

LEADER 33

OUTBOARD VERSION



OWNER'S MANUAL



JEANNEAU

197895 RCD-2
Index B



CONTENTS

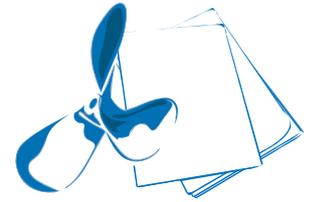
INTRODUCTION	7
<i>Welcome!</i>	7
<i>Notes on reading this manual</i>	9
1 TECHNICAL SPECIFICATIONS	11
1.1 CONSTRUCTION	11
1.2 GENERAL DIMENSIONS	11
1.3 ENGINE	11
1.4 ELECTRICITY	11
1.5 CAPACITIES	12
2 DESIGN CATEGORIES AND DISPLACEMENT	13
2.1 DESIGN CATEGORIES	14
3 STABILITY AND BUOYANCY	15
3.1 STABILITY INFORMATION	15
3.2 ACCESS TO THE BOAT	18
4 MANOEUVRABILITY	21
4.1 VISIBILITY FROM THE STEERING STATION	21
4.1.1 <i>Demister</i>	22
4.1.2 <i>Wiper</i>	23
4.1.3 <i>Windscreen washer</i>	23
4.1.4 <i>Deck searchlight</i>	24
4.1.5 <i>Horn</i>	25
4.1.6 <i>Navigation lights</i>	26
5 SAFETY	27
5.1 PREVENTING MAN OVERBOARD SITUATIONS AND MEANS OF REBOARDING .	27
5.1.1 <i>Prevention of man overboard</i>	27
5.1.2 <i>Reboarding</i>	29
5.2 STORING THE LIFERAFT	30
5.3 SECURING MOVEABLE ITEMS	31
5.4 INFORMATION ON FLOODING RISKS AND BOAT STABILITY	32
5.4.1 <i>Hull openings</i>	32
5.4.2 <i>Drainage system</i>	36
5.5 EMERGENCY SYSTEMS IN CASE OF STEERING GEAR FAILURE	42
5.6 INFORMATION ON LIGHTNING-RELATED RISKS	42
6 INFORMATION RELATING TO FIRE RISKS AND RISKS OF EXPLOSION	43
6.1 PROPULSION ENGINES AND OTHER FUEL-BURNING EQUIPMENT	43

6.2	ELECTRICAL SYSTEM	43
6.3	GAS SYSTEM	43
6.4	FIRE FIGHTING AND PREVENTION EQUIPMENT	44
6.4.1	Fire-fighting equipment	44
6.4.2	Fixed extinguishing system with manual control	46
6.4.3	Smoke alarm	49
6.5	EMERGENCY EXITS IN CASE OF FIRE	51
7	ELECTRICAL SYSTEM	53
7.1	GENERAL INFORMATION ABOUT THE ELECTRICAL SYSTEM	53
7.2	DC INSTALLATION (12V)	54
7.2.1	Battery use and distribution	54
7.2.2	Battery switches	57
7.2.3	Power distributor	58
7.2.4	Connection of the battery bank	59
7.2.5	Battery charger	60
7.2.6	Layout of hull wiring looms - DC circuit	62
7.2.7	Layout of deck wiring looms - DC circuit	63
7.2.8	Layout of wiring looms in the deck backing moulding - DC circuit	64
7.2.9	Sportop wiring harness plan - DC circuit	65
7.2.10	Circuit breakers	66
7.2.11	Fusibles	70
7.2.12	Steering station switches	71
7.3	TOUCH SCREEN	72
7.4	AC SYSTEM (110V OR 220V)	81
7.4.1	General points	81
7.4.2	AC shore socket	83
7.4.3	AC source selectors	85
7.4.4	Diagram of layout	87
7.4.5	DC/AC converter	93
7.4.6	Layout of hull wiring looms - AC circuit	96
7.4.7	Layout of deck wiring looms - AC circuit	97
7.5	PROTECTION AGAINST ELECTROLYSIS / EARTH PLATE	98
7.5.1	Anodes	98
7.5.2	Earthing plates	100
8	LIQUEFIED PETROLEUM GAS (LPG) SYSTEM	101
8.1	GENERAL POINTS	101
8.2	OPERATION OF THE LPG SYSTEM	103
8.3	VERIFICATION OF THE LPG SYSTEM	104
8.4	DIAGRAM OF LAYOUT	106
8.5	COOKING APPLIANCES WITH BUILT-IN LPG CYLINDER	108
9	DOMESTIC APPLIANCES	111
9.1	FRIDGE	111
9.2	MICROWAVE	113
9.3	HOT PLATE	114

10 AUDIO-VISUAL EQUIPMENT	115
10.1 TELEVISION	115
10.2 HIFI	116
11 ONBOARD COMFORT	117
11.1 AIR CONDITIONING	117
11.2 ELECTRONIC EQUIPMENT	124
11.3 FUEL-BURNING EQUIPMENT FOR PURPOSES OTHER THAN PROPULSION (GENERATOR, HEATING)	126
11.3.1 General points	126
11.3.2 Generator	126
12 WATER SYSTEMS	133
12.1 GENERAL POINTS	133
12.2 USING A VALVE	134
12.3 FRESH WATER FILLING SYSTEM	135
12.4 FRESH WATER DISTRIBUTION SYSTEM	136
12.5 MAIN PLUMBING EQUIPMENT	138
12.5.1 Water unit	138
12.5.2 Cockpit shower	139
12.5.3 Shore fresh water supply	139
12.5.4 Water heater	141
12.6 BLACKWATER SYSTEM (TOILET)	142
12.6.1 Diagram of blackwater system	142
12.7 WASTE WATER SYSTEM	149
12.7.1 Diagram of waste water circuit installation	151
12.7.2 Diagram of waste water circuit installation - waste water tank option	152
13 ENGINE	155
13.1 INFORMATION RELATING TO FIRE RISKS AND RISKS OF EXPLOSION	155
13.2 DANGER FROM MOVING MECHANICAL PARTS	157
13.3 GENERAL POINTS	157
13.4 STARTING THE ENGINE	159
13.5 ENGINE WATER INTAKE VALVE	160
13.6 FUEL FILTER	160
13.7 ENGINE INSTALLATION	160
13.8 ENGINE CONTROL	161
13.9 ACCESS TO THE ENGINE	161
13.10 FLAPS	161
13.10.1	172
13.10.2	174
13.11 PROPELLER	166

14 STEERING SYSTEM	167
14.1 GENERAL POINTS	167
14.2 HYDRAULIC STEERING	167
15 DECK FITTINGS	171
15.1 GENERAL POINTS	171
15.1.1 GRP	171
15.1.2 Plexiglas (PMMA)	171
15.1.3 Stainless steel	171
15.1.4 Solid wood on exterior wooden panelling	172
15.1.5 Exterior upholstery	172
15.2 EQUIPMENT	173
15.2.1 Sun roof	173
15.3 BERTHING, ANCHORING, TOWING	176
15.3.1 Anchor points	176
15.3.2 Towing	177
15.4 MAIN ELEMENTS OF THE CHAIN LOCKER	178
16 HULL FITTINGS	183
16.1 INTERIOR UPHOLSTERY	183
16.2 INTERIOR WOODWORK	186
16.3 INTERIOR MAINTENANCE	187
17 HANDLING, TRANSPORT	189
17.1 POSITION OF HOISTING CRADLE AND STRAPS	189
17.2 LIFTING	190
17.3 UPPER LIMIT OF ANTIFOUL	191
17.4 LAUNCHING AND LIFTING	192
17.5 WINTERISATION	193
17.6 TRANSPORT	194
18 ENVIRONMENT	195
APPENDIX: LABEL KEY	197

INTRODUCTION



Welcome!

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

A JEANNEAU 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 JEANNEAU 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 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 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 manoeuvring 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 be 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.



- 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.



1 TECHNICAL SPECIFICATIONS

1.1 CONSTRUCTION

Model	LEADER 33
Architect / Interior design	Mickael Peters / Garroni Design
Builder	SPBI S.A
Principal means of propulsion	Motor
Deck construction material	Monolithic glass sandwich / GRP / Balsa wood
Hull construction material	Monolithic glass sandwich / GRP
Application	Wet laid fiber

1.2 GENERAL DIMENSIONS

L.O.A (L_{max})*	10,53m
<i>(Including removable parts that can be dismantled (bow roller, pulpit, bowsprit), without affecting the structure of the boat)</i>	
Hull length (L_h)*	9,92m
<i>(Excluding: removable parts that can be dismantled without affecting the structure of the boat)</i>	
Overall width (B_{max})*	3,32m
<i>(Including: removable parts that can be dismantled without affecting the structure of the boat)</i>	
Beam(B_h)*	3,30m
<i>(Excluding: removable parts that can be dismantled without affecting the structure of the boat)</i>	
Air draft - Empty vessel:	4,15m
Draught - Boat fully laden (without engine):	0,72m
Wetted surface area	Approximately 24 m ²

1.3 ENGINE

Nominal maximum propulsion power (at the propeller output)	2 x 195Kw
Maximum recommended engine size	2 x 333kg

1.4 ELECTRICITY

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

1.5 CAPACITIES

Total mass of liquid contents of fixed tanks when full:779kg

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

The volume masses chosen are:

- 0,79kg/L for petrol,
- 0,86kg/L for diesel fuel,
- 1kg/L for water.

Fuel capacity:

- Outboard engine (Petrol):510L
- Generator (Diesel):30L

Fresh water capacity (*):175L

Blackwater capacity (Toilet):80L

Waste water capacity (Washbasin, Shower, Domestic appliances)95L

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).



2 DESIGN CATEGORIES AND DISPLACEMENT

- 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.

VERSION WITH ARCH			
Design category	B	C	D
Maximum number of people onboard (CL)*	8	10	10
Light displacement (MLC)**	5 492kg		
Recommended maximum load (ML)***	2 670kg	2 750kg	
Displacement with maximum load (MLDC)****	8 162kg	8 242kg	

SPORTOP VERSION			
Design category	B	C	D
Maximum number of people onboard (CL)*	8	10	10
Light displacement (MLC)**	5 909kg		
Recommended maximum load (ML)***	2 670kg	2 750kg	
Displacement with maximum load (MLDC)****	8 579kg	8 659kg	

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.



3 STABILITY AND BUOYANCY

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 change to the disposal of weight on board (for example, the addition of a raised structure for fishing, radar, change of engine etc) can noticeably 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 (Bimini, awnings...).

- 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.

Cabins



Head



Saloon



Galley





- It is important to take additional precautions in the event of strong winds, rough seas or breaking waves.
- Do not install an engine in this boat with a higher power rating than indicated on the manufacturer's plate of the boat.
- 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 right of way as defined by the rules of marine traffic and required by international regulations to prevent collisions at sea (RIPAM / Col Reg).
- Ensure that you always have sufficient room to stop or manoeuvre if necessary in order to avoid a collision.
- Avoid abrupt manoeuvres at full speed.
- Do not sit on the forward section of the cockpit when the boat is moving at high speed.
- Reduce speed in large waves for your comfort and safety.

3.2 ACCESS TO THE BOAT

Access to the cockpit



Access to the petrol tank compartment



Access to companionway



Foredeck access




- The cockpit and the petrol tank compartment must strictly be 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 companionway access is 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

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



4 MANOEUVRABILITY

4.1 VISIBILITY FROM THE STEERING STATION

The view of the helmsman from the helm station can be obstructed by the boat heeling significantly or because of other factors caused by one or several of the following variable conditions:

- 1) Adjustment angle of the propulsion system (trim) (On boats equipped with an engine push angle regulator);
- 2) Angles of level control flaps (On boats fitted with level control flaps, powered or fixed, installed on the transom);
- 3) Load and load distribution;
- 4) Speed;
- 5) Rapid acceleration;
- 6) Transition from displacement mode to planing mode;
- 7) Sea conditions;
- 8) Rain and mist;
- 9) Darkness and fog;
- 10) Lights inside the boat;
- 11) Position of covers and curtains;
- 12) Persons or mobile equipment located in the helmsman's field of view.

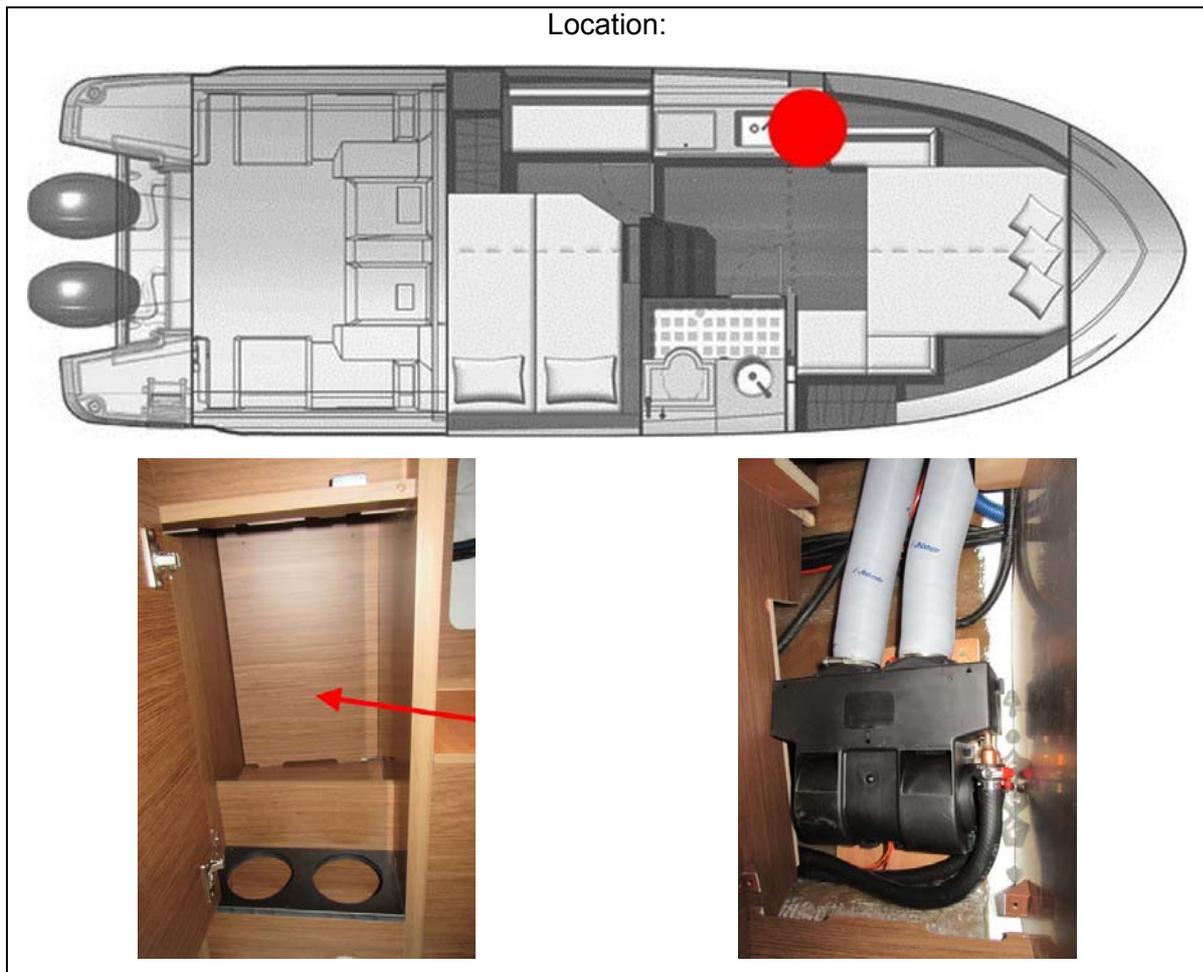
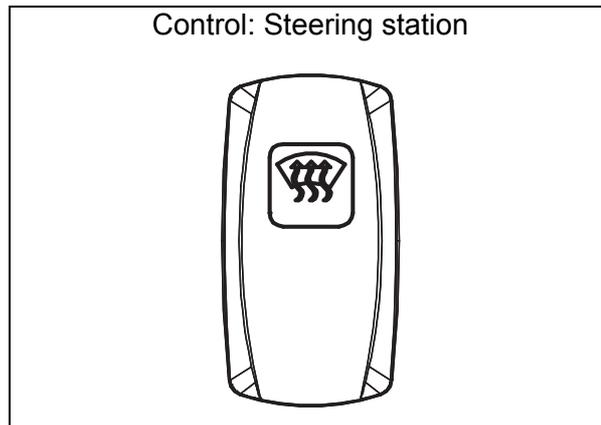
The international rules and regulations for avoiding collisions at sea (Col Reg / RIPAM) require a full and constant lookout as well as observance of the rules of right-of-way. Observance of these rules is essential.



- 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.

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 via the heat exchanger in the starboard engine cooling system.
- 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).

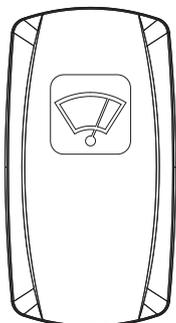




4.1.2 Wiper

The windscreen wipers run on DC power.

Control: Steering station



Location:



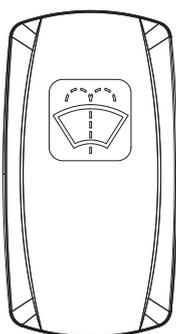
Engine access: Deckhead (Forward cabin)



MANOEUVRABILITY

4.1.3 Windscreen washer

Control: Steering station

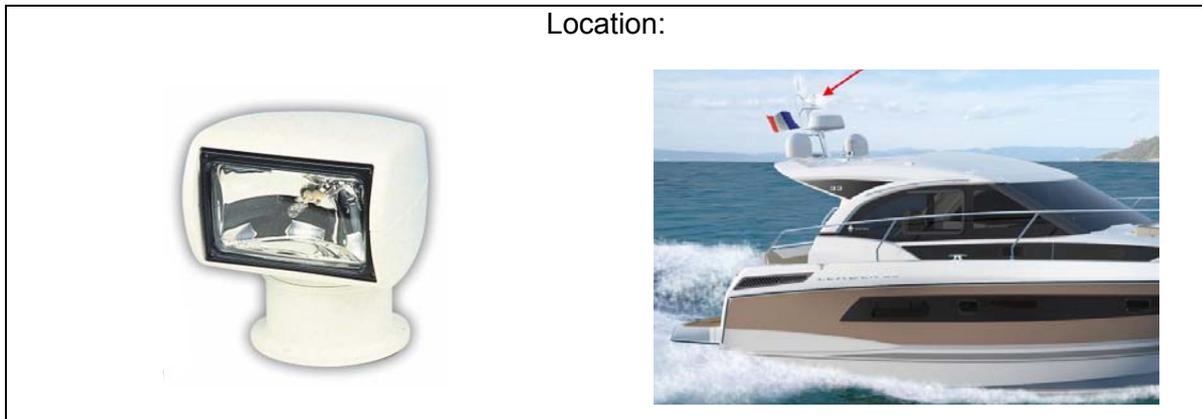
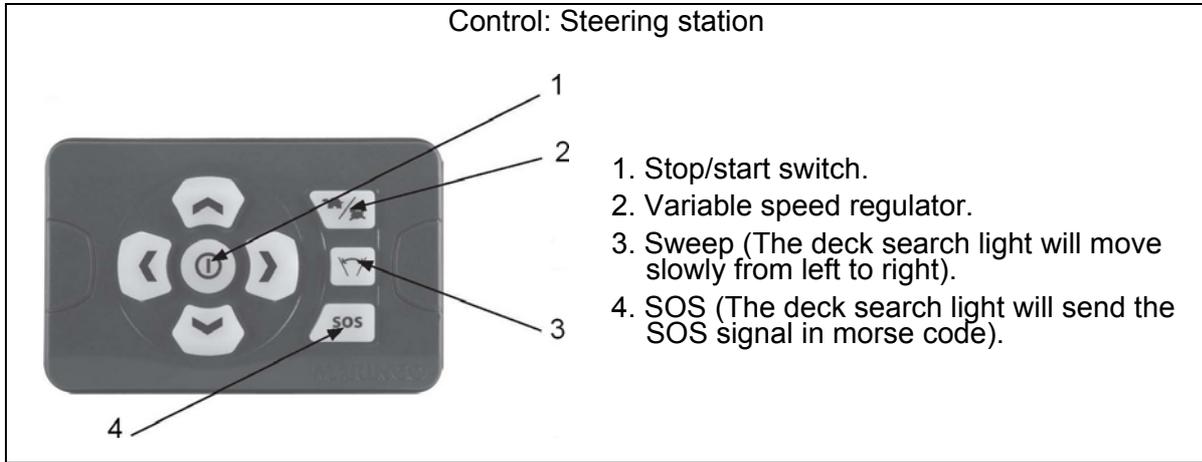


Reservoir location: Forward cabin



4.1.4 Deck searchlight

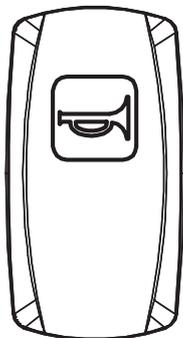
- The deck searchlight runs on DC power.
- A fuse protects the electrical circuit.



4.1.5 Horn

The foghorn runs on DC power.

Control: Steering station



Compressor:

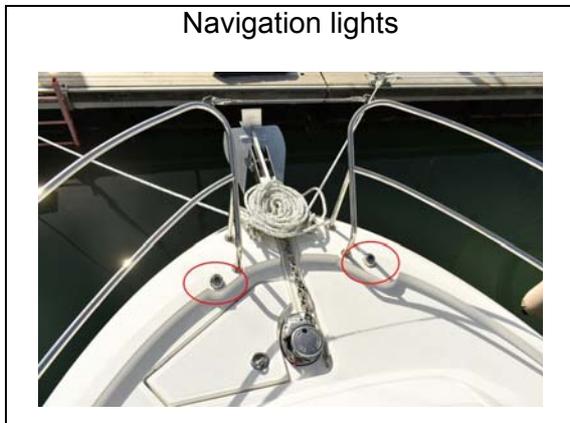
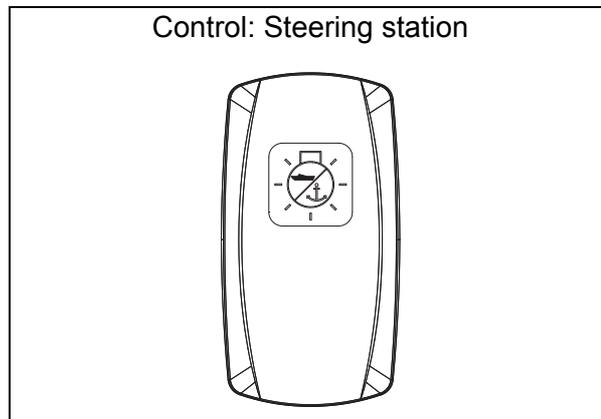


Location:



4.1.6 Navigation lights

The navigation lights run on DC power.



The only function of the samson post is to support the navigation light. Any other use is dangerous and must be strictly avoided.



5 SAFETY

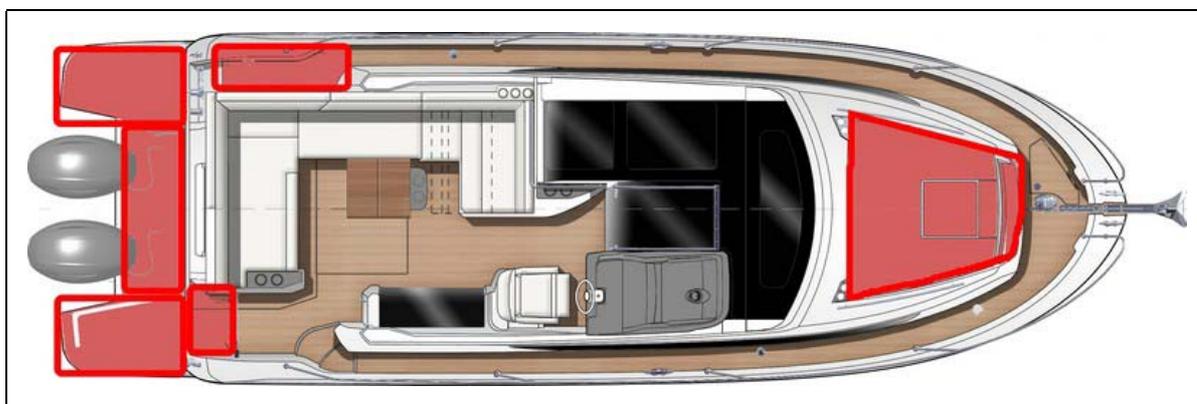
5.1 PREVENTING MAN OVERBOARD SITUATIONS AND MEANS OF REBOARDING

5.1.1 Prevention of man overboard

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

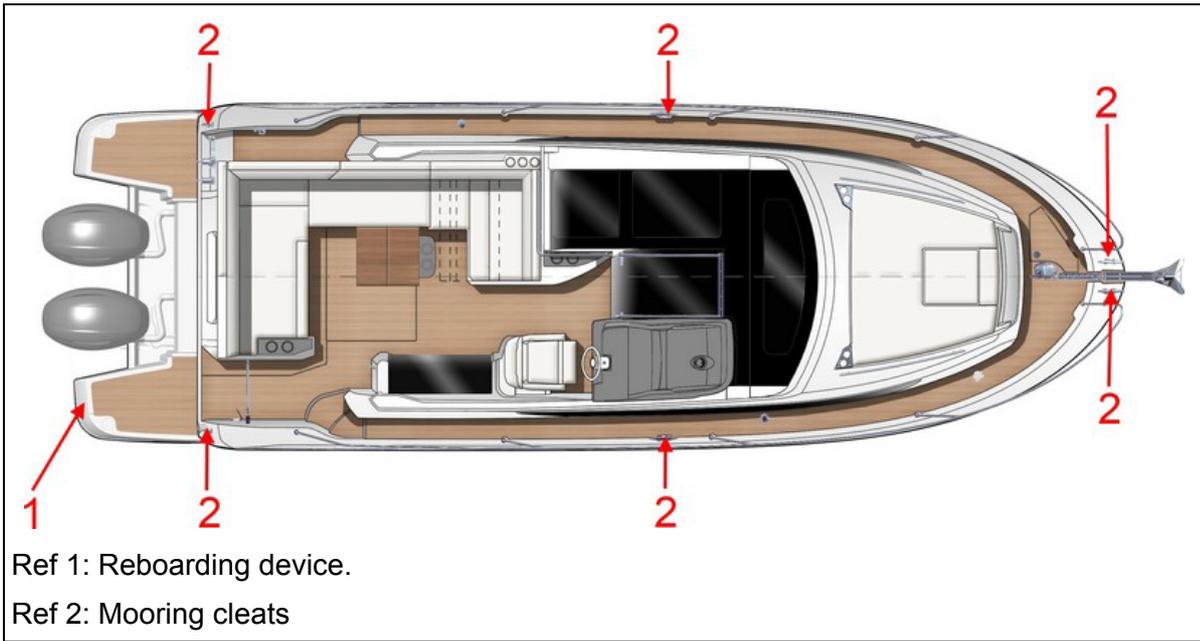


- "Working deck" refers to the exterior parts of the boat where people stand or walk during normal use.



NOTE: Standing on the sunbed must be strictly avoided.

SAFETY



- Use the seats provided.

Regularly check the guardrails:

- With metal guardrails look out for signs of corrosion (particularly at connecting points).

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

5.1.2 Reboarding

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

Reboarding device: (Ref 1)

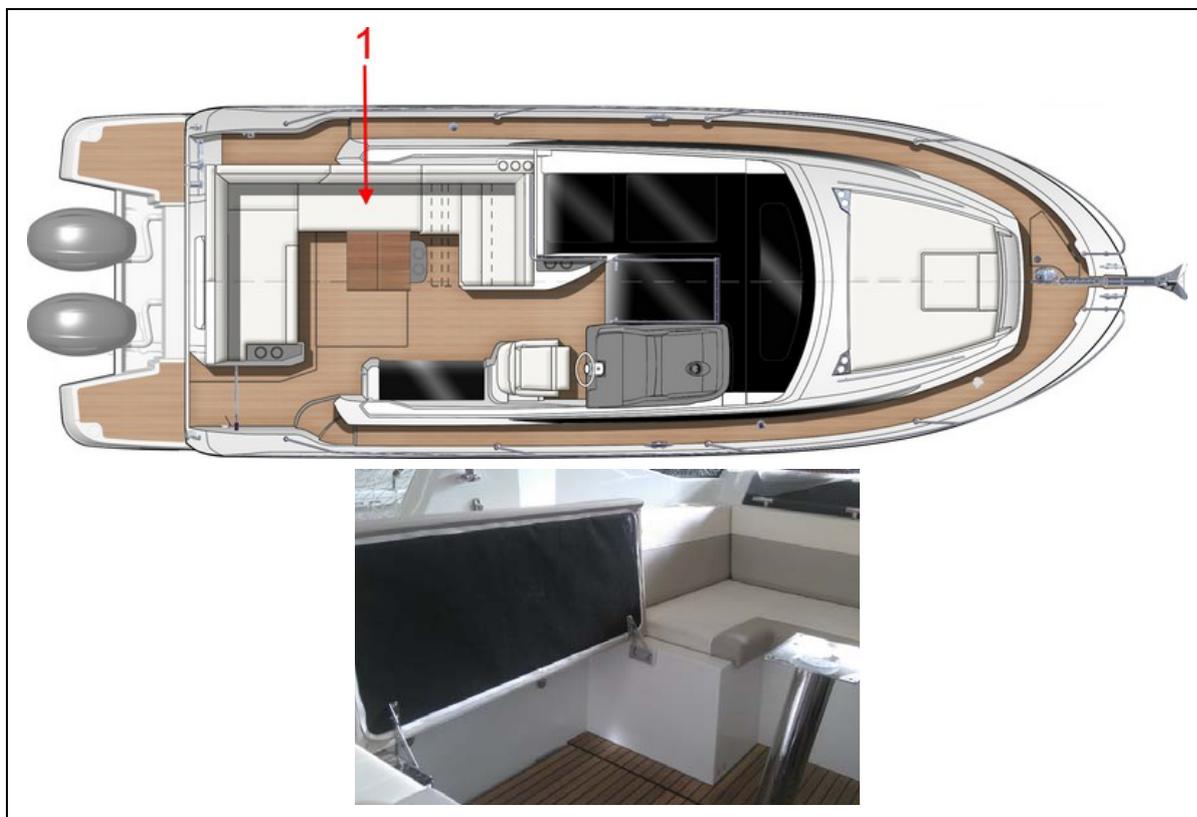


SAFETY



- 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.

5.2 STORING THE LIFERAFT



The liferaft (not supplied) must be stored in the space provided for it (Ref 1). A pictogram allows for easy location.

B I B



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.



5.3 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:



SAFETY

	Technical areas may not be used as storage compartments.
------------------------------------------------------------------------------------	----------------------------------------------------------

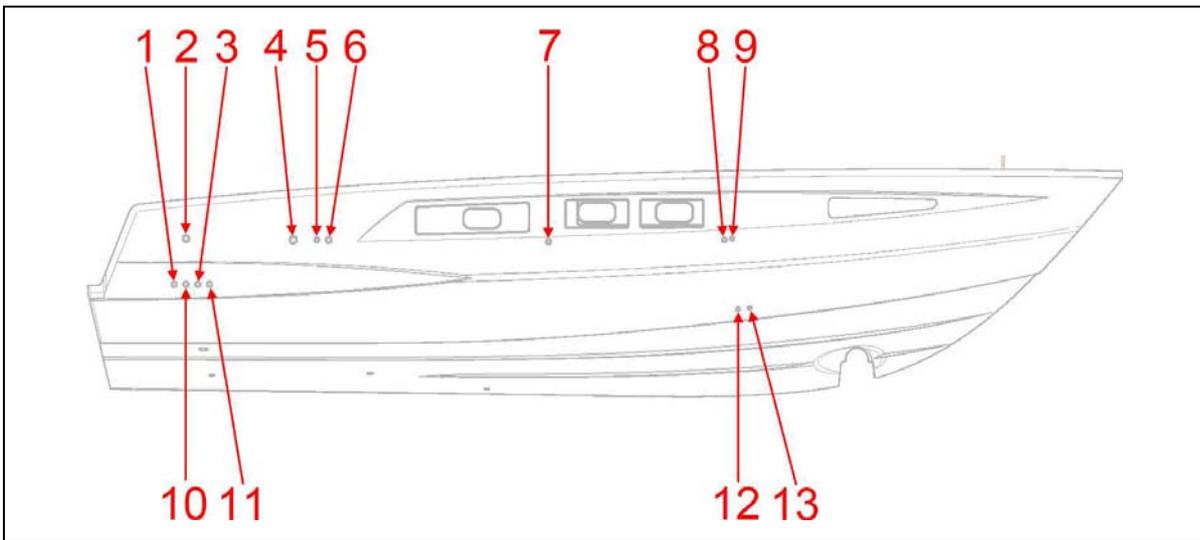
	<ul style="list-style-type: none">- Ensure that movable items are firmly secured when sailing.- Do not store anything below the floorboards.
-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------

5.4 INFORMATION ON FLOODING RISKS AND BOAT STABILITY

5.4.1 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.

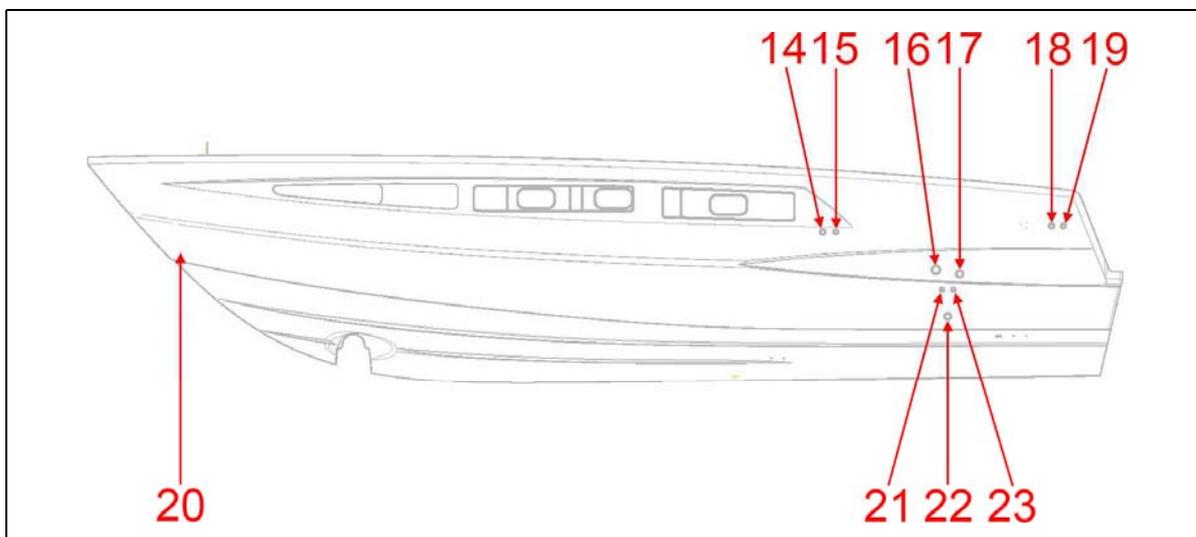
On the starboard side



Reference	Designation	Valve
1	Starboard vent drain	No
2	Heating exhaust	No
3	Gas cylinder locker vent	No
4	Blackwater tank vent	No
5	Stowage box drain	No
6	Fuel tank vent	No
7	Waste water collector vent	No
8	Forward electrical bilge pump draining	No
9	Fresh water tank vent	No
10	Drainage of manual bilge pump	No
11	Gas locker outlet	No
12	Air conditioning drainage (Seawater)	Yes
13	Air conditioning drainage (Condensation)	Yes



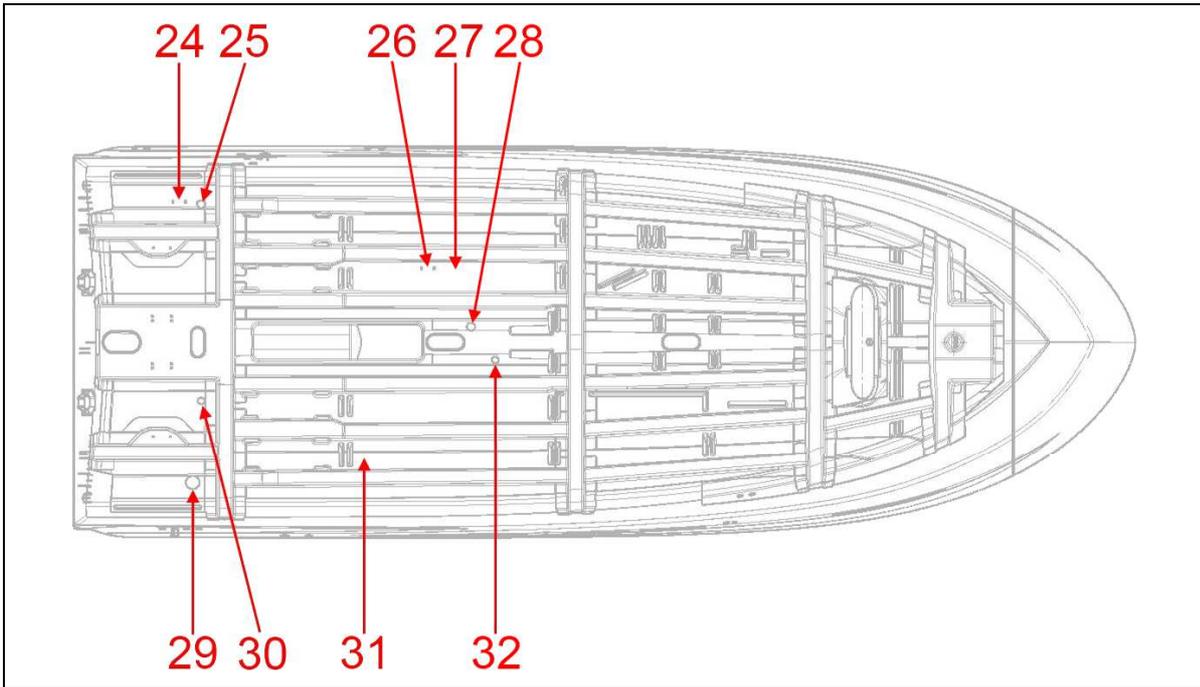
On the port side



SAFETY

Reference	Designation	Valve
14	Grey water tank vent	No
15	Electric bilge pump drainage (Petrol engine version)	No
16	Generator exhaust	No
17	Cockpit draining	No
18	Port side vent drain	No
29	Drainage of aft electric bilge pump	No
20	Chain locker scupper	No
21	Air conditioning drainage (Seawater)	Yes
22	Generator drain	Yes
23	Air conditioning drainage (Condensation)	Yes

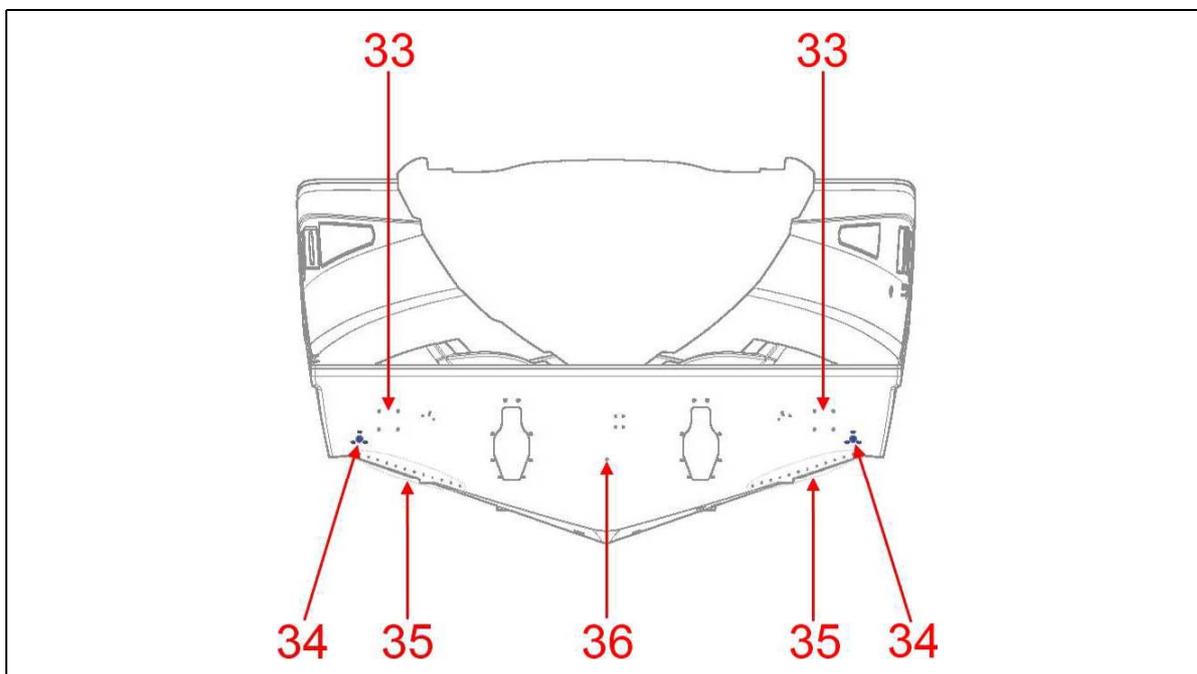
Top view



Reference	Designation	Valve
24	Generator earthing plate	No
25	Seawater inlet (Generator)	Yes
26	Inverter earthing plate	No
27	Sensor	No
28	Grey water tank drainage	Yes
29	Grey water tank drainage	Yes
30	Seawater inlet (Pump for deck washing)	Yes
31	Seawater inlet (Air conditioning)	Yes
32	Seawater inlet (Toilet)	Yes



Rear view



SAFETY

Reference	Designation	Valve
33	Aft platform support	No
34	Underwater light	No
35	Flaps	No
36	Anode	No

5.4.2 Drainage system

General points

- The inner moulding of the hull is equipped with channels: these are the drainage 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 - Drainage channels

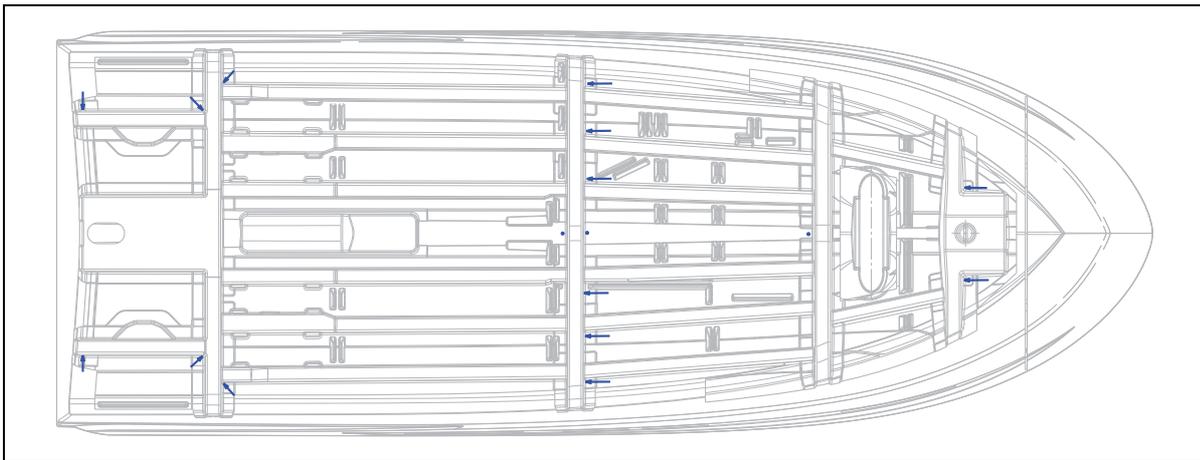
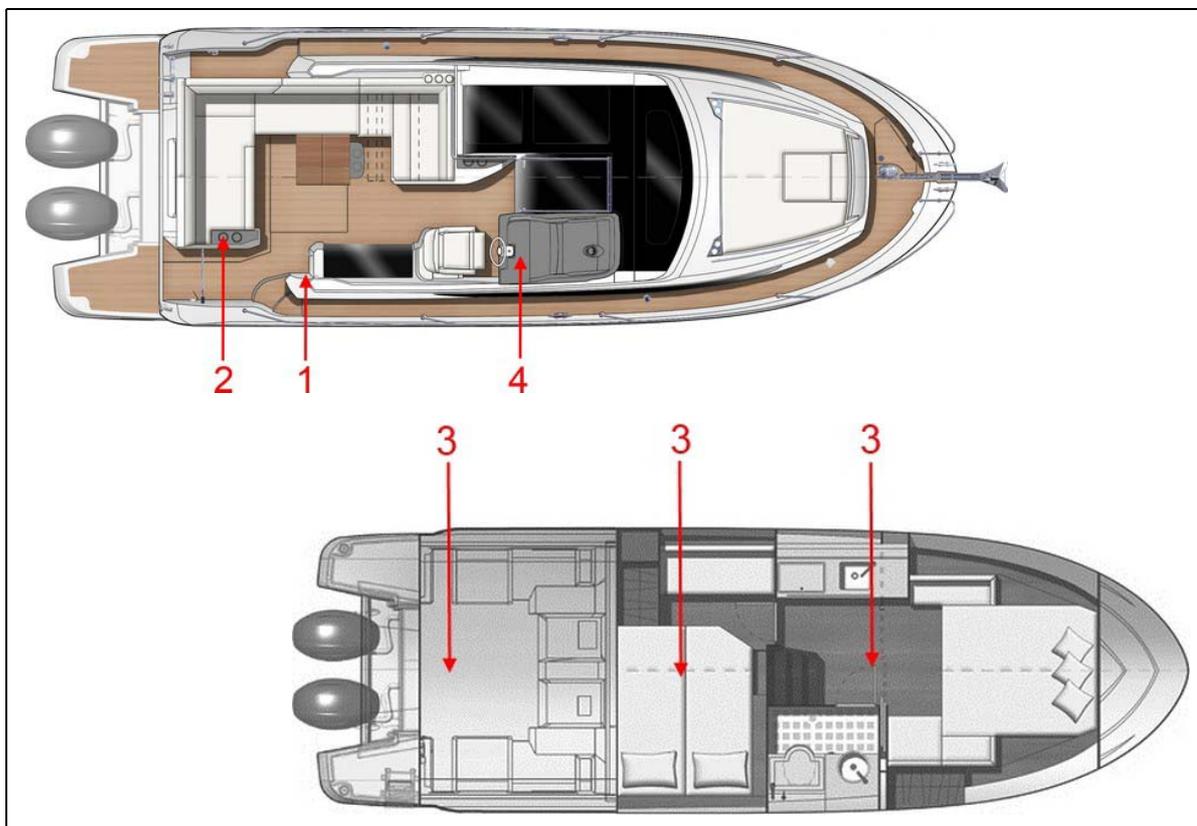




Diagram of Layout - Bilge pumps



SAFETY

Reference	Designation	Rate
1	Manual bilge pump	32L/minute (*)
2	Manual bilge pump lever	
3	Electric bilge pump	30L/minute
4	Electric bilge pump switch	

(*) 45 strokes/minute

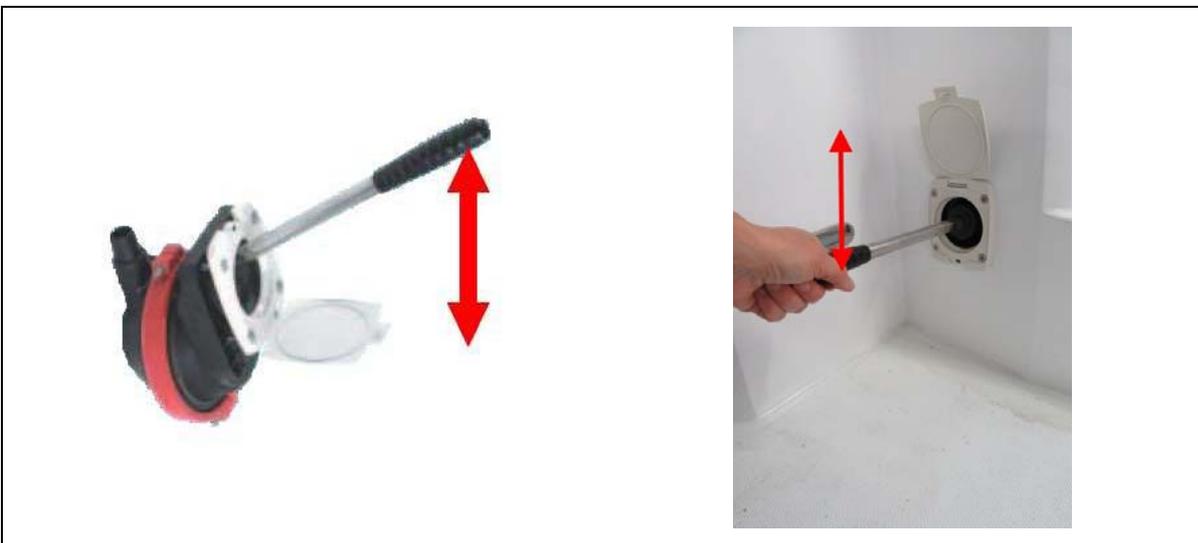
Secondary drainage system **Manual bilge pump**

The manual bilge pump is in the cockpit (Ref 1).
The bilge pump lever is located nearby (Ref 2).



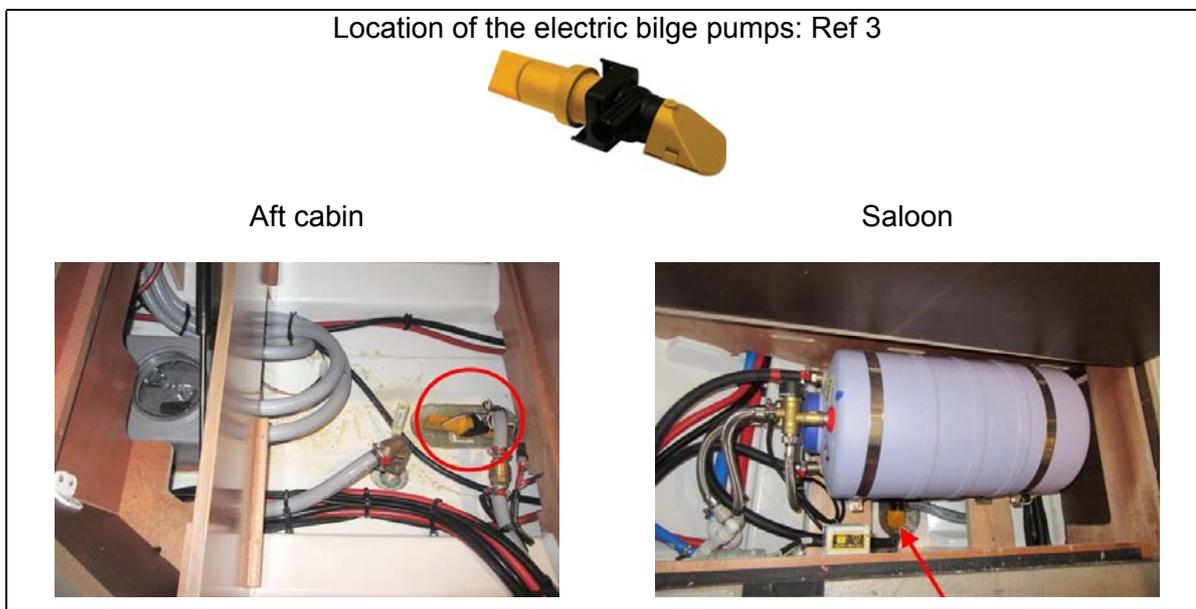
Operation:

- 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.



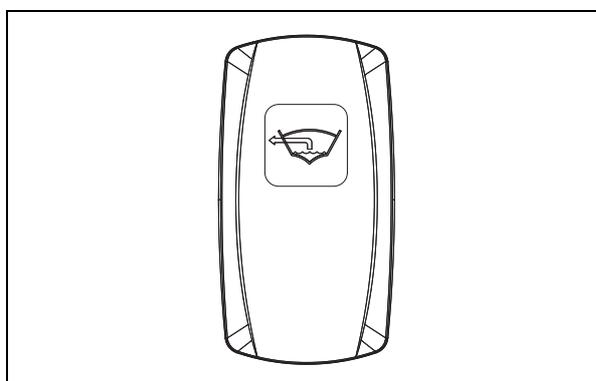
Main drainage system
Electric bilge pumps

- The bilge pumps are powered by DC.



SAFETY

- The electric bilge pump switch is located at the helm station (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 maintenance

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



- The drainage system is not designed to control water coming from breaches in the hull.
- 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.

SAFETY PRECAUTIONS

- 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



SAFETY

Reference	Designation
1	Intake filter
2	Manual bilge pump
3	Main electric bilge pump
4	Secondary electric bilge pump
5	Non-return valve
6	Kitchen sink thru-hull drainage
7	Electric bilge pump (Petrol engine version)
8	Non-return valve
9	Kitchen sink thru-hull drainage

5.5 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 power and/or forward/aft). The direction works only when the engines are running.

5.6 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.

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.
- 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.

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.



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 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.

6.2 ELECTRICAL SYSTEM



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

6.3 GAS SYSTEM



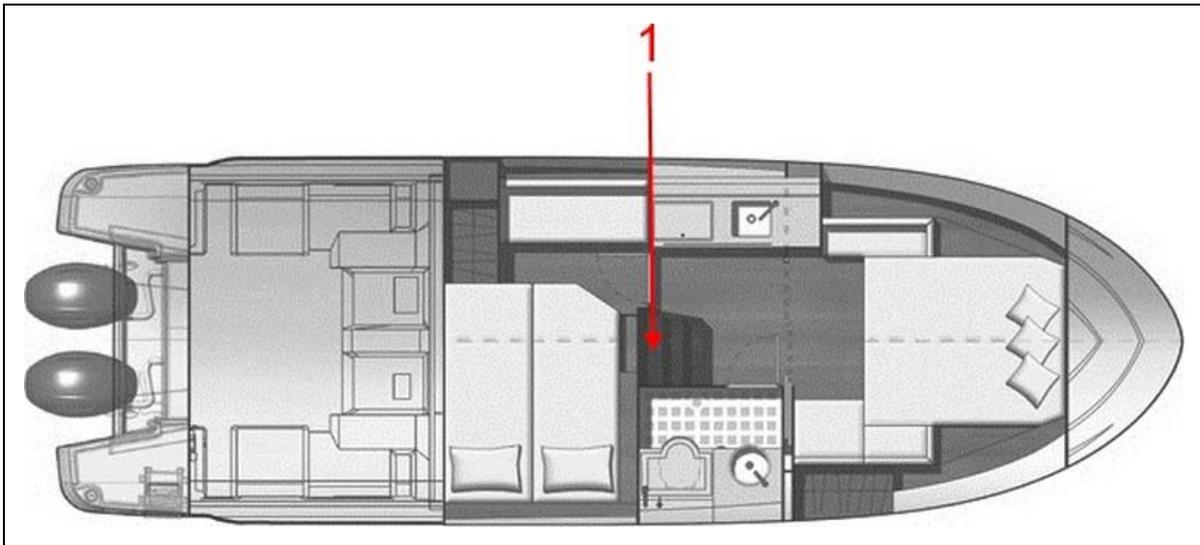
The risks associated with the gas system are described in the GAS chapter.

6.4 FIRE FIGHTING AND PREVENTION 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 capacities, located in the following places:



Reference	Designation	Location	Minimum extinguishing capacity
1	Portable fire extinguisher	Under the companionway	8A / 68B

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



- When in use, this boat must be equipped with 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.

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;
- Obstruct the ventilation of the compartments or spaces, in particular those containing the engines, tanks or batteries.



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;
- Make sure any petrol tank compartment draining opening is immediately accessible;
- Show the members of the crew:
 - The location and use of the fire-fighting equipment;
 - The location of the drainage points in the petrol tank 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.
- The fire exits other than the door or main companionway are identified by the following symbol:



6.4.2 Fixed extinguishing system with manual control

- This boat is equipped with a fixed fire extinguishing system that protects the fuel tank compartment.
- How to apply in case of fire compartment fuel tank:
 - Stop the engine and fan,
 - Disconnect electrical power (turn off all battery switches) and fuel supply,
 - Close access to the compartment,
 - Activate the extinguisher control for 20 seconds,
 - Wait,
 - Ventilate the compartment after the fire has been extinguished,
 - Open the access hatches and repair.

NOTE: Turning off the engine is not enough to turn off the fan. The starter key must be turned OFF to disconnect the power supply to the engine circuit.



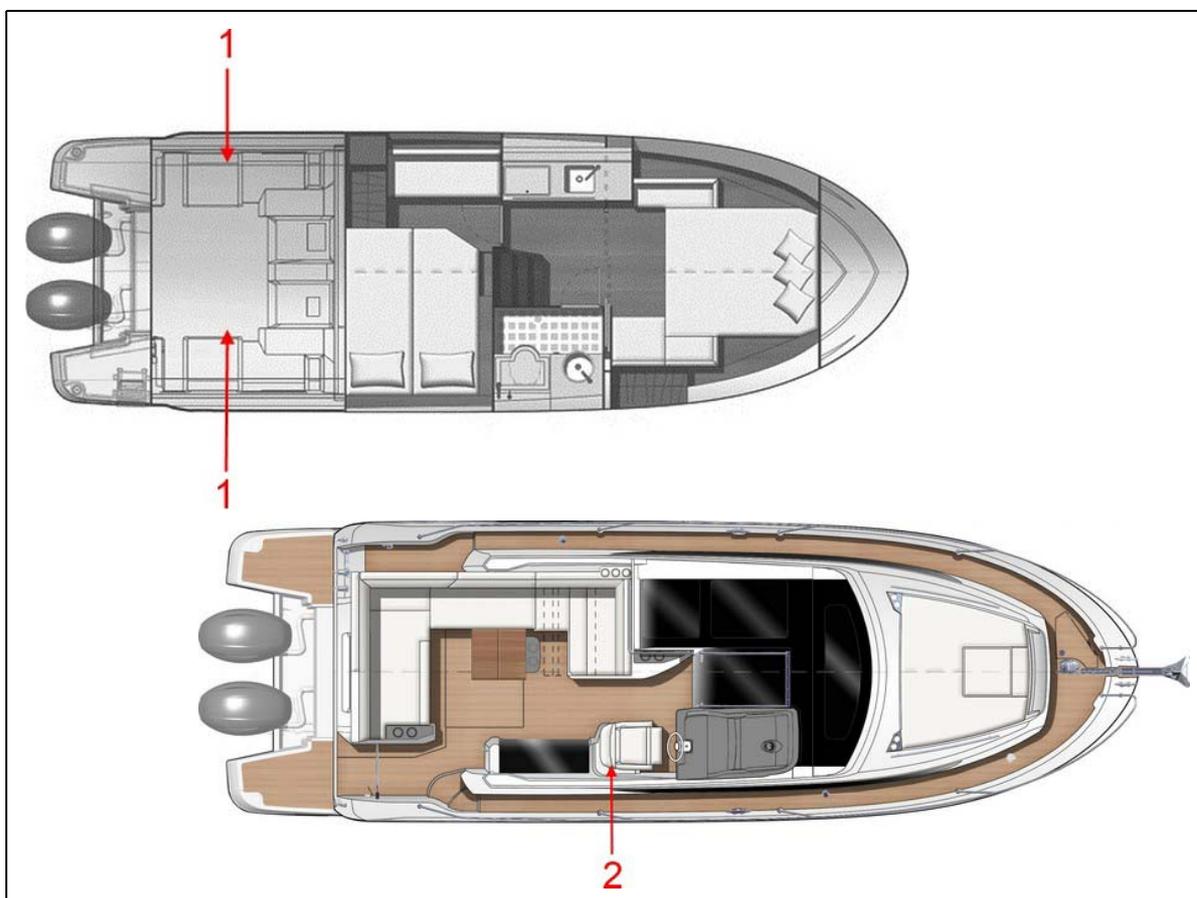
To enable functioning of the fixed fire extinguishers, the safety pins on each extinguisher must all be removed completely.

The position of the remote control handles is indicated by the pictogram shown below:



Maintenance of the fire-fighting system

- It is the responsibility of the boat owner to invite a fire safety professional aboard every year to check the fire fighting equipment (weight and pressure of the non-portable extinguisher, correct operation of the remote operation pull switch).
- Every 5 years, the boat owner must remove the non-portable extinguisher and take it to a fire safety professional for a full overhaul in a specialist workshop.



Ref 1: Fixed extinguisher
Location: petrol tank compartment



Ref 2: Remote pull switches
Location: Steering station

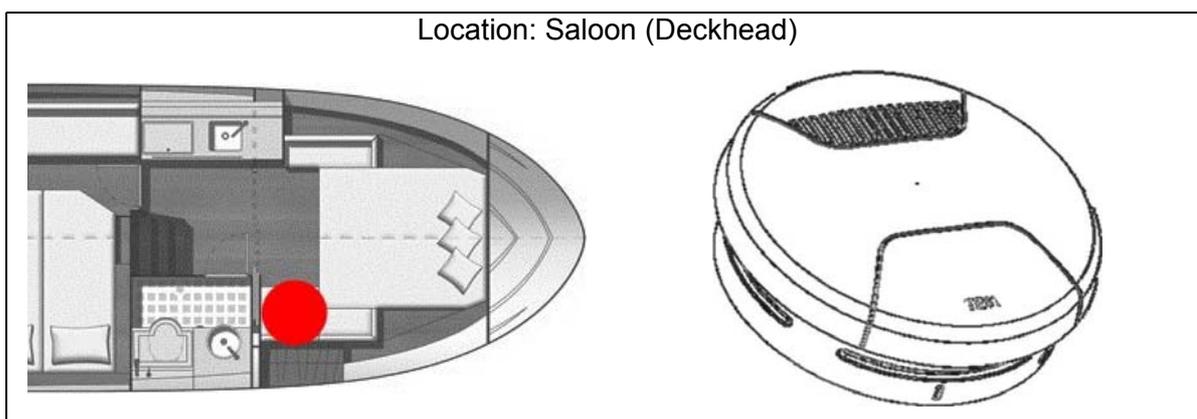




6.4.3 Smoke alarm

General points

- The smoke detector is a photoelectric detector which operates with a 9 V alkaline battery (battery included).
 - The detector emits a flashing red light every minute in normal operation.
 - The smoke detector is designed to operate between 0° and + 50°C.
 - Whenever any smoke is detected, the 85 dB alarm is triggered.
 - The smoke detector is not designed to stop a fire from breaking out. It serves to warn the people onboard of the danger.
 - The detector is a device which warns people onboard in the event of smoke.
- Actions to take if the alarm is triggered: The skipper should check the source of the smoke and attempt to extinguish the fire with the resources at his/her disposal. If the fire spreads, the skipper must immediately evacuate the entire crew.
- The service life of the smoke detector is approximately 10 years. Beyond 10 years, replace the smoke detector with an identical device.



- The smoke detector is not a gas detector.
- The smoke detector is sensitive to dust and steam: avoid exposing the detector to these environments to prevent the triggering of unwanted alarms.
- Never use a rechargeable battery.
- Never trigger the alarm deliberately to check the operation of the detector.
- A dirty detector may activate incorrectly or late. It is important to clean each detector for the safety of people onboard.
- Never cover the smoke detector (with paint or ceiling panels, for example) and in general do not alter the appearance of the detector.
- Do not fit the smoke detector in a different location from the one specified for the purpose.

Commissioning of the boat

- When the boat is first delivered, ensure that the battery protector is removed.

Maintenance

The smoke detector must be routinely tested when boarding or weekly if staying onboard for a prolonged period of time. If the device is faulty, change the battery. If the device is still faulty after changing the battery, replace the detector with the same model (consult your dealer).

• **TEST button**

- Regularly check that each detector is working correctly by pressing and holding the device's TEST button for around ten seconds:

- The detector's light flashes, then the alarm starts up.

NOTE: The alarm emits are very loud noise (approximately 94 dB at one metre), remember to use hearing protection during the test.

- When the TEST button is released, the alarm stops immediately.



• **Changing the battery**

- The smoke detector will emit an audible beep every minute for a month when the battery level is too low to operate.
- In that case, change the battery as described below:
 - Remove the detector from its mounting (turn anti-clockwise), remove the empty battery and replace it with the same model of alkaline 9 V battery, ensuring a battery life of 5 years.
 - Connect the battery as shown in its housing (ensure the battery polarity +/- is correct).
 - Return the detector to its mounting (turn clockwise) until it fits perfectly.

• **Annual routine maintenance**

- Remove the detector from its housing (turn anti-clockwise) and clean the vents on the side of the device with a vacuum cleaner or a soft brush.
- Use a damp cloth to clean the exterior of the detector cover.



Winterisation

- To ensure optimal operation, it is recommended that the smoke detector is stored for winter in a fresh and well-ventilated place, having removed the battery.
- Once one person is onboard, it is important to replace the smoke detector in the position specified for the purpose, having first reinstalled the battery.

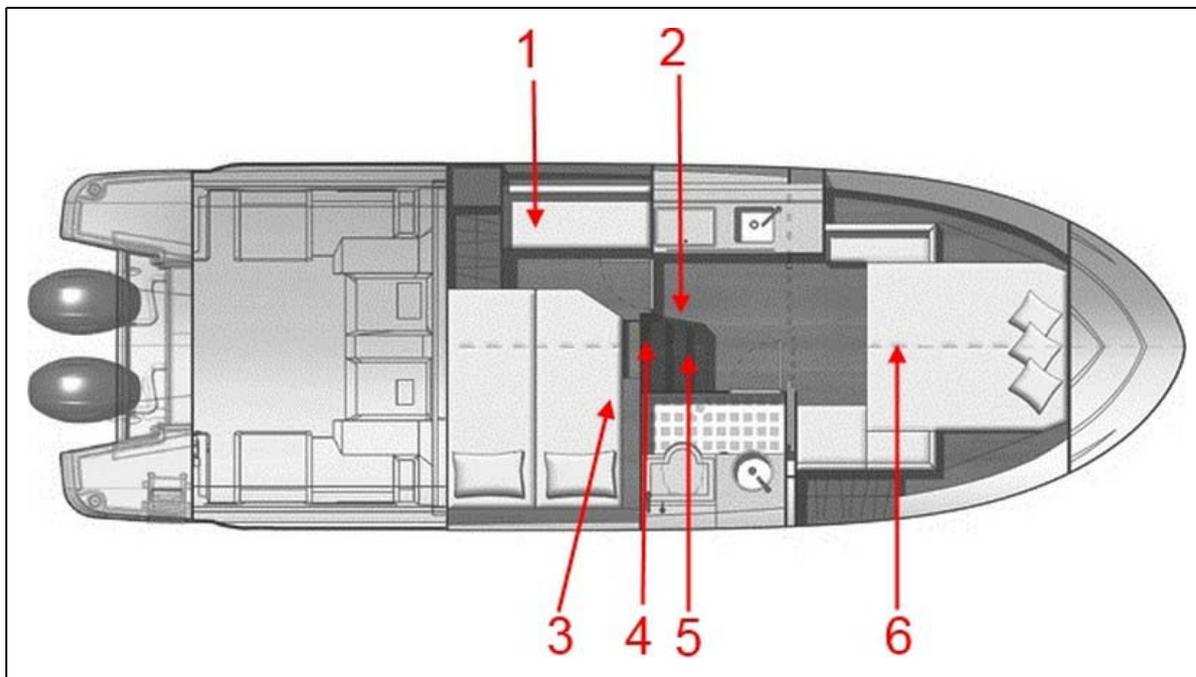
6.5 EMERGENCY EXITS IN CASE OF FIRE





7 ELECTRICAL SYSTEM

7.1 GENERAL INFORMATION ABOUT THE ELECTRICAL SYSTEM



ELECTRICAL SYSTEM

Reference	Designation
1	Service batteries
2	Generator battery
3	Electrical cupboard (Circuit breakers, Battery charger)
4	Battery switches
5	Engine batteries
6	Bow thruster batteries



- 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 electrical 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 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 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.

7.2 DC INSTALLATION (12V)

7.2.1 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;
- a bow 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 (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).

Battery bank

Engine battery: 2 x 110A



Generator battery: 50A



Service batteries: 1 x 115A
Spare service batteries: 1 x 115A



Propeller battery: 2 x 50A



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).



- 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.

Maintenance of lead batteries

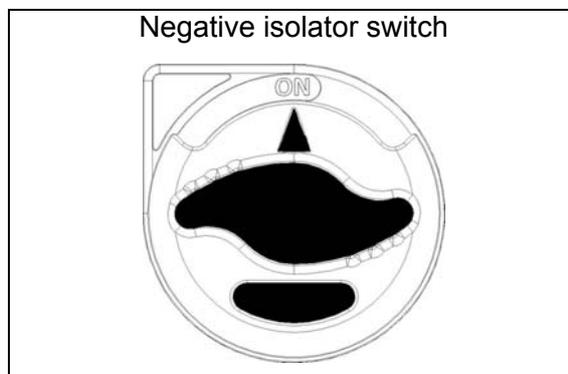
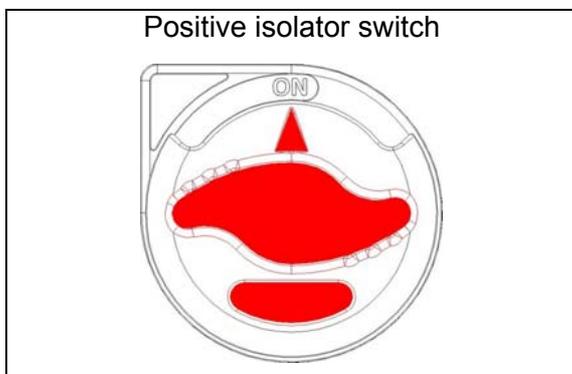
- Check the water levels in the batteries annually and top them up with distilled water if they are low.
- Keep all metallic objects away from the batteries.
- Lead batteries contain sulphuric acid: be careful not to knock them over whenever handling them.

Maintenance of watertight batteries

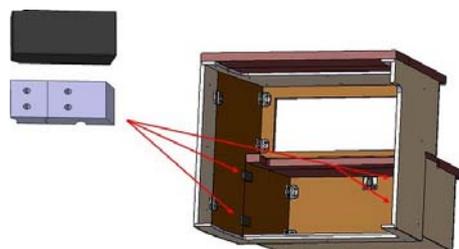
- This type of battery needs no maintenance and does not produce any gas during normal use. No ventilation is needed.
- The optimum temperature for use is between 10°C and 30°C. Lower temperatures will reduce the available capacity. Higher temperatures will increase the batteries' self-discharge rate.
- 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.

7.2.2 Battery switches

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



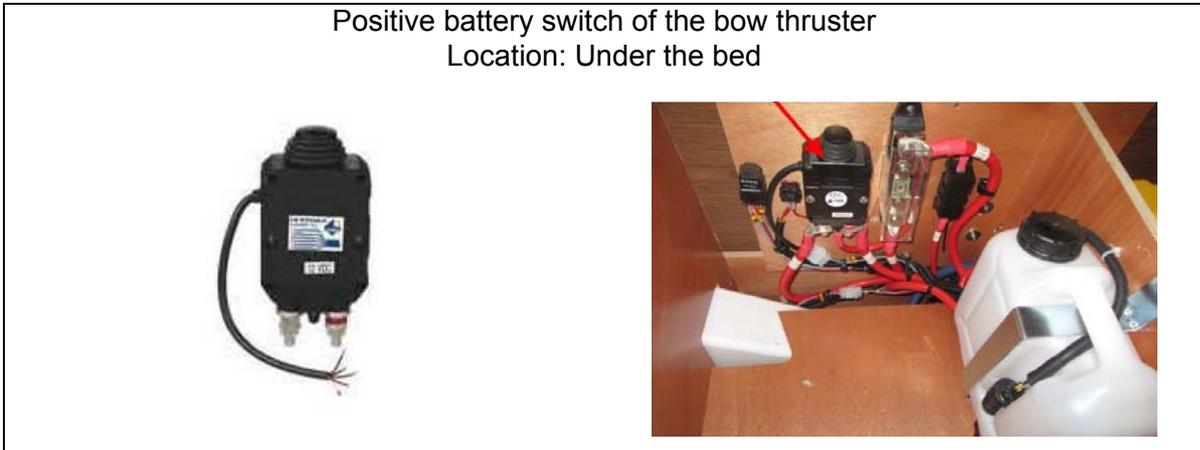
Access: Companionway steps



1. Generator negative isolator switch
2. Generator positive isolator switch
3. Starboard engine positive isolator switch
4. Service batteries positive isolator switch
5. Common battery negative isolator switch
6. Port engine positive isolator switch

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

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



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 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.





7.2.4 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.

Coupling handle

Put the handle in the emplacement provided. Turn the handle to connect the coupling circuit when starting the engine. Remove the handle once the engine is running.

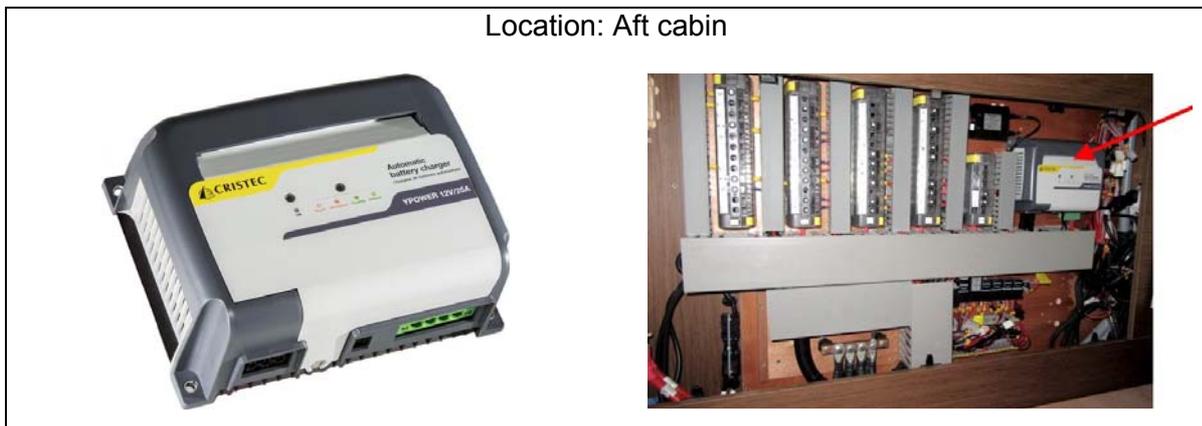
Location: Companionway steps



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.



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.

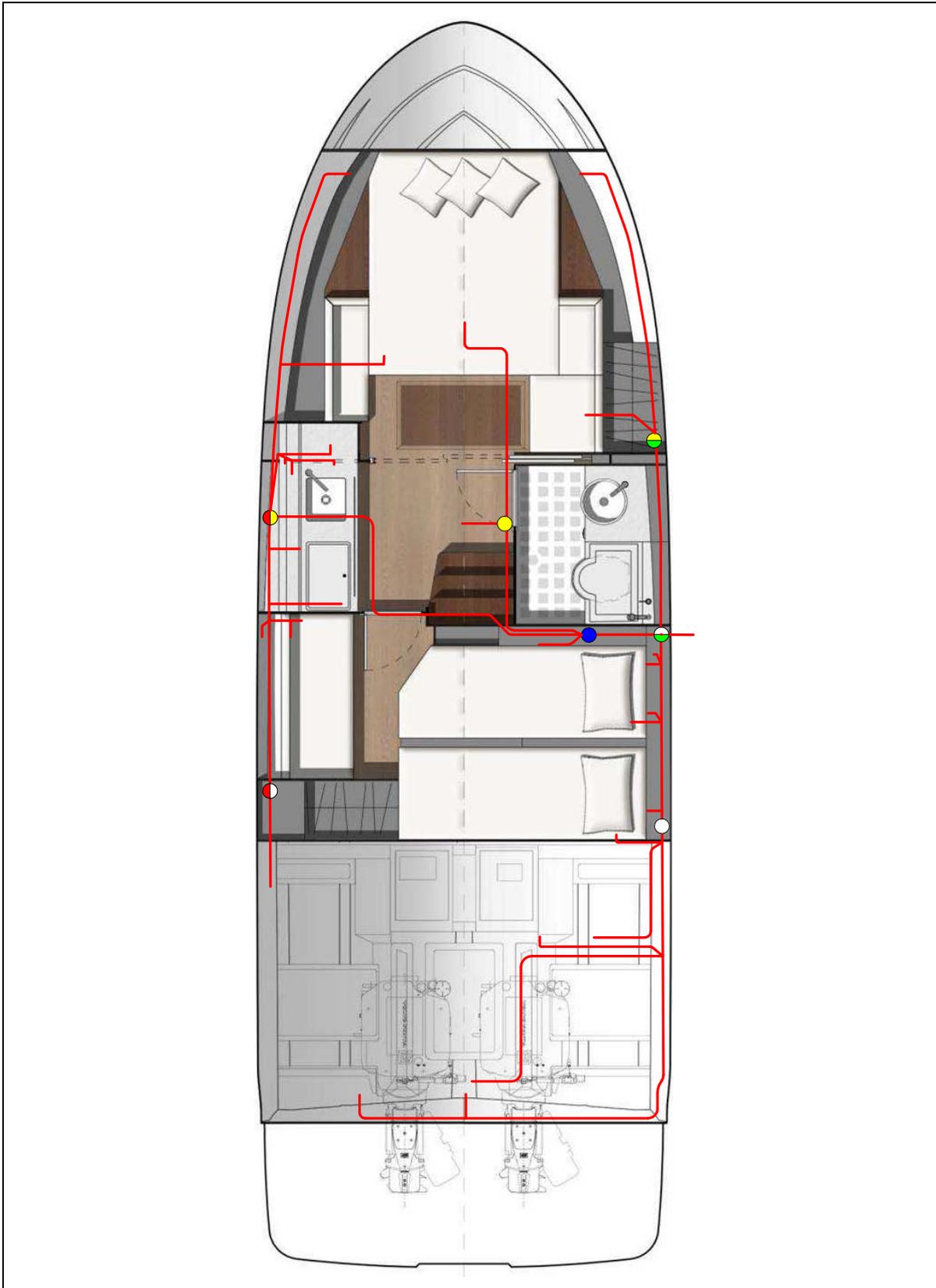
Maintenance

- 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.

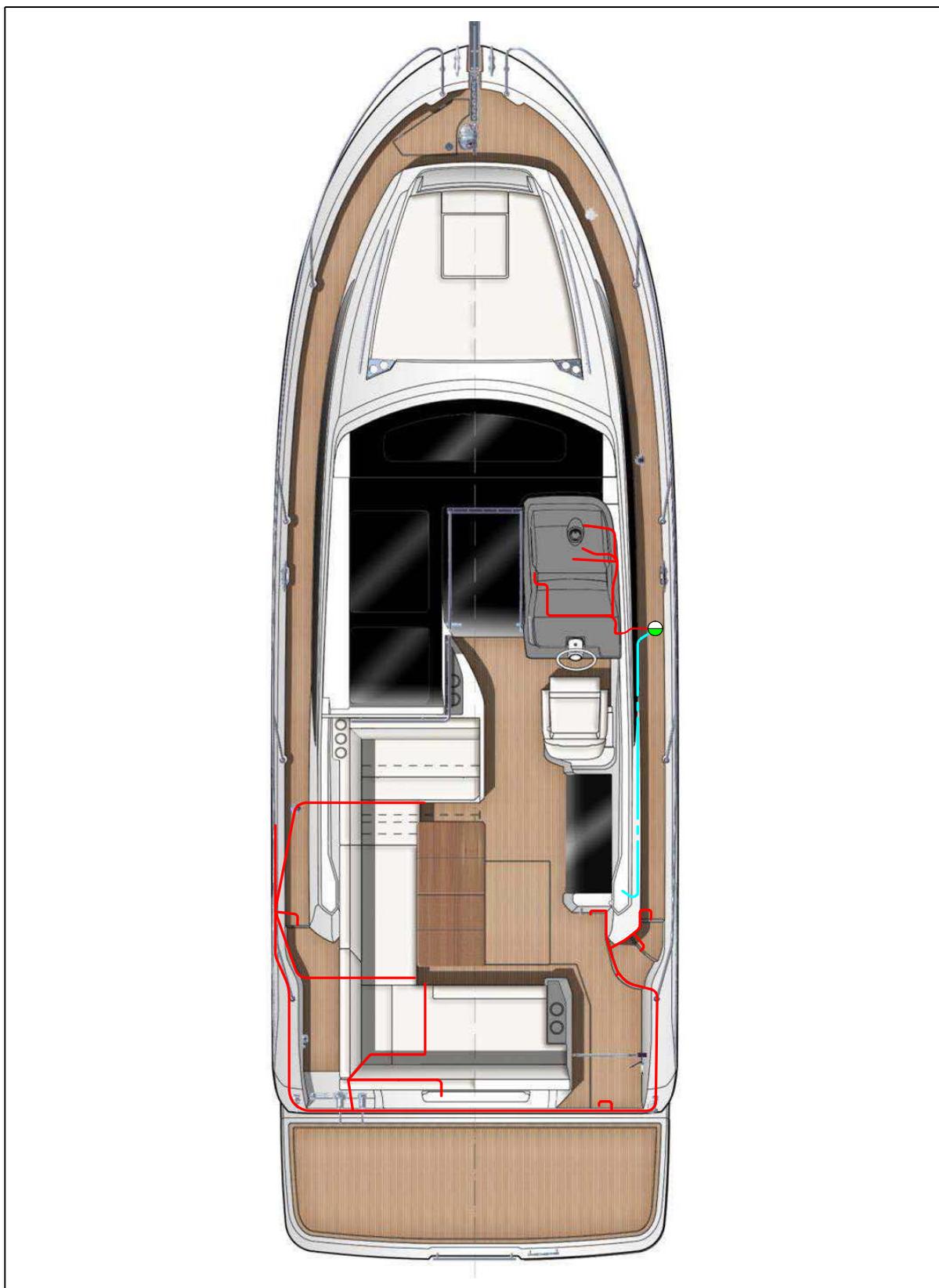


IT IS ESSENTIAL THAT YOU DISCONNECT THE BATTERY CHARGER BEFORE DISCONNECTING THE BATTERY TERMINALS FOR MAINTENANCE.

7.2.6 Layout of hull wiring looms - DC circuit

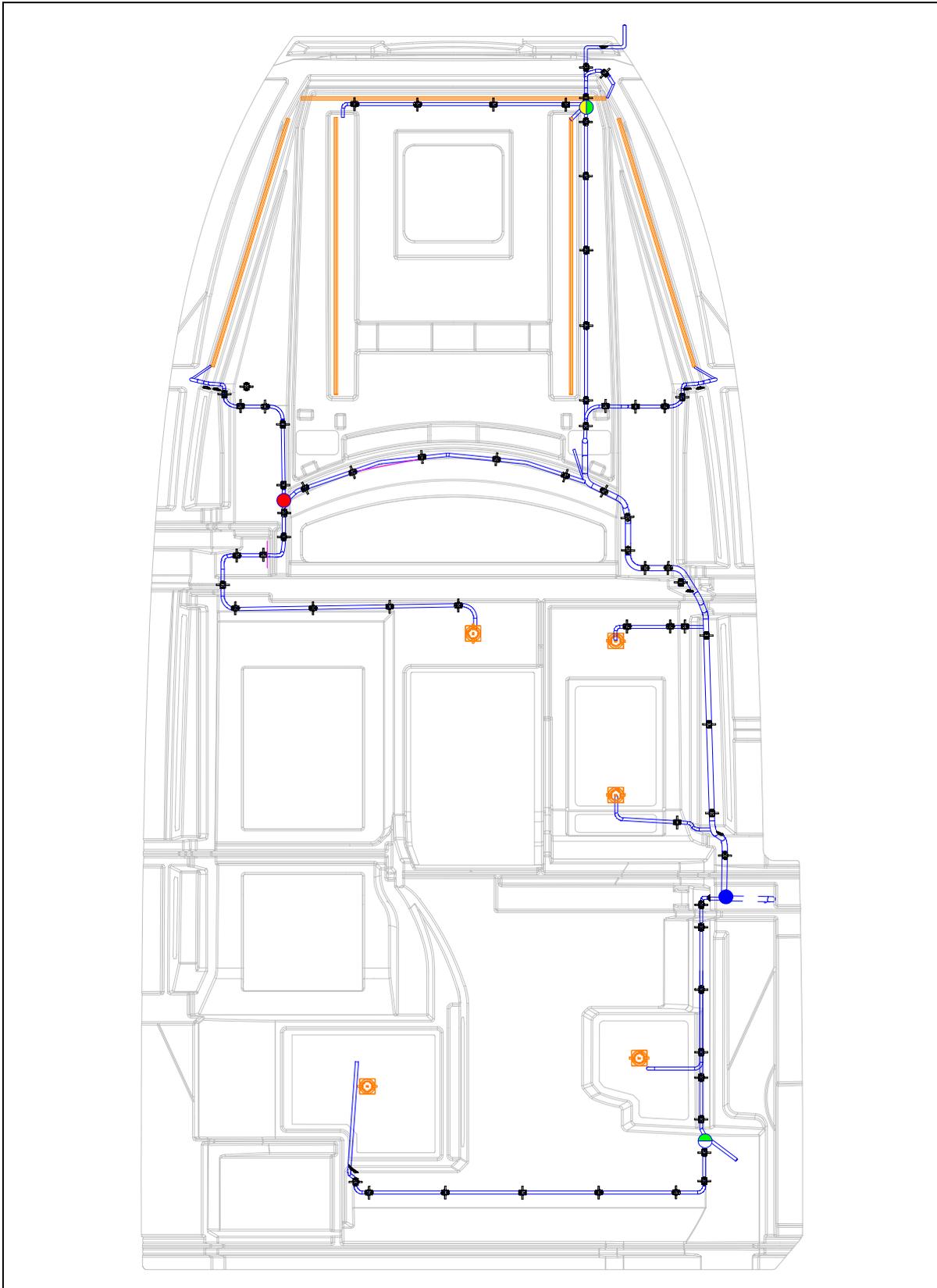


7.2.7 Layout of deck wiring looms - DC circuit



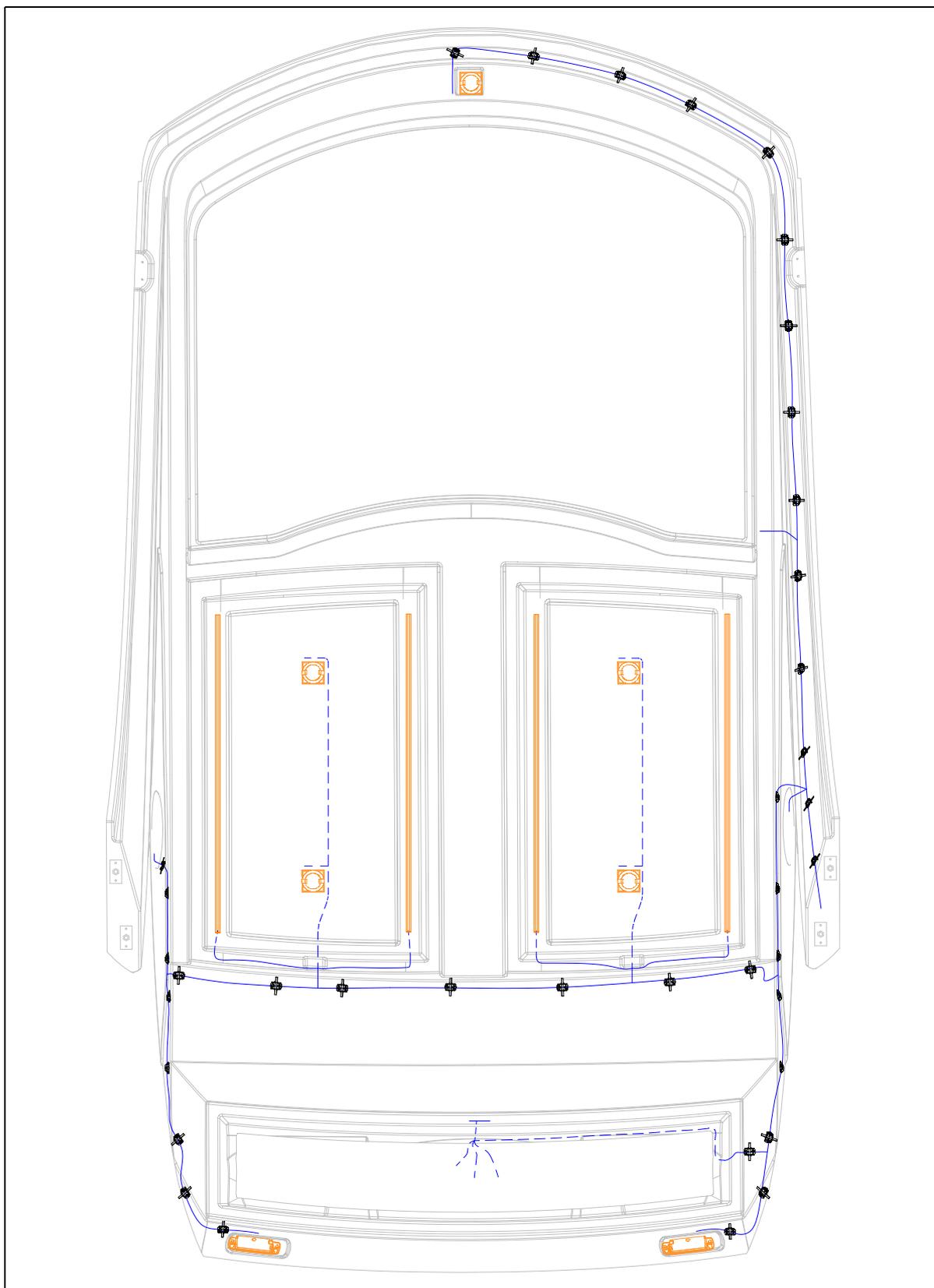
ELECTRICAL SYSTEM

7.2.8 Layout of wiring looms in the deck backing moulding - DC circuit





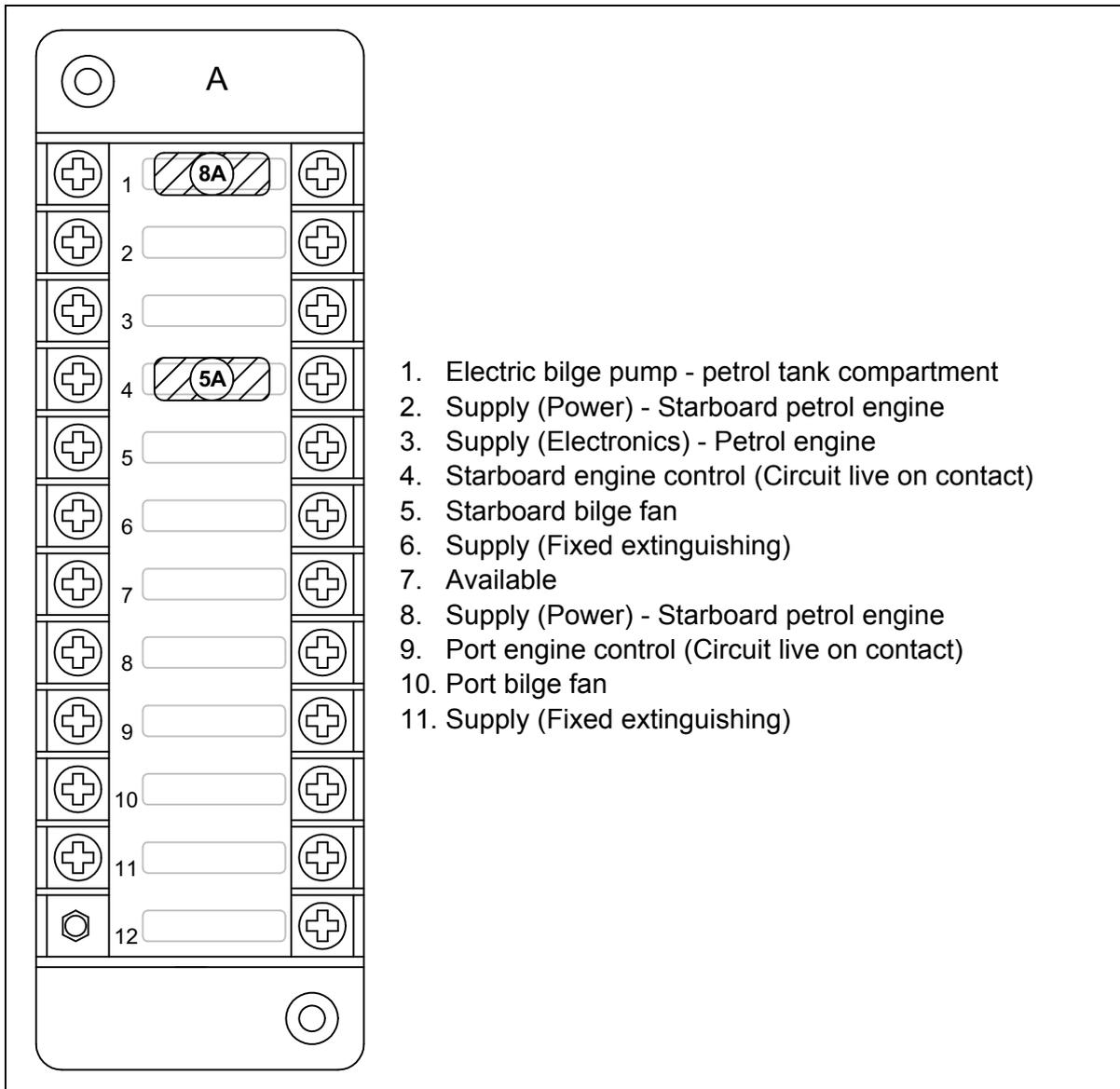
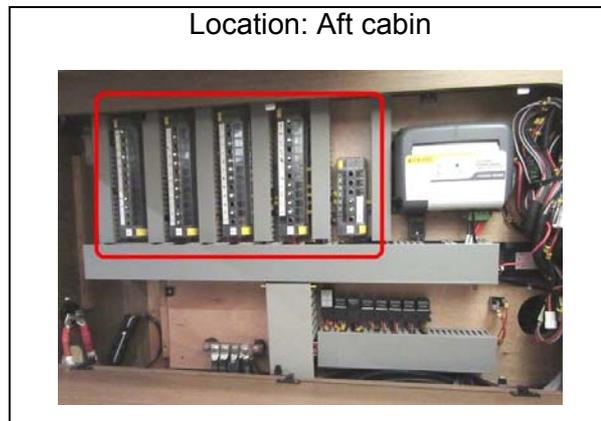
7.2.9 Sportop wiring harness plan - DC circuit

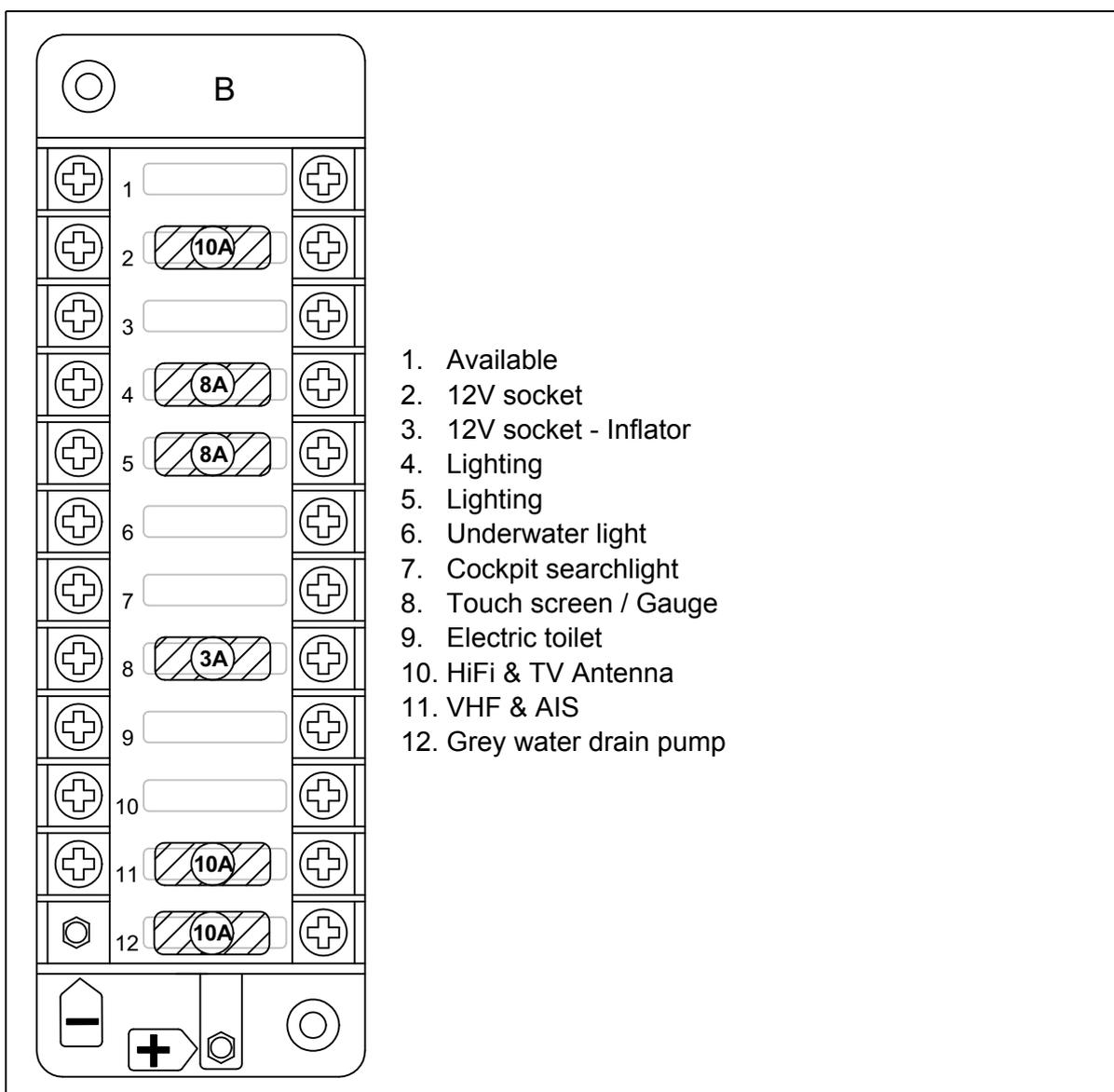


ELECTRICAL SYSTEM

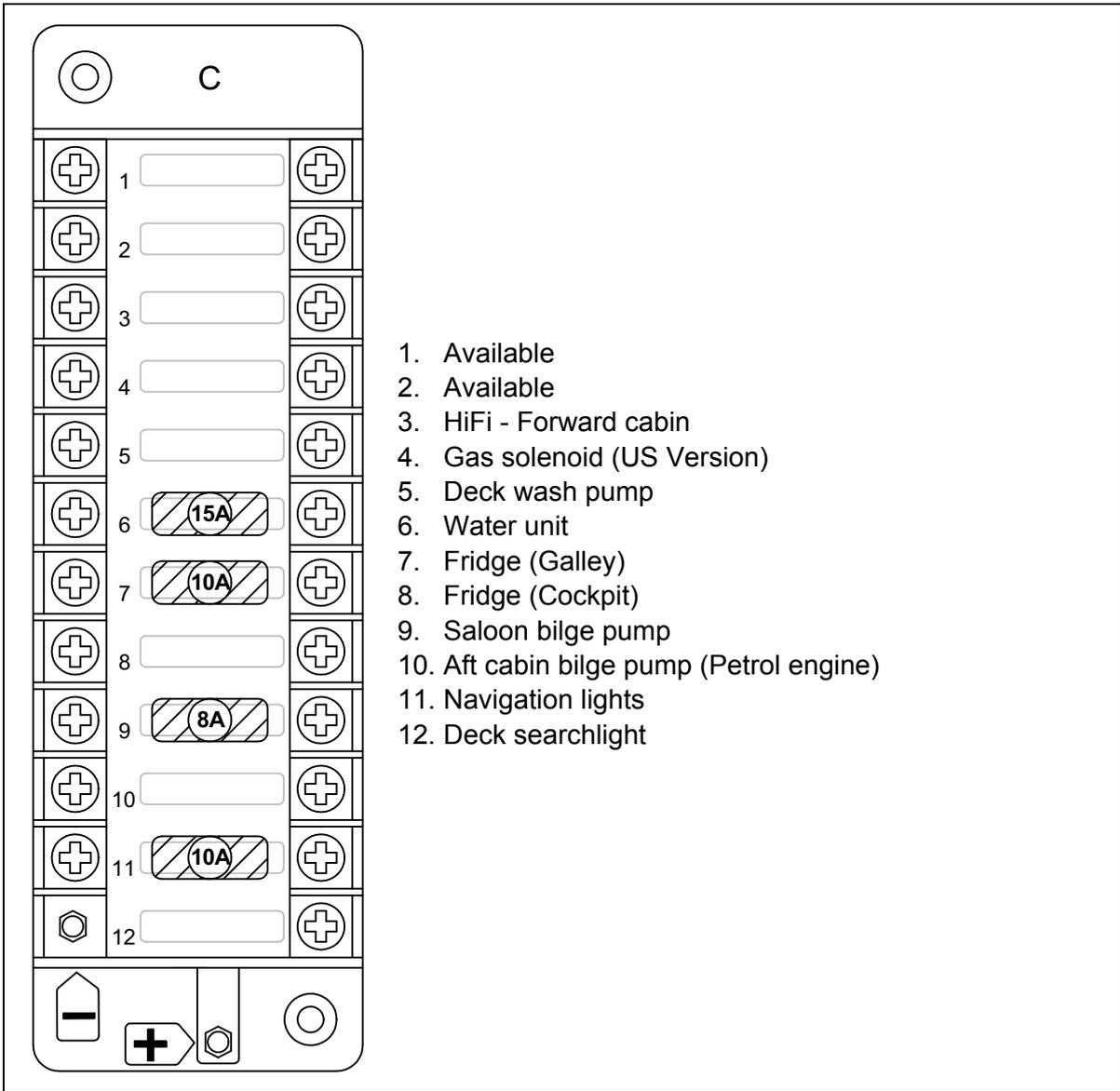
7.2.10 Circuit breakers

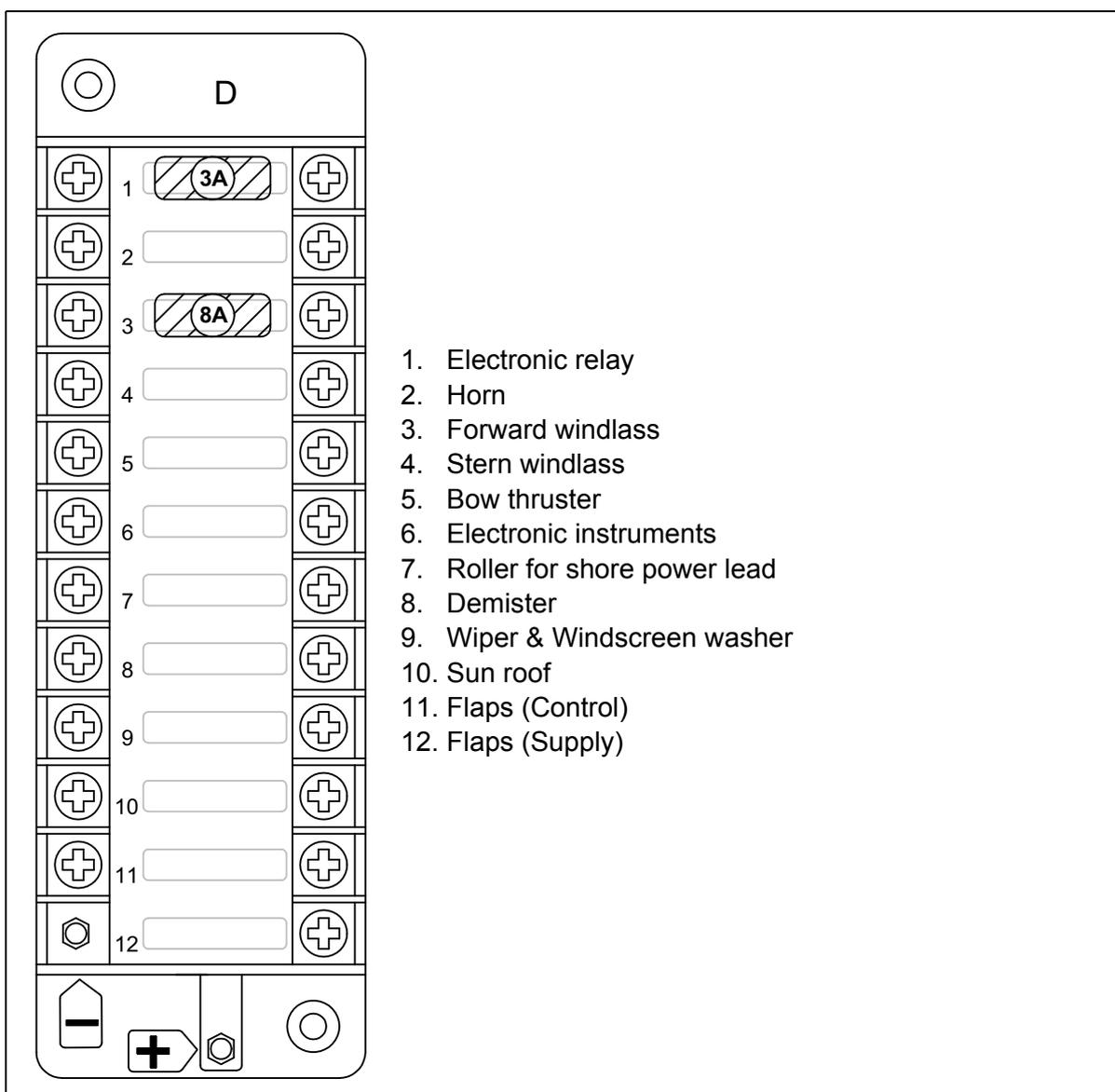
A circuit-breaker can be reset (manually press the black button to restart it).





ELECTRICAL SYSTEM





ELECTRICAL SYSTEM

7.2.11 Fuses

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



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



20A

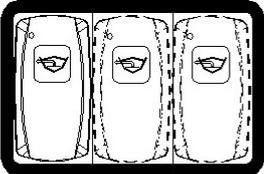
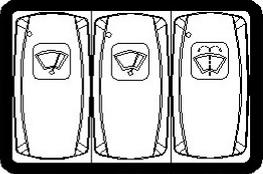
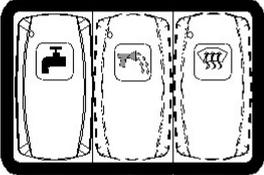
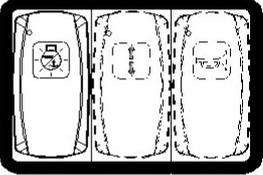
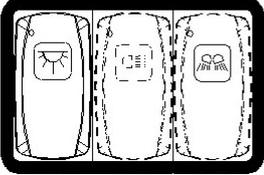
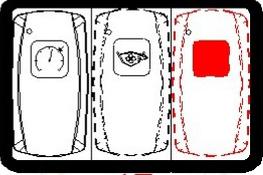
15A

10A

5A

3A

7.2.12 Steering station switches

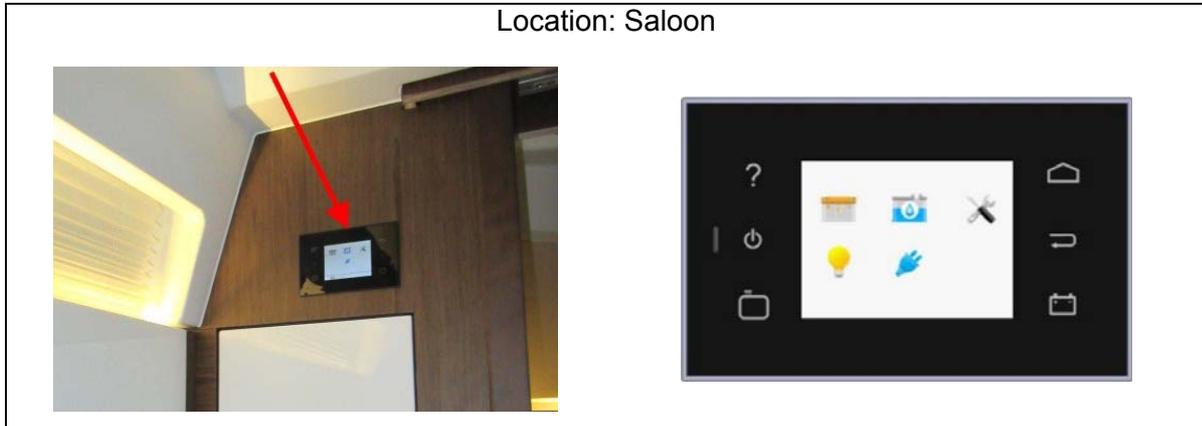








1. Forward electrical bilge pump
2. Electric bilge pump - petrol tank compartment
3. Electric bilge pump - Aft cabin
4. Port windscreen wiper
5. Starboard windscreen wiper
6. Windscreen washer
7. Water unit
8. Deck wash pump
9. Demister
10. Navigation light
11. Opening/closing mechanism - petrol tank compartment
12. Horn
13. Outside lighting
14. Cockpit searchlight
15. Underwater light
16. Electronic instruments
17. Engine compartment ventilator
18. Engine emergency stop button

7.3 TOUCH SCREEN

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

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

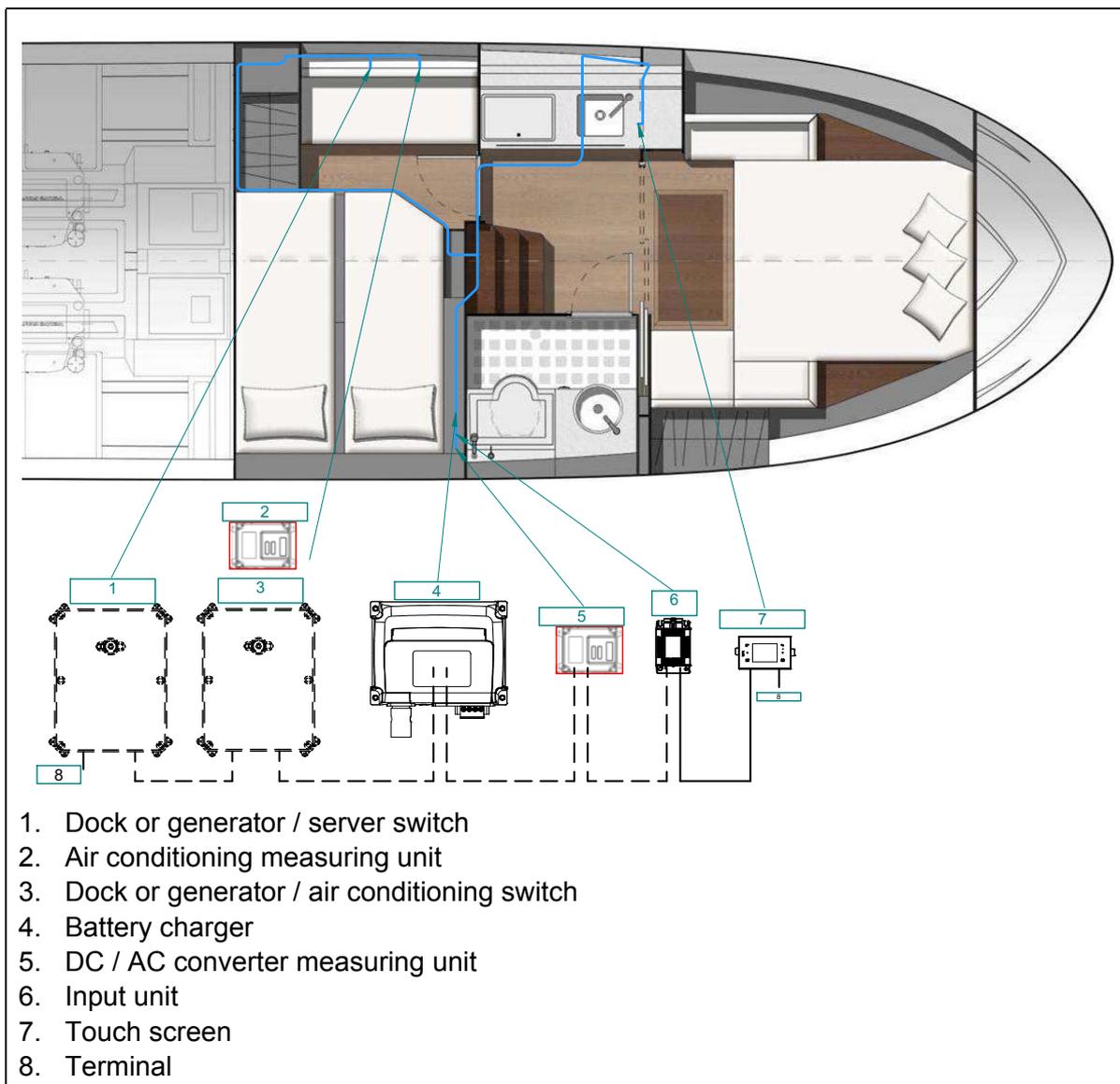


The screen NAVICOLOR is a touch interface for viewing and controlling the auxiliary functions of the boat:

- Fuel level,
- Fresh water level,
- Greywater level,
- Blackwater level (WC),
- Battery voltage,
- Starting the generator,
- Management of boat's AC supply sources,
- Network viewing and diagnostics.

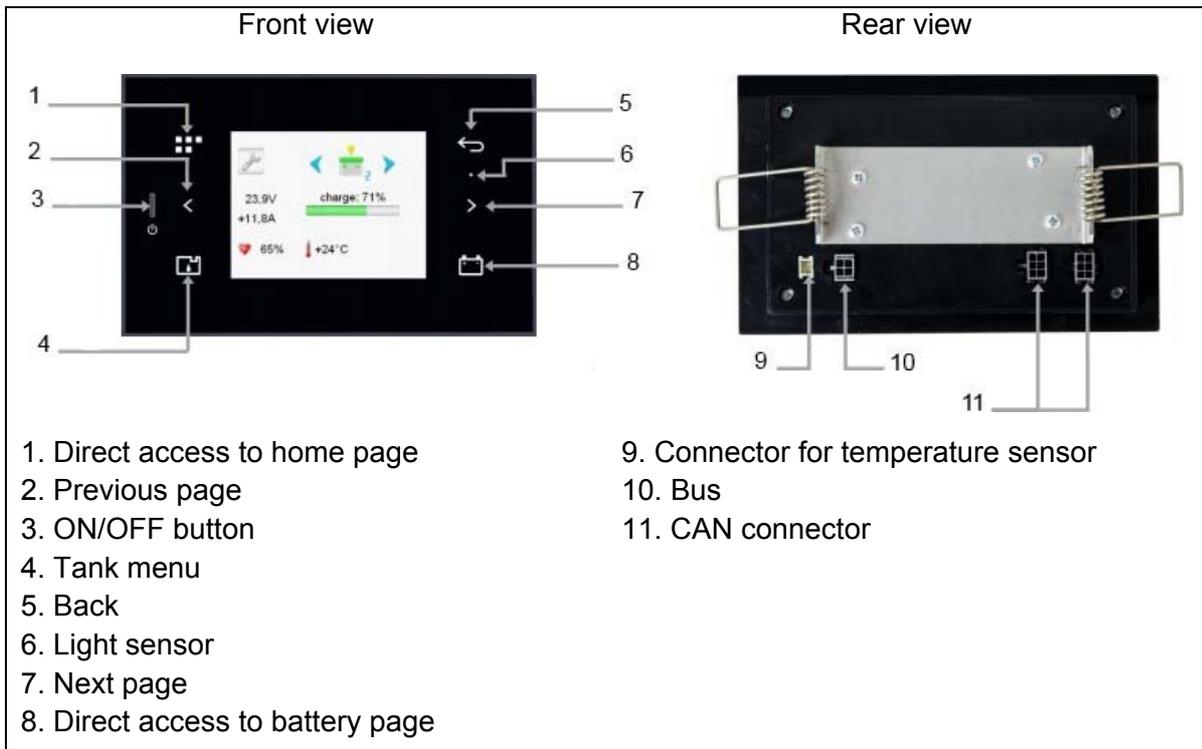


Description of elements



ELECTRICAL SYSTEM

Touch screen operation



- 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)

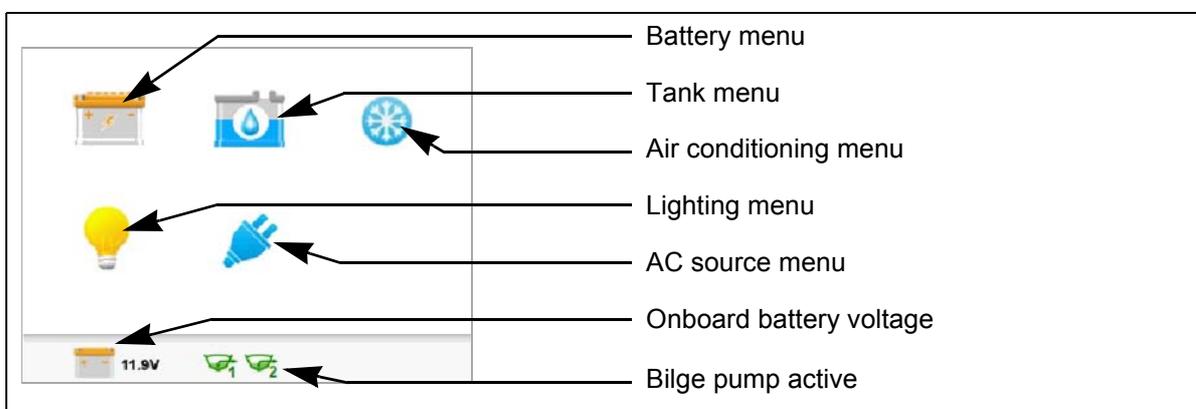


- CAN network display (Controller Area Network)
- Parameterization of lighting
- Configuration of the 'gauge' pack
- Configuration of source selectors



Return to preceding page

Operation



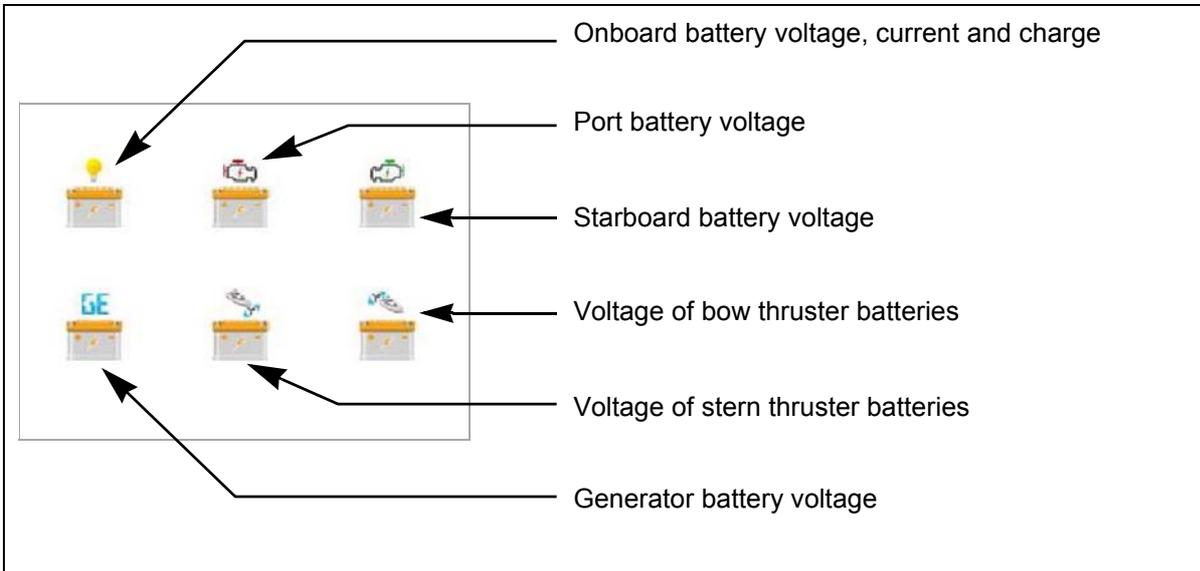
NOTES

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

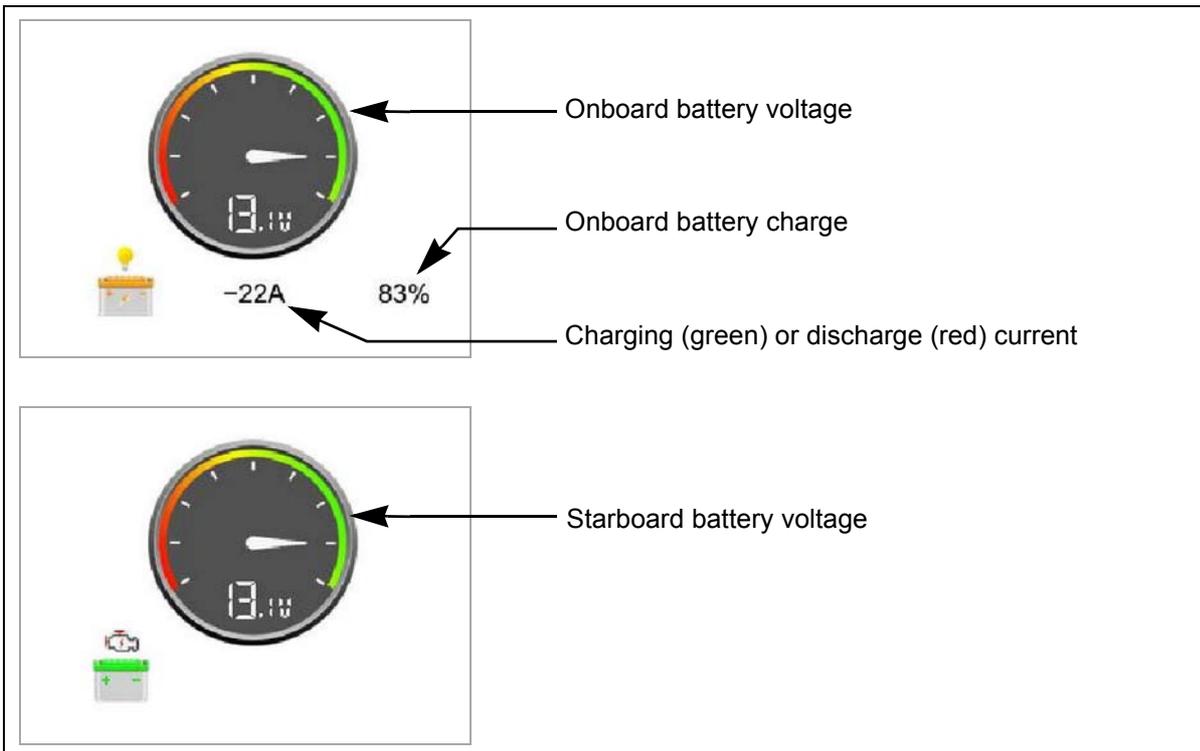
Battery menu



Access sub-menus by pressing the required menu icon.



examples:

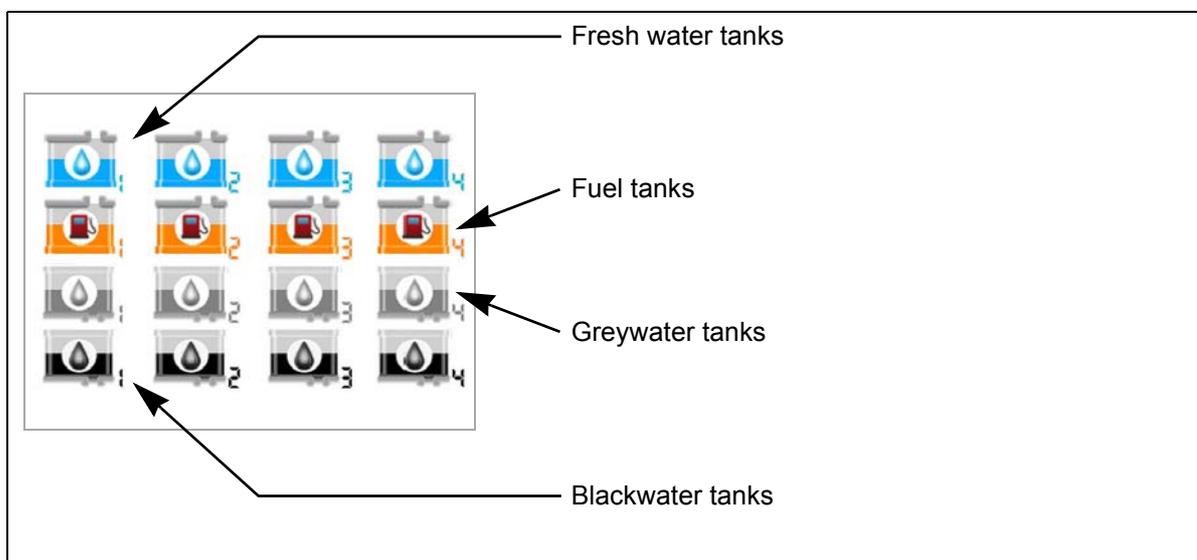




Tank menu

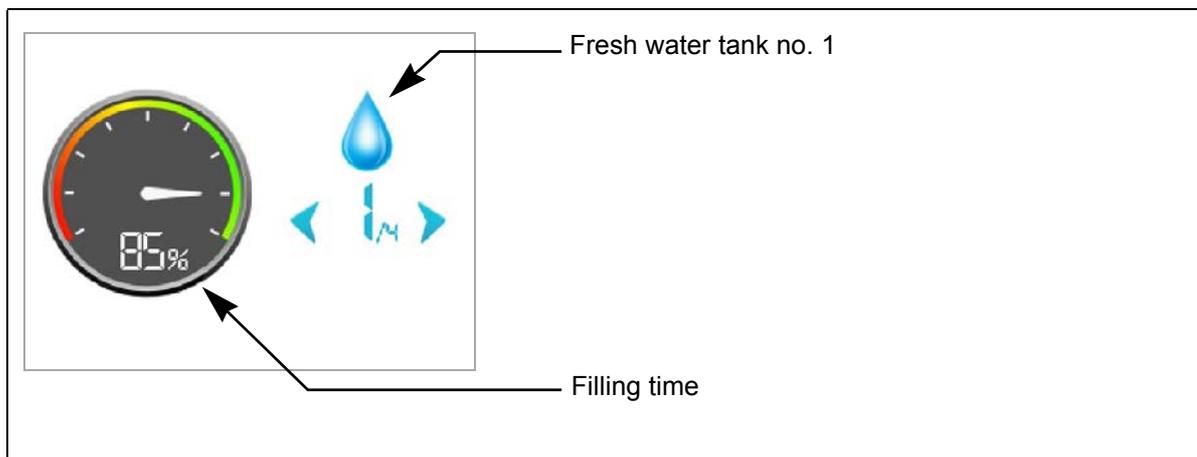


Access sub-menus by pressing the required menu icon.



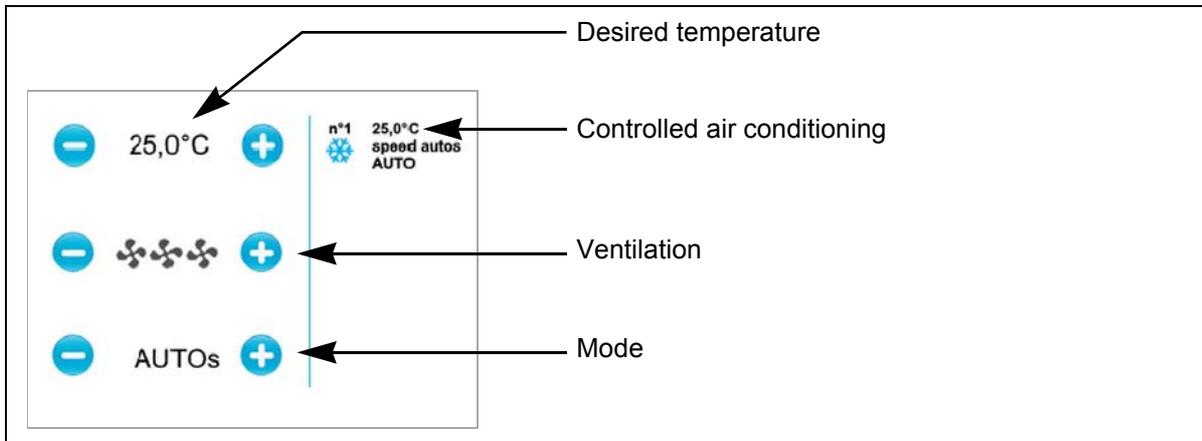
ELECTRICAL SYSTEM

examples:



Air conditioning menu

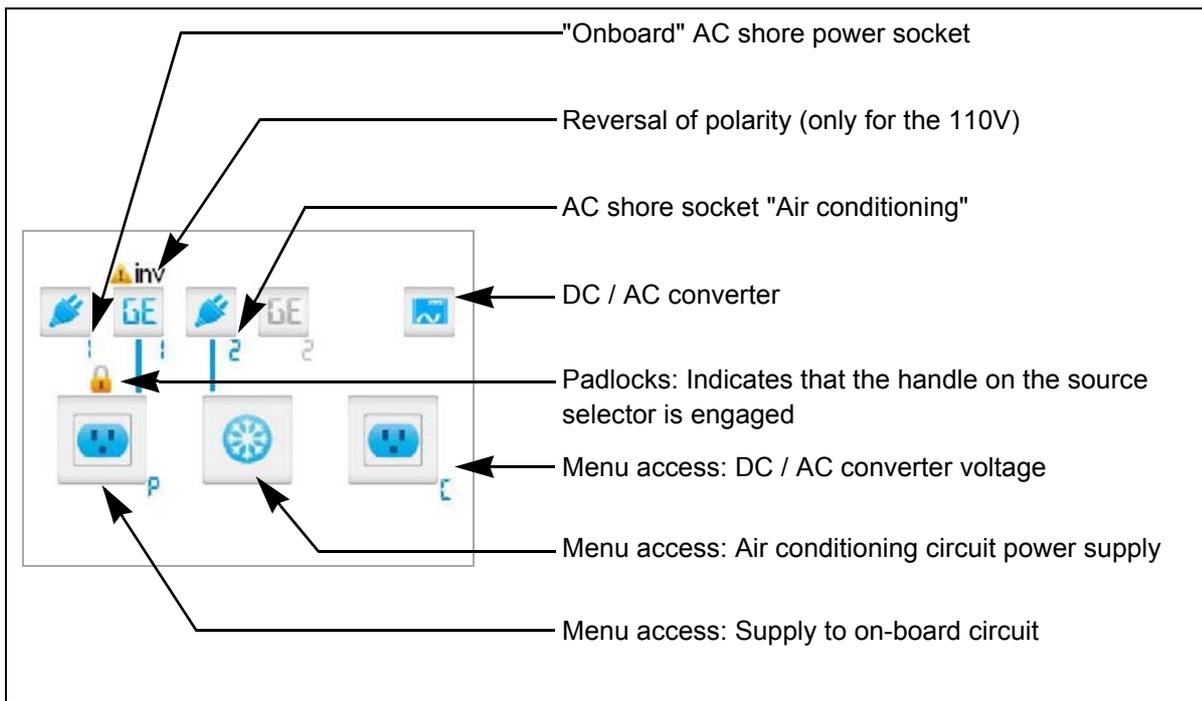
The Navicolor controls the air conditioning in the saloon.



AC source menu

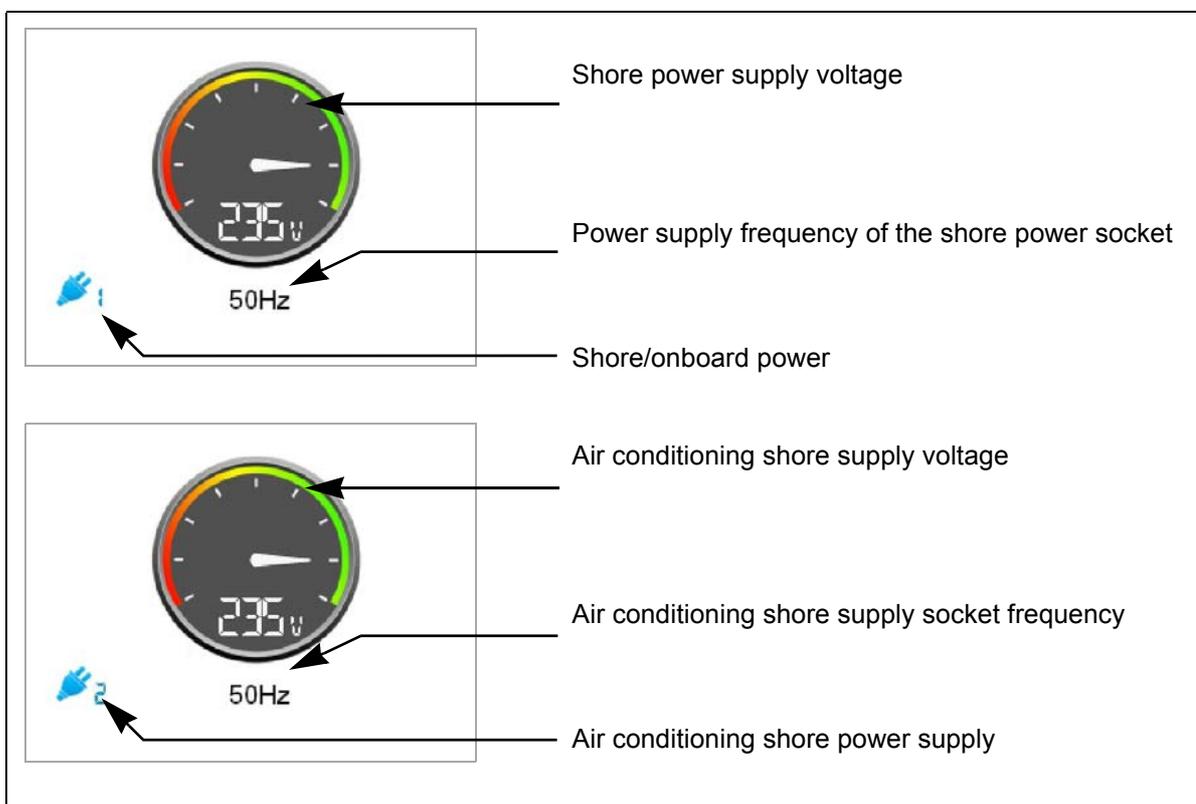
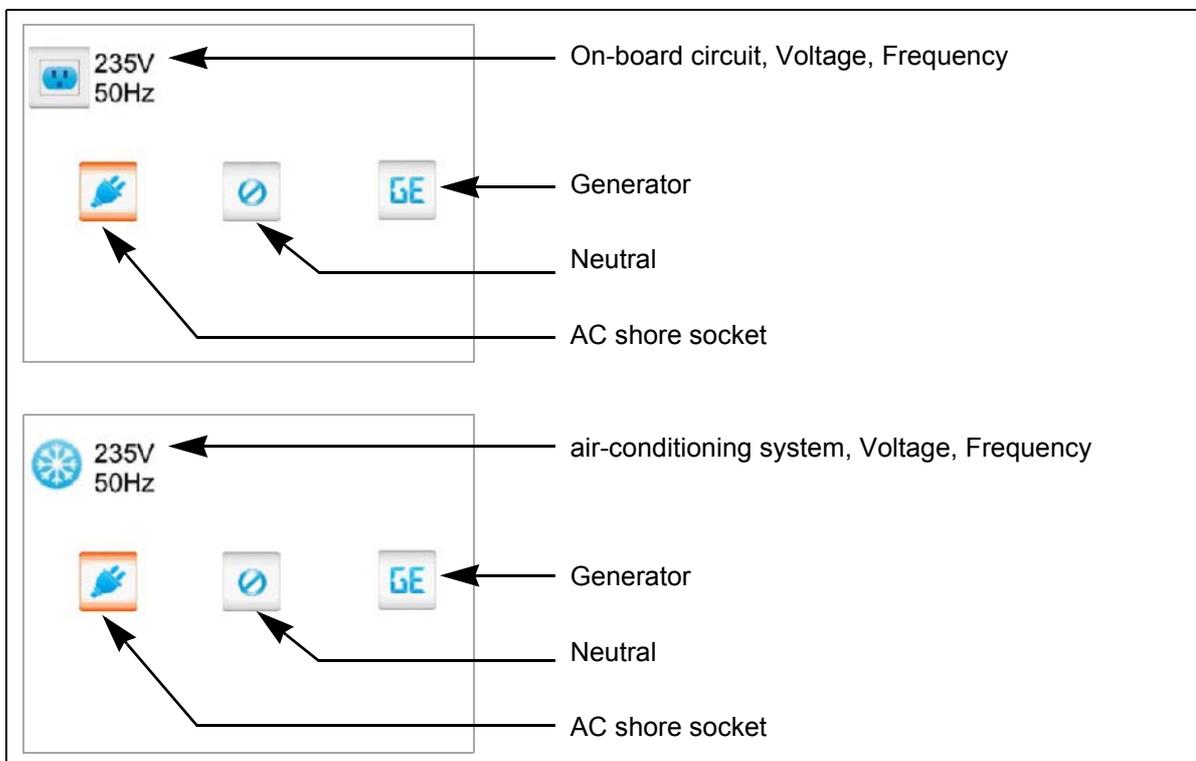


Access sub-menus by pressing the required menu icon.



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



7.4 AC SYSTEM (110V OR 220V)

7.4.1 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 electrocution.
- Do not work on a live AC system.

To reduce the risk of electric shock and fire:



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

DO NOT MODIFY THE CONNECTIONS OF THE BOAT/SHORE POWER CABLE.



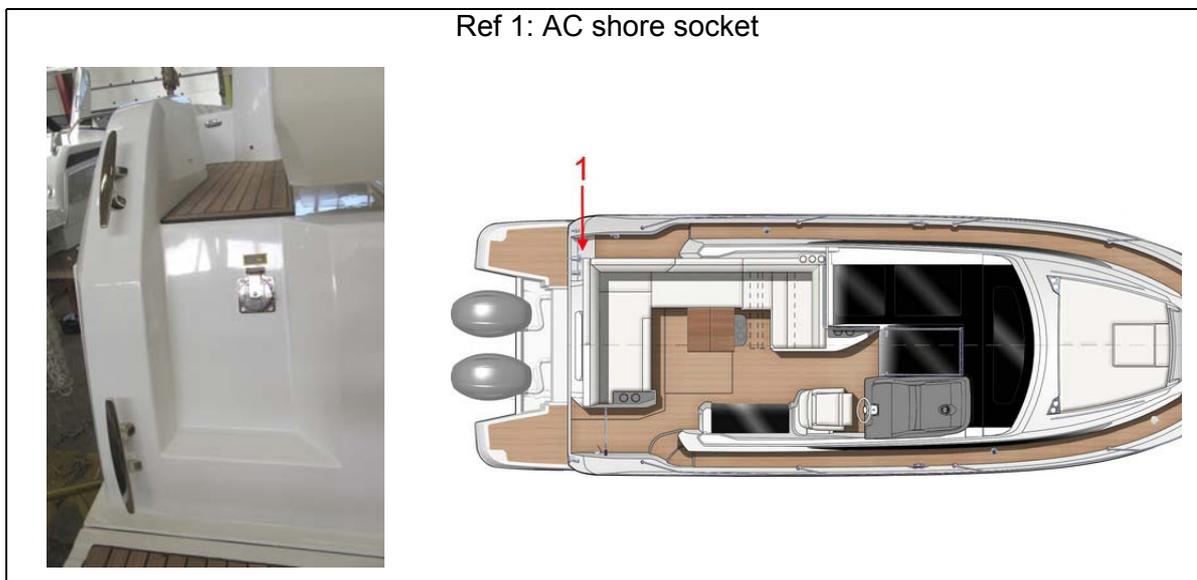
Electrical connections change over time. It is necessary to have the boat's electrics checked regularly and at least once every two years by a professional. Special attention should be paid to the tightness of the electrical connections.

ADVICE-RECOMMENDATION

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



7.4.2 AC shore socket

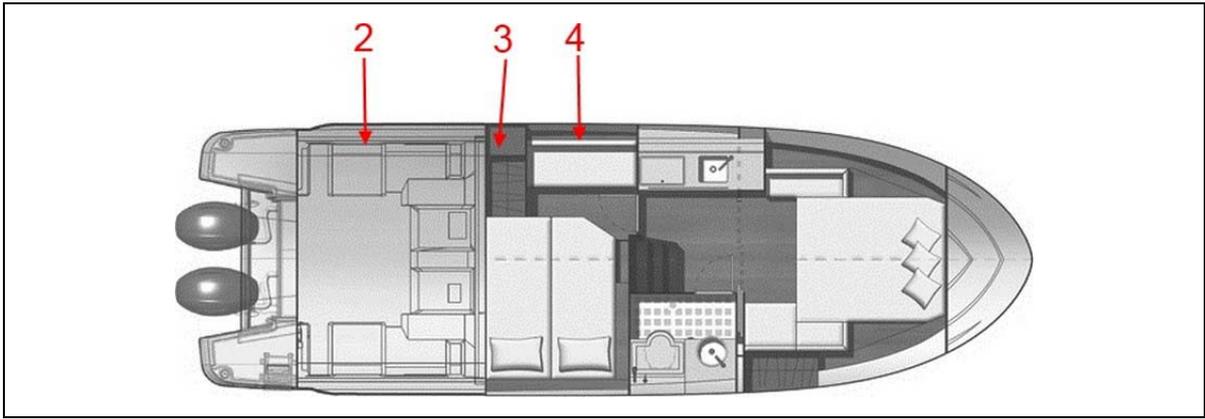


ELECTRICAL SYSTEM

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.



Ref 2: Circuit breakers (Protection)



- 1. Shore power socket
- 2. AC elements
- 3. Air conditioning

Ref 3:
Elements circuit breakers (Operation)



Ref 4:
Source selector



7.4.3 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.
- generator start (selector no°1 "onboard") or air conditioning (selector no°2 "air conditioning").
- an isolated measurement (galvanic) of the generator battery.

In the event of system failure, the switch can be operated manually using the handle on the device. Engage the handle, then switch to the right or left of the device to select the desired AC source.

Maintaining switching positions does not require power consumption.

Source selectors
Location: Aft cabin




- Source selector "onboard": fitted if the boat features a generator.
- Source selector "Air conditioning": is fitted if the boat is features air conditioning.

Handle

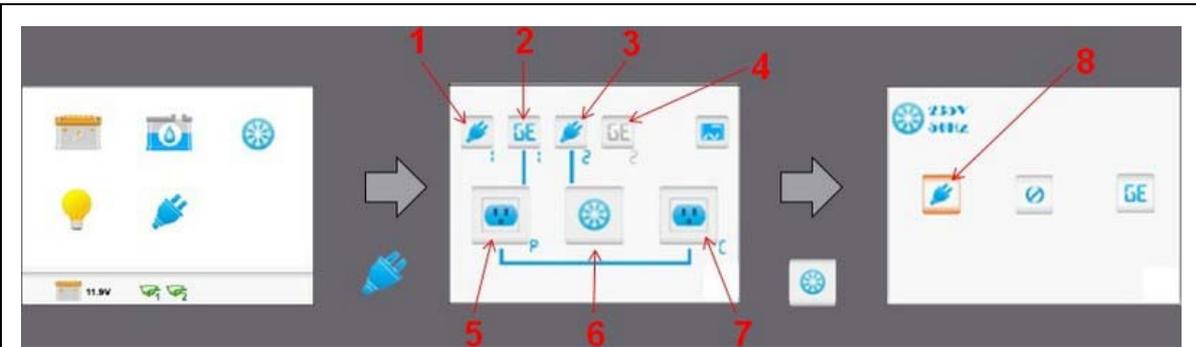


Manual use

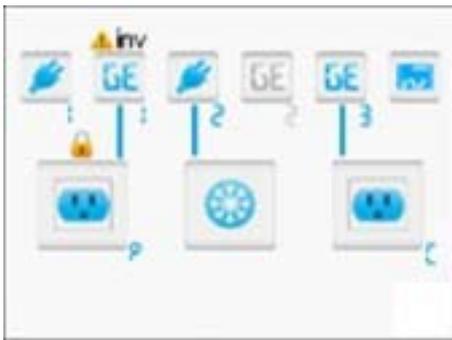


0. No selection
1. AC supply via generator
2. AC supply via shore power

Operation



1. Shore voltage present but not selected
2. Generator on and selected
3. Current and selected platform voltage
4. Generator off
5. Selector n°1
6. Selector n°2
7. AC unit (DC/AC converter)
8. Source selected for the onboard selector



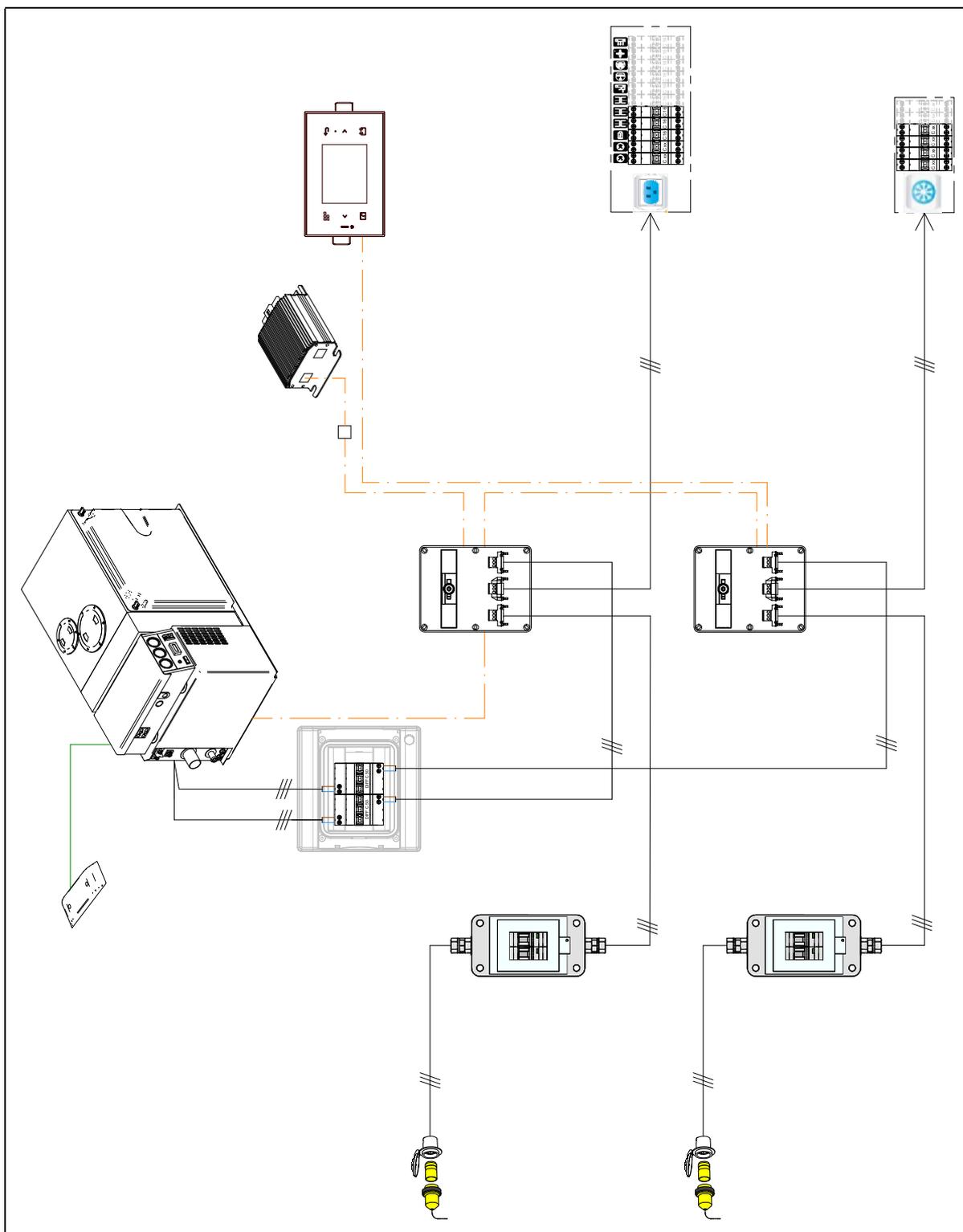
Here, on selector n°1, the padlock indicates the presence of the manual control handle on the selector. Switching cannot be carried out through the screen.



7.4.4 Diagram of layout

AC electrical system

Europe Version (220V / 50Hz)

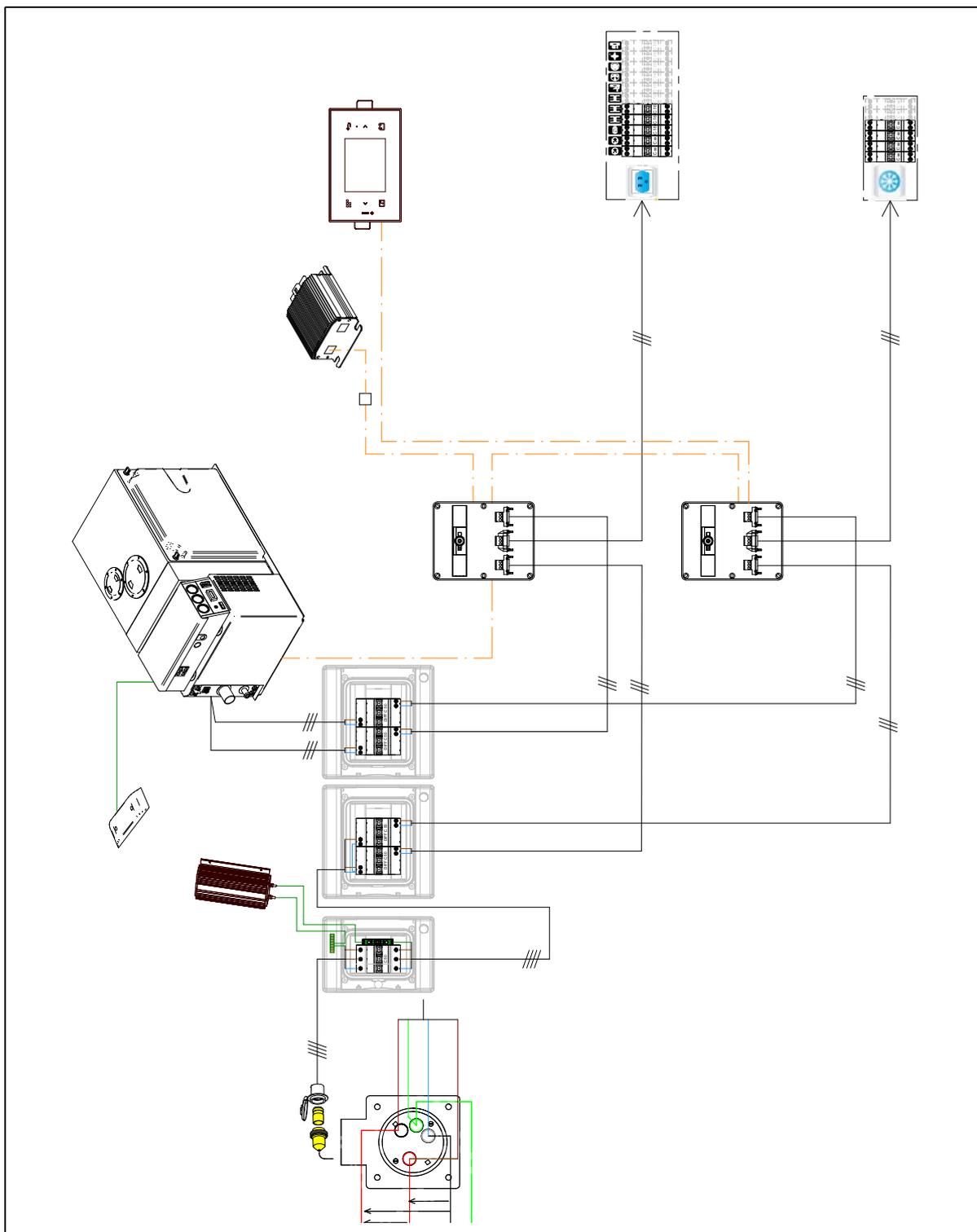


ELECTRICAL SYSTEM

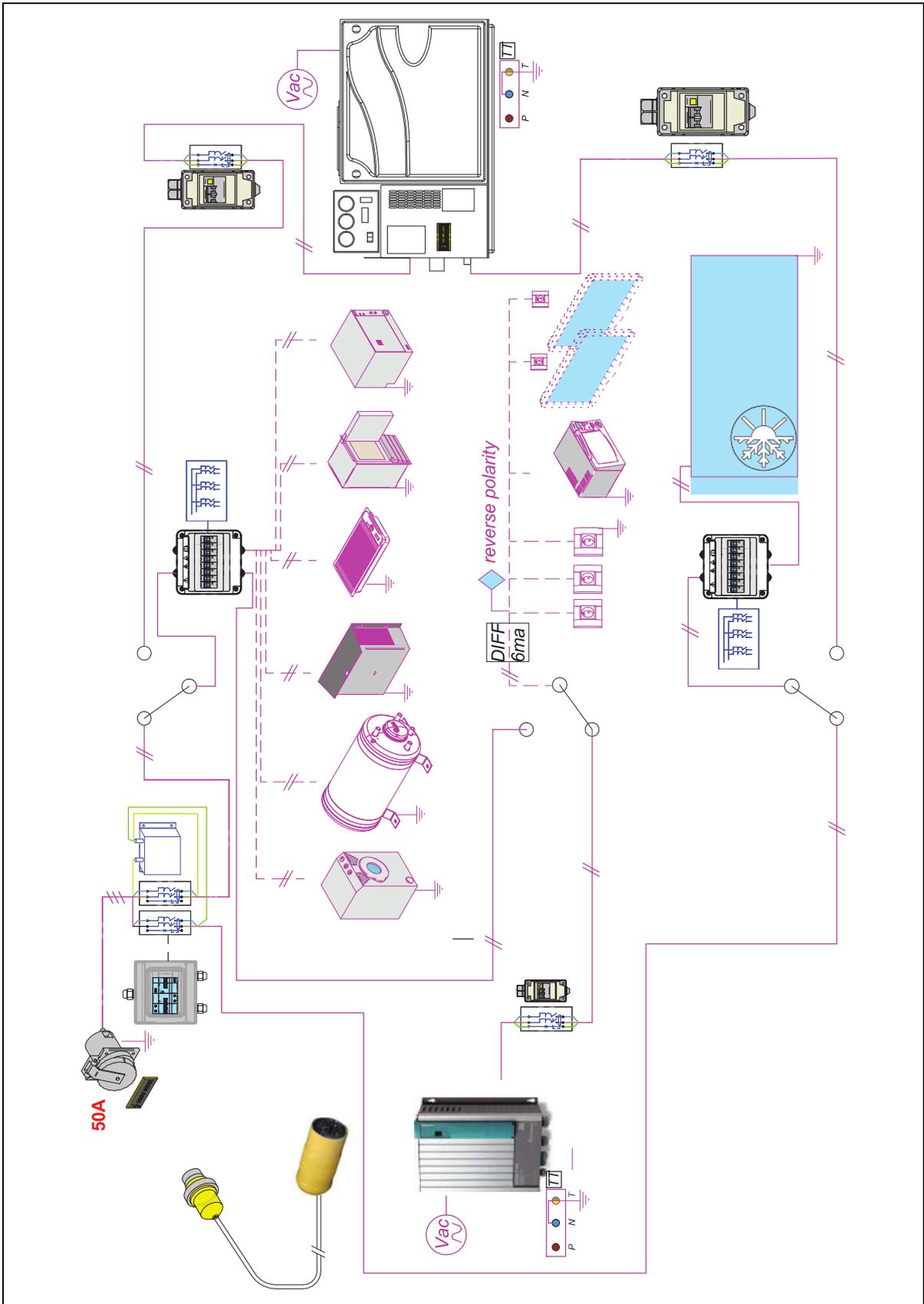


US Version (110V / 60Hz)

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.



ELECTRICAL SYSTEM



Installation of galvanic isolators: petrol tank compartment

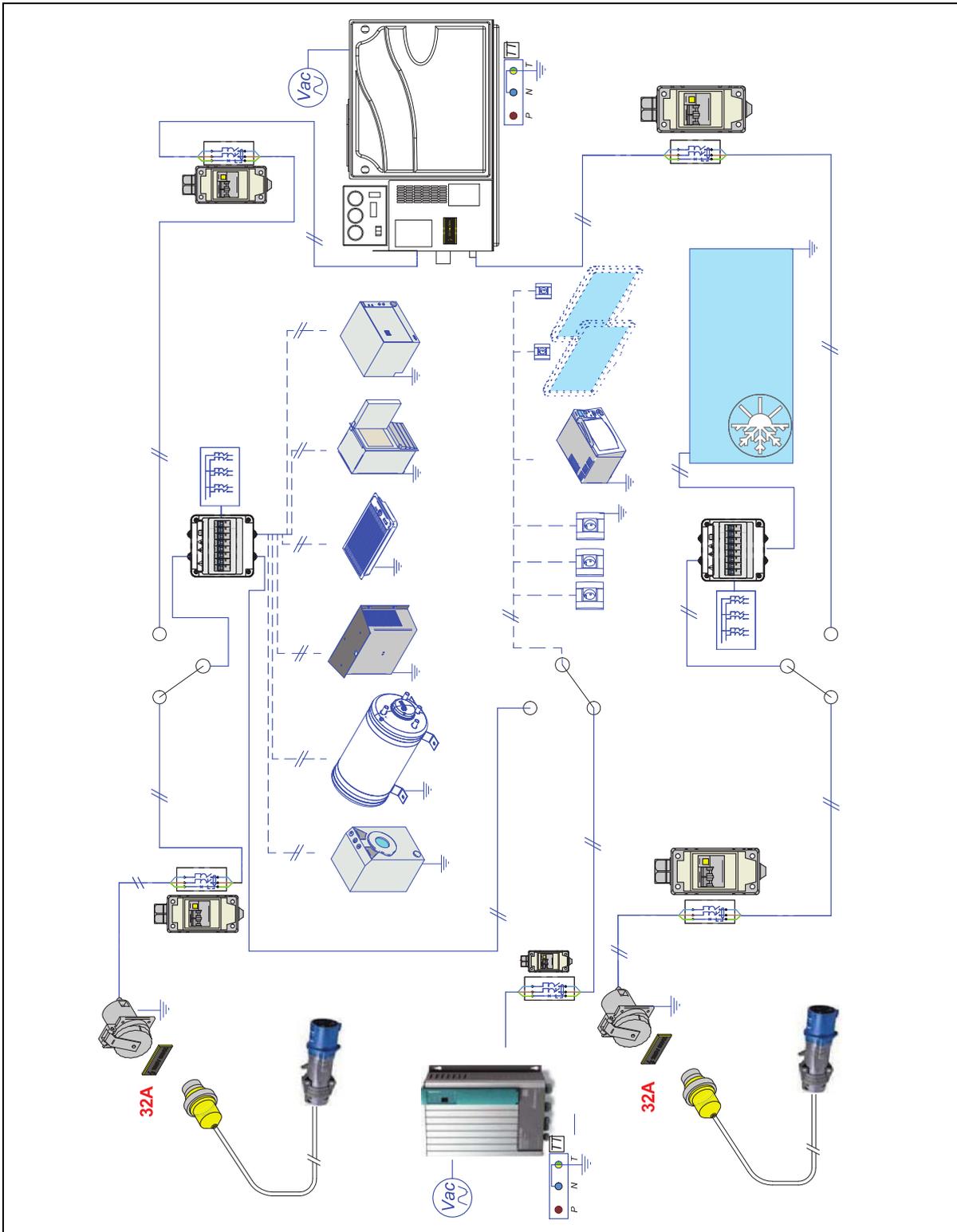


ELECTRICAL SYSTEM

Protection of interior sockets (US Version)
Location: Aft cabin



Brazil Version (220V / 60Hz)





7.4.5 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.

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 inverter 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.

DC/AC converter

Control located on the equipment



Remote control



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.



AC breakers
Location: Aft cabin



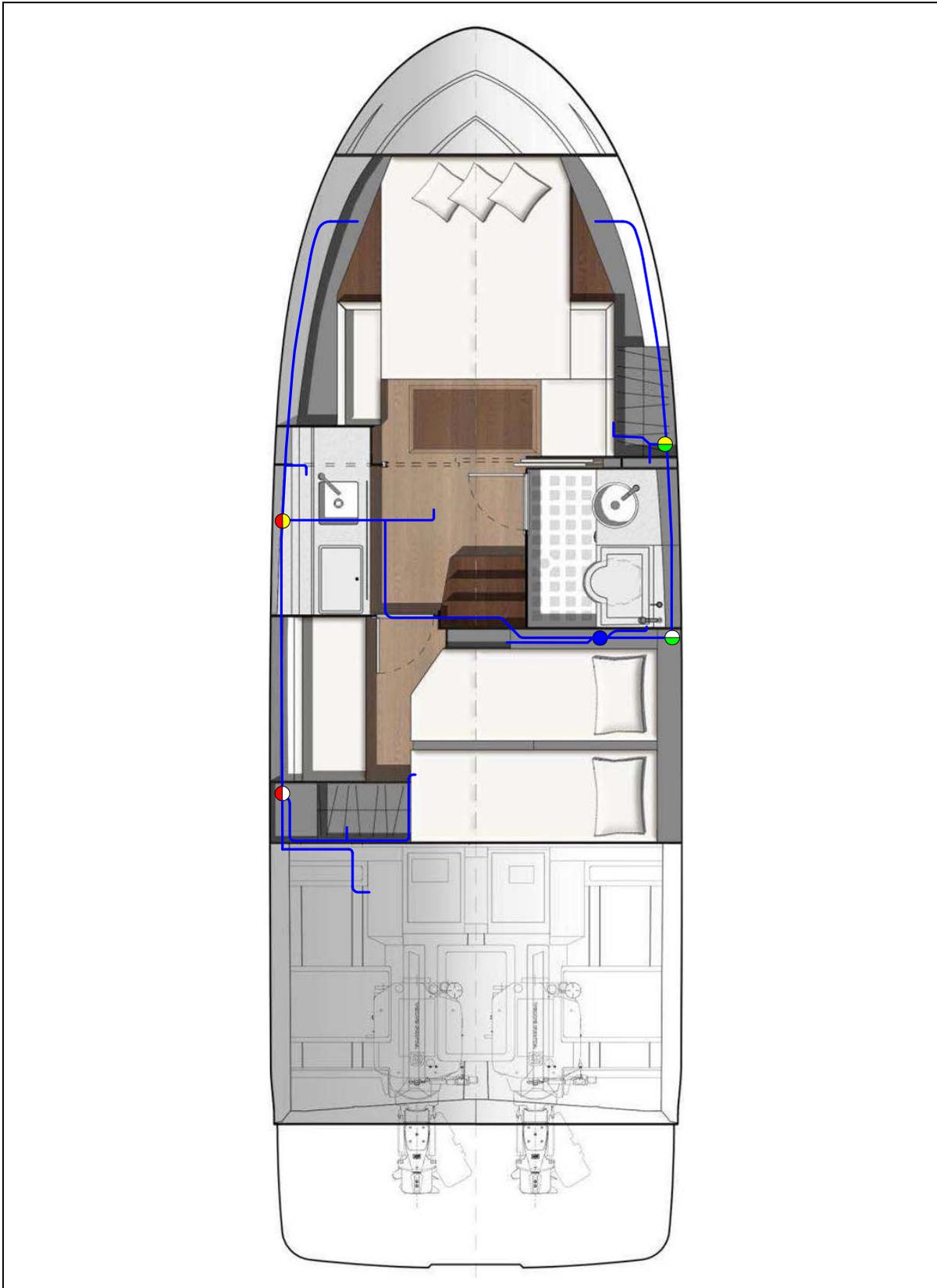
from left to right:

- Switch for shore power / DC/AC converter
- Water heater
- Battery charger (Service)
- Battery charger (Generator)
- Ceramic hob
- Interior AC sockets
- Microwave

from left to right:

- Relay box
- Compressor (Forward cabin)
- Compressor (Aft cabin)
- Compressor (Saloon)

7.4.6 Layout of hull wiring looms - AC circuit



7.4.7 Layout of deck wiring looms - AC circuit



7.5 PROTECTION AGAINST ELECTROLYSIS / EARTH PLATE

7.5.1 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

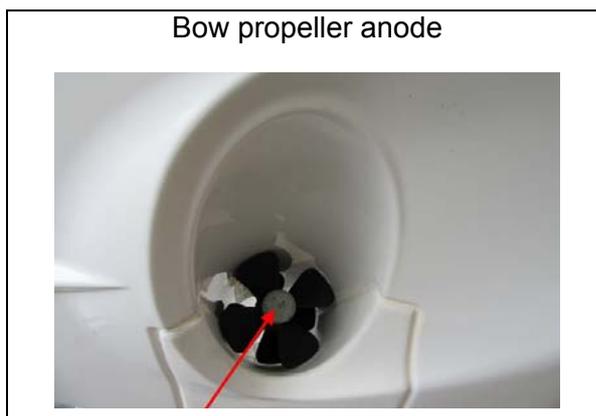
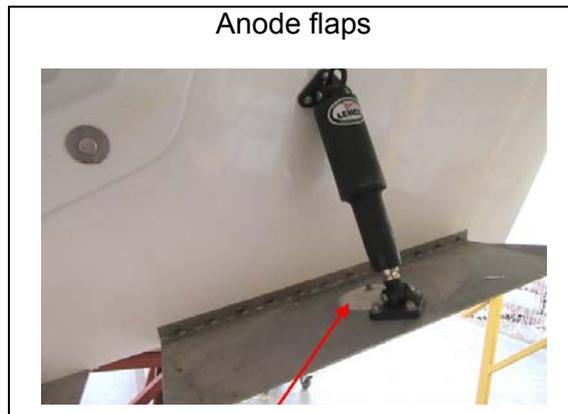
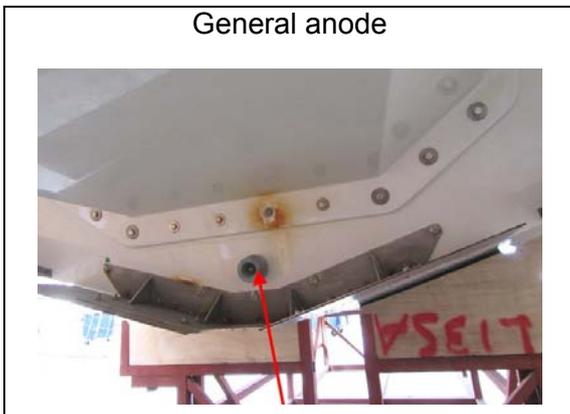
- At least 2 times a year, check the corrosion on all of the anodes. Change the anode if necessary (Before it has lost 50% of its weight).
- Use the appropriate anodes for the cruising area: magnesium anodes for fresh water; zinc anodes for seawater.
- If the motor mountings are raised, the anodes are 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.

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.



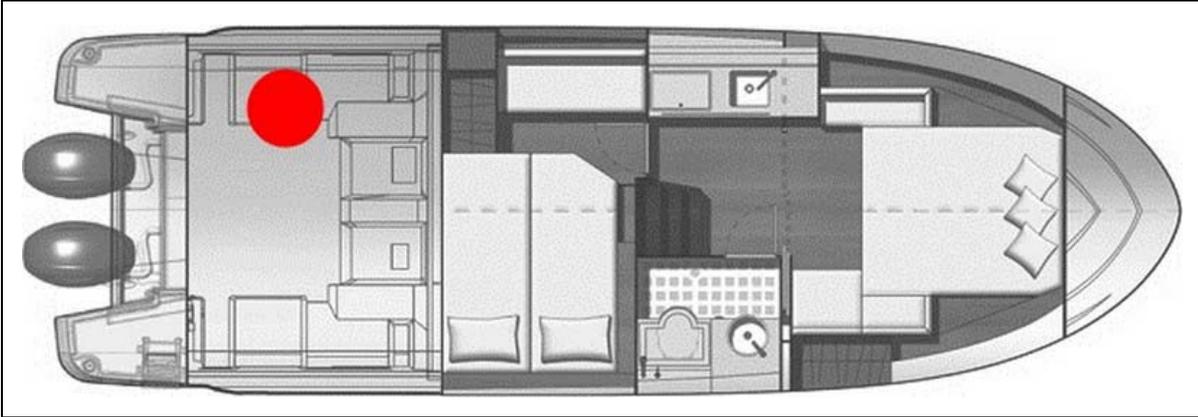
- Never cover the anodes in antifoul.
- During the first few weeks that the boat is in the water, check the anodes and replace them if necessary: they erode very rapidly during this period.

7.5.2 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.

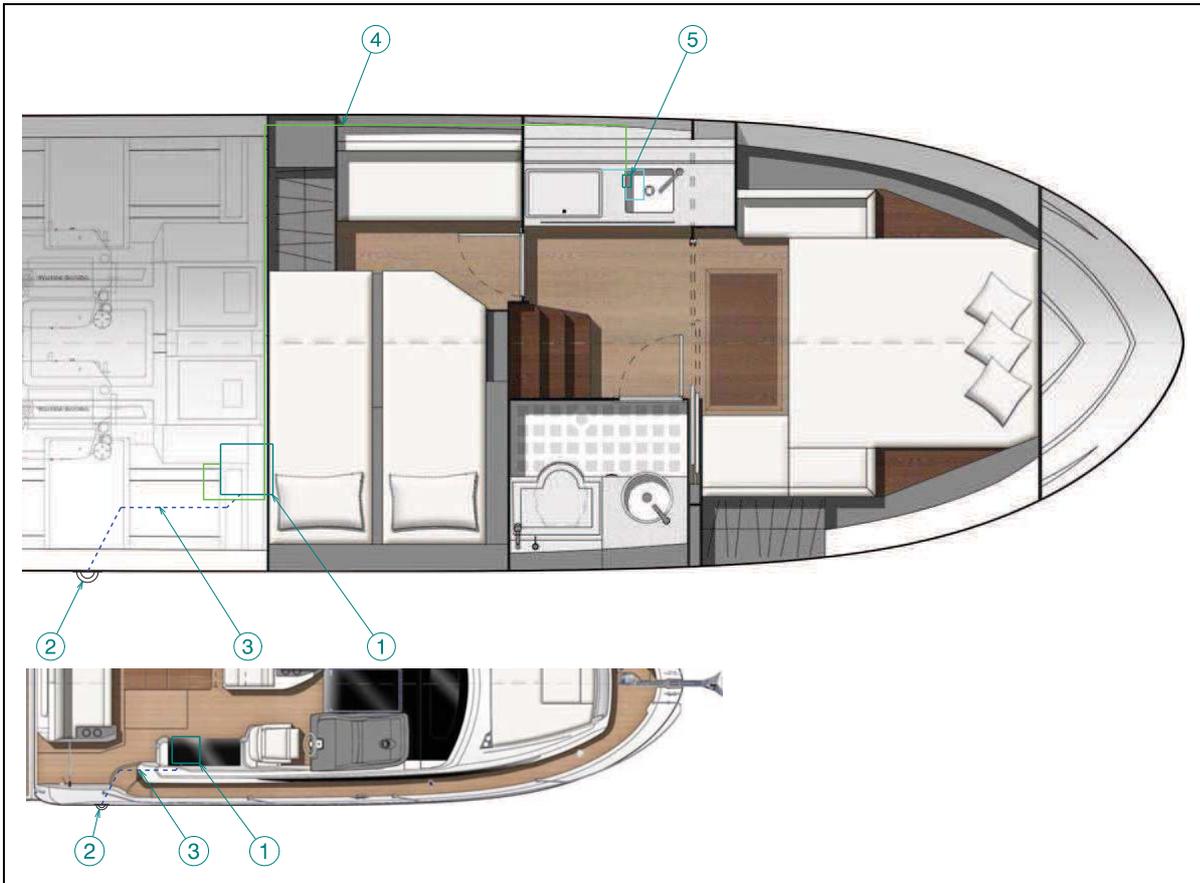


8 LIQUEFIED PETROLEUM GAS (LPG) SYSTEM

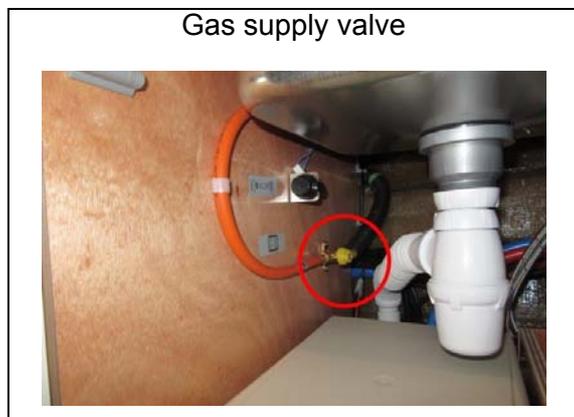
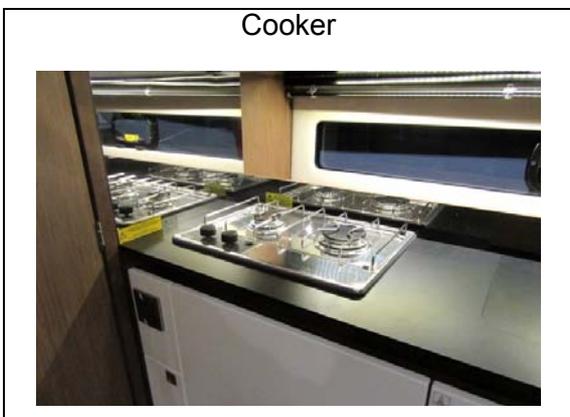
8.1 GENERAL POINTS

- The working pressure of the LPG unit is 28 millibars
- Recommended cylinder capacity:
 - Europe Version: 2,75 kg of butane.
 - US Version: 5 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 & bubble gas leak detector
2	Kitchen sink thru-hull drainage
3	Gas locker drain
4	Gas system
5	Gas supply valve



Gas cylinder locker



8.2 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.

8.3 VERIFICATION OF THE LPG SYSTEM

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

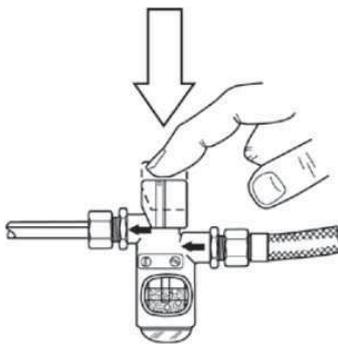
- If the LPG circuit is equipped with a pressure gauge:

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



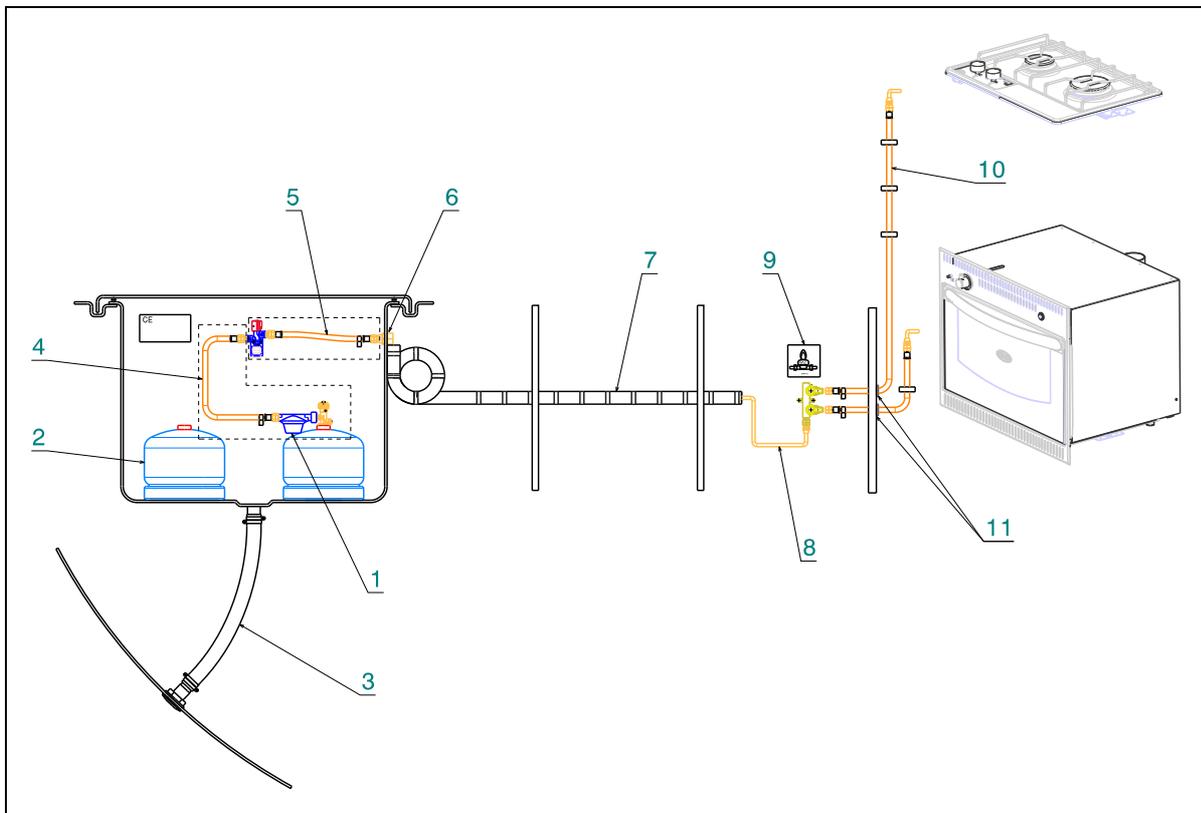
- Do not use solutions containing ammonia when testing for leaks manually (ammonia, which is present in certain soaps and detergents, attacks brass connections. Although the damage may at first be impossible to detect, the cracks and leaks may appear several months after contact with the ammonia).

To change an LPG bottle

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

8.4 DIAGRAM OF LAYOUT

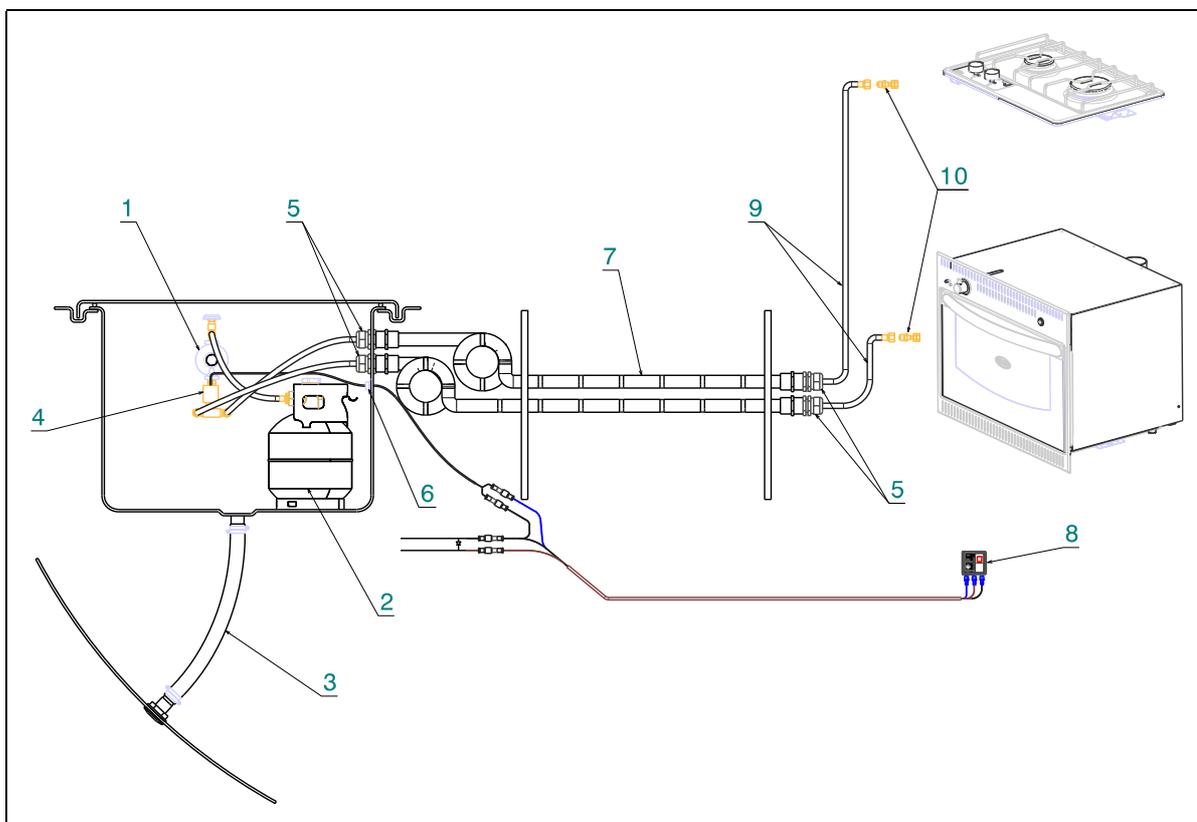
Europe Version



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

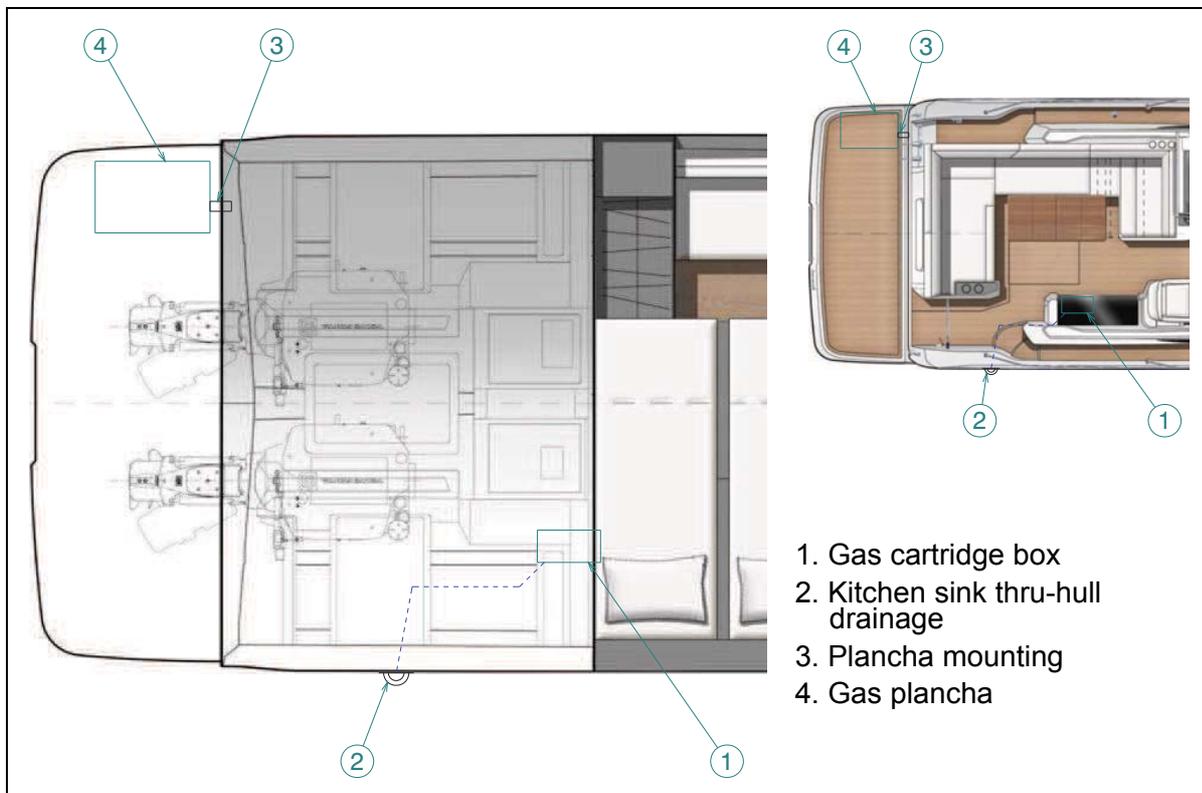


LIQUEFIED PETROLEUM GAS (LPG) SYSTEM

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

8.5 COOKING APPLIANCES WITH BUILT-IN LPG CYLINDER

Operation



- For safety reasons, use the cooking appliance only when sea and wind conditions allow it (calm sea, low wind, moderate rolling or pitching). It is not advisable to use the griddle when under way.



Storage



Ref 1: Storage - Griddle

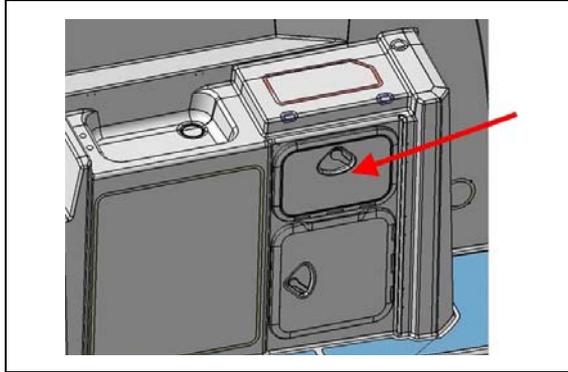


Ref 2: Storage - Plancha mounting



LIQUEFIED PETROLEUM GAS (LPG) SYSTEM

-
- When not in use, the LPG bottle must be disconnected and stored in the following location:
Cockpit galley



- The user must remove and replace the built-in LPG cylinder in the open air and away from sources of ignition.
- Spare cartridges 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.
- Follow the plancha supplier's instructions for use, maintenance and replacement of the LPG cartridges.



9 DOMESTIC APPLIANCES

9.1 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 icebox (without evaporator) keeps the food and drink chilled.
- 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 refrigeration 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/icebox door seal with a damp cloth.
- Regularly defrost the fridge.
- When winterising the boat, leave the fridge door/icebox cover open to prevent mould and odours from developing.

ADVICE-RECOMMENDATION

- 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.

Fridge
Location: Galley



Cockpit fridge





9.2 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.

9.3 HOT PLATE

General points

- The hob runs on an AC power supply.
- A breaker protects the electrical circuit.



Starting up

- Use the switch to select the desired power source (shore power or generator).
- Turn the hob circuit breaker to ON.

10 AUDIO-VISUAL EQUIPMENT

10.1 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 generator,
 - 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.

Starting up

- First turn on the circuit breaker, then switch on the TV.

TV mounting
Location: Forward cabin



Aerial amplifier
Location: Starboard hanging locker -
Forward cabin



10.2 HIFI

- The sound system is DC powered.
- The sound from the TV comes out of the integral speakers.
- The sound from the radio comes from the inside and outside speakers. It is possible to select either inside or outside speakers by adjusting the balance control.

Location: Forward cabin



1. Radio
2. Flash drive mounting

ADVICE-RECOMMENDATION

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



11 ONBOARD COMFORT

11.1 AIR CONDITIONING

General points

- The air-conditioning is powered by alternating current.
- The air-conditioning cools the air temperature inside the boat (only when the boat is floating in water).
- The cooling circuit consists of one or more compressors that operate independently. A compressor is called "reversible" because it can heat the boat if the seawater temperature exceeds 13°C.
- In winter, you can programme the dehumidifier function on the air conditioning controls.
- The refrigeration compressors are made by one or two seawater pumps. These pumps are run on AC voltage and are master controlled by one or two relay boxes.
- Seawater is drained via a through-hull fitting equipped with a valve, located above the waterline. Each compressor has its own through-hull drainage fitting. It is advisable to check the flow of water visually once the air conditioning starts running.

Operation

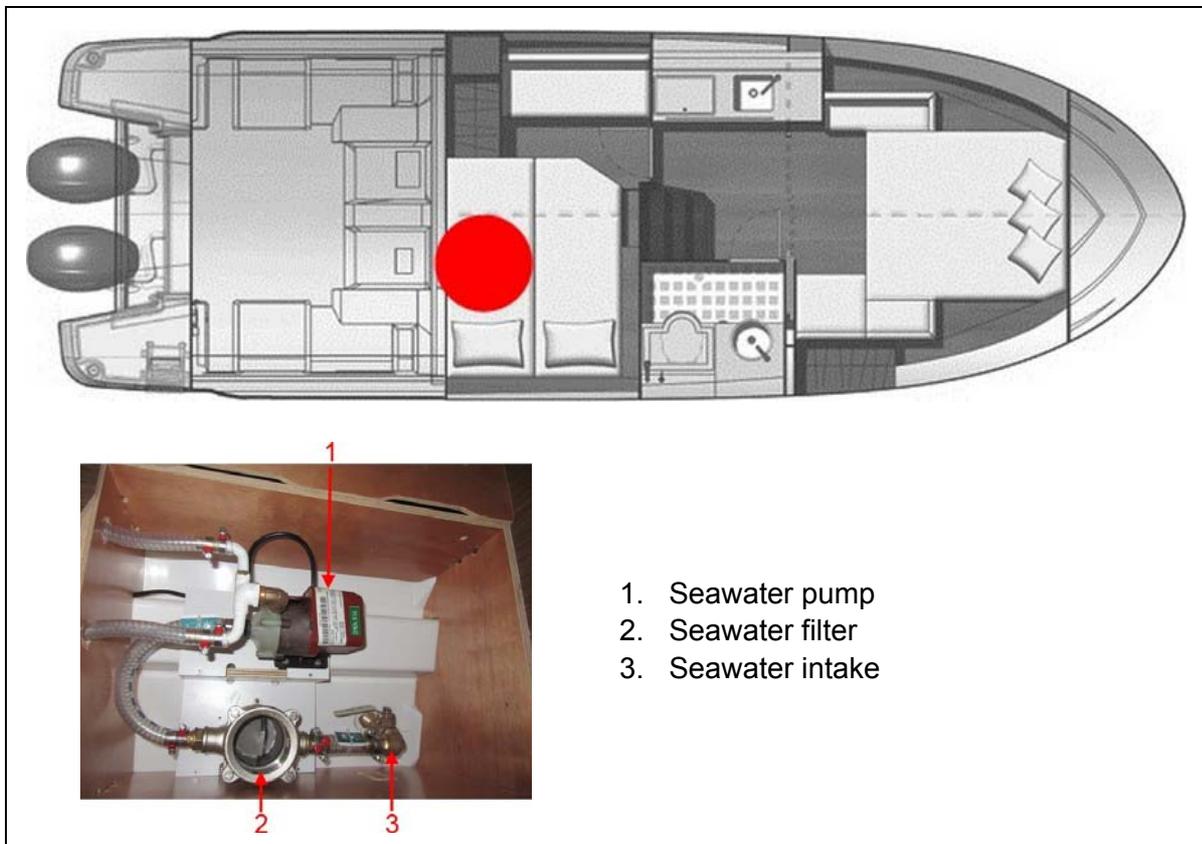
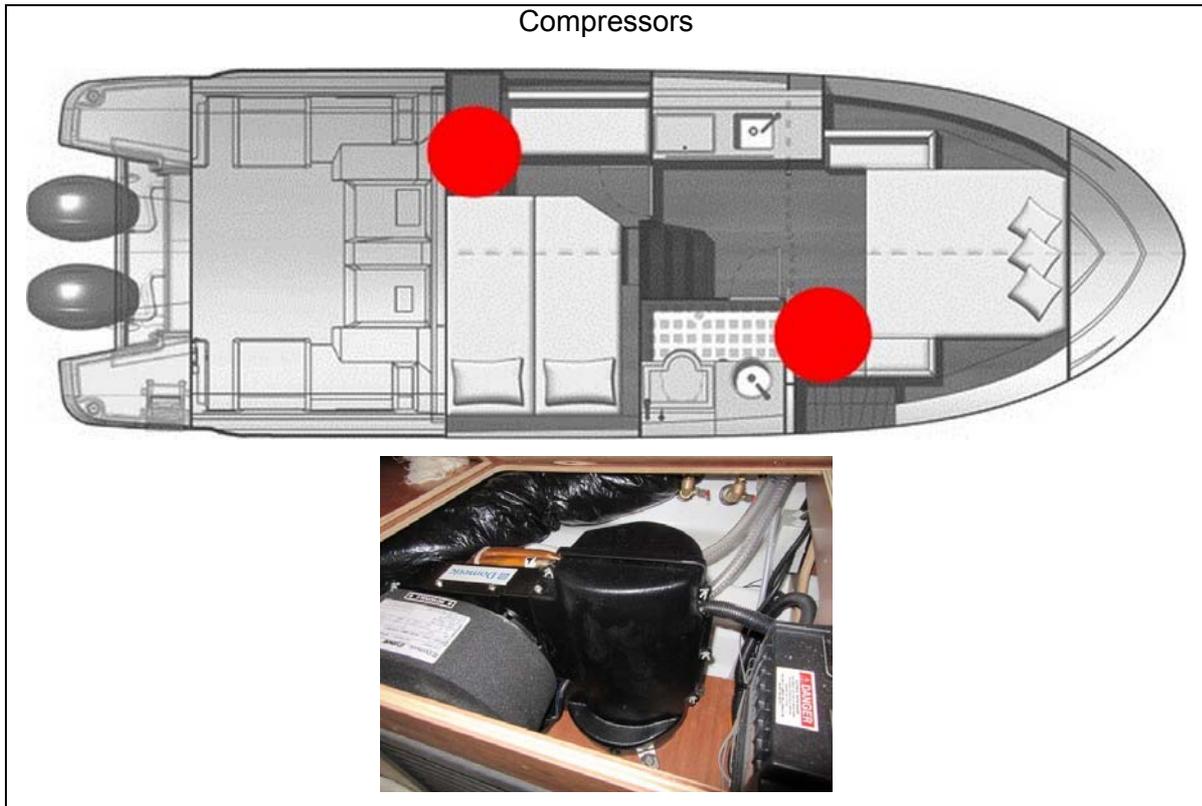
Before starting the engine:

- Open the raw water intake valves and evacuation valves;
- Make sure that the control panel is in the STOP position;
- Use the switch on the chart table to select the power source (shore power or generator).
 - If using shore power: plug into the shore power socket;
 - If using the generator: before turning on the air conditioning, leave the generator running for approximately 3 minutes.
- If the seawater pump is deprimed (eg. in case of running aground), carry out the following procedure:
 - Disconnect the discharge hose from the seawater pump by loosening the 2 stainless steel collars;
 - Blow air through the pipe using a compressor;
 - Re-connect the discharge hose with 2 stainless steel collars.

When the air conditioning is running:

- Switch the air-conditioning circuit-breakers ON.
- Select the temperature of each compressor using the control units.

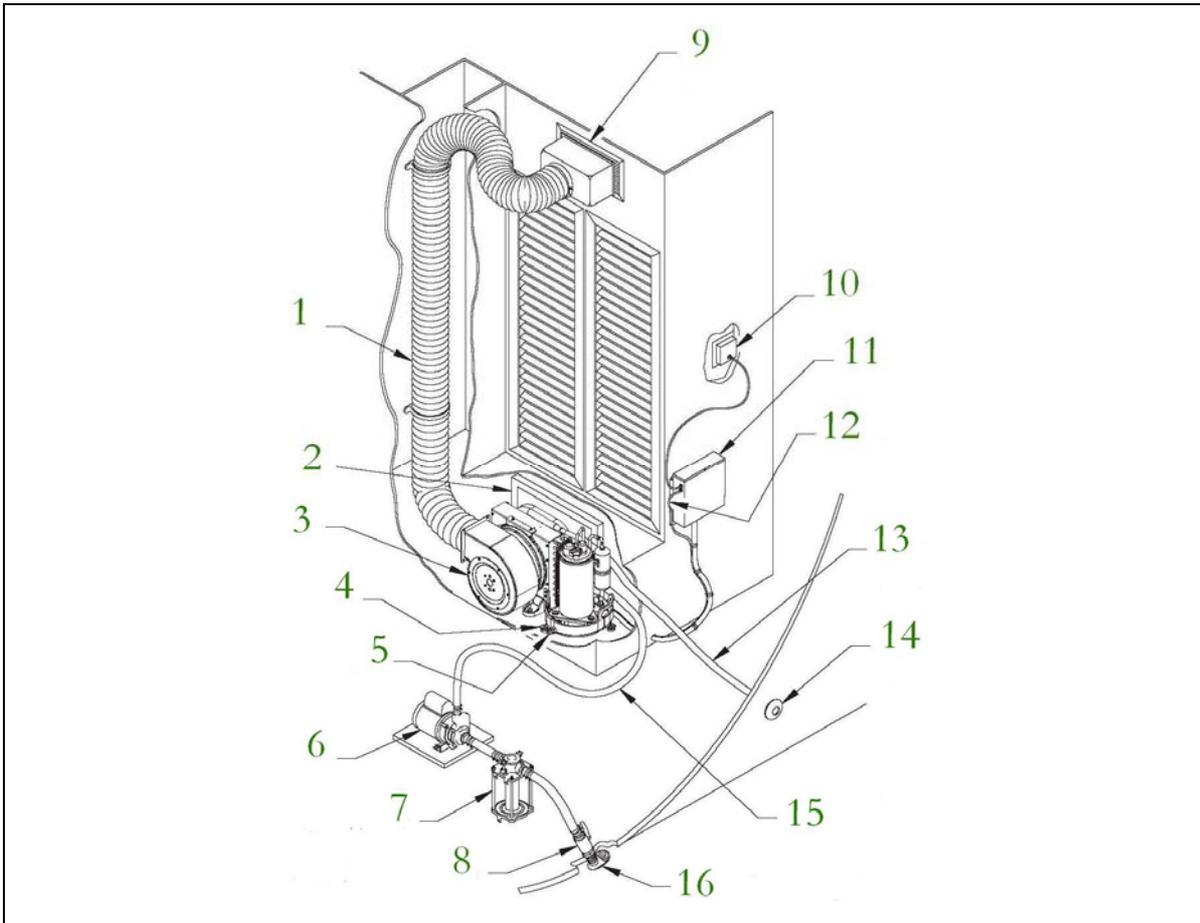
Layout of components:





- Refer to the manufacturer's instructions for use and maintenance.
- When the air conditioning is running, check visually that the seawater has been fully drained.
- Never start the generator when the air conditioning is already on.
- Always turn off the air conditioning before turning off the generator.
- Regularly check and clean the seawater filter placed on the thru-hull seawater intake.
 - Close the seawater intake valve;
 - Unscrew the top of the filter;
 - Clean the filtering screen;
 - Put everything back in place.
- Clean the air filter (located in the compressor) regularly for maximum performance.
- Clean the cooling coil at least once a year.
- To prevent the air-conditioning circuit from freezing: never run the system when the seawater temperature drops below 5°C.
- Winterisation: drain the whole seawater system.
- The cooling gas circuit requires no maintenance.

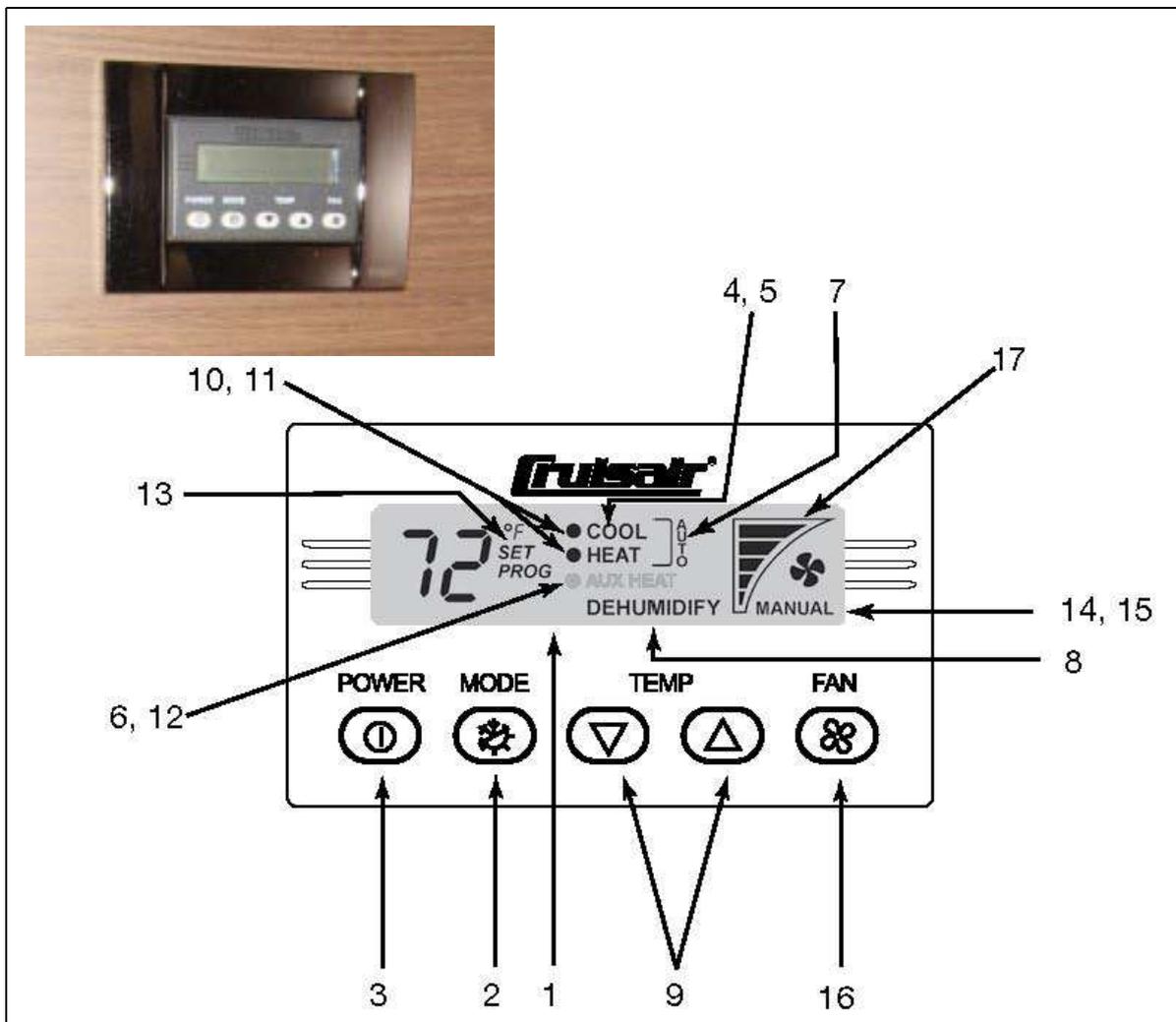
Diagram - Air conditioning



Reference	Designation
1	Insulated pipe
2	Ambient air intake
3	Refrigeration unit
4	Mounting support
5	Condensation water pipe
6	Seawater pump
7	Filter
8	Seawater supply valve
9	Conditioned air outlet
10	Manual control
11	Relay box
12	Temperature sensor
13	Seawater drainage pipe
14	Thru-hull fitting
15	Seawater supply
16	Seawater intake filter

Air-conditioning controls

Please refer to the key on the following page



ONBOARD COMFORT

Manual control of the air-conditioning

1. Data display:
Screen displaying desired temperature, programmed values and error messages.
2. MODE:
Enables navigation between the different operating modes.
3. POWER/OFF:
Lights up when the system is switched off. The manual ventilator may continue to run.
4. COOL:
Indicates that the compressor is activated when cooling.
5. HEAT:
Indicates that the compressor is activated when heating.
6. Option (Auxiliary heating).
7. AUTOMATIC:
Comes on when the system is in AUTO mode.
8. DEHUMIDIFY:
Comes on when the system is in dehumidifying mode.
9. + and - keys:
Allow you to raise or lower the desired temperature.
10. Cooling indicator:
This indicates that the compressor is in COOLING mode.
11. Heating indicator:
This indicates that the compressor is in HEATING mode.
12. Option (Auxiliary heating).
13. Temperature control indicator:
This indicates the temperature control setting (desired ambient temperature).
14. Indicator for the manual ventilator:
This comes on when the manual ventilator is running.
15. Indicator for the automatic ventilator:
This comes on when the ventilator is running in automatic mode.
16. Ventilator key:
Allows you to select manual or automatic mode for the ventilator.
17. Ventilator speed indicator:
Shows current ventilator speed.



NOTES

- When the system is in dehumidifying mode, the system's safety devices remain active: if there is an interruption in the flow of seawater or a drop in AC voltage, the system automatically stops.
- In cooling mode, the system works efficiently when the seawater temperature is below 30°C.
- In heating mode, the system works efficiently when the seawater temperature is above 13°C.
- It is important to switch the system to HEATING mode at least once a month to prevent the changeover cock from becoming stuck in the COOLING mode.

LOCKING METHOD

It is possible to lock the control buttons to prevent settings from being changed accidentally: Press these three buttons simultaneously: MODE, UP (arrow pointing up), FAN. LC appears on the screen, which signifies "LOCK".

To unlock and resume use of the buttons, press the same three buttons simultaneously: MODE, UP (arrow pointing up), FAN. UL appears on the screen, which signifies "UNLOCK".

SCREEN LIGHTING

If the control box is switched off by a fault (in the cabins for example), touching any button automatically and instantly lights the screen up blue.

To alter the light intensity of the screen, press these two buttons simultaneously: MODE, UP (arrow pointing up) until the required intensity is reached.

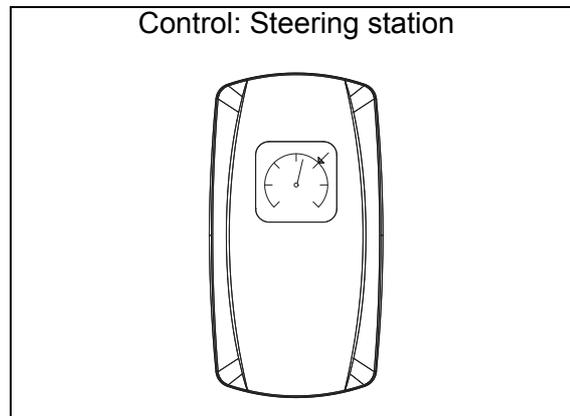
It is possible to programme whether or not the controls are illuminated by default: In this case the ON mode must be selected for permanently illuminated controls or the SLEEP mode for permanently unilluminated controls.

Procedure:

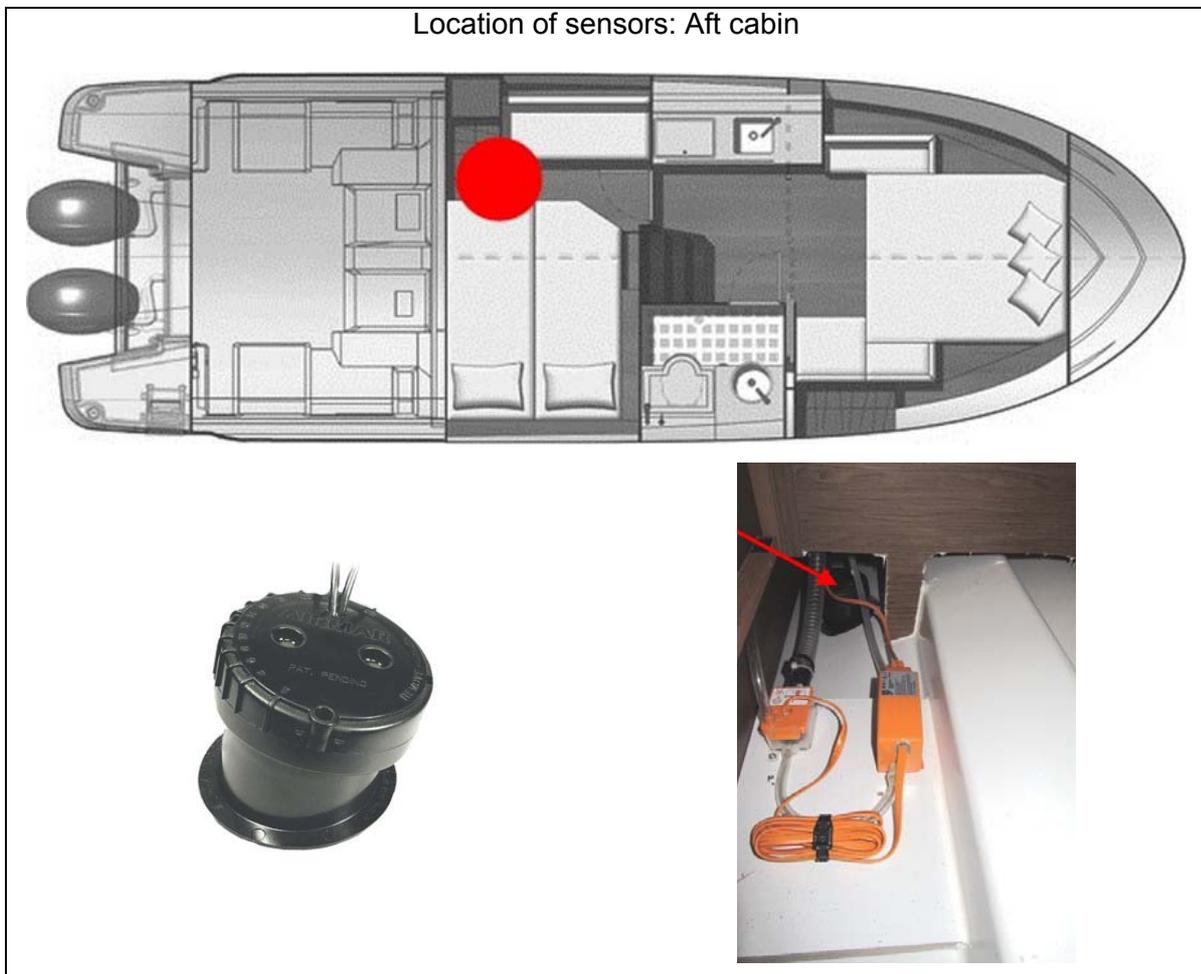
- Simultaneously press these two buttons: MODE and DOWN (arrow pointing down).
- Select n°18 on the menu using the arrows, then confirm by pressing MODE.
- With the arrows select either ON for illumination by default or SL (SLEEP) to turn the box off.
- Press FAN 2 times to confirm the selection.

11.2 ELECTRONIC EQUIPMENT

The onboard electronics are powered by direct current.



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.

VHF

Layout of components:

Location: Starboard aft cabin



Location: Steering station



ONBOARD COMFORT

ADVICE-RECOMMENDATION

- 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.

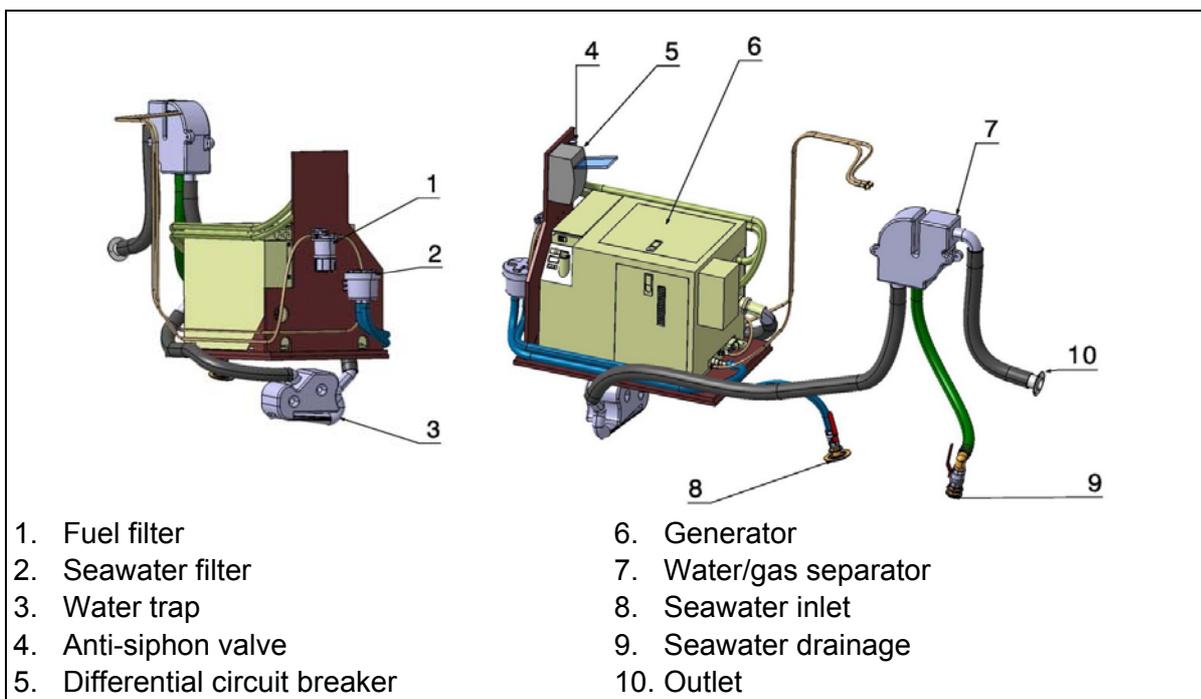
11.3 FUEL-BURNING EQUIPMENT FOR PURPOSES OTHER THAN PROPULSION (GENERATOR, HEATING)

11.3.1 General points

- 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.

11.3.2 Generator

Diagram of layout





General points

- The generator is a machine which can produce AC electrical power using mechanical power (fuel). The generator powers onboard equipment operating at 220V or 110V, moored or sailing.
- The generator starts with its own battery (12V circuit).
- Make sure that there is enough fuel in the fuel tank before using the generator.
- The cooling water and exhaust gases are separated in the separator to avoid noise pollution. The seawater is discharged below the waterline. The exhaust- pipe is located above the waterline. Check visually that the exhaust gases are being expelled properly. Make sure that the ventilator in the generator compartment is working.
- Check to see if any leaks appear (seawater, coolant, fuel, exhaust gases). If there is a leak, stop the generator at once and have the leak repaired.
- The generator is earthed by an earthing plate which is located under the hull (see Chapter: EARTHING PLATES).
- Maintenance of the generator must only be done by qualified and proficient personnel. Before working on the generator, it is imperative to isolate the generator's battery power, to prevent it from starting accidentally.
- The generator can be started by the switch on the generator itself or by the switch on the control panel.

Starting up

- Fill the generator with water to prevent the seawater pump from running dry (refer to the supplier's recommendations).
- Open the raw water intake valves and evacuation valves.
- Open the fuel supply valve.
- Turn the generator's battery switch to the ON position.
- Switch the generator's circuit-breaker to the ON position.
- Turn on the generator using the remote control (located near the main switch panel).
or on the generator itself.
- Make sure that no AC equipment is running. Toggle the shore power/ generator switch.

Location: petrol tank compartment



In the event of the generator catching fire

- Do not open the generator.
- Cut the power supply (electrical and fuel) to the boat's engines, to the generator and to the ventilators.
- Use the extinguisher access port on the generator to discharge the contents of the portable extinguisher.

Generator extinguisher hole



- Refer to the manufacturer's instructions for use of the generator.
- Never start the generator when the air conditioning is already on. Always turn off the air conditioning before turning off the generator.
- Never connect the shore power to the generator: you may suffer an electric shock.
- An extinguisher access port is provided on the generator in the event of a fire starting in the generator.

Layout of components

Remote control: Touch screen



Location: Companionway steps



1. Generator battery
2. Battery charger

Positive & negative battery switch





- 1. Seawater intake
- 2. Seawater drainage



- 3. Water/gas separator
- 4. Seawater filter
- 5. Fuel supply valve



- 6. Generator supply valve
- 7. Fuel tank (Diesel)

12 WATER SYSTEMS

12.1 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.

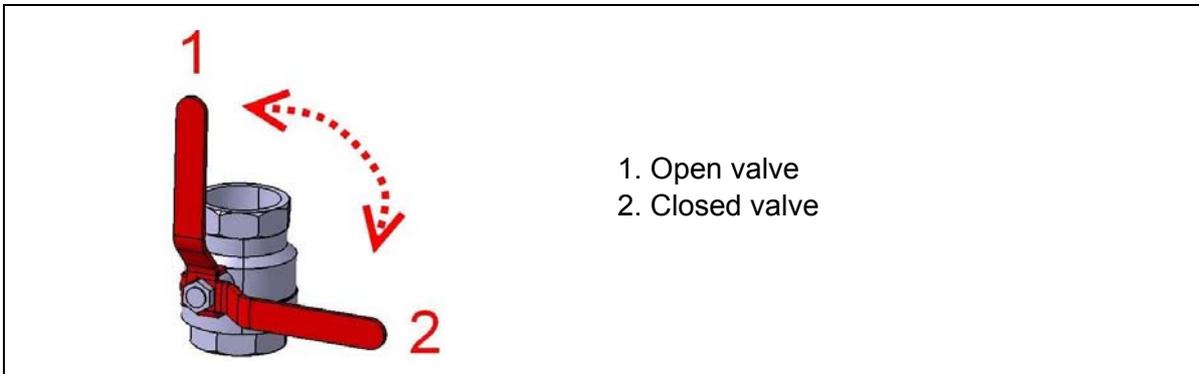


- Regularly check water-tightness of joints in the water system installations. Check that screws and bolts are well tightened and replace them if they are worn or corroded.
- Disconnect the onshore shore water supply before leaving the boat (if fitted).
- If the boat is sailing in temperatures below freezing, antifreeze can be used in the water systems: use a non-toxic antifreeze for potable water.

NEVER USE AUTOMOBILE ANTIFREEZE: RISK OF POISONING.

12.2 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.



- 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.

Plastic valve

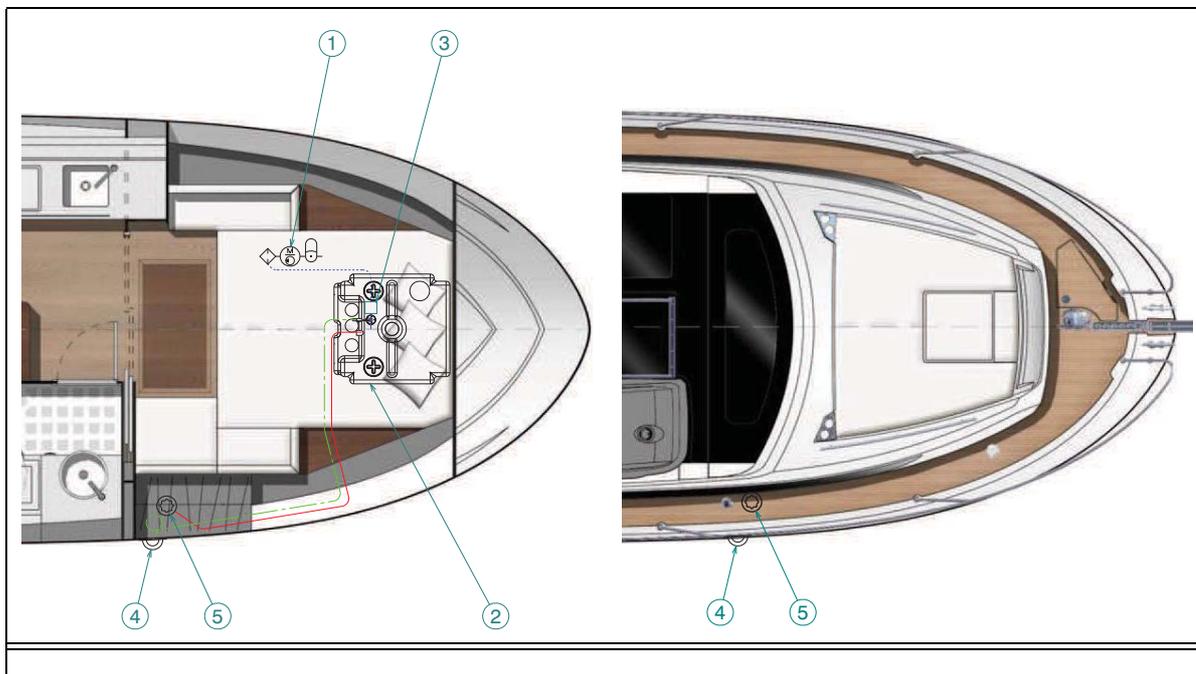


Bronze valve



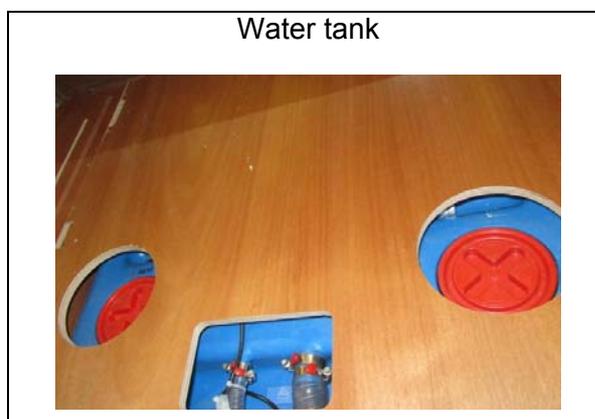
Beware of any unintentional draining.

12.3 FRESH WATER FILLING SYSTEM

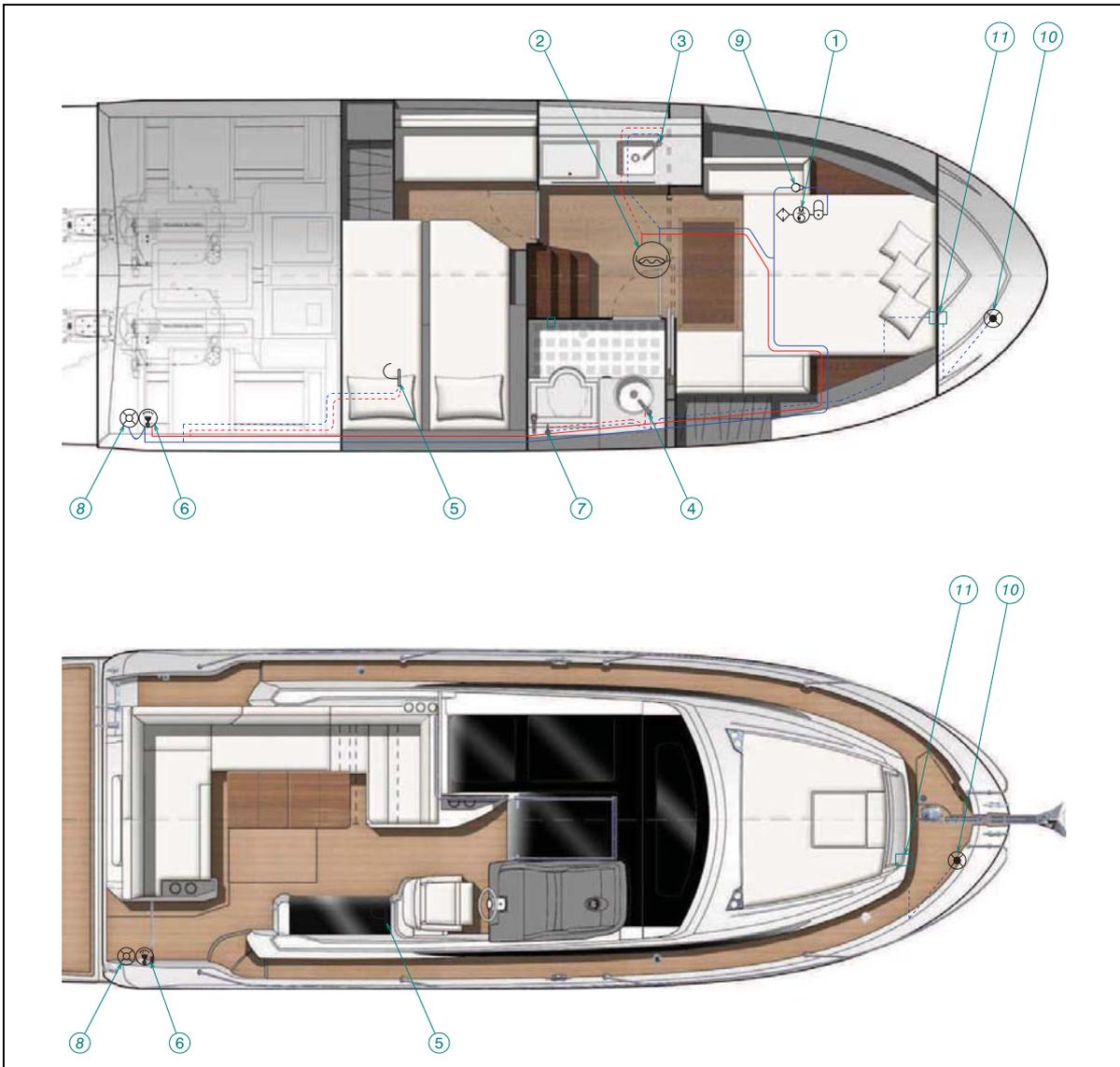


	Supply pipe - 19mm diameter
	Supply pipe - 38mm diameter
	Vent pipe - 16mm diameter
	Pipe filling - 38mm diameter

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



12.4 FRESH WATER DISTRIBUTION SYSTEM



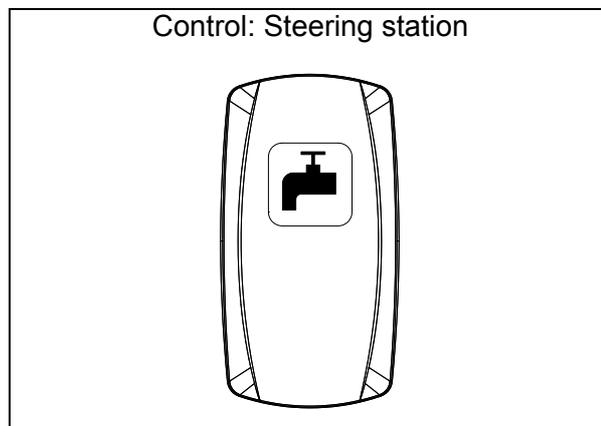
	Connectors
	Cold water hoses - 19mm diameter
	Cold water hoses - 12mm diameter
	Hot water pipe - 19mm diameter
	Hot water pipe - 12mm diameter

Reference	Designation
1	Water unit
2	Water heater
3	Sink mixer tap (Galley)
4	Washbasin mixer tap (Head)
5	Sink mixer tap (Cockpit galley)
6	Cockpit shower
7	Mixer shower
8	Fresh water shore supply
9	Non-return valve
10	Foredeck shower
11	Bulkhead fitting (Chain locker)

12.5 MAIN PLUMBING EQUIPMENT

12.5.1 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 pump is switched on at the helm station.
- 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.



12.5.2 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.

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.



12.5.3 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.

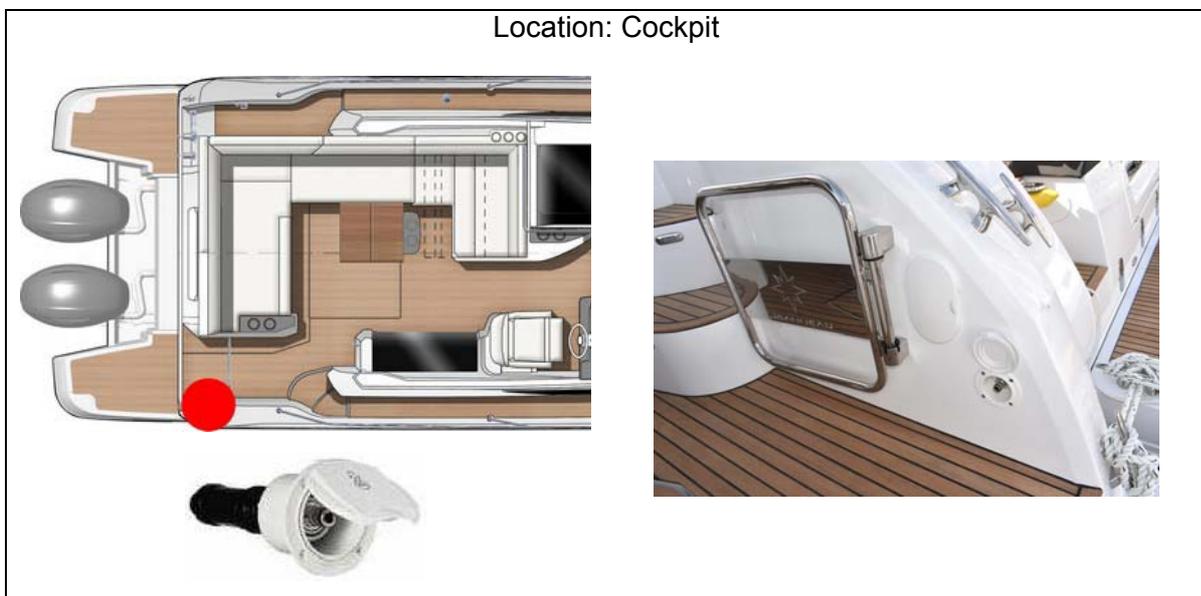
These two possibilities of supplying fresh water circuit of the boat are independent from each other.

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.
- The shore fresh water supply arrives directly into the fresh water plumbing system via the water unit, without passing through the tanks.
- 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.



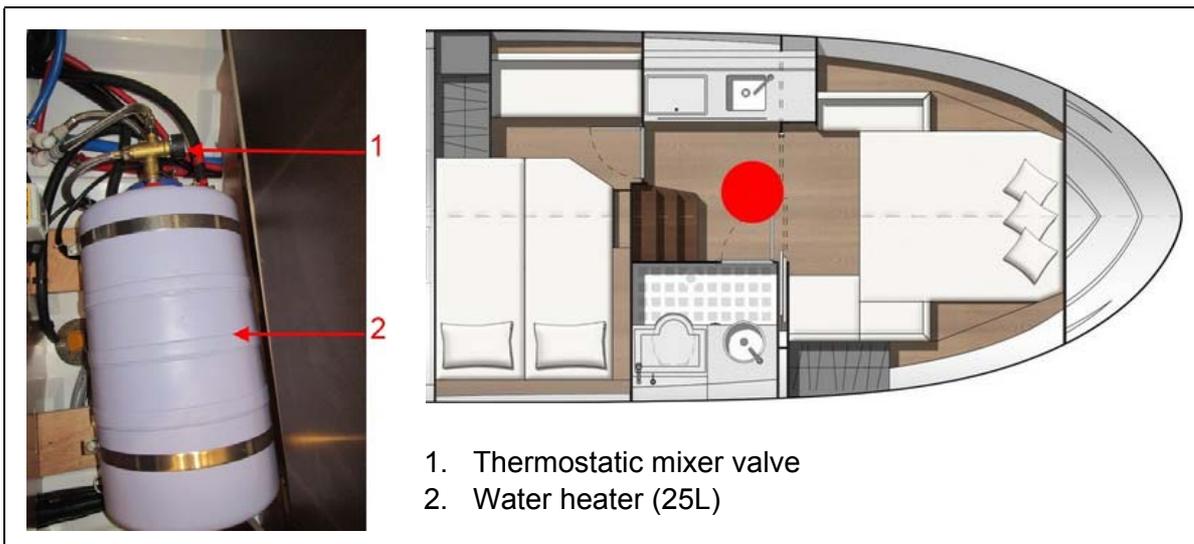
Disconnect the onshore shore water supply before leaving the boat.

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

12.5.4 Water heater

- The water heater enables the use of hot water on board the boat.
- The water heater operates on the onboard 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.



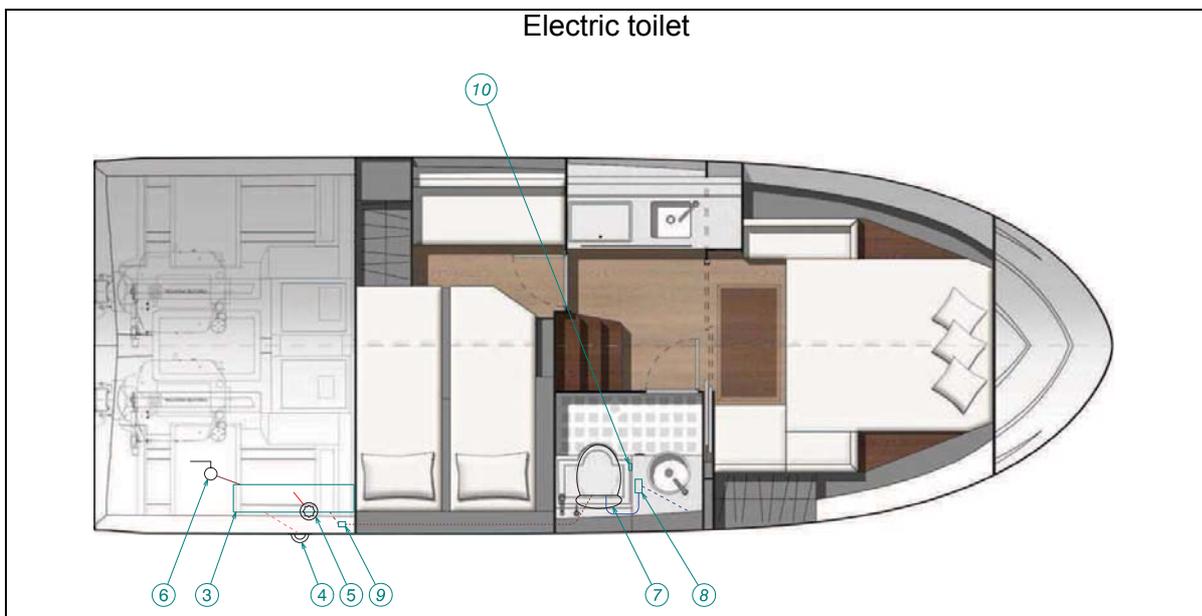
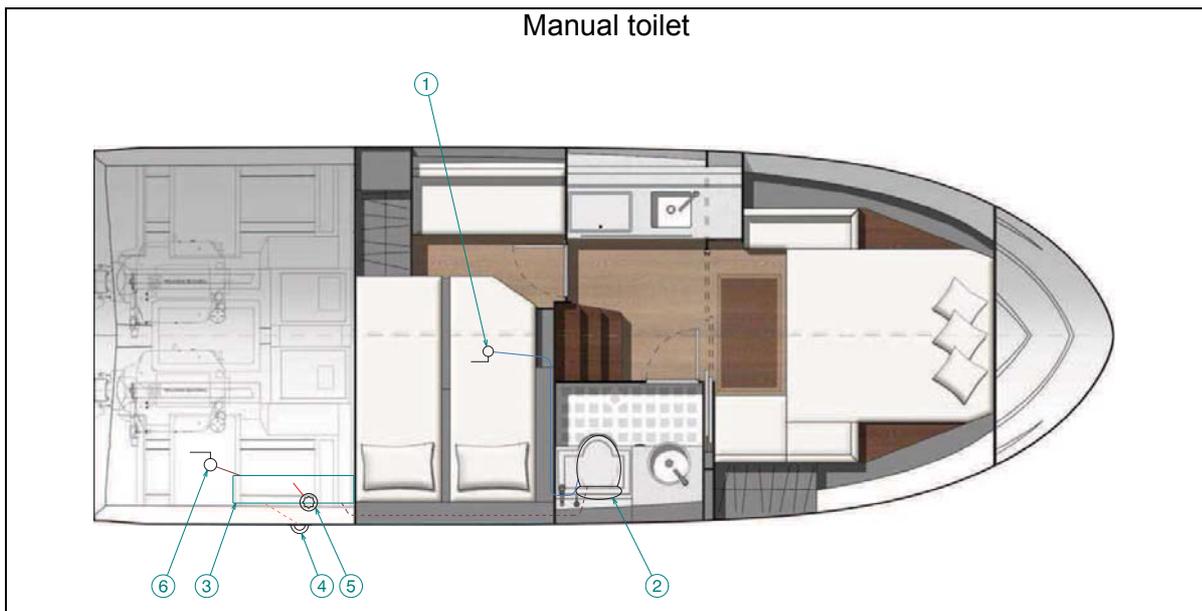
- The water heater functions only at 220V (Shore power socket).
- Refer to the manufacturer's instructions for use and maintenance.

12.6 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.

12.6.1 Diagram of blackwater system



	Suction hose - Sewage - 50mm diameter
	Pipe - Blackwater tank vent - 38mm diameter
	Pipe - Sewage drainage - 50mm diameter
	Pipe - Sewage drainage - 38mm diameter
	Pipe - Sewage drainage - 25mm diameter
	Seawater supply pipe - 20mm diameter

Reference	Designation
1	Seawater inlet (Toilet)
2	Manual toilet
3	Blackwater tank
4	Blackwater tank vent
5	Deck WC drain ("WASTE" filler cap)
6	WC drainage (to sea) (Thru-hull fitting)
7	Electric toilet
8	Electromagnetic valve
9	Connection
10	Toilet control

Electric toilet
Control



Electromagnetic valve
Location: Head (under the washbasin)



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.

Location: petrol tank compartment



1. Blackwater tank
2. Drainage to sea valve in tank

Blackwater tank gauge



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).



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

ADVICE-RECOMMENDATION

- Respect local regulations regarding the emptying of blackwater tanks.

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.

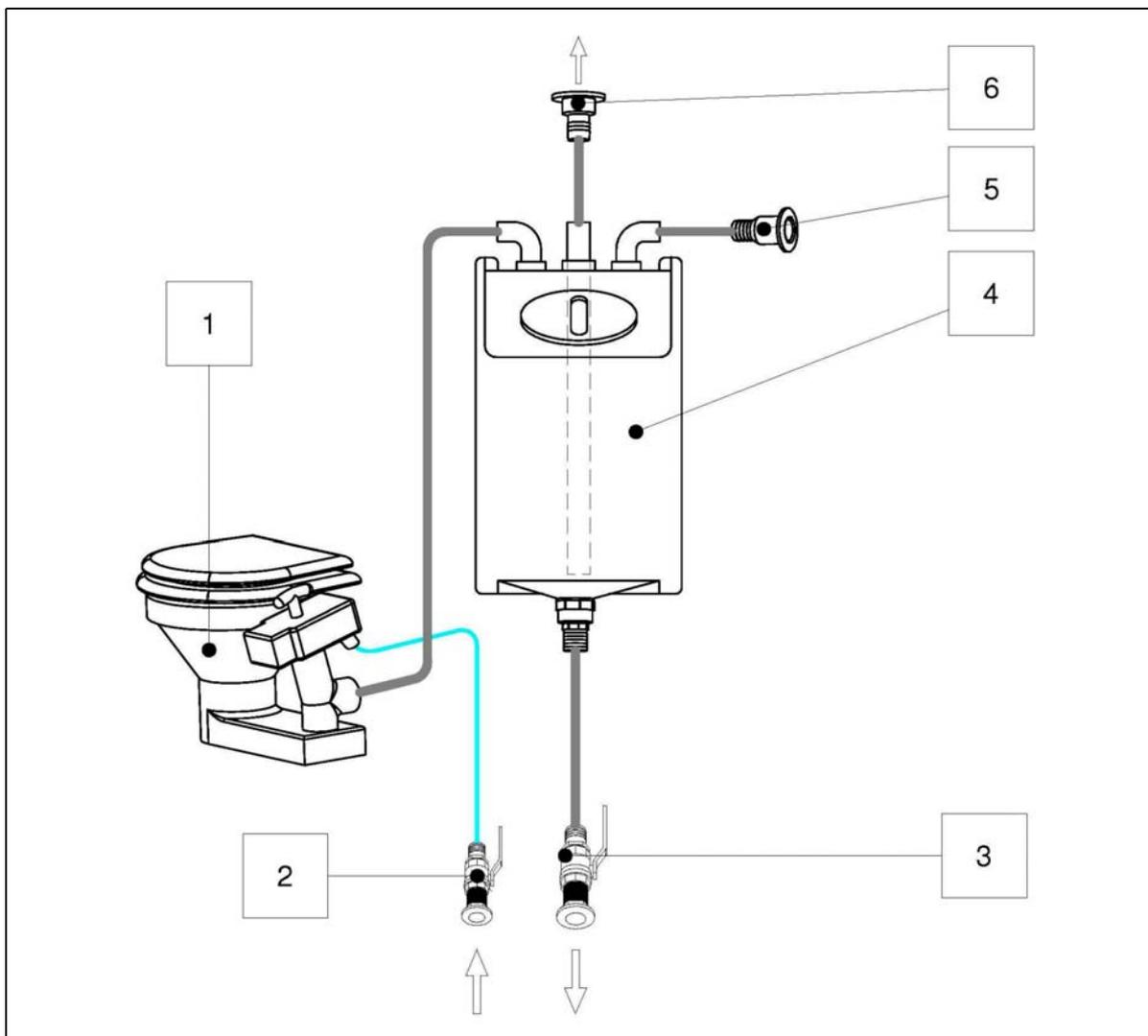
Plastic valve



Beware of any unintentional draining.

Layout diagram of blackwater system

Emptying by gravity



WATER SYSTEMS

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

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

The toilets use the water onboard.

- I. To start up the water unit.
- 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.



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



12.7 WASTE WATER SYSTEM

General points

- The waste water system comprises the water coming from the sink, showers and washbasins. All of this water is collected in the greywater tank and drained via a discharge pump controlled by a float switch.
- 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.

Use of the waste water tank

- A sensor with automatic pump activation enables the tank contents to be emptied. If the onboard electricity system is off the tank will not empty.

Location of thru-hull drain: Aft cabin

- When the DC supply light shows, a 3-minute drainage cycle automatically starts up.

ADVICE-RECOMMENDATION

- Observe local regulations regarding the emptying of greywater tanks.



- 1. Collector - Waste water
- 2. Sea discharge valve

Waste water drain pump



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

Shower plug hole

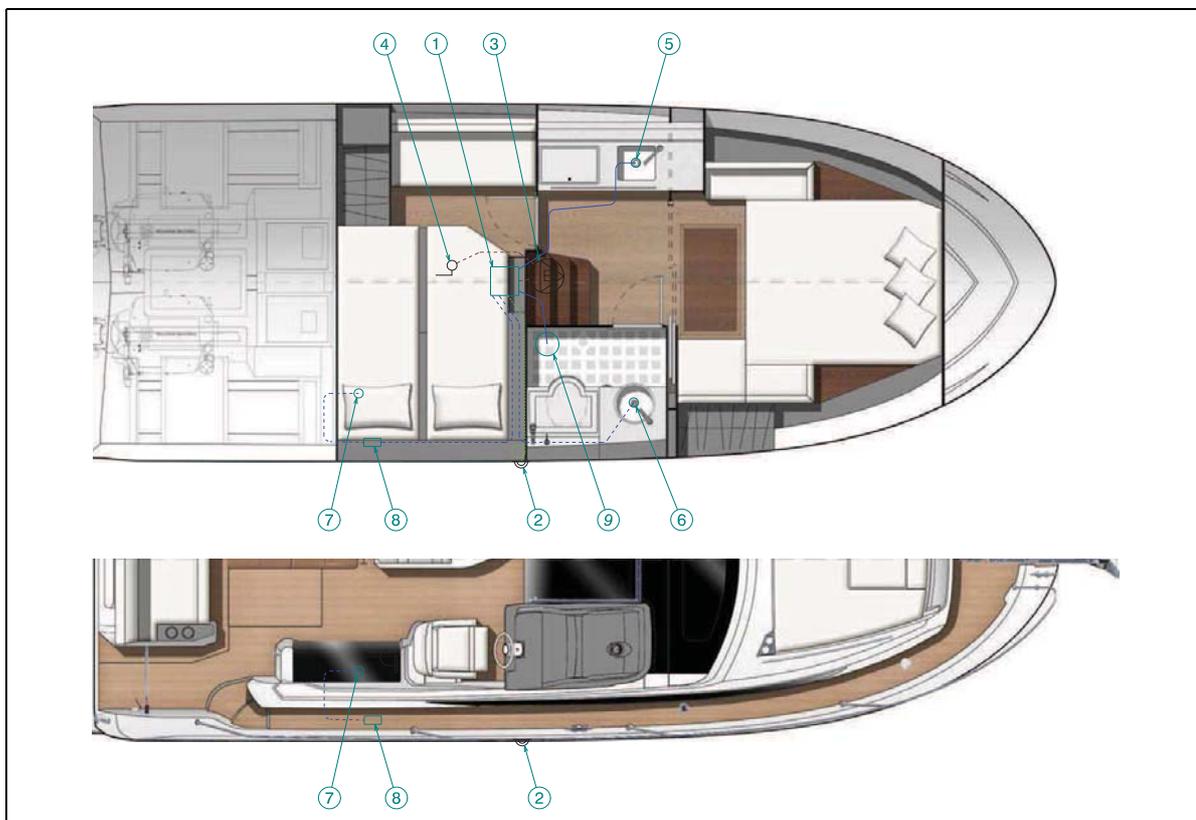


Shower screen



NOTE: Must be secured while sailing.

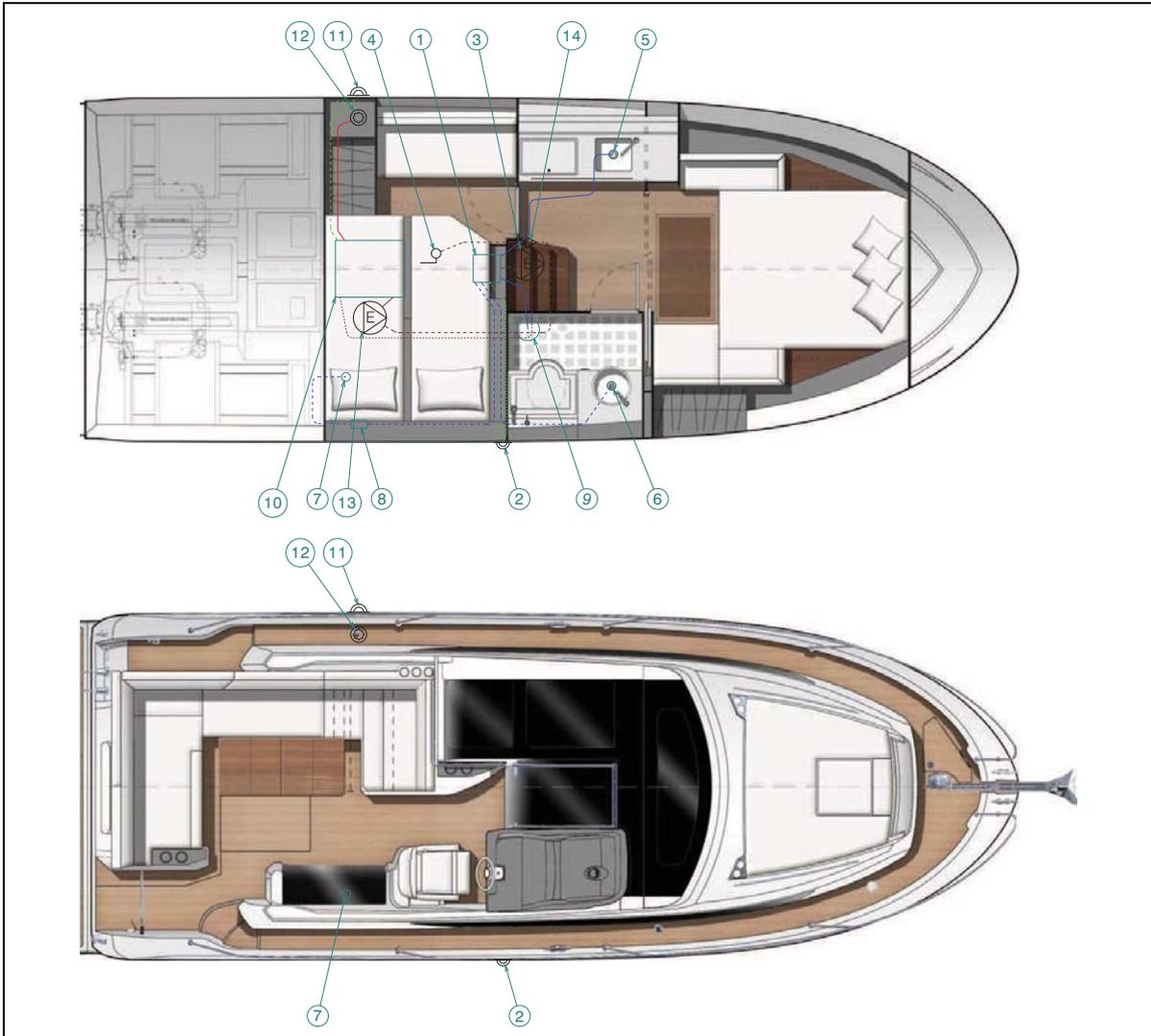
12.7.1 Diagram of waste water circuit installation



	Vent pipe - 20mm diameter
	Drainage hose - 25mm diameter
	Waste water pipe - 25mm diameter
	Waste water pipe - 40mm diameter

Reference	Designation
1	Collector - Waste water
2	Collector vent
3	Collector drain pump
4	Kitchen sink thru-hull drainage
5	Sink plug hole (Galley)
6	Washbasin drain plug (Head)
7	Sink plug hole (Cockpit galley)
8	Sink u-tube (Cockpit galley)
9	Shower plug hole

12.7.2 Diagram of waste water circuit installation - waste water tank option



	Vent pipe - 25mm diameter
	Vent pipe - 20mm diameter
	Suction hose - 38mm diameter
	Drainage hose - 38mm diameter
	Drainage hose - 25mm diameter
	Drainage hose - 20mm diameter
	Waste water pipe - 25mm diameter
	Waste water pipe - 40mm diameter

Reference	Designation
1	Collector - Waste water (8L)
2	Collector vent
3	Collector drain pump
4	Drainage valve
5	Sink plug hole (Galley)
6	Washbasin drain plug (Head)
7	Sink plug hole (Cockpit galley)
8	Sink u-tube (Cockpit galley)
9	Shower plug hole
10	Grey water tank (95L)
11	Tank vent hole
12	Suction fitting
13	Macerator (Pump for waste water drainage to sea)
14	Non-return valve

13 ENGINE

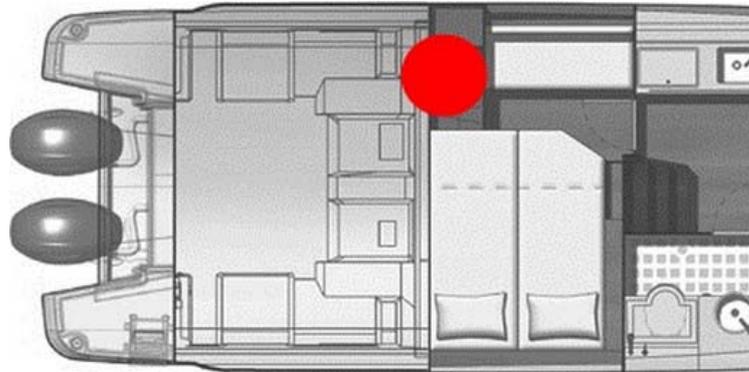
13.1 INFORMATION RELATING TO FIRE RISKS AND RISKS OF EXPLOSION

- Make sure that the coolant is circulating properly.
- Ensure that ventilation openings in the compartment fuel tank are not obstructed.
- 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 petrol tank compartment is clean and dry.

Fuel supply valve (Port engine & Starboard engine)
located directly on the tank

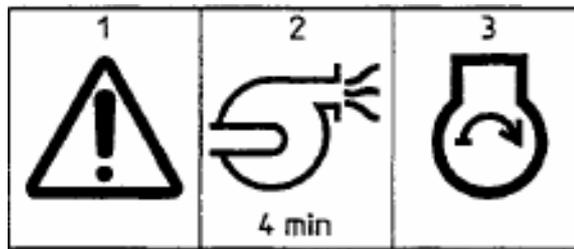


Remote shut-off pull handle
Location: Aft cabin



Petrol engine specialities

Operate (symbol 1) the fan for 4 min (symbol 2) before starting the engine (symbol 3).





13.2 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).

13.3 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.
- Make sure you have enough fuel before sailing.
- 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 petrol in-board engines.

Filling up with fuel

- Fill the fuel tank using the deck filler marked "PETROL".

NOTE: Ensure the seal is tightly closed to prevent ingress of water.

- Reservoir location: petrol tank compartment
- 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.
- The generator has its own fuel supply valve.

Gauge

- The fuel level is sent by the gauge to the indicator located on the touch screen.
- Some of the gauges must be calibrated when you first fill the tanks: please consult your dealer.



- 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.

ADVICE-RECOMMENDATION

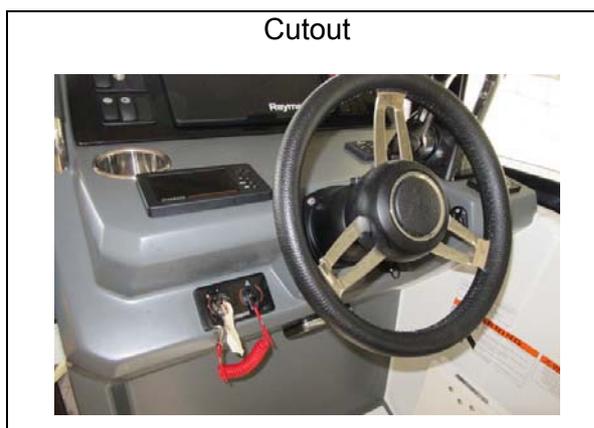
- Regularly check that the O ring on the filler cap is in good condition to prevent water ingress.
- Keep the fuel tank as full as possible to prevent condensation.
- Be careful with any possible risk of oil and fuel spillage.
- Follow the engine manufacturer's instructions exactly.
- **Never switch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

13.4 STARTING THE ENGINE

Before starting the engine, it is essential:

- to open the fuel supply valve;
- to switch on the battery supply by using the battery isolator switches;
- to put the control lever in neutral;
- to attach the circuit-breaker to the pilot.

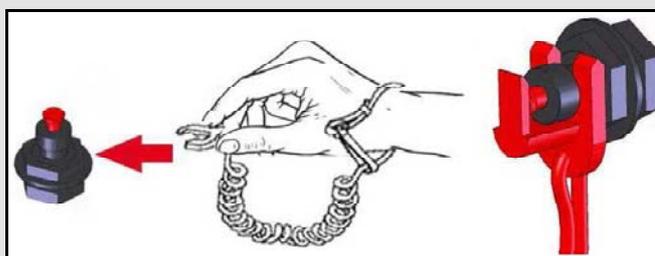
Make a habit of looking to see if seawater is pumped out with the exhaust gases as soon as you start the engine. If no water runs out, stop the engine immediately. Check the coolant flow.



- 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).
- Attach the kill cord to the helmsman when starting the engine.



- To avoid an accidental engine start, disconnect the kill cord when the engine is not running.

13.5 ENGINE WATER INTAKE VALVE

- The sea water intake plays a major role in keeping the engine running well.
 - Keep the filter under the hull as clean as possible;
 - Brush the filter whenever the boat is lifted out.
- 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.

13.6 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: petrol tank compartment



13.7 ENGINE INSTALLATION

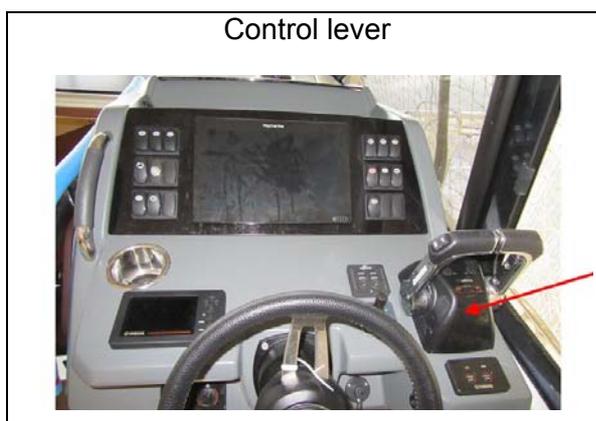
This boat is designed for used with twin outboard engines.

13.8 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.

Control lever

- The control lever is fitted with a safety system which prevents the engine from starting when in gear.
- The trim indicator is located at the helm.



13.9 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.

13.10 FLAPS

General points

- The flaps (trim control system) allow the pilot to adjust the boat's trim under way and thus to reduce fuel consumption.
- The flaps run on DC power.
- A fuse protects the electrical circuit.
- They are operated by means of a push button situated on the wheelhouse and their position is adjustable.
- The flaps work only when the boat's engines are running.

ADVICE-RECOMMENDATION

- Refer to the manufacturer's instructions for use and maintenance.
- Adjust the flaps gradually to avoid abrupt hull movements. At high speeds, take care when adjusting the flaps.
- Lift the flaps completely in case of swell from abaft of the boat.

13.10.1 Lenco trim tabs

General points

The flaps are controlled electrically.

The actuator is mechanical.

The flaps must be protected by an anode (see Chapter: ELECTRICAL SYSTEM).

Operation

When the flaps are lifted, the boat's bow tends to rise from the water.

When the flaps are lowered, the boat's bow tends to go down into the water.

Maintenance

Clean the flaps regularly with clean water.

When cleaning the hull, coat the flaps and piston with antifouling paint. Do not cover the section below the anode or the anode itself with antifouling.

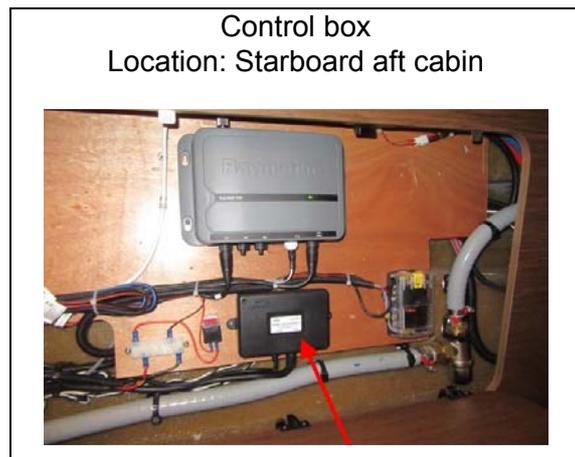
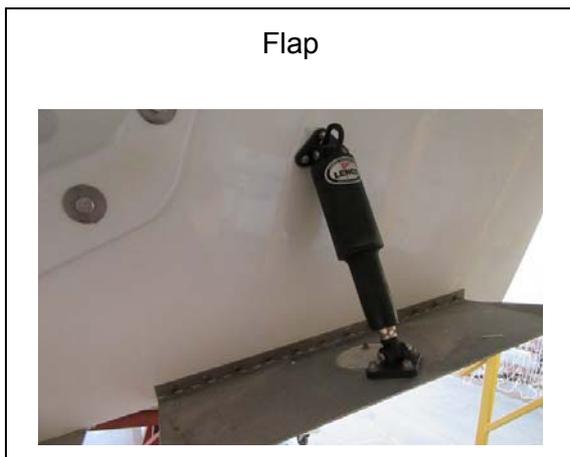
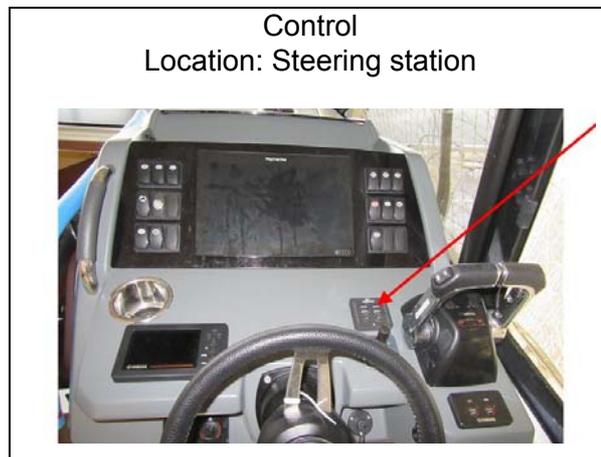
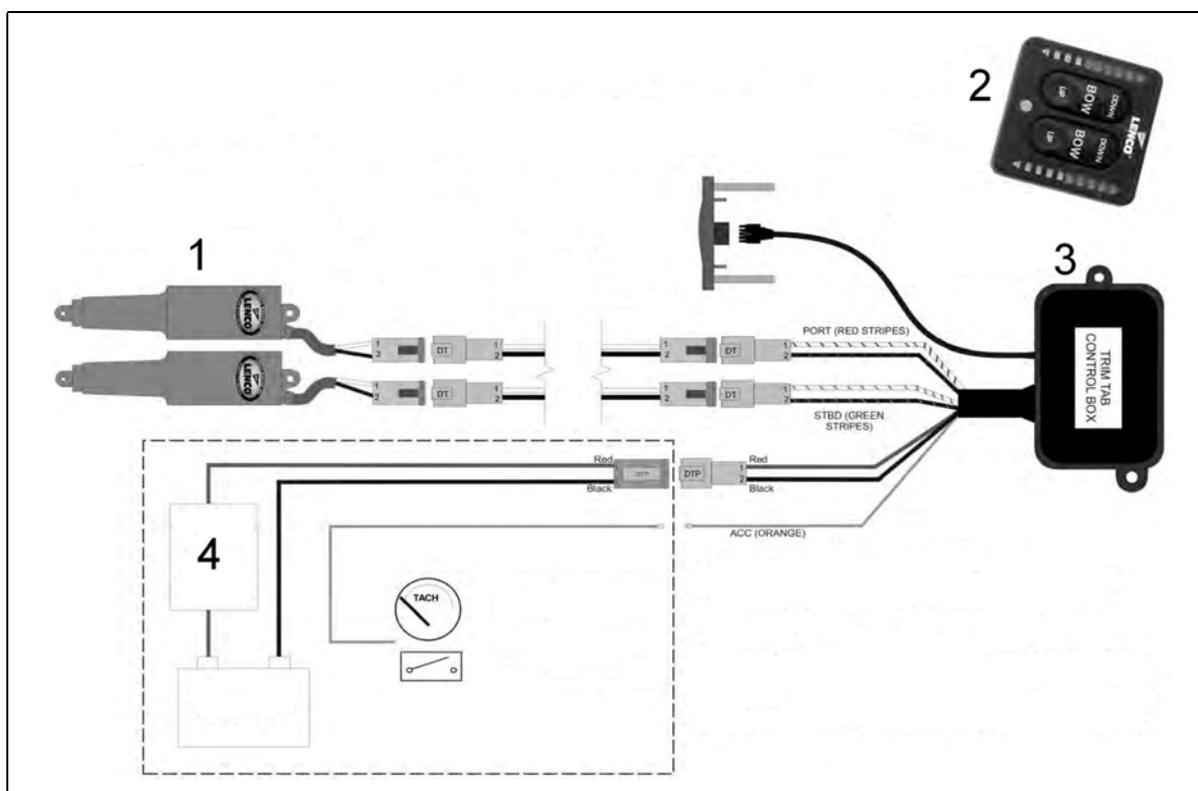


Diagram of layout



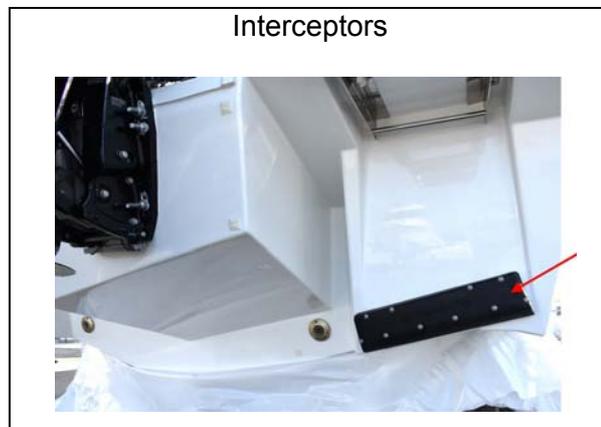
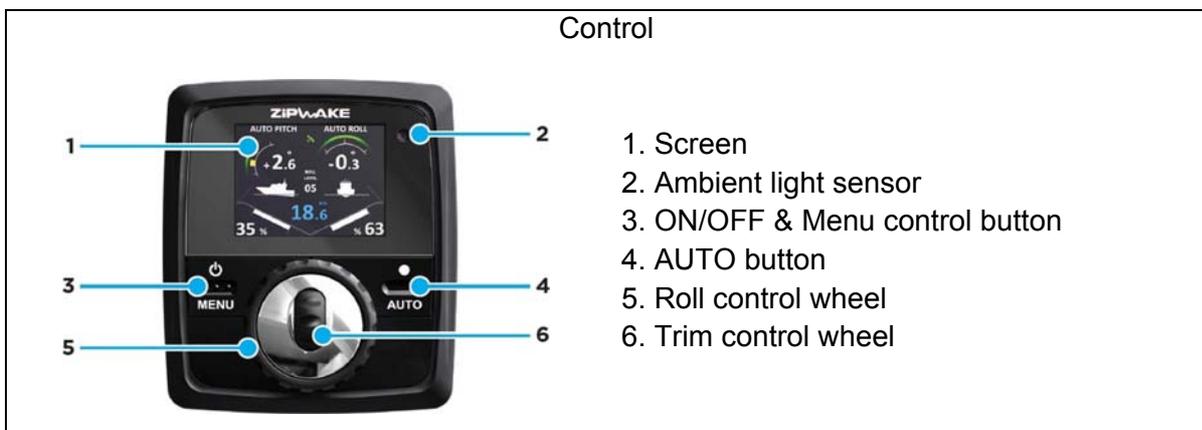
ENGINE

Reference	Designation
1	Mechanical actuator
2	Control panel
3	Control box
4	Fuse

13.10.2 Zipwake trim tabs

General points

- The dynamic control system of interceptors provides the boat's helmsman with precise control of the trim and list of the boat.
- The system automatically controls the trim and roll of the boat and works permanently to keep the boat level. The system encourages faster planing of the boat.
- The system does not relieve the helmsman of his/her responsibility to manoeuvre the boat safely.
- The system is supplied with standard configuration which can be customised by the skipper according to the boat's load. Before modifying the settings, ensure the initial settings are saved using a USB drive to be inserted behind the control panel.





Operation

- The boat's helmsman must get used to the interceptor system in calm water before using it in more severe weather conditions.
- The Zipwake system must only be used when underway : the skipper must shut it down when the boat is in port, at anchor or out of the water.
- The system can also be controlled manually using a control wheel (Pitch for trim, Roll for roll).

Launching

- Before the boat is first launched and then on regular occasions, it is recommended that you check each interceptor (see the specific menu for this on the control panel). All of the indicator lights must be green for the system to be correctly used. Corrective measures are necessary if a red indicator light is shown : for example, antifouling excess or damaged blades.
- Paint the interceptors with an antifouling spray. When the paint is dry, operate the interceptor blades with the controls to ensure that they move freely, with no play or sticking.

Maintenance

- It is recommended that you withdraw/extend the interceptor blades regularly to prevent the formation of deposits on the inner faces.

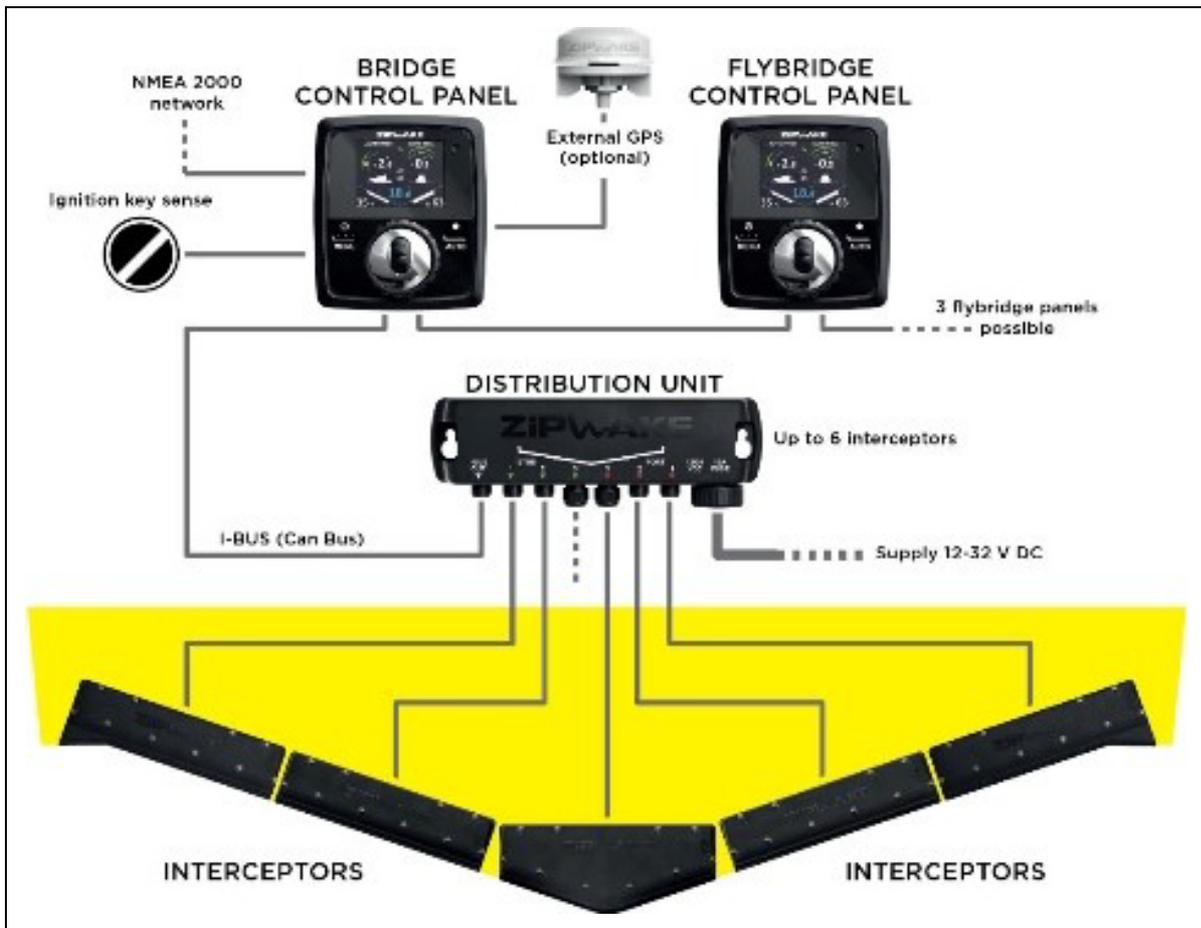
Lift-out/careening

- Check that no object is resting against the interceptors when the boat is on the cradle.
- Deploy the blades fully with the controls and clean them with a pressure washer.



- The Zipwake flaps affect the boat's ability to hold its course : the helmsman must be attentive when driving the boat, which remains his/her sole responsibility.
- Never touch the interceptor blades by hand : the edges are sharp. To withdraw/extend the Interceptor blades, always use the controls on the steering station.
- The automatic control function switches off when no GPS signal is present.

Diagram of layout



13.11 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.



14 STEERING SYSTEM

14.1 GENERAL POINTS

- The steering is hydraulic and is operated electrically.
- 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.

14.2 HYDRAULIC STEERING

General points

- The hydraulic pump allows the boat's steering to be controlled.
- It is essential that dismantling the wheel should be carried out with the aid of a 'hub puller' type tool. Never tap or lever the wheel to access the pump.

Replenishing and bleeding the circuit

- This task must be carried out by a professional engineer: please consult your dealer.
- Use only ISO 22 oil.
- The whole of the hydraulic circuit must be kept scrupulously clean: any impurity may cause deterioration of the steering gear.

After each winter, check

that rotating the wheel to starboard turns the boat to starboard;

that the circuit is properly bled;

that there are no leaks in the connections, pumps, cylinder or flexible hydraulic hoses;

that the pump is filled with oil to the correct level (25 mm of air must be left in the pump : this space is vital for the hydraulic circuit to work properly since it allows the oil to expand);

that the nuts and screws are fully tightened to the correct torque as shown in the manufacturer's instructions;

that the hydraulic hoses have not been flattened or deformed.

ADVICE-RECOMMENDATION

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

14.3 BOW THRUSTER

General points

- The thruster motor is DC powered.
- The bow thruster assists with steering the boat when manoeuvring at low speed (e.g. picking up a mooring buoy or berthing on a pontoon).
- An operating relay is installed in the circuit.
- A fuse protects the electrical circuit.
- The thruster motor has its own battery bank.



Operation

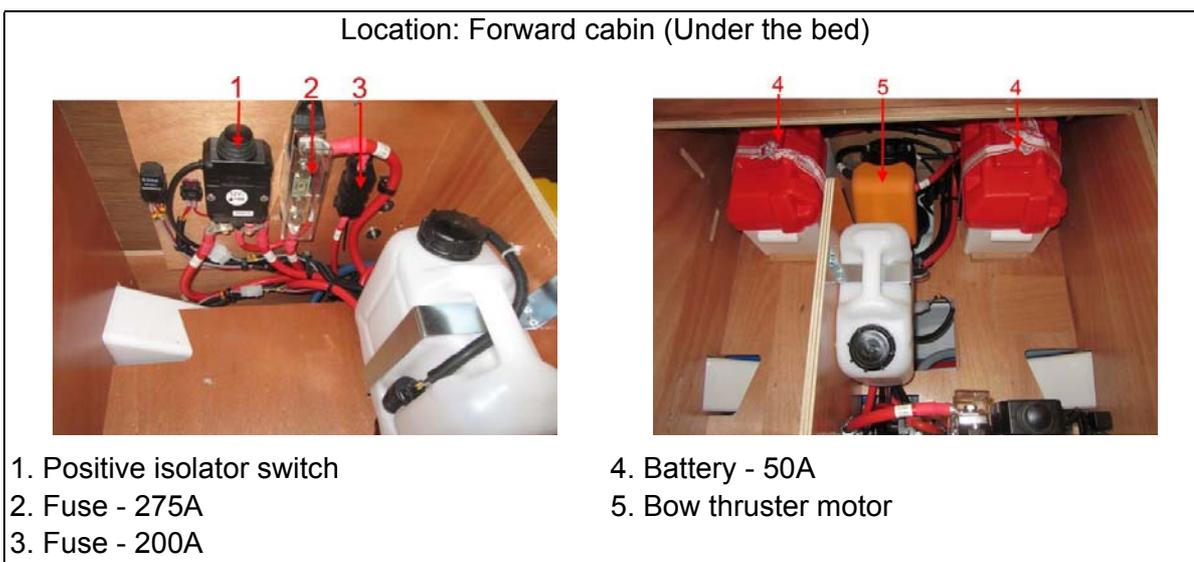
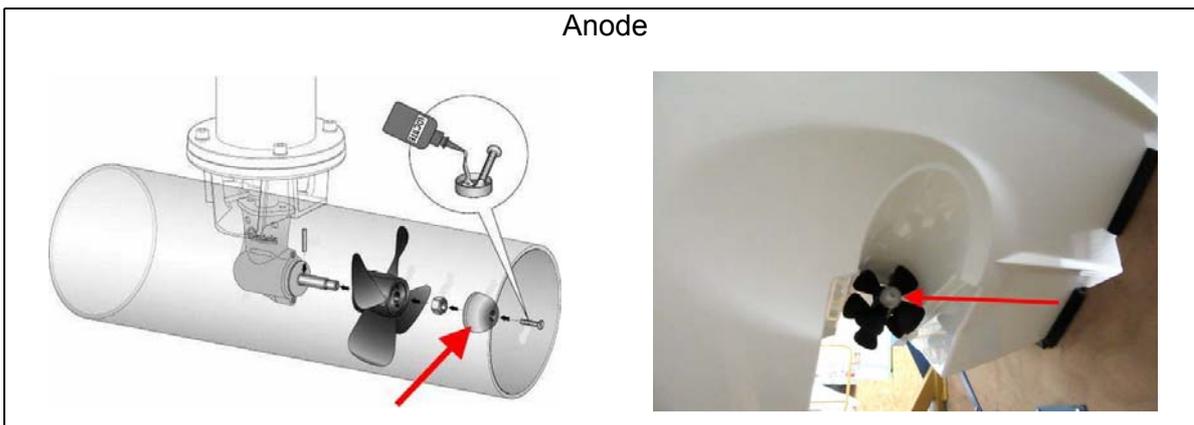
- Turn on the bow thruster battery switches.
- The engine's positive battery isolator automatically switches on and off when the engine is started/stopped. The thruster circuit negative is connected to the boat's general negative.
- The bow-thruster motor must operate with the boat's engine running.
- A control panel is located at the helm station.
- To turn the bow thruster on or off, press the red button while holding the joystick pushed to the right for a few seconds.
- When the bow-thruster motor is not in use, switch off the electrical supply both:
 - to the control panel,
 - and to the motor battery switches.

Maintenance

- The bow thruster's motor:
 - is lubricated for life and the oil does not require draining;
 - must not be dismantled, even partially.
- Regularly check the charge state of the motor's batteries: a loss of voltage will cause premature wearing of the motor's relay contacts and brushes.

During lift-out

- Check that the propellers turn properly, with neither play nor stiffness.
- Clean the blades carefully.
- Remove the propeller, clean the shaft support and coat the shaft with silicone-based grease before refitting the propeller.
- After cleaning and applying a primer, antifoul the housing and the propellers.



ADVICE-RECOMMENDATION

- Refer to the manufacturer's instructions for use and maintenance.
- Never run the motor when the propeller is out of the water.
- With dual control, be careful to use only one control at a time.
- The motor must not run for longer than 3 minutes (risk of overheating).



15 DECK FITTINGS

15.1 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.

15.1.1 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.

15.1.2 Plexiglas (PMMA)

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

ADVICE-RECOMMENDATION

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

15.1.3 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.

15.1.4 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.

ADVICE-RECOMMENDATION

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

15.1.5 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.



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

ADVICE-RECOMMENDATION

Never:

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

15.2 EQUIPMENT

15.2.1 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.
- Using the roof to enter or exit the wheelhouse must be strictly avoided.



Operation

- The sunroof is supplied with direct current.
- A fuse protects the electrical circuit.

Location: Sportop

Connection box

The yellow wire (engine DC supply) can be disconnected manually by accessing the connection box.

-
- The disengaging button allows the engine DC supply to be cut without having to access the connection box.

Control: Steering station



ADVICE-RECOMMENDATION

- Refer to the manufacturer's instructions for use and maintenance.
- It is forbidden to use high pressure washing on the rail or the sunroof motor.
- It is forbidden to climb on the roof (flexible or rigid).
- Never use rubbing alcohol or window cleaner to clean the roof.

Maintenance

Before and after winterisation (At least 2 times a year): Clean and dry the rail throughout its length (Closed roof and open roof).

Sun roof

General view



DECK FITTINGS

Reference	Designation
1	Polyester sun roof
2	Drive + built-in pads
3	Track
4	Electronics box
5	Engine roller

15.3 BERTHING, ANCHORING, TOWING

15.3.1 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	20,8kN	29,9kN	29,9kN
Mooring Line/Chain Breaking Strength	16,7kN	23,9kN	23,9kN



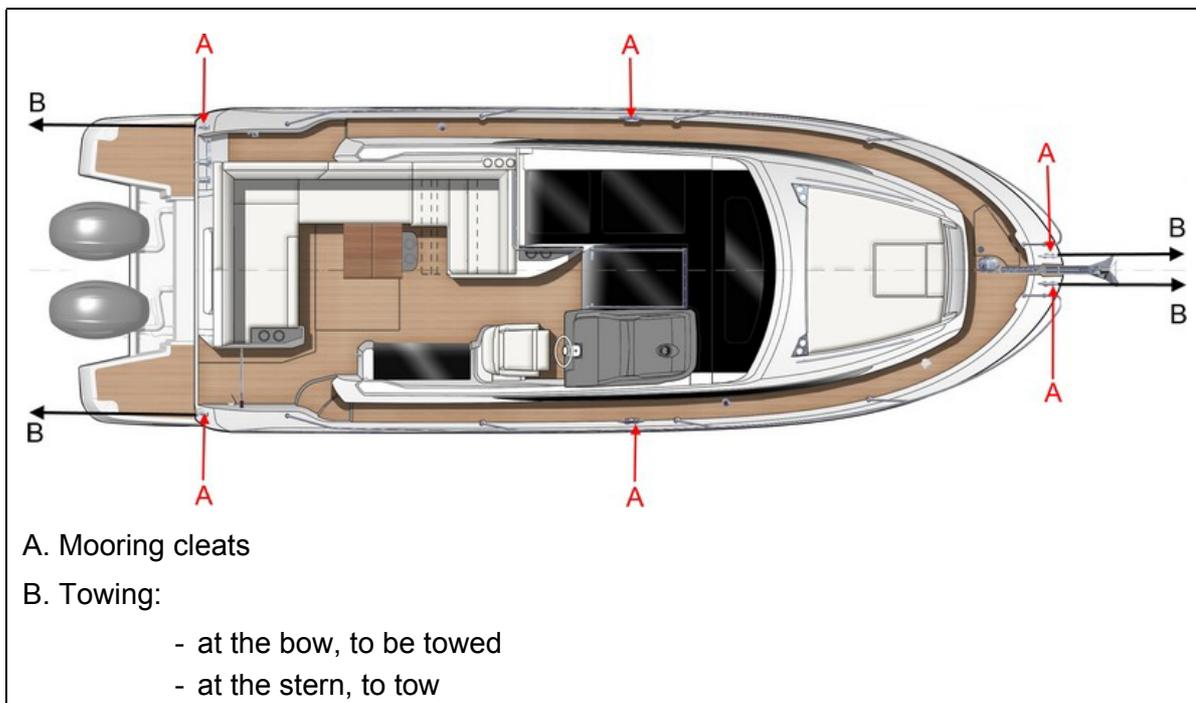
Anchoring points showing visible signs of deterioration must be replaced.

Be sure to protect the transom platform with a fender to avoid friction with the pontoon.

15.3.2 Towing

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

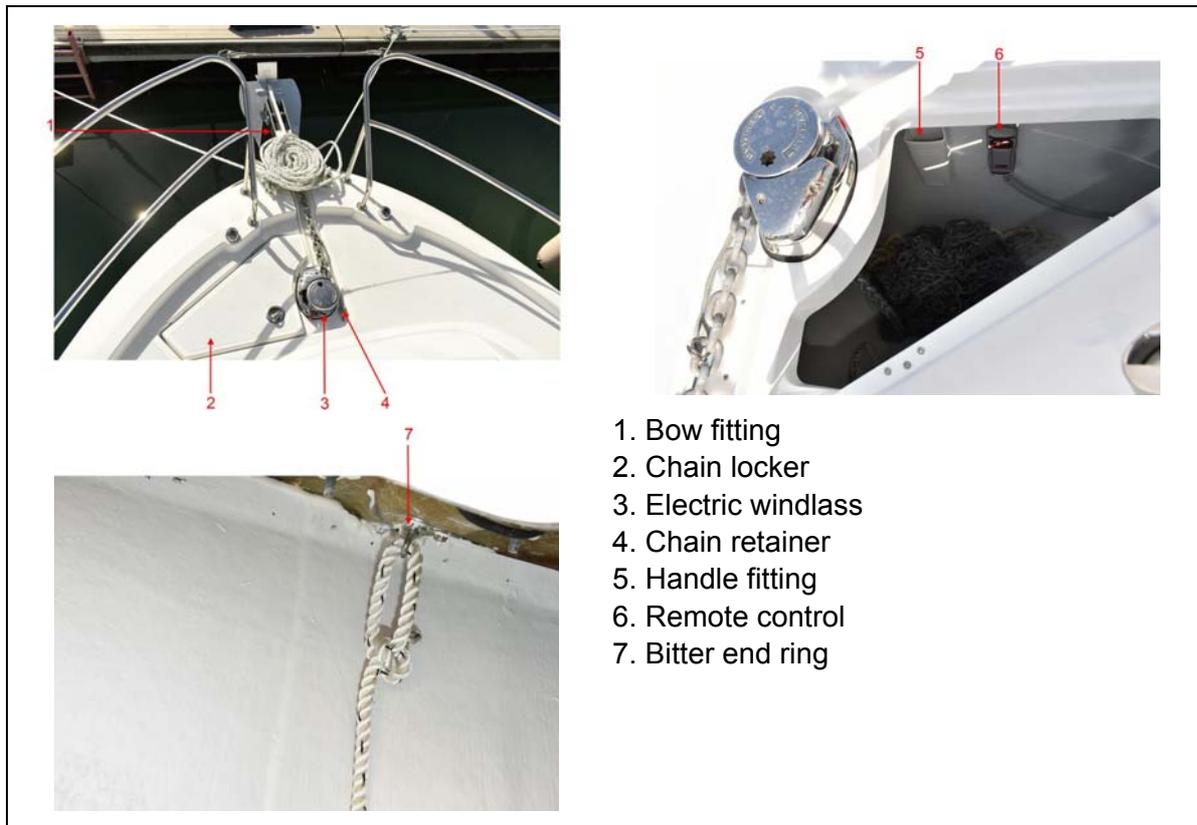
Location of attachment points



- 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.



15.4 MAIN ELEMENTS OF THE CHAIN LOCKER



Breaker - 90A
Location: Aft cabin



Operation relay
Access: Forward cabin



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..

15.5 ELECTRIC WINDLASS

General points

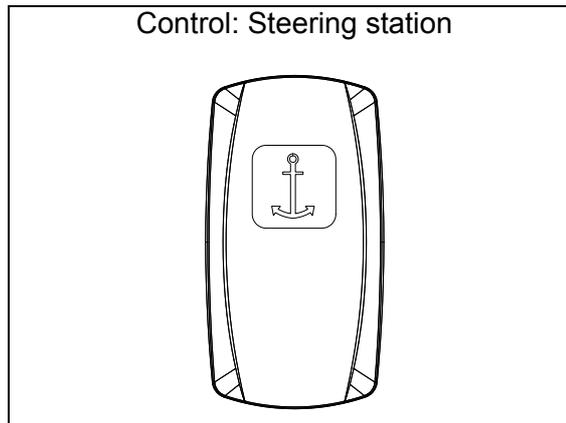
- The windlass is DC powered.
- The windlass is designed for anchoring purposes: Any other use is dangerous and must be strictly avoided.
- An operation relay is fitted to the electrical circuit.
- A circuit-breaker protects the power supply to the windlass.
- The windlass operation is activated by an 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.

ADVICE-RECOMMENDATION

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

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.



- **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.

ADVICE-RECOMMENDATION

- 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.



16 HULL FITTINGS

16.1 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.

LEATHER

Maintenance

Leather must be regularly cleaned and waxed.

To do so, clean the leather surface with a damp rag. This will remove dust.

Every 6 months to a year depending on use, apply a leather shampoo on the leather then use a hydrating cream which will also protect it.

Stain removal

If the leather surface gets stained, clean immediately using an absorbent piece of paper. Do not scour. Clean with inward motions to prevent the stain from spreading.

- Dab with denatured alcohol, using a piece of cotton to apply (ink and food stains).
- Apply absorbent powder (talcum) on grease stains.

Wait a couple of hours, then brush away the excess powder.

- Other: Apply white vinegar or acetic acid diluted in water.

ADVICE-RECOMMENDATION

- Test the product on a small hidden area of the surface before cleaning.
- Avoid excessive moisture.
- Do not scrub on leather surfaces.
- If you notice leather colouring on the rag, immediately stop cleaning.

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: lacqueurs, 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.

16.2 INTERIOR WOODWORK

Varnished wooden panels:

The UV varnish has a matt appearance:

- 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.

The acrylic varnish used has a matt appearance:

- The acrylic varnish features medium resistance to external chemical damage as well as minor scratches.
- The varnished surface tends to get dirty quickly since it is not flat and reveals hollow pores.
NOTE: Vigorously rubbing a varnish surface gives it a brighter appearance.
- Do not use polish (this may result in unwanted brightening of appearance).
- Gently and regularly clean with lukewarm soapy water.
- 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).

16.3 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...).

Saloon table
Stowage: Forward cabin



ADVICE-RECOMMENDATION

If in doubt or if stains persist, consult a cleaning specialist.

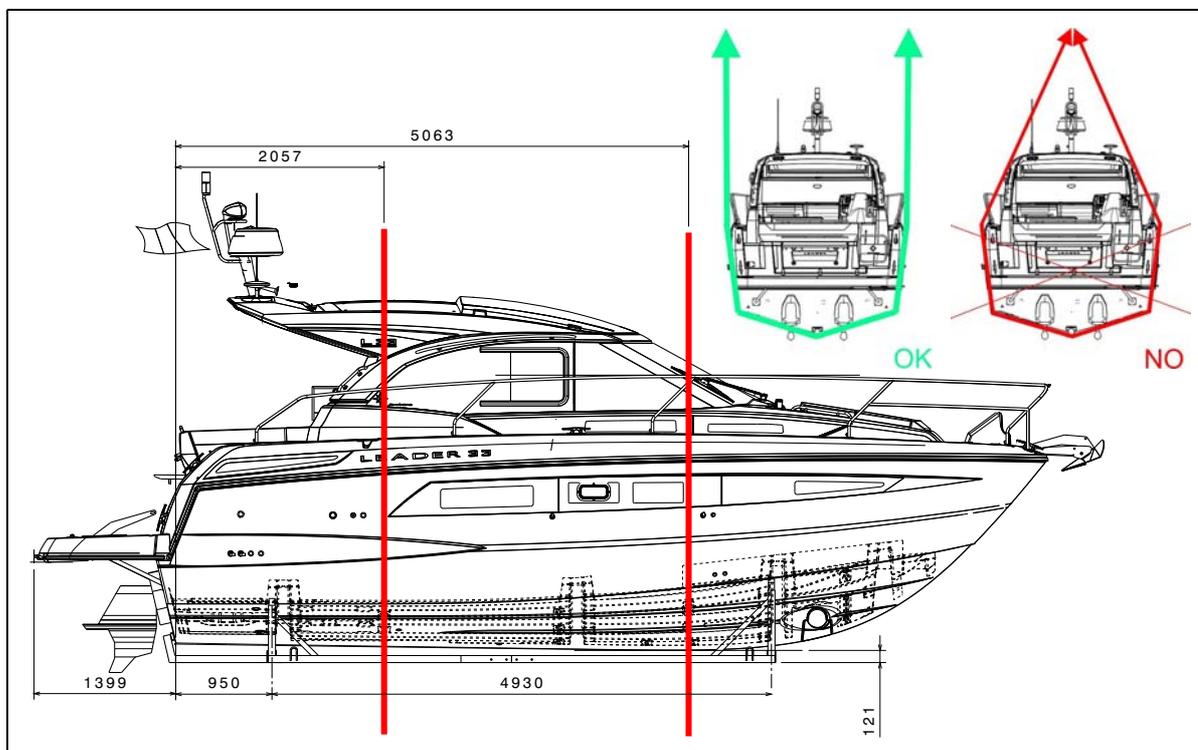
For winterisation, ensure the curtains are drawn to prevent prolonged exposure of the varnish and fabric to sunlight. This will prevent the risk of discolouration.

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.

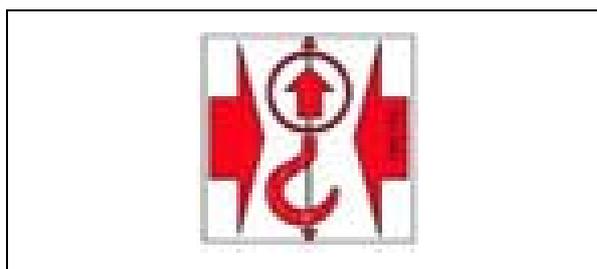
17 HANDLING, TRANSPORT

17.1 POSITION OF HOISTING CRADLE AND STRAPS



Note: Measurements are expressed in mm.

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



17.2 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.
- During the lift-out, check the anodes and the propeller (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:

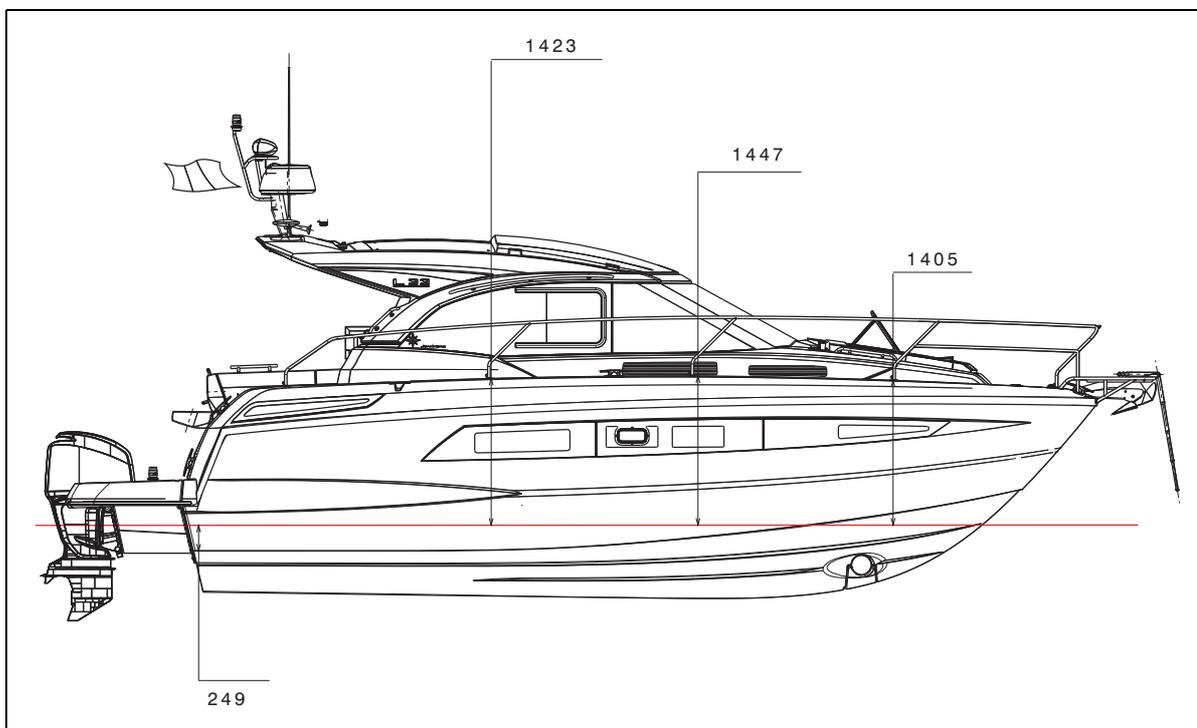
- Ensure the water temperature does not exceed 15 degrees;
- The water pressure must not exceed 150 bar (2175 PSI);
- The distance between the hose nozzle and the hull must not be less than 10 centimetres.

The wet surface area of the boat is approximately: 24m².



- 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.
- Avoid using copper or tin-based antifouling: these are banned in some countries.

17.3 UPPER LIMIT OF ANTIFOUL



Note: Measurements are expressed in mm.

17.4 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 (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.



17.5 WINTERISATION

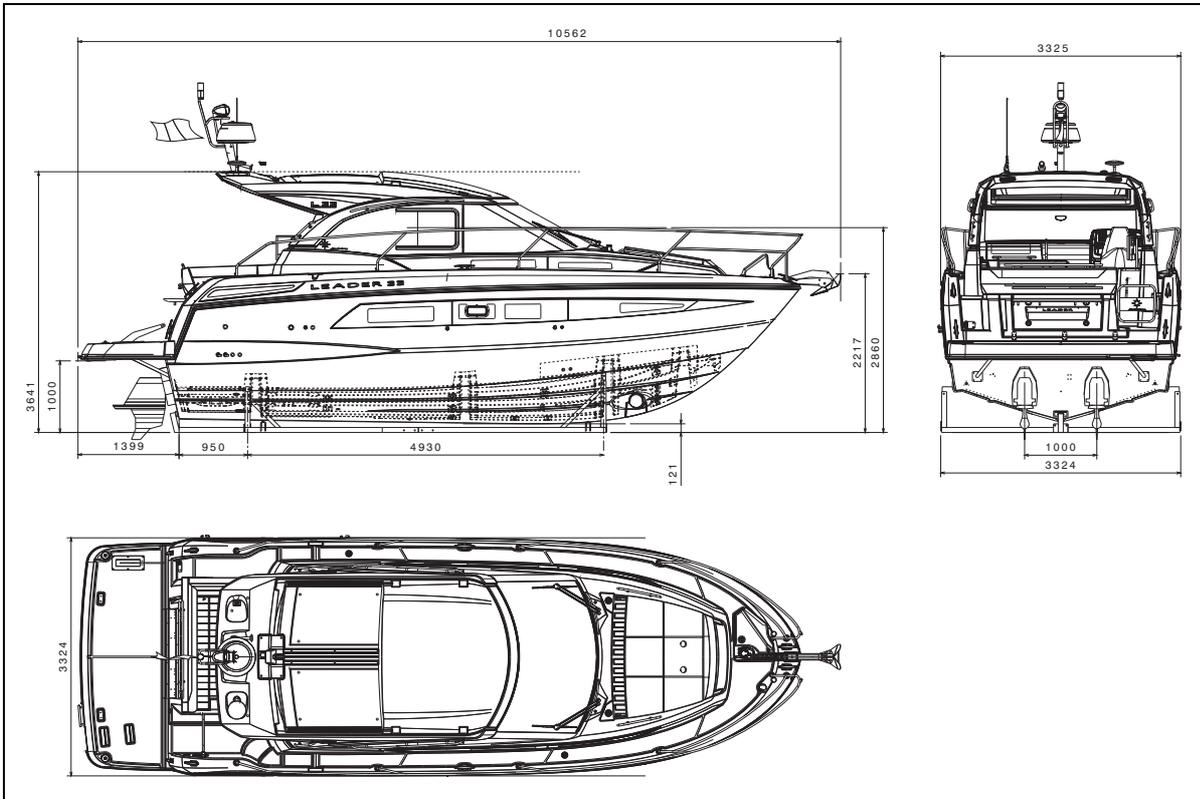
- Take advantage of laying-up to carry out a full inventory of the equipment.
- Check the expiry dates of the safety equipment.
- Have the liferaft overhauled.
- Empty the complete water system inside and outside and rinse it through with a mix of water and vinegar (do not use chlorine-based products).
- 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 movable upholstery.
- Disconnect the batteries. Make sure you recharge them during the Winter period if the boat is left inactive for a long time.

ADVICE-RECOMMENDATION

- 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.

17.6 TRANSPORT

Packing plan



Note: Measurements are expressed in mm.



- If the boat can be transported by trailer, make sure you use a trailer that is appropriate for the boat and its weight.
- The weight of liquids is calculated on the assumption that all tanks are full.



18 ENVIRONMENT

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 environmental 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.

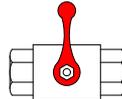


APPENDIX: LABEL KEY

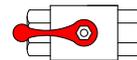
					
Engine group	Plumbing group	Colour - WC group	General electrical equipment	Comfort group	Drainage group



Valve location label

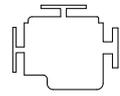
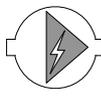
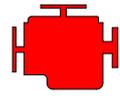
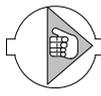
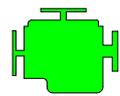
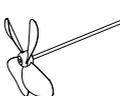
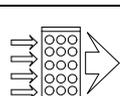
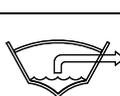
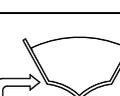
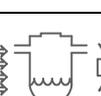
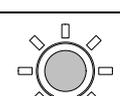
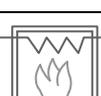


Closed valve



Open valve

Meaning of the symbols

	Motor		Shower		Electric pump
	Port engine		Washbasin		Manual pump
	Starboard engine		Ice maker		WC 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		WC Holding tank		Inverter
	Generator		12V Battery stock		Heating
	Breaker		Thruster		Air conditioning

Each label is defined by:
a functional group (specific colour);
example:

