Excess 11

OWNER'S MANUAL

XCS Excess

209173 RCD-2
Index A

CE

CONTENTS

INTRODUCTION

Welcome!

You have just been delivered your new EXCESS boat and we thank you for the confidence you have shown in us by ordering from our brand. The whole EXCESS team welcomes you on board.

A EXCESS is made to last and to bring you all the pleasure you should expect from a boat over a period of many years. Each boat is subject to the utmost attention to detail from the design stage right through to launching.

This manual is designed to help you to enjoy your boat comfortably and safely. It includes the boat's specifications, the equipment provided or installed, information on the boat's systems and some tips on operation and maintenance. Some of the equipment described in this manual may be optional.

Your EXCESS dealer will be able to help and advise you on the use and maintenance of your boat.
The first time you use your boat a high level of skill and attention will be required. The proper functioning of all equipment will depend on the initial set-up being carried out correctly. For this reason the first launch must be carried out under your dealer's supervision.

Read this Owner's Manual carefully and take time to get to know your boat before you use it.

The better you know your vessel, the better your experience will be when sailing it.

Keep this manual somewhere safe and pass it on to the new owner should you sell your boat..

You are advised to keep any user's guides supplied by the manufacturers of any equipment for your boat (accessories, etc.), together with your manual.

For each piece of equipment on your boat,please read the instruction manuals provided by the manufacturer.

- This manual is written to help you enjoy your boat in safety. It contains details of the boat and of all the equipment provided and installed on your boat, as well as instructions for its use. Read it carefully and get to know your boat properly before using it.

- This owner's manual is not in any way a navigation or mariner's training manual. If this is your first boat or if you have changed to a type of boat with which you are not familiar, make sure that you learn how to use it and manoeuvre safely and with ease before taking the helm alone. Your dealer, national sailing or motorboat association, or yacht club will be very happy to tell you about navigation schools or qualified instructors in your area.

- Make sure that the wind and sea conditions forecast are appropriate for the design category of your boat and that you and your crew are capable of manoeuvering the boat in these conditions.

- Even with a well-adapted boat, the wind and sea conditions which correspond to the design categories A,B and C range from storm force winds for category A to severe storm conditions at the upper end of category C, and could put the boat at risk from very large waves and strong gusts. These are dangerous conditions in which only an experienced, fit and well-trained crew, manoeuvring a well-maintained boat, will be able to navigate with sufficient skill.

- This owner's manual is not intended as a detailed maintenance or repairs manual. Should any problems arise please contact your dealer. If a maintenance manual is provided, please use it.

- Always use the services of an experienced professional for the maintenance of your boat, for fitting accessories and for any modifications. Any alterations which may affect the safety specifications of the boat must be assessed, carried out and recorded by persons qualified to do so. The boat manufacturer cannot be held responsible for any modifications not approved by them.

- Some countries require you to hold a Certificate of Competency or other such qualifications, or there may be other specific regulations in force.

- Always maintain your boat well and make note of any deterioration due to wear and tear or to heavy or inappropriate use.

- Any boat – no matter how well-built – could suffer serious damage if used recklessly. This kind of use is highly unsafe. Always adjust the speed and heading of your boat according to the sea conditions.

- If your boat is equipped with a life-raft, read the instruction manual carefully. The crew must have all safety gear available onboard (lifejackets, harnesses etc.), and this must appropriate for the type of boat and for the weather conditions. In some countries it is mandatory to have this safety equipment onboard. The crew must be fully familiarised with the use of the safety gear and with emergency manoeuvres (man overboard procedures, towing another vessel etc). Sailing schools and clubs regularly run training sessions for these skills.

- It is strongly advised that everyone wears an appropriate flotation device (lifejacket or personal buoyancy aid) when on deck. Be advised that in some countries it is mandatory to wear a flotation device which meets the national regulations at all times.

Notes on reading this manual

The various symbols used throughout the manual for crucial safety information are as follows:

DANGER

Indicates a serious inherent danger with a high risk of death or serious injury if the appropriate precautions are not taken.

WARNING

Indicates a danger which could lead to injury or death if the appropriate precautions are not taken.

WARNING

Either indicates a reminder of safety procedures or alerts you to dangerous manoeuvres or operations, which could result in injuries to those onboard, damage to the boat and its components or damage to the environment.

ADVICE-RECOMMENDATION

Indicates recommendations or advice for carrying out the correct manoeuvres for the planned course of action.

- While some of the information and illustrations in this manual may show details which are slightly different from those found on your boat, the key information remains the same. Future versions of this manual will show any possible modifications as required.
- Due to the constant desire to improve the products, SPBI S.A. reserves the right to make any changes considered necessary to the design or to the equipment.
The specifications and information given are not contractual and may be modified without prior notice or updates.

CE

- This owner's manual is written in several languages. French is the authentic reference language.
- This owner's manual was written and formatted by SPBI S.A.. Any reproduction of this manual, direct or indirect, provisional or permanent, by whatever means, whether in whole or in part, as well as any modification by third parties for commercial reasons, is forbidden.

TECHNICAL SPECIFICATIONS

1

1.1 CONSTRUCTION

Model ..... EXCESS 11
Architect / Design ..... Van Peteghem Lauriot-Prévost / Nauta Design
Builder ..... SPBI S.A
Principal means of propulsion ..... Sail
Deck construction material ..... Laminated sandwich glass / GRP / PVC foam
Hull construction material ..... Laminated sandwich glass / GRP / Balsa wood
Roof construction materials ..... Laminated sandwich glass / GRP / PVC foam
Deck implementation ..... Injection
Hull implementation ..... Infusion
Roof construction ..... Injection

1.2 GENERAL DIMENSIONS

L.O.A (L_{max})* 12,18m
(Including removable parts that can be dismantled (bow roller, pulpit, bowsprit), without affecting the structure of the boat)
Hull length (L_h)* 11,33m
(Excluding: removable parts that can be dismantled without affecting the structure of the boat)
Overall width (B_{max})* 6,59m
(Including: removable parts that can be dismantled without affecting the structure of the boat)
Beam(B_h)* 6,59m
(Excluding: removable parts that can be dismantled without affecting the structure of the boat)
Air draft - Empty vessel: 18,26m
Draught - Boat fully laden 1,15m
Wetted surface area ..... Approximately 51 m²

1.3 ENGINE

Nominal maximum propulsion power (at the propeller output) ..... 2 x 22,5Kw
Maximum recommended engine size ..... 2 x 269kg

1.4 ELECTRICITY

Circuit type: Direct current DC 12V
Alternating current AC 220V
AC (US Version) 110V

1.5 CAPACITIES

Total mass of liquid contents of fixed tanks when full 1 104kg

NOTE: The density of a liquid can vary according to its temperature and quality.

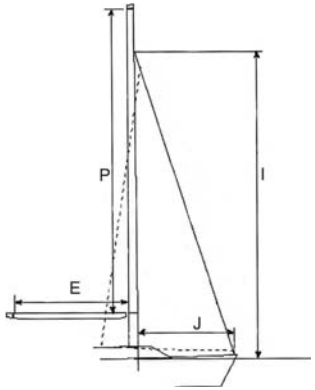
The volume masses chosen are:

- *0,86kg/L for diesel fuel,*
- *1kg/L for water.*

Fuel capacity: Tank 1 (*) 200L
Tank 2 (*) 200L
Fresh water capacity: 300L
additional 300L
Blackwater capacity - Toilet (in each head): 80L
It may not be possible to use these capacities fully depending on the trim and load of the boat. It is recommended that you keep a reserve of 20% in the fuel tanks.

(*): Refer to the corresponding chapter to locate the position of the tank (each tank number corresponds to its position on board).

1.6 SAILS



	Classical mast	Mast Performance
I: Distance between deck and highest genoa halyard sheave	13,19m	14,03m
J: Distance between the fore of the mast and the bow fitting on the deck	4,32m	4,32m
P: Length of the mainsail luff	13,87m	14,83m
E: Length of the mainsail foot	5,47m	5,47m

Square top mainsail	54,5m²	58,6m²
Genoa	22m²	23m²
Code 0	54m²	62m²
Planned sail area*	66m²	71m²

** Definition: designated by (AS) and calculated as the sum of the projected surfaces in profile of all sails that can be established when the vessel is close hauling, on the booms, horns, bowsprits or other spars, and the surface of fore triangle(s) to the foremost forestay, fixed permanently during operation of the vessel with the mast bearing the established sails, without overlap, assuming that the jackstays and leeches are straight lines.*
The surface of the spars is not included in the projected calculation sail plan area, with the exception of the wing-masts.

DESIGN CATEGORIES AND DISPLACEMENT

2

- Some information is shown on the manufacturer's plate fixed to the boat. Explanations of the information given can be found in the relevant chapters of this manual.

Design category	A	B	C	D
Maximum number of people onboard *(CL)**	**8**	**12**	**16**	**20**
Light displacement *(MLC)***	**9 541kg**			
Recommended maximum load *(ML)****	**2 930kg**	**3 210kg**	**3 330kg**	**3 590kg**
Displacement with maximum load *(MLDC)*****	**12 471kg**	**12 751kg**	**12 871kg**	**13 131kg**

NOTE: The options fitted onboard are included in the maximum load. The more options the boat has, the less room there is for provisions or personal belongings.

DEFINITION:

* **CL:** Crew Limit

** **MLC:** Mass of the boat in Light Craft Condition
includes the weight of the boat in the standard ready-to-navigate configuration, keel, standard equipment, engine(s) and sails (if the boat is a sailing boat).

*** **ML:** Maximum Load

- The recommended maximum load includes the weight of all people onboard, provisions, personal belongings, all equipment not included in the weight of the boat when not loaded, the cargo (if relevant) and all liquids contained in fixed tanks when full (fuel, water, greywater, blackwater).

- The maximum recommended weight shown on the manufacturer's plate does not include the weight contained in the fixed tanks of liquid when full (fuel, water, greywater, blackwater).

**** **MLDC:** Mass of the boat in Maximum Load Condition
Includes light ship mass (MLC) + maximum load (ML).

- If some of those onboard are children, the total number of people allowed onboard may be increased, provided that:
    - The total weight of the children does not exceed 37,5kg;

    and that

    - the total weight of all allowed onboard (based on about 75kg per adult) is not exceeded.

- Do not exceed the recommended maximum number of people onboard. However many people are onboard, the total, combined load of people and any gear or equipment must never exceed the recommended maximum load.
- Always use the seats or seating areas provided.

- When loading the boat, never exceed the recommended maximum load. Always load the boat with care and distribute weight evenly in order to maintain the optimum trim (more or less horizontal).
- Avoid placing heavy loads high up in the boat.

2.1 DESIGN CATEGORIES

Category A:

A yacht of design category A is considered to be designed for wind that may exceed force 8 (on the Beaufort scale) and waves that can exceed a significant height of 4 metres, but excluding exceptional conditions such as storms, severe storms, tornadoes and extreme sea conditions or very large waves.

Category B:

A yacht of design category B is considered to be designed for wind that may go up to force 8 inclusive and waves that can reach a significant height up to 4 metres inclusive.

Category C:

A yacht of design category C is considered to be designed for wind that may go up to force 6 inclusive and waves that can reach a significant height up to 2 metres inclusive.

Category D:

A yacht of design category D is considered to be designed for wind that may go up to force 4 inclusive and waves that can reach a significant height up to 0,3 metres inclusive, with occasional waves of a maximum height of 0,5 metres.

NOTE: Boats in each category must be designed and built to withstand these parameters in respect of stability, buoyancy and other relevant essential requirements, and to have good handling characteristics.

STABILITY AND BUOYANCY

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3.1 STABILITY INFORMATION

- Fully laden displacement was used to evaluate the stability and buoyancy of the boat. The value of this displacement can be found in the "Technical specifications" paragraph at the beginning of this manual.

- Any changes in the distribution of loads onboard (for example by adding a raised structure for fishing, fitting a radar or in-mast furling, changing the engine etc.) can significantly affect the boat's stability, trim and performance;

- It is important to keep water in the bilges to a minimum;

- Adding weight high up on the boat will affect stability;

- In heavy weather it is important to close all the hatches, lockers and doors to minimise the risk of water pouring in;

- The boat's stability can be reduced when towing a boat or when using a davit or boom to lift a heavy load;

- Breaking waves are a serious threat to stability.

- Reduce speed in wavy conditions.

- Always adjust the speed and heading of your boat according to the sea conditions.

- All of the watertight hatches must remain closed when at sea.

- If the wind exceeds 20 knots, it is recommended that you stow all removable protection sheets (lazy bag, Bimini, awnings, ...).

The skipper is responsible for ensuring that the normal operating mode is maintained. This means that the boat's speed is appropriate for the sea state and it is used with a sense of "good seamanship".

- This boat is likely to capsize or be overrun if it is over-canvassed. In these circumstances, it may then sink. The sail plan should be adjusted according to wind and sea conditions and it is important to be particularly vigilant in case of gusty winds or squalls.

- This vessel is likely to capsize and remain inverted if she carries an excessive sail surface. The sail plan should be reduced if wind exceeds 15 knots..

- The boat may capsize if carrying too much sail.

- It is important to take additional precautions in the event of strong winds, rough seas or breaking waves.

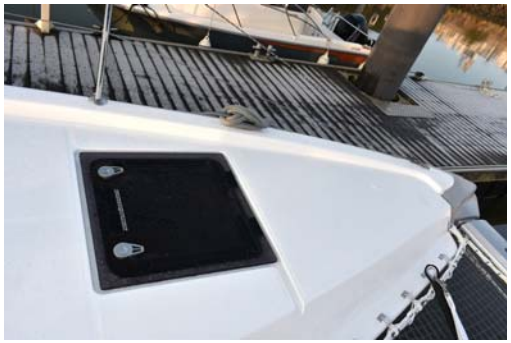
- The following openings are marked "MUST BE CLOSED WHEN UNDER WAY"; ensure that this warning is observed. "Under way" means the boat is not anchored or moored to the ground, nor is it aground.

Head

Saloon

Cabins

Forward cabin (Port and starboard)



3.2 ACCESS TO THE BOAT

Access to the cockpit

NOTE: It is essential that the guardrails remain closed when under way.

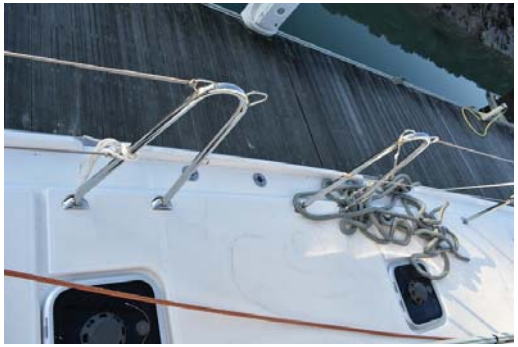
Access to the engine compartment

- It is essential that both the cockpit and the engine compartment are kept closed when at sea.
- When at sea close the guardrail side-opening or openings.
- Slamming an access hatch may cause injury : always close the hatch gently and carefully.
- Do not allow children to open or close the hatches unsupervised.

- It is essential that the access doors to the saloon are kept closed when at sea.
- Close the deck hatches and portholes before each trip.
- Close all access doors and hatches in heavy weather or when the sea is rough.

- When under way, keep hull valves and fillers in the closed position to minimise the risk of flooding.

Gangway access

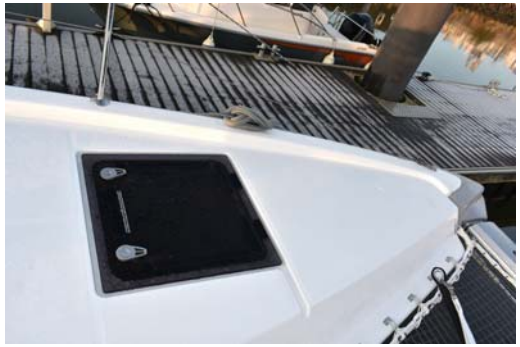


NOTE: It is essential that the guardrails remain closed when under way.

Access to the saloon

When sailing, the bay window can be open or half-open. However, it must be kept in the locked position by the two locks (top and bottom) to avoid sudden closing.

Access to forecabin (Port and starboard)



MANOEUVRABILITY

4

4.1 VISIBILITY FROM THE STEERING STATION

The helmsman's view from the steering station may be obstructed by one or more of the following variable conditions:

1) Load and load distribution;
2) Speed;
3) Sea conditions;
4) Reduced visibility caused by rain, darkness or fog;
5) Reduced visibility caused by changing or hauling up sails;
6) Interior lighting;
7) Position of the covers or curtains;
8) Persons or mobile equipment located in the helmsman's field of view.

The international rules and regulations for avoiding collisions at sea (Col Reg / RIPAM) require a full and constant lookout as well as observance of the rules of right-of-way. Observance of these rules is essential.

- Manoeuvrability is reduced at excessive speeds.
- There is a risk of loss of control during tight turns.
- Reduce speed before making a turn in any direction.
- When the helm area has multiple steering device, precautions must be taken when moving from one steering device to another.

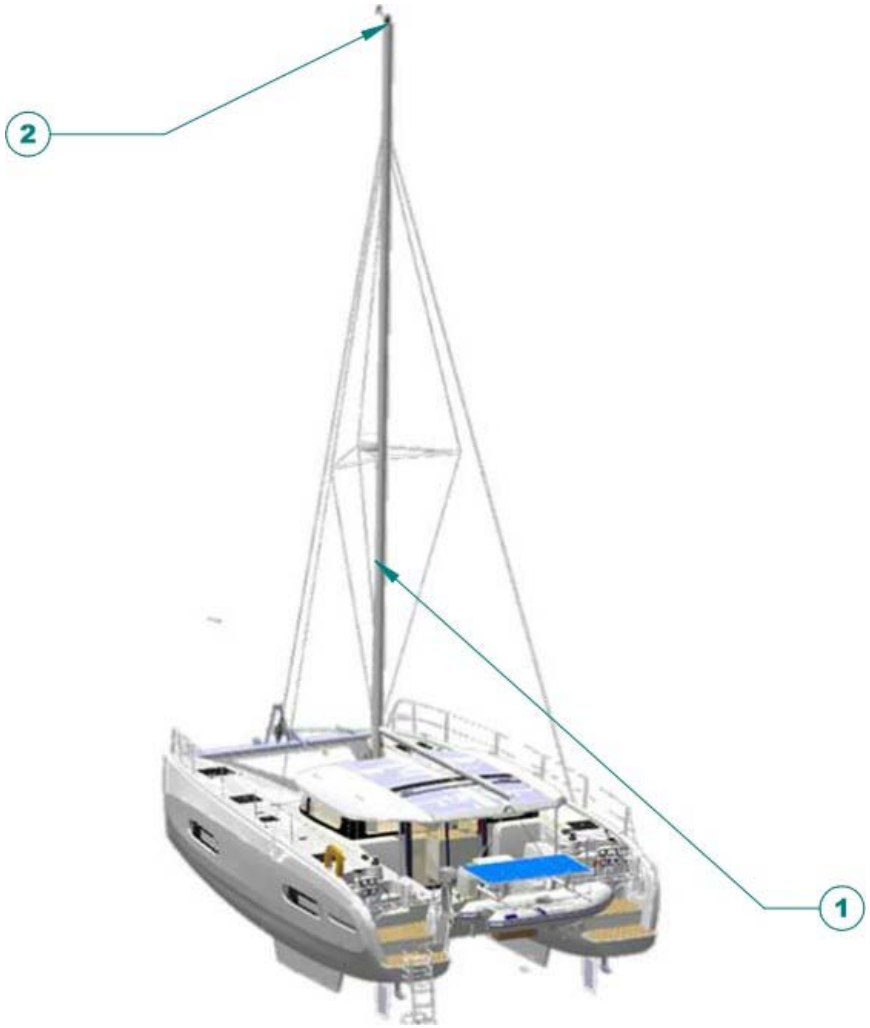
4.1.1 Pilot seat

4.1.2 Navigation lights

The navigation lights run on DC power.

Control: Electrical panel

Navigation lights



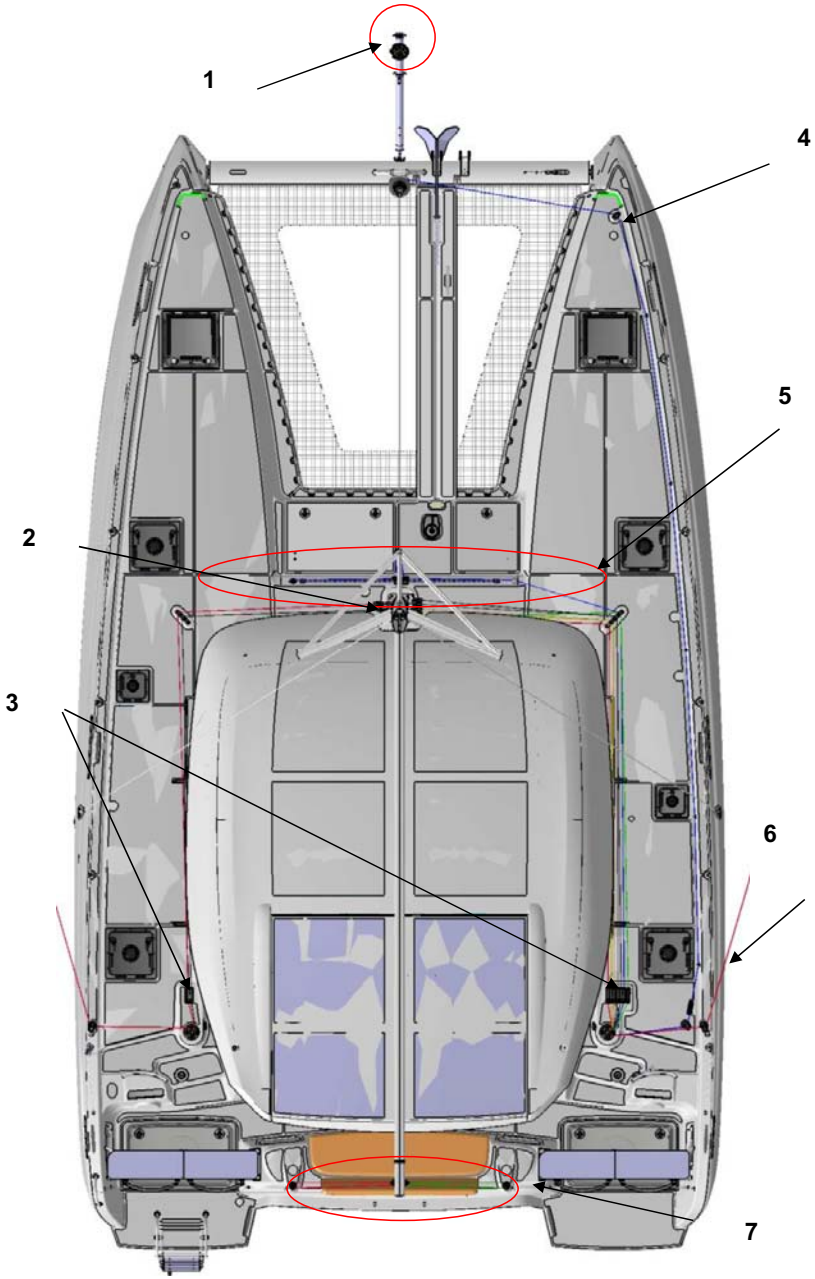
1. Bi-colour navigation light

2. Three-coloured navigation light

RIGGING AND SAILS

5

5.1 RIGGING DIAGRAM



Reference	Designation
1	Spinnaker pole (Code 0)
2	System at mast foot
3	Rigging diagram
4	Genoa circuit
5	Self tacking jib circuit
6	Code 0 sheet
7	Mainsheet system

5.2 STANDING RIGGING

- The adjustment and tensioning of the rigging must be carried out when the boat is afloat by a professional using tensiometers.
- The load measured on the shrouds must be identical to port and to starboard.
- The leeward cap shroud must never be slack when sailing.
- The correct configuration of the mast is defined by an even pre-bend (even with the mainsail reefed) and the mast must remain straight laterally.
- Regularly check the presence of the cotter pins, opened and protected by adhesive tape.
- Check the rigging after delivery of a new boat: it is worth paying attention to the adjustment of the mast during the first few sails and having all of the rigging checked by a professional after the first 150 miles with the boat..

Annual maintenance

- Every year, or every 1 500 miles, or after a winter lay-up, all rigging should be checked and re-adjusted by a professional using tensiometers.
- Worn cotter pins must be replaced with new pins of the same diameter, opened and protected with adhesive tap.

Equipment required for the measurements:

Tensiometer Dillon Quick Check

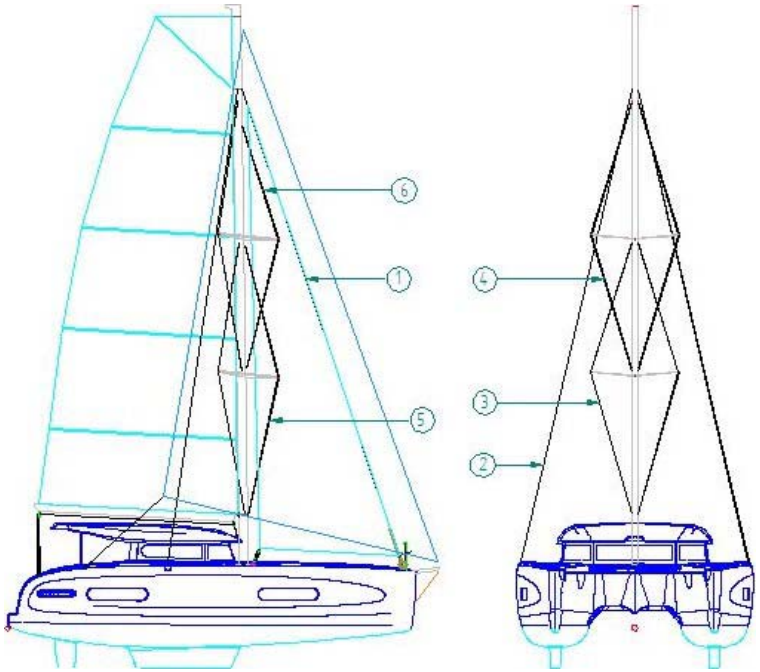
PT3M tensiometer (or equivalent)

- To hoist a crew member up to the top of the mast, tie a bowline with the halyard directly onto ring of the bosun's chair (never use the halyard snap shackle or a carabiner).
- Hoisting a crew member to the masthead will reduce the boat's stability. The skipper is the sole person responsible for the decision to hoist a crew member up the mast. This decision will depend on sea and wind conditions..

- The first time you use your boat a high level of skill and attention will be required. The proper functioning of all equipment will depend on the initial set-up being carried out correctly.
The first mast stepping must be carried out under the supervision of the dealer for this reason.
- Before each trip, carefully inspect the mast from top to bottom.

General view

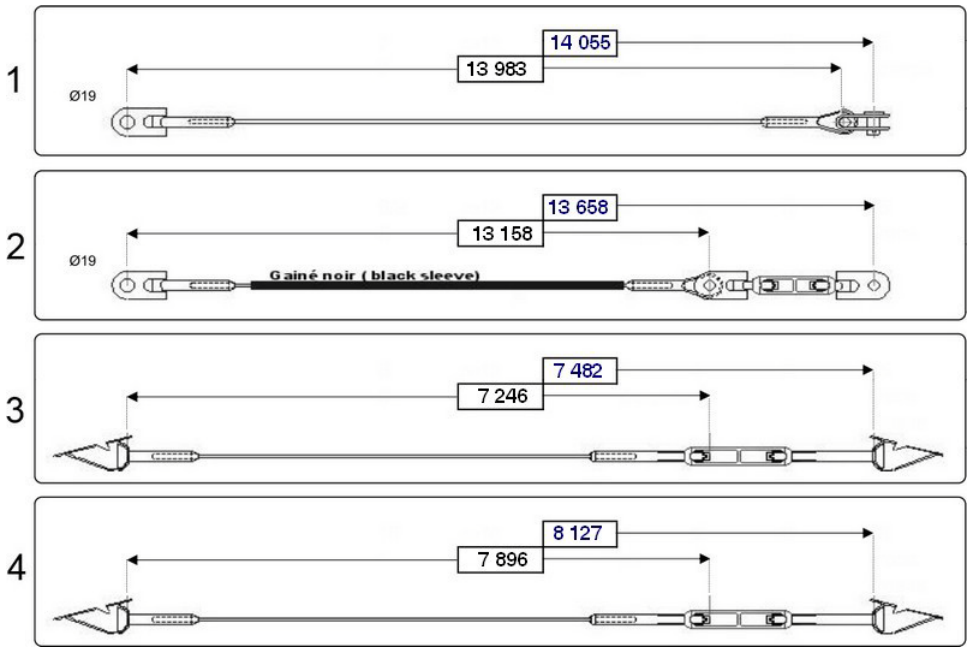
SAILS DIMENSIONS

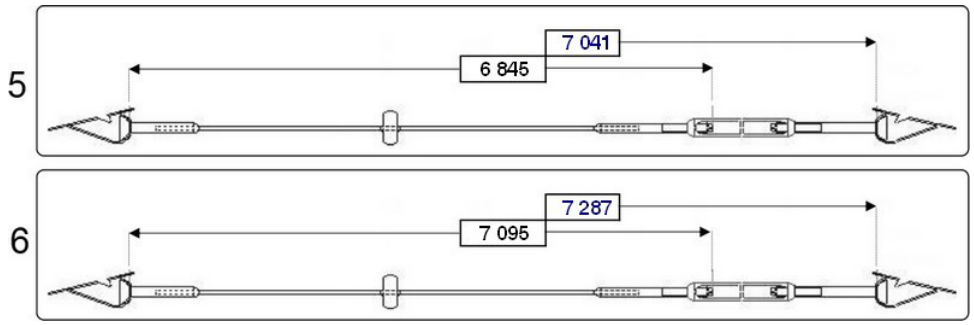


Reference	Designation
1	Forestay
2	Upper shroud
3	Diamond 1
4	Diamond 2
5	Martingale 1
6	Martingale 2

Classical mast

Prebend: 120mm (once the mast has been adjusted according to best practice)





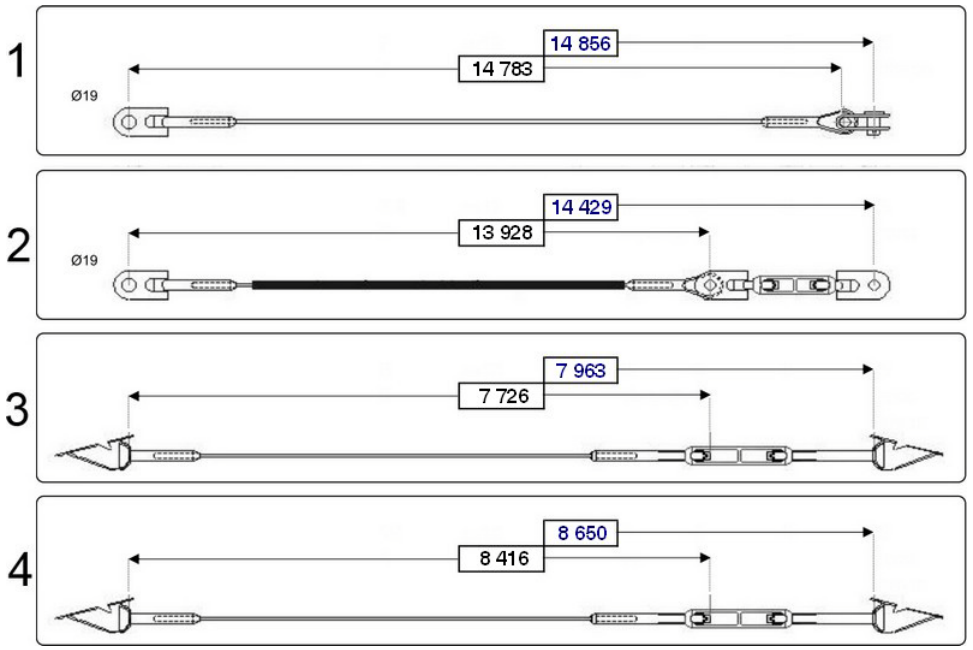
Reference	Designation	Quantity	Diameter (in mm)
1	Forestay	1	12
2	Upper shroud	2	12
3	Diamond 1	2	10
4	Diamond 2	2	10
5	Martingale 1	1	8
6	Martingale 2	1	8

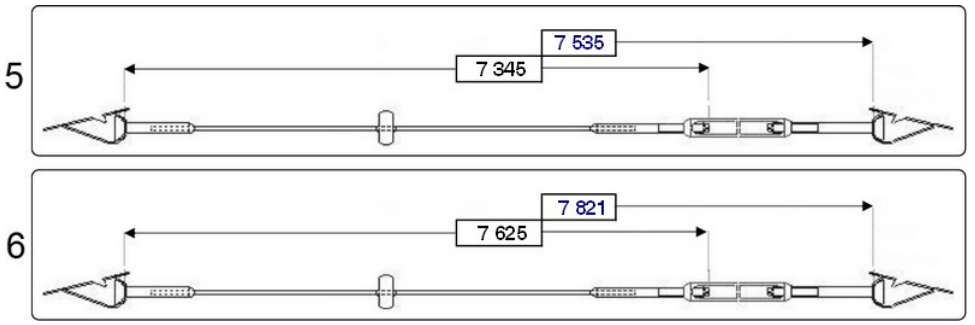
Summary table of standing rigging measurements:

Cable	Load (min)	Load (max)
Shrouds	2 160kg	2 400kg
Diamonds	1 520kg	1 760kg
Martingale	960kg	1 080kg

Mast Performance

Prebend: 130mm (once the mast has been adjusted according to best practice)





Reference	Designation	Quantity	Diameter (in mm)
1	Forestay	1	12
2	Upper shroud	2	12
3	Diamond 1	2	10
4	Diamond 2	2	10
5	Martingale 1	1	8
6	Martingale 2	1	8

Summary table of standing rigging measurements:

Cable	Load (min)	Load (max)
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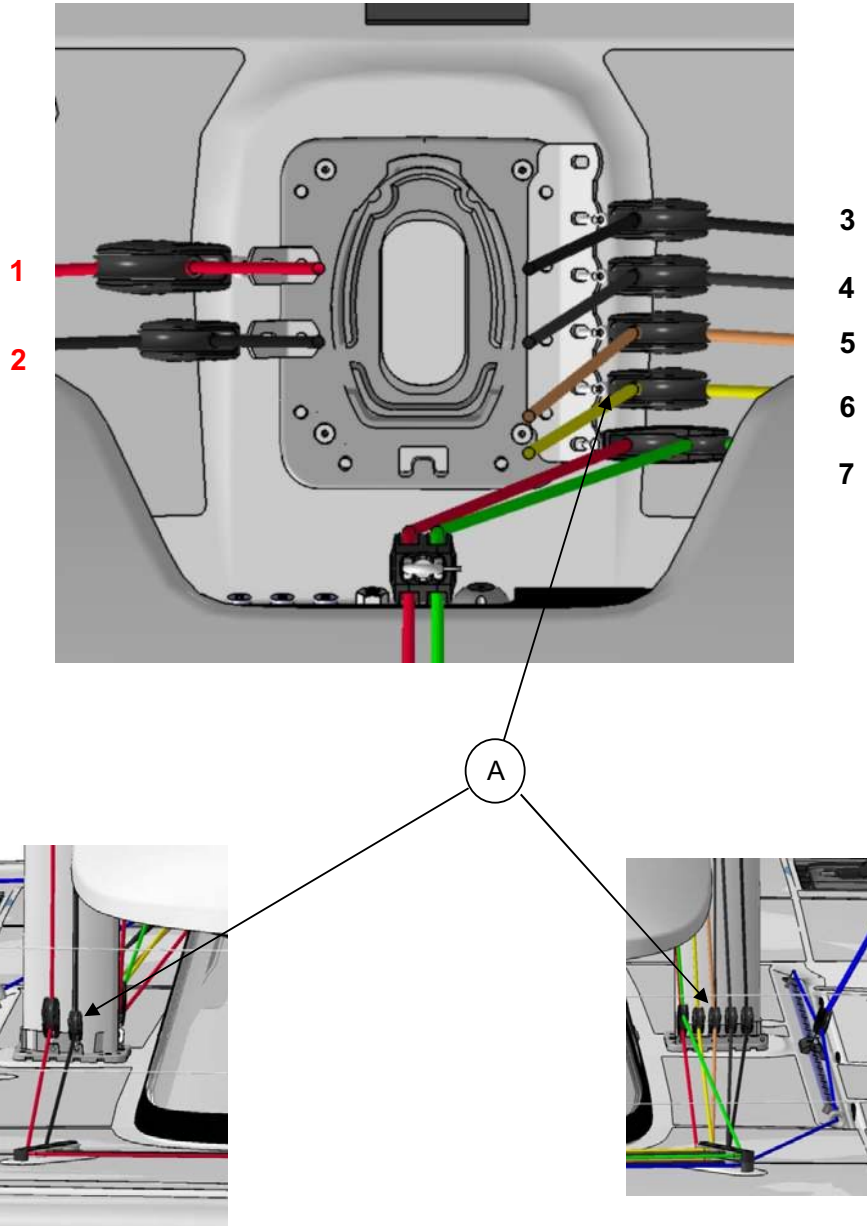
SYSTEM AT MAST FOOT



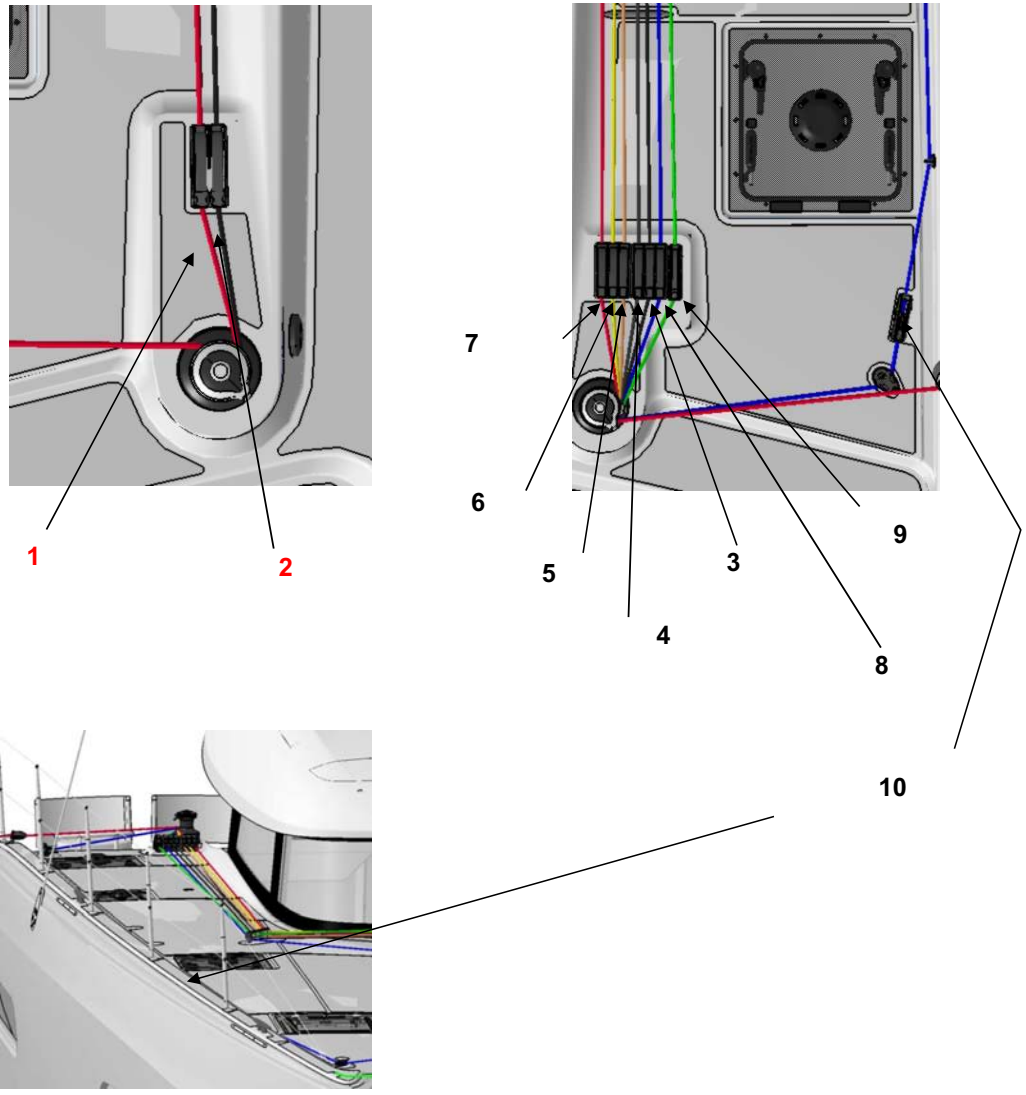
Reference	Designation
1	Spinnaker halyard (Option)
2	Genoa halyard (Option)
3	Mainsail halyard
4	Boom topping lift
5	Reef 2
6	Reef 1
7	Mainsail sheet

Reference	Designation	Shipyard code	Quantity
A	Single pulley - 60mm diameter (Rutgerson B300601B)	184498	5

RIGGING DIAGRAM

Port

Starboard



Reference	Designation
1	Spinnaker halyard (Option)
2	Genoa halyard (Option)
3	Mainsail halyard
4	Boom topping lift
5	Reef 2
6	Reef 1
7	Mainsail sheet
8	Jib sheet
9	Mainsail sheet
10	Genoa furler line

Information on the risk of demasting

- When the Genoa with furler is in position, the Genoa halyard must always be fully tightened. Regularly check the tension of the Genoa halyard when underway.

- When the Genoa sail is removed from the furler (during winter lay-up or for maintenance, for example), it is important to keep the Genoa halyard away from the forestay to avoid any risk of the halyard being wrapped around the forestay which could cause damage the forestay and the demasting of the boat.

- Running sails (gennaker or code 0) are designed to be used before the wind only, with the mainsail raised and an apparent wind of less than 15 knots. It is forbidden and dangerous to sail with only the gennaker (risk of demasting). With an apparent wind of more than 15 knots, the running sails must be furled and stored inside the boat.

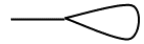
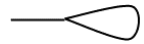
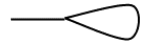
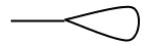
- When the Genoa with furler is in position, the Genoa halyard must always be fully tightened. Regularly check the tension of the Genoa halyard when underway.

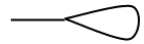
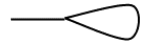
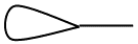
- When the Genoa sail with furler is removed (during winter lay-up or for maintenance, for example), it is important to keep the Genoa halyard away from the forestay which could cause the halyard to break and the boat to be demasted.

5.3 RUNNING RIGGING

- Check the general condition of the halyards and sheets and look out for any signs of wear.
- Regularly check the condition of the cams.
- Regularly clean the backstay blocks with fresh water.
- Avoid aggressive gybing in order to reduce premature wear on the sheets, attachment points and gooseneck.
- If halyard tension (mainsail/genoa) is too great, this can lead to problems when hoisting/furling.

TABLE SUMMARISING RUNNING RIGGING

Operation	Shipyard code	Diameter (in mm)	Length (in m)	Terminal 1	Colour	Terminal 2	Quantity
Mainsail							
2:1 Mainsail halyard	205567	12	57,00				1
Uphaul	205566	10	42,00				1
Mainsail sheet	205568	12	22,00				1
		12	22,00				1
Reef 1	—	12	25,00				1
Reef 2	—	12	40,00				1
Mainsheet strop	069084	10	0,60				2
Self-tacking jib							
Genoa halyard	211853	12	36,00				1
Self-tacking jib sheet	211852	10	20,00				1

Operation	Shipyard code	Diameter (in mm)	Length (in m)	Terminal 1	Colour	Terminal 2	Quantity
Code 0							
Spinnaker sheet / Code 0	205564	12	45,00				1
	205562	10	57,00				1
Spinnaker sheet / Code 0	205563	12	30,00				1
	205563	12	30,00				1
Tack line	—	12	8,00				1
Loop	—	8	0,35				1

5.4 SAILS

General points

- The working life of a sail depends above all on regular maintenance.
- When sailing, trim the sails to account for the stress placed on the fabric in order to reduce the chance of damage from strain.
- Secure your boat against wear and tear: Cover or protect gear with rough or sharp surfaces (spreaders, stanchions, etc.).
- Keep a sailmaker's kit and explanatory booklet onboard so that you can carry out emergency repairs whilst waiting for a professional sail-maker.
- Rinse the sails in fresh water regularly and dry them quickly to avoid mildew. Avoid drying the sails on the mast in the wind: Allowing them to flap freely wears the seams and increases the risk of tearing the sails on the rigging.
- UV rays are harmful for sails: If you are keeping your sails rigged, even for as short a period as 24 hours, cover them with a sail cover or protective fabric.
- The genoa can be fitted with an anti-UV strip: Make sure that the furling direction on the furling drum is correct (the UV strip must appear on the outside).
- Never use force if the sail sticks when furling or unfurling. If this happens, check that a halyard is not rolled around the forestay.
- The leech line must be released at the end of every sailing trip. If kept under constant tension, the leech line will cease to be adjustable after several trips..

Sail storage/folding

- Remove the sails if your boat is not to be used for a long time.
- Avoid storing sails wet to prevent mould and mildew.
- Fold the sail parallel to the foot into a concertina, then roll it up to fit into the bag.

Maintenance / Maintenance

- If an anti-UV strip is attached to the sail, it must be changed every 5 years or so..

When travelling at over 20 knots, you are advised to stow the lazy bag.

When the sailing season is over and, if possible, before Winter, take all the sails to a professional for servicing and for any necessary repairs.

Sail reduction table

Apparent wind: 30-70°				Apparent wind > 70°			
Apparent wind (Knots)	**Mainsail**	**Genoa**	**Code 0**	**Apparent wind (Knots)**	**Mainsail**	**Genoa**	**Code 0**
0-5	High	0%	100%	**0-16**	High	0%	100%
0-23	High	100%	0%	**0-20**	High	100%	0%
23-38	1st reef	100%	0%	**20-24**	1st reef	100%	0%
28-33	1st reef	75%	0%	**24-30**	2nd reef	75%	0%
33-38	2nd reef	60%	0%	**30-34**	3rd reef *	60%	0%
38-45	2nd reef	40%	0%	**34-38**	3rd reef *	40%	0%
45-55	3rd reef *	0%	0%	**38-50**	0%	25%	0%
> 55	0%	0%	0%	**> 50**	0%	0%	0%

*: 0 % if the mainsail is fitted with 2 reefs.

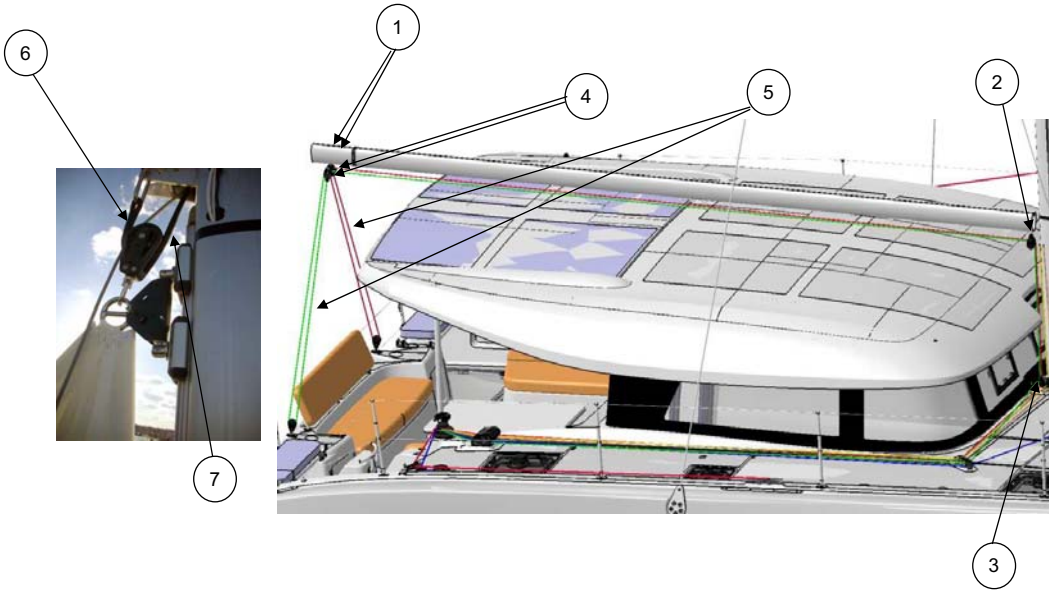
- A label on the steering position indicates the sail plan recommended by the manufacturer.
- To avoid any risk of demasting or capsize, the skipper must take it into account.
- The skipper has sole responsibility for set-up of the sails based on the apparent wind and the sea state, to ensure safe sailing.
- It is possible to sail close-hauled supported by the motor but it is forbidden and dangerous to sail into the wind under motor power only.

5.5 SETTING THE SAILS

5.5.1 Mainsheet system

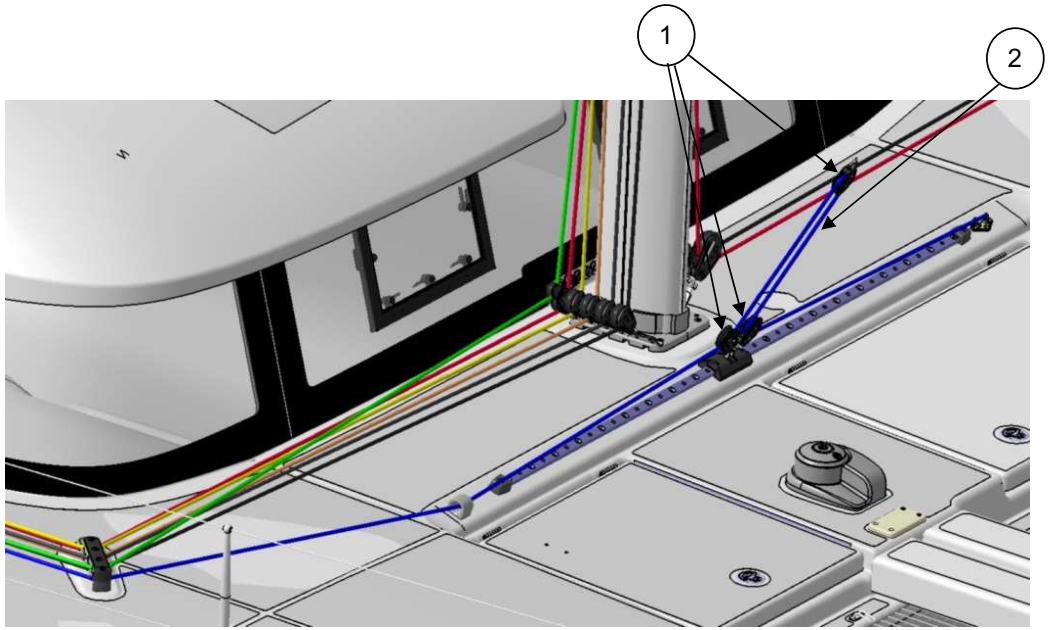
Sheet circuit

Sail tack



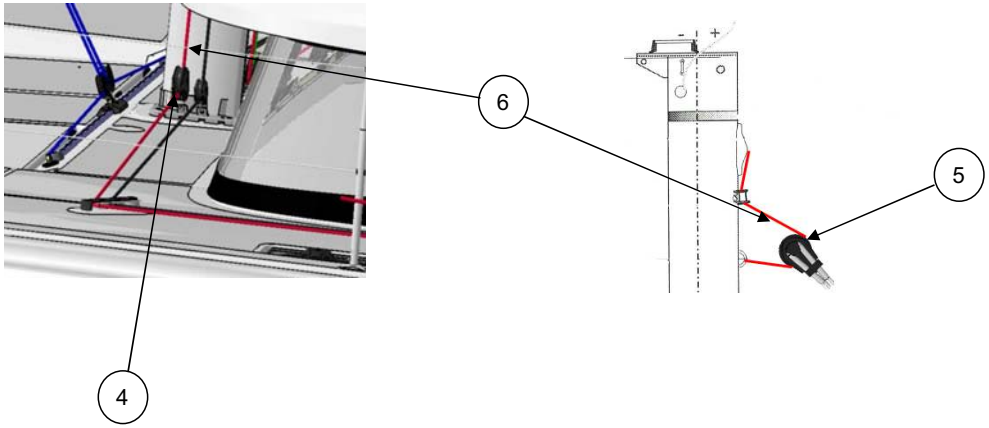
Reference	Designation	Shipyard code	Quantity
1	Mainsail strop (Lancelin)	204106	2
2	Double swivel pulley (Harken 6269)	205600	1
3	Fiddle block (Harken 6262)	211593	1
4	Simple pulley with becket (Harken 6261)	205599	2
5	Mainsail sheet (Lancelin)	205568	1
6	Tackle block (Lancelin)	122019	1
7	Mainsail halyard (Lancelin)	205567	1

5.5.2 Self tacking jib circuit

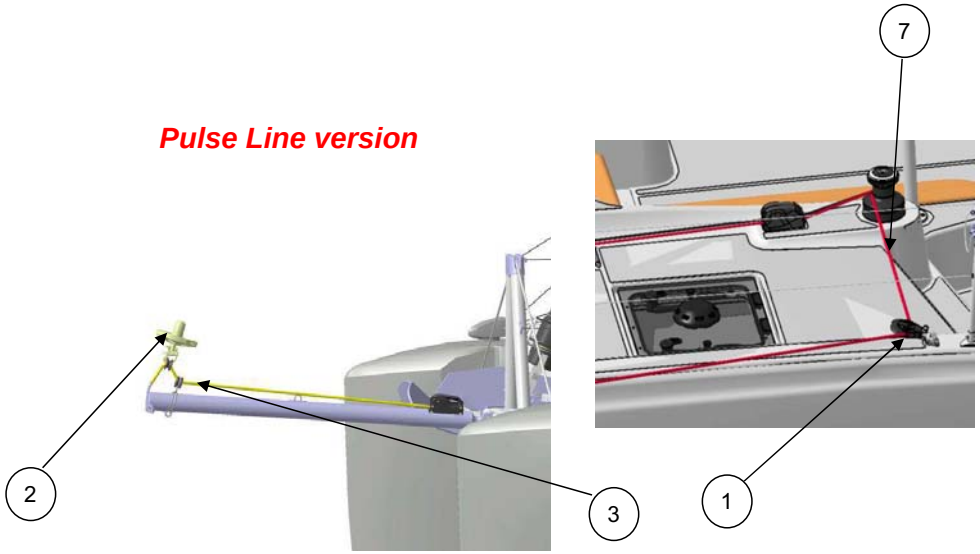


Reference	Designation	Shipyard code	Quantity
1	Single pulley (Harken 3215)	960346	3
2	Jib sheet (Lancelin)	211852	1

5.5.3 Circuit code 0



Pulse Line version



Reference	Designation	Shipyard code	Quantity
1	Single pulley (Harken 6290)	205601	2
2	Single line furler (Facnor FX4500)	184358	1
3	Spinnaker tack / code 0 (Lancelin)	208398	1
4	Single pulley (Harken 6260)	205598	1
5	Tackle block (Lancelin)	119937	1
6	Spinnaker halyard (Lancelin)	205562	1
7	Spinnaker sheet / Code 0 (Lancelin)	205563	1

5.6 DECK FITTINGS

General points

- Inspect each piece of deck gear regularly (blocks, shackles, swivels, cams, etc): Check that there is no cracking, corrosion or deformation.
- When replacing a piece of deck gear, make sure that you use a model with the same strength specifications.
- Failing to check deck fittings regularly and to replace worn ropes means that a block or hoist may suddenly break, causing an accident involving serious injury and damage to the boat.

Maintenance

- Upon return from sailing always rinse the deck fittings with fresh water.
- Wash deck gear regularly with a gentle soap, turning the sheaves of each block. Rinse afterwards with fresh water.
- Never use grease on deck fittings (except winches).
- Never use caustic-based cleaning materials on deck fittings (such as some teak cleaners).

5.7 WINCHES

Manual winches

- Do not leave loose ropes on the winches - secure them to cleats.

Electric winches

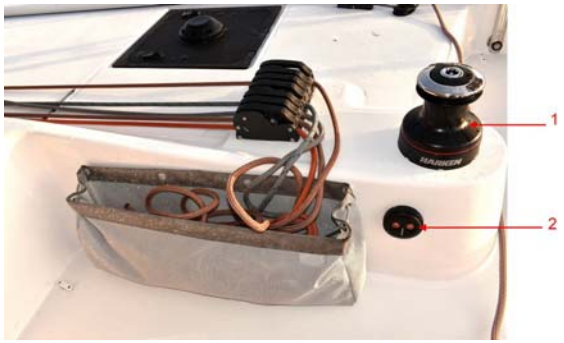
- The electric winches are powered by direct current.
- A breaker protects the electrical circuit.
- An operation relay is fitted to the electrical circuit.
- A load controller is fitted to the electrical circuit: This system protects the winches against overload by temporarily interrupting the electrical supply. The load controller is programmed in the factory.
- Inserting a winch handle into an unloaded winch automatically disconnects the motor transmission and allows it to be used manually.

NOTE: Operating the electrical winches requires heavy battery usage: Make sure the battery bank is systematically recharged after a day's sailing.

Rinse winches regularly with fresh water

- Rinse winches regularly with fresh water.
- Dismantle, clean and lubricate each winch annually. Parts that have been damaged or worn may need replacing.

Location: Cockpit



1. Electric winch
2. Control

Access: Port and starboard aft cabins

1. Motor
2. Operation relay

- The use of an electric winch for furling/ unfurling the genoa or any other foreward sail must be strictly avoided (risk of the forestay breaking which may lead to dismasting).

- Refer to the manufacturer's instructions for use and maintenance.
- Avoid bulky clothing, long hair and jewellery that might become caught in the winch when it is moving. Avoid riding turns when using the winches.

5.8 GENOA FURLER

Operation

- Leave several turns of the furling line around the drum.
- Furl/unfurl the genoa slowly so that the furling line is always under light tension, thus avoiding any riding turns in the drum.
- Never slacken the genoa halyard when furling/unfurling the sail.
- When furling in light winds, it is recommended that you keep the sheet under slight tension so that the genoa furls correctly.
- Furling and unfurling of the sail are carried out upwind.

Maintenance

- Rinse the furling drum regularly.
- It is recommended that you rinse mechanical parts at least once a year with fresh water.

General view

Refer to the manufacturer's instructions for use and maintenance.

5.9 SINGLE LINE FURLER

- The jib furler differs in use from roller reefing gear: The foresail is either completely furled or completely unfurled. It is not possible to reduce the sail plan using the jib furler as can be done with roller reefing gear.
- Furling and unfurling is carried out downwind.

Maintenance

- Rinse the drum regularly.
- It is recommended that you rinse mechanical parts at least once a year with fresh water.

General view

SAFETY

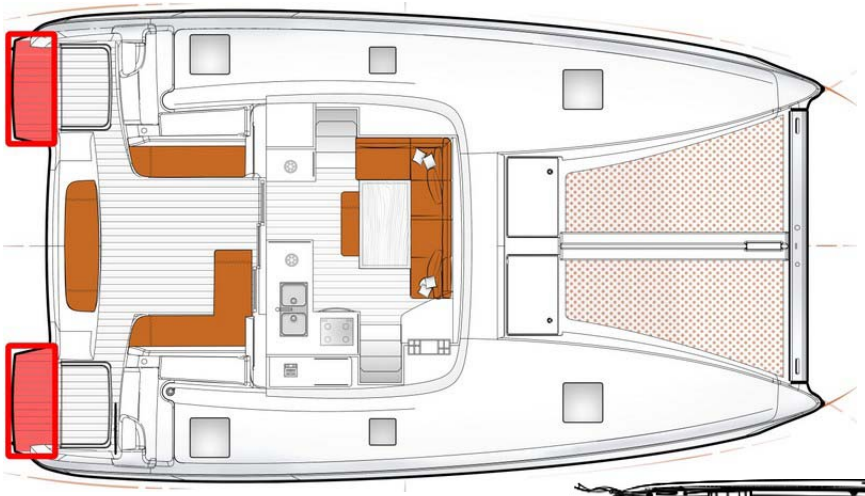
6

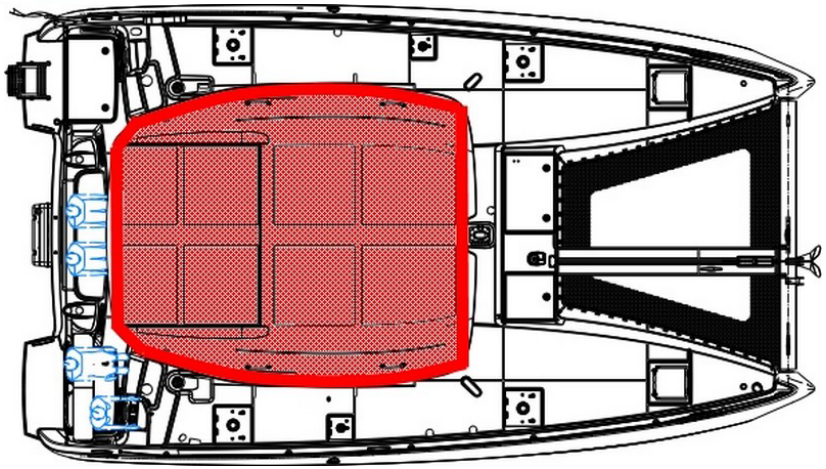
6.1 PREVENTING MAN OVERBOARD SITUATIONS AND MEANS OF REBOARDING

6.1.1 Prevention of man overboard

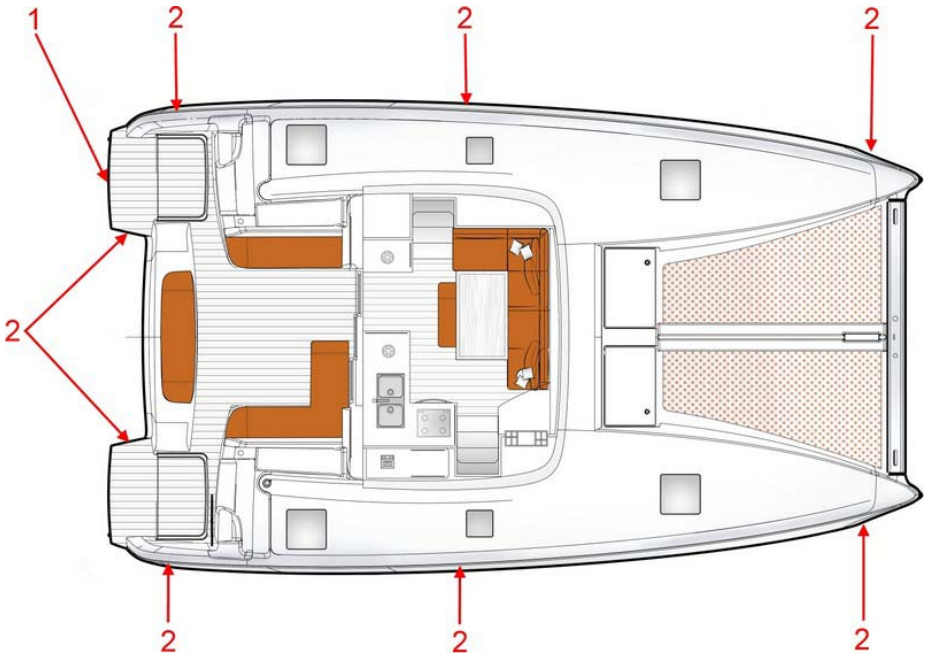
- The off-limits areas of the working deck when under way are cross-hatched below

- "Working deck" refers to the exterior parts of the boat where people stand or walk during normal use.





Use the seats provided.



Ref 1: Reboarding device.

Ref 2: Mooring cleats (corresponding to the anchor points for the lifelines).

Regularly check the tension of the lifelines and the attachment points.

According to the equipment level of your boat, textile lifelines may be fitted:

- The lashing at the ends of the lifelines is used to adjust the tension of the lifelins.
- The service life of a textile service life is between 5 and 7 years, depending on the area and the sailing schedule for the boat.
- It is recommended that the lifelines are checked annually to detect any traces of wear or fraying.
- After 7 years or in the event of fraying, it is vital to change the lifelines.

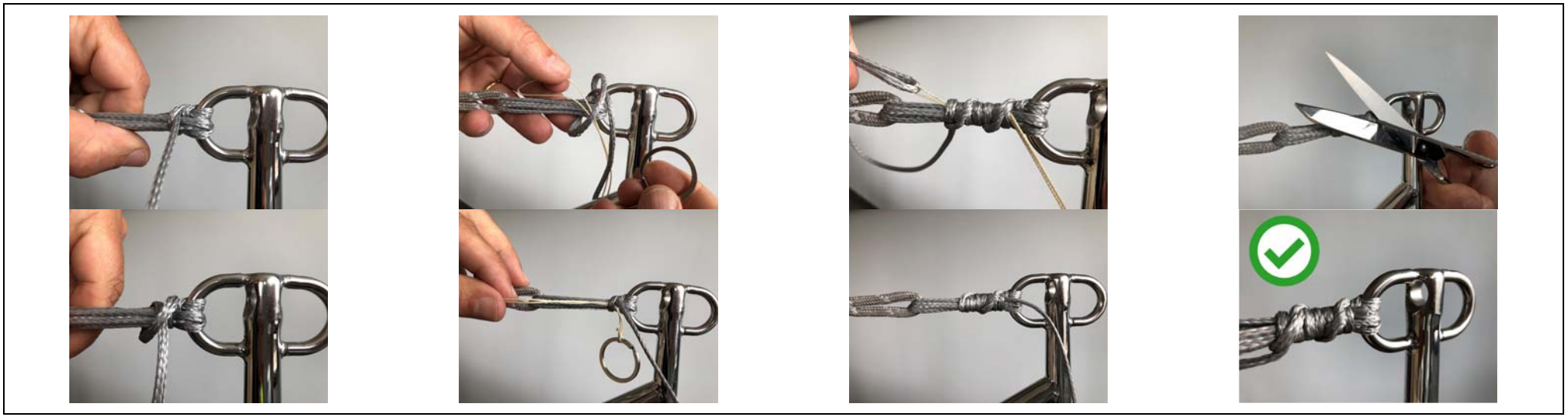
Example of fraying (the red core is visible)

Maintenance

- Rinse the lifelines regularly with clean water.
- It is possible to remove the textile lifelines during the boat's winter lay-up to protect them from UV. Ensure that each lifeline is correctly labelled to ensure they can be correctly repositioned during refitting.

- The lifelines are an important safety feature, incorrect installation risks causing a passenger to fall overboard. If in doubt about installation, please consult your dealer.
- The lifelines should be replaced by a professional to prevent any risk of a fall overboard.

Fitting of a textile lifeline:



Link to installation video: https://youtu.be/LoEEox73svI

6.1.2 Reboarding

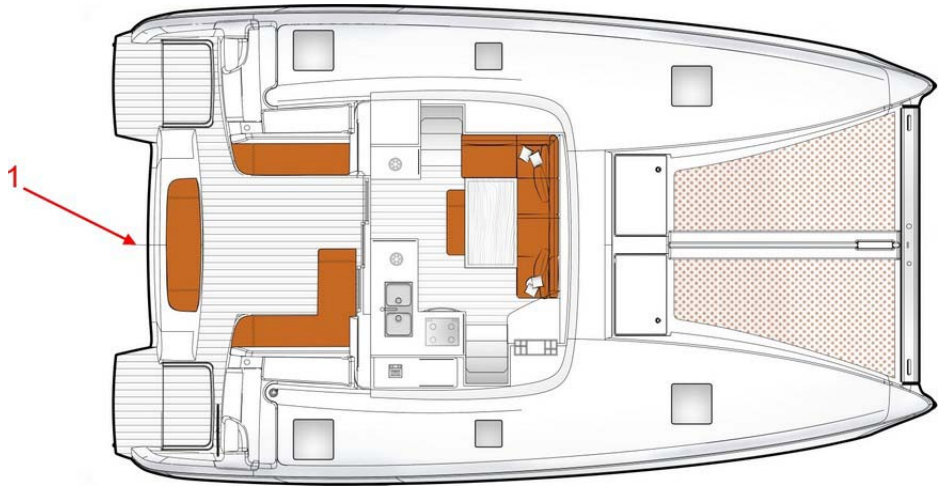
A reboarding device must be usable from the water by a single person with no external help.

Reboarding device:
Swimming ladder (Ref 1):

- Some types of reboarding equipment have a locking device when folded up: It is important to keep the means for getting back onboard deployed and ready to use once the boat is in use (at anchor, moored or at sea).

- Make sure that means for getting back onboard are readily accessible and easy to use by someone alone in the water.

6.2 STORING THE LIFERAFT



The liferaft (not supplied) must be stored in the space provided for it (Ref 1).

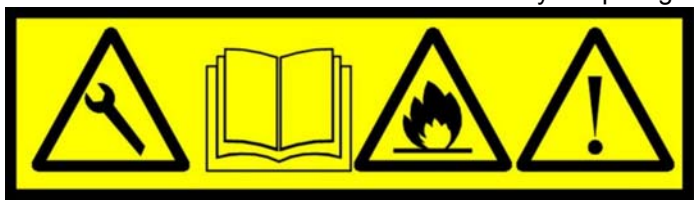
A pictogram allows for easy location:

- Before putting to sea, carefully read the launching instructions shown on the liferaft.

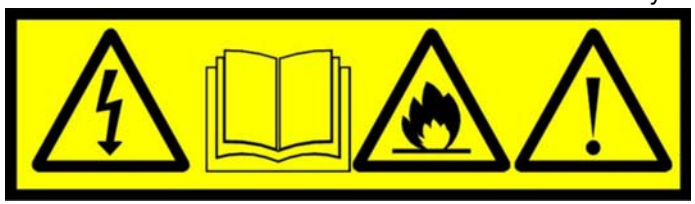
- It is the responsibility of the skipper to ensure regularly that the liferaft is properly secured in place.

6.3 SECURING MOVEABLE ITEMS

The technical areas are identified in the boat by the pictogram below:



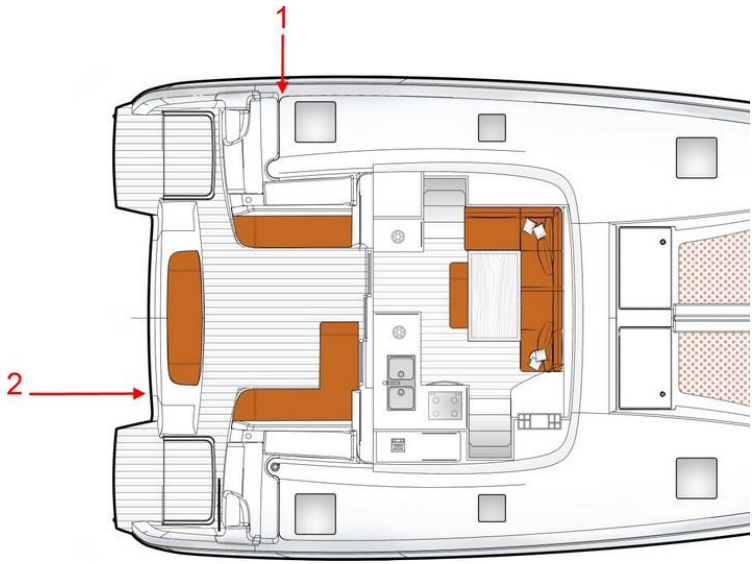
The electrical technical areas are identified in the boat by the pictogram below:



Technical areas may not be used as storage compartments.

- Ensure that movable items are firmly secured when sailing.
- Do not store anything below the floorboards.

6.4 DECK LAYOUT



1. Lifebuoy support bracket

(ring lifebuoy not supplied)

2. Outboard engine bracket
(outboard engine not supplied)

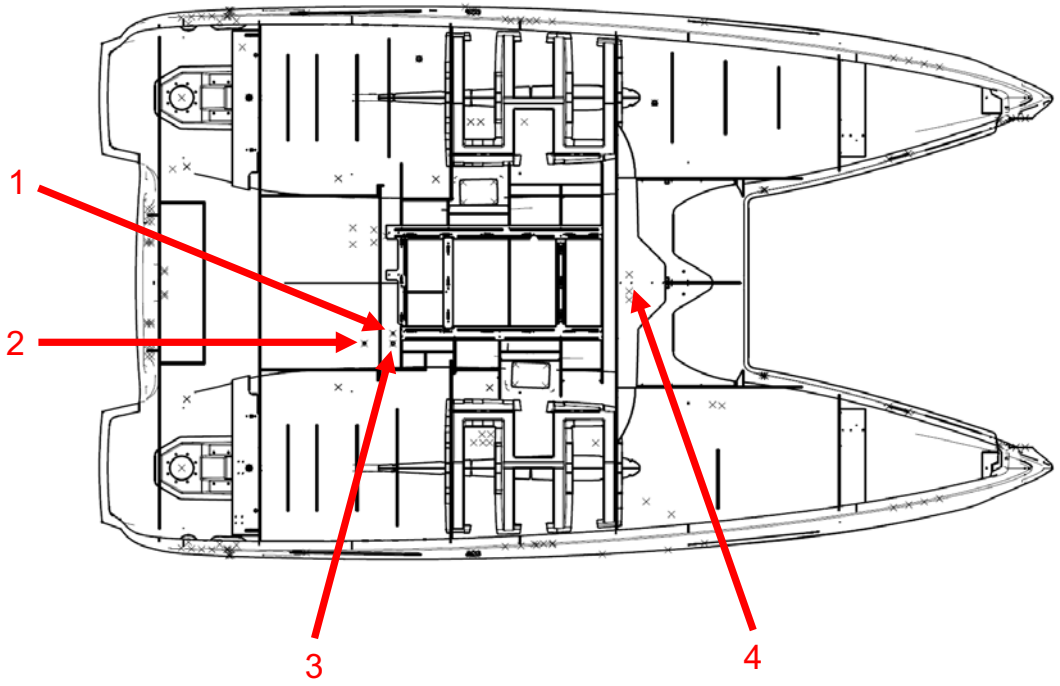
The maximum weight of the outboard engine on the pushpits must not exceed 20 kg.

6.5 INFORMATION ON FLOODING RISKS AND BOAT STABILITY

6.5.1 Hull openings

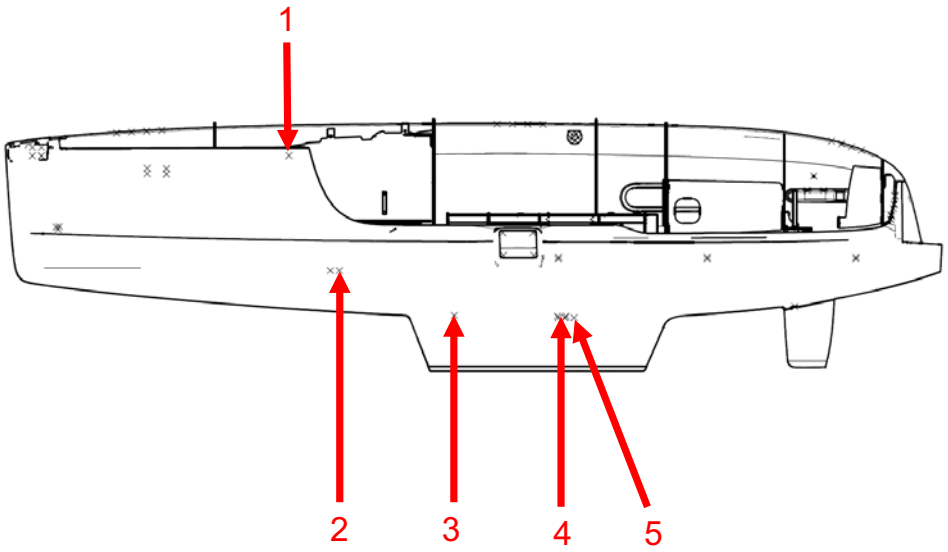
Valves, thru-hull inlets and other brass or bronze fittings have a lifespan of around 5 years. All valves, thru-hull inlets and other brass or bronze accessories must be checked by a professional every year and replaced as necessary.

TOP HULL VIEW



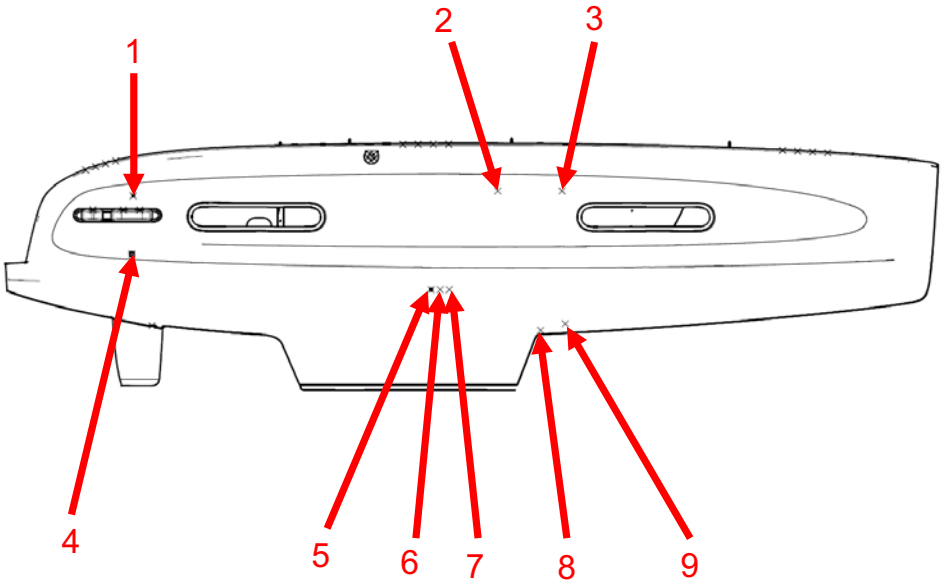
Reference	Designation	Valve
1	Fridge drain	No
2	Gas locker outlet	No
3	Galley sink drainage	No
4	Chain locker draining	No

STARBOARD HULL
Inside view



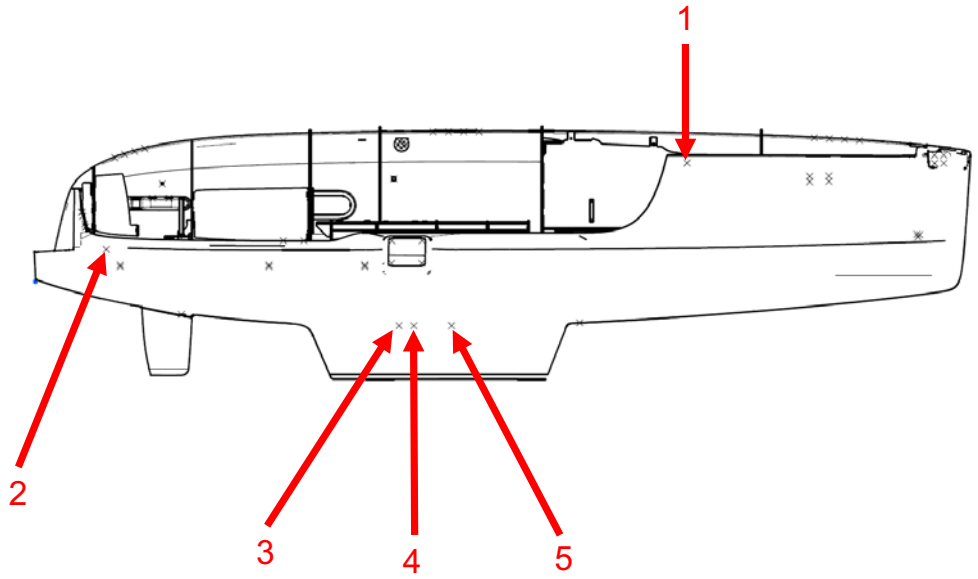
Reference	Designation	Valve
1	Additional water tank vent	No
2	Washbasin and shower drain (3-cabin layout)	Yes
3	WC seawater intake (4-cabin layout)	Yes
4	Anode / Inverter earthing plate	No
5	Seawater intake (Seawater electric pump)	Yes

Outside view



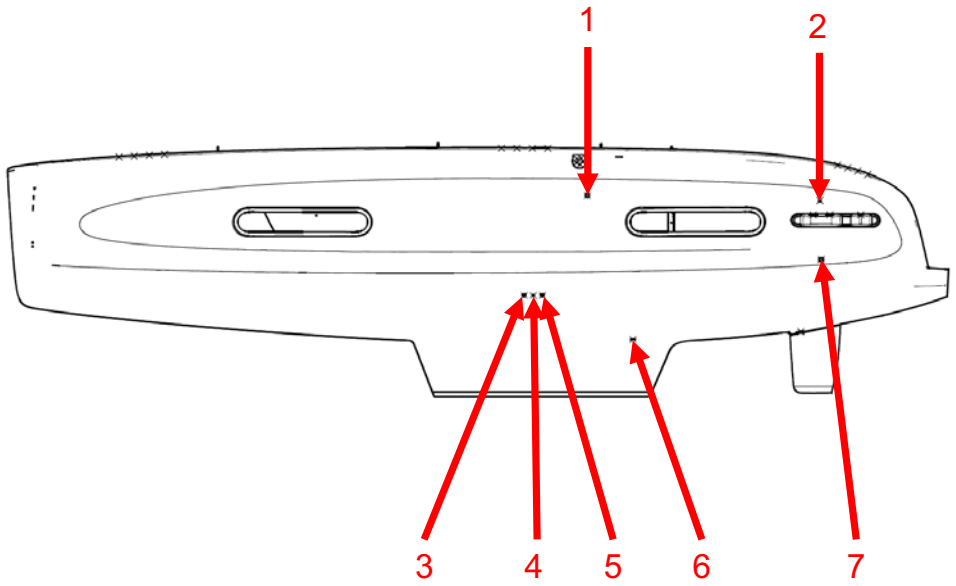
Reference	Designation	Valve
1	Starboard fuel tank vent	No
2	Blackwater tank vent (4-cabin layout)	No
3	Blackwater tank vent (3-cabin layout)	No
4	Port engine exhaust	No
5	Drain for starboard electric bilge pump	Yes
6	Shower drainage (4-cabin layout)	Yes
7	Head washbasin drainage (4-cabin layout)	Yes
8	Blackwater drainage tank	Yes
9	WC seawater intake (3-cabin layout)	Yes

PORT SIDE HULL
Inside view



Reference	Designation	Valve
1	Port side water tank vent (standard)	No
2	Brine drainage (Watermaker)	Yes
3	WC seawater intake	Yes
4	Seawater intake (Watermaker)	Yes
5	Seawater intake (Deck wash pump)	Yes

Outside view



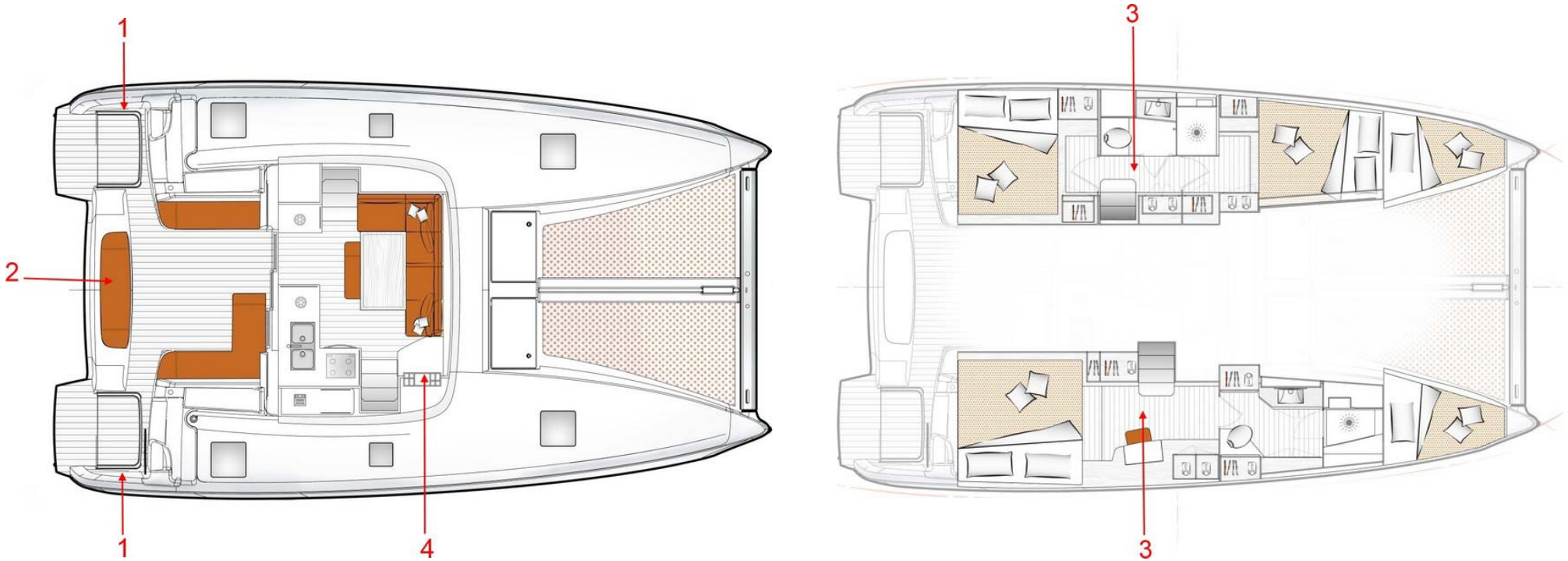
Reference	Designation	Valve
1	Blackwater tank vent	No
2	Port side fuel tank vent	No
3	Head washbasin drainage	Yes
4	Shower drainage	Yes
5	Drain for port electric bilge pump	Yes
6	Blackwater drainage tank	Yes
7	Port engine exhaust	No

6.5.2 Drainage system

General points

- It is the responsability of the skipper to have at least one bailer or bailing bucket on board, lashed down to prevent it being accidentally lost.
- The inner moulding of the hull is equipped with channels: these are the draingage channels. The drainage channels allow the water to drain down to the lowest point in the boat, where it can be discharged. It is important to allow the water to flow freely down to this lowest point of the boat, which means.
- regularly cleaning the lowest point of the boat and the drainage channels.

DIAGRAM OF LAYOUT - BILGE PUMPS



Reference	Designation	Rate
1	Manual bilge pump (x 2)	32L/minute *(*)*
2	Manual bilge pump lever	
3	Electric bilge pump	129L/minute
4	Electric bilge pump switch	

(*) 45 strokes/minute

Secondary drainage system
Manual bilge pump (x 2)

Location: Cockpit

The bilge pump lever is located nearby.

Operation:

I- Attach the lever to the manual bilge pump.

II- Repeatedly work the lever up and down to its fullest extent.

The manual bilge pump lever must remain accessible at all times.

Main drainage system
Electric bilge pumps

- The bilge pumps are powered by DC.

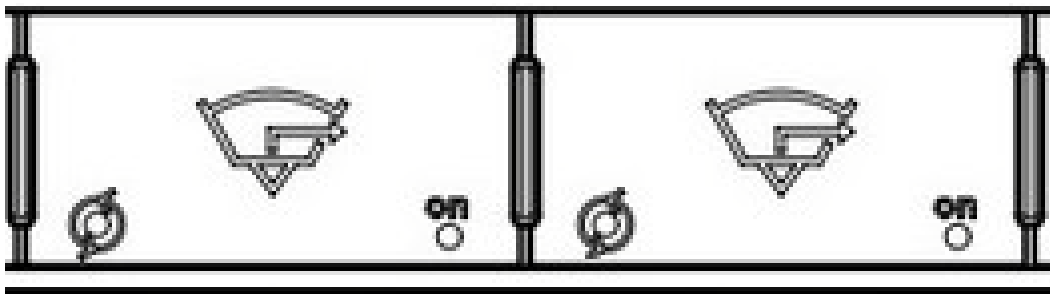
Location of the electric bilge pumps: Ref 3

Electric bilge pump drain valve
Location: Port & starboard passageway

NOTE: The valve must be opened before starting the pump.

- The switch for the electric bilge pump is located on the switch panel (Ref 4).

Starboard electric bilge pump Port electric bilge pump



- Pressing the switch once activates the "automatic" mode of the bilge pump: The pictogram lights up red.
- Pressing the switch twice activates the "forced run" mode of the bilge pump: The indicator light ON turns on (bottom right).
- When the indicator light on the bottom left lights up, the bilge pump is in operation.

- The electric bilge pump must only be used to discharge stagnant water at the bottom of the bilge. It must not be used to pump out any oil-based products (petrol, oil) or inflammable liquids.

Operation:

I- Turn on the battery switches.

II- Switch on the bilge pump (Ref 4).

If the boat is equipped with an automatic bilge pump, the switch has an always-on position.

Bilge pump maintenance

Please refer to the manufacturer's notes in the instructions for checking and maintaining the bilge pumps.

- The total capacity of the bilge pump system is not designed to drain the boat in case of damage.

- Keep the water level in the bilges to a minimum.

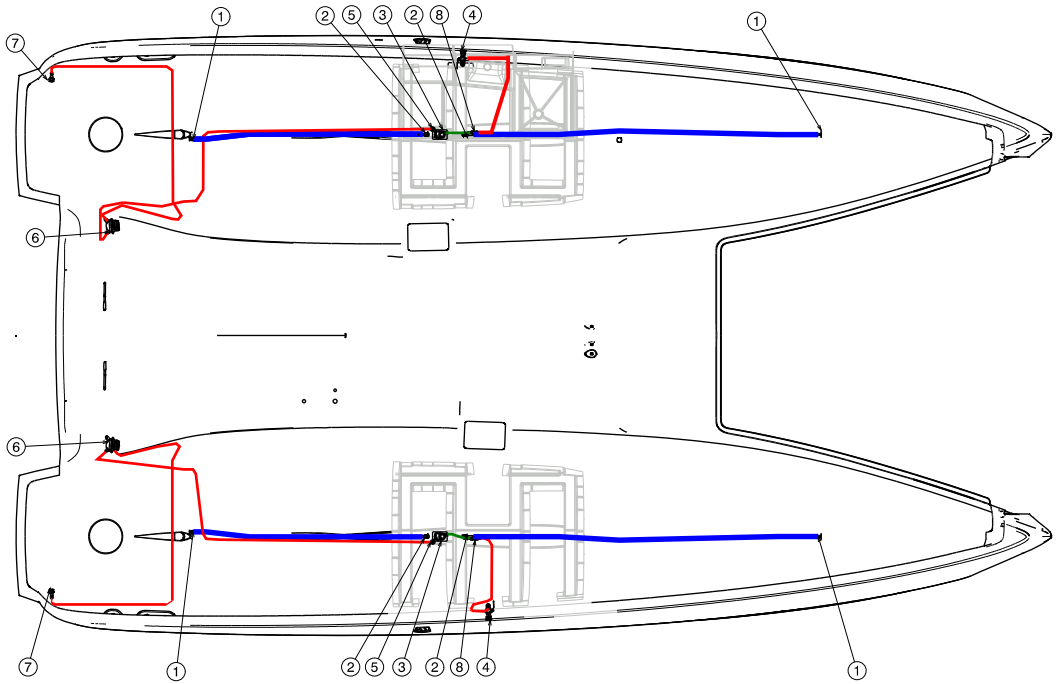
- Never store anything at the very bottom of the boat: Allow bilge water to flow freely down to the lowest point of the boat.

- Check that each bilge pump is working at regular intervals.

- Clear the points and suction filters of the bilge pump of any debris that could clog them.

- If the watertight partitions which seal off the fore and aft points are fitted with valves they must be closed at all times and only opened to drain water into the main bilge.

DIAGRAM OF LAYOUT - DRYING OUT THE BILGE



	Drainage hose - 20mm diameter
	Drainage hose - 25mm diameter
	Drainage hose - 30mm diameter

Reference	Designation
1	Bulkhead fitting
2	Valve closure
3	Electric bilge pump
4	Electric bilge pump drain valve
5	Manual bilge pump suction strainer
6	Manual bilge pump
7	Kitchen sink thru-hull drainage
8	Non-return valve

6.6 EMERGENCY SYSTEMS IN CASE OF STEERING GEAR FAILURE

Emergency tiller

The emergency tiller is designed only to enable navigation at a reduced speed in case of steering gear failure.

Location of components

Emergency tiller

ACCESS deck filler

Instructions in the event of steering gear failure

I. Unscrew the filler using a winch handle.

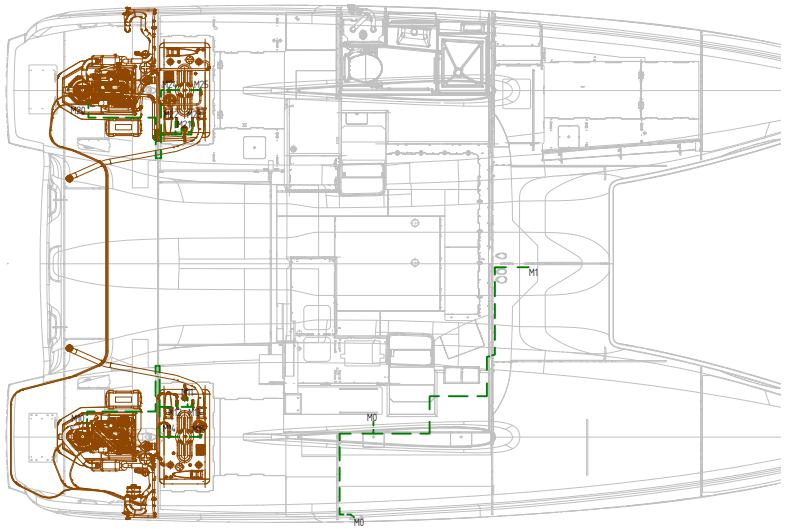
II. Fit the emergency tiller (Ref 2) in the square on the rudder post.

6.7 PROTECTION OF PERSONS AGAINST THE EFFECTS OF LIGHTNING

Information on lightning-related risks

- The skipper must check the weather conditions before deciding to put to sea. If there is a risk of thunderstorms, the skipper must avoid putting to sea.
- A lightning safety device is installed on the boat.
- A general anode dedicated to grounding of the rigging is connected to the mast pillar and the port cap shroud chainplate.

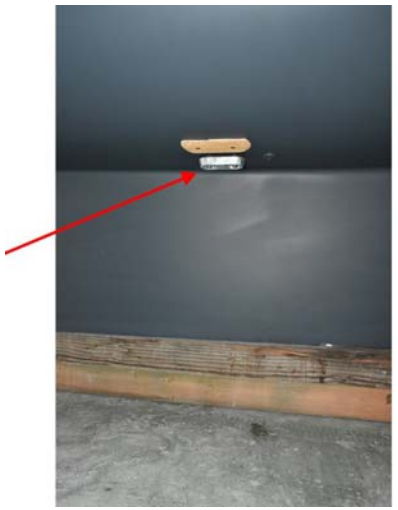
Electrical earthing



Anode

Inside view

Outside view



Precautions to be taken by the occupants of the boat during a storm

- Ensuring the safety of everyone on board is the fundamental goal of lightning protection.
- Turn off the engine, turn off the battery switches and disconnect all electronic and electrical equipment, including equipment mounted on the mast.
- Occupants should stay as much as possible inside the closed vessel.
- Occupants should not be in the water or let their arms or legs hang in the water.
- Occupants should avoid touching any part connected to a lightning protection device, especially in such a way that the parts become connected.
- Occupants must avoid contact with the metal parts of the rigging, spars, deck fittings and boat wiring. Even inside the boat, occupants should stay as far as possible away from the mast.

Maintenance

- Flexible radio antennas should not be tied down during a thunderstorm.
- If the boat has been struck by lightning, the compass and electronic and electrical equipment must be examined to determine whether any damage or calibration change has occurred.
- If the vessel has been struck by lightning, the lightning protection device must be inspected for damage and to verify the integrity of the device and continuity of the earthing.

INFORMATION RELATING TO FIRE RISKS AND RISKS OF EXPLOSION

7

7.1 PROPULSION ENGINES AND OTHER FUEL-BURNING EQUIPMENT

The risks associated with motorisation are described in the ENGINE chapter.

Note concerning the boat's tender:

- If the tender is fitted with a more powerful outboard motor than 25kW, it must have on board a portable extinguisher with a rating equal to or greater than 8A / 68B.
- Place for storage of tender petrol tank: on deck.

The risks associated with other fuel-burning equipment are described in the FUEL-BURNING EQUIPMENT OTHER THAN FOR PROPULSION chapter.

7.2 ELECTRICAL SYSTEM

The risks associated with the electrical systems are described in the ELECTRICITY chapter.

7.3 GAS SYSTEM

The risks associated with the gas system are described in the GAS chapter.

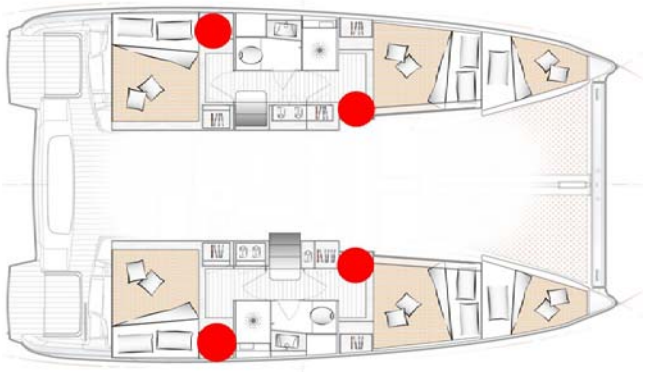
7.4 FIRE FIGHTING AND PREVENTION EQUIPMENT

7.4.1 Fire-fighting equipment

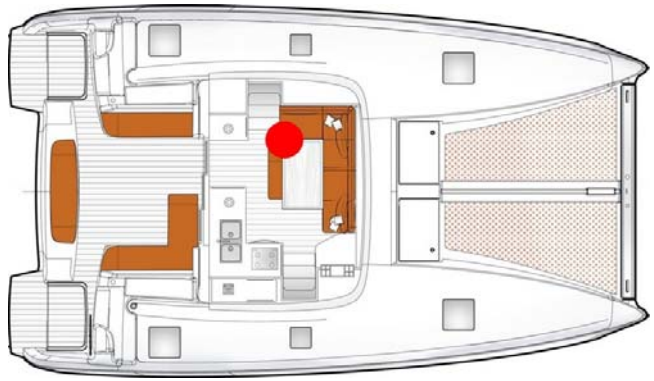
Portable fire-extinguishers and fire blanket (not supplied)

- When in use, this boat must be equipped with portable fire extinguishers of the following extinguishing capacities, located in the following places:

4-cabin layout



3-cabin layout



Location	Minimum extinguishing capacity
Cupboard - Port aft cabin	5A / 34B
Port passageway	5A / 34B
Cupboard - Starboard aft cabin (4-cabin layout)	5A / 34B
Starboard passageway	5A / 34B
Saloon	5A / 34B

- The location of the portable fire extinguishers is shown by the pictogram below:

- When in use, this boat must be equipped wih a fire blanket to protect the cooking equipment and/or the galley, installed in the following place: near the cooking equipment.

Maintenance of the fire-fighting equipment

The owner/person operating the boat must:

- Have fire-fighting equipment checked as frequently as recommended by the manufacturer;
- Replace portable fire extinguishers, if outdated or discharged, with extinguishing apparatus of equal capacity;
- Provide at least one fire bucket with a lanyard, in a readily accessible place, for protection of the deck;
- Have fixed fire extinguishing systems filled or replaced if they have been discharged or have expired.

Responsibility of the owner/boat operator

It is the responsibility of the owner/boat operator to:

- Ensure that the fire-fighting equipment (portable extinguishers, bucket and fire blanket) is readily accessible when there are people onboard;
- Ensure that the engine compartment fire extinguisher discharge port is readily accessible;
- Show the members of the crew:
    - The location and use of the fire-fighting equipment;
    - Location of discharge ports in engine compartment;
    - The location of evacuation routes and fire exits.
- Equip the vessel with one or more portable extinguishers whose heads are compatible with the diameter of the opening in vertical use.
- Unlock all deck hatches and fire escape openings when the vessel is occupied.

Notes for the attention of the boat user

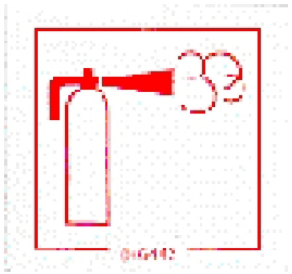
General points

- Check that the bilges are clean and frequently check that there are no fuel/gas vapours or fuel leaks.
- When replacing components of the fire-fighting equipment, use only appropriate components of the same code designation or with the equivalent technical capacity and fire resistance.
- Do not install free-hanging curtains or other fabrics near or above the cooking appliances or other equipment with a naked flame.
- Do not store combustible materials in the engine compartment. If non-combustible materials are stored in the engine compartment they must be secured so there is no danger of them falling on machinery and they do not obstruct access to and from the compartment.
- The fire exits other than the door or main companionway are identified by the following symbol:

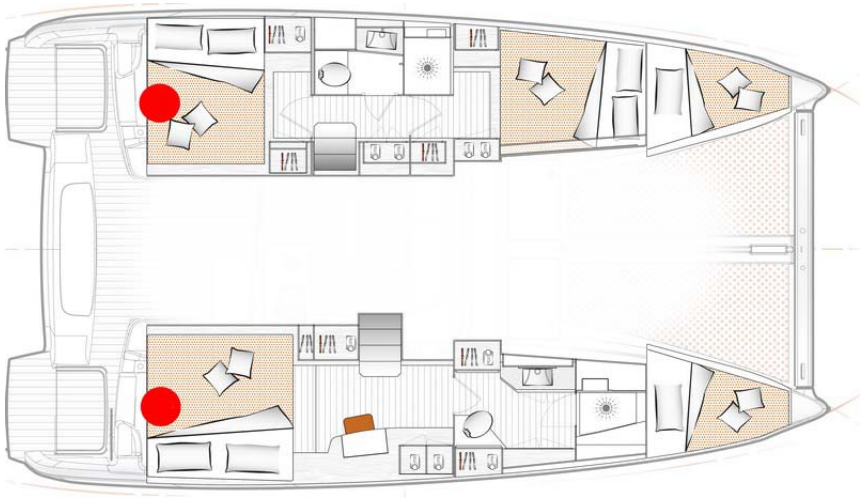
7.4.2 Extinguisher access port (Engine compartment)

The engine compartment has a port that makes it possible to discharge the extinguishing product inside without opening the usual access hatches.

A pictogram allows for easy location



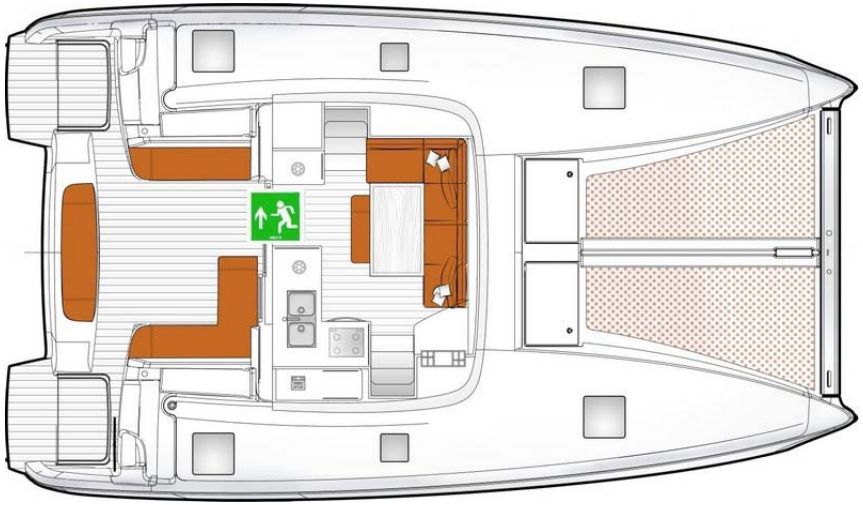
Location of the fire extinguisher port



Operation

15mm diameter

7.5 EMERGENCY EXITS IN CASE OF FIRE



NEVER:

- Obstruct the passages leading to the emergency exits and the hatches;
- Obstruct or block safety controls, for instance fuel shut-off valves, gas taps, electrical system circuit-breakers;
- Obstruct the access to the portable extinguishers stored in lockers;
- Leave the boat unsupervised when cooking equipment and/or heating equipment is in use;
- Modify any of the boat's installations (especially the electrical, fuel or gas installations) or allow unqualified personnel to proceed with modifying these installations;
- Fill the fuel tanks or replace gas bottles while the engine is running or while cooking or heating equipment is in use;
- Use gas lamps in the boat;
- Smoke when handling fuel or gas.

7.6 IN THE EVENT OF CAPSIZE

In the event of capsize break the glass of the "manhole" cover using the hammer if necessary.

The life-rafts are accessible on the transom (see the beginning of the chapter).

1.

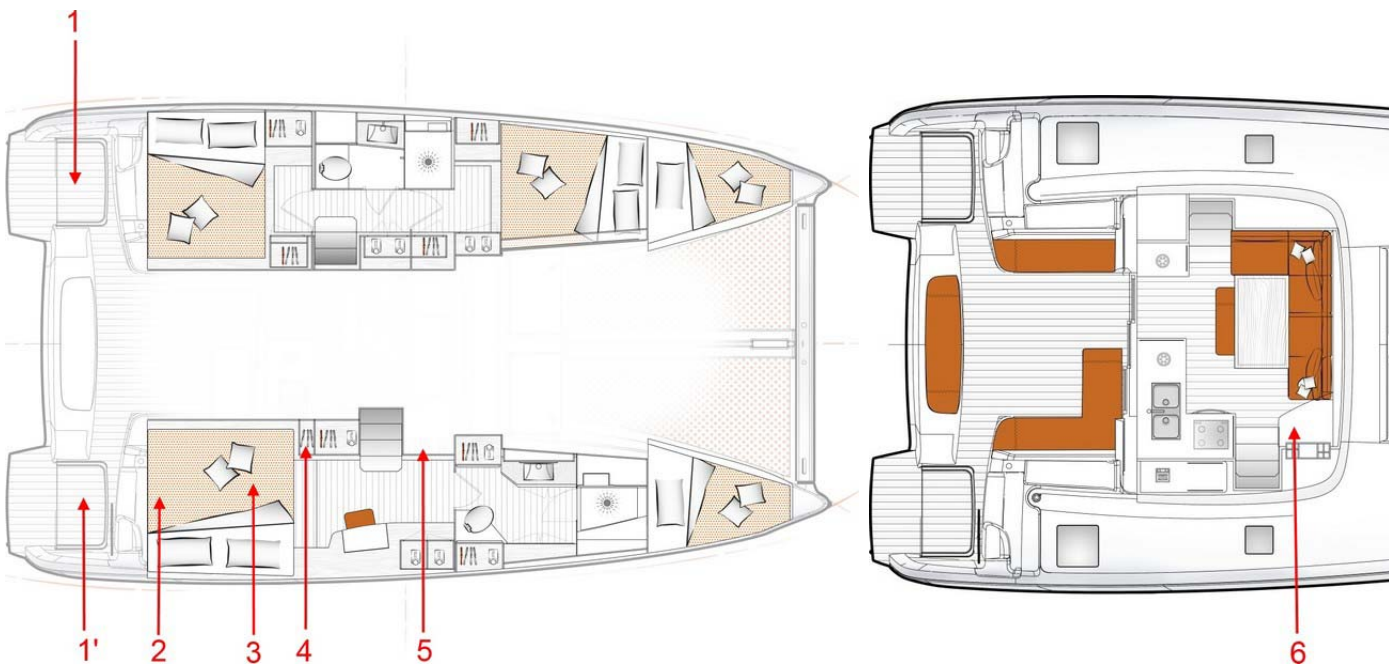
2.

3.

ELECTRICAL SYSTEM

8

8.1 GENERAL INFORMATION ABOUT THE ELECTRICAL SYSTEM



Reference	Designation
1	Port engine battery, "Port engine" battery switch, Connection of the battery bank, Fuses
1’	Starboard engine battery, Battery switch of starboard engine, Service batteries isolator, Fuses
2	Battery chargers
3	Service batteries
4	DC component circuit breakers
5	Circuit breakers (Terminal panel)
6	Electrical panel, Navicolor touchscreen

- A risk of fire or explosion may result from careless use of the DC and AC systems.

- A risk of electrocution may result from careless use of the AC system.

NEVER:

- work on a live electrical system;

- modify the elecrical system of the vessel or the relevant diagrams: It is important that installation, maintenance and any modifications be carried out by a qualified marine electrician;

- change or modify the strength of the safety devices protecting against power surges;

- Install or replace the electrical devices or equipments with components that exceed the rated current of the circuit;

- leave the boat unsupervised when the electrical system is live, apart from when the automatic bilge pump and the boat's fire protection and security system are in use (where installed).

Electrical connections change over time. It is necessary to have the boat's electrics checked regularly and at least once every two years by a professional. Special attention should be paid to the tightness of the electrical connections.

8.2 DC INSTALLATION (12V)

8.2.1 Battery use and distribution

General points

The boat is equipped with a direct current electrical system.

The boat's electrical system comprises service batteries and the engine battery or batteries. The service batteries serve as the power supply for all the boat's electrical components. The "engine" battery is used only for powering the electric starter of the propulsion engine.

The boat may also be equipped with:

- a generator powered by its own battery.

the batteries are charged either by a load distributor or:

- by the alternator linked to the engine when the engine is running,
- by the battery charger (where installed).

It is essential that a professional engineer connects the batteries when the boat is first launched.

Always check the condition of the batteries and charge system before putting to sea.

The battery banks are isolated from one another by a charge divider (see below).

Standard battery park

Engine battery: 2 x 120A

Location: Port and starboard engine compartment

Service batteries: 2 x 140A
Additional service batteries: 2 x 140A

Location: Starboard aft cabin

Maintenance

- Keep the batteries clean and dry.
- Regularly check that the terminals and connection cables are clean. If necessary, apply a thin coating of paraffin on the terminals to prevent corrosion.
- Regularly recharge all of the batteries onboard.
- Keep the batteries charged at all times: this will improve their lifespan.
- Avoid long periods of electrical inactivity (for example when wintering the boat).

Maintenance of lead batteries

- Check the water levels in the batteries annually and top them up with distilled water if they are low.
- Keep all metallic objects away from the batteries.
- Lead batteries contain sulphuric acid: be careful not to knock them over whenever handling them.

Maintenance of watertight batteries

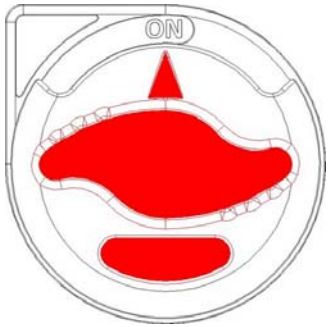
- This type of battery needs no maintenance and does not produce any gas during normal use. No ventilation is needed.
- The optimum temperature for use is between 10°C and 30°C. Lower temperatures will reduce the available capacity. Higher temperatures will increase the batteries' self-discharge rate.
- Never open watertight batteries.
- Never add acid or distilled water.
- The pressure valves are used to seal the batteries and cannot be opened without being permanently broken.
- If the batteries overheat, a build-up of gas may develop: stay away from the batteries.

- All work carried out on a battery must only be carried out by someone qualified to do so. Whenever working on a battery, wear safety goggles and protective clothing.
- Never smoke or produce a spark near a battery: this may cause an explosion.
- If any acid accidentally splashes on your skin or in your eyes, rinse it off immediately and thoroughly with fresh water. See a doctor immediately.
- Never touch the battery terminals: you may suffer an electric shock.
- Refer to the manufacturer's instructions for use and maintenance.
- **It is essential that you disconnect the battery charger before disconnecting the battery terminals for maintenance (either by disconnecting the AC shore power socket or by cutting the AC circuit breaker of the battery charger).**

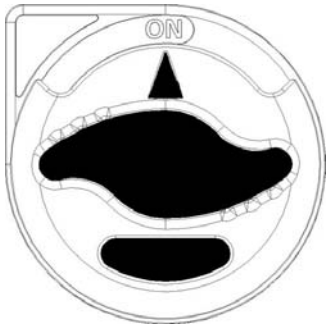
8.2.2 Battery switches

Manual battery switches: to make the system live, manually turn the positive and negative battery isolator switches.

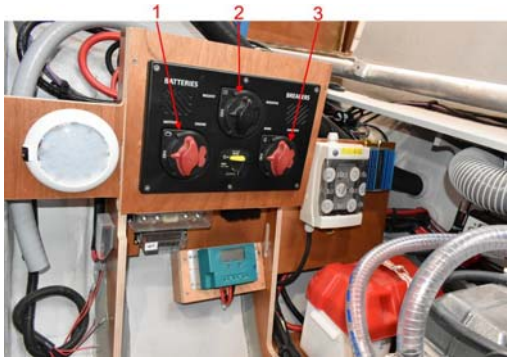
Positive isolator switch



Negative isolator switch



Location: Starboard engine compartment



1. Port engine positive isolator switch
2. Common battery negative isolator switch
3. Service batteries positive isolator switch

Location: Port engine compartment

4. Starboard engine positive isolator switch
5. Starboard engine negative battery switch

- Turn off all battery isolators before leaving the vessel: **failure to do so may result in critical damage to the entire battery bank**.

- Avoid touching the battery isolators when they are live.

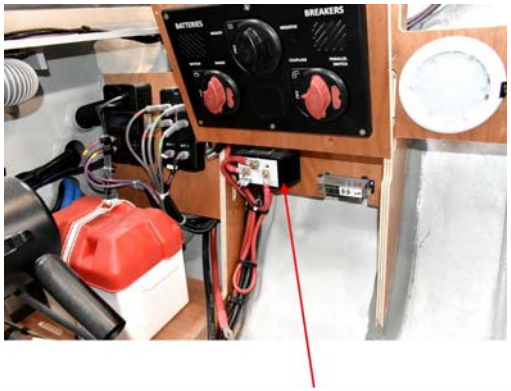
- Never switch off the battery isolators when the boat's engine is running (risk of serious damage to the charging circuit).

8.2.3 Power distributor

- The electronic charge dividers isolate the battery banks from each other and allow the charge to be directed automatically to the battery with the lowest charge. They provide the advantage of preventing a drop in voltage.

- The charge divider is electronic. It is designed to distribute the charging current with a low voltage drop between the battery banks (engine and service batteries). It prevents the current from circulating from one battery to another. When the voltage of the charger or alternator is available, the charge divider indicator lights up green.

Location: Port and starboard engine compartment



8.2.4 Connection of the battery bank

If one of the engine batteries is low on power, use the battery link function by actuating the linking system.

Location: Port engine compartment

8.2.5 Battery charger

General points

- The battery charger runs on AC power.
- A breaker protects the electrical circuit.
- The battery charger charges all of the batteries onboard while keeping the service battery bank isolated from the engine's battery bank.

Location: Starboard aft cabin

Power: 2 x 40A

Operation

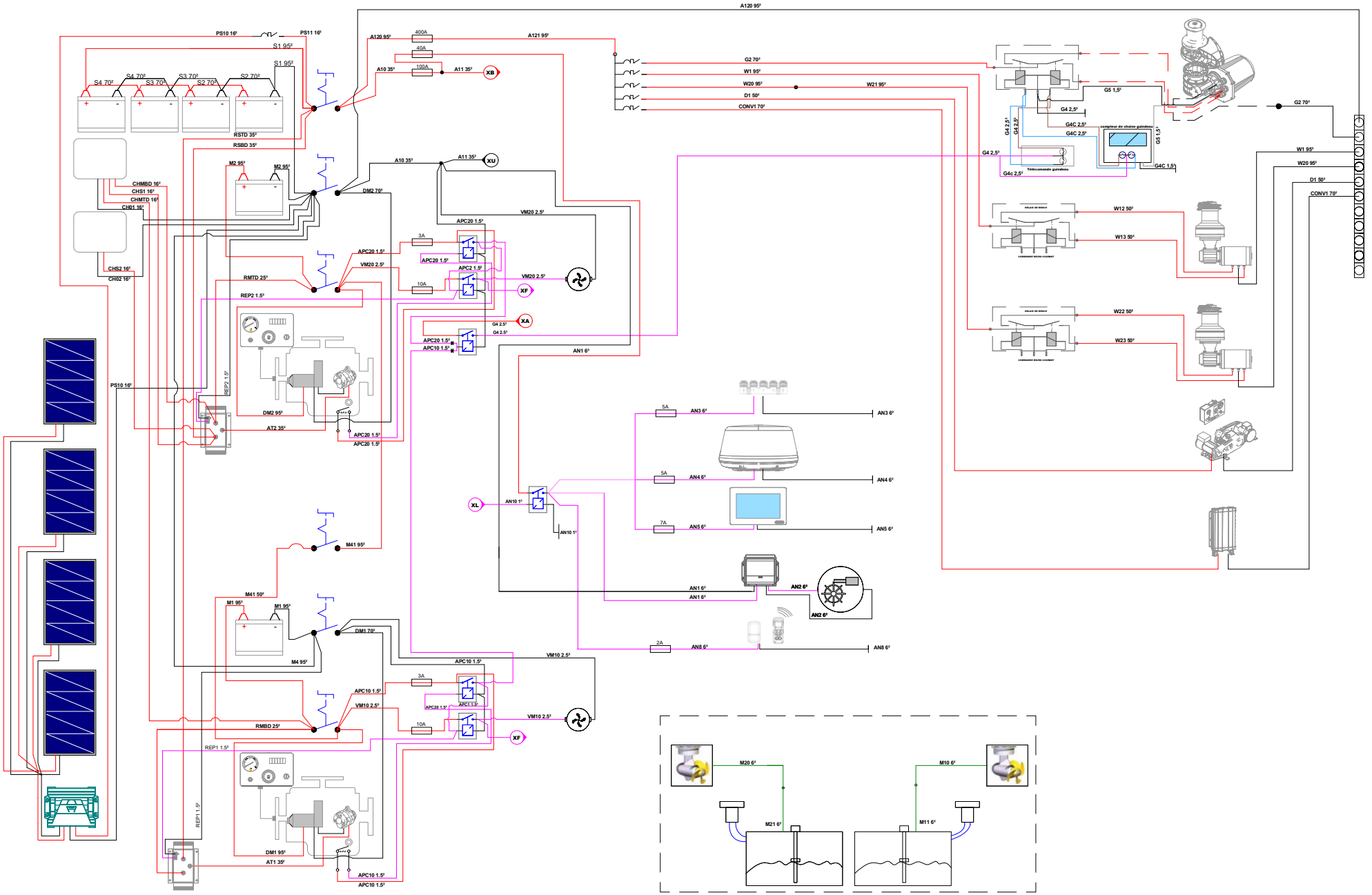
- The charger runs fully automatically. It can stay permanently connected to the batteries and does not need to be disconnected when starting the engine.
- In some electrical circuits, there may be battery chargers coupled in parallel.

Maintenance

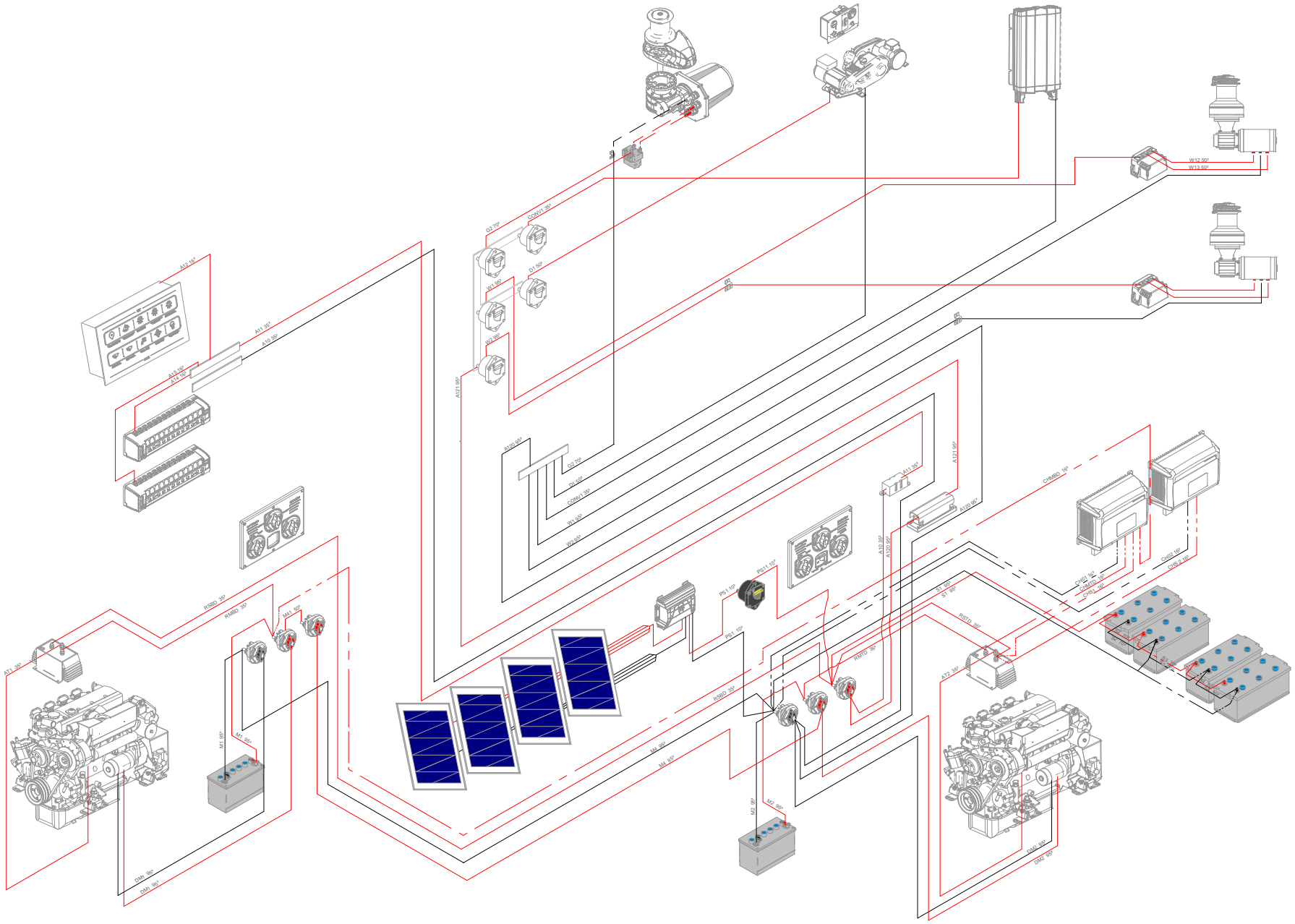
- Before doing any maintenance, cut the AC supply.
- Regularly vacuum out any dust particles which may accumulate in the charger. An annual check of the tightness of the nuts and bolts is necessary to ensure the correct operation of the charger.

It is essential that you disconnect the battery charger before disconnecting the battery terminals for maintenance (either by disconnecting the AC shore power socket or by cutting the AC circuit breaker of the battery charger).

DIAGRAM OF LAYOUT

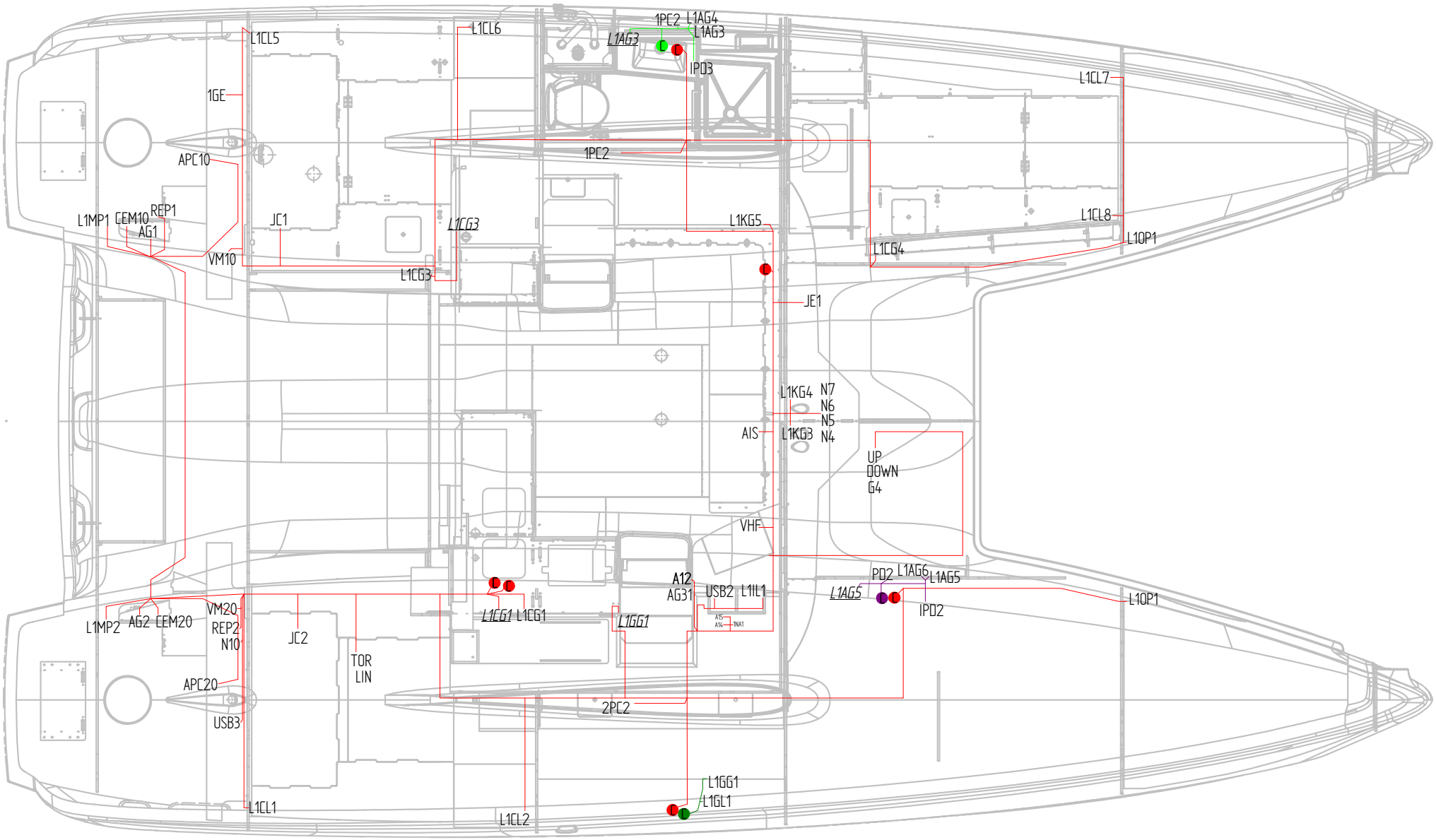


SYNOPTIC

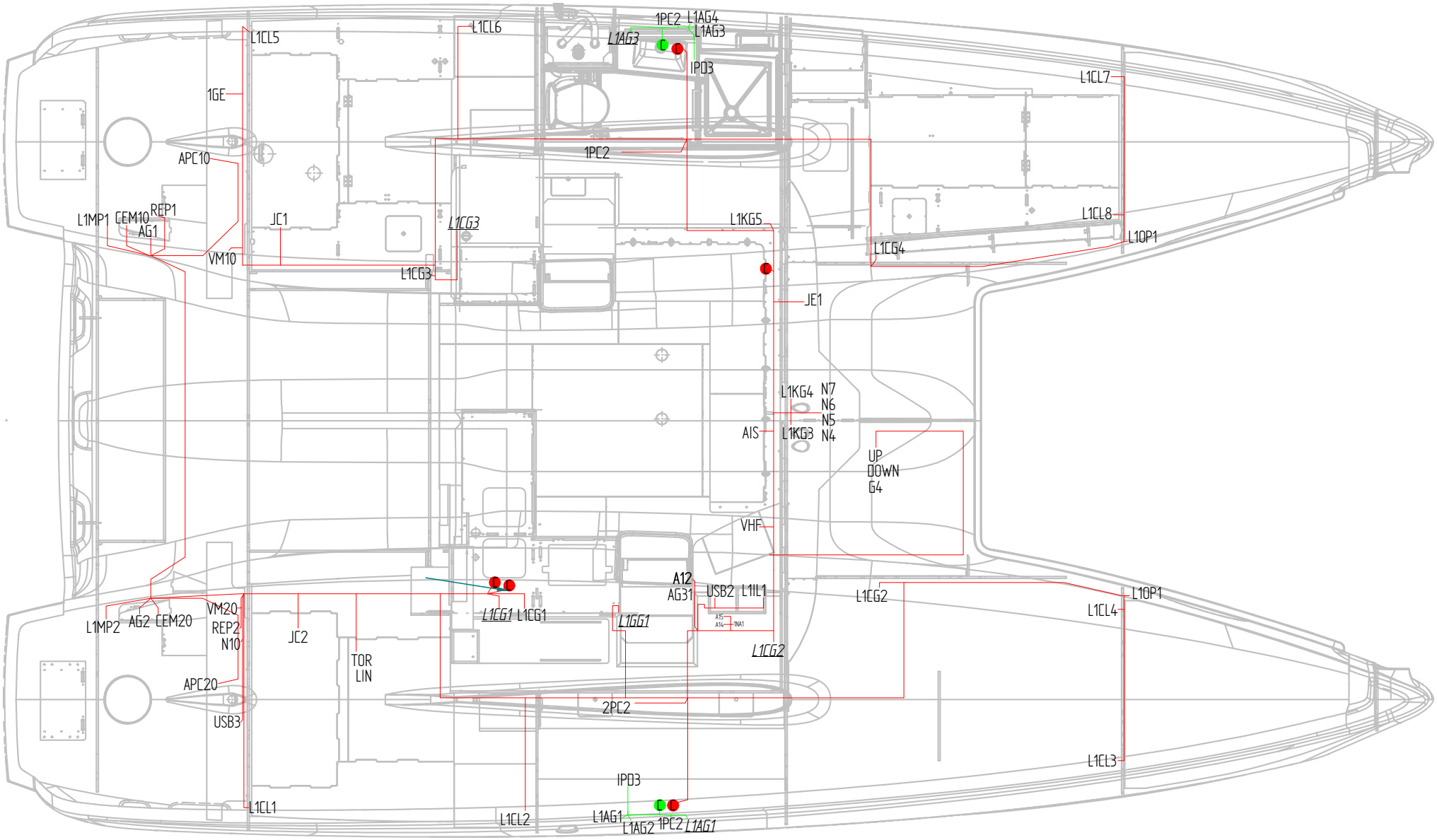


8.2.6 Layout of hull wiring looms - DC circuit

3-CABIN LAYOUT

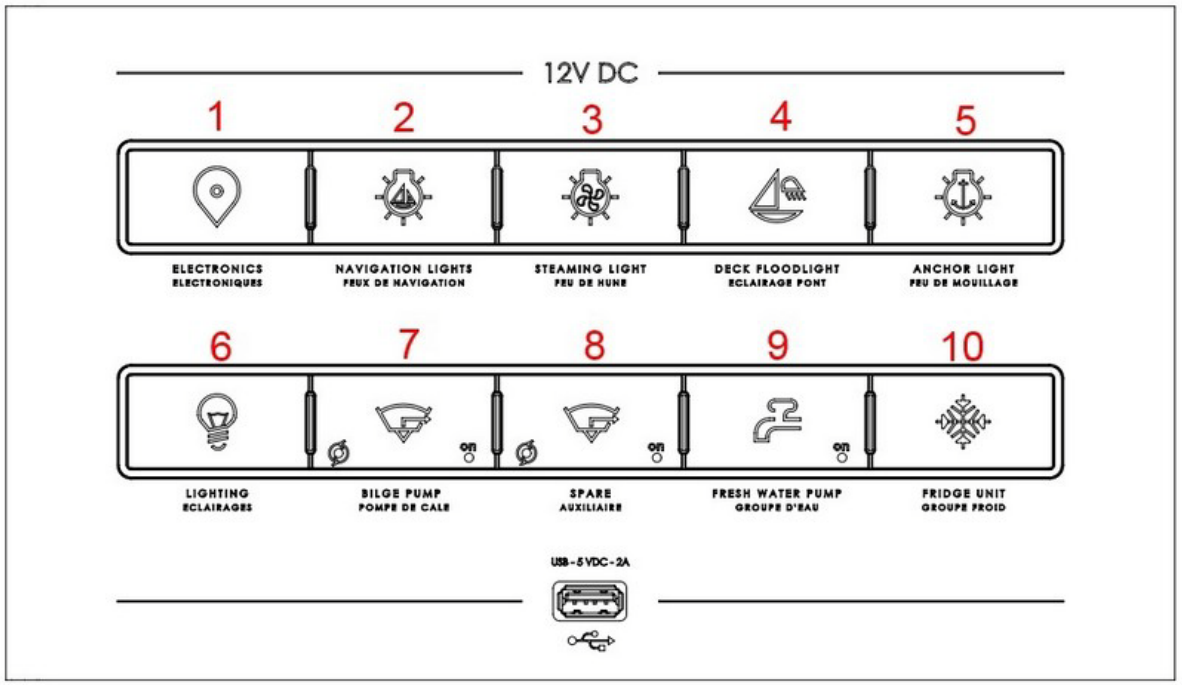


4-CABIN LAYOUT



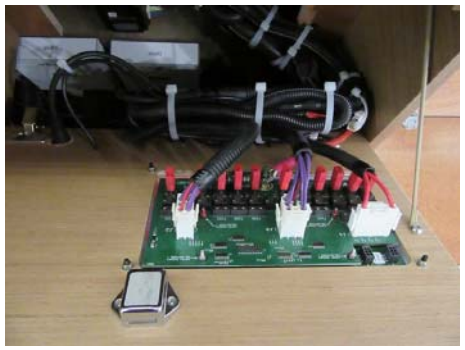
8.2.7 Electrical panel

Location: Chart table



1. Electronic instruments
2. Navigation lights
3. Steaming light
4. Deck light
5. Mooring light
6. Lighting
7. Starboard electric bilge pump
8. Port electric bilge pump
9. Water unit
10. Fridge

A circuit breaker protects the circuit of each DC component. An additional fuse holder allows the desired element to be supplied directly by shunting the relay.



1. Additional fuse holder (for inserting a fuse to power a DC component in defect mode)
2. Relay box
3. Fuse

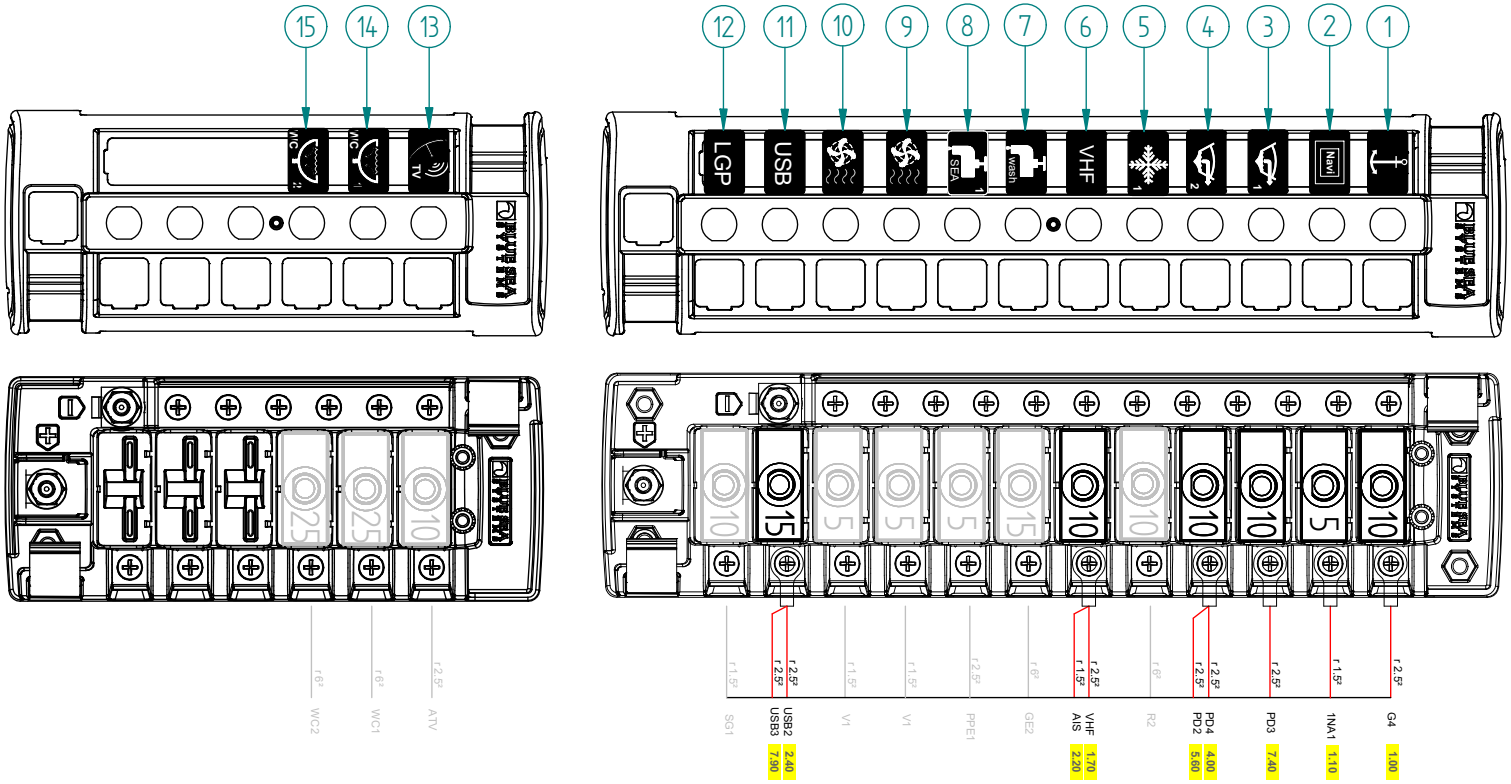
Designation	Safety fuse	Fuse in defect mode (by-pass)
Water unit	FU 3	FU 23
Electric bilge pump	FU 2	FU 22
Auxiliary	FU 4	FU 24
Refrigeration unit	FU 1	FU 21
Navigation lights	FU 8	FU 21
Steaming light	FU 9	FU 29
Mooring light	FU 7	FU 27
Electronic instruments	FU 5	FU 25
Deck light	FU 6	FU 26
Lighting 1	FU11	FU 31
Lighting 2	FU 10	FU 30

When one of the switches on the panel is flashing, it means that the circuit breaker behind the electrical panel of the faulty switch must be reset.

8.2.8 Circuit breakers

A circuit-breaker can be reset (manually press the black button to restart it).

Location: Starboard passageway



1. Electric windlass
2. Navicolor (Touch screen)
3. Shower pump drainage (Port)
4. Shower pump drainage (Starboard)
5. Refrigeration unit (Galley)
6. AIS / VHF
7. Deck wash pump
8. Seawater electric pump (Galley sink)
9. Cabin ventilators (Port)
10. Cabin ventilators (Starboard)
11. USB socket
12. Gas solenoid (US Version)
13. TV Antenna
14. Electric toilet (Port)
15. Electric toilet (Starboard)

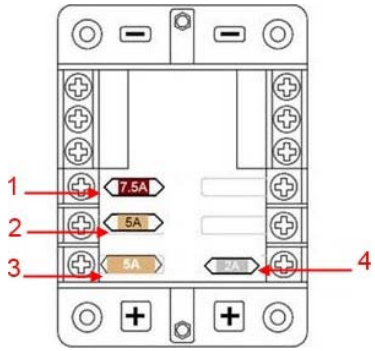
Location: Starboard aft cabin

1. Electric windlass (100A)
2. Genoa electric winch - Port (80A)
3. Genoa electric winch - Starboard (80A)
4. DC/AC converter (200A)

8.2.9 Fuses

- A fuse protects an electrical circuit from excess current. If it blows, you must replace it with another fuse of the same rating.

Location: Starboard passageway

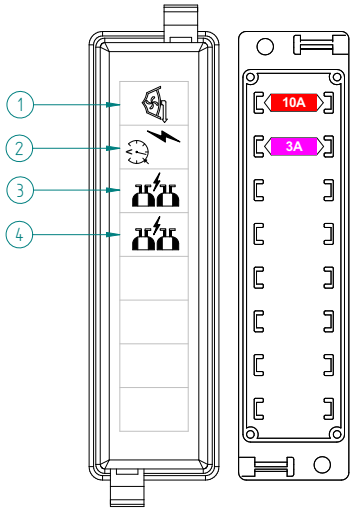


1. Navigation screen (Starboard)
2. Radar
3. VMU power supply - NMEA
4. Smart Controller

When replacing fuses/circuit-breakers, always ensure replacements are of the correct capacity (see the colour-codes)

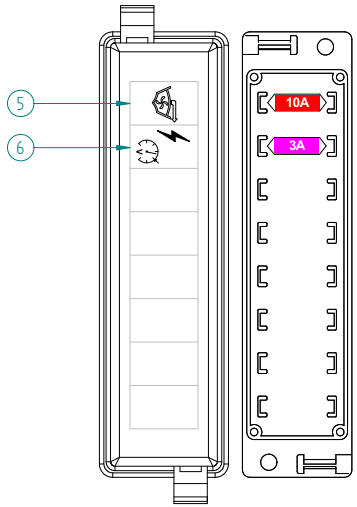
20A 15A 10A 5A 3A

Location: Port engine compartment



1. Engine compartment ventilator - Port engine compartment
2. Circuit live on contact - Port engine
3. Additional engine control
4. Additional engine control

Location: Starboard engine compartment



5. Engine compartment ventilator - Starboard engine compartment
6. Circuit live on contact - Starboard engine

8.2.10 Solar panels

The solar panels are connected to the service battery bank. Solar panels are used to maintain battery charge. They are insufficient for recharging of the onboard batteries.

- Refer to the manufacturer's instructions for use and maintenance.
- The solar panels are fragile: Never walk on them.

Location:

Layout of components: Port engine compartment

1. 40A circuit breaker
2. Fuse
3. Regulator
4. 40A fuse

Maintenance

- Clean regularly with clear water only or with a little neutral pH soap as needed.

8.3 TOUCH SCREEN

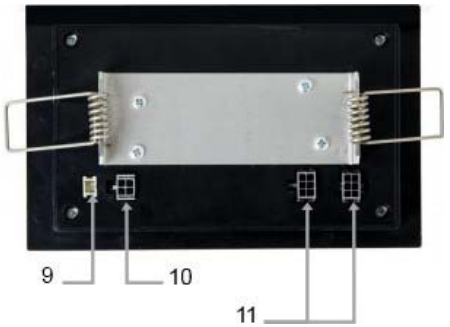
The screen NAVICOLOR is a touch interface for viewing and controlling the auxiliary functions of the boat:

- Fuel level,
- Fresh water level,
- Battery voltage,
- Management of boat's AC supply sources,
- Network viewing and diagnostics.

Location: Chart table

Front view:

1. Direct access to home page
2. Previous page
3. ON/OFF button
4. Tank menu
5. Back
6. Light sensor
7. Next page
8. Direct access to battery page



Rear view:

9. Connector for temperature sensor
10. Bus
11. CAN connector

Battery measurement menu access

Fresh water tank level menu access

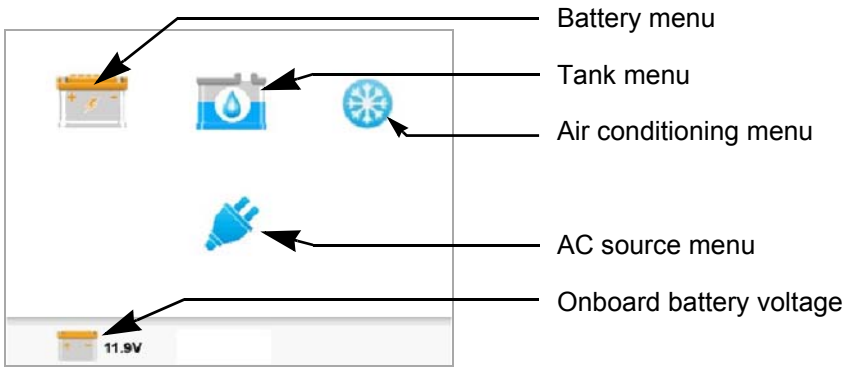
AC supply distribution menu access

Adjustment menu access (Access to it is restricted by a code supplied on request to the yard)

- CAN network display (Controller Area Network)
- Parameterization of lighting
- Configuration of the 'gauge' pack
- Configuration of source selectors

Return to preceding page

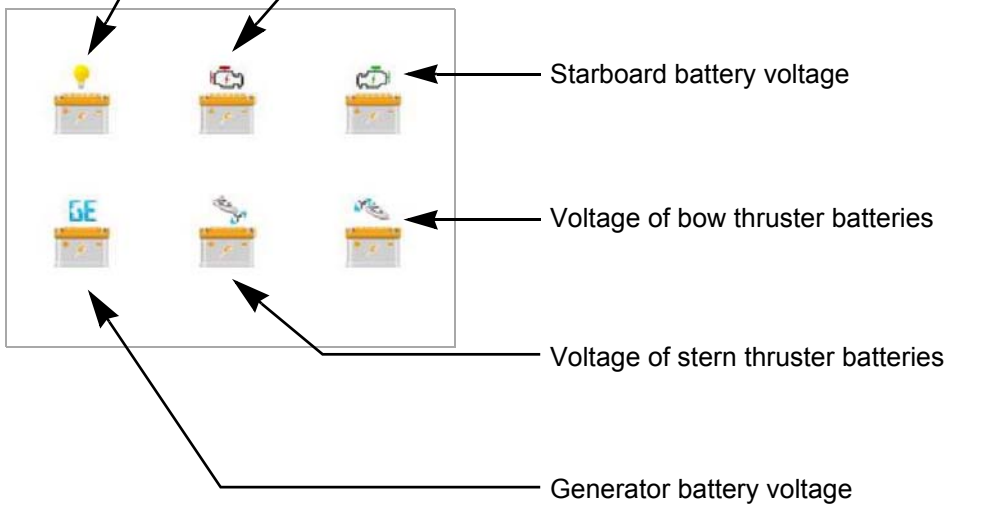
Operation



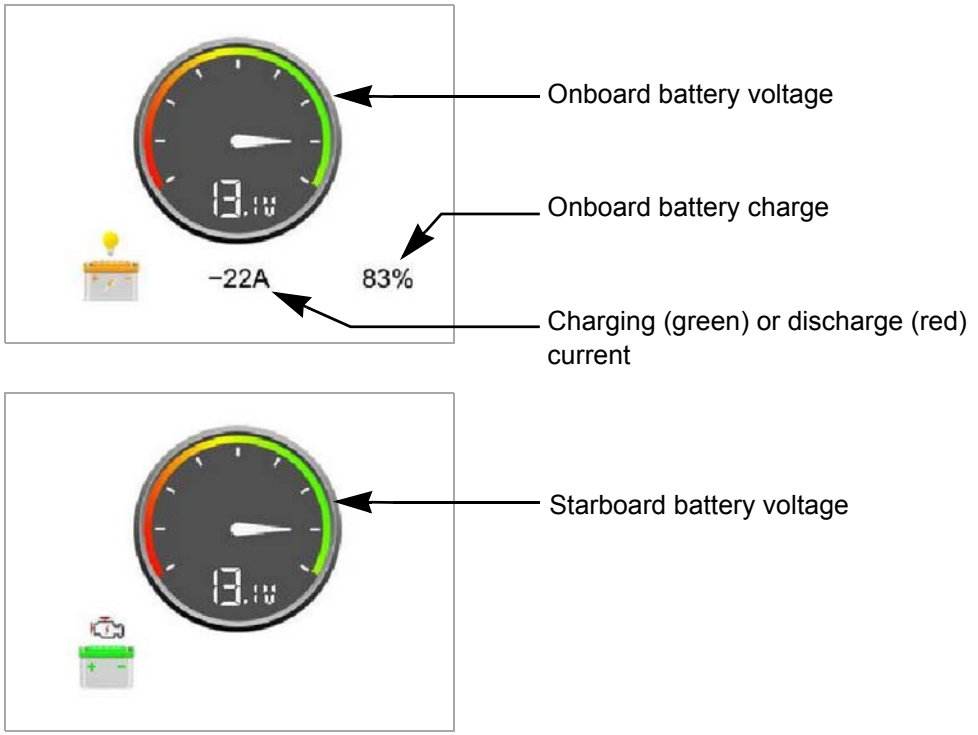
The menus may vary depending on the specific equipment of each boat.

Battery menu

Access sub-menus by pressing the required menu icon.

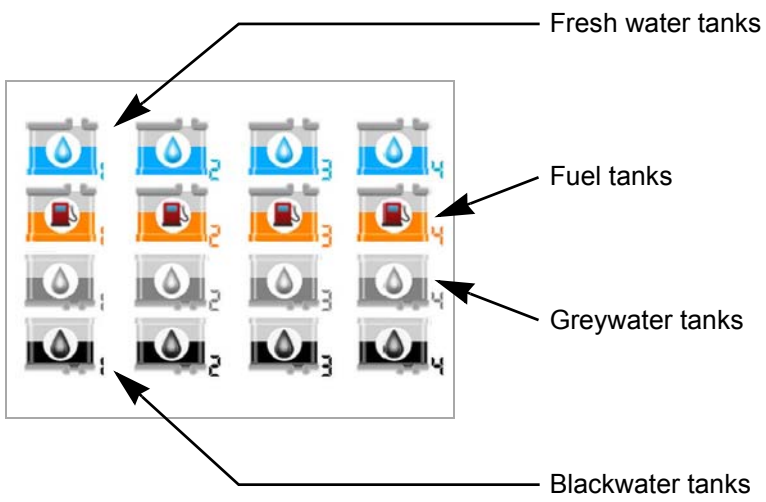


examples:

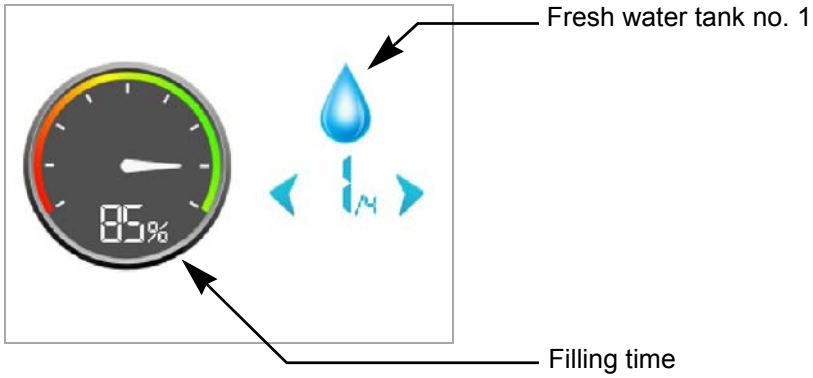


Tank menu

Access sub-menus by pressing the required menu icon.

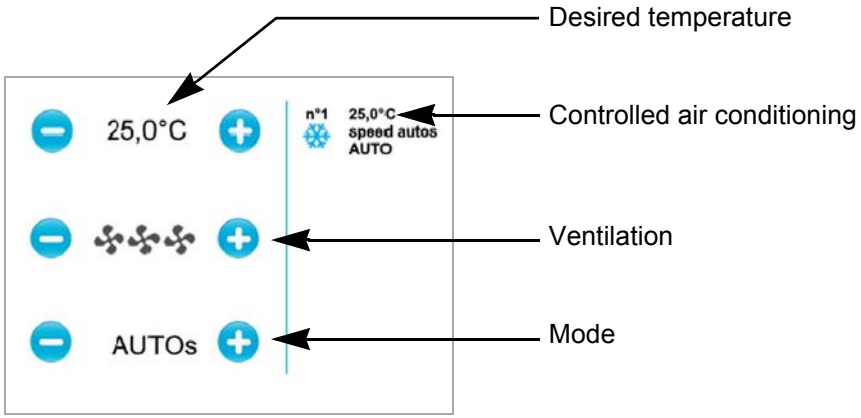


examples:



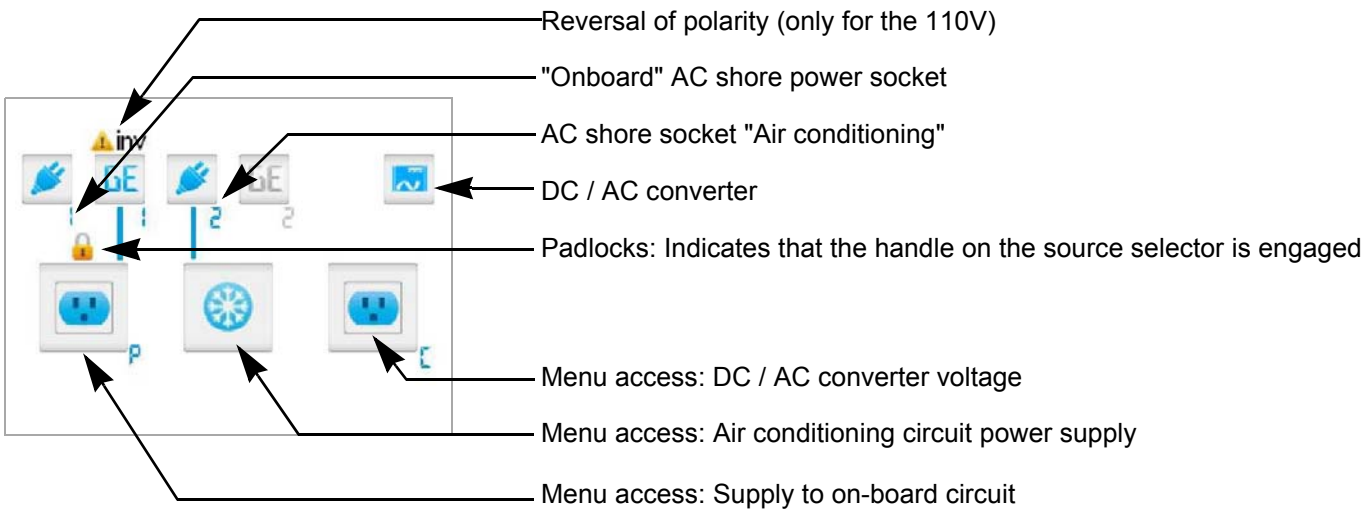
Air conditioning menu

The Navicolor controls the air conditioning in the saloon.



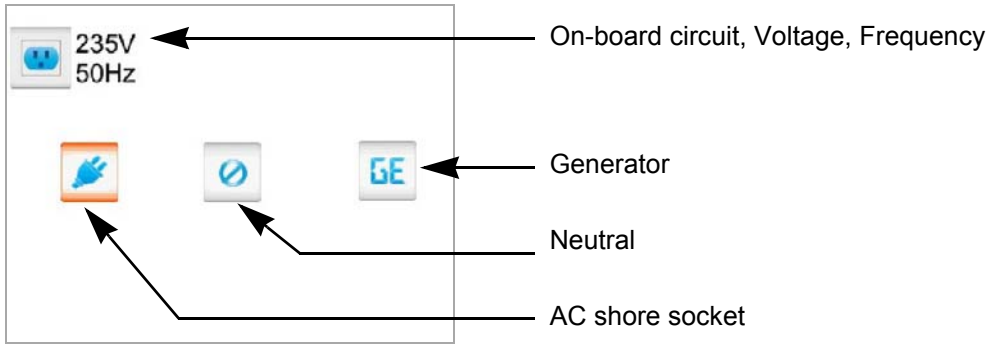
AC source menu

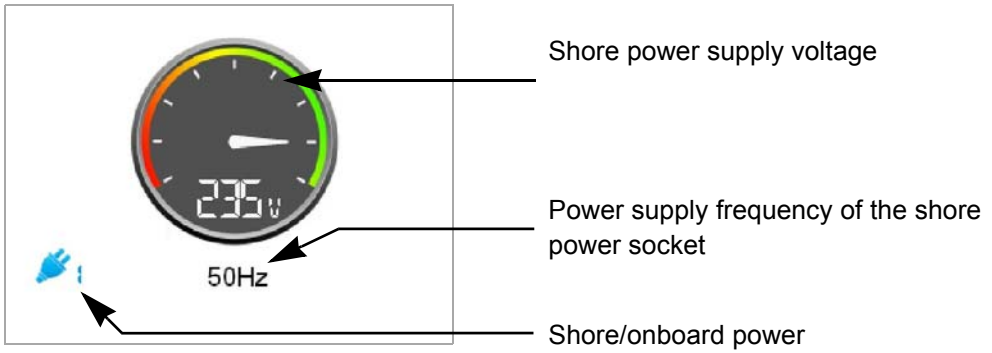
Access sub-menus by pressing the required menu icon.

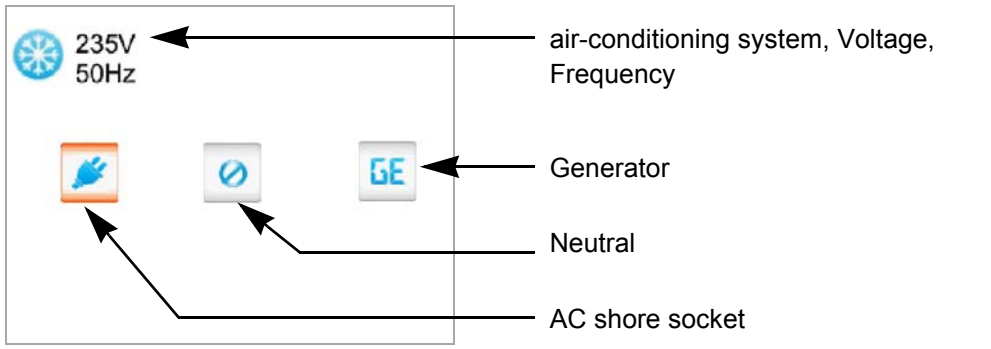


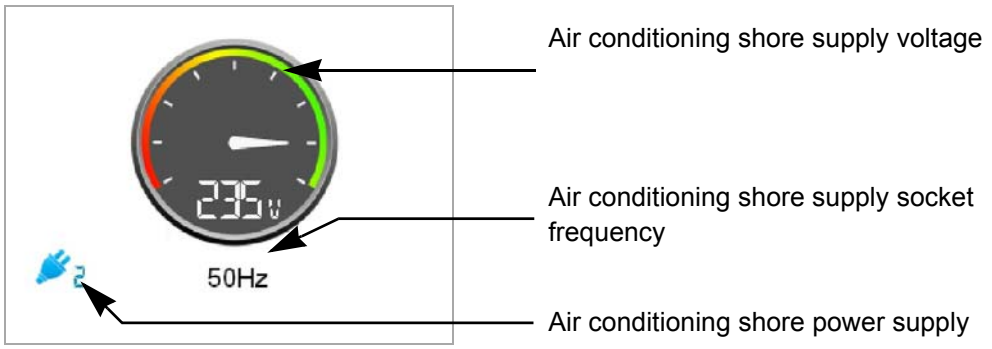
AC source menu

One press of the shore supply button sets the onboard selector switch to shore supply or generator. An orange circle indicates that the switch has been made.









AC source menu

Output voltage of the DC/AC converter

Output frequency of the DC/AC converter

DC/AC converter

Voltage supplied by the generator to the on-board power supply

Generator ON / OFF

Generator supply frequency on board

On-board AC

Voltage supplied by the generator to the on-board power supply

Generator ON / OFF

Generator supply frequency on board

On-board AC

8.4 AC SYSTEM (110V OR 220V)

8.4.1 General points

- The boat is equipped with an alternating current electrical system.
- The electrical system of the boat consists of an AC shore socket and if appropriate:
    - 1 Generator,
    - 1 DC/AC converter.
- The AC electrical system is used to power the following components (where installed):
    - Air conditioning,
    - Household appliances,
    - Water heater,
    - Interior AC sockets,
    - Battery charger(s).

Guidelines for using the AC electrical system correctly

- Do not modify the vessel's electrical installations or the relevant diagrams. Installation, maintenance and modifications must be carried out by an electrician qualified in marine electricity. Have all electrical installations checked (tightening and connections) every year.
- Disconnect the boat's shore power when the system is not in use.
- Connect the relay boxes or metal casings of the installed electrical equipment to the boat's protective conductor (green or green with yellow stripe).
- Use double-insulated or earthed appliances.
- If the reverse polarity indicator is activated, do not use the electrical installation. Rectify the polarity fault before using the vessel's electrical installation (this applies only to polarised circuits with a polarity indicator).

If a DC/AC converter is fitted on board: it is essential to switch off the DC and AC circuits before working on the cabin AC sockets.

- Never let the end of the boat/shore supply cable hang in the water: This may result in an electric field that could injure or kill nearby swimmers.
- Incorrect use of alternating current systems will result in a danger of electrouction.
- Do not work on a live AC system.

To reduce the risk of electric shock and fire:

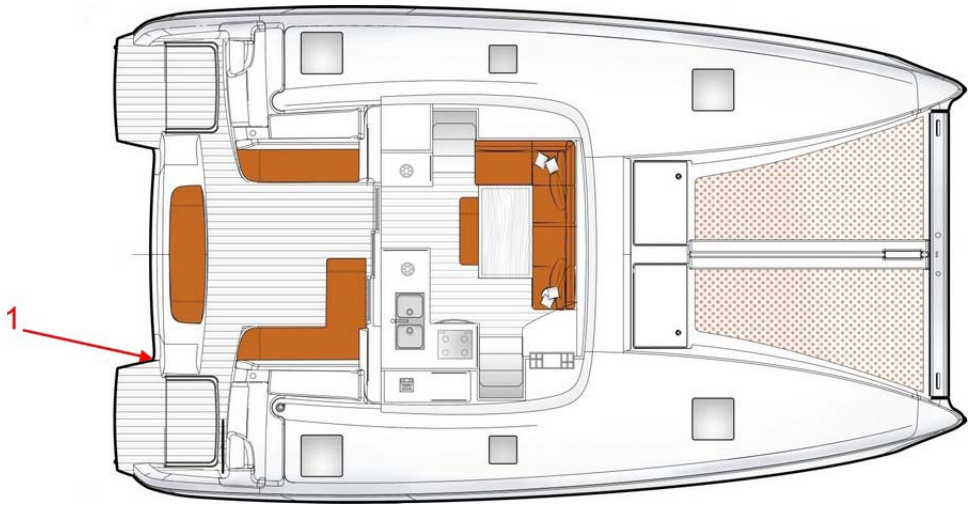
- Switch off the switch on the boat's shore cable before connecting or disconnecting the power cable from the shore cable.
- Connect the shore cable to the boat's power supply input connector before connecting it to the shore socket.
- If the reverse polarity indicator is activated, immediately disconnected the switch of the shore to boat cable (if fitted).
- If the reverse polarity indicator is activated immediately disconnect the cable.
- First disconnect the shore line on the quay.
- Ensure the protective cover of the power supply input of the shore to boat cable is properly closed.
- Do not alter the connections of the shore power supply cable: only use compatible plugs and sockets.

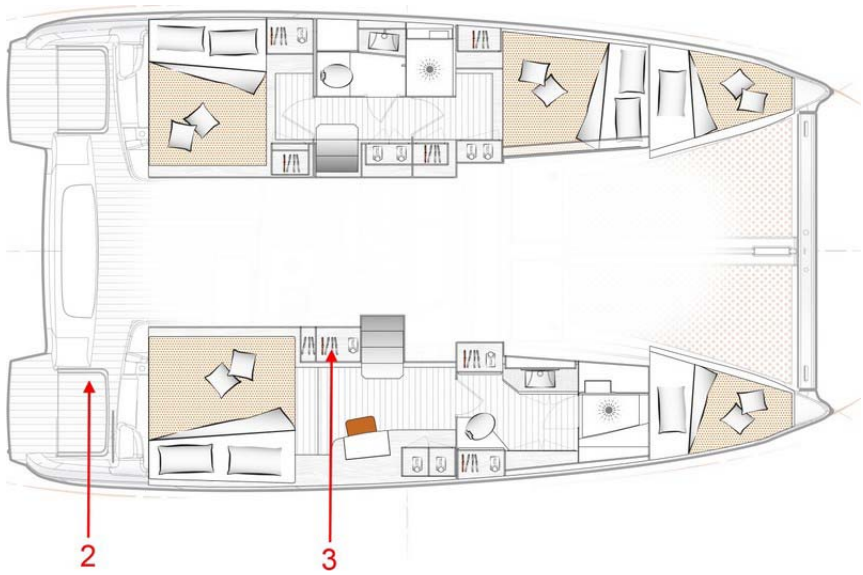
Electrical connections change over time. It is necessary to have the boat's electrics checked regularly and at least once every two years by a professional. Special attention should be paid to the tightness of the electrical connections.

Every month, you are advised to test the circuit breaker or residual current differential switch, recognisable by its "test" button.

8.4.2 AC shore socket

Location of components





Ref 1: AC shore socket (onboard & Air conditioning)
Location: Starboard cockpit

Ref 2: Bipolar circuit breaker (Protection)
Location: Starboard engine compartment

Ref 3: Differential switch (Operation)
Location: Starboard aft cabin

Operation

- First plug the extension cable into the AC socket on the boat, then into the socket onshore.
- First unplug the extension cable from the socket onshore, then from the AC socket on the boat.

8.4.3 AC source selectors

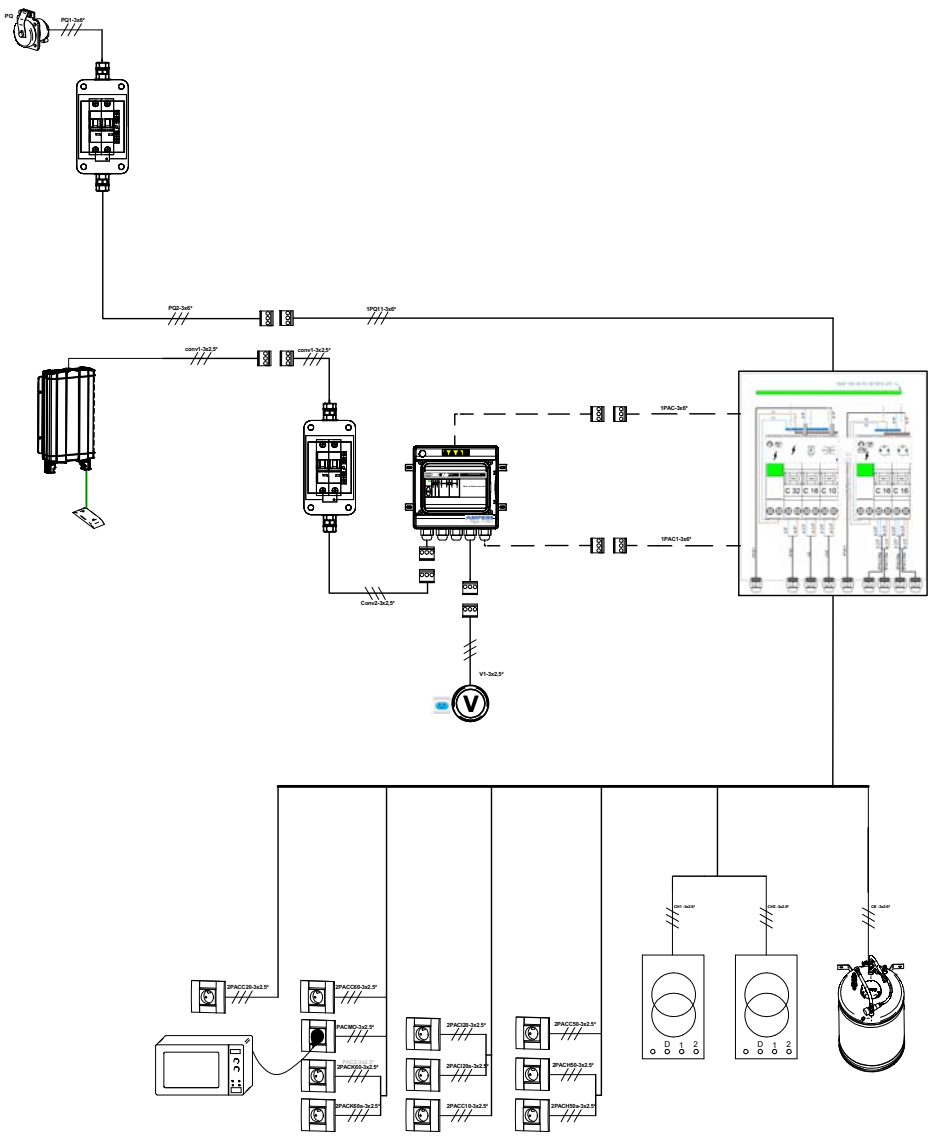
The shore-generator switch is the actuator for:

- switching between the different AC sources available on the boat. These include the dock socket(s) and the generator.
- measuring the voltage, frequency and current of the power sources connected to it.

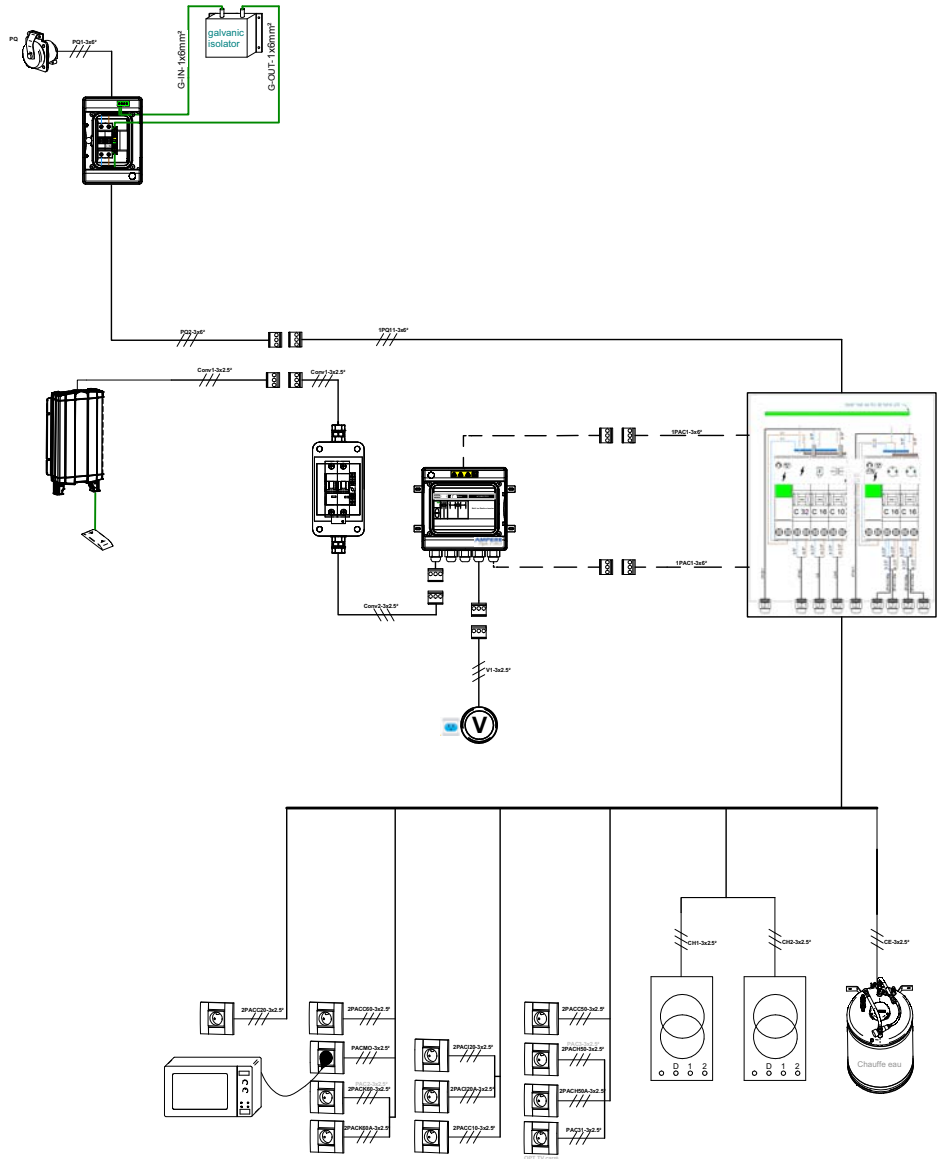
8.4.4 Diagram of layout

AC ELECTRICAL SYSTEM

Europe Version (220V / 50Hz)



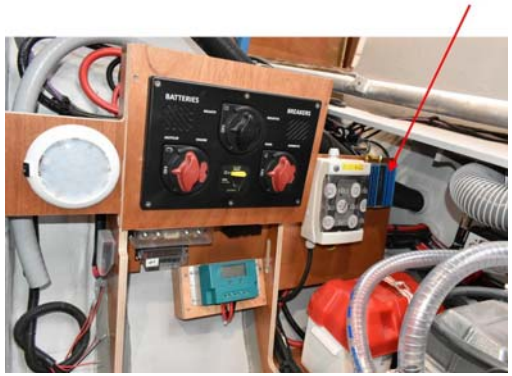
US Version (110V / 60HZ)



US Version:

This functions on the principle of isolating the earth of the boat from that of the shore using a galvanic isolator. This assembly protects the motors from electrolysis in the event of faulty insulation between the negative side of the battery and the boat's earth.

Installation of galvanic isolators: Starboard engine compartment



Circuit breaker of sockets
Location: Chart table

8.4.5 DC/AC converter

Description

- The inverter converts the DC voltage of the service battery bank to AC voltage. The circuit between the inverter and the batteries is protected by a fuse or a circuit-breaker.
- The inverter is earthed by an earthing plate located under the hull (see Chapter: EARTHING PLATES).
- The voltage measurement delivered at the converter output is visible on the touch screen.

Operation

Power supply for the 220V AC electric sockets in the cabins:

Once there is sufficient nominal voltage coming from the AC switch panel, AC power is supplied by the onshore socket or by the generator.

If there is insufficient nominal voltage coming from the AC switch panel, the AC power supply automatically switches over to the inverter. In this way, the power for the 220V sockets in the cabins can be supplied by the inverter, itself supplied by the service battery bank. Be careful to disconnect the inverter circuit to prevent the AC power supply automatically switching over and to prevent accidental discharge of the service battery bank. This can be done by:

- setting the inverter's circuit-breaker to the OFF position; or,
- setting the switch located on the inverter to the OFF position.

Simply cutting the AC power supply at the switch panel does not cut the AC power supply to the cabins: it is also necessary to disconnect the DC supply.

Location: Starboard aft cabin

1. Operation relay
2. AC circuit-breaker
3. DC/AC converter

Operation

- The inverter is fully automatic.
- A remote control is located near the boat's switch panel. To start the converter put the switch on the invertor in the "REMOTE" position then put the switch located on the remote control in the "ON" position.
- If the switch on the inverter is in the "OFF" position, you cannot use the remote control to start it.
- The DC/AC converter operates by default when shore power is not supplied. It is controlled by a relay connected to the shore power supply. This converter powers the indoor sockets and some onboard appliances.
- When shore power is not connected, the relay automatically connects the inverter to a part of the onboard AC circuit.
- When the shore power socket is plugged in and powered, the relay automatically disconnects the inverter.

Maintenance

- Check at least once a year that the inverter cables and connections are securely tightened.
- Clean the inverter by removing any accumulated dust to ensure good ventilation.

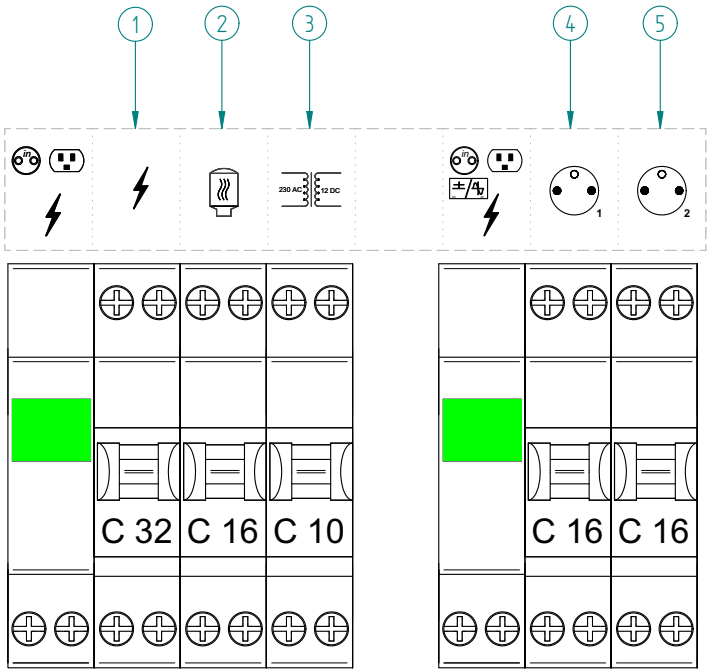
Control located on the equipment

Remote control
Location: Chart table

- Refer to the manufacturer's instructions for use and maintenance.
- NEVER:
  - connect the inverter AC lead to an AC terminal or to the onboard generator.
  - disconnect the wiring from the inverter when in use.
  - open the inverter.

8.4.6 AC breakers

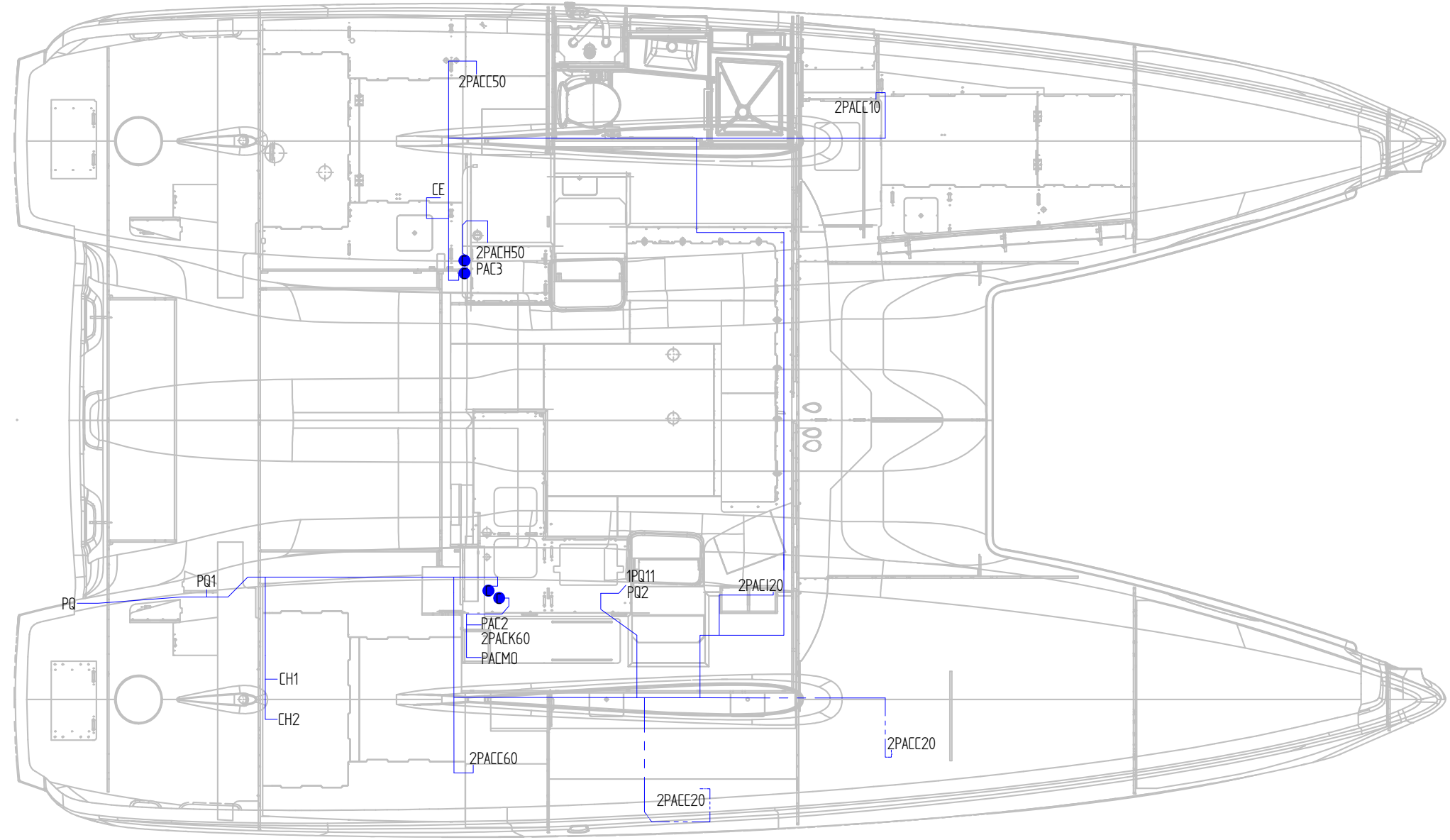
Location: Starboard aft cabin



1. AC supply
2. Water heater
3. Battery charger

4. Interior AC socket circuit 1
5. Interior AC socket circuit 2

8.4.7 Hull wiring looms - AC circuit



8.5 PROTECTION AGAINST ELECTROLYSIS / EARTH PLATE

8.5.1 Anodes

General points

- The sacrificial anode protects the submerged elements of the boat against electrolysis.
- A sacrificial anode is a consumable part that protects submerged metal parts by its dissolution (oxidation). The anodes used are made of a metal that is more readily reductive than the metal they are protecting.
- On a new boat, all the underwater metallic components seek to reach the same electric potential, which leads to the rapid deterioration of the anodes during the first few weeks in the water.
- You can put several anodes on the hull.

Maintenance

- At least 2 times a year, check the corrosion on all of the anodes. Change the anode if necessary (Before it has lost 50% of its weight).
- Use the appropriate anodes for the cruising area: magnesium anodes for fresh water; zinc anodes for seawater.
- If the motor mountings are raised, the anodes are out of the water: in this case the anodes can no longer protect the sterndrive: take note of the skipper's recommendations.
- When the boat is kept in a dry dock, a light deposit of dust will settle on the anodes: clean the anodes before relaunching.

- Never cover the anodes in antifoul.
- During the first few weeks that the boat is in the water, check the anodes and replace them if necessary: they erode very rapidly during this period.

Cleaning anodes

- Use emery paper. Do not use metal brushes or steel tools to clean the boat as this may damage the galvanic protection.

Replacing the anodes

- The anodes are fastened with screws and nuts. First, remove the screws and nuts that hold the anode, then clean the contact surface. Press the new anode to obtain a good electrical contact.
- Change all the anodes every year.

Engine base anode

8.5.2 Earthing plates

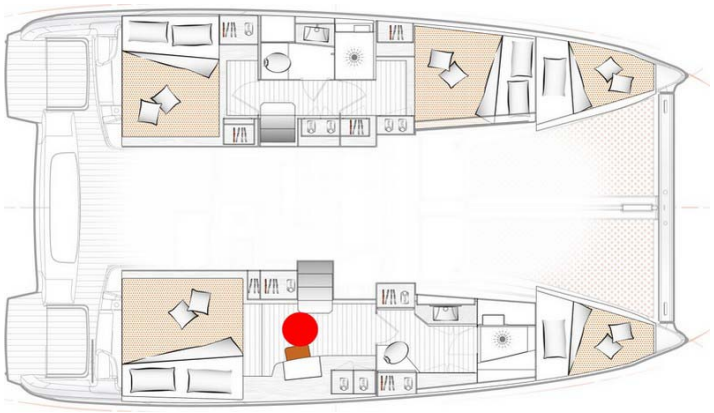
- An earthing plate is a shot-peened plate mounted on the hull to recreate an earth neutral point on the electrical circuit of the equipment supplying AC power (generator and AC/DC convertor). The earthing plate earths this equipment.

The earthing plate is not an anode: it must not be allowed to deteriorate.

- If the earthing plate deteriorates, consult a professional immediately to determine the cause. Because it is mounted across the hull below the waterline, deterioration of the earthing plate puts the boat at risk of sinking.

Outside view

Inside view



Never antifoul over the earthing plates.

LIQUEFIED PETROLEUM GAS (LPG) SYSTEM

9

9.1 GENERAL POINTS

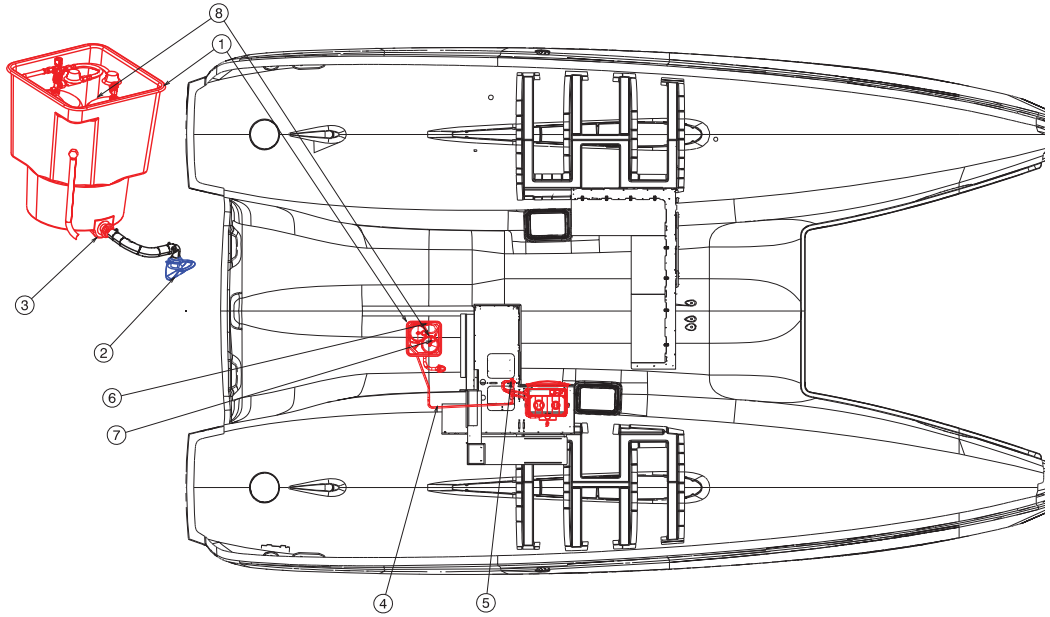
- The working pressure of the LPG unit is 28 millibars.
- Recommended cylinder capacity:

  Europe Version: 2,75 kg of butane.

  US Version: 10 lb of propane.

- Have the hoses, the entire LPG system and the flue pipes in the LPG system inspected professionally and regularly (or at intervals determined by the national requirements of the country in which the boat sails), and have them replaced if damage is detected.
- Taps attached to empty cylinders must be closed and disconnected. Protective covers, lids or caps must be held in place. Spare bottles must be stored outside on the boat and protected from weather and mechanical damage. If a gas leak occurs, it is essential that the gas escapes outside.
- Do not impede access to the components of the LPG system.
- Do not use the housings or the LPG bottle lockers to store other equipment.
- Check the vent pipes at least once a year. Replace them if they have deteriorated or split.

Location of components



Reference	Designation
1	Gas cylinder locker
2	Kitchen sink thru-hull drainage
3	Gas locker drain
4	Gas system
5	Gas supply valve
6	Bubble tester
7	Gas expansion valve
8	Gas cylinder

Gas cylinder locker

(Europe Version)

(US Version)

Gas solenoid (US Version)
Location: Under the sink

Gas supply valve
Location: beneath the oven

Cooker / Oven

9.2 OPERATION OF THE LPG SYSTEM

- Valves for supply lines and cylinder valves must be closed when appliances are not in use, before changing a cylinder and immediately in case of emergency.
- Appliance valves must be closed before opening the cylinder valve.
- Ventilation is necessary when appliances that consume oxygen from inside the boat are used.
- If the stove is not suspended by gimbals, it should not be used when wide roll angles or continuous listing are likely.
- Please refer to the manufacturer's notes for the use and maintenance of the LPG cooker.

9.3 VERIFICATION OF THE LPG SYSTEM

The LP system should be tested for leakage before each use in any of the following ways:

- If the LPG circuit is equipped with a pressure gauge:

  Before each use, close the appliance valve, open the LPG cylinder valve, allow the pressure gauge to stabilize, close the LPG cylinder valve and observe the pressure indicated by the pressure gauge near the LPG cylinder for 3 minutes. The pressure indicated by the manometer should be constant if there is no leak in the system.

  The pressure indicated by the manometer should be constant if there is no leak in the system. If bubbles are observed in the detector liquid, there is a leak.

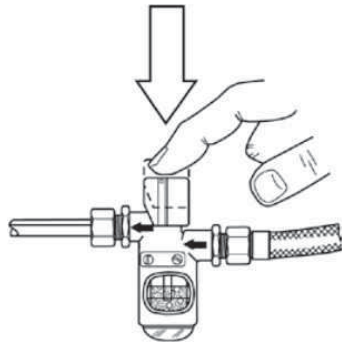
  NOTE: The pressure gauge only indicates vapour pressure, which is a constant at a given temperature. It gives no indication of the amount of LPG remaining in the cylinder..

- If the LPG circuit is equipped with a bubble leak detector, use it as follows:

  Regularly observe the bubble leak detector.

  OR

  Once the installation is pressurised and stabilised, press the detector push button. The installation is not leaking if bubbles do not appear in the detector liquid. If bubbles are observed in the detector liquid, there is a leak.



- Carry out a manual search by applying a foaming solution, soapy water or a detergent (with the burner taps closed and the installation and gas bottle taps left open). Foaming solutions for detecting leaks in gas installations conforming to EN 14291 are adequate for these requirements.

- If an LPG leak is detected or suspected, immediately take the following measures:
    - Cease use of all LPG appliances;
    - Disconnect the LPG supply from the supply valve(s);
    - Extinguish all naked flames and other sources of ignition (heaters, cooking appliances, pilot lights, etc.);
    - Do not operate electrical switches;
    - Evacuate the area if possible.

NOTE: Leak tests carried out by the boat user are not a substitute for regular and complete checks of the LPG circuit by a competent professional.

- When the cooker is on, ventilate well to prevent any risk of asphyxiation.
- Do not use the cooker as a means of heating.

- If a leak or fire from an LPG tank is detected, close the main LPG supply valve and do not use LPG appliances.
- Do not use an installation with a leak before it has been inspected and repaired by a competent person.
- Do not modify the boat's LPG system. Installation, modification and maintenance should be carried out by a qualified individual. Have the system checked at regular intervals or as prescribed by national requirements.
- Never use a naked flame to check for leaks.
- Do not use a hotplate or an oven to heat the living areas.
- Fuel-burning equipment with a naked flame consumes the oxygen in the cabin and leaves combustion residue in the boat. Ventilation is necessary when this equipment is used.Open the vents provided for this purpose when using this equipment. Do not use a hotplate or an oven to heat the living areas. Never obstruct the openings provided for ventilation.
- Ventilation requirements have been calculated for LPG appliances as installed. Additional ventilation openings may be required if other appliances are installed in addition to these (please consult a professional).
- Never leave the boat unsupervised when equipment using LPG with a naked flame is on.
- Do not smoke or use a naked flame when replacing LPG bottles. Close the tap on the empty bottle before detaching to replace it.
- To ensure sufficient ventilation, make sure that you open the hatches or ports near the hotplate when using it.

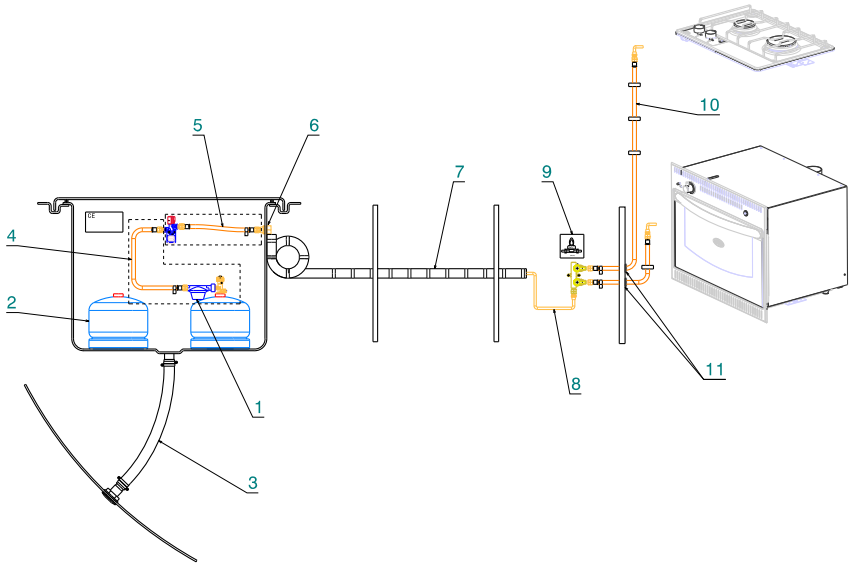
- Do not use solutions containing ammonia when testing for leaks manually (ammonia, which is present in certain soaps and detergents, attacks brass connections). Although the damage may at first be impossible to detect, the cracks and leaks may appear several months after contact with the ammonia).

<u>To change an LPG bottle</u>

1. Close the tap on the LPG bottle
2. Detach the LPG bottle
3. Replace the LPG bottle
4. Attach the new LPG bottle
5. Open the tap on the LPG bottle

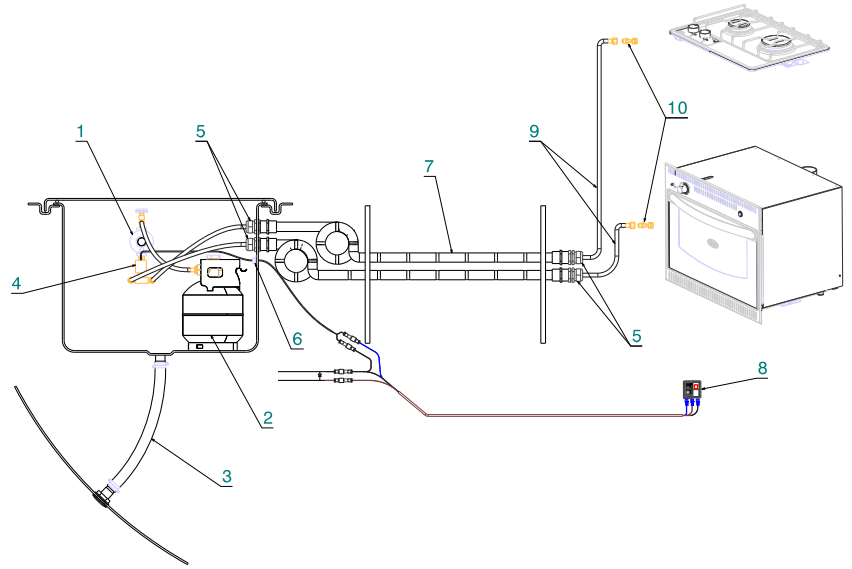
9.4 DIAGRAM OF LAYOUT

Europe Version



Reference	Designation
1	Regulator valve
2	Gas cylinder
3	Drain
4	Gas bottle connection kit
5	Bubble tester kit
6	Rubber washers
7	Ringed PVC sheath
8	Copper gas connection kit
9	Label
10	Gas appliance connection kit
11	Bulkhead fitting

US Version



Reference	Designation
1	Regulator valve
2	Gas cylinder
3	Drain
4	Electromagnetic valve (12V)
5	Bulkhead fitting
6	Wire passage
7	Ringed PVC sheath
8	Solenoid switch
9	Plastic propane pipe
10	Gas appliance connection kit

DOMESTIC APPLIANCES

10

10.1 FRIDGE

General points

- The fridge comprises 3 components: the compressor, the evaporator and the condenser. These components are connected by a closed refrigerant gas circuit. The fridge is air-cooled.
- The fridge is DC powered. It is designed to chill food and drink. Any other use is dangerous and must be strictly avoided.
- A breaker protects the electrical circuit.
- The ON/OFF start button is located on the fridge.
- The thermostat is in the inside compartment of the fridge. It enables selection of the desired temperature setting for the inside of the fridge.
- The refrigration power can be affected by:
    - The ambient temperature,
    - The quantity of food to chill,
    - The frequency with which the door is opened.

Maintenance

- Clean the evaporator with a damp cloth at least once a year. Never use cleaners which are abrasive or acidic, or which contain solvents, for cleaning the evaporator.
- Regularly clean the fridge door joint with a damp cloth.
- Regularly defrost the fridge.
- During wintering leave the fridge door open to avoid damp and smells forming.

- Refer to the manufacturer's instructions for use and maintenance.
- Never heat or use tools to defrost the inside of the fridge more quickly (doing so may damage the interior surface).
- Never obstruct the heat exchanger of the fridge.

Galley fridge (Positive temperature)

NOTE: The control is located directly inside the device.

Galley fridge (Negative temperature)

NOTE: The control is located directly inside the device.

10.2 MICROWAVE

General points

- The microwave is AC powered.
- A breaker protects the electrical circuit.
- The microwave is designed to reheat food and drink or to cook food. Any other use is dangerous and must be strictly avoided.
- The microwave must never be started when empty.
- Remove all foil or metallic packaging elements before putting food in the microwave.
- Remove airtight coverings from packaging before putting food in the microwave.

Starting up

- Use the switch to select the desired power source (shore power or generator).
- Put the microwave circuit-breaker in the ON position.

Maintenance

- Regularly check the door seals.
- Regularly clean the inside of the fridge with a damp sponge.

Refer to the manufacturer's instructions for use and maintenance.

AUDIO-VISUAL EQUIPMENT

11

11.1 TELEVISION

General points

- Power for the television is supplied by alternating current. Depending on the equipment of the boat, alternating current may be provided by:
    - the AC shore power socket,
    - the DC/AC converter powered by service batteries.
- A circuit-breaker protects the circuit.
- Pre-cabling for the aerial is already installed on the boat.

Location: Saloon

ONBOARD COMFORT

12

12.1 ELECTRONIC EQUIPMENT

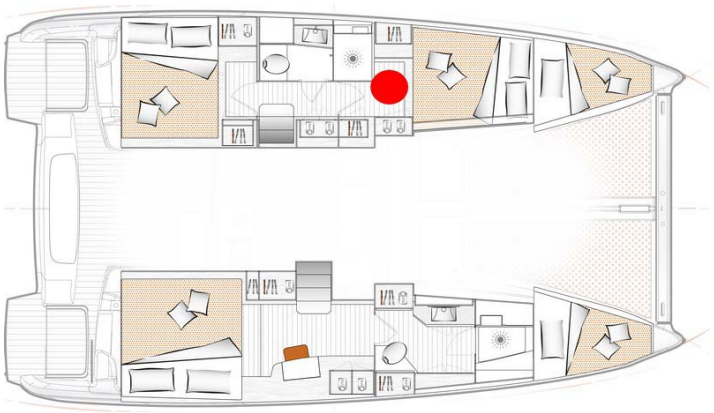
The onboard electronics are powered by direct current.

Control: Electrical panel

Sensors

- Do not store equipment on top of the sensors.
- Do not cover the sensors in antifoul when antifouling the hull.
- Regularly clean the sensors.

Location of sensors:

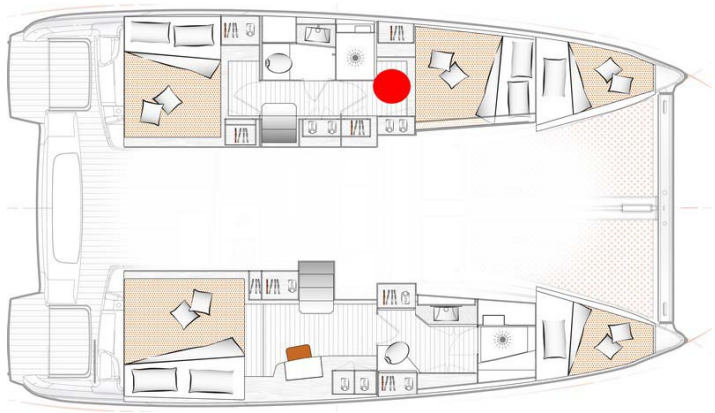


Autopilot

- To ensure optimum perfomance, keep all metallic objects away from the gyrocompass.
- Do not store equipment close to the calculator and electrical connections.

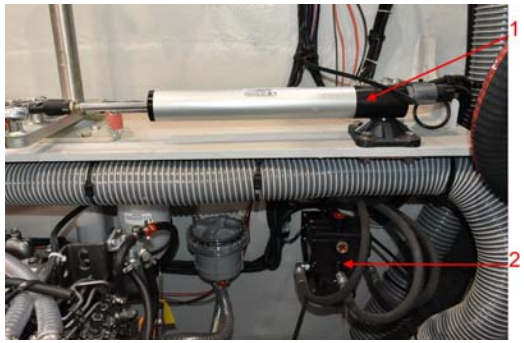
Layout of components:

Gyrocompass



Vessel Management Unit
Location: Starboard aft cabin

Location: Starboard engine compartment



1. Hydraulic piston
2. Tank

VHF

Location: Chart table

1. VHF
2. AIS

Location: Locker forward

1. AIS aerial
2. VHF/GPS aerial

Cockpit steering station

- Place the protective covers on the repeaters when unused for long periods.
- When sailing, store the protective covers inside the boat to avoid loss.
- The various repeater displays are back-lit.
- Regularly clean the dials of the repeaters with fresh water.
- Refer to the manufacturer's instructions for use and maintenance.

12.2 FUEL-BURNING EQUIPMENT FOR PURPOSES OTHER THAN PROPULSION

- Make sure that the ventilation openings in the engine (and, if installed, generator) compartment are well-cleared.
- Stop the engine and refrain from smoking while the fuel tank is being filled.
- Have your fuel circuit checked regularly by a professional engineer.
- Avoid any contact between inflammable materials and the hot sections of the engine.
- Take all necessary precautions to avoid contact with naked flames and other hot areas.
- Do not obstruct or modify the ventilation system.
- Fuel stored outside the tanks (jerrycans, portable fuel tanks, etc.) must be stowed on deck and protected from bad weather and mechanical damage.

- Never store fuel tanks or tanks containing petrol in any area not specifically designed for storing petrol.

WATER SYSTEMS

13

13.1 GENERAL POINTS

- It is essential to rinse the entire on-board water system the first time the boat is used (the water system is protected in the factory by a non-toxic antifreeze).

- The water tanks may have had an anti-algae treatment using a copper sulphate based product. It is advisable to renew the treatment according to the area in which the boat is sailing.

- Drain all the water systems during winterisation (in particular the cockpit shower and water heater) to avoid damage from freezing.

- Clean/change the filters regularly.

- Regularly check water-tightness of joints in the water system installations. Check that screws and bolts are well tightened and replace them if they are worn or corroded.

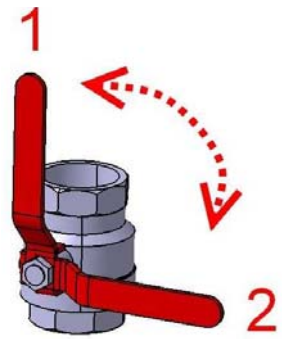
- Disconnect the onshore shore water supply before leaving the boat (if fitted).

- If the boat is sailing in temperatures below freezing, antifreeze can be used in the water systems: use a non-toxic antifreeze for potable water.

NEVER USE AUTOMOBILE ANTIFREEZE: RISK OF POISONING.

13.2 USING A VALVE

The valve is closed when the valve handle is at right angles to the pipe. The valve is open when the valve handle is in line with the pipe.



1. Open valve
2. Closed valve

Valves, thru-hull inlets and other brass or bronze fittings have a lifespan of around 5 years. All valves, thru-hull inlets and other brass or bronze accessories must be checked by a professional every year and replaced as necessary.

Using the drainage valve

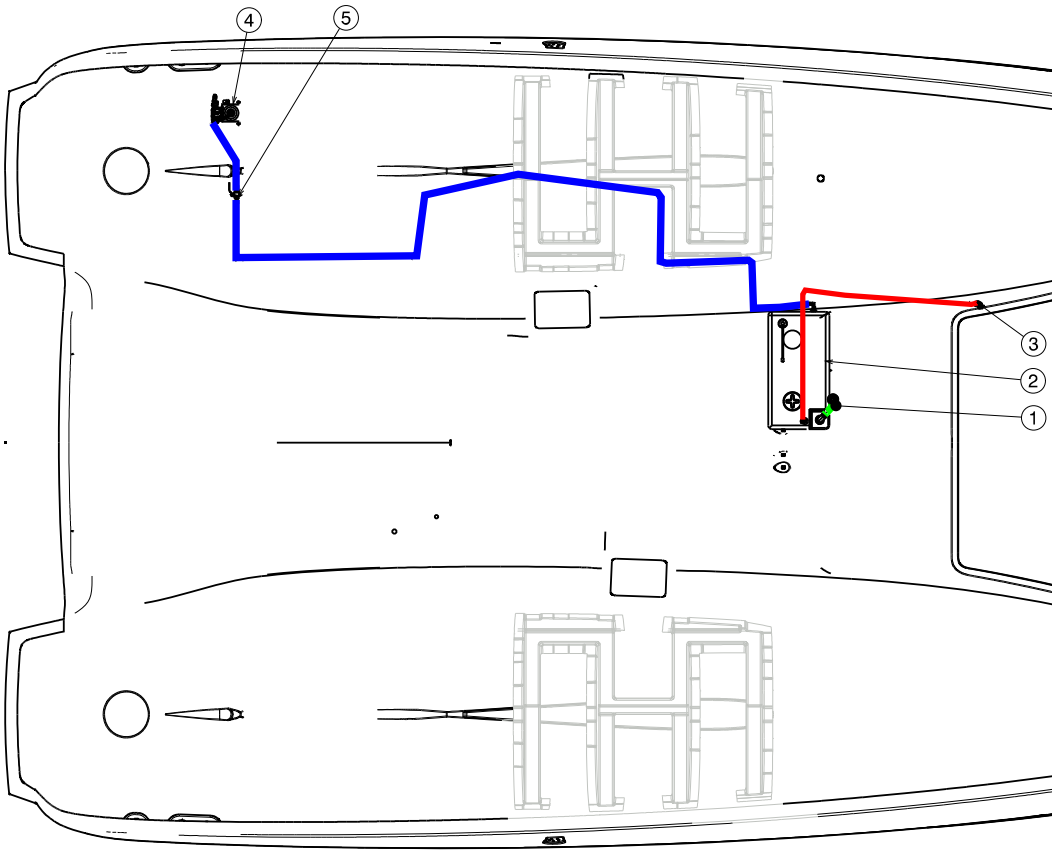
- The direct-to-sea drainage valve can be sealed by means of the drilled hole on the handle.
- To lock the drainage valve in the closed position: Pass the tightening collar around the drainage valve and feed through the hole in the handle as shown.

- Beware of any unintentional draining.

Plastic valve

Bronze valve

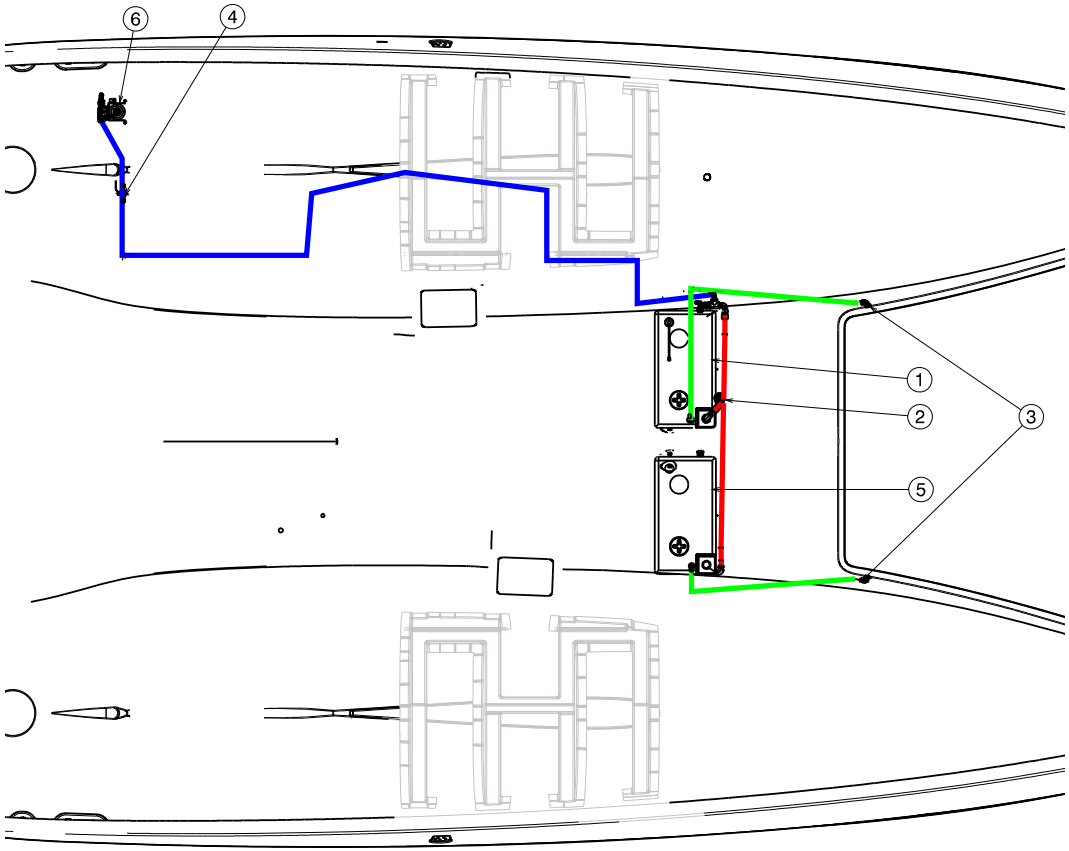
13.3 FRESH WATER FILLING SYSTEM



Reference	Designation
1	"WATER" deck filler
2	Fresh water tank
3	Fresh water tank vent
4	Water unit
5	Water tank / water unit supply valve

Gauge: Touch screen

Extra water tank

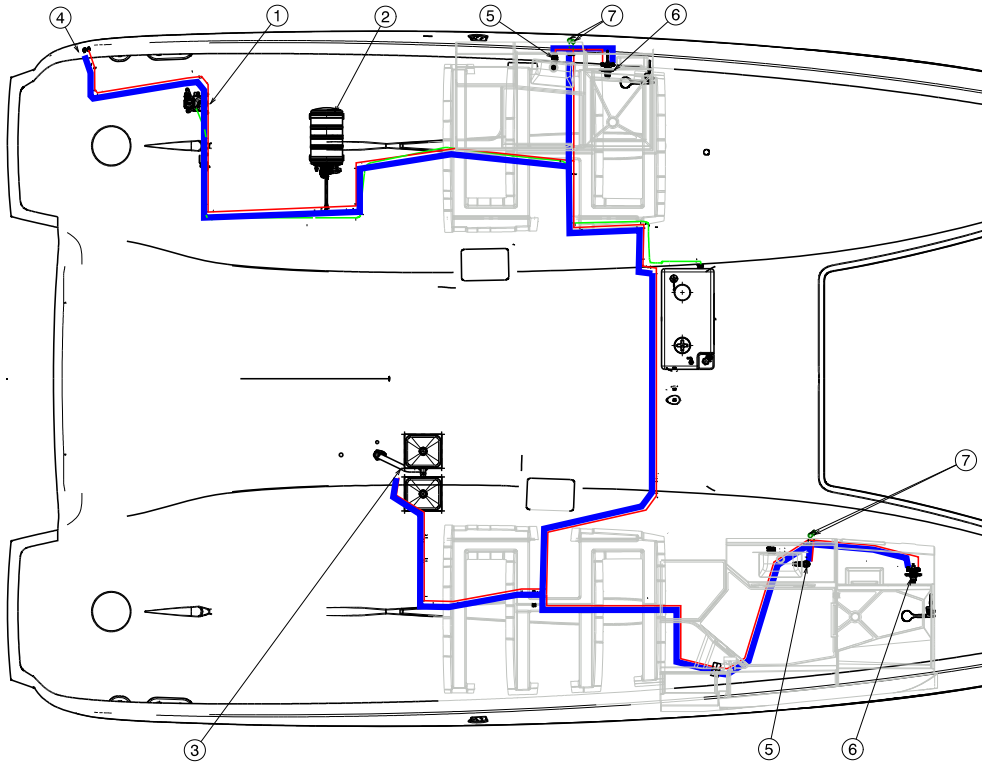


Reference	Designation
1	Fresh water tank (standard)
2	"WATER" deck filler
3	Fresh water tank vent
4	Water tank / water unit supply valve
5	Extra water tank
6	Water unit

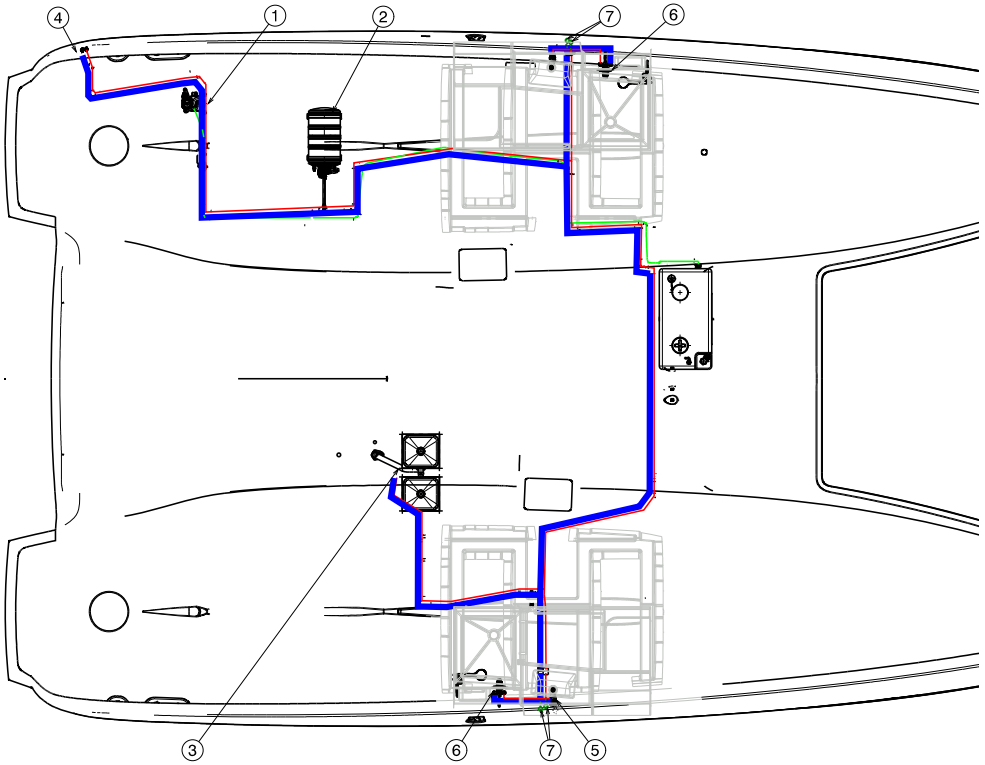
Water tank
+ Extra water tank
Location: Locker forward

13.4 FRESH WATER DISTRIBUTION SYSTEM

3-cabin layout



4-cabin layout



Reference	Designation
1	Water unit
2	Water heater
3	Galley sink
4	Cockpit shower
5	Head washbasin
6	Shower
7	Flow rate detector

13.5 MAIN PLUMBING EQUIPMENT

13.5.1 Water unit

- The water unit is powered by direct current.
- It supplies all the boat's plumbed-in equipment with fresh water. It is fitted with a pressure switch that activates the flow when the pressure in the water system falls.
- The water unit must only be used with the fresh water supply. All other use (e.g. seawater, bilge water, oil products) must be strictly avoided.
- The water unit is switched on at the electrical panel.
- Make sure that the water unit never runs dry.
- The pressure and capacity of the water unit depend on the temperature of the stored fresh water supply.

Control: Electrical panel

- When the water unit is powered by the DC circuit, the switch lights up in red.
- When the ON indicator turns green, the water unit is operating.

Location: Port engine compartment

1. Fresh water filter
2. Water unit

Water tank / water unit supply valve

NOTE: A valve allows the water unit to be isolated from the tanks for maintenance operations.

13.5.2 Cockpit shower

- The cockpit shower provides fresh water for rinsing off.
- The shower is fitted with a mixer tap.
- The tap has a dual function:
    - It allows the water to be turned on or off,
    - It allows a choice of water temperature (hot water / cold water).

Operation

- To use the shower, turn on the water by tipping the tap on its axis.
- Press the button on the top of the shower to allow the flow of water.
- Choose the required temperature by turning the tap clockwise or anti-clockwise.
- After using the shower, it is important to turn off the water by tipping the tap back into its original position.

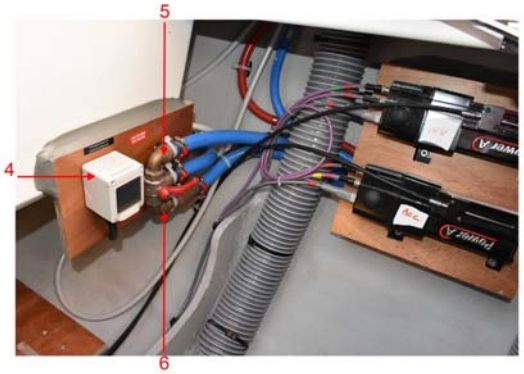
Location: Cockpit

13.5.3 Deck wash pump (seawater/fresh water)

- The deck wash pump is supplied by direct current.
- The deck wash pump allows the deck or the boat's tender to be washed.

Layout of components: Port engine compartment

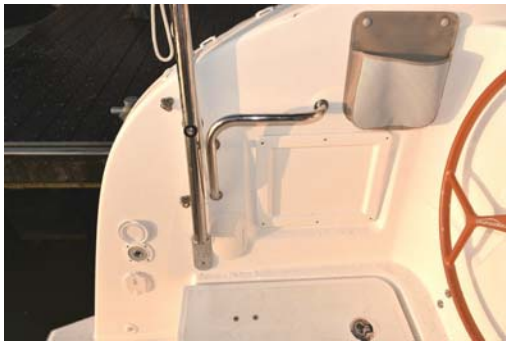
1. Seawater intake
2. Deck wash pump
3. Seawater filter



4. Control - Deck wash pump
5. Seawater supply
6. Onboard water supply

Operation

Location: Cockpit



- Open the seawater intake valve.
- Select the seawater or fresh water supply.
- Attach a hose to the connector provided in the cockpit.
- Start the pump.

13.5.4 Shore fresh water supply

General points

There are two options for supplying the fresh water circuit of the boat:

1. via the water unit supplied by one or more water tanks,
2. by fresh water taken from the dock.

These two possibilities of supplying fresh water circuit of the boat are independent from each other.

1. Supply of the fresh water circuit by the water unit and the water tanks

- Open the valve of the desired water tank located near the water unit (if the boat has several water tanks, it is advisable to open only one valve at a time).
- Switch on the water unit.

2. Supply of the fresh water circuit by taking fresh water from the dock

- Connect a water pipe to the onshore water supply.
- Open the water supply tap located on the pontoon.
- A non-return valve in the distribution circuit allows the shore supply water to be used without opening the valve.
- The connection of the water intake is located in the cockpit.

Disconnect the onshore shore water supply before leaving the boat.

NOTES

- The water from the onshore supply is delivered under pressure directly into the onboard water circuit. It is not necessary to switch on the water unit.
- It is not possible to fill up the water tanks using the onshore water supply.

13.5.5 Seawater electric pump

Location: Under the sink

1. Seawater electric pump
2. Seawater filter
3. Electric pump control
4. Spout

13.5.6 Water heater

- The water heater enables the use of hot water on board the boat.
- The water heater operates by recovering heat from the starboard engine cooling circuit or by means of the boat's AC electrical circuit.
- The water heater thermostat regulates the water temperature only when it is operating with electrical resistance. The thermostat is pre-set in the factory.
- The mixer tap allows the temperature leaving the water heater to be adjusted.
- Never switch on the water heater if it is not filled with water.

Location: Port aft cabin

1. Mixer tap
2. Water heater (25L)

Refer to the manufacturer's instructions for use and maintenance.

13.5.7 Watermaker

General points

- The watermaker allows fresh water to be produced from the seawater.
- The watermaker can be supplied either:
    - by DC (direct current),
    - by AC (alternating current).
- A circuit-breaker protects the circuit.
- The watermaker circuit comprises several elements:
    - seawater intake,
    - seawater filter(s),
    - circulation pump,
    - electric valve for automated rinsing,
    - manual rinsing valve,
    - motor block and high-pressure pump,
    - membrane block,
    - control panel,
    - seawater discharge valve.

Operation

- Seawater enters the membrane block under pressure, which allows only pure water to pass out.
- A sensor at the membrane block outlet allows measurement of the salt content of water filtered in this way. A three-way valve allows drinking water to be directed automatically to the tanks or for water that is too salty to be discharged to the sea.
- The drinking water filtered by the membranes is sterile; it is advisable to treat it with a weak dose of chlorine from time to time and to mineralise it if consumption is prolonged.
- Fresh water production is affected by the temperature of the seawater used and the cleanness of the filter.

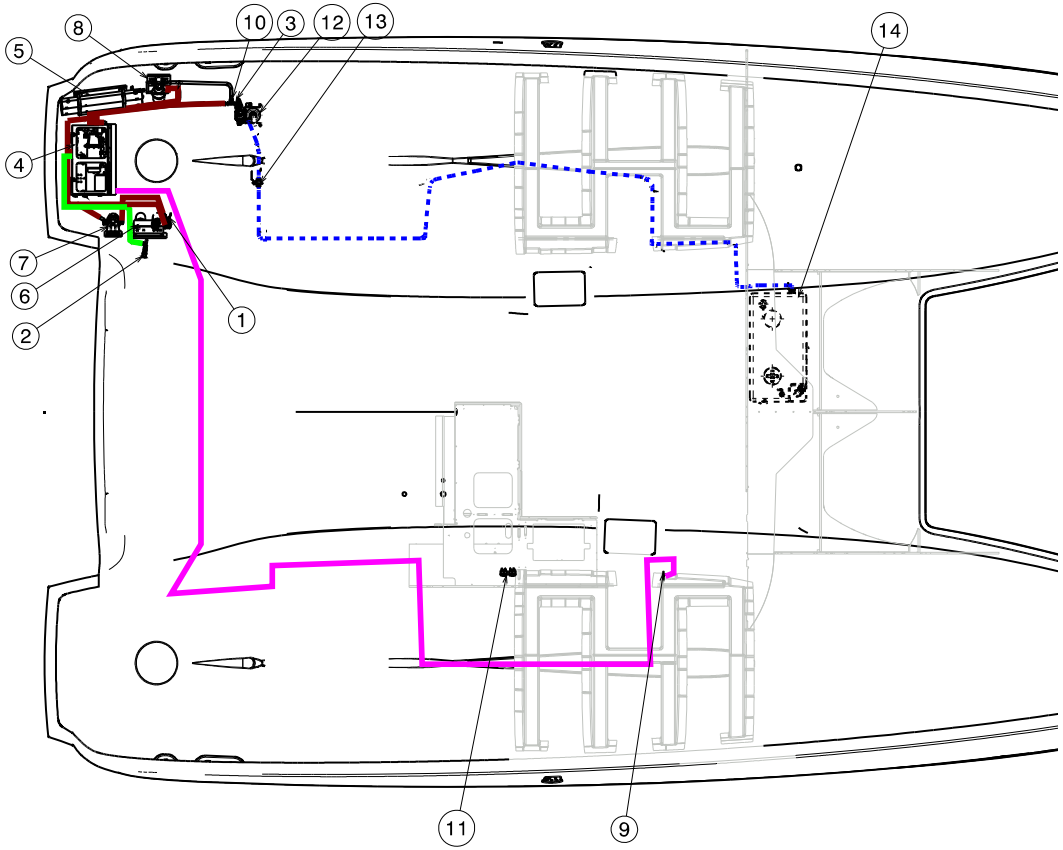
Operation

- Before starting the watermaker circuit, check that the supply and discharge valves are open.
- Using the watermaker with DC supply needs a lot from the battery bank: make sure to recharge them regularly by running the boat's engine.
- The different quality and salinity of the seawater used affect the production of fresh water; it is advisable not to use the watermaker in areas of heavy sail traffic or where the water is muddy, polluted or brackish.
- The membranes are temperature-sensitive; in the event of negative (0°C and less) or too hot (60°C and over) temperatures, the membranes are likely to tear.

Maintenance

- Every week, rinse the system with fresh water. This can be done manually or automatically as preferred. The fresh water used for rinsing the circuit must not be under pressure as this can damage the membranes.
- Every 6 months, the seawater filter must be changed.
- When the watermaker is not being used for a long period, rinse the system every month or sterilise the membranes.

DIAGRAM OF LAYOUT



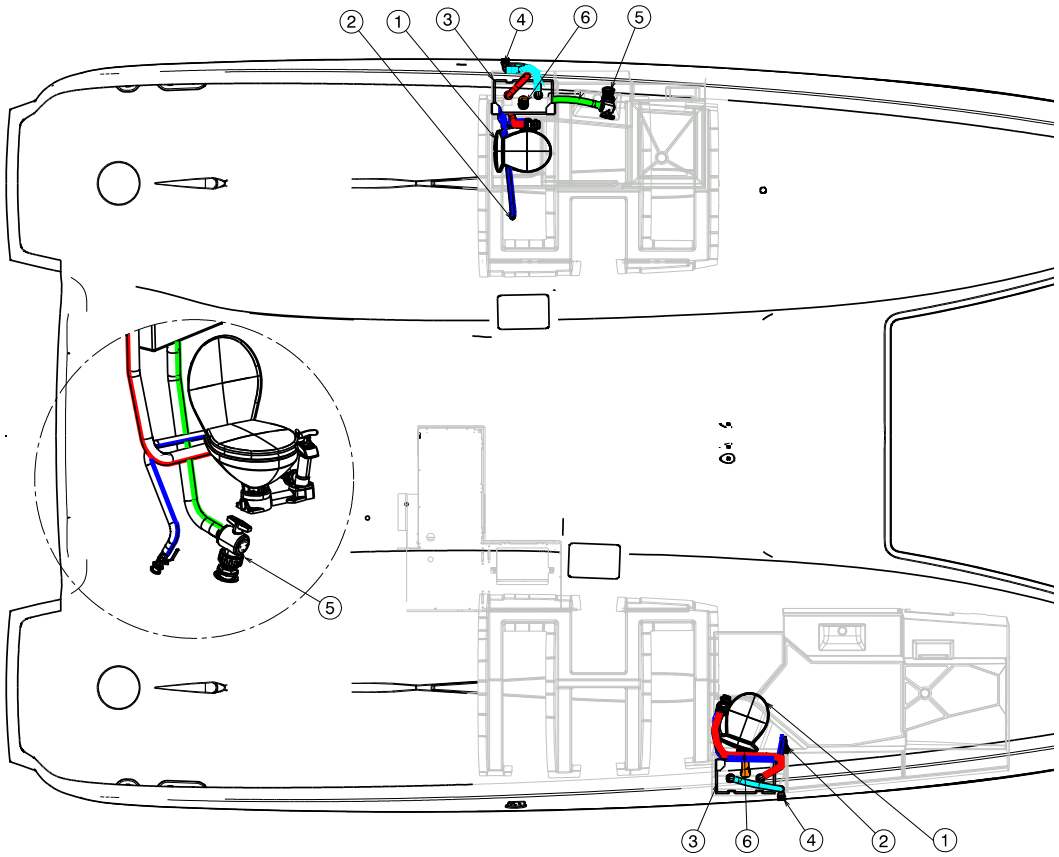
Reference	Designation
1	Watermaker seawater intake
2	Brine drainage
3	Connection
4	Water maker motor
5	Membrane block
6	Filters
7	Seawater filter
8	Rinsing pump
9	Control box
10	Connection
11	Breaker
12	Water unit
13	Water maker/water unit feed valve
14	Fresh water tank

13.6 BLACKWATER SYSTEM (TOILET)

General points

- Blackwater is human waste including water flushed from the toilets.
- Close the valves after each use and especially when the boat is unattended.
- Regularly check the valves and thru-hull seacocks for proper operation and watertightness.
- Regularly check the tightness of the flexible pipe clamps and connections.

13.6.1 Diagram of blackwater system



	Drainage hose (Hull) - 50mm diameter
	Suction hose (Deck) - 50mm diameter
	Sea water vent pipe - 20mm diameter
	Vent pipe - 38mm diameter
	Drainage hose (Sewage) - 38mm diameter

Reference	Designation
1	Marine toilet
2	WC seawater intake
3	Blackwater tank
4	Blackwater tank vent
5	Drainage of blackwater tank into the sea
6	WASTE drain nozzle

YOUR BOAT IS FITTED WITH A BLACKWATER TANK

To minimise odours from this tank, we suggest following the use and maintenance guidelines below:

1) Holding tank

- A blackwater tank is used solely for the temporary collection of water from the toilets.
- The tank can be emptied in 2 ways:
    - By connection to a pumping system that empties the tank by suction. This system uses the "WASTE" deck connection.
    - Via the thru-hull fitting, which empties directly into the sea (provided that the laws of the country in which the vessel sails permit dumping into the sea).
- Only use water-soluble toilet paper to avoid blockages.

Note: Sanitary towels and other items (paper handkerchiefs, dressings etc.) in the toilets and blackwater tank will result in blockages.

- Faecal matter causes the formation of unpleasant odours in the blackwater tanks, to which the use of salt water for flushing the toilets also contributes. Algae present in salt water also give off unpleasant odours.
- Completely empty the blackwater system before leaving the vessel unattended in temperatures below freezing.
- Ask for information about the laws in force in your country or your marina about discharging your waste waters into the sea.

Blackwater tank
Location: in each head

2) Use of toilets

- Every time the toilets are used, flush afterwards with copious amounts of water in the bowl using the toilet pump (manual or electric).

- When you are leaving the boat for several days, flush with fresh water. You may wish to use the shower in the head for this purpose. Seawater allowed to stagnate in the bowl gives off bad odours.

3) Maintenance of blackwater tank

- The risk of unpleasant odours forming increases when the waste water remains in the tank for a long time.

- Whenever possible empty the tank regularly, even before it is full.

- Every time the tank is emptied put in about 5 litres of fresh water and add an appropriate detergent additive (available from chandleries). A very simple method is to add soda salts, which clean and disinfect at the same time.

- Before winterising, flush the tank with copious amounts of fresh water filling it through the 'WASTE' deck connection. Leave at least 5 litres of fresh water mixed with a detergent additive.

- Disinfecting: Disinfect the tank once a year by filling it with a solution of Javel water (1 to 1000).

4) Using the drainage valve

- The direct-to-sea drainage valve can be sealed by means of the drilled hole on the handle.

- To lock the drainage valve in the closed position: Pass the tightening collar around the drainage valve and feed through the hole in the handle as shown.

Blackwater tank drainage valve (to sea)

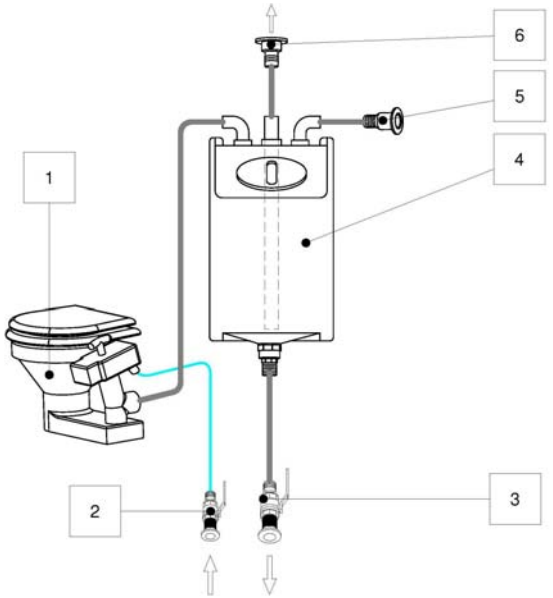
Never use automobile anti-freeze in the blackwater system: risk of poisoning.

Respect local regulations regarding the emptying of blackwater tanks.

- Beware of any unintentional draining.

Layout diagram of blackwater system

Emptying by gravity



1. Toilet
2. Seawater intake valve
3. Thru-hull seacock
4. Blackwater tank
5. Vent
6. "WASTE" deck connection

Refer to the manufacturer's instructions for use and maintenance.

Using a marine toilet fitted with a tank emptied by gravity

I. Open the seawater intake valve (Ref 2).

II. Fill the bowl by using the manual toilet pump.

III. Using the toilet (Ref 1).

IV.a. To empty the organic waste in the tank:

- Make sure the thru-hull seacock (Ref 3) is closed.
- Empty the bowl using the manual toilet pump.

IV.b. For direct discharge into the sea:

- Open the thru-hull seacock (Ref 3).
- Empty the bowl using the manual toilet pump.

IV.c. To discharge through the deck:

- Open the deck connection marked "WASTE" (Ref 6).
- Use the pump-out system where fitted at a port.

Using an DC electric WC fitted with a tank emptied by gravity

I. Open the seawater intake valve (Ref 2).

II. Fill the bowl by pressing the fill button.

III. Using the toilet (Ref 1).

IV.a. To empty the organic waste in the tank:

- Make sure the thru-hull seacock (Ref 3) is closed.
- Empty the bowl by pressing the empty button.

IV.b. For direct discharge into the sea:

- Open the thru-hull seacock (Ref 3).
- Empty the bowl by pressing the empty button.

IV.c. To discharge through the deck:

- Open the deck connection marked "WASTE" (Ref 6).
- Use the pump-out system where fitted at a port.

Electric toilet pump

Electric toilet control

13.7 WASTE WATER SYSTEM

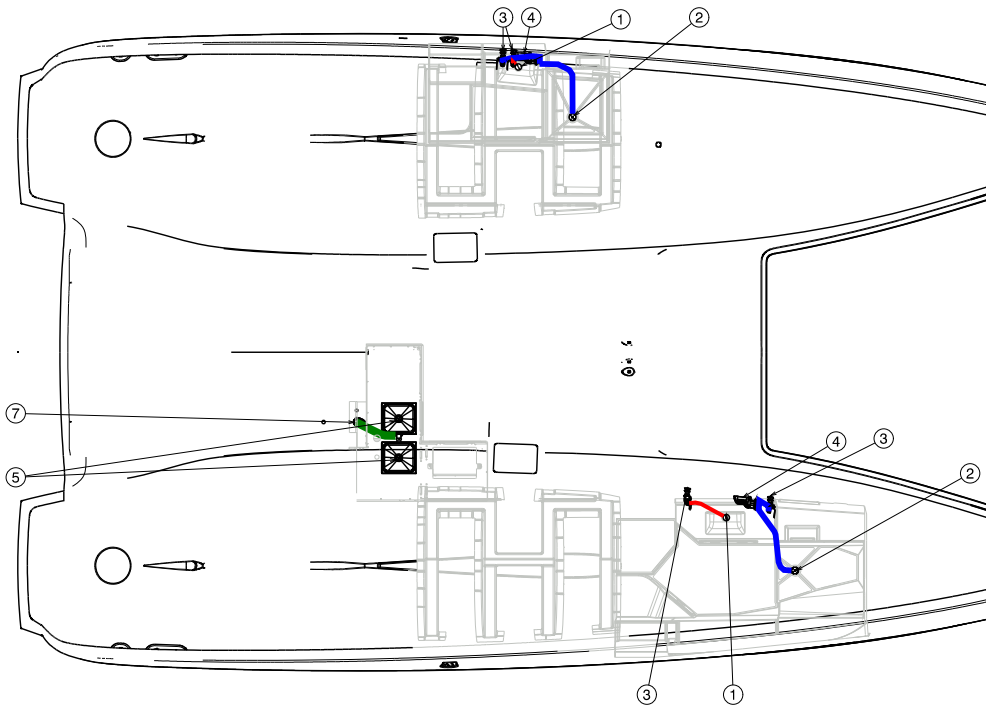
General points

- Waste water comprises the water coming from the sink, showers, air conditioning drains and washbasins.
- Close the valves after each use and especially when the boat is unattended.
- Regularly check the valves and thru-hull seacocks for proper operation and watertightness.
- Regularly check the tightness of the flexible pipe clamps and connections.

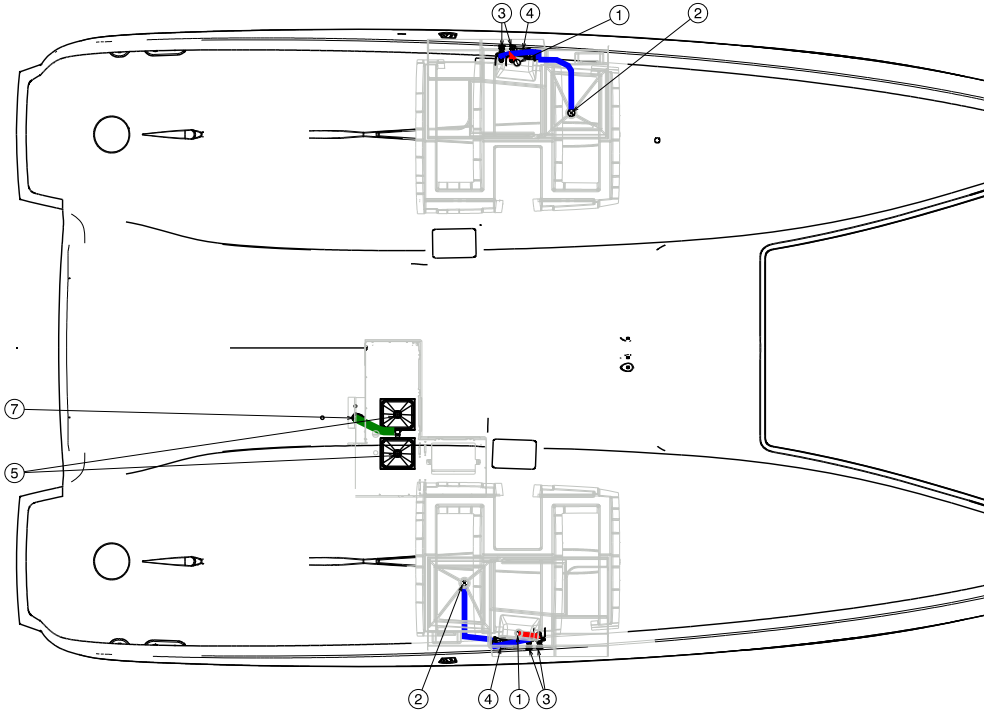
Observe local regulations regarding the emptying of greywater tanks.

13.7.1 Diagram of waste water circuit installation

3-cabin layout



4-cabin layout



	Waste water pipe - 20mm diameter
	Waste water pipe - 25mm diameter
	Waste water pipe - 35mm diameter

Reference	Designation
1	Head washbasin
2	Shower
3	Drainage valve
4	Shower pump drainage
5	Galley sink
7	Kitchen sink thru-hull drainage

SHOWER

Shower plug hole

Shower screen

NOTE: It is essential that the shower screen remains locked in place when under way.

Shower pump drainage

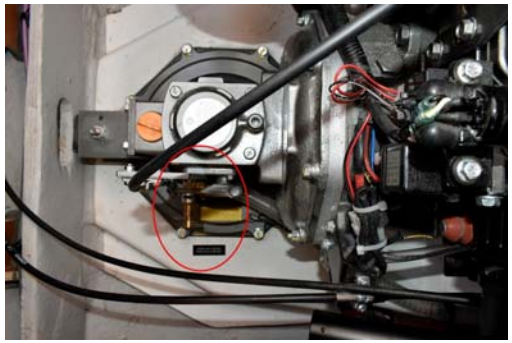
ENGINE

14

14.1 INFORMATION RELATING TO FIRE RISKS AND RISKS OF EXPLOSION

- Make sure that the coolant is circulating properly.
- Ensure that the engine compartment ventilation air inlets are kept clear.
- Stop the engine and refrain from smoking while the fuel tank is being filled.
- Have your fuel circuit checked regularly by a professional engineer.
- Avoid any contact between inflammable materials and the hot sections of the engine.
- Never switch off or cut off energy to the electric system when the engine is running.
- Never block access to the fuel supply valve.
- Do not obstruct or modify the ventilation system.
- Never turn the engine over when the boat is on land.
- Fuel stored outside the tanks (jerrycans, portable fuel tanks, etc.) must be stowed on deck and protected from bad weather and mechanical damage.
- Regularly check that the engine compartment is clean and dry.

Engine water intake valve:
Located directly on the saildrive



Fuel supply valve
located directly on the tank

14.2 DANGER FROM MOVING MECHANICAL PARTS

- Keep away from the drive shafts and the mechanical parts of the engine when they are in motion (including belts, moving parts and hot components).
- Be careful if you have long hair, bulky clothing, rings etc. (these may become caught).

14.3 GENERAL POINTS

- Do not install an engine more powerful or heavier than recommended for this boat, since doing so may compromise the boat's stability.
- Any alteration or modification to the exhaust system of the propulsion engine(s) is prohibited.
- Make sure you have enough fuel before sailing.
- Stop the engine before opening the engine compartment.
- Do not close the fuel supply valve between each use of the engine (except in the event of prolonged disuse).
- Get the whole propulsion system checked at least once a year by a professional engineer.

see Chapter: MANOEUVRABILITY.

Always start the engine with the control lever in neutral.

Type of motorisation

Your boat is fitted with two in-board diesel engines.

The transmission is Sail-drive type .

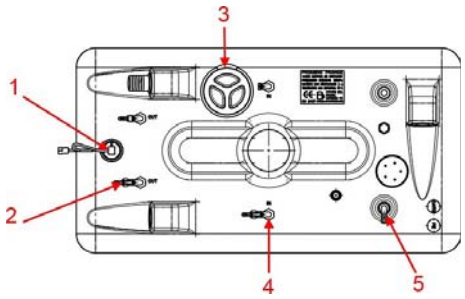
Do not install engine(s) on this boat which are more powerful than the recommended power output, this may cause a loss of control of the boat and lead to serious injuries or death.

- Regularly check that the O ring on the filler cap is in good condition to prevent water ingress.
- Keep the fuel tank as full as possible to prevent condensation.
- Be careful with any possible risk of oil and fuel spillage.
- Follow the engine manufacturer's instructions exactly.
- **Never switch off the battery isolators when the boat's engine is running (risk of serious damage to the charging circuit).**

Filling up with fuel

- Fill the fuel tank by opening the cap marked "DIESEL", provided for this.
- Regularly check that the O ring on the filler cap is in good condition to prevent water ingress.
- Each fuel supply valve supplies one engine.

Position of tanks: Port and starboard aft cabins



1. Fuel gauge transmitter
2. Motor supply
3. Stern inspection hatch
4. Generator power supply
5. Vent

Gauge

- The fuel level is transmitted via the gauge to the indicator on the steering station (Touch screen).

The tanks' nominal capacity cannot be fully used due to the load and the need to maintain the correct trim. A 20% reserve should be kept.

14.4 STARTING THE ENGINE

Before starting the engine, it is essential:

- to open the fuel supply valve;
- to open the seawater intake valve of the engine;
- to switch on the battery supply by using the battery isolator switches;
- to put the control lever in neutral.

Make a habit of looking to see if seawater is pumped out with the exhaust gases as soon as you start the engine. If no water runs out, stop the engine immediately. Check the coolant flow.

The engine compartment bilge fan is activated automatically when the engine is started.

Before using the engine, make sure you carefully read the handbook provided by the engine manufacturer.

- Always start the engine with the control lever in neutral.

- Learn how to judge the necessary distance of deceleration for the vessel to come to a complete stop (the reverse gear is not a brake).

14.5 ENGINE WATER INTAKE VALVE

The seawater intake valve plays a crucial role in ensuring that the engine runs well.

- Keep the filter under the hull as clean as possible;
- Brush the filter whenever the boat is lifted out.

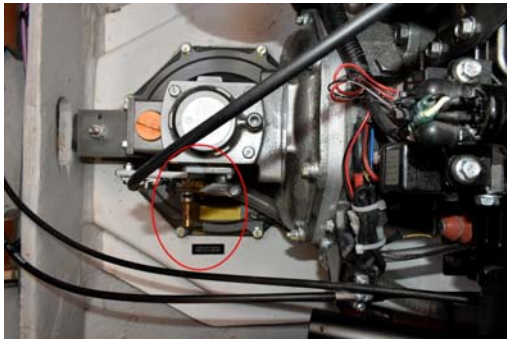
This valve must absolutely always be opened before starting the engine.

A seawater filter filters the water before it goes through the heat exchanger.

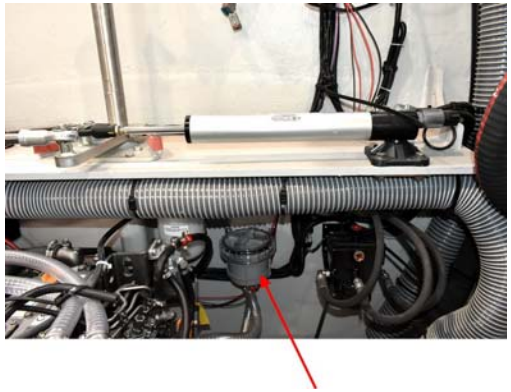
Regularly inspect the seawater filter and clean it if necessary. Screw/unscrew the cover of the filter by hand (never use tools).

For lengthy absences, close the engine's seawater intake valve.

Engine water intake valve:
Located directly on the saildrive



Seawater filter
Location: Port engine compartment & Starboard engine compartment



14.6 ANTI-SIPHON VALVE

- The function of the anti-siphon valve is to inhibit the siphoning action when the engine stops, thus preventing a backflow of water.
- It is possible that on starting the engine or at certain engine speeds some drops of water may be seen escaping from the anti-siphon valve.

If this occurs, you must clean the anti-siphon valve: dismantle the water collector at the top of the anti-siphon valve, then clean the valve with fresh water to remove any impurities.

- Then do the reverse procedure to refit the cleaned component, taking care not to refit the valve the wrong way round.
- It is advisable to carry out this simple preventative maintenance procedure on the anti-siphon valve once a year.

Anti-siphon valve
Location: Port engine compartment & Starboard engine compartment

14.7 FUEL FILTER

Engine running problems may stem from various causes, including dirty fuel. The injection pump may wear out if there is water in the system. The water results either from condensation resulting from an insufficiently filled tank, or from a filler cap which has either not been closed properly or which has a damaged seal.

In order to prevent any water infiltration, the fuel runs through two filters:

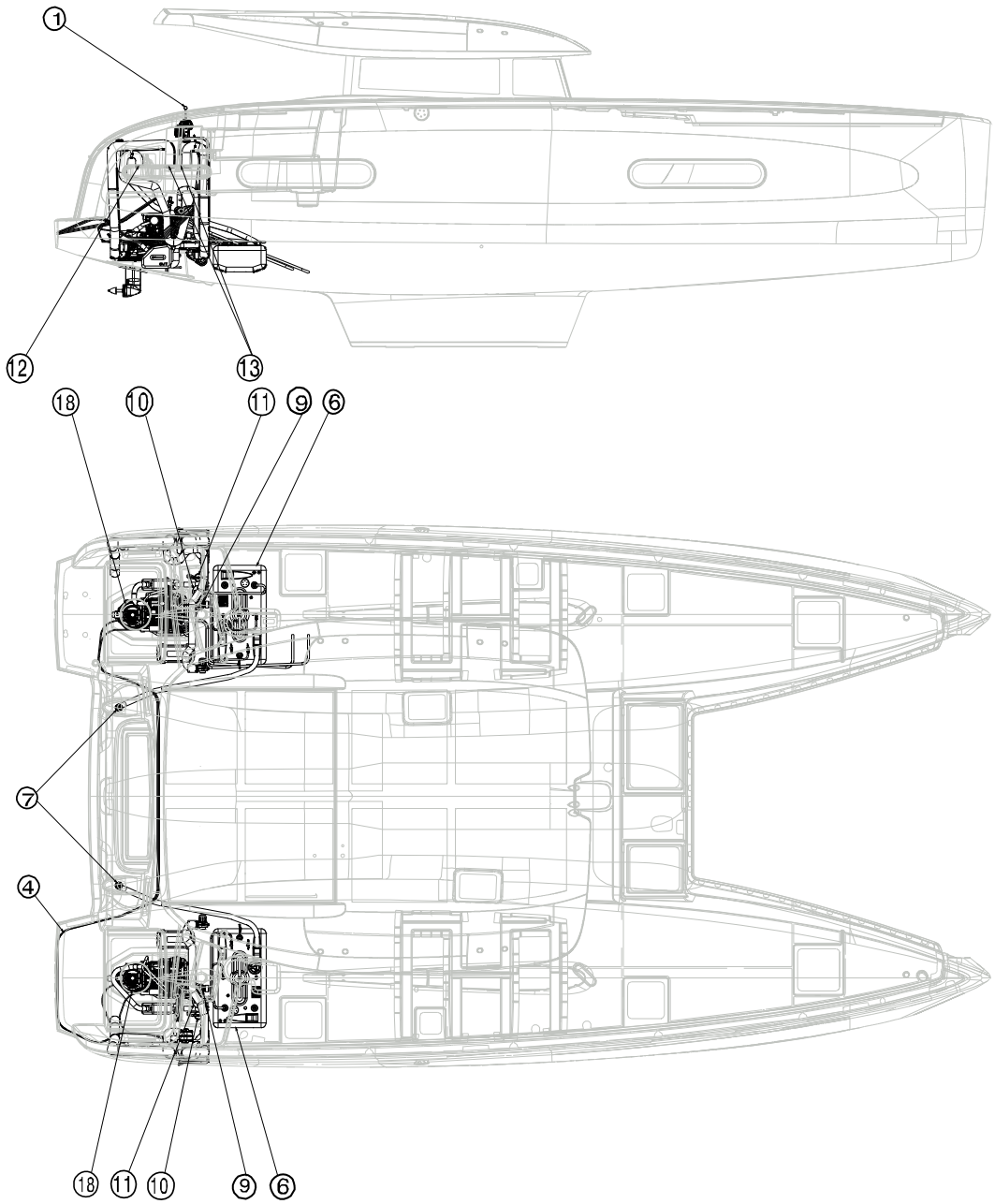
- One filter is an integral part of the engine; its role is to filter fuel very finely. Please refer to the engine manufacturer's notes for any maintenance and for the frequency of filter changes.
- The second filter is on the pipe that links the tank to the engine; it works as a water decanter and prefilter.

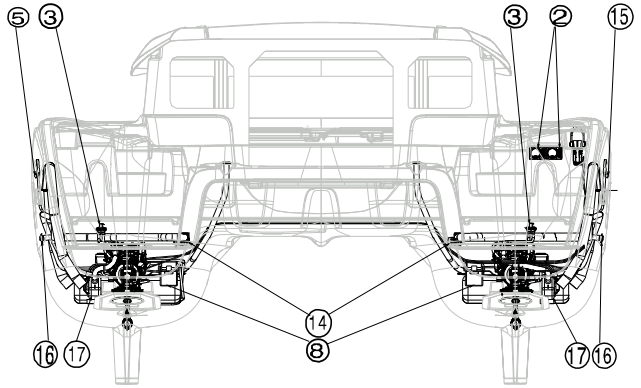
Maintenance

- Purge the impurities by unscrewing the screw located at the base of the decanting bowl (without removing it). Let the liquid run into a receptacle until the fuel runs clear. Do this several times a year.
- Change the pre-filter at least once a year.

Location: Port engine compartment & Starboard engine compartment

14.8 ENGINE INSTALLATION





Sail Drive engine installation

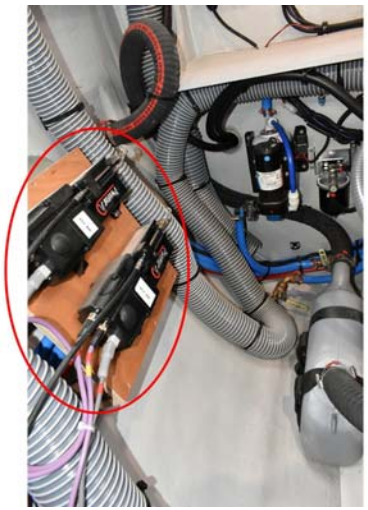
Reference	Designation
1	Engine control lever
2	Engine instrument panel
3	Anti-siphon valve
4	Motor control cable
5	Port side fuel tank vent
6	Fuel tank
7	DIESEL deck filler
8	Engine battery
9	Expansion tank
10	Seawater filter
11	Fuel filter
12	Hot air extraction
13	Fresh air inlet
14	Engine compartment ventilator
15	Starboard fuel tank vent
16	Engine exhaust
17	Water trap
18	Motor

14.9 ENGINE CONTROL

- The engine manufacturer's notes provide detailed explanations on how to operate the engine and keep it running well.
- Read the manufacturer's notes on use and maintenance of the engine.

Engine control lever
Location: Cockpit

Actuator
Location: Port engine compartment & Starboard engine compartment



Engine instrument panel
Location: Cockpit

14.10 ACCESS TO THE ENGINE

Access to the engine can be gained via:

- the cockpit.

All access hatches to the must strictly be kept shut when at sea.

14.11 PROPELLER

- The propeller delivered with the boat is specifically selected after trials carried out in collaboration with the engine manufacturer. Never change the propeller without first consulting a professional engineer.
- Propeller efficiency will drop if the propeller blades are damaged or dirty: clean the blades regularly and attentively.
- During lift-out, check the propeller: it should turn freely on its axis and there should be no play.
- Boats with twin engines are equipped with counter-rotating propellers.

- Respect speed limits.

- If this boat is equipped with a fixed blade propeller, when sailing at speeds over 8 knots it is essential to leave the reverse gear control in neutral.

STEERING SYSTEM

15

15.1 GENERAL POINTS

- The steering operates by steering cables.
- The steering system is an important safety feature. For this reason, an annual inspection of the whole system must be carried out by a professional engineer.
- Owners are expected to operate the boat in a reasonable manner, with the direction of the helm (in degrees/seconds) set according to the actual speed of the boat.
- Regularly check the tension of the steering cables and the tightness of the steering components. If needed, adjust the tension of the steering cables. Don't tighten the steering cables excessively. When properly adjusted the steering should work smoothly, with no play at all and no stiffness in the tiller or wheel (consult your dealer).
- Do not grease the steering cables or the pulleys.
- Maintain the nylon, ertalon or teflon bushes with only a suitable lubricant.
- Each ring is a wearing part: make sure you change them regularly (Please contact your dealer).

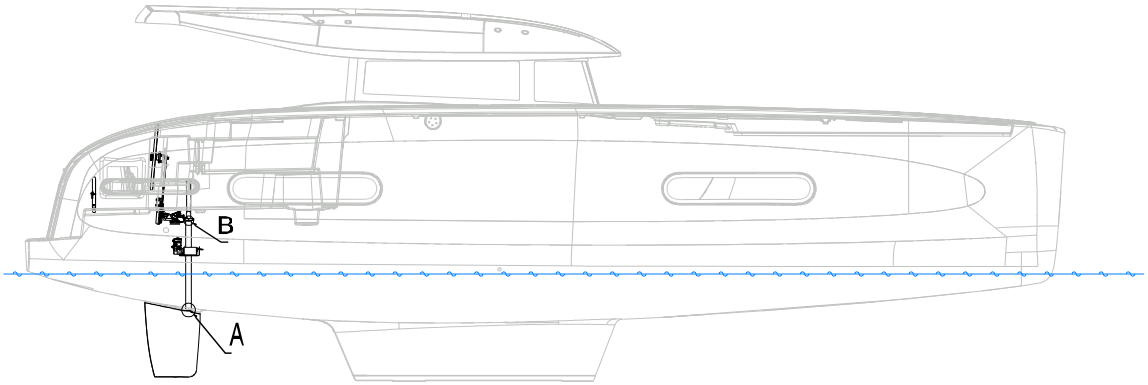
Label indicating the date on which the steering cable should be changed

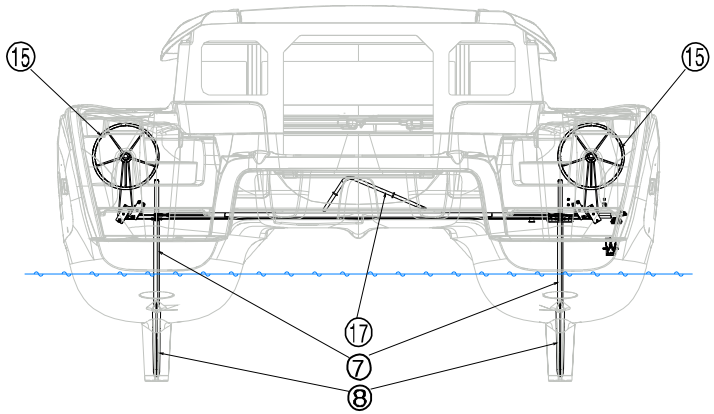
- The textile lines on the boat have a lifetime of 5 years. Beyond 5 years (the expiry date is sewn on the textile lines) the textile lines must be changed.

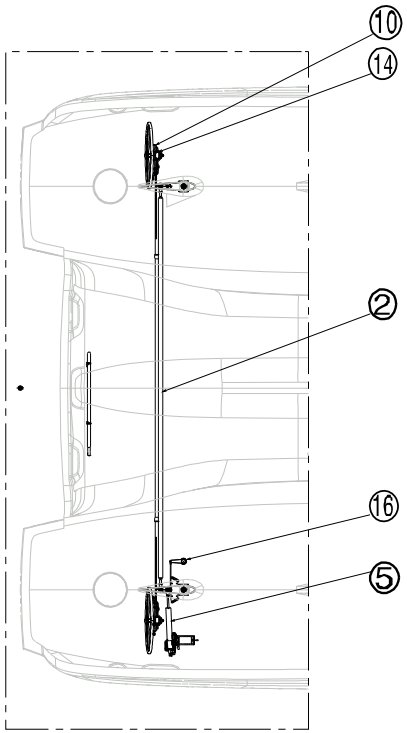
- The steering bearings do not require any special maintenance.
- It is only recommended that you regularly rinse the bearings of the steering system with fresh water when taking the boat out of the water.

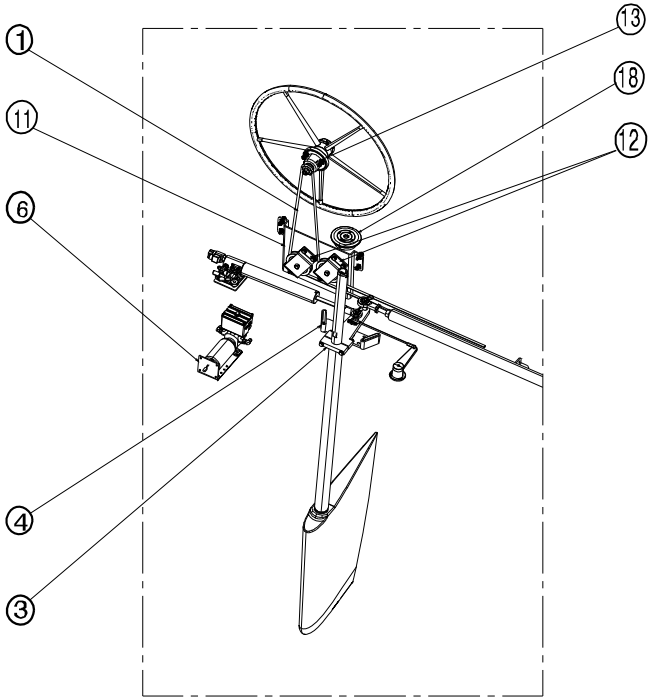
Note: Greasing the steering bearings creates a risk of them seizing with dust and no longer working properly.

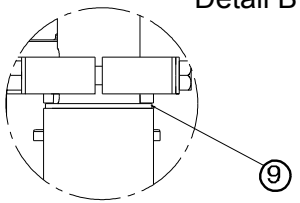
15.2 DIAGRAM OF LAYOUT

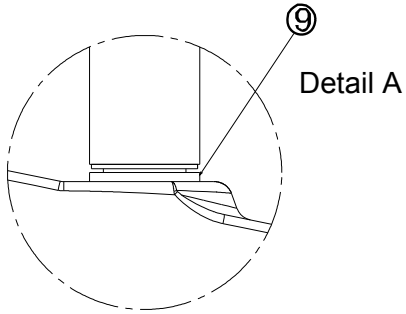












Reference	Designation
1	Helm line
2	Connecting rod
3	Stock arm
4	Stock arm stop
5	Autopilot ram
6	Angle bracket
7	Rudder tube
8	Rudder
9	Balance bush
10	Port sheave support
11	Starboard sheave support
12	Sheaves
13	Steering Gear + Steering lock
14	Steering Gear
15	Steering wheel
16	Tiller angle indicator
17	Emergency tiller
18	ACCESS deck filler

DECK FITTINGS

16

16.1 GENERAL POINTS

Alcohol, solvent or acetone-based solutions must not be used to clean/maintain the outer surfaces of the boat. A warm, soapy, water-based solution is best for this purpose.

16.1.1 GRP

- Regularly brush the deck using a gentle de-greasing agent then rinse the deck with fresh water.
- Use as few cleaning agents as possible.
- Don't use solvents or aggressive detergents.
- Don't dump cleaning agents into the water: Consult the harbourmaster's office to find out the conditions of water use and the maintenance area for cleaning your vessel.
- Do not use a pressure washer.

The boat's polyester outer skin is strong enough to withstand the design pressure but it is not designed to withstand localised damage caused by impacts against hard/sharp objects. If the outer skin is damaged, it must be repaired immediately.

16.1.2 Plexiglas (PMMA)

- Rinse plexiglas with fresh water.
- Use a polish paste for thin scratches.
- Consult your dealer if deep scratches occur.

Never use solvents, alcohol, acetone or detergents on plexiglass.

16.1.3 Stainless steel

Stainless steel is an alloy of iron and carbon (steel) with the addition of chromium. The chromium creates a protective film which insulates the steel from the surrounding environment. This coating is usually invisible due to its thinness. Thus, despite its name, this steel is not stainless and requires a minimal level of maintenance:

- Chromed tools are preferable whenever handling stainless steel;
- Re-nourish the protective film regularly with passivating paste.

Passivating paste is an acid-based product whose purchase and/or use may be subject to regulation. Please contact your dealer.

16.1.4 Solid wood on exterior wooden panelling

- Wood exposed to harsh conditions such as salty air and UV rays tends to become whiter and to lose its natural colour. This phenomenon has no effect on the intrinsic qualities of the wood, but can spoil its aesthetic appeal.
- To maintain the colour of the wood, regularly wash the woodwork in fresh water using a sponge (if necessary, use a mild soap).
- It is recommended that you oil the external woodwork regularly using teak oil in order to protect it from harsh conditions.

Never use detergents, acetone or other harsh products on the wood.

16.1.5 Exterior upholstery

- Bring the removable cushions inside (washed with soapy water then dried) when the vessel is unoccupied.
- Put canvas sheets/protective covering over the fixed upholstery.

Maintenance

To maintain the quality of the fabric, spray regularly with clarified water and brush with a soft brush (such as a clothes brush). A thorough clean every 2 years is recommended.

Stain removal

Follow these steps for routine cleaning:

- Remove as much debris as possible using a soft brush;
- Spray the fabric with water;
- Prepare a cleaning solution using mild soap and water (do not use detergent);
- Wash with a soft brush;
- Wait for the soap solution to act;
- Rinse thoroughly in fresh water;
- Dry in the open air.

Bimini

If the wind exceeds 20 knots, it is recommended that you stow all removable protection sheets (Bimini, awnings...).

Never:

- use a heat source (hairdryer/clothes dryer);
- use detergent, silicone, acetone, chlorine-based products or hot water;
- use a high-pressure cleaner.

16.2 EQUIPMENT

16.2.1 Sun roof

General points

- The roof must be absolutely open OR closed during navigation. It is dangerous to sail with the roof partially open.
- Opening and closing the sunroof becomes difficult in strong wind or rough seas: take extra care in these conditions.

Open / Closed



Mechanism


16.2.2 Davits

- The davits enable the launch and retrieval of the tender from the transom. Any other use is dangerous and must be strictly avoided.

- The davits are equipped with a pulley block for manoeuvering the tender. This pulley block is manoeuvered by hand/ using an electric winch.

- A breaker protects the electrical circuit.

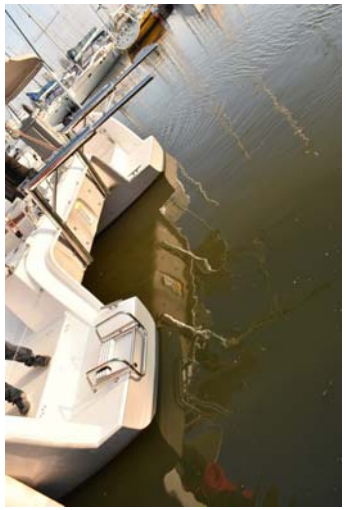
Layout of components:

Launching the tender

- Insert the bung.
- Secure the pulley's hooks to the front and back of the tender.
- Lower the front then the back of the tender alternately until it touches the water.

Retrieving the tender from the water

- Pull out the bung.
- Secure the pulley's hooks to the front and back of the tender.
- Raise the front and then the back of the tender alternately as high as the pulley block allows.



No one must be onboard the tender while launching or retrieving it.

- The davits are designed to support a maximum load of 150kg and a tender which is at most 3.80m long.

- Before heading out to sea, remove the outboard engine from the tender and store it on the boat.

- Secure the tender taking account of sea conditions.

- Secure the outboard engine to the tender once this is in the water.

16.3 BERTHING, ANCHORING, TOWING

16.3.1 Anchor points

Responsibility

It is the responsibility of the owner/user of the boat to ensure that the berthing lines, towing cables, chains and mooring lines and the anchors are adequate for the intended use of the boat, i.e. that the lines or chains do not exceed 80 % of the breaking strength of the corresponding anchor point.

	MOORING LINES	MOORING	TOWING
Reference *(Diagram on next page)*	**A**	**A / B**	**A / B**
Anchor Point Breaking Strength	**26,6kN**	**42,4kN**	**42,4kN**
Mooring Line/Chain Breaking Strength	**21,3kN**	**33,9kN**	**33,9kN**

Anchoring points showing visible signs of deterioration must be replaced.

- The fenders supplied are fabric.
- They should be inflated to between 150 mb and 250 mb.
- It is possible to fill 10% of the fender's volume with fresh water to ballast it in the event of strong winds.

Storage

- The fender should be rolled or folded up for storage.

Washing

- Remove the polyurethane pouch from the fabric outer layer.
- Put the fabric outer layer in the washing machine at 30°. Do not use bleach or any other produce other than a mild detergent. Do not tumble-dry.
- Do not iron.

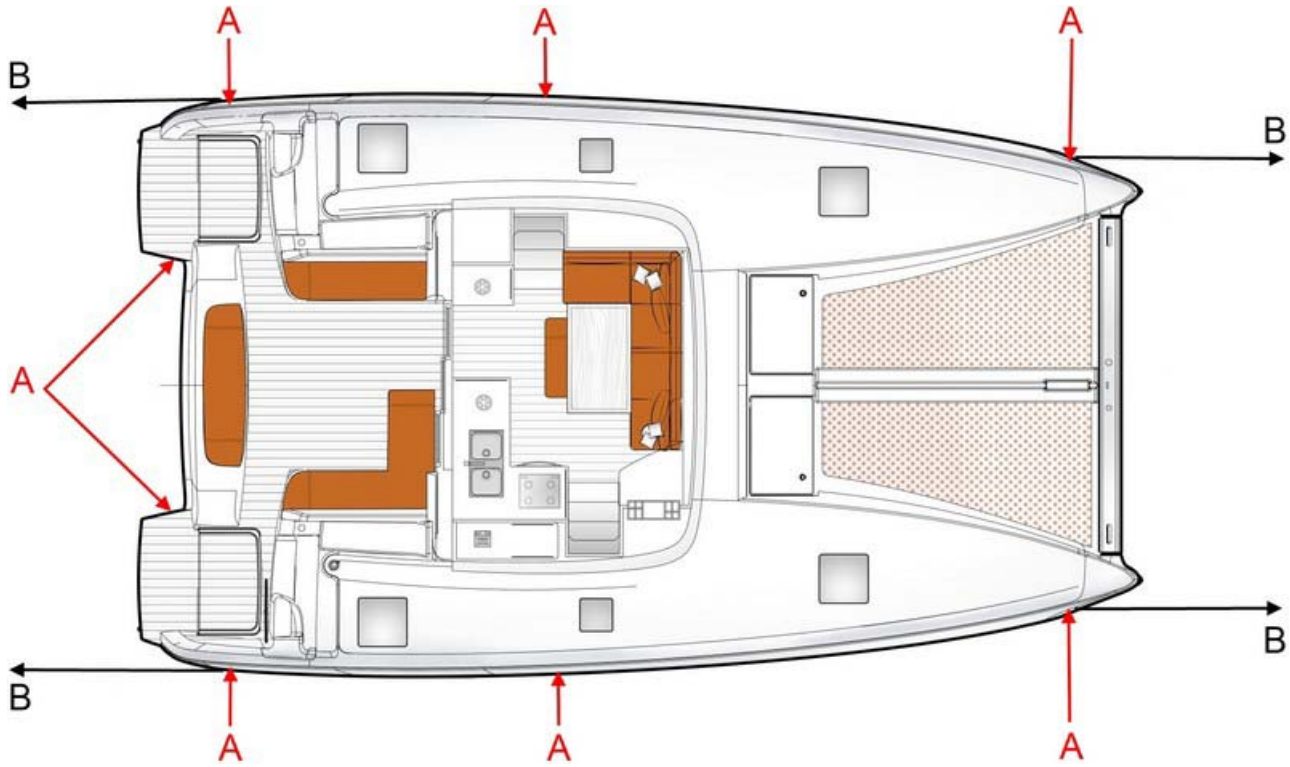
Repair

- An air leak can be repaired using the repair kit supplied.
- Remove the polyurethane pouch from the fabric outer layer to repair the leak.
- Clean the area to be repaired carefully using a clean, dry cloth (Do not use solvents).
- Remove the red protective film from the repair patch and apply the white part to the leak.
- Warm the repair patch using a hair dryer for around 1 minute.
- Leave it to rest for 10 minutes, then reinflate.

16.3.2 Towing

Responsibility: It is important that the owner thinks through the actions required when securing a towing cable onboard.

Location of attachment points



A. Mooring cleats (corresponding to the anchor points for the lifelines).

B. Towing:

- at the bow, to be towed,
- at the stern, to tow.

- Generally the breaking strength of lines/ chains must not exceed 80% of the breaking strength of the anchor points.

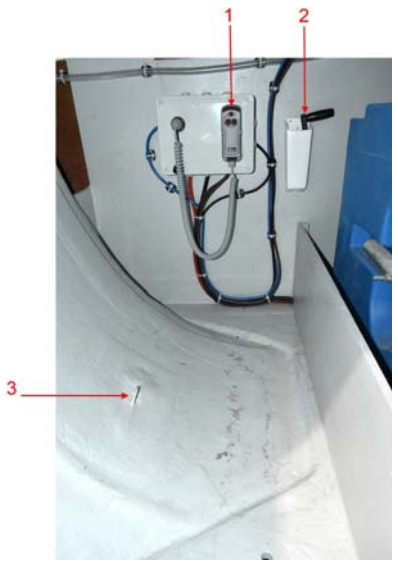
- Always tow or be towed at low speed. Never exceed the maximum speed of a displacement hull during a tow.

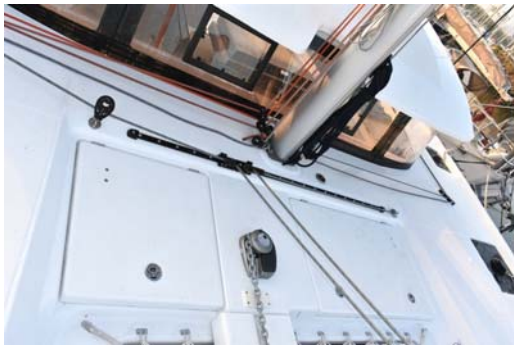
- Be particularly vigilant when the end of a towing cable is being thrown or received (the end may become caught in the propeller).

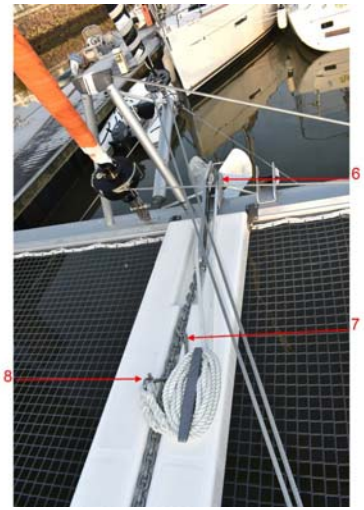
- A towing cable must always be secured in such a way that it can be released under load.

- Do not try to stop the boat by using a boathook or your foot, hand or any other part of your body.

16.4 MAIN ELEMENTS OF THE CHAIN LOCKER







1. Remote control
2. Handle fitting
3. Bitter end ring
4. Chain locker
5. Electric windlass (sprocket diameter * 1 mm)
6. Bow forestay chain plate
7. Chain retainer
8. Mooring hook

- Refer to the manufacturer's instructions for use and maintenance.
- Windlass operations are dangerous:
  - Always keep the anchor chain or rope free and unfouled;
  - Carry out manoeuvres carefully and always wear shoes;
  - Avoid wearing baggy clothing and jewellery that could get caught in the engine when it is running. Tie up long hair..

16.5 ELECTRIC WINDLASS

General points

- The windlass is DC powered.
- The windlass is designed for anchoring purposes: Any other use is dangerous and must be strictly avoided.
- An operation relay is fitted to the electrical circuit.
- A circuit-breaker protects the power supply to the windlass.
- The windlass operation is activated by an operational interlock relay which is powered by the engine's alternator: the windlass only works when the boat's engine is running.
- The controls to raise/lower the windlass are protected by a circuit-breaker positioned between the batteries and the windlass relay.
- Your boat may be equipped with a chain meter: this shows the length of chain let out.

Operation

- Before lowering the anchor, make sure that the chain or anchor rope is securely attached to the bitter end ring.
- Activate the circuit-breaker then use the control to start the windlass.
- Nobody should be aboard the tender during maneuvers carried out with the davits. If the port engine is not functioning,the windlass can work on service batteries (if available) by switching on the port engine ignition only (the engine alarm will then sound while the windlass is in use).

Refer to the manufacturer's instructions for use and maintenance.

Preparation of anchoring

- Install the bridle by fixing it to the chain plates located at the ends of the fore beam.
- Put the bridle through the stem bow roller.
- Shackle the bridle to the central cleat during the lowering of the chain.

Bridle

- When at sea, secure the chain or anchor rope to secure points such as the chain stopper or the anchor rode to the belaying cleat (the windlass must not be used as the only method of securing the chain or rode).

- With dual control, be careful to use only one control at a time.
- When raising the anchor, use the boat's engine to move towards the position of the anchor until the boat is just over it: never use the windlass as a winch to move the boat forward.
- When out at sea, cut the electrical supply to the windlass.
- Cut the electrical supply when using the windlass manually.

Maintenance

- Once a year, dismantle, carefully wash and grease all the moving parts of the windlass.
- Regularly grease the supply terminals of the electric motor of the windlass and of the relay control box.

Emergency anchoring procedure

In the event of an electrical fault, it is possible to lower the anchor manually: Put the handle in the space provided to release the chain sprocket. Let the chain run out using the handle to control the speed as it runs.

The handle serves only to release the chain sprocket in order to lower the anchor manually should the electric windlass break down.

The handle cannot be used to raise the anchor manually.

- Before anchoring check the depth of water, the power of the current and the nature of the sea bed.
- Check the swing radius once the boat is at anchor.
- After each trip rinse the windlass and anchor chain or rope with fresh water.
- Refer to the manufacturer's instructions for use and maintenance.

HULL FITTINGS

17

17.1 INTERIOR UPHOLSTERY

GENERAL POINTS

- The interior upholstery is designed for use inside the boat only.
- The fabric used inside the boat has not had any special treatment to protect it from a saline atmosphere or from UV.
- Make sure the curtains are drawn to protect the interior upholstery from exposure to sunlight.

ALCANTARA (microfibre)

Stain removal

- The fabric must be free from dust before stain removal. To do so, use a vacuum cleaner.
- Rub with a duster soaked in a solution containing ammonia diluted by 10%. Dilute to the strength appropriate for this fabric. Try it out first on a hidden area such as the hem. If the appearance of the fabric changes, dilute accordingly.
- Scrub the Alcantara fabric in all directions, particularly on the stains.
- Rinse off the cleaning solution using a damp cloth.
- Dry in the open air.
- After taking the Alcantara fabric off, it's a good idea to use a gentle brush to bring back its softness.
- For difficult stains, dry-cleaning is recommended.

SYNTHETIC FABRIC

Stain removal

If you can remove the fabric:

- Clean in the washing machine (use the programme for delicate fabrics) at 30°.
- Do not iron.
- Never use Javel water.
- Do not dry-clean.
- Do not tumble-dry.

If you cannot remove the fabric:

- Clean with the vacuum cleaner,
- Clean with a foam for synthetic fabrics (see manufacturer's instructions for these products).

COATED FABRIC (PVC)

Maintenance

- The PVC must be regularly cleaned with soapy water to maintain its appearance and to avoid accumulation of debris. We strongly advise against using the following products: lacqeurs, aggressive cleaning products, detergents, xylene or acetone-based products which can cause permanent damage or make the fabric deteriorate. The use of such products is carried out at the owner's risk.

Stain removal

- All stains must be quickly removed to avoid formation of permanent stains.
- Use mild water to remove stains on the surface of the fabric. Use only clean, white, damp pieces of cloth.
- Difficult stains can be removed using a mixture of water (25%) and white spirit.
- Rinse with clean water.
- Dry with a soft piece of cloth.

ACRYLIC (bimini fabric)

Maintenance

To maintain the quality of the fabric, spray regularly with clarified water and brush with a soft brush (such as a clothes brush). A thorough clean every 2 years is recommended.

Stain removal

Follow these steps for routine cleaning:

- Remove as much debris as possible using a soft brush;
- Spray the fabric with water;
- Prepare a cleaning solution using mild soap and water (do not use detergent);
- Wash with a soft brush;
- Wait for the soap solution to act;
- Rinse thoroughly in fresh water;
- Dry in the open air.

17.2 INTERIOR WOODWORK

Varnished wooden panels:

- The acrylic varnish has medium resistance to external chemical damage as well as minor scratches.
- Clean regularly with lukewarm soapy water.
- Do not use polish (this may result in unwanted brightening of appearance).
- For scratches, remove the panel and have it re-varnished by your dealer.

Floors:

- The floors fitted onboard are laminated.
- Clean regularly with lukewarm soapy water.
- In the event of a scratch, remove the plank and replace it with a new one (consult your dealer).

17.3 INTERIOR MAINTENANCE

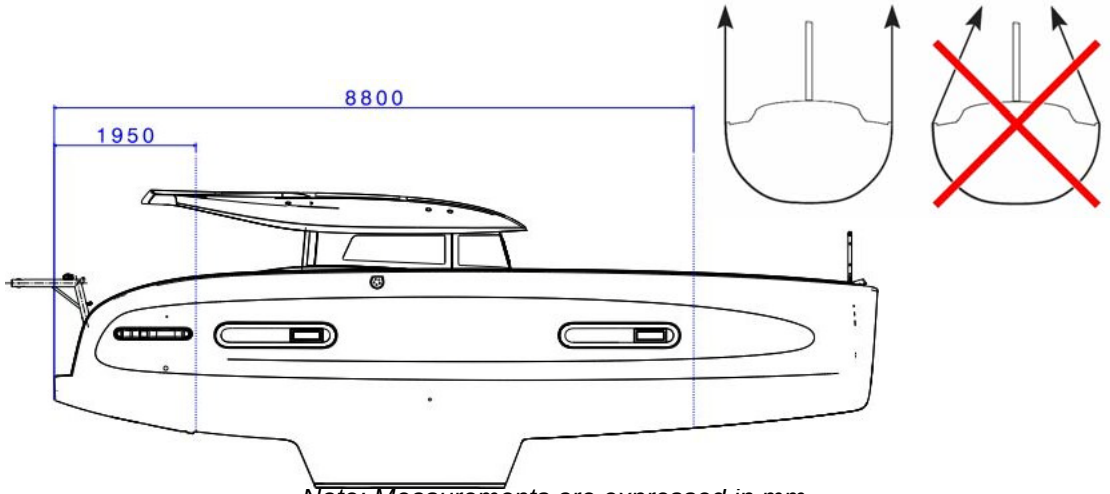
- Take advantage of fine weather to air the interior upholstery.
- Remove the cushions during lengthy periods of absence.
- Make sure the bilges are clean and dry.
- For lengthy periods of absence, leave the icebox and fridge doors open to prevent mould from developing.
- Use a dehumidifier in the saloon and ensure cabin and storage doors are left open (cupboards, iceboxes...).

- If in doubt or if stains persist, consult a cleaning specialist.
- :For winterisation, ensure the curtains are drawn to prevent prolonged exposure of the varnish and fabric to sunlight. This will prevent the risk of discolouration.
- NEVER:
  - use solvents or abrasive products.
  - use a heat source (hairdryer/clothes dryer);
  - use detergent, silicone, acetone, chlorine-based products or hot water;
  - use a high-pressure cleaner.

HANDLING, TRANSPORT

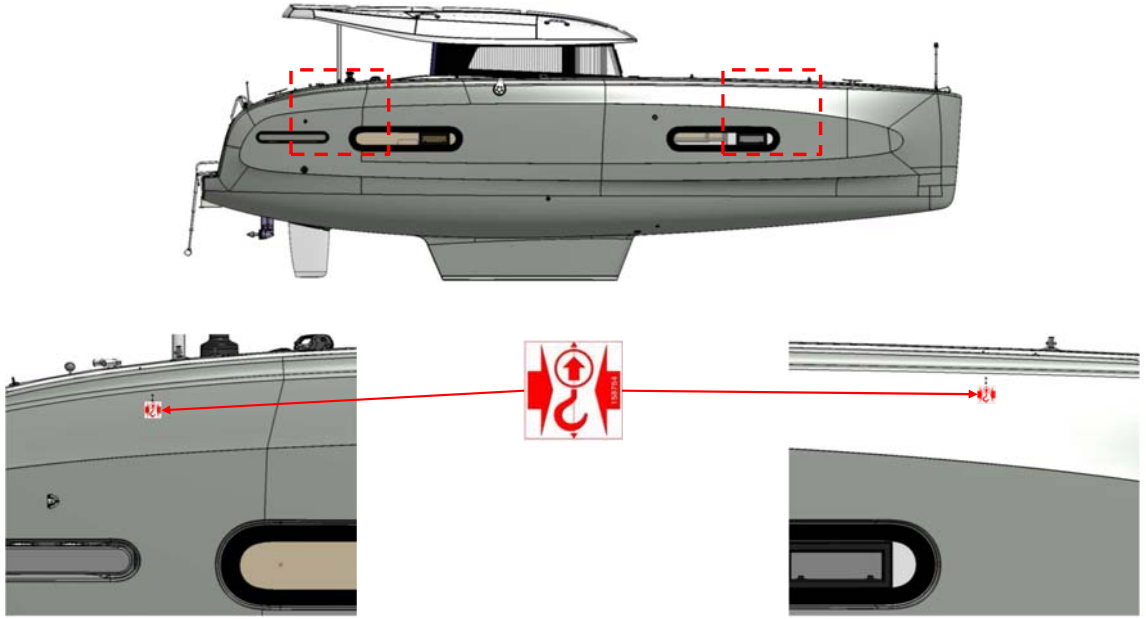
18

18.1 LIFTING PLAN



Note: Measurements are expressed in mm.

The position of the lifting slings is shown in the pictogram below:



18.2 LIFTING

- Before the first application of antifouling to the hull, you can lightly sand the hull using wet and dry sandpaper of 400 µm or more.
- The lower hull of your boat should be covered with an anti-fouling paint to prevent the adhesion of marine growth.
- The water quality where your boat is kept, along with the frequency of lifting, will determine the choice of antifouling.
- All bronze or steel surfaces, including the propellers, should be protected by a suitable antifoul paint.
- (see corresponding chapters).
- Antifouling can deteriorate when the boat is ashore or dried out: Please observe the out-of-water time limit set by the supplier.

Before applying antifouling NEVER:
- Do any sandblasting;
- Use any other solvents than ethylic alcohol;
- Use pressure washer detergents;
- Use scrapers;
- Use grinding tools.

If cleaning off existing antifouling requires high pressure washing:
- Ensure the water temperature does not exceed 15 degrees;
- The water pressure must not exceed 150 bar (2175 PSI);
- The distance between the hose nozzle and the hull must not be less than 10 centimetres.

The wet surface area of the boat is approximately: 51m².

- Follow the manufacturer's recommendations closely when applying antifouling.
- Never let antifouling cover:
  - the anodes;
  - the earthing plates (Generator / DC/AC converter);
  - the sensors of the electronic instruments.
- the sail-drive baseplate must be covered with copper-free antifouling.
- Avoid using copper or tin-based antifouling: these are banned in some countries.

18.3 UPPER LIMIT OF ANTIFOUL

The boat's hull has a shallow indent moulded along its length: the upper marking corresponds to the upper limit of antifoul on the hull.

18.4 LAUNCHING AND LIFTING

The first time you use your boat a high level of skill and attention will be required. The proper functioning of all equipment will depend on the initial set-up being carried out correctly. For this reason the first launch must be carried out under your dealer's supervision.

Before launching

- Replace the speedometer in its housing.
- Check the cleanliness of the seawater filters.
- Check the anodes (see Chapter: ELECTRICAL SYSTEM).
- Check the propeller/hydrolube bush (see Chapter: STEERING SYSTEM).
- Prepare enough fenders and lines.
- Check the engine's seawater intake valve and the fuel feed valve (see Chapter: ENGINE).

Do not stand onboard or beneath the boat during the handling operations.

- When placing the slings make sure that the positioning marks are still visible.
- Immerse the sling fully under the engine mounting.

18.5 STEPPING AND UNSTEPPING THE MAST

The stepping/unstepping operations require the skills of a professional rigger: please consult your dealer.

18.6 WINTERISATION

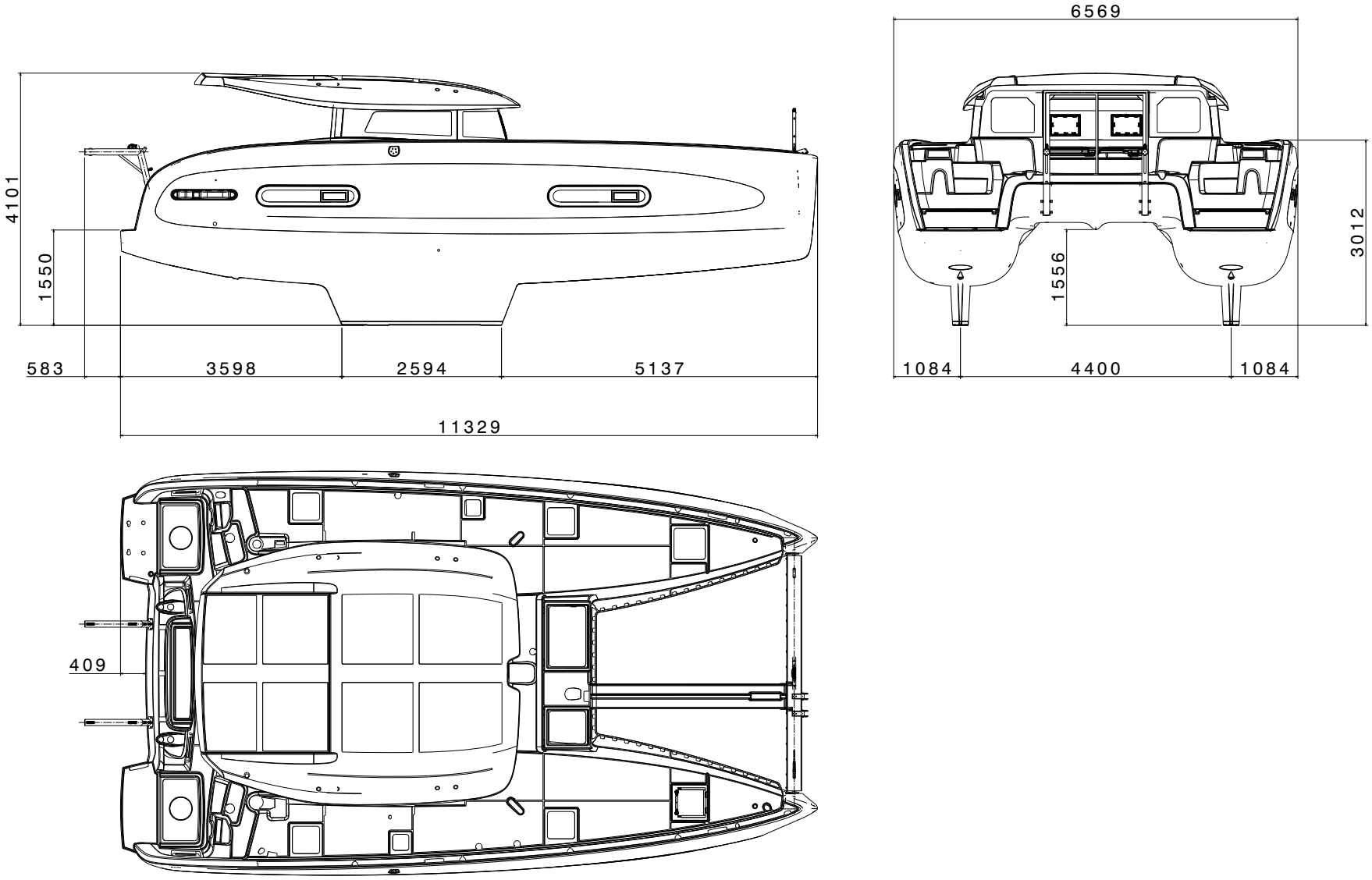
- Take advantage of laying-up to carry out a full inventory of the equipment.
- Check the expiry dates of the safety equipment.
- Have the liferaft overhauled.
- Empty the complete water system inside and outside and rinse it through with a mix of water and vinegar (do not use chlorine-based products).
- Empty and rinse the entire blackwater system.
- Dry out and clean the boat's bilges.
- Grease and close all the valves and thru-hull fittings.
- Close all the boat's seacocks.
- Remove the depth sounder and speedometer heads.
- Put the covers back on the electronic screens.
- Use a dehumidifier in the saloon and ensure cabin and storage doors are left open.
- Air all of the cushions and upholstery for a while before putting them back onboard and arranging them so as to limit contact between surfaces.
- Close the blackout curtains.
- Leave the fridge/icebox doors open to prevent mould and smells from developing.
- Protect the boat as well as possible with fenders.
- Make sure the boat is properly moored.
- Grease all mechanical and moving parts (bolts, hinges, locks...).
- Remove the sails and store them somewhere dry and well-ventilated.
- Remove the movable upholstery.
- Disconnect the batteries. Make sure you recharge them during the Winter period if the boat is left inactive for a long time.

- Engine winterisation requires a professional engineer: please consult your dealer.

- This is not an exhaustive list of recommendations: Your dealer will give you the advice you need and will carry out technical maintenance of your boat.

18.7 TRANSPORT

PACKING PLAN



Note: Measurements are expressed in mm.

ENVIRONMENT

19

19.1 WASTE MANAGEMENT

- Throw all packaging in the recycling containers provided.

- Once a piece of equipment has stopped working completely, find out about the relevant recycling regulations from your nearest recycling centre or from your dealer.

- Make sure you follow the relevant local laws when scrapping.

- Some onboard equipment can have a toxic effect on the environment and on human health due to the specific substances they contain: Do not throw any equipment in household waste containers and absolutely never dispose of equipment in the sea.

- Dead batteries are toxic to health and to the environment. Batteries must not be put in with household waste and must be recycled separately. Contact the harbour master or a specialist company about recycling them.

- Make sure you know the local enviromental regulations and follow the codes of best practice.

- Do not pump out the toilets or the contents of the black water tank near the coast or in areas where this is forbidden. Use the pump-out facilities available in ports or marinas to empty the contents of the black water tank before leaving port.

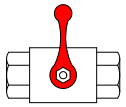
- Make sure you know the international regulations to prevent pollution in the marine environment (MARPOL Convention) and follow these as much as possible.

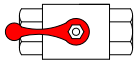
APPENDIX

LABEL KEY

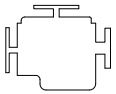
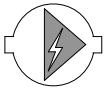
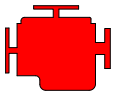
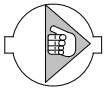
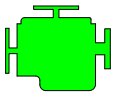
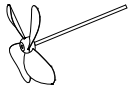
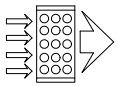
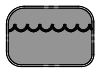
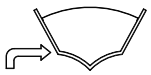
Engine group	Plumbing group	Colour - WC group	General electrical equipment	Comfort group	Drainage group

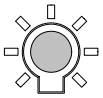
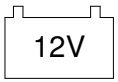
 Valve location label

 Closed valve

 Open valve

Meaning of the symbols

 Motor	 Shower	 Electric pump
 Port engine	 Washbasin	 Manual pump
 Starboard engine	 Ice maker	 Toilet
 Propeller shaft	 Deck wash	 Washer
 Filter	 Sea water tap	 Dryer
 Hull drainage	 Waste water tank	 Dishwasher
 Sea water intake	 Fresh water tank	 Watermaker

	Shore power socket		Fuel tank		Fuel filter
	Service		Holding tank		Inverter
	Generator		Battery stock		Heating
	Breaker		Thruster		Air conditioning

Each label is defined by:

- a functional group (specific colour);
- a component.

example: