

# FERRETTI YACHTS 580

OWNER'S MANUAL



**FERRETTI**YACHTS

This manual has been drafted in compliance with standard UNI EN ISO 10240.  
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This manual has been issued by **FERRETTI S.p.A.**



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**FERRETTIYACHTS**



## FOREWORD

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### 1. **FOREWORD**

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### 2. SAFETY RULES

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### 3. SAFETY DEVICES AND EQUIPMENT

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### 4. DESCRIPTION OF THE YACHT

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### 5. HELM STATIONS

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### 6. WATER SYSTEMS

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### 14. TROUBLESHOOTING

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## I.1 GENERAL INFORMATION

NAME OF THE YACHT \_\_\_\_\_ **FY580**  
 TYPE OF YACHT \_\_\_\_\_ **MOTOR YACHT**  
 PROJECT CATEGORY \_\_\_\_\_ **A**



### CAUTION

CATEGORY A: This yacht is designed for cruising in conditions where the wind can exceed 8 on the Beaufort scale, the significant wave height is greater than 4m and is largely self-sufficient. Excessive conditions, such as hurricanes are excluded. These conditions can be found in long crossings, for example inter-ocean or near the coast, exposed to wind and waves for several hundred nautical miles.

### I.1.1 Introduction to the use of the manual

Prior to operate the yacht and the equipment on board, read the manual carefully, in order to acquire an adequate familiarity with the systems and their operation, so as to avoid hazard to personnel and risks of costly damages.

A great passion for sea and the prestige of this yacht are elements that encourage constant and regular maintenance to ensure long periods of cruising, a long life span and an ensuing improvement in safety.

The maintenance operations described in the manual are simple, but should be performed by authorised and qualified technical staff only, according to standard procedures and in compliance with national and international regulations.

For specific interventions it is advisable to request the service of specialized technicians or contact our Service Department.

For an easy and quick consulting, the manual is subdivided in the following sections:

- FOREWORD
- SAFETY RULES
- SAFETY DEVICES AND EQUIPMENT
- DESCRIPTION OF THE YACHT
- HELM STATIONS
- WATER SYSTEMS
- ELECTRIC SYSTEM
- PROPULSION SYSTEMS
- STEERING SYSTEMS
- AIR CONDITIONING SYSTEM
- AUXILIARY EQUIPMENT ON BOARD
- INFORMATION FOR USE
- HULL AND FURNITURE MAINTENANCE
- TROUBLESHOOTING



### CAUTION

If the entire manual is printed, remember to store it in a safe, dry and easy access area for easy consultation. When you decide to change the yacht, deliver this manual to the new owner in its integrity.

## 1.2 MANUAL INTRODUCTION

The documentation provided to the Owner by FERRETTI YACHTS consists of two types of documents:

- The “**Owner’s Manual**”, produced in accordance with current regulations;
- The **Technical Document Collection**, related to on-board equipment and systems, consisting of a series of independent manuals, produced by the relevant Manufacturers.

The owner’s manual constitutes the “guide” document and must be examined in its entirety and in any case before the manuals constituting the collection of technical documentation.

It is compiled with the aim of helping you to use your yacht safely; it contains details of the yacht, the equipment supplied and installed, the systems and instructions on their correct operation.



### CAUTION

FERRETTI YACHTS recommends carefully reading the whole documentation delivered by the Manufacturers of the various components.

For all problems concerning the use and the maintenance of components you can refer directly to the Service Departments listed in the documents delivered by the Manufacturers.

Anyway, in case of need, some little interventions can be carried out by the staff on board, after consulting the operation manual.

This manual has been drawn up by FERRETTI YACHTS in their mother language (Italian) and translated into other languages, to satisfy the customer’s requirements, and has been issued with the purpose of assisting you with the use of your yacht in full safety and with complete satisfaction.

This manual has been issued in compliance with the Directive 2013/53/ EU, with UNI EN ISO 10240 rules and with RINA S.p.A. (REGISTRO ITALIANO NAVALE) requirements.

The manual contains detailed explanations on the yacht, the systems and equipment installed and information on the practical use of the yacht and its maintenance.

We recommend that you carefully read through this manual so as to become familiar with its contents before starting to seal for the first time.

If this is your first yacht, or if this is a type of yacht that you are not familiar with, for your safety and to ensure your maximum satisfaction, make sure you have acquired sufficient experience about how to use and operate the yacht, before “taking the command”.



### CAUTION

Make sure that the conditions of wind and sea correspond to the design category of your yacht and that you and your crew are capable of manoeuvring the yacht in such conditions.

Even when your yacht is classified accordingly, the conditions of sea and wind corresponding to design categories A, B and C ranging from storm conditions for category A to the conditions of wind and sea strong for the upper limit of category C, exposed to the dangers of a tidal wave or a wind gust. These are therefore dangerous conditions, where only a competent crew, coached and trained on well-maintained yacht can operate satisfactorily.

THIS MANUAL must BE STORED AND WILL ALWAYS BE ON THIS YACHT AT EVERY TRANSFER OF PROPERTY.

SANCTIONS ARE ENVISAGED IF THE YACHT IS NOT EQUIPPED WITH THE “OWNER’S MANUAL”.

IN CASE YOU LOSE OR DAMAGE THIS MANUAL, FERRETTI YACHTS WILL ALWAYS BE ABLE TO SUPPLY YOU WITH A NEW COPY OF IT.



### CAUTION

FERRETTI YACHTS declines all responsibility for any damage to third parties due to discrepancies between the manual and reality.

**CAUTION**

This manual contains pictures of details not representing completely our yacht or with colours not corresponding to your arrangements. This is mainly due to the fact that it is possible to encounter problems during the realization of details' photos, like bed covers and sofas, which are defined only shortly before yacht delivery and therefore when the manual itself has already been issued.

**CAUTION**

In some countries, a license or permit to drive are required or specific regulations are in force. This yacht may be conducted exclusively by authorized personnel to command and to the conduct of pleasure craft in relation to the same class of the yacht.

**CAUTION**

All yachts, regardless of their strength, may undergo serious damage if used improperly. This is not compatible with safe navigation.  
Always adjust the speed and course of the yacht under the terms of sea.

**CAUTION**

If the yacht is equipped with a life raft, carefully read the operating manual. The yacht must have the appropriate safety equipment (life jackets, safety rope, etc..) according to the type of yacht, weather conditions, etc..  
This equipment is mandatory in some countries. The crew must be familiar with the use of all safety equipment and emergency manoeuvres (recovery of man at sea, towing, etc..).

**CAUTION**

All persons should wear a suitable buoyancy aid (life jacket / personal flotation equipment) when they are on the deck.  
Note that, in some countries, it is a legal requirement to always wear a buoyancy aid that complies with the applicable regulations.

### 1.2.1 Service request procedure - warranty

The extensive FERRETTI YACHTS service network is glad to provide you with any information regarding issues not addressed by the manual.

Customers may contact Dealers, Sale Offices, Service Centres or directly:

FERRETTI YACHTS AFTER SALES & SERVICE DEPARTMENT  
 Via Ansaldo 7 - 47100  
 Forlì - Italy  
 Tel +39 0543 474445  
 Fax +39 02 70058589  
 customer.service@ferretti-yachts.com

FERRETTI YACHTS has carefully selected all main components and accessories installed aboard your yacht, choosing among the most reliable manufacturers who, by offering a wide service network, also guarantee a speedy availability of spare parts.



**CAUTION**

For all aspects related to the warranty of the yacht, please exclusively refer to what indicated in the sale agreement and in the warranty certificate in which all warranty conditions applicable to the purchased product are specified.



**CAUTION**

The maintenance operations described in the manual are simple, but should be performed by authorised and qualified technical staff only, according to the standard procedures delivered by the devices Manufacturers and in compliance with national and international regulations. We suggest contacting the FERRETTI YACHTS After Sales & Service Department.



**CAUTION**

FERRETTI YACHTS declines all responsibility for damage due to improper preservation and poor maintenance.



**CAUTION**

FERRETTI YACHTS declines all responsibility for the installation and operation of electric, electronic or mechanical equipment improperly installed by third parties in any unauthorised way by the Shipyard.



**WARNING**

FERRETTI YACHTS declines all responsibility concerning tampering carried out by third parties on equipment installed in the Shipyard. Such tampering or unauthorized installations will not only void the warranty, but may cause damage to the yacht and injuries to the people on board.



**WARNING**

Equipment and devices: engine, winch, extractors and other devices are guaranteed by their manufacturers, who will service them directly through their service points. In case of need, the Service Department of FERRETTI YACHTS will support your requests in order to provide you with a quick service and to guarantee the respect of the applicable rules. Upon yacht purchase, the Owner must send the Warranty Certificates of the relevant Manufacturers, in order to start the warranty period. FERRETTI YACHTS will not be liable for undelivered Warranty Certificates.

### **I.3 KNOW YOUR RESPONSIBILITY AS OWNER**

As owners of a yacht, it is your responsibility to be aware of several laws and rules applicable to navigation, operation and equipment of your yacht.

In the United States, the Federal Government, through the Coast Guard, it establishes the requirements for personal flotation devices (e.g. life jackets) and other safety equipment which must be on board the recreational craft.

Personal flotation devices and other safety equipment must be approved by the Coast Guard and / or other organizations dealing with rules relating to safety. If approved, an adhesive will indicate on equipment itself.

Member States may impose additional requirements.

It is necessary that you know the rules that relate to your areas of action.

It is the responsibility of the owner and / or operator of the yacht to know the rules of navigation and safety and navigational practices.

Take up time to read the Nautical Rules of Navigation (COLREGS) that are found in the publication of the Coast Guard “Navigation Rules - International and Internal”. CG-169 must be on all the length of more than 39 feet yachts. Study the techniques of navigation and safety practices to run your yacht and its equipment.

You are the key person in ensuring the safety of your passengers, the crew and the yacht. Take up time to read the chapter on Safety in this manual for important information regarding the safety procedures.

Each yacht owner or operator must be well informed about the yacht and its systems.

Since you are responsible for the operation of your yacht, we provide you with information about these topics.

For every system on board we have planned a detailed description, including diagrams where appropriate, as well as information about the Maintenance and troubleshooting.

A variety of instruction manuals, courses and videos to help you to improve your knowledge of navigation rules, navigation, operation of the yacht, naval electronics operation, Maintenance, etc..

## I.4 NOTICES

To highlight particularly significant sections and/or to indicate some important requirements, some symbols have been defined as follows.



### CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in slight or minor injury.



### WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



### DANGER

Indicates a situation of imminent danger, which if not avoided, will result in death or serious injury.



### ENVIRONMENT

This symbol draws your attention to the possible hazards of environmental pollution.

### NOTE

Indicates information considered important, but not related to the risk, for example, related to damage to objects.

### MAINTENANCE

This symbol indicates the maintenance schedules on the various on board devices.

## I.5 SPECIFIC SAFETY WARNINGS

They integrate the general safety notice and are aimed at providing specific information about the nature of possible dangers.

### Fire hazard:

To indicate a specific fire hazard.



### DANGER

The cause of fire breaking is described here.

### Electric shock hazard:

To indicate a specific electrocution risk.



### DANGER

The cause of electrocution is described here.

### Burn hazard:

To indicate a specific burn hazard.



### DANGER

The cause of burn is described here.

### Forbidden areas:

To forbid the access, the transit or the stay in a dangerous area.



### DANGER

This area describes the forbidden area: for forbidden areas are meant dangerous places or the approaching to mechanical moving parts.

## I.6 CERTIFICATION, CLASSIFICATION AND IDENTIFICATION

FERRETTI YACHTS undergo rigid and accurate tests required by the International Authorities in charge, in order to obtain a CLASSIFICATION CERTIFICATE.

The FERRETTI YACHTS 580, on which you are about to sail, has obtained the RINA S.p.A. (REGISTRO ITALIANO NAVALE) classification after supervision of the hull lamination, of the reinforcement structures, of the power system and of the safety equipment on board.



### CAUTION

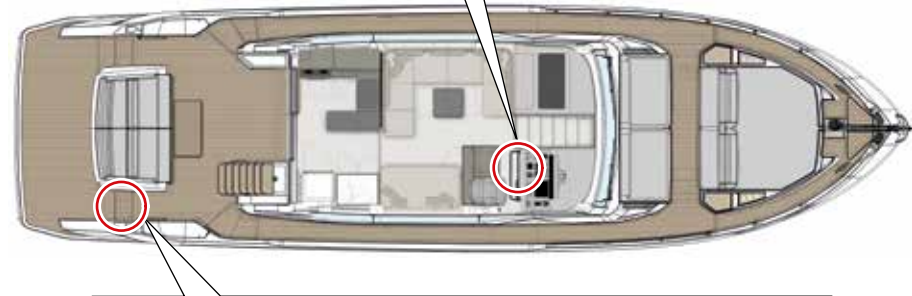
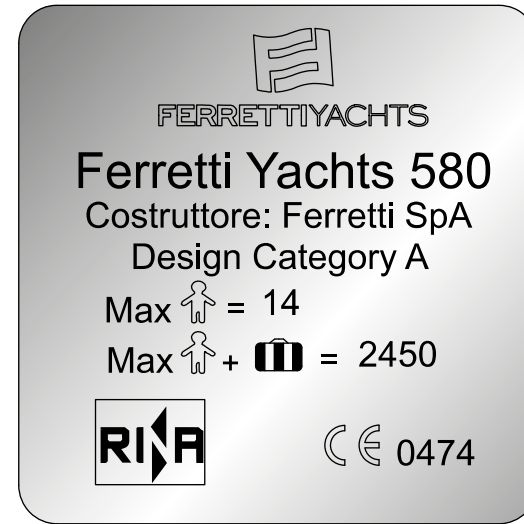
Always keep the plates readable and, if deteriorated or altered, address to FERRETTI YACHTS for replacement.

### NOTE

Builder's plate - Part of the information is provided on the manufacturer's plate affixed to the yacht. A full explanation of this information is provided in the relevant sections of this manual.

The significant wave height is the average height of the waves that make up the highest third of the same, which is approximately wave height estimated by an experienced observer. Some waves know no twice this height.

In the figure aside you will find two plates shown in detail: Manufacturer plate and yacht identification code plate.



### 1.6.1 Yacht identification specifications

Manufacturer	<b>FERRETTI S.p.A.</b>
Model	<b>FERRETTI YACHTS 580</b>
Type of yacht	<b>MOTOR YACHT</b>
Identification number CIN (Craft Identification Number)	<b>IT-FERF5835 _____</b>
Navigation class	<b>A (open sea navigation): the wind force can be higher than 8 and the wave height can exceed 4 metres</b>
Certification forms	<b>B+F+A I (sound emission)</b>
Classification	<b>“EC” conformity according to the standards stated by the Directive 2013/53/EU</b>

## I.7 LOAD-CARRYING CAPACITY

<b>Maximum number of passengers</b>	no. 14 (RINA S.p.A. class.)
<b>Maximum load recommended by the Manufacturer</b>	kg 2450 (people + luggage)
<b>Safety equipment</b>	Standard: 8 Optional: 14
<b>Berths:</b>	Standard: 7 Optional: 9 or 10
<b>Located in:</b>	<ul style="list-style-type: none"> <li>• 2 in the VIP cabin at the bow (double bed);</li> <li>• 2 in the Owner's cabin at the centre of the yacht (double bed);</li> <li>• 2 in the guest cabin on the left (single beds) (optional);</li> <li>• 2 in the starboard guest cabin (single beds);</li> <li>• 1 in the crews' cabin (single bed).</li> <li>• 1 in the dinette (single bed) (optional).</li> </ul>



### WARNING

Do not exceed the maximum recommended number of persons. Regardless of the number of person on board, the total weight of persons and equipment must never exceed the maximum recommended load. Always use the seats/seating spaces provided.



### CAUTION

Make sure that safety equipment is perfectly efficient and available to each passenger.



### CAUTION

The maximum load carrying-capacity includes the weight of all persons on board, all their luggage and personal effects and any other equipment not included in the unladen displacement.



### CAUTION

When the yacht is being loaded, never exceed the maximum load carrying capacity. Always take great care when loading the yacht and try to distribute the loads evenly so as to keep the correct trim. Avoid placing heavy loads in the upper part to not reduce the stability.



### CAUTION

The maximum load recommended by the manufacturer excludes the mass of the contents of the fixed fuel and water tanks when full. It must exceed the total load that can be added to the displacement to download and dry yacht.



### CAUTION

Standard or optional equipment is provided by the shipyard. If the yacht is used with more passengers on board (max 14), the above safety equipment must be supplemented to match the number of persons on board.

**CAUTION**

Changes in the arrangement of the on-board masses, such as the addition of weights at the top, a structure, or the replacement of components with different specifications, can significantly affect the stability, trim, and performance of the yacht.

In such cases, contact FERRETTI YACHTS After Sales & Service Department.





FERRETTIYACHTS

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## SAFETY RULES

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## 2.1 SAFETY RULES

Your yacht has been designed paying the utmost attention to all aspects regarding your safety and the safety of your guests. However, all personnel on board must be instructed and aware about some precautions to be adopted at all times.

For this purpose, it is advisable that all people on board carefully read the guidelines contained in this manual, as well as the signs installed on the yacht and, in particular, all safety notices.

The time spent in reading such instructions will prevent unpleasant accidents. Remember that you are responsible for your safety and the safety of your passengers, and that you may jeopardize the safety of other yachts.

Please, make sure you are perfectly aware of the main safety rules:

- During normal operation or any activities on the yacht, keep passageways and escape routes in proper conditions, in order to avoid hazards to people's safety;
- Always perform regular inspections of hull conditions, power system, safety equipment, and systems on a regular basis;
- Always check the fuel level before cruising and compare the tanks' capacity with the engines' consumption and the length and the expected type of cruise;
- Check the forecasted weather conditions in the area you are about to sail;
- In any case, always act according to common sense.



### **DANGER**

Only the personnel having a regular license or the necessary qualifications can steer this yacht.  
Personnel operating the yacht must not be under the influence of alcohol, drugs or narcotics.

Safety is also "in the hands" of all those on board, who should be instructed and aware of some precautions to be adopted all times:

- Move carefully around the yacht because yacht stability may be suddenly affected by the effects of the sea waves;
- Everybody on board must know the life jacket storage location and how to wear it; the location of fire extinguishers (see safety equipment) and life raft;
- All passengers must be perfectly aware of the risks provoked by a fire, and what to do in case of fire;
- The engine room must be properly ventilated when the engines are running;
- Everybody on board must be able to release and launch the life raft at sea;
- Access to the engine room must be allowed only to authorized personnel, aware of possible dangers like:
  - Moving mechanical parts;
  - Hot parts and components;
  - Circuits with pressurized, hot or irritating fluids;
  - Circuits with flammable fluids;
  - High noise when engines are running;
  - Possibility to shift important valves for navigation safety unintentionally.



### **DANGER**

It is strictly forbidden to stay on weather decks without railings (i.e. aft platform) during navigation.

Do not tamper with, disconnect, eliminate or by-pass the safety devices installed on your yacht. Periodically check their real efficiency in time to ensure that they can be used in case of need. Failure to meet such requirements may lead to serious risks to the health and safety of passengers.



**WARNING**

Personnel performing any type of operation during the entire lifetime of the yacht must be technically qualified and have proven abilities and experience acquired and recognized in the specific field. The lack of such skills can endanger your safety as well as the safety of people on board and the integrity of the yacht.

Make sure any parts not stored or not secured correctly, cannot move during navigation, hinder the passage, prevent the opening of inner hatches, fall against the people on board, damage or hinder the quick finding of necessary pieces.



**CAUTION**

Always place the necessary attention while navigating, especially in adverse weather conditions or breaking waves.

**2.1.1 Use-related rules**



**DANGER**

**Carbon monoxide poisoning**

Fossil fuel combustion generates high quantities of carbon monoxide. This gas is a colourless, odourless and highly toxic. When the engines and/or the generator are running, the yacht must be properly ventilated, in particular if underway at low speed, or when the exhaust fumes may blow back on board (e.g. when the yacht is shored or anchored or riding the anchor).

Arrange the load evenly so as to keep the correct trim.  
Do not overload the yacht especially at bow and aft.

Observe the rules to prevent a sea collision and respect the speed limits; moreover always pay the utmost attention during navigation.



**WARNING**

The Captain is the only person responsible for driving the yacht. Prior to departure, the Captain must ensure that the safety equipment required by law is present on board and perfectly working.

The Captain should always meet the requirements and have the specific qualification to steer this yacht as requested by the laws in force in the country of use.

After becoming duly informed as to the operation and controls of the yacht, at first use the Captain should simulate some test manoeuvres, to locate the controls and to be aware of the common reactions of this yacht.

**WARNING**

Do not use the Yacht if the safety equipment is inoperative. Failure to meet such requirement may cause serious risks to the safety and health of passengers.

The basic operations like start, navigation, anchorage and mooring must be carried out and checked thoroughly; in particular all procedures for navigation set-up should strictly be observed.

**WARNING**

At high speed, the use of the autopilot is dangerous and not recommended. Always be very careful during navigation even when the autopilot is in use.

All refuelling phases have to be carried out with the necessary precautions to avoid even the smallest spillage of products which could pollute the environment.

When navigating near harbours, beaches and shores, observe the directives issued by local port authorities, particularly as to the speed; high speed can originate wake waves which can jeopardize the safety of the environment and of people.

Before lowering the anchor in free waters, be aware of the kind of sea bottom underneath and near your Yacht, to avoid damaging it.

**CAUTION**

In case a jet-ski is used, each passenger must wear a life jacket; the driver must also have a regular license and keep to the rules of the country where the jet-ski is driven.

**CAUTION**

Close portholes, windows and skylights during navigation, especially in poor weather conditions.

Also, make sure that you have closed or locked doors to prevent collisions with objects or people.

**CAUTION**

Any changes in the distribution of the masses on board, such as the addition of weights on top, a structure or the replacement of components with different specifications, can significantly affect the stability, trim and performance of the yacht.

In these cases, contact Customer FERRETTI YACHTS.

**CAUTION**

Pay the utmost attention when towing, as the stability of the yacht may be significantly reduced.

## 2.1.2 Maintenance rules

Keep your yacht in conditions of the highest efficiency, carrying out all scheduled maintenance of the devices on board. A good maintenance will provide the best performance, a longer useful life and a constant respect of the safety requirements. For the general cleaning of your yacht, only use biodegradable or environmentally friendly products.



### ENVIRONMENT

During navigation, do not release any on-board waste at sea, but keep it and dump it in waste containers ashore.

Remember that it is forbidden to dump oils and fuels into the sea; therefore, it is recommended to clean the engines' bilges by using absorbent materials to be disposed of later on into dedicated containers.

Before carrying out maintenance and adjustment operations on your yacht, activate all safety devices provided and evaluate if it is necessary to inform all persons on board.

In particular, place warning signs in the nearby areas and prevent access to any device that, if operated, could cause unexpected hazardous conditions, thus endangering the persons and/or property on board.

Maintenance and adjustment operations must be carried out by authorized personnel who must use all necessary protections according to the procedures provided by the Manufacturer.

All maintenance operations requiring a precise technical knowledge or particular skills must be carried out exclusively by qualified personnel with a recognized experience, acquired in the specific field of intervention.

To carry out maintenance in an area that is not easily accessible, or dangerous, take all of the necessary safety measures, according to rules and standards applicable to safety at work.



### WARNING

Do not work on a system alternating current active.



### ENVIRONMENT

Any maintenance operation must be carried out in the strict respect of the surrounding environment. Take all necessary measures to avoid that even one single "oil drop" may be spilled: the protection of our environment starts with this type of attention.

Access to the engine room during navigation must be limited only to authorized personnel.

Inspect the sea water system inlets and outlets as well as the bilge systems. These checks are vital to ensure yacht buoyancy.

Do not perform any maintenance operations or adjustments other than those indicated and/or suggested by the Manufacturer.

If necessary, contact the Service Centre for more precise instructions.

Keep all yacht's components clean by following the procedures and using the specific products suggested by the Manufacturer.

Only replace worn parts using original spares.

Use oils and greases recommended by Manufacturer. This will ensure yacht functionality and the expected safety level.

Do not start any work before ensuring that people on board are not in danger.

If something about the work to be carried out is doubtful, ask someone with knowledge. Do not draw any conclusions.

### **Always operate with caution, care, and under safety conditions.**

Apart from the regulations stated in this manual, specific warnings are given throughout. This section is meant provide safety rules for operation and maintenance procedures.



**CAUTION**

This section includes a certain amount of information to maintain the components without dangers. Remember that each time you activate the controls, you are in fact the pilot. You must therefore read and understand the information given before activating the controls.



**CAUTION**

The use of faulty **lifting attachments** can be the cause of accidents; therefore, check their efficiency. Ensure the compliance of hoisting gears with local norms and their suitability for the job they have to carry out. Also check their soundness according to the work to be carried out.



**CAUTION**

The use of **unsuitable** clothing can cause accidents; do not wear loose, flapping clothes which could easily get caught in the yacht's moving parts. Wear protective clothes suitable for the kind of work to carry out (helmets, safety shoes and protective goggles, overalls). Button cuffs, do not use ties or scarves and do not leave long hair loose.



**CAUTION**

It is extremely dangerous to operate the yacht controls under **the influence of alcohol or drugs**. Never take alcohol or drugs before or during work. Do not take medicines that cause dizziness.



**CAUTION**

Be **alert and use the greatest caution** while working. Take great care to avoid possible dangers.



**CAUTION**

**Lifted equipment** may fall and hurt you. Do not walk or work under lifted devices not sufficiently and safely supported.



**DANGER**

The engines' moving parts are dangerous; do not open hatches while running the yacht.



**CAUTION**

**Yacht entrance.** Always face the yacht to enter or leave it and use the handles and the steps. Make sure that steps, handles and rubber soled shoes are clean and dry. It is advised to remove the shoes. Do not jump down from the yacht; do not use the yacht controls as handholds; use the handles.



**CAUTION**

Activating the **throttles** from outside the helm station can cause serious accidents even fatal ones: controls must only be operated from the correct position in the helm station.


**CAUTION**

**Metallic chips** from working with metallic parts can cause injury: always wear safety goggles and use a soft mallet or punch.


**CAUTION**

Insufficient **information** may cause accidents. If two or more persons are working simultaneously in the same area, make sure that each one of them is aware of the operation carried out by the others. Before starting the engine, move the other persons from the risky areas (rotary blades and engine belt, tools and movements, engine inner and rear parts). Failure to comply with these precautions may cause serious injury, and even death.


**DANGER**

Do not place naked flames near the yacht. Do not smoke during refuelling or while working on the engine. Carry out refuelling with the engine shut off. Failure to comply with these precautions can cause accidents and injuries.


**CAUTION**

A frozen **battery** may blow up if used or charged; do not start a yacht with a frozen battery. To prevent the battery from freezing always keep it completely charged.


**DANGER**

The **battery** releases explosive gas: do not allow sparks or flames to come close to the battery and never smoke near it. If the battery is used or charged in a closed area, check for good ventilation. Do not check the battery charge by short-circuiting the terminals with metal tools: use a density gauge or a voltmeter.


**CAUTION**

Do not remove the **tank filling plug** when the engine is on, because the hydraulic system under pressure may cause injury. Stop the engine before releasing pressure.


**CAUTION**

The spilling of hydraulic oil under **pressure** may cause injuries: before disconnecting or connecting the hoses, stop the engine and operate the controls to release the residual pressure. Prevent the engine from starting when the hoses are disconnected.


**CAUTION**

If damaged, the **hydraulic hoses** may cause death, carry out appropriate periodical checks to check for the presence of:

- Damaged fittings;
- Wear of outer coatings as consequence of rubbing;
- Swelling on outer coatings;
- Bent or squashed hoses;
- Fittings not properly located.



**CAUTION**

**Oil** is poisonous: do not swallow. The engine oil contains dangerous polluting agents which can generate skin tumours. Handle oil as little as possible and protect your skin with creams and gloves. Any skin that comes into contact with oil must be washed carefully with warm water and soap: do not use petrol, fuel or oil.



**CAUTION**

**Hydraulic oil** spraying at high pressure penetrates the skin: do not check for oil leaks with your fingers or allow your face to become too close to them. Use a cardboard blank to verify the possible presence of hydraulic oil. If oil penetrates the skin, ask immediately for a doctor for the relevant treatment.



**CAUTION**

Periodically clean the **interceptors** to eliminate any dirt deposits that may affect their efficiency.



**CAUTION**

The **cleaning** of the metallic parts with unsuitable solvents may cause corrosion; use detergents and solvents of the prescribed type only.



**CAUTION**

**Seals and O-rings fitted** incorrectly, or damaged or worn out may cause leaks or accidents; replace them immediately except when otherwise prescribed. Do not use trichlorethane or solvent near O-rings and seals.



**DANGER**

**Hot coolant.** When the engine temperature is high, the cooling system is at a high pressure value and this results in liquid coming out when the expansion tank cap is removed. Therefore, before removing it, wait until the system has cooled down, then turn the plug up to the first notch and release the system's pressure.



**CAUTION**

During the restoring operations of metallic or non metallic components, wear **safety goggles**. Move away from the area or protect possible flammable materials, which could catch fire from sparks.

### 2.1.3 Fire prevention rules



#### **DANGER**

On all yachts, fire is a major danger.  
All fire prevention measures must be followed scrupulously.

Before steering a yacht, the Captain must be perfectly aware of the following fire prevention measures.

This yacht must always be equipped with portable fire extinguishers positioned as indicated in the chapter 'Arrangement of safety and fire fighting equipment'.

The yacht's Owner and the Captain are directly responsible for:

- Having fire extinguishers and fire-fighting equipment overhauled as scheduled on their labels, and having them replaced, as required by the rules in force, with similar or equivalent or higher capacity ones;
- Informing the crew about the location and use of fire extinguishers and fire-fighting systems and escape routes;
- Ensuring that fire extinguishers are also available in the passengers' cabins.



#### **CAUTION**

The engine room of this yacht is equipped with a dedicated fire-fighting system.



#### **WARNING**

##### **NEVER:**

- Obstruct passageways and the escape routes;
- Hinder access to safety devices, such as fuel valves, electrical switches, etc..;
- Obstruct access to fire extinguishers stowed inside the lockers;
- Leave the yacht unattended, when burners or heat generating equipment are ON;
- Use naked flames;
- Modify electrical or fuel supply systems, without consulting FERRETTI YACHTS beforehand;
- Smoke near or when handling flammable materials;
- Stow highly flammable materials (such as fuel, thinners, etc..) In proximity to heat sources, such as engines, galley, etc..;
- Stow flammable material in the engine room. Non-flammable materials may be stowed only if properly rigged, so they do not accidentally come into contact with rotating engine parts, or obstruct access to the engine room.

Keep the bilge clean and check it frequently for any oil or fuel leaks.



#### **CAUTION**

In case fire breaks out in proximity to electrical equipment, do not use water, use the manual fire extinguishers only. After using the extinguishers, leave and ventilate the area immediately before reapproaching it, in order to prevent asphyxia and physical damages.

Clean out any fire extinguishing powder out very carefully.

In addition to these requirements, FERRETTI YACHTS recommend what follows:

- Avoid smoking lower deck, especially in the engine room.
- Avoid dropping liquids in the bilge and keep it clean, especially the engine room bilge. In case of fuel leaks from the engines or from the generator, operate as follows:
  - Stop all engines immediately;
  - Locate the leak cause and, if possible, repair it after closure of supply valves;
  - Dry and clean the bilge before restarting the engines, without draining at sea or in the harbour;
  - Do not stow flammable items in proximity to heat sources, like engines, burners, halogen lamps, etc..;
  - Should the yacht leak, try to remedy with plugs and/or rags, if possible, from outside;
  - In case a system of the yacht breaks, close all hull valves, locate and repair the leak if possible. Remember to reopen all hull valves not involved.



## CAUTION

The Captain of a leisure yacht must be perfectly aware of the basic fire fighting techniques and how to use the extinguishers.

In case of fire, follow the procedures described herein below:

- Keep calm and do not spread panic among the passengers;
- Stop the yacht, and close the sea cocks and the drains;
- Set the battery breaker to "OFF";
- Close the air intakes in the engine room;
- Locate the fire and its origin;
- Avoid breathing smoke;
- Extinguish the fire, following standard fire extinguishing techniques.



## DANGER

In case of the yacht sinking risk, close the fuel and black waters valves.



## CAUTION

The reading of this section, containing all the information the Captain of the yacht should know, is strongly recommended.



## WARNING

### EXPLOSION HAZARD

Any lithium battery powered device on board must be recharged only in open air areas, connected to a suitable charging system. Also please refer to the device dedicated Use and Maintenance Manual.

## 2.2 NOTES ON THE ENVIRONMENT

Environmental pollution is caused by three kinds of polluting agents:

- Water polluters
- Air polluters
- Soil polluters

Non oily and black waters (containing only human organic waste) can be discharged into the open sea. In the harbour area, these must be collected in special tanks and then discharged either by removal at open sea or by means of appropriate fixed shore side or truck-mounted emptying systems.

Soil pollution is also caused by discharging waste at shore.

International rules for pleasure yachts essentially prescribe the following:

- During navigation it is forbidden to discharge any non biodegradable product, either of food or commercial origin, into the open sea.
- In the harbour, normal waste is considered as urban waste that must be hermetically sealed in plastic bags and thrown into waste dumpsters.
- Special waste must be disposed of into suitable containers or, if these are not available, it must be delivered to local waste disposing areas, in compliance with the rules in force, issued by the local Port Authority.
- The following waste is considered special waste:
  - Water and oily mixtures (e.g.: Bilge water);
  - Oils (fuel, additives and lubricants);
  - Poisonous chemical substances (like battery acids, paints, thinners and the relevant containers);
  - Spray cans containing C.F.C. gas;
  - Batteries;
  - Spent flares;
  - Expired pharmaceutical products;
  - Products containing lead or asbestos;
  - Etc..

- Fuel and oil leaks
- Waste discharge and disposal
- Excessive noise
- Wake / wake from board
- Exhaust fumes
- Paints, detergents and other agents

Please remember that, according to legislation, until such waste is delivered to suitable disposal areas, you will be considered as possessors and therefore indictable in case of unlawful discharge. Should specific cases be missing in the harbour area, the Authority in charge for the disposal is the Port Authority section "Waste Disposal".

## 2.3 REGULATIONS FOR WASTE DISPOSAL

The standards referred to in the International Convention for the Prevention of Pollution (Marpol 73/78) apply to all ships with no tonnage and service limits, including pleasure yachts.

The regulations apply to the entire Mediterranean Sea.



### WARNING

When moored in a harbour, always check that your yacht is not a source of pollution. The environment must be respected and safeguarded, preventing risks for the life of aquatic flora and fauna. It is good practice to leave no trace behind you, to respect laws on safety and environmental protection. Do not discharge bilge waste, oily residues, fuel or other liquids overboard. Dispose of solid waste and old engine oil in the containers provided at mooring points.



### WARNING

When cruising, it is always necessary to behave suitably and to respect the safety and the comfort of your guests and of persons on nearby yachts. Therefore:

- Avoid excessive noise;
- Do not leave the engines running for long periods without moving off;
- Do not sail at high speed or beyond the permitted limits when leaving or entering harbours, marinas, etc., To prevent causing excessive wash or wave motion.



### CAUTION

It is absolutely prohibited to throw into the sea: plastic materials, synthetic cables, fishing nets, waste bags, floating packaging materials, cordage, paper, rags, glass, metals, bottles, galley utensils and similar. Non-comminuted or unground food waste can only be disposed of beyond 12 miles.



### ENVIRONMENT

Always consider and comply with local and international environmental laws against marine pollution (MARPOL).

Also, you must always respect the rules of conduct of the yacht.



### CAUTION

It is forbidden to use toilets or holding tanks near the shore or in any prohibited area. Use the facilities of the suction port or marina to empty the holding tank before leaving port.



### CAUTION

Within 12 nautical miles from the coast, it is forbidden to discharge the sewage tank into the sea. Keep the launch pump deactivated and disable the activation automatism if present.



### CAUTION

In the event of waste mixed with other harmful substances having different requirements for disposal or discharge, the more restrictive disposal requirements shall apply.

Although discharge at sea, except in special areas, of a wide range of ship-generated garbage is permitted at specified distances from the nearest land, preference should be given to disposal at shore reception facilities.



FERRETTIYACHTS

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## SAFETY DEVICES AND EQUIPMENT

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### 3.1 SAFETY EQUIPMENT

Everybody on board must be aware of the location and use of safety equipment, i.e. life jackets, life buoys, life rafts, extinguishers and fire extinguishing systems (i.e. in engine room, etc..).

One of the principles that must always be remembered is that safety starts from the shore before you sail. It is one of the responsibilities of the yacht's captain to ensure that all necessary equipment for the route to be sailed is available on board.

- Individual life jackets: they are normally stored in easily accessible places in the cabins.
- Everybody on board must be able to release and launch a life buoy with "man overboard" lifeline;
- Life rafts;
- Extinguishers are stored in different locations of the yacht indicated by a proper label.
- Fire extinguishing system in the engine room.
- Radiotelephone.



**CAUTION**

The above-mentioned safety systems must comply with existing local and international navigation regulations, and which must be periodically inspected and maintained by qualified technical personnel, prior to the expiry date indicated on the systems.



**CAUTION**

Upon delivery, the yacht can not have all the safety devices listed above. It is the duty of the owner's to ensure the presence on board of such devices and periodically check the operation.



**CAUTION**

The captain must inform the crew of the yacht about the safety equipment, both in the event of fire and in the event of sinking, and list it.



**CAUTION**

Make sure that safety equipment is perfectly efficient and available to each passenger.



**CAUTION**

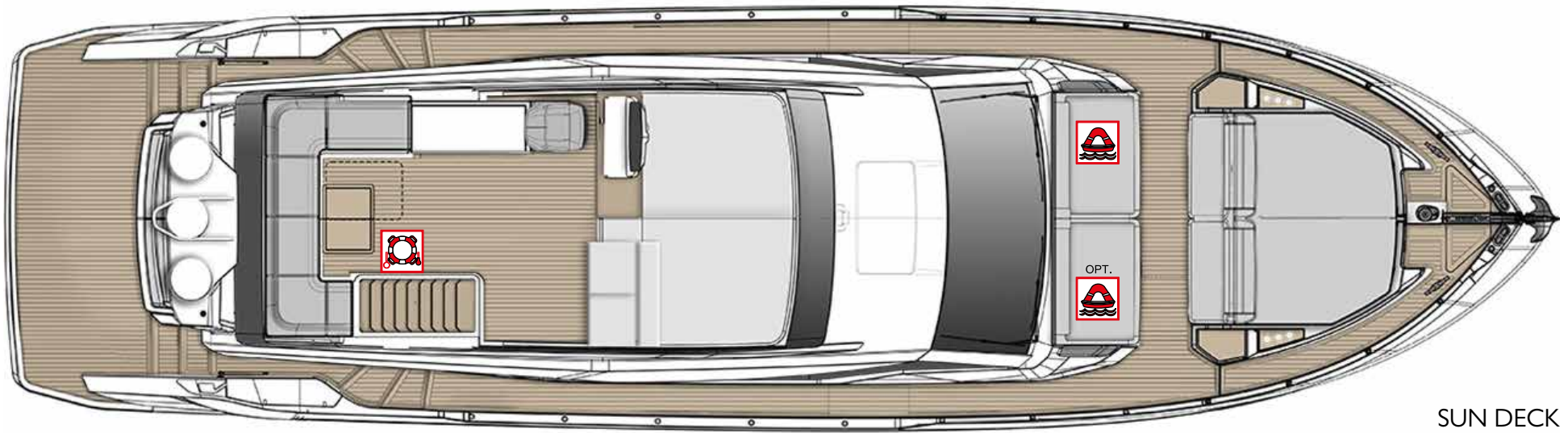
To sail at a distance of over six miles from the coast, pleasure yachts both with and without EC mark must have a deviation chart officially authorized by Maritime Authorities. To this purpose, the compass installed on board must be compensated by personnel authorized by the Harbour Master who, after completing the operation (compass turns), will issue the chart with residual deviations. These charts do not have an expiry date, and are therefore not renewed when periodic inspections are made for the renewal of the Safety Certificate. It is one of the responsibilities of the captain of the yacht to verify correct compass operation and to update deviation values.



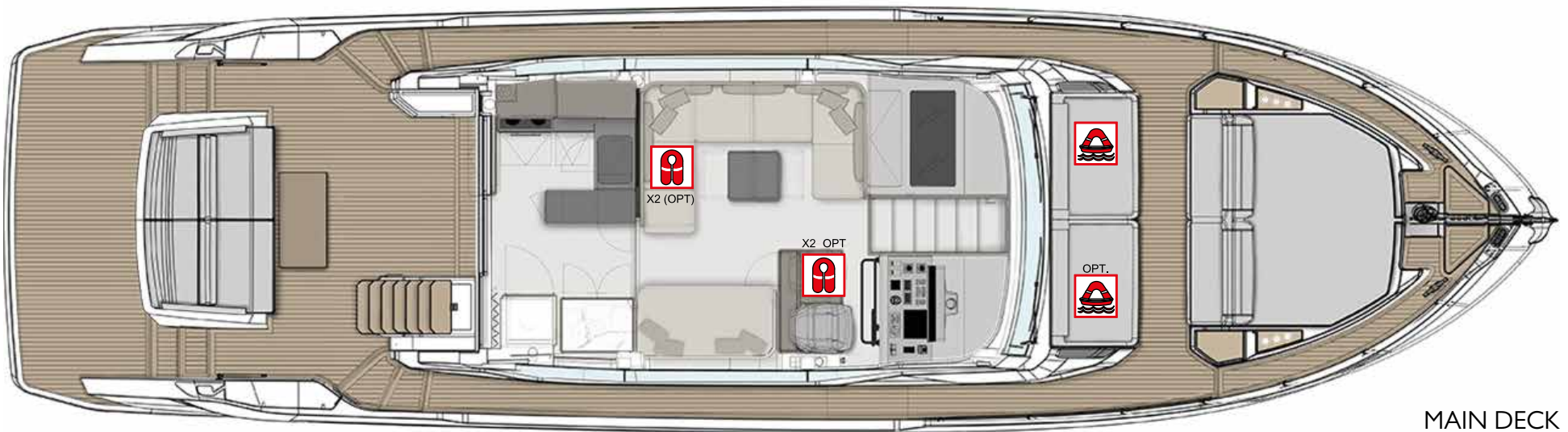
**DANGER**

Periodically inspect the wear conditions of safety equipment and check servicing or replacement dates, so that the equipment is always in perfect working order.

### 3.1.1 Arrangement of safety and fire-fighting equipment



SUN DECK

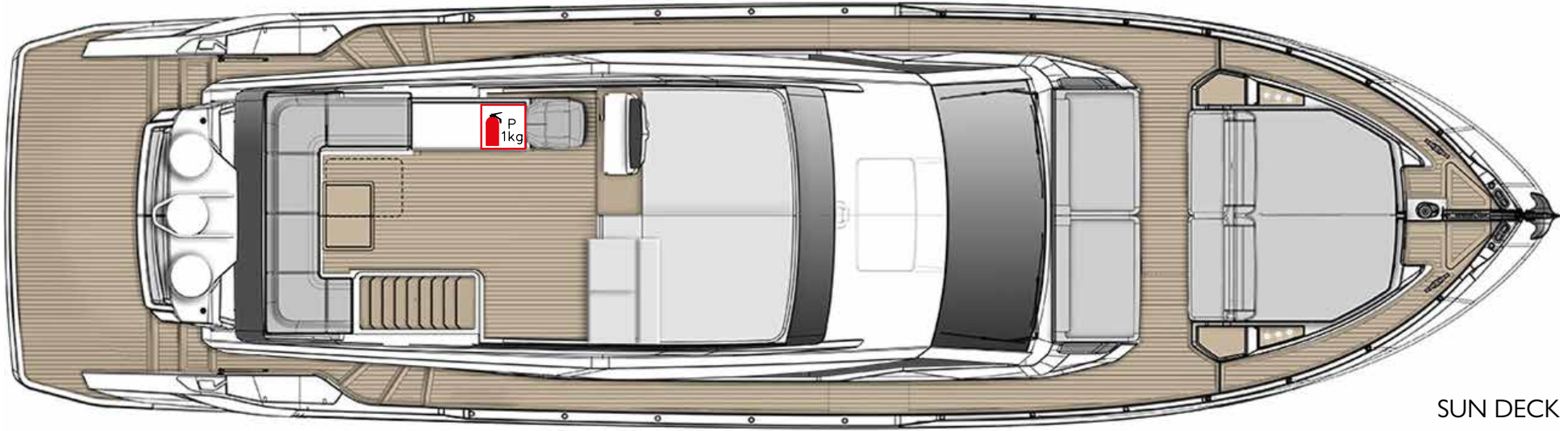


MAIN DECK

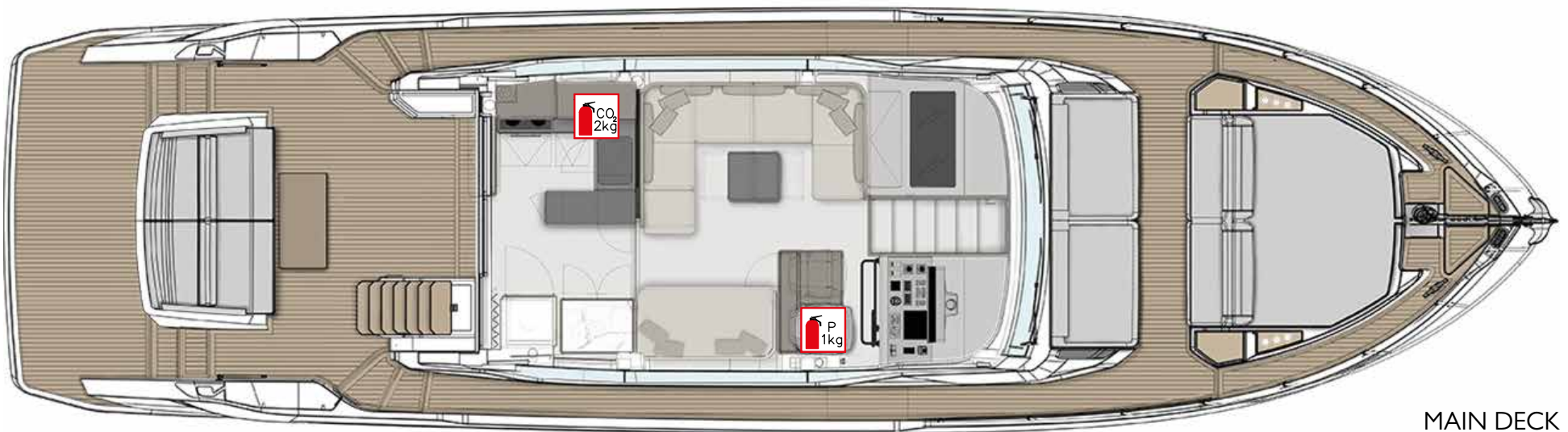


LOWER DECK

ICON	DESCRIPTION
	Life raft STD = 1x8p OPT= 1x8p + 1x4p
	Life jacket for adult: STD = 8p OPT = 14p
	Life belt



SUN DECK



MAIN DECK



LOWER DECK

ICON	DESCRIPTION
	Portable 1 kg powder extinguisher
	Portable 2 kg CO <sub>2</sub> extinguisher

Warning label for CO<sub>2</sub> extinguishers

**⚠ WARNING**

THIS EXTINGUISHER USES CO<sub>2</sub>H0.5x;  
AS AN EXTINGUISHING MEDIUM  
IT SHALL BE USED ONLY TO FIGHT  
ELECTRIC OR GALLEY FIRES

TO AVOID ASPHYXIATION  
AFTER DISCHARGE  
LEAVE THE AREA IMMEDIATELY AND  
VENTILATE BEFORE ENTERING

### 3.2 PERSONAL FLOATING DEVICES AND RESCUE EQUIPMENT

All personal buoyancy devices used on the yacht must be approved by competent authorities.

They can be worn in any weather condition.

People can fall overboard at any time.

- People who cannot swim and children must always wear an individual flotation device.
- People working on deck must always wear an individual flotation device.
- Wear personal flotation devices on deck when you sail in cold water (water temperature below 20°C [68°F]).
- In an emergency, passengers must wear personal flotation devices.

The inflatable personal flotation devices are easy to wear and some automatically swell if dropped overboard.

These personal flotation devices are excellent safety equipment to be kept on board for yourself and for your guests.

Make sure that the personal flotation devices are approved by the appropriate national or international Authorities.



#### CAUTION

Check the efficiency of personal flotation devices at least once a year and, anyway, before any navigation.



#### CAUTION

Children and people who cannot swim should always wear personal flotation devices when they are on board. If a personal flotation device is not worn, it becomes useless in an emergency. The law requires that personal flotation devices are always accessible, i.e. are stowed out of their storage containers and unhooked.



#### WARNING

Before setting up for navigation, check that it can be used immediately without obstacles.



#### CAUTION

The validity of the self-inflatable life raft is limited, check its expiry on the certificate. The raft can be overhauled by a reliable entity extending its validity. Some sanctions are provided if this rule is not respected.

#### Individual personal flotation devices

A personal flotation device must be available for all persons on board.

Children must wear a special children's device. The Captain must make sure that people on board know the storage location of their individual personal flotation device, know how to wear and fasten it to the body.

They must know where the whistle and/or the light are and how to turn it on.

#### Throwable individual personal flotation devices

The Captain must make sure that all passengers know:

- The location of the lifebuoy;
- How and where to throw a lifebuoy;
- What to do in case of "man overboard".

The Owners and Captains of yachts must regularly carry out exercises of "man overboard", so that the people on board familiarize with the procedures to save a person who falls into the sea.

- At least once a month:
  - Check the fastening of the floating line;
  - Check the loading condition of the batteries of light buoy.
- At least once every 6 months check the status of the floating line.

### 3.2.1 Self-inflatable life raft



**WARNING**

Before setting up for navigation, check that it can be used immediately without obstacles.

Self-inflatable rafts must be used only in case of real emergencies, requiring the abandonment of the yacht.

The yacht must in fact be abandoned in case of a serious sinking hazard, or in case of fire becoming out of control. In all other cases careful evaluation is necessary, because to leave the yacht, even though on a self inflatable life raft, could mean a more difficult identification by of the rescue team.

As a matter of fact, the search for the shipwrecked will start exactly from the last known position of the yacht.

In case the use of self-inflatable life rafts becomes necessary, perform the following operations:

- Shut OFF the engines and wear the life jackets;
- Perform the distress call using the VHF device;
- Uncoil the life line of each raft by 3 m (0,12 in) - to 4 m (0,16 in); secure it tightly to a fixed point of the yacht and launch the self inflatable life raft into the sea on the lee side.



**WARNING**

Check that the anchoring line is always well fastened to the yacht.

- Unwind the lifeline completely, then give a strong and decisive pull; the raft will open in a couple of minutes;
- Board by jumping directly from the yacht into the life raft;
- If the distress call has already been made and you have received an answer, prepare for a relatively short wait; then evaluate whether to cut or not the life line. If you did not have the time to make the distress call or you did not receive an answer, prepare for a long wait;



- In this case, plan for survival, taking the following items, as well as the equipment included in the kit: floating smoke signals and rockets, a knife, drinking water and energy foods that do not cause thirst. Before boarding the raft wear all possible garments, except for shoes that could injure other shipwrecked persons or damage the life raft;
- Embark possible clothes and supplies;
- If somebody falls overboard, help him/her up into the raft;
- Make sure that everybody is on board, take the knife out of its sheath, and cut the line that ties the life raft to the yacht;
- Move quickly away from the sinking yacht, using the oars;
- When the overpressure valves have stopped hissing, close them by tightening the safety plugs.



**CAUTION**

The validity of the self-inflatable life raft is limited; check its expiry on the certificate. The raft can be overhauled by a reliable entity extending its validity. Some sanctions are provided if this rule is not respected.



**DANGER**

If the life raft opens upside down, jump into the water and roll it over, by pulling the special rope.

If the life raft does not open after the first pull, repeat the operation two or three times. If the life raft still does not open, jump into the water and, keeping a hand on the container, pull the emergency line strongly. If the life raft still does not open, cut the container open with a knife and operate the opening device directly (by pulling the life line).

Differently from a life yacht, the life raft cannot self-propel to the shore, unless blown there by favourable winds. Oars are only useful for small manoeuvres.

- The life raft is fitted with interceptors and a floating anchor, for improving its stability and drift. The interceptors give stability to the raft. Keep the floating anchor into the water. The anchor prevents excessively rapid drifts.
- When the life raft is towed, weigh the floating anchor on board.

- With very high waves and strong wind there is the risk that the raft may overturn: shift the weight of persons on board towards the side tending to lift.
- If the life raft does capsize, roll it over and return on board. If the sea is rough, it is advisable to wear the life jackets all the time. If the raft deflates, inflate it again from time to time using the relevant inflating device provided with the raft.
- If air blows out of a hole, use one of the plugs stowed inside the repair kit.
- You can perform minor repairs, by using the glue provided with the kit. Clean the torn area and the repair pad, spread both with the glue. Hold the pad for thirty seconds, pressing from the centre outwards, in order to eliminate any air bubbles.
- Hold down for a little time and inflate again, after one hour.



**DANGER**

All persons on board must know the location of self-inflatable rafts storage and the correct use procedures.



**DANGER**

With very high waves and strong wind there is the risk that the raft may overturn: shift the weight of persons on board towards the side tending to lift. If the life raft in spite of all does capsize, roll it over and return on board.

### 3.2.2 Individual life jacket

The life jacket is an individual safety device, consisting of an orange jacket so that it is easily visible in water and resistant to the effects of sea water, hydrocarbons and low temperatures.

This kind of life jacket assures, by means of a suitable distribution of the floating material, the support of a body with the face out of water, apart from the position taken by the body when diving in the water. These life jackets must be worn correctly and be firmly tied by means of strong laces.

It is important to learn, particularly for children, how to float in water with the life jacket.

To avoid energy waste it is necessary to float by keeping legs and arms folded as far as possible and tight to the body to maintain the heat. The individual life jacket is equipped with an orange whistle, fastened to the jacket by means of a safety cord.

The whistle is particularly useful to indicate the wearer's position when the weather conditions do not allow sufficient visibility (bad weather, fog, etc.).

The individual life jacket has to be worn under following circumstances:

- When you navigate through sandbanks or tide reefs;
- At first sign of bad weather;
- When visibility is limited;
- When you navigate with rough sea;
- When you navigate alone;
- At any time with children below 10 years of age.





**CAUTION**

The yacht must be equipped with a number of individual life jackets equal to the number of persons present on board. All persons boarded must know the location of the life jackets, how to wear them, how to tie them properly to the body, and where the whistle is located.



**DANGER**

If you are to choose a life jacket for a child, take care about for the correct size and that smaller children do not slip out of them once in water. We recommend that all children wear an individual life jacket when they move on the yacht.



**CAUTION**

The life jackets must be handled with care so that they are able to save your lives whenever necessary.  
 Check that all the belts, braces and buckles are in good condition and firmly secured on a regular basis. Make sure that all the seams are steadfast and that any welded or glued part adheres perfectly.  
 Check that the reflecting strip, whistle and light are firmly secured and that the light battery has not yet expired.

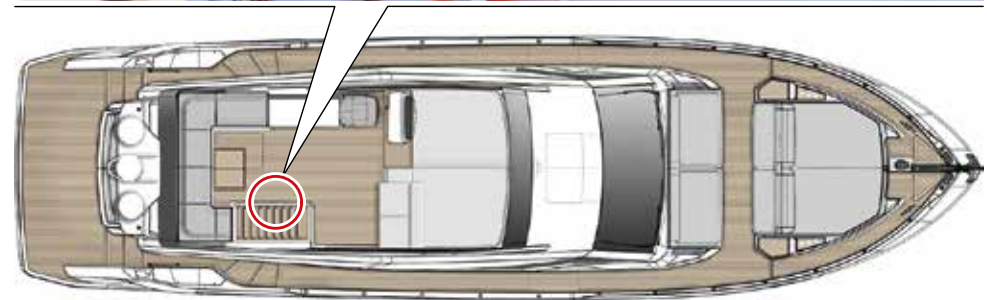
### 3.2.3 Life buoy

The life buoy is classified and resistant to sea water, to hydrocarbons, and to low temperatures; it is orange in order to be easily seen in water.

The life buoy (I) is equipped with a lifeline of 30 m and with an automatic light buoy.

The life line is not twistable and it is orange in order to be easily seen in water.

- At least once a month:
  - Check the fastening of the floating line;
  - Check the loading condition of the batteries of light buoy.
- At least once every 6 months check the status of the floating line.



**CAUTION**

All passengers must know the stowing place of life buoy.



**CAUTION**

The Captain must make sure that all passengers know how to use the life buoy:

- How and where to throw it;
- How to behave in case of “man overboard”.

### 3.2.4 Portable fire extinguishers

In order to supply an easy, ready and quick fire-fighting system on board of your ship, portable fire extinguishers have been set at disposal, designed to be carried manually, and in compliance with the rules in force.

The use of a fire extinguisher requires a certain familiarity with it, but some theoretical-practical rules can facilitate its handling:

- Make sure that the safety pin (I) against accidental discharge, has been removed;
- Always direct the extinguisher towards the bottom of the flame;
- Do not stand but try to bow as far as possible;
- Do not hit the fire from above;
- Shift the fan-shaped jet slowly from one side to the other of the flame;
- Act immediately before the temperature becomes too high;
- Always sail windward;
- If the material burnt is wood, paper or tissue, after the fire has been extinguished, pour on water to prevent any further spread of flames;
- Always act dressed, avoiding loose clothing or similar;
- Persons not engaged in extinguishing a fire must remain outside the fire area and, if necessary, disembark on a rescue device (dinghy, self-inflating life raft), which must be connected to the yacht with a rope to also embark those extinguishing the fire;
- If the fire is quite large, operators must wet their clothing with plenty of water;
- The engines must be turned immediately off and the fuel supply must be cut off;



#### **DANGER**

The person in charge of the yacht must make sure that all passengers know the locations and how to operate the fire extinguishers on board correctly.

- Isolated objects in flames must immediately be thrown overboard;
- All openings that can allow air to penetrate through the flames must be closed;
- After using the extinguisher to fight fire in closed spaces, ventilate the space carefully, prior to entry, and remove powder deposits.



**WARNING**

We advise regularly checking the charge status (visual check of pressure gauge and weight) and also its overhauling, according to the rules in force in the country whose flag the yacht flies.

**DANGER**

Pay particular attention during the cleaning and cooling operation because the components are still hot and can generate burns or scalds.

Fire extinguishers were placed in positions visible and easy to access, and the location is marked by special plates.

The extinguisher should be kept in a good condition and the charge indicator, located on the pressure gauge, must always be positioned in the green field.

Keep the extinguishers in a vertical position.

After the use of a dry-chemical fire extinguisher, carefully clean the parts that came in contact with the powder because it is highly corrosive.

**NOTE**

For further information on use and maintenance of the different systems and equipment, please refer to the manufacturer's manual.

**Portable fire-extinguishers maintenance:**

Component	Maintenance	Notes and precautions
Portable fire extinguishers	Checks and tests	<p>Check the state of charge of each fire extinguisher at least once every 12 months, and in any case before each journey at sea, by means of the installed pressure gauge. The fire extinguisher is correctly charged when the weight value is as stated on the fire extinguisher's tag, and the charge indicator on the pressure gauge is in the green area.</p> <p>If they are found to be discharged or insufficiently charged, or at least every 10 years, have qualified technicians:</p> <ul style="list-style-type: none"> <li>• Check the condition of the container (cylinder);</li> <li>• Refill the extinguishing medium;</li> <li>• Carry out a hydrostatic test.</li> </ul> <p>Have fire extinguishers recharged even after partial use.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;"><b>MAINTENANCE</b></p> <p>At least every 12 months, and, in any case, before each journey to sea, check the state of charge of the fire extinguisher.</p> <p>At least every 10 years, and in any case before each journey to sea, check the external state of the fire extinguisher.</p> <p>At least every 6 months check the fastening of the fire extinguisher.</p> </div>

### 3.2.5 Signalling rockets

Pleasure yachts are obligated to carry 4 manual rockets with red light and 4 manual orange smoke signals as required.

Always verify the legislation of the Country in whose waters the yacht is going to navigate.

- The signalling rockets have a limited lifetime; it is therefore necessary to check their expiry date and eventually to replace them.
- The floating smoke signals, visible up to 4 km, have to be used with the daylight, to indicate the correct position.
- The red light rockets, visible up to 10 km, are designed for night use, but they can also be seen during the day.
- Before using the signalling rockets, always wait for the arrival of an air plane or to see persons on the shore or on other yachts.
- Store the signalling rockets away from flammable liquids and from other fuels.
- As the content of the signalling rockets absorbs the moisture, make sure to have them located in a dry and accessible place.
- All persons boarded must know the place of the signalling rockets and the method of use.
- Carefully follow the activation instruction for all signalling rockets.



#### **DANGER**

Keep the signalling rockets away from heat sources, flammable liquids or naked flames, and out of the reach of children.



#### **DANGER**

Once the signalling rocket has been lit, never direct it towards persons, there is a risk of burns and scalds.



#### **WARNING**

The signalling rockets have a limited lifetime, indicated on their containers. Once expired, contact the rockets suppliers which offer a disposal service. Do not light them unless necessary, because they can activate the Emergency Services.

### 3.2.6 First aid kit

The first aid box must be kept on board of class A yachts qualified for navigation“ with no limits from the coast”.

The container must be rigid, floating and with watertight closure.



#### ENVIRONMENT

It is forbidden to discard medicines at sea, even if expired. Treat medicines as special waste and therefore in accordance with the disposal procedures envisaged by the Country in which you are staying/ transiting.



#### DANGER

Remember to check the expiry date and availability of the products contained in the first aid box at regular intervals.

Remember to store those medicines, which need to be kept in cool places in the fridge.

Inform all passengers of this.

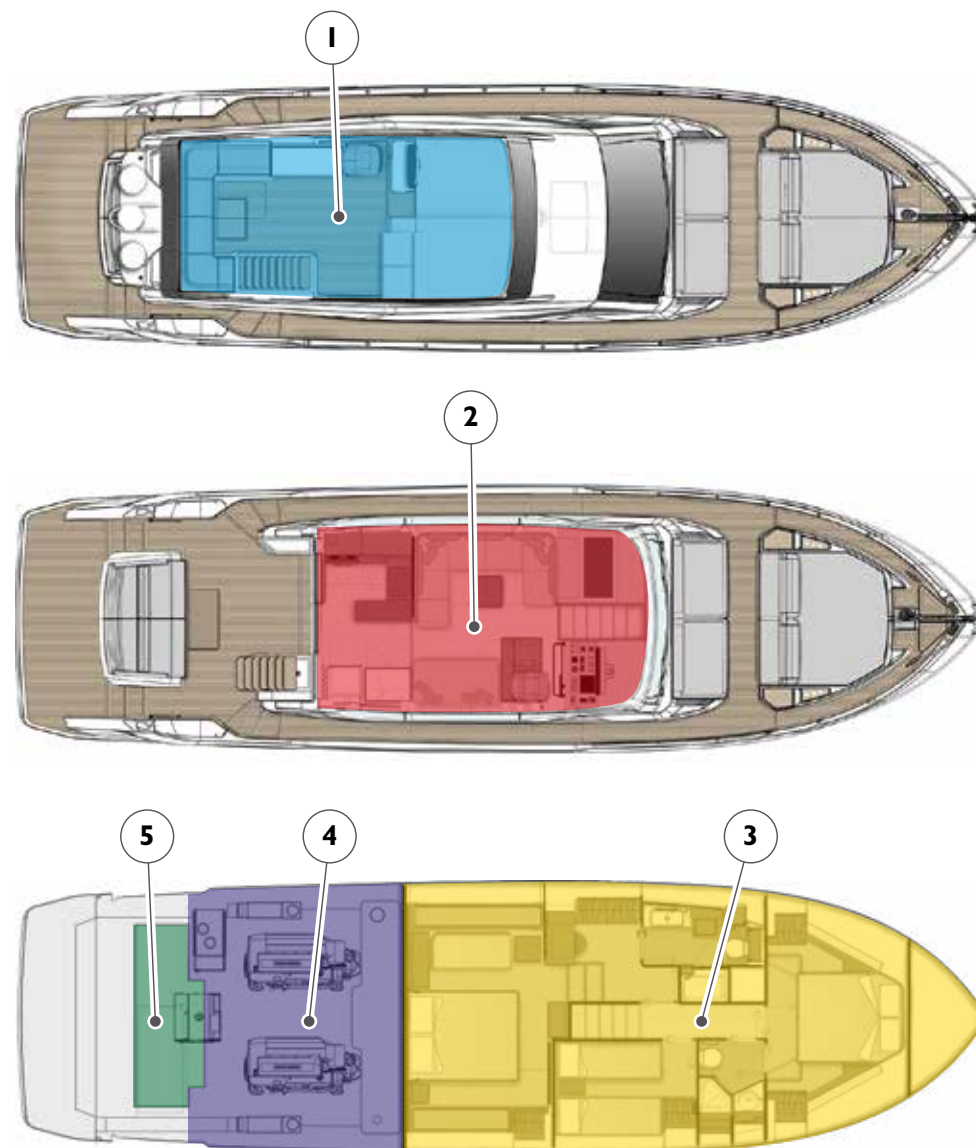
Keep the first aid box in a place free from moisture and away from heat sources, easily accessible, quickly reachable in case of need and far from the reach of children.

### 3.3 YACHT'S AREAS AND ESCAPE ROUTES

#### 3.3.1 Yacht's areas

The diagram below, represents the yacht's general layouts, subdivided according to the areas they include:

- 1. Flying bridge
- 2. Salon, galley, main helm station
- 3. Lower deck
- 4. Engine room
- 5. Crew cabin



### 3.3.2 Escape routes

In order to deal with the different emergency situations that could determine the abandonment of the yacht (fire, collision with sinking hazard etc..) in the quickest and safest way, the rules in force require an “escape plan” informing about the safest and most secure, as well as the quickest, paths (from any yacht area) for taking shelter and reaching the “muster stations”, outdoors, from which it will be easier to leave the yacht.



#### **DANGER**

The various yacht's areas have more than one escape route. It is therefore necessary, according to the nature and position of the danger or fire source, to choose very carefully the safest and most suitable escape route.



#### **WARNING**

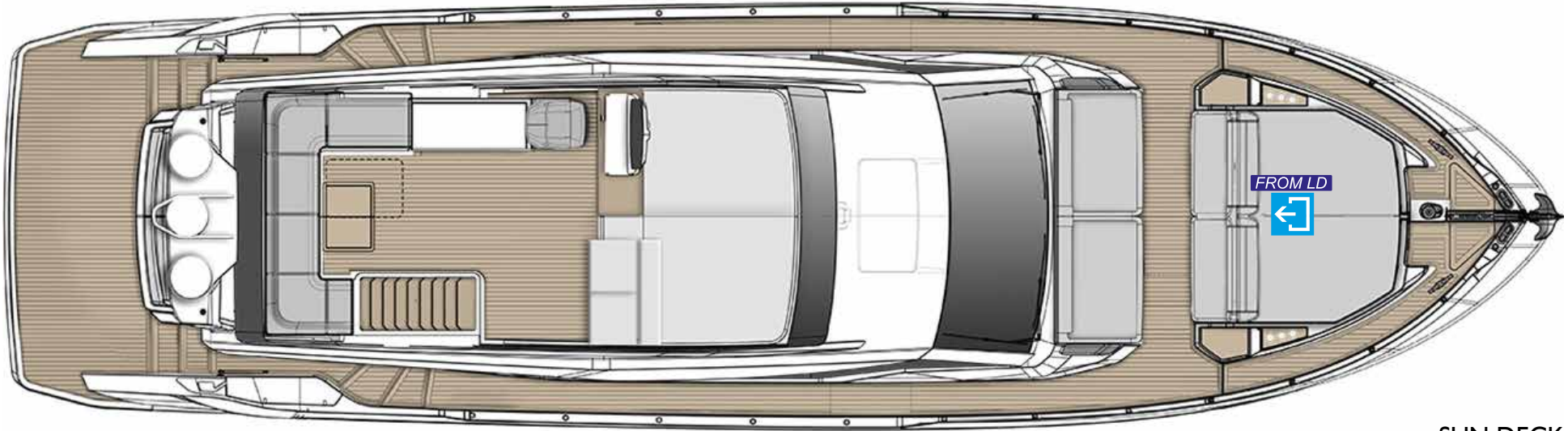
The ladders must be carefully used during navigation.



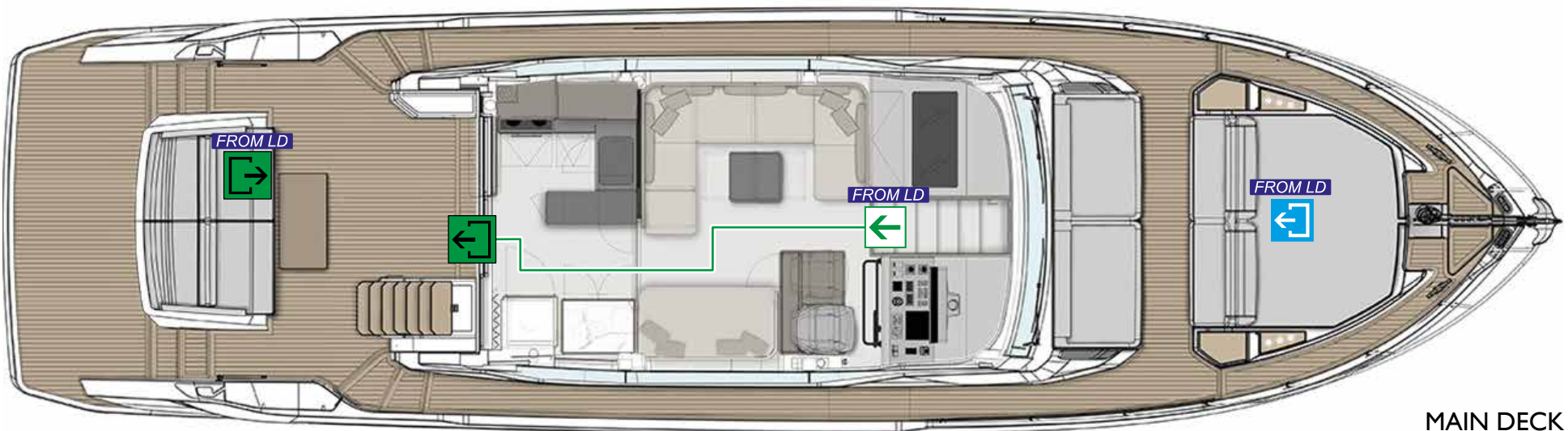
#### **WARNING**

During navigation it is necessary to unlock the safety retainer of the bow skylight.

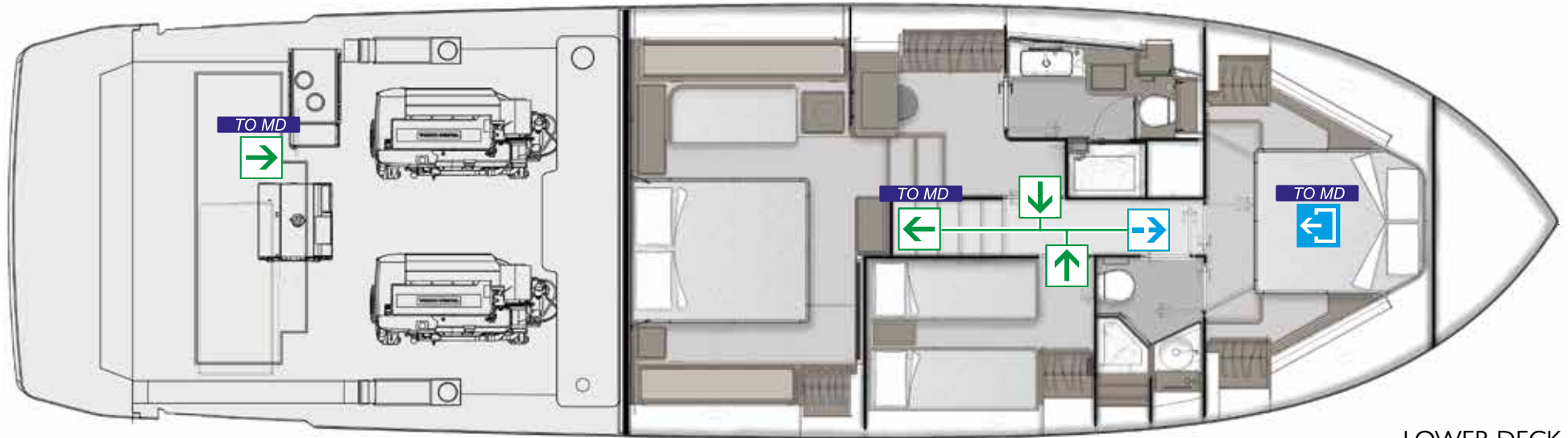




SUN DECK



MAIN DECK



LOWER DECK

ICON	DESCRIPTION
	Primary escape route
	Secondary escape route
	Primary mean of escape
	Secondary mean of escape

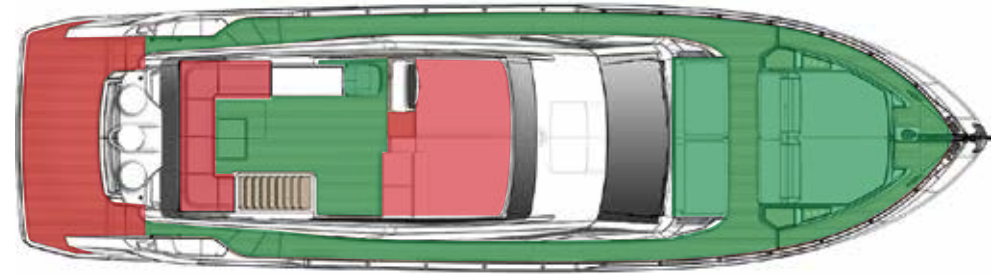
### 3.3.3 Forbidden areas and working deck

**Forbidden area**

Areas that cannot be used during navigation.

**Free-working deck**

During navigation, in this area highlighted in green, it is possible to stop and walk; it is not possible to walk and stand on the seats of the cockpit and on those of the fly.



**WARNING**

Control and verification of compliance with safety requirements is a responsibility of the yacht Captain.



**CAUTION**

All the areas where there is polished fibreglass are no-step areas.



**DANGER**

On board the yacht, some areas are “dangerous”, and need plenty of care, and possibly require wearing protective equipment, in order to safeguard the integrity of people on board.

During navigation, the risks relating to any hazardous area increase significantly; we recommend, therefore, scrupulously observing the safety rules indicated in this manual.

Warning label for prohibited areas




**DANGER**

Unidentified external areas of the yacht: access to these areas is **FORBIDDEN**. Only professional personnel, under their own responsibility, can gain access to them when the yacht is moored in a safe harbour or in a lay-up shipyard if they are wearing shoes with non-slip sole and belt/safety equipment tied to a safe point of the yacht to prevent falling.

The areas are following:

- **Engine room:** area with a high level of noise, presence of moving components, burns hazard, tripping and falling hazard. The access to the engine room is exclusively allowed to trained and expert crew, prepared for the risks and equipped with proper safety devices.
- **Flying bridge:** outer area with protections against falls with reduced height and extension. Therefore be extremely careful when leaning out during the manoeuvres of the yacht and during navigation, especially with rough sea.
- **Stern platform:** outer area non protected by rails against the fall at sea. During navigation access to this area is forbidden. Accessing and staying in this area is allowed only when the yacht is idle and with the engines shut off.
- **Exterior superstructure:** in these areas there are no anchor points and the surfaces are smooth; Therefore, there are significant risks of falling. Access to these areas should be permitted only for authorized persons provided with shoes (or boots) with non-slip soles and possibly tied to a rope.
- In case of a fall overboard, the following rescue devices can be used:
  - Individual life jackets;
  - Life buoy.

The easiest way to get on board is from the stern platform by means of the swim ladder, which is stowed inside the stern structure when not in use.


**CAUTION**

It is the responsibility of the captain, whenever the yacht is in the condition of being **NOT OPERATING** (ie not in navigation) **BUT PRESIDED**, guaranteeing the ability to return on board by taking out the swim ladder.


**CAUTION**

Responsibility of the conductor, whenever the yacht is in the condition of being **NOT OPERATING** (ie not in navigation) **BUT PRESIDED**, ensure the possibility of return on board by using the tender provided appropriately prepared.

Your yacht is equipped with hooking points located along the yacht's handrails (ISO 15085).

The hooking points allow you to move safely on deck during emergency situations (e.g. rough seas). You can hook yourself onto the yacht's hooking points using a safety harness and avoid possible falls overboard.

**Hooking points:**



### 3.4 ALARM DEVICES (OPTICAL AND ACOUSTICAL)

The alarm devices include a smoke detection unit, (1) a flashing signal unit with alarm siren (3).

These are activated in the event of smoke being detected by detection sensors located in the engine room and on-board spaces.

#### MAINTENANCE

At least every month carry out an operation test.

There is another alarm device type siren (2) to report high water in the bilge.

#### MAINTENANCE

At least once a week check the operation of the floating switches and of the siren. At least once a month clean the floating switches.

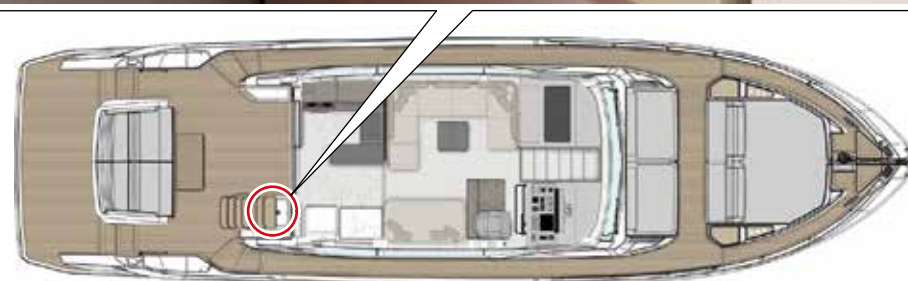
#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



#### CAUTION

To prevent false alarms, make sure that the system is isolated and disabled before performing maintenance and cleaning of the smoke detectors. Once the periodic maintenance of all detectors in food and rehabilitate the system.



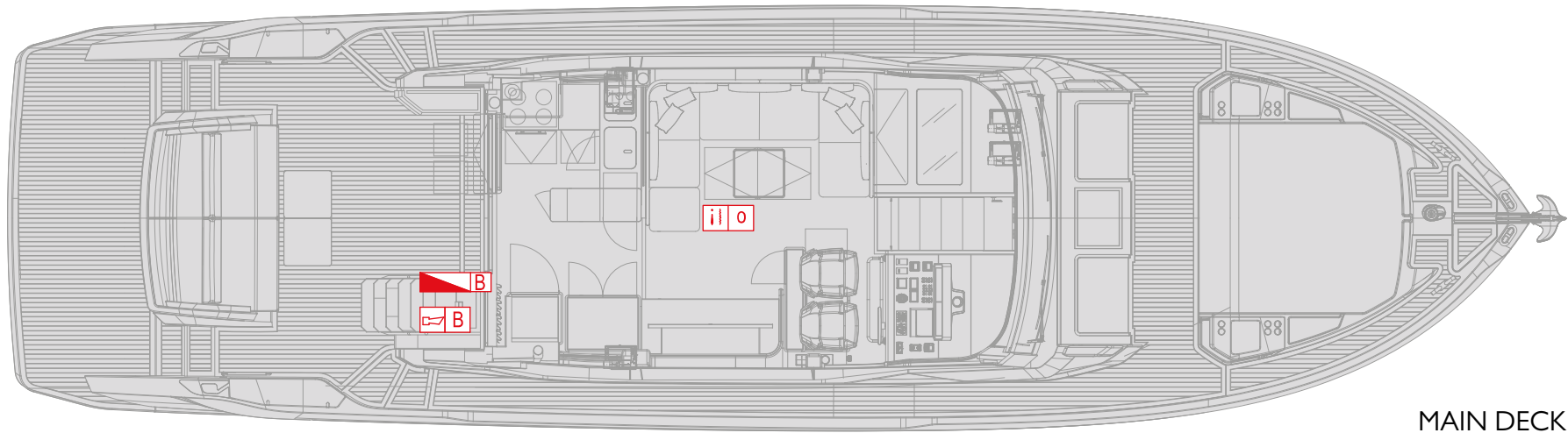
**CAUTION**

The control unit has been configured and tested by FERRETTI YACHTS. Do not modify the programming commands in any way. If necessary, consult the user manual to restore correct operation, or better still, consult FERRETTI YACHTS assistance.

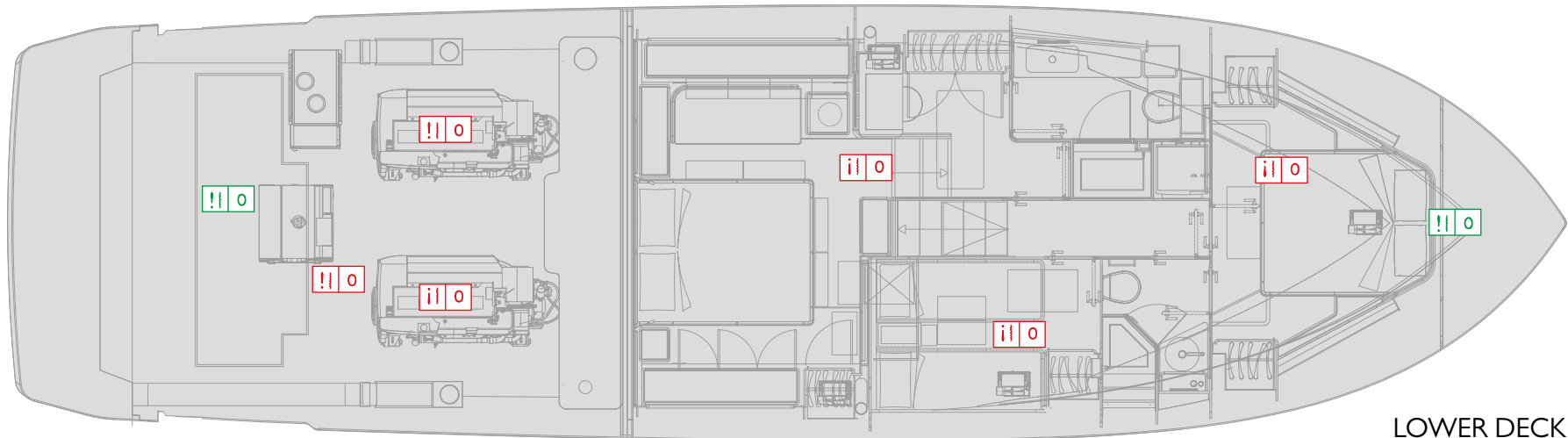
**CAUTION**

In case the accumulator of the smoke detection unit is discharged, the siren starts automatically.

Smoke detection system:



MAIN DECK



LOWER DECK

ICON	DESCRIPTION
	Control unit with batteries
	Self-powered alarm

ICON	DESCRIPTION
	Smoke detector
	Smoke detector (optional)

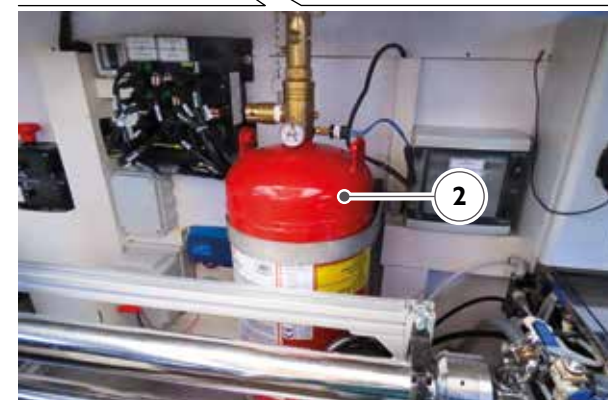
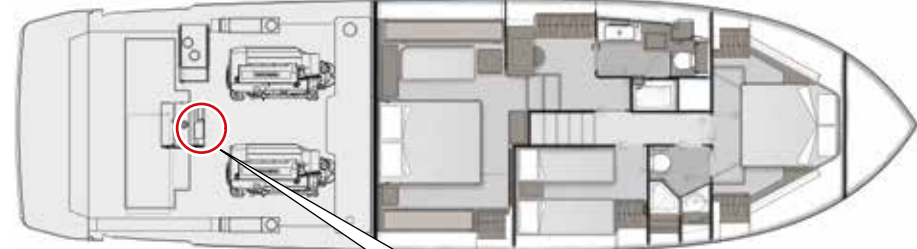
### 3.5 FIRE-FIGHTING SYSTEM

The engine room is protected by its own system or fixed fire-activated automatically or manually.

The cylinder (2) is located on the aft bulkhead in the engine room with the nozzles positioned above the engines.

The discharge is activated automatically via a glass via filled with liquid, to temperature in the engine room, it expands to cause breakage of bulb and the activation of the discharge of the extinguisher. The ampoule with a pressure gauge is mounted on the same cylinder.

The discharge can also be activated manually by the tie rod (1) placed inside a locker in the aft cockpit.



**CAUTION**

During maintenance Always exercise caution to not inadvertently break the ampoule to prevent accidental discharge of the cylinder.



**CAUTION**

Being the ampoule calibrated to the temperature of 68°C (154,4°F) is detected in the case of a fire, it is absolutely necessary to manually operate the system so as to limit to a minimum the damage resulting.



**CAUTION**

Before starting navigation, it is mandatory to check that the cylinder safety pin has been removed.



**DANGER**

The automatic fire-fighting system does not block the possible and the escape of oil, only suitable tie-rods are able to lock it.



**DANGER**

The automatic fire-fighting system, which only covers part of the engine room, it may not activate in certain fire conditions, and this IT IS ALWAYS COMPULSORY TO MANUALLY OPERATE THE FIRE FIGHTING CONTROL TIE ROD.



**WARNING**

When working with the fire-fighting system, power down the extractor engine room and close the vents.

At the end of the intervention, before entering the room for inspection, ventilate the room for a long time without running the extractor. Thoroughly clean the debris deposited in order to avoid corrosion.

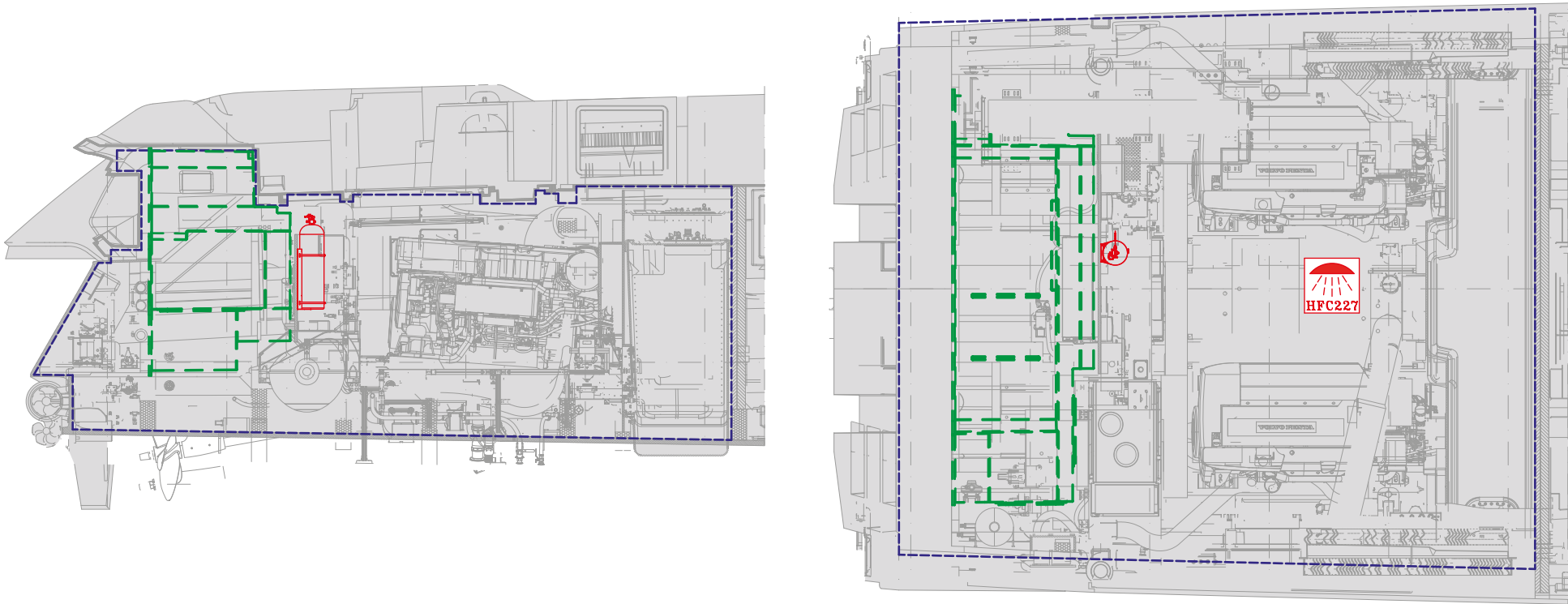


**DANGER**

Do not store flammable materials such as gas cylinders, fuel containers, spray cans, etc.. in the engine room or near heat sources.

These objects must be stored in ventilated rooms and, if possible, on the outside.

Fixed fire-fighting system diagram:



ICON	DESCRIPTION
	Space protected by HFC-227
	Acustical and flash alarm

### 3.5.1 Fire-fighting system control tie rods

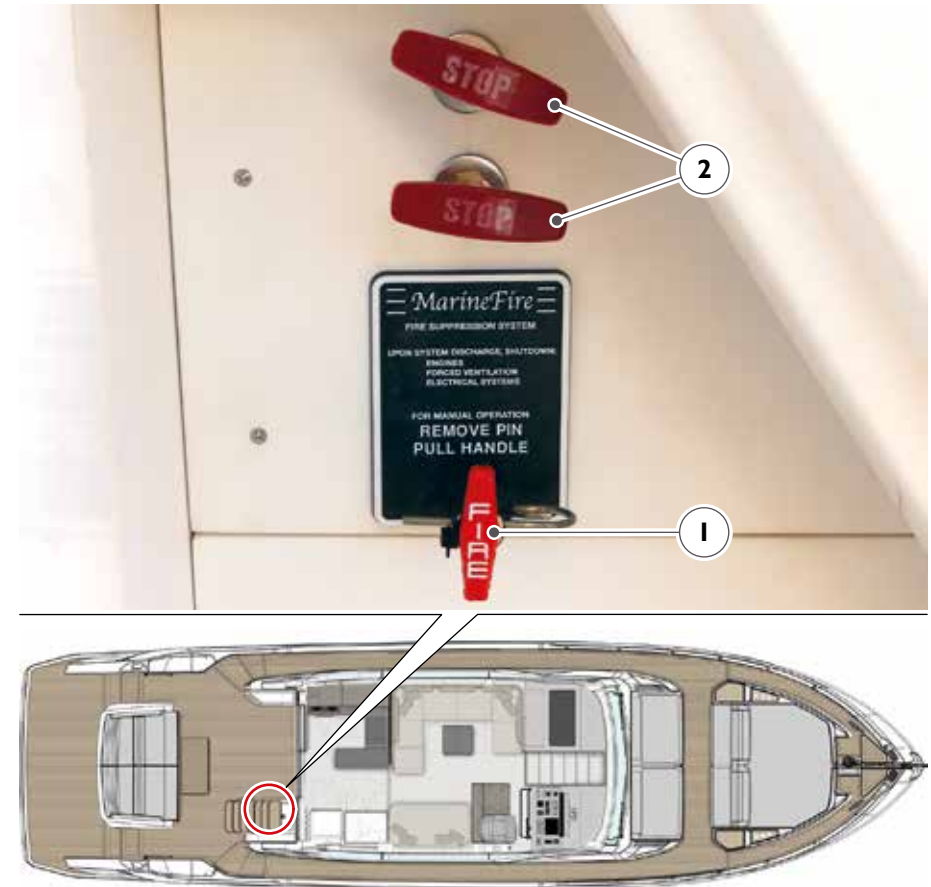
The tie rods are designed to control, through a system of cables the various devices described below:

1. Automatic fire extinguisher system  
Activate the fire extinguisher placed in the engine room.
2. Interception fuel engines  
Closes the fuel supply valves of the propulsion and generator engines.



#### CAUTION

Keeping the system of rods control levers fire periodically performing maintenance and functional checks (as per regulations). At least every three months to verify the operation and at least one time a year to make the greasing of the cables and connections.



### 3.5.2 Operation of the fire-fighting system

In case of fire in the engine room, do the following:

- Stop both engines through the stop buttons on the dashboard of the deck;
- Open all buttons battery switches selecting uses and all breakers uses.

From the fire panel in the aft cockpit, carry out the following steps:

- Break the plexiglass panel;
- Intercept the fuel supply of the engines and the generator through the related tie rods (2);
- Pull the extinguisher discharge control rod (1) (the extinguisher may have already been activated automatically, but you should still operate the rod). For the remote tie rod to activate the discharge, the cylinder safety pin must have been previously removed;
- If you are navigation make the distress call “Mayday”; if you are in port alert the manager of the port, the yachts close and evacuate all unnecessary personnel.



**DANGER**

Before activating the engine room fire fighting system, make sure that no people are inside the room. Once checked that the fire ism totally extinguished, before entering the room, ventilate it for a long time by opening the hatches, and remove any powder deposits carefully.



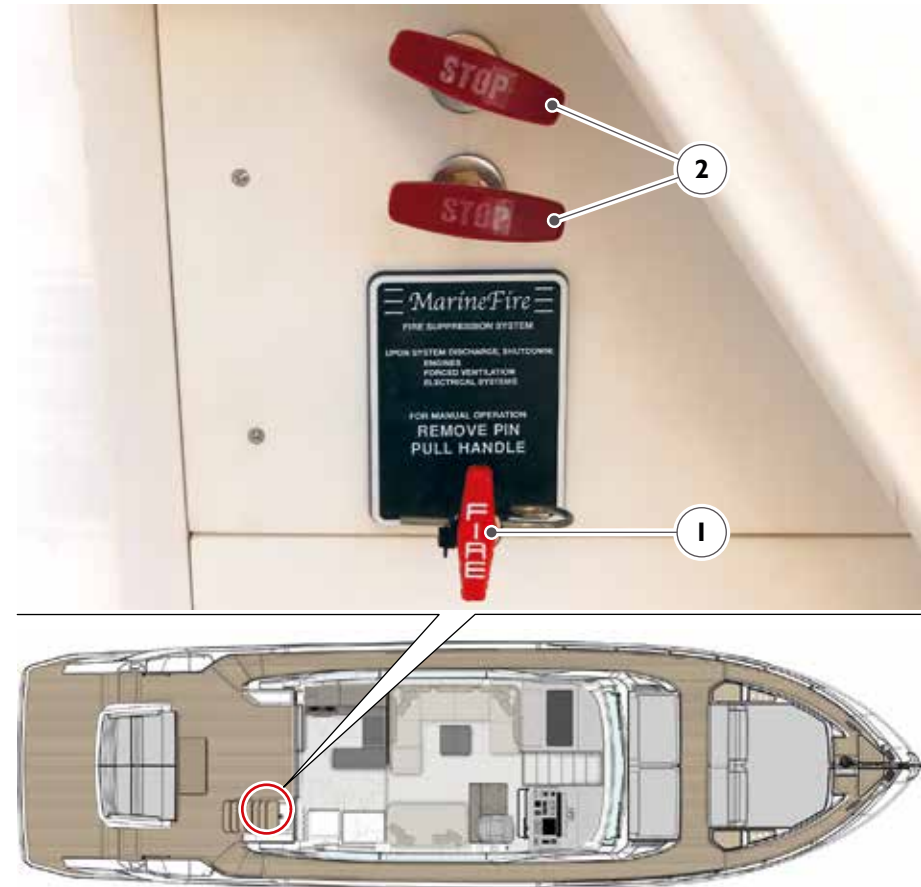
**WARNING**

Do not open the engine room access hatch until you are absolutely sure that the fire has been extinguished.



**DANGER**

The fire-fighting cylinder has a safety pin. Check that the above mentioned pin has actually been removed. If this is not the case, should fire spread out, the cylinder would be jammed and would not discharge, with consequent possibility of heavy damages to your yacht up to its sinking.





**DANGER**

The presence of the safety pin inserted prevents the activation of the manual discharge.

### 3.5.3 Restoring the fire-fighting system in the engine room

If the fire-fighting system of the engine room has been activated and a fire has been extinguished, it is necessary to restore the essential conditions for navigation, in order to quickly reach the nearest harbour in which to carry out the due checks.

To resume navigation, the ventilation system of the engine room and the fuel system of the propulsion engines must be brought back to normal working condition.



**DANGER**

Before entering the engine room, ventilate the room properly, to avoid risks due to high temperatures and noxious gases suspended in the air.



**DANGER**

These operations have to be carried out directly from the engine room; therefore before carrying out any operation, read carefully the safety instruction reported in the present Manual.



**DANGER**

To reset the fire-fighting system, with the aim of resuming navigation is a recommended operation only in case the fire source has not produced damages to the yacht's structure or to important devices of the same.  
In such a case, or should you have any doubt, it is essential, to wait for rescue without resuming navigation.

**WARNING**

Remember that, as a result of the fire-fighting system reset, the extinguisher will be discharged and will be inefficient in case of another fire break out. Therefore, once returned to the harbour, you must have the fire extinguishers immediately recharged by authorised personnel.

In order to allow the starting of the propulsion engines, it is necessary to activate manually the engines supply valves, placed on the fuel tank in the engine room.

For this purpose, it is necessary to open the fuel delivery valves, previously closed by the fire-fighting handle for fuel cut-off, by turning them anticlockwise.

The fuel cut-off valves are not to be left in intermediate positions but they must be completely open, when the red handle is parallel to the longitudinal axis of the piping.

**Checks and tests**

To make sure that the fire extinguisher is operational, the pressure gauge must be in the green field.

**WARNING**

Accidental discharge during handling or installation may cause serious injury. Re-insert the safety pin fitted by the Manufacturer on the sensing/ detecting valve of the cylinder up to complete and controlled installation.  
Protect eyes during the installation or maintenance.

**WARNING**

During maintenance operations, pay attention not to break the flask located on the cylinder, because, even if the safety pin is inserted, if the flask breaks, the fire-fighting system activates.

**DANGER**

Once you completed the maintenance and / or installation remove the safety pin of the valve of the extinguisher.

### 3.5.4 General information to prevent fire

Regular and correct maintenance of the systems and a cautious behaviour of all passengers are indispensable measures to prevent any risk of fire.

Over 90% of the probabilities of fighting a fire successfully, depends on the ability to prevent and avoid any condition that may help a fire to spread.

The small remaining percentage depends on the crew's reaction ability, and most of all, their rapidity to enter into action.

Nearly all fires, if detected early, can be extinguished easily.

For these reasons, it is necessary to carry out preventive surveys on a regular basis and identify all possible fire sources, and in particular:

- Check the proper operation of all main equipment/systems;
- Visit all compartments and in particular the engine room frequently;
- If a system does not work correctly, identify the failure and take the appropriate corrective actions;
- Operate all systems and equipment as specified.

If a fire is detected, identify and remove the cause, if possible, (e.g. in case of a short-circuit, cut-off the electrical system), extinguish the fire promptly and be vigilant to make sure that the fire does not break out again.



#### WARNING

Never use water jets to extinguish fires on electric or electronic equipment.



#### CAUTION

The ability to operate the fire extinguishers properly can ensure the success of the operation.

It is vital that the fire fighting operations are performed by people competent in this type of emergencies.

It is in any case necessary to be aware of the minimum fire-prevention and fire-fighting rules; the first defence is to prevent fires before they start spreading.

The following table contains the classification of the fire types:

**Comparison between fire classes**

American	Europe/Australia/Asia	Fuel/Heat source
Class A	Class A	Ordinary fuels
Class B	Class B	Flammable liquids
	Class C	Flammable gases
Class C	Class E	Electric appliances
Class D	Class D	Combustible metals
Class K	Class F	Cooking oil or fat

It is very important to use the correct extinguishing agent according to each fire class; normally, water can be used only for class A fires, together with chemical extinguishing agents (portable or fixed devices).

### 3.6 SAFETY PLATES

The plates applied on the yacht are used to point out special risks: each plate is located on the part of the yacht which can be a source of risk.

Before working with or on this part of the yacht, read the safety warning carefully.

Keep all the plates clean and readable, replace them if missing or damaged. This page shows the plates with their application points.

The fire extinguisher plate is located adjacent to each fire extinguisher (fire-fighting equipment layout).



#### CAUTION

It is forbidden to remove the plates attached to the yacht.

### 3.7 MANDATORY SAFETY EQUIPMENT

In order to ensure the maintenance of the intrinsic safety conditions of the yacht, the Owner must keep the yacht in good operational conditions (as regards to the hull, and the propulsion, electrical and fire-fighting systems), and also to provide for the replacement of any system, rescue and safety equipment showing signs of wear or deficiencies capable of impairing their efficiency.

In addition to the equipment provided by FERRETTI YACHTS, the Owner is responsible for providing the yacht with any further system and safety/ marine equipment required by the rules in force in the nation where the yacht is used, according to weather and sea conditions and to the distance from safe harbours along the intended course.



#### DANGER

Rescue equipment must be arranged so as that when it is launched there are no obstacles to free floating and must be equipped with proper fitting allowing for quick release from the yacht when at sea.

The Owner is responsible for equipping the yacht with some of the equipment listed.



#### CAUTION

Refer to the local Port Authorities for instructions and changes of the Safety Rules in force in the country where you are.

### 3.8 ITEMS USEFUL TO HAVE ON BOARD

In addition to the standard safety and marine equipment, required by the existing regulations for pleasure yachts, we recommend keeping on board a number of items (not included in the standard equipment), that can be useful when operating the yacht; most probably, these items will not be used frequently, but may be determining for the navigation safety and continuity, in case of failures:

- 2 lines, Ø 25/30 mm, 30 m long
- 2 lines, Ø 20 mm, 20 m long
- 1 line, Ø 25/30 mm, 50 m long
- 1 line, Ø 5 mm, 100 m long
- 1 spare anchor 30 kg
- 2 plastic buckets
- 2 synthetic sponges
- 2 empty 25 l cans
- 2 funnels of different size, complete with 50 cm rubber tube
- 15 kg of engine oil
- 10 kg of gear box oil
- 5 kg of hydraulic oil for the steering system
- 5 kg of anti-freeze liquid
- 10 kg of oil for the electro-hydraulic system
- 2 engine room lights
- Insulating tape
- Stainless steel pipe clamps of various size
- 1 underwater light
- 2 pairs of heavy duty rubber gloves
- 3 kg of white rags
- 1 CRC spray can
- 1 Vaseline spray can
- 1 engine spare parts kit
- 1 generator spare parts kit
- 1 watermaker spare parts kit
- Battery for smoke detection system
- Signal light battery
- Noise-proof earphones

### 3.9 SCHEDULE

Minimum rescue facilities and safety equipment to be kept on board of yachts and pleasure yachts with no limit of distance from the shore and with expiry date.

	2027	2028	2029	2030	2031	2032	2033	2034	2035
Self-inflatable life raft (for all persons on board)									
Individual life buoy (for each person on board)									
Life jacket with rope (floating type)									
Light buoy									
Smoke buoy									
Red light hand fires									
Red signal rockets with parachute									
Compass and deviation schedules									
Nautical charts									
First aid kit									
RTF inspection									
Property tax									
Insurance									
License (pilot)									
Portable fire extinguishers									
Fixed fire extinguisher in the engine room									
E.p.i.r.b.									



FERRETTIYACHTS

4



## DESCRIPTION OF THE YACHT

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1. FOREWORD

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2. SAFETY RULES

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3. SAFETY DEVICES AND EQUIPMENT

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**4. DESCRIPTION OF THE YACHT**

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5. HELM STATIONS

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6. WATER SYSTEMS

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7. ELECTRIC SYSTEM

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8. PROPULSION SYSTEMS

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9. STEERING SYSTEMS

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10. AIR CONDITIONING SYSTEM

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11. AUXILIARY EQUIPMENT ON BOARD

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12. INFORMATION FOR USE

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13. HULL AND FURNITURE MAINTENANCE

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14. TROUBLESHOOTING

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### 4.1 MAIN DIMENSIONS AND CHARACTERISTIC DATA OF THE YACHT



(Loa) Overall length	18,24 m	59 ft 10 in
(Lh) Hull length	16,90 m	55 ft 5 in
(Lwl) Waterline length (yacht fully laden)	14,50 m	47 ft 7 in
Maximum beam	5,00 m	16 ft 5 in
Hmax = Overall height from keel	5,82 m (Hard top: 7,58 m)	19 ft 1 in (Hard top: 24 ft 11 in)
Pulpit + transom	1,34 m	4 ft 5 in
Tmax = Depth under propellers (yacht fully laden)	1,50 m	4 ft 11 in
Displacement unladen	31 ton	68343 lbs
Displacement laden	37 ton	81571 lbs

<b>Features</b>					
Construction materials		Multiaxial fiberglass			
Hull type		Warped hull with spray rails and aft deadrise 12°			
Propulsion	Model	VOLVO PENTA D13		BAUDOUIN 6F2I	
	Configuration	6 cylinder in-line			
	Power	Standard	Optional 1	Optional 2	
		662 kW 900 mhp	735 kW 1000 mhp	735 kW	1000 mhp
		rpm	2300 rpm	2400 rpm	2300 rpm
	Dry weight (kg)	1560 kg		3639 lb	
Fuel tank capacity	Approx.	3250 l		859 US gal	
Fresh water tank capacity	Approx.	700 l		185 US gal	
Black water tank capacity	Approx.	170 l		45 US gal	
Gray water tank capacity	Approx.	120 l		32 US gal	
Total weight of the liquid (full tanks)	Kg / lb	3690 kg		8135 lb	
On board electric power supply	(V)	Standard		Optional	
		230V single-phase from power generator (7 kW)		230V single-phase from power generator (21,5 kW)	
		24 V from batteries			
Bilge pump	Main intake (engine room) (n)				
	Rudder locking suction (n)				
	Indoor access stairs area suction (n)				


**CAUTION**

FERRETTI YACHTS yachts are designed to obtain a correct transversal trim with full optional equipment, as well as spare propellers and shafts.

If the yacht is not provided with full optional and with spare propellers and shafts, some weights are inserted to correct the transversal trim.

The above-mentioned weights can be removed or displaced as soon as the yacht is provided with a new equipment.

**NOTE**

The technical specifications and the performances indicated are merely indicative, do not constitute an offer with the value of a contract in any way, and are referred to standard models of the yachts built by the Shipyard in the European version. The only technical indications or descriptions with contract value for the purchaser are those relevant to the specific yacht purchased and contained in the sale documents.

## 4.2 GENERAL ARRANGEMENTS

This chapter contains a general description of the yacht and is supported by a set of illustrations, thanks to which it is possible to easily locate the main areas and the various devices.

Advice and information on the correct use of the various instruments are also given.

The structure of the yacht has been divided as follows:

- Sun deck
- Aerials and navigation lights
- Main deck - exterior
- Main deck - interior
- Lower deck
- Engine room

The yacht is provided with both electronic and mechanical devices and instruments; some of these are provided with their own user's manuals.

The information contained therein are an integral part of this Owner's Manual.

### 4.2.1 Keys of the yacht

With the yacht all the keys are delivered, they have different handles and each one of them is supplied in two or three copies.

The keys can be recognized by a code number printed on them. Rewrite the code into a list if you need another copy.

The keys are:

- Engine keys:
  - 2 copies to start the starboard engine;
  - 2 copies to start the port engine.
- Keys for salon entry (salon door): 3 copies;
- Keys for cabs access (owner, guests, VIP): 3 copies;
- Keys of the lockers upright fly cockpit: 2 copies;
- Keys for crew area: 3 copies.

The other locks of the yacht are universal; the same key opens all locks.

The universal key consists in a female 6x6 mm square connection, and a 10 mm cylindrical end to be fitted into the keyhole.

The key always opens a door even if locked from inside, unless the key is not still inserted in the keyhole.



#### **CAUTION**

For the safety of the persons on board, the Captain should have an identifiable copy of the keys on board for any occasion.

Always keep a copy of the keys on your yacht and always contact FERRETTI in case of deteriorated or altered locks.

In addition to the various keys, the yacht is equipped with a remote control ensuring remote handling of the gangway.

The receiver is installed in the aft transom, whose function is to pick up the signal sent by the remote control and transmit it to the hydraulic control unit.

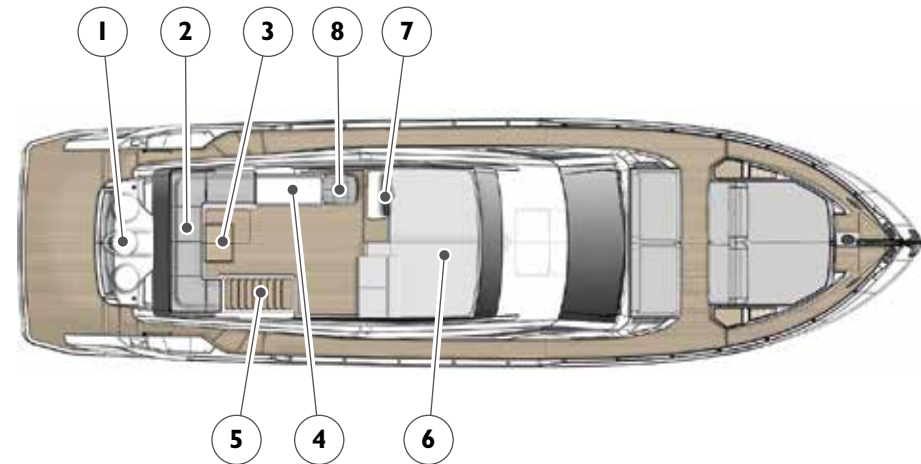


**CAUTION**

Although easy to manoeuvre, the hydraulic gangway might cause damage to people and property. It should be used by people with enough experience.

### 4.3 SUN DECK

1. Aerials
2. Sofa with storage
3. Table
4. Services furniture
5. Access from the cockpit
6. Sundeck with cushions
7. Helm station
8. Pilot's seat



### 4.3.1 Access to the sun deck

The sun deck can be accessed from the cockpit via the stairs.

On the sun deck, there is a sofa with lockers underneath and with removable cushions secured to the structure by means of snap buttons.

In front of the sofa is a table which makes the environment comfortable.

The sundeck area is completely covered with removable and washable cushions.

The service unit includes the refrigerator and the sink fed with fresh water.

A gas spring supports the opening / closing of the upper floor of the mobile services.

The large helm station features all the instruments on board.

The dashboard is equipped with a comfortable seat that allows a good view even during navigation.



#### **CAUTION**

Never use alcohol or acetone to clean parts plexiglass; They could develop cracks inside the piece itself.

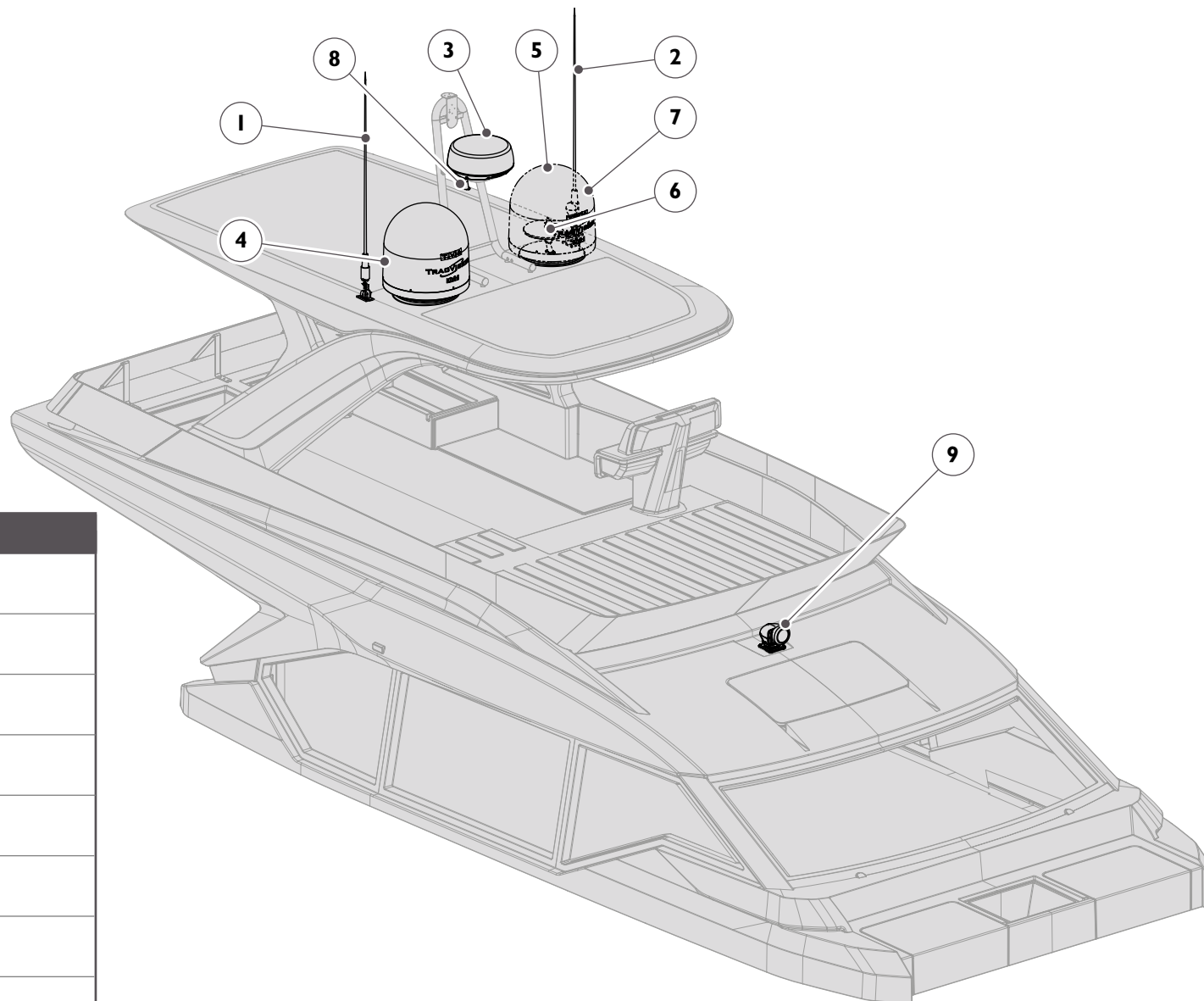


#### **CAUTION**

Do not close the door when the grid / plate is still hot.

## 4.4 AERIALS, NAVIGATION LIGHTS AND DAYLIGHT SIGNALS

### 4.4.1 Aerials



ICON	DESCRIPTION
①	VHF antenna
②	AIS antenna (optional)
③	Radar (optional)
④	SAT antenna (optional)
⑤	SAT dome (optional)
⑥	TV antenna
⑦	GPS antenna (optional)
⑧	X-AID antenna (optional)
⑨	Searchlight (optional)

## 4.4.2 Navigation lights and daylight signals:

### Mast head light (white)

Visibility range 225°.

Shown by every engine-driven yacht.

### Side lights or navigation lights (red port, green starboard)

Visibility range 112° 30' each.

Shown by any moving yacht and caused by any reason.

### Aft light (white)

Said also stern light, visibility range 135°.

Shown by any moving yacht and caused by any reason.

### Anchor riding light (white)

Visibility range 360°, can be seen from any point of the horizon.

Seen from every anchored or under navigation yacht, or in specific circumstances.

The rules relevant to the navigation lights, shapes and sound signals must be observed from sunset to dawn and during this period no other lights must be visible except the lights that cannot be exchanged for those specified in this manual.

Although the lighting system is preset by the Manufacturers, the Owner/ Captain has the responsibility for the observance of the local rules.

Please note that the local and international rules relevant to lighting can slightly vary, we suggest therefore to gather information about the local rules of your area. Night navigation requires more precaution.

All rules are applicable but apart from the right of course, it is advisable to slow down and to keep the proper distance from other yachts.

It is a good rule to remember that bright lights reduce visibility at night.

### MAINTENANCE

At least once a week check the operation of the navigation lights.

At least once a week carry out accurate cleaning of glasses and headlights.

At least once every six months check the presence of corrosion in the connections of the navigation light cables.

At least once every six months, tighten the cable connections of the navigation lights.

The use of headlights during the various situations of use of the yacht during night navigation are illustrated below:

- **Navigation:** Masthead lights, side lights and stern lights ON.
- **At anchor:** Anchor lights ON.
- **Drifting:** Two red lights ON (no steering mast installed).
- **Stranded:** Anchor light and two red lights ON (no steering mast installed).



### WARNING

Navigation lights, shapes and sound signals.

Where navigation lights, shapes and sound signals are installed, they must be in conformity with COLREG 1972 (II International Regulations for Preventing Collisions at Sea) or CEVNI (European Code for Inland Waterways). Regulations depending on the case.



### CAUTION

The positioning of the navigation lights is optimised by adapting the regulatory requirements to the geometry of the yacht, providing lights where they are most easily visible.

Non-steering lights (N.U.C. = Not Under command) and a bell are not included in the on-board equipment.

The fitting of lights and sound signals is subject to the approval of the Flag Administration where the yacht is registered.

**Daylight signals:**

In order to increase the safety of persons on board, the manufacturer has provided for the installation of a mast daylight signalling, in accordance with the Directive 2013/53/EU.

**NOTE**

The combined use of daytime signals and navigation lights increases the yacht's visibility, reducing the risk of collisions.

Daytime signals have the same function as navigation lights but are more visible during the day than navigation lights.

Depending on the situation, appropriate signalling templates shall be used.

Hereunder is a list of the most common ones to adopt after installing the relevant mast:

Yacht at anchor:



Not under command yacht:



Stranded yacht:



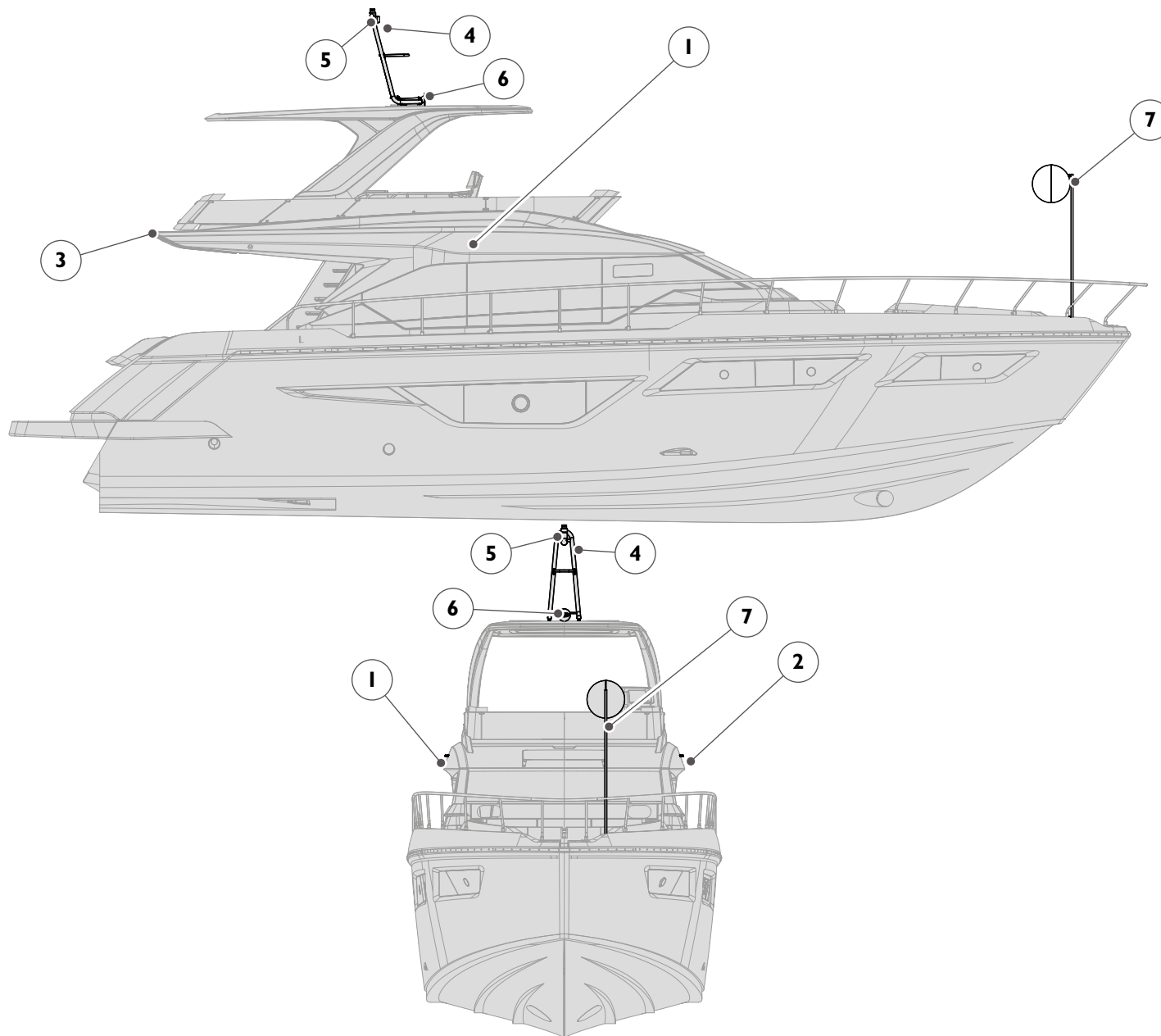
Yacht with limited manoeuvrability:

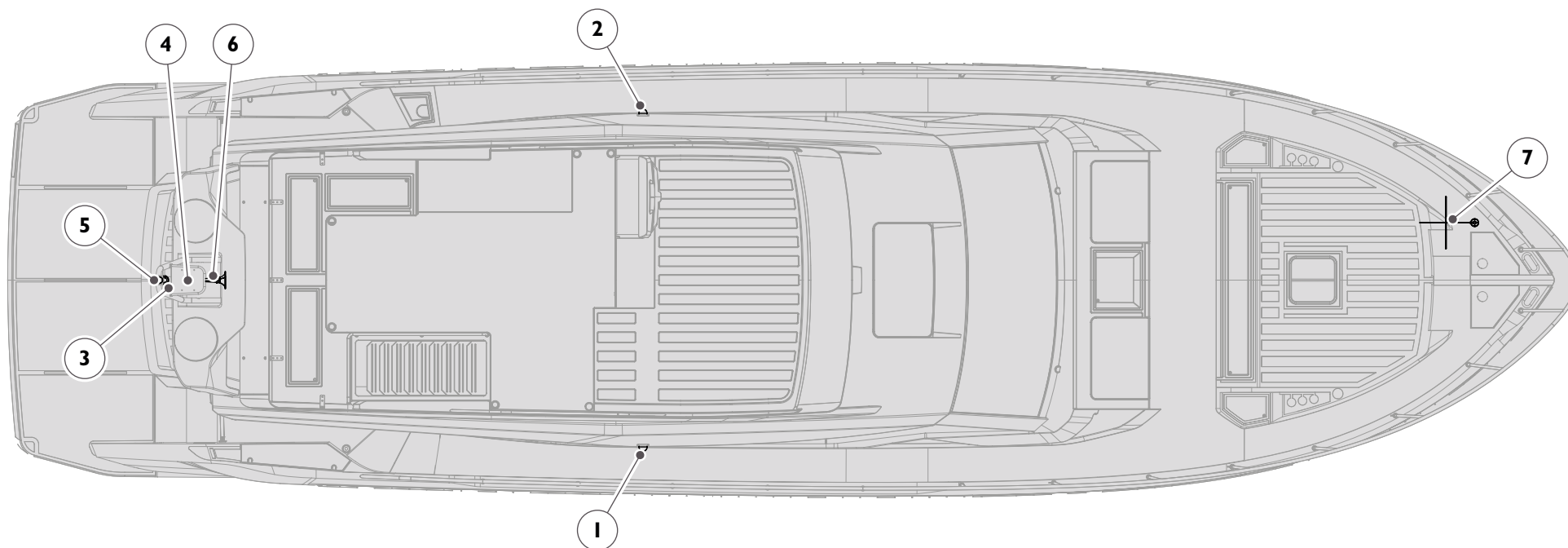


Yacht to trailer or towed:



Diagram of navigation lights and daylight signals:





CONDITION	DESCRIPTION
Navigation	Masthead, side and stern lights
Anchorage by day	1 Black ball
Non-government by day	2 Black balls
Stranded by day	3 Black balls

NUM	DESCRIPTION	VISIBILITY	dB (1/3 OCT.)
1	Navigation light right - green   12.5°	2 nm	-
2	Navigation light left - red   12.5°	2 nm	-
3	Aft light - white   35°	2 nm	-
4	Masthead light - white 225°	3 nm	-
5	Anchor riding light - white 360°	2 nm	-
6	Whistle for sound signals	-	> 120
7	Daylight mast	-	-

## 4.5 MAIN DECK - EXTERIOR

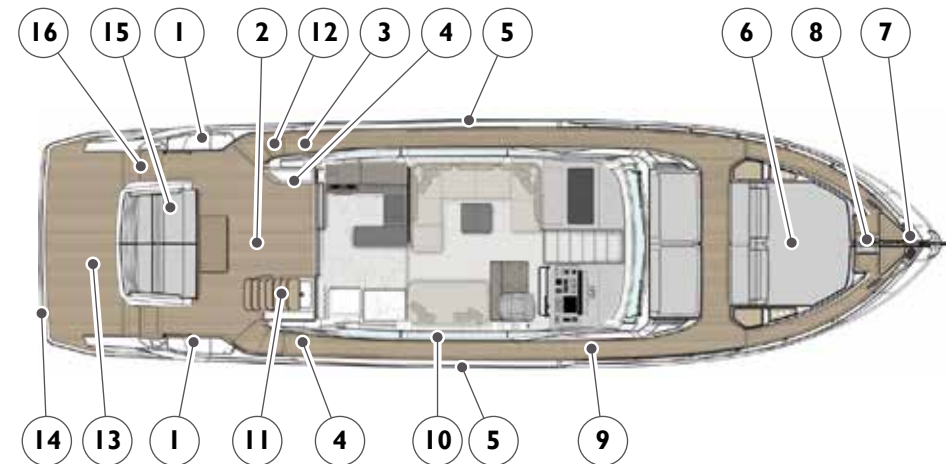
1. Mooring furniture
2. Engine room access hatch
3. Fire-fighting system control locker
4. Walk-around access (sidewalk)
5. Cleats in the middle of the yacht
6. Sundeck area with cushions
7. Mooring cleats
8. Anchor windlass and chain locker
9. Fresh water filling nozzle
10. Black water shore discharge nozzle
11. Access stairs to the sun deck
12. Fuel filling nozzle
13. Stern platform
14. Swim ladder
15. Crew cabin access
16. Gangway



### CAUTION

The removable awnings and their support poles must always be dismantled and stored in the appropriate places before starting navigation. When the poles are not in use, they should only be stored in the appropriate places.

The awnings should only be installed when the yacht is stationary and the weather conditions are favourable. Do not leave the blinds open in heavy rain. Do not leave the awnings installed when the yacht is unattended. Do not allow water to stagnate on the fabric of the awnings. When the awnings are not in use, keep the poles closed with the appropriate lids.



The yacht can be accessed from the shore through the hydraulic gangway located at the stern.



**CAUTION**

Always use the gangway to access the yacht; the use of any other system is potentially dangerous.

From the sea level it is instead possible to climb on board by means of the swim ladder located under the stern platform. The aft platform is accessible from the cockpit through access gates on both sides of the yacht.



**CAUTION**

Do not remove the protection of the kinematic motion rudders. Periodically check the integrity of the grounding. Keep connections dry and protected from corrosion grease.



**DANGER**

Never navigate with the swim ladder and walkway not properly stowed/closed.



**DANGER**

Never stay on the stern platform during navigation, because this is not equipped with protection rails preventing a possible fall at sea.



**CAUTION**

Care must be taken in the event of rough seas during the entry and exit from the yacht.



**DANGER**

The stern platform must always be raised during navigation; it can only be lowered with stationary yacht and with favourable sea conditions. During navigation, no-one must stand on the aft platform.



**DANGER**

Since the movement of the aft platform takes place through servo-assisted mechanisms, it is always necessary to check that there are no objects or people nearby before activating the movement. Moreover, the latter must be carried out exclusively by the crew members.

The main deck in the aft area features the crew cabin access compartment. Lift the door to access.

On both sides of the yacht are the mooring furniture, inside which are placed the cleats, useful in the manoeuvres of approach to the shore.

Inside the port mooring cabinet, an additional shower can be installed (optional).



At the center of the cockpit is located the hatch that gives access to the engine room.

At the beginning of the port-side walk-around, there is the fuel filling cap.



Next to the upright starboard there are the sun deck access stairs. Through the steps, from both sides of the yacht you can be accessed walk-around, protected by a perimeter handrail.



**WARNING**

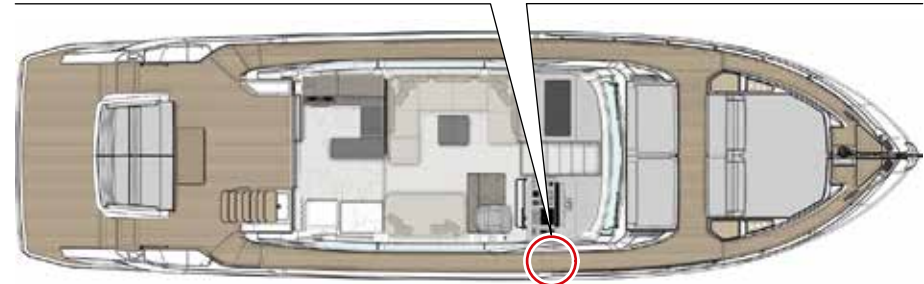
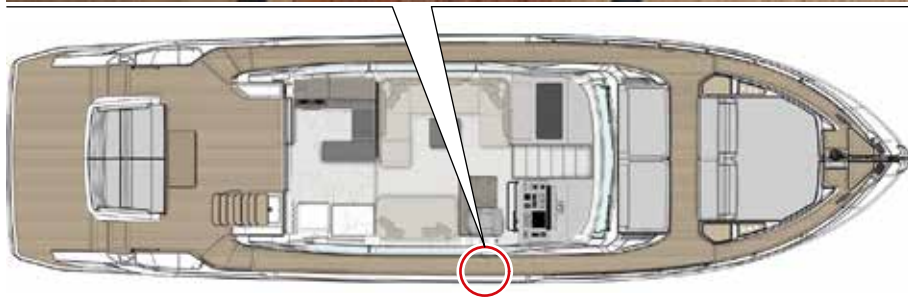
When leaning against the handrail perimeter, pay caution to avoid falling overboard.

Along the walk-arounds half yacht cleats can be found, leading to a reinforcement mooring in rough seas.

Proceeding towards the bow on the port side, you will find the PUMP OUT nozzle, which allows the discharge of waste water in the equipped docks.



On the port side walkway, there is fresh water embarkation by means of a screw nozzle at the level of the walking surface.



The plug is fitted with a cable to prevent it from falling into the sea in case of unscrewing.

At the bow you will find a large sundeck and sofa with comfortable cushions. At the edge of the sundeck there is the bow skylight, which provide light and air to the VIP cabin and can be used as an escape route.



**CAUTION**

The hatch opened creates clutter, obstacles on the main deck.

On the extreme bow there is a dedicated group formed by the anchor windlass, the peaks and passes from cleats.

In the forepeak there is the remote control of the windlass and tap dedicated to wash chains.



**DANGER**

During navigation it is compulsory to unlock the safety retainer of the bow skylight so as to ensure a safe and quick escape.



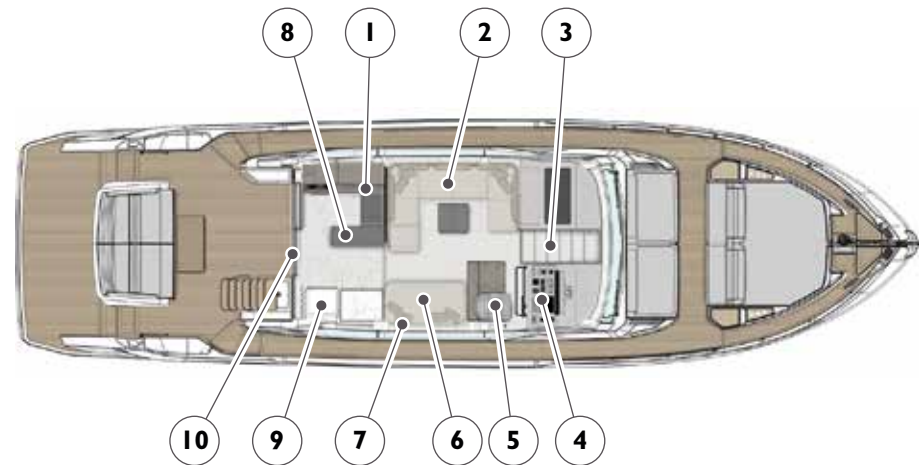
**DANGER**

Pay particular attention to rotary pieces, keeping your feet, hands, clothing and hairs at due distance.

If you control the anchor winch from the main helm station make sure that nobody is near it and that your visual field is free.

## 4.6 MAIN DECK - INTERIOR

1. Galley
2. Sofa with table/bed (optional)
3. Cabins access stairs
4. Helm station
5. Captain's seat
6. Sofa
7. TV position
8. Salon entrance cabinet
9. Drawer refrigerator
10. Salon door



A wide sliding door allows the access to the salon of the yacht.  
The salon door consists of a stainless steel frame, shading glass panes and reflective crystals, which protect against sunlight reflections while allowing a for a view of the outside.



**CAUTION**

Never navigate with the door unlocked. If released, its structure could develop an inertial force, thereby causing cutting or crushing hazards.

Inside and outside the door a solid handle and a key lock will oversee the movement (lock / unlock).  
The key always controls the locking handle.



**CAUTION**

For the adjustment of the salon door, refer to the FERRETTI YACHTS After Sales & Service Department.

As soon as you enter, on the right there is a piece of furniture featuring practical compartments and with the drawer refrigerator powered by the service batteries. Left in front of the entrance to the cabinet there is a galley, equipped with all essential appliances and communicating through a counter directly with the salon.

The refrigerator operates at 230V, but can also be powered through a dedicated inverter. During navigation, you should lock the doors of the refrigerator using the appropriate hooks.

**MAINTENANCE**

If not used, check the operation of the refrigerator at least once every two months. Make cleaning and defrosting when necessary.

The electric cooktop operates at 230V and is constituted by four cooking plates. Above the cooking surface is located the extractor hood for cooking fumes.



**CAUTION**

Do not leave pans unattended when they are on the burner.

The microwave grill in combined electronic positioned under the hob is ready to use the component to cook quickly; also it works at 230V.

**MAINTENANCE**

At least once a month check the proper functioning of the oven.  
Perform a thorough cleaning after each use.



**CAUTION**

Always check the absorption of the household appliances and deactivate them in case they are not used.



**CAUTION**

Do not put liquid food into the oven.



**CAUTION**

In case of navigation with rough sea, we recommend not to use the galley.



**CAUTION**

To eliminate odours, vapours and fumes is essential to switch on the fan starting cooking and keep it on after the end of cooking for 10-15 minutes.



**CAUTION**

Children are allowed to use the galley only when they are able to use its items correctly and to understand the dangers specified in the special instruction manuals. The help of an adult is required.



**CAUTION**

It is recommended not to fill pots more than 50% with water and not to use pressure cookers.



**CAUTION**

When using the galley, increase the ventilation of the inner rooms as much as possible. Never use the cooking top to heat the room.

For procedures and proper use of the various appliances in the galley present refer to the appropriate manuals.

Spotlights placed under the cabinet light sinks and work plan of the galley.



**CAUTION**

During navigation is not recommended move, swerving the yacht could affect the movement of a passenger causing accidental fall or the impact of a moving yacht.

Continuing towards the bow on the left is the sofa around a table, while on the starboard there is a piece of furniture on which the television is placed.



**CAUTION**

The living area is equipped with air conditioning as much of the yacht, so it is advisable to open the window as little as possible when the system is operating.

Further ahead, on the starboard side, is the helm station. This has a pilot chair, which allows for the use and view of all the steering equipment of the yacht.



**CAUTION**

Maintain access to the helm station exclusive to the Captain to prevent accidental tampering of equipment by unskilled people.



**DANGER**

The staff responsible for the conduct of the yacht during the various activities on board should not be under the influence of alcohol, drugs, narcotics or drugs.

Next to the helm station is the lower deck area access stairs where the accommodation of the guest and owner are located.



**CAUTION**

Check the closing of doors access the cabins before you start navigating.

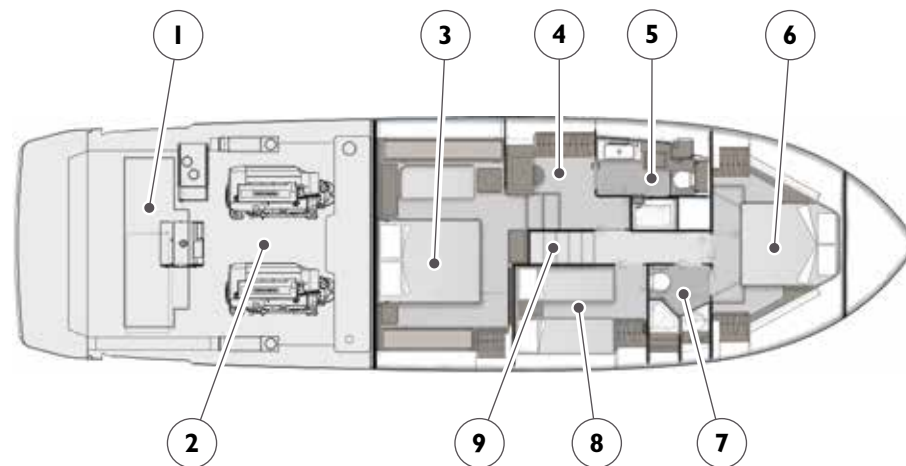
## 4.7 LOWER DECK

The lower deck consists of three areas, which are accessible from different not-connecting places.

The areas are:

- Crew cabin;
- Cabins with bathroom: Owner's, Guest's and VIP;
- Engine room.

1. Crew cabin
2. Engine room
3. Owner's cabin
4. Owner's office
5. Owner's bathroom
6. VIP cabin
7. VIP / service bathroom
8. Guest cabin
9. Main Deck access stairs



### 4.7.1 Crew cabin



The crew cabin can be accessed from the aft area of the deck through an access (I) located under the stern sun-deck.

The cabin is equipped with air-conditioning system with autonomous control, a sink and a toilet.

### 4.7.2 Cabins with bathroom: Owner's, Guests' and VIP

Going down the stairs near the helm station, you come to the guest cabin featuring two separate beds and a comfortable wardrobe.

Moving towards the bow, there is access to the VIP/ service bathroom on the right, which via a door communicates directly with the guest cabin.

The owner's cabin, located amidships to exploit the full width, is fitted with a double bed, a comfortable sofa and a practical unit with various compartments; it is also equipped with two closets.

From the Owner's cabin through a door, you reach the Owner's bathroom equipped with a large shower.



#### CAUTION

The extremely precious finishing of woods used for the bathrooms floors and for the cockpit tables is the result of an accurate work, water resistant but at the same time delicate and needing accurate maintenance.

Such surfaces must therefore be dried after use, after being exposed to rain and or washed, and a regular maintenance must be carried out.

The bilge below the floorboards of the corridor, there are the fresh water distribution manifolds.

The VIP cabin is located forward and the only one equipped with a hatch to be considered as an escape route in case of danger.

The cabin is furnished with a double bed and two closets.

On the sides are the portholes to give light and ventilate the room, complete with curtains and drapes.

In the floorboard at the foot of the bed is the group of the bow thruster.

All cabins are air conditioned with independent regulation.



#### WARNING

During navigation must unlock the solenoid interlock opening bow.


**CAUTION**

Check the closing of doors access the cabins before you start navigate. They avoid unpleasant slamming dangers and accidental.

### 4.7.3 Porthole

The porthole consists in a fixed part (frame) and a moving part (window). For opening, it is necessary to unlock the window by turning the handles 90° outwards. Closing is done by means of a thick seal on the porthole frame. It is necessary to make sure that the two knobs are correctly closed, in order to make the window seal adhere well to the frame.

**MAINTENANCE**

At least once a month check the correct operation of the closing system.  
At least once every three months check the watertight status.  
When necessary, clean the seals or replace them, if required.


**CAUTION**

Close the portholes and the skylight when underway or when the yacht is left unattended for a long period.

## 4.8 ENGINE ROOM

The engine room is accessible through the central hatchway located on the main deck's external floor (cockpit).

For lifting the hatchway, the relevant foldaway knob, provided with lock, is used; the operation is assisted by a gas spring which, further to relieving the load, has the function of keeping the hatchway open.

A stairs leads to the engine room, which is illuminated by fixed ceiling lights.

The bulwarks and the walls of the room, included the ceiling, are insulated and covered with soundproofing material to absorb and lower the noise produced by the engines and by the other appliances installed as much as possible, and to make navigation and rest more comfortable.

The engine room is provided with a watertight bulkhead; all tube passages towards the bow, and vice versa, are installed on the watertight bulkhead.


**DANGER**

In the engine room, thermal engines create highly radiated areas which keep temperature high for a long time. Protect yourself and wait until they are cool before entering the engine room.


**CAUTION**

Do not store free-to-move items in the engine room, as they might skid during navigation.


**CAUTION**

Only authorized personnel should have access to the engine room and also be informed about the components operation and about the features of the fire-fighting system.





FERRETTIYACHTS

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## HELM STATIONS

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1. FOREWORD

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  2. SAFETY RULES

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  3. SAFETY DEVICES AND EQUIPMENT

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  4. DESCRIPTION OF THE YACHT

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  - 5. HELM STATIONS**

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  6. WATER SYSTEMS

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  11. AUXILIARY EQUIPMENT ON BOARD

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  14. TROUBLESHOOTING

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## 5.1 HELM STATIONS

This Chapter describes the various controls, instruments and devices installed and the main functions of the two helm stations located in:

- Sun deck;
- Main deck;
- Cockpit helm station (OPT).



### CAUTION

Herewith only general information for first start-up is given: for the practice and the specific use of the individual systems, consult the manuals of the Manufacturers or the FERRETTI YACHTS After Sales & Service Department.



### CAUTION

It is a good rule to keep the instruments clean by washing them with wet and clean rags, avoid using chemical or abrasive products. After navigation, it is advisable to cover instrumentation and equipment.



### CAUTION

All electric appliances for navigation, whose parameters can be configured and set by software through the control panel, have been configured and tested upon delivery. These operations must be performed exclusively by authorized service personnel. Any modification of the preset configurations can alter the operation and reliability of the concerned system. Appliances must be used by the personnel in charge of driving the yacht and of using the systems.



### CAUTION

The location of the main steering gear is located on the sun deck, as the seat of steering located on the Main Deck visibility is reduced.

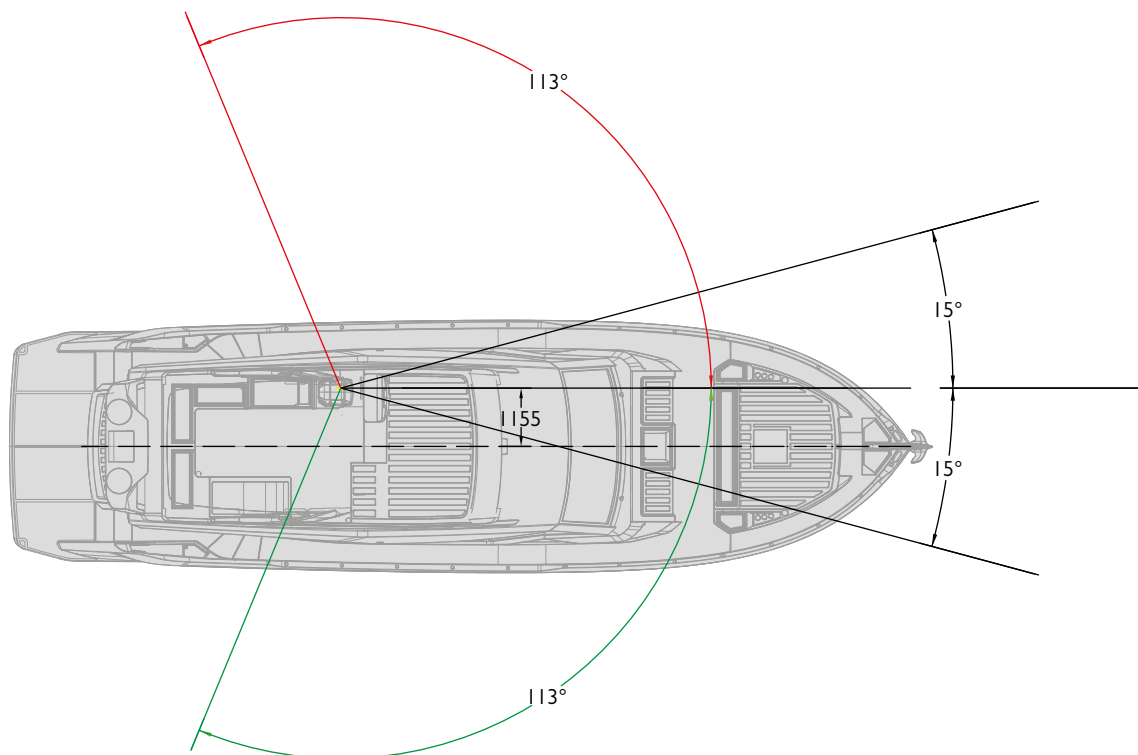
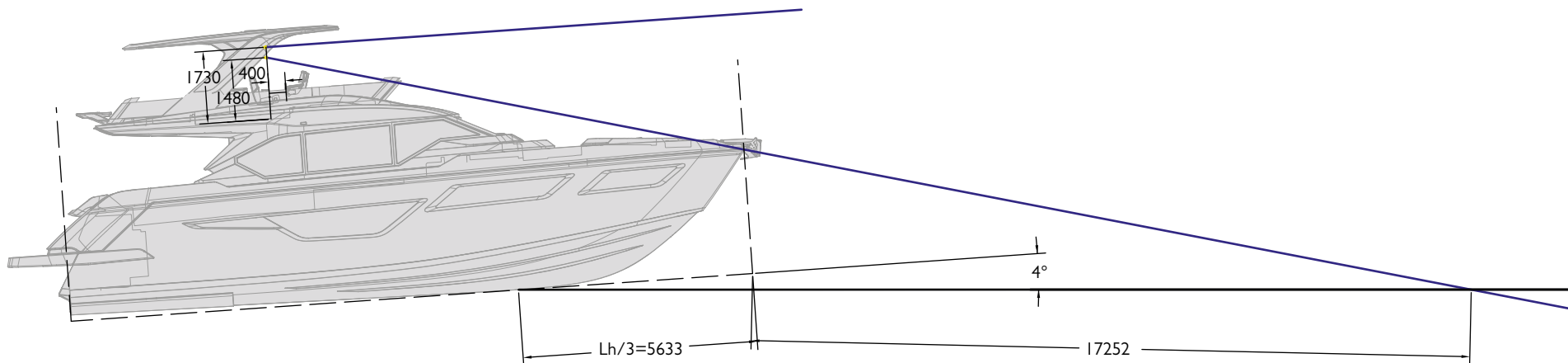
Data plate applied by the manufacturer shall draw his caution.



### WARNING

**VISIBILITY FROM THE STANDING POSITION  
AT THIS HELM STATION IS LIMITED.  
AVOID SERIOUS INIURY OR DEATH FROM COLLISIONS.  
OPERATION FROM A SEATED POSITION  
MAY BE NECESSARY TO MAINTAIN A LOOKOUT  
AS REQUIRED BY RULES OF THE ROAD.  
READ OWNERS MANUAL**

Vertical field of view (eye high, standing):



Misure espresse in mm  
Angoli espressi in gradi

## 5.2 SUN DECK HELM STATION (MAIN)



## 1. Monitoring panel

Used to monitor the various on-board systems.



### CAUTION

If the interceptors transducers and the tiller angle are faulty, also the remaining readings of this panel could work out to be unreliable. In this case you should therefore contact assistance service or FERRETTI YACHTS After Sales & Service Department.

## 2. Throttle

Through electrical signals, this manages the revolutions of the propulsion engines and gears of the inverters.

## 3. Thrusters control joystick

It allow adjustment of the thrusters.

## 4. Digital chain counter (optional)

## 5. Anchor winch buttons

This buttons allows the operation in both direction of the anchor winch.

## 6. Interceptors control levers

Used to manage the interceptors.

## 7. Alarm light and bilge control

## 8. Engine buttons ON / OFF

They allow you to turn on and turn off the starboard and port engines.



### WARNING

In the event of a engine malfunction alarm, the luminous ring of the corresponding Start button on the dashboard will be illuminated in a flashing red color. Proceed to acknowledge on the helm station or in the engine room.

## 9. Steering joystick

It allows to make manoeuvres in confined waters easier, coordinating the whole steering instrumentation, including bow thruster, inverters and positioning instrumentation, and controlling the yacht movements and rotations.

## 10. Interceptors control levers

Used to manage the interceptors.

## 11. VHF-DSC radiotelephone

This device is a radiotelephone with digital selective call (DSC). The distress keys and calls are protected against accidental press. Single or group calls can be carried out with the key-pad taking advantage of the device directory or by dialling the number directly.

Your yacht can be equipped with the AIS (Automatic Identification System), which allows you to exchange information with other yachts equipped with the same technology. This system allows you to communicate your yacht's position, course and speed.

## 12. HI-FI stereo system

Stereo system with relevant loudspeakers on the sun deck.

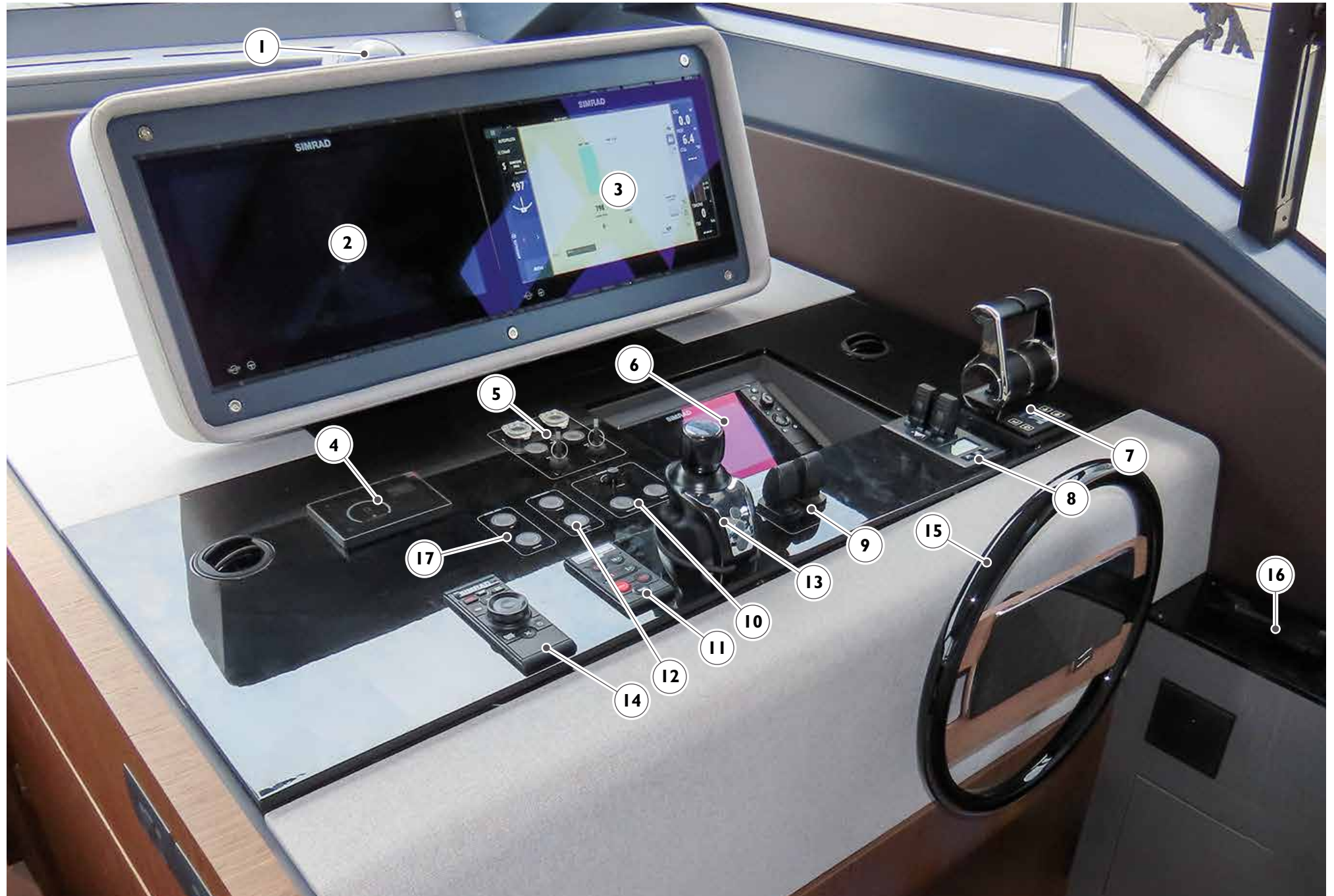
## 13. Steering wheel

By turning the steering wheel you operate the feedback engines which actuate the Smart Command control units, then the actuators, each of which is connected to a rudder bar, thus steering the yacht.

## 14. 12V socket

12V cigarette-lighter type socket.

### 5.3 MAIN DECK HELM STATION



## 1. Magnetic compass

## 2. Port engine control panel

This system allows monitoring and transmitting the operating data of the port engine.

## 3. Starboard engine control panel

This system allows monitoring and transmitting the operating data of the starboard engine.

## 4. Gyroscopic stabilizer control display

It allows to monitor and control the operation of the gyroscopic stabilizer.

## 5. Port/starboard engine start/stop keys and buttons

It allow starting and stopping of the port and starboard engines.

## 6. Multifunctional display

## 7. Throttle

This device controls, by means of electric signals, the revolutions of the propulsion engines and the speeds of the gear boxes.

## 8. Thrusters control joystick

It allow adjustment of the thrusters.

## 9. Interceptors control levers

Used to manage the interceptors.

## 10. Windscreen wiper controls

- “SPEED” speed regulator
- Windscreen wiper activation buttons
- “WASH” windscreen wiper liquid button

## 11. Automatic pilot (autopilot)

This device allows holding a certain pre-set track, without having to manually operate on the steering system.



### WARNING

When navigating with the autopilot enabled and if there is an obstacle in front of the yacht's bow, the best thing to do is set the device to standby in order to definitively take control of the yacht. Once by-passed the obstacle the device can be switched on by setting the track again.

## 12. Control buttons lights / horn

It allow switching on the lights and the actuation of the horn.

## 13. Steering joystick

It allows to make manoeuvres in confined waters easier, coordinating the whole steering instrumentation, including bow thruster, inverters and positioning instrumentation, and controlling the yacht movements and rotations.

## 14. Multifunction keyboard (optional)

Allows you to manage the operation of the monitoring panels.

## 15. Steering wheel

By turning the steering wheel you operate the feedback engines which actuate the Smart Command control units, then the actuators, each of which is connected to a rudder bar, thus steering the yacht.



### WARNING

The field of vision from the helm position on the navigating bridge is limited. When using this rudder position, keep watch both forward and aft.

## 16. VHF-DSC radiotelephone

This device is a radiotelephone with digital selective call (DSC). The distress keys and calls are protected against accidental press. Single or group calls can be carried out with the key-pad taking advantage of the device directory or by dialling the number directly. Your yacht can be equipped with the AIS (Automatic Identification System), which allows you to exchange information with other yachts equipped with the same technology. This system allows you to communicate your yacht's position, course and speed.

**17. Anchor winch buttons**

This buttons allows the operation in both direction of the anchor winch.

**5.3.1 Helm station starboard side section**

This section is located on the starboard side of the helm station.



**1. Fire-fighting system control panel**

**2. USB port**

**3. 12V socket**

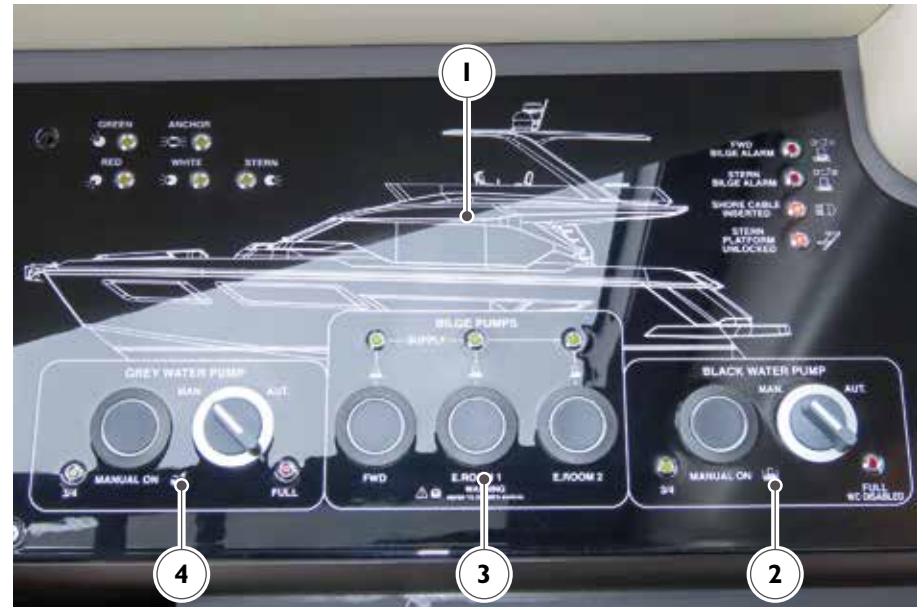
12V cigarette-lighter type socket.

**4. SD card slot**

**5. Remote control panel for watermaker (optional)**

**5.3.2 Synoptic panel**

The synoptic panel is located on the starboard side of the helm station.



**1. Indicator lights for navigation lights, bilge alarms, shore cable detection and lock of the stern platform**

**2. Buttons for managing the operation of black water pump**

**3. Bilge pump activation buttons**

**4. Buttons for managing the operation of grey water pump (optional)**

### 5.3.3 Magnetic compass

The magnetic compass fitted on the dashboard of a yacht of such size, is inevitably close to the magnetic fields produced by the electric and electronic systems on board.

Compass turns for compensation must be carried out by a specialized technician. We remind you that the compensation should be carried out a couple of weeks after the launching, in order to eliminate the magnetization developed during the construction of the yacht.



#### CAUTION

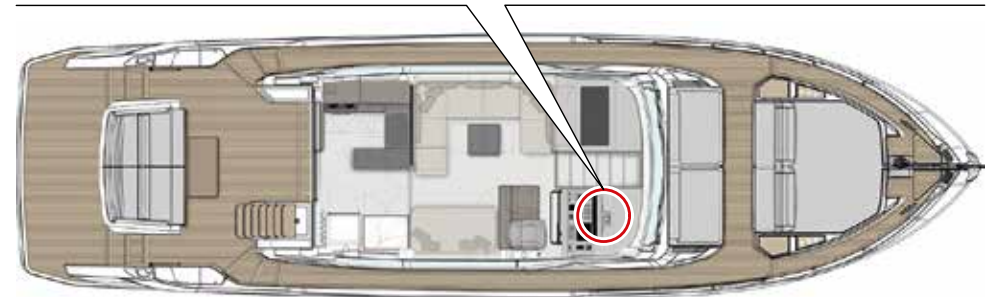
The yacht is delivered with a compass not compensated. The compass compensation has to be carried out at Owner's responsibility, after the installation of any additional electronic equipment, and should be performed by an authorised and qualified technician. Any electrical or metallic items located in its proximity may influence the compass.

#### MAINTENANCE

At least once a month check the operation and the deviations. When necessary have it calibrated and compensated again.

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



### 5.3.4 Weather control panel (optional)

#### 1. Barometer

It measures the atmospheric pressure in millibar.

#### 2. Clock

It measures the time.

#### 3. Thermometer and hygrometer

It measures the temperature and the presence of moisture.



## 5.4 COCKPIT HELM STATION (OPTIONAL)

Your yacht can be equipped with a third helm station located in the aft cockpit.

### 1. Engines start / stop buttons

It allow starting and stopping of the port and starboard engines.

### 2. Bow and stern thrusters control joystick

It allow adjustment of the bow (standard) and stern (optional) thrusters.

### 3. Throttle

This device controls, by means of electric signals, the revolutions of the propulsion engines and the speeds of the gear boxes.



## 5.5 INSTRUMENTATION

### Radiotelephone keyboard

#### 5.5.1 VHF-DSC Radiotelephone (standard)

Operate the radiotelephone according to following instructions:

- Power the device with the magneto-thermal switches located on the electrical panel on the helm station.
- Press ON/C key; as default setting the device switches on the priority channel (16) frequency. If the function “LAST CHANNEL USED” has been previously set, the radiotelephone will switch on the frequency of the last channel selected.

The display shows the channel number, the volume, and squelch levels.



#### WARNING

For channel selection or special function instructions, please refer to the radiotelephone Manufacturer’s manual.

The keyboard has digital keys for the selection of the channels and function keys for the adjustment of the volume, of the squelch and of the scanning function.

The SHIFT key allows the access to the secondary functions.

The PTT key (push to talk) located on the port side of the device, is activated when the receiver is unhooked from the holder.

Key 16 allows selecting the channel for vocal rescue request. It is however possible to carry out selective digital calls, quicker and simpler than the traditional calls. To obtain this, lift the protection flap placed on the front side of the radiotelephone. Then press the DISTRESS key to get access to the various functions.



The VHF device allows communication on channels dedicated to Port Authority, rescue and radio stations.

To ask for rescue it is necessary to use the suitable VHF/FM channel: after each hour, as a legal rule, follow 6 minutes of silence, from minute 0 to minute 3 and from minute 30 to minute 33, so as to enable a better listening of the distress communications.

If the VHF is used, the distress call must be preceded and ended by the wording **“MAYDAY, MAYDAY, MAYDAY”**.

It is therefore necessary to give your position, the yacht’s name, the kind of damage and the kind of help you require (medical, mechanical, etc..).



**CAUTION**  
Perform the **“MAYDAY”** rescue call, only in case of real need.

If, listening to the distress channel, a distress call that has not yet received an answer is picked up, it is possible to send a **“MAYDAY RELAY, MAYDAY RELAY, MAYDAY RELAY”** forwarding the communication of the person who requested rescue.

It can in fact happen that the distress call, carried out on the open sea or by means of a poorly powered sender, is not received by the rescue team. Acting as a spokesman, you can help the message reach its destination successfully.



**CAUTION**  
Perform the call **“MAYDAY RELAY”** only if there is a reasonable certainty that the message has not been collected by the rescue team so as not to engage the distress channel uselessly.

The use of the standard procedure avoids creating confusion and shortens the transmission time. In case of danger, use only the phonetic alphabet recommended.

The VHF device is a vital and important communication line; please remember some fundamental rules:

- No transmission should be performed without reason;
- Listen before transmission so as to avoid interference with other senders;
- For distress calls, use and hold the best possible wireless contact;
- Always use your call identification or the name of the yacht in order to make yourself identifiable. The use of names or family names is not allowed;
- Send short and clear messages;
- For distress calls it is important to give the yacht’s position, the kind of danger, the time passed in water, the kind of yacht and the number of persons involved;
- For other calls, once the contact with the person called has been established, transfer the call on an operation channel;
- Cut out transmission if required by a coastal station;
- Retune the radio when the call is ended.

**MANUAL DISTRESS CALL:**

- Select the distress channel by pressing the 16/9 button or by scrolling through the channels with the volume buttons.
- Press the transmission key “PTT” on the radiotelephone and carry out the communication.

**MAYDAY - MAYDAY - MAYDAY THIS IS:**

repeat the yacht’s name for 3 (three) times.

**MAYDAY THIS IS:**

repeat the yacht’s name.

**AT POSITION:**

specify the position of the yacht.

**SPECIFY THE DISTRESS CAUSE.**

- Release the “PTT” transmission key.
- Wait for the reply for a few seconds.
- If you do not receive any reply, repeat the message at regular intervals, until receiving a reply.
- When you receive an answer, continue the conversation:
  - Hold down “PTT” while talking.
  - Release “PTT” while listening.
- It may be required to switch to a working channel.

**AUTOMATIC DISTRESS CALL:**

- Lift the cover and press the DIST key; the display will show the wording “Distress call Undefined”.
- DIST hold for about 3 seconds, then circa 3 secondi. Dopodiché viene displays the message: “DISTRESS CALL SENDING” and the radio beeps.
- The distress message will be automatically transmitted and repeated at irregular intervals on channel 70. Channel 16 will be available for communication after each transmission.
- If you do not receive a response after a short time, try to send the distress message manually.



**WARNING**

After the automatic SOS has been activated, it must be turned off by pressing the ON/C, otherwise the help message continues to be transmitted. The SOS function is automatically locked until the number of DSC has been entered.

- You can press ▲ or ▼ to scroll through the transmitted Distress call information.
- You now have the following soft-key options:

**RESEND**

Displays “HOLD DISTRESS 3 SECONDS TO SEND”. You can then:

- Hold down the red “DISTRESS” key for 3 seconds to resend the call, or
- Press the “EXIT” soft key to return to waiting for an acknowledgement.

**PAUSE**

Pauses the call repeat mode. You can then:

- Press the “EXIT” soft key to resume the same call.

**CANCEL**

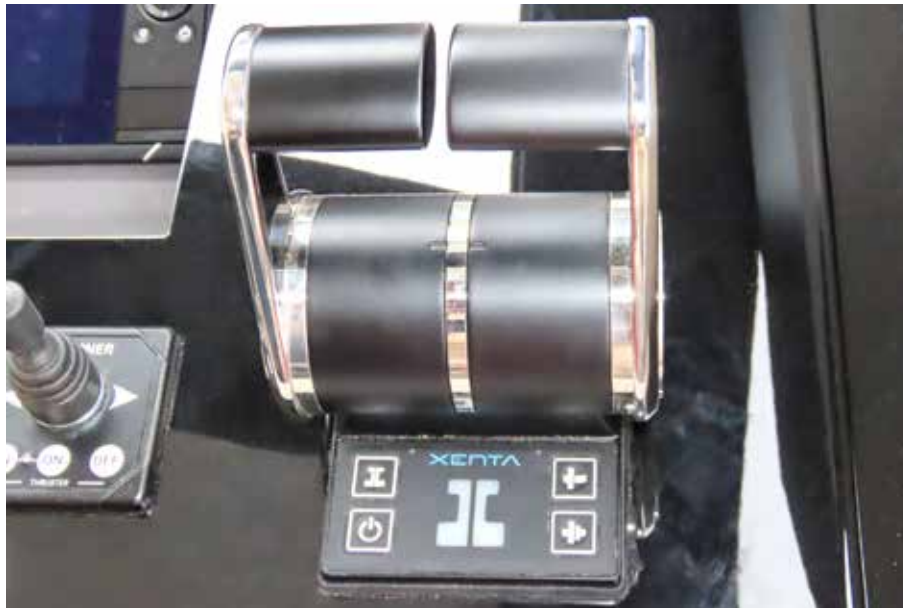
Displays “DISTRESS CALL SEND CANCEL.” You can then:

- Press the “NO” soft key to send the DISTRESS CANCEL signal.
- Press the “YES” software button to send the “Distress Cancel” signal;
- Press “PTT” and report your situation using the handset.
- When finished talking, press “X” to return to standby mode.
- 

**NOTE**

For further information on use and maintenance, please refer to the manufacturer’s manual.



## 5.5.2 Throttle







The throttle is a system intended for control engine revolutions and inverter gears. It has the following features and performance functions.

- Sequential inverter and engine speed;
- Start interlock;
- High/low idle;
- Engine synchronization for several thrusters;
- Trolling solenoid valve control;
- Emergency protection against inversion;
- Inverter oil pressure interlock (optional).

These features and functions make lever group use easier.

- Throttle of port engine/inverter
- Throttle of starboard engine/inverter
- WARM UP  button
- Control indicator – port
- TROLLING  button

- Throttle indicators – port
- Gear and mode indicators – port
- COMMAND  button
- SINGLE LEVER  button
- Gear and mode indicators – starboard
- Throttle indicators – starboard
- Control indicator – starboard

- SINGLE LEVER button : it allows the activation of the SINGLE LEVER mode (after authorisation by means of the COMMAND button).
- COMMAND button : it activates the throttle levers station and allows to confirm the activation of all the other operative modes.
- WARM UP button : it activates the WARM UP mode (prior authorization by COMMAND button).
- TROLLING button : it activates the TROLLING mode (prior authorization by COMMAND button). The TROLLING mode is an optional feature.
- Control indicator: it indicates the status of the port/starboard lever and reports the errors.
- Throttle indicators: they indicate the level of throttle requested by port/starboard lever.
- The more throttle is requested, the higher is the number of lights activated.
- Gear and mode indicators: In THROTTLE mode, they are both ON in solid blue if the port/starboard lever is in neutral. When the lever is in forward position, the top LED is ON in solid blue. When the lever is in backward position, only the bottom LED is in solid blue. In SINGLE LEVER mode, they are both on in fixed blue if the control lever is in neutral. When the lever is in forward position, the top LEDs are ON in solid blue. When the lever is in backward position, the bottom LEDs are ON in solid blue. In WARM UP and TROLLING modes they flash in blue giving an indication on the active operational mode.

The lights on the control panel of the control level provide information on the operational conditions of the system.

**Control taking stages**

- Make sure the throttle are in neutral. The station cannot take control when the levers are in other positions.
- Press twice the throttle switching on button, the LEDs go on indicating that the throttle is active.



**WARNING**

The following movement of the group lever of the throttle will engage the gear.

- Start engine and the neutral control at the same time. If the levers of the lever group are not in neutral, the interlock switch will not allow engine starting.
- Move the levers to the stop backward or forward. The drive system starts..

**Basic operation**

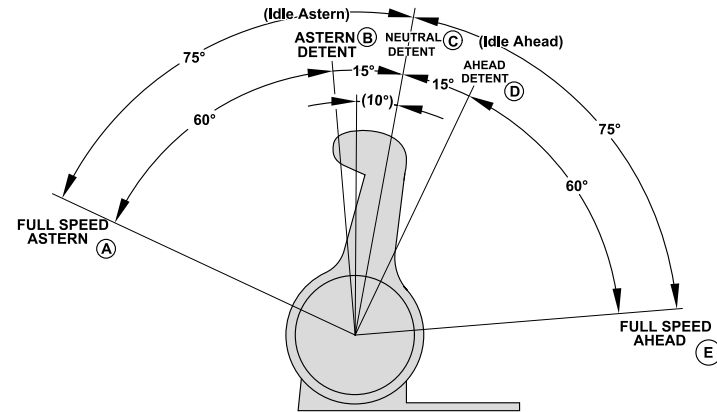
The throttle has three stops: backward, neutral, and forward.

With the throttle positioned on the “Neutral detent” stop, the system sends the neutral control and idle revolutions per minute.

By moving the lever of the throttle forward “Astern detent” or backward “Ahead detent” by 15° the backward/forward clutch engages.

The engine runs at the idle revolution number.

By moving the lever further, the engine revolution number increases proportionally compared to the lever of the throttle.



**CAUTION**

The neutral stop (central position of the throttle movement) is 10° forward. The moving degrees are measured from this position, not from the vertical one.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer’s manual.

INDICATOR	LEVER POSITION
A	Full speed astern
B	Stop backward (idle astern)
C	Neutral stop
D	Stop forward (idle ahead)
E	Full speed ahead

### 5.5.3 Engine control panel

This panel allows the display of the engine's data and its monitoring. The engine and gear data visualization is carried out graphically on a display with digital indication of the values obtained. The led as the visualization listing all incoming alarms with detailed information, indicate the alarms status.

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

### 5.5.4 Multifunctional display

This device allows displaying, in analogical, numerical and graphical format, the information relevant to speed, depth, compass, environmental data, wind etc., on different, easily configurable pages.

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

### 5.5.5 Bow and stern thrusters control joystick

This panel is supplied by a switch located on the general electrical panel of the main helm station. For the operation of the propeller, the relevant thruster battery breaker must be enabled.

The control panel carries the ON and OFF buttons and the joystick for the bow/stern thruster control (with the silk-screened side arrows).

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

### 5.5.6 Steering wheel

The steering wheel is connected to the rudder bar by means of an electric driven system, making steering easier during navigation. The sun deck pump is parallel connected to the one of the main helm station. This pump is always ready to operate without any valve switching.

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



#### WARNING

The steering wheels of the helm stations are not interlocked. Before starting to manoeuvre, make sure that the unused station is free from people who may interfere with the controls.

**5.5.7 Radar / Chartplotter / Fishfinder (optional)**

This tool provides all the features of a radar, a digital fishfinder and chartplotter. The new high-speed network protocol used to transfer radar, chartplotter, the fishfinder on any point of the network, creating a multifunction system. The overlaid radar mapping that combined with user-defined data boxes turn the tool into a truly integrated navigation system. From any display you are able to access all the functions and controls of the various tools allowing a safe navigation.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.



**WARNING**

Pay the outmost attention during navigation, because in proximity of the yacht a shadow cone is formed, which is not covered from the radar waves.



**DANGER**

**Radiation danger**

The radar antenna emits radiations, which can damage the human body, especially the eyes. When the radar is operating, never look straight at the transmission aerial from a distance shorter than 1 m. During the radar operation it is necessary to keep out of the antenna transmission flow. Switch off the radar if not expressly necessary to navigation.

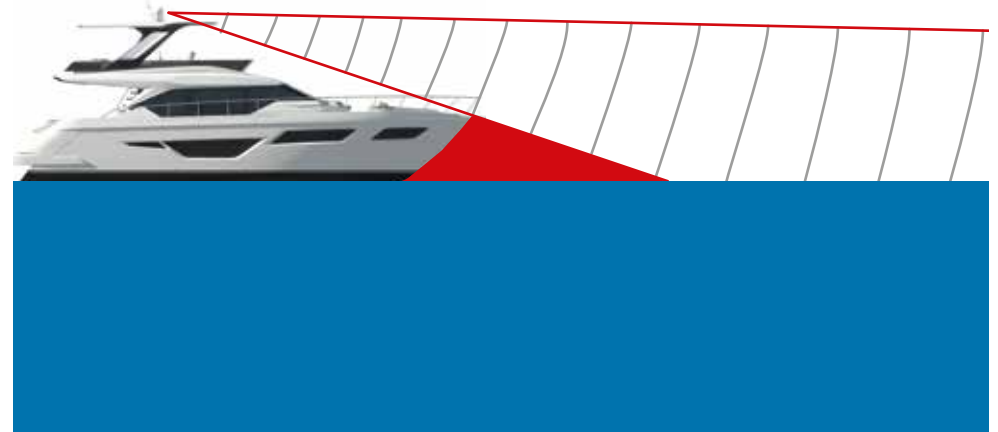


**CAUTION**

The electronic chart is an aid to navigation, designed to facilitate the use of authorized steering charts, not to replace them. Only official steering charts and notices to mariners contain all information needed for the safety of navigation and, as always, the Captain is responsible for their proper use.

**MAINTENANCE**

At least once a week carry out the cleaning of the LCD. At least once every six months check the connection and the presence of corrosion on the cables.



### 5.5.8 Automatic pilot (autopilot)

When you turn the autopilot is always in standby mode and the display shows the bow of your yacht. To return to manual control press Standby. The autopilot functions are controlled by the touch of the keys and the operations that occurred are confirmed by a short beep. In addition to the functions obtained with the press of a single button, there are a series of functions obtainable through the simultaneous pressing of two keys.

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



#### WARNING

Never place electric and/or electronic sources of any kind closer than 1 meter from the autopilot compass (particularly in presence of loudspeakers, transceivers, tool boxes, etc..) because they could jeopardize the operation and reliability of the autopilot.



#### WARNING

This instrument has been designed in order to offer the maximum precision and reliability; anyway its performance can be influenced by many factors. For this reason we recommend its use only as an help to navigation. A careful and continuous monitoring has always to be kept also under the best navigation and sea conditions.



#### DANGER

In the event of a sudden obstacle in front of the bow of the yacht you can avoid it by turning the steering wheel with force. This operation allows to command a yacht only until it firmly holds the wheel. As soon as you abandon your grip on the wheel above, the autopilot immediately puts the yacht on course.

If the obstacle is too close, it's best to put on standby instrument to take command of the yacht permanently.

Once past the obstacle you can safely restart the meter by setting the route again.

#### MAINTENANCE

At least once a week check the correct operation.

At least once every six months check all connections.

When necessary have it calibrated.

### 5.5.9 Steering joystick (optional)

It allows to make manoeuvres in confined waters easier, coordinating the whole steering instrumentation, including engines, bow thrusters, inverters and positioning instrumentation, and controlling the yacht movements and rotations.

1. Joystick;
2. Command button and indicator (C);
3. Thruster button and indicator (T);
4. Engine button and indicator (E).

- **Joystick (I)**: Controls all manoeuvres.
- **Command indicator (C) (2)**: A blue light indicates the correct operation of the system. It turns red in case of problems. This button is used to activate the combined control of engines and thrusters.
- **Thruster indicator (T) (3)**: A blue light indicates the correct operation of the thruster(s). It turns red in case of problems or malfunctions. This button is used to activate control of the thruster or the rudders.
- **Engine indicator (E) (4)**: A blue light indicates the correct operation of engines. It turns red in case of problems or malfunctions. This button may be used to activate optional features.

The three lights on the joystick control panel provide information on the operational conditions of the system. They show both the system status and any malfunction, providing information about the first troubleshooting level:

- **C:** indicates the overall system status.
- **T:** indicates the status of the thruster(s).
- **E:** it indicates the status of the engines.

Each indicator has five possible states, providing a greater level of detail:

- Solid red:** operation is blocked;
- Flashing red:** operation failure;
- Flashing blue:** operation is available for use;
- Solid blue:** system in operation;
- OFF:** system either turned OFF or unavailable.



All of functions of the system are activated via the **C**, **T** and **E** buttons situated on the joystick control panel.

To activate the system, proceed as described below:

1. Make sure the Joystick is in neutral.
2. Switch both keys on.
3. Wait until the system switching on procedure is complete.
4. At the end of the procedure, the system will start the STANDBY mode automatically.

### MANEUVER mode (easy dock)

The **MANEUVER** mode allows the captain to control at the same time both the engines and the thrusters, carrying out very complex and precise manoeuvres in restricted water with ease.

While performing a side shift in **MANEUVER** mode, the system automatically acquires the information of the heading from the compass and compensates possible undesired rotations caused by wind or current action. It is anyway always under captain's responsibility to keep full control of the heading by combining the different manoeuvres according to the movement expected by the yacht.

To activate the **MANEUVER** mode, proceed as follows:

1. Make sure the Joystick is in neutral;
2. Push the **C** button to enter the **SELECTION** mode, the **MANEUVER** mode will be already selected;
3. Press again the **C** button to confirm the activation of the **MANEUVER** mode.

### TILLER-THRUSTER mode

The **TILLER-THRUSTER** mode allows the captain to control the bow thruster or the rudders while piloting the boat with the throttle levers.

To activate the **TILLER-THRUSTER** mode it's necessary to take command from the throttle.

The joystick will be automatically in **TILLER-THRUSTER** mode.

The configuration of the lights while in **TILLER-THRUSTER** mode depends on the speed of the boat.

If the joystick is not in neutral during **TILLER-THRUSTER** mode activation, **VMA** will remain in its current mode.

If the thruster fails, it is still possible to use **VMA** by activating **MANEUVER POWERTRAIN** mode allowing the pilot to control the vessel using only the main engines. This mode provides limited operability.

In **TILLER-THRUSTER** mode, the pilot controls only the thruster and the rudders with the **VMA** joystick and must use the engine lever controls to complete the

maneuver. In **TILLER-THRUSTER** mode, **VMA** operates in different ways according to the speed of the boat.

### TILLER mode

The **TILLER** mode allows the captain to control the rudders with the joystick.

To activate the **TILLER** mode, proceed as follows:

1. Make sure to be in **TILLER-THRUSTER** mode and the joystick is in neutral;
2. Press the **T** button 3 times to select the **TILLER** mode.

The configuration of the lights while in **TILLER** mode depends on the speed of the boat.

If the joystick is not in neutral during **TILLER** mode activation, **VMA** will remain in its current mode.

In **TILLER** mode, the pilot controls only the rudders with the **VMA** joystick and must use the engine lever controls to complete the maneuver.

In **TILLER** mode, **VMA** operates in different ways according to the speed of the boat.

### THRUSTER mode

The **THRUSTER** mode allows the captain to control both the bow and the stern thruster with the joystick.

To activate the **THRUSTER** mode, proceed as follows:

1. Make sure to be in **TILLER-THRUSTER** mode and the joystick is in neutral;
2. Press the **T** button to select the **THRUSTER** mode.

### DYNAMIC POSITIONING mode (optional)

The **DYNAMIC POSITIONING** mode, when active, maintains the position and the heading of the yacht. In calm wind conditions, with low currents, the **DYNAMIC POSITIONING** mode allows the pilot to hold the yacht steady within 5 meters of a selected position. When **DYNAMIC POSITIONING** is active, the yacht's heading will also remain steady.

**DYNAMIC POSITIONING** is based on GPS and compass data.

**VMA** automatically controls engines, gearboxes and thrusters to maintain the selected position and heading.

This allows the captain to keep the yacht almost steady when, for example, waiting for refuelling, for a bridge to open or where anchoring is not allowed or feasible.

It is anyway always under captain's responsibility to keep under control the movements of the boats and the surroundings, watching for obstacles or any other kind of danger.

It is captain's solely responsibility to always stay close to the helm station and react to any kind of danger that may occur.

When **DYNAMIC POSITIONING** is active, the pilot can still use the joystick to perform every action, as in **MANEUVER** mode.

When the joystick is put back in neutral, the system detects the yacht's new position and heading and automatically controls engines, gearboxes and bow thruster to keep the position and heading steady.

To activate the **DYNAMIC POSITIONING** mode, proceed as follows:

1. Make sure the Throttle levers are at neutral position;
2. Make sure the Joystick is in neutral;
3. Press the **C** button to open the selection mode;
4. Press the **T** button once to reach the **DP** mode;
5. Press the **C** to confirm the activation.

### **CRUISE mode (option)**

The **CRUISE** mode allows the captain to pilot the boat at speed using the joystick control station.

In **CRUISE** mode, the engines are synchronized to maintain a certain constant rpm level, simply like with the traditional throttle levers systems. The system controls the rudders together with the engines in order to turn the boat promptly and fast.

The more the captain moves the joystick forwards the more the engine RPM increase. The RPM increasing rate increases accordingly on how much the pilot is moving forward the joystick.

When the joystick is released, the RPM remain at the value reached. A further forward movement of the joystick, will continue to increase the RPM until the maximum is reached.

To decrease the boat speed, how much the pilot moves the joystick backwards determines the rate the RPM decrease.

The boat speed continues to decrease until the RPMs of the engines go to minimum and the gearbox goes to neutral.

When the engines reach the neutral level, moving the joystick backward allows you to reverse the thrust of the joystick to reverse the direction of the boat.

When the joystick is moved backward, the thrust of the engines is proportional to the extent of the joystick's backward movement; releasing the joystick at the center puts the engines in neutral. In reverse, **CRUISE** mode cannot be activated for safety reasons.

To steer the boat when the **CRUISE** mode is activated, the captain can move or rotate the joystick to the left or to the right, according to the desired direction.

Since the **CRUISE** works synchronizing both the engines and not using the thrusters, it provides limited maneuverability. It is strongly recommended to not use the **CRUISE** mode while close to the dock or obstacles, docking or undocking the vessel, in narrow channels and in any other situations that may require a separated and precise use of engines and thrusters.

To activate the **CRUISE** mode, proceed as follows:

1. Check that the joystick is in **MANEUVER MODE**;
2. Move the joystick forward;
3. Once the boat is moving, press twice the **C** button.

More the captain moves the joystick forward more the engine RPM increase.

The RPM increasing rate increases accordingly on how much the pilot is moving forward the joystick.

When the joystick is released, the RPM remain at the value reached. A further forward movement of the joystick will continue to increase the RPM until the maximum is reached.

To decrease the boat speed, how much the pilot moves the joystick backwards determines the rate the RPM decrease.

The boat speed continues to decrease until the RPMs of the engines go to minimum and the gearbox goes to neutral.

Once at neutral, the system returns in **MANEUVER mode**.

If a second VMA station is in **MANEUVER** or **TILLER-THRUSTER** mode and a maneuver is under way, VMA will not accept the mode change request.

If the engines fails, it is still possible to activate **TILLER-THRUSTER** mode, allowing the pilot to control the thruster directly with the joystick.

### **NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

### 5.5.10 WATCHIT system (optional)

WATCHIT is an advanced system intended to assist the captain in operating the boat in a safer way by providing an alert about potential risks both over and under the water.

This system processes data from the on-board sensors (GPS position, heading, speed, rudder angle, LOG, wind indicator, etc..) and from the maps data which allows to constantly assess the risk of collision and issue warnings in real time to prevent accidents at sea.



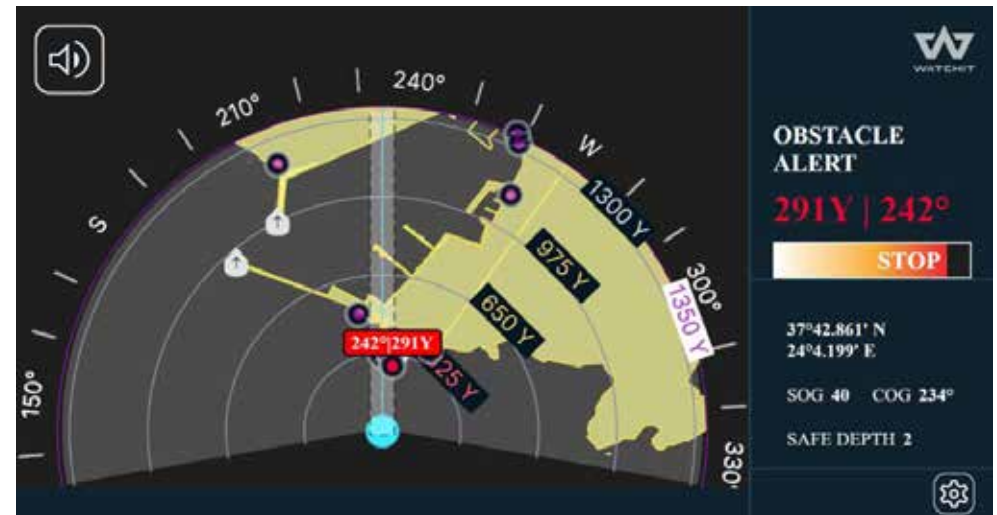
#### CAUTION

Do not use the system as a navigational tool as it is not intended as such. This system is intended only as an aid to navigation and does not substitute safe and alert yacht navigation and operation by a qualified operator.

Once the system was installed on board your yacht and was calibrated, there is no need to actively operate the system. The only action needs to be taken before leaving your port or marine is making sure the power supply switch/fuse is ON and the system will automatically power up.

The system has 4 modes of operation:

- **Normal Mode** – In this mode the system will generate a vocal an obstacle alert in case it has detected a potential hazard on the yacht's path. The alert will be heard 30 seconds before impact in order to allow enough time for the skipper to react.
- **Crowd Mode** – Whenever the system detects multiple objects in the near surrounding and the yacht speed is less than 15 Knots - the system will automatically switch to Crowd Mode and the vocal alerts will be replaced with Beeps to inform the captain about any potential risks. The beeps frequency will increase as the risking object will get closer to the yacht.
- **Anchor Mode** – Whenever the system has detected that the yacht has stopped – it will automatically switch to Anchor Mode. In case the system has detected the yacht is drifting, it will popup a Drifting Notification. After 5 minutes in case no one acknowledge the notification – a drifting alert will be triggered.
- **Marina Mode** – Whenever the yacht has entered a marina, the system will switch to Marina Mode. In this mode no vocal alerts will be heard.



#### NOTE

For further information, see the Manufacturer's Manual.

## 5.6 INTERNATIONAL RULES FOR PREVENTION OF COLLISIONS AT SEA

The pneumatic whistle (horn) installed on board of the ship, satisfies adequately the requirements prescribed by the regulation against collisions at sea (Colreg 1972).

Hereunder please find an off-print of the “International rules for prevention of collisions at sea”.

- **Application (Rule #1):** the current Norms are applicable to all yachts at high sea and to all waters communicating with it, accessible for sea navigation.
- **Responsibility (Rule #2):** none of the current rules can exempt a yacht, its Owner or the crew from the consequences of any negligence of application of said rules.
- **Definitions (Rule #32):**
  - “one short sound”, of the duration of approximately a second;
  - “prolonged sound”, of the duration of four to six seconds.
- **Signals of manoeuvre and warning (Rule #34):**
  - one short sound “I am going starboard”
  - two short sounds “I am going to port”
  - three short sounds “I am going backward”
  - — — two prolonged sounds and a short one “I am going to overtake you starboard”
  - — — — two prolonged sounds and two short ones “I am going to overtake you port”
  - — — — — one prolonged sound, a short one, a prolonged one and a short one “OK for the overtaking”
  - five short sounds “I have doubts about this manoeuvre
  - a prolonged sound “yacht approaching a channel elbow”
  - a prolonged sound “yacht answering to previous signal”

- **Signals with poor visibility (Rule #35 and 37):**
  - a prolonged sound at two minutes interval “yacht at mechanical thrust in fresh way”
  - — two prolonged sounds with an interval of two seconds and repeated every two minutes “yacht at mechanical thrust in navigation, with engines shut-off and without fresh way”
  - — — a prolonged sound and two short ones at intervals of two minutes “yacht out of control or with manoeuvre troubles or towing”
  - — — — a prolonged sound and three short ones at intervals of two minutes “last yacht towed answering to yacht towing”
  - — — — a short sound, a prolonged one and a short one “yacht riding the anchor giving its position to a ship approaching with hazard of collision”
  - — — — — five seconds of continuous sound at intervals of one minute “yacht riding the anchor giving its position”
  - — — — three short sounds one after the other “yacht stranded”
  - — — — — four short sounds “pilot yacht in service”
  - a continuous sound “danger and rescue need”



FERRETTIYACHTS

6



## WATER SYSTEMS

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1. FOREWORD

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  2. SAFETY RULES

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  3. SAFETY DEVICES AND EQUIPMENT

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  4. DESCRIPTION OF THE YACHT

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  5. HELM STATIONS

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  - 6. WATER SYSTEMS**

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  7. ELECTRIC SYSTEM

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  8. PROPULSION SYSTEMS

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  10. AIR CONDITIONING SYSTEM

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## 6.1 FRESH WATER SYSTEM

The fresh water tank has a capacity of 700 l and is divided into two 350 l units connected to each other, each of which is fitted with an inspection cover. It is mounted in the bilge, near the guest cabin.

The system is completed by a 24V autoclave pump powered from a breaker located on the main electrical panel.

On the tank are installed the following links:

- **Shore water inlet (1)**  
It is located on the starboard side main deck walk-around easily accessible.
- **Venting fresh water tank**  
It is located on the port side.
- **Water tank level sensor**  
It detects the level of fresh water in the tank.
- **Watermaker (4) (optional)**  
The tank can be filled via the water inlet and through the watermaker. It removes salt from sea water and makes it drinkable.

The system can also be powered via an outlet from the platform (3) (Optional), located on the starboard side of the cockpit, on whose line is a pressure regulating valve with pressure gauge, located in the engine room.

The fresh water system is equipped with a autoclave pump (2).

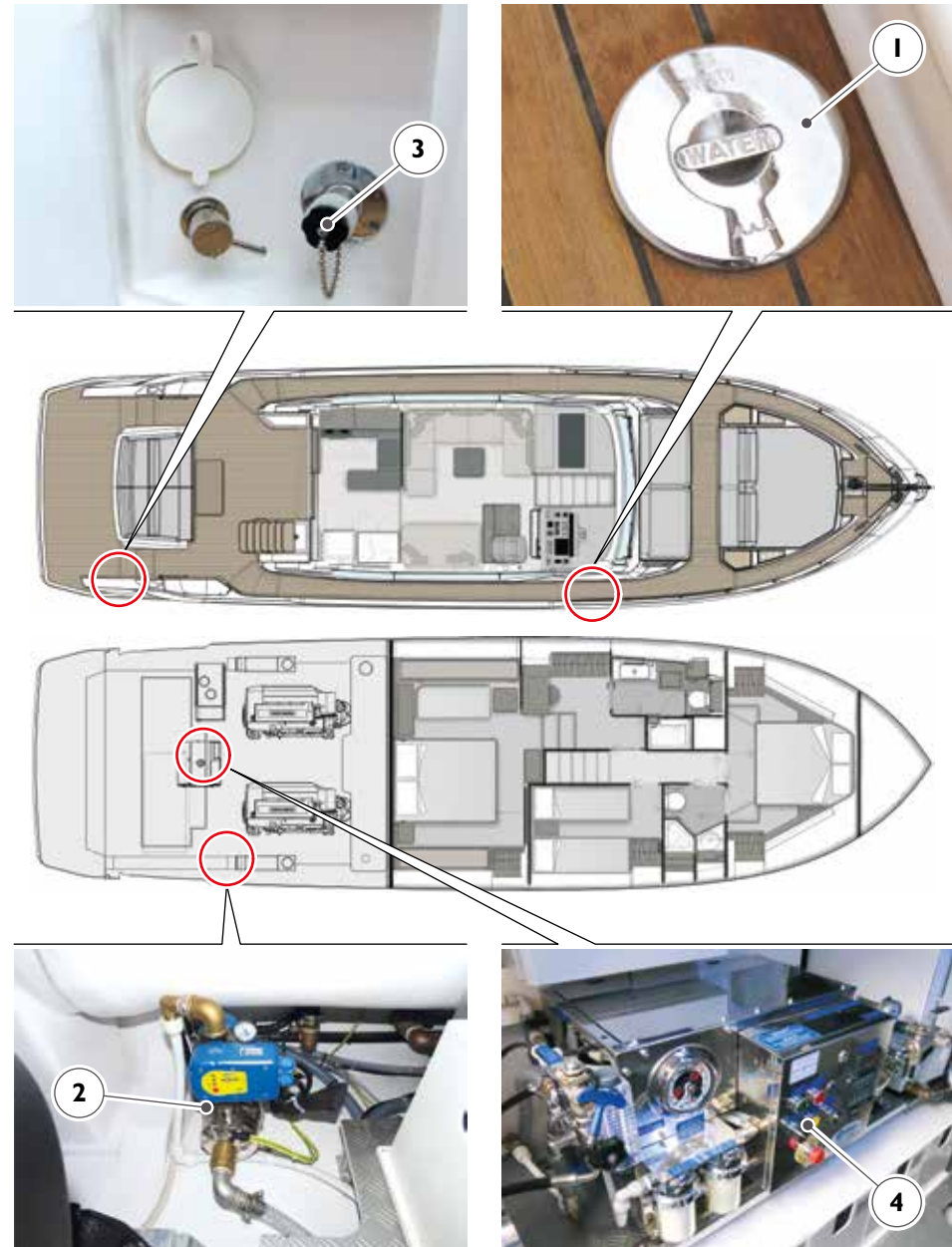
This system can offer following advantages:

- The pump continuous operation, eliminating the connection and disconnection phases;
- The pump stopping in case of water lack;
- The pump start after reaching the minimum pressure value set.

The various operating phases are shown through a display with indicator lights positioned on the pump itself:

- Power ON (green light - voltage);
- Power ON (yellow light - pump runs for some seconds and brings the system under pressure 2,8/3 bar).

When a utility is opened, the device automatically starts the pump, which stops when the utility is closed after returning the system to pressure.



When faults occur, such as water leak of pipe clogging, the Control Press indicates the faults by means of “Failure” red light and stops the pump.

The system restarts either by pressing the red Restart button, or by handling on the magneto-thermal switch on main electrical panel (by cutting out/in the pump voltage supply).

In case of technical problems, see instruction manual of the pumps group or address to the Service Department.



**CAUTION**

Regularly inspect the fresh water and bilge circuits for leaks. Repair any leaks by releasing the pressure in the system, in order to avoid damaging the furniture and the electrical equipment.



**CAUTION**

The inlet plug carries the indication “WATER” to avoid accidental input of different liquids. To avoid damage to the system and tanks, we recommend replenishing by gravity and not by pressure.



**CAUTION**

The fresh water circuit, and particularly the tanks, must be sanitized periodically by pouring in the case a specific disinfectant solution. We recommend in any case that the water coming from the on-board system not be drunk.



**WARNING**

It is a good rule to optimise the use of water, especially if navigating at open sea!



**CAUTION**

Before refilling the fresh water tank, check that the water supplied by the shore fresh water system is potable.



**WARNING**

In case of need, break or pollution of the tanks, they can be replaced. Contact FERRETTI YACHTS After Sales & Service Department.



**CAUTION**

In the yachts on which you have direct attack from the shore fresh water it is prescribed that the maximum operating pressure must not exceed 2.8 bar and that the pipeline should be disconnected during the periods when the yacht is unmanned for security reasons.

Although there is a pressure limiting check the pressure on the pressure gauge installed on the controller.



**CAUTION**

The entire capacity of fresh water tanks may not work depending on the buoyancy of the yacht and cargo on board.

### 6.1.1 Cold fresh water system

The system is kept under pressure by the pumps equipped with pressure switches. The pumps supply the system by drawing water from the tank; the water flowing through pipes and manifolds supplies following uses:

- Vip bathrooms;
- Owner's bathroom;
- Guests bathroom;
- Windscreen washer;
- Air conditioning group (optional);
- Aft shower;
- Port mooring cabinet shower (optional);
- Bow shower (optional);
- Deck washing at bow (optional);
- Galley utilities;

### 6.1.2 Hot fresh water system

Water is drawn from the tanks by means of pumps and delivered to the water heaters to be heated. The autoclave pump always keeps the circuit under pressure, circulating constantly the hot water so as to be available as soon as you open the tap. A thermostatic valve located on the water heater allows adjustment of the temperature of hot water to the taps. The water heater is powered by 230V a.c. generator, power from shore or from the inverter when installed.

In the lower part there are two valves which intercept the exchange water.

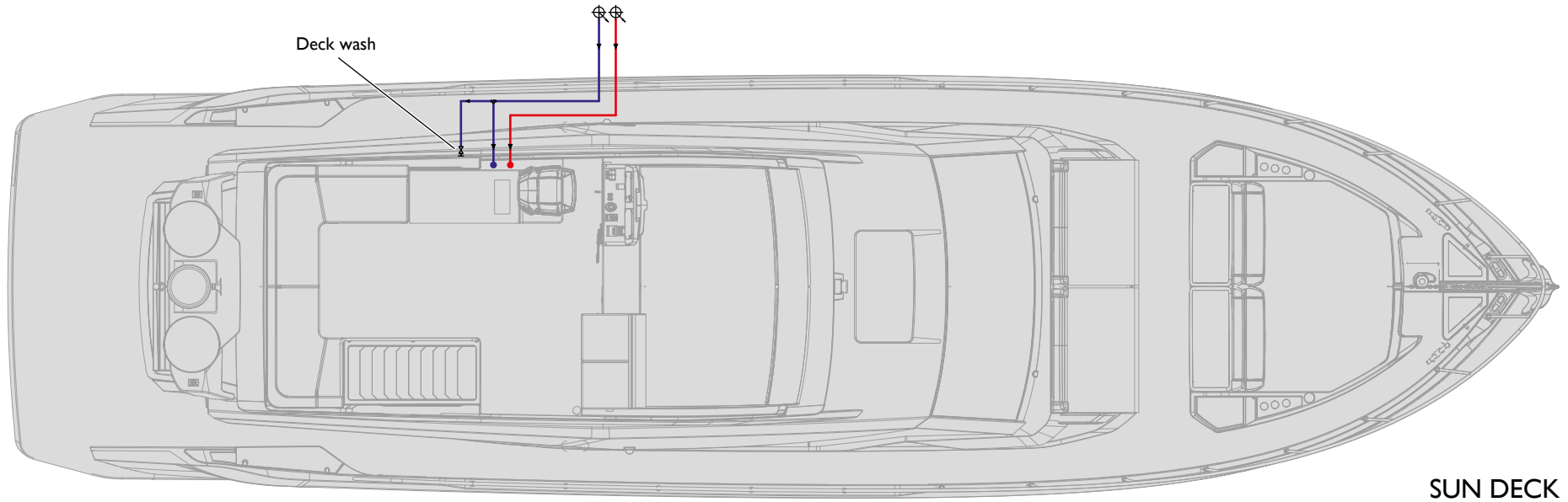
Through a distribution manifold the hot water is sent to the following uses:

- VIP cabin bathroom;
- Guests cabin bathroom;
- Owner cabin bathroom
- Galley utilities;
- Aft shower;
- Bow shower (optional).

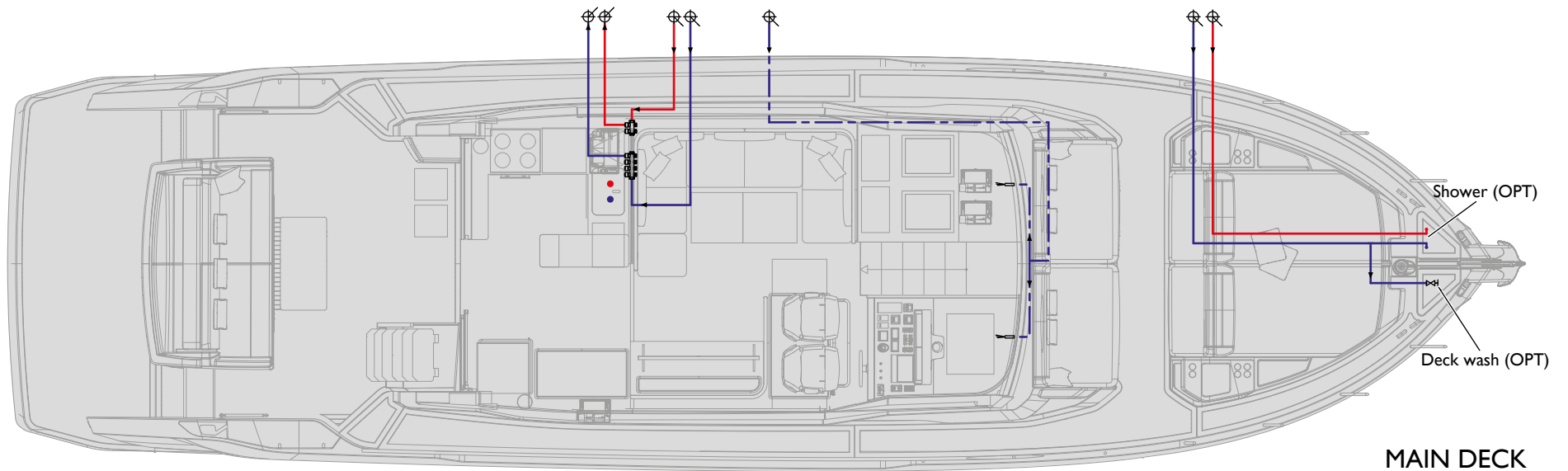
In order to use hot water, it is necessary that:

- The magneto-thermal for the water heater and autoclave, on the main switchboard, must be in the ON position;
- Ensure that a power supply is connected (generator or shore);
- The services battery breaker is set to on.

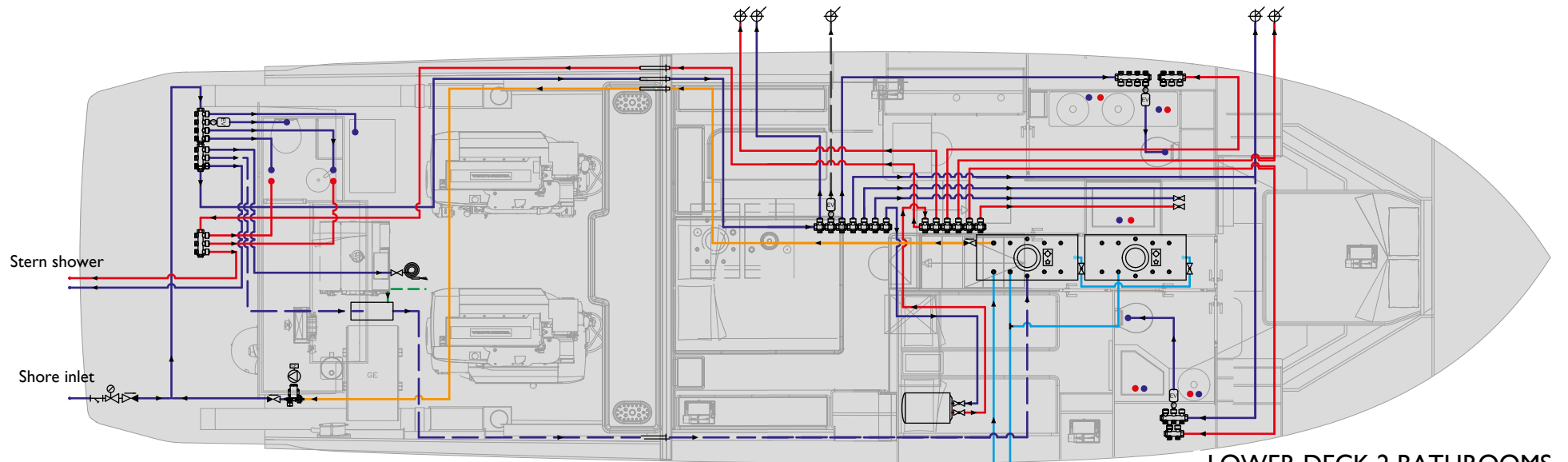
Fresh water system diagram:



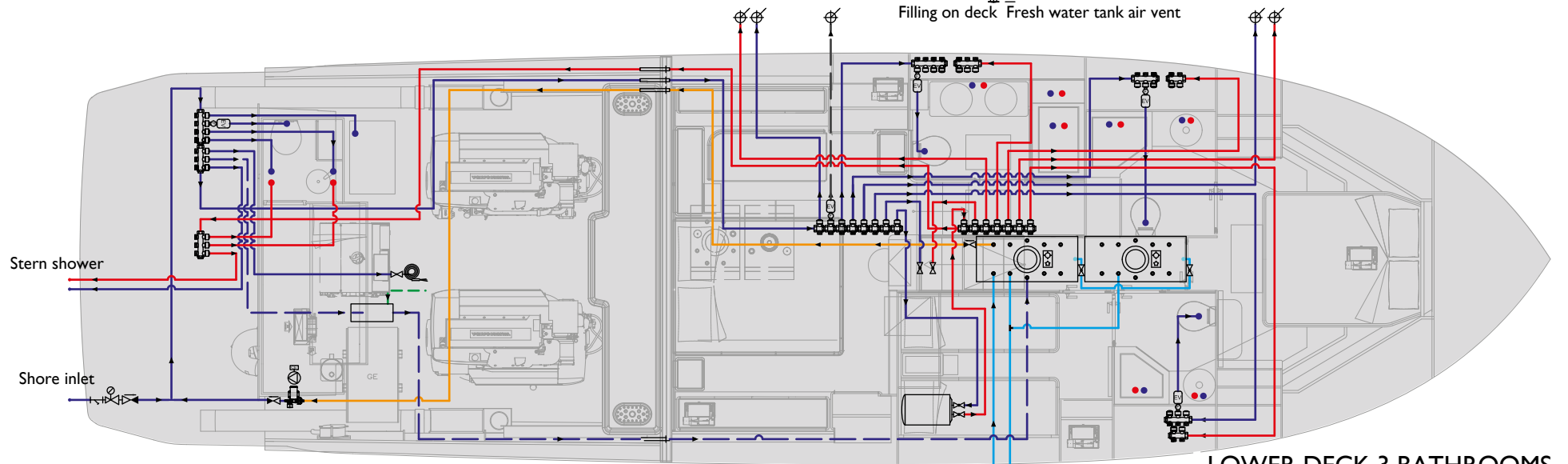
SUN DECK



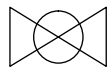




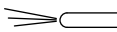
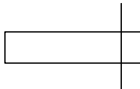


MAIN DECK




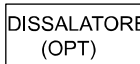


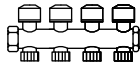
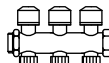







LOWER DECK 2 BATHROOMS





LOWER DECK 3 BATHROOMS


ICON	DESCRIPTION
	Ball valve
	Non return valve
	Electrovalve with filter
	Deck washing station with ball valve
	Y strainer
	Washer nozzle
	Watertight bulkhead penetration
	Overboard
	To upper deck




ICON	DESCRIPTION
	To lower deck
	Autoclave
	Water heater
	Watermaker (optional)
	Pressure reducer
	Fresh water filling
	4-way manifold with valves
	3-way manifold with valves
	2-way manifold with valves

ICON	DESCRIPTION
	1-way manifold with valves
	Fresh water line
	Insulated hot water line
	OPT

**6.1.3 Maintenance of fresh water system**

Component	Maintenance	Notes and precautions
Fresh water tanks	Cleaning and checks	<p>At least every month, drain the fresh water tanks completely and rinse them a couple of times with clean fresh water. This in order to change completely the water stowed in the storing tanks and at the same time to wash them too.</p> <p>At least once a year, carry out the inner cleaning of the tank.</p> <p>Periodically pour a specific disinfectant, in the quantity recommended by the Manufacturer, into the tanks, through the intake filler, in order to prevent the formation of bacteria in the system.</p>
Electric water heater	Cleaning and checks	<div style="border: 2px solid orange; padding: 10px; text-align: center;">  <p><b>WARNING</b></p> <p>During winter, if you do not use the Yacht, drain the water heater to avoid cracks due to freezing.</p> </div> <div style="border: 1px solid gray; padding: 10px; text-align: center; margin-top: 10px;"> <p><b>MAINTENANCE</b></p> <p>At least once a month check the operation of the water heater. At least once a month check the operation of the relief valve. At least once a year carry out the thermostat calibration, and if necessary, have it calibrated again.</p> </div> <div style="border: 2px solid yellow; padding: 10px; text-align: center; margin-top: 10px;">  <p><b>CAUTION</b></p> <p>If warm water is not available, because of the fresh water circuit discharge, switch off the water heater to prevent damaging it resistor.</p> </div> <div style="border: 1px solid gray; padding: 10px; text-align: center; margin-top: 10px;"> <p><b>NOTE</b></p> <p>For further information on use and maintenance, please refer to the manufacturer's manual.</p> </div>

Component	Maintenance	Notes and precautions
Fresh water system	Cleaning and checks	<p>In case of need or of maintenance, by acting on the valves installed on the distribution manifolds, it is possible to cut out parts of the system or single uses, without involving the operation of the general system.</p> <p>At least once every six months check for leakages along the system.</p> <p>At least once a month check the correct operation of the taps.</p> <div style="border: 2px solid orange; padding: 10px; text-align: center;">  <p><b>WARNING</b></p> <p>The high temperature can cause the softening of the pipes and the following slackening of the fittings. Always check the pipes tightening, especially those located near heat sources.</p> </div>
Autoclave pump	Cleaning and checks	<p>At least each week, check the operation of the fresh water pump.</p> <p>Periodically check for the presence of leaks. Before carrying out maintenance on the fresh water pump, avoid its accidental priming.</p> <p>Regularly check that fittings are tightly closed and free from corrosion. Check the cleaning condition of the pump and expansion tank; eventually clean with well diluted detergent and dry accurately at least once a month (see Specific Manual).</p> <p>When necessary replace the engine brushes. At least once every six months protect electric components of the pump with proper products.</p> <div style="border: 1px solid gray; padding: 10px; text-align: center;"> <p><b>NOTE</b></p> <p>For further information on use and maintenance, please refer to the manufacturer's manual.</p> </div>

Component	Maintenance	Notes and precautions
Autoclave pump	Cleaning and checks	<div style="border: 2px solid orange; padding: 10px;">  <p><b>WARNING</b></p> <p>The autoclave pump is self-priming but it needs though, in order to operate, to have its body filled with liquid.                      For a correct use, we recommend priming first or after a long idling period, to fill the pump body with liquid and to verify the rotation direction of the pump (it should be clockwise, seen from the engine side).                      Besides, if on the synoptic panel the pump operating led remains always lit, but the enslaved uses are not in use, check for leaks.</p> </div> <div style="border: 2px solid orange; padding: 10px; margin-top: 10px;">  <p><b>WARNING</b></p> <p>When anomalous situations occur, such as lack of water or pipes clogging, the Control Press indicates it presence of faults by means of the red light “Failure” and stops the pump.                      By pressing red button (reset) the system restart.</p> </div> <div style="border: 2px solid red; padding: 10px; margin-top: 10px;">  <p><b>DANGER</b></p> <p>Before carrying out maintenance on the fresh water pump, avoid its accidental priming.</p> </div>

### 6.1.4 Watermaker (optional)

To solve the problem of water supply and to ensure a constant availability also during long navigations, the yacht has been provided with an efficient watermaker system.

The watermaker is installed in the engine room and draws seawater through the dedicated sea inlet by means of a dedicated electric pump and, after straining and treating, sends it to the on-board tank.

Before the sea water is treated, it is filtered in order to remove all “suspended” particles, such as small seaweed and impurities in the water, which could clog the inner membranes of the watermaker, even within a short amount of time.

The watermaker produces bacteriologically pure water and can therefore be used for all on-board applications.

Excess water and salt concentrate are discharged overboard.

In order to prevent the problem of the deposit of salts on the inner membranes and their crystallization over time, the system has been provided with an end-of-cycle flushing system which uses fresh water. Given the importance of this operation, clean the inner membranes of the watermaker according to the procedures and the schedules indicated by the manufacturer.

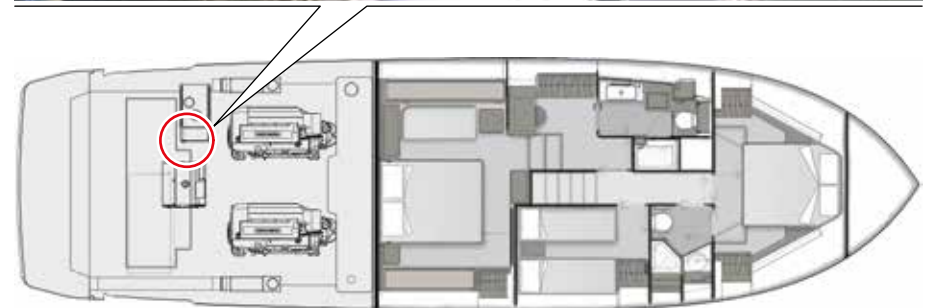
On the general electrical panel (230V mains), there is a magneto-thermal breaker which supplies and protects the watermaker system.



#### CAUTION

The watermaker is to be kept in good condition by scrupulously following the indications in the specific manual.

Bad maintenance can lead to production of non-potable water unsuitable for food use.



**CAUTION**

The watermaker does not eliminate all dangerous agents present in polluted waters (see specific manual).

Use the watermaker only in clean waters, to avoid contamination of its membranes, tanks and of the whole circuit.

**CAUTION**

In order to prevent clogging the watermaker filters and membranes, do not use the system where sea water is dirty or contains a great deal of sand in suspension.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

**MAINTENANCE**

At least once a month verify:

- The correct operation;
- The oil level in the pump.

Periodically perform a fresh water washing cycle.

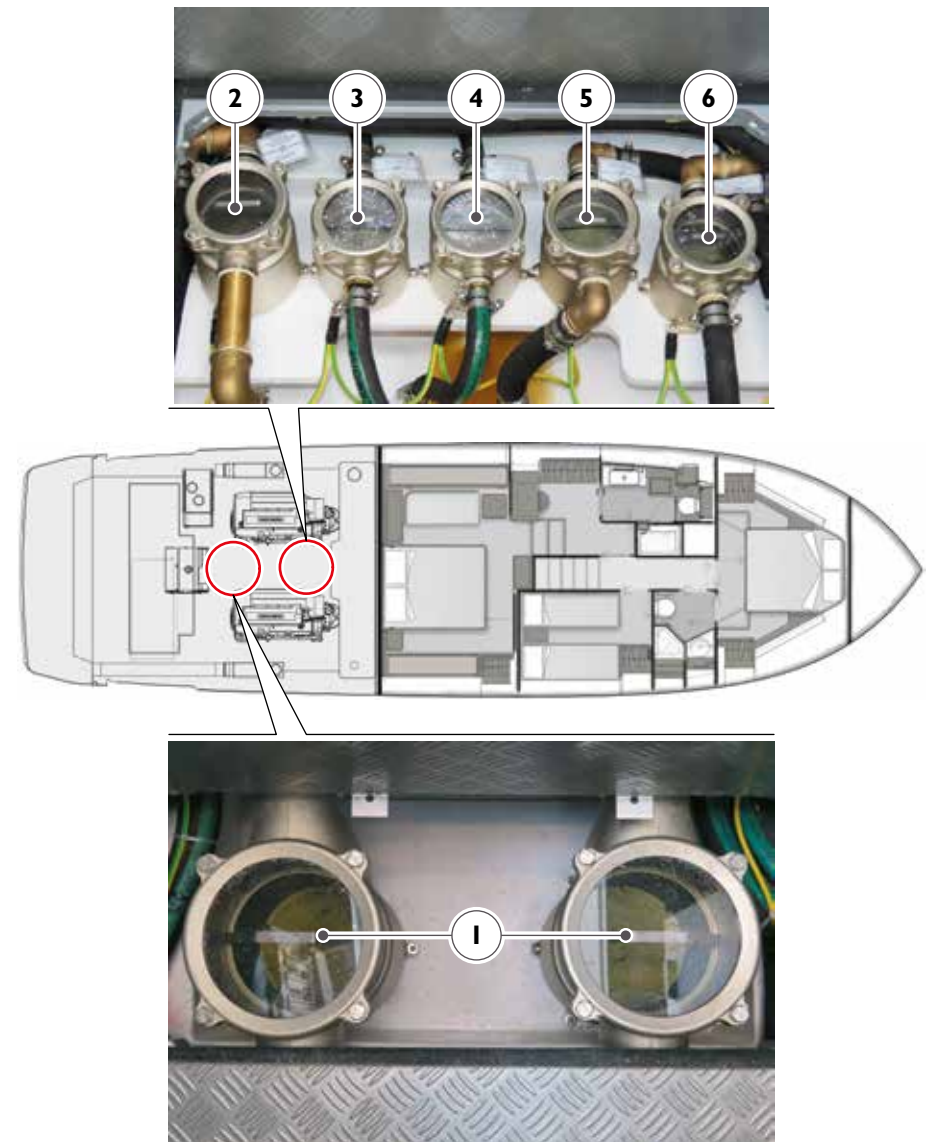
At least once a year, change the oil of the pump.

When necessary clean the filters.

## 6.2 SEA WATER SYSTEM

The sea water systems on board are:

- Engine cooling system (1)**  
 Consisting of two circuits, one for the starboard engine and the other for the port engine. Sea water is sucked directly by the inner pumps of the same engines by means of two sea cocks equipped with two cut-off valves and strainers. The water drawn by the engines flows through the strainers and is then conveyed to the heat exchangers of the engines and gearboxes and later discharged overboard by means of engine exhausts. Moreover, part of the water drawn in is directed to the hull seal to cool it.
- Generator cooling system (5)**  
 Sea water is sucked directly by the pump of each generator, by means of a sea cock equipped with cut-off valve and strainer. After going through the strainers, the water sucked by the generators is delivered to the heat exchangers and then discharged overboard.
- Seawater fire extinguishing/washing system (4)**  
 It consists of an electric pump that sucks in sea water through the services sea water intake equipped with a shut-off valve and strainer and sends it to the fire hose, as well as to services supplied by sea water such as black waters tanks washing and anchor chain washing.
- Air conditioning unit cooling system (2) (optional)**  
 The circuit consists of a sea suction with shut-off valve, a sea water strainer and a pump used to cool the air-conditioning unit. After cooling the unit, the water is discharged outboard.
- Gyroscopic stabilizer cooling system (6) (optional)**  
 The sea water is sucked by the pump dedicated to cooling the stabiliser through a sea cock equipped with a shut-off valve and strainer. The suctioned water passes through the strainer before being sent to the heat exchanger of the gyroscopic stabilizer and then discharged outboard.
- Watermaker system (3) (optional)**  
 Seawater is sucked in by dedicated seawater pumps through a sea inlet equipped with a shut-off valve and filter.  
 The water sucked through the filter is sent to the watermaker, treated and used to fill the fresh water tank.



Clean the sea cock strainers according to the interval of time required by the system use and to the pollution condition of the sucked waters.

- Close the valve of the involved sea cock.
- Cut-off valves upstream of involved strainer.
- Remove the strainer cover by loosening the screws.
- Remove the strainer basket and wash away all impurities with fresh water. If necessary, replace them.
- Reinstall the baskets and the cover.
- Open the valves upstream of involved strainer.
- Before restarting the system circuit, ensure that the screws and relevant washers are correctly fastened with the ring and disc on strainer's body.

Re-open the sea cock valve completely and check for leaks presence from the strainer cover.



### CAUTION

In case of sinking hazard, if the escaping conditions allow it, close all ball valves of the sea intakes.



### DANGER

The lack of care while cleaning each sea intake strainer can cause serious damage to the on-board devices and, in some cases such as fire, it may have extremely serious consequences. Check before undertaking the navigation and at regular intervals during navigation, the condition of the sea cock strainers of the various devices through the transparent covers.



### CAUTION

Before carrying out cleaning of the sea cock strainer, check that uses supplied with sea water are not ON and used: sea water pump, watermaker, air conditioning unit.



### WARNING

During navigation, regularly check the cleanliness of the sea water strainer baskets.

If the yacht is crossing a dirty sea area, check the condition of the strainers and proceed with their cleaning.

Taking suitable precautions is very important to prevent damage to mechanical parts (engines, generators, etc..), discharge systems and to not jeopardize the safety of the yacht.



### WARNING

It is advisable, when leaving the Yacht in water for a long time, to close all sea cocks.



### CAUTION

In case of sinking hazard, if the escaping conditions allow it, close all ball valves of the sea intakes.



### WARNING

Before carrying out maintenance on the sea water circuit, disable its operation and close the sea cock valve.

Before restarting the system circuit, make sure that the cut-off valve is completely open.



### WARNING

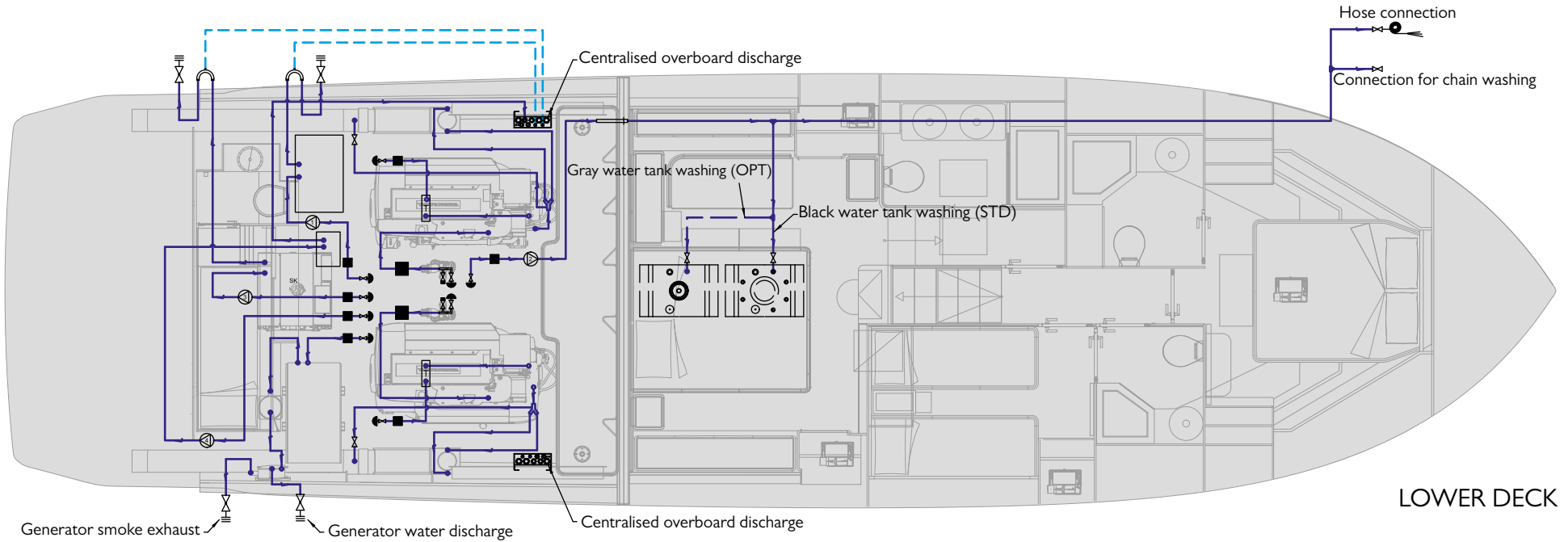
Avoid running the seawater service pump dry for more than a few minutes.



**DANGER**

The lack of care while cleaning each sea intake strainer can cause serious damage to the on-board devices and, in some cases such as fire, it may have extremely serious consequences. Check before undertaking the navigation and at regular intervals during navigation, the condition of the sea cock strainers of the various devices through the transparent covers.

Sea water system diagram:





LOWER DECK



ICON	DESCRIPTION
MMEE	Engine
DG	Generator
WM	Watermaker (optional)
AC	Air conditioning (optional)
SK	Gyroscopic stabilizer



ICON	DESCRIPTION
T	Mechanical seals
1	AC cooling pump
2	Sea water autoclave pump
3	Gyroscopic stabilizer cooling pump

ICON	DESCRIPTION
4	Watermaker pump (optional)
	Chain washing hose
	Sea water strainer
	Sea water intake

## 6.2.1 Maintenance of sea cocks and strainers

Component	Maintenance	Notes and precautions
Sea cocks and strainers	Cleaning (as required depending on the shoring area, but at least every month)	<p><b>Sea cock cleaning</b>            This operation has to be carried out outside, therefore the yacht must be in a dry shore or you can ask the intervention of a diver.</p> <ul style="list-style-type: none"> <li>• Have the sea cocks cleaned (removal of seaweed or barnacles. If necessary have them removed with a brush).</li> </ul> <div style="border: 2px solid red; padding: 10px; margin: 10px 0;"> <div style="text-align: center;">  <p><b>DANGER</b></p> </div> <p>If the ship is in the water, before starting to work on the shaft lines, block the start of the engines, the generators and the sea water pumps.</p> </div> <p><b>Inspection and cleaning valves and strainers</b></p> <ul style="list-style-type: none"> <li>• Cleaning is necessary more frequently if the sucked waters are particularly dirty (seaweeds, mucilage presence etc..).</li> </ul> <div style="border: 2px solid orange; padding: 10px; margin: 10px 0;"> <div style="text-align: center;">  <p><b>WARNING</b></p> </div> <p>Before removing the strainer, it is necessary to close the valve fitted to the sea cock, to prevent flooding the bilge with water.</p> </div>

Component	Maintenance	Notes and precautions
Sea cocks and strainers	Cleaning (as required depending on the shoring area, but at least every month)	<p><b>Inspection and cleaning valves and strainers</b></p> <ul style="list-style-type: none"> <li>• Check for barnacles or corrosion on the control levers of the cut-off valves of the strainer to be checked.</li> <li>• Clean the control levers of the valves with a brush.</li> <li>• Move the levers repeatedly.</li> <li>• Close the cut-off valve upstream the strainer.</li> <li>• Remove the strainer cover by loosening the screws.</li> <li>• Remove the filter element, clean it with a brush and rinse it in water (replace as necessary).</li> <li>• Clean the strainer housing.</li> <li>• Check and, if necessary, replace the gasket of the strainer cover.</li> <li>• Fill the strainer with water to avoid the pumps running dry or that the system does not prime.</li> <li>• Reposition the strainer, the cover and tighten the nuts.</li> <li>• Reopen the cut-off valve and check whether the strainer cover is leaking.</li> </ul> <div style="border: 2px solid orange; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"> <b>WARNING</b></p> <p>Before servicing the sea water lines, disable the operation of the connected uses. Before restarting the uses, make sure that the cut-off valve is completely open.</p> </div> <div style="border: 2px solid orange; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"> <b>WARNING</b></p> <p>During navigation, regularly check the cleanliness of the sea water strainer baskets. If the yacht is crossing a dirty sea area, check the condition of the strainers and proceed with their cleaning. Taking suitable precautions is very important to prevent damage to mechanical parts (engines, generators, etc..), discharge systems and to not jeopardize the safety of the yacht.</p> </div>

Component	Maintenance	Notes and precautions
Electropump services	Cleaning and check	<p>At least each week, check the operation of the sea water pump.</p> <div style="border: 2px solid orange; padding: 10px;"> <p style="text-align: center;"></p> <p style="text-align: center;"><b>WARNING</b></p> <p>The pump is self-priming but, in order to operate, it needs to have its body filled with liquid. For a correct use, we recommend at first priming or after a long idling period, to fill the pump body with liquid and to verify the rotation direction of the pump. Also, if the synoptic panel is always on the LED of the pump but no one is using uses switched, check for any leaks.</p> </div> <div style="border: 2px solid red; padding: 10px; margin-top: 10px;"> <p style="text-align: center;"></p> <p style="text-align: center;"><b>DANGER</b></p> <p>Before servicing the pump, disable its operation.</p> </div> <ul style="list-style-type: none"> <li>• Have the inner cleanliness of the pump checked; possibly, have it cleaned with well diluted detergent and dried.</li> <li>• Have the fittings for well tightening and corrosion checked.</li> <li>• Frequently check and keep the suction filter clean.</li> <li>• Check that the electric power supply cables are in good conditions.</li> <li>• Have the pump brushes replaced every 500 operating hours.</li> </ul> <div style="border: 1px solid gray; padding: 10px; margin-top: 10px;"> <p style="text-align: center;"><b>NOTE</b></p> <p>For further information on use and maintenance, please refer to the manufacturer's manual.</p> </div>

### 6.3 GREY WATER SYSTEM

The waste water from showers, bidets and sinks is collected from a grey water tank 120 l (31,7 gal) placed under the bed in the owner's cabin.

The system is equipped with an evacuation pump with automatic or manual control. The dishwasher (optional), washing machine (optional) and galley sinks can be unloaded directly overboard.

In the bilge of the crew cabin is an additional tank that collects grey water from crew's bathroom; the tank is provided with emptying pump with automatic activation.



#### ENVIRONMENT

Do not discharge soaped waters drained by washing machines and dishwashers in the harbour, inside marinas or near beaches, because of the large amount of foam produced.

In automatic operation, the optional grey water pump (I), in the engine room starts to operate when the float inside the tank reaches the maximum level and is deactivated when it reaches the minimum level.

It has to be remembered that, the float inside the grey water tank, is equipped with a circuit delaying for some second, both the pump switching on and off.

The start delay prevents that, in case of yacht rolling, the pump primes with the wake. The switching off delay ensures that the pump sucks also the residual liquids below the float level.

In manual mode the grey waters pump can be controlled by means of a switch located on the synoptic panel of main helm station.

The pump is powered by the magneto-thermal on the control panel in the engine room.

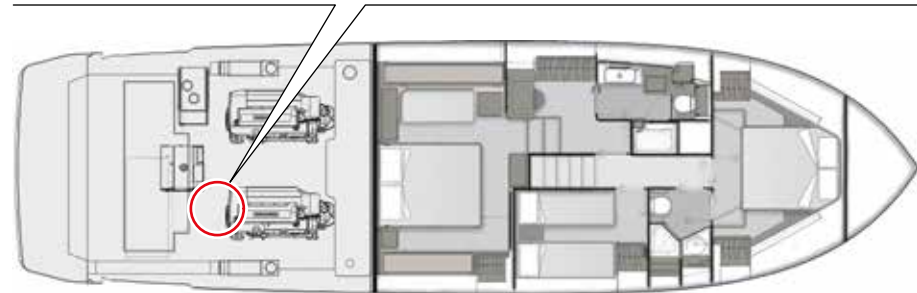
You should always check the warning light tank collection or emptying it into manual control before entering port, to avoid having to make a new exit at sea to be emptied.

#### MAINTENANCE

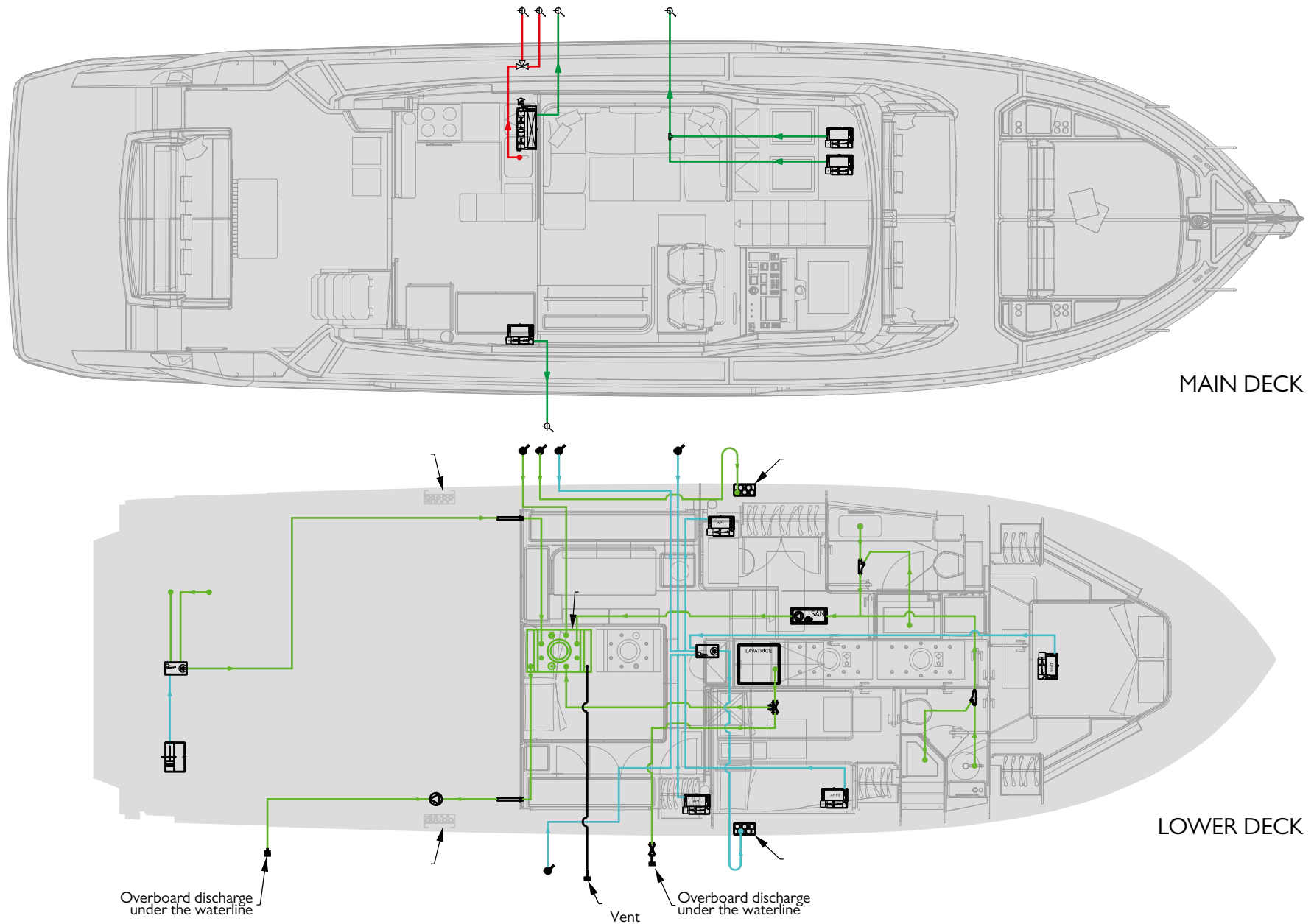
At least once every three months:

- Carry out the complete cleaning of the tank;
- Carry out the complete cleaning of the pump;

At least once every six months check the status of the pump.



Grey water system diagram:



## 6.4 BLACK WATER SYSTEM

The sewage system can be equipped with a holding tank (optional) 170 l (45 gal), located under the bed in the owner’s room.

The waste water tank is discharged either through the waste water pump located in the engine room that discharges outboard or through the suction port located on the walk-around to the starboard side.

The holding tank is equipped with minimum level alarm, pre-alarm and maximum level alarm, starting/stopping automatically the black water pump (I) activating the alarm indication in the main helm station, and disabling the toilets.

The draining control can be activated either in manual or in automatic mode.



### WARNING

On the float inside the water tank, it has been prepared for a circuit delay of a few seconds to activate the pump. The ignition delay is to prevent, in the case of oscillations of the yacht, that the pump primers with the lapping. The pump black water, in automatic mode, part whenever is below estimates.



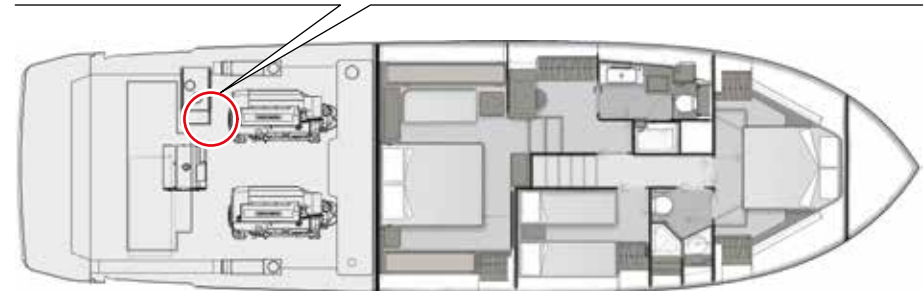
### ENVIRONMENT

Before entering the port is recommended to monitor the status of the tank and whether the dumping at sea or make use of port services by checking in advance if the port to which you are heading is unable to empty the tank through the filler WASTE charge, located on walk-around to the starboard side.

Every toilet has a macerator pump discharging sewage directly in the black water tank.

To activate the toilet facility must be operated magneto-thermal on the electrical panel located in the engine room.

The water used for washing the toilet is taken from the DC cold fresh water through the distribution manifold. Collectors are installed on the solenoid relative to each toilet, which allow the introduction of water every time they pressed “before use” or “after use”.




**CAUTION**

In case of necessity, breaking or pollution of the tanks, these can be replaced. Contact FERRETTI YACHTS After Sales & Service Department.


**CAUTION**

If there is the risk the yacht might sink, if the evacuation conditions allow it, close the waste water discharge ball valve.


**WARNING**

The exhaust valves must be closed when the toilet is not used.


**WARNING**

It is forbidden for all pleasure yachts to discharge their waste into the sea from the toilets on board in ports, shores and at the moorings dedicated to yachts parking, and within the limit of the beaches frequented by bathers in each set of maritime authorities' ordinances.


**DANGER**

In the event of a pipe break or an accessory connected to a water intake or discharge to the sea, immediately close the seacock and open it only after the fault is cleared. Do not follow this procedure may cause flooding.


**WARNING**

The toilet can discharge exclusively organic waste and thin toilet paper.


**WARNING**

Within 12 nautical miles from the coast it is forbidden to discharge into the sea the black water . it is necessary to keep off the drain pump and exclude the automatic activation.

Procedure for draining by WASTE outlet.

- Loosen the plug of the WASTE outlet.
- Handle the hose by paying attention not to soil the deck teak.
- Correctly fit the outlet for shore drain by means of the screw connection.
- Take advantage of harbour services for sewage intake with vacuum system.
- Disconnect the hose correctly by paying attention again so as not to soil the deck.
- Retighten the plug of the WASTE outlet and clean with fresh water.

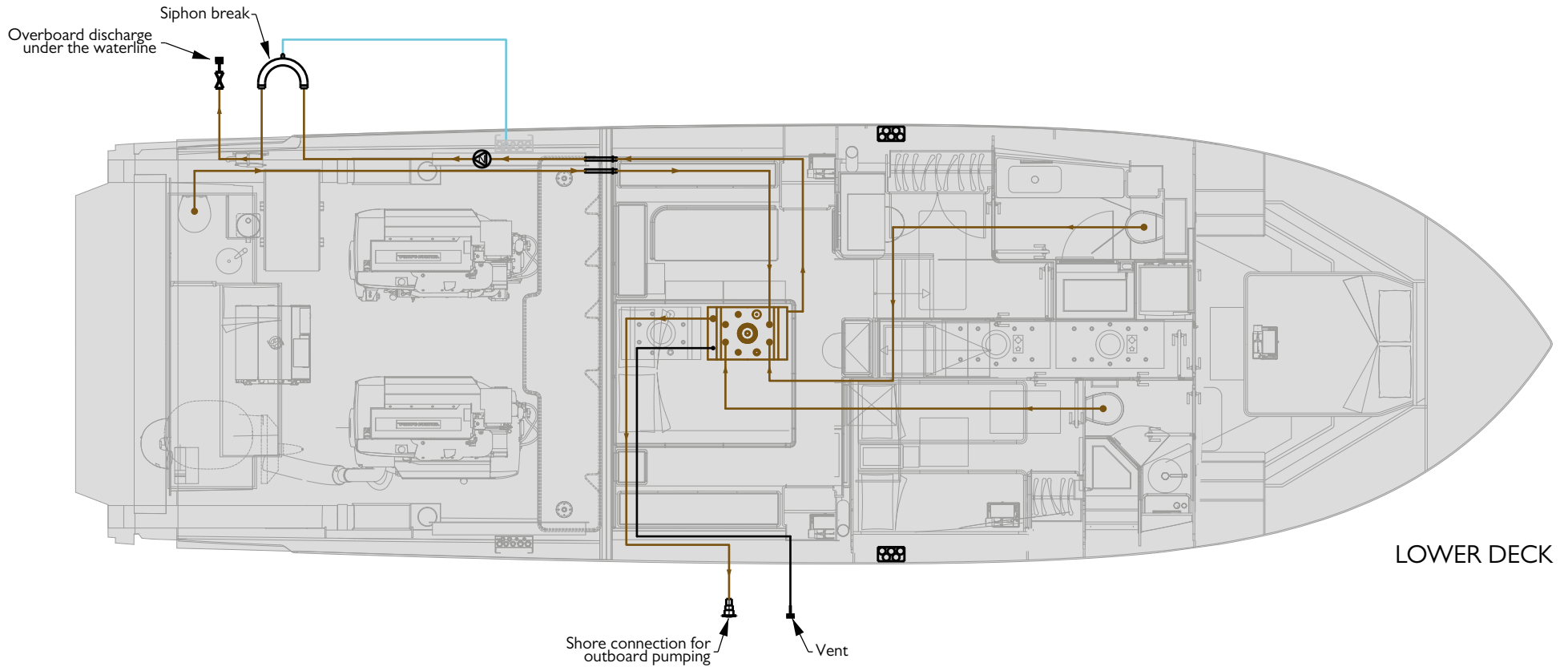

**CAUTION**

All pleasure yachts classified for a number of passengers exceeding the 15 units and equipped with toilets can drain the untreated sewage at sea according to MARPOL rules, only BEYOND the limit of 12 (twelve) miles from the coast, while navigating at fixed track and at the maximum speed allowed, anyway not lower than 4 knots.


**CAUTION**

The suction nozzle on the walk-around features the word "WASTE" to prevent accidental infiltration of liquids, such as water or fuel.

**Black water system diagram:**



ICON	DESCRIPTION
	Air vent
	Ball valve
	Siphon break
	Discharge nozzle
	Fan coil

ICON	DESCRIPTION
	Grey water collection tank
	Overboard discharge
	Grey water pump
	Black water pump

ICON	DESCRIPTION
	Tank with pump and float
	Centralised overboard discharge
	From the lower deck
	To the upper deck

## 6.4.1 Toilet operation

The bathroom toilets are made of ceramic and their control panels contain two backlit buttons:

1. Button BEFORE USE
2. Button AFTER USE

After 2 minutes of service the backlit buttons and switch off and the device sets to energy saving mode.

When pressing of one of the two buttons, the backlighting and operation will be restored.

When the level sensor indicates that the tank is full, the toilet will not discharge.

To force the toilet discharge, hold button (2) pressed over 6 seconds.

In order to activate or deactivate the tank protection, press both buttons twice in quick sequence.



### CAUTION

Except for organic waste, only very thin toilet paper can be discharged into the sea toilets. Paper tissues or handkerchiefs and sanitary napkins may clog and damage the sanitary system.



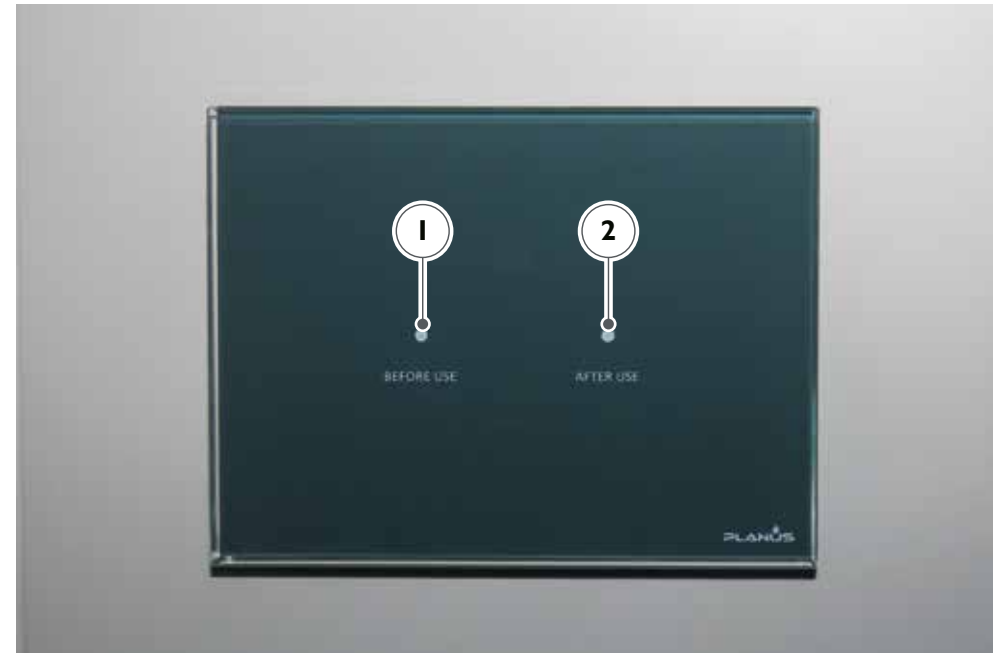
### CAUTION

Make sure that toilets are electrically powered and that the black water system is operating before using them.



### CAUTION

We suggest not to use the residential function of the toilet, as the water inside the toilet could splash out and wet the floor due to the yacht's rolling.



**WARNING**

The exhaust valve outboard must be closed when the toilet is not used.

**CAUTION**

Forcing the toilet discharge can cause overflow of the tank.



**CAUTION**



The full tank condition is indicated by the red light of the tank icon on the synoptic on the helm station. Draining may cause the tank to overflow.

**CAUTION**

The disabling of toilet drain protection can cause the tank to overflow.

## 6.4.2 Maintenance of black and grey waters draining system

Component	Maintenance	Notes and precautions
Black and grey water tank	Rinse the tanks (at least every month)	<p>Have the tanks filled with clean water and drain them two or three times. To prevent the formation of bacteria and of bad smell, pour periodically a disinfectant into the toilet, sink and bidet drains.</p> <div style="border: 2px solid yellow; padding: 10px;"> <p style="text-align: center;"></p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Should deodorants or disinfectants be used, avoid abrasive substances or acids, because they could damage tubes and seals.</p> </div> <div style="border: 2px solid yellow; padding: 10px;"> <p style="text-align: center;"></p> <p style="text-align: center;"><b>CAUTION</b></p> <p>In case of need, break or pollution of the tanks, they can be replaced. Contact FERRETTI YACHTS After Sales &amp; Service Department.</p> </div> <div style="border: 2px solid gray; padding: 10px;"> <p style="text-align: center;"><b>MAINTENANCE</b></p> <p>At least once a week check the correct operation:</p> <ul style="list-style-type: none"> <li>• Of toilets;</li> <li>• Of the black water pump.</li> </ul> <p>At least once every three months check the status of the tubes and connections.</p> <p>At least once every six months protect with proper products:</p> <ul style="list-style-type: none"> <li>• Of toilets solenoid valves;</li> <li>• The black waters pump.</li> </ul> <p>When necessary, at least once a year, carry out the accurate cleaning of the holding tank.</p> </div>

Component	Maintenance	Notes and precautions
Pumps	Check and cleaning (at least every month)	<p>Electric pumps usually do not need ordinary maintenance, as long as some precautions are taken, extending their lives. Periodically check the cleanliness of the protective mesh of the aspiration pump.</p> <div style="border: 2px solid red; padding: 10px; text-align: center;">  <p><b>DANGER</b></p> <p>Before each intervention make sure that voltage is disconnected and that there is no possibility of accidental connection.</p> </div> <ul style="list-style-type: none"> <li>• Make sure that the pump never runs dry.</li> <li>• The DC motor brushes must be periodically checked for consumption and spring pressure.</li> <li>• If the pump does not work for a long time, it is better to empty the pump casing and clean it.</li> <li>• Check that the impeller is jammed, this could cause heavy damages to the electric motor; if this happens, descale the impeller and pump body.</li> </ul>
Pumps	Replacement of impeller and mechanical seal	<p>This is a difficult operation and should only be undertaken by skilled personnel.</p> <div style="border: 2px solid yellow; padding: 10px; text-align: center;">  <p><b>CAUTION</b></p> <p>The electric pump must only be repaired by competent or qualified personnel, using manufacturer's spares; if this procedure is not followed, the Manufacturer declines any responsibility and warranty is void and null.</p> </div>

## 6.5 SCUPPERS SYSTEM

The scupper system, by means of suitable holes and drainage channels, allows rain-water, seawater or other water that may fall onto the main deck to flow quickly off the yacht.

All waters collected by the scuppers are conveyed by means of manifold tubes, placed along the bulwarks.

The total or partial clogging of one or of more scuppers must absolutely be prevented, because it is a cause of flooding and consequent loss of stability by the yacht and its structures.



### CAUTION

Always check the correct water flow towards the scuppers.

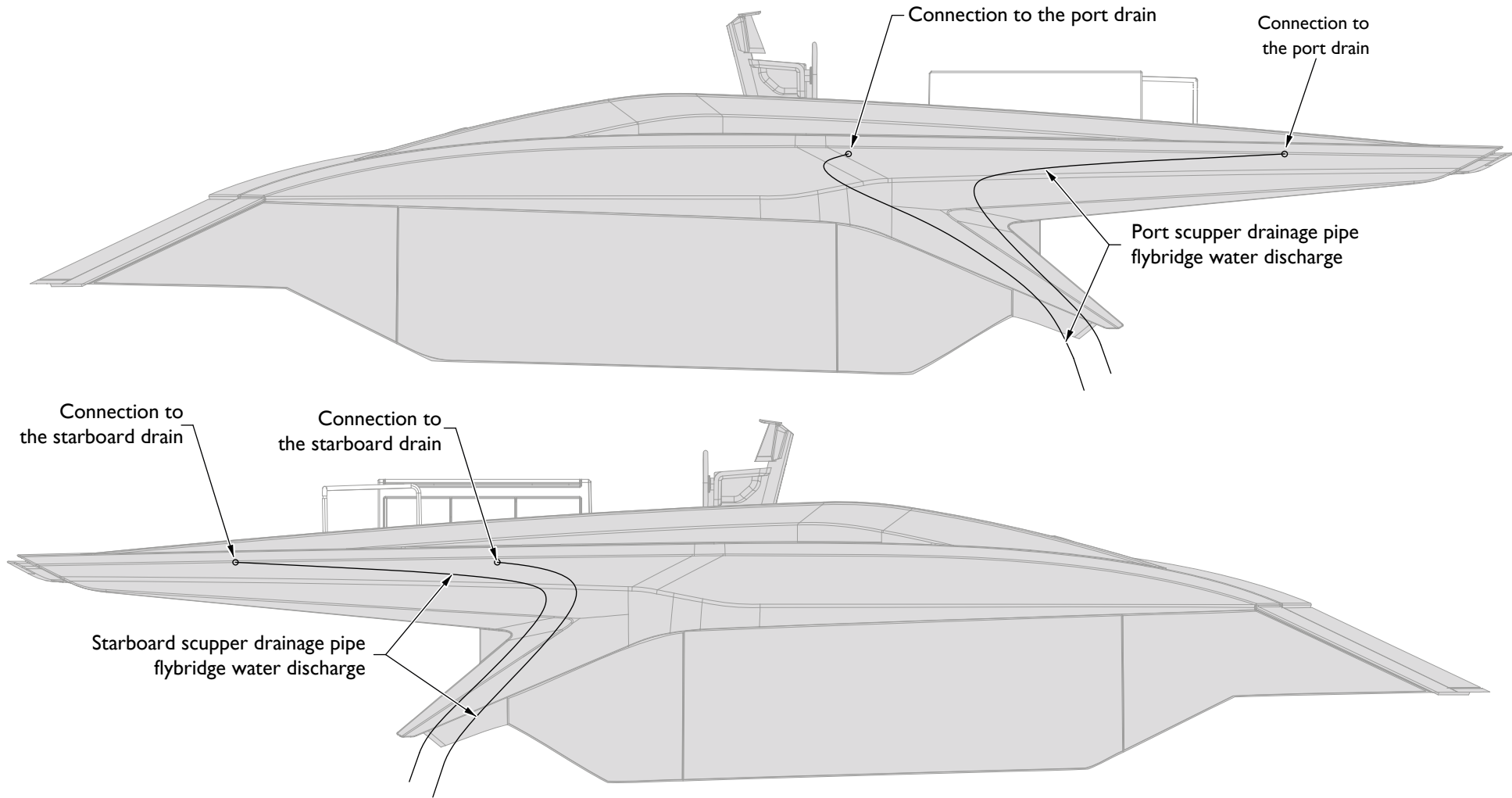
The partial or total clogging of one or more scuppers is a possible cause of damage for the yacht structure and of loss of stability.

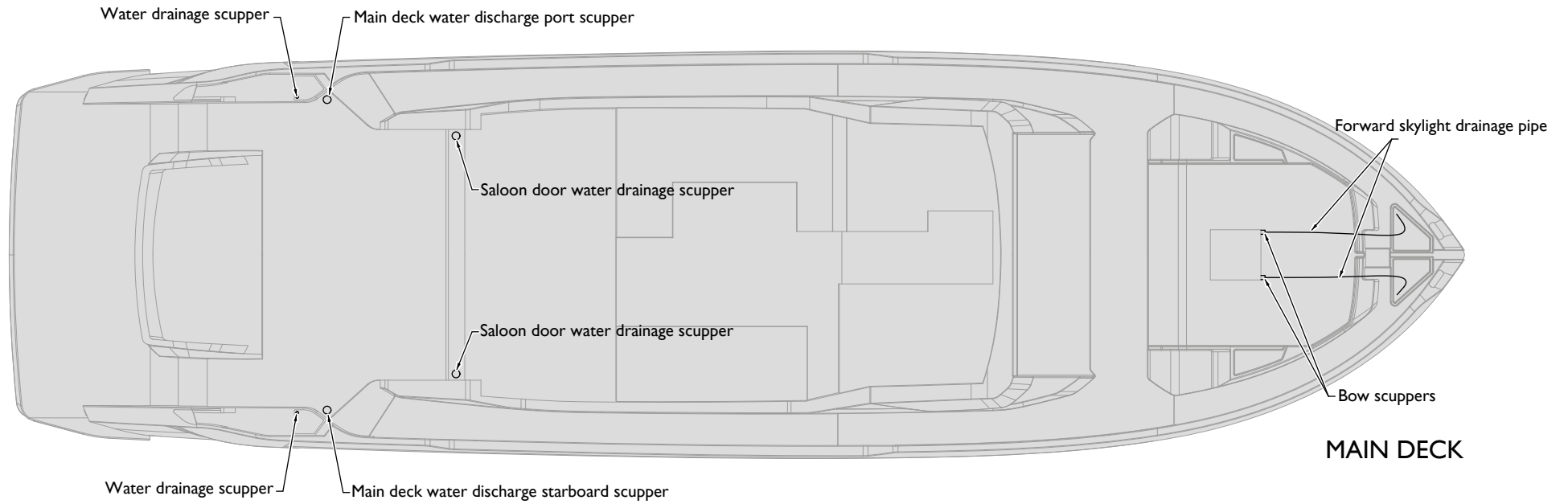
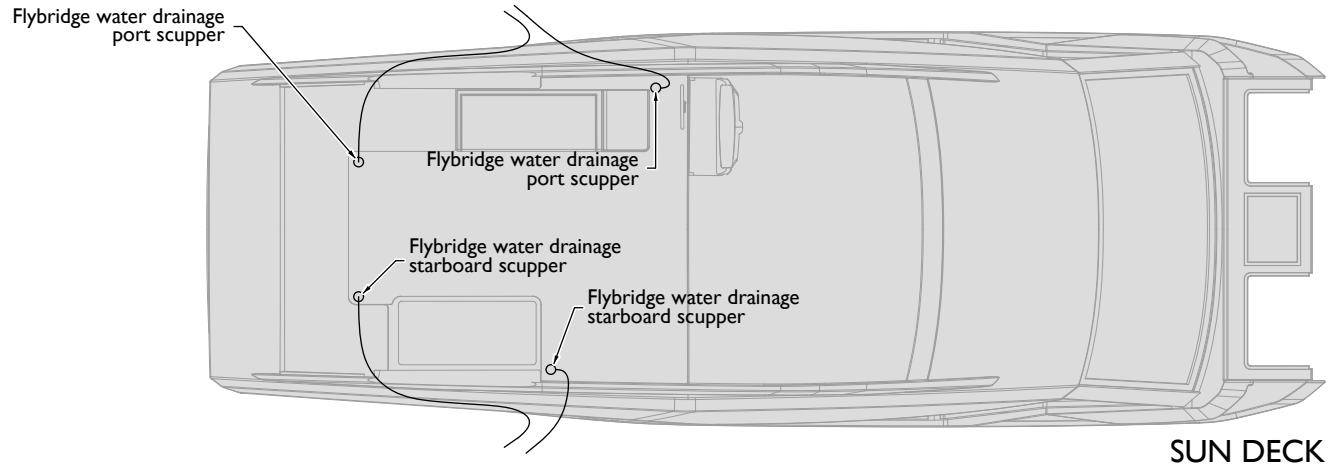


### CAUTION

Avoid that incorrectly stowed objects clog the scuppers.

Scuppers system diagram:





## 6.6 BILGE EXHAUST SYSTEM

Each space on your yacht is served by two bilge exhaust systems:

- Main bilge exhaustion system (automatic and manual operation);
- Secondary bilge exhaustion system (manual operation).

### 6.6.1 Main bilge exhaust system

The centrifugal diving pumps for bilge suction (I), driven by suitable float switches, suck water from the bilge and deliver it to the overboard drain.

Another alarm activation float, placed higher than the first one, activates the alarm siren with signalling on the dashboard.

The pumps are connected directly to the batteries and can therefore start even if the battery master switch is positioned to OFF, thus ensuring water drain at any time (keep the magneto-thermal breakers on the electrical panel to ON).

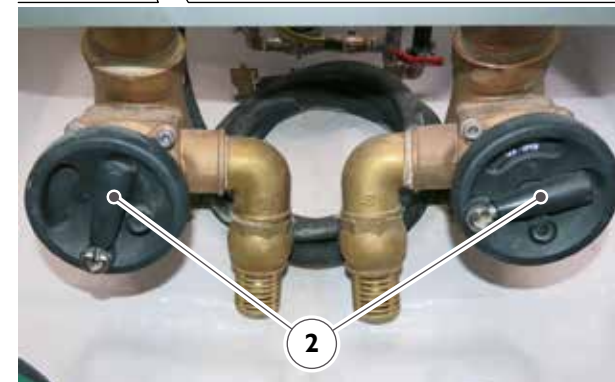
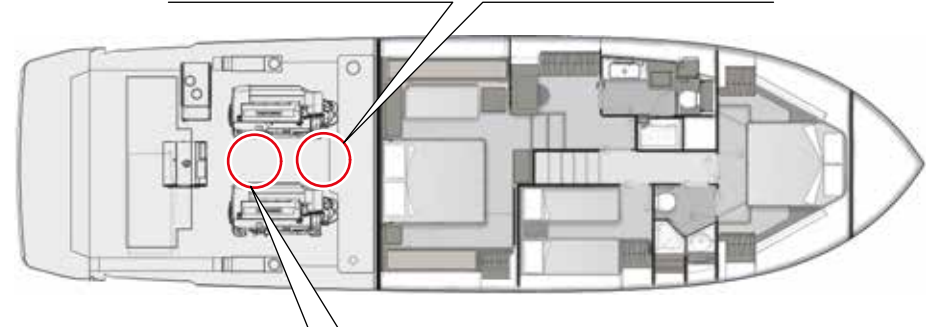
The suctions of the pumps are equipped with net strainers; their purpose is to prevent the penetration inside the circuit of foreign bodies, which may damage the pump or cause pipe clogging.

- Engine room bilge pumps (126 l/min);
- Crew area bilge pumps (126 l/min);
- Guest cabin bilge pump (126 l/min).

The bilge pumps can operate both in automatic mode, thanks to float switches and in manual mode.

To activate the pumps manually, push the respective buttons on the synoptic panel on the bridge.

For the bilge pumps to work, the related magneto-thermals located on the main electrical panel of the engine room must be activated.



#### WARNING

In case of emergency it is possible to extract the bilge water in the engine room through the sea pumps placed on each engine.



**WARNING**

Keep the bilge dry to allow the detection of water and to reduce the risk of slipping, as well as creating a less aggressive environment for the fixtures.

Should the automatic bilge pumps of the engine room, as well as the auxiliary bilge pump not be able to drain the bilge water, the engine room is equipped with the bilge emergency draining system, operating by means of flywheel valves with manual activation, as a draining pump.

In case of emergency, use the handwheels of the valves (2), taking the valves to the emergency position; the suction of the pumps, driven by the engines, is diverted towards the bilge.

Should it be necessary to use this draining system, the bilge level must be checked continuously, because in case of complete drainage, the engines will not be cooled down.



**CAUTION**

Be careful to replace the valves to sea water suction position, when the water level in the engine room bilge is under control, so as not to impair the engine components.



**CAUTION**

A suction basket to collect accidental oil leakage is located under the engines and does not communicate with the bilge.



**ENVIRONMENT**

Sea discharge of oils and fuels is prohibited.



**CAUTION**

In case of water presence in some compartments of the lower deck, before getting alert, check if the bilge water is fresh or salted, this will be of fundamental help with checking its source.



**WARNING**

The bilges must be kept dry and clean. Remove any rags or other residues from the bilge, to prevent any clogging of the pump intakes, causing serious damage to the pumps and impairing the safety of the yacht.



**WARNING**

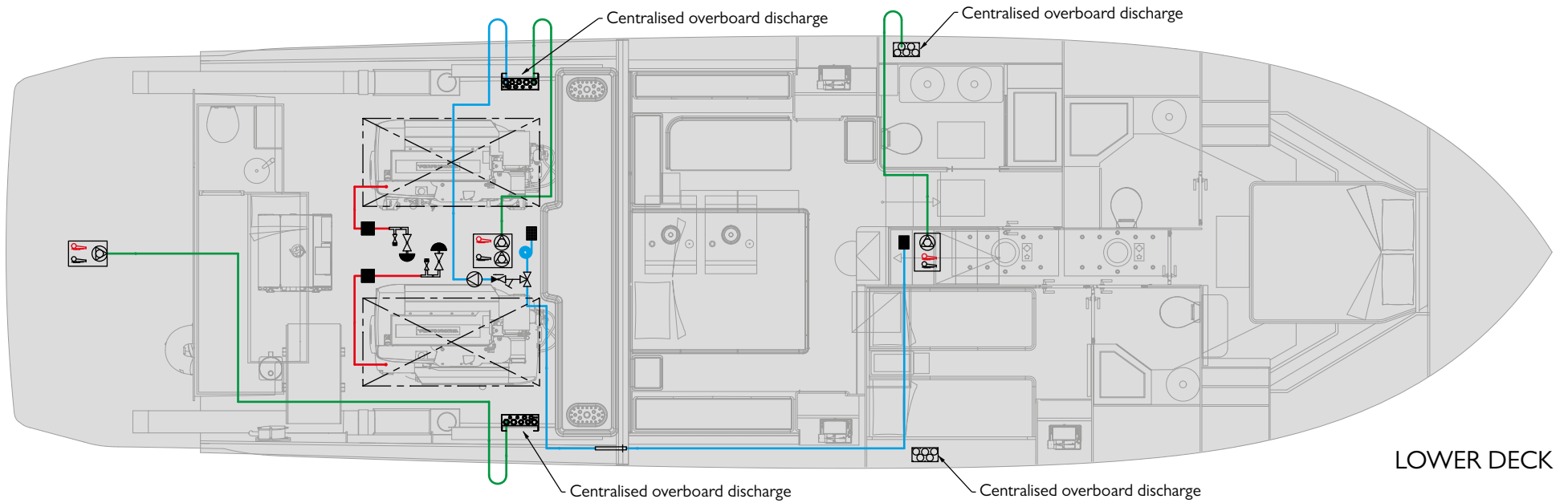
The system total capacity is not designed for yacht draining in case of a hull leaks.



**ENVIRONMENT**

Possible oil or fuel spilled in the bilge must be collected and stowed. It is forbidden to discharge bilge water mixed with oil or diesel fuel into the sea, because this can cause pollution. During the maintenance operation in the engine room, it is compulsory to disconnect the magneto-thermal breakers of the bilge pump automatic suction system, avoiding in this way accidental spillages of liquids and consequently sea water pollution.

**Bilge exhaust system diagram:**



LOWER DECK

ICON	DESCRIPTION
	Non-return valve
	3 way valve
	Y filter
	Self-priming pump

ICON	DESCRIPTION
	Immersion pump
	Centralised overboard discharge
	From the lower deck
	To the upper deck

ICON	DESCRIPTION
	Main bilge suction line
	Secondary bilge suction line
	Engine bilge suction line

## 6.6.2 Main bilge exhaust system maintenance

Component	Maintenance	Notes and precautions
Bilge pumps	Operation check	As shown in the following sequence.
	Bilge pump operation check	
Non-return valves	Operation check	As shown in the following sequence.

### Bilge pumps functionality check:



#### **DANGER**

Before each intervention make sure that voltage is disconnected and that there is no possibility of accidental connection.

Check that the pump shaft turns freely (this is possible by inserting the screwdriver in the back end of the engine shaft).

Fill the pump body with liquid to make the pump prime. This operation is very important and should be done at the first start-up and as often as the pump body remains empty, so as to avoid damage to the pump itself.

Check the rotation direction, that the pump motor works within its output range and that the absorbed current is not higher than the one indicated in the tag.

These pumps, normally, do not need ordinary maintenance, provided that some measures are taken which extend their operation.

- Make sure that the pump never runs dry.
- The brushes, on DC motors, must be checked at regular intervals.
- If the yacht must remain inoperative for a long period, it is advisable to drain the pump body and to clean it.
- If a strainer and a foot valve are installed, check their efficiency and cleaning periodically.
- Check that the impeller is not jammed, this could cause serious damages to the electric motor; if this happens, descale the impeller and pump body.

- Have the operation of each bilge pump checked, having the bilge filled with clean water up to the activation of each pump and having the correct draining over-board checked.
- Have the operation of each bilge pump checked also manually.



#### **CAUTION**

Never run the electric pumps dry.



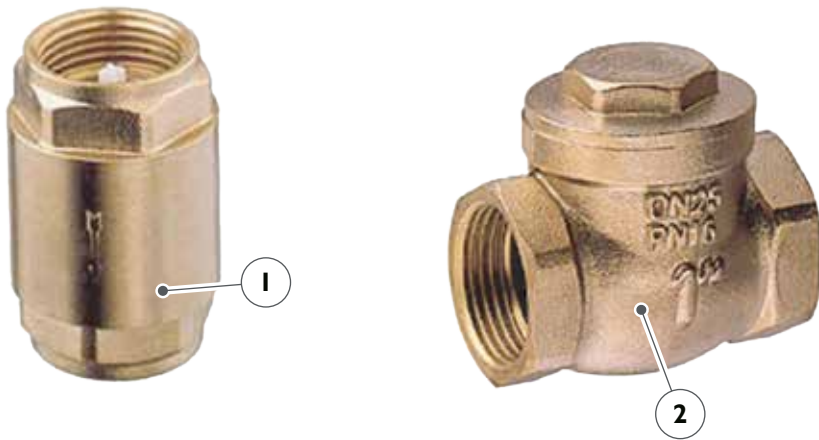
#### **CAUTION**

Check the operation of all bilge pumps at regular intervals. Clean debris from pump inlets.

**Non-return valves**

The on-board hydraulic system consists of check valves (or non-return valves) “EU-ROPE” type (1) and “CLAPET” type (2).

They require extraordinary maintenance only, due to their lack of operation, which can be caused by a foreign body inside the valve itself, or by a mechanical break; in both cases, check the failure, if it is not removable, carry out the replacement.



**6.6.3 Centralised pump system**

The yacht is equipped with a centralised pump (35 l/min) which helps or replaces the various automatic bilge pumps in the event of an emergency, in the task of emptying the bilges of water.

The inlets of the centralised pump are located in:

- The engine room;
- The guest cabin.



**CAUTION**

After using the pump, it is advisable to carry out an inspection of the impeller. Consult technical support for instructions.



**CAUTION**

To use the multi-purpose pump, activate the magneto-thermal switch located on the general electrical panel.



**ENVIRONMENT**

The bilge drains can be discharged at sea only if they do not contain polluting substances.

If polluting agents are present in the bilge waters, dispose of them using the suitable containers for polluting agents located in harbours.



**CAUTION**

Never run the electric pumps dry.



FERRETTIYACHTS

7



## ELECTRIC SYSTEM

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1. FOREWORD

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  2. SAFETY RULES

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  3. SAFETY DEVICES AND EQUIPMENT

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  4. DESCRIPTION OF THE YACHT

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  5. HELM STATIONS

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  6. WATER SYSTEMS

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  - 7. ELECTRIC SYSTEM**

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  8. PROPULSION SYSTEMS

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  10. AIR CONDITIONING SYSTEM

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  11. AUXILIARY EQUIPMENT ON BOARD

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  13. HULL AND FURNITURE MAINTENANCE

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## 7.1 ELECTRIC SYSTEM

The yachts are equipped with electronic injection machines and electronic remote control systems, for this reason it is very important for the user to carry out some simple operations to prevent faults to the electric systems, which on their turn may cause problems to the propulsion system.



### CAUTION

Before undertaking any navigation, check that the batteries are in good condition and that they supply the correct nominal current.



### CAUTION

During navigation both the button switch of the service batteries and the button switch of the engine batteries, must always be connected, that is positioned to ON. The parallel button switch on the two sets must be normally disconnected and therefore set to OFF.



### CAUTION

If, during navigation, an operation fault on the re-charging alternators occurs, set to ON the button switch of the parallel connection between the battery sets and leave it connected until the fault has been removed, but for the shortest time possible.



### CAUTION

Never start navigation without having set to ON both the engines batteries switch and the service batteries switch and do not disconnect them during navigation.



### CAUTION

If, during navigation, a remarkable and continuous voltage drop of one or both battery banks occurs, check the recharging efficiency (alternator recharge on general electrical panel) of the relevant alternator.

If the alternator is not operating, it is necessary to start the power generator and to activate the independent electrical battery charger.



### CAUTION

The parallel connection system between the batteries sets, driven by a switch located in the main helm station, is used to increase the boosting power at engines start, under particularly climate conditions or charge condition, and for a short period of time.

This system must be activated only if the button switches connecting the engines and service battery banks are positioned to ON.

Do not use in case of faults on the batteries recharging circuits, for instance on the engines alternators. We advise to use this system only in emergency cases.



### CAUTION

The engines checking systems: accelerator and gears engagement remote controls are electronic. Their reliability is very high, but in case of a sudden black-out, it is necessary to immediately switch off the engine which is not controllable any more by means of the relevant buttons located in the main helm station.



### CAUTION

Do not modify the electric systems or relevant drawings. The installation, the modifications or the maintenance must be carried out only by a skilled naval electrician. Frequently inspect the system.

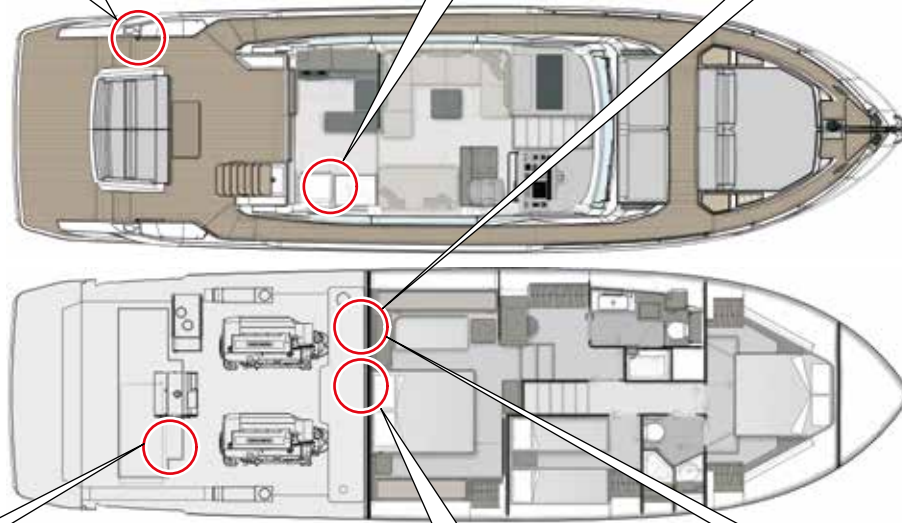
Electrical shore connection



Main deck electrical panel



Engines battery charger



Generator



Engine room electrical panel



Service battery charger and inverter (optional)



**CAUTION**

Use electric devices with double isolation or grounding.



**WARNING**

Do not allow that cable end of shore power supply to floats in the water. This can cause an electric field and following injuries or even the death of the swimmers nearby.



**CAUTION**

Disconnect the shore power supply connections when the system is not in use.



**WARNING**

To lower the risk of electrocution or fire:

- Turn OFF switch for connection to shore supply of the yacht, before connecting or disconnecting the shore power supply cable;
- Connect the shore power supply cable to the intake socket of the yacht, before connecting the shore power supply source;
- Disconnect the shore power supply cable first from shore source supply (shore columns);
- Firmly fasten the lid of shore power supply socket.



**CAUTION**

Do not modify connectors of shore power supply cable, use only plug compatible connectors.

The electrical system of your yacht has been designed with the utmost attention to the SAFETY of you and your guests and has been made using top quality materials that are fully compliant with current legislation.

The project and realization of the system has been carried out according to the standards of the Registro Italiano Navale and to UNI EN ISO and ABYC standards.

The electric system of your yacht consists of three separate sections.

- User mains, supplied with a rated voltage of 24V DC.
- Engine mains, supplied with a rated current of 24V DC.
- 230V uses mains, supplied by the shore mains with galvanic insulator or, as an alternative, by the on-board power generator.

The yacht is equipped with an isolation transformer with booster.

The system is made with insulated cables.

Each junction is made by terminals with screw tightening and housed inside of self-extinguishing PVC boxes, having a IP4X protection degree.

The protection of the single electric system sections is performed by automatic magneto-thermal switches of different amperage and size, according to the absorption of the various uses to be protected and by the size of cables used for their supply. All metallic wet pieces are interlocked with equipotential connections and linked on sacrificial anodes installed on the underwater quick-work.

The most important contribution to SAFETY will come from the use of the system and from its regular maintenance. Do not forget that the electric system, like any other system on board, is submitted to the stresses and vibrations of the hull; it is in a place with strong salt humidity and therefore it is necessary to check its condition periodically. Especially check all connections for correct tightening.


**WARNING**

NEVER:

- Work on the electric system while under voltage;
- Modify the electric systems of the system or relevant drawings: the installation, the modifications and the maintenance must be carried out only by a skilled marine electrician;
- Alter or modify the intensity of rated current of protections against overcurrent;
- Install or replace electric equipment or devices with components exceeding the rated current intensity of the circuit;
- Leave the yacht unguarded with electric system under power, except for the circuits of the bilge automatic suction pumps, of fire-fighting protection and of alarm.


**DANGER**

We recommend, in order to operate in complete safety, to carefully read the safety rules relevant to the maintenance and contained into the "Safety rules".


**DANGER**

The 230V AC system has characteristics and risks similar to those of the home systems; for this reason, it is necessary to periodically check the conditions of the grounding system, of the residual current circuit-breakers and of the protection devices installed.

The electric system is one of the most frequent causes of fire on board; therefore, it must be dealt with the utmost care and frequently checked.


**DANGER**

Electrocution hazard! Turn the power off before removing the cover and servicing any electrical equipment internal component.


**DANGER**

Stop the generator and the inverters, then disconnect the magneto-thermal switches and the shore socket, before opening the electrical panel door.


**DANGER**

Operate all electrical equipment and systems (including low voltage systems) with special attention and avoid any excessive overload, to prevent short circuits and dangerous overheating with potential fire hazards!


**CAUTION**

FERRETTI YACHTS suggest to very carefully view the whole documentation delivered by the manufacturers of the various components; for any problem relevant to maintenance it is advisable to contact directly FERRETTI YACHTS After Sales & Service Departments.


**CAUTION**

If you are compelled to use the "battery parallel connection", turn off all electronic devices, so as not to jeopardize their correct operation.  
In emergency conditions, use the battery parallel set for the shortest reasonable time.


**CAUTION**

Only a skilled naval electrician can perform maintenance on the yacht electrical system.

**WARNING**

Before stopping the power generator, deactivate the various on-board uses supplied by the generator itself; stopping the power generator under load can irreparably damage the electronic control units of the various uses and have a negative influence on the generator's operation.

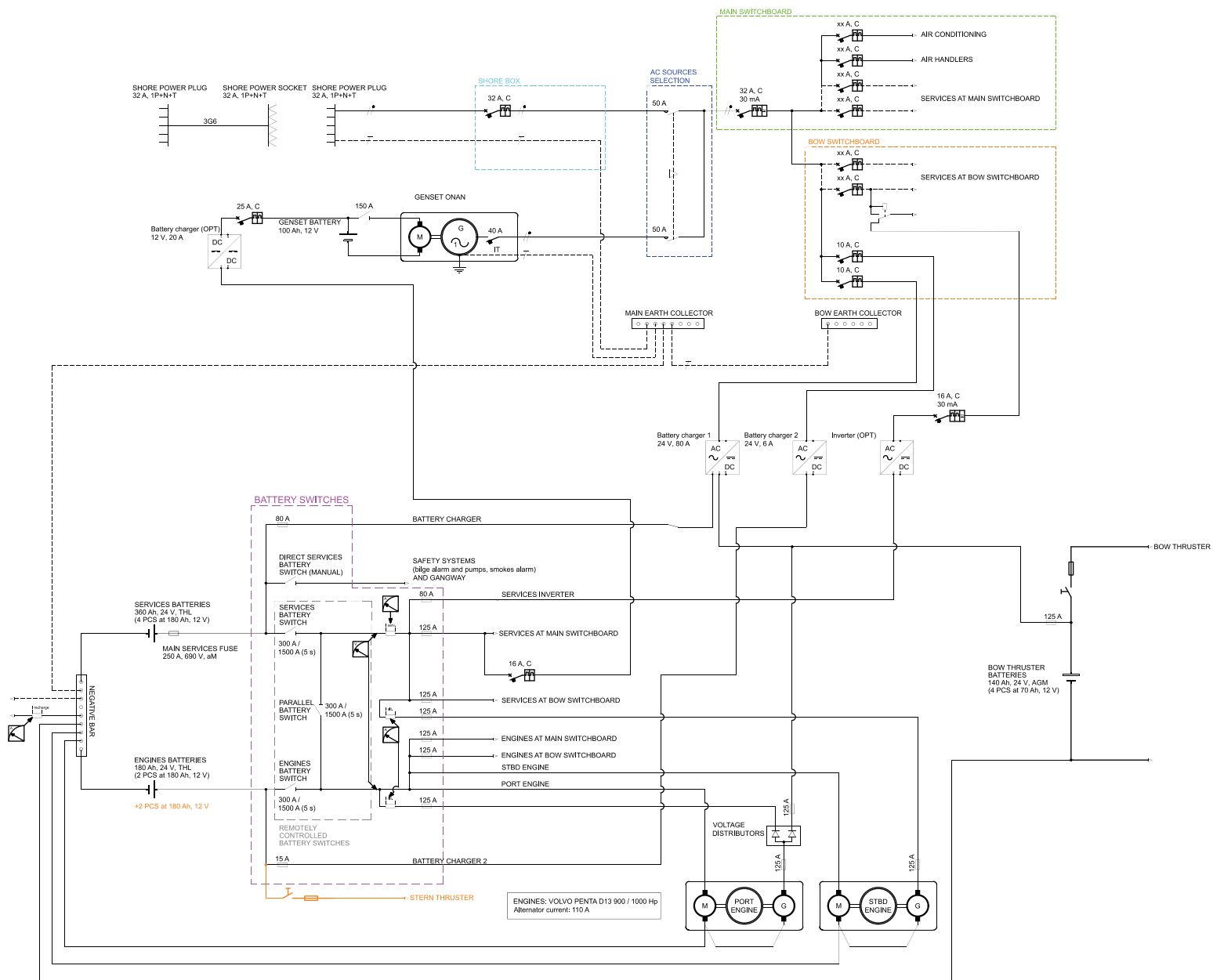
However, please refer to the manual of the power generator to obtain more detailed information about the starting and stopping procedures.

We recommend, in particular, not to forget that the electric system has features (and dangers) similar to the domestic systems; in general, the electric system, if "misused", badly kept and disregarded, statistically represents one of the most frequent causes of fire on board.



The on-board uses are supplied by separate electric systems with different features:

- 24V in Direct current
- 230V in Alternating current (50 Hz)

**AC / DC distribution diagram:**



7.1.1 Maintenance of the electric system

Component	Maintenance	Notes and precautions
Equipment and circuits	Cleaning and checks	<p>At least once every 2 weeks, have the status of the connections in the electric boards, panels and boxes checked by experienced and equipped personnel. Make sure that ground connections of electric equipment and electrical panels are tight and not oxidized. Have the absorption of the different electric motors periodically checked by skilled personnel.</p> <p>When cleaning the bottom hull, carefully clean the electronic instrument ground static discharger and the porous plate to which is connected the power generator grounding.</p> <p>Moreover, check the condition of the protection anodes and if necessary, replace them.</p> <p>During the lay-up period, do not apply any antifouling on the ground static dischargers.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><b>MAINTENANCE</b></p> <p>At least once a week check the operation of all electrical panels.</p> <p>At least once every six months:</p> <ul style="list-style-type: none"> <li>- Check the possible presence of damaged cables;</li> <li>- Protect the various contacts.</li> </ul> </div> <div style="border: 2px solid red; padding: 10px; margin: 10px 0; text-align: center;">  <p><b>DANGER</b></p> <p>Before working on panels or electrical equipment, prevent generator functioning, disconnect shore power and inverters.</p> </div> <div style="border: 2px solid red; padding: 10px; margin: 10px 0; text-align: center;">  <p><b>DANGER</b></p> <p>Do not modify the electric systems or relevant drawings. The installation, the modifications or the maintenance must be carried out only by a skilled naval electrician.</p> <p>Frequently inspect the system.</p> </div>

## 7.2 MAIN DECK ELECTRICAL PANEL

The control of the electrical system is carried out from the panel located on the starboard side of the salon of the main deck.

The following main sections have been identified, in order to make the descriptions easier:

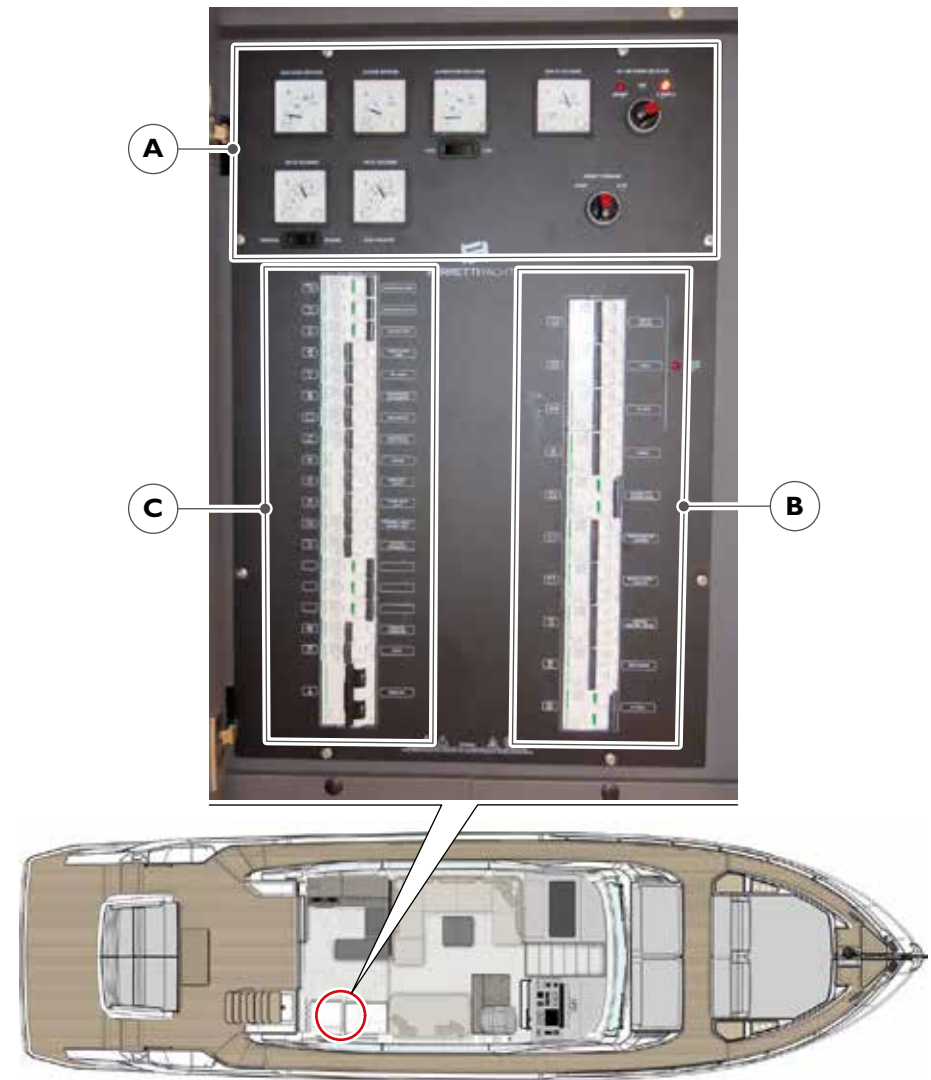
- A.** Measuring instruments for control of the network 24V DC / 230V AC. and generator commands
- B.** 230V AC uses magneto-thermal switches
- C.** 24V DC uses magneto-thermal switches



### CAUTION

Before removing the front panel for maintenance, stop the power generator, the inverters and disconnect the shore socket.

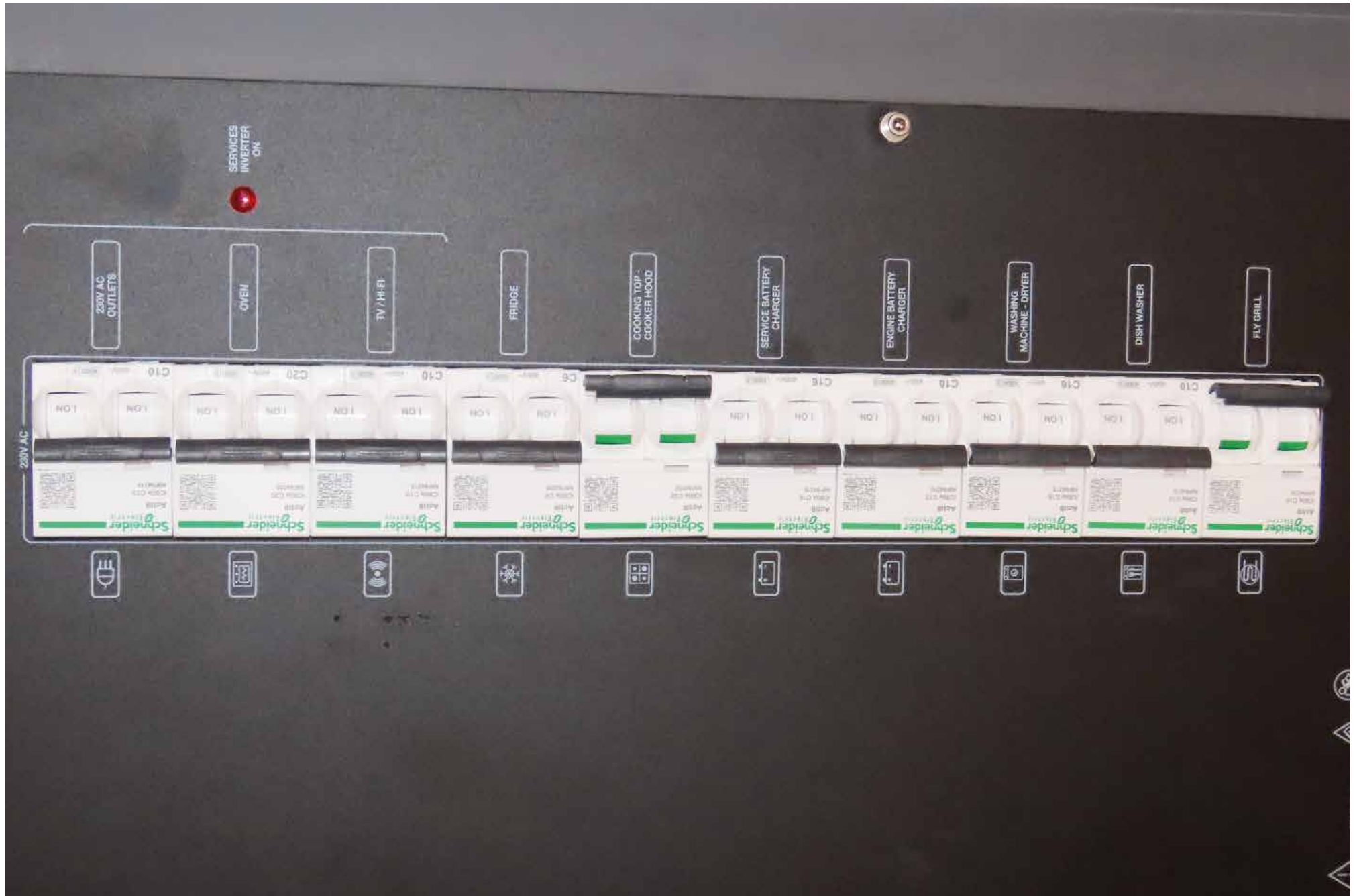
For a detailed description refer to the electric installation manual.



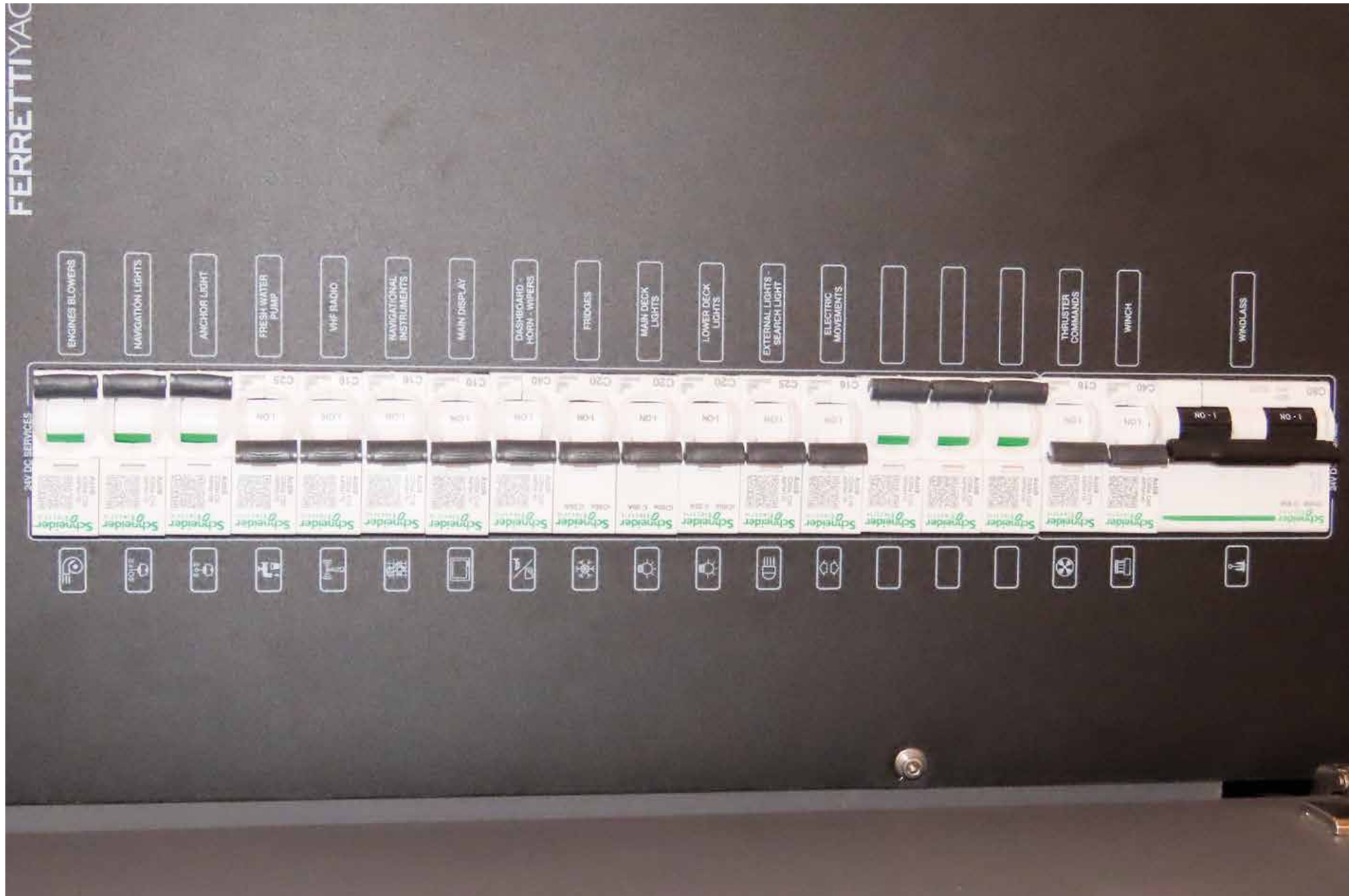
A. Measuring instruments for control of the network 24V DC / 230V AC. and generator commands



B. 230V AC uses magneto-thermal switches



C. 24V DC uses magneto-thermal switches



### 7.3 ENGINE ROOM ELECTRICAL PANEL

Down in the engine room there is an electrical panel equipped with fuses, magneto-thermal switches and buttons.

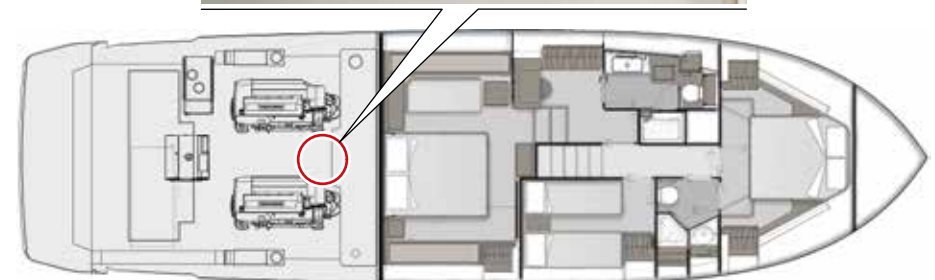
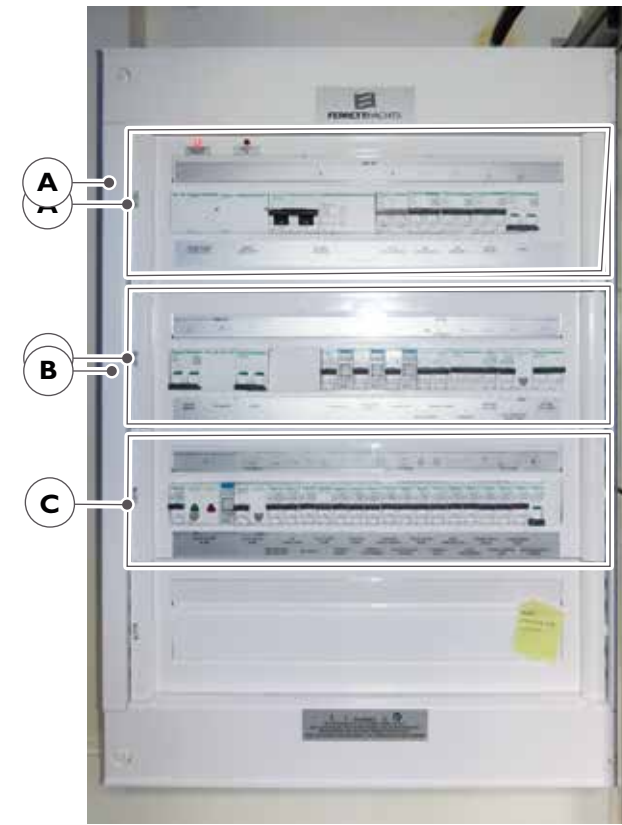
This panel consists of four sections:

- A.** 230V AC uses magneto-thermals
- B.** 24V DC safety systems and utilities magneto-thermals
- C.** 24V DC uses magneto-thermals



**DANGER**

All these switches, supplying and protecting the connected uses, **MUST CONSTANTLY BE KEPT CONNECTED**, also with yacht unattended.



A. 230V AC uses magneto-thermals



**B. 24V DC safety systems and utilities magneto-thermals**



C. 24V DC uses magneto-thermals



## 7.4 BATTERY SET

The batteries are normally charged by the alternators during engine operation. Alternatively, they can be charged with the chargers powered by the shore power supply or by the generator (select the power source on the main deck electrical panel).

Denomination	Characteristics element	Quantity
Starter engines	24V 180 Ah	2
Starter generator	12 V 100 Ah	1
Services batteries	24V 360 Ah	STD: 4 OPT: 6



### WARNING

The batteries left uncharged over long periods of non-operation progressively lose their charge until they become completely flat and irreparably damaged.



### DANGER

NEVER obstruct the air intakes of the battery boxes, as natural ventilation of the batteries must always be ensured so that they do not overheat.



### WARNING

Do not lay objects on the cases containing the batteries.



### CAUTION

A frozen battery may blow up if used or charged; do not start a yacht with frozen battery. To prevent the battery from freezing keep it always completely charged.



### DANGER

The battery releases explosive gas: do not approach flames, sparkles or smoke near the battery. If the battery is used or charged in a closed area, ensure good ventilation. Do not check the battery charge by short-circuiting the terminals with metal tools: use a densimeter or a voltmeter.



### WARNING

#### EXPLOSION HAZARD

Any lithium battery powered device on board must be recharged only in open air areas, connected to a suitable charging system. Also please refer to the device dedicated Use and Maintenance Manual.

7.4.1 Battery maintenance

Component	Maintenance	Notes and precautions
Batteries	Battery check (accumulators)	During the periods when the yacht is not in use, have the battery terminals disconnected, or leave them all connected and have periodically all batteries charged (generator included).



**CAUTION**

In case of contact with battery acid, wash the contaminated part with fresh water for at least 15 minutes and consult a doctor.



**CAUTION**

Always keep the batteries charged and recharge them periodically even if the yacht is left unattended. If the charge level drops to the minimum, the batteries can get irreparably damaged. Check each week the charge status.



**CAUTION**

It is important to periodically check the electrolyte level inside the batteries (at least every three months). Remove bracelets, rings and every other piece of jewellery before working on the batteries.



**CAUTION**

Check the condition of batteries for the presence of galvanic corrosion on connection poles and terminals; if some is noticed, address to the Service Department and have the pieces showing this kind of problem replaced.



**CAUTION**

Monitor the voltage of the engine and Uses batteries. During the charging phase 29.1V can be reached, this is a temporary value, well tolerated, both by the batteries and by the battery charger. This value must be monitored and, if this situation lasts for too long, the magneto-thermal switch of the battery charger must be disconnected.



**CAUTION**

Never top-up with sulphuric acid or other solutions different from demineralized or distilled water.

## 7.4.2 Battery check (accumulators)

Carry out following checks:

Electrolyte level (if possible)

- Restore the level with distilled water by removing the caps from the battery elements. The electrolyte level must be between the Max. and Min. references of the same battery.

Terminal inspection

- Check that the battery containers are clean and dry and that the terminals are coated with silicon grease and properly fastened. Clean and grease as required. Check at least every six months.
- Positive and negative cables must be identified before connection (connect the positive terminal first and then the negative, in order to avoid sparkles).



### **DANGER**

Always remove the negative terminal (-) for ground connection first and connect it last.



### **DANGER**

Electrolyte may cause burns and serious injuries to eyes. Wear safety goggles and protective clothing.  
This maintenance operation must be carried out by expert staff only.



### **DANGER**

Batteries may be subject to explosion hazard, with subsequent risks of serious personal injuries. Do not use naked flames, smoke, sparks or other ignition sources in the battery area.

Do not disconnect battery cables when the generator is running.

Do not wear any bracelet, ring or any other jewel when operating on batteries.

In case of contact with battery acid, wash the contaminated part with fresh water for at least 15 minutes and consult a doctor.

## 7.5 BATTERY BREAKER PANEL

The panel is positioned in the aft cockpit, inside a locker.



### CAUTION

Before starting navigation, it is mandatory to make the battery breaker panel accessible.

The panel contains the electric battery breaker control buttons (each of them equipped with a green LED) which activate:

- Services batteries;
- Parallel connection between engine and services batteries;
- Engine batteries.

When the led are lit the batteries are operating, in order to disconnect them press again the buttons (LED OFF).

If the control buttons of the electrical battery breaker switches do not work, they can be operated from the battery breaker switch panel located in the engine room by acting on the respective mechanical controls.



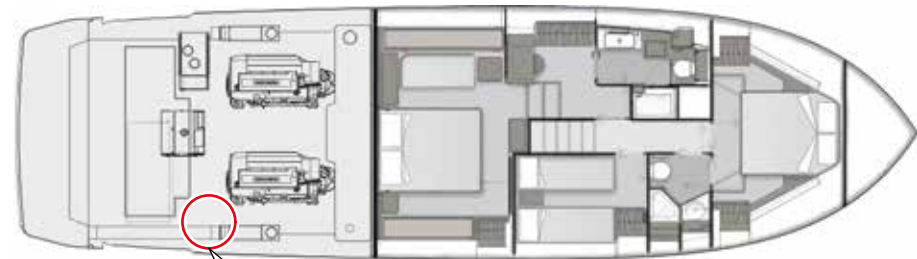
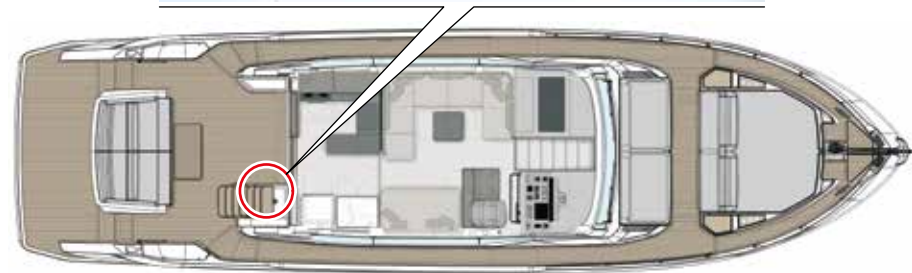
### CAUTION

Never disconnect the magneto-thermals with the engines running so as not to damage the engine alternators.



### CAUTION

Use the “Services-engine parallel connection” breaker only if strictly necessary and disconnect it as soon as possible.





**CAUTION**

From the moment the key contact is deactivated, you must wait at least 30 seconds before you turn off the engines and services battery switch.

The on-board battery breaker switches are:

1. Services batteries  
This switch allows cutting in or out the services battery set.
2. Services / engine battery parallel connection  
If the engine batteries are flat or not sufficiently charged, the battery main switch allows the parallel connection between services battery bank and the engine battery bank, to enable the start of the propulsion engines.



**CAUTION**

This connection must be activated only if the engine batteries are not sufficiently charged. The battery parallel connection switch, must be activated only with buttons connecting the user battery banks and the engine banks set to ON.

3. Engine batteries  
This switch allows cutting in or out the engine battery set.
4. Generator batteries  
These battery breakers allow cutting in or out the generator batteries.

## 7.6 SHORE ELECTRIC POWER SUPPLY



### DANGER

Before connecting the shore socket, ensure the type of voltage and the sockets available, their integrity and the absolute absence of moisture on the wire, on the socket and on the plug.

With plug connected check that wire:

- Cannot get in traction as a result of tide variations, yacht movements, etc.;
- Cannot get crushed, etc.;
- Does not dive into water.

The harbour shores are equipped with little columns carrying the connections for the supply of the electric system on your yacht.

The shore columns can supply different types of voltage, according to the harbour you are moored into; contact the Port Authority for the correct power supply of the column you are going to be connected.

To power the yacht's electrical system in order to ensure the operation of the various on-board systems, a connection has been provided for the 32A to 230V 50Hz shore electrical connection located on the left access ladder to the aft cockpit.

Both connections are watertight and with plug-in connection according to the safety rules and technologies.

To use the electric power supply from shore:

- Open the shore socket magneto-thermal located in the engine room.
- Open the "AC MAIN BREAKER" magneto-thermal located on the main electrical panel in the engine room.
- Turn OFF the switch on the shore column.
- Connect the cable to the socket on the yacht before connecting it to the shore charging point.



### CAUTION

Do not modify the shore power cable connectors and only use compatible connectors. If the yacht power supply cable cannot be plugged into the shore socket, ask the Port Authority for an adapter.



- Close the switch on the shore column.
- Close the shore socket magneto-thermal in the engine room.
- Select the shore power supply from the electrical panel in the main deck hall.
- Use the voltmeter to check the current supplied by the shore.
- If the measured values are compliant, close the “AC MAIN BREAKER” on the main electrical panel in the engine room.

It is common to find sockets on the shore that are not of the same size as the one supplied or that have different amperages to those on the yacht; in this case, contact the harbourmaster’s office for information on the type of amperage, the availability of a new plug or.

Perform the procedure described above in reverse order to disconnect the power from the shore.

The shore socket can be fitted with a 63A adapter (optional).

#### MAINTENANCE

At least once a month check the status of the electric contacts and eventually protect them with proper products.

At least once a month check the status of the shore socket and eventually clean it.



#### DANGER

Do not leave shore power supply connected without people on board.



#### WARNING

Do not allow the end of the shore power cable to float in the water. This can cause an electric field and following injuries or even the death of the swimmers nearby.



#### CAUTION

Disconnect the shore power supply connections when the system is not in use.



#### DANGER

Before working on the electrical system, disconnect all the circuits and disconnect the shore socket.



#### DANGER

Risk of electric shock from leakage currents. Never swim in waters near harbours or marinas.



#### CAUTION

The connection must be performed under safety conditions with not powered connections and by paying attention to carry out a correct grounding.



#### CAUTION

If the warning lights on the synoptic panel and on the main electrical panel are lit, this means that the electric socket for shore power supply is plugged.

## 7.7 BATTERY CHARGER

### Service battery charger:

Your yacht is equipped with a fully automatic and high-performing battery charger. The battery charger utilises an optimized charging technique to rapidly and safely charge the batteries, while also supplying the connected uses.

The battery charger is protected from short-circuits, overcharges and high temperatures (engine room).

### Power on/off:

The charger is activated by pressing and holding the mode button (MODE) for about 3 seconds. The MODE LED lights up green. If necessary and if the AC power supply is available, it will start charging the batteries.

Pressing the mode button (MODE) again for about 3 seconds, the charger will turn off: the charger stops and the MODE LED lights up red.



### WARNING

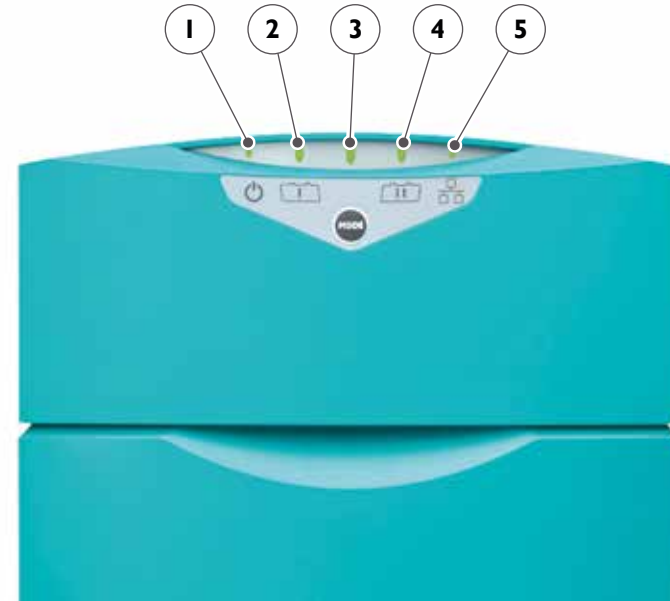
Switching off the charger or switching it to “standby” does not interrupt the connection to the batteries or the AC source. This means that the appliance is still powered on.

### Status display:

The status display on the front of the charger allows you to control and monitor the charging process.

The status display has a 3-level menu. Briefly press the MODE switch to browse through the menu. Whenever you press the button, the display shows the next menu level. The colour of LED 1 indicates the level displayed.

LED 1 colour	Menu	Meaning
Green	Level 1	Status menu
Orange	Level 2	Output power menu
Red	Level 3	Error menu



STATUS MENU		
LED	Status	Meaning
1	Steady green	ChargeMaster Plus on
	Steady red	ChargeMaster Plus in standby
	Fast red flashing	Error, navigate to error menu
2	Fast green flashing	Battery 1 in bulk phase
	Slow green flashing	Battery 1 absorption phase
	Steady green	Battery 1 in float phase

STATUS MENU		
LED	Status	Meaning
4	Fast green flashing	Battery 2 in bulk phase
	Slow green flashing	Battery 2 absorption phase
	Steady green	Battery 2 in float phase
5	Green flashing	Network communication

OUTPUT POWER MENU		
LED	Status	Meaning
1	Steady orange	Output power menu
2	Steady orange	Total power output 0-25%
3	Steady orange	Total output power 26-50%
4	Steady orange	Total output power 51-75%
5	Steady orange	Total power output 76-100%

ERROR MENU			
LED	Status	Meaning	Resolution
1	Flashes rapidly in red	Error menu	
2	Flashes rapidly in red	Reverse polarity	Check the battery connection
3	Flashes rapidly in red	AC error	Check AC voltage/frequency
4	Flashes rapidly in red	DC error	Check battery voltage
5	Flashes rapidly in red	Temperature sensor error	Check the temperature sensor

### Engine battery charger:

Your yacht is equipped with an engine battery charger installed in the engine room on the aft wall.

To operate the charger, simply plug the power plug into the socket.

The front of the battery charger is equipped with two status LEDs. Depending on whether the status LEDs are on or off, the battery charger indicates the operating phases.

LED on		Meaning
Charging	Ready	
Red	(OFF)	REGENERATION or BULK phase. The battery is being charged.
Red	Green	ABSORPTION phase.
(OFF)	Green	FLOAT phase. The battery is now fully charged.
(Slowly) flashing red	Green	FLOAT phase. The battery is now fully charged and the load is absorbing current.

### Generator battery charger (optional):

Your yacht may be equipped with a generator battery charger installed in the engine room on the aft wall.

The transformer operates automatically while keeping the batteries charged.

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

**7.7.1 Battery charger maintenance**

Component	Maintenance	Notes and precautions
Battery charger	Inspection Charge output	At least two or three times a year, have a specialist check the connection of each cable for looseness or oxidation.  Keep the battery charger dry, clean and away from dust in order to ensure a good dissipation of heat.



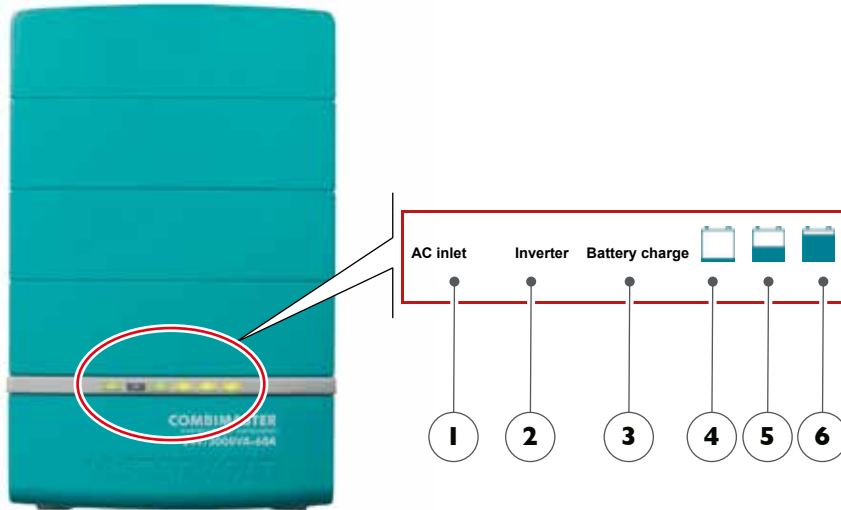
**DANGER**

Do not work on the battery charger or on the electric system if they are still connected to a current supply. Disconnect the mains supply before connecting or disconnecting the battery.

Modification to the electric system must be carried out exclusively by skilled personnel and only after the approval of FERRETTI YACHTS.

## 7.8 INVERTER (OPTIONAL)

The inverter is a fully automatic device with high efficiency levels.  
The inverter is a device that transforms the 24V DC voltage into 230V AC.



The main switch located at the bottom of the inverter has two positions:

- Inverter ON.
- Inverter OFF.

### Warning lights

The functions of the warning lights located on the inverter front panel are:

1. AC input
2. Inverter function
3. Battery charger function
4. Battery charger status 1
5. Battery charger status 2
6. Battery charger status 3

### Warning lights functioning

- **Light 1 OFF**  
No AC input.
- **Light 2 OFF**  
Inverter OFF
- **Light 3 OFF**  
Battery charger OFF.
- **Light 1 green**  
AC input.
- **Light 2 green**  
Inverter ON.
- **Light 3 green**  
Battery charger ON.
- **Light 4 green**  
Battery charger in bulk phase.
- **Light 5 green**  
Battery charger in absorption phase.
- **Light 6 green**  
Battery charger in float phase.
- **Light 2 green - blinking**  
Battery charger in absorption phase.
- **Light 1 red**  
AC input out of range.
- **Light 4 red**  
Battery voltage low warning/shutdown.
- **Light 6 red**  
Battery voltage high causing shutdown.
- **Light 2 red - blinking**  
AC output overload.
- **Light 2+3 red - blinking**  
Shutdown by any other error.
- **Light 5 red - blinking**  
Battery temperature (sensor) error.

**DANGER**

When disconnecting the inverter by means of the switch located on the front panel the connection with the mains is not broken off.

**DANGER**

Do not operate on the inverter or on its system if still connected to a power source. Only qualified staff can carry out interventions on the electric system and after the approval of FERRETTI YACHTS.

**DANGER**

Have the inner condition of the inverter checked at least once a year by skilled personnel. Faults like loose connections, burnt wires, etc., with following fire break risks, must be removed immediately.

**WARNING**

The uses supplied by the inverter highly stress the batteries that could discharge as a result.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

### 7.8.1 Inverter Maintenance

Component	Maintenance	Notes and precautions
Inverter (services / refrigerators)	Maintenance and control	<p>At least once a year, have the cable and wire connections checked by skilled personnel; they should still be tight and not oxidized.</p> <p>Keep the inverter/battery charger dry, clean and away from dust to ensure a good heat dissipation.</p> <p>If the device is off during the maintenance and/or repair works, it should be set to prevent an unexpected or unintentional activation:</p> <ul style="list-style-type: none"> <li>• Switch off the battery connection or remove the fuse of the AC+DC inverter;</li> <li>• Disconnect all cables.</li> </ul>

## 7.9 GENERATOR SET

Your yacht is equipped with a generator set **(1)**, operated by a diesel engine, dimensioned to satisfy the power supply requirements suitably planned in the electric balance for various navigation conditions.

The generator is fundamental when 230V equipment must be used while underway, or when it is not possible to connect to the shore power supply mains.

The generator is located in the engine room aft of the starboard propulsion engine, placed on a base suitable to withstand its weight and induced vibrations.

The generator is contained in a sound-proof box, made of removable and insulating panels in painted marine aluminium. This solution allows easy access to the engine and to the alternator for maintenance and inspection, and at the same time a remarkable reduction of noise.

The control panel is positioned on the generator to control and to carry out the start and stop operations.

The generator is provided with a battery breaker **(2)**.

### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

### Cooling

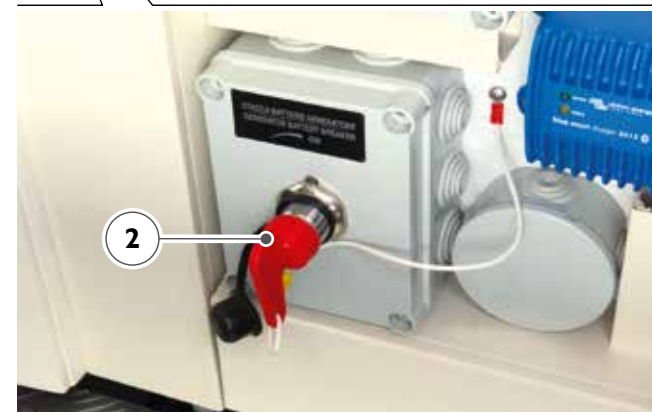
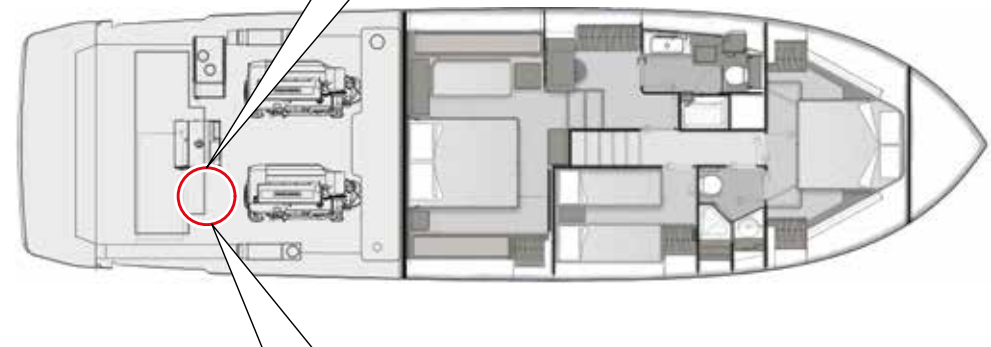
The engine is cooled via a heat exchanger by sea water that is sucked through an independent seawater intake fitted with a shut-off valve and an inspectable filter.

The sea cock of the cooling water circuit of the generator is not dynamic, as for the propulsion engines, but direct, in order to prevent damaging pressures on the circuit during navigation with the power generator turned off.

The inspectable strainer of the sea water intake efficiently protects the cooling circuit from the harmful entering of mud, sand and seaweeds.

The exhaust gases, instead of being discharged directly overboard, are conveyed through a muffler located next to the generator itself.

This muffler, by injecting water in the exhaust pipes, allow cooling down the fumes and, at the same time, reducing the noise produced by the water outflow.



## Fuel feed

The diesel engine of the generator is powered by fuel drawn from the tank via dedicated pipelines and filtered by a specific filter cartridge interior.

Fuel is supplied to the generator through a duct equipped with a shut-off valve.

The fuel supply of the generator can be intercepted at a distance by a tie rod located on the fire control panel positioned inside the locker in the aft cockpit.

The excess fuel, which can not be burned by the generator, is discharged back into the fuel tank through the return conduits.



### **DANGER**

#### **Carbon monoxide poisoning**

Activate the generator only in a well ventilated area. The carbon monoxide, created by the internal combustion engine, is extremely toxic.



### **DANGER**

#### **Danger of explosion / fire**

Check the presence of explosive fumes in the generator.



### **CAUTION**

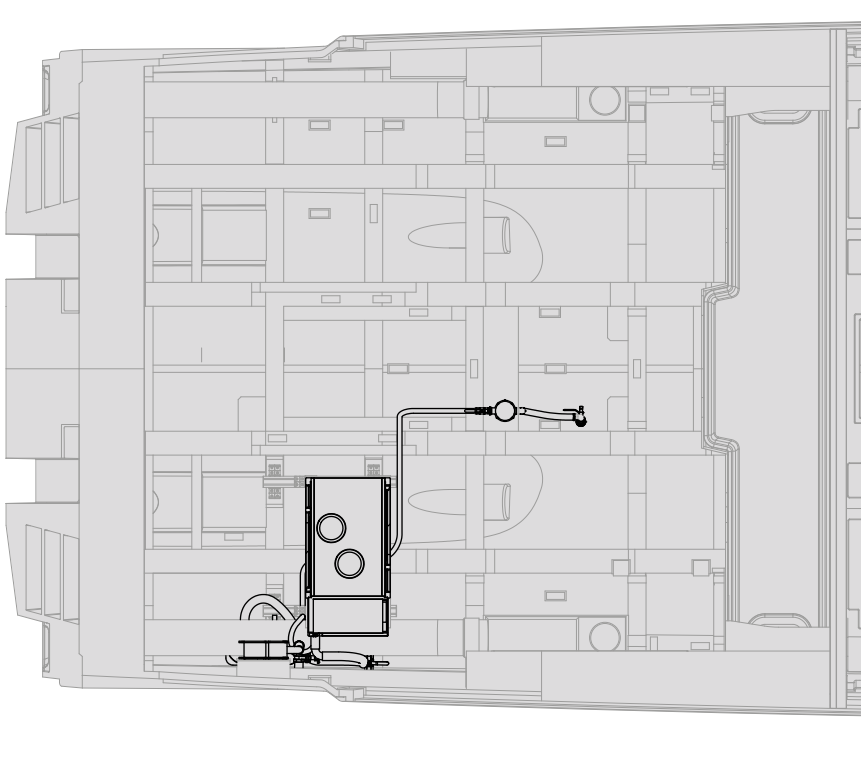
Repeated attempts at starting with negative results can cause excessive accumulation of water in the exhaust system with possible serious consequences to the engine.

If you encounter the difficult engine start condition is indispensable you do not persist without first closing the intake valve at sea.

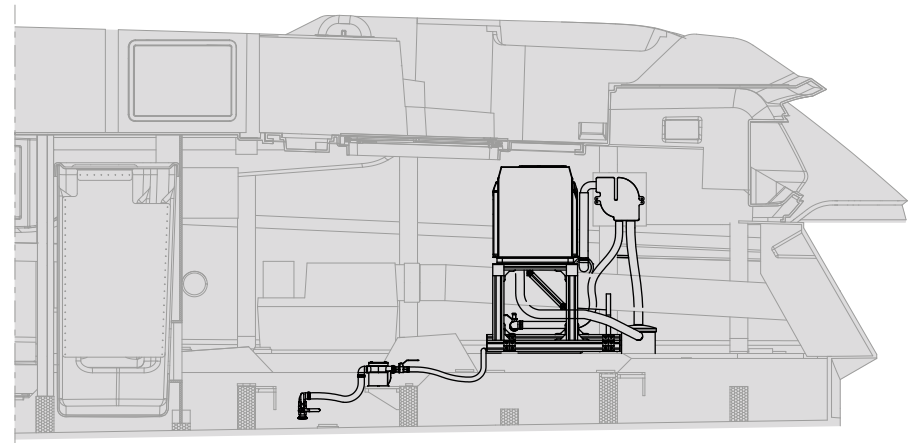
Reopen it just happened goodwill.

**Generator gas exhaust system:**

TOP VIEW



SIDE VIEW



## 7.9.1 Power generator control panel

### Description

On the power generator there is a control panel allowing to carry out the controls and the start/stop operations.

A display indicates, by means of the relevant warning lights, the fault detected, thus allowing the monitoring of the power generator set.

1. Warning lights
2. Display
3. Generator stop button
4. Generator start button
5. Generator emergency stop button
6. DC current battery cut-off switch selector



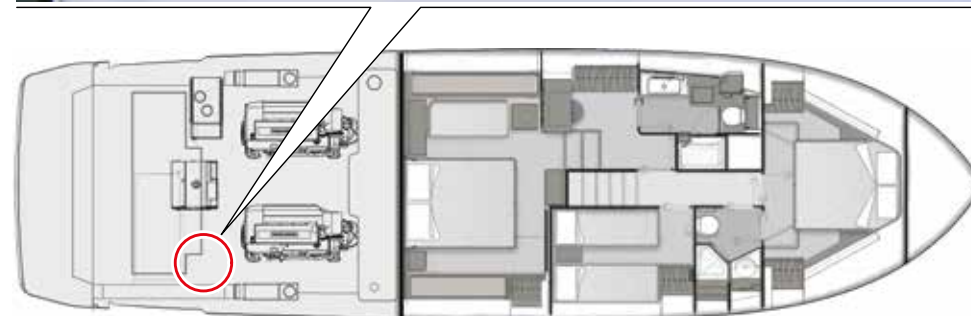
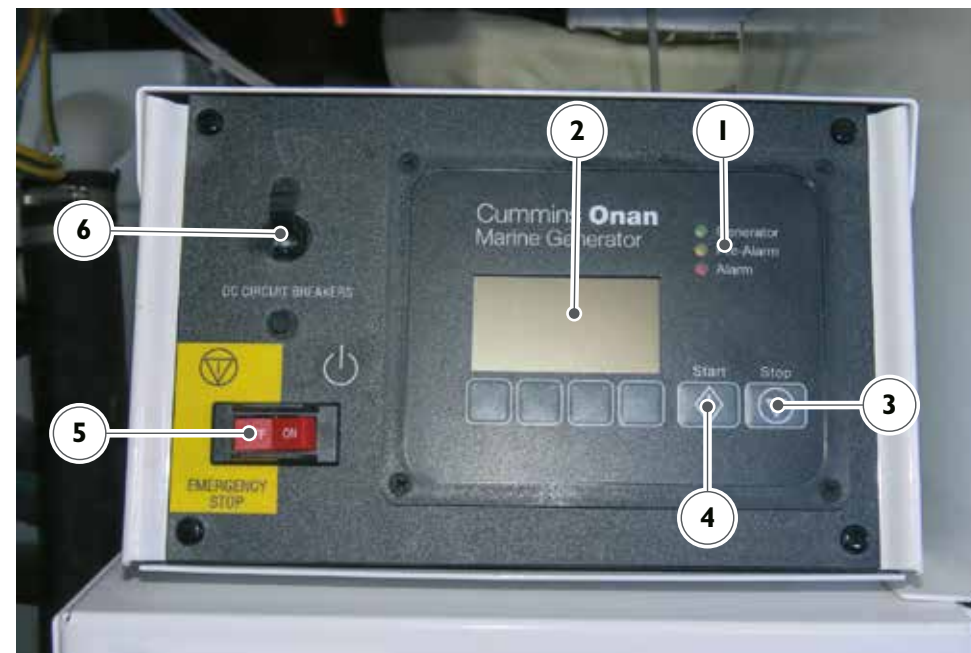
#### WARNING

Before stopping the power generator, deactivate the various on-board uses supplied by the generator itself; stopping the power generator under load can irreparably damage the electronic control units of the various uses, beyond having a negative influence on the generator's operation.

However, please refer to the manual of the power generator to obtain more detailed information about the starting and stopping procedures.

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



**7.9.2 Generator maintenance**

Component	Maintenance	Notes and precautions
Lubrication system	Oil specifications	Use specified oils according to Manufacturer's indication.
	Oil check	Check the oil level in the crankcase daily or before each start-up to ensure that the level is in the safe range. Remove the dipstick and wipe the end clean, reinsert as far as possible, and remove. Maintain the oil level between the marks (Min and Max).
	Oil change	For the oil change remove the draining hose from its holder. Position the hose in the oil collecting container. Remove the oil filling plug. Open the oil draining valve located on the engine and drain the oil completely in the container. Change oil according to intervals suggested by the Manufacturer.
	Oil filter change	Remove the oil filter by turning it counter clockwise by means of a suitable wrench. Apply a thin layer of oil to the rubber seal of the new filter. Replace the oil filter according to time intervals recommended by the Manufacturer.
Fuel system	Cleaning and replacement of fuel pre-filter	Replace fuel pre-filter at time intervals recommended by the Manufacturer.
	Cleaning and replacement of fuel filter	Close the fuel supply valve. Loosen the fuel filter by turning it counter clockwise. Remove the filter and clean the contact surface. Tighten the filter on the adapter until the seal comes in contact. Replace fuel filter within the intervals indicated by the Manufacturer.
Cooling system	Cleaning / replacement of the air cleaner	Release the two spring clamps and remove the cover of the air intake. Clean the cover and the base with a clean cloth so as to remove the dirt. Refit the filter and the cover at the base of the filter air intake. Replace the filter at time intervals recommended by the Manufacturer.
	Cooling liquid top up	Before filling the cooling system stop the generator and let it cool down. Close the draining taps. In order to discharge the pressure turn slowly the plug clockwise up to the first stop. Remove the plug after the pressure has been completely released.
	Sea water strainer	At least once a week check for the correct water flow through the strainers. At least once a month check the integrity of the strainers. At least once a month clean the suction strainer. At least once every six months check the condition of the cover seal.



**ENVIRONMENT**

Recover all waste materials (engine oil, fuel, filter, etc..) according to the rules in force concerning the special waste disposal.



**DANGER**

Hot coolant and steams may cause heavy injuries or even death.



**CAUTION**

Failure to observe the oil specifications may cause inadequate lubrication/oil pressure and cold-starting difficulties.



**CAUTION**

If the oil level is not positioned between the two reference notches do not activate any device.



**CAUTION**

Pay special attention to the coolant level. After the coolant drains, allow coolant to completely refill the engine water jacket. Check the coolant level as prescribed in the Pre-start Checklist.



**CAUTION**

**Damage due to sea water.** Sea water quickly deteriorates metals. Wipe up sea water on and around the generator set and remove salt deposits from metal surfaces.



**CAUTION**

Do not add coolant if the engine is still hot. Adding coolant to an hot engine can cause the cylinder block or cylinder head to crack. Wait until the engine has cooled down.





FERRETTIYACHTS

8



## PROPULSION SYSTEMS

- 
1. FOREWORD

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  2. SAFETY RULES

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  3. SAFETY DEVICES AND EQUIPMENT

---

  4. DESCRIPTION OF THE YACHT

---

  5. HELM STATIONS

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  6. WATER SYSTEMS

---

  7. ELECTRIC SYSTEM

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  - 8. PROPULSION SYSTEMS**

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  9. STEERING SYSTEMS

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  10. AIR CONDITIONING SYSTEM

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  11. AUXILIARY EQUIPMENT ON BOARD

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  12. INFORMATION FOR USE

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  13. HULL AND FURNITURE MAINTENANCE

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  14. TROUBLESHOOTING

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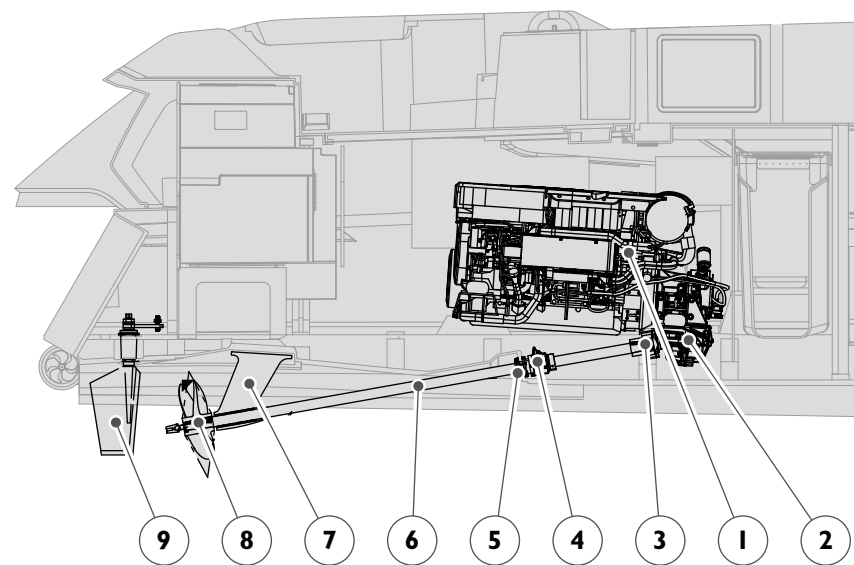
## 8.1 PROPULSION SYSTEMS

The engine room features all the components for the propulsion system of your yacht.

The propulsion system consists of two equal units.

Each one includes:

1. Engine
2. Inverter
3. Flange coupling
4. Deep sea seals
5. Thru-hull for Deep Seals
6. Propeller shaft
7. Propeller shaft support
8. Propeller
9. Helm



## 8.2 ENGINES

The following specifications:

- |                    |                   |
|--------------------|-------------------|
| • Model            | D13               |
| • Make             | VOLVO PENTA       |
| • N° of cylinder   | 6                 |
| • Configuration    | In line           |
| • Effective output | 735 kW / 1000 mhp |
| • Rated speed      | 2400 rpm          |

For all needs related to use or maintenance issues of the engines, please refer to the manuals or directly to the service points of the engine manufacturer.

### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



### CAUTION

You may not use the yacht with one or more engine power greater than the maximum recommended by the manufacturer (horsepower engine series).

Among all the possible interventions to carry out on the engines in case of need (see the operating instruction manual) hereunder are the most useful, according to our experience:

- Replacement of the fuel filters.
- Replacement of the oil filters.



### CAUTION

The engine data boards are very important in case of repairs. Therefore keep them with care together with the warranty.



Remember that you can obtain a flawless operation and a high power only by respecting the prescribed maintenance intervals and by using the specified fuels and lubricants.

The engines have been installed on suitable elastic supports, which absorb vibrations and allow the minimal motion of the engines; in this way structures and devices connected with them are not damaged.

In addition, the elastic supports easy engine position adjustment, both for a new installation or after the required run in.

## 8.3 START OF PROPULSION ENGINES

### Commissioning

Before starting up a new or reconditioned engine carefully read the Manufacturer's documentation.

During the first hours of operation it is recommended to operate the new engines at most three quarters of their maximum and regimes changed.

After this period the engine can be slowly brought to its full performance.



#### CAUTION

Only use technical fluids approved by the manufacturer, otherwise the manufacturer's warranty expires and serious damage can be caused to the engines.

### Start-up

Before commissioning exercise daily, control the amount of fuel, the level of coolant and the level of oil in the engine.

If the levels of oil and coolant are insufficient top up inside the expansion tanks, being careful not to exceed the maximum level index.



#### CAUTION

The engine must be started with gear in neutral and throttle levers to idle.



#### DANGER

Before starting an engine, ensure that nobody is standing in the dangerous area of the engine room.

### Cooling liquid



The engine cooling system must be filled with a mixture of drinking water and anti-freeze or anti-corrosive liquid.

Slowly introduce the coolant into the expansion vessel through the coolant inlet. For the required amount of coolant, refer to the relevant documentation provided by the manufacturer.

Engine oil



Oil level check




 **CAUTION**  
Do not top up oil so to exceed the MAX notch of the dipstick. If the oil level is too high, damage to the engines may occur!

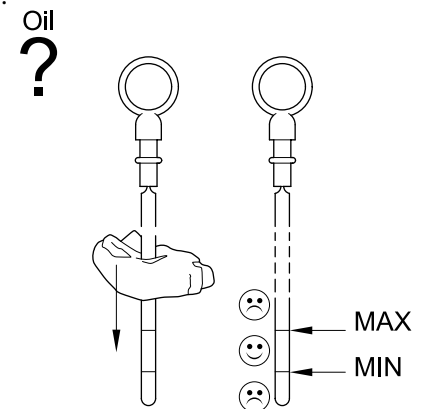
Introduce the lubrication oil for the engine through the special nozzle. For refuelling quantities, refer to the manufacturer's specific documentation.

Check engine oil level only approx. 20 minutes after the yacht has been switched OFF.

- Pull out dipstick for oil level check.
- Wipe it with a clean, dry and lint-free cloth.
- Place it back up to retainer.
- Pull out dipstick again.

The oil level should be between the two notches in the dipstick and must never fall below the MIN notch. Top up oil as necessary. In the use of fuels, lubricants and coolants, pay attention to absolute cleanliness.

 **CAUTION**  
Do not top up oil exceeding the MAX notch of the dipstick. If the oil level is too high, damage to the engines may occur!



### Procedures for start-up

- Check that the yacht's functional uses are inserted on the general electrical panel:
- Move the control levers to the neutral centre position.
- Turn the starter key of the starboard engine to the "ON" position.
- Start the operation of the handcuffs by pressing twice the start button.
- Then proceed by pressing the engine start "START" button.
- Check that the oil pressure settles in the normal value within 10 seconds.
- Check that the cooling water circulation is correct.
- Start the first engine and, only after it has been ascertained that it is working properly, start the second engine.
- Start the left hand engine as described for the right hand engine.
- Turn the starter key of the port engine to the "ON" position. Then proceed by pressing the engine start "START" button.
- Warm up the engines for about 2-3 minutes at 1000 rpm maximum.
- Check the charge of the alternators.

### Throttle operation

- Bring both throttles to "NEUTRAL" position (vertical single levers).
- Press the lever power button twice.
- Press the button for the mode to be activated on the throttles themselves.



#### CAUTION

We suggest avoiding slow running for more than 5 minutes. The slow run implies major wear of the engine mechanical parts and is the most harmful from the point of view of polluting exhaust.



#### CAUTION

If you have to connect the batteries in parallel for the start-up of the propulsion engines, it is suggested to disconnect the electric devices in order to avoid current rushes or drops.



#### CAUTION

Should a magneto-thermal switch trip, do not try repeatedly to reset it, but check the relevant electric system condition.

### 8.3.1 Checks after start of engines

Following correct engine startup, some checks must be performed:

- Check for strange noises or excessive smoke. If these are detected, stop the engines and call for assistance.
- Check that alternators load the batteries.
- Verify the efficiency of the instrument system from the plotter to the radar, VHF, compass, etc..
- Plug out the shore cable if connected.
- Remove moorings and check for loose mooring ropes or floating objects hindering the propellers' movement.



#### **DANGER**

Make sure that no crew stands in front of gas exhausts and near the mooring ropes.

### 8.3.2 Engine drive

Despite the efficiency and the high performances of the yacht, and in particular the sensitivity to rudder motion, which allow an immediate response to the controls, the use of this yacht requires a careful and responsible behaviour.

In the passage between displacement and gliding navigation there is a critical phase to be carried out as quickly as possible, as it is characterized by high consumption and more vibrations; it also causes a very deep wake.

Minimum glide speed is influenced by displacement, weight distribution on board, position of interceptors and sea conditions.

The excellent choice and quality of the engines allows keeping high speeds for a long time with no consequences.

In order to achieve the best compromise between comfort and speed, while minimizing fuel consumption, it is recommended to keep the engine operating speed in the range between 1500 and 2000 rpm.

Do not keep the propulsion engines at idle run for a long period of time; this to prevent them from getting "dirty" or overheated.

Avoid harsh accelerations or decelerations to avoid excessive stresses for the engine turbines.

When the yacht reaches the cruising speed, the engine check instruments should set to constant values.

If the instruments show contrasting or abnormal indications during continuous run, check for failures of the systems or of the equipment and contact the service department



#### **CAUTION**

Even if the automatic pilot controls the route, navigation must be supervised in any case.


**CAUTION**

During navigation, the salon door must usually be kept closed to prevent exhaust gases and any splashes of water from entering deck areas under particular conditions in terms of wind direction and force. This will improve comfort for the passengers and silence inside the compartments.


**CAUTION**

The speed of the yacht must be controlled, together with the position of the interceptors, according to the sea conditions and the prevailing wave direction, so as not to subject the structure of the yacht to avoidable stress and assure the occupants' comfort when underway.


**DANGER**

It is absolutely forbidden to perform reverse run with one of the two engines stopped. This operation is allowed only in case of life danger for the persons on board and for the safety of the yacht itself, however when the engine is running it should not run higher than 1000 rpm.


**WARNING**

Avoid prolonged use of engines at low speeds to avoid overheating of exhaust pipes due to reduced cooling water circulation.

## 8.4 STOP OF PROPULSION ENGINES

Do not immediately stop the engines after a full-load operation, but let them run low (about 5 minutes) to balance the temperature differences.

**From inner helm station:**

- Set levers to central idle position of gear box.
- Turn keys to OFF.
- Disconnect magneto-thermal switches relevant to the start keys of both engines.

**From sun deck helm station:**

- Set levers to central idle position of gear box.
- Press STOP buttons.
- Go to inner helm station and turn keys to OFF.
- Disconnect magneto-thermal switches relevant to the start keys of both engines.


**DANGER**

Make sure that the engines cannot be started by unauthorized staff.


**CAUTION**

With engines stopped carry out following:

- Turn off any unnecessary electrical utilities and check the general layout of the electrical panels and the indications of the voltmeters and ammeters;
- Check the switches of the bilge pumps and their regular operation;
- Check for possible leaks from the shaft lines seals;
- Rinse the yacht with fresh water;
- Connect the shore electric power supply;
- Keep the engine room extractor running for about 30 minutes, for ventilation and air cooling.

## 8.5 ENGINE EMERGENCY PROCEDURE

Due to a mechanical or electrical fault, the normal procedures for engine stop might not be sufficient; it is therefore necessary to stop the engines with the EMERGENCY procedures.

- **EMERGENCY STOP buttons:**  
The STOP EMERGENCY buttons are positioned on the dashboard: keep them pressed until the engines actually stop.
- **From the engine room with control panel:**  
Press the STOP buttons (I) located on the stern side of the engine room.

In the case of an engine malfunction alarm, the luminous ring of the relevant Start button on the helm station will light up red in a flashing manner.



### CAUTION

The emergency stop causes heavy stress on the engines with consequent hazard of component damage. Use only in case of real need.



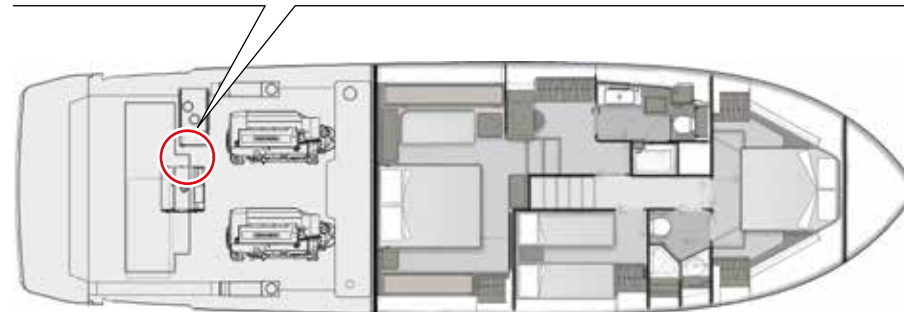
### WARNING

The engines emergency stop controls must be used only in case of real emergency. Never use these controls during the normal engine stop procedure.



### DANGER

Before restarting the engines after an emergency stop, make sure to find and to clear the reason of the fault.



## 8.6 PROPULSION ENGINE MAINTENANCE

Component	Maintenance	Notes and precautions
Lubrication system	Oil level check	Check the oil level by means of the special dipstick to make sure the level is set in the proper range (MIN - MAX). Do not start the engines if the oil level is not included between the two reference marks, as indicated in the Manufacturer's Manual.
	Oil and oil filter replacement	Replace engine oil according to time intervals and oil type suggested by the Manufacturer.
Fuel system	Cleaning of fuel pre-filter	Clean the fuel pre-filter with proper diesel oil and dry it with a compressed air jet.
	Drain of the fuel filter condensate	Each time the engine oil is changed, open the draining plugs and have the condensate flow out until only fuel comes out.
	Fuel filter replacement	Replace fuel filter within the intervals indicated by the Manufacturer.
Cooling system	Drain the cooling system	Drain the coolant only when the engine is stopped; follow the procedure indicated by the Manufacturer.
	Filling and draining	Refill with a mixture of drink water and antifreeze on ethylene glycol basis or anti-corrosion agent.
Fuel injection equipment	Cleaning	The components of the current injection systems contain high accuracy items strongly stressed. Because of this high accuracy in technology it is necessary to observe the highest cleaning during maintenance of the injection system. Even particles exceeding 0,2 mm of diameter can damage the components.



### CAUTION

Use only technical approved fluids otherwise the Manufacturer's warranty will become null and void.



### DANGER

Due to the high temperature in the engine room, oil or fuel leaks can evaporate and create a serious risk of fire. Regularly check the integrity of the system.



### DANGER

Oil is hot, danger of burning! Do not touch the drain plug with bare hands. Engines oils are polluting agents, treat and dispose of them carefully!



**CAUTION**

It is absolutely necessary to examine, together with FERRETTI YACHTS, the whole documentation provided by the Manufacturer of the various components; for any problem regarding use or maintenance, please directly contact the Service Departments listed in the documentation provided by the Manufacturer. In any case there are some small procedures that can be carried out by the crew on board, after consulting the operation manual.



**CAUTION**

At every oil change also replace the filter cartridge.



**DANGER**

Do not approach the hands to the V-belts or to the pulleys of a running engine.



**DANGER**

Do not top up oil exceeding the MAX notch of the dipstick. If the oil level is too high, damage to the engines may occur!



**DANGER**

If a sufficient oil pressure is not achieved within 10 seconds, switch off the engine immediately.



**DANGER**

Do not use open flames, do not generate electric sparks. Do not smoke. Avoid ignition sources. Risk of fires and explosions!



**DANGER**

A wrong use, a wrong maintenance, tampering and replacement of pieces, can cause serious damages or mortal events, beyond damaging the equipment. The interventions on the electrical and mechanical equipment must be carried out by qualified staff after having examined the Manual delivered by the Manufacturer.



**ENVIRONMENT**

Dispose of waste materials with respect for the environment and according to the laws in force. Use only authorized disposal procedures, in case of doubts, contact the Port Authority.



**DANGER**

Any maintenance work on the engines must be carried out with the engine switched off, after having allowed it to cool down enough and after having prevented it from starting.



**ENVIRONMENT**

Handle used fuel filters as special waste.


**DANGER**

Danger during the draining of hot coolant.


**ENVIRONMENT**

Collect the cooling liquid and dispose of it according to the regulations in force.


**CAUTION**

The cooling system should be refilled only with cold engine.


**WARNING**

When the cooling system is refilled, the turbo-chargers should not be vented.


**DANGER**

Compressed air at high pressure may create the risk of injuries. Do not direct compressed-air jets at persons. Wear protective goggles, safety masks and ear protectors.


**CAUTION**

Do not open the cooling system with engine at operation's temperature because this will cause pressure drops in the circuit. Should the cooling system have been opened at operation temperature, the alarm "Pressure in the expansion tank" might trip and the engine power may decrease as a consequence. The pressure of the coolant in the compensation tank settles automatically when the engine cools down.

The cooling system should be refilled only with cold engine.


**DANGER**

Should exceptionally be necessary to check the coolant level with engine at operation temperature, turn first cautiously the closing plug up to the first notch, than let the pressure relieve and open the plug very carefully.


**DANGER**
**Danger of injuries!**

While the engine is running, the piping of the injection system under high pressure contain fuel at a pressure up to 1600 bar.

Before releasing the connections wait at least one minute from the engine shut down, so that the pressure in the injection manifold is discharged.

## 8.7 FUEL SYSTEM

The fuel system consists of a 3250 l (859 USgal) tank.

The tank is located at the bow of the engine room.

The tank is filled via the refuelling nozzle located near the left fly upright protected by a door.

The fuel level is detected by a sensor and is visible by means of the monitoring panel installed in the main helm station.

It is also possible to monitor the level of the tank by using an optical indicator applied directly on the flange of the fuel tank located in the engine room. It can be operated by means of a ball valve to be activated to check whether the transduced value coincides with the actual level of the fuel inside the tank.



### CAUTION

Before starting navigation, it is always best to further check the fuel level by also using the optical indicator in the engine room.

At least once a month check for the correct operation of the level gauge.

### NOTE

The level indicated without operating the valve refers to the last check.



### CAUTION

The level indicated by the electric gauge is only indicative: for an accurate reading, always refer to the direct visual reading in the engine room.



### CAUTION

While checking for consumption and distances, it is a good rule to always keep plenty of margin, so as to be able to face bad weather conditions or other possible unexpected events.

The fuel is sucked directly from the tank and is sent to the distribution manifold, which supplies the engines and the generator.

The fuel sucked, before reaching the two engines and the generator, is first conveyed through the water/fuel separator pre-filters, so as to hold impurities and to separate possible water contained in the fuel and then through the engine circuit through the condensate separator filters.

During boarding, the fuel flow produces a lot of foam; if this comes out, you might think the tank is full. Therefore, it is good to wait for a few minutes and then top up, in order to be sure that the tank has been filled correctly.

The particular geometric shape of the tank allows besides the decantation of impurities in the fuel tank.

It is appropriate to fill the tank some hours before setting up for navigation; in this way, the impurities in the fuel will settle down and water will decant as they are both heavier than fuel.



### DANGER

Is forbidden stow fuel into compartments not designed for this purpose in order to avoid any unpleasant accidents.



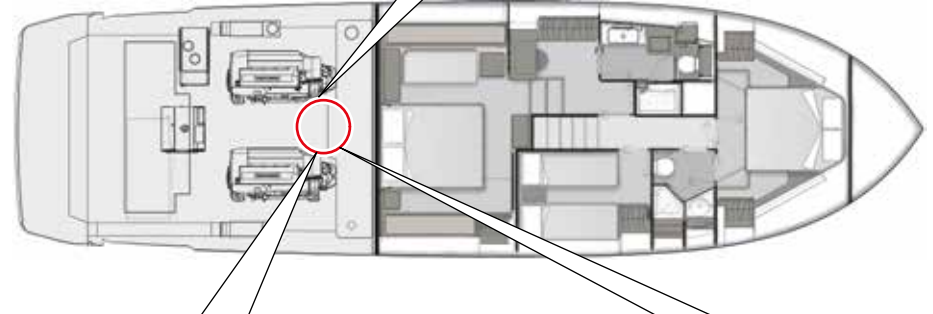
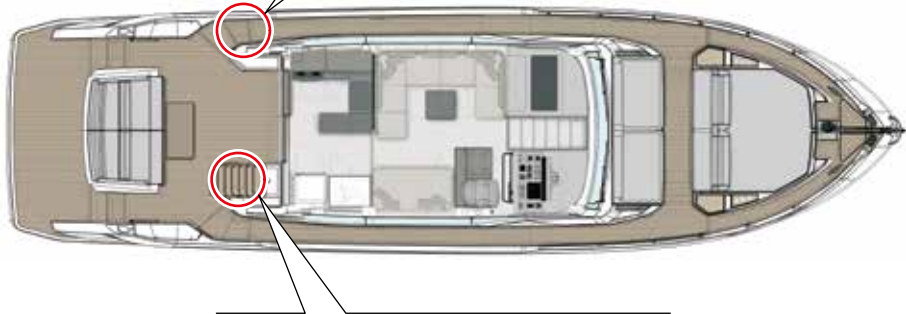
### CAUTION

The draining should never be conveyed to the bilge. If accidentally the draining is conveyed to the bilge, disconnect the bilge pumps and clean accurately.

Fuel filling cap



Optical fuel level



Fuel interception tie rods



Fuel distribution valves



Fuel separator filters

To avoid exhalations of fuel, the tank was equipped with a manifold air vent with retinal flame arrestor.

The fuel suction of the engines, as well as on site, can be intercepted at a distance by two tie rods to be operated only in the event of an emergency and located in the aft cockpit.



**CAUTION**

The level indicated by the electric gauge is only indicative: for an accurate reading, always refer to the direct visual reading in the engine room.



**CAUTION**

The bleeding procedure should be carried out every two or three refuelling operations.



**ENVIRONMENT**

Handle water mixed with fuel and dispose of it according to the rules in force. Use only authorized disposal procedures; in case of doubt, refer to the Port Authorities.



**DANGER**

It is forbidden to smoke, use naked flames or keep mobile phones switched on during refuelling.



**CAUTION**

We advise to drain and clean the tank periodically, at least once a year. Please remember that re-used fuel must be filtered.



**ENVIRONMENT**

Dispose of fuel-contaminated polluting waste according to the rules in force.



**ENVIRONMENT**

Every marina has dedicated toxic waste disposal areas. It is recommended not to scatter waste that can contaminate the environment (such as used oil, fuel, oily liquids, batteries, etc..).

Prior to perform any job in the engine room, disconnect the bilge pumps switches, to prevent accidental fuel, lubricant or other liquid leaks and therefore the pollution of the yacht surrounding waters.



**DANGER**

Because of the high temperature in the engine room, oil or fuel leaks can evaporate and create a serious risk of fire.



**DANGER**

Fuel leak can cause a fire to break. Check regularly the integrity of the system.



### **WARNING**

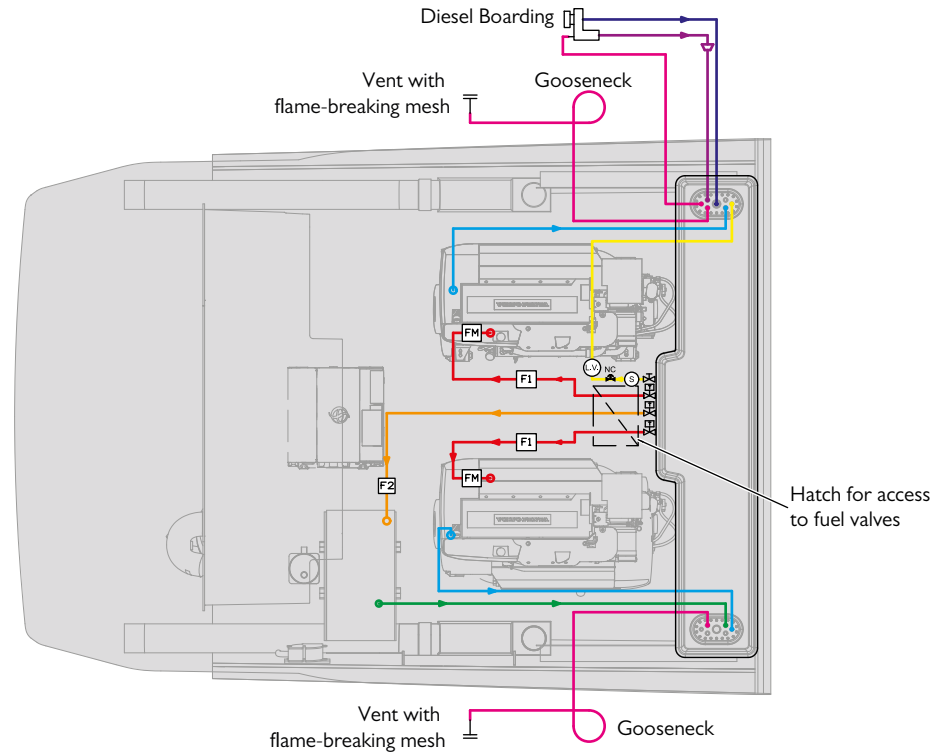
The bilges of the engine room must always be kept clean, so that fuel or oil leaks or penetrations from the engines or the generators can be easily noticed. If leaks are noticed, it is necessary to stop the engines and to let them cool and only afterward, if possible, repair the leak.  
Finally clean the bilges.



### **ENVIRONMENT**

It is forbidden to discharge bilge water mixed with oil or diesel fuel into the sea, because this can cause of serious pollution.  
Check periodically the level of possible oily waters contained into the collecting tanks under the engines, should their level be close to bilge overflowing, disconnect the magneto-thermals switches of the bilge automatic pump system, to avoid accidental spills, until the tanks have been completely drained in accordance with the environmental legislation.  
During the maintenance operation in the engine room, it is compulsory to disconnect the magneto-thermals of the bilge pumps automatic suction system, avoiding in this way accidental spills.

Fuel system diagram:



ICON	DESCRIPTION
	Engine suction
	Engine rejection
	Generator suction
	Generator rejection
	Diesel boarding
	Tank draining

ICON	DESCRIPTION
	Tank vent
	Reserve
	Optional lines
	Fuel prefilter (optional)
	Fuel filter
	Fuel filter (standard)

ICON	DESCRIPTION
	Visual level
	Fuel level sensor
	Ball valve
	Ball valve with remote shut-off
	Flow switch

### 8.7.1 Fuel inlet

The fuel intake of the yacht is equipped with a flow switch having the function to prevent undesired leaks of fuel from the plug and from the vent which may stain the bridge and pollute the water. The leak of fuel may occur during refuelling, if the tank is almost completely full.

The fuel coming out of the intake duct is collected in a tank with suitable capacity, which, on its turn, will drain automatically into the on-board fuel tank, through the return duct.



**CAUTION**

The inlet plug carries the indication “DIESEL” to avoid accidental input of different fuels. To avoid damage to the system and tanks, we recommend refuelling by gravity and not by pressure.



**CAUTION**

Before refuelling, wash the teak with fresh water to avoid its contamination with fuel.



**CAUTION**

Stop all engines when refuelling.



### 8.7.2 Fuel quality

The quality of the fuel is crucial for a good performance of the engines installed on your yacht.

The fuel should be purchased from reliable high-sale filling stations, for both the quality and a probable short stay of the fuel inside the shore tank.

Fuels that meet the following standards:

- European Standard EN590
- DIN EN 590 (Germany)
- ÖNORM EN 590
- ASTM D975 No. 1D (USA)
- BS 2869 Part 1 Class A 1 (United Kingdom)
- BS MA 100 DMX (Marine Diesel Fuel)

are suitable for powering engines.

If the above fuel type is not available in some countries, follow the rules described in the engine manual.



**WARNING**

For the type of fuel to be used, follow the manufacturer's recommendations. Diesel engines require very clean fuel. Keep filters clean.



**WARNING**

Stop all engines when refuelling.



**WARNING**

If fuel containing water reaches the engines it can seriously damage the injection system. To avoid this, drain water from the fuel tank and service regularly the fuel/water separator filter. During winter service do not use fluidity correctors.



**CAUTION**

We advise to drain and clean the tank periodically, at least once a year. Please remember that re-used fuel must be filtered.

### 8.7.3 Fuel system maintenance

Component	Maintenance	Notes and precautions
Fuel tank	Bleeding (at least every two or three refuelling and at least every three months)	As shown in the following sequence.
Flow stopper	Fuel checks and cleaning	As shown in the following sequence.
Water/fuel separator filters for engines	Maintenance and water drain Replacement of filter element Troubleshooting procedure	As shown in the following sequence.

### 8.7.4 Fuel tank

#### Bleeding

In order to bleed the water or any impurities that may have been taken on board with the fuel, it is necessary to wait a few hours after refuelling so that the suspended particles have time to settle.

Bleeding is done by opening the bleed valve on the tank. To do this, remove the closing cap on the valve, slowly open the valve and let the water and deposits drain into a container until only clean fuel comes out. Once the operation has been carried out, close the valve and reinsert the cap.

During long periods of inactivity of the yacht, when the tank is empty it is recommended to open the flange and remove the fuel deposits formed during refuelling on the bottom of the tank.



#### WARNING

The inner cleaning of tank is a special operation, that has therefore to be carried out by specialized personnel. Contact technical service department to receive suitable help.

During the flange reassembly, make sure that the screws are correctly and uniformly tight, in order to prevent leaks of fumes and fuel. Furthermore, check the condition of the O-ring.



#### CAUTION

The draining should never be conveyed to the bilge. Before draining, first deactivate the bilge pumps.



#### CAUTION

The bleeding procedure should be carried out every two or three refuelling operations.



#### ENVIRONMENT

Handle water mixed with fuel and dispose of it according to the rules in force. Use only authorized disposal procedures; in case of doubt, refer to the Port Authorities.



#### CAUTION

It is recommended to empty and clean the tank periodically, contact the FERRETTI YACHTS After Sales & Service Department. Please also remember that reused diesel fuel must be filtered.



#### WARNING

During the tank's inner cleaning, it is a good habit to ventilate the room for a long time and to wear all necessary protections to avoid injuries caused by gas fumes.



#### ENVIRONMENT

It is forbidden to discharge bilge water mixed with oil or diesel fuel into the sea, because this can cause of serious pollution. Periodically check the level of possible oily waters inside the collection tanks under the engines; should the level be next to overflowing into the bilge, disconnect the magneto-thermal switches of pumps of the bilge suction system, to prevent accidental spilling, until the bilge is empty, in compliance with current legislation for environmental protection. During the maintenance operation in the engine room, it is compulsory to disconnect the magneto-thermals of the bilge pumps suction system, avoiding in this way accidental spills.

## 8.7.5 Water/fuel separator pre-filters for engines and generator

### Maintenance and water drain from collection tank

Bleed frequency or the replacement of the filter element are determined by the contamination level of the fuel.

Check or drain the water collection tank daily.

The collection tank must be emptied before contaminants reach the end of the turbine, i.e. when the water detector sends an alarm signal indicating the need to drain the water.

- After having placed a capacious collection container underneath it, open the drain to discharge containments.
- Remove the cover and fill with clean fuel.
- Close the cover and tighten the T-handle firmly by hand.

### Replacement of filter element

Replace the element according to the schedule recommended by the manufacturer or if a lack of power is noticed.

Power loss indicates that the element is indeed clogged. Other elements like a too full tank or excessively contaminated fuel can also clog the filter.

- Close the seacock.
- Remove the cover.
- Remove the element by holding the handle and by pulling lightly forward with a twisting movement.
- Insert a new filter having the same filtering features of the one replaced.
- Check and, if necessary, replace the filter cover gasket. Apply a layer of clean fuel or engine oil on the seal before reinstalling it, insert the new element with a slow twisting movement downwards.
- Fill with clean fuel, then replace the cover. Tighten the T-handle manually and reopen the valve.
- Start the engine and ensure there are no leaks. Repair any leaks with engine shut OFF.

### MAINTENANCE

At least once a month check the operation.

At least once a week, and anyway before each refuelling, check for the presence of water in the fuel.

If necessary drain the water present.

When necessary, but at least once a year, replace the cartridge of the filters.

### Troubleshooting procedure

The main reason for a poor start-up or lack of power is the result of a clogged filter or of an air leak in the fuel system.

If the unit does not engage or does not maintain idle speed, or if air bubbles are visible, first check the cover via the T-handle and vent it if it was not closed properly.

Then check all connections and lines and make sure that no fuel line is clogged with contaminants. If the fuel tank is equipped with an incorporated filter, check for its possible clogging.

If the problem persists and the filter part is new, contact technical support.



### CAUTION

The separators have to be checked at regular intervals as suggested by manufacturer, so as not to compromise the engines operation.

## 8.8 EXHAUST SYSTEM

Engine exhausts are of the semi-submerged type with 'wet' mufflers. This system reduces the smoke that usually tends to soil the yacht's stern. The cooling water and the smokes are mixed with sea water and conveyed to the bottom.

### MAINTENANCE

At least once every three months carry out the tightening of the discharge raiser bolts.



### CAUTION

A strong smell and a light smoke from exhaust insulation are normal during the first period of use.



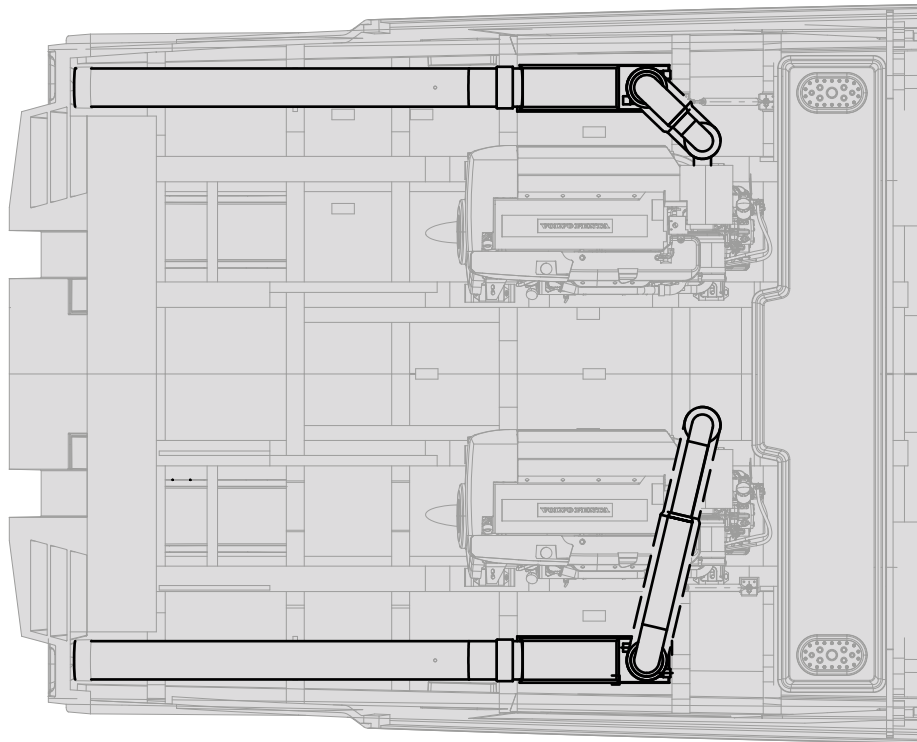
### WARNING

Avoid prolonged use of engines low speed to avoid overheating the exhaust pipes due to reduced circulation of cooling water.

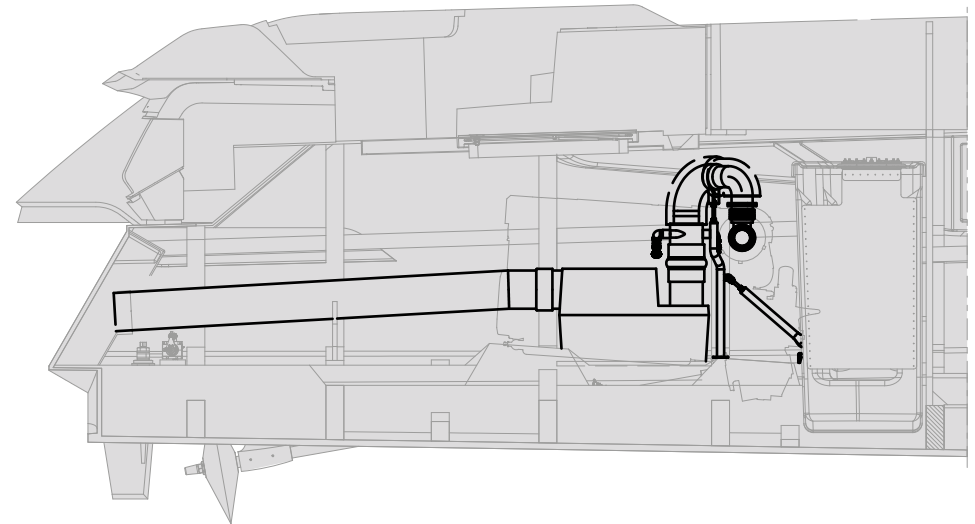


**Main engines exhaust system:**


TOP VIEW



SIDE VIEW



**8.8.1 Engine exhausts maintenance**

Component	Maintenance	Notes and precautions
Semi-submerged exhaust	Periodical check (as necessary, according to the floating area)	<p>It is recommended to periodically check the cleanliness of the immersed drain terminal. If you need to clean.</p> <div style="border: 2px solid yellow; padding: 10px; text-align: center;">  <p><b>CAUTION</b></p> <p>Carbon deposits, marine growths and fouling may affect the engine regular operation, causing performance degradation and serious damages. They must be inspected periodically.</p> </div>

**Periodical check**

To carry out the check, ensure the propulsion engines are off and cannot be started.

## 8.9 ENGINE ROOM VENTILATION SYSTEM

The ventilation system of the engine room allows the necessary air recirculation for the operation of the propulsion systems and of the machinery installed on your yacht, in order to keep a safe temperature inside the engine room.

The ventilation system consists of two side air intakes (equipped with an air separation system from any suspended water) positioned along the two sides in the engine room that allow air to enter the environment and 2 extractors for extracting air from the inside to the outside.

To activate the air extractor it is necessary to act on the magneto-thermal located on the main deck electrical panel.



### CAUTION

While the engines are running, the extractor must always be activated. It is suggested to keep the extractor for at least 30 minutes on, after anchoring, to dispose of the residual heat. Also make sure that the vents are not obstructed.



### CAUTION

Do not lay tools or clothing on the extractor or on the air inlets, because the emergency closing mechanism might get blocked.



### DANGER

#### Carbon monoxide poisoning

Fossil fuel combustion generates a high quantity of carbon monoxide. This gas is a colorless, odorless and highly toxic. When the engines and/or the generator are running, the yacht must be properly ventilated, in particular during low speed navigation, or when the exhaust fumes may blow back on board (e.g. when the yacht is shored or anchored or riding the anchor).

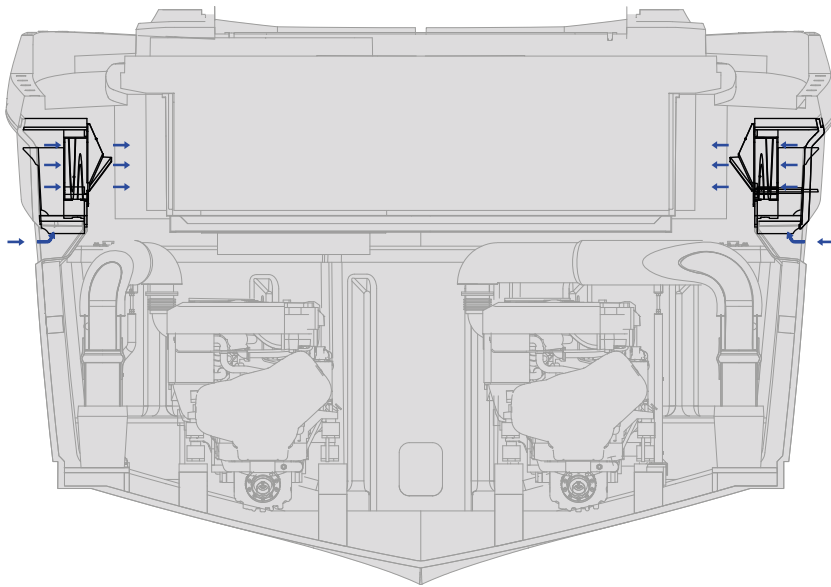


### DANGER

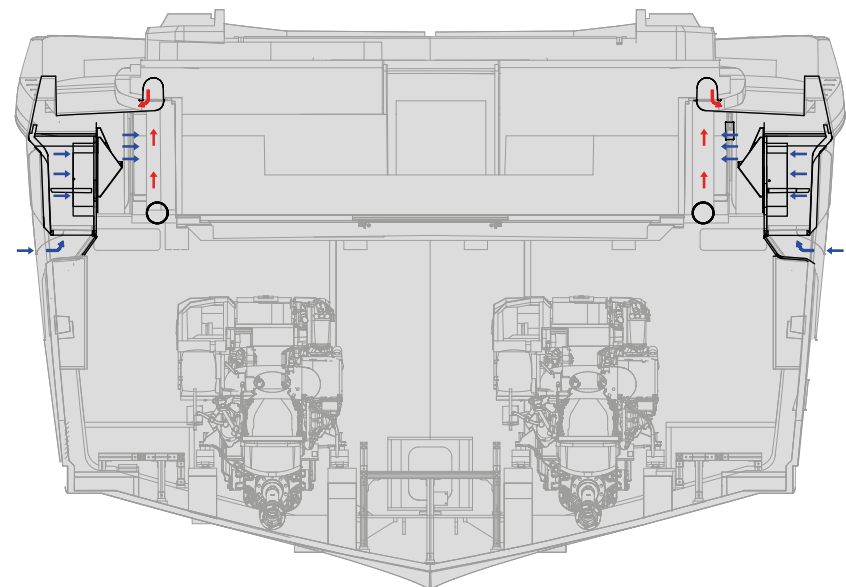
It is strictly forbidden to insert your hands or tools inside the fan when operating or when electrically connected. Before starting the fan, make sure that this one is protected against tampering, in compliance with the laws in force.

Engine room ventilation system diagram:

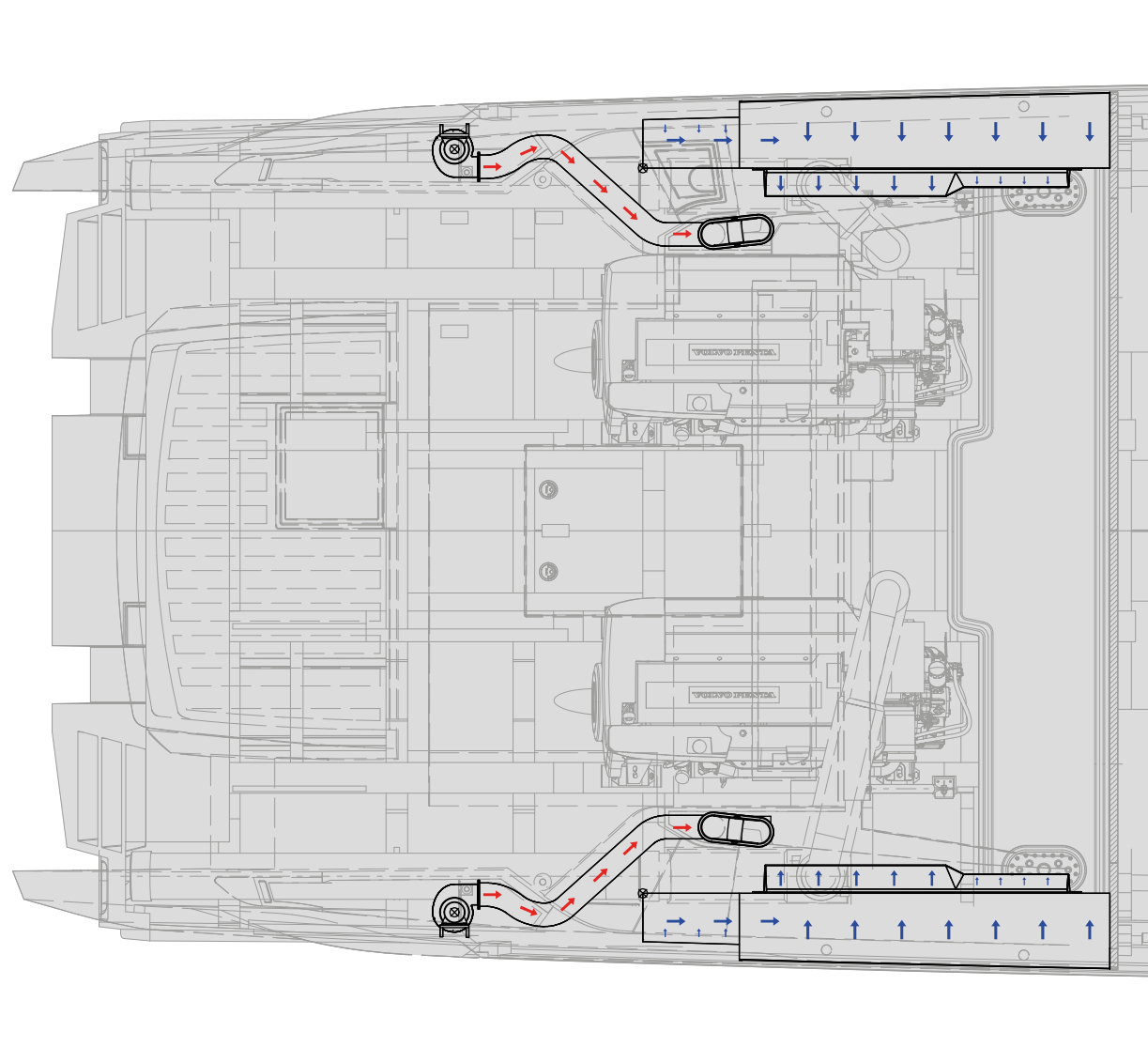
VIEW FROM STERN



VIEW FROM STERN



TOP VIEW



## 8.10 GEAR BOX

The installed gearboxes are flanged directly on each engine.

The main functions of a marine gearbox are the following:

- Couple the engine with the propeller shaft and reduce the number of revolutions of the propeller.
- Reverse the motion direction.
- Interrupt the propeller shaft motion (idle).

With the use of the gearbox controls, 3 operating modes are available:

- Idle: the output shaft connected to the propeller shaft, does not transmit any rotation of the input shaft.
- Forward run: the output shaft connected to the propeller shaft, has the same rotation direction of the input shaft.
- Reverse run: the output shaft connected to the propeller shaft has the opposite rotation direction of the input shaft.



## 8.10.1 Gearbox maintenance

Component	Maintenance	Notes and precautions
Gearbox	Oil level check Oil change Oil filter change	For the correct maintenance and check procedures, refer to use manual delivered by the Manufacturer. For the kind of oil and grade of viscosity recommended by the Manufacturer, refer to the gearbox plate.  Have the scheduled maintenance operations performed at the correct time schedule by authorized and skilled personnel, in order to keep the gearboxes perfectly efficient.



### WARNING

The gearboxes are provided with emergency controls in case of fault.

### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



### CAUTION

The use of the gearbox with a low quantity of oil may damage the gears.  
 An excessive quantity of oil may cause seals and vents to leak and can remarkably increase the operation temperature.



### WARNING

Under normal operation conditions, the gear change can be carried out with the engine at low speed.  
 However, in case of emergency, gearshifting can be carried out with the engine at high speed, thus remarkably reducing clutch life though.

### 8.10.2 Gearbox check

#### Oil level check

Check the oil level only when the engine is at a standstill. The proper oil level is between the upper and the lower notch of the dipstick.

After the first oil filling, a repair or the cleaning of the oil filter, the gearbox must be run for about two minutes.

Next the oil level check has to be carried out again two minutes after the engine has stopped.



#### CAUTION

Before starting checking the oil level, check that the gearbox oil temperature complies with the normal operating specifications.



#### ENVIRONMENT

Recover waste oil following the norms in force, relevant to special waste disposal.



#### DANGER

Operate on the inverter only when both the engine and the propeller have been stopped and cannot be started up. Before starting the inverter, carry out the filling and the consequent check of the oil level. The use of the gearbox with a low quantity of oil may damage the gears. An excess of oil might cause leaks to the seals and to the vent and increase remarkably the operating temperature.



## 8.11 SHAFT LINE

### 8.11.1 Propeller shaft and mechanical seal

The propeller shaft is secured to the inverter with the handle (1) and is aligned on the three points represented by the inverter, by a mechanical seal (4) lubricated with water and by the shaft support (2).

The stuffing box case includes a piece fixed to the hull and an adjustable piece. The adjustable piece is closed to the fixed one, in order to compress the seal, located inside the stuffing box case.

It's very important that the seal disposal is compressed, in order to avoid irregular pressures on the seal seat that might compromise life and efficiency of seal disposal.

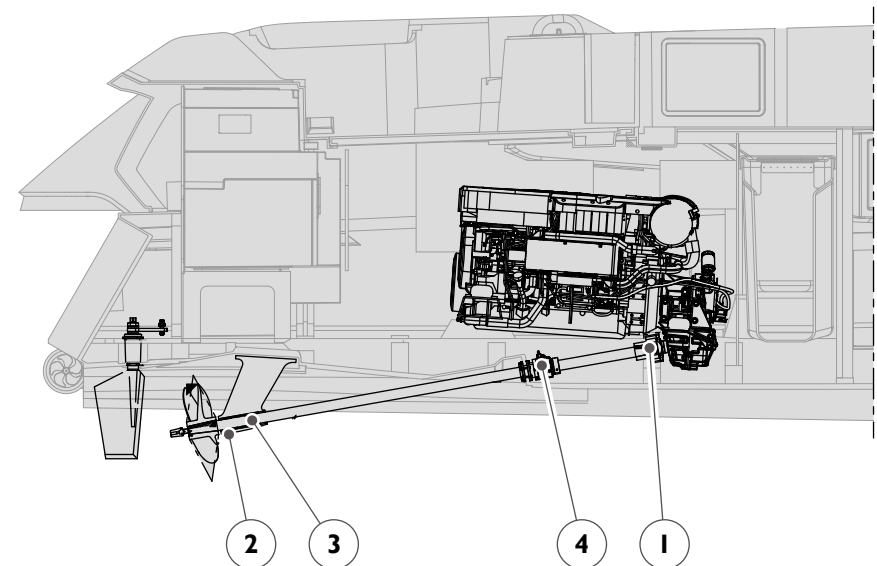
The outer shaft support includes a Neoprene (3), bushing which uses the sea water as a lubricant. Check it every season, as it might get worn quickly during cruising, especially in sandy waters.

The bushing wear causes a vibrations increase. When the yacht is on a sandbank, a good technician can easily consider, by moving the shaft, if the wear demands the replacement of the bushing.



**DANGER**

Never approach the shafts while they are rotating.



### 8.11.2 Mechanical shaft seal

The mechanical seal has the function of preventing seawater from entering the yacht through the space between the propeller shaft and the hull.

It consists of two rotating rings held in contact by combined forces.

One ring is defined as rotating and rotates with the shaft; the other stationary is fixed to the hull. The structure of the stationary part is made by the use of industrial techno polymers, which guarantee not to run into problems such as ageing or the possibility of drilling or fire.

The seal between the parts is made by means of O-rings.

The cooling of the seal is ensured by the access of water through the flushing duct.

#### Before starting the engine

- Make sure the seal is clean on the outside as well. If foreign bodies are present, it is recommended to wash thoroughly.
- Make sure that the flush water valve is open and there are no leaks from the sealing surfaces.



#### DANGER

Do not approach the shafts when they are rotating.



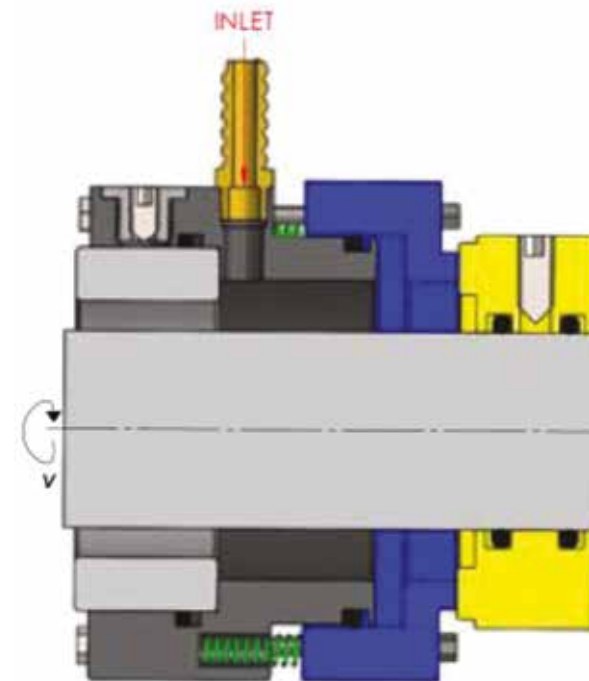
#### CAUTION

In order not to compromise the seal, it is essential never to operate it without cooling water.



#### WARNING

FERRETTI YACHTS yachts are designed to have a correct transversal trim with full optional equipment, in the presence of propellers and shafts of respect. In case the yacht is not equipped with all the optional extras and with respect shafts and propellers, weights are inserted to compensate and make the trim correct.



**MAINTENANCE**

At least once a week, check that there is no water seepage.

At least once a month carry out a cleaning.

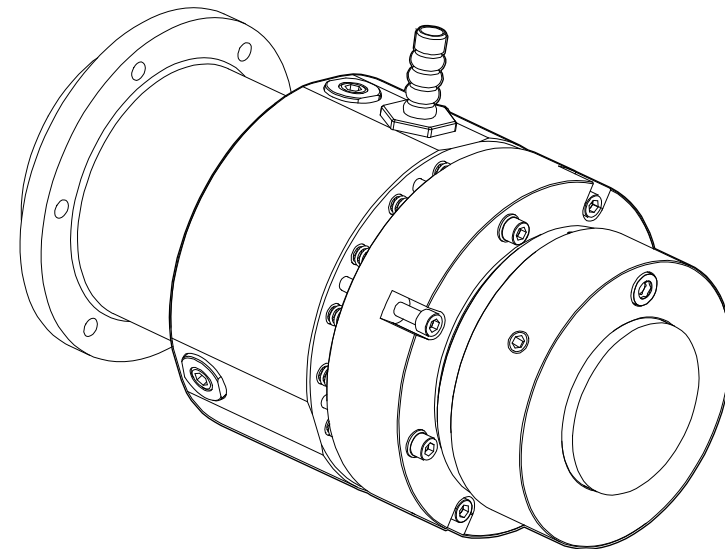
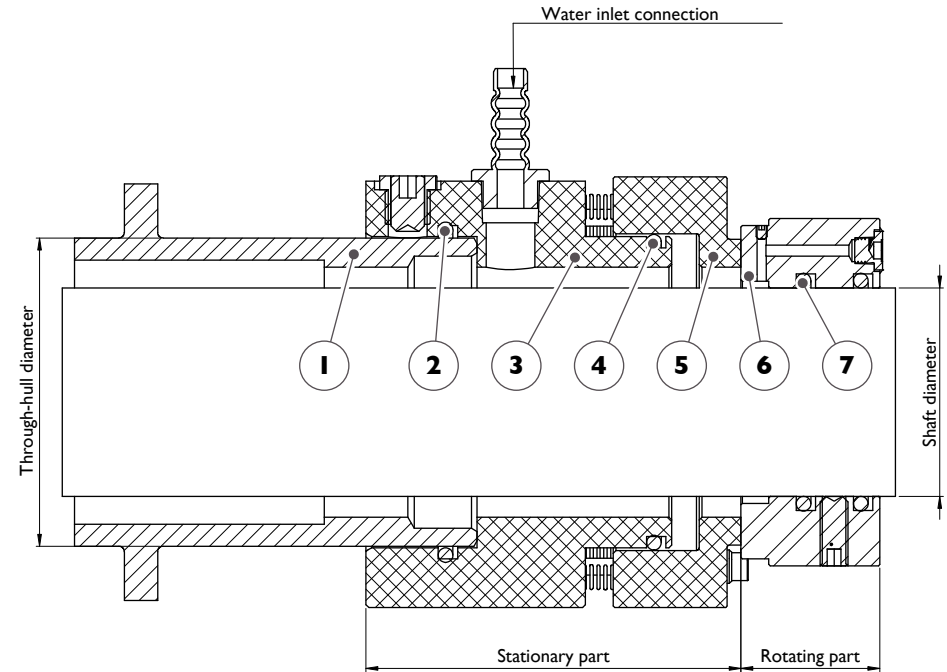
Periodically:

- Check the condition of the seals;
- Check the compression of the seal and when necessary make a compression;
- Check and maintain the cooling circuit of the seals to prevent dirt, algae and foreign bodies from blocking the flow of cooling water, causing the seals to overheat and permanently damage them.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

1. Through-hull
2. O-ring
3. Stationary support
4. O-ring
5. Stationary ring
6. Rotating ring
7. O-ring



### 8.11.3 Propeller shaft and mechanical seal maintenance

Component	Maintenance	Notes and precautions
Shaft support bushings	Periodical checks (at least once a month)  Assembly/disassembly	The Neoprene bushing of the shaft support, when cruising in waters with sandy suspensions, may wear rapidly. The bushing wear causes a vibrations increase. With the yacht in a dry shore, a good technician can easily evaluate, by moving the shaft, if the wear is so bad as to need the bushing to be replaced.
Mechanical shaft seal	Maintenance and check	With yacht moored in the harbor every day.
Shaft lines	Periodical checks (as necessary in function of the stop zone, but at least every month)	It is essential to keep always the propellers and shafts clean; the formation of parasites or the presence of foreign bodies like cables, cloths or plastic bags lead to propulsion power reduction, to propellers cavitation with consequent surface damage, and to vibrations causing damages to the stuffing box seals and to the bushings of the shaft supports.  Checking and eventual cleaning may be carried out with the yacht in a dry shore or with the help of a diver. To clean scrape the barnacles, without engraving the metal, polish them with sand paper at thin grain.

## 8.11.4 Shaft support bushings

### Checking the oil level

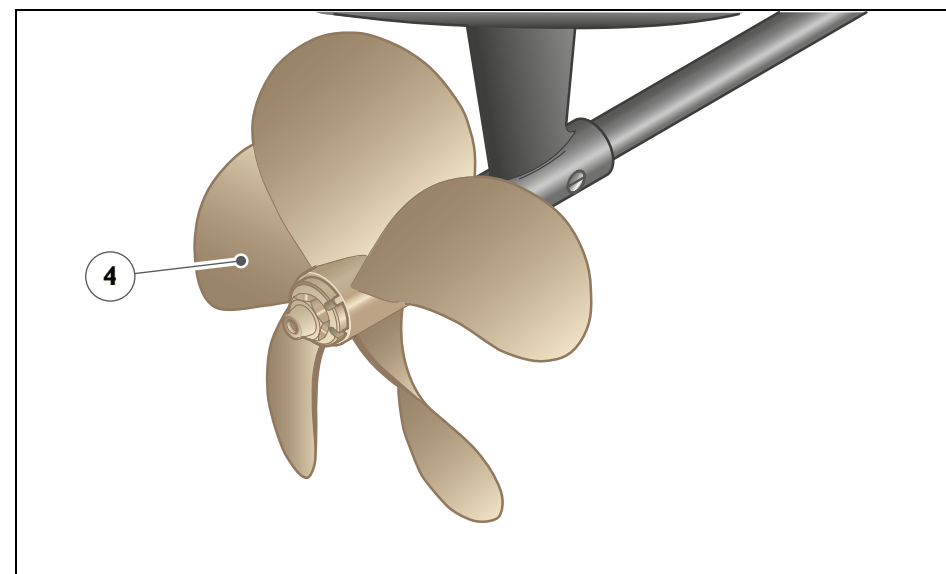
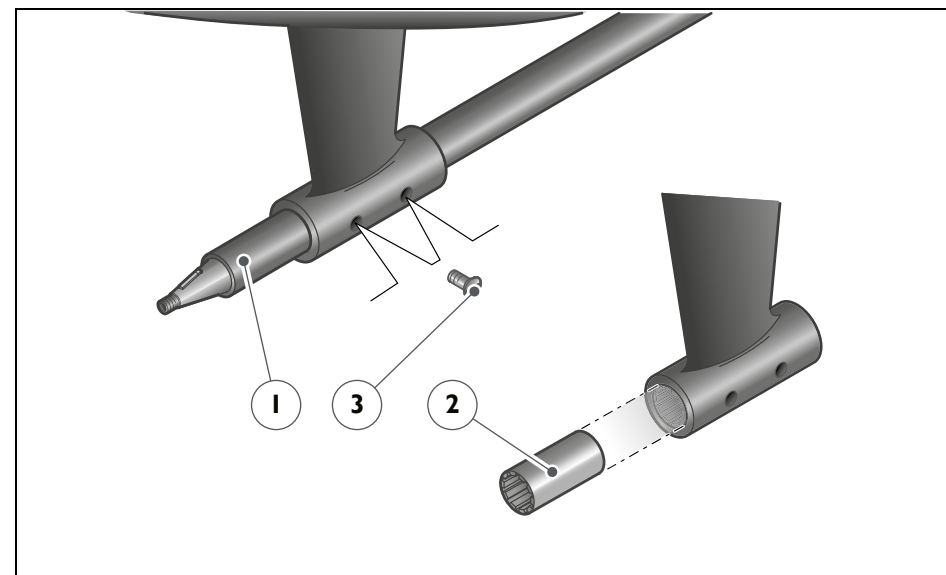
Check the shaft backlash (1) trying to move the shaft on a side back and forth to verify the backlash of the shaft supporting bushing (2).

### Assembly/disassembly

- If the propeller shaft (1) shows backlash, the water lubricated neoprene bushing (2) could be worn out; in this case replace it.
- Remove completely the antifouling to reveal the screwdriver screws (3) which lock the bushing positioned.
- After the propeller (4) and the shaft (1), have been disassembled, by means of a plastic tube with a slightly smaller diameter, pull out the bushing (2).

For reassembly, repeat the above-mentioned operations in reverse sequence.

- Do not use grease between propeller shaft and bushing. Remember to fasten the bushing retaining screws (3).



### CAUTION

For spare part request contact FERRETTI YACHTS After Sales & Service Department.



### CAUTION

Remember to tighten the fixing screws (3) of the bushing on the shaft support. Never use grease or other lubricant between propeller shaft and Neoprene bushing.

## 8.12 PROPELLERS

The propellers have been designed in order to result lightly “unloaded” with a new yacht, hull clean and without displacement overloads: in this way the engines will develop all their power in average normal operating conditions, with hulls and propellers not perfectly clean and some overloads on board.

Periodically check if the propellers are not too “dirty”, as this leads to a fast performance decrease and to a vibration increase.

In the event of a collision with the seabed or against submerged/semi-submerged bodies, immediately check the propellers and shafts; in the event of noticeable vibrations, reduce revolutions to idle and head to port for repair, as increased vibrations could cause damage to the yacht’s propulsion organs and structures.



### **CAUTION**

FERRETTI YACHTS are designed to obtain a correct transversal trim with full optional equipment, and with spare propellers and shafts.

If the yacht is not provided with full optional and with spare propellers and shafts, some weights are inserted to correct the transversal trim.

The above-mentioned weights can be removed or displaced as soon as the yacht is provided with a new equipment.

### 8.12.1 Maintenance of the propellers

Component	Maintenance	Notes and precautions
Propellers	Inspection and cleaning	<p>Check propellers at intervals according to the stationary waters, and however, at least once every six months.</p> <p>Check and cleaning can be carried out both with the yacht in a dry shore or with the help of a diver, however each time the yacht is lifted up; in particular, with the yacht in a dry shore, clean with under pressure water, do not use acids which may corrode propellers and alter their chemical composition or abrasive products which may alter their geometric shape (If you need to use abrasives, only use mild ones).</p> <p>Do not use antifouling paint on the propellers, in order not to alter their geometry.</p> <p>With propeller cleaning, it is essential to clean also:</p> <ul style="list-style-type: none"> <li>• Supports (final and intermediate);</li> <li>• Shafts.</li> </ul> <p>Check the condition of the anodes and if corrosion traces are on the propeller - replace the propeller in case of serious failures.</p> <p>Check if the propeller blades have notches, fractures, fouling or barnacles.</p> <p>A careful cleaning of propellers, supports and shafts prevents flow difficulties which also jeopardize the performance of the yacht.</p>

Component	Maintenance	Notes and precautions
Propellers	Assembly/disassembly	<p>Disassemble always with the special puller and remember:</p> <ul style="list-style-type: none"> <li>• Do not use the hammer on the propellers;</li> <li>• If necessary, heat the propeller hub with care in order to avoid its deformation.</li> </ul> <p>When assembling the propeller, check also if the key is correctly coupled with the shaft and the hub of the propeller; do not tighten if the key enters hardly in the shaft seat or drags on the groove of the propeller hub.</p> <p>With reference to the propellers with cone and key, tightening is normally carried out with a hand wrench after checking if the shaft cone and the propeller hub are correctly coupled and if the key does not interfere.</p> <p>The starboard and port propeller are not interchangeable between them, neither with others as designed according to specific features of your yacht.</p>

## Assembly/disassembly - propeller replacement:



### DANGER

To clean and check the yacht in water: disconnect the engines and generator start.

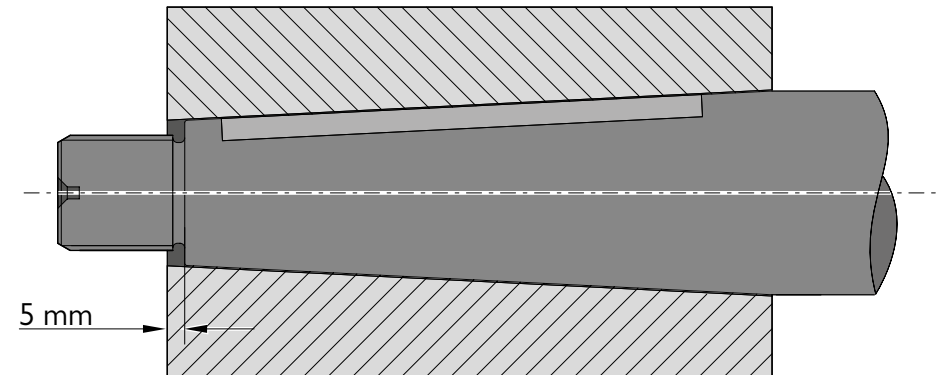
It is advisable to carry out this operation by yacht in dry shore because maintenance is in this way eased. Check if the propeller paddles show notches or breaks, scales or barnacles, which may have a negative influence on the yacht output during navigation. If you notice corrosion, check the anodes conditions and replace the propellers for major failures.

The extreme end of the shaft (9) is conical and a little key allows the coupling with the propeller (5) which must be inserted up to the shaft catch and leaving the propeller stretching out from the shaft plane of 5 mm.



### CAUTION

Do not replace the propellers of your yacht with other of doubtful origin. Contact FERRETTI YACHTS After Sales & Service Department. Each yacht model has its own propeller.



Pieces should not show burrs or dents to make the coupling effective. It is essential to lubricate them with plenty of silicon grease.

Tighten the nut (4) locking the propeller (9); on the propeller hub there are three holes to 120°. Tighten as necessary to insert the dowel (3), to avoid natural loosening.

For disassembly keep an extractor at disposal so as not to deform the propeller. In case of obstacles or excessive sticking, heat the propeller to expand the coupling and ease the removal.

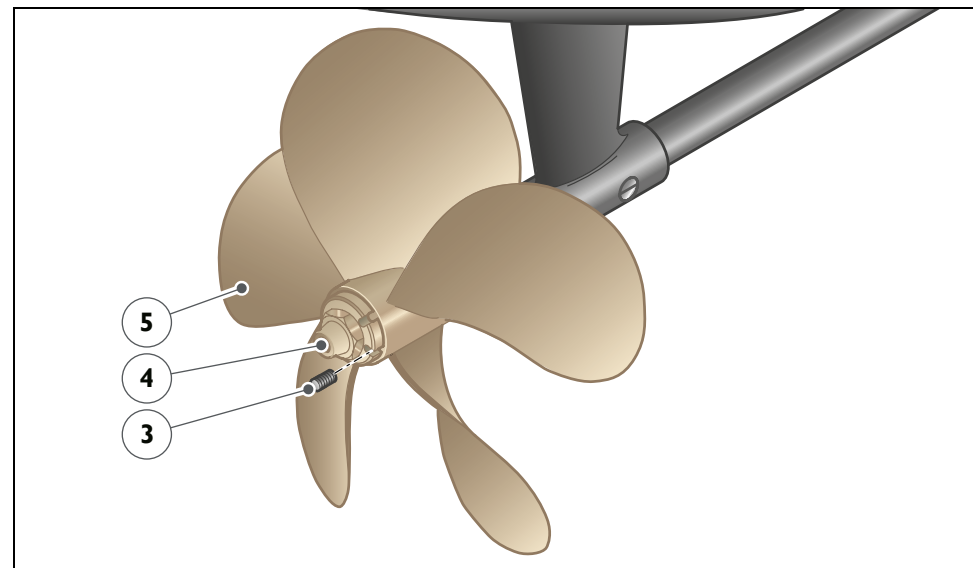
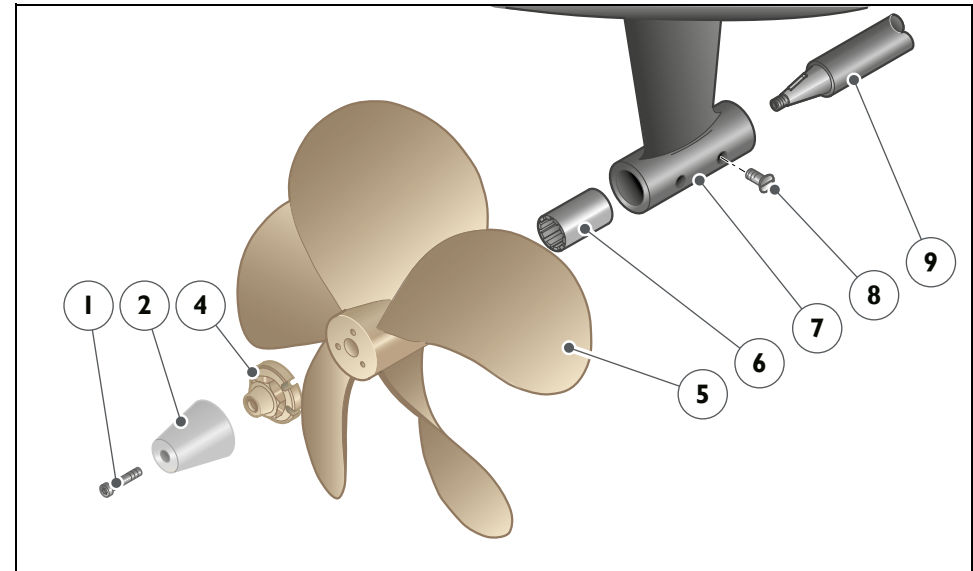


### CAUTION

Avoid the use of hammers or mallets to pull out the propeller. The pull out force must be uniformly exerted on the entire hub of the propellers.

Hereunder, the list of components of shafts and propellers line:

1. Screw
2. Propeller anode
3. Dowel
4. Nut
5. Propeller
6. Shaft support bushing
7. Shaft support
8. Countersunk screws with notch
9. Propeller shaft



### 8.13 OIL CHANGE SYSTEM (OPTIONAL)

The yacht can be equipped with an automatic oil change system.

The system consist of a pump connected via a manifold to:

- Engines
- Generator
- Inverters

The system removes waste oil from the utilities and replaced with new oil.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.





FERRETTIYACHTS

9



## STEERING SYSTEMS

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1. FOREWORD

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  2. SAFETY RULES

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  3. SAFETY DEVICES AND EQUIPMENT

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  4. DESCRIPTION OF THE YACHT

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  5. HELM STATIONS

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  6. WATER SYSTEMS

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  7. ELECTRIC SYSTEM

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  8. PROPULSION SYSTEMS

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  - 9. STEERING SYSTEMS**

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  10. AIR CONDITIONING SYSTEM

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  11. AUXILIARY EQUIPMENT ON BOARD

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  12. INFORMATION FOR USE

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  13. HULL AND FURNITURE MAINTENANCE

---

  14. TROUBLESHOOTING

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## 9.1 STEERING SYSTEM

The steering system essentially consists of the hydraulic power unit (2) connected to the actuators that move the rudders.

The wheels transmit the control via “CAN BUS” to the control units and, consequently, to the actuators (1) which move the rudders.

The helm stations control unit is located in the rudder locking.

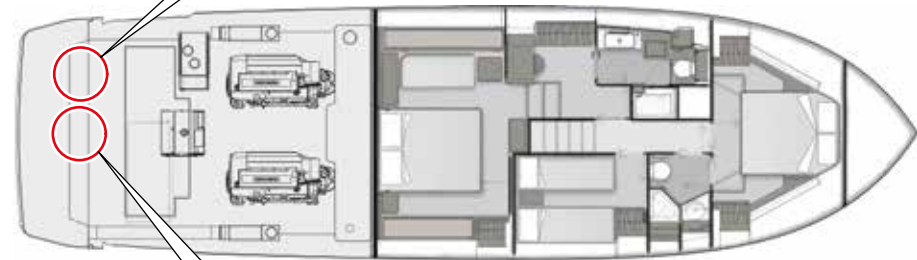
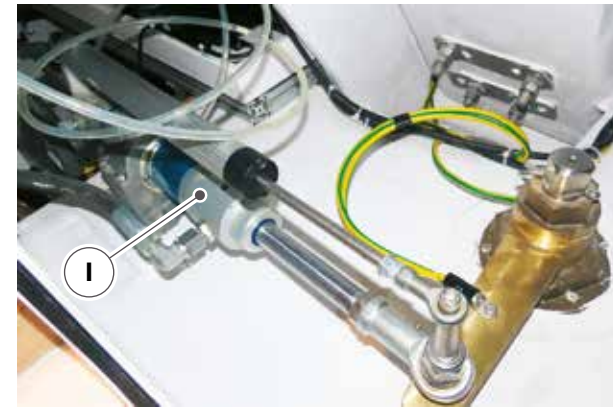
The electric and electronically pilot-controlled steering system has the purpose of enabling an easier steering during navigation by assisting the manoeuvres carried out by the pilot.

The system, which replaces the traditional hydraulic steering system, carries out an individual control, by means of an optimised logic, the linear actuator of the rudders in the most appropriate way and according to:

- Speed;
- Tacking angle.

### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



## 9.2 INTERCEPTORS SYSTEM

The yacht is fitted with interceptors, which can be operated from both driving positions and moved by two electric motors.

They allow varying, during navigation, both the longitudinal and the transversal trim of the yacht.

The circuit is extremely simple: the electrical signal coming from the switches reaches the electronic control unit that controls the electric motors that move the interceptors. The controls are powered and protected by a magneto-thermal located on the electrical panel of the engine room.

### General information on the use

It is possible to move the wheel alignment correctors through the panel on both control boards.

It is important to become familiar with the use of the interceptors, because their correct use is extremely important both for performance and comfort improvement. Usually, when you lower the interceptors, also the bow lowers down; while if you raise them, you raise the bow.

Correct positioning of the interceptors results in stable and ideal set-up, which can increase speed while reducing consumption.

Under particular navigation conditions when, due to lateral sea forces, sea and wind currents, the yacht reaches an inclined trim, in order to restore normal conditions and to keep the course, it is necessary to act on the rudder wheel or to use the interceptors in an offset way.



### WARNING

Interceptors are normally used during cruising, both to make it more comfortable and to achieve better performance of the yacht, according to the sea and navigation condition, and the yacht loading.



### CAUTION

When using reverse, set the interceptors fully up, otherwise they may be damaged.

### Suggestions about the use

Some advice will prove useful to familiarize with the interceptors.

- After the hull has moved to the glide position, adjust the position of the interceptors to find the most favourable extraction for navigation.
- At high speed it is advisable not to operate the interceptors at the same time, one up and one down, but carry out these operations separately to avoid sudden lurching; it is nevertheless possible to operate them together in the same direction.
- With calm sea, the best trim tab position is the one allowing maximum speed with minimum yacht resistance.
- With rough sea at bow, lowered interceptors will allow the yacht to bump less and to navigate more comfortably even if speed will be decreased.
- With rough sea “at stern”, lifted interceptors will tend to raise the bow thus avoiding unpleasant listing.
- With side wave motion or asymmetrical side load, best stability is obtained with staggered interceptors.
- In case the yacht is not underway, raise the interceptors completely.



### WARNING

The interceptors can suddenly change the direction of the yacht if operated too quickly or with a high incidence, especially with the increase in the speed of the yacht and during manoeuvres (as they are usually sized and optimized for intermediate speeds). It is therefore necessary to familiarise yourself well with their use and with the reactions of related devices in any condition and especially at high speeds.



### DANGER

Always make sure that passengers are seated before carrying out large adjustment manoeuvres, especially if cruising at high speed.

**CAUTION**

Periodically clean the interceptors to remove any corrosion that may affect their efficiency.

**WARNING**

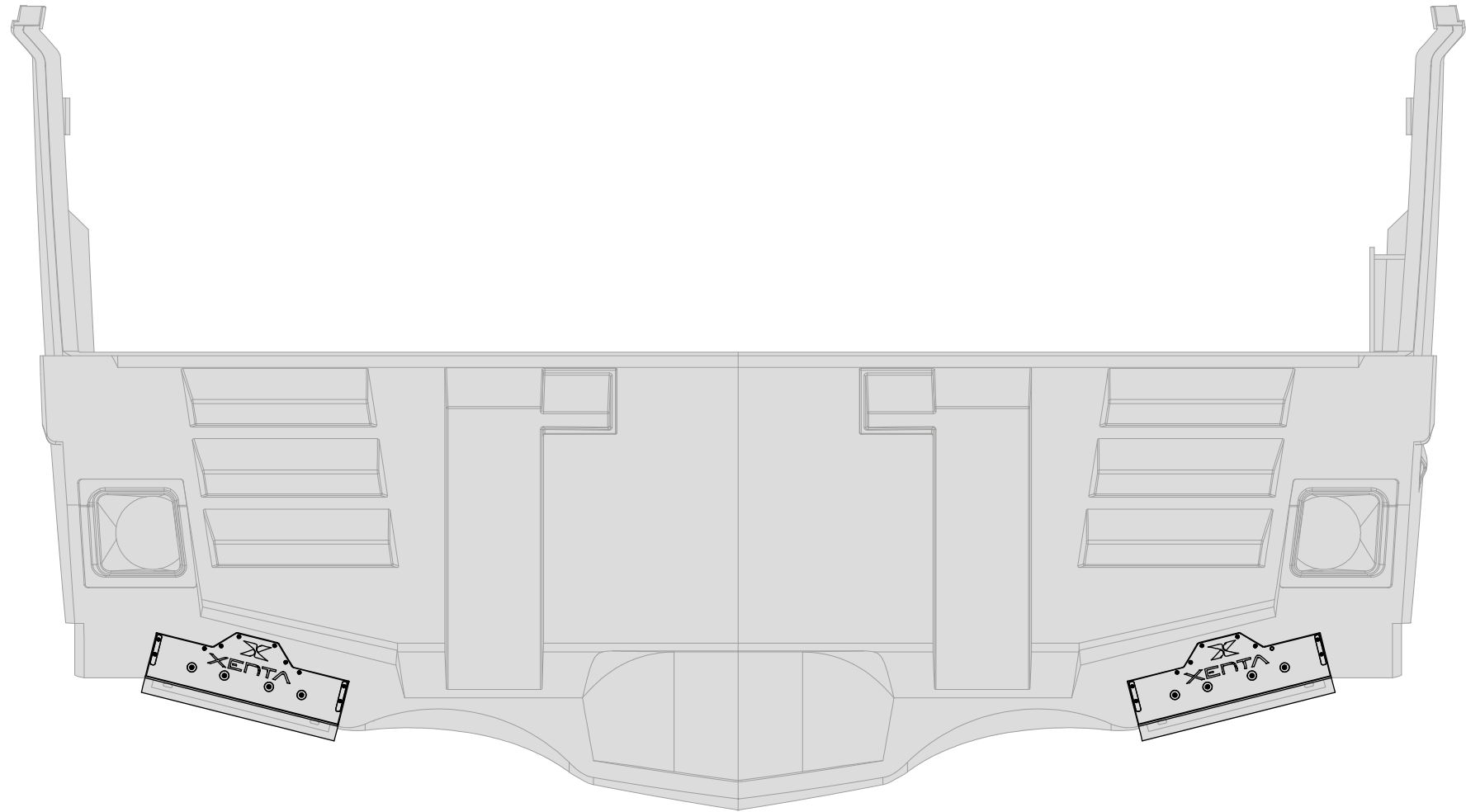
The manual use of interceptors, running at high speed, requires special attention and it is normally not recommended.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

Interceptors system diagram:

AFT VIEW



### 9.2.1 Maintenance of the interceptors system

Component	Maintenance	Notes and precautions
Interceptors	Cleaning	Clean the interceptors of any remaining algae or dirt.
Sacrificial anodes	Check and replacement	Check at least once a month the sacrificial anodes mounted as interceptors protection and replace them when necessary.

#### MAINTENANCE

At least once a month, and anyway before each navigation, check the operation of the interceptors.

At least once every three months:

- Check the status of the sacrificial anodes and, when necessary, replace them;
- Check the status of the antifouling paint and when necessary restore it;

At least once a year.

- Carry out a protection treatment of the antifouling paint.

### 9.3 BOW (STANDARD) AND STERN (OPTIONAL) THRUSTERS

The thruster is a very simple device but it requires some special care:

- The thruster must be used at a very low speed, or without fresh way; at higher speed, more correct reactions can be obtained with the offset use of the gear boxes;
- The Manufacturer, considering the excessive overheating, has foreseen a continuous run of max. 3 minutes. The electric motors are equipped with a built-in protection thermal switch, which stops the engine, in case it overheats and starts it again once it has cooled down. You should consider this when planning the manoeuvres to carry out;
- Each time the yacht is lifted up, check the condition of the thrusters, of the protection anodes and of the fastening systems.

The thruster (1) is intubated in the tunnel cut into the bow of the yacht and is driven by a 24V reversible electric motor, through gears lubricated in an oil bath, below the access corridor to the VIP cabin, in a vertical position.

The stern thruster (2) (if present) is driven by a 24V reversible electric motor positioned in the rudder lanyard.

The thrusters are controlled by the joysticks featured in each helm station.

#### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

#### Use of the thrusters

After activating the main magneto-thermal on the electrical panel of the main deck room, press both "ON" buttons on the control panel.

The warning light indicates that the device is ready for use.

The electric motor of the thruster is controlled by means of the joystick.

Among the control panels, there is no control priority; therefore, the thruster must not be controlled through more panels at the same time.



If more control panels are activated at the same time in opposite directions, the control electronics stops the thrust unit until it receives one single movement signal in one direction only.

If activated at the same time in the same direction, the thrust unit will turn in this direction.

To activate each thruster, use the relevant joystick: in the central position of the control lever, the system is blocked and still; by manoeuvring to the right, the thruster will push water to the left, moving the yacht's bow to the right, and vice versa.



### CAUTION

The maximum duration of the thruster continuous run is about 3 minutes, beyond which the electric motor switches off.



### DANGER

During the thruster operation, pay attention to possible swimmers or small yachts which may be close to the thrusters openings.  
Do not test the thruster when the yacht is outside water, unless you are sure the workers are at safety distance from the thruster tunnel.



### CAUTION

When the thruster is not used, always disconnect the control units.

When the thruster is no longer used, press "OFF" switch.

Before going ashore, disconnect the magneto-thermal on the electrical panel.



### WARNING

Remember to disconnect the power supply of the system when manoeuvres are ended or during normal navigation.



### DANGER

Always stop the thruster before carrying out checks or maintenance operations and always disconnect the switches.



### CAUTION

Never activate the thruster longer than one second when the yacht is at dry shore, because this can seriously damage the electric motor.



### CAUTION

When the thruster stops supplying the thrust while the electric motor turns, there might probably be a fault in the transmission system.  
In this case, immediately disconnect the thruster.

## 9.4 BATTERY BREAKER ENABLING

On the battery breaker there is a 2-position manual button:

- ON: in this position, the battery breaker may be automatically closed/opened by respectively turning ON/OFF the thruster control joysticks;
- OFF: in this position, the battery breaker is always OPEN, regardless of the turning ON/OFF of the thruster control joysticks.

To close the battery breaker and have the thruster powered and ready for the manoeuvre, in general, it is necessary to:

- Position the automatic battery breaker to the ON position (button “extracted”);
- Close the engine battery breaker (remote control from the battery breaker panel or manual control on the battery breaker);
- Close the thruster control enabling switch on the main electrical panel;
- Turn on one of the thruster joysticks by simultaneously pressing the “ON” buttons.

This function may be useful when the yacht is left unattended for long periods of time, or in case of thruster maintenance.



### CAUTION

When leaving the yacht, or during maintenance work, it is necessary to turn all the battery breakers and breakers of the thruster system on board to the manual OFF position.

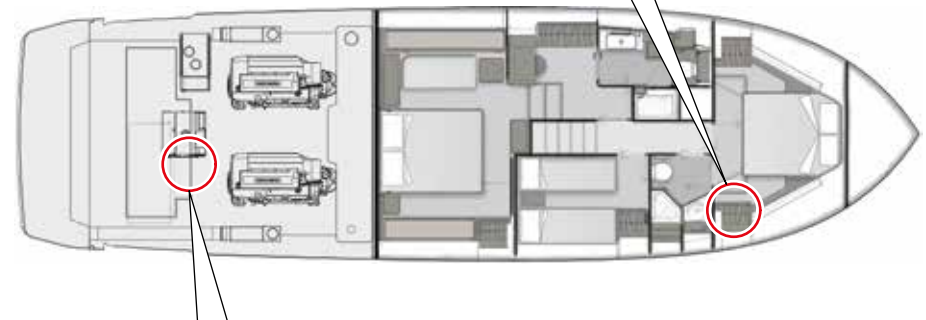
### Thruster fuse

Each battery breaker has a protection fuse for the power supply line and for the thruster motor line.



### CAUTION

In case it is necessary to replace a fuse on the thruster system, have this operation carried out by a skilled naval electrician. Take care to carry out a preliminary inspection of the relevant thruster technical operation documents or to contact the FERRETTI YACHTS After Sales & Service Department.



## 9.5 GYROSCOPIC STABILIZERS (OPTIONAL)

In order to reduce the annoying effect of the rolling, determined by the motion of the sea, a system can be installed, consisting of two gyroscopic stabilizers, able to generate an equal and opposite spin with respect to the waves. The system provides a remarkable reduction of the pitch both with the yacht stationary or during navigation with low energy consumption that does not impair the quality of life on board and does not affect performance. Thanks to these important features, the devices can also be kept on at night to allow a greater comfort by damping almost completely the annoying rolling motion.

The stabilizer device is based on a well-known principle of physics: a gyroscope tends to maintain its vertical rotation axis, parallel to the acceleration of gravity.

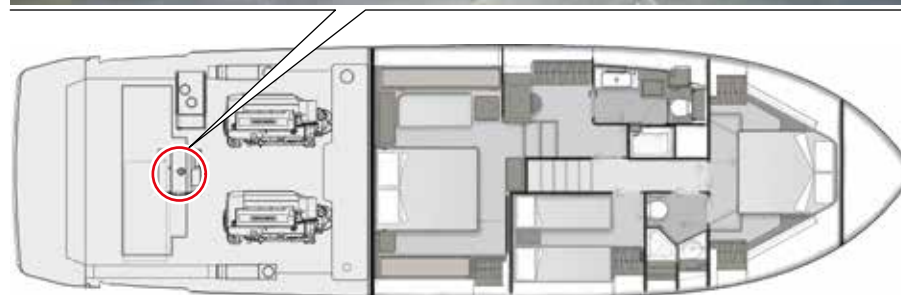
When an external force attempts to vary the position of the stabilizer, such as roll caused by the movement of waves, the stabilizer prevents this action by rotating along an axis perpendicular to its own and that of the disruptive cause.

This generated operation (pitch) is reduced by means of one dampener, duly calibrated according to yacht's features.

The system consists of a stabilizer positioned at the centre of the engine room and a control display on the main deck helm station.

### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.





FERRETTIYACHTS

10



## AIR CONDITIONING SYSTEM

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## 10.1 AIR CONDITIONING SYSTEM (OPTIONAL)

Your yacht may be equipped with an air-conditioning system consists of a heat pump air-conditioning unit (1) fitted with an internal seawater exchanger that cools (or heats, in winter mode) freshwater in a closed circuit. This unit is used to cool water used as a thermal exchange with the air of the rooms to be cooled down. In winter the inversion of the cooling circuit (by heat pump) allows the water heating instead of the cooling, in this way the rooms get warmed up. The fresh water, by means of a circulation pump, delivers cooled (or heated) water to the fan-coils until it reaches the set temperature.



### CAUTION

Check that fresh water circulates regularly. Because of a pressure drops or of a long period of inactivity, stop the system and top up water through supply valve until the requested pressure is achieved, this will be indicated by proper pressure switch installed on the unit. After this, close the supply valve.

The entire system is powered at 230V AC through the magneto-thermal located on the main electrical panel in the engine room.

The compressor unit with control panel is located is in the engine room.

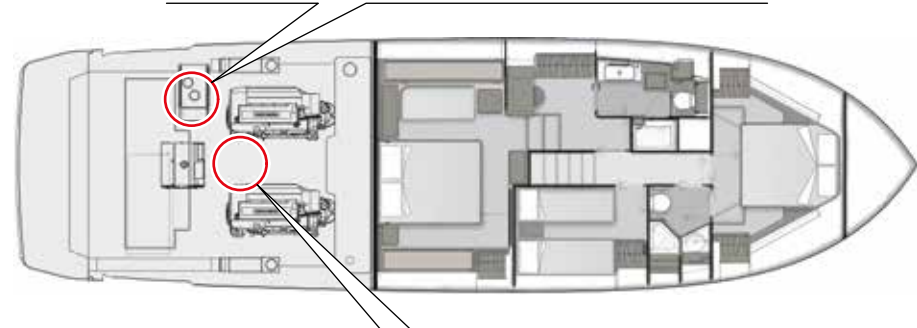
Each fan-coil is independent and is controlled by an associated control panel provided with independent temperature sensor.

Before starting the system, check the sea-water and circulation pumps for free rotation, by rotating the cooling fan of the electric motor with a screwdriver.

Rotation should be free, in case the pump is locked, do not start, but eliminate troubles first (dirt, rust, scraps, etc..).

Check that the sea water inlet and outlet valves (2) are both open. Power the chiller unit using the magneto-thermal on the main electrical panel.

Check the correct rotation of sea water and treated water pumps, by looking at the arrow that is marked on the pump body.



The unit works normally only if the circulation of seawater and treated water is correct. The compressor will start after a few seconds.

Its operation will stop when reaching the temperature of chilled water 7 to 8°C. The circulation pump sends the chilled water to the various fan-coils; the latter exchange heat with the surrounding environment.



**CAUTION**

Make sure before every start of the system, which is the valve seacocks and those of the overboard discharge are fully open and check the cleanliness of the filter.



**CAUTION**

Clean the strainer of the sea cock according to the time interval of the system use and to the pollution conditions of the sucked waters (seaweeds, mucilage's, etc..).



**CAUTION**

Before cleaning the strainer, remember to close the sea cock valve, to stop the generator and then proceed with maintenance. Once this operation is finished, remember to open the valve which supplies the cooling circuit.



**CAUTION**

When starting the unit after a prolonged shut down check the correct operation of the sea water pump and make sure of proper circulation.



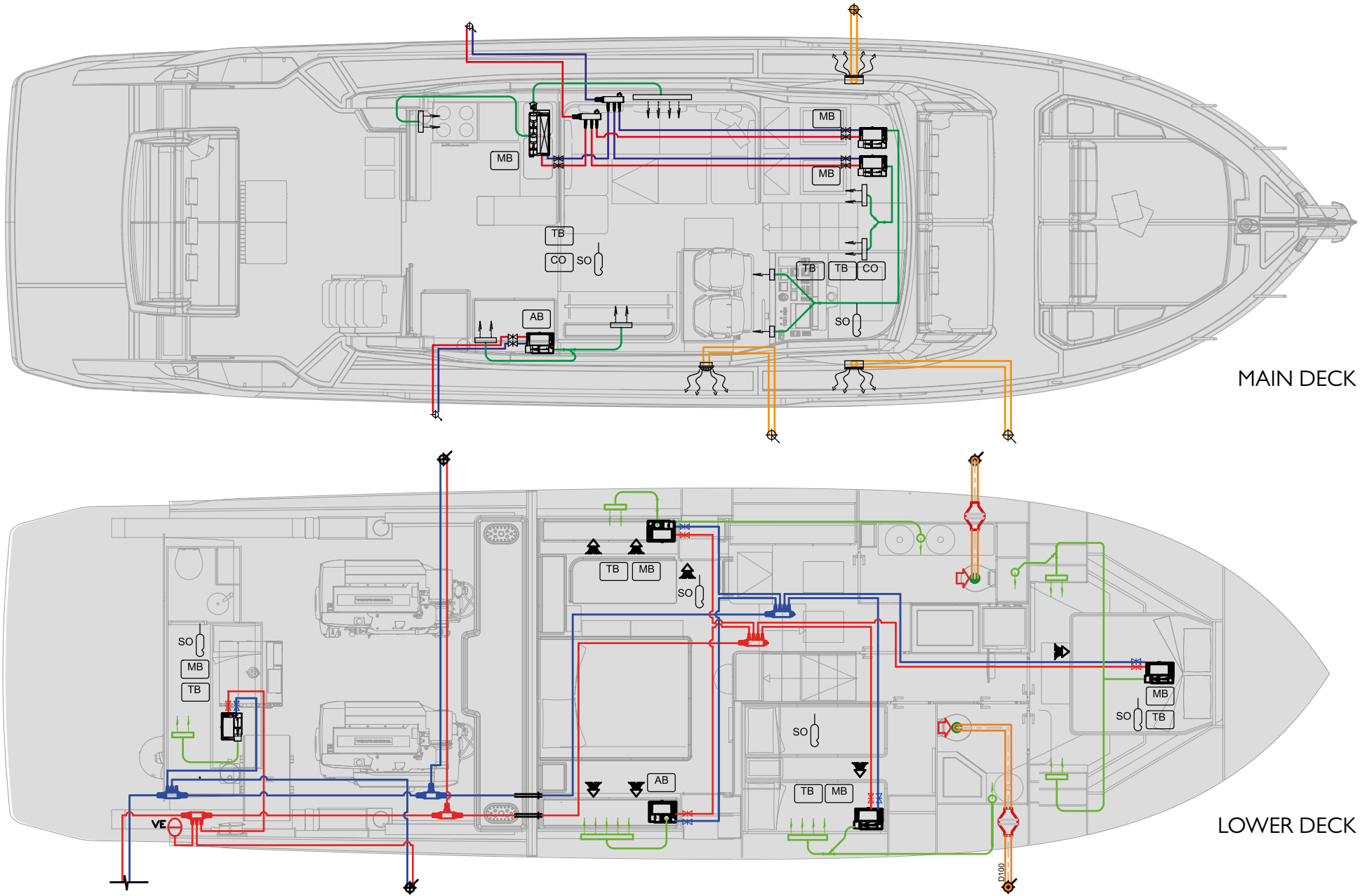
**CAUTION**

The excessive use of conditioned air may cause infirmities due to the great difference of temperature between the yacht inside and the outside.

**NOTE**








For more information on the use and maintenance of the air conditioning system and its components, refer to the specific manuals provided.





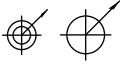


Air conditioning system diagram:










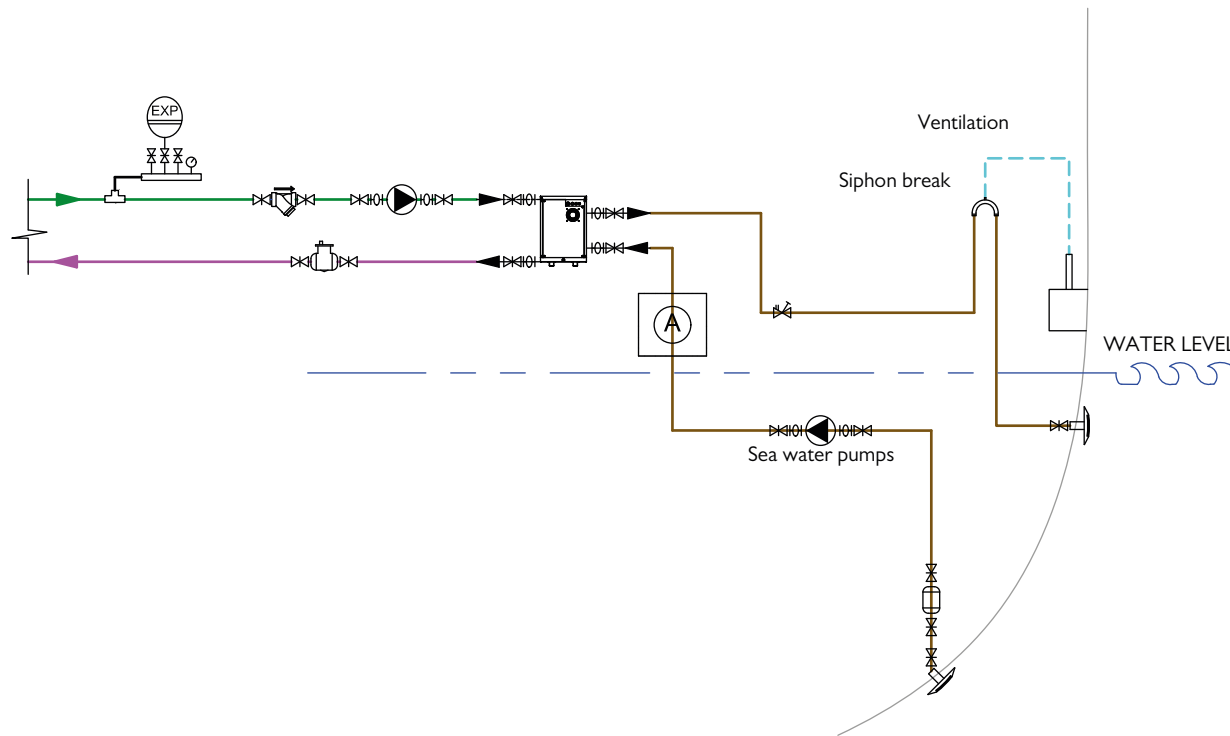
MAIN DECK

LOWER DECK

ICON	DESCRIPTION
	Water delivery line
	Water return line
	Sea water inlet
	Air delivery fan coil
	Air extraction
	Watertight bulkhead penetration
	Blower

ICON	DESCRIPTION
	Delivery air grilles UTA
	Extraction air grilles
	Air intake
	Delivery air grill fan coils
	To upper deck
	To lower deck
	Fan coil control panel

ICON	DESCRIPTION
	A/C display
	Extraction grid
	Extraction ducting
	Manifolds
	Extractor fan
	Extraction box
	Ball valve



ICON	DESCRIPTION
	Fresh water pipes
	Sea water pipes
	Electrical connection
	Pump
	Fresh water Y filter
	Air bleeder

ICON	DESCRIPTION
	Expansion tank
	Slow switch
	Balancing valve
	Service kit
	Ball valve
	Check valve

ICON	DESCRIPTION
	Anti-vibration joint
	Zincs anodes
	Sea water strainer
	Manual 3-way valve
	Motorized 3-way valve
	Sea water intake/outlet

### 10.1.1 Fan-coil control panel

The fan-coil control panel, located in each room of your yacht, ensures optimal control of the functions in order to adapt the temperature and ventilation of each room to the needs of the occupants.

Through an LCD display via a simple and intuitive interface, the control panel allows you to:

- Set the operating mode:
  - Cooling;
  - Heating;
  - Fan only.
- Set the ventilation mode:
  - Automatic;
  - Manual allowing you to set the speed.
- Set the desired temperature;
- Set a weekly operating schedule;
- Turn OFF.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

## 10.1.2 Air conditioning system (maintenance)

### Sea water circuit check and cleaning

Check the strainer located on sea water suction periodically, specially when the yacht is shored.

Never leave water in the system when the yacht is out of water.

At least once a year, it is important to have the system rinsed with fresh water for half an hour, to remove all sea water residues.

### Fan-coil cleaning

At least once every six months clean the fan-coils sucking the dust trapped in the back screen. Disassemble the filter, clean it, disinfect it and reassemble it; if broken, replace it.



#### **WARNING**

Pay attention not to damage the airtight cooling circuit, because it contains a polluting and irritating gas inside.



#### **CAUTION**

The topping-up of the cooling liquid must be carried out by skilled and qualified personnel, according to the indications of the Manufacturer.



#### **CAUTION**

The air inlets of the air conditioning system must always be free; their obstruction beyond involving the system performance, can also generate serious problems.



#### **CAUTION**

Never clog the temperature sensors located in each air conditioned room; as their clogging could impair the correct operation of the system.



FERRETTIYACHTS



## AUXILIARY EQUIPMENT ON BOARD

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## 11.1 PREPARATION FOR MOORING

Your yacht is equipped with deck instruments necessary for easy and safe mooring. In addition to the anchor winch, mooring equipment is located at the bow, on the walk-around and at stern of the yacht (optional), and consist of cleats and fairleads:

- Two cleats, two fairleads and a mooring winch (optional) are placed inside the aft mooring furniture;
- On the walk-around there is a cleat on each side of the yacht;
- In the anchorage area at the extreme bow, there are two cleats, two fairleads and anchor winch.



### CAUTION

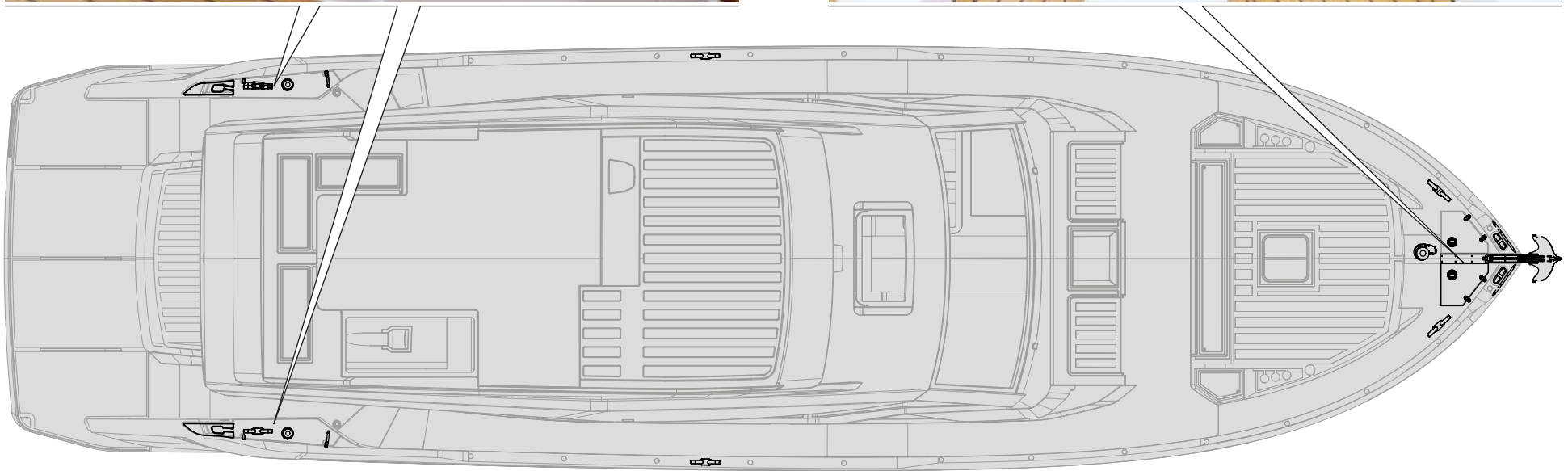
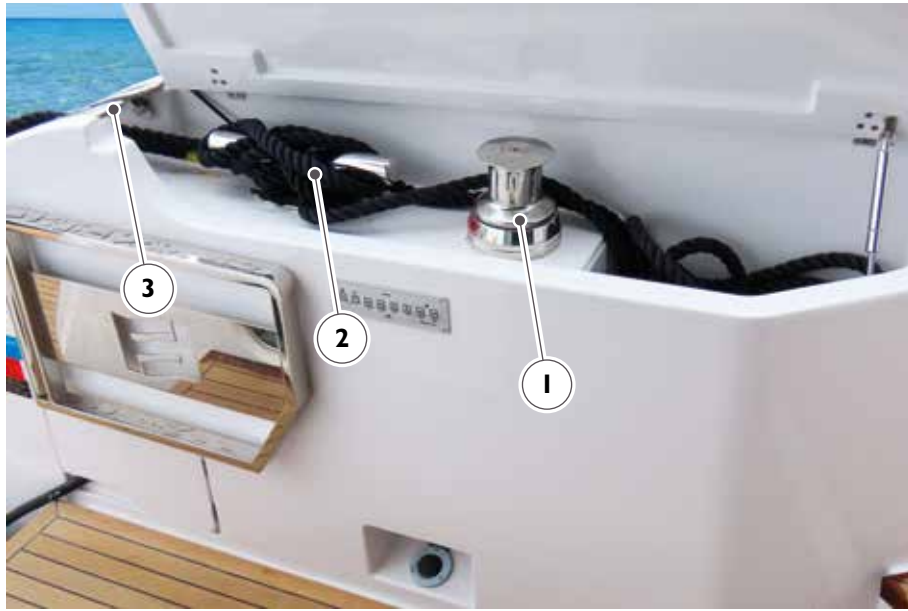
Do not use the stern platform cleats as permanent mooring points of the yacht. They should only be used for the tender or jet-ski mooring.



### CAUTION

Do not use the stern cleats for towing tender or jet-ski, but only for mooring the yacht.

1. Mooring winch (optional)
2. Cleats
3. Fairlead
4. Anchor
5. Anchor winch



## 11.2 MOORING WINCH (OPTIONAL)

In the aft cockpit, mooring furniture is installed on both sides of the yacht. A mooring winch can be installed inside the mooring furniture, with the relative cleats and fairlead.

To ensure operation it is necessary to wind the top in the bell and then operate the pedal control switch.

The winch control pedal is positioned under the mooring furniture. A mooring cleat is mounted next to the mooring winch.

The ropes used for the mooring must be fixed to the cleats in order to obtain secure anchorage.

1. Mooring winch control (optional)
2. Mooring winch (optional)
3. Cleats
4. Fairlead

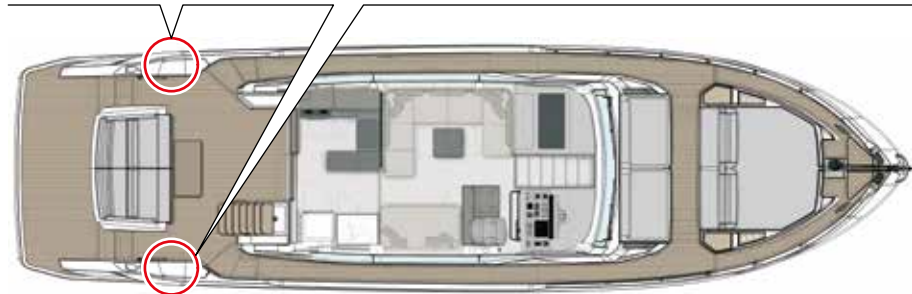
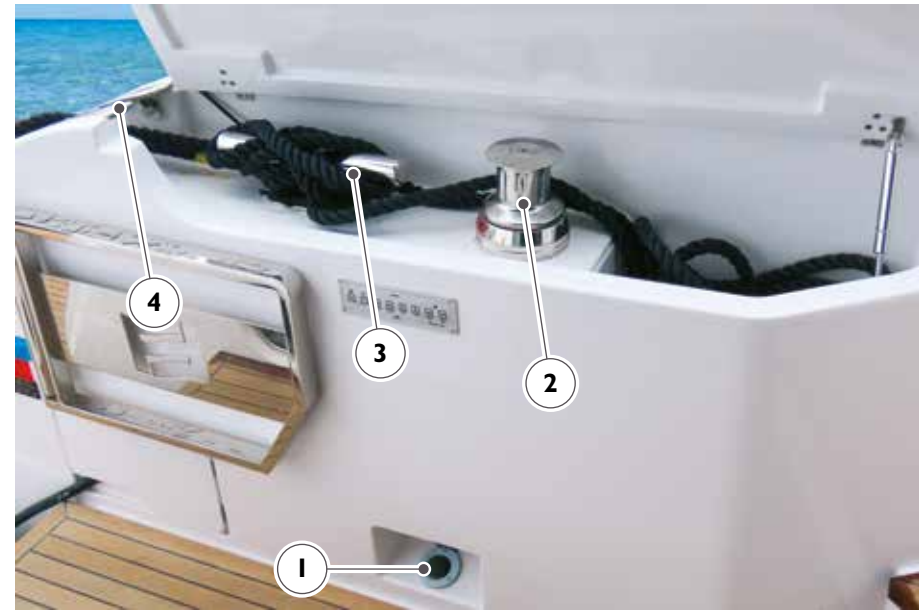


**DANGER**

Avoid placing your hands near the mooring line sliding area.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.



### 11.2.1 Mooring winch maintenance

Component	Maintenance	Notes and precautions
Gearmotor	Check and cleaning	For proper maintenance and control refer to the user manual provided by the Manufacturer.

#### Gearmotor:

#### Inspection and cleaning



**DANGER**

Before carrying out any maintenance operation on the anchor winch cut-off the electric power connected with it and remove with care the chain from the wildcat.



**CAUTION**

Do not activate electrically the winch with lever inserted into the drum.

The winch consists of materials resistant to the marine environment: in any case it is essential to periodically remove the salt deposits that form on external surfaces to avoid corrosion and consequently damage to the appliance. Surfaces and parts where they might be salt deposits must be thoroughly washed with fresh water. Disassemble the bell according to the frequency recommended by the manufacturer.

**MAINTENANCE**

At least once a week:

- Check operation;
- Wash with fresh water and clean thoroughly.

Grease the terminals of the electric motor at least once every 6 months.  
Disassemble and inspect exposed parts at least once a year.



**DANGER**

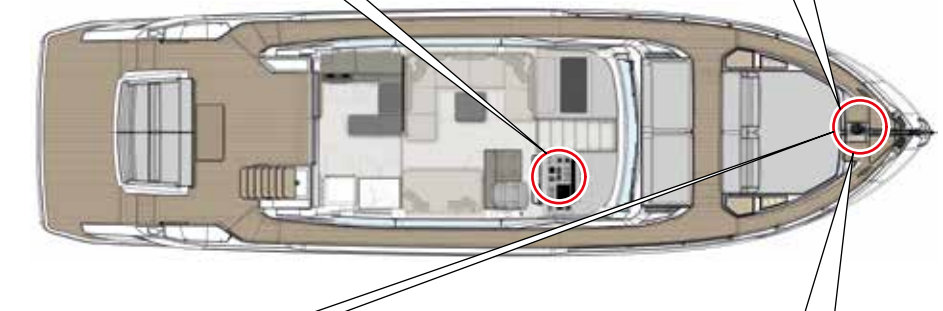
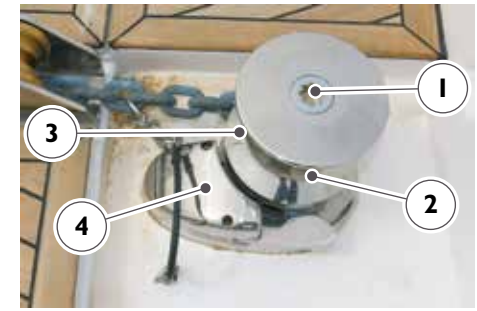
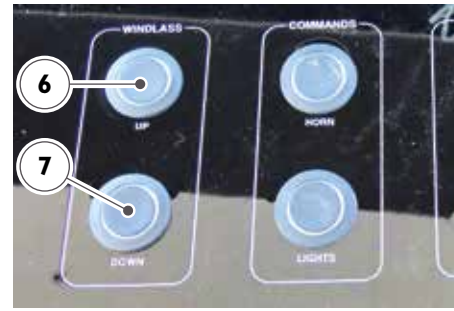
Do not place body parts or objects near the area where the line runs.  
Make sure that there is no power supplied to the electric motor when manually operating on the winch.

### 11.3 ANCHOR WINCH

The yacht is equipped with an anchor winch handling the anchor located at bow. The anchor chain glides into the yacht through the chain guide and reaches the anchor winch, then winds around the wildcat and glides into the chain pit. The anchor winch is equipped with control for chain displacement in both directions and with manual brake to lock the chain during mooring. The winch is equipped with a clutch separating the drive shaft from the wildcat; this allows using it as a warping winch for pulling a line.

The main components of the anchor winch are:

- 1. Bushing for lever engagement**  
This device allows lever engagement.
- 2. Barrel**  
This device allows pulling a line.
- 3. Wildcat**  
This device allows weighing and lowering the anchor.
- 4. Wildcat lock**  
This device allows locking the wildcat rotation for the chain fastening.
- 5. Lever**  
Adjusts manually the clutch opening and closing, and releases the wildcat.





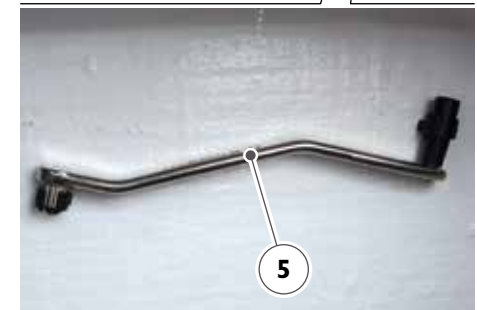
**CAUTION**

FERRETTI YACHTS is exempted from any liability for any accidents or damage to persons or property caused by incorrect use of the device.

#### Anchor winch activation controls

It is possible to operate the winch, located on the bow, either by means of the remote control housed inside the fore locker on the port side or by means of the buttons, located on the dashboard of the main deck and sun deck helm station. It is also possible to lower the anchor using the digital chain counter that will measure the length of the lowered chain (data visible on the multifunction display). The buttons on the helm stations are:

- 6. "UP" button**  
This button allows weighing the anchor chain.
- 7. "DOWN" button**  
This button allows lowering the anchor chain.





### DANGER

Do not bring body parts or objects near the area where the chains, the lines and the wildcat run. Make sure the electric motor is not powered when acting manually on the anchor winch (also when you use the lever to loosen the clutch): people having the remote controls of the anchor winch (remote push-button panel) might accidentally activate it.



### CAUTION

When the use of the winch key-pad is complete, disconnect the pad and close the socket with suitable cover.

### Clutch use

The wildcat is connected to the main shaft by means of the clutch. The clutch opens (disengages) when the lever inserted in the bushing is rotated counterclockwise. When rotating clockwise, the clutch will close (engage).

### Anchoring

The wind and the sea conditions highly affect an anchored yacht. Make sure the anchor is set in any situation. It is necessary to understand the principles of the chain length and its effect on the anchor performance.

The chain length depends on the type of anchor, on the sea bottom, on the tide, on the wind and on the sea conditions.

$$\text{Radius} = \frac{\text{Chain length}}{(\text{Bow height} + \text{water depth})}$$

The chain length depends on the type of anchor, on the sea bottom, on the tide, on the wind and on the sea conditions.

The chain length is 5 times the depth of calm sea; it is 7:1 in normal conditions and up to 10:1 in critical conditions.

$$\text{Chain length} = (\text{bow height} + \text{water depth}) \times \text{radius}$$

### Anchor weighing

Start the yacht's engine. Make sure the clutch is engaged and pull out the lever. Press the control button available and start to weigh the anchor. If the anchor winch stops without any reason, the anchor might be stuck and therefore the anchor winch thermal switch trips, due to the effect of the effort. In this case, if after several attempts the anchor winch remains stuck, we suggest to manoeuvre the yacht to release the anchor.

Check the raise of the last metres/feet in order to avoid bow damage.

### Anchor lowering

Lower the anchor by means of the electric controls or manually. To carry out this operation manually, open the clutch and let the wildcat rotate freely on its shaft and the chain fall into the water. To brake the anchor chain fall, turn the lever clockwise. To lower the anchor electrically, press the control button at your disposal.

In this case the anchor lowering is perfectly controllable and the unrolling of the chain or of the line is regular.

Once the yacht is anchored, lock the chain with the safety cable.

The anchor and the chain may damage the yacht bow if the anchor winch is not operated carefully.

We suggest to carry out the operation by means of the remote control located near the anchor winch; this will allow checking the lifting and lowering speed of the chain and the entry and exit of the anchor shaft into the anchor roller. Namely during those operations, an excessive gliding of the chain or a wrong entry or exit of the anchor shaft from the roller may cause damages to the yacht's bow.



### DANGER

Pay utmost attention: never get too close to moving parts to avoid danger and injury.



### CAUTION

Lock the chain with its safety cable before setting up for navigation.



**CAUTION**

Do not operate the anchor winch electrically with the lever in the drum housing or in the wildcat cover.



**DANGER**

Do not use the on board auxiliary equipment for aims or ways other than those indicated in the manual delivered by the Manufacturer.



**DANGER**

Never get too close to moving parts to avoid danger and injury.



**CAUTION**

The anchor chain is fastened to the yacht by means of a line and an hook system. If it is impossible to remove the anchor from the sea bottom, this system will ease up to resume navigation.



**CAUTION**

The anchoring area is a circle with the centre at the anchoring point and a radius equal to the chain length plus the yacht length.

The entire anchoring area must be free, in case of sudden variations of wind and/or current direction, especially in case of night anchoring.

At night, before dropping the anchor, check that the white anchor light works.

Before dropping the anchor, check the nautical charts: anchoring is prohibited in certain areas, in weeds covered sea bottom, anchoring is unsafe and harmful to the environment, on rocky sea bottom, the anchor may get stranded or lost.

Anchor the yacht with the engines running, both for safety reasons and to compensate the electrical consumption of the winch.

Check the anchoring point frequently.

The distance from obstacles or other yachts must be, at 360°, greater than the length of chain dropped.

During anchor riding it is advisable to leave the winch powered.

Do not reverse the winch rotation suddenly.



**DANGER**

When the winch is operating, be extremely cautious of rotating parts; keep your feet, hands and the remote control cable at safe distance.

**Anchoring operations**

- Make sure that the engines battery breaker is on;
- Turn on the anchor winch switch on the general electrical panel;
- When the key-pad is not used, disconnect it to prevent contact oxidation;
- Before operating the anchor winch with the electric control, check that the wildcat clutch is properly engaged and remove the wildcat stopper and the safety wire;
- Let the yacht move backward slowly; if necessary, use the engines;
- Lower the anchor until just below the waterline, and hold;
- Lower the anchor until it reaches the sea bottom;
- Once the anchor holds, leave the lock and the brake engaged.



**CAUTION**

Operate the anchor winch with the engines running because of the high current absorption and to reduce the stress by slowly moving the yacht towards the anchor.

Lower and raise the anchor always by using the electrical control, after engaging wildcat and barrel. This latter can be disengaged both for casting off the anchor in case of need and to operate the barrel as a warping winch.

To disengage the wildcat, undo the clutch located on the barrel, by using the lever stowed in the chain pit.



**CAUTION**

During navigation, both the clutch and the chain stopper must be securely locked.

**Weighing the anchor**

To weigh the anchor, perform the same operations previously described above, in reverse order.

In windy or strong current conditions, start the engines and keep the bow toward the anchor position to avoid the breakage of the chock.

Once the anchor is on board, fasten the chain stopper before resuming navigation.



**CAUTION**

Prior to departing, check that the chain stopper is properly fastened.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

**11.3.1 Anchor winch maintenance**

Component	Maintenance	Notes and precautions
Reduction motor	Check and cleaning (before each navigation)	When you weigh the chain, after an anchor mooring in a muddy or weedy sea bottom, we advise you to wash the chain using the proper system. The outer part of the winch requires frequent washes with fresh water, at least once a week, because very much exposed to sea salt during navigation, especially with rough sea. It is a good norm at least every six months, to carry out maintenance by disassembling the wildcat and the barrel, to remove oxidation in the rubbing and gliding points and to restore correct lubrication in the required points.
Connection spindle between anchor and chain	Check	At least every three months.
Chain links status	Check	At least each year.
Anchor winch	Check check	At least once a week.
	Disassembly and check of all parts	At least once a year.
Electric motor terminals and control box	Check the connections	At least once a month.
Locking system still idling	Check reliability	At least once a month.

**Check of the gearmotor:**



**DANGER**

Before carrying out any maintenance operation on the anchor winch cut-off the electric power connected with it and remove with care the chain from the wildcat.

The winches are made of materials resistant to sea environment: it is necessary, in any case, to remove periodically the layer of salt which forms on the outer surfaces, to avoid dangerous corrosion, which could jeopardize its integrity. Wash accurately with fresh water and clean the surfaces, particularly those in which salt remains trapped. Disassemble the drum according to the service intervals recommended by the Manufacturer.



**CAUTION**

Do not activate electrically the winch with lever inserted into the drum.



## 11.4 TENDER LIFT (OPTIONAL)

The tender lift control panel is located aft on the starboard side, near the mooring furniture.

To launch or lift any tender or jet-ski housed on the aft platform (5), it is necessary to move it from the appropriate control panel.

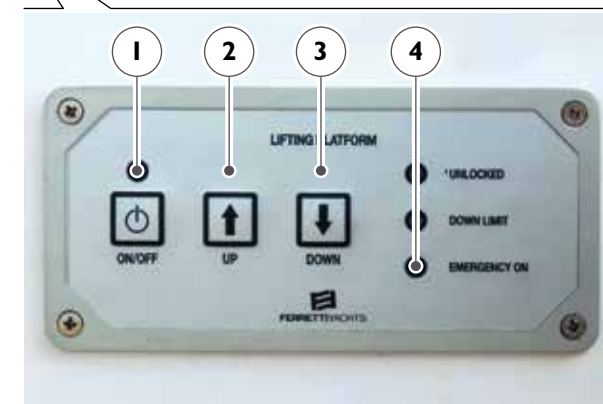
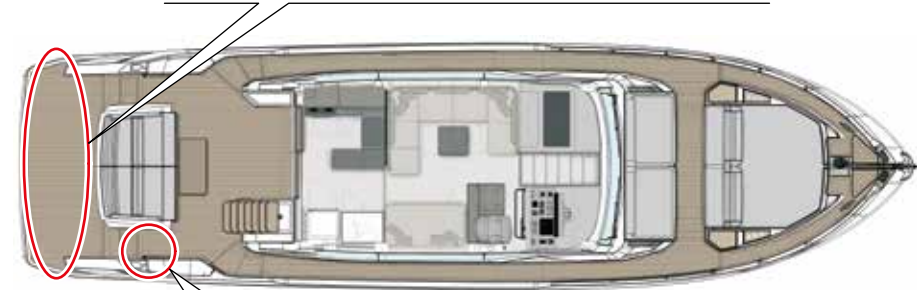
The control panel allows you to:

- Power on the tender lift
- Lift the tender lift
- Lower the tender lift

The control panel features warning lights that indicate:

1. Tender lift power-up
2. Tender lift unlocked
3. Minimum lowering limit of the tender lift reached
4. Emergency

The movement of the tender lift takes place thanks to an electro-hydraulic control unit located in the technical room of the rudder lanyard.



### CAUTION

Move the controls on the runway on a regular basis without making them make sudden movements.



### WARNING

Before launching or lifting the eventual tender in its bilge ensure that there is no water, as it would greatly increase its weight with serious consequences to the stability and risk of damage to the transom of the yacht.



**CAUTION**

Never exceed the maximum capacity of the tender lift to avoid any damage.



**CAUTION**

It is recommended to:

- Only use the tender lift in good weather conditions and when the sea is not rough;
- Do not move the tender lift with people on it;
- Do not leave the yacht with the tender lift not in the up position and the locking pins locked;
- Do not navigate with the tender lift unlocked locking pins.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

### 11.4.1 Tender lift maintenance



**CAUTION**

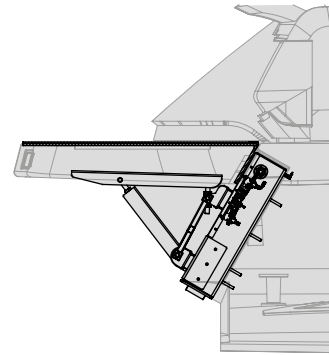
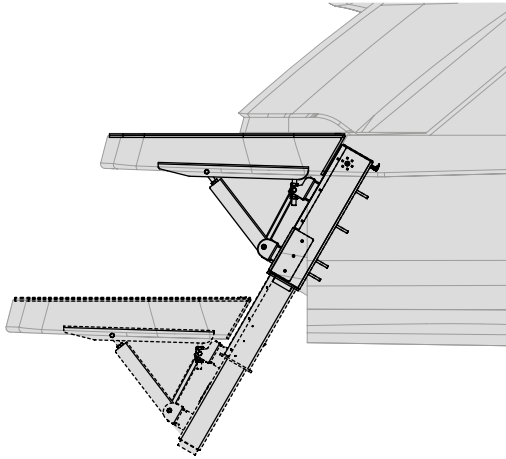
In case of malfunction, check the operating conditions of the cylinder valve kit.



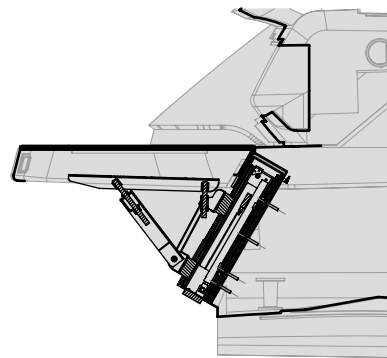
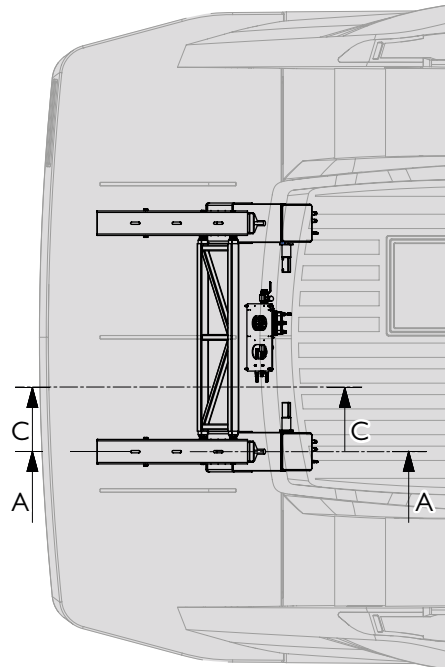
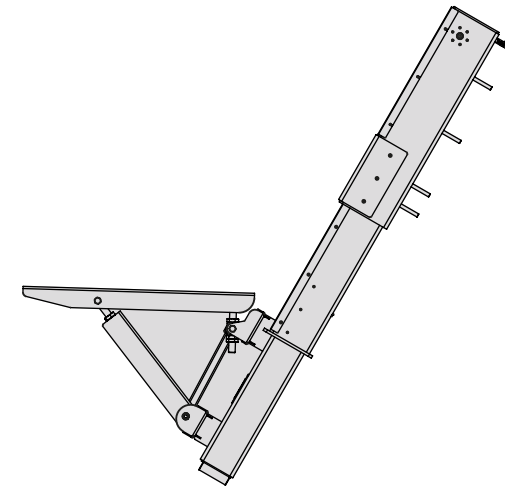
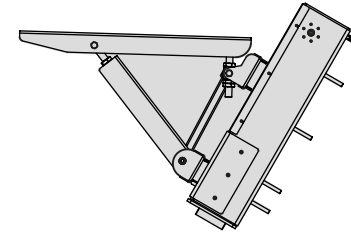
**CAUTION**

It is advisable to contact support FERRETTI YACHTS for any malfunctioning of the tender lift.

Tender lift system diagram:



Section C-C



Section A-A

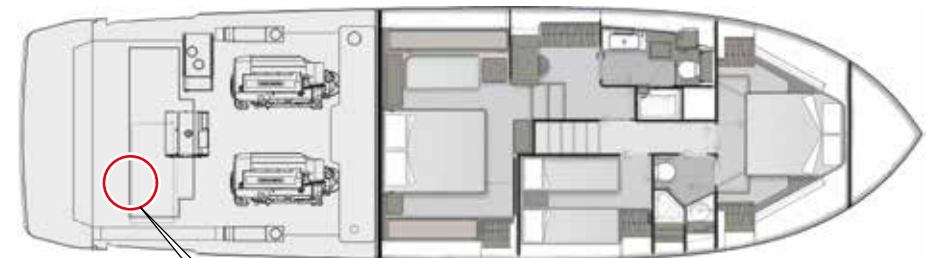
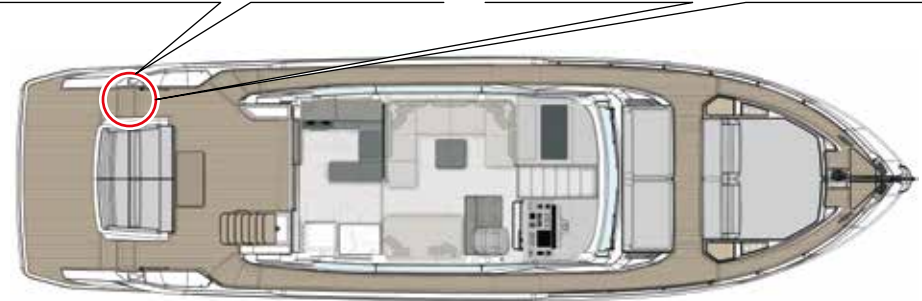
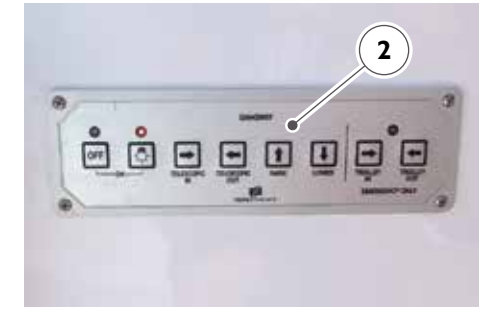
## 11.5 GANGWAY SYSTEM (OPTIONAL)

Your yacht is equipped with a telescopic gangway **(1)** with a maximum capacity of 150 kg. The gangway is housed in the aft cockpit (port side) and allows access aboard the yacht. The movement of the gangway shall be assisted and allows you to extend or close the same. Once extracted completely the gangway you can raise or lower the free end, to adapt the set-up of the shore.

The control panel **(2)** for the movement of the gangway is positioned on the port mooring furniture in the aft cockpit. The functions are to be performed by holding down the respective button.

It is also possible to operate the gangway by means of a remote control.

The receiver is installed on the transom, whose function is to pick up the signal sent in the remote control and transmit it to the hydraulic control unit.



### CAUTION

FERRETTI YACHTS is exempt from all responsibility for any accident or damage to persons or property caused by incorrect use of the appliance.



### CAUTION

Always give full attention to the movements of the gangway, in an emergency, press any button on the remote control or control panel to shut down the gangway.



### CAUTION

The hydraulic gangway, even if easy manoeuvrable, might damage people and things. Its use is recommended only to well experienced people.



### CAUTION

Do not use the gangway as a trampoline.



**DANGER**

Pay attention to the moving parts and hands.

The gangway system operates through an electro-hydraulic control unit **(3)** located in the technical room in the rudder latch on the starboard side and essentially consisting of an electric pump, an oil tank and a solenoid valve block.

The system is fed by the pump which sucks the oil from the tank, it sends, through the solenoid valves and pipe block, to hydraulic piston that actuates the gangway.

In the event of electrical system failure or power failure, it's possible to use the emergency manual control.

Insert the lever in the relevant seat of the manual pump and act on the valves by opening the ones concerned.



**WARNING**

To avoid compromising the seals, perform the wash, avoiding that in the box enters water pressure.



**DANGER**

Always make sure not to exceed the maximum capacity defined by the Manufacturer. Never operate the gangway during the passage of persons. To step on the gangway maintain caution in the stand to handrail; this, being formed by the rope, can not be considered a safe and rigid support, but simply an aid in maintaining the balance.



**CAUTION**

Never start navigation if the gangway is not correctly retracted.



**CAUTION**

Use and suggest to passengers comfortable shoes and possibly help them in boarding steps.



**CAUTION**

Do not use slippery products for the cleaning the gangway.



**CAUTION**

Do not use the gangway as a trampoline.



**CAUTION**

Place the tray so that it does not touch the shore even during the normal fluctuations of the yacht or as a result of the tides. If the gangway were to stress against the platform could seriously damage.



**CAUTION**

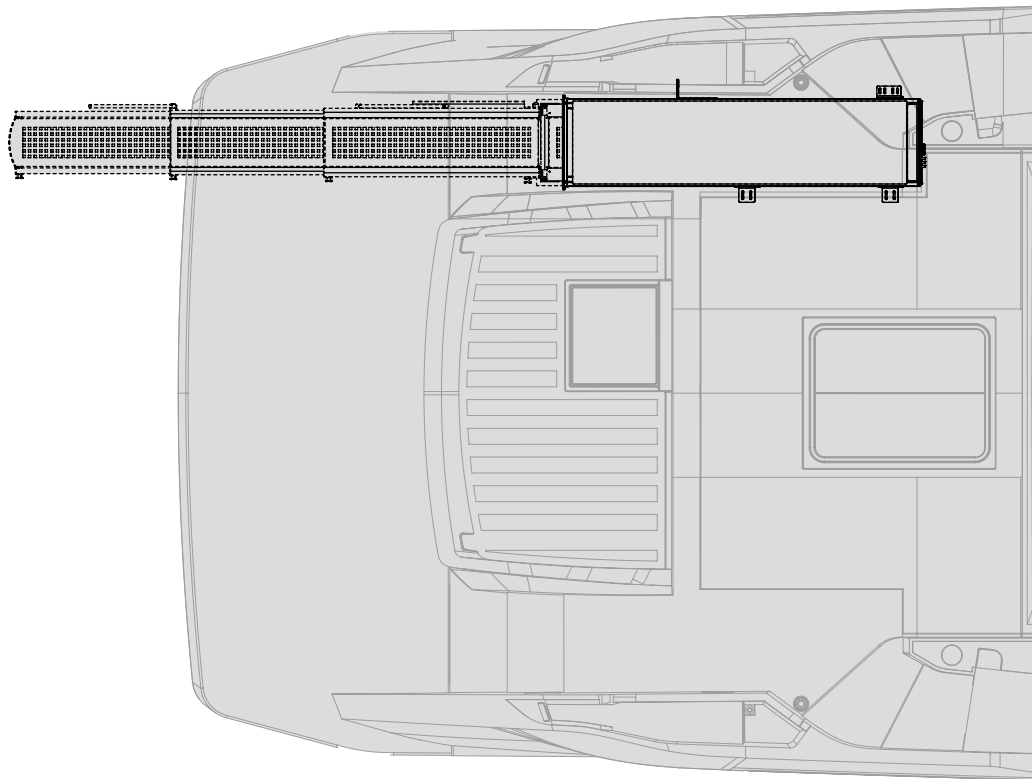
It is recommended to never exceed the maximum gangway capacity 150 kg.

**NOTE**

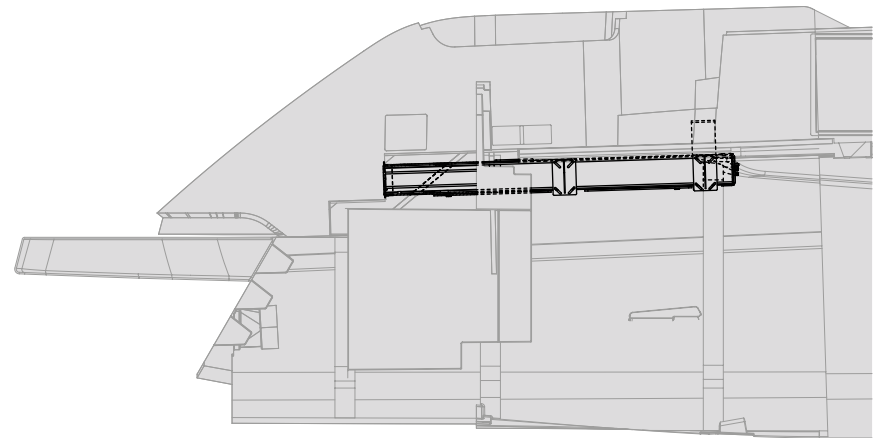
For further information on use and maintenance, please refer to the manufacturer's manual.

Gangway system diagram:

TOP VIEW



SIDE VIEW



**11.5.1 Gangway system maintenance**

Component	Maintenance	Notes and precautions
Gangway unit	Checking the oil level	Check monthly, and before each navigation, the oil level inside the tank. Top up keeping about three quarters of the tank capacity using the type of oil recommended by the manufacturer.
Gangway	Cleaning	As the gangway is in a very critical position compared to all other on-board equipment, it is constantly contact with water, salt and exhaust gas, and therefore requires a more thorough cleaning.



**DANGER**

During the cleaning or maintenance, make sure that no one can put the gangway as it can cause serious harm to people, it may want to turn off power on the go.



**ENVIRONMENT**

Do not discharge the hydraulic oil into the sea, but in the appropriate areas for the dumping of toxic waste.



**CAUTION**

The original configuration of the gangway must never be modified.

**Checking the oil level**

Check the oil level at start and end of each season, if below the minimum level, supplement with oil indicated by the Manufacturer. Verify the correct operation of the emergency pump and the manual activation of the solenoid valves. Occasionally check the integrity of the electrical contacts by spraying the protective spray against corrosion caused by the salt sea. The mechanical joints and the sliding parts are previously greased. It is recommended that the tightening of the anchor bolts and lightly lubricate the joints at each start and end of season.



**CAUTION**

After running a few steps, check the oil level in the tank. Top up the tank has to be performed by the gangway closed.



**CAUTION**

Improper use of the gangway, the alteration of the valve set value, and/or failure to follow operating procedures outlined in this manual, raises the FERRETTI YACHTS any liability.

**MAINTENANCE**

At least 1 time per month do greasing of all mechanical parts.



**CAUTION**

The control and maintenance operations must be performed by specialized maintenance technicians and informed on the control unit operating conditions.



**CAUTION**

Spare parts must meet the technical requirements established by the manufacturer, that is always guaranteed by using original spare parts.

## 11.6 STERN COCKPIT TABLE (OPTIONAL)

In the stern cockpit there is table (4) that can be adjusted in height using electric actuators. The table controls are located aft on the starboard side, near the mooring area.

1. Table lift power supply
2. UP
3. DOWN



### CAUTION

Before opening the table, make sure that the table legs are also open.  
Before closing the table, make sure that the table legs are also closed.



### DANGER

Moving parts: be alert, always keep hands and feet at a safe distance. Do not insert any object between the structure and its seat.



### CAUTION

Do not sit on the table while it is in motion.  
This could impair the hard-top operation.

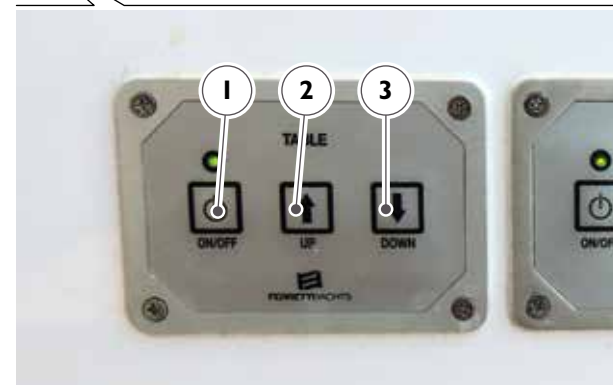
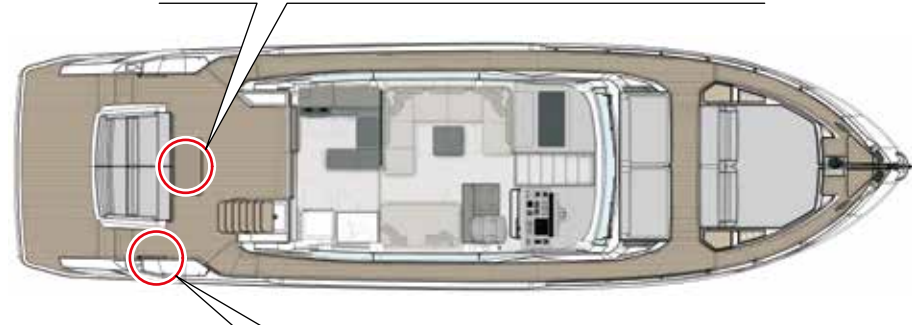
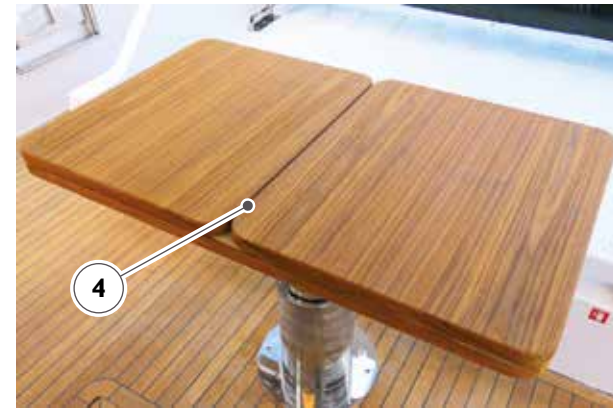


### DANGER

During cleaning or maintenance operations, make sure that nobody can activate the sun-deck, because this can cause heavy injuries to persons; we recommend disconnecting the electric power supply.

### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.



## 11.7 SWIM LADDER

The yacht is equipped with a manually removable swim ladder that allows for easy access from the sea to the aft platform and vice versa.

The swim ladder is equipped with two handles (optional) that make it easy to use; These handles can be removed and if necessary must be inserted in the seats present on the platform at the exit of the swim ladder.

The swim ladder is retracted inside the stern platform structure, so as not to hinder navigation and the mooring and unmooring operations.

A warning light on the synoptic panel on the control panel indicates when the swim ladder has not been stored back correctly.

In order to use the swim ladder, simply pull it out from its housing up to stroke end, and lay it in water.

The swim ladder does not require ordinary maintenance; anyway, being particularly exposed to sea corrosion, it is advisable to wash it accurately with fresh water after each use.



### **DANGER**

NEVER start navigation if the swim ladder is not correctly retracted.



### **DANGER**

Risk of electric shock from leakage currents.  
Never swim in waters near harbours or marinas.



### **CAUTION**

Before you start navigating to remove the shackles of the bathroom scale and reposition them in its housing, to avoid losing them in the sea.





**DANGER**

Make sure that the swim ladder is correctly extracted and positioned before going down to water.



**CAUTION**

Pay attention because the ladder can be slippery. Secure the grip before starting the return on board.



**DANGER**

In no way use the swim ladder when the engines are running. Pay utmost attention to not approach to the interceptors area, because they could be accidentally activated.



**CAUTION**

Do not use the swim ladder as a springboard.



**DANGER**

Pay attention to moving parts and to your hands.

**MAINTENANCE**

At least once a week carry out an accurate washing.

At least once a month:

- Check for corrosion signs;
- Grease the sliding grooves;
- Tighten the fixing bolts.

At least once every three months, grease the swivel pins and the sliding sleeves.



**CAUTION**

FERRETTI YACHTS declines all liability for any accident to persons or damage to property caused by a wrong use of the device.

**NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

## 11.8 WINDSCREEN WIPER SYSTEM

To ensure sufficient visibility under any weather condition, your yacht is equipped with an efficient screen wiper system.

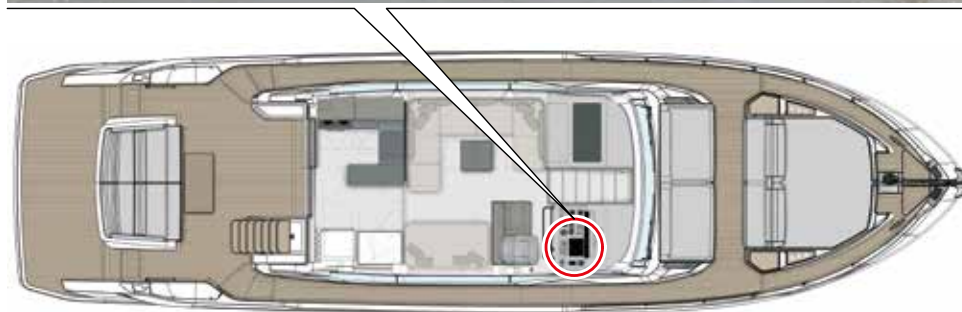
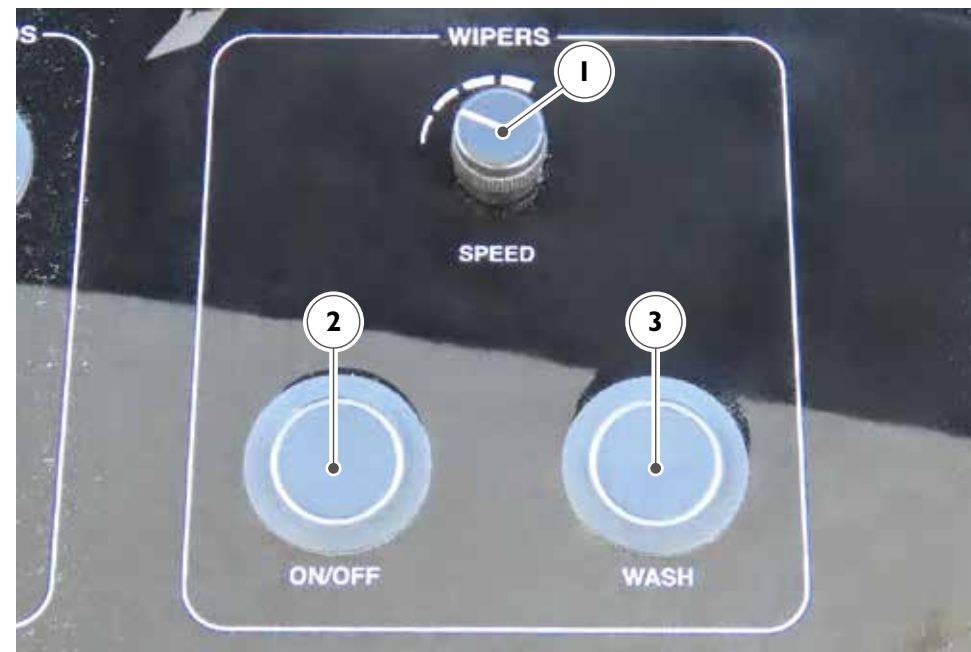
The system is supplied at 24V and allows activating, by means of mechanical brackets and at variable speed, the two windscreen wipers.

The windscreen wiper system is controlled by the relevant panel located in the helm station of the main deck.

The potentiometer “**SPEED**” (1) allows the Captain to set the operation speed of the blades, according to the weather conditions, so as to obtain the best possible visibility.

The wipers are activated by the button “**ON/OFF**” (2).

The “**WASH**” (3) button feeds the glass washer nozzles with fresh water, through the opening of the solenoid valve installed on the cold fresh water system manifold. These controls are protected and powered by the magneto-thermal located on the main deck electrical panel.



**11.8.1 Maintenance of the windscreen wiper system**

Component	Maintenance	Notes and precautions
Windscreen wiper blades	Cleaning	Clean accurately with fresh water after each navigation return. Clean periodically the windscreen wiping blades using specific detergent or alcohol. Apply Vaseline oil on the blades and grease the arms springs with silicone grease.
	Replacement	Replace the windscreen wiper blades at least once a year only with original spares. If necessary and if the blade rubber results to be deformed or worn out, replace them more frequently. For the correct procedures for replacement, refer to Chapter “Substitutions” of this Manual.
Windscreen washer	Cleaning	If the screen washing system does not work or has a poor performance, check that the supply circuit of the nozzles is not clogged. In such a case, clean the spray holes with a needle.



**WARNING**

During the cleaning or maintenance operation, make sure that nobody can operate the windscreen wiping system causing damages to persons.



**CAUTION**

Do not remove foreign bodies activating the blades when the windscreen is dry.



**CAUTION**

With very harsh weather, and with the freezing risk, detach first the wiping blades from the windscreen surface.  
Before activating the windscreen wiping system make sure that ice has not stuck the blades on the windscreen surface; if necessary to spray an anti-freezing agent to detach them.

## 11.9 SACRIFICIAL ANODES

The submerged metallic parts of the yacht are protected against galvanic corrosions by means of anodes installed on the stern, on the interceptor and on the spinners of the propeller shafts. Check for their wear very frequently, as it depends also (and highly) on environmental factors like sea chains nearby, metal posts or shores, metal hulls moored nearby, electric devices, etc.. The replacement is necessary when the wear exceeds 50%.



### CAUTION

Each time the yacht is lifted, check for the condition of the propeller, of the protection anodes and of the fastening system.

Replace the anode frequently.

The following sacrificial anodes are installed on the yacht:

- Submerged exhaust valve anodes (no. 2);
- Propeller shaft anodes (no. 2);
- Propeller anodes (no. 2);
- Bow thruster anodes (n. 2);
- Stern thruster anodes (no. 2) (optional);
- Interceptor anodes (no. 2);
- Hull anodes (no. 2).

For a spare part of the propeller shaft anode, specify the diameter of the shaft itself.

**11.9.1 Maintenance of sacrificial anodes**

Component	Maintenance	Notes and precautions
Sacrificial anodes	Periodical check (At least once a month, or even more frequently, according to the stationary area)  Assembly/disassembly	Metallic parts are protected against galvanic corrosion (caused by electrolytic currents due to the approach of different metallic bodies as steel or aluminium) by means of sacrificial anodes, fitted on bottom hull, on interceptors, on propeller shaft, etc. The anodes wear may depend on environment factors as nearby chains, hulls or metallic shores, bad insulation of ground electric systems.
Porous plate	Periodical check Cleaning/Replacement	The porous plate to which is connected the grounding of the power generator is installed in the hull, below the water line. This plate allows the protection of metallic parts in case the sacrificial anodes are ineffective.

**Periodical check**


This operation must be carried out with yacht on dry shore or with the help of a diver.

- Have the outer profile of the sacrificial anodes and porous plate checked. Have them replaced if they show evident signs of corrosion or if their volume is reduced to about 50%.




**WARNING**

To clean and check the yacht in water: disconnect the engines and generator start.



**CAUTION**

Check the wear conditions of anodes and porous plate very frequently (when the yacht is on a dry shore or with the help of a diver) and replace them as soon as wear exceeds 50%.



**CAUTION**

Fail to replace the anodes, and the porous plate causes the spreading of corrosion on the other metallic parts.

**Assembly/Disassembly**

The sacrificial anodes are fastened to the yacht in several positions of the hull. We advise you to clean the seat of the sacrificial anode and cover with silicon the screws ends which fasten the anodes. This will ease the replacement of the anodes when worn out. We advise not to tighten the nuts fastening the anodes with glues or other materials which will hinder their removal.



**CAUTION**

Do not cover the contact surface between anode and hull with silicone.

## 11.10 SKYLIGHT SYSTEM (OPTIONAL)

On your yacht it is possible to install an electric handled skylight **(1)**.

The skylight control buttons **(2)** are located in the main deck helm station.

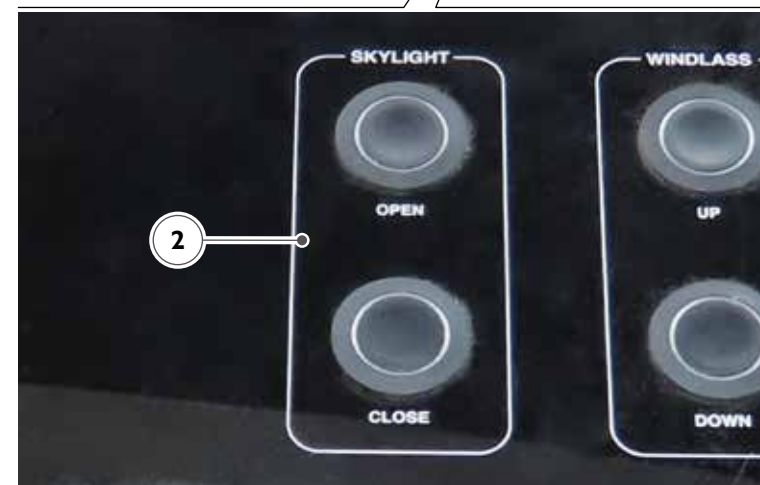
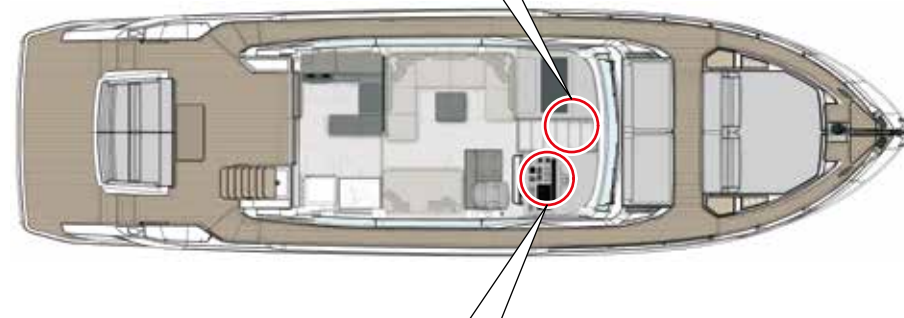


### CAUTION

Do not operate the skylight in adverse weather conditions.

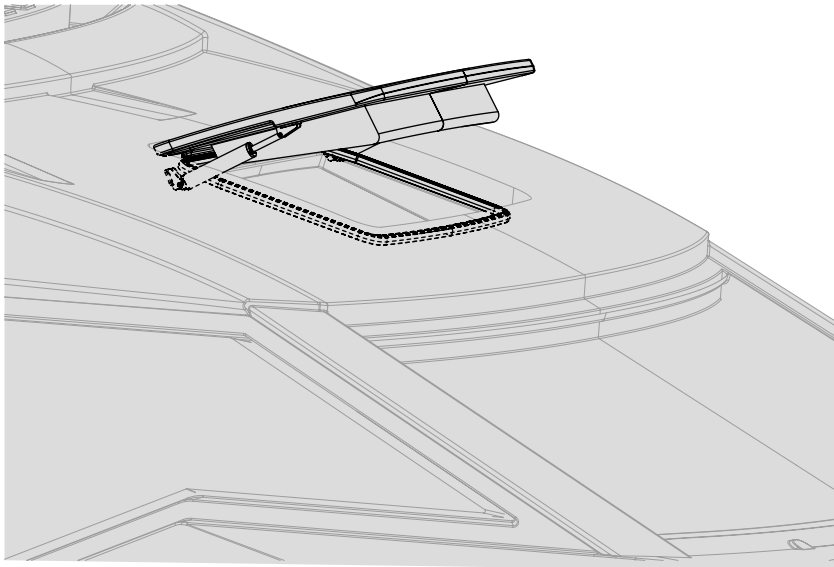
### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

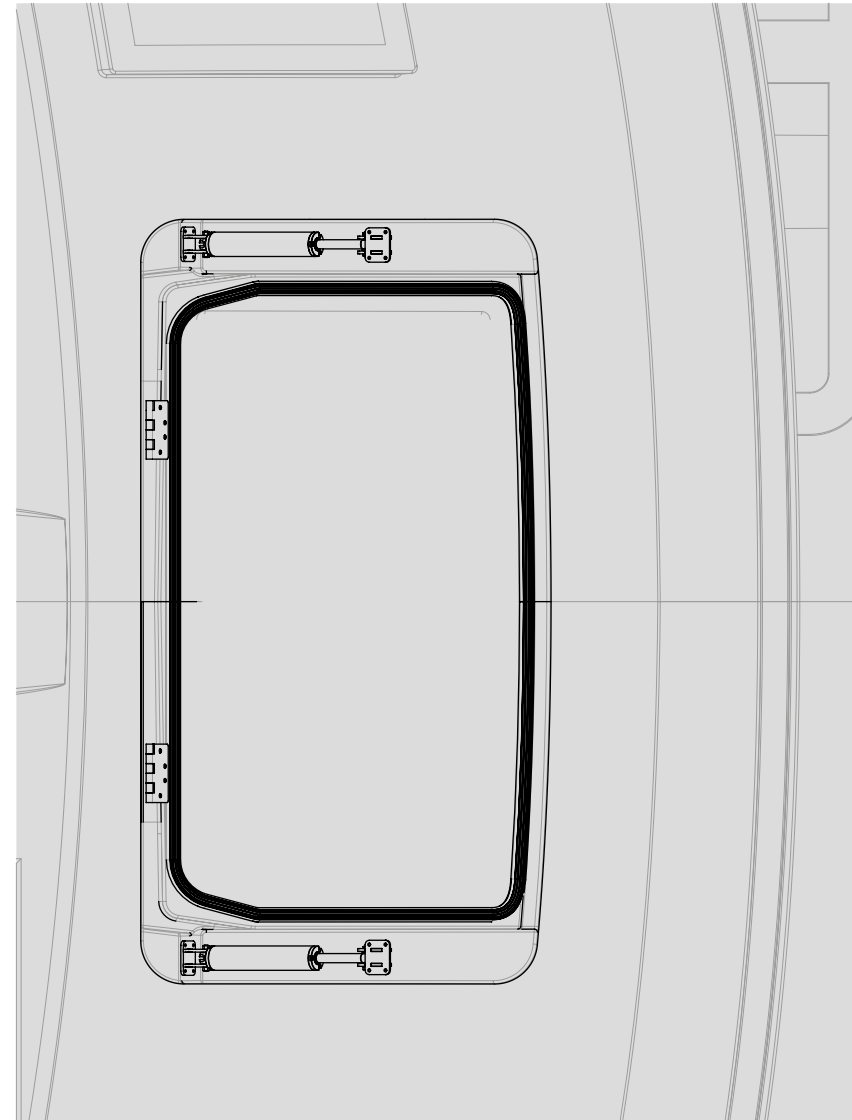


**Skylight system diagram:**

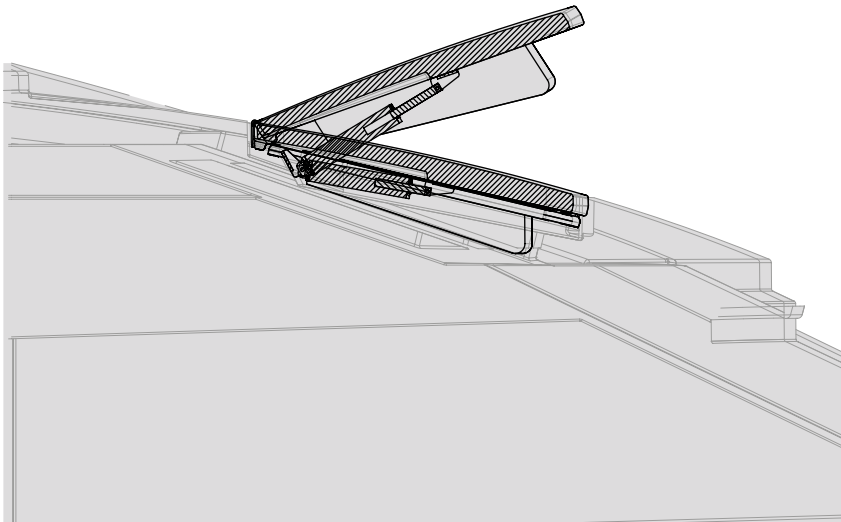
ISOMETRIC VIEW



TOP VIEW



B-B SECTION





FERRETTIYACHTS

12



INFORMATION FOR USE

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1. FOREWORD

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2. SAFETY RULES

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3. SAFETY DEVICES AND EQUIPMENT

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4. DESCRIPTION OF THE YACHT

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5. HELM STATIONS

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6. WATER SYSTEMS

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7. ELECTRIC SYSTEM

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8. PROPULSION SYSTEMS

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9. STEERING SYSTEMS

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10. AIR CONDITIONING SYSTEM

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11. AUXILIARY EQUIPMENT ON BOARD

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**12. INFORMATION FOR USE**

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13. HULL AND FURNITURE MAINTENANCE

---

14. TROUBLESHOOTING

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## 12.1 GENERAL INFORMATION

This part of the manual describes some basic rules to always keep in mind:

- Periodically check the availability and efficiency of individual and collective safety equipment.
- Keep a safe distance.
- Check that all yacht safety equipment on board is in good condition and no maintenance activity is overdue.

### NOTE

The manufacturer provides some of the international equipment required. The owner will have to equip the yacht with devices required by national laws.

- In case of using the fixed fire-fighting system: do not ventilate the engine room, until the fire has been completely extinguished.
- Ventilate the engine room before entering. Ventilate the lower deck compartment before entering, if portable extinguishers have been used.
- When operating the gangway, be sure that nobody is in the way.
- Oils, used filters, emulsions, coolants and electrolytes are all harmful products: avoid contact with the skin and dispose of them carefully.
- In the engine room, be cautious with hot and moving parts.
- Wear hearing protection when entering the engine room.
- Do not use open flames and do not smoke, when handling fuel or lubricants.
- Do not scatter fuel in the environment.
- Replace the fresh water stored in the tanks frequently and apply bactericides as needed.
- Do not exceed speed limits in harbours or confined waters.
- Reduce speed in the proximity of other yachts or swimmers.
- Adjust speed according to sea conditions.
- Reduce speed before entering the engines room. Modify the course, if necessary.
- Before connecting to shore, make sure that the main switch on the switch panel is disconnected.
- Before leaving the yacht, turn the battery breakers off.
- Handle hot oils carefully, in order to prevent serious burns.
- Secure engines, shafts and generators prior to performing any maintenance activity.
- Open the coolant tanks very carefully, in order to prevent serious burns.

- Do not perform any work on the generator's electric board when it is running: serious risk of electric shock.
- Do not inhale exhaust fumes: risk of serious injuries or death.
- Before disconnecting a battery, check if the battery charger is operating. If it is, disconnect it and remove the negative wire first and then the positive one. When reconnecting the battery, follow the same steps in reverse order (the positive wire first and then the negative one).
- Replace any part showing signs of corrosion immediately.
- Never disconnect the batteries when the generators are running.
- Switch the radar off, prior to performing any work on the aerial.



### DANGER

The responsibility for the operation of each yacht lies solely with the owner. It is the Owner's direct responsibility to ensure, prior to departure, that the safety equipment required by law is present on board and fully functional.



### DANGER

We recommend that you read the safety instructions in this manual carefully before you set off on your voyage and before operating the various on-board devices.

## 12.2 PRECAUTIONS FOR HARSH CLIMATES

Regularly check that all equipment and machinery containing water is protected with the correct proportion of non-toxic antifreeze.

If the outside temperature is below or close to 0°C, the fresh water and sea water systems run the risk of freezing.

Piping and hoses may break from freezing and this could lead to the yacht sinking.

The systems subject to the risk of freezing include, but are not limited to: the engine and generator sea water and fresh water cooling systems; the watermaker system; the fresh water system (cold and hot water piping, pumps and tanks); the windscreen washing system; the toilet and waste systems (piping, pumps and black water tanks); the air-conditioner pumps and piping; all sea water pumps and piping; the icemakers and refrigerators; etc..

For more information on the maintenance and service requirements of your yacht and its equipment, and for special information about maintenance in cold weather, see the sections in this manual that refer to the single components, devices and equipment, but be sure to consult the User Manuals provided by the Manufacturers for specific information.

### NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

### 12.2.1 Cooling system

The antifreeze liquid is advised for all kinds of climates: it increases the working temperature range, lowering the freezing point and increasing the boiling point.

When the temperature comes close to 0°C it is necessary, in order to avoid the risk of freezing, to make sure that the cooling lines are filled with antifreeze mixture. If not, replace the cooling liquid with such a mixture.

Before filling the system with antifreeze mix, it is necessary to wash the cooling circuit.

We recommend the use of antifreeze liquid.



### ENVIRONMENT

Concentrated coolant must be treated as special waste.

When disposing of used coolant, abide by the regulations of the local authority.



### CAUTION

Regularly check that all devices containing water are filled with the correct quantity of anti-freeze if necessary.

Each time that the outside temperature drops below 0°C the water (fresh or sea) inside the ducts may freeze and cause them to break.

All systems and equipment containing water, both sea water systems (engine cooling system, generators cooling system, etc.) and fresh water systems (windscreen wipers, fresh water pump, etc..) may run this risk.

### 12.2.2 Fuel system

With low temperatures, diesel fuel can form solidified paraffin suspensions which can clog the fuel filters making the normal engine supply impossible.

Fuel as per European standard EN590 guarantees fluidity up to 0°C during the summer period, and up to -20°C during the winter period.



#### **WARNING**

There is a special type of fuel for countries subject to very low temperatures.

In case the fluidity is not sufficient or the temperatures were below -20°C (-4°F) is better mixing with oil.



#### **CAUTION**

Do not add petrol to fuel, in order to avoid serious engine damage.

#### **NOTE**

For further information on use and maintenance, please refer to the manufacturer's manual.

### 12.3 NAVIGATION SET UP PROCEDURES

Accurate preliminary checks carried out with time, are fundamental for a safe navigation. Here is some fundamental advice to consider when setting up for navigation:

- Gather information on the weather forecast and warnings.
- Consult the pilot's book.
- Consult the navigation charts, and consider the cruise distance, courses, dangerous sea bottoms and flats.
- Consider the quantity of diesel oil necessary.
- Consider the length of navigation.
- Check the monitoring system and on the synoptic panel of the main helm station for warning lights for the bilge pumps, indicating the presence of water. If the indicators are lit, turn on the bilge pump switches. If pumps do not prime, batteries may be discharged (recharge batteries). If pumps work, but water does not come out, this means that the suctions are clogged (clean them).
- Check the cleanliness of the sea cock strainers for engine and generator cooling and for the other on board utilities. If they are dirty, check closing or close the hull valves, remove and clean the baskets, then replace them and close the strainer housings; clean and open the hull valves.



**WARNING**

During navigation, regularly check the cleanliness of the sea water strainer baskets. If the yacht is crossing a dirty sea area, check the condition of the strainers and proceed with their cleaning. Taking suitable precautions is very important to prevent damage to mechanical parts (engines, generators, etc..), discharge systems and not to jeopardize the safety of the yacht.



**WARNING**

Once the hull valves have been reopened, make sure that no leaks are present.

- Check oil levels of engines, gear boxes and generator. If necessary, top up.
- Check engines and generator coolant level. If necessary, top up.
- Ensure fuel system separator filters are properly clean. If water is present, drain the filters by mean of tap.
- Check the hydraulic oil levels of the various control units. If necessary, top up.



**WARNING**

To carry out the above mentioned checks and the top-ups, refer to specific manuals supplied by the Manufacturer.

- Check liquid levels (fuel, fresh water) in the tanks.
- Ensure everything necessary has been loaded (provisions, nautical charts, documents, rockets, first aid kit, etc..).
- Check the proper fastening of all mobile components, on the main deck and lower deck.
- Ensure the load has been distributed evenly, so that the yacht maintains a proper trim.



**CAUTION**

The materials stowed can alter the trim, especially the transversal one. Try to arrange loads equally and securely, in order to avoid sudden displacements.



**WARNING**

The designated captain of the yacht must ensure that all persons on board are aware of the location of safety systems (fire extinguishers, life rafts, lifebuoys, etc.) and that they are aware of their use.

**CAUTION**

Safety equipment should always be checked before each navigation, in order to ensure the good condition of the safety devices and to become familiar with their location and use. The little time spent may be very useful in case of need.

- Create a checklist of safety equipment, as indicated herein after.
- Ensure that life jackets are in good condition, that the inflating device is in working order and that the jackets are in the correct location and easily accessible (do not obstruct access hatches with anything).
- Ensure that the collective life rafts are easily accessible and that their mooring and anti-capsizing line is in good condition (properly rolled up and not worn out).
- Ensure that the life buoy is in its correct location and fitted with the relevant safety rope.
- Check extinguisher charge level. The extinguisher is charged when the pressure gauge indicator is in the green sector.

**12.3.1 Weather**

Learn to understand weather patterns and signs of change. Bad weather and sea conditions can cause an uncomfortable and unsafe situation.

Here are a few basic weather-related rules:

- Check the forecast and sea conditions before leaving and while navigating;
- A sudden change in wind direction or speed, or an increase in wave height indicates worsening weather conditions;
- If a storm approaches, immediately seek a safe harbour;
- If a storm hits, head the bow of your yacht into the wind;
- If you encounter fog, identify your position, set a safe course, slow down and alert other yachts of your presence with a sound signal.

## 12.4 FIRST PERIOD OF USE

During the first period of yacht operation, beyond the normal maintenance and check operations indicated in this manual, we recommend to carrying out the following additional operations and more accurate checks.

The duration of this period varies according to the frequency and use modes, but are in any case suitable to allow a correct run-in of all systems and components on-board.



### **WARNING**

We recommend consulting the technical documentation provided by the Manufacturers of the various on-board systems and components; they can indicate operations, checks and specific times not included in this section of the Manual.

Following the first period of use, the hereunder listed additional operations and checks, should be performed at longer time intervals, playing anyway an important role for the safeguard and reliability of the yacht and navigation safety.

- It is recommended that new or overhauled engines should not be operated at higher loads than 75% of their maximum load and at variable speeds. After this initial run-in, the engine should be brought up to full output gradually.
- After starting each engine, check for the correct circulation of the cooling water inside the circuit, by verifying that it comes out of the drains. Check also for the presence of leaks from the sea cock valves and strainers of the cooling circuits.
- Check the possible presence of anomalous noises from the engines exhaust.
- Before and after navigation, check for possible leaks in the shaft lines.
- During navigation monitor constantly the temperatures and operation pressures of the devices on board (propulsion engines, generator, gear boxes).
- Check, by means of indicators installed on the main electrical panel, the correct charge condition of the batteries starting the engines and the uses. Moreover, the engine alternators must correctly charge the batteries.
- Check the rudder efficiency (by often checking the tiller angle) and the interceptors.
- Before and after navigation, check the correct level of oil inside the hydraulic systems such as the steering system, hydraulic gangway and stern platform.

- After the generator to start, wait several minutes before loading. Bring it slowly to maximum performance monitoring its correct operation.
- Check the correct load level of all extinguishers (fixed and portable) installed on board; the indicator needle on the pressure gauge should be set in the green range.
- Check the indicator of the main pressure gauge for possible pressure drops inside the system.
- Before and after navigation, check the correct operation of all bilge pumps on board.
- Check tightness and closure of portholes and hatches.
- Check the correct sliding and closure of the salon door, considering that it is not watertight.



### **DANGER**

Before starting the inspection and maintenance listed, it recommends careful reading of the rules on safety standards for the maintenance contained in this manual.



### **WARNING**

In case you find a fault more or less serious, contact as soon as possible Service Centre FERRETTI YACHTS.

**CAUTION**

FERRETTI YACHTS assumes no responsibility for tampering made by third parties to the equipment installed by the shipyard itself.

Such unauthorized tampering, in addition to immediate cancellation of the warranty, can cause damage to the yacht itself and the people who are on board.

FERRETTI YACHTS accepts no responsibility for periodic maintenance is not performed, but expected by the yard or by the manufacturers of the equipment or components on board and to which reference is made to the consultation of technical manuals relating supplied.

**WARNING**

Avoid prolonged use of engines at low speeds to avoid overheating of exhaust pipes due to reduced cooling water circulation.

## 12.5 DEVICES SETTINGS CARRIED OUT BY THE OWNER

### Magnetic compass:

**CAUTION**

The yacht is delivered with a compass that has not been compensated. Compass compensation has to be carried out under the Owner's responsibility, after the installation of any additional electronic equipment, and should be performed by an authorised and qualified technician. Any electrical or metallic items located in its proximity may influence the compass.

Compass compensation must be carried out by the Authorized Experts of the Marine Authority. As a consequence of variable magnetic fields on board and prolonged anchorage always in the same bow, the compass turns for the relevant correction must be carried out at least every year.

**CAUTION**

Have this operation carried out exclusively by specialized personnel.

## 12.6 REFUELLING

Proceed as follows to refuel:

- Ensure the yacht is properly moored, stop the engines and generator, if running.
- Loosen the filling nozzle, make sure that refuelling pump has suitable dimensions, then insert the pump and hold it still.
- The fuel filler cap is located at the beginning of the left side gangway.
- During refuelling, check the correct operation of the electric level gauge.
- Do not top up the tanks at highest level, so as to allow the fuel to expand into the tank, without spilling out from vents.
- During boarding, the fuel flow produces a lot of foam; if this comes out, you might think the tank is full. Therefore, it is good to wait for a few minutes and then top up, in order to be sure that the tank has been filled correctly.
- Tighten the filler cap and remove any drops of fuel.
- At least once a month check the correct operation of the level gauge.



### CAUTION

The filler plug cap has the indication "DIESEL" to avoid accidental introduction of different liquids.

To avoid damage to the system and tanks, we recommend replenishing by gravity and not by pressure.



### CAUTION

Refuelling should be performed at the end of navigation, in order to allow fuel to cool down, without condensation. Drain the tanks, every 2 or 3 refuelling operations. Before refuelling, wash the teak with fresh water to avoid its contamination with fuel.





**DANGER**

Do not smoke during refuelling, do not leave the yacht unattended, do not leave the engines running.



**ENVIRONMENT**

Do not disperse fuel in the environment: it causes pollution.



**WARNING**

For the type of fuel to be used, follow the manufacturer's recommendations. Diesel engines require very clean fuel. Keep filters clean.



**DANGER**

**Explosion/fire hazard**

- Stow flammable material in a safety-approved container. Never stow flammable material in non-vented areas.
- Check bilge and engine room for fumes.
- Keep the ventilation system free of obstructions. Never modify the ventilation system.
- Inspect the fuel system for leaks.



**DANGER**

**Explosion/fire/pollution hazard**

Fuel system connections that are too loose or too tight can leak, resulting in fuel spillage, environmental pollution and explosion/fire hazard.

## 12.7 WATER SUPPLY

- Ensure the yacht is properly moored; we suggest to stop the engines and the generator, if running.
- Loosen the filling nozzle and insert the hose (which must have suitable dimensions). The water filler is on the port walk-around of the yacht.

During refilling, check the correct operation of the level gauge. At the end of filling, remove the hose and tighten the filler cap.



### CAUTION

Often replace fresh water in the tanks and, if necessary, disinfect it with suitable products.

Avoid leaving the tanks full in case of frosting risk.

Do not leave the yacht unattended while filling.



### CAUTION

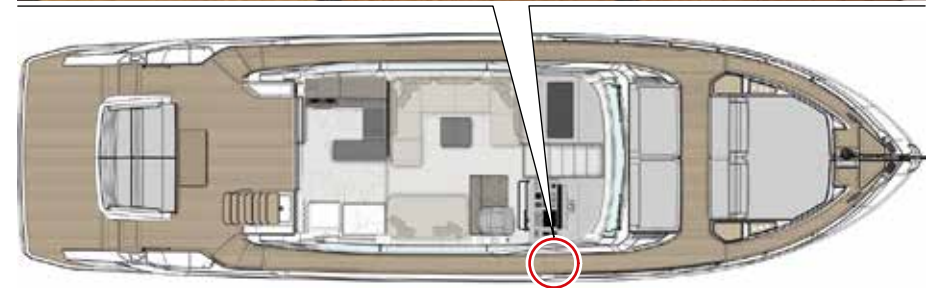
The filler cap is marked "WATER" to avoid accidental introduction of different liquids.

To avoid damage to the system and tanks, we recommend replenishing by gravity and not by pressure.



### CAUTION

Before refilling the fresh water tank, check that the water supplied by the shore fresh water system is potable.



## 12.8 MOORING AND UNMOORING



### CAUTION

Before the unmooring operation, ensure that engines, gear boxes, rudders and bow/stern thruster are in good working order. During such manoeuvres, the Captain should prevent any unpleasant noise, and/or wake that might bother other people.

Before unmooring, make sure that all doors, hatches, portholes, etc.. are closed.



### CAUTION

The steering wheels of the helm stations are not interlocked. Before starting the manoeuvre, make sure that the unused station is free from people who may interfere with the controls.



### WARNING

Before starting the manoeuvre, make sure that people on board, especially children, do not obstruct operations and that they stay in suitable places.



### DANGER

Check with extreme care that no one on board is in danger (with legs or arms outside the edge, in precarious balance or moving on wet or slippery surfaces) and that the fenders are well positioned and fastened.

The yacht is equipped with very powerful engines, with very efficient rudders and with high-performing bow/stern thruster.

The bow/stern thruster are to be used at very low speed, or without fresh way; at higher speed, it is possible to obtain a more correct reaction, by using the engines throttles in an off-set way.

Manoeuvre at low speed, so as to have enough time to react and to better evaluate the situation; in this way, in case of accidental contact with other yachts, you will not cause any serious damage.

Before unmooring check the following:

- That there are no other yachts manoeuvring nearby;
- That the mooring ropes are not damaged;
- That the fenders are positioned and well fastened (in case of wind or surf prepare a passenger with fender to avoid damages);
- That there are no floating objects or loose ropes which can damage the propeller.

If the yacht is moored with the stern to the shore:

- Undo the stern lines, haul in the chain, until distant from the shore, and head to the exit.

If the mooring is on the side:

- Ease away the mooring rope from stern, warp on bow rope to move away the stern from the shore, manoeuvre for way out.

## 12.8.1 Leaving the mooring

The yacht is steered by means of the steering wheel that moves the rudders (rudder operation is independent from the engine operation).

In case of need and/or when in confined waters, manoeuvre the yacht by using the engines (changing the rpm and reversing the engine direction of rotation).

It is a good rule not to leave the steering wheel, particularly when cruising at high speed or in confined waters.

Do not exceed the speed limits when operating in confined waters, harbours and wherever required.

Keep in mind that the rudders effect is proportional to the propellers rpm and to the yacht fresh way, especially with headway; as a result of an high rpm and an high speed, the rudder efficiency is high, while when the engines are idling, with low fresh way, the reaction of the tiller angle is almost negligible.



### **WARNING**

Before unmooring disconnect the electric cable for shore electric power supply.

## 12.8.2 Mooring manoeuvre

Before setting back for the harbour, stop in free waters and test the gear boxes and the bow/stern thruster. Also check:

- That mooring lines are ready for use;
- That the mooring point and the berthing course are free from incoming, leaving or moored yachts or yachts with the signal of unsteered yacht;
- Check that on the electrical panel, all necessary uses are supplied. Disconnect unnecessary uses;
- That the yacht hook is easily accessible and does not hinder any passage;
- The operation of acoustic signals and of swinging spotlight;
- In case of at-night mooring, have a torch light (possibly operating) handy;
- That the passengers will not interfere with operations and, if participating, they know whom to listen to and what to do;
- That bilge, grey water tanks and holding tanks are empty;
- That mooring ropes and fenders are correctly arranged.
- Reduce speed.

If the yacht is moored with the stern to the shore:

- Warp on stern ropes and on an anchor log, so as to haul the shore.

If the mooring is on the side:

- Warp on bow and stern ropes, so as to haul parallel to the shore.

Once moored:

- Stop the engines;
- Ensure that indication lights on the dashboard are off and remove the start keys;
- Disconnect all unnecessary electric uses and check the general status of the electrical panels as well as the voltmeters and ammeters indications;
- Check bilge pump switches and their regular operation;
- Check bilge and dry it;
- Ensure there are no leakages from shaft stuffing seals;
- Rinse the yacht with fresh water;
- Connect the shore electric power supply;
- Stop the generator, once cooled down.

Before leaving the yacht, check following:

- Lower deck lights are not powered;
- Ensure that navigation lights and external lights are not powered;
- Ensure that unnecessary uses are not powered;
- Ensure that devices in use are powered;
- Ensure that the shore plug is properly connected and the cable cannot be damaged;
- Disconnect battery breakers;
- Make sure that the devices are in their correct positions;
- Ensure that all bottles and containers with flammable liquids are properly sealed;
- Make sure that no food residues are left around;
- That the gangway is in a suitable position and locked correctly;
- Ensure that mooring is correct (in case of bad weather conditions, tighten the mooring lines as much as possible and check the distance from other yachts is appropriate; ensure fenders are properly fastened, etc.);
- Ensure that sea water intakes are closed;
- That lower deck compartments are properly closed;
- That all portholes and doors are tightly closed;
- All fire extinguishers.

### 12.8.3 Unattended mooring

If the yacht is moored and left unguarded, operate as follows:

- Close sea cocks and overboard drain valves of sea water circuits.
- Check the condition of the main electrical panels and disconnect all unnecessary uses.
- Check all on board compartments, portholes, skylights and bilge.
- Ensure the ship is safely moored.
- Disconnect all unnecessary uses.



**CAUTION**

The electric power supply from shore must be disconnected, especially if the yacht is left unattended for a long time.  
It is necessary to recharge the batteries periodically.  
Overboard outlets and drain pipes should be regularly checked, in order to ensure good buoyancy.  
The electric system should be regularly checked, in order to prevent fires on board.



**CAUTION**

Inform the Port Authority about the location of the on-board fire-fighting system.



**CAUTION**

Disconnect all pumps of the yacht.

## 12.9 YACHT OPERATION DURING NAVIGATION



### WARNING

Persons operating your yacht must never be under the influence of alcohol or drugs. The yacht's pilot should be experienced in the use of all instruments and controls, and know the handling characteristics of the yacht at all speeds and sea conditions.

You should be certain that persons intending to operate your yacht are completely knowledgeable about its proper operation. If you are not certain about an individual's qualifications or competence, the person must be supervised by a qualified operator.

The yacht is very efficient and is equipped with very responsive rudders; nevertheless, because of its size and performance capability, only persons experienced, competent, responsible, cautious and with necessary qualifications should operate the yacht.

The yacht is manoeuvred by means of the steering wheel in the helm station. The steering wheel operates the rudders by means of an electric system. The steering gear operation is independent from the engine operation. Never leave the steering wheel unattended when the yacht is navigating.

Keep in mind that the rudder effect is proportional to the propeller rpm and the yacht's speed, especially when moving forward.

As a consequence, the rudder efficiency is high at high rpm and speed.

On the contrary, when the engines are idling and the yacht's speed is low, the yacht's reaction to the tiller angle is almost negligible.

If necessary, or when in restricted waters, you can steer the yacht with the engines by varying and/or reversing the engine speeds and alternating power from port and starboard engines.

At low rpm's, operating on a single engine, alternating port and starboard engines and using the "back and fill" method for turning the yacht is the recommended practice. Learn and practice the skills for handling the yacht at low speed and engine rpm.

When the yacht's speed increases, the transition of the hull from displacement mode to planing mode is a critical phase.

The transition to the planing mode should be done as quickly as practical to achieve fuel efficiency and provide a comfortable motion.

The minimum planing speed depends on yacht's displacement, on load distribution, on interceptor position and on sea conditions.

Adjust speed and interceptor position according to sea conditions and to the loading conditions of the yacht, in order to ensure an easy yacht movement and to avoid stress to the structure due to the effects of sea conditions.



### WARNING

At high speed, the use of the autopilot is dangerous and not recommended. Anyway, be always very careful during navigation also when the autopilot is in use.

The engines allow the yacht to be run safely at cruising speed for extended periods of time.

### 12.9.1 Operating in shallow water



#### **DANGER**

COLLISION HAZARD - Use extra caution in shallow water or where underwater/floating objects may be present. Hitting an object at high speed or at an acute angle can seriously injure people and damage the yacht.

## 12.10 PRECAUTIONS DURING NAVIGATION

- During navigation, do not release the anchor chain safety cable because it can seriously damage the bow of the yacht.
- Maintain a safe speed for the sea conditions, visibility, and when near other yachts.
- Do not exceed speed limits in harbour and confined waters.
- Follow all navigation rules applicable to the waters in which you are operating.
- Provide laminated plastic reference cards for the Rules of Navigation and have them available for quick reference at each helm station.
- Consult charts for information on locations of reefs, rocks, shoals, or other hazards to make sure that the yacht is not at risk of grounding or collision with fixed or floating structures.
- Frequently check that your route ahead and around the yacht is unobstructed (no yachts or objects in the expected route or approaching your yacht).
- Frequently confirm the yacht's position as you cruise, using all available aids, such as charts, visual observations and bearings, depth soundings, GPS, radar, etc..
- If the yacht is controlled by the autopilot, be especially careful to keep a good visual watch. The autopilot cannot see.
- Before night navigation, make sure that navigation lights and search lights are operational. Ensure that the correct navigation lights are turned on for operation at night. Do not keep the anchor riding light on while the yacht is navigating.
- Use navigation lights in all conditions of reduced visibility, such as fog and rain and at all times between sunset and sunrise.



### WARNING

When navigating at night, visual sharpness is crucial for a safe passage. To avoid collisions, reduce speed at night to compensate for limitations of visibility. Avoid switching on inner lights that may affect the pilot's night vision.

- Know the characteristics of the sea bottom prior to anchoring. Keep well clear of other anchored yachts.
- During anchoring, pay special attention to avoid the rotating parts of the winch and take precautions when handling the anchor chain as it comes off the winch. Caution is needed to avoid injury to hands and fingers. Also, take care to avoid entangling feet and legs in the anchor rode.
- While the yacht is navigating, all persons on board must be seated in the designated seating areas in order to prevent injury due to falls caused by yacht movements with rough sea and in active wake areas or in the event of sudden changes in yacht speed or during manoeuvring. No one should be seated on the spoiler or forward decks when the yacht is navigating.



### WARNING

For comfort and safety, reduce the speed in the presence of waves.



### WARNING

Persons entering the engine room when the yacht is navigating should be aware of the hazards of the yacht's motion and their potential exposure to high ambient temperatures, hot equipment components and operating machinery within the engine room.

Prior to entering the engine room, set the yacht on the most comfortable heading for sea and wind conditions. Persons in the engine room should maintain communication with the pilot.



**CAUTION**

To avoid heavy injuries or even death caused by hazards in the engine room, avoid the contact with hot and/or moving parts, while you are working in this area, wear proper safety clothing and also safety goggles and safety gloves. Be extremely cautious in proximity to hot and moving parts. Wear hearing protection if the engine is running.



**DANGER**

It is forbidden to carry out sudden manoeuvres at high speed. This can result in accidents to persons on board.



**DANGER**

It is forbidden to stand or sit on the forward cockpit while cruising at high speed.



**DANGER**

It is absolutely forbidden to perform reverse run with one of the two engines stopped. This operation is allowed only in case of endangering life for the persons on board and for the safety of the yacht itself, however when the engine is running it should not run higher than 1000 rpm.



**WARNING**

In order to achieve the best compromise between comfort and speed, while minimizing fuel consumption, it is recommended to keep the engine operating speed in the range between 1500 and 2000 rpm.

Observing the following guidelines will improve comfort, minimize noise inside the yacht, avoid damage and assist in the proper operation of the yacht.

- Do not run the engines at idle longer than necessary.
- Avoid sudden accelerations and decelerations, which create stress on engine turbochargers.
- Run at idle for a few minutes before shutting down the engines, to allow a gradual cool-down.
- Once the yacht is at cruising speed, the engine instrumentation readings should remain steady. However, if, during normal operating conditions, the engine gauges show abnormal or contradicting values, investigate for possible systems and/or equipment problems or failures (stop the engines).
- Monitor the control panel gauges and system condition alerts frequently.
- Once in open waters and well clear of other yachts, increase the engine rpm gradually, until the desired speed is reached. Adjust the interceptor positions for the best performance. For information on interceptor adjustment refer to chapter "Interceptors system".
- Adjust the speed to accommodate sea conditions.
- Check the engine exhausts. Very black smoke means in particular dirty filters or unburned fuel, due to improper calibration of injection pumps or injectors. Very white smoke may mean presence of water in the fuel. Bluish smoke may mean abnormal oil combustion.
- In case of abnormal vibration, reduce speed and run at slow rpm until the cause of the vibration is determined. If the vibration is severe, take the engines out of gear. It may be necessary to check the propeller condition. It may also be necessary to have a specialist check the propeller shaft alignment.
- Check the bilges periodically.

Be aware of the fuel supply in relation to the distance you plan to cover.



**WARNING**

While the yacht is underway, all persons on board must be seated in the designated seating areas in order to prevent injury due to falls caused by sudden yacht movements in active wake areas or in the event of sudden changes in yacht speed or during manoeuvring. No one should be seated on the spoiler or forward decks when the yacht is navigating.

## 12.11 PREPARATION FOR ANCHORING



### CAUTION

If the anchor has to be used, unlock it, check the wildcats clutch engagement and test the operation of the anchor winch from the helm station in use.

We remind you that the anchor winch system has no end-stroke-safety controls, therefore we suggest you to handle “manually” the last chain metres, by means of buttons of remote control, when the anchor is approaching the roller or when you reckon to lower almost the whole chain.

To avoid overheating of the anchor winch, it is advisable to help recovering it, by moving slowly the yacht toward the chain, without approaching it too closely, so as not to damage the hull.

When weighing the chain, after anchoring on a sea floor with mud or algae, it is advisable to wash the chain while recuperating it.

## 12.12 SUGGESTIONS FOR NAVIGATION UNDER SPECIAL CONDITIONS

### 12.12.1 Navigation with bad weather conditions

The yacht has been designed for safe, comfortable use, under all weather and sea conditions, bad or favourable; in any case, the navigation safety (especially with bad weather) depends mainly on the Captain’s behaviour, who should either not set off or reduce the yacht’s speed, sometimes considerably, and steer the yacht with the proper attitude.

It is very important during navigation in harsh weather, to make sure that all pieces of furniture, hatches, and mobile parts, are duly fastened or stowed, to avoid damages and above all to avoid hurting persons on board.

The reliability of the machinery, also due to a perfect maintenance, the scrupulous check during the pre-navigation phase and a Captain of proven experience assume, under adverse sea and weather conditions, an even greater importance.

The following table shows the maximum speed allowed in function of the wave height, in order to safeguard the yacht structural integrity.



### WARNING

FERRETTI YACHTS declines any responsibility for the improper use of the yacht, in relation to the wave height conditions.



### WARNING

Before undertaking navigation, it is necessary to be aware of the sea and weather conditions you will find along the transfer route and in the area you want to reach.

Speed (knots)	Wave height in metres
10	1,46
11	1,28
12	1,14
13	1,03
14	0,93
15	0,85
16	0,78
17	0,72
18	0,67
19	0,62
20	0,58
21	0,54
22	0,51
23	0,48
24	0,46
25	0,43
26	0,41
27	0,39
28	0,37
29	0,36
30	0,34
31	0,33
32	0,31

Beaufort scale	Descriptive term	Wind speed		Probable wave height (metres)	
		m/sec	knots	average	max
0	Calm	0 - 0,2	up to 1	-	-
1	Light air	0,3 - 1,5	1 - 3	0,1	0,1
2	Light breeze	1,6 - 3,3	4 - 6	0,2	0,3
3	Gentle breeze	3,4 - 5,4	7 - 10	0,6	1,0
4	Moderate wind	5,5 - 7,9	11 - 16	1,0	1,5
5	Gentle wind	8,0 - 10,7	17 - 21	2,0	2,5
6	Fresh wind	10,8 - 13,8	22 - 27	3,0	4,0
7	Strong wind	13,9 - 17,1	28 - 33	4,0	5,5
8	Gale	17,2 - 20,7	34 - 40	5,5	7,5
9	Strong gale	20,8 - 24,4	41 - 47	7,0	10,0
10	Storm	24,5 - 28,4	48 - 55	9,0	12,5
11	Violent storm	28,5 - 32,6	56 - 63	11,5	16,0
12	Hurricane	over 32,7	over 64	14,0	

## 12.12.2 Navigation with one only engine

The yacht is driven by two powerful propulsion systems designed to operate together and at the same time.

In case of failure of one of the propulsion systems, you may navigate with only one engine.

In this case, we recommend that you:

- Shut off the failed propulsion engine;
- Set the position of the steering wheels in the opposite direction of the failed propulsion system; in case the steering wheels cannot contrast the asymmetric push of the operating system, lower the interceptor on the side of the failed system, or reduce the speed;
- Head to the nearest landing at a reduced speed;
- Keep the yacht at a speed that allows the best manoeuvrability.

In case one engine stops due to a failure and the gear box is in idle position, during navigation keep a constant eye on the oil temperature of the gear box connected with the failed system.

The propeller shaft is kept rotating thanks to the water flow through the propeller, under these conditions some parts of the gear box are also kept rotating.

Should the temperature increase excessively over 80°C (176°F), lock the propeller shaft by engaging the gear box: in this way the resistance will be higher, because the gear box is jammed, but oil will not overheat.



### WARNING

The yacht has been designed to navigate driven by two engines; please remember that it is possible to navigate with one engine only in case of emergency and for a very short time.



### DANGER

It is absolutely forbidden to perform reverse run with one of the two engines stopped. This operation is allowed only in case of life danger for the persons on board and for the safety of the yacht itself, however when the engine is running it should not run higher than 1000 rpm.

### 12.13 EMERGENCY MANOEUVRE UNIT

Emergency manual control/engine accelerator

The engine control unit (I) located in the engine room, in the event of a failure of the throttles, can be configured to control the engine speed and allow the safe continuation of navigation.

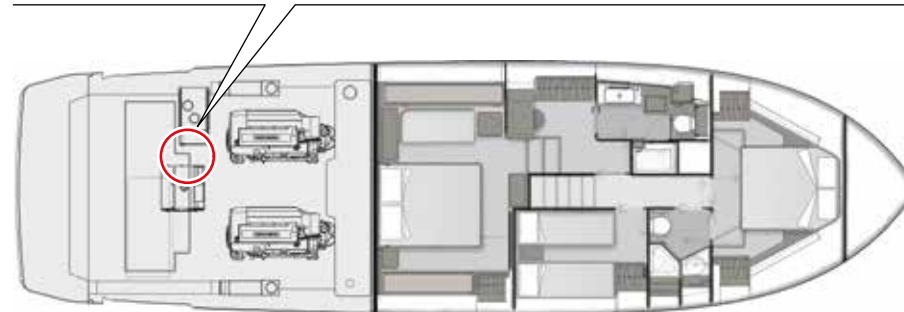
In case of need, refer to the specific documentation.

The engines can be stopped either by means of the stop buttons in the helm station, or by means of the emergency stop of the engine control unit.



**CAUTION**

The emergency manoeuvre must be performed by at least three people. One in the main helm station, the other in the hatchway of the engine room, giving advice to a third person who manually activates the manual accelerator.



## 12.14 ENGINE EMERGENCY SUCTION FROM THE BILGE

In the engine room there is the bilge emergency draining system, which operates with shunters, which allow using the sea water pumps, driven by the propulsion engines as draining pumps.

The diverters are valves which, in their normal position, ensure sea water suction for engine cooling, through the sea cocks and the sea water strainers. In case of emergency, operate the handwheels of both valves, bringing them to the emergency position: the suction of the pumps, driven by the engines is then diverted directly to the bilge.



### CAUTION

In case of emergency it is possible to suck the water from the bilge through the sea water pumps of each engine.

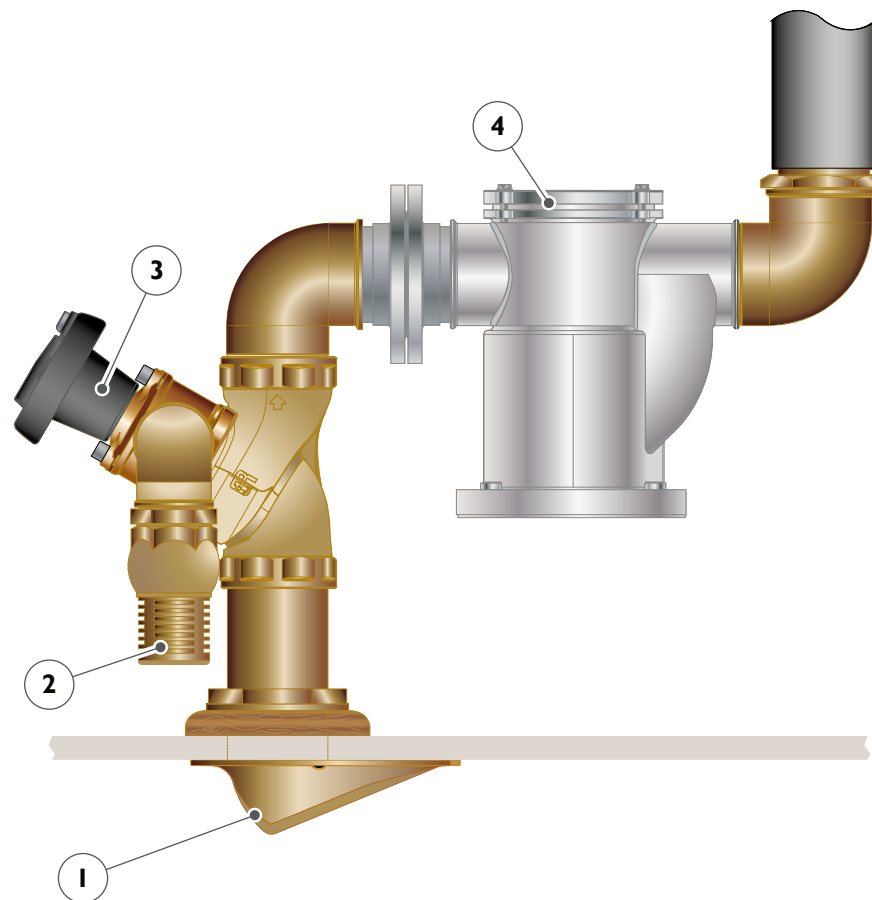
Should it be necessary to use this draining system, the bilge level must be checked continuously, because in case of complete drainage, the engines will be without coolant.

1. Engine sea cocks
2. Bilge emergency suction cocks
3. Suction selection handwheel
4. Engine sea cock strainers



### CAUTION

When the bilge is empty, remember turning the valves back to sea water intake position, in order to avoid damaging the engines.



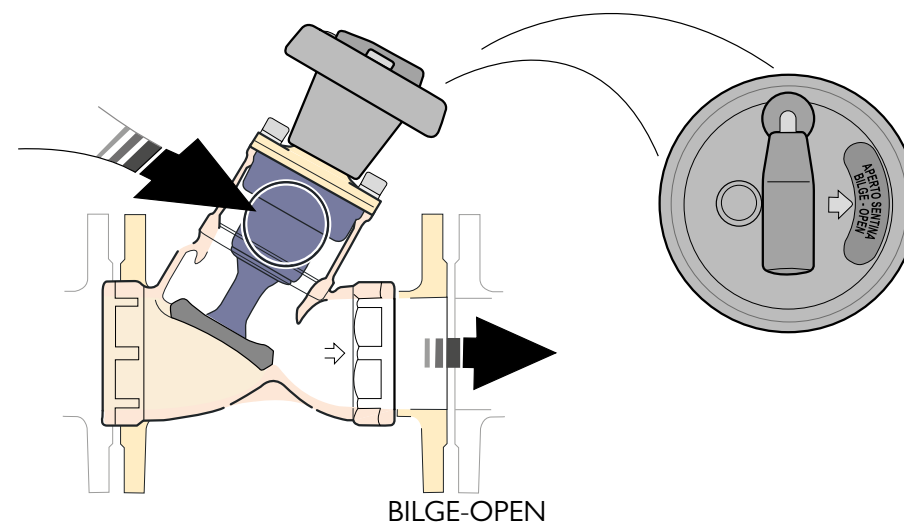
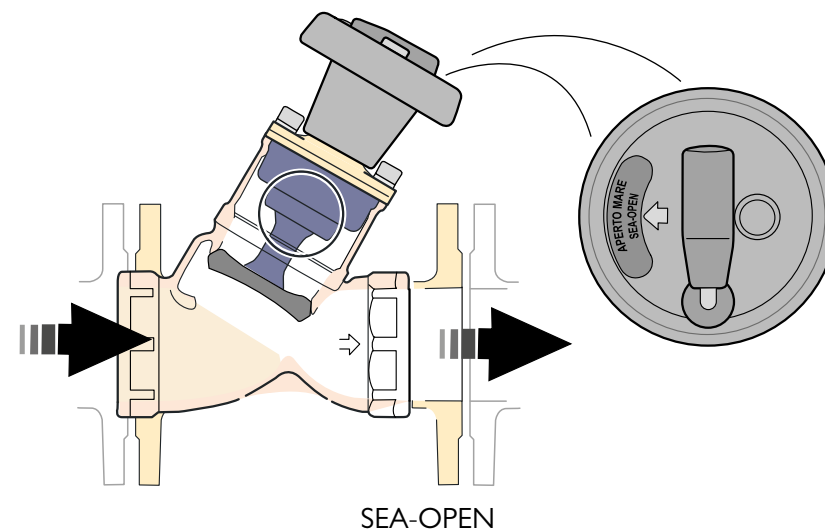
### 12.14.1 Operating diagram

All valves are provided in the sea-open position.

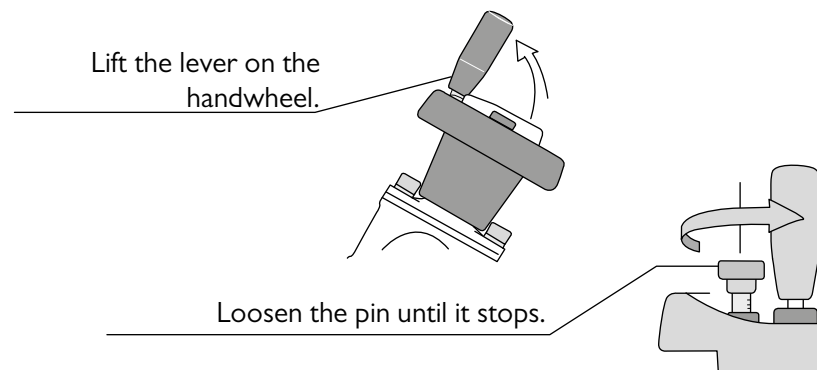
Before proceeding with the installation, visually check the passage and that the wording through the handwheel window reads: **APERTO MARE / SEA-OPEN**.

The direction of the water flow through the valve must align with the arrow on each valve.

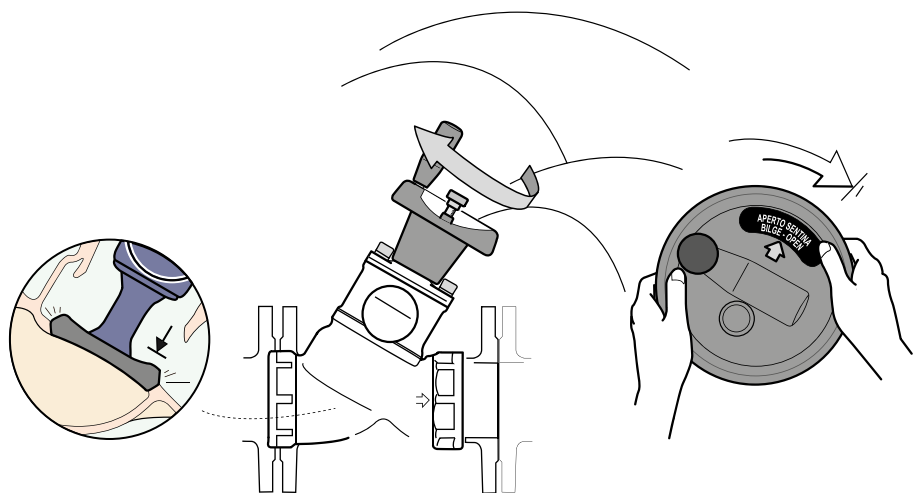
The handwheel is provided with a position indicator to simplify its use.



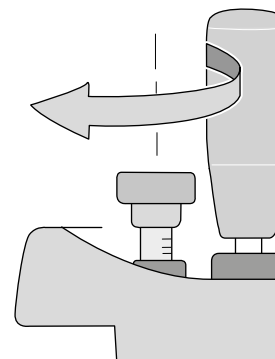
To enable water inlet from **SENTINA / BILGE**, proceed as follows:



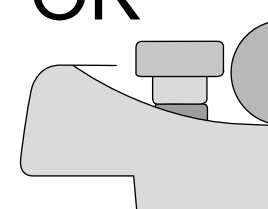
Turn the handwheel clockwise until it stops. In this phase the shutter, located in its housing, offers resistance. With both hands, close until it mechanically locks. The wording in the handwheel window will read: **APERTO SENTINA / BILGE-OPEN**, which indicates the inlet position.



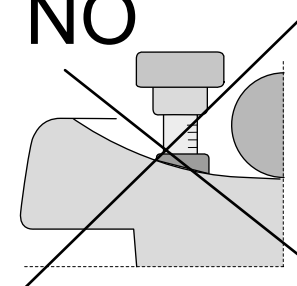
Tighten the pin until it stops



OK



NO



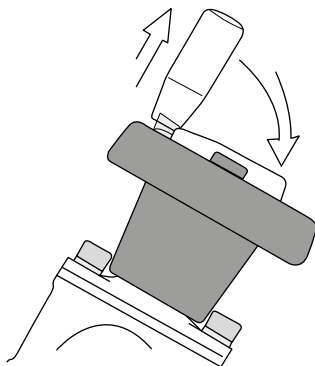
**CAUTION**

The pin is correctly tightened as shown. A complete closure of the pin has the purpose of preventing any movement of the shutter.

Lower the handwheel lever into its seat.

To enable water inlet from SEA, proceed as described above, turning the handwheel counterclockwise.

Once the operation is finished, the wording in the handwheel window will read: **APERTO MARE / SEA-OPEN** which indicates the inlet position.



### 12.14.2 Maintenance

During ordinary maintenance, which must be carried out while the yacht is in dry shore, it is recommended to extract the valve control block as follows: make sure that the indicator is positioned to **SEA-OPEN** (first turn the handwheel counterclockwise). Loosen the screws with an Allen wrench and extract the mechanism from its body, paying special attention to the rubber components (gaskets).

**DO NOT remove the handwheel from its seat!**

If necessary, clean the rubber components with fresh water and soap, do not use any chemical cleaners and pay attention not to damage the gaskets.

If necessary, the control block can be replaced with a new one.

When reassembling, use silicone grease, and pay special attention to the seats of the gaskets.

Make sure to insert the mechanism in "**APERTO MARE - SEA OPEN**" position (first turn the handwheel counterclockwise as indicated in the INSTRUCTIONS).

Tighten the screws with a torque of approx. 9 Nm.

## 12.15 HAULAGE AND LAUNCH



### CAUTION

Lifting geometry is subject to the type of the lifting equipment and therefore can not be indicated.



### CAUTION

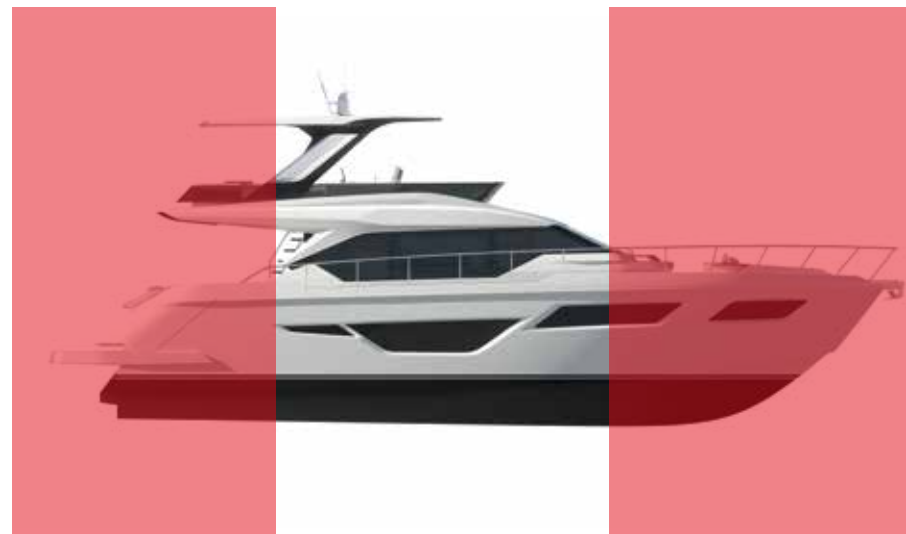
Before the operations of hauling and launching, check that there are no unforeseen material on board, provided that the materials are properly locked, and that there are people on board.



### WARNING

Hauling and launching operations have to be carried out only by skilled personnel and in qualified shipyards and under their direct responsibility. FERRETTI YACHTS declines any responsibility for damages to things or persons caused by the wrong performance of hereunder listed operations.

- The lifting equipment must be in good condition and, in particular, the bands of hauling should not be worn and possibly covered with protective gear to avoid damaging the gel-coat the sides and the antifouling hull.
- It recommends the use of travel lift to reach well above the weight of the yacht.
- If there were only a crane, it is necessary the use of a “spacer” that maintains the bands tow at an angle greater than the width of the hull.
- Try stability before lifting the yacht, the center of gravity of that depends on the load and its provisions.



**CAUTION**

**Never** position the lifting straps in the areas highlighted on the drawing.

**CAUTION**

Do not put the lifting straps in way of intakes, of sea exhausts or of other protrusions.

Lifting straps must be positioned according to the loading conditions of the yacht at the moment of its lifting, because these vary remarkably, for instance, when the yacht is unloaded and dry or when the yacht is fully loaded. The lifting straps arrangement must be carefully evaluated each time, in order to prevent any damage to the yacht.

**CAUTION**

FERRETTI YACHTS declines any responsibility for the location of the lifting straps, the lowering of the yacht to the ground and the support points carried out in other shipyards.

**DANGER**

During haulage and launch, never stay underneath or in proximity of the yacht.

## 12.16 TOWING THE YACHT

In case of towing or trailer the tops must be fixed as shown in the figure to cause to divide the effort and center the shot.

It is good practice, after giving time to the cleats, take the top, giving time to the winch, so you would have taken advantage of the major points of strength.

The length of the towing cable must be determined according to sea conditions, so as to amortize the shot without damaging the accommodations mooring.



### DANGER

Do not approach and do not carry out any kind of intervention on transmission during the towing because propeller can turn.



### WARNING

In case it is necessary to tow another yacht, do this under calm sea and calm wind conditions only, and tow yachts with a displacement not exceeding 50% of your yacht displacement; in case of emergency, if towing is not possible, give help by taking the people of the other yacht on board, as many as permitted and possible, and reach the nearest harbour.

Anyway, inform immediately the Port Authority.



### WARNING

Towing navigation can be carried out continuously for 8 hours, provided that you constantly monitor the gear box oil temperature, which must not exceed 80°C (176°F).

If temperature exceeds 80°C (176°F), stop navigation and wait until the temperature lowers.

When the engine is shut off, the throttle position is unimportant.



**CAUTION**

Do not stand near the ropes during drawing (or towing) operations, a rope that breaks can be extremely dangerous ("whip lash effect").

**DANGER**

During towing navigation, the propeller shaft has to be kept turning by the water flow through propeller. We recommend not to carry out any kind of service on the thrust devices (engines, gear boxes, shafts, etc..).



FERRETTIYACHTS

13



## HULL AND FURNITURE MAINTENANCE

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1. FOREWORD

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  2. SAFETY RULES

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  3. SAFETY DEVICES AND EQUIPMENT

---

  4. DESCRIPTION OF THE YACHT

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  5. HELM STATIONS

---

  6. WATER SYSTEMS

---

  7. ELECTRIC SYSTEM

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  8. PROPULSION SYSTEMS

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  9. STEERING SYSTEMS

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  10. AIR CONDITIONING SYSTEM

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  11. AUXILIARY EQUIPMENT ON BOARD

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  12. INFORMATION FOR USE

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  - 13. HULL AND FURNITURE MAINTENANCE**

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  14. TROUBLESHOOTING

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### 13.1 GENERAL MAINTENANCE OUTLINES

The yacht is equipped with a large number of sophisticated devices and systems, which require not only a certain care when it comes to use, but also regular maintenance to obtain correct operation.

One of the factors that might cause problems or faults, is usually the irregular use of the yacht and because of this, of the on-board devices.

Experience indicates that regular use of the devices normally gives fewer problems, and therefore, we recommend operating all on-board devices regularly, for short periods.

Daily checks and regular maintenance are important for maintaining equipment/ components in the best working order and efficiency.

If the regular maintenance schedule is not correctly followed, the equipment's performance can deteriorate, causing reduced efficiency, a shorter life and the occurrence of unexpected problems which can compromise safety at sea.

The maintenance schedule is based on time intervals or running hours.

For example, if a maintenance task is scheduled every 100 hours or 3 months, this task must be repeated at 200 hours or after 6 months, at 300 hours or after 9 months, and so on.

In case of a long period of inactivity (for example, during winter), it is advisable to lay up the yacht, possibly under cover.



**CAUTION**

Some general information about ordinary maintenance tasks, their schedule and procedures is provided herein with.

For further specific information referring to maintenance schedule, see Manufacturer Manuals of on board devices/components, issued by the various Manufacturers.



**CAUTION**

Look over the maintenance safety rules contained in this manual in order to act with the maximum safety and follow the indications here below.



**CAUTION**

During the replacements, remove the parts with care and order, in this way the assembly operations are as easy as possible.

Make sure to install genuine spare parts, in this way the system efficiency is not altered.

Sometimes the use of non-genuine spare parts may cause the withdrawal of the Manufacturer's warranty.



**CAUTION**

Check periodically that all equipment containing water is filled with the correct quantity of anti-freeze.

If the outside temperature drops below 0°C, all fresh or sea water systems are exposed to the risk of freezing and consequent breakage.

Systems especially subject to risks of freezing are all systems and devices containing either fresh or sea water.



**WARNING**

Before carrying out any maintenance and adjustment operation on the yacht, turn all necessary safety devices on and consider informing all personnel, in particular persons operating nearby. In particular, place warning signs in the areas concerned and prevent any device, if operated, from causing unexpected hazardous conditions, thus endangering the persons on board and/or property.

To avoid pollution, do not scatter any type of waste in the environment, and only use the dedicated disposal areas in the harbours.



**CAUTION**

When working in the engine room, switch magneto-thermal switches of the bilge draining pumps off, to prevent that fuel, lubricants and other liquid spilling causes sea pollution.



**CAUTION**

FERRETTI YACHTS declines all responsibility for the installation and operation of electric, electronic or mechanical equipment improperly installed by third parties in a manner not authorised by the Shipyard.

FERRETTI YACHTS declines all responsibility with regard to tampering carried out by third parties on equipment installed in the Shipyard. Such tampering or unauthorized installations will not only immediately void the warranty, it may also cause damage to the yacht and injuries to the people on board.

FERRETTI YACHTS declines all responsibility concerning regular maintenance operations scheduled by the Shipyard or by Manufacturers, but not carried out, on equipment/components, for which it is necessary to refer to the relevant Technical Manuals.



**CAUTION**

The use of pressurised water on external lighting fixtures is prohibited.

## 13.2 LONG PERIODS OF YACHT INACTIVITY

Following list only represents a general guide to give the customer an idea of the ordinary maintenances which should be carried out when the yacht remains stationary for a rather long period without being used. We recommend carefully checking the instruction manuals of the single devices, because they often contain detailed information and very important specifications relevant to the maintenance of each device. The following instructions NEVER REPLACE the specific instructions concerning each single device and issued by the device's Manufacturer.

- **Engines**  
Before winter time let fresh water flow into the sea water circuit, check the antifreeze liquid, the sacrificial anodes against the galvanic currents, remove salt build-ups and spray protective agents.  
Carry out the scheduled maintenance of the propulsion engines, indicated in the Use and Maintenance section.
- **Generators**  
Use the same procedure as for the engines.
- **Inverters**  
Carry out the scheduled maintenance for gear boxes.
- **Batteries**  
Check the liquid level and regularly charge the batteries, protect the terminals with Vaseline grease; the best solution would be to disconnect the batteries from the system and to charge them regularly with a separate battery charger, but this is not always possible on yachts.
- **Watermaker (optional)**  
A proper procedure provided by the supplier in the instruction manual has to be followed when the water maker is not used for a long time.
- **Washers and Dishwashers**  
Carry out an empty washing cycle, carefully remove all detergent residues, and dry thoroughly. Clean the filters.
- **Sun-deck cushions**  
Remove all sun-deck cushions and store them into a dry place.
- **Aluminium and steel**  
Wash all metallic parts with fresh water and protect by rubbing with a rag soaked into Vaseline oil.

- **Wood and interior upholstery**  
Cover the cushions of sofas with sheets and above all cover all windows with the relevant covering sheets, so that as little light as possible is projected inside, because the UV-rays fade the wood and tissue colours.
- **Teak wood deck**  
Wash with water and neutral soap and treat with proper products. Sandpaper if strictly necessary.



### CAUTION

DO NOT USE mechanical or forced water jet equipment (e.g. pressure washers, etc.) to wash the deck, as this force alters the wood and the caulking sealants (it detaches the microparticles) causing damage in some cases even radical (e.g. detachment of the staves).



### CAUTION

DO NOT USE alkaline-based or acid-based detergents or aggressive detergents (soda, solvents, ammonia, etc..) to wash the deck; their aggressive degreasing action corrodes the wood (it eliminates its natural water repellency and whitens its natural colour), while the caulking sealant modifies its physical-chemical qualities, softening the surface, damaging the waterproofing, sealing and anchoring of the deck.

- **Sacrificial anodes**  
Check their wear and if necessary, replace the hull, propellers and interceptors anodes, etc..
- **LOG Transducer**  
Pull out the paddlewheel, clean it and apply the proper blanking plug.
- **Windscreen wiper**  
Wash with fresh water and lubricate with Vaseline oil.
- **Anchor winch**  
Check the oil level in the gear box where possible. Check the oil level, protect the electrical components with a suitable protective spray and lubricate with silicon grease clutches and wildcat.

- **Water tank**  
Wash with disinfectant, drain the fresh water circuit, especially if frost is forecasted.
- **Fuel tank**  
Cleaning by means of a decanter especially if there are traces of water in the fuel.
- **Grey water tank**  
Pour sterilizing products into the washbasin, showers, and bidet wastes .  
Empty the tank and clean, ensuring the float is efficient.
- **Black water tank**  
Pour a sanitary product containing Paraformaldehyde (available in camping equipment shops) into the WCs and rinse the tank with this mix a couple of times.  
Drain the tank completely.
- **Air conditioning**  
Before winter:
  - Let water flow in the sea water system.
 After winter:
  - Check the anti-freeze mix in the fresh water circuit: top-up or replace it if necessary (perform replacement at least every two seasons);
  - Carry out the maintenance operations suggested by the Manufacturer.
- **Tender engine**  
Wash with the fresh water contained in the cooling system of the engine. Carry out the maintenance as recommended by the supplier.
- **Bow and stern thruster**  
Protect the electrical components with a proper spray and check the oil level.
- **Electro-hydraulic control units**  
Protect with the proper sprays and check the oil level.
- **Fire extinguishers**  
Check the loading condition and expiry date for regular inspections.
- **Safety equipment**  
Check the expiry dates of the self-inflatable means, flares etc..
- **Refrigerators**  
Cleaning and protection for the outer one, should the yacht remain in the open.
- **Engine room**  
As for the engine room, we suggest carrying out a general cleaning, by removing all traces of salt drifts on devices and protect all electric, mechanic and hydraulic devices, by spraying them with protective agents.

- Clean all cabins and inspect all dunnages on-board.
- Check all hatches seals and lubricate their contact with appropriate silicone lubricant.
- Clean fan coils with an air jet, sucking the dust from the back net.
- Inspect the outer hull and all components: propeller, anodes, struts, interceptors, fan coils, sea cocks, bow/stern thruster
- Carry out laying up of the yacht in a sheltered and dry place. If the yacht is stationed outside, cover it with a waterproof sheet, in such a way that allows ventilation. Otherwise the formation of damaging moisture could be helped.
- Wash the yacht with fresh water.
- Check all systems and fastenings on the yacht: damages, wear, cracks are signs of unsuitable use. Repair the damaged equipment. If necessary, fit new ones.
- Check the efficiency of limber holes and that they are not clogged so as to cause the leaking of the bilge system.
- Check the fastening of the partial or total covering of the yacht.
- Disconnect all unnecessary utilities.



**DANGER**

During recharge the batteries produce explosive gas. Do not approach to re-charging area with free flames or sparkles.  
Avoid wrong connections; never connect a positive terminal (+) with a negative one (-).

### 13.3 RE-USE OF THE YACHT AFTER A LONG INACTIVITY

#### Engines

After the winter, check engines oil, gear boxes and replace them if necessary. Check oil and fuel filters and replace them if necessary.

- Adjust the belt tension of the alternator belts both of engines and generators.
- Fill the fuel tank. Vent the air of the fuel system.
- Start propulsion engines.



#### CAUTION

After a long period of yacht inactivity, carry out all above-listed operations and following checks:

- Check the condition of all hoses and connections of the steering system, stabilizer, gangway, swim ladder, etc..
- Start the engines.
- Stop the engines.
- Clean fuel filters. Replace engine oil filters and add oil to the engines if necessary.
- Check all bilge pumps and their operation.
- Check the operation of the black water, grey water and sea water pumps.
- Check the operation of all on-board instruments used for navigation.

- Let the engine run at middle speed for some minutes, before letting them run at full speed.

#### Generator:

- Start the engine of the power generator.

#### Hull:

- Verify the hull.
- Have the bottom hull accurately cleaned, as well as the rudders and trim tabs with brushes (water) or a jet-cleaner (dry) to remove seaweed and scale.
- Check the paintwork condition of the hull. If necessary, have 2 coats of suitable antifouling paint applied by specialized personnel.




#### Propeller and Anodes:

- Verify the propeller condition and possible leaks from the seals, if necessary adjust them.
- Check the conditions of the sacrificial anodes; if necessary, replace them.

#### Batteries:

- Check the charge of the batteries, and that their terminals and housings are dry and clean.

### 13.4 HULL MAINTENANCE

Component	Maintenance	Notes and precautions
Bottom hull	<p>Periodical cleaning and check of antifouling treatment (as required according to stationary area, but at least every three months)</p> <p>Check/restoration</p> <p>Preparation of the surface of an already treated yacht</p>	<p>The length of the anti-fouling effects depends mainly on the conditions of the waters where the yacht is stationed.</p> <div style="border: 2px solid yellow; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"> <b>CAUTION</b></p> <p>When removing the old antifouling, do not use sandblasting methods, as this may damage the gel-coat surface and the anti-osmosis resin applied by the Manufacturer. As suggested by the antifouling manufacturers, use paint removers or, as an alternative, wet sanding.</p> </div> <p>The Shipyard uses high-quality ant-fouling paint and applies two layers.</p> <div style="border: 2px solid yellow; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"> <b>CAUTION</b></p> <p>Bad maintenance condition (barnacles, etc..) may cause cavitation and damage shaft, rudders, propellers, etc..</p> </div> <div style="border: 2px solid yellow; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"> <b>CAUTION</b></p> <p>Small areas of paint may peel off from the propellers even after a short period of operation.</p> </div>

### 13.4.1 Bottom hull

#### Antifouling treatment

If scales builds up on the hull, this causes notable speed reduction and with time may damage the “gel-coat”. When you choose an antifouling paint for your yacht, it is important that you find the proper product, suitable for your yacht and for the waters in which you are going to navigate. Contact the FERRETTI YACHTS After Sales & Service Department.

#### Check/restoration

The cleaning and checks have to be carried with yacht at dry dock or with the help of a diver. Have the repairs done only with yacht at dry dock.



#### WARNING

To clean or check the yacht in water, disable engines and generators ignition.



#### CAUTION

There are some hull areas (fastening area of thrusters shaft support base, submerged drainage areas, around the thruster tunnel and shaft exits, etc.) where operations can be carried out after hull pressing; in these areas, fillers are usually used which, over time, may produce local faults, like bubbles or small cracklings. These little faults do not impair the hull’s mechanical strength at all. To repair them just sandpaper the area, remove the bubbles, and apply fillings suitable for the bottom hull.

- Have the bottom hull accurately cleaned, as well as the rudders and flaps with brushes (water) or a jet-cleaner (dry) to remove seaweed and scale.
- Check the paintwork situation of the bottom hull. If necessary, have 2 coats of suitable antifouling paint applied by specialised personnel.

#### Preparation of the surface of an already treated yacht

Carefully check the old anti-fouling paint to see if it is still good or if it needs a new layer. Make sure that the new product is compatible with the old one. Contact the FERRETTI YACHTS After Sales & Service Department. If the old antifouling is crusty, thick and tends to scale off, then remove it and start the treatment as for a new yacht.



#### CAUTION

Antifouling is poisonous and should never be burnt, use only authorized disposal procedures and in case of doubts contact the authorities in charge. The sandblasting operations and removal of antifouling must be carried out with suitable clothes and protections.






#### WARNING


During the application of antifouling, make sure that following parts of the bottom hull are not painted:



- Depth sounder transducer;
- LOG speed sensor paddlewheel;
- Sacrificial anodes;
- Shafts and propellers;
- Underwater lights;
- Hull porous plate;
- Reference anode of the monitoring system.






Component	Maintenance	Notes and precautions
Wood and upholstery	Regular cleaning	<p>The worst enemies of these materials are light and moisture; to protect them, they must be kept away from direct light as much as possible and the interior must be ventilated as soon as the weather conditions allow. The use of external awnings is extremely important because there is no species of wood, either natural or dyed, which, when exposed to the sun's rays, does not undergo a change in colour. The woods used for the yacht's fittings are exclusively natural-based materials carefully selected and the painting cycles with which they are treated comply with environmental regulations. Furniture made of wood, precisely because of the natural origin of both the material and the treatments, may be subject, if not properly treated and maintained, to:</p> <ul style="list-style-type: none"> <li>• Colour variations due to exposure to direct and continuous light. It is advisable to shade the heavily exposed parts with the internal curtains supplied with the yacht;</li> <li>• Retention of dirt if not cleaned promptly, given the characteristic absorbency of wood fibres. It is recommended to use non-aggressive products;</li> <li>• Scratches and marks if in contact with sharp or metallic objects, due to the inevitable relative "softness" of the wood.</li> </ul> <p>Even if the production processes have been carefully studied and tested, the furnishings and fittings made of natural wood may undergo variations in colour over time due to the "natural" maturation of the material due to ageing. Despite the painting cycles developed after many years of experience, wood remains a "living" material, and therefore subject to movement and settlement. Scratches caused by bumps must be repaired immediately, to avoid the blackening of the wood below. The technical staff of the FERRETTI YACHTS After Sales &amp; Service Department will advise you about the maintenance level you have to apply at the end of each season's use. Correct maintenance will allow you to avoid deterioration which is expensive to repair.</p> <div style="border: 2px solid yellow; padding: 10px; margin-top: 10px;"> <p style="text-align: center;"> <b>CAUTION</b></p> <p>The extremely precious finishes of the polish-varnished woods used for bathroom floors and cockpit tables is the result of careful work: they are water resistant but at the same time delicate and need careful maintenance. Such surfaces must therefore be dried after use or after rain and must be washed and maintained regularly.</p> </div>





Component	Maintenance	Notes and precautions
Wood and upholstery	Regular cleaning	<div style="text-align: center;">  <b>CAUTION</b> </div> <p>Upholstery and wooden parts: the leather and wooden parts have to be treated as natural products, subject to colour alteration, particularly if the necessary precautions for good maintenance are not taken. FERRETTI YACHTS therefore reserves the right to evaluate any problems and its own responsibility according to case.</p> <div style="text-align: center;"> <b>MAINTENANCE</b> </div> <p>At least once a week, carefully wash and clean all teak outside parts, and at least once a year perform a protective treatment with suitable products.</p> <div style="text-align: center;">  <b>CAUTION</b> </div> <p>Current use:</p> <ul style="list-style-type: none"> <li>• Do not walk or jump on the cushions;</li> <li>• Prevent the cushions from turning yellow due to direct exposure to sunlight;</li> <li>• Prevent the absorption of water or moisture by not leaving the upholstery exposed to bad weather, particularly during periods of inactivity.</li> </ul> <p>Cleaning:</p> <ul style="list-style-type: none"> <li>• Remove ordinary dirt with a warm water solution and neutral soap: do not use detergents or solvents;</li> <li>• Dry with a soft rag, not leaving any residues.</li> </ul> <p>Preservation:</p> <ul style="list-style-type: none"> <li>• Store clean and dry upholstery in a cool, ventilated room with no moisture;</li> <li>• Do not place heavy objects on upholstery when stored.</li> </ul>



Component	Maintenance	Notes and precautions
Teak	Regular cleaning	<p>The characteristic of teak is its resistance to weathering and therefore, it does not require maintenance. Over time, teak tends to assume a particular silver colour that may not appeal; in this case, to maintain the original colour of the teak, it needs to be treated regularly with specific products (e.g. teak wonder).</p> <p>If the wood has smears that cannot be removed with normal washing, it is necessary to sand the wood to remove stains, and then repaint with wonder teak.</p> <p>You must use fresh water and manual brush (no hard bristles) at least once a day. This will remove any machinery, common dirt from feet and shoes, and normal environmental salt. This process, if carried out regularly, allows constant maintenance of your teak and caulking. In this case only time and wear will naturally deteriorate this product.</p> <div style="border: 2px solid yellow; padding: 10px; text-align: center;">  <p><b>CAUTION</b></p> <p>Do not clean the teak with stiff brushes, as even rubbing the grain lengthways can damage the softer grain of the wood.</p> </div> <p>Non-black caulking could have not the same behaviour compared with the black one. Any aesthetic issues like mildew on the surface, colour variation, dirt in the caulking have not been addressed as defects and could be prevented with a regular maintenance and service of the teak surface and caulking.</p>


Component	Maintenance	Notes and precautions
Teak	Regular cleaning	<div style="border: 2px solid yellow; padding: 10px; margin-bottom: 10px;">  <p><b>CAUTION</b></p> <p>Washing the deck with mechanical equipment or with a jet of pressurised water (hydro-cleaners, for example) IS STRONGLY ADVISED AGAINST since this force alters the wood and the caulking sealants (detaches the micro-particles), even causing serious damage in some cases.</p> <p>Washing the deck with alkaline or acid-based detergents, or however with aggressive agents (soda, solvents, ammonia, etc..) IS STRONGLY ADVISED AGAINST. Their aggressive degreasing action corrodes the wood (eliminates its natural water-repellent properties and bleaches its natural colour), while the physical-chemical properties of the caulking sealant are altered, with its surface portion becoming softened and the impermeability, sealing and anchorage of the deck becoming damaged.</p> </div> <div style="border: 2px solid yellow; padding: 10px;">  <p><b>CAUTION</b></p> <p>Be careful when cleaning the exterior painted parts. The use of alkaline or acid-based soaps or detergents, which are usually used to remove dirt or salt, can settle on the deck and irreparably damage the teak and caulking sealant.</p> <p>Therefore, teak and caulking sealant must be insulated when these washes are carried out. Therefore, when these washes are carried out, it is necessary to isolate the teak and caulking sealant from any deposits, even temporary, of soaps and/or detergents. If it is not possible to cover the deck when cleaning the fibreglass, we recommend wetting the deck surface with plenty of fresh water.</p> <p>We recommend the same procedure when refuelling.</p> <p>If fuel seeps into the wood or caulking sealant, the deck will be irreparably damaged there. Use a neutral detergent to clean the teak.</p> </div>



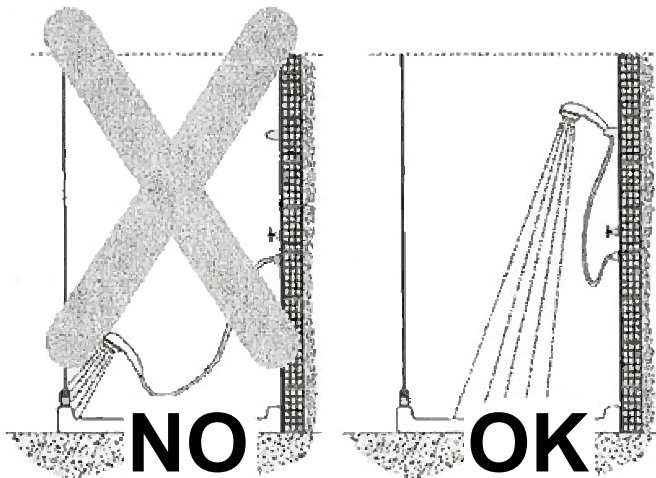
Component	Maintenance	Notes and precautions
Ceilings Panels	Regularly check the flatness of the panels and / or any discontinuities or steps between the ceiling panels	<p>Whenever the ceilings are disassembled, it is compulsory to check the status of the Fit Lock or/ and 3M Dual Lock fastening systems, breakage of the teeth, and/ or the entire system.</p> <div style="border: 2px solid orange; padding: 10px; text-align: center;">  <p><b>WARNING</b></p> <p>Do not install Fit Lock or 3M Dual Lock ceiling panels with damaged fastening systems , due to a possible reduction of their retention power. Damaged parts must absolutely be replaced with new ones.</p> </div> <p>In order to be sure that the ceilings have been reassembled correctly, check flatness with the other ceiling panels and the absence of discontinuities and steps between one ceiling panel and the others.</p>
Light alloys and stainless steel	Regular cleaning	<p>It is a good rule to accurately wash the entire yacht after each navigation, in particular all metal parts that may be damaged by sea water. Have plenty of fresh water sprayed on handrail, windows, skylights, rub rail, anchors, cleats and ladder. Protect all metal parts with Vaseline oil periodically.</p> <div style="border: 2px solid gray; padding: 10px; text-align: center;"> <p><b>MAINTENANCE</b></p> <p>At least once a year check the fastening of all metallic parts of the yacht.</p> </div> <div style="border: 2px solid yellow; padding: 10px; text-align: center; margin-top: 10px;">  <p><b>CAUTION</b></p> <p>The stern glass door is not watertight, so do not point the bolt of water towards the window, when washing.</p> </div> <div style="border: 2px solid yellow; padding: 10px; text-align: center; margin-top: 10px;">  <p><b>CAUTION</b></p> <p>Never use brushes or abrasive rags on metallic fittings, not even on rusty spots, scratches on the surface result in a less shiny appearance and diminish the mechanical features.</p> </div>



Component	Maintenance	Notes and precautions
Windscreen/windows	Regular cleaning	<div style="border: 1px solid yellow; padding: 10px; margin-bottom: 10px;">  <b>CAUTION</b>                      Rags and chamois leathers used for cleaning glass must be replaced at least every 3 months. The inner side of windows and windscreen can be cleaned with non-aggressive and non- acid detergents for glass and a soft or paper cloth.                 </div> <div style="border: 1px solid yellow; padding: 10px; margin-bottom: 10px;">  <b>CAUTION</b>                      If, after normal cleaning, some traces of dirt or light scratches remain, do not try and remove them with mechanical means or using aggressive detergents, solvents or abrasive products. Contact the Service Department.                 </div> <div style="border: 1px solid yellow; padding: 10px;">  <b>CAUTION</b>                      For cleaning the outer side of coloured or mirrored (pyrolytic) windows and windscreen:                     <ul style="list-style-type: none"> <li>• Evenly wet the whole surface of the glass with plenty of fresh water.</li> <li>• Use a neutral detergent or a delicate commercial product (not alkaline) diluted in fresh water.</li> <li>• Spread the solution with a soft and clean cloth. Frequently rinse the cloth in order to pre- vent deposits of dust or dirt particles which could scratch the glass or its glazed coating.</li> <li>• Rinse the soapy surface with plenty of fresh (or distilled) water.</li> <li>• We recommend drying the glass with chamois leather only.</li> </ul>                     For cleaning the tinted windows and windscreen it is possible to use the same type of detergent used for internal cleaning (non-aggressive and non-acid).                 </div>
Mirrored glass walls	Regular cleaning	<div style="border: 1px solid yellow; padding: 10px;">  <b>CAUTION</b>                      For cleaning mirrored glass walls only use water and neutral soap. Different products could damage the surface coating.                 </div>

Component	Maintenance	Notes and precautions
Windscreen wiper and washer	Regular cleaning (as required)	Wash them carefully with fresh water and coat with Vaseline oil; grease the spring with silicone grease. Check the rubber blade conditions regularly, and replace the blades if worn; this prevents bad visibility problems.
Windscreen and deckhouse glass	Inspection of seals	<div style="border: 2px solid yellow; padding: 10px; text-align: center;">  <p><b>CAUTION</b></p> <p>At least once every 6 months check the condition of the glass seals. If you feel that the seals have deteriorated due to a wear, please contact our Service Department.</p> </div>
Light fittings	Regular cleaning	DO NOT use alcohol-based products to clean the light bodies.
Instrumentation and navigation lights	Regular cleaning (as required)	<p>Use clean wet rags for cleaning.</p> <div style="border: 2px solid gray; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"><b>MAINTENANCE</b></p> <p>At least once a week, check the operation of the navigation lights. At least once a week, carry out careful cleaning of glasses and headlights. At least once every six months, check the presence of corrosion in the connections of the navigation light cables. At least once every six months, tighten the cable connections of the navigation lights.</p> </div> <div style="border: 2px solid yellow; padding: 10px; text-align: center; margin: 10px 0;">  <p><b>CAUTION</b></p> <p>Do not use chemical or abrasive products.</p> </div> <p>After navigation, cover instrumentation and equipment.</p>
Metal parts and connectors	Regular cleaning (as required)	Grease connectors and metal parts of the devices installed and exposed to moist and salty environment to prevent oxidation; pay particular attention to the above-mentioned components of the steering system, gangway, hatches, and control units, etc..

Component	Maintenance	Notes and precautions
Plexiglass	Regular cleaning (as required)	<p>To clean the Plexiglas, only use products that do not contain aggressive substances such as alcohol, ammonia or the like. Preference for antistatic liquid detergent.</p> <div style="border: 2px solid yellow; padding: 10px; text-align: center;">  <p><b>CAUTION</b></p> <p>Never use alcohol or acetone to clean Plexiglas parts; they could crack inside.</p> </div> <p>Use cloth of soft material (such as cotton or felt) To clean, degrease and polish the Plexiglas, spray a small amount of antistatic liquid detergent on the cloth and wipe the surface. The antistatic effect of the cleaner is very useful to prevent dust from being attracted by static electricity generated during rubbing and that makes it very difficult to clean the entire surface smoothly. If the cause of opacity is dirt, simply use an anti-static cleaning fluid and a soft cloth to remove smears: the Plexiglas will clean and bright. If opacity is due to the contact with aggressive substances, it means that the surface has been compromised in the structure and the Plexiglas will not return as before. If the marks are light and have been caused by wear and not from chemicals, anti-scratch paste can solve the problem. Even for light scratches anti-scratch paste is suitable.</p>
Fenders	Regular cleaning (as required)	Always keep all the fenders and their sleeves clean by washing regularly with fresh water, in order to prevent the salt deposited on them from scratching the paint of the hull.

Component	Maintenance	Notes and precautions
Shower	Checking and replacing gas-kets	<div style="text-align: center;">  <p><b>CAUTION</b></p> </div> <p>Carry out regular maintenance and/or replacement of the shower box seals, in order to prevent water leakage.</p> <div style="text-align: center;">  <p><b>CAUTION</b></p> </div> <p>The shower enclosures are made in such a way as to avoid water leaks outside the enclosure, under normal conditions of shower use. However, they do not have a watertight seal.</p> <div style="text-align: center;">  </div> <p>The functionality of the shower cubicles is subject to the use for which it was designed; the water tightness is therefore conditioned by the correct use.</p>

Component	Maintenance	Notes and precautions
Back glass wall	Cleaning	<p>The stern glass wall has many functional and aesthetic advantages. The salon door, that completely overlaps the fixed part starboard makes it possible to convert the salon and the cockpit into a single, large room.</p> <p>Of course, this glass wall needs particular care during washing, because a lack of care may allow water to penetrate.</p> <p>To avoid this problem, we advise taking great care to the direction of the water jet for rinsing: it should not be directed frontally and with pressure, but the water should be let flow down from above.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;"><b>MAINTENANCE</b></p> <p>At least once a week, clean thoroughly.</p> <p>At least once a month, check the operation.</p> <p>At least once every six months, check the locking with open door.</p> <p>When necessary have them adjusted.</p> </div>

## 13.6 MARBLE MAINTENANCE

### THE WORST ENEMIES OF MARBLE ARE:

Some substances damage marble more than others.

Keeping them away from surfaces, or at least removing them promptly as soon as they come into contact with the marble is very important if you want to preserve its appearance.

The worst enemies of marble surfaces are:

1. **Water:** a enemy of marble, especially that with a high presence of limestone. If it settles on marble surfaces and is not dried, it can ruin them in the long run.
2. **Coffee, wine and dyes:** as dark substances, coffee, wine and other food dyes can damage marble when they come into contact with it.
3. **Tomato sauce:** tomato sauce, when it stains, is very difficult to remove, and the same applies to marble.
4. **Polishing wax:** marble should be polished from time to time, but never apply too much wax to avoid risking obtaining the opposite effect, i.e. making it dull.
5. **Sugary substances:** fruit, juices and sweet substances, if deposited on marble, can corrode it, ruining its natural lustre. If they accidentally fall on the marble, they need to be cleaned quickly.

### HOW TO CLEAN MARBLE:

1. **Damp cloth:** If the stain to be removed is not particularly stubborn, a damp cloth can be used to clean marble surfaces and achieve an excellent effect. It is important to always remember to dry the surface, otherwise, limescale will damage it.
2. **Marseille soap:** Marseille soap is also perfect for cleaning marble surfaces. Lightly dampen a cloth and rub it lightly on the soap, then wipe the marble. After rinsing, carefully dry the surface, which will look as good as new.
3. **Hydrogen peroxide:** Hydrogen peroxide is another product that can have infinite uses, including cleaning marble. Put a drop of hydrogen peroxide on a damp cloth and rub it on the marble surface to quickly restore its shine.
4. **Baking soda:** Baking soda is another useful substance for cleaning marble. Put a tablespoon of baking soda in a glass or container and mix. The resulting compound is a slightly abrasive paste that will penetrate the marble, freeing it from foreign substances, the stains. Baking soda is also perfect for polishing, so the

marble will look shinier after the treatment.

5. **Detergents for marble:** On the market, you can find numerous special detergents for cleaning marble surfaces. They are very useful for those who have large marble surfaces to wash, such as floors. Make sure that the detergent is not too acidic and aggressive, or the surface will be weakened over time and more susceptible to stains.

### HOW NOT TO CLEAN MARBLE:



#### CAUTION

Do not use generic household cleaners of any kind.

Cleaning marble with products purchased in non-specialised shops that contain acids, alkalis and other chemicals can mark or damage the surface, leaving the stone more vulnerable to staining.

The most common and popular household cleaners are too aggressive for use on marble and can cause damage.

Trying to save time by using low-end products such as general surface cleaners will only lead to expensive repairs or marble restoration.



#### CAUTION

Do not use vinegar, ammonia or lemon juice.

Powders and even “soft” creams contain abrasives that can scratch and dull the surface.

Detergent soap scum and water are the main contributors to bathroom wear.

Use only specific detergents for marble to avoid most marble cleaning problems.

**CAUTION**

Do not place toiletry products on the worktop.

Hair products, toothpaste, perfumes, colognes, nail products, creams, lotions and potions can stain or mark the surface leaving dots, rings or dull areas.

Protect surfaces by making sure these products do not come into contact with the marble.

### 13.7 SPEED MULTISENSOR (LOG) MAINTENANCE

Component	Maintenance	Notes and precautions
LOG - speed multisensor with valve	Regular check Ordinary Maintenance	As indicated in the Manufacturer's manual. <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;"><b>MAINTENANCE</b></p> <p>At least once every six months check the correct operation.</p> <p>At least once every six months check the connection of the cables.</p> <p>At least once every six months check the propeller and grease the outer Log.</p> </div>





FERRETTIYACHTS

14



## TROUBLESHOOTING

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  - 14. TROUBLESHOOTING**
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## 14.1 GENERAL NOTES

The yacht is equipped with a large number of complex devices and installations. These require regular checks and maintenance to keep their operation correct.

One of the factors that might lead to problems or faults, is usually the irregular use of the yacht and, as a consequence of this, of the on-board devices.

Experience has shown that the regular use of the devices normally means fewer problems and, therefore, we recommend regularly operating all on-board devices for short periods.

When an on-board problem is detected, it is essential to carry out a quick check in order to understand its cause and, if possible, to find a remedy.

In order to analyse a malfunction it is appropriate to ask the following questions:

- Is the malfunction caused by a human error?
- Is the malfunction due to bad weather conditions?
- Is the malfunction due to a device failure or to a fault of another external device, but in some way connected to the first one?
- At what stage does the malfunction occur: at the start, at steady state, at device switch OFF?
- Does the malfunction occur repeatedly; if yes in which way?
- What does the malfunction imply from an operating point of view?
- Does the malfunction trigger any signals (luminous and/ or acoustic: sirens, buzzers, etc.) and/or messages on a display and/or anomalous noises (like whistles, beats, buzzes, etc..) and/or anomalous smells (burning smell)?
- Does the malfunction interfere with the operation of other devices?
- Is the malfunction a real apparent fault (that is, it can be cleared after a device reset and following switch ON).

The best, most complete answer we can give to the previous questions, will give us a malfunction analysis.

This section of the Manual analyses the most likely causes, that may lead to the malfunctioning of a component of the main components/devices on board.

For any possible analysed cause, a corrective action is advised, in order provide a solution to the problem that is as effective as possible.



### WARNING

We recommend, in order to operate with peace of mind, in full safety, taking good note of the Safety Rules relevant to Maintenance described in the "SAFETY RULES".



### WARNING

Corrective actions may only be carried out by specialised and authorised personnel. FERRETTI YACHTS declines all responsibility for proposed corrective actions carried out by unskilled personnel.



### CAUTION

For more detailed information, please refer to the various Manufacturer's Service Departments or contact the FERRETTI YACHTS After Sales & Service Department directly.

## 14.2 PROPULSION ENGINES

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<b>1.</b> Engine does not turn when starter is actuated: <ul style="list-style-type: none"> <li>- Battery</li> <li>- Starter</li> <li>- Engine wiring</li> <li>- LOP Local Operation Panel</li> <li>- ECU Engine Control Unit</li> <li>- Engine</li> <li>- Start-interlock limit switch</li> </ul>	<ul style="list-style-type: none"> <li>• Low or defective</li> <li>• Cable connections defective</li> <li>• Engine wiring or starter defective</li> <li>• Faulty</li> <li>• Loose seating of assemblies or connectors</li> <li>• Loose plug-in connections</li> <li>• Gear locked (engine cannot start manually)</li> <li>• Limit switch not installed or defective</li> <li>• Wiring defective</li> </ul>	<ul style="list-style-type: none"> <li>• Charge or replace (see Manufacturer's documentation)</li> <li>• Check that cable connections are properly secured (see Manufacturer's documentation)</li> <li>• Check that cable connections are properly secured, contact Service</li> <li>• Contact Service Department</li> <li>• Visual inspection</li> <li>• Check plug-in connections</li> <li>• Contact Service Department</li> <li>• Check limit switch</li> <li>• Check wiring</li> </ul>
<b>2.</b> Engine turns but does not fire: <ul style="list-style-type: none"> <li>- Starter</li> <li>- Engine wiring</li> <li>- Fuel system</li> <li>- ECU Engine Control Unit</li> </ul>	<ul style="list-style-type: none"> <li>• Poor or defective starter rotation</li> <li>• Faulty</li> <li>• Not vented</li> <li>• Faulty</li> </ul>	<ul style="list-style-type: none"> <li>• Charge or replace battery (see Manufacturer's documentation)</li> <li>• Contact Service Department</li> <li>• Check vent</li> <li>• Contact Service Department</li> </ul>

Problem	Cause	Corrective action
<p><b>3.</b> Engine fires unevenly:</p> <ul style="list-style-type: none"> <li>- Fuel injection equipment</li> <li>- Engine wiring</li> <li>- Fuel system</li> <li>- ECU Engine Control Unit</li> </ul>	<ul style="list-style-type: none"> <li>• Injector defective</li> <li>• Faulty</li> <li>• Not vented</li> <li>• Faulty</li> </ul>	<ul style="list-style-type: none"> <li>• Replace</li> <li>• Contact Service Department</li> <li>• Check vent</li> <li>• Contact Service Department</li> </ul>
<p><b>4.</b> Engine does not reach full-load speed:</p> <ul style="list-style-type: none"> <li>- Fuel supply</li> <li>- Air supply</li> <li>- Fuel injection equipment</li> <li>- Engine wiring</li> <li>- Yacht</li> <li>- Rudder</li> <li>- Propeller</li> </ul>	<ul style="list-style-type: none"> <li>• Shut OFF</li> <li>• Fuel pre-filter clogged (water/fuel separator)</li> <li>• Fuel filter clogged</li> <li>• Air cleaner clogged</li> <li>• Injector defective</li> <li>• Injection pump defective</li> <li>• Faulty</li> <li>• Yacht too heavy</li> <li>• Yacht's trim position</li> <li>• Marine growths on hull, propeller shaft, propeller, rudder</li> <li>• Rudder position</li> <li>• After propeller replacement: propeller too small/large</li> </ul>	<ul style="list-style-type: none"> <li>• Open shut-OFF valve before fuel pre-filter (water/fuel separator)</li> <li>• Replace</li> <li>• Replace</li> <li>• Check air cleaner clogging indicator</li> <li>• Replace</li> <li>• Replace</li> <li>• Contact Service Department</li> <li>• Check yacht's load condition, reduce load if necessary</li> <li>• Trim yacht</li> <li>• Clean</li> <li>• Align rudder</li> <li>• Replace only with original spares</li> </ul>

Problem	Cause	Corrective action
<b>5.</b> Engine speed not steady: <ul style="list-style-type: none"> <li>- Fuel injection equipment</li> <li>- Speed sensor</li> <li>- Fuel system</li> <li>- ECU Engine Control Unit</li> </ul>	<ul style="list-style-type: none"> <li>• Injector defective</li> <li>• Injection pump defective</li> <li>• Faulty</li> <li>• Not vented</li> <li>• Faulty</li> </ul>	<ul style="list-style-type: none"> <li>• Replace</li> <li>• Replace</li> <li>• Contact Service Department</li> <li>• Vent</li> <li>• Contact Service Department</li> </ul>
<b>6.</b> Charge-air temperature too high: <ul style="list-style-type: none"> <li>- Coolant</li> <li>- Intercooler</li> <li>- Engine room</li> </ul>	<ul style="list-style-type: none"> <li>• Incorrect coolant concentration</li> <li>• Contaminated</li> <li>• Air intake temperature too high</li> </ul>	<ul style="list-style-type: none"> <li>• Check coolant properties</li> <li>• Contact Service Department</li> <li>• Check fans and ventilation air supply</li> </ul>
<b>7.</b> Charge air pressure too low: <ul style="list-style-type: none"> <li>- Air supply</li> <li>- Intercooler</li> <li>- Turbo charger exhaust</li> </ul>	<ul style="list-style-type: none"> <li>• Air cleaner clogged</li> <li>• Contaminated</li> <li>• Faulty</li> </ul>	<ul style="list-style-type: none"> <li>• Check air cleaner clogging indicator</li> <li>• Contact Service Department</li> <li>• Contact Service Department</li> </ul>
<b>8.</b> Coolant leaks from intercooler: <ul style="list-style-type: none"> <li>- Intercooler</li> </ul>	<ul style="list-style-type: none"> <li>• Leaking, major coolant discharge</li> </ul>	<ul style="list-style-type: none"> <li>• Contact Service Department</li> </ul>
<b>9.</b> Exhaust gas black: <ul style="list-style-type: none"> <li>- Air supply</li> <li>- Fuel injection equipment</li> <li>- Yacht</li> </ul>	<ul style="list-style-type: none"> <li>• Air cleaner clogged</li> <li>• Injector defective</li> <li>• Injection pump defective</li> <li>• Overload</li> </ul>	<ul style="list-style-type: none"> <li>• Check air cleaner clogging indicator</li> <li>• Replace</li> <li>• Replace</li> <li>• Contact Service Department</li> </ul>
<b>10.</b> Exhaust gas blue: <ul style="list-style-type: none"> <li>- Engine oil</li> <li>- Exhaust turbocharger, piston rings, cylinder liner</li> </ul>	<ul style="list-style-type: none"> <li>• Too much oil in engine</li> <li>• Oil separator clogged</li> <li>• Faulty</li> </ul>	<ul style="list-style-type: none"> <li>• Drain engine oil</li> <li>• Replace</li> <li>• Contact Service Department</li> </ul>

Problem	Cause	Corrective action
<p><b>II.</b> White exhaust gas:</p> <ul style="list-style-type: none"> <li>- Engine</li> <li>- Fuel system</li> <li>- Intercooler</li> </ul>	<ul style="list-style-type: none"> <li>• Not at operating temperature</li> <li>• Water in fuel</li> <li>• Leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Run engine to reach operating temperature</li> <li>• Check fuel pre-filter (water/fuel separator filter) and drain pre-filter</li> <li>• Contact Service Department</li> </ul>

## 14.3 GEAR BOX

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
1. Transmission oil temperature too high	<ul style="list-style-type: none"> <li>Insufficient water flows through oil heat exchanger</li> <li>Drain sludge from oil cooler</li> <li>Undefined range, clutch slipping</li> </ul>	<ul style="list-style-type: none"> <li>Increase water flow</li> <li>Clean oil cooler</li> <li>Adjust mechanism</li> </ul>
2. Transmission oil temperature too low	<ul style="list-style-type: none"> <li>Excessive water flow through heater exchanger</li> </ul>	<ul style="list-style-type: none"> <li>Reduce water flow</li> </ul>
3. Oil pressure upstream of oil cooler and filter too high (*)	<ul style="list-style-type: none"> <li>Clogged oil filter</li> <li>Oil cooler dirty</li> </ul>	<ul style="list-style-type: none"> <li>Clean filter and drain off oil sludge</li> <li>Clean oil side of oil cooler</li> </ul>
4. No operating oil pressure (*)	<ul style="list-style-type: none"> <li>No oil in transmission</li> <li>Wrong rotation direction at transmission input</li> <li>Faulty display unit</li> </ul>	<ul style="list-style-type: none"> <li>Add oil</li> <li>Use special transmission version</li> <li>Remedy fault</li> </ul>
5. Operating oil pressure too low (*)	<ul style="list-style-type: none"> <li>Oil viscosity too low</li> <li>Incorrect oil pump ratio</li> <li>Defective oil pump</li> <li>Pressure relief valve leaking</li> <li>Timeswitch for pressure modulation defective</li> </ul>	<ul style="list-style-type: none"> <li>Use a prescribed oil grade</li> <li>Adjust oil pump ratio to suit engine operating speed range</li> <li>Replace oil pump</li> <li>Remedy the fault</li> <li>See Manufacturer's documents</li> </ul>
6. Operating oil pressure too high (*)	<ul style="list-style-type: none"> <li>Oil viscosity too high</li> <li>Incorrect oil pump ratio</li> </ul>	<ul style="list-style-type: none"> <li>Use a prescribed oil grade</li> <li>Adjust oil pump ratio to suit engine operating speed range.</li> </ul>

(\*) see monitoring data.

Problem	Cause	Corrective action
<p><b>7.</b> Drive interrupted between transmission input and transmission output; clutch not transmitting torque</p>	<ul style="list-style-type: none"> <li>• Mechanical transmission actuation: incorrect shift angle</li> <li>• Electrical transmission actuation: electrical system fault</li> <li>• Defective solenoid valve</li> <li>• Longitudinal valve stuck</li> <li>• No operating oil pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust setting</li> <li>• Remedy electrical system fault</li> <li>• Replace</li> <li>• Remedy fault</li> <li>• See “No operating oil pressure” or “Oil pressure too low”</li> </ul>
<p><b>8.</b> Drive between transmission input and transmission output cannot be interrupted; clutch does not disengage</p>	<ul style="list-style-type: none"> <li>• For possible causes and remedial actions, see “clutch not transmitting torque” fault</li> </ul>	<ul style="list-style-type: none"> <li>• Use a prescribed oil grade</li> <li>• Adjust oil pump ratio to suit engine operating speed range</li> </ul>
<p><b>9.</b> Clutch slips at high engine speed</p>	<ul style="list-style-type: none"> <li>• Operating oil pressure too low (*)</li> </ul>	<ul style="list-style-type: none"> <li>• See remedy for “Operating oil pressure too low”. If the fault cannot be remedied on board, proceed at reduced engine speed - so that the clutch does not slip - until repairs can be carried out. Avoid changes in direction or only change direction with the propeller almost at a standstill and with engine idle speed as low as possible</li> </ul>
<p><b>10.</b> Oil level decreases rapidly (as indicated on the dipstick). See maintenance job “Oil level check”</p>	<ul style="list-style-type: none"> <li>• Leaks on housing joints or oil lines, oil escaping from shaft seals</li> <li>• Oil cooler leaking into cooling system</li> </ul>	<ul style="list-style-type: none"> <li>• Correct mechanical fault</li> <li>• Remedy fault, replace oil cooler if necessary</li> </ul>
<p><b>11.</b> Oil level increases. See maintenance job “Oil level check”</p>	<ul style="list-style-type: none"> <li>• Water entering the oil circuit from the cooling system</li> </ul>	<ul style="list-style-type: none"> <li>• Correct mechanical fault</li> </ul>
<p><b>12.</b> Transmission is too loud at certain speed ranges</p>	<ul style="list-style-type: none"> <li>• Torsional vibration resonance of propulsion system in engine idle speed range</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid critical speed range. Use more suitable flexible coupling (see Manufacturer’s document)</li> </ul>

(\*) see monitoring data.

Problem	Cause	Corrective action
<b>I3.</b> Transmission too loud at engine idle speed range	<ul style="list-style-type: none"> <li>• Torsional vibration resonance of propulsion system in engine idle speed range</li> </ul>	<ul style="list-style-type: none"> <li>• Increase engine idle speed range</li> </ul>
<b>I4.</b> Engine stalls following rapid change from “Ahead” to “Astern”	<ul style="list-style-type: none"> <li>• Engine idle speed too low</li> <li>• Change in direction made too quickly or made at excessive craft speed</li> </ul>	<ul style="list-style-type: none"> <li>• Increase engine idle speed range</li> <li>• Change direction (see Manufacturer’s document)</li> </ul>

If the fault cannot be remedied, the transmission lubricating oil supply is also at risk. Proceed at reduced engine speed only until repairs can be carried out.

## 14.4 GENERATORS

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<p><b>1.</b> Fluctuating or low oil pressure</p>	<ul style="list-style-type: none"> <li>• Oil level too low</li> <li>• Dirty oil</li> </ul>	<ul style="list-style-type: none"> <li>• Stop the generator immediately and top up with suitable oil</li> <li>• Replace dirty oil with new suitable oil</li> </ul>
<p><b>2.</b> Cooling water temperature too high</p>	<ul style="list-style-type: none"> <li>• Excessive load</li> <li>• Air in the cooling circuit</li> <li>• Coolant low level or wrong mixture</li> <li>• Sea water intake is obstructed or sea water intake filter is clogged</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce the load</li> <li>• Bleed the circuit</li> <li>• Restore the cooling water level and correct percentage</li> <li>• Clean sea cock and strainer</li> </ul>
<p><b>3.</b> Black smoke</p>	<ul style="list-style-type: none"> <li>• Engine room insufficient ventilation</li> <li>• Excessive load</li> <li>• Unsuitable fuel</li> <li>• Cooling water temperature too high</li> <li>• Lack of maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Check that air intakes are not obstructed</li> <li>• Reduce the load</li> <li>• Replace with suitable fuel</li> <li>• See step 2</li> <li>• Have the scheduled maintenance operations carried out</li> </ul>
<p><b>4.</b> Blue smoke</p>	<ul style="list-style-type: none"> <li>• Excessive oil</li> <li>• Dirty oil</li> <li>• Lack of maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Discharge the excess oil by draining oil filters</li> <li>• Replace dirty oil with new suitable oil</li> <li>• Have the scheduled maintenance operations carried out</li> </ul>
<p><b>5.</b> White smoke</p>	<ul style="list-style-type: none"> <li>• Cold generator</li> <li>• Generator with too low load</li> </ul>	<ul style="list-style-type: none"> <li>• Let the generator warm up</li> <li>• Increase the generator load</li> </ul>

Problem	Cause	Corrective action
<b>6.</b> Lack of power	<ul style="list-style-type: none"> <li>• Engine room insufficient ventilation</li> <li>• Fuel filter clogged</li> <li>• Unsuitable fuel</li> <li>• Cooling water temperature too high</li> <li>• Lack of maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Check that air intakes are not obstructed</li> <li>• Clean</li> <li>• Replace with suitable fuel</li> <li>• See step 2</li> <li>• Have the scheduled maintenance operations carried out</li> </ul>
<b>7.</b> Excessive or unusual noise	<ul style="list-style-type: none"> <li>• Insulation cover not properly fastened</li> <li>• Leakage from the exhaust</li> <li>• Exhaust not properly fastened</li> <li>• Lack of maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Check the exhaust</li> <li>• Check the exhaust</li> <li>• Have the scheduled maintenance operations carried out</li> </ul>

## 14.5 BATTERY CHARGER

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<p><b>1.</b> No inverter output voltage. The inverter does not work, or just for a few seconds</p>	<ul style="list-style-type: none"> <li>• Battery voltage may be too low. Low voltage cut-out switch trips at 10V (12V), 20V (24V) or 40V (48V).</li> <li>• Battery connections are corroded</li> <li>• Check if the inverter is overheated. In case of overheating LED of temperature + failure lights up</li> <li>• Overload or short circuit</li> <li>• LED overload + failure will be lit</li> </ul>	<ul style="list-style-type: none"> <li>• Recharge battery for 24 hrs</li> <li>• Check for corrosion, and replace bad sections</li> <li>• Disconnect connected load. Improve ventilation</li> <li>• Disconnect excessive load</li> <li>• Remove short circuit condition</li> </ul>
<p><b>2.</b> Battery charger does not operate</p>	<ul style="list-style-type: none"> <li>• AC voltage not supplied</li> <li>• Input voltage too low</li> <li>• The battery charger will not operate below 160/80V</li> </ul>	<ul style="list-style-type: none"> <li>• Check installation</li> <li>• The AC green LED should light up, if power is supplied</li> <li>• Check fuses or magneto-thermals</li> <li>• Check the generator output voltage, remove connected load, output voltage should come up</li> </ul>
<p><b>3.</b> The battery charger does not operate, while mains voltage is present</p>	<ul style="list-style-type: none"> <li>• Mains frequency could be too high or too low</li> <li>• The frequency must be within 35-66 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• Check the generator output frequency</li> <li>• Check generator rpm</li> </ul>

Problem	Cause	Corrective action
<b>4.</b> Batteries not fully charged	<ul style="list-style-type: none"> <li>• Charge current too low</li> <li>• Current to load too high</li> <li>• Charge time too short</li> <li>• Battery temperature too low</li> <li>• Defective battery (short circuit in cell)</li> </ul>	<ul style="list-style-type: none"> <li>• See “charge current too low”</li> <li>• Decrease the battery load</li> <li>• Replace the battery</li> <li>• Use temperature sensor</li> <li>• Replace the battery</li> </ul>
<b>5.</b> Battery loses charge quickly	<ul style="list-style-type: none"> <li>• Battery capacity reduced because:             <ul style="list-style-type: none"> <li>- Wastage</li> <li>- Sulphating/stagnation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Replace batteries</li> <li>• Charge/discharge several times, this might help, otherwise replace batteries</li> </ul>
<b>6.</b> Batteries are warm	<ul style="list-style-type: none"> <li>• Defective batteries (short circuit in cell)</li> <li>• Battery temperature too high</li> <li>• Charge voltage too high</li> </ul>	<ul style="list-style-type: none"> <li>• Replace batteries</li> <li>• Use temperature sensor</li> <li>• Check the switches setting</li> </ul>

## 14.6 INVERTER

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<b>1.</b> No output voltage and no lighting of warning lights (LED OFF)	<ul style="list-style-type: none"> <li>• High output voltage</li> <li>• DC fuse burnt out</li> <li>• Switch set on remote control, but this is not available</li> </ul>	<ul style="list-style-type: none"> <li>• Check the battery voltage and switch OFF the charger</li> <li>• Replace the fuse</li> <li>• Place the switch to ON</li> </ul>
<b>2.</b> No voltage in output, LED of battery charge is ON	<ul style="list-style-type: none"> <li>• Batteries discharged</li> </ul>	<ul style="list-style-type: none"> <li>• Charge the batteries, the inverter will switch on when the battery voltage exceeds 24 V</li> </ul>
<b>3.</b> No voltage in output, temperature LED ON	<ul style="list-style-type: none"> <li>• The inverter is overloaded</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce the charge and let the inverter cool down</li> </ul>
<b>4.</b> No output voltage, LED “ON” is lit	<ul style="list-style-type: none"> <li>• Inverter is in stand-by</li> </ul>	<ul style="list-style-type: none"> <li>• Connect a charge or modify the jumper’s settings</li> </ul>
<b>5.</b> Low voltage in output	<ul style="list-style-type: none"> <li>• Low power supply = jumper adjustment</li> </ul>	<ul style="list-style-type: none"> <li>• Connect a charge &gt; 30 W or modify the jumper’s settings</li> </ul>
<b>6.</b> The inverter turns ON and OFF, the “ON” LED and the battery charger LED flash in turns	<ul style="list-style-type: none"> <li>• Batteries discharged</li> <li>• Wires are too thin</li> <li>• The connections are corroded or faulty</li> </ul>	<ul style="list-style-type: none"> <li>• Disconnect the charge and charge the batteries</li> <li>• Replace with wires of correct diameter</li> <li>• Tighten connections. If wires are burnt out, replace them</li> </ul>
<b>7.</b> The inverter lights ON/OFF, the ON LED is lit, the “overload” LED flashes once a second and the fan operates at full speed.	<ul style="list-style-type: none"> <li>• The inverter is overloaded</li> <li>• The inverter has been switched OFF ten times as a result of an overload or short-circuit condition.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce the inverter load</li> <li>• Reduce the load or the short-circuit. Reset the inverter manually through ON/OFF switch.</li> </ul>

## 14.7 UTILITIES

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
I. A connected utility will not receive power supply	<ul style="list-style-type: none"> <li>• Power line fuses blown</li> <li>• Wiring disconnected</li> <li>• Connections oxidised maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Check the line and replace the fuses</li> <li>• Check wiring connections</li> <li>• Check and carry out proper maintenance</li> </ul>

## 14.8 FUEL SYSTEM

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
I. Irregular fuel supply to engines and generators and engines	<ul style="list-style-type: none"> <li>• Circuit valves closed or not fully open</li> <li>• Filters clogged</li> </ul>	<ul style="list-style-type: none"> <li>• Check/Open</li> <li>• Clean</li> </ul>

## 14.9 BLACK OR GREY WATER DRAINING SYSTEM

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
I. Holding tank or grey water tank drain irregular	<ul style="list-style-type: none"> <li>• Circuit valves closed or not fully open</li> <li>• Lack of maintenance</li> <li>• Abnormal pump operation</li> </ul>	<ul style="list-style-type: none"> <li>• Check/open</li> <li>• Carry out maintenance</li> <li>• Check</li> </ul>

### 14.10 HOT/COLD FRESH WATER SYSTEM

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<b>1.</b> No water to outlets	<ul style="list-style-type: none"> <li>• Circuit valves closed or not fully open</li> <li>• Tanks empty</li> <li>• Pump not receiving electric power supply</li>   <li>• Protection pump mode</li> </ul>	<ul style="list-style-type: none"> <li>• Check/open</li> <li>• Fill the tanks and bleed the circuit</li> <li>• Check</li>   <li>• Reset</li> </ul>
<b>2.</b> Pump starts even with outlets closed	<ul style="list-style-type: none"> <li>• Circuit leaking</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate leakage</li> </ul>
<b>3.</b> The pump gets continuously ON/OFF	<ul style="list-style-type: none"> <li>• The tank has no air inside the membrane</li> </ul>	<ul style="list-style-type: none"> <li>• Contact the Service Department</li> </ul>

### 14.10.1 Watermaker (optional)

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<b>1.</b> The pump runs but can't reach the pressure as indicated	<ul style="list-style-type: none"> <li>• The pump sucks air</li> <li>• Worn valves</li> <li>• Worn seat of pressure relief valve</li> <li>• Improper or worn nozzle</li> <li>• Worn gaskets</li> </ul>	<ul style="list-style-type: none"> <li>• Check the intake pipes. They must be well air-tight</li> <li>• Check and/or replace</li> <li>• Check and clean</li> <li>• Check and/or replace</li> <li>• Check and/or replace</li> </ul>
<b>2.</b> Irregular pressure variations	<ul style="list-style-type: none"> <li>• Worn intake and/or pressure relief valve</li> <li>• Presence of foreign bodies in valves</li> <li>• Air suction</li> <li>• Worn gaskets</li> <li>• Relief valve too open</li> </ul>	<ul style="list-style-type: none"> <li>• Check and/or replace</li> <li>• Check and clean</li> <li>• Check intake pipes</li> <li>• Check and/or replace</li> <li>• Close the valve nut clockwise</li> </ul>
<b>3.</b> Drop in pressure	<ul style="list-style-type: none"> <li>• Worn nozzle</li> <li>• Worn intake and/or pressure relief valve</li> <li>• Presence of foreign bodies in valves</li> </ul>	<ul style="list-style-type: none"> <li>• Replace</li> <li>• Check and/or replace</li> <li>• Check and clean</li> </ul>
<b>4.</b> Noise	<ul style="list-style-type: none"> <li>• Air suction</li> <li>• Broken or unloaded spring of intake and/ or pressure valves</li> <li>• Presence of foreign matters</li> <li>• Worn bearings</li> <li>• Exceeding temperatures of pumped fluid</li> </ul>	<ul style="list-style-type: none"> <li>• Check the suction pipes are well air-tight</li> <li>• Check and clean</li> <li>• Check and clean valves</li> <li>• Replace</li> <li>• Decrease the temperature</li> </ul>

## 14.11 BILGE PUMPS

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<p><b>1.</b> Bilge pump does not run. No water pumped</p>	<ul style="list-style-type: none"> <li>• Wire connections</li>   <li>• Blown fuse</li> </ul>	<ul style="list-style-type: none"> <li>• Check wire connection integrity, make sure wire connections are not corroded</li> <li>• A visual check may not be enough, a slight pull on each wire will indicate if wires are still connected</li> <li>• Check to ensure that no wire joints are hanging down into the water</li>   <li>• Check the correct fuse size (fuse size is printed on the side of the bilge pump)</li> <li>• If fuse size is correct, check the impeller through the inlet opening to be sure it is not jammed or stuck with debris</li> </ul>
<p><b>2.</b> Repeated blown fuse</p>	<ul style="list-style-type: none"> <li>• Fuse rating or clogged impeller</li> </ul>	<ul style="list-style-type: none"> <li>• Re-check fuse to verify compliance to pump specifications</li> <li>• Also examine impeller area &amp; clean any obstructions</li> </ul>
<p><b>3.</b> Pump runs without water output</p>	<ul style="list-style-type: none"> <li>• Airlocking/cavitating</li>   <li>• Pump strainer &amp; impeller area clogged with debris</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect &amp; reposition hose for short vertical discharge</li> <li>• We suggest installing pump below water line to ensure sufficient water flow</li> <li>• Faulty or clogged check valve may add to pump air locking</li>   <li>• Disconnect pump &amp; clean outside of strainer, clean debris around impeller, &amp; reattached &amp; re-hook wiring</li> </ul>

Problem	Cause	Corrective action
<b>4.</b> Pump shaft corroded	<ul style="list-style-type: none"> <li>• Electrolysis, cracked housing</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect pump housing for cracks which can cause leakage into motor cavity causing corrosion</li> <li>• Possible incorrect current running through wiring causing corrosion.</li> </ul>
<b>5.</b> Pump stays on after water is pumped out	<ul style="list-style-type: none"> <li>• Wire connections may be incorrect, automatic pumps may have faulty circuit, possible electrical short</li> </ul>	<ul style="list-style-type: none"> <li>• On bilge pumps check for correct positive and negative battery connections</li> </ul>
<b>6.</b> Nozzle breakage	<ul style="list-style-type: none"> <li>• Hose clamp fastened too tightly</li> </ul>	<ul style="list-style-type: none"> <li>• Suggest using plastic style hose clamp, do not use PVC hose</li> </ul>
<b>7.</b> Pump impeller spins backward	<ul style="list-style-type: none"> <li>• Check wiring</li> </ul>	<ul style="list-style-type: none"> <li>• Switch wiring for correct polarity</li> </ul>
<b>8.</b> Wires overheated, melted insulation	<ul style="list-style-type: none"> <li>• Incorrect fuse size, possible jammed impeller</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect &amp; clean impeller area of any debris</li> <li>• Make sure that impeller is free to rotate</li> <li>• Check to make certain correct fuse rating is installed</li> <li>• REPLACE ALL DAMAGED WIRING</li> </ul>

## 14.12 STEERING SYSTEM

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<p><b>1.</b> Air bubbles or foam in the system</p>	<ul style="list-style-type: none"> <li>• The oil level in the tank is too low and does not allow the suction pipe to be completely plunged. In this way the pump sucks oil and air at the same time</li> <li>• Possible openings and little holes on the suction pipes or faulty pump seals, which allow air to penetrate</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Check</li> </ul>
<p><b>2.</b> The pump does not deliver oil</p>	<ul style="list-style-type: none"> <li>• Wrong rotation direction</li> <li>• Obstructed ducts or suction strainers</li> <li>• Oil level in the tank too low</li> <li>• Air leakages in the suction system</li> <li>• Oil too viscous with some difficulties in passing through</li> <li>• The shaft or other components of the pump are broken</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Replace</li> </ul>
<p><b>3.</b> Lack of pressure in the system</p>	<ul style="list-style-type: none"> <li>• The pump does not deliver oil</li> <li>• Relief valve is not calibrated</li> <li>• Free discharge of oil to the tank somewhere in the system</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Check</li> <li>• Check</li> </ul>

Problem	Cause	Corrective action
<b>4.</b> The pressure of the system is low or fluctuating	<ul style="list-style-type: none"> <li>• Possible leaks in the piping or elsewhere in pressurized parts of the system</li> <li>• Relief valve set at a too low rate</li> <li>• The relief valve remains open or oscillates in its housing</li> <li>• Restriction of pump suction pipes or possible obstruction of filter</li> <li>• Air in leaks in suction pipes or by pump seals</li> <li>• Worn pump</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Check</li> </ul>
<b>5.</b> Pump too noisy	<ul style="list-style-type: none"> <li>• Wrong pump rotation direction</li> <li>• Oil with air bubbles</li> <li>• Oil viscosity causing obstructions to the suction system</li> <li>• Irregular flow of oil into the pump, caused by an insufficient filtering capacity of the filter (the filter could be dirty or not suitable)</li> <li>• Big lacks of charge along the suction line</li> <li>• Worn pump components</li> <li>• Relief valve vibrations</li> <li>• Mechanical vibrations due to bad anchor action</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Bleed</li> <li>• Check</li> <li>• Check/Clean</li> <li>• Check</li> <li>• Check/Replace</li> <li>• Check</li> <li>• Check</li> </ul>

Problem	Cause	Corrective action
<p><b>6.</b> Too high temperature</p>	<ul style="list-style-type: none"> <li>• The pump is working at a higher pressure than permitted</li> <li>• Faulty or worn pump which causes internal leaks</li> <li>• Excessive blow-by through valves and cylinder</li> <li>• Oil too viscous</li> <li>• Continuous overloaded operation</li> <li>• Temperature too high in the room where the pump unit is placed</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Check</li> <li>• Check</li> </ul>
<p><b>7.</b> Leaks from the seals</p>	<ul style="list-style-type: none"> <li>• Possible abrasive substances have entered into the oil circulation, damaging the pump's shaft</li> <li>• Seals are faulty, broken or mounted in a wrong way</li> <li>• Too hot oil</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Check</li> <li>• Check</li> </ul>
<p><b>8.</b> Pump overcharging the motor</p>	<ul style="list-style-type: none"> <li>• Too viscous oil</li> <li>• Obstructed delivery line or excessive resistance</li> </ul>	<ul style="list-style-type: none"> <li>• Check</li> <li>• Check</li> </ul>

## 14.13 AIR CONDITIONING SYSTEM (OPTIONAL)

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Cause	Corrective action
<b>1.</b> High crankcase temperature	<ul style="list-style-type: none"> <li>• Overheating</li> <li>• Poor circulation of treated water (winter cycle) or condensation water (summer cycle)</li> </ul>	<ul style="list-style-type: none"> <li>• Check coolant charge</li> <li>• Correct circulation</li> </ul>
<b>2.</b> Low suction pressure	<ul style="list-style-type: none"> <li>• Low coolant charge</li> <li>• Poor circulation of condensation water (winter cycle) or treated water (summer cycle)</li> </ul>	<ul style="list-style-type: none"> <li>• Add</li> <li>• Correct circulation</li> </ul>
<b>3.</b> System noisy	<ul style="list-style-type: none"> <li>• Loose fastening bolts</li> <li>• Unit base improperly insulated</li> <li>• Improper support or insulation of piping</li> <li>• Piping vibrations</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten bolts</li> <li>• Insulate foundation</li> <li>• Use correct piping techniques and support piping with suitable hangers</li> <li>• Clip pipes correctly. Check the couplings</li> </ul>
<b>4.</b> Compressor does not start	<ul style="list-style-type: none"> <li>• Power OFF</li> <li>• Thermostat misadjusted</li> <li>• Pressure switch open</li> <li>• Faulty wiring</li> <li>• Pumps not operating</li> <li>• Flow-switch does not close</li> <li>• Gas discharging unit</li> </ul>	<ul style="list-style-type: none"> <li>• Check the supply. Check fuses and/or magneto-thermal switches</li> <li>• Adjust thermostat</li> <li>• Reset switch and check proper calibration, 20 bar (h.p.) and 2.5 bar (l.p.)</li> <li>• Check diagram and rewire</li> <li>• Check pumps free rotation. Check the magneto-thermal switches</li> <li>• Restore correct treated water circulation</li> <li>• Check coolant circuit for possible breaks due to transport and installation</li> </ul>
<b>5.</b> Compressor cycles intermittently	<ul style="list-style-type: none"> <li>• Low pressure switch erratic in operation</li> <li>• Low coolant charge</li> <li>• Internal protection tripped</li> </ul>	<ul style="list-style-type: none"> <li>• Check pressure switch setting. Check good circulation of condensed water</li> <li>• Add</li> <li>• Check for any voltage drop, correct</li> </ul>

Problem	Cause	Corrective action
<p><b>6.</b> High delivery pressure with compressor stop (high pressure switch).</p>	<ul style="list-style-type: none"> <li>• Coolant overcharge</li> <li>• Insufficient or no condenser water low; clogged condenser or sea-water strainer</li> <li>• Condensed water pump OFF</li> <li>• Poor treated water circulation (winter cycle)</li> <li>• Air in coolant circuit</li> </ul>	<ul style="list-style-type: none"> <li>• Remove excess coolant</li> <li>• Adjust water regulating valve to condenser; clean condenser or sea-water strainer</li> <li>• Check pump and start</li> <li>• Check for air in the circuit. Check for possible clogging</li> <li>• Restore vacuum and refill with coolant</li> </ul>

## 14.14 GANGWAY (OPTIONAL)

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.


Problem	Causa	Corrective action
<b>1.</b> The system does not react to the controls	<ul style="list-style-type: none"> <li>• Flat battery</li> <li>• 3 A fuse</li> </ul>	<ul style="list-style-type: none"> <li>• Verify that the battery of the sender is loaded or correctly inserted. Verify that the self learning of the sender code has been carried out</li> <li>• Check that the hydraulic control unit is correctly supplied; check for the integrity of the 3 A fuse</li> </ul>
<b>2.</b> The gangway does not move smoothly	<ul style="list-style-type: none"> <li>• The hydraulic power unit has a thermal protection</li> </ul>	<ul style="list-style-type: none"> <li>• Wait until hydraulic power unit is disconnected (about 5 minutes) and re-try handling on the adjusting trimmer (shift few degrees each time), if the problem continues, also with trimmer at bottom scale (clockwise) address to service department</li> </ul>

### 14.15 BOW (STANDARD) AND STERN (OPTIONAL) THRUSTERS

For further information, please contact the FERRETTI YACHTS After Sales & Service Department.

Problem	Causa	Corrective action
<p><b>1.</b> The electric motor does not turn and the warning light on the control panel is OFF</p>	<ul style="list-style-type: none"> <li>• No electric power supply</li> </ul>	<ul style="list-style-type: none"> <li>• Check that the main magneto-thermal switch has been activated</li> <li>• Check the status of the fuses of the control and main current; if necessary, replace them</li> <li>• Possible presence of a short circuit; check the cables</li> </ul>
<p><b>2.</b> The electric motor does not turn and the warning light on the control panel is ON</p>	<ul style="list-style-type: none"> <li>• Presence of a foreign body in the tunnel, which blocks the thruster</li> </ul>	<ul style="list-style-type: none"> <li>• Check and eliminate the cause of the block</li> </ul>
<p><b>3.</b> The motor turns too slowly</p>	<ul style="list-style-type: none"> <li>• The battery is insufficiently charged</li> <li>• The contact of the carbon blades is poor</li> <li>• Presence of seaweeds or fishing line stuck in the thruster</li> </ul>	<ul style="list-style-type: none"> <li>• Adequately charge the batteries</li> <li>• Replace the blades</li> <li>• Proceed to clean</li> </ul>
<p><b>4.</b> The motor turns (too) quickly but there is no propulsion</p>	<ul style="list-style-type: none"> <li>• The safety pin has broken due to the presence of an object in the tunnel</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the safety pin and eliminate the cause of the block of the thruster</li> </ul>





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