VELASCO 43 F

OWNER'S MANUAL

CROISIERE

164060
Index A

CE

CONTENTS

INTRODUCTION

Welcome

You have just taken delivery of your new JEANNEAU boat and we thank you for the confidence you have shown us in ordering a vessel of our brand. The whole JEANNEAU team welcomes you aboard.

A JEANNEAU is made to last, in order to bring you all the pleasure you expect from a vessel 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 meant to help you to enjoy your boat comfortably and safely. It includes the boat specifications, the equipment provided or installed, the systems and tips on her operation and maintenance. Some of the equipment described in this manual may be optional.

Your JEANNEAU dealer will be able to help and advise you in the use and maintenance of your boat.
A lot of skill and care is required to commission your boat. The proper working of all your boat's equipment is the result of the quality of the commissioning operations. This is why the initial launch must be overseen by your dealer.

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

The better you know your vessel the more pleasure you will get from being at the helm.

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

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

For all the equipment on your boat,

please read the instruction manuals provided by the manufacturer.

- This manual has been produced to help you enjoy using your boat in all safety. It contains the details of the boat and of all the equipment provided and installed on your boat, as well as the instructions for their use. Read it carefully and really get to know your boat 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 it safely and with ease, before taking the helm alone. Your dealer, or national sailing or motorboat association, or your yacht club will be very happy to tell you about the 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 would put the boat at risk from massive waves and extreme gusts. These are dangerous conditions in which only an experienced, fit and well-trained crew, manoeuvering a well-maintained boat, could navigate sufficiently well.

- 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 qualifications, or other specific regulations may be 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 is not compatible with safe navigation. 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 available onboard all the safety gear (lifejackets, harnesses etc) appropriate for the type of boat and for the weather conditions etc.. 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.

- It is advised that, when on deck, everyone should wear the appropriate buoyancy aids (lifejackets, personal buoyancy aids) Be advised that in some countries, it is mandatory to wear a buoyancy aid 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 the existence of a serious inherent danger with a high risk of death or serious injury if the appropriate precautions are not taken.

WARNING

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

WARNING

Indicates either a reminder of safety procedures or alerts you to dangerous manoeuvres or operations, which could result in injuries to those onboard or in damage to the boat or to components of it, or to the environment.

ADVICE-RECOMMENDATION

Indicates a recommendation or advice for carrying out manoeuvres appropriate for the planned manoeuvres.

- 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.
That is the reason why the specifications and information given are not contractual, they may be modified without prior notice or up dates.

- This owner's manual complies with the European Directive 94/25/CE of the 16 June 1994 amended by the European Directive 2003/44/CE of the 16 June 2003 ;
and with the standard NF EN ISO 10240 of February 2005 .

CE

- This owner's manual is written in several languages. French is the authentic reference language.

- This owner's manual was written and made up into pages by SPBI S.A.. Any reproduction of this manual, direct or indirect, provisional or permanent, by whatever means this may be, whether in whole or in part, and any modification of this manual by a third party for commercial reasons, are forbidden.

1 TECHNICAL SPECIFICATIONS

1.1 CONSTRUCTION

Model ..... VELASCO 43 F
Architect / Interior design ..... TONY CASTRO Yacht Design
Builder ..... SPBI S.A
Principal means of propulsion ..... Engine
Hull and deck construction material ..... Laminated sandwich glass / Polyester / Balsa wood
Deck implementation & Hull ..... Wet laid fibre
Implementation of inner hull moulding ..... infusion

1.2 GENERAL DIMENSIONS

L.O.A (L_{max})* ..... 13,70 m
(Including removable parts that can be dismantled (bow roller, pulpit, bowsprit), without affecting the structure of the boat)
Hull length (L_h)* ..... 11,98 m
(Excluding: removable parts that can be dismantled, without affecting the structure of the boat)
Overall width (B_{max})* ..... 4,13 m
(Including: removable parts that can be dismantled, without affecting the structure of the boat)
Beam(B_h)* ..... 4,10 m
(Excluding: removable parts that can be dismantled, without affecting the structure of the boat)
Air draught – Empty vessel ..... 5,64 m
Draught - Boat fully laden ..... 1,17 m
Wetted surface area ..... Approximately 43 m²

1.3 ENGINE

Nominal maximum propulsion power ..... 560 Kw
Maximum recommended engine size ..... 1 496 kg

1.4 ELECTRICITY

Circuit type - Direct current 12V
Circuit type - AC 220V
Circuit type - AC (US version) 110V

1.5 CAPACITIES

Total mass of the liquid content of fixed tanks when they are full ..... 1 722 kg
Fuel capacity: ..... Tank 1 (*): 560 l
..... Tank 2 (*): 560 l
Fresh water capacity: ..... Tank 1 (*): 400 l
..... Extra tank: 200 l
Black water capacity ..... WC: 120 l
Waste water capacity ..... Washbasin, Shower, Domestic appliances: 200 l
..... Collector: 50 l

It may not be possible to use these capacities fully depending on the trim and load of the boat.
It is recommended to keep a reserve of 20% in the fuel tanks.
(*): Refer to the corresponding chapter to locate the position of the tank (relationship between the tank number and its position on board).

2 DESIGN CATEGORIES AND DISPLACEMENT

- Some of the data is shown on the manufacturer's plate fixed to the boat. The explanation of the data is given in the appropriate chapters of this manual.

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

- 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, grey water, black water).

Design category	B	C	D
Maximum number of people to be allowed onboard	**12**	**14**	**14**
Maximum number of people to be allowed on the flybridge	**5**	**14**	**14**
Light displacement	**10 761 kg**		
Recommended maximum load	**4 710 kg**		
Displacement with maximum load	**15 471 kg**		

DANGER

When sailing in conditions of design category B (wind force up to and including 8 Beaufort and significant wave height up to and including 4 metres)the Flying Bridge crew must be limited to 5 persons of the 12 persons on board.

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 37,5 kg ;

AND THAT

- the total weight of all allowed onboard (based on about 75 kg 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 the loads in order to maintain the theoretical trim (more or less horizontal).
- Avoid placing heavy loads high up in the boat.

2.1 DESIGN CATEGORIES

Category A: At high sea

This craft is designed to operate in winds that may exceed wind force 8 (Beaufort scale) and in significant wave heights of 4 m and above.
This craft is largely self-sufficient. Abnormal conditions such as hurricanes are excluded. Such conditions may be encountered on extended voyages, for example across oceans, or inshore when unsheltered from the wind and waves for several hundred nautical miles.

Category B: In open sea

This craft is designed to operate in winds up to Beaufort force 8 and the associated wave heights (significant wave height up to 4 m, see Note 1 below).
Such conditions may be encountered on offshore voyages of sufficient length, or on coastal waters when unsheltered from the wind and waves for several dozens of nautical miles.
These conditions may also be experienced on inland seas of sufficient size for the wave height to be generated.

Category C: Near to the coast

This craft is designed to operate in winds up to Beaufort force 6 and the associated wave heights (significant wave height up to 2 m, see Note 1 below). You may meet with such conditions in exposed inland waters, in estuaries and in coastal waters with moderate weather conditions.

Category D: In sheltered waters

This craft is designed to operate in winds up to Beaufort force 4 and the associated wave heights (occasional maximum waves of 0,5 m height).
Such conditions may be encountered in sheltered inland waters, and in coastal waters in fine weather.

NOTE:

- The significant wave height is the mean height of the highest one-third of the waves, which approximately corresponds to the wave height estimated by an experienced observer. Some waves will be double this height.

- The creation of different design categories results from the need to distinguish between different levels of risk according to the construction of the boats.
The parameters for the characteristics are established to define the conditions of navigation which each category may encounter; they serve purely to evaluate the boat designs and are not to be used to limit the geographical areas in which these boats may operate.

- One boat may be classed in several design categories at the same time, each with their different maximum capabilities.

3 STABILITY AND BUOYANCY

3.1 STABILITY DATA

- Fully laden displacement was used to evaluate the stability and buoyancy of the boat. The value of this displacement can be found in paragraph ' Technical specifications ' 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 its performance ;

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

- The boat's stability is affected by adding to the weight of the superstructure ;

- 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 ;

- The air tanks must not be pierced ;

- Breaking waves are a serious threat to stability.

- Reduce speed in waves.

- 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.

3.2 ACCESS TO THE BOAT

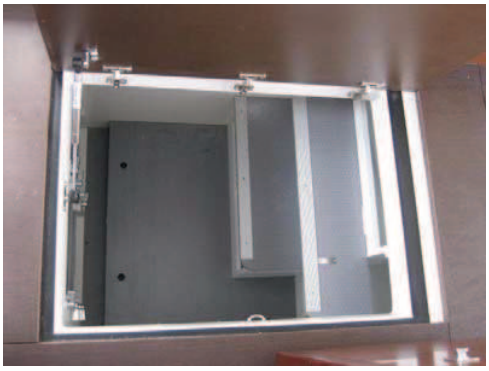
Access to the cockpit

Access to the engine compartment

Sliding side bay window access

Flying bridge access

Access to the machinery compartment



Access to the saloon

Access - Cave





- It is imperative 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 imperative 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.

ADVICE-RECOMMENDATION

- Keep the sea cocks, discharge and drainage points closed to minimise the risk of seawater pouring in.

4 MANOEUVRABILITY

- This boat was found to be capable of carrying its crew, even when flooded.

- It is important to take additional precautions in very strong winds or in a confused sea or breaking waves.

- Maximum rated power of boat propulsion: 560 Kw.

- Do not install an engine in this boat with a higher rated power than that indicated on the manufacturer's plate.

- Do not drive the boat at high speed with a negative trim of the propulsion equipment (bow down). This can make the boat heel and cause it to be unstable when turning.
Use a negative trim to make the transition from displacement speed to planing speed, and at lower speeds in choppy seas (applicable to boats equipped with a system for directing the propeller thrust).

- Do not drive at top speed in areas of heavy boat traffic or in situations of reduced visibility, strong winds or heavy seas. Reduce the boat's speed and wake out of courtesy and for your own safety and the safety of others. Observe speed limits and "NO WASH" signs.

- Observe the rules of priority as defined in the Navigation Rules and imposed by the international regulations for preventing collisions at sea (Collision Regulations - COLREG).

- Ensure that you always have sufficient room to stop or manoeuver if necessary in order to avoid a collision.

- Avoid abrupt manoeuvers at full speed.

- Do not sit on the forward section of the cockpit when the boat is moving at high speed.

- Reduce speed in big waves for your comfort and safety.

4.1 VISIBILITY FROM THE STEERING STATION

Visibility from the steering station may be obstructed when the boat is trimmed at a steep angle or due to other factors caused by one or more of the following conditions:

- Angle of engine trim control switch (in boats equipped with an engine trim control switch) ;
- Angle of hull trim control switch (in boats equipped with a hull trim control switch or trim tabs) ;
- Load and load distribution ;
- Speed ;
- Rapid acceleration ;
- Transition from displacement mode to planing mode ;
- Sea conditions ;
- Rain and mist ;
- Darkness and fog ;
- Lights on inside the boat ;
- Position of the upper and side awnings ;
- Persons and removable equipment in the helmsman's field of visibility.

The international rules for preventing collisions at sea (COLREG) and the navigation rules demand constant vigilance and observance of priority rules. 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.

4.1.1 Demister

- The demister runs on DC power.

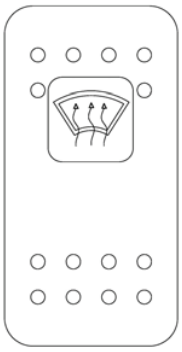
- The demister uses heat recovered from the boat's engine to demist the windscreen. It operates on the port engine cooling circuit exchanger.

- The demister operates only when the engine is warm and running.

- A valve on the engine allows the demister to be isolated from the engine cooling system (for maintenance or to isolate a faulty circuit).

Supply valve - Port engine / Demister

Control
Steering station



Location: Forward cabin

4.1.2 Wiper

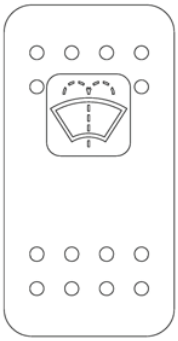
The windscreen wipers run on DC power.

Control: Steering station

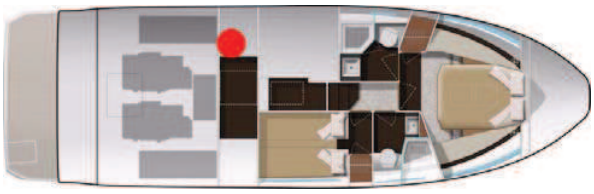
Engine access:
Deckhead - Head

4.1.3 Windscreen washer

Control: Steering station



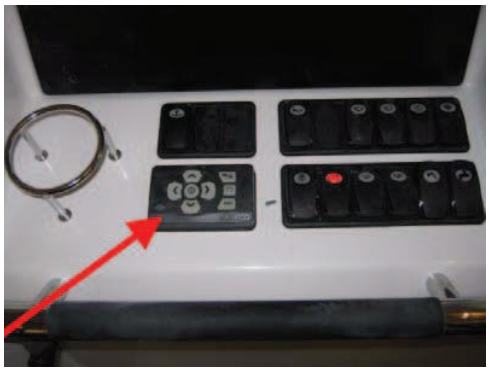
Reservoir location

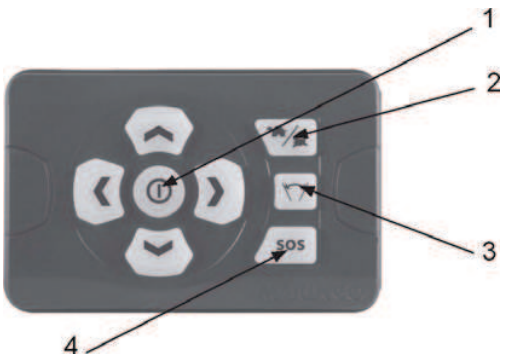


4.1.4 Deck searchlight

- The deck searchlight runs on DC power.
- A fuse protects the electrical circuit.

Control: Steering station





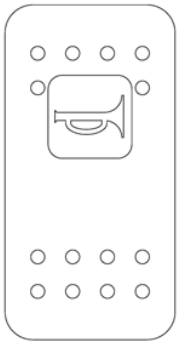
1. Stop/start switch
2. Variable speed regulator
3. Sweep (The deck search light will move slowly from left to right)
4. SOS (The deck search light will send the SOS signal in morse code)

Location: Flying bridge

4.1.5 Horn

The foghorn runs on DC power.

Control: Steering station

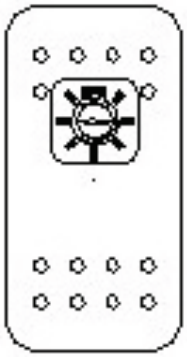


Location: Flying bridge

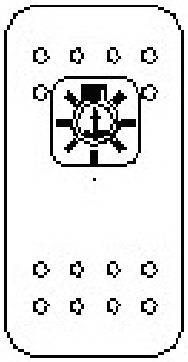
4.1.6 Navigation lights

The navigation lights run on DC power.

Control: Steering station



The only function of the samson post is to support the navigation light. Any other use is dangerous and forbidden.



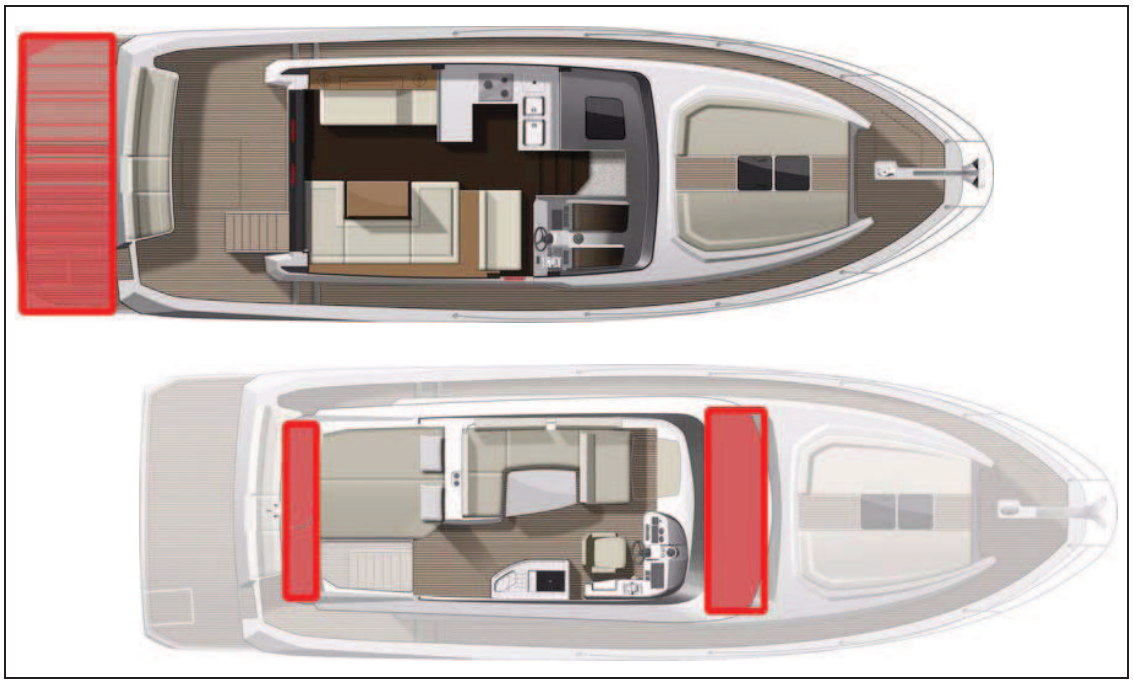
5 SAFETY

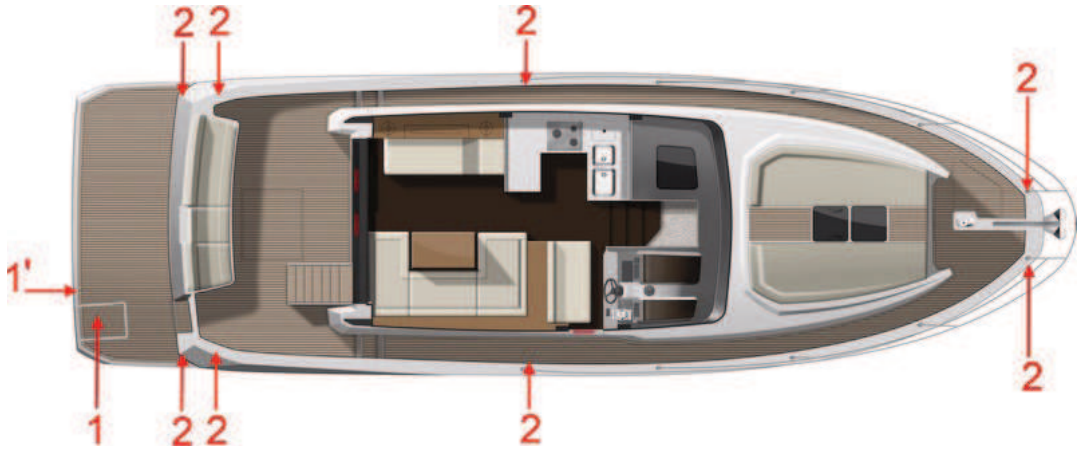
5.1 PREVENTING MAN OVERBOARD SITUATIONS AND THE MEANS OF GETTING SOMEONE BACK ONBOARD

5.1.1 Prevention of man overboard

- The zones outside the working deck area are the hatched areas below

- The ' working deck ' means those areas outside where people stand or walk during normal use of the boat.





Ref 1: Fitting a means of climbing back onboard.

Ref 2: Mooring cleats which correspond to the anchor points for the lifelines.

- Use the seats provided.

Regularly check the guard-rails:

- With metal guard-rails, watch for corrosion particularly at connecting points.

- With synthetic guard-rails, change them as soon as they show signs of wear due to chafing or UV.

5.1.2 Getting back onboard

The means for getting back onboard must be able to be deployed by one person alone in the water, with no other help.

Fitting a means of climbing back onboard:

Ref 1'

Ref 1

- Some types of equipment for getting back onboard 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 the means for getting back onboard are readily accessible and easy to use by someone alone in the water.

5.2 STORING THE LIFE-RAFT

The life-raft(not supplied) must be stored in the space provided for it. A pictogram helps to locate it easily.

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

When at sea, never padlock or lock the stowage locker for the life-raft.

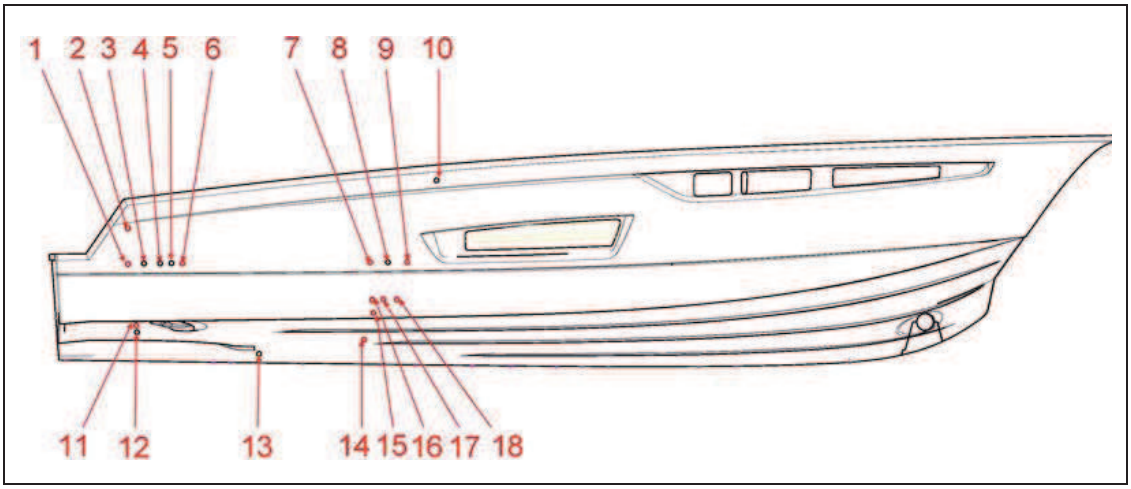
5.3 SECURING MOVEABLE ITEMS

- Ensure that movable items are firmly secured when the boat is under way.
- Don't store anything below the floorboards.

5.4 INFORMATION ABOUT THE RISKS OF FLOODING AND ABOUT THE BOAT'S STABILITY

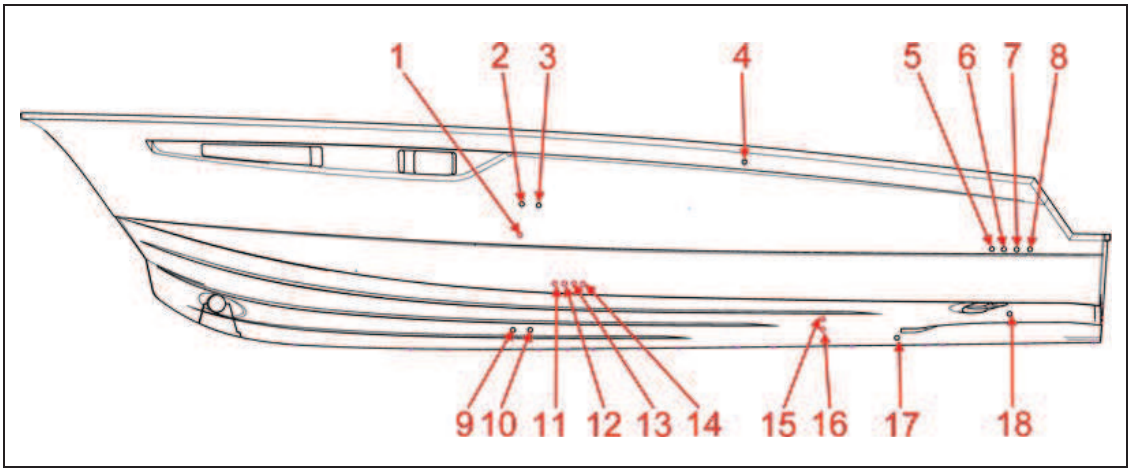
5.4.1 Openings in hull

View - Starboard



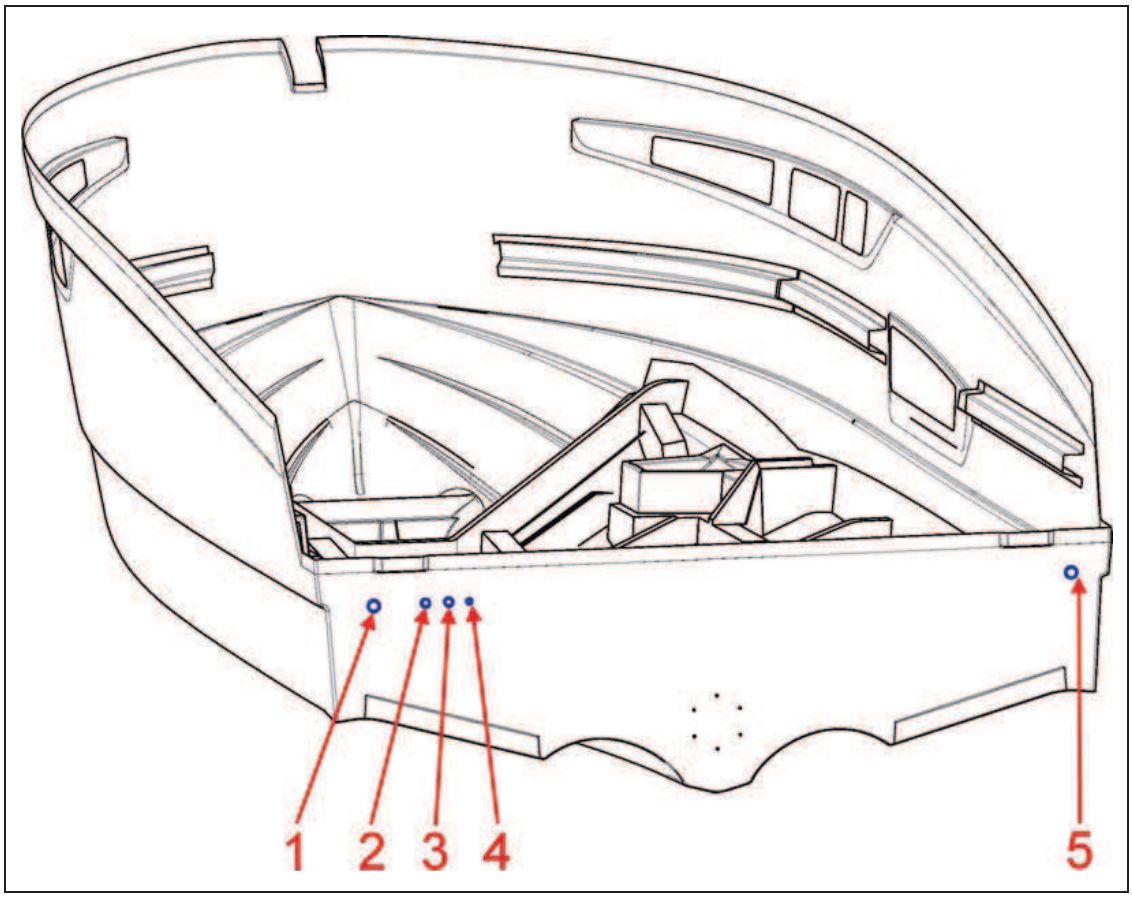
Reference	Designation	Valve
1	Generator exhaust	Not
2	Waste water tank vent	Not
3	Cockpit scupper	Not
4	Drainage - Flying bridge	Not
5	Drainage - Gangway	Not
6	Galley sink drain (Flying bridge)	Not
7	Heating exhaust	Not
8	Water tank vent	Not
9	Water tank vent	Not
10	Vent hole - Fuel tank	Not
11	Seawater inlet (Deck wash pump)	Yes
12	Sea water inlet valve for engine	Yes
13	Seawater inlet - Sternpost	Yes
14	Sea water intake - Generator	Yes
15	Drainage - Generator	Yes
16	Drainage - Air conditioning	Yes
17	Drainage - Air conditioning + Fridge	Yes
18	Drainage - Air conditioning	Yes

View - Port side



Reference	Designation	Valve
1	Heating exhaust	Not
2	Tank vent hole - Waste water	Not
3	Black water tank (WC)	Not
4	Vent hole - Fuel tank	Not
5	Forward electrical bilge pump draining	Yes
6	Draining of manual bilge pump	Yes
7	Electric bilge pump draining - Engine compartment	Yes
8	Drainage - Gangway	Not
9	WC evacuation to sea	Yes
10	Drainage - Tank - Waste water	Yes
11	Washing machine outlet	Yes
12	Drainage - Air conditioning	Yes
13	Drainage - Air conditioning	Yes
14	Drainage - Air conditioning	Yes
15	Seawater inlet - Air conditioning	Yes
16	Seawater inlet - Air conditioning - Tropical	Yes
17	Seawater inlet - Sternpost	Yes
18	Sea water inlet valve for engine	Yes

Rear view



Reference	Designation	Valve
1	Engine exhaust (Decompression)	Not
2	Cockpit scupper	Not
3	Drainage - Liferaft locker	Not
4	Gas locker drain	Not
5	Engine exhaust (Decompression)	Not

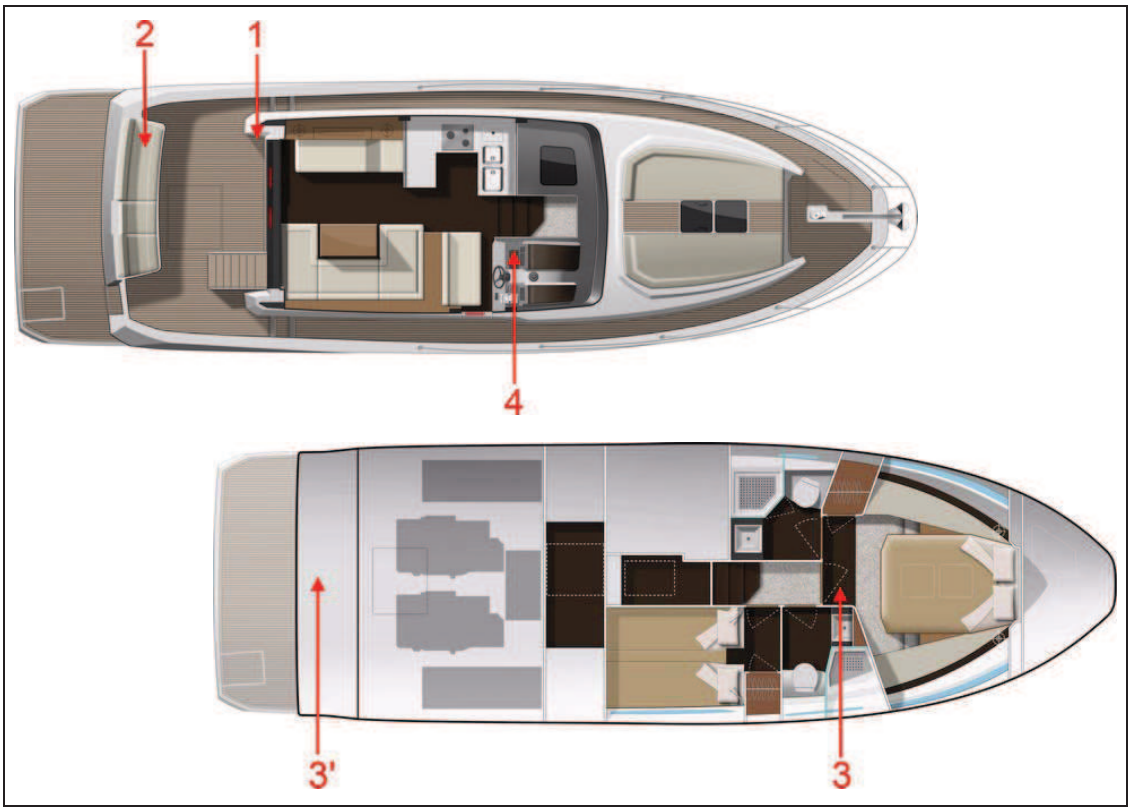
5.4.2 Bilge pumps and drainage

General points

- The inner moulding of the hull has channelling: the drainage channels. The drainage channels allow the water to drain down to the lowest point in the boat, where it can be discharged.. So it is important to allow the water to flow freely down to this lowest point of the boat, which includes.

- Regularly cleaning the lowest point of the boat and the drainage channels.

Diagram of the layout - Bilge pumps



Reference	Designation	Rate
1	Manual bilge pump	32p/minute *(*)*
2	Manual bilge pump lever	
3 & 3’	Electric bilge pump	108p/minute
4	Electric bilge pump switch	

(*) 45 strokes/minute

If 70 stroke/minute: rate 35p/minute

Manual bilge pump

The manual bilge pump is in the cockpit (Ref 1).

The bilge pump lever is located close to it (Ref 2).

Ref 1

Ref 2

Operation:

I- Put the lever on 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.

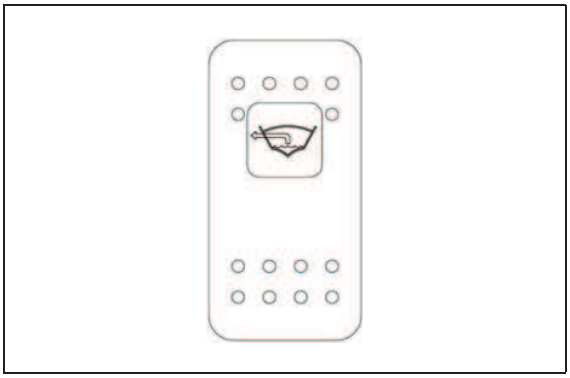
Electric bilge pumps

- The bilge pumps are powered by DC.

Ref 3':
Engine compartment

Ref 3:
Forward cabin

- Location of the electric bilge pumps: Ref 3.
The electric bilge pump switch is situated inside the wheelhouse (Ref 4).



- 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 no. 3' (Engine compartment) is connected directly to the batteries.

Bilge pump maintenance

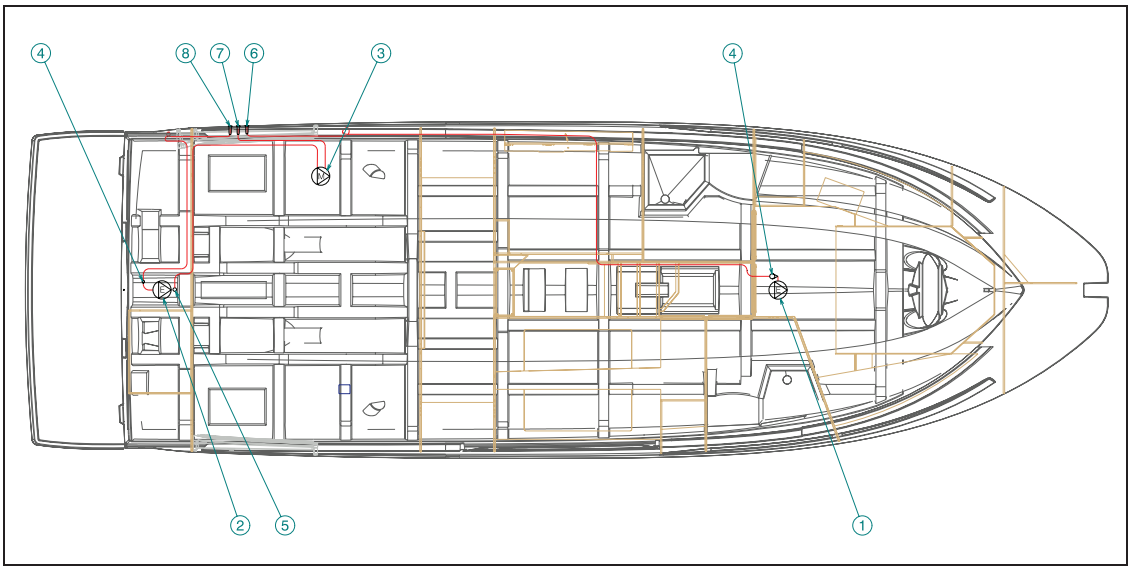
Please refer to the manufacturer's notes on the instructions for checking and maintaining the bilge pumps.

- The bilge pumps system is not designed to deal with water coming in through breaches in the hull.
- Keep the water level in the bilges to the minimum.
- Never store anything right at the bottom of the boat: Allow bilge water to flow freely down to the lowest point of the boat.

SAFETY PRECAUTIONS

- Check that each bilge pump is working at regular intervals.
- Clear the bilge pump points or strainers 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 the layout - Drying out the bilge



	Pipe - Bilge pump system - Ø 25mm

Reference	Designation
1	Forward electrical bilge pump
2	Aft electric bilge pump
3	Manual bilge pump
4	Non-return valve
5	Stuffing box
6	Forward electrical bilge pump draining
7	Draining of manual bilge pump
8	Draining of aft electric bilge pump

6 INFORMATION RELATING TO FIRE RISKS AND RISKS OF EXPLOSION

6.1 PROPULSION ENGINES AND OTHER FUEL-BURNING EQUIPMENT

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

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

6.2 ELECTRICAL SYSTEM

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

6.3 GAS SYSTEM

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

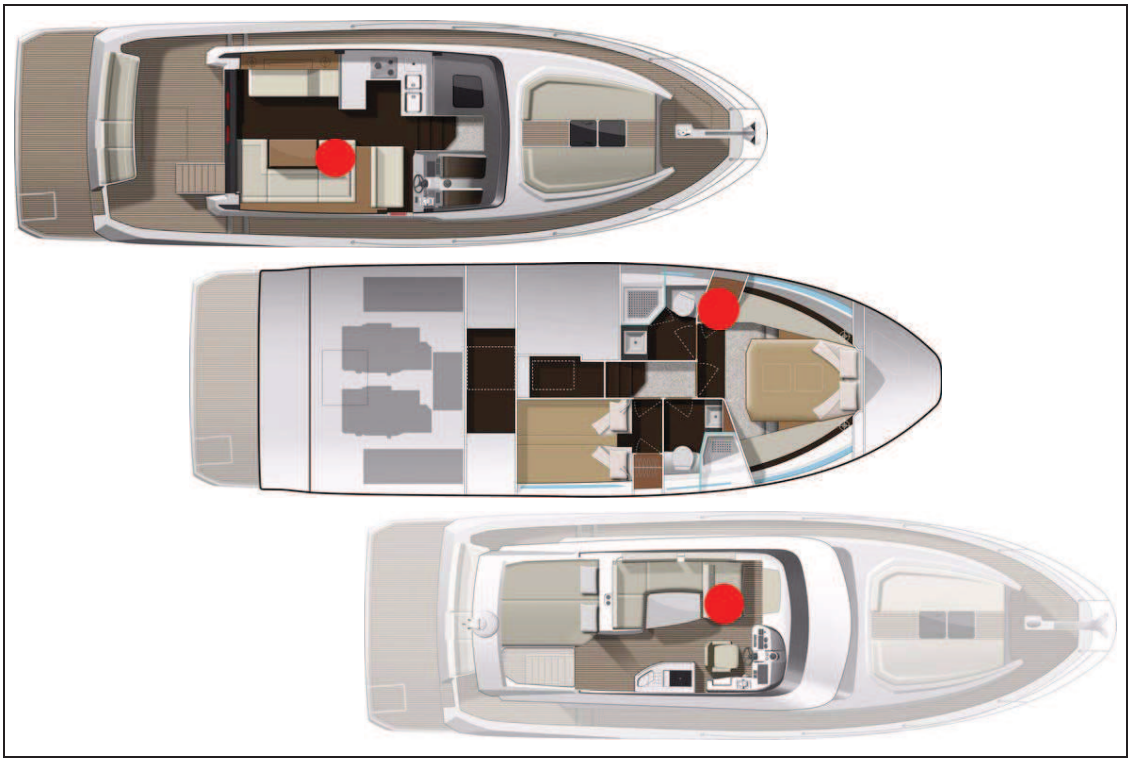
6.4 FIRE-PREVENTION AND FIRE-FIGHTING EQUIPMENT

6.4.1 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 capacity and located in the following places:

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



Location	Minimum extinguishing capacity
Saloon seating	5A / 34B
Forward cabin closet	5A / 34B
Compartment - Flying bridge	5A / 34B

- 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:

- Get the fire-fighting equipment checked at the frequency shown on the equipment ;
- Replace portable fire extinguishers, if outdated or discharged, by extinguishing apparatus of equal capacity ;
- Provide at least one fire bucket with a lanyard, in a readily accessible place, for protection on deck ;
- Get the fixed fire extinguishing systems filled or replaced if they are 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 ;
    - The location of evacuation routes and fire exits.

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.
- In the case of replacement of components of the fire-fighting equipment, use only the appropriate components of the same code designation or having 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:

- The **CO_2** extinguishers shall be used only to fight **electrical fires**.

6.4.2 Automatic fire extinguishing system

General points

The system protects the vessel engine compartment.

It is comprised of the following elements:

1. Fixed inert gas extinguisher ;
2. Temperature sensor (located on the extinguisher) ;
3. System box ;
4. Control panel ;
5. Remote pull switches.

Operation

The mechanism works automatically.

When the sensor detects a temperature above 79° Celsius (175° Fahrenheit) it immediately activates the control unit which:

- Shuts down the engines and the bilge fan,
- Discharges the contents of the fire extinguisher into the engine compartment.

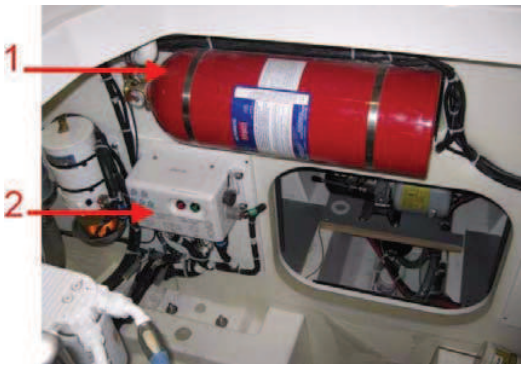
Remark: The system can be activated manually however. To do this you must:
Shut down the engines, the generator (if installed) and the bilge fan,
Discharge the contents of the fire extinguisher into the engine compartment.

- To avoid suffocation, leave the area before discharge. After discharge, ventilate before entering. After discharge, ventilate before entering.
- Refer to manufacturer's instructions for use and maintenance.

To enable functioning of the fixed fire extinguishers, the safety pins on each extinguisher must all be removed completely.

Layout of components

Location: Engine compartment

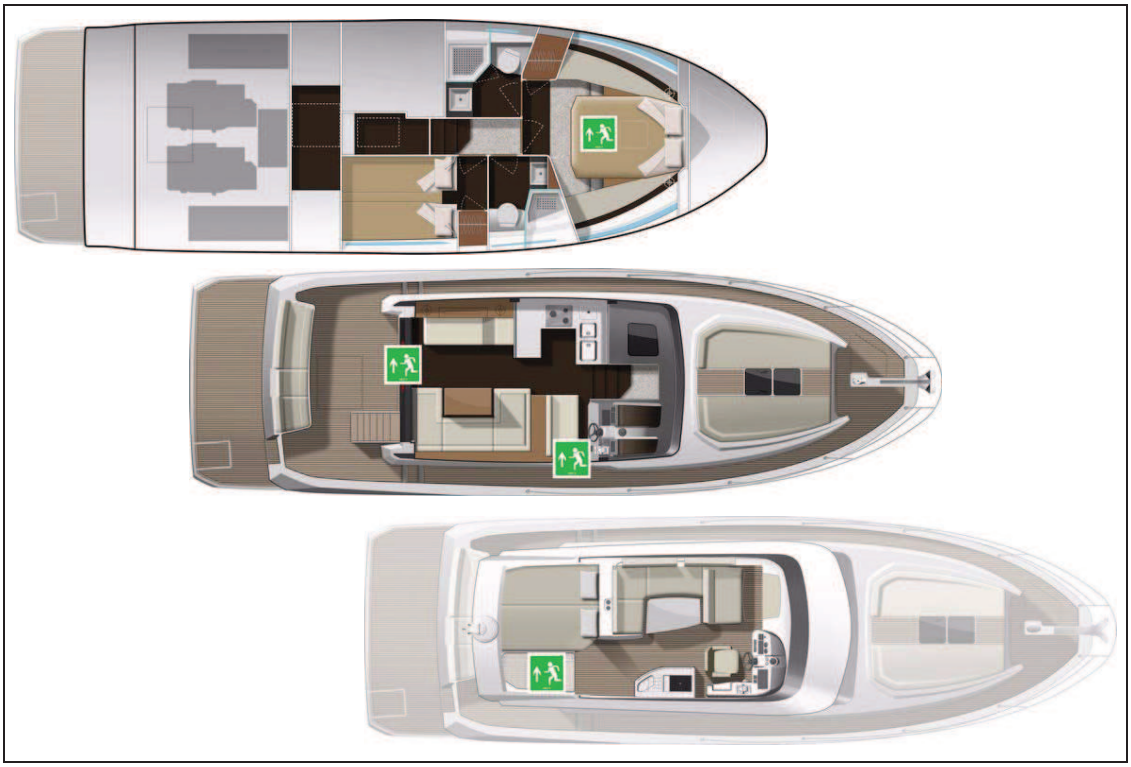


1. Fixed extinguisher (supplied)
2. System box

Control screen
Location: Steering station

Remote pull switches
Location: Flying bridge control house

6.5 EMERGENCY EXITS IN CASE OF FIRE



Location
The forward cabin deck hatch
Sliding hatch
Sliding side bay window
Ladder - Flying bridge

Deployment of the steps for the forward cabin's emergency exit

NEVER:

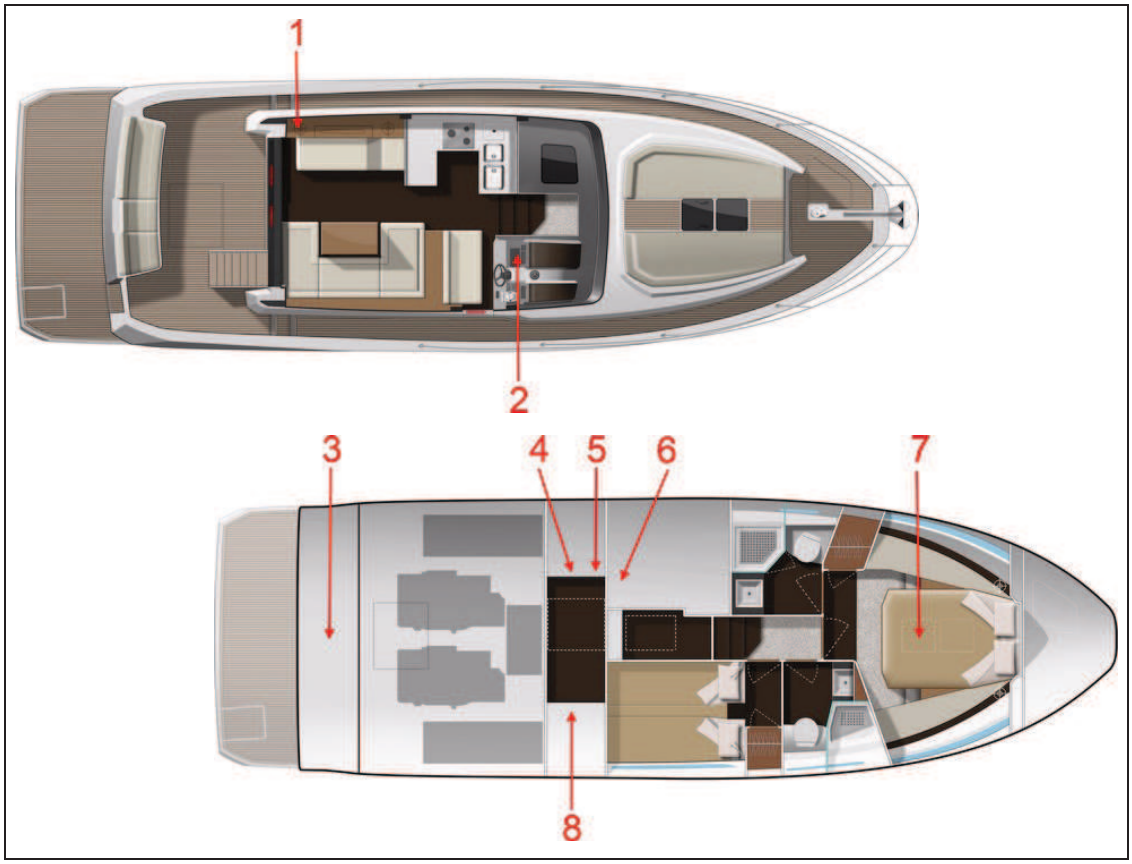
- Obstruct the passages leading to the emergency exits and the hatches ;
- Obstruct or block safety controls, for instance fuel shut off valves, gas taps, electrical system circuit-breakers ;
- Obstruct the access to the portable extinguishers stored in lockers ;
- Leave the boat unsupervised when cooking 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.

6.6 EMERGENCY SYSTEMS IN CASE OF STEERING GEAR FAILURE

On a twin-engined vessel the emergency tiller system works on the difference in drive between the port and starboard engines (difference in throttle and/or forward/aft).

7 ELECTRICAL SYSTEM

7.1 GENERAL INFORMATION ABOUT THE ELECTRICAL SYSTEM



Reference	Designation
1	Battery switch control, Touch screen
2	Circuit breakers / Switches - DC elements
3	Batteries - Stern thruster
4	Battery - Generator & Engines
5	DC breakers
6	Power unit (Battery switch, Power distributor, DC breakers)
7	Bow thruster batteries
8	Service batteries

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

- The risks 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 the installation, maintenance and any modifications be carried out by a technician qualified in marine electricity ;

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

- install or replace electrical equipment or materials with components which exceed the system's nominal electrical power capacity ;

- 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 systems are in use.

7.2 DC INSTALLATION (12 V OR 24 V)

7.2.1 Battery use and distribution

General points

The electricity onboard is direct current.

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 solely to power the engine's starter motor.

The boat may also be equipped with:

- a generator powered by its own battery ;
- a bow thruster, powered by its own battery bank ;
- A stern thruster, powered by its own battery bank.

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 (if the boat has one).

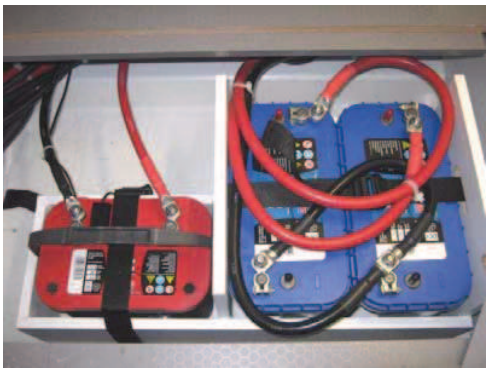
It is imperative that when the boat is first launched, a professional engineer connects the batteries.

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).

Battery set

Generator battery - 50A
Engine batteries - 2 x 75A



Service battery - 3 x 115A
Spare service battery - 115A

Bow thruster batteries - 2 x 50A

Batteries - Stern thruster - 2 x 50A

Maintenance

- Avoid charging batteries to a voltage greater than 14,6 V.
- 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.
- Continuously maintain the charged batteries: this determines their length of life.
- Avoid long periods of electrical inactivity (for example when wintering the boat).

- 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: risk of an explosion.
- If any acid accidentally splashes on your skin or in your eyes thoroughly rinse it off immediately with fresh water. See a doctor immediately.
- Never touch the battery terminals: danger of electric shock.
- Refer to manufacturer's instructions for use and maintenance.

- IT IS IMPERATIVE TO DISCONNECT THE BATTERY CHARGER BEFORE DISCONNECTING THE BATTERY TERMINALS FOR MAINTENANCE.

Maintenance of lead batteries

- Every year check the water levels in the batteries, and if they are low top them up with distilled water.
- 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 degree C and 30 degrees 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 destroyed.

- If the batteries overheat, a build-up of gas may develop: Keep away from the batteries.

7.2.2 Battery switch

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

Generator battery switch
Location: Technical room

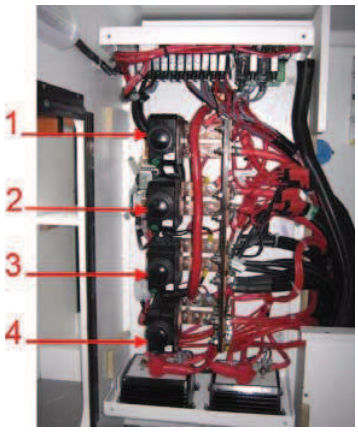
Positive battery isolator switch

Battery switch of negative terminal

- Electrically controlled battery breakers: press the switches on the breaker control panel. In the event of electrical failure, it is possible to press down the button on top of the battery breaker manually to activate it.

The electrically-controlled battery breakers use very little electricity when they are on: **It is imperative to turn off all the battery breakers during lengthy absences, to prevent the batteries from slowly and irreversibly discharging**.

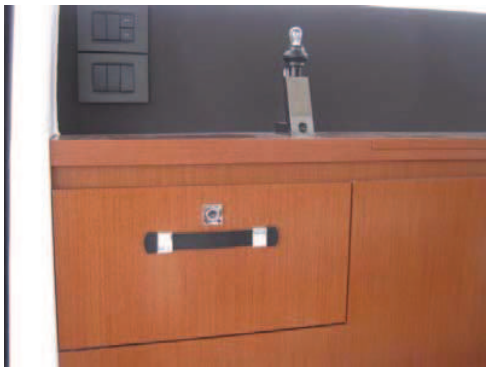
Location: Technical room
Access: Power unit



1. Positive battery isolator switch - Port engine
2. Positive battery isolator switch - Starboard engine
3. Common battery negative isolator switch
4. Service batteries positive isolation switch

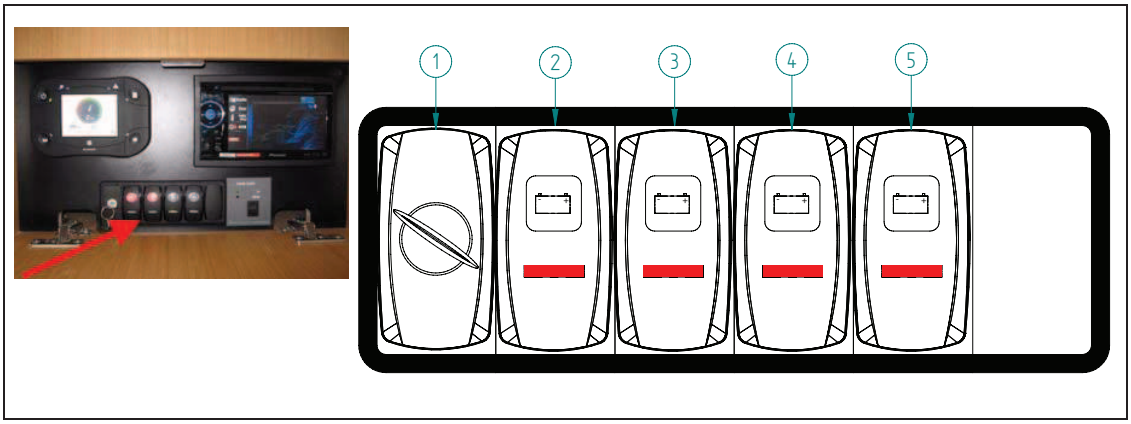
Control panel for electrically controlled battery breakers

Access: Port saloon



- Insert the locking key in the panel. This operation enables the battery breaker control switches to be operated.

- Operate the push button.



Reference	Designation
1	Key - Locking
2	Control - Common negative
3	Control - Service positive
4	Control - Starboard engine
5	Control - Port engine

- The green light illuminates on the locking switch and on all the battery breaker control switches. This indicates that control of the battery breakers is enabled.

- Activate the push button of the battery breaker you wish to operate: the red light on the switch illuminates. This means that the battery isolator is ON (actuated).

- To turn off the battery breaker, press the push button again. When the red light goes out, the battery breaker is OFF (turned off).

- Turn off all battery breakers before leaving the vessel: **risk of complete discharging of whole battery bank**.

- Avoid touching the battery breakers when they are live.

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

7.2.3 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 give 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's green indicator comes on.

Location: Technical room

Power: 150A

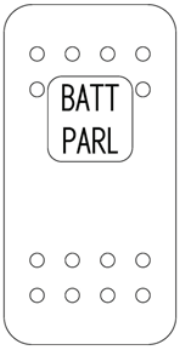
7.2.4 Connection of battery set

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

Linking switch

Hold the switch down while starting the engine. Release the switch once the engines are running.

Location: Steering station



7.2.5 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.
- Within its power limits, the DC equipment can be supplied directly.

Location: Technical room
Capacity: 2 x 40A

Operation

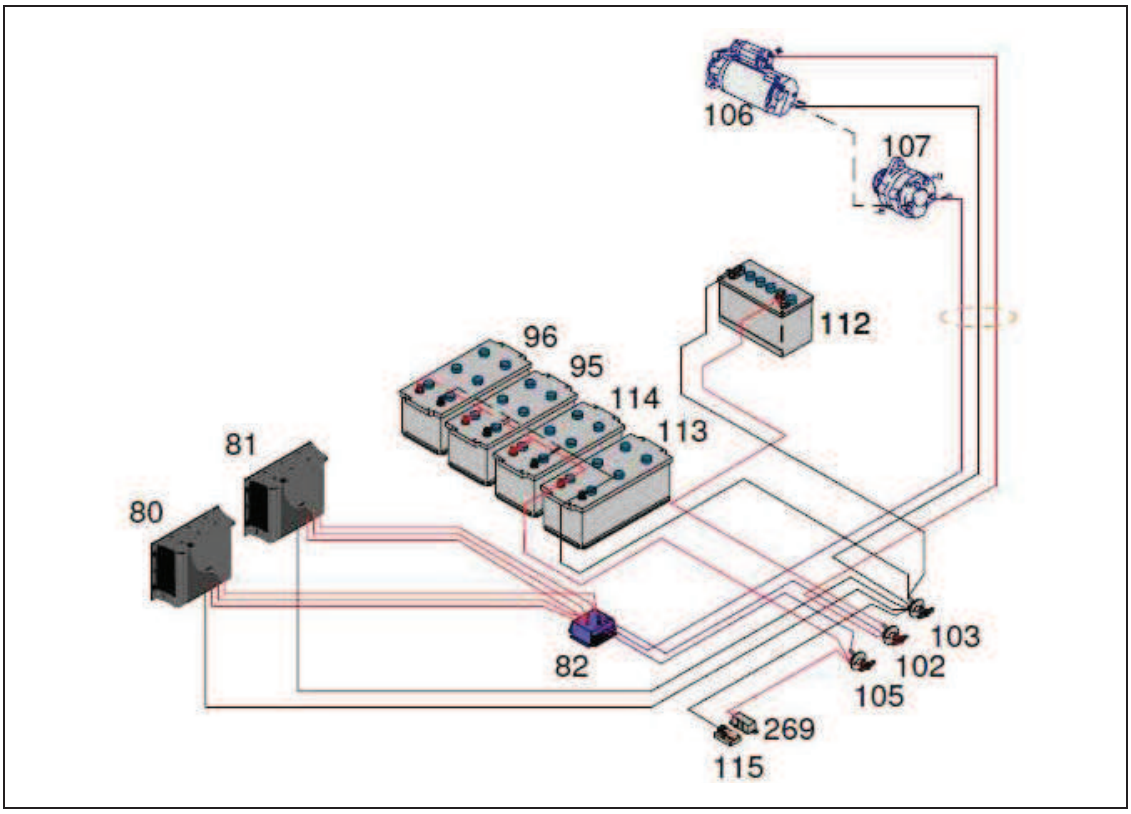
- The charger runs fully automatically. It can remain permanently connected to the batteries and does not need to be disconnected when starting the engine.
- In some electrical circuits, there may be battery chargers coupled in parallel.

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.

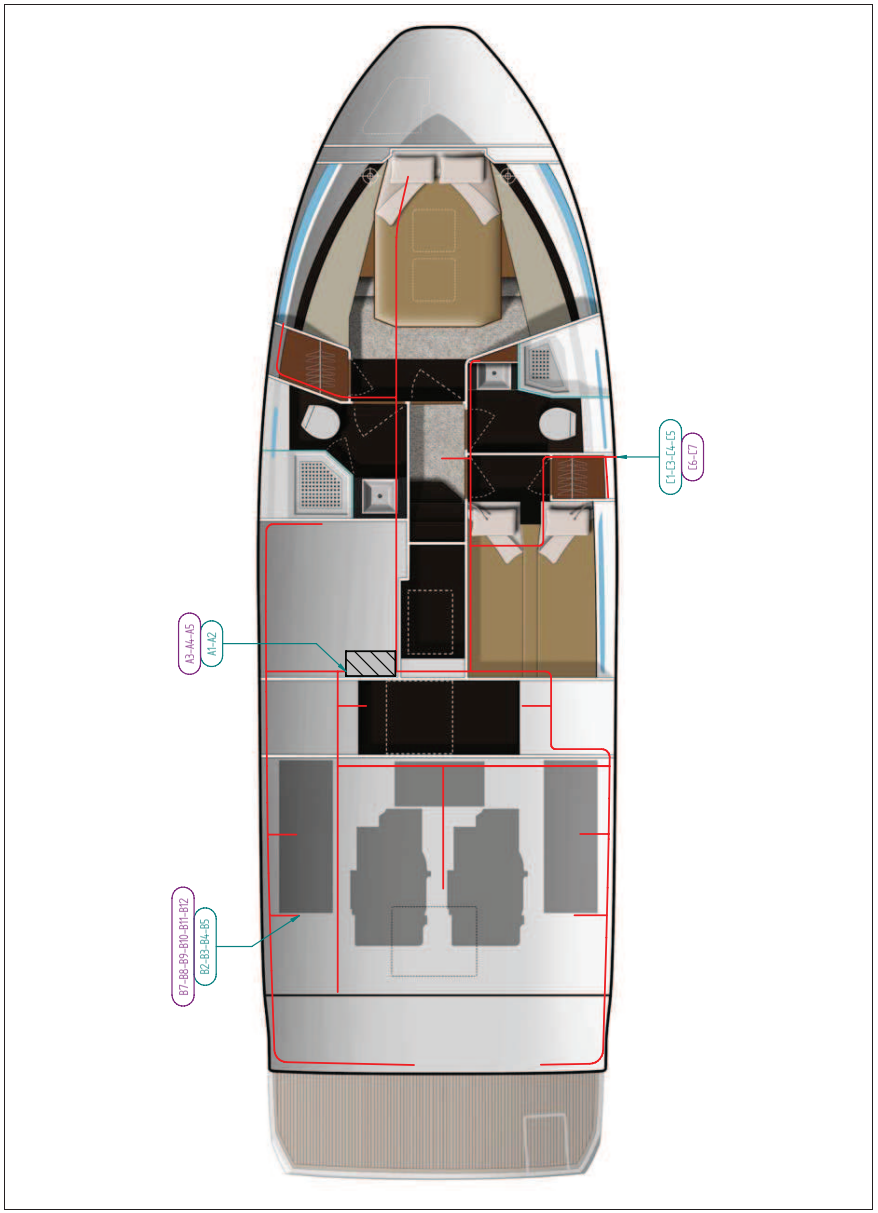
IT IS IMPERATIVE TO DISCONNECT THE BATTERY CHARGER BEFORE DISCONNECTING THE BATTERY TERMINALS FOR MAINTENANCE.

Layout diagram - Battery cables

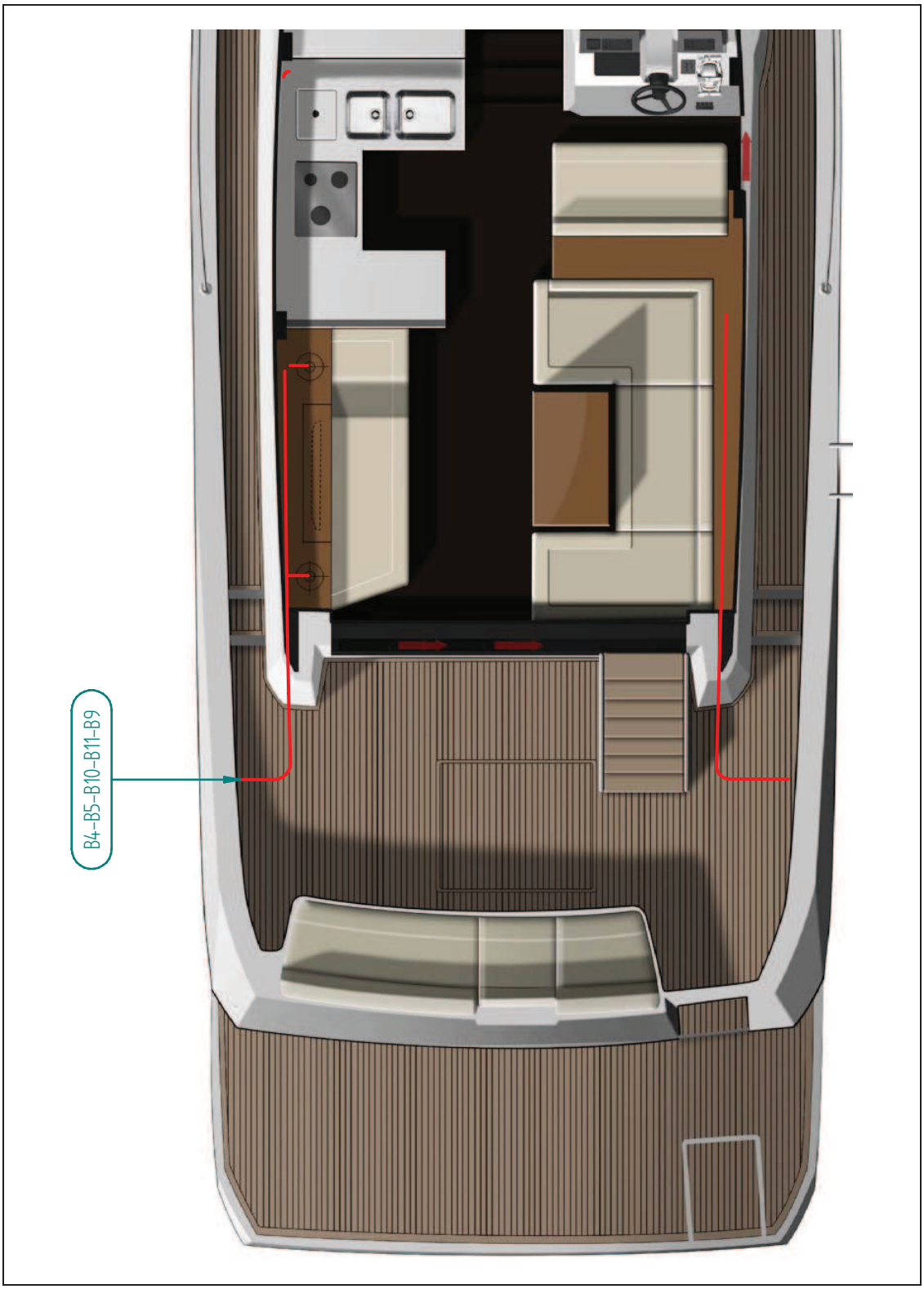


Reference	Designation
80	Battery charger
81	Battery charger (additional)
82	Power distributor
95	Spare service battery
96	Spare service battery
102	Engine battery's positive isolation switch
103	General negative battery isolation switch
105	Service batteries positive isolation switch
106	Alternator
107	Electric starter
112	Engine battery
113	Service battery
114	Service battery
115	Shunt (used to measure current)
269	General fuse for 12 V circuit

7.2.6 Layout of the wiring looms in the hull - DC circuit



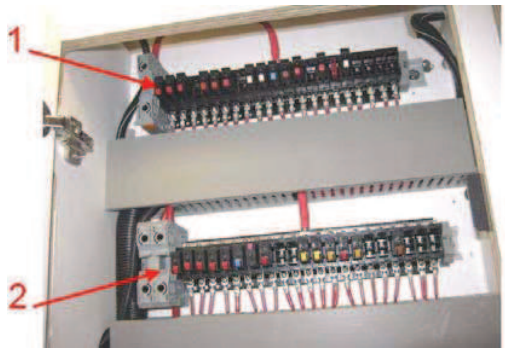
7.2.7 Layout of the deck wiring looms - DC circuit



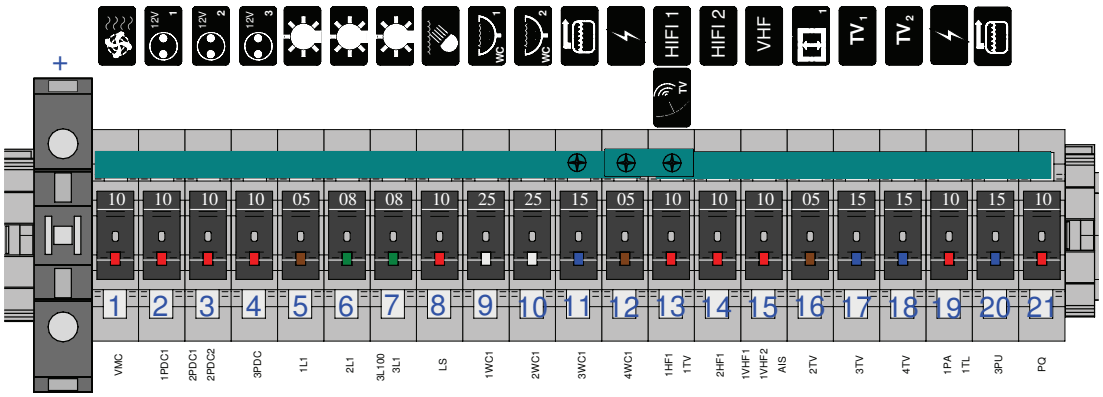
7.2.8 Circuit breakers

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

Location: Technical room

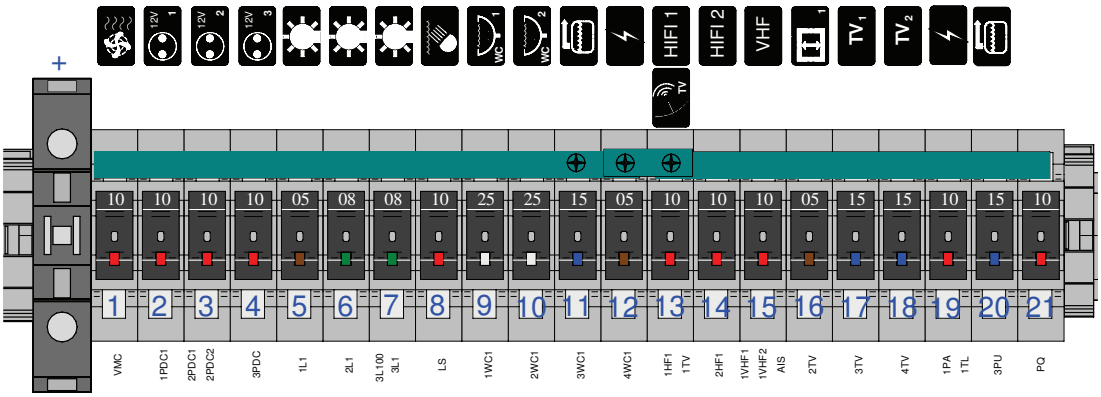


Ref 1



Reference	Designation
1	Air extractor (Washer-dryer)
2	12 V socket
3	12 V socket
4	12 V socket (Tender inflator)
5	Lighting - Flying bridge
6	Deck light
7	Deck light
8	Underwater projectors
9	Electric toilet
10	Electric toilet
11	Masher (Pump - WC evacuation to sea)
12	Black water tank gauge
13	Hifi - saloon - TV Antenna
14	Hifi - Forward cabin
15	VHF / AIS
16	Mechanism for raising/lowering the TV
17	Inverter - Saloon TV
18	Inverter - TV - Forward cabin
19	VMU power supply tenderlift / Gangway
20	Pump - Drainage of the waste waters
21	Jib reefer - AC shore socket

Ref 2



Reference	Designation
1	Starboard windscreen wiper
2	Wiper - Middle
3	Port windscreen wiper
4	Windscreen washer
5	Demister
6	Water unit
7	Deck wash pump
8	Fridge (Wheelhouse)
9	Fridge (Flying bridge)
10	Conservator (Cave)
11	Wine cellar
12	Wine cellar
13	Bilge pump
14	Navigation lights
15	Pump discharge - Waste water tank (Supply)
16	Pump discharge - Waste water tank (Control)
17	Deck searchlight
18	Projector - Cockpit
19	Gas solenoid (Version: US)
20	Flaps
21	Fixed extinguisher

Location: Technical room

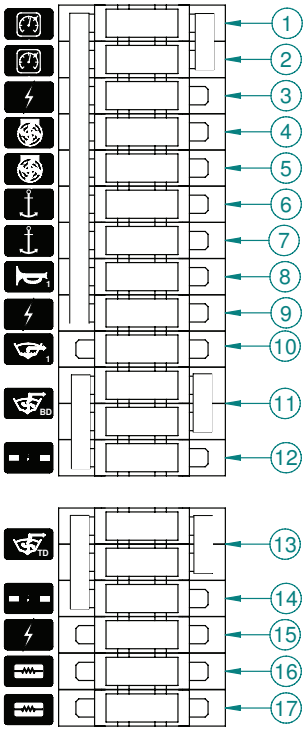
120A: Electric windlass

120A: Gangway

120A: tenderlift

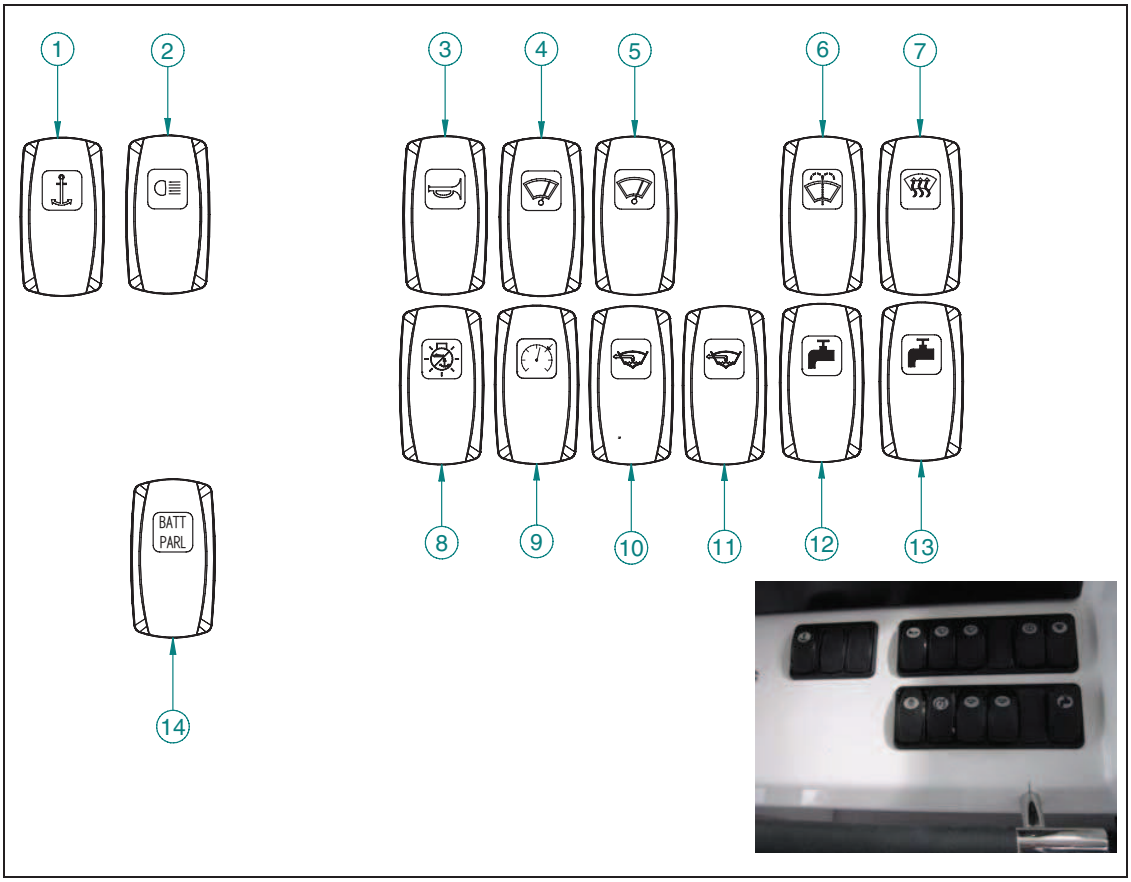
DC breakers

Location: Technical room



Reference	Designation
1	Electronic
2	Electronic
3	Battery switch control supply
4	Bow thruster
5	Stern thruster
6	Windlass - forward
7	Windlass - aft
8	Horn
9	Touch screen
10	Electric bilge pump
11	Ventilator - Engine compartment
12	Plus after contact - Port side
13	Ventilator - Engine compartment
14	Plus after contact - Starboard
15	Horn & Demister
16	Shunt (Current measurement - House)
17	Shunt (Current measurement - House)

Circuit breakers / Switches - Steering station



Reference	Designation
1	Electric windlass
2	Underwater projectors
3	Horn
4	Starboard windscreen wiper
5	Port windscreen wiper
6	Windscreen washer
7	Demister
8	Navigation lights
9	Electronic instruments
10	Electric bilge pump
11	Electric bilge pump
12	Deck wash pump
13	Water unit
14	Connection of battery set

7.2.9 Lighting - Touch screen

The touch screen allows the boat's auxiliary functions to be driven and displayed:

- Lighting,
- Battery voltage,
- Fresh water gauge.
- Management of boat's AC supply sources.

Location: Port saloon.

Source selectors:

Location: Engine compartment.

A handle allows the selector to be engaged manually.

1. Source selector: "House" - is fitted if the boat is fitted with a generator.

2. Source selector: "Air conditioning" - is fitted if the boat is fitted with air conditioning.

Handle

NOTES

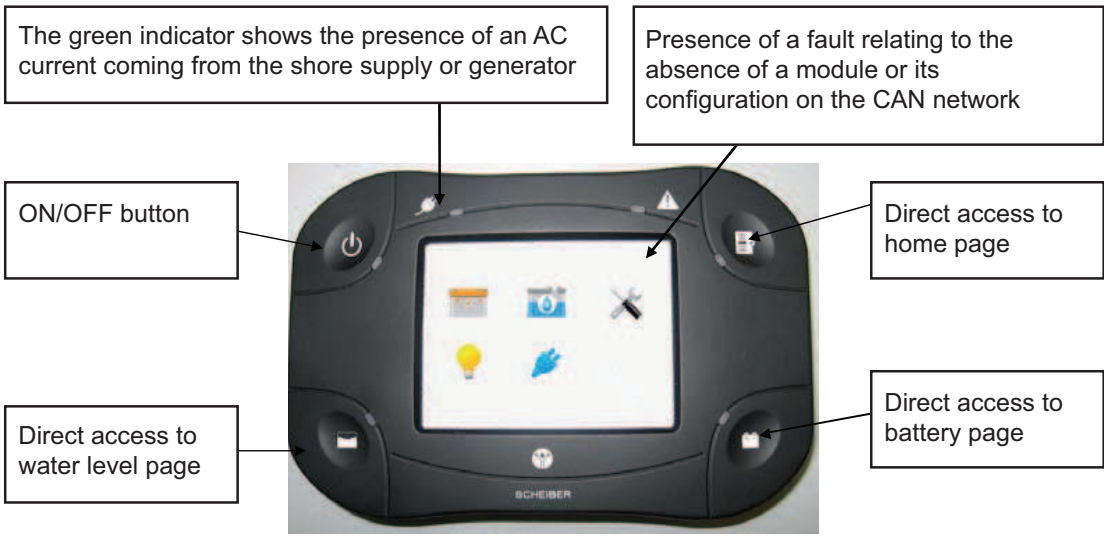
The switches are stand-alone, they operate without wires: they are automatically supplied with electricity by means of 'PIEZO' technology.

Each switch switches a lighting outlet on and off.

Each switch is fitted with a dimmer.

The switches do not require any particular maintenance. To clean them, simply wipe over the surface of the switch with a clean, damp cloth.

Touch screen operation



- Battery measurement menu access

- Fresh water tank level menu access

- AC supply distribution menu access

- Interior lighting menu access

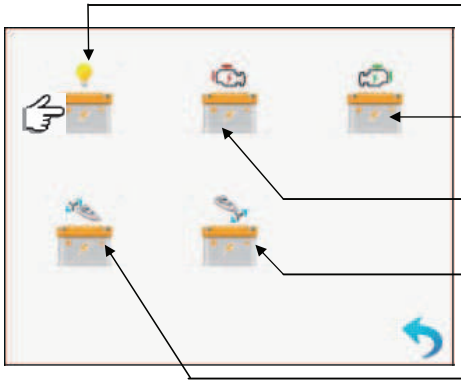
- Adjustment menu access (Access to it is restricted by a code supplied on request to the yard)

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

Return to preceding page

Battery menu

A press of the finger on the required menu icon allows access to a sub-menu.



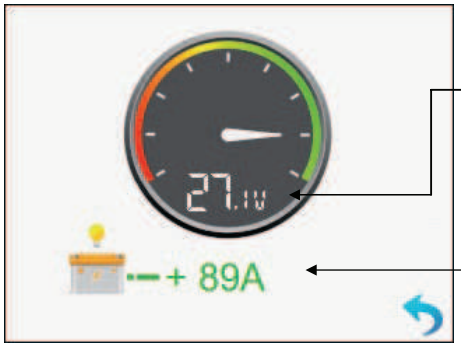
Access to service battery charge and discharge voltage display

Access to starboard engine battery voltage display

Access to port engine battery voltage display

Access to bow thruster battery voltage display

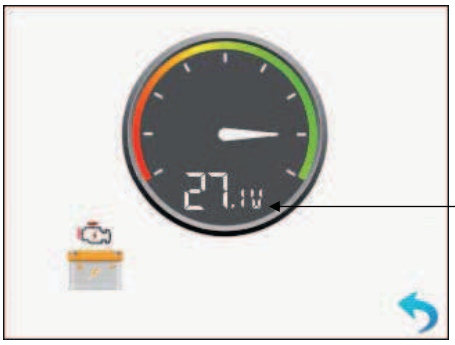
Access to bow thruster battery voltage display (if fitted on board)



Service battery voltage

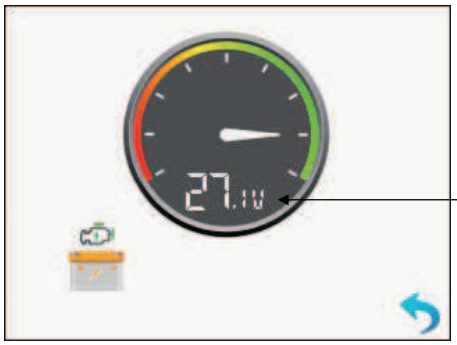
Current charge (green) or discharge (red) measurement

BATTERY MENU - PORT ENGINE



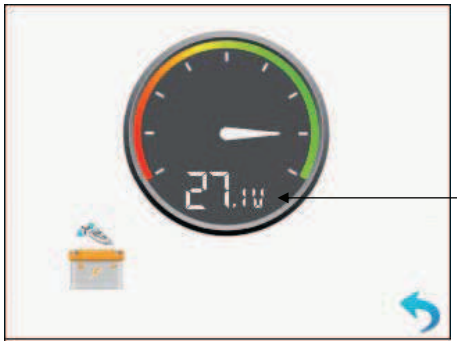
Battery voltage - Port engine

BATTERY MENU - STARBOARD ENGINE



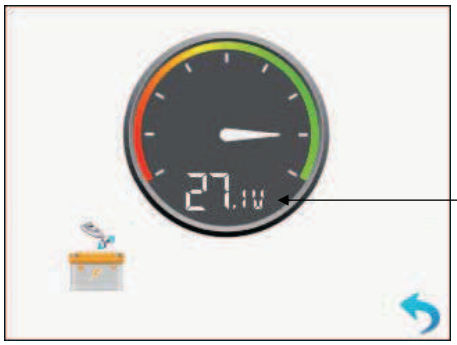
Battery voltage - Starboard engine

BATTERY MENU - STERN THRUSTER



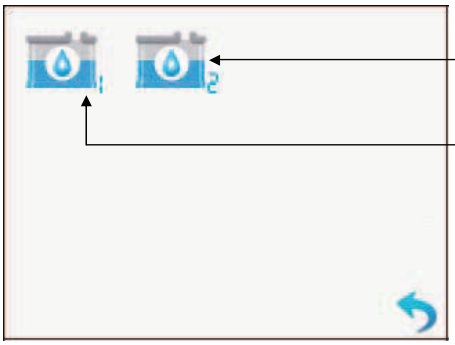
Battery voltage - Stern thruster

BATTERY MENU - BOW THRUSTER



Battery voltage - Bow thruster

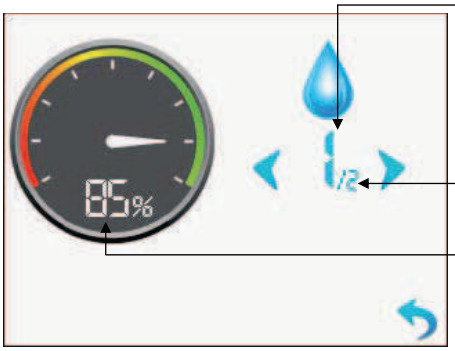
MENU ACCESS: - WATER GAUGE



Access to the 2 tank gauge

Access to the 1 tank gauge

MENU: - WATER GAUGE



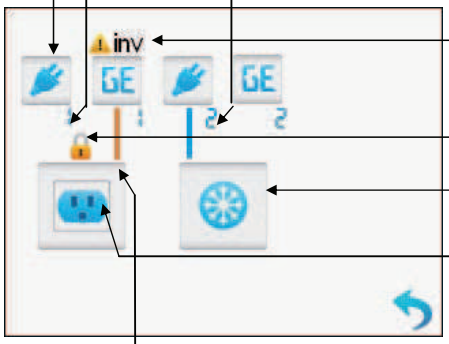
Tank No.

Number of tanks in the boat

Tank level

Menu: - AC source "Air conditioning"

This menu allows the AC current origin (shore supply or generator) to be chosen for operating the air conditioning.
This function drives an electromagnetic inverter located in the engine room *.



1 - Supply line "House"

2 - Supply line "Air conditioning"

Shore supply blue-tinted: The socket is connected and supplied. Access to the shore supply voltage display

Reversal of polarity (only for the 110V)

Padlocks: Indicates that the handle on the source selector is engaged

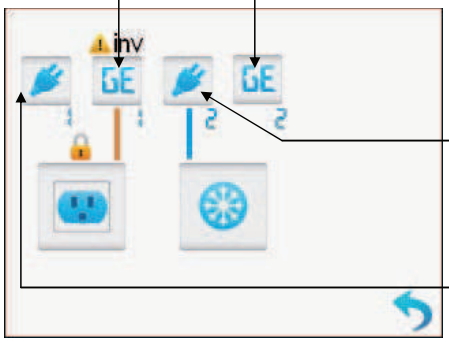
Menu access: Power supply - air conditioning

Menu access: Supply to on-board circuit

Grey: Non current carrying

Blue: On-board circuit live

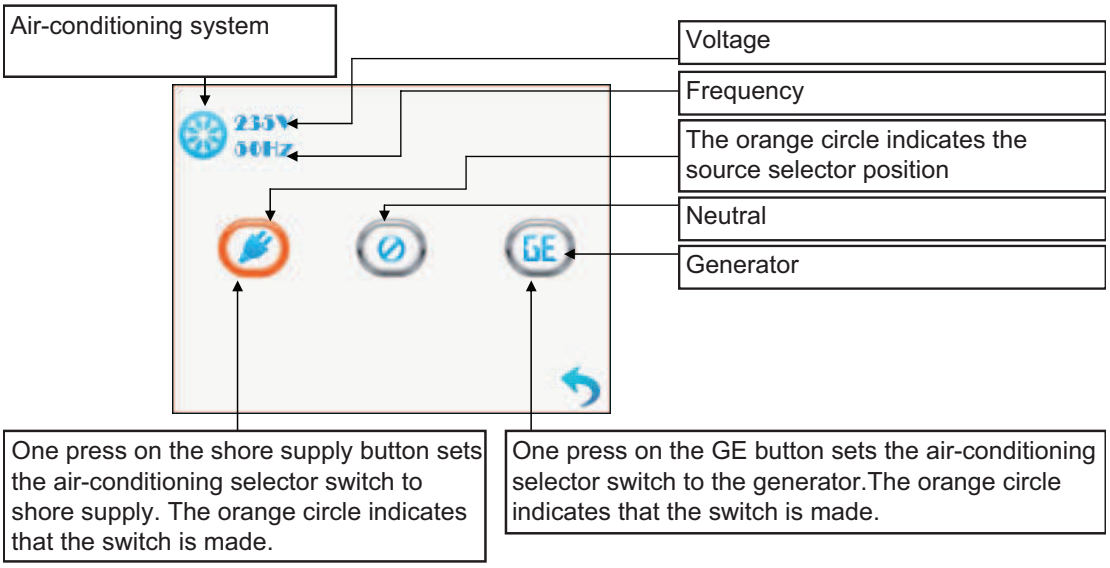
Orange: On-board circuit live but locked by setting the handle on the source selector



Access the generator start menu by pressing the GE button

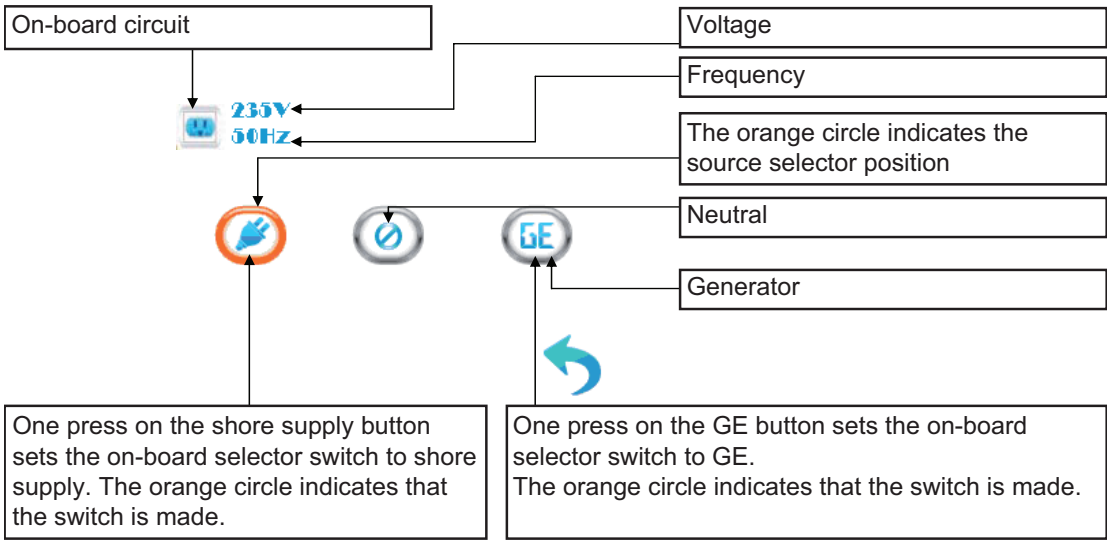
Access the air-conditioning shore power supply menu by pressing on the "2 socket" button

Access the shore power supply menu by pressing on the "1 socket" button



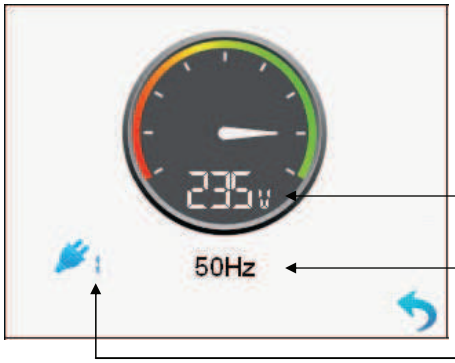
Menu: - On-board circuit source

This menu allows the AC current origin (shore supply or generator) to be chosen for operating the air conditioning.
This function drives an electromagnetic inverter located in the engine room *.

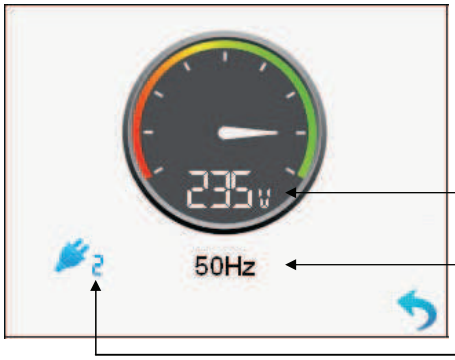


*** The source inversion packages installed in the engine room also have a removable handle to alter the source origin manually.**

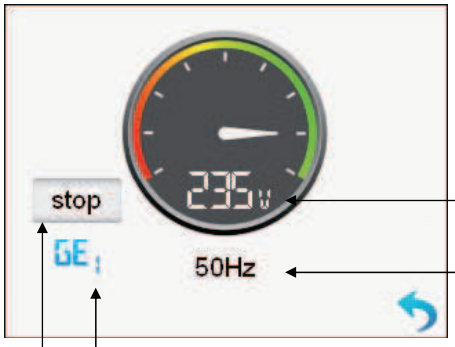
Menu access: - Shore supply source



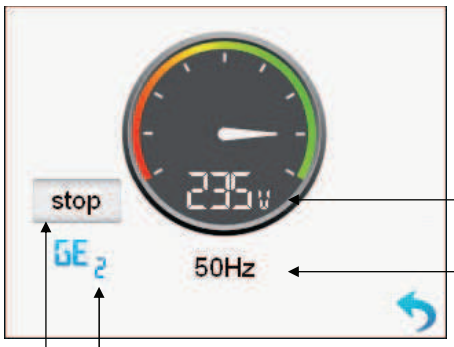
- Shore power supply voltage
- Shore power supply frequency
- 1 - Shore power supply



- Air conditioning shore supply voltage
- Air conditioning supply frequency
- 2 - Air conditioning shore power supply



- Voltage provided by the generator for on-board supply
- On-board supply frequency
- 1 - On-board AC
- Starting or stopping the generator



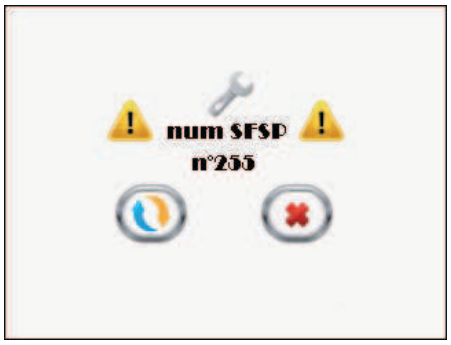
Voltage supplied by generator to air conditioning

Air conditioning supply frequency

2 - AC air conditioning

Starting or stopping the generator

Access to settings for network maintenance
(boatyard access only)



Error - lighting module has no coding resistance

Error - several lighting modules with the same coding n°

Error - the on-board source selector configuration is not up to date.

Confirm or cancel up-date

Dismantling the touch screen

The touch screen is clipped to an aluminium support.

7.3 AC SYSTEM (110 V OR 220 V)

- Never let the end of the boat/shore supply cable hang in the water: The result may be an electric field liable to hurt or kill the swimmers nearby.
- There may be danger of electrocution if alternating current systems are incorrectly used.
- Do not work on a live AC system.

To reduce the risks of electric shock and of fire:

- Turn off the shore supply with the onboard cut-off switch before connecting or disconnecting the vessel/shore supply line.
- Connect the ship/shore power cable on the boat before plugging it into the socket onshore.

- Disconnect the ship/shore power cable at the shore socket first.
- If the reverse polarity indicator is activated immediately disconnect the cable.
- After using the socket onshore, close its protective cover tightly.
- Do not modify the connections of the ship/shore power cable: only use compatible connections.

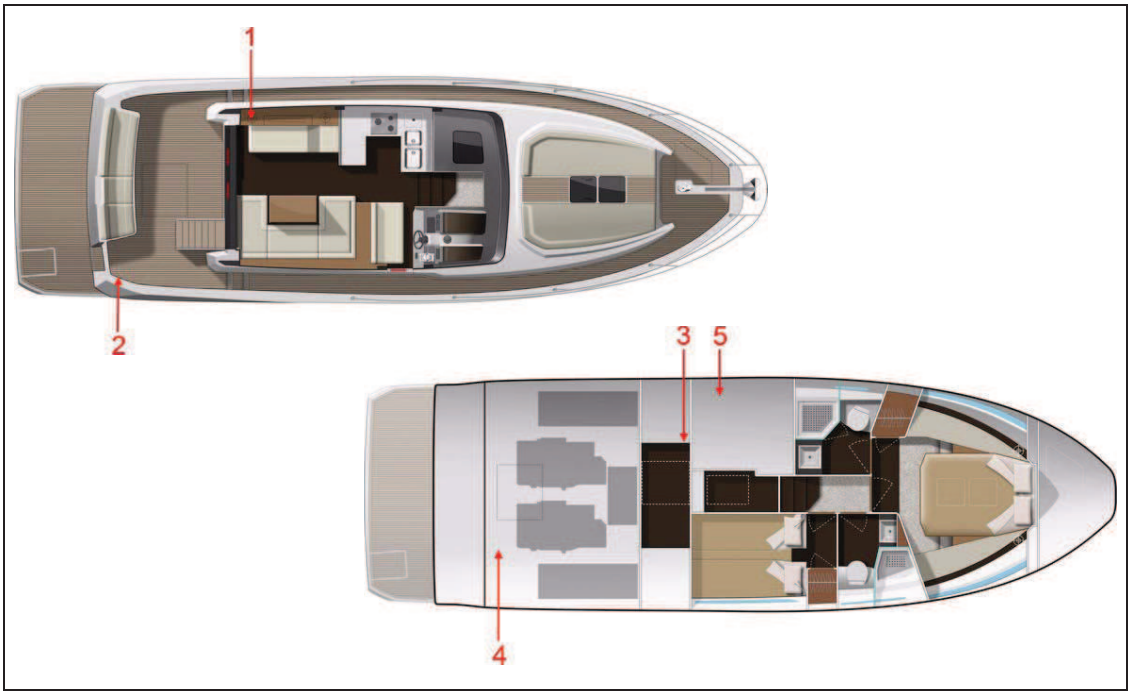
DO NOT MODIFY THE CONNECTIONS ON THE SHIP/SHORE POWER CABLE.

- Do not modify the vessel's electrical installation nor its relating diagrams. The installation, maintenance and any modifications must be carried out by an electrician qualified in marine electricity. Check the system at least every two years.
- Disconnect the boat's shore power when the system is not in use.
- Connect the relay cans or metal casing of the electrical equipment installed to the boat's protective conductor (green or green with yellow stripe conductor).
- 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 of the DC and AC circuits before working on the cabin AC sockets.

7.3.1 AC shore socket

location of components



AC sockets (Shore / Air conditioning)
Ref 1

Control - AC Source selector
(See Lighting chapter - Touch screen)
Ref 2