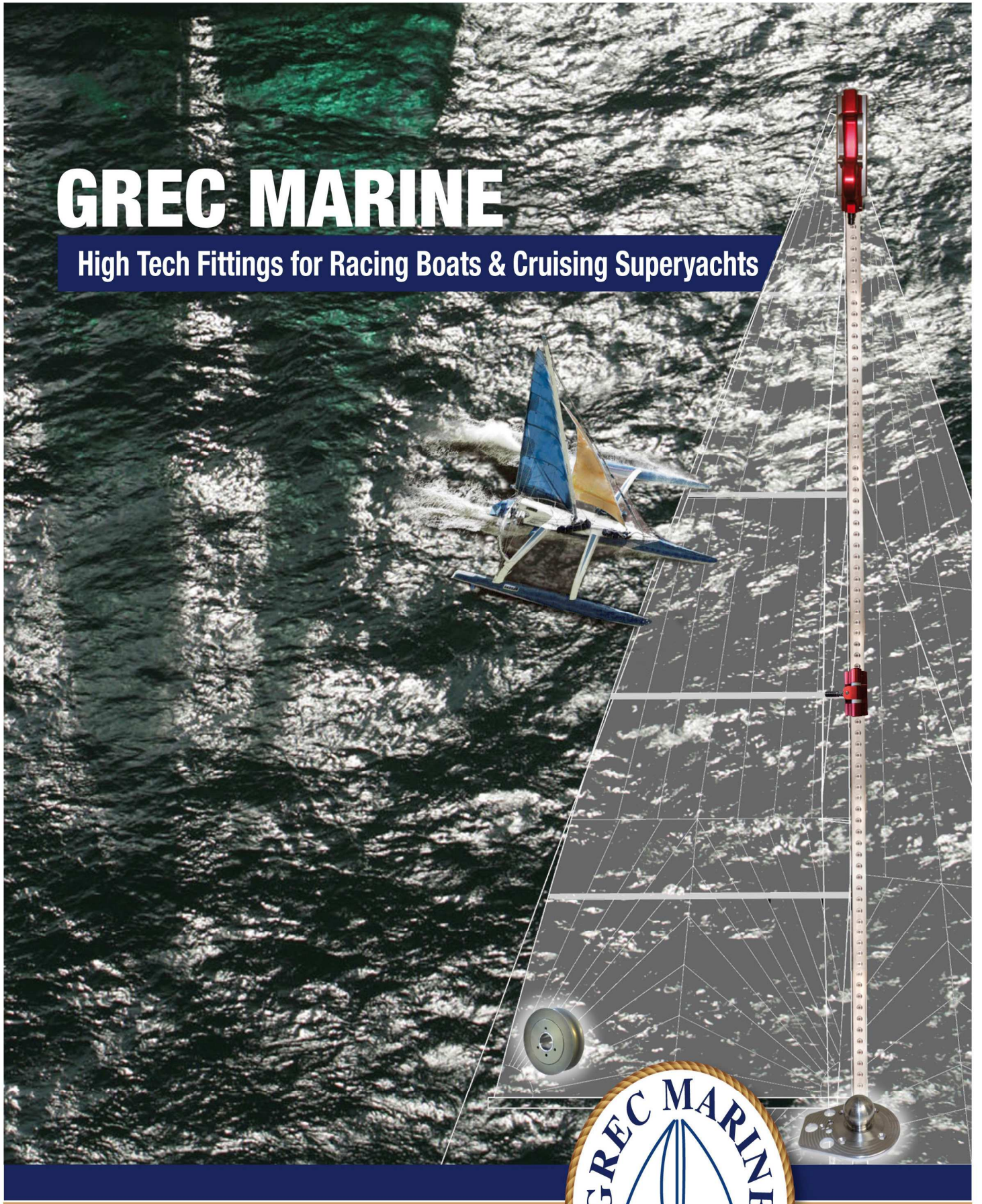


GREC MARINE

High Tech Fittings for Racing Boats & Cruising Superyachts



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PRESENTATION

NEW : Complete range of mast equipment for 40' (track and cars...)

Grec Marine is an engineering & design office that specializes in the design and production of high tech prototypes, products and fittings. They have been developed for 40' to 130' racing boats in order to propose a range of products to satisfy naval architects, shipyards and skippers from all over the world.

We are located in Lorient, next to different offshore racing teams in Lorient, Port La Forêt and La Trinité Sur Mer, and this enables us to test our products with well known and experienced skippers.

Our designs are produced with the TOP SOLID 3D software, so we produce our fittings with 3D machines.

All our products are made in France from state-of-the-art material combining resistance and lightness.

Our references in offshore racing boats :

60' Vendée Globe

- BT
- Cheminées Poujoulat
- DCNS
- Delta Dore
- Generali
- Maisonneuve
- Pindar
- PRB
- Safran
- Veolia Environnement
- VM Matériaux
- Virbac-Paprec

50' & 60' Multi-hulls

- Banque Populaire IV
- Brossard
- Foncia
- Gitana X, XI & XII
- Sodebo
- Sopra
- Groupama II
- Crêpes Whaou
- Lalou Roucayrol
- L'Hydroptère

Maxi Multi-hulls

- Orange
- Sodebo II
- Banque Populaire V
- Kingfisher

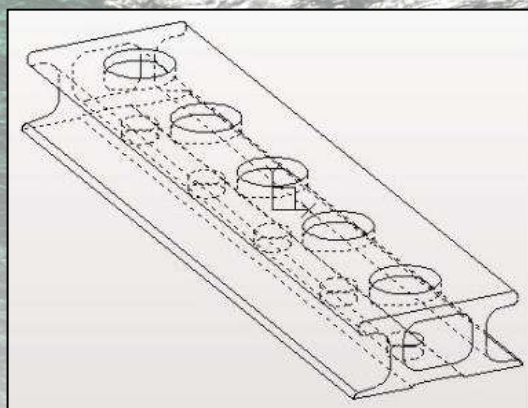
ALINGHI was equipped by Grec Marine for the America's Cup

Our industrial production partners offer complementary equipments and machines :

- AMB 91 (La Ferté Alais)
- Méca Océan (Lorient)
- Kéroman Usinage (Lorient)
- Armor Mécanique (Lorient)



MAINSAIL TRACKS



These extruded tracks in aluminum 6106T6, which has been subjected to a strong anodizing process (with or without *Teflon*) to limit friction enabling a smoother slide.

3 or 6 meters sections: strong anodizing treatment with *teflon*.

12 meters sections: colorless strong anodizing treatment.

The advantage of our track is that you can use both ball bearing or sliding cars.

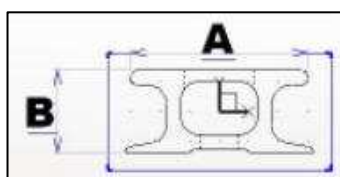
The tracks are fixed to the mast with screws, every 25 or 50 mm on the standard model, or customized following any given plan (titanium or stainless steel screws in option).

To guarantee that the tracks are perfectly aligned, we also propose aluminum inserts with strong anodizing treatment that are screwed in the connecting ends of the different sections.

The tracks end stops are fabricated in PA66 (Nylon) the form is taken from the tracks' profile which enables the positioning of the height position to stop the cars.

With this concept, the tracks can be used with fixed or rotating masts to optimize when hoisting or hauling down the sails with loads.

Model	Weight	A	B
40 - 50'	320 g/m	20	12
50 - 70'	490 g/m	30	14
80 - 100'	650 g/m	34	16
100 - 130'	Development in process		



Specific profiles designed on request.

HEADBOARD CARS



013040- Double headboard car



012017- single piece headboard for 2 lashings



013050

Headboard car with central hook, 70mm sheave & lashing for 2:1 halyard



012013

Headboard car with lashing on a 65mm sheave



013065

Headboard car with lashing on a 65 mm sheave for 2:1 halyard & lasheye for the main



013100 - Headboard car with lashing on a 100 mm sheave for 2:1 halyard & lasheye for the main



013080 - Headboard car with lashing on a 80 mm sheave for 2:1 halyard & lasheye for the main



013070 - Headboard car with lashing on a 80 mm sheave for 2:1 halyard & articulated lasheye for the main



120070 – Headboard car with 2 :1 halyard & 2 external hooks

BATTEN CARS (for Grec Marine tracks)

Sliding batten car with quick connect locking system or cardan joint. (Rotating mast)



Sliding batten car with cardan joint
(90 mm & 140 mm)



Sliding batten with quick locking system

The cars are cast from a single piece of aluminum which has been subjected to a strong anodizing process.

The vesconite runner ensured a perfect and long term slide.

For the batten car with quick locking system, the pin is not included in the price. It has to be defined with the order.

Ref.	Description	Model
012022	90 mm sliding batten car with quick locking system	50' – 70'
012019	90 mm sliding batten car with cardan joint	50' – 70'
012100	110 mm sliding batten car with cardan joint	80' – 100'
012130	110 mm sliding batten with quick locking system	80' – 100'
012110	140 mm sliding batten car with cardan joint	80' – 100'

The range for Super Yachts is currently in development

Ball bearing car, with quick locking system or cardan joint (fixed mast)



Ball bearing batten cars with cardan joint & quick locking system

Ref.	Description	Model
012021	Ball bearing batten car with quick locking system	50' – 70'
012020	Ball bearing batten car with cardan joint	50' – 70'

Please specify the required connection when ordering

TACK CARS – INTERMEDIATE CARS

Tack car :



90° tack car

The tack cars and intermediate cars are made from aluminum, series 7000, cast from a single piece of aluminum which has been subjected to a strong anodizing process.

The vesconite runner is machined after mounting and the axis is fabricated in titanium, 12 mm diameter.

All our cars are light and reliable.

Ref.	Description	Weight
012018	90 mm length tack car with vesconite runner	190 g
012012	120 mm length tack car with vesconite runner	300 g
012120	140 mm length tack car with vesconite runner	340g

Intermediate car :



60mm length car

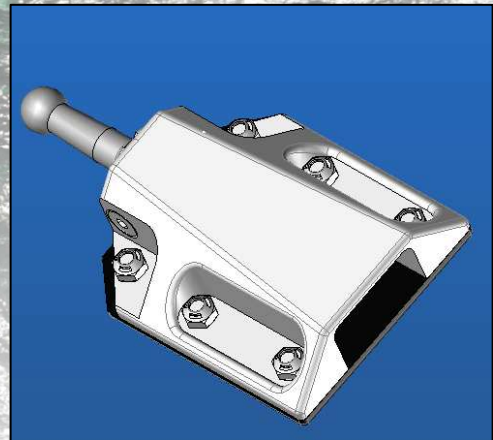


90 mm length car



Ref.	Description	Weight
012023	60 mm length intermediate car with vesconite runner	100 g
012090	90 mm length intermediate car with vesconite runner	210 g
60.012091	50 mm PA66 intermediate car	30 g

BATTEN RECEPTACLES



The batten receptacles and their backing are cast from a single piece of aluminum which has been subjected to a strong anodizing process, or a Rilsan® treatment (for carbon sails).

The pin type is to be defined when ordering.

Ref.	Description	Material	Weight
019979	50'-60' batten receptacle	PA66	123 g
019982	60' batten receptacle	Alu 6061 T6	300 g
011985	80' batten receptacle	Alu 6061 T6	420 g
020001	145' batten receptacle	Alu series 7000	1 500 g



145' batten receptacle



PA66 batten receptacle

Contact us with reference to design and production of other models.

MAST FEET FROM 50' TO 130' BOATS

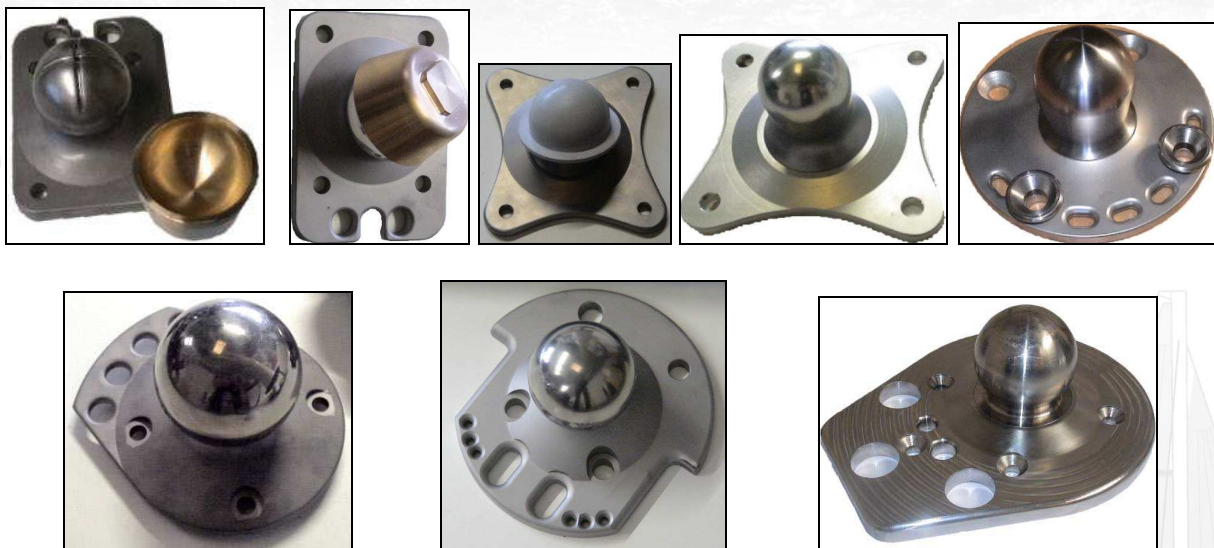
Adjustable mast foot (fixed mast) :



This mast foot is made in aluminum, series 7000, which has been subjected to a strong anodizing process.
Its adjustable system enables the selection of the best position for the rake.

Mast feet spheres, casings (rotating mast) :

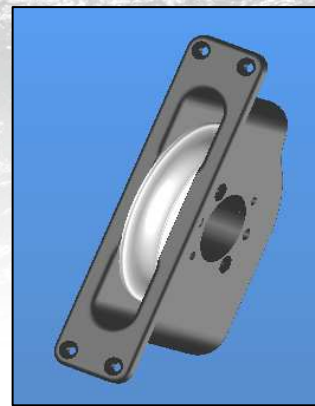
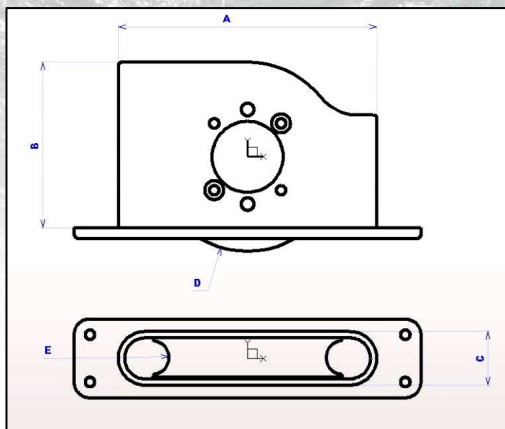
A specific range of mast feet designed by Grec Marine for each boat.



These mast feet are cast from a single piece of titanium, stainless steel or aluminum treated with a strong anodizing treatment.
Casings are fabricated from beryllium bronze, ertalyte TX or vesconite.

We also produce mast feet shoes in aluminum, series 7000, which have been subjected to a strong anodizing process, following the 3D files supplied by the boat builder.

SHEAVE BOXES



The boxes and the sheaves are made in aluminum, series 7000; which has been subjected to a strong anodizing process.

Installed in the mast, they enable the smooth passing of the halyards for mainsail, ORC or staysail.

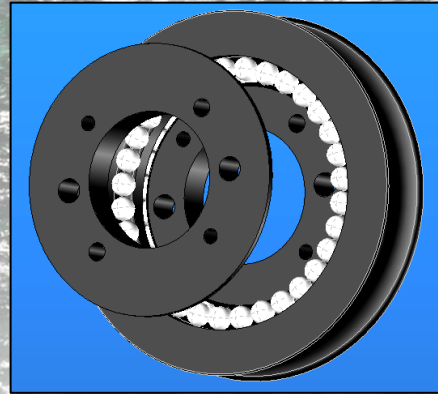
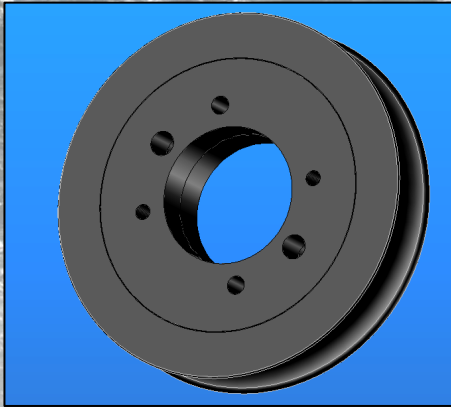
The sheaves are built to withstand heavy loads (radial or axial), ideal for maneuvering, and they can also be equipped with protections and fixed in the mast.

The sheaves contain *Torlon* or Nylon balls, depending on the load.
Contact us for other sizes, designs and customized items.

Ref.	A	B	C	D	E	Load (W/B)	Weight	Balls
010080	110	70	30	Ø 80	Ø 18	2,5 t / 6 t	350 g	Torlon
010090	110	70	30	Ø 80	Ø 18	1,9 t / 4,7 t	350 g	Nylon
010100	134	88	34	Ø 100	Ø 18	6 t / 12 t	600 g	Torlon
010110	134	88	34	Ø 100	Ø 18	4,7 t / 9 t	600 g	Nylon
010120	134	106	34	Ø 120	Ø 18	8 t / 15 t	850 g	Torlon
010130	134	106	34	Ø 120	Ø 18	6,5 t / 12,5 t	850 g	Nylon
010160	208	146	38	Ø 160	Ø 22	15 t / 24 t	1 600 g	Torlon
010170	208	146	38	Ø 160	Ø 22	11,5 t / 18 t	1 600 g	Nylon

Sizes in mm – Loads: W : Working / B : Breaking

BALLS SHEAVES WITH HUB



The balls sheaves with hub have been conceived and tested on 60' multi-hulls in order to be adaptable for various configurations.

The concept is to obtain flexibility in the fixed rope when working with heavy loads.

The sheaves are available with diameters from 63mm to 200mm and are used for:

- deck,
- block cylinder,
- main shroud block,
- staysail block,
- sheave box
- headboard car with lashing
- ...

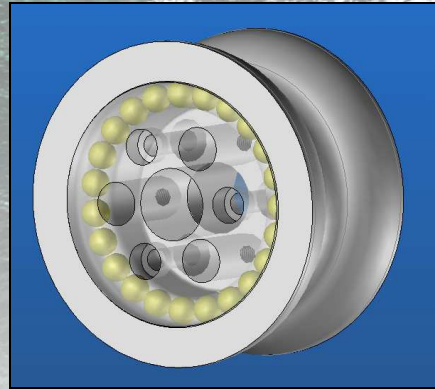
Ref.	ø Int	ø Ext	ø max ropes	Thickness	Weight	Load W/B
010080	18	60	18	23	185 g	2,5 t / 6 t
010100	30	100	18	25	318 g	6 t / 12 t
010120	45	120	18	25	450 g	8 t / 16 t
010160	70	160	22	29	950 g	15 t / 24 t
010200	50	200	30	36	2300 g	28 t / 34 t

Load : W = Working / B = Breaking

For Super Yachts, our design & engineering office is at your disposal

BALL BEARING WING SHEAVES

Ball bearing wing sheaves with hub :



The sheaves are fabricated from aluminum, series 7000, which has been subjected to a strong anodizing process to ensure protection against saline mist.

The balls fabricated in *Torlon* offer an excellent resistance against load, shock and temperature deformation. This optimizes the lifespan and guaranties the high quality performance of the ball bearing.

Ref	ø Ext	ø Int	ø max rope	Thickness	Weight
011400	90	20	20	56	420 g
011410	90	20	17	48	380 g
011420	70	20	20	40	220 g
011430	85	20	16	30	350 g
011440	80	20	16	30	320 g
010204	200	60	30	55	3 250 g

For Super Yachts, our design & engineering office is at you disposal.

Custom Ball bearing sheaves with vesconite plate:



REEF HOOK AND PLATES

Reef hook :



The reef hook is complimentary to the headboard reef hook. It allows a rapid attachment of the reef point.

This hook can also be used as ORC hook or staysail hook.

We regularly develop new products for offshore racing boats and offshore expeditions.

Ref.	Type	Material	Weight	Load W / B
018002	50'	Aluminum series 7000	617 g	12 t / 18 t
018001	50'	17.4 PH Stainless steel	624 g	12 t / 18 t

Load : W : Working / B : Breaking

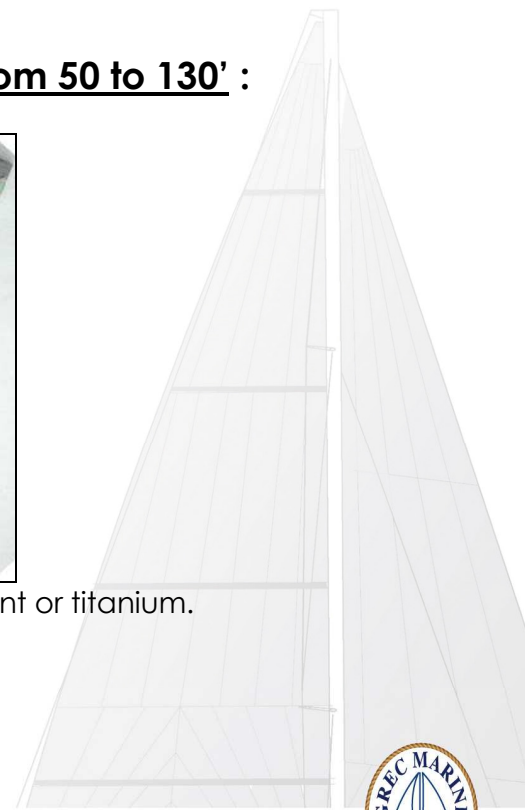
For other range of hook, on specific demand
Following the type of boat.



High and reef plates to hook the mainsail from 50 to 130' :



Aluminum plates with strong anodizing treatment or titanium.



SAILS SHEET RINGS



Rings in aluminum, series 7000, with *teflon* strong anodizing treatment :

Ref	Ø Ext.	Ø Int	Thickness	Working load	Breaking load
015100	60	40	16	1,5 †	3 †
015103	50	30	12	1,3 †	2.6 †
015105	85	55	20	2,5 †	5 †
015107	80	49	20	3 †	6 †
015120	115	70	30	7 †	14 †
015150	150	80	40	18 †	36 †

Titanium rings :

Ref	Ø Ext.	Ø Int	Thickness	Working load	Breaking load
015101	60	40	16	4,5 †	9 †
015002	50	30	12	3,5 †	7 †
015104	85	55	20	6 †	12 †
015004	80	49	20	6,5 †	13 †
015120	115	70	30	15 †	30 †
015151	150	80	40	44 †	88 †

17.4 PH stainless steel rings :

Ref	Length	Width	Thickness	Weigth	Breaking Load
119002	115	95	10	331 g	8 †
119003	122	102	12	413,5g	10 †



Custom head

SHEAVES

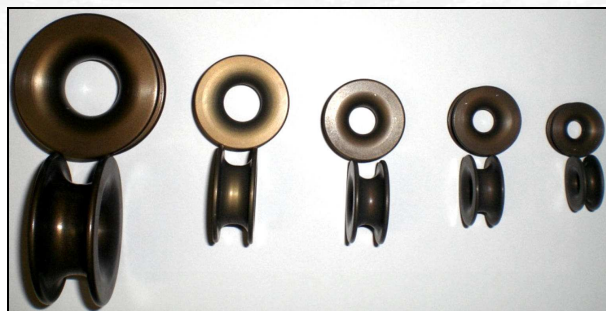


These sheaves fabricated in aluminum, series 7000, have been subjected to a strong anodizing process with or without *teflon*. This treatment creates a protective coating against saline rust and the *teflon*, reducing frictions, smoothes the slide.

These sheaves are used by seamanship or to replace blocks.

Sheaves with *teflon* treatment :

Ref	Ø Ext.	Ø Int	Thickness	Ø max rope	Weight
015024	24	8	9	6	5 gr
015030	30	10	12	9	9.10 gr
015035	35	12	14	10	13.70 gr
015040	40	16	16	12	19 gr
015050	50	18	20	15	40 gr
015060	60	24	24	18	64 gr



Sheaves with black strong anodizing treatment :

Ref	Ø Ext.	Ø Int	Thickness	Ø max rope	Weight
015020	20	8	7.5	6	3.26
015025	22	9	8.5	6	5
015031	27	12	10	8	5.94
015033	35	14	14	12	12
015041	40	16	16	14	19.1
015048	18	19	19	16	32.1
015061	60	24	24	22	38
015065	65	26	27	25	45



CUSTOM PRODUCTS & DESIGN

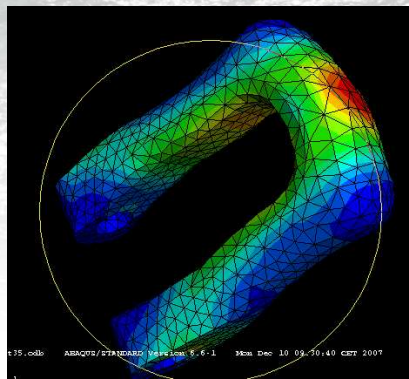
Ballast systems :



System for helm :

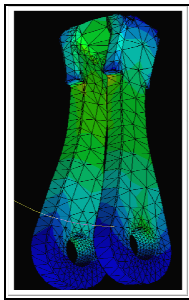


Titanium shackle :

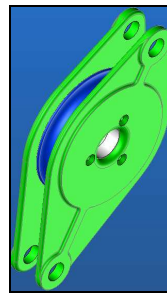


Design, sizing and custom fabrication to resist a 47 tonnes load.

Main shroud Yoke :



Main shroud Block :



Cardan joints and gooseneck :

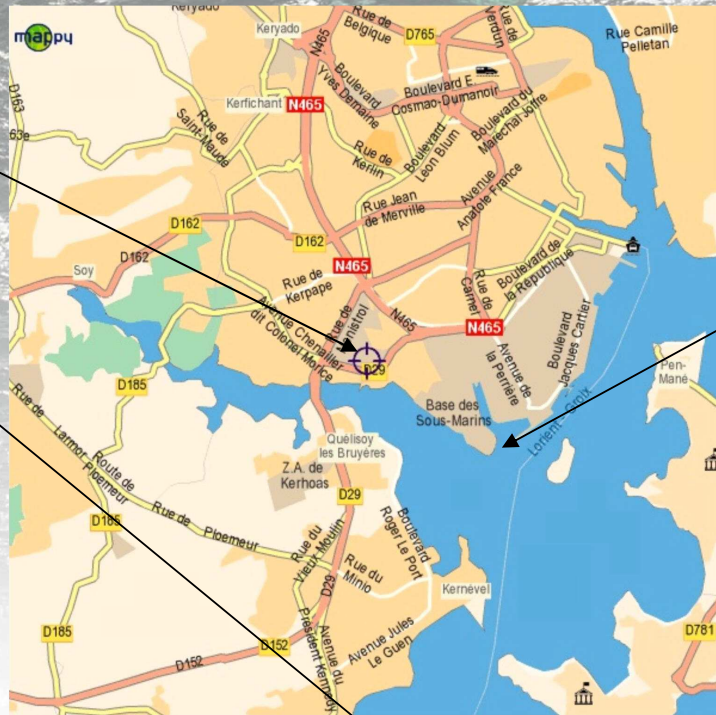


Find us :

**Grec Marine
engineering &
design office**

**At 10 minutes
from Lorient in
inflatable boat,
the Grec
Marine shop**

**Offshore racing teams
& Eric Tabarly Museum**



Grec Marine, is present for great offshore races starts with its truck and UFO inflatable boat (carbon hull).
We rent our assistance for races



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