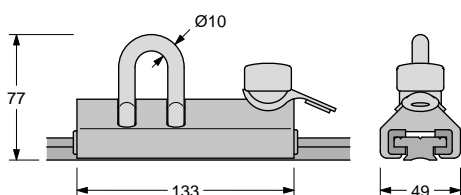
For 32x6 "T" track, as the above model, but with smaller sizes.

Weight = 0.40 kg

SWL = 800 kg

Stop pin $\varnothing = 11$ mm





Mod. 622.462 **SIMPLE SLIDER**

A 10 mm shackle is fitted on the aluminium slider. Also this model is supplied with the stop pin.

Weight = 0.45 kg **SWL = 2200 kg**

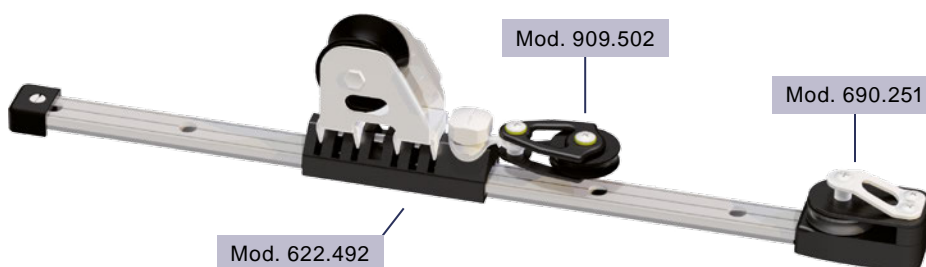
Stop pin Ø = 11 mm



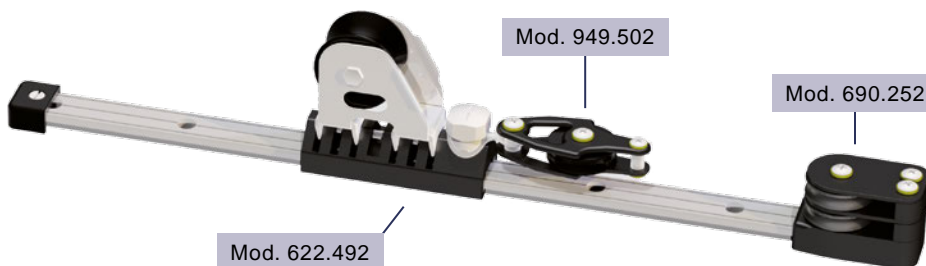
CAR CONTROL

To regulate the car position, tackles with 2:1 and 3:1 purchase can be produced. A special end fitting with 1 or 2 sheaves can be mounted on the track and one block connected to the car.

CAR CONTROL 2:1



CAR CONTROL 3:1



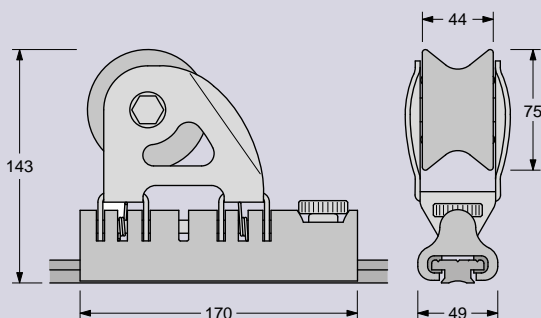
Mod. 909.502 50 mm block connected to the car.

Mod. 949.502 50 mm block with becket connected to the car.

Mod. 690.251 Black aluminium end fitting with one 50 mm sheave.

Mod. 690.252 Black aluminium end fitting with two 50 mm sheave.

For boats up to 52 ft



Mod. 625.492 **GENOA CAR 32x6 PLUS**

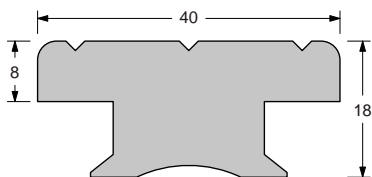
The "plus" genoa car runs on HS fibre sliding inserts on 32x6 "T" track.

It is fitted with a "screwed" stop pin done for 11 mm holes (smaller diameter are available on request).

Weight = 1.34 kg **SWL = 3800 kg**



40x8 genoa cars



Mod. 602.113 **"T" TRACK 40x8** with 100 mm holes-spacing

Mod. 602.213 **"T" TRACK 40x8** with 50 mm holes-spacing

High resistance silver anodized light alloy extrusion. Rounded upper edges, larger base with a seat for the silicone. Hard black anodization is also available on request (add **/B** to the mod. number).

Hole spacing: 100 mm or, for a more accurate positioning, 50 mm.

Fasteners: 8 mm screws Weight: 1.3 kg/m

Max length: 6 m



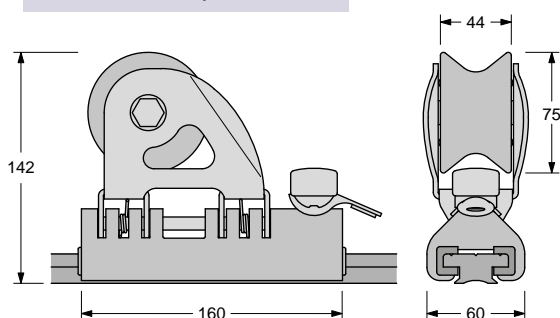
Mod. 691.341 **END FITTING**, made in plastic, or:

mod. 691.341/AL - silver anodized alu

mod. 691.341/B - black anodized alu

mod. 691.341/S - AISI 316 s. steel

For boats up to 52 ft

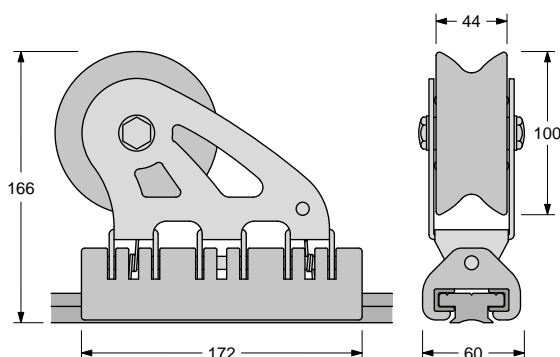


Mod. 623.492 **GENOA CAR 40x8**

Hard black anodized aluminium slider with low-friction nylon sliding inserts. The revolving upper structure ($\pm 50^\circ$) is made of AISI 316 s.steel. The aluminium sheave is fitted with one main Composite Fibre bearing and 2 side ball bearing, wide section for double sheet. AISI 316 s.steel pin with a lock-up position. Becket for remote control line.

Weight = 1.50 kg **SWL = 3800 kg** Stop pin $\varnothing = 14$ mm

For boats up to 60 ft



Mod. 624.492 **GENOA CAR 40x8 MAXI**

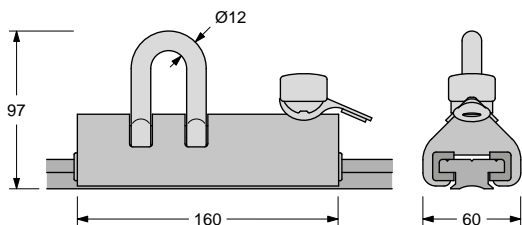
The maxi slider, for boats up to 60 ft, runs on HS fibre sliding inserts on 40x8 "T" track (mod. 602.213).

Weight = 1.94 kg **SWL = 4800 kg**

Mod. 691.722/AL **DOUBLE STOP PIN**

For the double stop pin with alu slider the 50 mm hole spacing track (mod. 602.213) is necessary. Stop pin $\varnothing = 14$ mm





Mod. 623.462

SIMPLE SLIDER

A 12 mm shackle is fitted on the aluminium slider. Also this model is supplied with the stop pin.

Weight = 0.79 kg **SWL = 3300 kg**

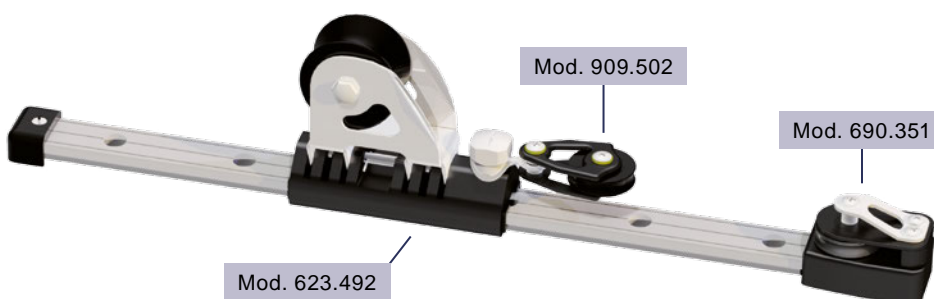
Stop pin Ø = 14 mm



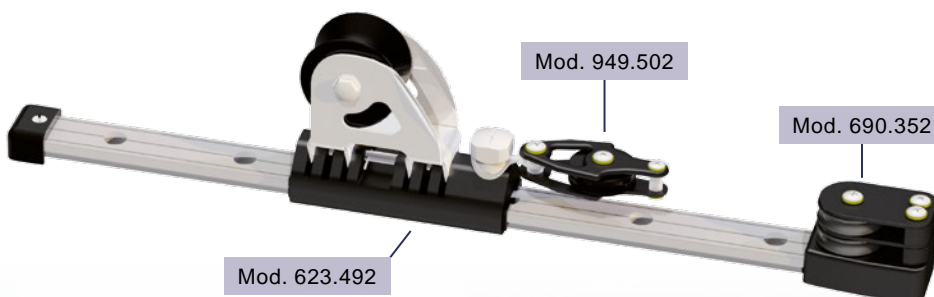
CAR CONTROL

To regulate the car position, tackles with 2:1 and 3:1 purchase can be produced. A special end fitting with 1 or 2 sheaves can be mounted on the track and one block connected to the car.

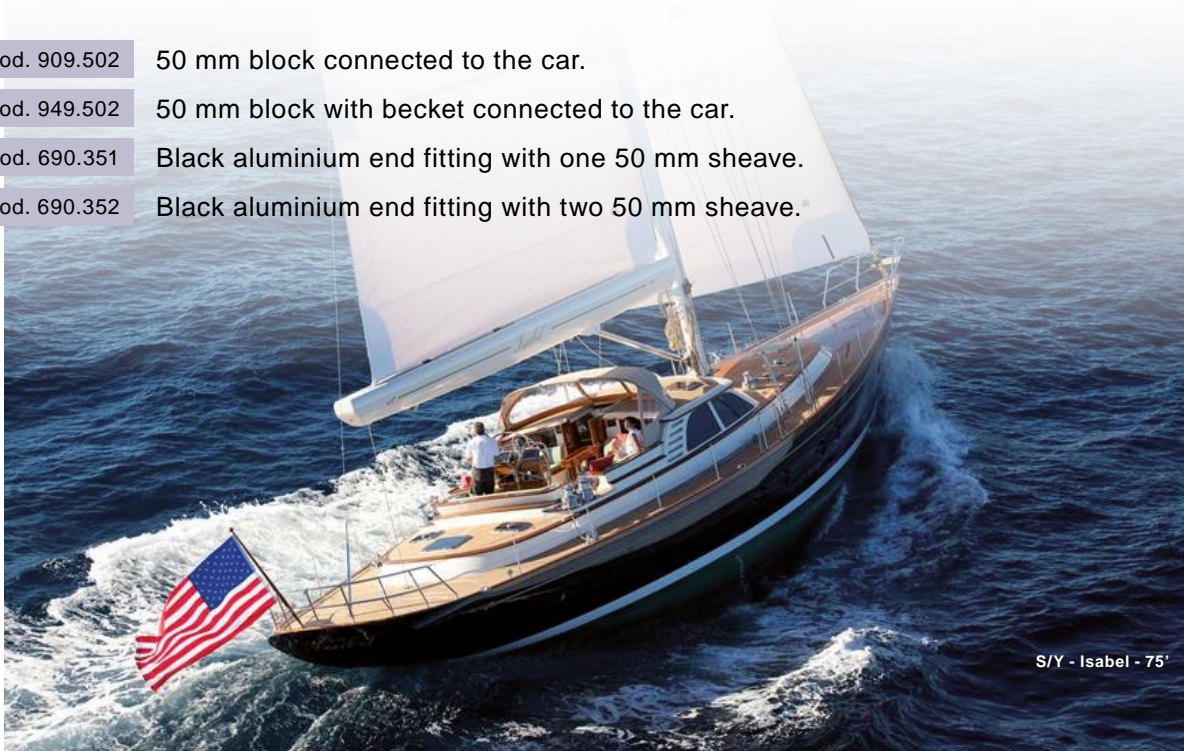
CAR CONTROL 2:1



CAR CONTROL 3:1



- Mod. 909.502 50 mm block connected to the car.
- Mod. 949.502 50 mm block with becket connected to the car.
- Mod. 690.351 Black aluminium end fitting with one 50 mm sheave.
- Mod. 690.352 Black aluminium end fitting with two 50 mm sheave.



S/Y - Isabel - 75'

double 40x8 genoa cars

DOUBLE 40x8 GENOA CARS SHEAVES 120, 150, 180 mm

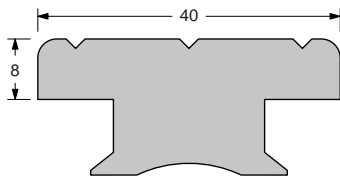
The double 40x8 genoa cars are made for maxi yachts (larger than 60 ft), they run on 40x8 T-track (see page 108).

Two hard black anodized aluminium sliders (add **/AL** after the model number) or two polished s.steel sliders (add **/S** after the model number) running on nylon guides are connected with a revolving ($\pm 50^\circ$) link structure.

The sheave, with a wide sections for a double sheet, is fitted with a main Composite Fibre bearing and two side self-captive ball bearings.



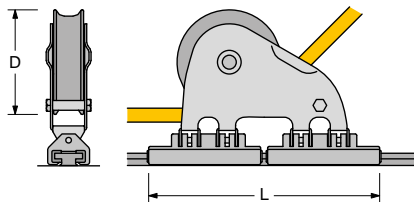
Sunreef 60 - photo Sunreef Yachts



Mod. 623.150/AL

Mod. 623.180/AL

Mod. 623.120/AL



MODEL	D mm	L mm	SWL kg	WEIGHT kg
623.120/AL	120	330	5000	3.10
623.150/AL	150	330	6500	4.25
623.180/AL	180	375	9000	6.20

All the above double cars are available with stainless steel sliders.

The double stop pin and the T-track are also available in s.steel.

Substitute **/S** for **/AL** in the model number.

STOP PIN

A special double stop pin ($\varnothing 14$ mm) is available to lock the car in position on the track:



Mod. 691.722/AL

mod. 691.722/AL - hard black anodized alu
mod. 691.722/S - polished s.steel

With the double stop pin the 50 mm hole spacing track (mod. 602.213) is necessary.

Mod. 623.180/S

Mod. 691.722/S

spi-pole sliders

SPI-POLE SLIDERS

This “long version” of Spi-Pole sliders is designed to reduce the side loads and torsion on the track. They slides on fibre inserts to reduce the friction to a minimum.

Made for standard 32x6 and 40x8 T tracks, they are always fitted with one upper and one lower block with becket for the control line. Single and double sheave end fitting for 2:1 and 3:1 systems are available.

Antal offer a hard black anodized and teflon coated “T” track that gives a lower friction coefficient.

Mod.
671.002

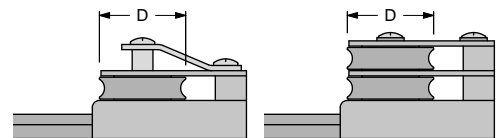
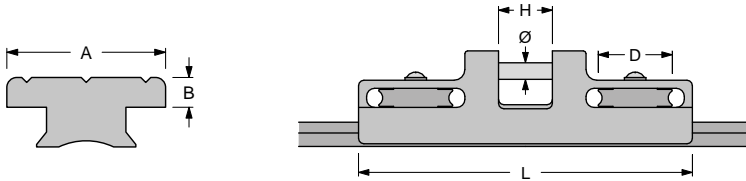
Mod.
671.003

Mod.
671.004

TRACK	
MODEL	A x B mm
602.212/B	32 x 6
602.213/B	40 x 8

SLIDER						
MODEL	L mm	H mm	Ø mm	D mm	WEIGHT kg	
671.002	214	40	12	50	0.75	
671.003	248	40	12	50	1.10	
671.004	310	32	16	75	1.60	

END FITTING			
1 SHEAVE AND BECKET		2 SHEAVES	
MODEL	WEIGHT kg	MODEL	WEIGHT kg
690.251	0.38	690.252	0.43
690.351	0.47	690.352	0.52
691.451	0.60	691.452	0.75



Solaris 76' - Serigi

Line driver for Spi-Pole slider control is on page 27



POWER
16 : 1
TACKLE
2 : 1



POWER
24 : 1
TACKLE
3 : 1

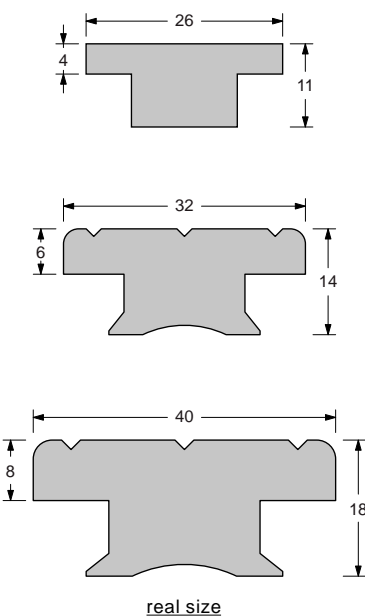


'T' tracks

'T' TRACKS

Antal produces three sizes of 'T' tracks: 26x4, 32x6 and 40x8.

'T' tracks are available in the three versions silver aluminium, hard black anodized aluminium and s.steel, all with 50 and 100 mm hole spacing.



SIZE	HOLE SPACING mm	SILVER	BLACK	S.STEEL
------	--------------------	--------	-------	---------

STANDARD TRACK

26 X 4	50	602.211	602.211/B	- - -
32 x 6	50	602.212	602.212/B	602.212/S
	100	602.112	602.112/B	602.112/S
40 x 8	50	602.213	602.213/B	602.213/S
	100	602.113	602.113/B	602.113/S

AUTOMATIC TRACK

32 x 6	50	602.312/SI	602.312	- - -
40 x 8	50	602.313/SI	602.313	- - -

On request, track will be machined with "rounded ends" and then anodized.

Moreover, 32x6 and 40x8 sizes are also made with holes for automatic locking of the slider, in both the silver and hard black anodized versions.



silver anodizing



hard black anodizing



s.steel with
rounded head



halyard system

HALYARD SLIDER

The “halyard slider” has been specifically planned for wire halyards and for those halyards which are subject to such high strain as to preclude use of a stopper. This solution permits easy adjustment and secure locking of halyards.



AUTOMATIC TRACK

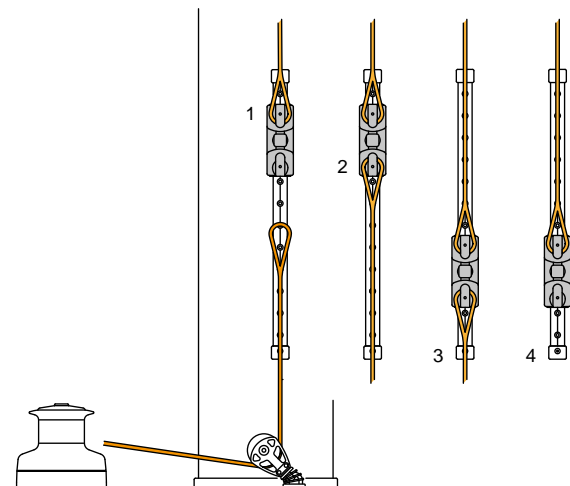
The special shape of the holes allows the car moving with the stop pin on and the automatic car lock in the new position.

THE COMPLETE SYSTEM INCLUDES:

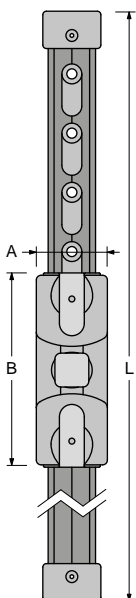
- Hard black aluminium ‘T’ track automatic version, with fixed length and with numbered positions of the slider, positioning holes spacing = 50 mm, fixing screws spacing = 100 mm.
- The halyard slider with the 2-positions stop-pin: locked and automatic insertion.
- 2 simple aluminium end fittings for ‘T’ track.

Also automatic tracks of any length, up to 6 m, are available. In this case, the positioning holes are not numbered (32x6 mod. 602.312, 40x8 mod. 602.313).

ADJUSTING AND BLOCKING THE HALYARD



1. hook the halyard to the slider
2. connect the winch
3. put the halyard under tension and lock it in place
4. free the slider from the winch



COMPLETE SYSTEM		TRACK			SLIDER			END FITTING
MODEL	SWL kg	MODEL	SIZE mm	L mm	MODEL	A mm	B mm	MODEL
622.422	2800	602.412	32X6	990	622.402	50	135	691.241/B
623.422	3800	602.413	40X8	1130	623.402	60	160	691.341/B
624.422	5800	602.413	40X8	1130	624.402	60	210*	691.341/B

* Car with double Stop-pin

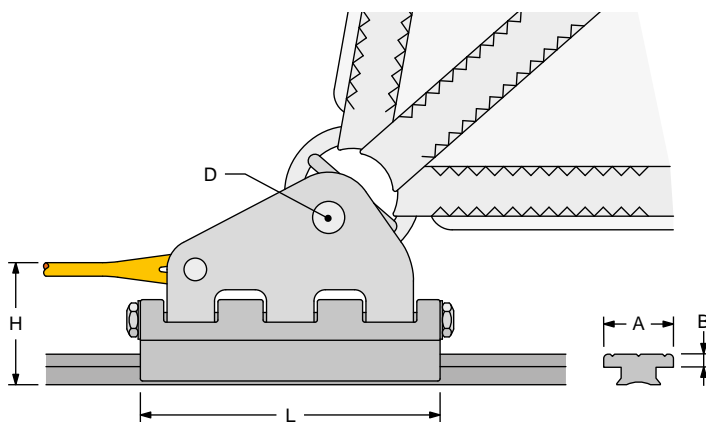
outhaul sliders

OUTHAUL SLIDER

This slider runs on self-lubricating *HS* fibre enabling it to deal with heavy work loads while remaining compact; it also provides low friction running and easy manoeuvring.

The sail connection, which is made of s.steel and revolves, reduces the height of the sail above the boom to a minimum.

Standard “T” tracks, sizes 32x6 and 40x8, are used, with black anodized finish and 50 mm hole spacing.



with **32x6** T-track:

For boats up to 48 ft

with **40x8** T-track:

For boats up to 70 ft



s.steel version



The car runs on self-lubricating *HS* fibre and with hard black anodized track.

CAR

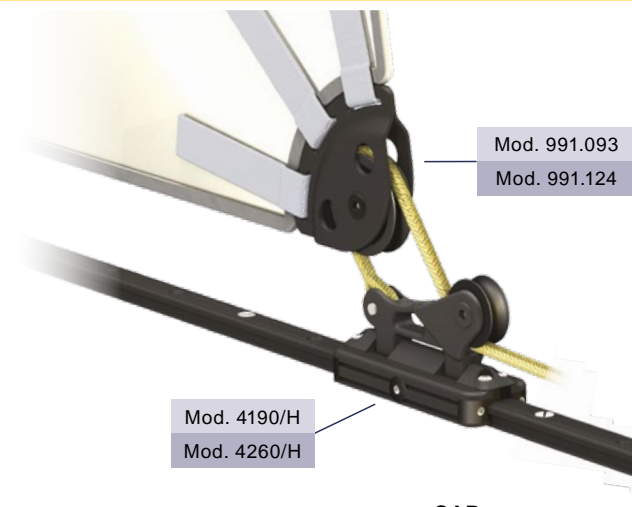
MODEL	L mm	H mm	D mm	WEIGHT kg	SWL kg
672.002	130	60	12	0.50	3000
672.003	160	80	16	1.23	6000
672.004	200	80	16	1.68	8000
672.005	280	90	20	3.55	10000

TRACK

MODEL	A x B mm	SCREWS Ø mm	SPACING mm	WEIGHT kg/m
602.212/B	32 x 6	6	50	0.80
602.213/B	40 x 8	8	50	1.30



outhaul cars - furling main



OUTHAUL CAR WITH SHEAVE

A ball bearing car is necessary for the outhaul of a furling main sail. Two sizes: 190 mm car with a 60 mm sheave and 260 mm car with a 90 mm sheave, both on Antal 4Race 21x31 tracks. A special clew block completes the system.

CAR

	MODEL	L mm	SHEAVE Ø mm	SWL kg	WEIGHT kg
For boats up to 48 ft	4190/H	190	60	1900	1.10
For boats up to 56 ft	4260/H	260	90	2800	1.65

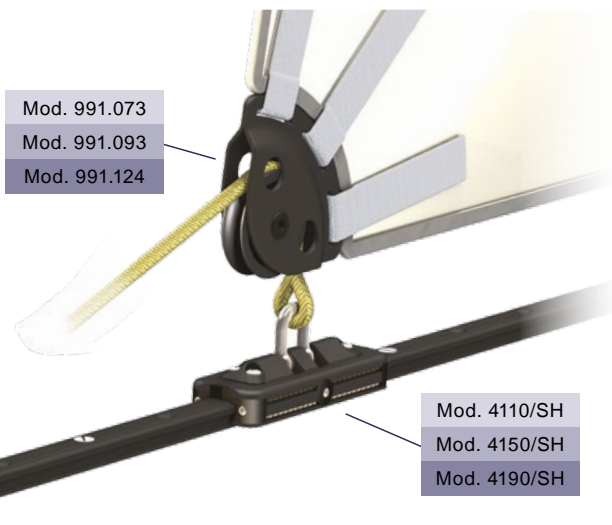
CLEW BLOCK

MODEL	SHEAVE Ø mm
991.093	90
991.124	120

For further information on cars and tracks see p. 120.
For further information on clew blocks see p. 92.

OUTHAUL CAR - DIRECT CONNECTION

This simple solution reduces the load on the car but increases the tension of the line. Three sizes with cars 110, 150 and 190 mm long, on Antal 4Race 21x31 tracks. In this case too a special clew block completes the system.



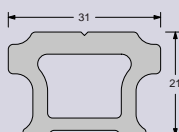
CAR

	MODEL	L mm	SWL Kg	WEIGHT kg
For boats up to 40 ft	4110/SH	110	1000	0.50
For boats up to 48 ft	4150/SH	150	1400	1.10
For boats up to 56 ft	4190/SH	190	1900	1.65

CLEW BLOCK

MODEL	SHEAVE Ø mm
991.073	75
991.093	90
991.124	120

TRACK

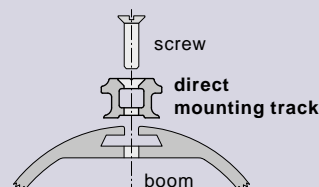


Two track models are available for the cars described on this page.
For both models 4510 & 4560:

- fixing with Ø8 mm screws
- 100 mm hole spacing
- 0,77 kg/m weight
- end-fitting Mod. 4271

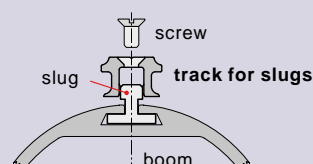
Mod. 4510 DIRECT MOUNTING

The track is directly screwed to threaded holes on the boom.



Mod. 4560 SLUG MOUNTING

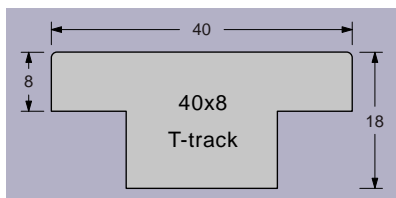
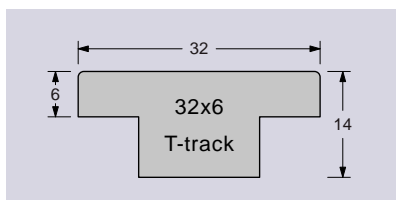
The track is screwed to the slugs. Slugs are custom made to fit the groove of the boom.



Classic s.steel for genoa


32x6 genoa car - L = 132 mm - Sheave Ø = 60 mm - SWL = 2800 kg


40x8 genoa car - L = 160 mm - Sheave Ø = 75 mm - SWL = 3800 kg



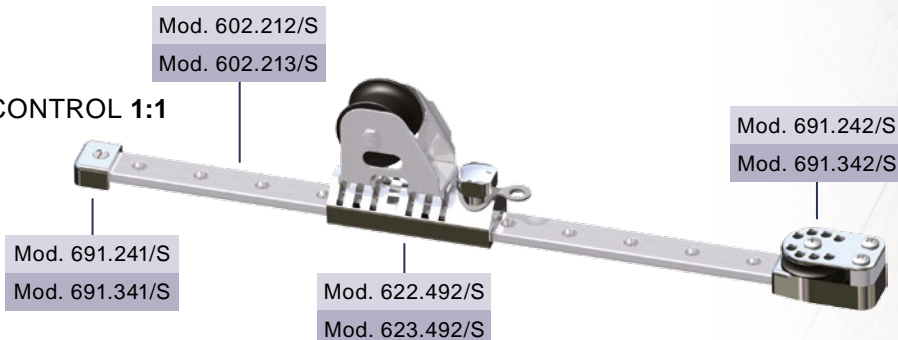
Antal offers a complete series of cars for genoa and mainsail with tracks and accessories completely made in **316 polished s.steel**. Particularly designed for classic boats.

Two sizes: with 32x6 and 40x8 s.steel T-tracks. 50 mm sheaves for all cars control.

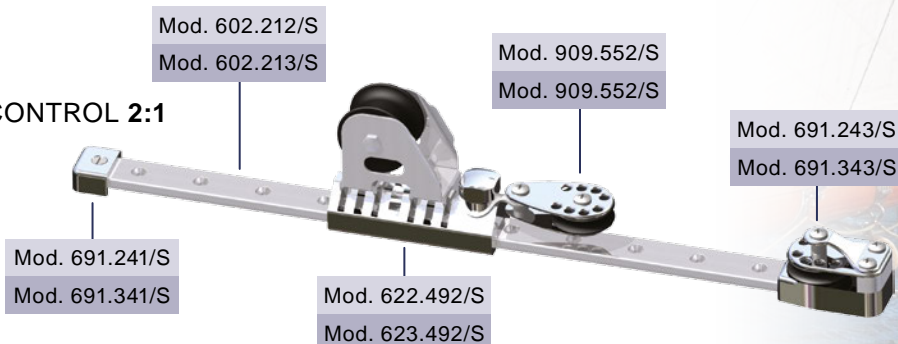
Models on  are for T-track size 32x6

Models on  are for T-track size 40x8

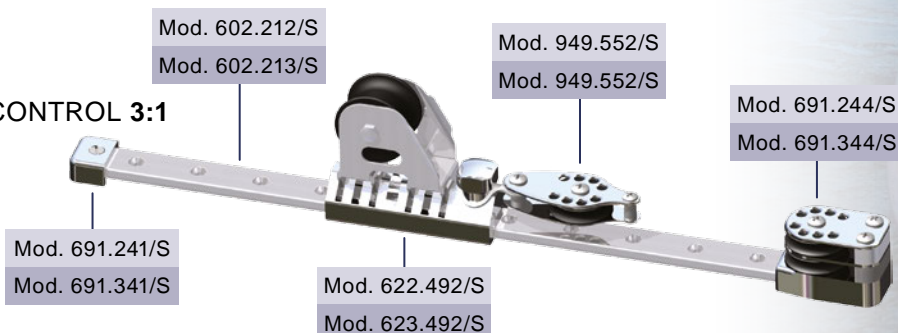
CAR CONTROL 1:1



CAR CONTROL 2:1



CAR CONTROL 3:1



Classic s.steel for main sail

32x6 car with one block size 75 mm - L = 132 mm - SWL = 1500 kg

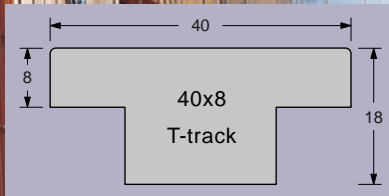
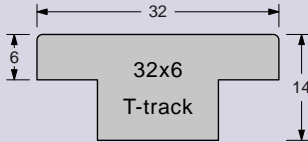
32x6 car with two blocks size 75 mm - L = 180 mm - SWL = 2000 kg

40x8 car with one block size 90 mm - L = 160 mm - SWL = 2500 kg

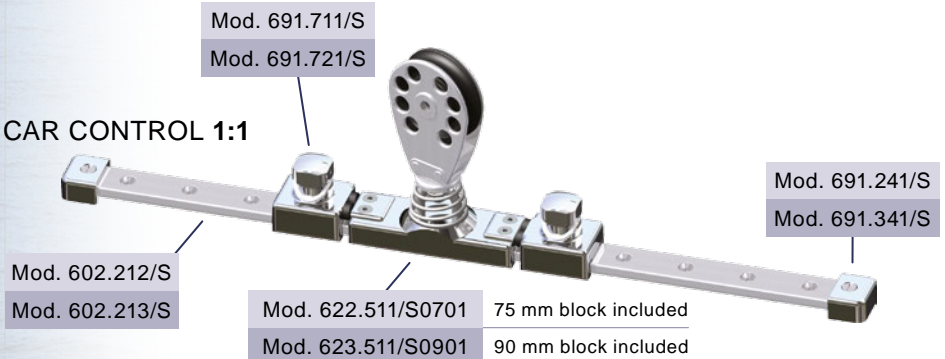
40x8 car with two blocks size 90 mm - L = 200 mm - SWL = 3500 kg

50 mm sheaves for all cars control.

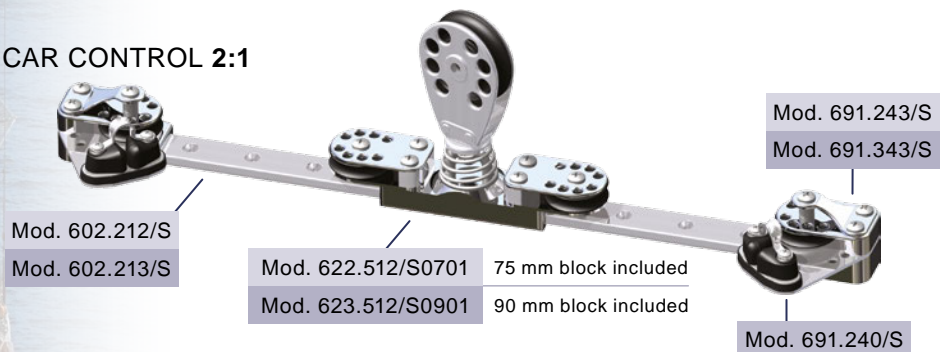
For classic Blocks, see page 78.



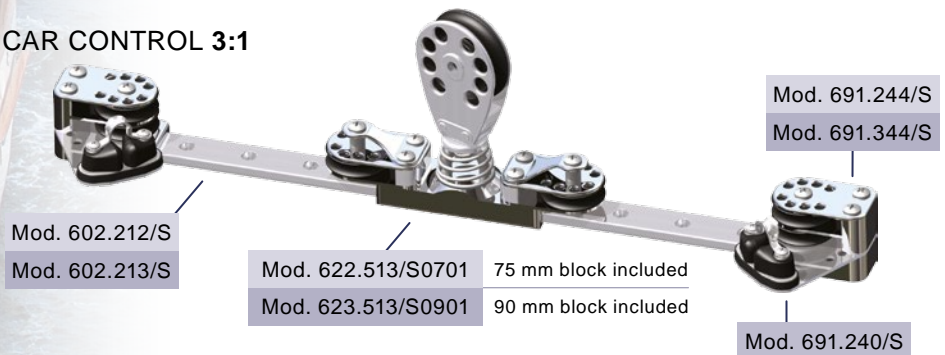
CAR CONTROL 1:1



CAR CONTROL 2:1

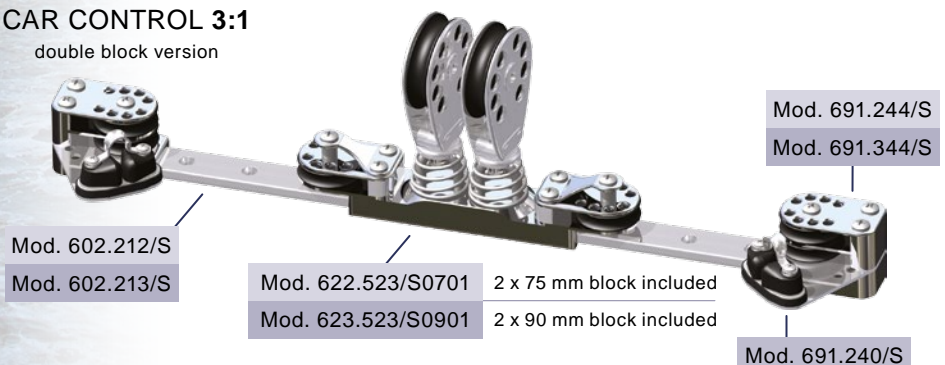


CAR CONTROL 3:1



CAR CONTROL 3:1

double block version



Mod. 622.512/S

All the cars on this page are also available without the sheet block and with a simple eyebolt.

To order this version, just end the model code after "S".

For example, **Mod. 622.512/S**



ball bearing cars



size 100121



size 110 - 150 - 190124



Dyneema links132



size 230 - 330 - 430138



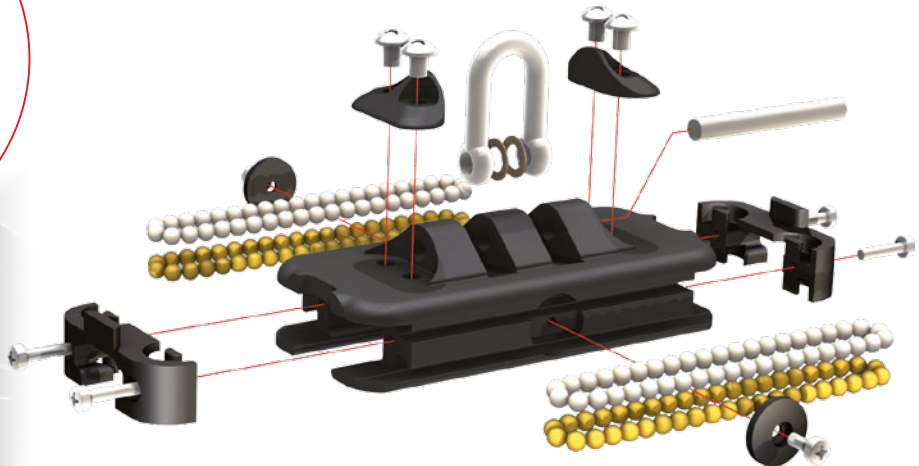
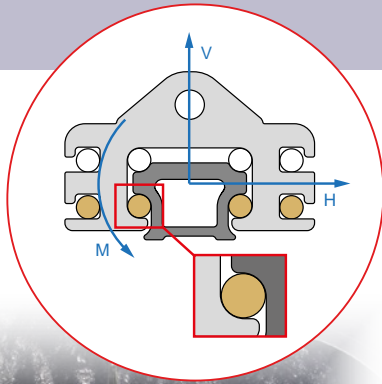
ball bearing cars



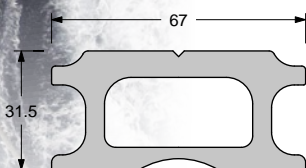
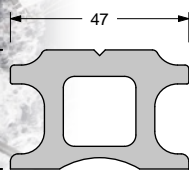
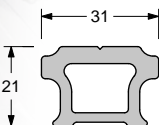
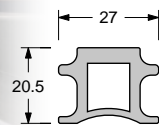
4RACE SYSTEM

- Higher efficiency and smoother running.
- Better load resistance to vertical (V), horizontal (H) and torsional (M) loads.
- Higher safety margin as the car will remain on the track even after ball bearing failure (overload).
- Travellers are fitted with 2 Torlon ball circuits (lower) and 2 Delrin ball circuits (upper).

- Single double and triple control sheaves, with or without becket, can be fitted on the car.
- One-piece extruded body.
- The traveller, the track and all components are extruded in high strength alloy and hard black anodized. (Steel parts: AISI 316)
- Side windows for easy maintenance and ball bearing cleaning and/or replacement. Standard shackle or special "stand-up" joint.



Open 40' - Vaquita



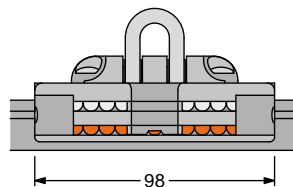
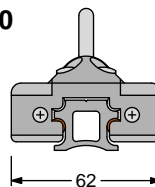
CAR SIZE	FOR BOATS UP TO	PAGE
100 mm	33 ft	121
110 mm	36 ft	124
150 mm	42 ft	
190 mm	48 ft	
230 mm	60 ft	138
330 mm	70 ft	
430 mm	80 ft	
330 mm	70 ft	142
430 mm	80 ft	



Mod. 4102/SH TRAVELLER SIZE 100

Weight = 0.23 kg SWL = 820 kg

This car is fitted with 54 Delrin + 54 Torlon balls

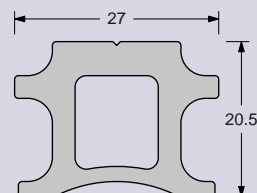


Mod. 601.121 STANDARD TRACK

Tubular hard black anodized aluminium extrusion.
Fasteners = 6 mm screws / 100 mm hole spacing
Weight = 0.69 kg/m Max length = 6 m

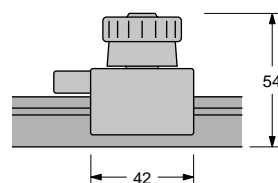
Mod. 601.221 STOP PIN TRACK

As the above model but with holes (50 mm spacing) for the stop pin.



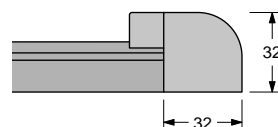
Mod. 691.421 STOP PIN

Aluminium slider on nylon inserts and AISI 316 s.steel pin. The stop pin needs to be fitted on the mod. 601.221 track.



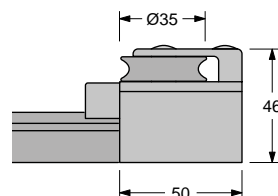
Mod. 4261 SIMPLE END FITTING

Plastic made, mounted with a 6 mm screw.



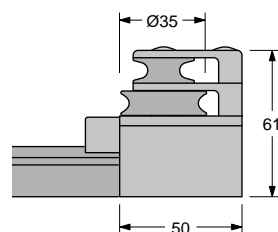
Mod. 4262 END FITTING WITH ONE SHEAVE

High strength resin made with one Ø=35 mm sheave.
Completed with a shock proof rubber.
Weight = 0.08 kg
Screws = 3 x Ø5 mm



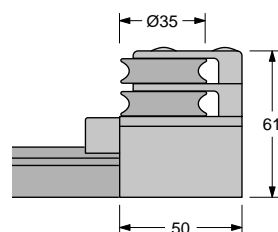
Mod. 4263 END FITTING WITH ONE SHEAVE AND BECKET

High strength resin made with one Ø=35 mm sheave.
Completed with a shock proof rubber.
Weight = 0.10 kg
Screws = 3 x Ø5 mm



Mod. 4264 END FITTING WITH 2 SHEAVE

High strength resin made with two Ø35 mm sheaves.
Completed with a shock proof rubber.
Weight = 0.10 kg
Screws = 3 x Ø5 mm



Mod. 4266 END FITTING CAM-CLEAT

This cam-cleat revolving in 3 different positions can be fitted on the end fitting with one or two sheaves.

main travellers size 100



MAIN BALL BEARING TRAVELLER SIZE 100

This traveller is 98 mm long and 62 mm wide.
The weight is 0.23 kg and the **working load = 820 kg**.
The sheaves for the car control are D=35 mm.
The complete systems includes 1.5 m long track.

The sheet block (OPF 60, page 60) is not included.

The blocks in the OPF series to be mounted on the 4Race cars must have a special long swivel head as described on page 57; add **/J** to the block model code.

The traveller is fitted with a special "stand-up" connection for Antal block size 60 mm and includes the "stand-up" rubber. The same traveller is also available with a 6 mm shackle (for this case add **/SH** to the model number).



Mod. 4100



Mod. 4100/SH

For boats up to 33 ft

COMPLETE SYSTEM

Mod. 4901

Mod. 4261

Mod. 00601/J

Mod. 691.421



COMPLETE SYSTEM

Mod. 4902

Mod. 4262

Mod. 4100

Mod. 00601/J



CAR CONTROL 1:1

COMPLETE SYSTEM

Mod. 4903

Mod. 4263

Mod. 4101

Mod. 00601/J

Mod. 4266



CAR CONTROL 2:1

COMPLETE SYSTEM

Mod. 4904

Mod. 4264

Mod. 4102

Mod. 00601/J

Mod. 4266



CAR CONTROL 3:1

Mod. 4103

Mod. 4266



genoa cars size 100 / 130

BALL BEARING GENOA TRAVELLER SIZE 100

This traveller is 98 mm long and 62 mm wide.
The weight is 0.40 kg and the **working load = 820 kg**.
Can be fitted with a front sheave with becket for a 3:1 control.

Main sheave (diameter 45 mm) with 2 side ball bearings and a wide section suitable for 2 sheet.
The sheaves for the car control are D=35 mm.

For boats up to 33 ft



Mod. 4261



Mod. 4601

Mod. 4603

Mod. 4264

BALL BEARING GENOA TRAVELLER SIZE 130

This traveller is 130 mm long and 62 mm wide.
The weight is 0.50 kg and the **working load = 1100 kg**.
Can be fitted with a front sheave with becket for a 3:1 control.

Main sheave (diameter 48 mm) with 2 side ball bearings and a wide section suitable for 2 sheet.
The sheaves for the car control are D=35 mm.

For boats up to 38 ft



Mod. 4633

Mod. 4261



Mod. 4631

Mod. 4633

Mod. 4264/Z



sizes 110/150/190



Mod. 4510

Standard track 31x21:

- fastening screws from the top
- 8 mm screws
- 100 mm hole spacing
- weight 0.77 kg/m



Mod. 4520

Standard track with stop pin holes:

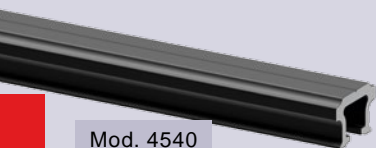
- fastening from the top
- 8 mm screws
- 100 mm hole spacing
- stop pin holes 50 mm spacing
- weight 0.75 kg/m



Mod. 4530

Race track 31x21: with lightening holes

- fastening screws from the bottom
- 8 mm screws, 100 mm hole spacing
- weight 0.64 kg/m



Mod. 4540

Adjustable fastener track 31x21:

- bolts can be fixed in any position, for pre-existing holes
- 8 mm screws on sliding slugs
- weight 0.72 kg/m



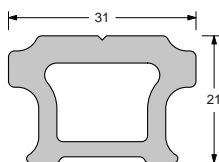
Mod. 4550

Adjustable fastener track 48x60:

- bolts can be fixed in any position, for pre-existing holes
- 8 mm screws on sliding slugs
- weight 3.2 kg/m
- unsupported span max = 1.5 m

TRACK

Low profile track suitable for both mainsheet and genoa systems.



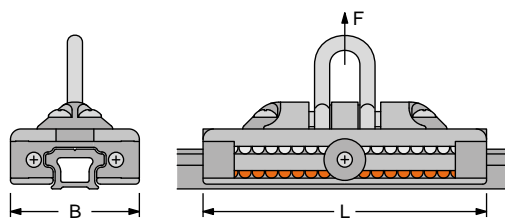
TRAVELLER SIZE AND LOAD TABLE

Three models: 110, 150 and 190 mm long, for boats up to 48 ft.

These cars are fitted with standard shackle (/SH), but also special "stand-up" joint for 70, 80 and 100 mm blocks is available.

Longer cars are available: L=230 mm (SWL= 2400 kg) and L=260 mm (SWL= 2800 kg) described in the following page 129.

TRAVELLER SIZE AND LOAD TABLE					
MODEL	L mm	B mm	SWL kg	WEIGHT kg	N° of Balls
4110/SH	110	70	1000	0.50	62 Delrin + 62 Torlon
4150/SH	150		1400	0.70	86 Delrin + 86 Torlon
4190/SH	190		1900	0.90	112 Delrin + 112 Torlon



Mod. 4551

Special end fitting for 48x60 track

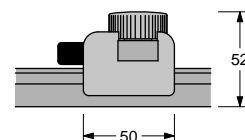
TRAVELLER SELECTION GUIDE FOR: MAINSHEET (END BOOM) & GENOA SHEET

30	32	34	36	38	40	42	44	46	48	LOA (ft)
Mod. 4110 (110 mm)										
				Mod. 4150 (150 mm)						
							Mod. 4190 (190 mm)			



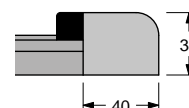
Mod. 4291 STOP PIN

Aluminium slider on nylon inserts and AISI 316 s.steel pin. The stop pin needs to be fitted on the mod. 4520 track. Knob with 2 positions: free and lock.



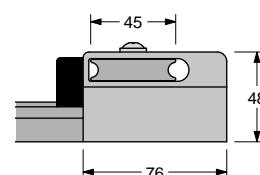
Mod. 4271 SIMPLE END FITTING

Plastic made, mounted with a 8 mm screw.



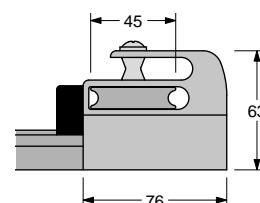
Mod. 4272 END FITTING WITH 1 SHEAVE

Aluminium made with one $\varnothing=45$ mm sheave fitted with double side ball bearings. Completed with a shock proof rubber. Weight = 0.21 kg Screws = 3 x $\varnothing 6$ mm



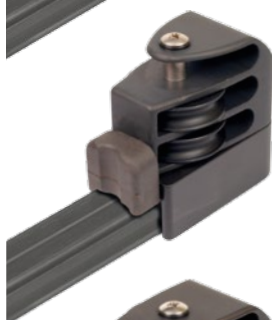
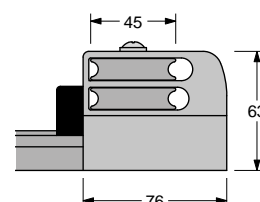
Mod. 4273 END FITTING WITH 1 SHEAVE AND BECKET

Aluminium made with one $\varnothing=45$ mm sheave fitted with double side ball bearings. Completed with a shock proof rubber. Weight = 0.26 kg Screws = 3 x $\varnothing 6$ mm



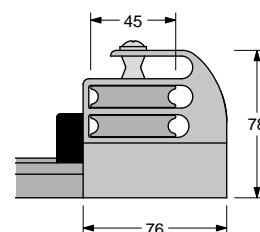
Mod. 4274 END FITTING WITH 2 SHEAVES

Aluminium made with two $\varnothing=45$ mm sheaves fitted with double side ball bearings. Completed with a shock proof rubber. Weight = 0.28 kg Screws = 3 x $\varnothing 6$ mm



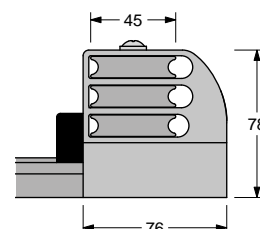
Mod. 4275 END FITTING WITH 2 SHEAVES AND BECKET

Aluminium made with two $\varnothing=45$ mm sheaves fitted with double side ball bearings. Completed with a shock proof rubber. Weight = 0.32 kg Screws = 3 x $\varnothing 6$ mm



Mod. 4276 END FITTING WITH 3 SHEAVES

Aluminium made with three $\varnothing=45$ mm sheaves fitted with double side ball bearings. Completed with a shock proof rubber. Weight = 0.35 kg Screws = 3 x $\varnothing 6$ mm



Mod. 4410 END FITTING CAM-CLEAT

Mod. 4420 110 mm TRAVELLER CAM-CLEAT

Mod. 4430 150/190 mm TRAVELLER CAM-CLEAT

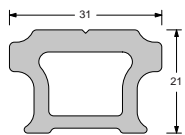
The revolving cam-cleat (3 different positions) can be fitted on the end fitting with one, two or three sheaves. The traveller cam-cleat is not revolving.

main cars - size 110



SIZE 110

For boats up to 36 ft



Information
about the track
on page 124

This traveller, 110 mm long (**SWL = 1000 kg**), is fitted with a special "stand-up" connection for Antal block size 70 mm and includes the "stand-up" rubber. The same traveller is also available with an 8 mm shackle (for this case add **/SH** to the model number).

The complete system includes 1.5 m long track.

The sheet block (OPF 70, page 62) is not included.

The blocks in the OPF series to be mounted on the 4Race cars must have a special long swivel head as described on page 57; add **/J** to the block model code.



COMPLETE SYSTEM

Mod. 4911



COMPLETE SYSTEM

Mod. 4913

CAR CONTROL 2:1



COMPLETE SYSTEM

Mod. 4914

CAR CONTROL 3:1



COMPLETE SYSTEM

Mod. 4915

CAR CONTROL 3:1

Cam-cleat on the car



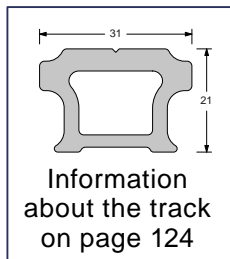
COMPLETE SYSTEM

Mod. 4916

CAR CONTROL 4:1

Cam-cleat on the car





SIZE 150

For boats up to 42 ft

This traveller, 150 mm long (**SWL = 1400 kg**), is fitted with a special "stand-up" connection for Antal block size 80 mm and includes the "stand-up" rubber. The same traveller is also available with an 8 mm shackle (for this case add **/SH** to the model number). The complete system includes 1.5 m long track.

The sheet block (OPF 80, page 64) is not included.

The blocks in the OPF series to be mounted on the 4Race cars must have a special long swivel head as described on page 57; add **/J1** to the block model code.



COMPLETE SYSTEM

Mod. 4951

CAR CONTROL 3:1



COMPLETE SYSTEM

Mod. 4952

CAR CONTROL 4:1



COMPLETE SYSTEM

Mod. 4953

CAR CONTROL 5:1



COMPLETE SYSTEM

Mod. 4954

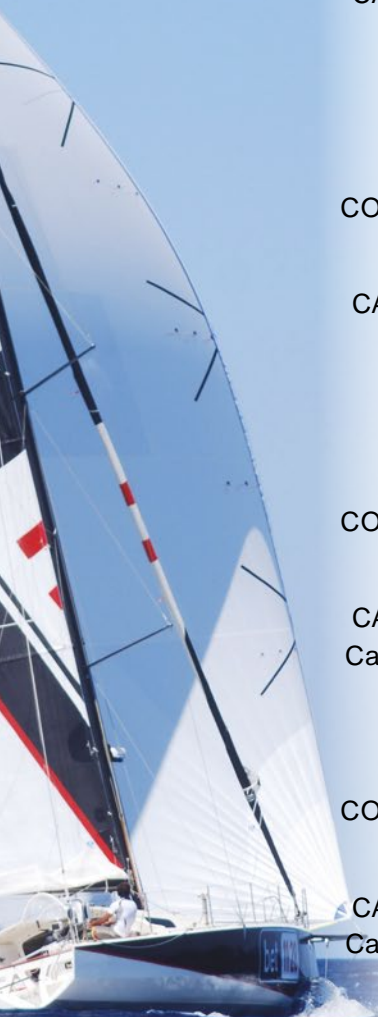
CAR CONTROL 4:1 Cam-cleat on the car



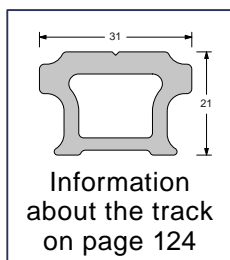
COMPLETE SYSTEM

Mod. 4955

CAR CONTROL 5:1 Cam-cleat on the car



main cars - size 190



SIZE 190

For boats up to 48 ft

This traveller, 190 mm long (**SWL = 1900 kg**), is fitted with a special "stand-up" connection for one or two Antal sheet blocks (size 80 mm) and includes the "stand-up" rubber. The same traveller is also available with a 10 mm shackle (for this case add **/SH** to the model number). The complete system includes 2 m long track.

The sheet blocks (OPF 80, page 64) are not included.

The blocks in the OPF series to be mounted on the 4Race cars must have a special long swivel head as described on page 57; add **/J2** to the block model code.



COMPLETE SYSTEM

Mod. 4991

CAR CONTROL 4:1



COMPLETE SYSTEM

Mod. 4992

CAR CONTROL 5:1



COMPLETE SYSTEM

Mod. 4993

CAR CONTROL 5:1

Cam-cleat on the car



COMPLETE SYSTEM

Mod. 4994

CAR CONTROL 6:1

Cam-cleat on the car



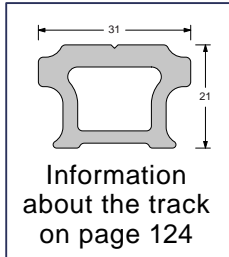
COMPLETE SYSTEM

Mod. 4995

CAR CONTROL 4:1

Double block version





SIZE 260

For boats up to 52 ft

This traveller, 260 mm long (**SWL = 2800 kg**), is fitted with a special connection for one (size 100 mm) or two (size 80 mm) Antal sheet blocks and with 55 mm control sheaves. The complete system includes 2,5 m long track.

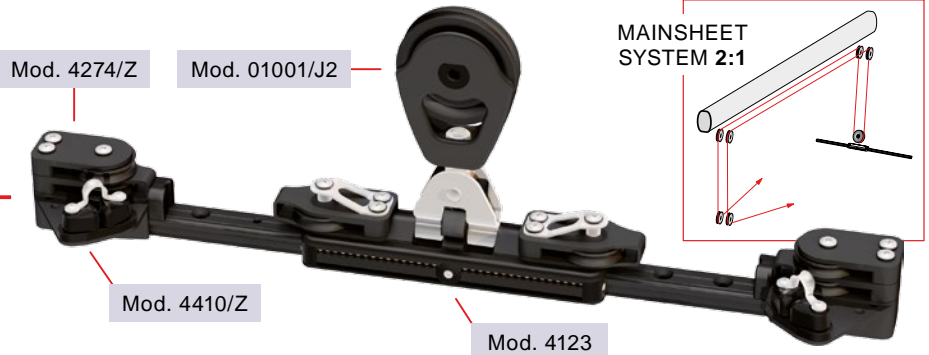
The sheet blocks (OPF 80 and 100, page 64-65) are not included.

The blocks in the OPF series to be mounted on the 4Race cars must have a special long swivel head as described on page 57; add **/J2** to the block model code.

COMPLETE SYSTEM

Mod. 4921

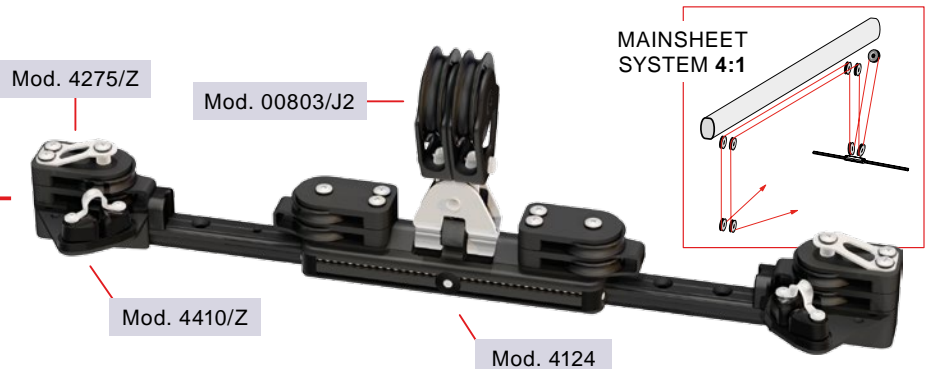
CAR CONTROL 3:1



COMPLETE SYSTEM

Mod. 4922

CAR CONTROL 4:1



COMPLETE SYSTEM

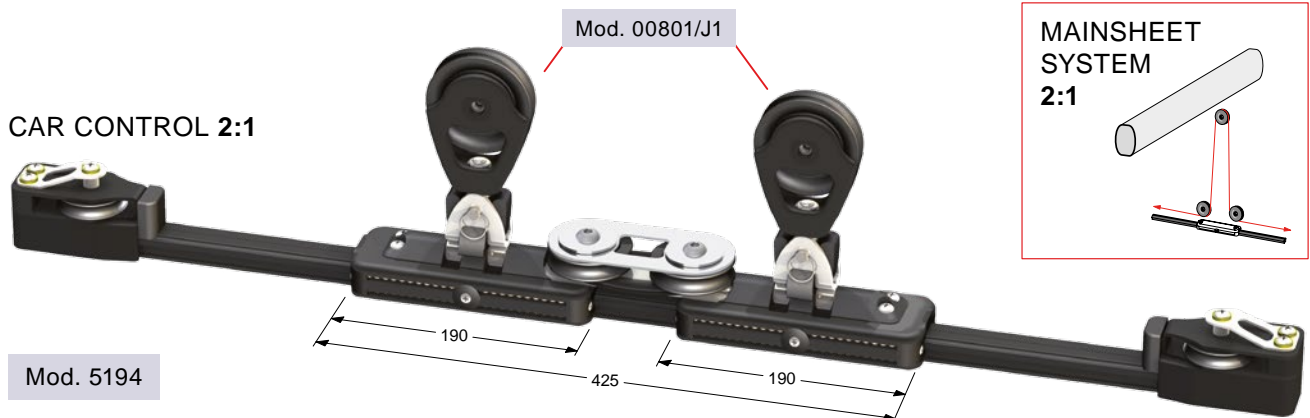
Mod. 4925

CAR CONTROL 3:1



double and triple main cars

CAR CONTROL 2:1



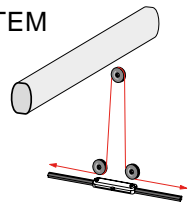
The double car is obtained with 2x190 mm long cars with two D=65 mm sheaves for a 2:1 control.

SWL = 3800 kg For catamarans up to 50 ft LOA

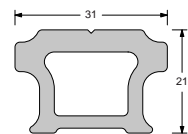
The mainsheet blocks (OPF 80, page 64) **are not included**.

The blocks in the OPF series to be mounted on the 4Race cars must have a special long swivel head as described on page 57; add **/J** to the block model code.

MAINSHEET SYSTEM 2:1

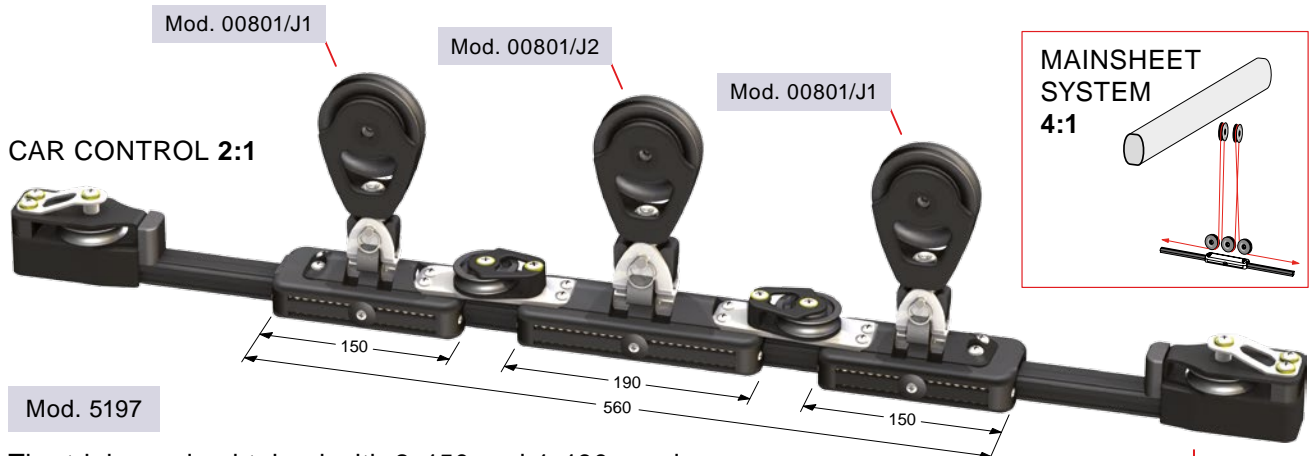


Mod. 4273/Z



Information about the track on page 124

CAR CONTROL 2:1

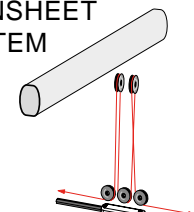


The triple car is obtained with 2x150 and 1x190 mm long cars with two D=70 mm blocks (OPF 70, page 62) for a 2:1 control.

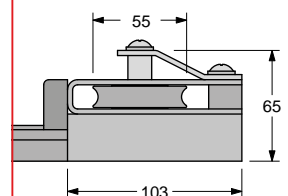
SWL = 4400 kg For catamarans up to 60 ft LOA

The mainsheet blocks (OPF 80, page 64) **are not included**.

MAINSHEET SYSTEM 4:1



Mod. 4273/Z



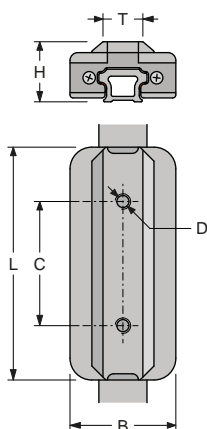
End fitting, 1 sheave (D=55 mm) and becket



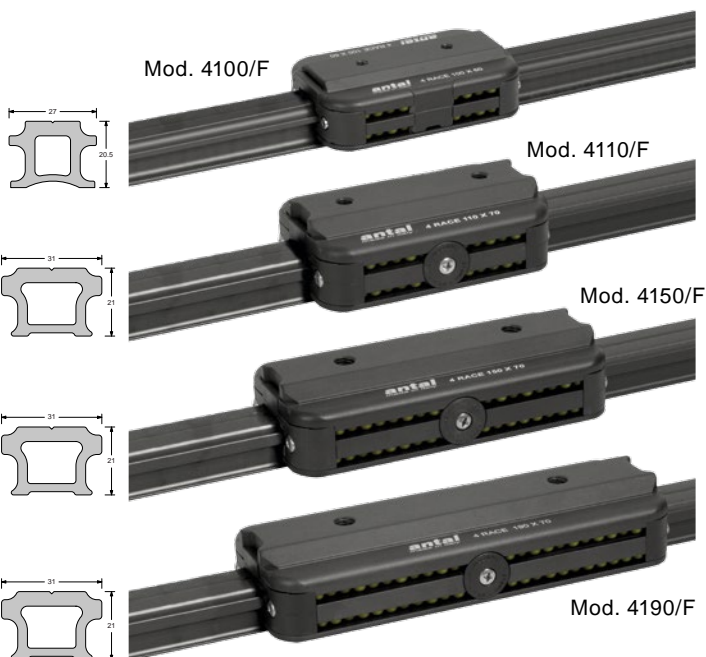
4RACE BB CARS FLAT SERIES

All the 4Race ball-bearing cars are also available in “flat” versions with 2 threaded holes for an easy connection with other systems, for example, in steering systems or for driving large sliding hatches, etc.

These cars are fitted with 4 circuits of Torlon balls providing compression loads as high as the pulling loads and greater torsional resistance.



NEW



TRAVELLER SIZE AND LOAD TABLE

MODEL	TRACK SIZE mm	L mm	B mm	C mm	D mm	H mm	T mm	SWL kg	WEIGHT kg	BALLS n°
4100/F	27 x 20.5	100	62	43	6	36	24	820	0.20	108
4110/F	31 x 21	110	70	65	8	39	26	1000	0.44	124
4150/F		150		80	10			1400	0.64	172
4190/F		190		103	10			1900	0.79	224

More information about the 27x20 track on page 121 and about the 31x21 track on page 124

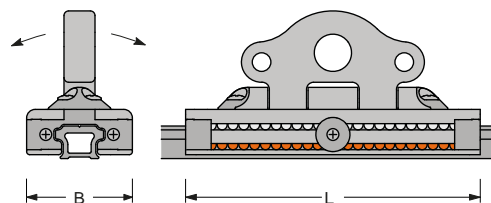


S/Y "In Love"

ball bearing cars for Dyneema links

CARS FOR DYNEEMA LINKS

Four ball bearing models, 110, 150, 190 and 230 mm long, for the same track 31x21 (see page 124) fitted with a special aluminium pivoting bracket suitable for Dyneema links, for both: 2 side control lines and one central connection for a sheet block or a sheet Ring.



MODEL	L mm	B mm	SWL kg	WEIGHT kg
4110/D	110	70	1000	0.45
4150/D	150		1400	0.65
4190/D	190		1900	0.85
NEW 4230/D	230		2400	1.05

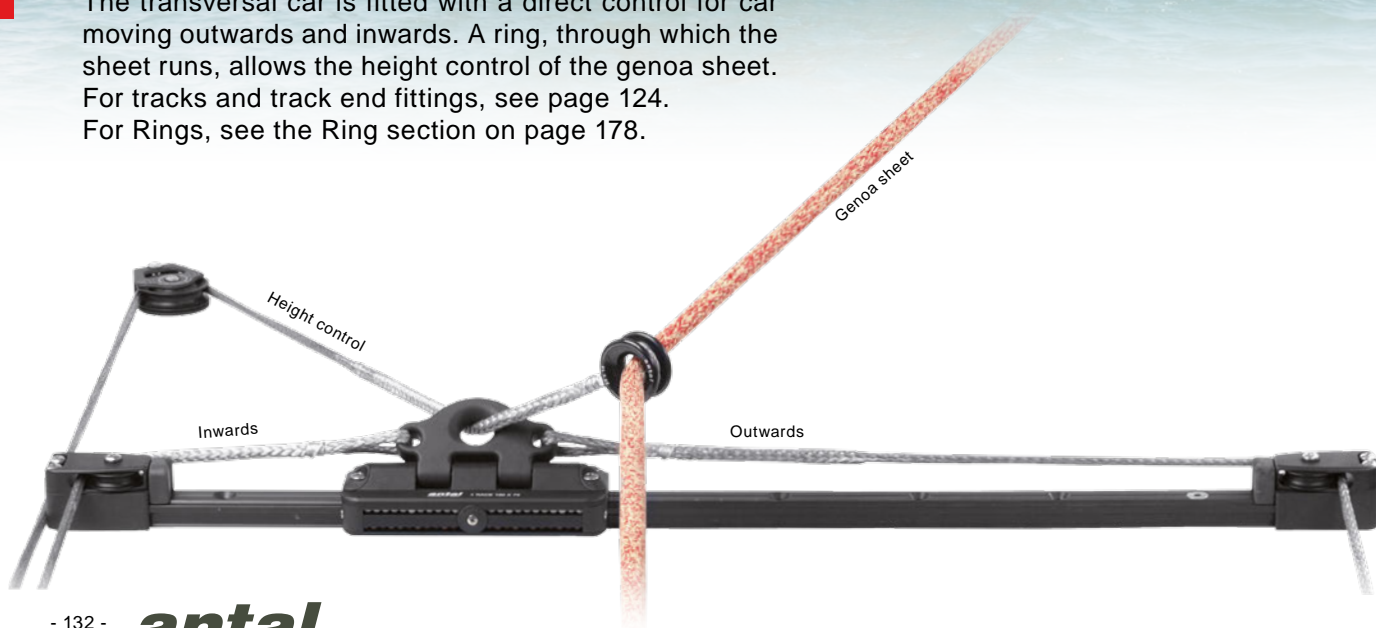
For tracks and track end fittings, see page 124.



Farnova 60

TRANSVERSAL CARS FOR GENOA SHEET

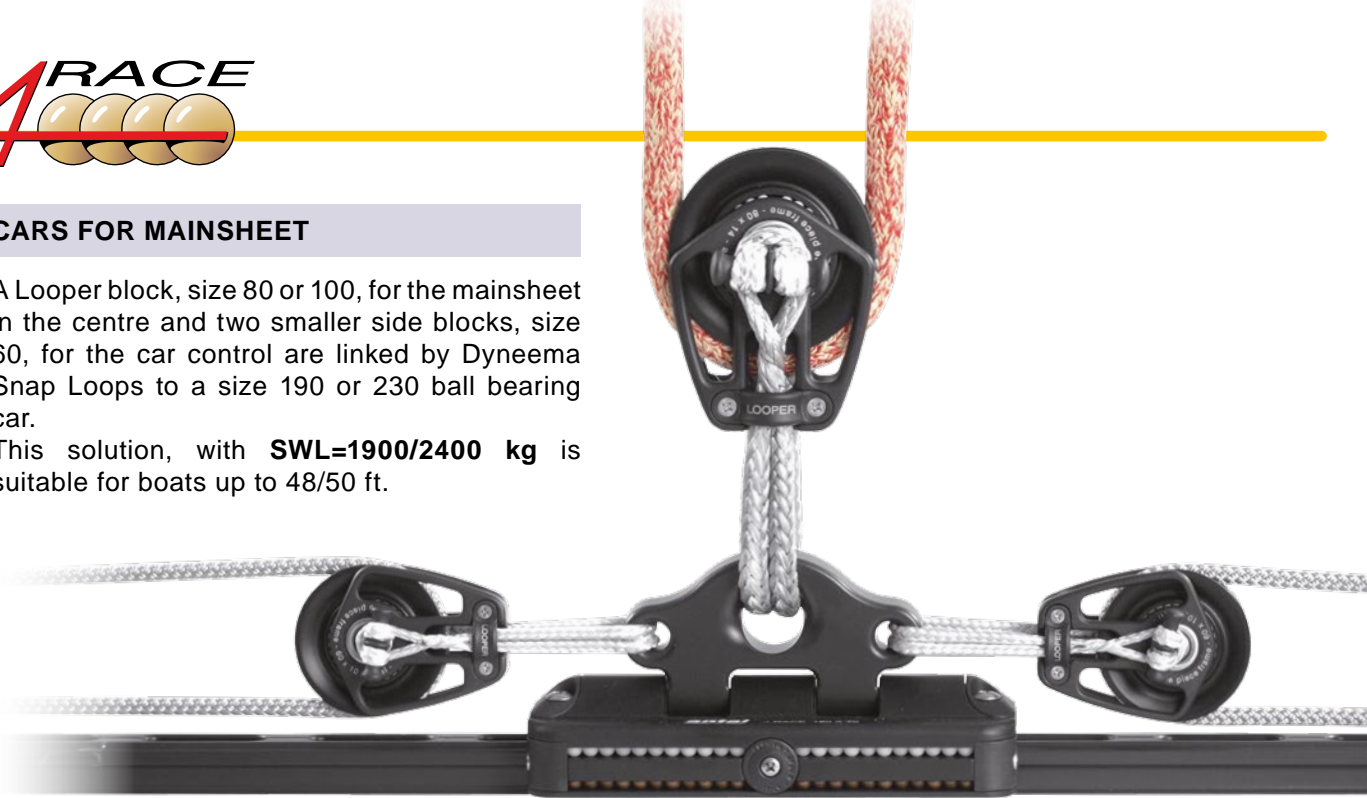
The transversal car is fitted with a direct control for car moving outwards and inwards. A ring, through which the sheet runs, allows the height control of the genoa sheet. For tracks and track end fittings, see page 124. For Rings, see the Ring section on page 178.



CARS FOR MAINSHEET

A Looper block, size 80 or 100, for the mainsheet in the centre and two smaller side blocks, size 60, for the car control are linked by Dyneema Snap Loops to a size 190 or 230 ball bearing car.

This solution, with **SWL=1900/2400 kg** is suitable for boats up to 48/50 ft.



For Looper blocks see page 74.

For Dyneema Snap Loop, see page 183.

For tracks and accesories, see page 124.



For larger boats up to 60 ft and SWL up to 3800 kg, two cars can be linked together.

Two Looper blocks, size 80, for the sheet and two Looper blocks, size 60, for car control complete this double 190 mm car.



Custom solution with two extra-long cars (2 x 230 mm) and SWL 4800 kg.

Two Looper blocks, size 100, for the mainsheet and two Looper blocks, size 70, for the side control, complete this solution designed for a 65 ft boat.



genoa cars 150 / 190 / 260



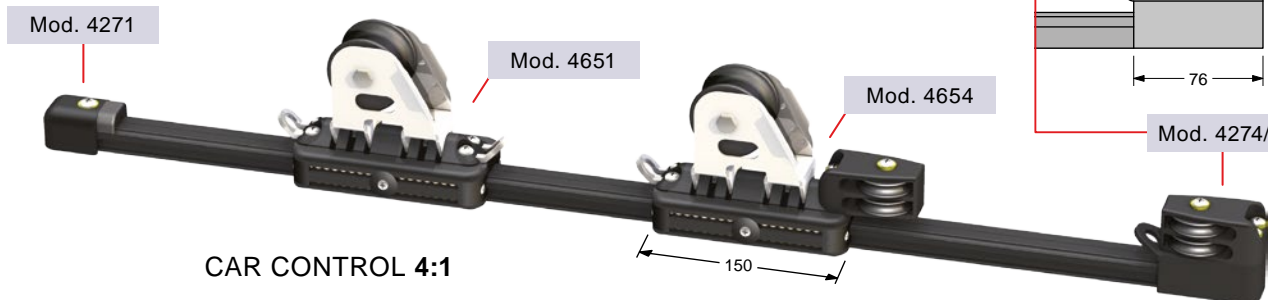
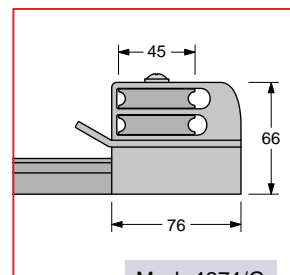
SIZE 150

For boats up to 42 ft

This 150 mm long traveller (**SWL = 1400 kg**) is fitted with one 60 mm sheave, for the genoa sheet, and two 45 mm sheaves for the car control.

All these sheaves are made of high strength resin with a double side ball bearing.

End fitting, 2 sheaves (D=45 mm) and becket



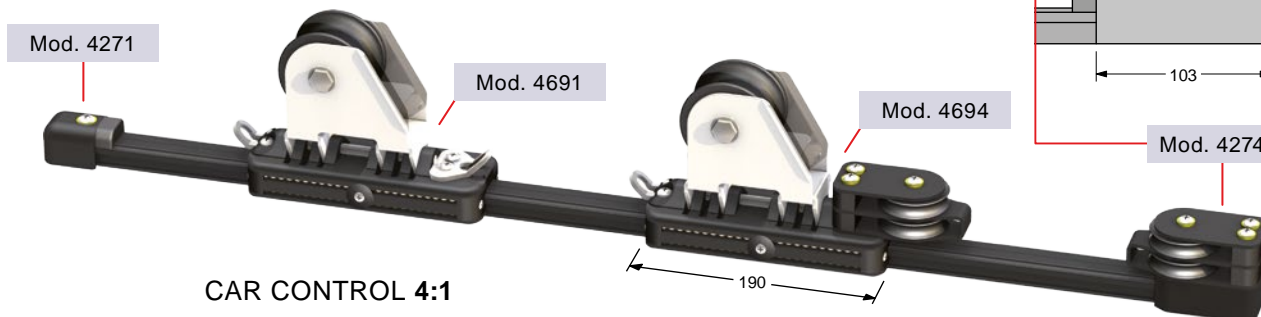
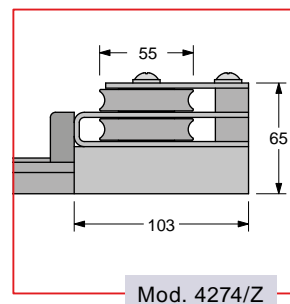
SIZE 190

For boats up to 48 ft

This 190 mm long traveller (**SWL = 1900 kg**) is fitted with one 75 mm aluminium sheave with Composite Fibre main bearing for the genoa sheet, and two 55 mm resin sheaves for the car control.

All these sheaves are made with a double side ball bearing.

End fitting, 2 sheaves (D=55 mm) and becket

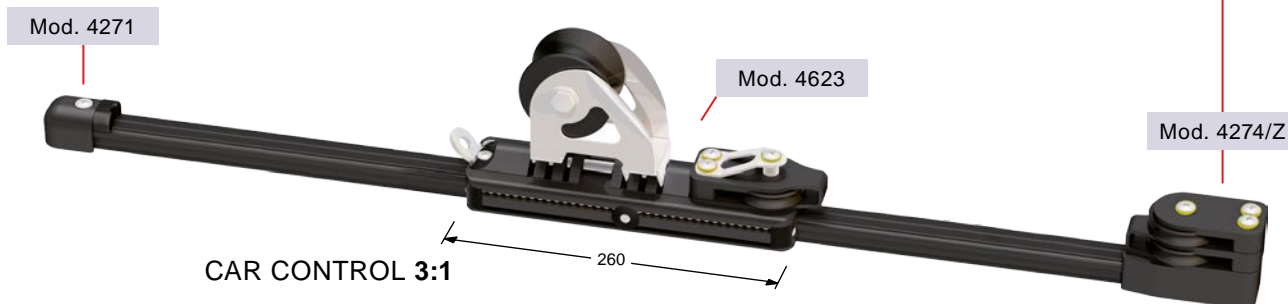


SIZE 260

For boats up to 52 ft

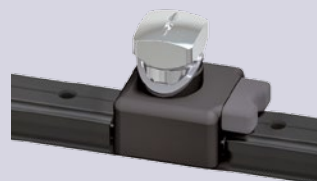
This 260 mm long traveller (**SWL = 2800 kg**) is fitted with one 75 mm aluminium sheave with Composite Fibre main bearing for the genoa sheet, and one 55 mm resin sheave for the car control.

All these sheaves are made with a double side ball bearing.



Mod. 4291

Systems of this page may be completed with the adjustable stop pin mod. 4291 (only with track mod. 4520).



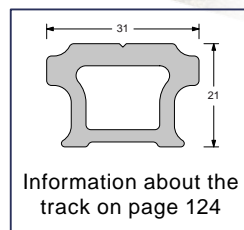
Mod. 4150/C

TRANSVERSE GENOA CAR

For boats up to 50 ft

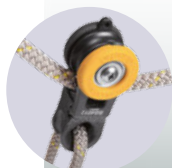
This 150 mm long traveller (SWL = 1400 kg) is fitted with two high-load Ø20 mm sheaves and one integrated side ring for a 2:1 control to move the car inward. It moves outwards automatically. Weight = 0.80 kg

NEW



sheet blocks on page 98-99

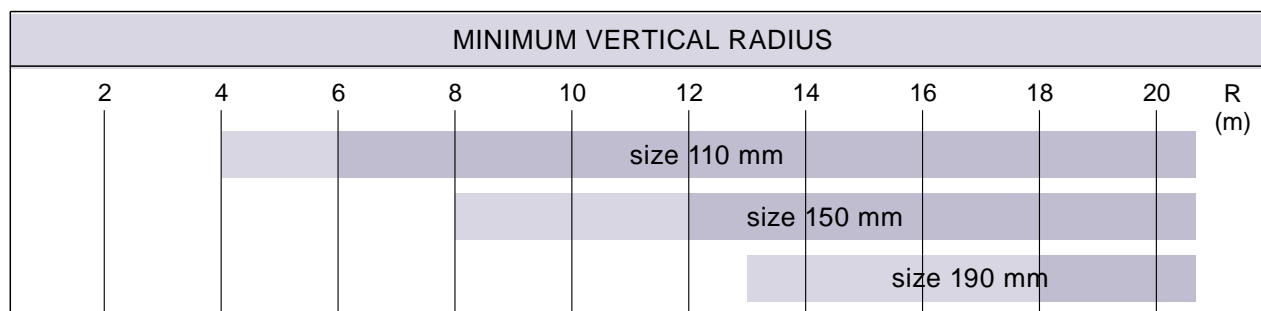
Mod. TB4212 42 mm sheave for 12 mm line
or snatch-blocks:



Mod. BB4012 40 mm sheave for 12 mm line
Mod. BB6014 60 mm sheave for 14 mm line



Club Swan 50 - Nautor

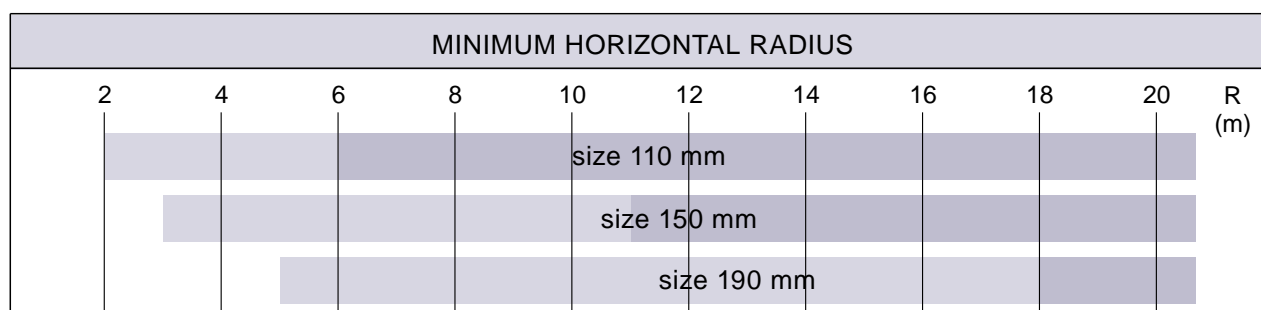


Acceptable



Acceptable but with a reduction of the working load

R = vertical bending



Acceptable



Acceptable only for a modified car

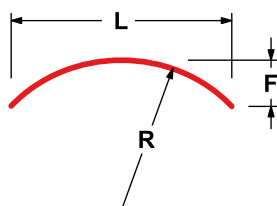
R = horizontal bending



Horizontally curved track with a size 110 car.

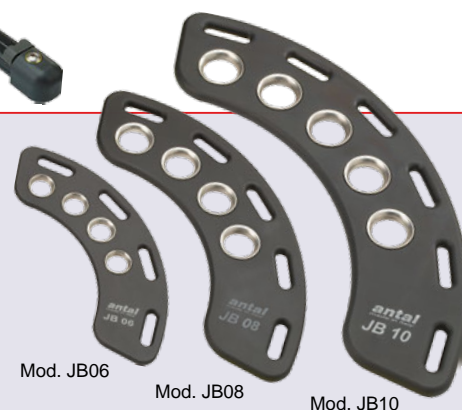
MAXIMUM BENDING (MINIMUM RADIUS) FOR ANTAL TRACKS

On request Antal will supply bent tracks whether in the vertical or in the horizontal plane. Minimum radius for different lengths of the car: 110, 150 and 190 mm are quoted on the tables.



To find the value of the curved radius start from the length L and height F of the arch using the following approximate formula (R, L and F will be measured with the same unit of length):

$$R = \frac{L^2}{8 \cdot F}$$



SELF-TACKING JIB BOARDS

5 hard black anodized aluminium models for "webbing" connection to the sail.

There are 4/5 different positions for the sheet block that will be simply fixed with an HR shackle.

SELF-TACKING SYSTEMS

Antal has two solutions for self-tacking using track and travellers of the new "4RACE" system.

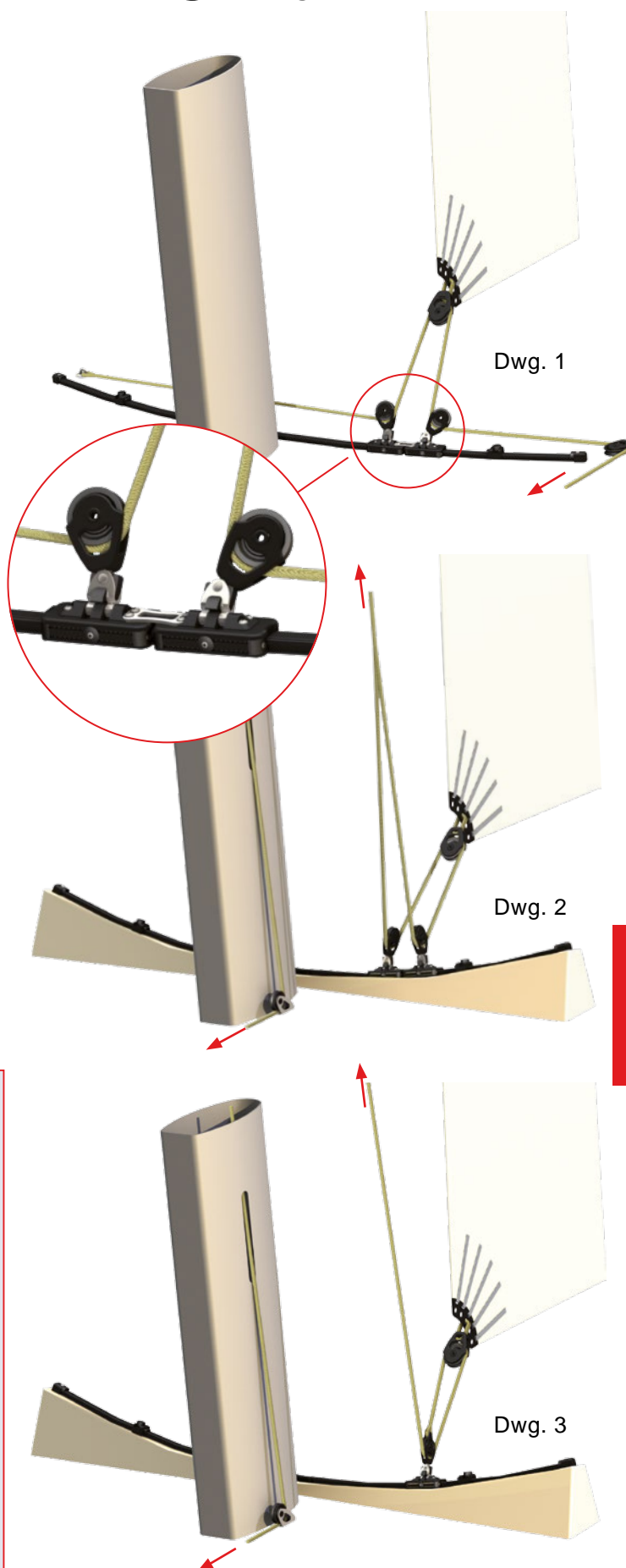
The first solution (Dwg. 1) needs a "footblock" for the sheet on one side of the track; the sheet, from this footblock, goes to the cockpit. In this case the track will be curved only in the horizontal plane.

In the second solution (Dwg. 2 and 3) the sheet climbs up the mast then down and to the cockpit as a halyard. In this case the track will be curved vertically and trimmed forward. Travellers with one or two sheet blocks will be used.

Double cars are often considered because a shorter car accepts a smaller radius.

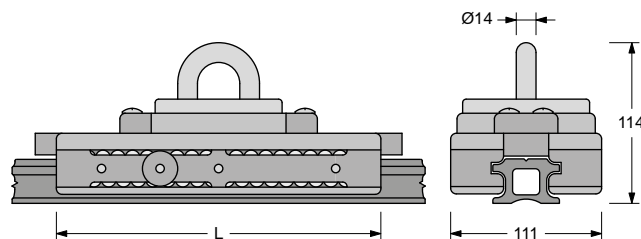
To control the traveller moving it will be useful to consider also two side stop-pins (mod. 4290) and consequently the track for stop pin (mod. 4520).

Systems of drawings 1 and 2 are obtained with 2 x 110 mm travellers and 2 x 70 mm blocks (for boats up to 50 ft), or 2 x 150 mm travellers and 2 x 80 mm blocks (for boats over 50 ft).



MODEL	R mm	SWL kg	WEIGHT kg	A x B mm	HR SHACKLE mm
JB06	110	1000	0.10	6 x 18	6
JB08	150	1800	0.25	7 x 20	8
JB10	210	3000	0.60	7 x 24	10
JB12	270	5000	1.60	8 x 40	12
JB14	385	7000	3.85	12 x 50	14

maxi 47 - sizes 230/330/430



TRAVELLER LOAD AND SIZE				
MODEL	L mm	SWL kg	WEIGHT kg	BALLS n°
614.219	234	3800	2.10	86 DELRIN + 86 TORLON
614.229	334	5800	3.00	124 DELRIN + 124 TORLON
614.239	434	7200	3.90	162 DELRIN + 162 TORLON



Mod. 601.123 **MAXI TRACK 47**

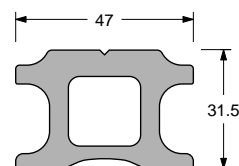
Hard black anodized light alloy extrusion.
Weight = 1.8 kg/m
Fasteners = 10 mm screws / 100 mm spacing.

Mod. 601.123/R **MAXI 47 RACE VERSION**

As the previous one with lightening holes.
Weight = 1.15 kg/m

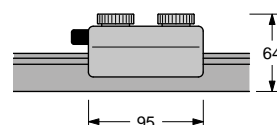
Mod. 601.223 **MAXI 47 WITH STOP-PIN HOLES**

As the above Maxi track 47 with stop-pin holes.



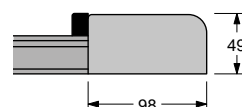
Mod. 691.822 **DOUBLE ADJUSTABLE STOP-PIN**

Special double stop-pin with two independent "screw pins" (distance 50 mm). Only for track mod. 601.223



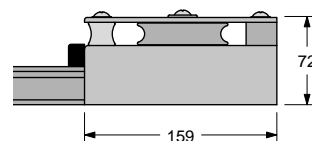
Mod. 691.560 **SIMPLE END FITTING**

Hard black anodized aluminium base with shock proof rubber.
Weight = 0.40 kg Fasteners = 2xØ10 mm screws



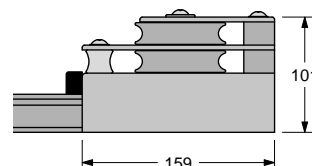
Mod. 691.561 **END FITTING WITH 1 SHEAVE**

Hard black anodized aluminium base, one D=75 mm sheave, one becket and shock proof rubber.
Weight = 0.90 kg Fasteners = 2xØ10 mm screws



Mod. 691.563 **END FITTING WITH 2 SHEAVES**

Hard black anodized aluminium base, two D=75 mm sheave, one becket and shock proof rubber.
Weight = 1.05 kg Fasteners = 2xØ10 mm screws



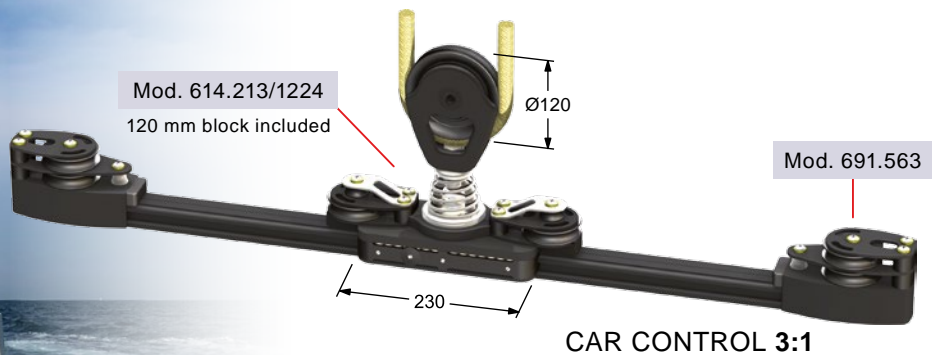
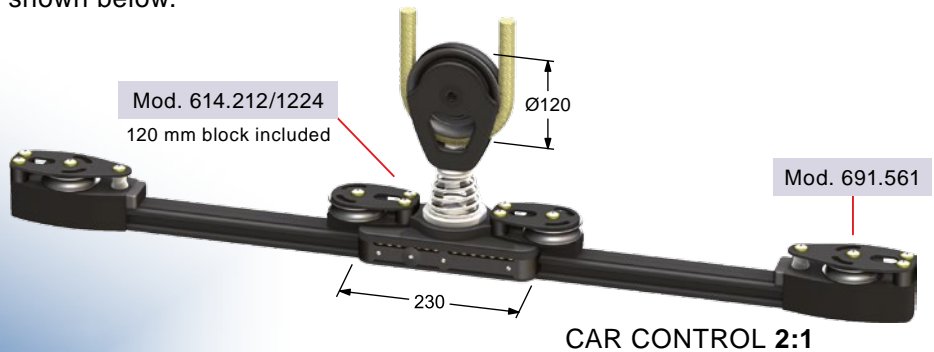
MAINSHEET SYSTEM, MAXI 47 TRACK SIZE 230 TRAVELLER

For boats up to 60 ft

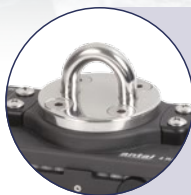
One 120 mm block, OPF series, is fitted with a padeye and spring on the car for the mainsheet; one or two 75 mm sheaves for the car control.

Car control 2:1, 3:1 and 4:1 are shown below.

SWL = 3800 kg



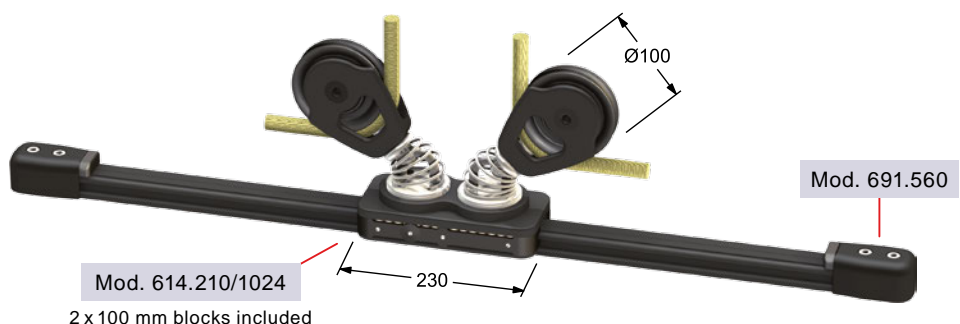
Rimar 45 RS



All the cars on this page are also available without the sheet block and with a simple pad-eye. To order this version, just end the model code before the "/" (for example, Mod. 614.212).

SELF-TACKING SOLUTION

On the maxi 47 track there is a 230 mm with 2 blocks size 100 mm (OPF series).



maxi 47 - size 330



MAINSHEET SYSTEM, MAXI 47 TRACK SIZE 330 TRAVELLER

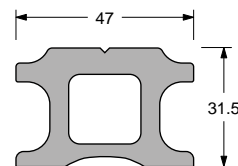
For boats up to 70 ft

1 x 140 or 2 x 120 mm blocks (OPF series) are fitted with a pad-eye and spring on the car for the mainsheet; one or two 75 mm sheaves for the car control.

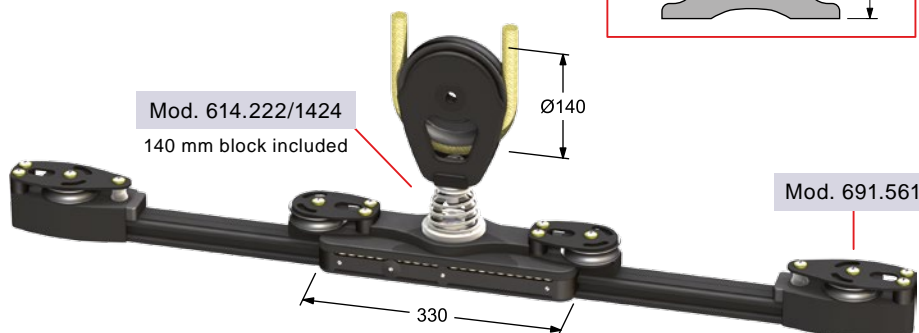
Car control 2:1 and 3:1 are shown below.

SWL = 5800 kg

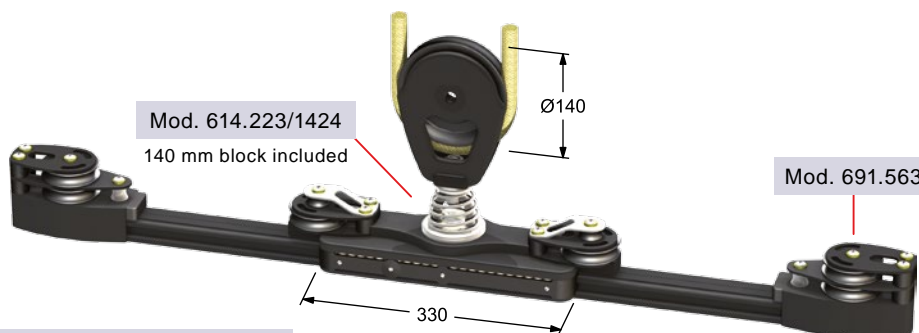
Information about the track on page 138



CAR CONTROL 2:1

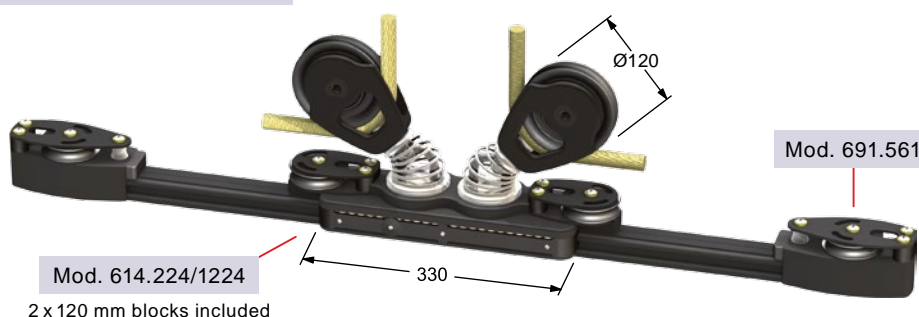


CAR CONTROL 3:1

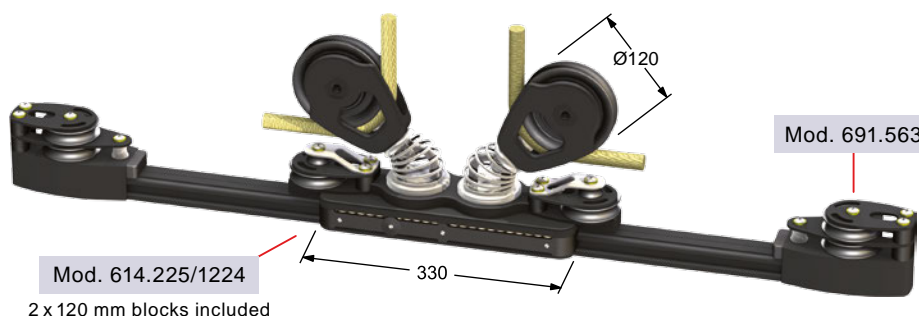


If the cars on this page are also available without the sheet block and with a simple pad-eye. To order this version, just end the model code before the "/" (for example mod. 614.222).

CAR CONTROL 2:1



CAR CONTROL 3:1



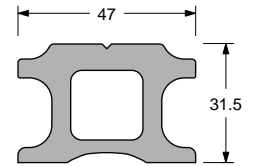
MAINSHEET SYSTEM, MAXI 47 TRACK SIZE 430 TRAVELLER

For boats up to 80 ft

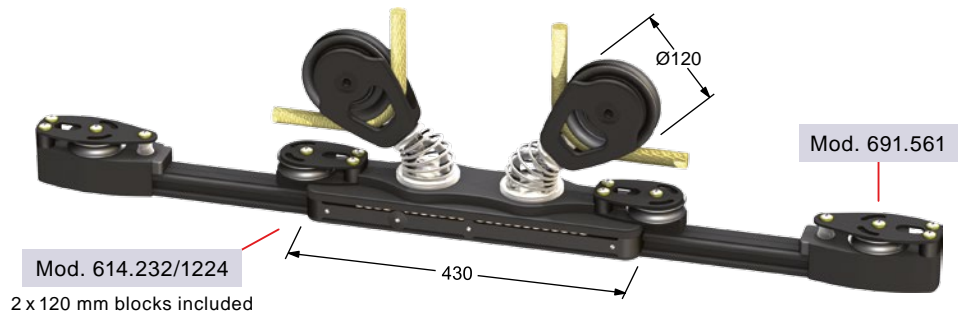
2x120 or 3x120 mm blocks (OPF series) are fitted with a padeye and spring on the car for the mainsheet; one or two 75 mm sheaves for the car control. Car control 2:1 and 3:1 are shown below.

SWL = 7200 kg

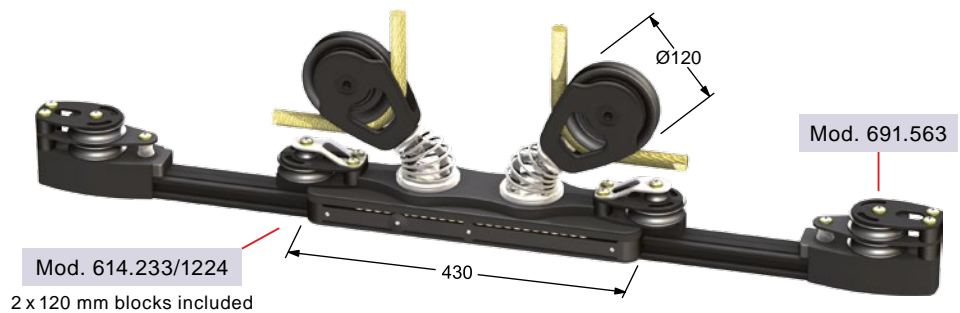
Information about the track on page 138



CAR CONTROL 2:1



CAR CONTROL 3:1



If the cars on this page are also available without the sheet block and with a simple pad-eye. To order this version, just end the model code before the "/" (for example mod. 614.232).

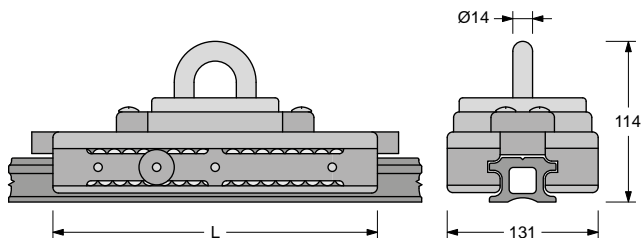
CAR CONTROL 2:1



CAR CONTROL 3:1



maxi 67 - sizes 330 / 430 / 530

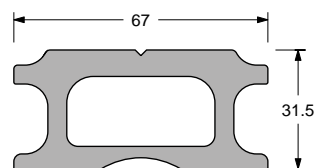


TRAVELLER LOAD AND SIZE				
MODEL	L mm	SWL kg	WEIGHT kg	BALLS n°
615.229	334	5800	4.30	124 DELRIN + 124 TORLON
615.239	434	7200	5.50	162 DELRIN + 162 TORLON
NEW 615.249	534	9000	6.80	206 DELRIN + 206 TORLON



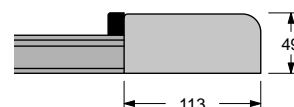
Mod. 601.124 **MAXI TRACK 67**

Hard black anodized light alloy extrusion.
Weight = 2.4 kg/m
Fasteners = 12 mm screws / 100 mm spacing.



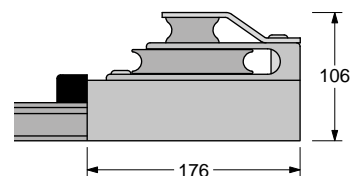
Mod. 691.660 **SIMPLE END FITTING**

Hard black anodized aluminium base with shock proof rubber.
Weight = 0.60 kg Fasteners = 2xØ12 mm screws



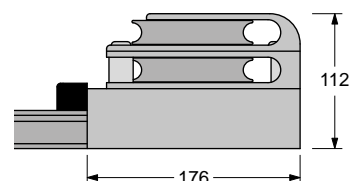
Mod. 691.661 **END FITTING WITH 1 SHEAVE**

Hard black anodized aluminium base, one D=100 mm sheave (Opf series p.65), one becket and shock proof rubber.
Weight = 1.30 kg Fasteners = 2xØ12 mm screws



Mod. 691.663 **END FITTING WITH 2 SHEAVES**

Hard black anodized aluminium base, two D=100 mm sheave (Opf series p.65), one becket and shock proof rubber.
Weight = 1.50 kg Fasteners = 2xØ12 mm screws



CUSTOM MODEL

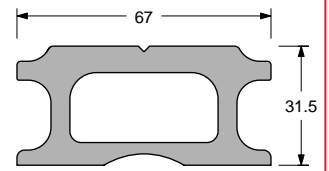
Two cars 330 mm long
and two blocks 150 mm diameter.

SWL = 2 x 5800 kg

MAINSHEET SYSTEM, MAXI 67 TRACK
SIZE 330 - 430 TRAVELLER SWL = 5800 - 7200 kg

D=140 mm or D=120 mm blocks (OPF series) can be fitted with a padeye and spring on the car for the mainsheet; two D=100 mm sheaves for the car control. Car control 2:1 and 3:1 are shown below.

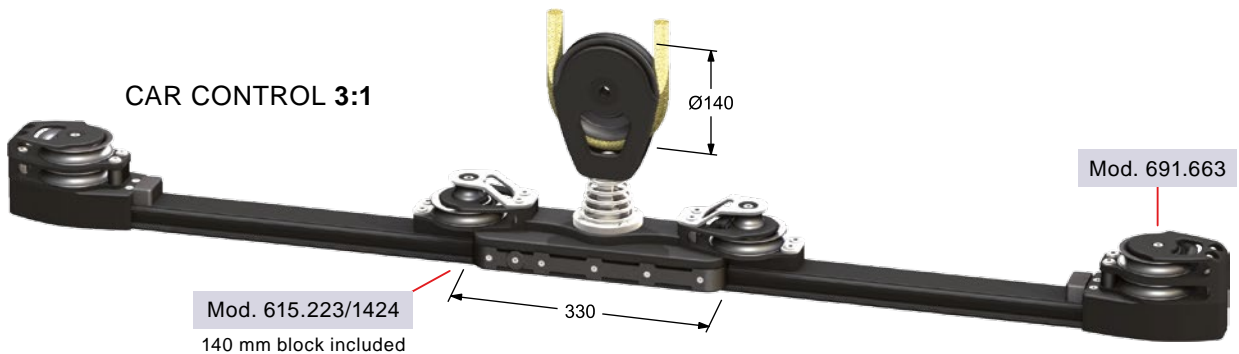
Information about the track on page 142



CAR CONTROL 2:1

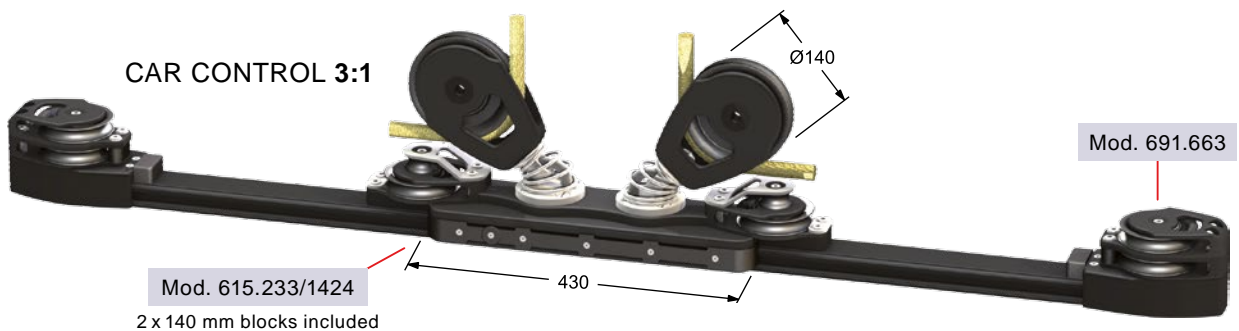


CAR CONTROL 3:1

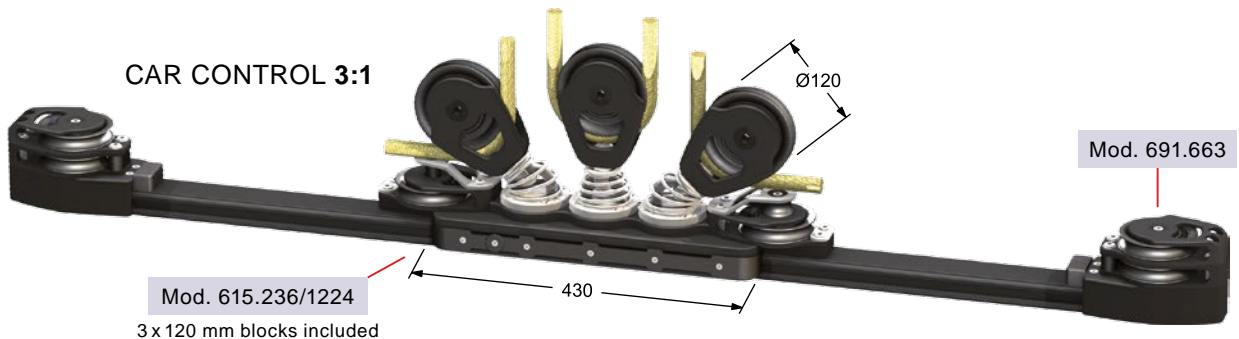


If the cars on this page are also available without the sheet block and with a simple pad-eye. To order this version, just end the model code before the "/" (for example mod. 615.222).

CAR CONTROL 3:1



CAR CONTROL 3:1



antal for maxi yachts

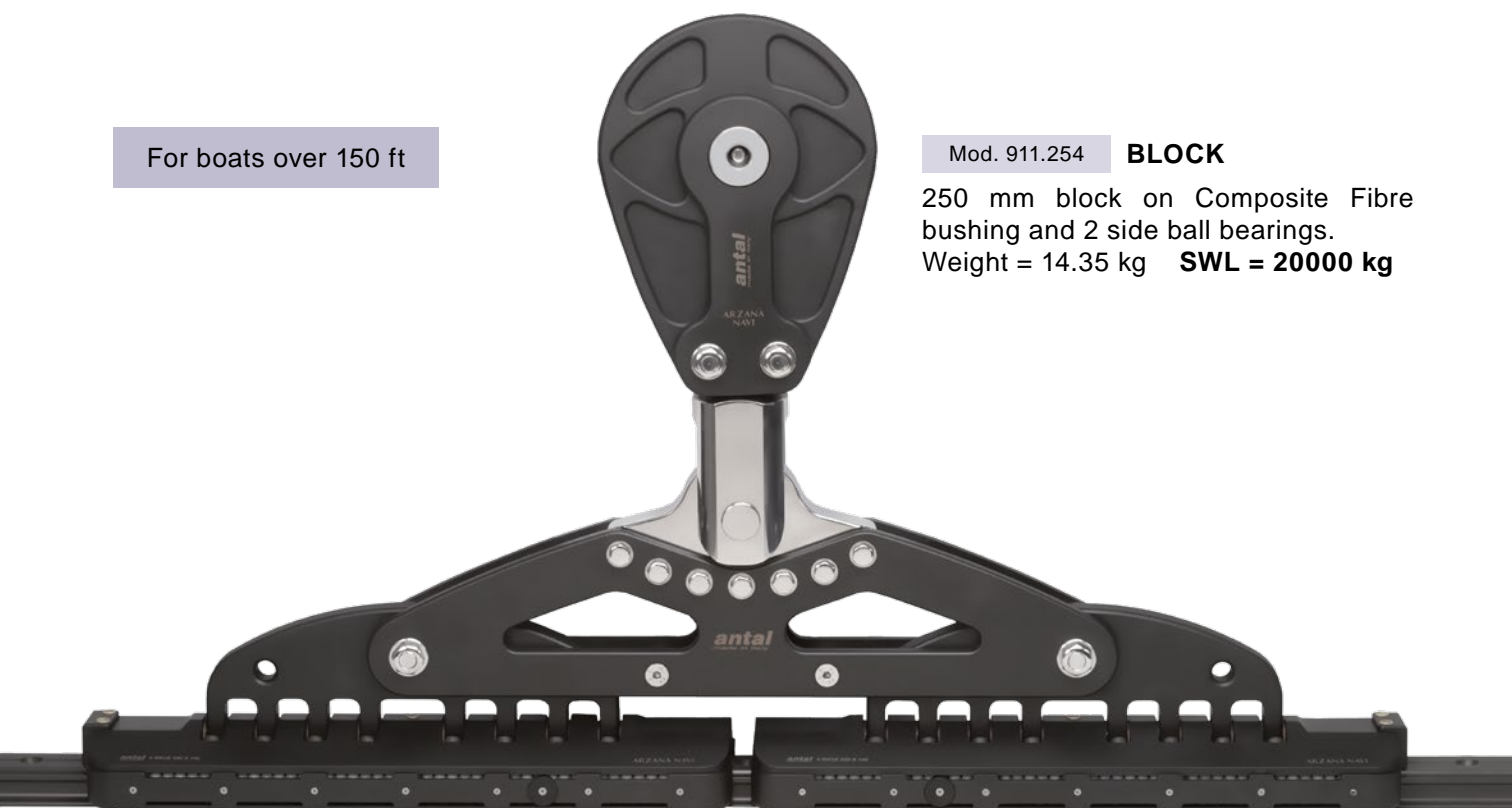


For boats over 150 ft

Mod. 911.254 **BLOCK**

250 mm block on Composite Fibre bushing and 2 side ball bearings.

Weight = 14.35 kg **SWL = 20000 kg**



TRAVELLERS

2 x 530 mm long, hard black anodized aluminium one-piece body on Torlon ball bearings Antal 4Race system (Each traveller works on 424 balls).

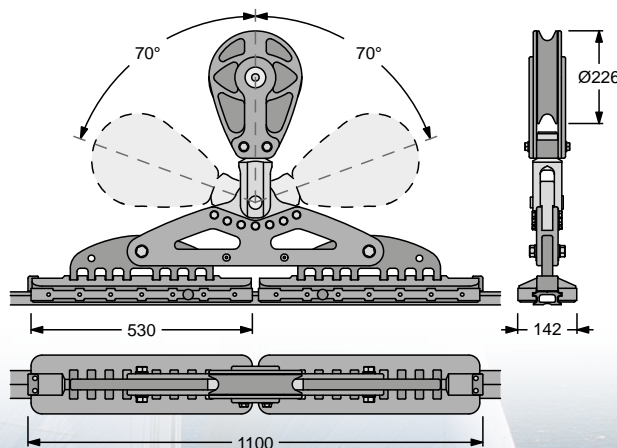
Weight = 26 kg **SWL = 18000 kg**

TRACK MAXI 67

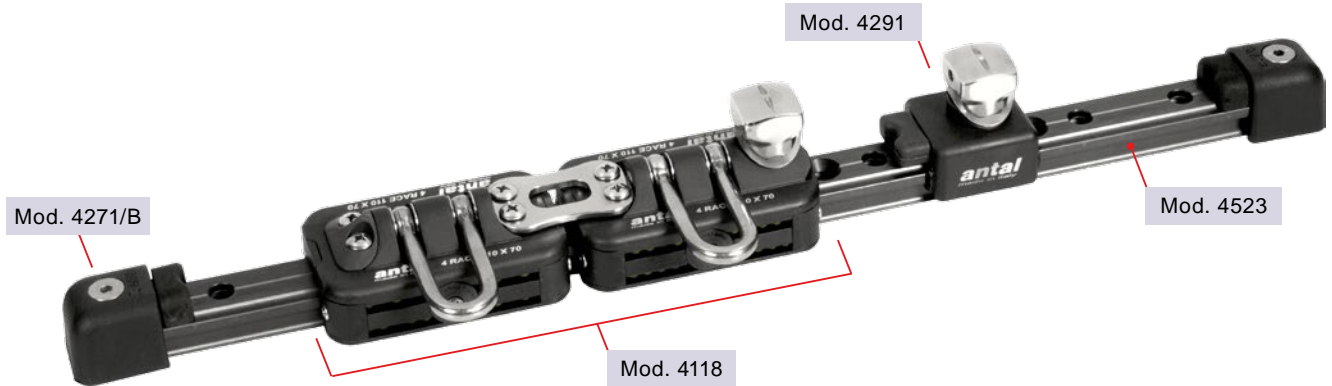
Hard black anodized and teflon coated aluminium extrusion 4Race system.

Weight = 2.40 kg/m

Fasteners = 12 mm screws / 100 mm spacing



safety device for outboard cleaning and maintenance



The operator (using a suitable harness) is tied to a double traveller that slides horizontally on the rail and is free to reach the working area in perfect safety.

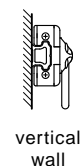
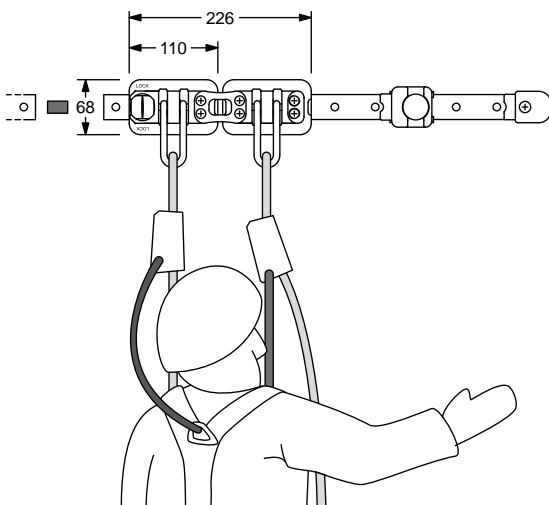
The double traveller is fitted with two shackles and a stop pin:

- stop pin open: it allows the traveller to slide along the whole track;
- stop pin closed: it locks the traveller when it intercepts the first hole in the rail.

Other travellers (without any stop pin) can be connected to the main traveller for further security and for carrying tools or any other material (bosun's chair, etc.)

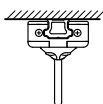


More information in the LRS user's guide available on request.



vertical wall

The track can be fixed both on a horizontal surface and on a vertical wall.



horizontal surface

The system consists of:

Mod. 4523 Tubular track (31x21 mm) in high resistance hard black (silver on request) anodized extruded aluminium, Ø8 mm fixing screws every 100 mm, holes to stop the traveller every 50 mm, weight 0.75 kg/m, available in 3 m lengths.

Mod. 4271/B Aluminium end-fitting with rubber protection.

Mod. 4291 Aluminium stop pin on nylon guides.

Mod. 4283 Track joint, aluminium made.

Mod. 4118 Hard black anodized aluminium double traveller (2 x 110 mm). The traveller slides on four circuits of Torlon balls and its hold is guaranteed even in the event of the balls failing. Two AISI 316 steel shackles with 180° rotation.

Mod. 4119/SP The car with the stop-pin is also available individually.



Mod. 4119/SP





full batten systems



HS guide systems..... 148



Fibreball systems..... 157



special products..... 167



batten receptacles 168



6 different tracks and 14 slider systems, a wide and complete range for full-batten mainsails, for boats from 30 to 100 ft and for multihulls.

HS GUIDE SYSTEMS

A simple and efficient solution with minimum sizes for very high loads, designed for racing. The HS guide systems have been developed also for cruising and charter boats.

FIBREBALL SYSTEMS

Designed for large boats and for mainsails with a large roach, they offer the high strength of HS Fibre Guides (for tension load) and the low friction of the Torlon ball bearing (for compression).

hook carriages..... 170



full batten HS guide systems



HS SYSTEM

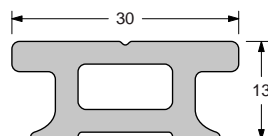
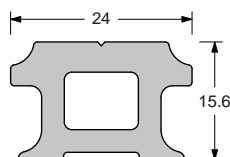
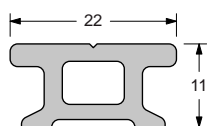
The Antal HS Guide System is designed for boats with full batten mainsails that experience high loads and compression-loading on the mainsail luff. The system's aluminium sliders contain HS composite fibre inserts that run on aluminium track mounted on the mast. HS composite fibre is a new material that is durable over long periods of use and offers extremely low friction coefficients. The material is made from special resins strengthened with fibre and is self lubricating.

The HS Guide System provides the following advantages:

- the low friction properties of the HS composite fibre allows the cars to be shorter than standard ball-bearing car systems, thereby reducing the stacking height at the mast when the sail is down;
- the lower cars can easily be removed from the track when the sail is reefed, thereby keeping the tack low to the boom;
- minimum friction under load;
- less maintenance than ball bearing car systems;
- cars can easily be removed and re-installed on the track whenever the mainsail is changed.

Each batten end fitting is attached to a slider with a triaxial joint to ensure that the batten can freely orient itself under all points of sail.

At least one simple slider should be attached to the sail with nylon webbing between two battens. A headboard is attached to the sail with webbing and is secured to the slider (double or triple) with a clevis pin which allows the headboard to pivot and to be removed.



TRACK	SYSTEM	FOR BOATS UP TO	PAGE
HS 22	40	40'	149
	50/R	50' (Racing)	150
	60/R	60' (Racing)	151
HS 24	50	50'	152
	60	60'	153
	70	70'	154
HS 30	90	80'	155
	130	100'	156

HS22.40 system

HS22 Track 40 mm sliders For boats up to 40 ft

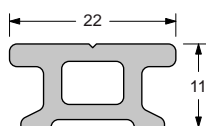
HS22.40 system sliders run on inserts made of self-lubricating resin.



Mod. HS22.40D

HEADBOARD SLIDERS

Length = 130 mm
Weight = 0.19 kg
SWL = 700 kg (horizontal)



Track and
accessories
on page 162

Mod. HS22.44

HEADBOARD 40°

Height = 122 mm
Width = 126 mm
Weight = 0.11 kg
SWL = 1300 kg (vertical)
20 mm webbing

Mod. HS22.46

HEADBOARD 60°

Height = 122 mm
Width = 145 mm
Weight = 0.12 kg
SWL = 1300 kg (vertical)
20 mm webbing

Mod. HS22.49

HEADBOARD 90°

Height = 118 mm
Width = 100 mm
Weight = 0.09 kg
20 mm webbing

Mod. 609.320

SBR RECEPTACLE

on page 168

Mod. HS22.40S

SIMPLE SLIDER

Length = 40 mm
Weight = 0.04 kg
SWL = 350 kg (horizontal)
16 mm webbing

Mod. HS22.40J

SLIDER WITH JOINT

Length = 40 mm
Weight = 0.07 kg
SWL = 350 kg (horizontal)
10 MA Threaded Pin

SYSTEM HS22.40/R

FOR RACING BOATS UP TO 40 ft

As system HS22.40, but with sliders on HS fiber guides instead of resin guides (/R)

Mod. HS22.40D/R

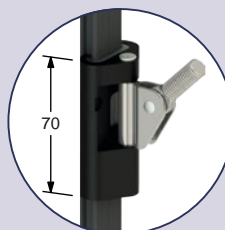
HEADBOARD SLIDERS

Mod. HS22.40S/R

SIMPLE SLIDER

Mod. HS22.40J/R

SLIDER WITH JOINT



Mod. HS22.70JA/R

ASYMMETRIC SLIDER WITH JOINT

For inclined battens of
Top-Square sails
Length = 70 mm
Weight = 0.15 kg
SWL = 600 kg
10 MA Threaded Pin

HS22.50/R system

HS22 Track 50 mm sliders For 50 ft racing boats

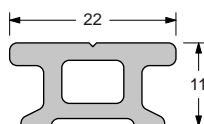
Mod. HS22.50D/R

HEADBOARD SLIDERS

Length = 150 mm

Weight = 0.33 kg

SWL = 1600 kg (horizontal)



Track and
accessories
on page 162

Mod. HS22.50S/R

Mod. HS22.70J/R

SLIDER WITH JOINT

Top batten

Length = 70 mm

Weight = 0.23 kg

SWL = 1300 kg (horizontal)

12 MA Threaded Pin

Smaller thread sizes available on request

Mod. HS22.50S/R

SIMPLE SLIDER

Length = 50 mm

Weight = 0.08 kg

SWL = 800 kg (horizontal)

18 mm webbing

Mod. HS22.50J/R

SLIDER WITH JOINT

Lower battens

Length = 50 mm

Weight = 0.14 kg

SWL = 800 kg (horizontal)

10 MA Threaded Pin

Mod. HS24.54

HEADBOARD 40°

Height = 136 mm

Width = 147 mm

Weight = 0.19 kg

SWL = 2000 kg (vertical)

25 mm webbing

Mod. HS24.56

HEADBOARD 60°

Height = 136 mm

Width = 182 mm

Weight = 0.25 kg

SWL = 2000 kg (vertical)

25 mm webbing

Mod. HS24.59

HEADBOARD 90°

Height = 146 mm

Width = 120 mm

Weight = 0.18 kg

SWL = 2000 kg (vertical)

25 mm webbing

Mod. HS22.100JA/R

ASYMMETRIC SLIDER WITH JOINT

For inclined battens of
Top-Square sails

Length = 100 mm

Weight = 0.32 kg

SWL = 1400 kg

10 MA Threaded Pin

Mod. 609.321

SBR RECEPTACLE

on page 168

HS22.60/R system

HS22 Track 60 mm sliders For 60 ft racing boats

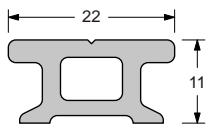
Mod. HS22.60T/R

HEADBOARD SLIDERS

Length = 201 mm

Weight = 0.65 kg

SWL = 3900 kg (horizontal)



Track and
accessories
on page 162

Mod. HS22.50S/R

Mod. HS22.90J/R

SLIDER WITH JOINT

Top batten

Length = 90 mm

Weight = 0.29 kg

SWL = 1300 kg (horizontal)

12 MA Threaded Pin

Smaller thread sizes available on request

Mod. HS22.50S/R

SIMPLE SLIDER

Length = 50 mm

Weight = 0.08 kg

SWL = 800 kg (horizontal)

20 mm webbing

Mod. HS22.60J/R

SLIDER WITH JOINT

Lower battens

Length = 60 mm

Weight = 0.20 kg

SWL = 1300 kg (horizontal)

12 MA Threaded Pin

Smaller thread sizes available on request

Mod. HS22.110

SLIDER OUTHAUL

Length = 110 mm

Weight = 0.30 kg

SWL = 1800 kg (horizontal)

For two 25 mm webbing

Mod. HS24.64

HEADBOARD 40°

Height = 182 mm

Width = 193 mm

Weight = 0.43 kg

SWL = 3500 kg (vertical)

35 mm webbing

Mod. HS24.66

HEADBOARD 60°

Height = 182 mm

Width = 240 mm

Weight = 0.54 kg

SWL = 3500 kg (vertical)

For 35 mm webbing

Mod. HS24.69

HEADBOARD 90°

Height = 180 mm

Width = 142 mm

Weight = 0.38 kg

SWL = 3500 kg (vertical)

35 mm webbing

Mod. 609.323

SBR RECEPTACLE

on page 169

HS24.50 system

Track HS24 50 mm Sliders For 50 ft boats

Mod. HS24.50D

HEADBOARD SLIDERS

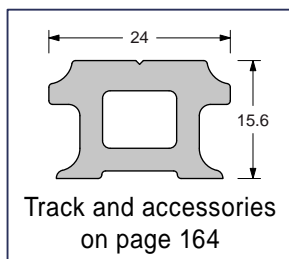
Length = 150 mm

Weight = 0.37 kg

SWL = 1600 kg (horizontal)

50

50



Mod. HS24.50S

SIMPLE SLIDER

Length = 50 mm

Weight = 0.09 kg

SWL = 800 kg (horizontal)

18 mm webbing

50

Mod. HS24.50J

SLIDER WITH JOINT

Length = 50 mm

Weight = 0.14 kg

SWL = 800 kg (horizontal)

10 MA Threaded Pin

50

Mod. HS24.54

HEADBOARD 40°

Height = 136 mm

Width = 147 mm

Weight = 0.19 kg

SWL = 2000 kg (vertical)

25 mm webbing

Mod. HS24.56

HEADBOARD 60°

Height = 136 mm

Width = 182 mm

Weight = 0.25 kg

SWL = 2000 kg (vertical)

25 mm webbing

Mod. HS24.59

HEADBOARD 90°

Height = 146 mm

Width = 120 mm

Weight = 0.18 kg

SWL = 2000 kg (vertical)

25 mm webbing

Mod. HS24.110JA

ASYMMETRIC SLIDER WITH JOINT

For inclined battens of
Top-Square sails

Length = 110 mm

Weight = 0.38 kg

SWL = 1600 kg

10 MA Threaded Pin

110

Mod. 609.321

SBR RECEPTACLE

on page 168

HS24.60 system

Track **HS24** **60 mm** Sliders For **60 ft** boats

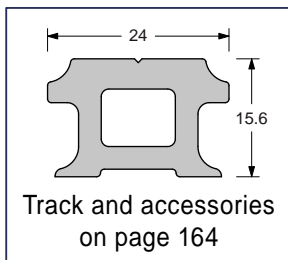
Mod. HS24.60T

HEADBOARD SLIDERS

Length = 201 mm

Weight = 0.73 kg

SWL = 3900 kg (horizontal)



Mod. HS24.50S

Mod. HS24.60J

SLIDER WITH JOINT

Top batten

Length = 60 mm

Weight = 0.21 kg

SWL = 1300 kg (horizontal)

12 MA Threaded Pin

Smaller thread sizes available on request

Mod. HS24.50S

SIMPLE SLIDER

Length = 50 mm

Weight = 0.09 kg

SWL = 800 kg (horizontal)

18 mm webbing

Mod. HS24.50J

SLIDER WITH JOINT

Lower battens

Length = 50 mm

Weight = 0.14 kg

SWL = 800 kg (horizontal)

10 MA Threaded Pin

Mod. HS24.64

HEADBOARD 40°

Height = 182 mm

Width = 193 mm

Weight = 0.43 kg

SWL = 3500 kg (vertical)

35 mm webbing

Mod. HS24.66

HEADBOARD 60°

Height = 182 mm

Width = 240 mm

Weight = 0.54 kg

SWL = 3500 kg (vertical)

35 mm webbing

Mod. HS24.69

HEADBOARD 90°

Height = 180 mm

Width = 142 mm

Weight = 0.38 kg

SWL = 3500 kg (vertical)

35 mm webbing



L30 - One Design

Mod. 609.323

SBR RECEPTACLE

on page 169

system HS24.70

Track HS24

Sliders 70 mm

For boats 70 ft

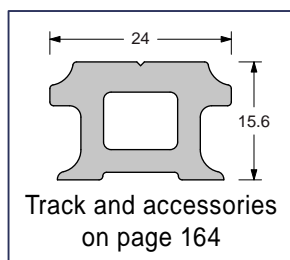
Mod. HS24.70Q

HEADBOARD SLIDERS

Length = 340 mm

Weight = 1.28 kg

SWL = 5200 kg (horizontal)



Mod. HS24.50S

SIMPLE SLIDER

Length = 50 mm

Weight = 0.09 kg

SWL = 800 kg (horizontal)

18 mm webbing

Mod. HS24.70J

SLIDER WITH JOINT

Top batten

Length = 70 mm

Weight = 0.24 kg

SWL = 1500 kg (horizontal)

14 MA Threaded Pin

Smaller thread sizes available on request

Mod. HS24.50S

Mod. HS24.60J

SLIDER WITH JOINT

Lower batten

Length = 60 mm

Weight = 0.21 kg

SWL = 1300 kg (horizontal)

12 MA Threaded Pin

Smaller thread sizes available on request

Mod. HS24.74

HEADBOARD 40°

Height = 281 mm

Width = 279 mm

Thickness = 12 mm

Weight = 1.06 kg

SWL = 5000 kg (vertical)

40 mm webbing

Mod. HS24.76

HEADBOARD 60°

Height = 281 mm

Width = 359 mm

Weight = 1.18 kg

SWL = 5000 kg (vertical)

40 mm webbing

Mod. HS24.79

HEADBOARD 90°

Height = 225 mm

Width = 180 mm

Weight = 0.71 kg

SWL = 5000 kg (vertical)

40 mm webbing

Mod. 609.325

SBR RECEPTACLE

on page 169

system HS30.90

Track HS30 Sliders 90/110 mm For boats 80-90 ft

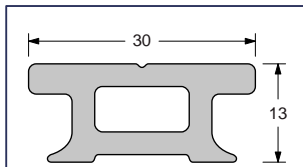
Mod. HS30.70Q

HEADBOARD SLIDERS

Length = 340 mm

Weight = 1.63 kg

SWL = 5200 kg (horizontal)



Track and accessories
on page 165

Mod. HS30.70S

SLIDER WITH JOINT

Top batten

Length = 110 mm

Weight = 0.47 kg

SWL = 2200 kg (horizontal)

14 MA Threaded Pin

Smaller thread sizes available on request

Mod. HS30.70S

SIMPLE SLIDER

Length = 70 mm

Weight = 0.20 kg

SWL = 1300 kg (horizontal)

25 mm webbing

Mod. HS30.90J

SLIDER WITH JOINT

Lower batten

Length = 90 mm

Weight = 0.39 kg

SWL = 1900 kg (horizontal)

14 MA Threaded Pin

Smaller thread sizes available on request

Mod. HS30.116

SLIDER OUTHAUL

Length = 116 mm

Weight = 0.32 kg

SWL = 2500 kg (horizontal)

2 X 25 mm webbings

Mod. HS30.74

HEADBOARD 40°

Height = 281 mm

Width = 279 mm

Thickness = 15 mm

Weight = 1.30 kg

SWL = 6200 kg (vertical)

40 mm webbing

Mod. HS30.76

HEADBOARD 60°

Height = 281 mm

Width = 359 mm

Weight = 1.47 kg

SWL = 6200 kg (vertical)

40 mm webbing

Mod. HS30.79

HEADBOARD 90°

Height = 225 mm

Width = 180 mm

Weight = 0.88 kg

SWL = 6200 kg (vertical)

40 mm webbing

NEW

Mod. HS30.120JA

ASYMMETRIC SLIDER WITH JOINT

For inclined battens of

Top-Square sails

Length = 120 mm

Weight = 0.42 kg

SWL = 2200 kg

14 MA Threaded Pin

Smaller thread sizes available on request

Mod. 609.325

SBR RECEPTACLE

on page 169

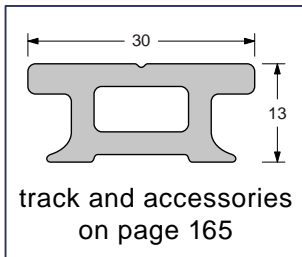
HS30.130 system

HS30 Track 130 mm Sliders For 100 ft boats

Mod. HS30.90Q

HEADBOARD SLIDERS

Length = 366 mm
Weight = 1.88 kg
SWL = 6600 kg (horizontal)



Mod. HS30.70S

SIMPLE SLIDER

Length = 70 mm
Weight = 0.20 kg
SWL = 1300 kg (horizontal)
25 mm webbing

Mod. HS30.130J

SLIDER WITH JOINT

Length = 130 mm
Weight = 0.75 kg
SWL = 3000 kg (horizontal)
16 MA Threaded Pin
(Smaller thread sizes available on request)

Mod. HS30.116

SLIDER OUTHAUL

Length = 116 mm
Weight = 0.32 kg
SWL = 2500 kg (horizontal)
2 X 25 mm webbing

Mod. HS30.74

HEADBOARD 40°

Height = 281 mm
Width = 279 mm
Thickness = 15 mm
Weight = 1.30 kg
SWL = 6200 kg (vertical)
40 mm webbing

Mod. HS30.76

HEADBOARD 60°

Height = 281 mm
Width = 359 mm
Weight = 1.47 kg
SWL = 6200 kg (vertical)
40 mm webbing

Mod. HS30.79

HEADBOARD 90°

Height = 225 mm
Width = 180 mm
Weight = 0.88 kg
SWL = 6200 kg (vertical)
40 mm webbing

Mod. 609.326

SBR RECEPTACLE
on page 169

full batten Fibreball system



NEW FIBREBALL SYSTEMS

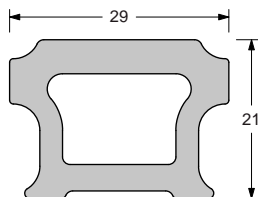
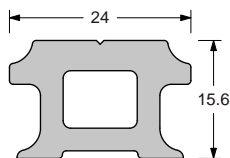
Designed for large boats and for mainsails with a large roach, they offer the high strength of HS Fibre Guides (for tension load) and the low friction of the Torlon ball bearing (for compression).

Maximum load because the HS fibre guides give excellent resistance to the main pull loads despite the compact size of the carriages.

Each batten end fitting is attached to a slider with a triaxial joint to ensure that the batten can freely orient itself under all points of sail. At least one simple slider should be attached to the sail with nylon webbing between two battens. A headboard is attached to the sail with webbing and is secured to the slider (double) with a clevis pin which allows the headboard to pivot and to be removed.



Self-captive bearings: it's impossible for the bearings in the slider to come out, so it's possible to take off the sliders from the track.



TRACK	SYSTEM	FOR BOATS UP TO	PAGE
FB 24	60	50'	158
	90	60'	159
	120	70'	160
FB 29	190	100'	161

FB24.60 system

HS24 Track

60 mm sliders

For 50 ft boats

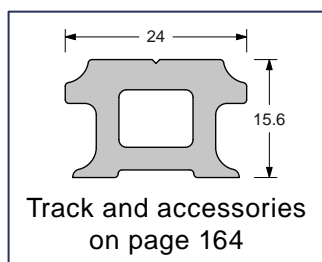
Mod. FB24.60D

HEADBOARD SLIDERS

Length = 160 mm

Weight = 0.30 kg

SWL = 1600 kg (horizontal)



Mod. FB24.60S

SIMPLE SLIDER

Length = 60 mm

Weight = 0.12 kg

SWL = 800 kg (horizontal)

25 mm webbing

Mod. FB24.60J

SLIDER WITH JOINT

Length = 60 mm

Weight = 0.16 kg

SWL = 800 kg (horizontal)

10 MA Threaded Pin

Mod. HS24.54

HEADBOARD 40°

Height = 136 mm

Width = 147 mm

Weight = 0.19 kg

SWL = 2000 kg (vertical)

25 mm webbing

Mod. HS24.56

HEADBOARD 60°

Height = 136 mm

Width = 182 mm

Weight = 0.25 kg

SWL = 2000 kg (vertical)

25 mm webbing

Mod. HS24.59

HEADBOARD 90°

Height = 146 mm

Width = 120 mm

Weight = 0.18 kg

SWL = 2000 kg (vertical)

25 mm webbing



Mod. 609.321

SBR RECEPTACLE

on page 168

FB24.90 system

HS24 Track

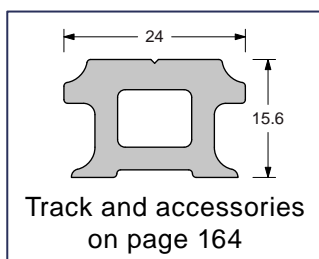
90 mm sliders

For 60 ft boats

Mod. FB24.90D

HEADBOARD SLIDERS

Length = 240 mm
Weight = 0.50 kg
SWL = 2600 kg (horizontal)



Mod. FB24.60S

SIMPLE SLIDER

Length = 60 mm
Weight = 0.12 kg
SWL = 800 kg (horizontal)
18 mm webbing

Mod. FB24.90J

SLIDER WITH JOINT

Length = 90 mm
Weight = 0.24 kg
SWL = 1300 kg (horizontal)
12 MA Threaded Pin
Smaller thread sizes available on request

Mod. FB24.121

SLIDER OUTHAUL

Length = 120 mm
Weight = 0.24 kg
SWL = 1600 kg (horizontal)
2 x 18 mm webbing

Mod. HS24.64

HEADBOARD 40°

Height = 182 mm
Width = 193 mm
Weight = 0.43 kg
SWL = 3500 kg (vertical)
35 mm webbing

Mod. HS24.66

HEADBOARD 60°

Height = 182 mm
Width = 240 mm
Weight = 0.54 kg
SWL = 3500 kg (vertical)
35 mm webbing

Mod. HS24.69

HEADBOARD 90°

Height = 180 mm
Width = 142 mm
Weight = 0.38 kg
SWL = 3500 kg (vertical)
35 mm webbing

Mod. 609.323

SBR RECEPTACLE

on page 169

Mod. FB24.120JA

ASYMMETRIC SLIDER WITH JOINT

For inclined battens of Top-Square sails
Length = 120 mm
Weight = 0.40 kg
SWL = 1400 kg
12 MA Threaded Pin
Smaller thread sizes available on request

FB24.120 system

HS24 Track 120 mm sliders For 70 ft boats

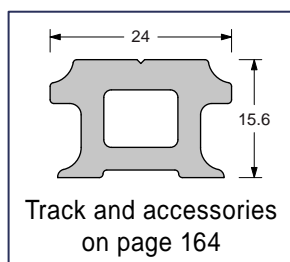
Mod. FB24.120D

HEADBOARD SLIDERS

Length = 340 mm

Weight = 0.90 kg

SWL = 3200 kg (Horizontal)



Mod. FB24.60S

SIMPLE SLIDER

Length = 60 mm

Weight = 0.12 kg

SWL = 800 kg (Horizontal)

18 mm webbing

Mod. FB24.120J

SLIDER WITH JOINT

Length = 120 mm

Weight = 0.36 kg

SWL = 1600 kg (Horizontal)

14 MA Threaded Pin

Smaller thread sizes available on request

Mod. FB24.121

SLIDER OUTHAUL

Length = 120 mm

Weight = 0.24 kg

SWL = 1600 kg (Horizontal)

2 x 18 mm webbing

Mod. HS24.74

HEADBOARD 40°

Height = 281 mm

Width = 279 mm

Thickness = 12 mm

Weight = 1.06 kg

SWL = 5000 kg (vertical)
40 mm webbing

Mod. HS24.76

HEADBOARD 60°

Height = 281 mm

Width = 359 mm

Weight = 1.18 kg

SWL = 5000 kg (vertical)
40 mm webbing

Mod. HS24.79

HEADBOARD 90°

Height = 225 mm

Width = 180 mm

Weight = 0.71 kg

SWL = 5000 kg (vertical)
40 mm webbing

Mod. 609.325

SBR RECEPTACLE

on page 169

FB29.190 system

FB29 Track 190 mm sliders For 100 ft boats

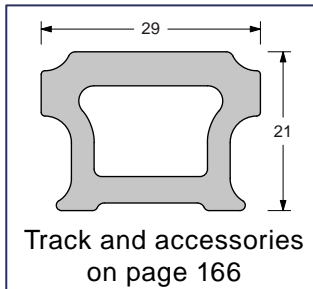
Mod. FB29.190D

HEADBOARD SLIDERS

Length = 390 mm

Weight = 2.09 kg

SWL = 6000 kg (Horizontal)



Mod. FB29.90S

Mod. FB29.190J

SLIDER WITH JOINT

Top batten

Length = 190 mm

Weight = 1.10 kg

SWL = 3000 kg (Horizontal)

16 MA Threaded Pin

Smaller thread sizes available on request

Mod. FB29.90S

SIMPLE SLIDER

Length = 90 mm

Weight = 0.31 kg

SWL = 1600 kg (Horizontal)

25 mm webbing

Mod. FB29.150J

SLIDER WITH JOINT

Lower battens

Length = 150 mm

Weight = 0.88 kg

SWL = 2200 kg (Horizontal)

14 MA Threaded Pin

Smaller thread sizes available on request

Mod. FB29.191

SLIDER OUTHAUL

Length = 190 mm

Weight = 0.65 kg

SWL = 3000 kg (Horizontal)

2 x 25 mm webbing

Mod. HS30.74

HEADBOARD 40°

Height = 281 mm

Width = 279 mm

Thickness = 15 mm

Weight = 1.30 kg

SWL = 6200 kg (vertical)

40 mm webbing

Mod. HS30.76

HEADBOARD 60°

Height = 281 mm

Width = 359 mm

Weight = 1.47 kg

SWL = 6200 kg (vertical)

40 mm webbing

Mod. HS30.79

HEADBOARD 90°

Height = 225 mm

Width = 180 mm

Weight = 0.88 kg

SWL = 6200 kg (vertical)

40 mm webbing

Mod. 609.326

SBR RECEPTACLE

on page 169

**SELF
CAPTIVE
BALLS**



HS22 track

HS22 track is made for systems:
HS22.40, HS22.40/R (page 149),
HS22.50/R (page 150) and
HS22.60/R (page 151).

Mod. HS22.13 END FITTING

Made in plastic; should be attached to the mast with 2 X 5 mm screws.

Mod. HS22.12 JOINT

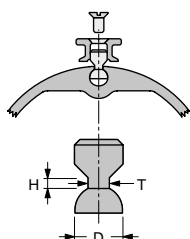
In order to ensure proper alignment the sections of the track can be jointed together with a nylon fitting; track joint is supplied with 2 screws.

SLUGS & SCREWS

7 standard models for round or flat grooves are available, custom slugs for special grooves are made on request.

Consider 17 slugs for 2 m of track with 120 mm hole spacing or 1 m of track with 60 mm hole spacing.

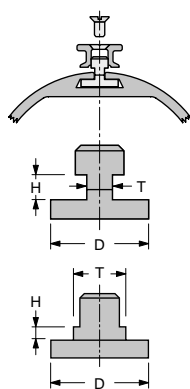
Screws (included) must be fixed using Loctite 222 or similar.



SLUGS - ROUND GROOVE

MODEL	T mm	D mm	H mm
HS22R04	3.9	8.7	2.0
HS22R05	4.7	9.5	2.0

Ø5 x 10 mm screws



SLUGS - FLAT GROOVE

MODEL	T mm	D mm	H mm
HS22F05	4.7	18.0	4.6
HS22F08	7.8	20.0	4.6
HS22F10	9.8	20.0	2.0

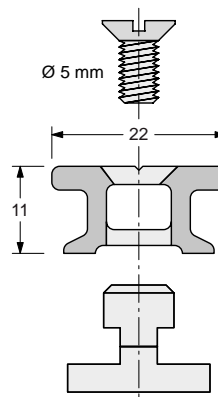
Ø5 x 10 mm screws

HS22F12	11.8	22.0	3.0
HS22F14	13.6	24.0	3.0

Mod. HS22.15 INSTALLATION TOOL

It is necessary to position the slugs with the mast in vertical position (with track mod. HS22.221 and HS22.222).

For boats up to 40 ft and
racing boats from 35 to 55 ft



TRACK

The TRACK is an aluminium extrusion hard black anodized and teflon coated.
Weight = 0.34 kg/m

MODEL	HOLE SPACING	LENGTH
-------	-----------------	--------

DIRECT MOUNTING

HS22.311	120 mm	3 m
HS22.312	60 mm	

SLUG MOUNTING VERTICAL MAST

HS22.221	120 mm	2 m
HS22.222	60 mm	

SLUG MOUNTING HORIZONTAL MAST

HS22.321	120 mm	3 m
HS22.322	60 mm	

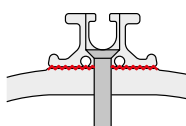
Direct mounting requires drilling and tapping holes in the mast, slug mounting does not.

120 mm hole spacing for 40-50 ft boats,
60 mm hole spacing for 50-60 ft boats.

Mod. HS22.11 LOADER

It allows the cars to be loaded and unloaded easily; the loader includes a stop pin which provides 2 positions: open and closed.

Fixing = 2 X 5 screws L = 176 mm
Weight = 0.10 kg



The HS22 is also available in the glued version, which is particularly suitable for carbon masts. Tracks and accessories on the following pages.

HS22.carbon track

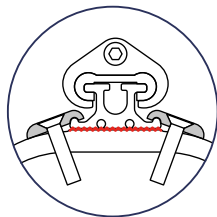
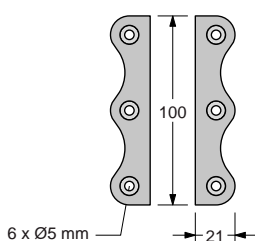
For racing boats
from 40 to 60 ft

Mod. HS22.03 **END FITTING**

Made in plastic; should be attached to the mast with 2 X 5 mm screws.

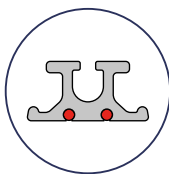
Mod. HS22.05 **SIDE PLATES**

Fixing can be improved, on most loaded zones (mast head and reefing positions), with 2 aluminium side plates screwed to the mast.



Mod. HS22.02 **TRACK JOINT**

Connection of different sections will be done with 2 s.steel pins.



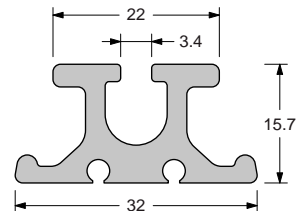
Mod. HS22.01 **LOADER**

It allows the cars to be loaded and unloaded easily; the loader includes a stop pin which provides 2 positions: open and closed.
L = 500 mm Weight = 0.30 kg

GLUED TRACKS

Wide base profiles for secure strong gluing, particularly suitable for carbon masts. Use for gluing "SP SYStem Spabond 345" or similar.

These tracks always have bolt-rope groove.



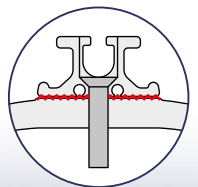
Mod. HS22.330

TRACK FOR CARBON FIBER MAST

Aluminium profile hard black anodized and teflon coated. Weight = 0.56 kg/m
It's available in 3 m sections.

FIXING

The track will be glued to the mast (SP SYSTEM - SPABOND 345). For an easier gluing each track is fixed with 3 positioning screws.



HS24/FB24 track

HS24 or FB24 track is made for HS guide systems:

HS24.50 (page 152), HS24.60 (page 153) and HS24.70 (page 154)

and for Fibreball systems :

FB24.60 (page 158), FB24.90 (page 159) and FB24.120 (page 160).

Mod. HS24.13 END FITTING

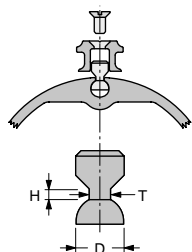
Made in plastic; should be attached to the mast with 2 X 6 mm screws.

SLUGS & SCREWS

8 standard models for round or flat grooves are available; custom slugs special grooves are made on request.

Consider 20 slugs for 2 m of track with 100 mm holes spacing or 1 m of track with 50 mm holes spacing.

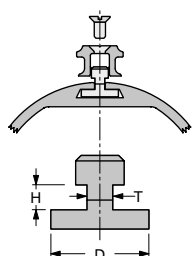
Screws (included) must be fixed with Loctite 222 or similar.



SLUGS - ROUND GROOVE

MODEL	T mm	D mm	H mm
HS24R04	3.7	9.7	2.5
HS24R06	5.7	11.5	2.5

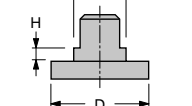
Ø6 x 14 mm screws



SLUGS - FLAT GROOVE

MODEL	T mm	D mm	H mm
HS24F05	4.8	19.0	4.8
HS24F06	5.8	19.0	5.8
HS24F08	7.8	19.0	6.7
HS24F10	9.6	22.0	6.7

Ø6 x 12/14 mm screws



HS24F12	11.8	22.0	3.0
HS24F14	13.6	24.0	3.0

Ø6 x 14 mm screws

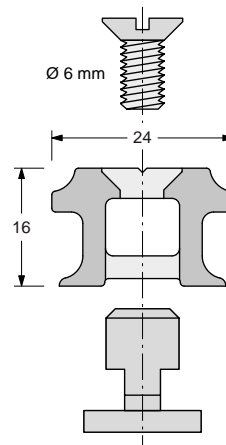
Mod. HS24.15 INSTALLATION TOOL

It is necessary to position the slugs with the mast in vertical position; with tracks mod. HS24.221 and HS24.222.

Mod. HS24.12 JOINT

In order to ensure proper alignment the sections of the track can be jointed together with a nylon fitting; track joint is supplied with 2 screws.

For 50 - 60 - 70 ft boats



TRACK

Aluminium profile hard black anodized and teflon coated. Weight = 0.55 kg/m

MODEL	HOLE SPACING	LENGTH
-------	-----------------	--------

DIRECT MOUNTING

HS24.311	100 mm	3 m
HS24.312	50 mm	

SLUG MOUNTING VERTICAL MAST

HS24.221	100 mm	2 m
HS24.222	50 mm	

SLUG MOUNTING HORIZONTAL MAST

HS24.321	100 mm	3 m
HS24.322	50 mm	

Direct mounting requires drilling and tapping holes in the mast; track will be screwed to the mast; lengths of 3 m available.

100 mm hole spacing for 50-60 ft boats, 50 mm hole spacing for 60-70 ft boats.

Mod. HS24.11 LOADER

It allows the cars to be loaded and unloaded easily; the loader includes a stop pin which provides two positions: opened and closed.

Fixing = 2 x Ø6 mm screws

L = 200 mm Weight = 0.19 kg

HS30 track

For 80 - 90 - 100 ft boats

The HS30 track is made for HS guide systems:
HS30.90 (page 155) and HS30.130 (page 156)

Mod. HS30.13 END FITTING

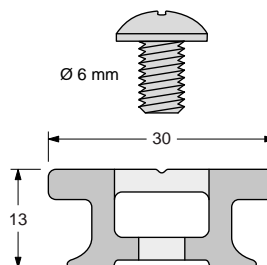
Made in aluminium, should be attached to the mast with the 2 x 6 mm screws.

Mod. HS30.12 JOINT

In order to ensure proper alignment the sections of the track can be joined together with an aluminium fitting; track joint is supplied with 2 screws.

Mod. HS30.11 LOADER

It allows the cars to be loaded and unloaded easily; the loader includes a stop pin which provides two positions: opened and closed.
Fixing: 2 screws X 6 mm.
L = 210 mm Weight = 0.20 kg



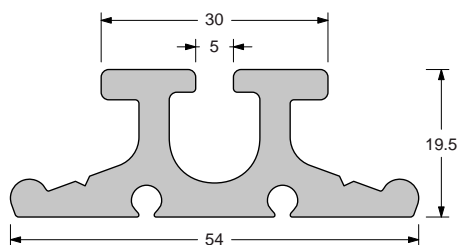
Mod. HS30.313 TRACK

The extremely light (500 gr/m) hard black anodized and teflon coated aluminium profile is very small (only 13x30 mm). It is fixed directly to the mast with 6 mm screws every 50 or 25 mm (without inserts) and is available in 3 m sections.
Weight = 0.50 kg/m

Mod. HS30.313/R TRACK RACE

As above with lightening holes.
Weight = 0.46 kg/m

HS30 BOLTROPE TRACK FOR CARBON FIBER MAST



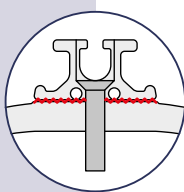
Mod. HS30.330

TRACK FOR CARBON FIBER MAST

Aluminium profile hard black anodized and teflon coated. Weight = 1.10 kg/m
It's available in 3 m sections.

FIXING

The track will be glued to the mast (SP SYSTEM - SPABOND 345). For an easier gluing each track is fixed with 3 positioning screws.

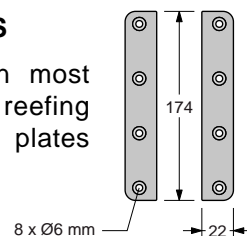


Mod. HS30.03 END FITTING

Made in aluminium; should be attached to the mast with 3 x 6 mm screws.

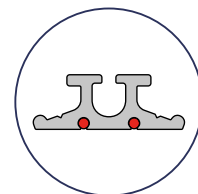
Mod. HS30.05 SIDE PLATES

Fixing can be improved, on most loaded zones (mast head and reefing positions), with 2 alu side plates screwed to the mast



Mod. HS30.02 JOINT

Connection of different sections will be done with 2 s. steel pins.



Mod. HS30.01 LOADER

It allows the cars to be easily loaded and unloaded.
L = 990 mm Weight = 1.20 kg

FB29 track

For boats
from 80 to 100 ft



The FB29 track is made for Fibreball system FB29.190 on page 161.

Mod. FB29.13 **END FITTING**

Made in aluminium, should be attached to the mast with the 2 X 8 mm screws.

Mod. FB29.12 **JOINT**

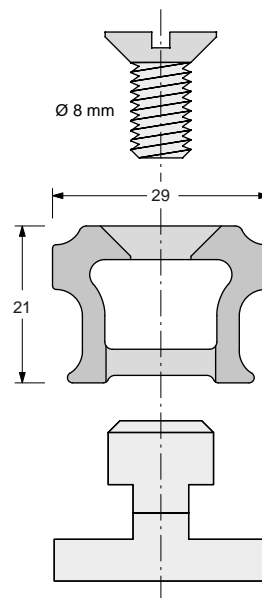
In order to ensure proper alignment the section of the track will be joined together with this nylon fitting: it is supplied with 2 screws.

SLUGS

Available on request, for 8 mm screws.

Mod. FB29.15 **INSTALLATION TOOL**

It is necessary to position the slugs with the mast in vertical position; with tracks mod. FB29.221.



TRACK

Aluminium profile hard black anodized and teflon coated. Weight = 0.72 kg/m

MODEL	HOLE SPACING	LENGTH
-------	--------------	--------

DIRECT MOUNTING

FB29.311	100 mm	3 m
----------	--------	-----

SLUG MOUNTING VERTICAL MAST

FB29.221	100 mm	2 m
----------	--------	-----

SLUG MOUNTING HORIZONTAL MAST

FB29.321	100 mm	3 m
----------	--------	-----

Direct mounting requires drilling and tapping holes in the mast, slug mounting does not.

Mod. FB29.11 **LOADER**

It allows the cars to be easily loaded and unloaded.

Fixing = 2 x Ø8 mm screws.

L = 300 mm Weight = 0.24kg

special products

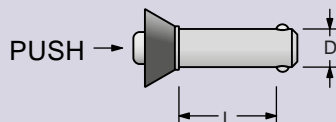
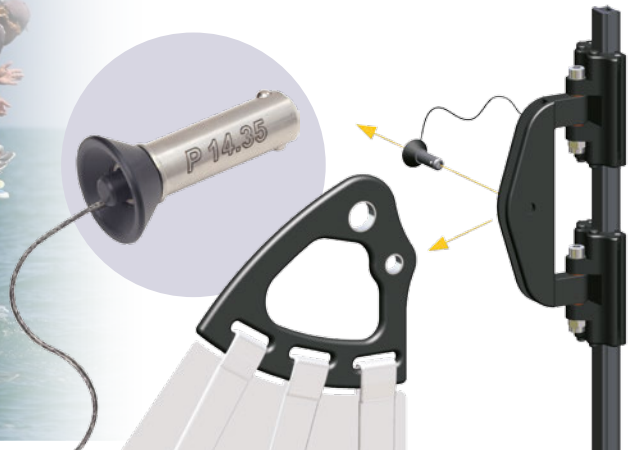


Arya 415 - Duvetica

FAST-RELEASE HR PUSH-PINS

Are available for the main headboard connection to the head carriage.

Made in HR s.steel to offer the highest loads, with a security-line and an easy grip for a quick coupling and release.



MODEL	D mm	L mm	SWL kg	CARRIAGE CODE
P10.20	10	20	1600	HS22.50D/R - HS24.50D - FB24.60D
P14.25	14	25	5000	HS22.60T/R - HS24.60T - FB24.90D HS24.70Q - FB24.120D
P14.35	14	35	5000	HS30.70Q - HS30.90Q - FB29.190D



FEEDER CARRIAGE

Mounted on the bolt-rope tracks to bend the mainsail inside the bolt-rope-groove. It can be easily removed to fit the mainsail with sliders.

Mod. HS22.07 for the loader HS22.01 of the HS22.330 track (on page 163)

Mod. HS30.07 for the loader HS30.01 of the HS30.330 track (on page 165)



GATE

A stretch of mobile track is placed above the lowered mainsails. When the gate is removed, the head carriage and top batten slider of a square-top mainsails can be extracted to make it easier to "tie" the mainsail to the boom.

Mod. HS22.16 L=204 mm - for HS22 track (on page 162)

Mod. HS22.06 L=204 mm - for HS22.330 track (on page 163)

Mod. HS24.16 L=264 mm - for HS24 track (on page 164)

Mod. HS30.16 L=264 mm - for HS30 track (on page 165)

batten receptacles

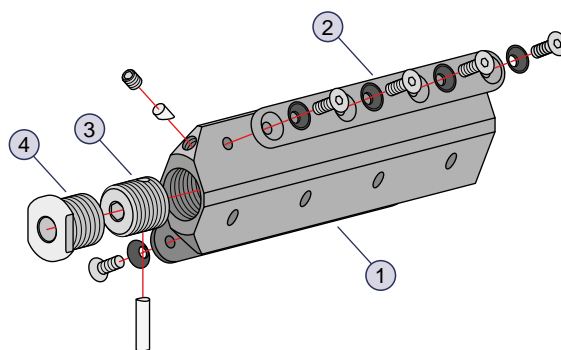
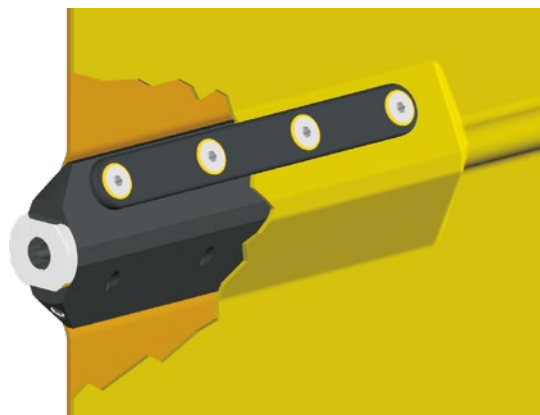
SBR SYMMETRIC BATTEN RECEPTACLE ROUND BATTENS

The SBR is different from standard batten receptacles in that it fits inside the batten pocket, making it invisible on the outside except for the small fastening plate - thereby almost completely eliminating chafe on the mast and rigging.

Moreover the batten will be not on one side, but perfectly "in the middle"

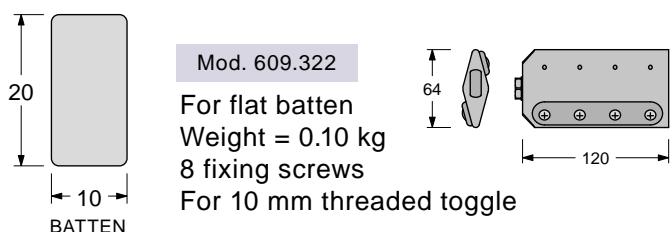
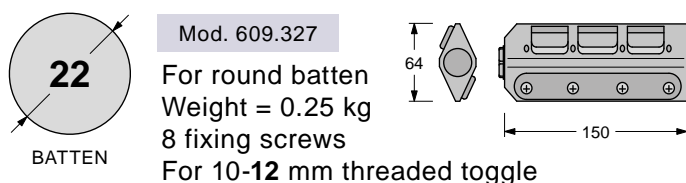
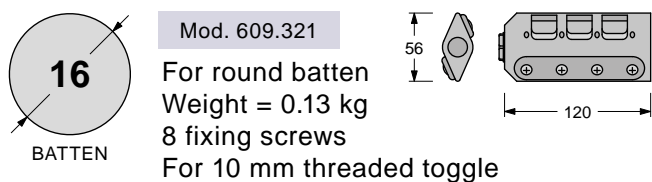
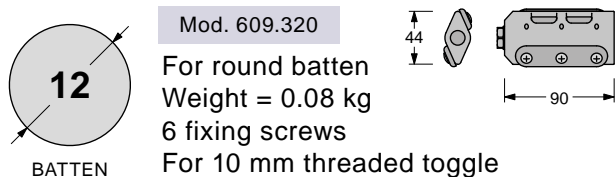
Each SBR includes:

1. the main body;
2. side plates to fix the receptacle to the sail;
3. trimming screw for batten compression;
4. the cap with a threaded hole to screw the receptacle in the toggle of the batten slider.

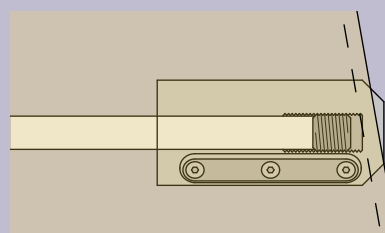


RESIN SBR FOR ROUND AND FLAT BATTENS

Completely made of high-strength, 50% glass fiber resin, max UV resistance, with self-tapping screws to offer a very fast and easy mounting. For boats up to 40 ft.

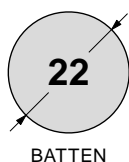


These resin made receptacles are very light, for this reason they can be used also on the leech side.



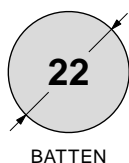
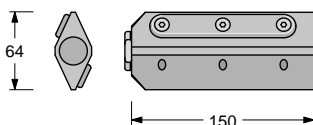
ALUMINIUM SBR FOR ROUND BATTENS

Main body and side plates are aluminium made with 6 mm A316 screws, the s.steel A316 cap for the batten car toggle connection is available with different threads. These SBR receptacles are suitable for boats up to 100 ft.



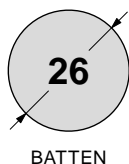
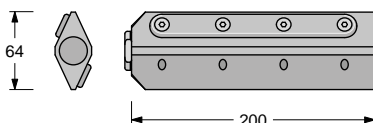
Mod. 609.323

For round batten
Weight = 0.45 kg
6 fixing screws
For 10-12 mm threaded toggle



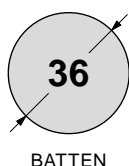
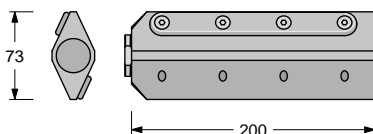
Mod. 609.324

For round batten
Weight = 0.54 kg
8 fixing screws
For 10-12 mm threaded toggle



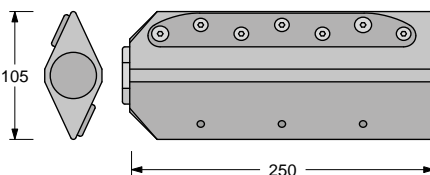
Mod. 609.325

For round batten
Weight = 0.62 kg
8 fixing screws
For 12-14 mm threaded toggle

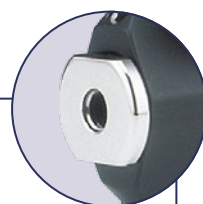


Mod. 609.326

For round batten
Weight = 1.05 kg
14 fixing screws
For 14-16 mm threaded toggle

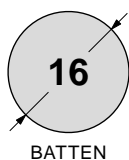


On the same receptacle a number of threads for the connection with the batten slider toggle are available. So it will be necessary to specify not only the receptacle model (from 609.323 to 609.326) but also the thread size: 10, 12, 14 or 16 mm.



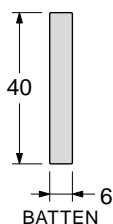
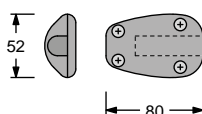
RESIN STANDARD RECEPTACLES FOR ROUND AND FLAT BATTEN

Made of high-strength resin with max UV resistance.
Fixing: 4 screws + 4 self-locking nuts.
Made for Antal system HS22.40.



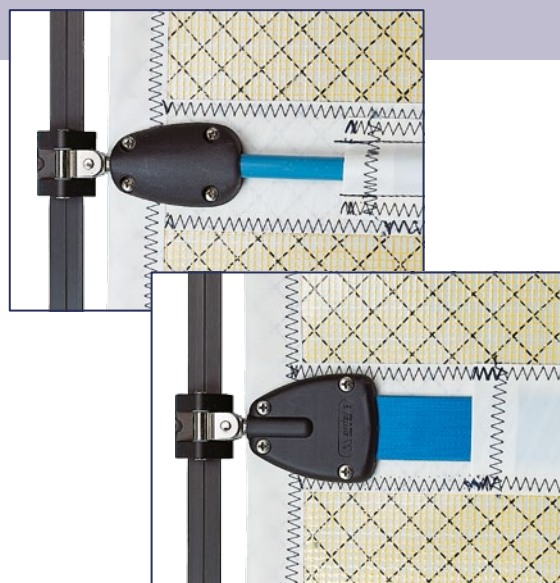
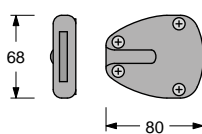
Mod. 610.341

For round batten
Weight = 0.06 kg
4 fixing screws
For 10 mm threaded toggle



Mod. 610.340

For flat batten
Weight = 0.06 kg
4 fixing screws
For 10 mm threaded toggle



hook carriages



MINI HOOK CARRIAGE

For boats up to 40 ft

This head carriage has been designed for Antal track HS22 (page 162). It is fitted with a hook that automatically catches specific hook stops on the mast track to unload the halyard.

Two lines from the carriage run down the sail:

- 1 - to disengage the hook so that the carriage is free to descend;
- 2 - to load the hook, which attaches to the first hook-stop.

Mod. HS22.160R **Mini hook carriage** for HS22 track

Weight = 042 kg Length = 160 mm **SWL = 1400 kg**

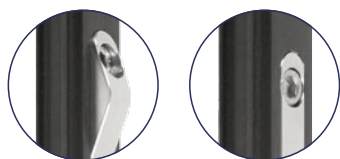
Mod. HS22.17 **Hook-stop** for HS22 track (page 162)

Fitted on a 340 mm long track that is screwed to the mast with 7 x Ø5 mm screws

Mod. HS22.27 **Hook-stop** for HS22 carbon track (page 163)

Fitted on a 340 mm long track that is glued or screwed to the mast with 4 x Ø5 mm screws

To avoid too many junctions in the track, Antal offers custom tracks with hook-stops that are already fitted at the required points based on the design of the mainsail and reef locations: one hook-stop at the top and two or three for the reefs along the track.



NEW



HOOK CARRIAGE

For boats up to 60 ft

This head carriage has been designed for Antal track HS24 (page 164). It is fitted with a hook that automatically catches specific hook stops on the mast track to unload the halyard.

Two lines from the carriage run down the sail:

- 1 - to disengage the hook so that the carriage is free to descend;
- 2 - to load the hook, which attaches to the first hook-stop.

These two lines are connected so when one is pulled the other is automatically released.

Mod. HS24.210 **Hook carriage** for HS24 track

Weight = 1.06 kg Length = 210 mm **SWL = 2400 kg**

The carriage is fitted with a swivelling bracket on which it is possible to mount any headboard from the HS24.6 series (page 153) or the **HS24.61** model, specifically designed for this carriage. The halyard is fixed to the headboard.

Mod. HS24.61 **Special headboard** for Hook carriage

Sizes 120x130 mm Weight = 0,25 kg **SWL = 2400kg**

Mod. HS24.17 **Hook-stop** for HS24 track (on page 164)

Fitted on a 350 mm long track that is screwed to the mast with 7 x Ø6 mm screws.

Mod. HS24.18 **Automatic Hook-stop** for HS24 track (on page 164)

Similar to the previous model, it has been designed for the mast head.

By simply pulling the halyard for a few centimeters, the carriage moves up, the hook is automatically disengaged and the carriage is free to descend. Therefore, even in the event of breakage of the line that frees the hook, the sail can be lowered.



2:1 MINI HEADBOARD SLIDER FOR HS22 TRACK

This model, designed for class 40ft, is fitted with a 40 mm high load sheave for a 2:1 halyard; the mainsail head will be simply tied to the slider with a line.

Weight = 0.45 kg Length = 185 mm **SWL = 2000 kg**

Mod. HS22.185 For HS22 track (on page 162)



DOUBLE HEAD SLIDER FOR RING CONNECTION

Two 90 mm long sliders with a bracket will be connected to the ring on the head of the mainsail.

Weight = 0.87 kg Length = 240 mm **SWL = 3200 kg**

Mod. HS24.90/DY For HS24 track (on page 164)

Mod. HS30.90/DY For HS30 track (on page 165)



DOUBLE HEAD SLIDER WITH SOFT-LINK

Two 90 mm long sliders with a bracket will be tied to the ring on the head of the mainsail.

Weight = 0.65 kg Length = 240 mm **SWL = 3200 kg**

Mod. HS24.90/DX For HS24 track (on page 164)

Mod. HS30.90/DX For HS30 track (on page 165)





soft links

Dyneema pad-eye 168



T-Lock..... 175



deck rings 176



low friction rings..... 178



solid rings 179



rings & loops..... 180



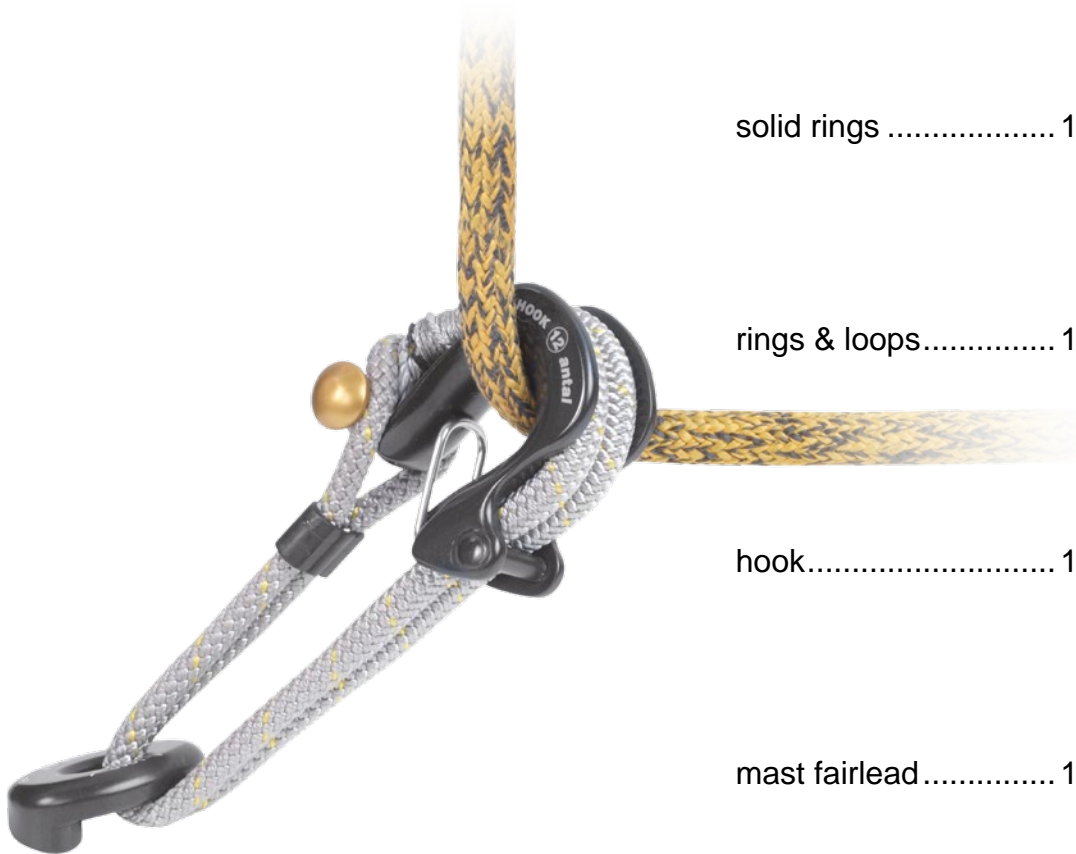
hook..... 180



mast fairlead..... 181



snap-loops 182



soft links

SOFT LINKS

The use of Dyneema lines, characterized by high stiffness and strength and by excellent smoothness, resulted in the development of new equipment that exalts these properties.

First the fastenings called “soft-links”: Dyneema loops and snap-loops that replace shackles, snap-shackles and other metal connections.

Then the rings, now produced in different versions and many sizes that exploit the excellent sliding of Dyneema lines, replace sheaves and blocks for more and more manoeuvres.

The advantages of this new equipment are: high resistance, increased lightness, a reduction in size and significant cost savings.



mod. LS1120

mod. 7608

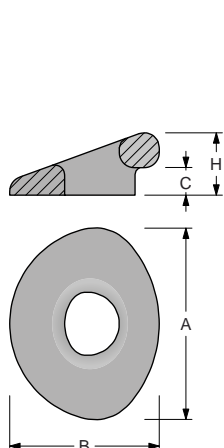
DYNEEMA PAD-EYES

Special extremely light, “low profile” pad-eye, designed for Dyneema loop in hard black anodized aluminium. The Dyneema pad-eye is available in two versions:

- 1) with studs from the bottom and a perfectly smooth upper surface;
 - 2) with screws from above.
- Studs or screws, washers and nuts included.

The Study of the Pull Direction

DPE offers great performance on a wide angle. DPE's profile is so low and smooth that it is walkable. This is because we designed this pad-eye starting from its Pull Direction, and not for a simple coupling.



WITH SCREWS	WITH STUDS									
MODEL	MODEL	SOFT LINK Ø mm	A mm	B mm	H mm	C mm	SWL kg	WEIGHT* gr	SCREWS N° x Ø mm	
7505	7605	5	43	34	16	7	600	22	2 x 6	
7506	7606	6	58	45	21	10	1300	50	3 x 6	
7508	7608	8	77	60	27	12	2200	90	3 x 8	
7510	7610	10	93	74	34	16	3500	180	3 x 10	
7512	7612	12	112	89	41	19	5000	370	3 x 12	
7514	7614	14	123	97	46	21	6800	520	4 x 12	

Do not use Antal Dyneema Pad Eyes for boat lifting

* without screws-nuts

T-LOCK FOR SWIVELLING & REMOVABLE DECK LOOPS

T-Lock is a flush-mounted deck base to which a loop can be connected.

A special toggle, which automatically locks-in, fits into the base. It cannot be removed under load, but can easily be removed without a load on it. The toggle can be locked-in permanently which makes it not-removable.

The toggle is swivelling, it can take a load in any direction.

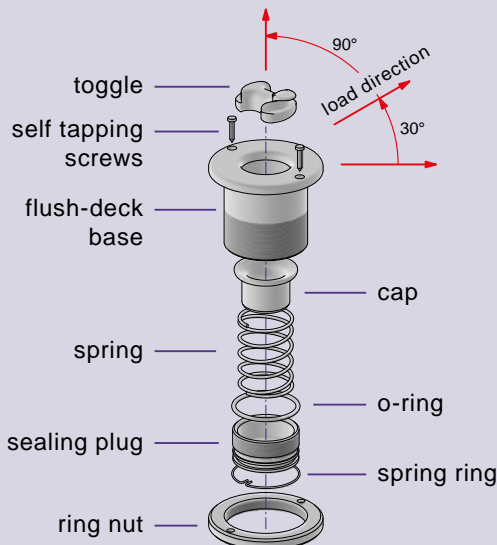
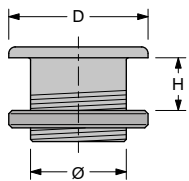
When used as a dog-bone it will adapt to any Dyneema loop, such as a simple loop, low friction ring with loop and a snatch block with loop.

Two models are available, sizes and characteristics are shown in the table.



mod. TL22.32

MODEL	D mm	MAX DECK H mm	DECK HOLE Ø mm	SWL kg	WEIGHT gr	TOGGLE mod.	LOOP & TOGGLE mod.	RING mod.
TL22.32	64	33	44	2200	170	TT22.32	TD22.32	R20.14
TL28.40	74	44	54	3500	300	TT28.40	TD28.40	R28.20



there are two positions for the sealing plug:

- 1) **low position** (unscrewed): in this position it is possible to fit the toggle into the base or to take it off (only if not under load).
- 2) **high position** (screwed): in this position the toggle is permanently locked into the base and it is not possible to take it off.

⚠ For load directions with angles of less than 30°, the sealing plug must be completely tightened so as to lock the slug and avoid accidental unhooking.

ACCESSORIES

- **Simple toggle:** this is an aluminium dog-bone suitable for splicing your own loop, models in the above table are available on request.

- **Loop & toggle:** this is a multi-ring Dyneema loop with a cover linked to the toggle, it is always included in the T-Lock.

- **Low friction ring:** a ring can be inserted in the Dyneema loop, models in the above table are available on request.

- **Blocks:** Looper blocks (page 74) can be lashed to the toggle and easily locked-in the T-Lock base. This feature is optional.

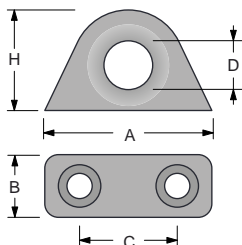


T-Lock Basis + Looper blocks

deck rings

ALUMINIUM DECK RINGS

Two sizes, highly polished and hard black anodized aluminium deck ring.
Screws included.



mod. R14.14

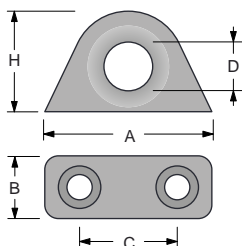
mod. R20.20

MODEL	A mm	B mm	C mm	D mm	H mm	SWL kg	WEIGHT* gr	SCREWS N° x Ø mm
R14.14	48	18	28	14	29	800	25	2 x 6
R20.20	59	19	38	20	39	800	45	2 x 6

* without screws-nuts

S.STEEL DECK RINGS

Two sizes, highly polished s.steel deck ring.
Screws included.



mod. R14.14/S

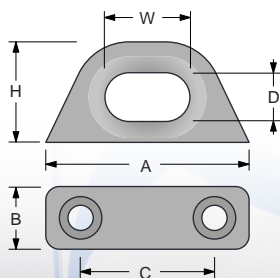
mod. R20.20/S

MODEL	A mm	B mm	C mm	D mm	H mm	SWL kg	WEIGHT* gr	SCREWS N° x Ø mm
R14.14/S	48	18	28	14	29	800	74	2 x 6
R20.20/S	59	19	38	20	39	1500	120	2 x 8

* without screws-nuts

DOUBLE LINE DECK RINGS

Two sizes, highly polished and hard black anodized aluminium deck ring.
The wide hole allows the passage of two lines.
Screws included.



mod. R12.25

mod. R18.36

MODEL	A mm	B mm	C mm	H mm	D x W mm	SWL kg	WEIGHT* gr	SCREWS N° x Ø mm
R12.25	59	18	39	27	12 x 25	800	30	2 x 6
R18.36	75	19	54	37	18 x 36	800	56	2 x 6

* without screws-nuts



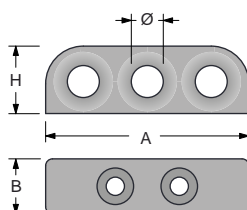
MULTI RING ORGANIZER

Antal Low-Friction products now include a new organizer: MRO, the Multi-Ring Organizer.

A CNC-machined body in hard black anodized aluminium, polished finely to guarantee minimum friction. MROs are easy-to-install, extremely lightweight, resistant and practical organizers.

Just like Ring by Antal, they simplify the mechanics and provide great performance. MROs are available from 2 to 6 lines, and fit lines up to 12 mm.

Screws not included.



MODEL	HOLES N° x Ø mm	A mm	B mm	H mm	SINGLE RING SWL (kg)	ORGANIZER SWL (kg)	WEIGHT* gr	SCREWS N° x Ø mm
NEW R2.14	2 x 14	73	18	29	800	800	50	2 x 6
R3.14	3 x 14	88	24	29.5	800	1500	98	2 x 8
R4.14	4 x 14	116					132	2 x 8
R5.14	5 x 14	144					165	2 x 8
R6.14	6 x 14	172					196	3 x 8

SINGLE RING SWL: the maximum Safe Working Load on the single ring.

ORGANIZER SWL: the maximum Safe Working Load on the organizer.

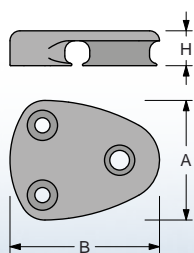
* without screws-nuts

DEFLECTOR

The Antal "Deflector" is a low friction ring for deck mounting.

One piece aluminium made, polished and hard black anodized.

Screws included.



MODEL	MAX LINE Ø mm	A mm	B mm	H mm	SWL kg	WEIGHT* gr	SCREWS N° x Ø mm
D3008	8	48	60	14	1500	49	1 x Ø8 + 2 x Ø6
D3610	10	54	75	17	2300	93	1 x Ø10 + 2 x Ø8

* without screws-nuts

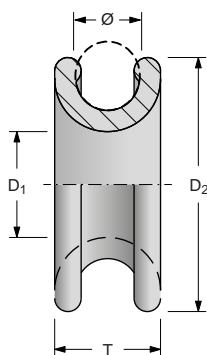


Tutima, Germany - Photo by Sven Jürgensen

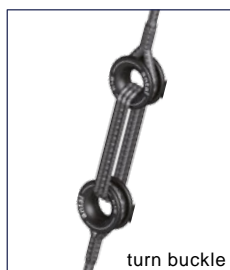
low friction rings

LOW FRICTION RINGS

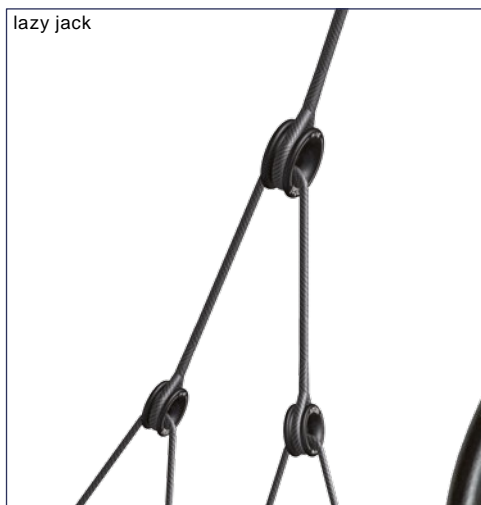
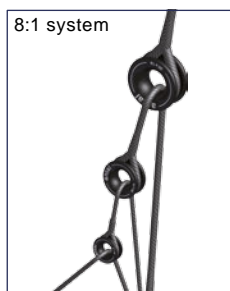
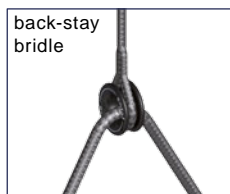
Six models with holes from 7 to 38 mm, the simplest idea for maximum load and minimum weight.



MODEL	D1 mm	D2 mm	Ø mm	T mm	WEIGHT gr	SWL kg
R07.05	7	18	5	9	3	400
R10.07	10	25	7	12	5	800
R14.10	14	35	10	15	12	1600
R20.14	20	50	14	22	44	3200
R28.20	28	70	20	31	120	6400
R38.28	38	99	28	44	338	10000



THE UNIVERSAL SOLUTION



mod.
R07.05



mod.
R10.07



mod.
R14.10

real size



mod.
R20.14



mod.
R28.20



mod.
R38.28

solid rings

SOLID RINGS

Four models with holes from 30 to 50 mm, the simplest idea for maximum load and minimum weight.

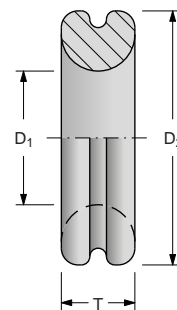
What's good about it

Compared with Antal Ring, Solid Ring has a thinner body and a wider hole with the same extreme working loads. The outer groove is suitable for a hanging line.

Material and Finishing

Minimum friction, highly polished, hard black anodized aluminium body.

Solid ring has been specifically designed for reefing and for 3D setting of the genoa sheet.



MODEL	D1 mm	D2 mm	T mm	WEIGHT gr	SWL kg
R30.56	30	56	16	62	1800
R34.64	34	64	18	89	2800
R40.76	40	76	22	154	4400
R50.94	50	94	25	266	6500

Solid ring has been specifically designed for reefing and for 3D setting of the genoa sheet.



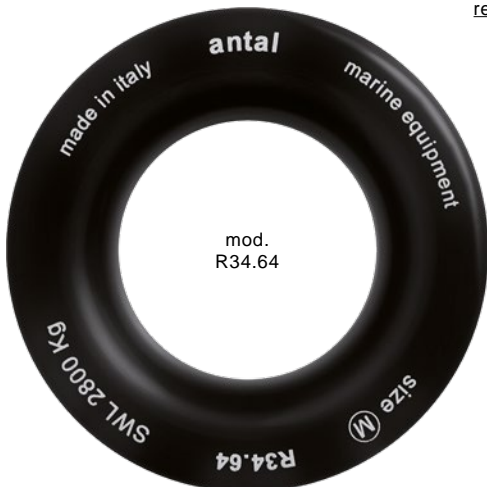
Reefing



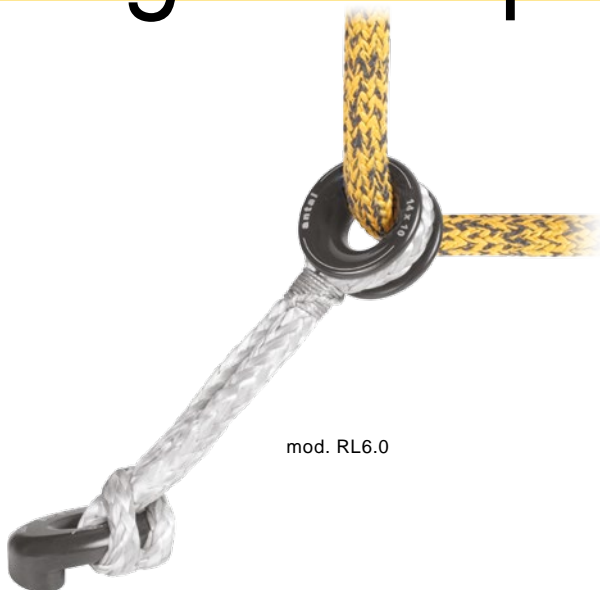
3D genoa adjusting



real size



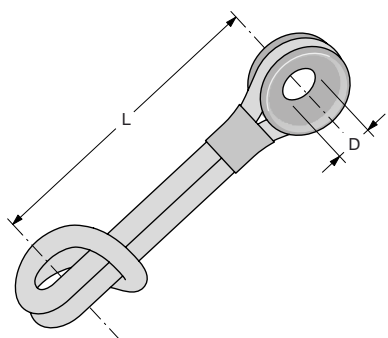
rings & loops



mod. RL6.0

RINGS & LOOPS

The Antal low friction rings are available also with a dyneema loop for a fast and easy connection.



MODEL	D mm	L mm	SWL kg	LOOP Ø mm	RING model
RL3.0	7	60	240	3	R07.05
RL4.0	10	70	400	4	R10.07
RL4.5	10	80	700	4.5	R10.07
RL5.0	14	90	900	5	R14.10
RL6.0	14	110	1500	6	R14.10
RL6.1	20	130	1500	6	R20.14

Breaking load values have been obtained through tests on new Dyneema loops, the safe working load is obtained from the breaking load with a safety factor = 3 to consider the wear and tear of the dyneema lines.

hook



mod. HK12

HOOK

It can be easily "hooked" to a genoa or a spinnaker sheet: the lightest and strongest solution for a line control.

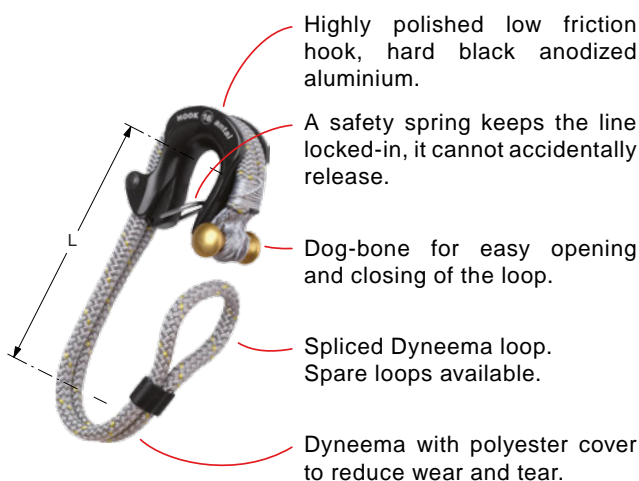
Aluminium made, highly polished and hard black anodized with a spliced Dyneema Snap Loop.

A safety spring prevents the line from going out.

Spare Dyneema Loops are available.

Antal offers a special aluminium pad-eye (page 168) for Dyneema Loops.

Dyneema Loop safety factor (breaking load / safe working load) = 3.



MODEL	MAX LINE Ø mm	L mm	SWL kg	WEIGHT gr
HK12	12	110	1500	80
HK16	16	120	2200	130

mast fairlead

MAST FAIRLEAD

This low-friction fairlead is suitable for mounting on mast, boom and thin wall with no access from behind.

Aluminium made, hard black anodized and highly polished to guarantee minimum friction.

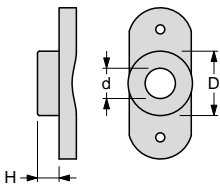
3 sizes with 14, 16 and 18 mm holes for lines up to 10, 12 and 14 mm max.

Just drill a hole of appropriate size (30,35 or 40 mm for the different models) insert the fairlead into this hole and fix it with two screws (included).

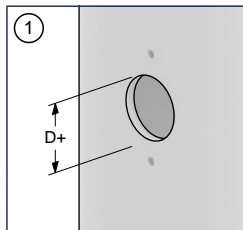
NEW



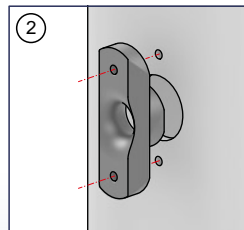
mod. RF14.30



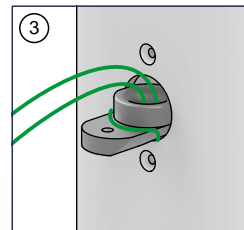
MODEL	d mm	D mm	H mm	WEIGHT gr	SCREWS N° x Ø mm	MAX LINE Ø mm
RF14.30	14	30	10	39	2 x 5	10
RF16.35	16	35	12	62	2 x 6	12
RF18.40	18	40	14	90	2 x 6	14



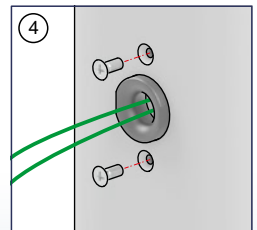
Drill a hole with a hole saw.



Use the Fairlead as a template to mark the position of the two screws and drill the holes.



Tie the Fairlead with a line, insert it into the hole.



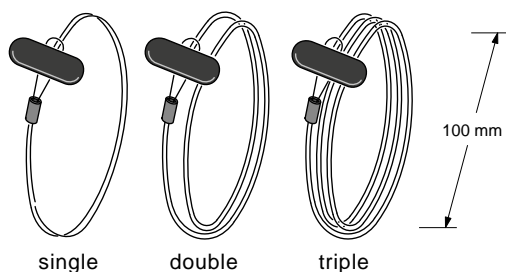
Put the Fairlead into place using the line, fit the screws, take off the line and tighten screws.



mini snap loops

MINI SNAP LOOP

It's a Dyneema loop that can be opened, with an easy and safe lock system. Three sizes with 2.5, 4 or 5 mm lines with different lengths. It will be used as a single, double or triple ring.



MODEL	Ø mm	TOTAL LENGHT cm	FOR	SWL kg
9001	2.5	20	SINGLE	250
SL4S	4	30	SINGLE	600
SL4D		50	DOUBLE	1200
SL4T		70	TRIPLE	1800
SL5S	5	30	SINGLE	1000
SL5D		50	DOUBLE	2000
SL5T		70	TRIPLE	3000

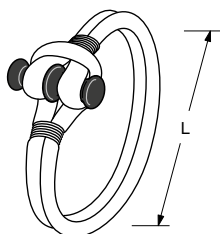


Class 40 Eco - M. Miceli

snap loops

SNAP LOOPS WITHOUT COVER

These snap loops are obtained with a spliced Dyneema line without a cover and an aluminium dog-bone.
Suitable for Looper blocks (page 74).



DYNEEMA WITHOUT COVER

MODEL	DYNEEMA Ø mm	BL kg	SWL kg	L mm	WEIGHT gr
LS2060	4	3000	1000	100	11
LS2070	5	5200	1600	110	20
LS2080	6	6600	2200	125	44
LS2100	8	11000	3500	160	81

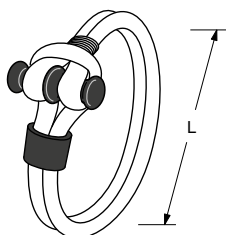


mod. LS2070

The Safe Working Load SWL is 1/3 of the breaking load, obtained from traction tests on a new Loop.

SNAP LOOPS WITH COVER

These snap loops are obtained with a spliced Dyneema line with a polyester cover, an aluminium dog-bone and a locking sleeve.
Suitable for Snatch Looper blocks (page 100).



DYNEEMA WITH POLYESTER COVER

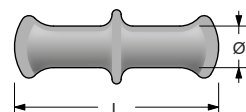
MODEL	DYNEEMA Ø mm	BL kg	SWL kg	L mm	WEIGHT gr
LS2061	5	2800	900	110	15
LS2071	6	4800	1600	125	27
LS2081	8	6700	2200	150	51
LS2101	10	10500	3500	200	90



mod. LS2071

DOG-BONE

You can prepare your special snap loop using Antal aluminium dog-bones, available separately.



MODEL	FOR DYNEEMA Ø mm	Ø mm	L mm	WEIGHT gr
LS2062	4	6.5	30	3
LS2072	5	8.0	37	6
LS2082	6	10.0	46	13
LS2102	8	11.5	55	22
LS2122	10	13.5	67	36
LS2142	12	16.0	79	55





accessories

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promotional items 192



model index200

roller cleat



mod. RC290/SI

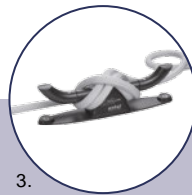
mod. RC290/B



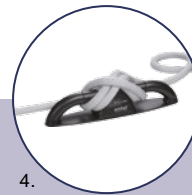
1.



2.



3.



4.

Roller is a folding cleat with rotating horns: with a simple gesture of your hand, you can open or close roller even with the line on, just by turning one of the horns.

Roller is **open**: you can easily tie or remove the mooring line.

Roller is **closed**: this position minimizes the size and, more important, prevents other lines from getting caught.

The horns can be shut down or turned up even under load. Roller is the only folding cleat you can close with the line on.

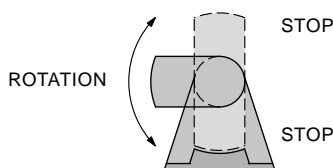
Roller has perfectly rounded shapes in order not to damage the mooring lines.

Available in 4 sizes and 2 finishes: silver (/SI) or black anodized (/B).

Mounting screws included.

Horn rotation

The horn can only be rotated on one side (inward). In this way, Roller can act as a footrest (outward rotation is locked).

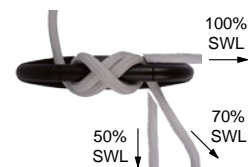


A safety ball keeps the cleat steady in the open or closed position.

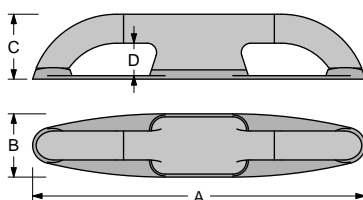
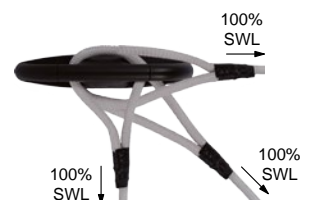
Safe Working Load

The SWL may differ according to the pull direction, depending on the type of mooring line used.

Mooring knot: the max. load changes with the line direction.



Spliced line: the max. load remains the same for any line direction.



MODEL	A mm	B mm	C mm	D mm	SWL kg	WEIGHT kg	SCREWS N" x Ø mm	MAX LOA ft
RC230*	232	46	46	21	2000	0.44	2 x Ø10 + 2 x Ø6	36
RC290*	287	55	56	28	4000	0.77	2 x Ø14 + 2 x Ø6	46
RC350*	346	64	65	31	7500	1.33	4 x Ø12 + 2 x Ø6	58
RC420*	418	76	77	36	11500	2.30	4 x Ø14 + 2 x Ø8	70

* For black finishing add /B to the model number, add /SI for the silver.

track adjustable cleat

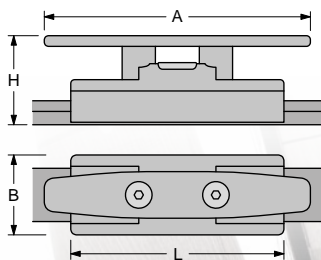
TRACK ADJUSTABLE CLEAT

Two moveable cleats for either 32 mm or 40 mm T-track.

Cleats and slider are CNC machined from hard black anodized aluminum, low profile design.

Single screw-in stop pin keeps the cleat firmly locked in any position along the track, or locked open for easy of movement.

Nylon insert on the slider for easier movement.
S.steel version available.

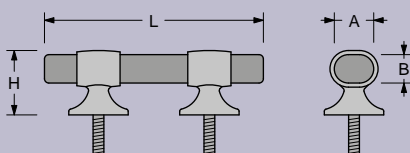


MODEL	T TRACK mm	PIN Ø mm	A mm	B mm	H mm	L mm	WEIGHT gr
622.412	32x6	11	170	49	55	132	0.45
623.412	40x8	14	200	60	67	160	0.78



CLASSIC CLEATS

This cleat is a classical look cleat formed by a teak beam and a double s.steel basis.
Teak Cleat is available in two sizes.

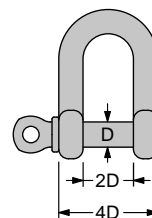


MODEL	A mm	B mm	H mm	L mm	SCREWS Ø mm
7412	36	26	60	320	10
7413	48	31	73	400	16

shackles & pad-eyes

SHACKLES AISI 316 & HR

Antal supplies standard shackles made in AISI 316 and HR high resistance s.steel. The HR version offers higher values of the Safe Working Load.



SHACKLES AISI 316

MODEL	D mm	SWL kg	ANTAL BLOCKS Ø mm
005SS	5	600	50
006SS	6	800	60
008SS	8	1300	- - -
010SS	10	1900	- - -
012SS	12	2600	- - -
014SS	14	3500	- - -
016SS	16	4400	- - -

SHACKLES HR

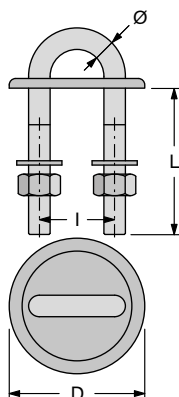
MODEL	D mm	SWL kg	ANTAL BLOCKS Ø mm
- - -	- - -	- - -	- - -
006HR	6	1300	70
008HR	8	2200	80
010HR	10	3500	100
012HR	12	5000	120
014HR	14	7000	140 - 150
016HR	16	9000	180



"Ciolita" - photo J.R.Taylor

"U" BOLTS

Made of AISI 316 stainless steel. They can be fitted with a block and a "stand-up" spring.



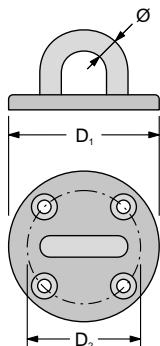
MODEL	7105	7106	7108	7110
Ø mm	5	6	8	10
I mm	17	22	28	35
D mm	38	44	54	63
L mm	50	55	67	67
WEIGHT kg	0.05	0.06	0.13	0.17
SWL kg	500	800	1500	2500
BLOCK Ø mm	50	60	70	80



Do not use Antal U-Bolt for boat lifting

"4 SCREWS" PAD-EYES

These models, made in AISI 316 s. steel, are fixed to the deck with 4/6 screws that guarantee the best distribution of the load, making them the right solution for heavy loads. They can be fitted with a block and a "stand-up" spring.



MODEL	7206	7208	7210	7212	7214	7216	7220
Ø mm	6	8	10	12	14	16	20
D ₁ mm	44	65	75	80	99	110	129
D ₂ mm	32	49	53	59	74	84	104
SCREWS N° x Ø mm	2 x Ø6	4 x Ø6	4 x Ø8	4 x Ø8	4 x Ø10	6 x Ø10	6 x Ø10
WEIGHT kg	0.10	0.16	0.26	0.38	0.68	1.10	1.80
SWL kg	800	1500	2500	3600	4600	6500	9000
BLOCK Ø mm	60	70	80	100	120	140 - 150	180

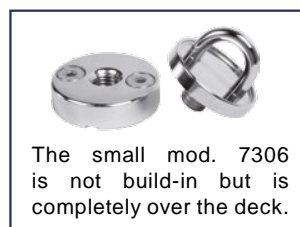


SCREWED EYEBOLTS

Made of AISI 316 stainless steel.

This solution allows an easy removal of the eyebolt from the deck. They can be fitted with a block and a "stand-up" spring.

Blocks with screwed eyebolts include: block with spring and (removable) eyebolt and the base (fixed to the deck). The same base is suitable for blocks of different sizes: same base for 70 and 80 mm blocks, same for 100 and 120 mm blocks and one for 140, 150 and 180 mm.



The small mod. 7306 is not build-in but is completely over the deck.



MODEL	7306	7308	7310	7312	7314	7316	7321
Ø mm	6	8	10	12	14	16	20
D ₁ mm	12	20	20	24	24	30	36
D ₂ mm	40	50	60	70	78	84	100
D ₃ mm	46	70	80	90	90	120	120
D ₄ mm	30	50	56	64	64	92	92
D ₅ mm	- - -	28	28	32	32	42	46
H mm	- - -	35	35	38	38	56	56
SCREWS N° x Ø mm	2 x Ø6	4 x Ø6	4 x Ø8	4 x Ø10	4 x Ø10	6 x Ø10	6 x Ø10
WEIGHT kg	0.23	0.56	0.58	0.72	1.09	2.20	3.60
SWL kg	800	1500	2500	3600	4600	6500	9000
BLOCK Ø mm	60	70	80	100	120	140 - 150	180

Do not use Antal Pad-Eyes or Eyebolts for boat lifting

sliding pad-eye



DOWN



UP

Mod. SP10.48

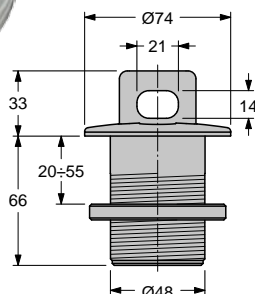
SLIDING PAD-EYE

A sliding pad-eye with two positions:

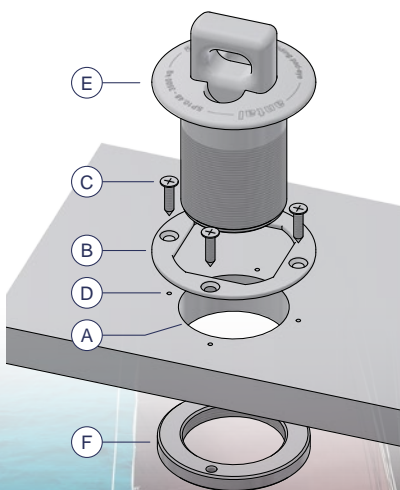
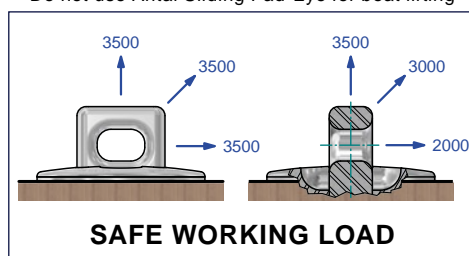
- **open:** for a Dyneema™ line connection or an HR shackle 10 mm connection;
- **closed:** to offer a completely flush deck.

Made from highly polished 316 stainless steel.

Weight = 850 gr **SWL = 3500 kg**



Do not use Antal Sliding Pad-Eye for boat lifting



- Drill a Ø48 mm hole (A) on a reinforced area of the deck.
- Center washer B on the hole and turn it so that the pad-eye is along the direction of the maximum load.
- Put some sealant under the washer and fix it with the 4 self-tapping screws C (first drill 4 holes of Ø3 mm D).
- Put some sealant on the washer and insert cylinder E into the hole. Rotate the cylinder until it enters the square hole of the washer.
- Lock the cylinder by screwing ring-nut F from under the deck. The ring-nut is provided with two threaded holes for Ø5 mm screws (not supplied) that can be used for strong tightening.



Marina Militare - Capricia



promotional items

RING & CARD

Rings mod. R07.05, R10.07, R14.10 and R20.14 are available with packaging (add /P after the Ring code) and Ring Display Set. Contact Antal for more info.



Mod. R10.07/P

Mod. G206/0

Ring & Card
(Pag. 178)

Ring Display Set
(Ring & Card not included)

DISPLAY FOR SHOPS

5 models available, sizes : 245 x 335 mm.
Blocks, rings and winch handle are included.



Mod. G201B

Mod. G202

Mod. G204

Mod. G205

Mod. G207

ring & loop

**Low friction rings
& Loop**
(Page 180)

snatch

Snatch blocks
(Page 98)

speedylock

Winch handle
(Page 31)

Dyna block

Dynablock
(Page 97)

hook

Hook
(Page 180)

T-SHIRT

Mod. G302

Add /S, /M, /L or /XL for
small, medium, large or extra
large sizes.



WEB SITE

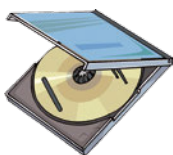


2019 Antal catalogue is available on www.antal.it.
CAD library is available in download section of www.antal.it



FACEBOOK

Follow us on Facebook



CD-ROM

2019 4 languages Antal catalogue and CAD library is available in CD-Rom.



USER'S GUIDE

Winches user's guide and many products exploded view are available on request.



2019 CATALOGUE

Photo: Studio Light
Printing: Centrooffset
Printed in October 2018



CUSTOM

Custom products are designed, produced and tested on request.

Products are continuously improved and Antal reserves the right to modify them without notice. Antal has no responsibility for possible mistakes in this catalogue.

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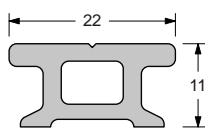
Vismara V50DS

ant tracks

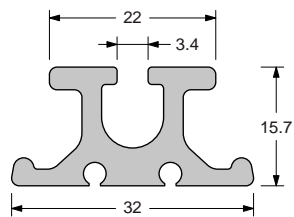
FULL BATTEN MAST TRACKS

Material & finish: hard black anodized and Teflon-coated aluminium. Silver finish only on request.

For sliders with plastic or HS fibre guides

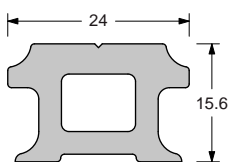


size 22x11 mm
fasteners: Ø5 mm screws
mounting slugs available
length : 2 or 3 m
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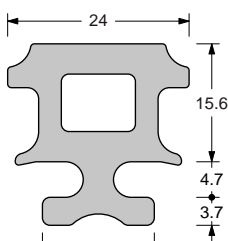


size 22x16 mm
profile to be glued
length: 3 m
page 163

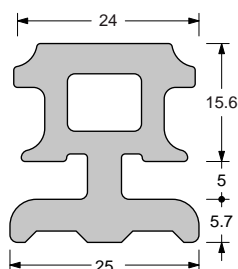
For sliders with HS fibre guides or Fibreball sliders



size 24x16 mm
fasteners: Ø6 mm screws
mounting slugs available
length : 2 or 3 m
page 164

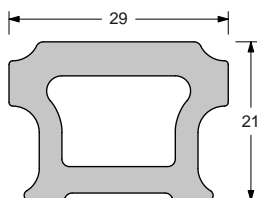


size 24x16 / 4x15 mm
no fasteners
mast groove 4x15 mm
length : 3 m



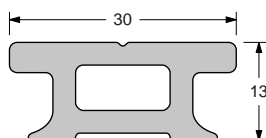
size 24x16 / 6x25 mm
no fasteners
mast groove 6x25 mm
length : 3 m

For Fibreball sliders

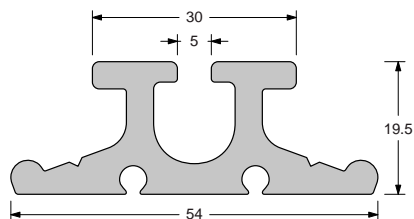


size 29x21 mm
fasteners: Ø8 mm screws
mounting slugs available
length: 3 m
page 166

For sliders with HS fibre guides



size 30x13 mm
fasteners: Ø6 mm screws
no slugs available
length : 3 or 6 m
page 165



size 30x20 mm
profile to be glued
length: 3 m
page 165

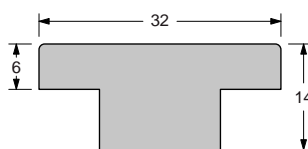


"T" TRACKS

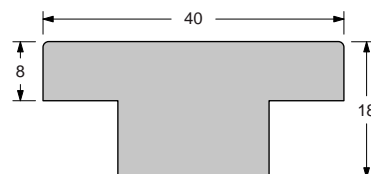
"T" tracks for sliders with plastic guides.

Material & finish: hard black or silver anodized and Teflon-coated aluminium.

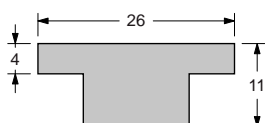
Material & finish: polished 316 stainless steel



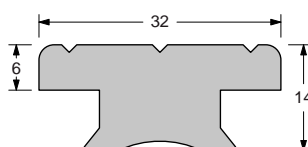
size 32x6 mm
fasteners: Ø6 mm screws
any length up to 6 m
page 112



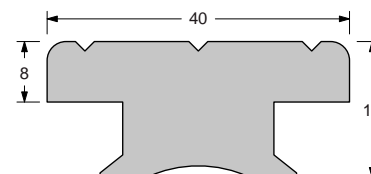
size 40x8 mm
fasteners: Ø8 mm screws
any length up to 6 m
page 112



size 26x4 mm
fasteners: Ø5 mm screws
any length up to 3 m
page 104



size 32x6 mm
fasteners: Ø6 mm screws
any length up to 6 m
page 106

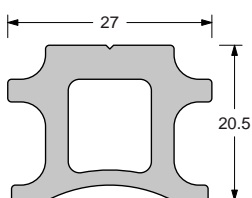


size 40x8 mm
fasteners: Ø8 mm screws
any length up to 6 m
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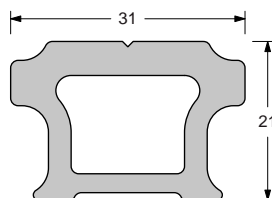
4RACE TRACKS

4Race tracks for ball bearings sliders.

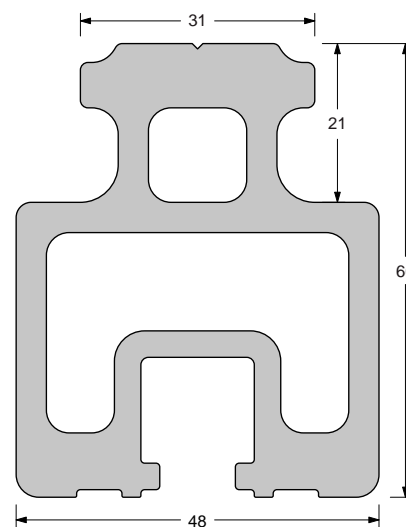
Material & finish: hard black anodized and Teflon-coated aluminium. Silver finish only on request.



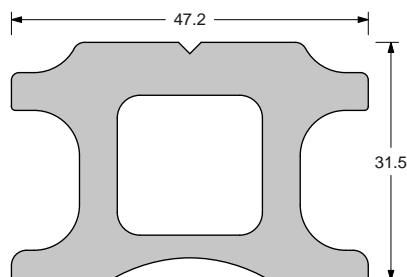
size 27x20 mm
fasteners: Ø6 mm screws
any length up to 6 m
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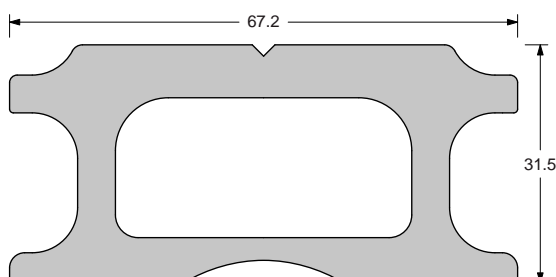
size 31x21 mm
fasteners: Ø8 mm screws
any length up to 6 m
page 124



size 31x60 mm
fasteners: Ø8 mm screws on
sliding slugs
any length up to 6 m
page 124



size 47x31.5 mm
fasteners: Ø10 mm screws
any length up to 6 m
page 138

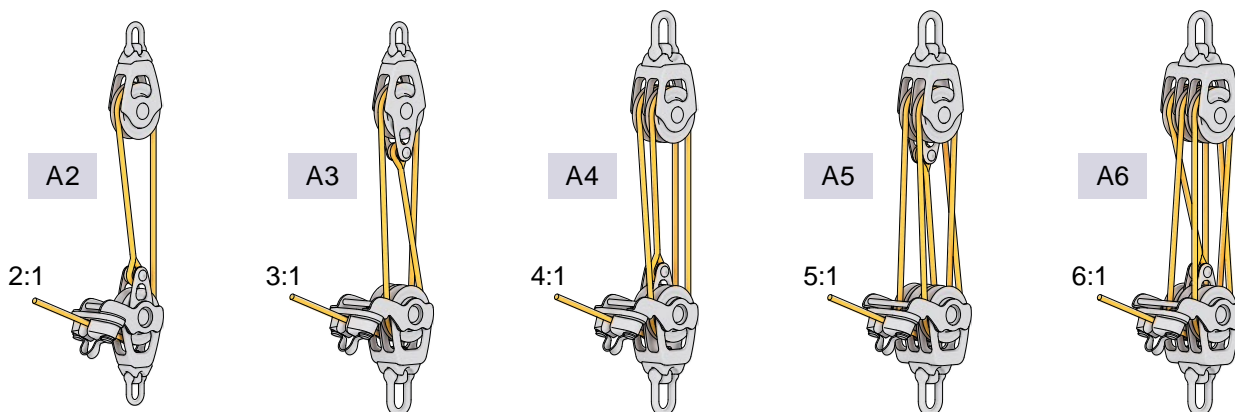


size 67x31.5 mm
fasteners: Ø12 mm screws
any length up to 6 m
page 142

block systems

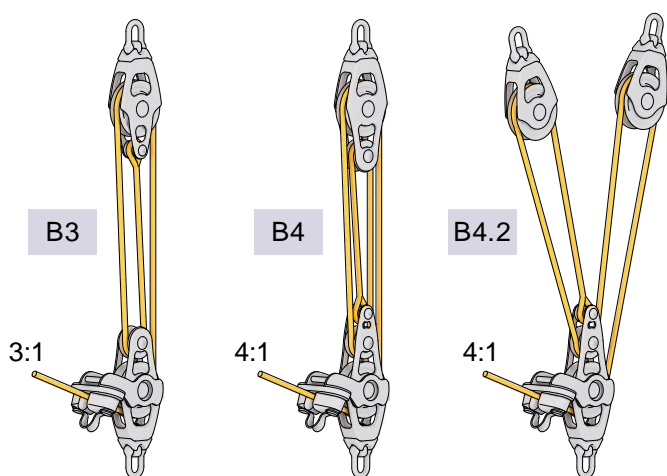
STANDARD SYSTEMS

TAB. A

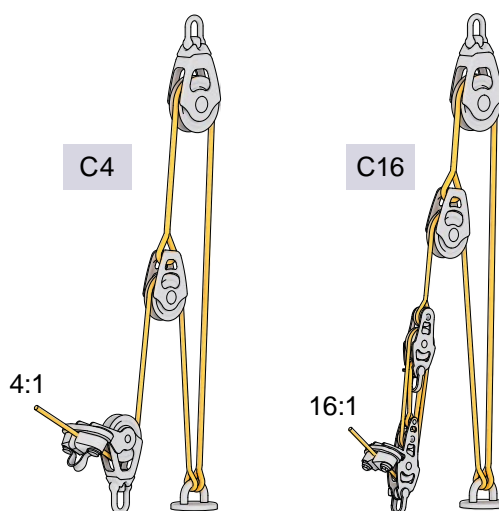


FIDDLE SYSTEMS

TAB. B

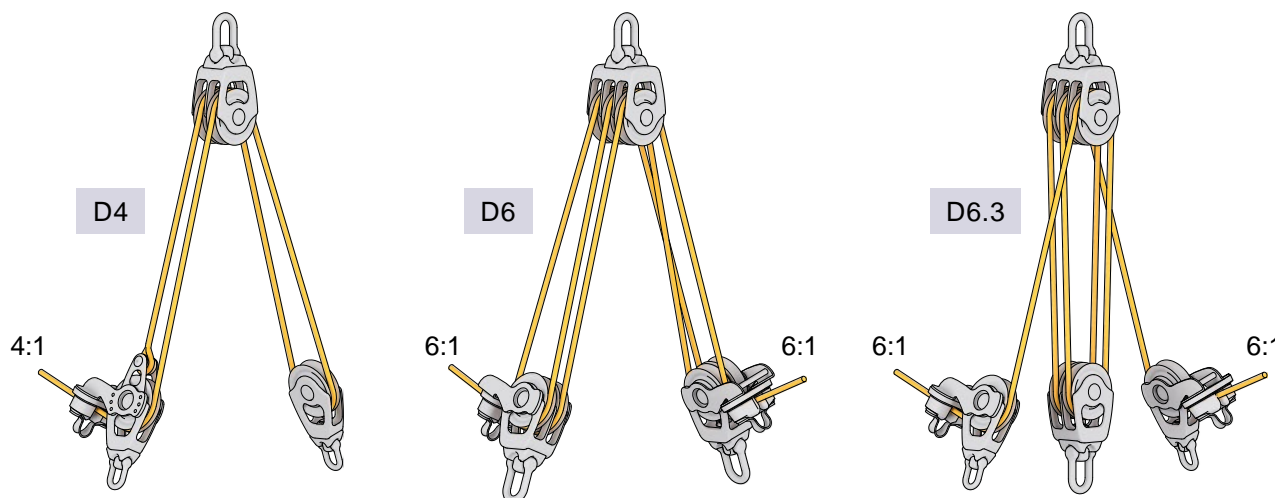


CHAIN SYSTEMS FOR VANG AND BACKSTAY TAB. C



BLOCKS SYSTEM FOR VANG AND BACKSTAY

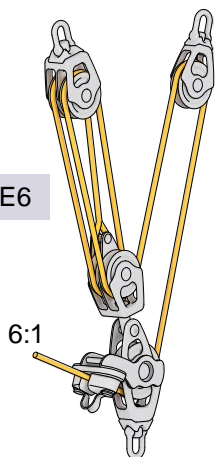
TAB. D



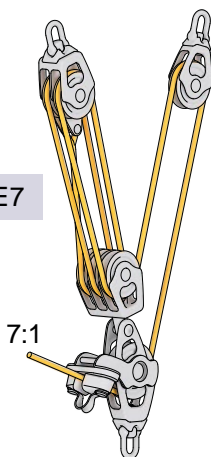
SINGLE SPEED MAIN SHEET SYSTEMS

TAB. E

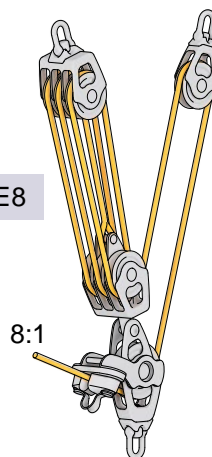
E6



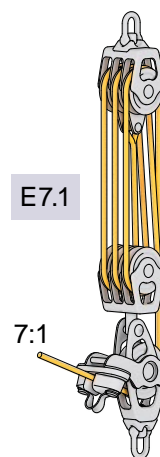
E7



E8



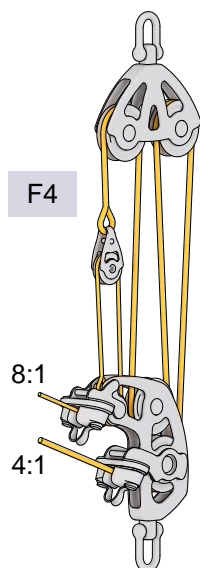
E7.1



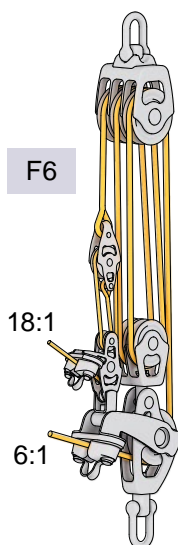
DOUBLE SPEED MAIN SHEET SYSTEMS

TAB. F

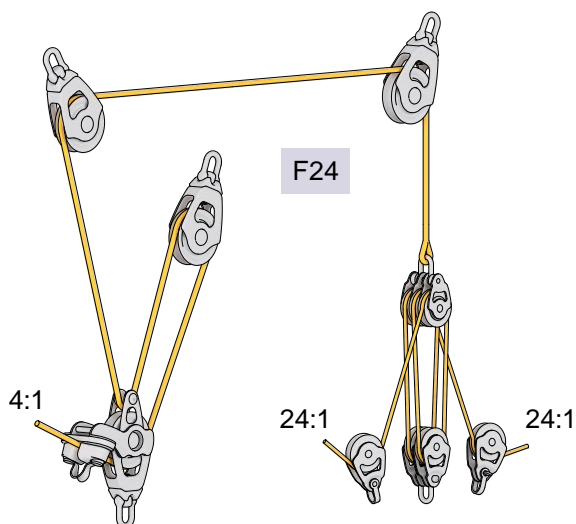
F4



F6



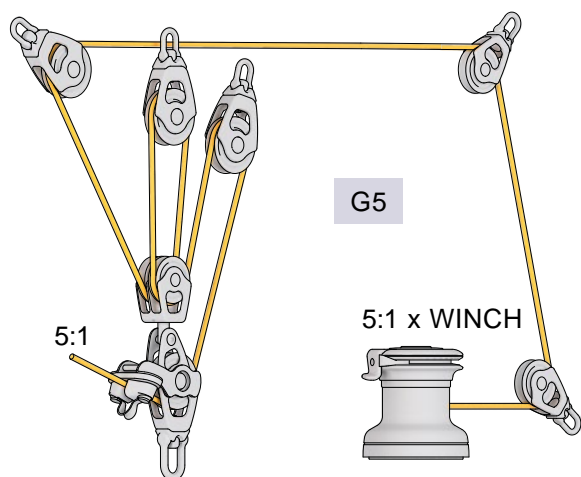
F24



DOUBLE SPEED SYSTEM

TAB. G

G5



rigging loads

BREAKING LOADS

Reported “breaking loads” are “average values”: real values may vary greatly according to the supplier.

“Working loads” will be obtained with appropriate safety factors: 1/2 for steel wire, 1/4 for rope.

POLYESTER cover and core			
Ø mm.	BL kg	Ø inch	BL lb.
4	450	5/32	1000
5	600	3/16	1300
6	750	1/4	1650
8	1300	5/16	2850
10	2100	3/8	4600
12	2900	1/2	6400
14	3900	9/16	8600
16	5000	5/8	11000
18	6200	11/16	13600
20	7500	13/16	16500
22	9000	7/8	19800

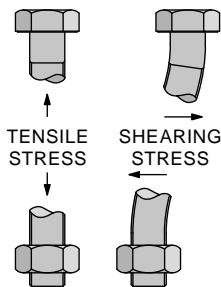
POLYESTER (cover) DYNEEMA (core)			
Ø mm.	BL kg	Ø inch	BL lb.
4	700	5/32	1550
5	1000	3/16	2200
6	1800	1/4	3950
8	3000	5/16	6600
10	4600	3/8	10100
12	6600	1/2	14500
14	8900	9/16	19600
16	11000	5/8	24200

S. STEEL AISI 316 1 x 19			
Ø mm.	BL kg	Ø inch	BL lb.
3	800	1/8	1700
4	1400	5/32	3100
5	2100	3/16	4600
6	3100	1/4	6800
7	4100	9/32	9100
8	5200	5/16	11400
10	8000	3/8	17600
12	11000	1/2	24200
14	14500	9/16	31900
16	19000	5/8	41900
18	23500	11/16	51800

S. STEEL AISI 316 7 x 19			
Ø mm.	BL kg	Ø inch	BL lb.
3	550	1/8	1200
4	900	5/32	2000
5	1500	3/16	3300
6	2200	1/4	4800
7	2900	9/32	6400
8	3800	5/16	8400
10	6000	3/8	13200
12	8500	1/2	18700

BREAKING LOADS

Screws AISI 316 class 50



	TENSILE STRESS	SHEARING STRESS
D mm	BL kg	BL kg
5	1000	600
6	1400	800
8	2600	1500
10	4000	2400
12	5600	3300
14	7600	4600

CONVERSION FACTOR

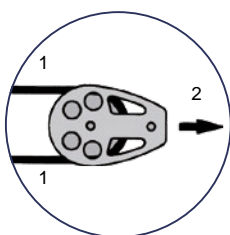
mm = inch x 25.4	inch = mm x 0.039
cm = inch x 2.54	inch = cm x 0.394
cm = ft x 30.48	ft = cm x 0.033
m = ft x 0.305	ft = m x 3.281
m² = ft² x 0.093	ft² = m² x 10.76
gr = oz. x 28.35	oz. = gr x 0.035
kg = lb x 0.454	lb = kg x 2.205

SWL is the abbreviation of **Safe Working Load**, it is half of the **Breaking Load (BL)**.

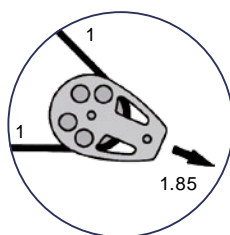
BLOCK LOADING

Block loading depends on the angle of the line.

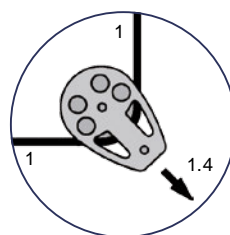
Values for typical angles are reported in the table.



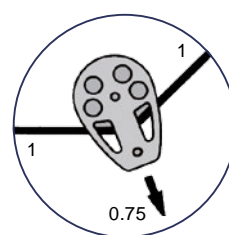
ANGLE = 0°



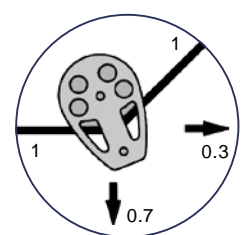
ANGLE = 45°



ANGLE = 90°



ANGLE = 135°



ANGLE = 135°

Paraglide



not only
for sailing



Kite



Tensostructure



Rescue



Arborist



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LIMITED WARRANTY

Antal guarantees its equipment to be free of defects in material and workmanship for 3 years from the date of purchase. During this period defective parts will be repaired or replaced by Antal.

Warranty does not cover:

- products incorrectly installed;
- products used in applications for which they are not intended;
- products used under loads exceeding the product's stated loads;
- products not properly maintained.

Warranty does not cover defects due to corrosion, U-V degradation, and normal wear and tear.

Products subject to warranty claim will be returned to Antal for examination and possible repairing or replacement. Antal is not responsible for installation or shipping costs.

MAINTENANCE

Remove salt deposits with fresh water; frequently washing will avoid corrosion that is activated from salt water.

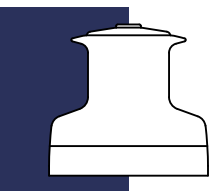
Grease (Hydrolub) or Loctite or anticorrosive product will protect aluminium; it will be useful to use some grease on s. steel parts: screws, washers, pin to reduce the contact with aluminium.

Although all Antal products are made only with anti U-V plastic it will be better to reduce the exposure to sunlight.

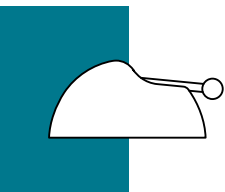


SOLAR PLANT

The new Antal photovoltaic solar plant with a surface of 500 m² and a power of 20 kw will supply 20% of the energy necessary for the production. Our passion for sailing is also care for the environment.

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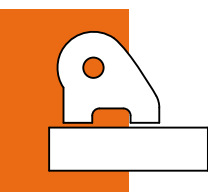
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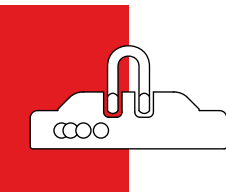
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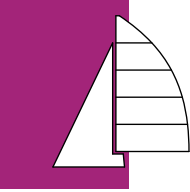
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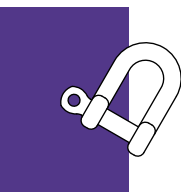
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