

Riva

OWNER'S MANUAL

130 BELLISSIMA

This manual has been drafted in compliance with standard UNI EN ISO 10240.
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130 BELLISSIMA

FOREWORD

CHAPTER 1

1.1 GENERAL INFORMATION

NAME OF THE YACHT 130 BELLISSIMA
TYPE OF YACHT FLY BRIDGE



CAUTION

The yacht must be supplemented with the equipment required by the local flag authorities.

1.1.1 Introduction to using 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.

Constant and regular maintenance of the on-board systems and of the yacht allows to extend its life and safe operation.

The maintenance operations described in the manual are simple, but should be performed by authorised and qualified technical staff only 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.

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

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



CAUTION

Please keep this manual carefully in a safe, dry and easily accessible place for an 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 by RIVA to the Owner consists of two types of documents:

- The **“Owner’s Manual”**, edited by experienced professional staff in compliance with the regulations in force;
- The **Technical Document Collection**, concerning the on-board devices/systems (engines, air conditioning, etc..): it consists in a series of independent manuals, delivered by the relevant Manufacturer and/or Suppliers.

The Owner’s manual is the Main Document and must be read in whole, in any case before considering the documents in the Technical Document Collection.

The associated Technical Documentation Collection makes up the set of the Reference Documents that are required to complete the information provided in the Owner’s Manual.

Since these documents are independent and aimed at giving information on specific single components, it is necessary to refer to them when indicated by the Main Document.



CAUTION

RIVA 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.

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This manual has been realized by the Builder in their mother tongue (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 drawn up in accordance with Directive 2013/53/EU, the UNI EN ISO 10240 standard and RINA S.p.A. (REGISTRO ITALIANO NAVALE).

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.

Read it carefully and familiarize yourself with its content before using the yacht for the first time.

If this is your first yacht or if you are switching to a type of craft that you are unfamiliar with, make sure you have gained enough experience in manoeuvring and operating it before taking command for your safety and to ensure maximum satisfaction.



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, RIVA WILL ALWAYS BE ABLE TO SUPPLY YOU WITH A NEW COPY OF IT.

**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**

RIVA 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**

There are specific regulations in force in some countries.

This yacht may only be operated by personnel authorised to control and operate in relation to the class of the yacht.

**CAUTION**

If the yacht is equipped with a life raft, carefully read the operating manual. The yacht should have on board the appropriate safety equipment (life jackets, safety line, etc..) depending on the type of yacht, to the weather conditions, etc.. This equipment is mandatory in some countries. The crew should 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 RIVA 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:

RIVA AFTER SALES & SERVICE DEPARTMENT

Via Ansaldo 7 - 47100

Forli - Italy

Tel +39 0543 474445

Fax +39 02 70058589

customer.service@riva-yacht.com

RIVA 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 RIVA After Sales & Service Department.



CAUTION

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



CAUTION

RIVA 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

RIVA 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 RIVA After Sales & Service Department 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. RIVA will not be liable for undelivered Warranty Certificates.

1.3 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.

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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..

1.4 NOTICES

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



CAUTION

It indicates a reminder to apply certain safety measures or to avoid certain unsafe practices that could lead to personal injury or damage to the yacht, to its components or to the environment.



WARNING

It indicates the existence of a possible hazard that may lead to personal injury or death, if proper safety precautions are not taken.



DANGER

It indicates the existence of a serious hazard that could involve a high probability of death or of serious injury if suitable safety precautions are not taken.



ENVIRONMENT

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

NOTE

Draws your attention on information and important memos.

MAINTENANCE

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

1.5 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.

1.6 CERTIFICATION, CLASSIFICATION AND IDENTIFICATION

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

The RIVA 130 BELLISSIMA yacht, on which you are about to cruise, has been obtained the homologated from RINA S.p.A. (REGISTRO ITALIANO NAVALE) after supervision of the hull, of the reinforcement structures, of the power system and of the safety equipment on board.

1.6.1 Yacht identification specifications

Manufacturer	FERRETTI S.p.A.
Model	130 BELLISSIMA
Type of yacht	FLY BRIDGE
Hull number	08
Design category	Vessel designed and built under RINA Rules for commercial use - RINA Certificate of class for pleasure use, C ✕ HULL, ● MACH, Y ch, SHORT RANGE NAVIGATION, COMPLIANCE REG CODE
Gross tonnage	< 300 GT

1.7 LOAD-CARRYING CAPACITY

Maximum number of passengers:	no. 20 (RINA S.p.A. class.)
Safety equipment (standard):	n° 20
Berths:	n° 15
Divided into:	<ul style="list-style-type: none"> • 1 in the captain's cabin (single bed); • 2 in the owner's cabin (double bed); • 2 in the VIP cabin (double bed); • 2 in the port-side guest cabin (double bed); • 2 in the starboard guest cabins (modular bed); • 2 in the starboard crew cabin (single beds); • 2 in the starboard bow crew cabin (single beds); • 2 in the Port bow crew cabin (single beds).



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.

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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 loading the yacht, never exceed the maximum transportable load. 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 discharge and dry yacht.



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 RIVA After Sales & Service Department.

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SAFETY

CHAPTER 2

2.1 SAFETY RULES AND WARNINGS

Your yacht has been designed paying maximum 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, the length and the expected type of cruise;
- Check the expected weather conditions in your cruising area;
- In any case, always act according to common sense.

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All those on board must be instructed and aware of precautions to be taken at all times:

- Move carefully around the yacht because its stability may be suddenly affected by the sea waves;
- People on board must know the location of life jackets, how to wear them and the location of fire extinguishers (see safety equipment) and of the life raft;
- All passengers must be aware of the risks caused by the fires and the correct way to proceed in the event a fire should occur;
- The engine room must be properly ventilated when the engines are running;
- Everybody on board must be able to release and launch the life buoy and 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 of inadvertently manoeuvring valves that are important for safe navigation.

Carefully read the instructions in this manual and the instructions affixed directly on the yacht, particularly those concerning safety.

Do not tamper with, disconnect, eliminate or by-pass the safety systems installed on board. Regularly verify the good working order of the safety equipment in order to guarantee their efficiency 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 recognised 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.

**DANGER****Carbon monoxide.**

Adequate ventilation of the yacht is required with the engines are running and when navigating at low speeds or in conditions where fumes may re-enter the hull.

**DANGER**

The personnel in charge of the yacht must not be under the influence of alcohol, drugs or narcotics.

**DANGER**

It is absolutely forbidden to remain on the external decks outside protected areas during navigation.

**CAUTION**

Always pay the utmost attention during navigation, especially in adverse weather conditions or with crashing waves.

2.1.1 Use-related rules

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.



WARNING

The Captain is the sole 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.

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. Anyway be always very careful during navigation also 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.

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 the speed limits, moreover pay always the highest attention during navigation.

**WARNING**

This yacht has been designed and built in accordance with Classification Society rules and is in all respects seaworthy and capable of navigation without limitation. However, the manufacturer draws attention to the dangers and navigation challenges in adverse sea and weather conditions. Such navigation must be undertaken with caution on the part of the yacht captain, who shall be solely and exclusively responsible for departure from any port or shelter notwithstanding forecasts of adverse sea and weather conditions, or ongoing adverse sea and weather conditions and shall adopt the appropriate speed, engine revolutions and course. The manufacturer declines any responsibility for improper use and navigation of the yacht in adverse sea and weather conditions.

**DANGER**
CARBON MONOXIDE POISONING

The combustion of fossil fuels produces a large quantity of carbon monoxide.

This is a colourless, odourless and highly toxic gas. Adequate ventilation of the yacht is therefore necessary when the engines or generators are switched on, especially when cruising at low speed or in conditions where fumes can re-enter the hull (such as when moored on the dock, anchored or lying at anchor).

**CAUTION**

Always pay the utmost attention during navigation, especially in adverse weather conditions or with crashing waves.

**CAUTION**

The garage hatch, aft beach area, swim ladder and gangway must always remain closed during navigation.

**DANGER**

It is forbidden to stand or sit on the bow dinette during high-speed navigation.

**CAUTION**

When using a jet-ski, each passenger must wear a lifejacket; the driver must also have a valid licence and comply with the rules of the country in which he/she is located.

**CAUTION**

Close the portlights, portholes and skylights during navigation, especially in adverse weather conditions.

Also ensure that doors are closed or locked to avoid impact with people or things.

**DANGER**

It is forbidden to carry out sudden manoeuvres at high speed. This can cause accidents for the people on board.

**WARNING**

For comfort and safety, reduce speed in the presence of waves.

**CAUTION**

The captain is responsible whenever the yacht is INOPERATIVE (i.e. not underway) but MANNED.

**WARNING**

Control and verification of compliance with safety requirements is a yacht's captain responsibility.

**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, to observe scrupulously the safety rules indicated in this manual.

**DANGER**

Unidentified external areas of the yacht: access to these areas is FORBIDDEN. Only professional personnel, on 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 anti-slipping 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, hazard of burns, hazard of stumbling and falling. The access to the engine room is exclusively allowed to trained and expert crew, prepared for the risks and equipped with proper safety devices.
- **Fly 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 not protected by rails against the fall at sea. During navigation the 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.

In case of fall overboard, following rescue devices can be used:

- Life buoy;
- Individual life jackets.
- Pilot ladder.

The easiest way to climb 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**

The pilot is responsible for ensuring boarding with the Jacob's ladder provided and properly set up every time the yacht is NOT IN OPERATION (meaning not navigating) ALTHOUGH ATTENDED.

**CAUTION**

The pilot is responsible for ensuring boarding with the electro-hydraulic ladder extracted every time the yacht is NOT IN OPERATION (meaning not navigating) ALTHOUGH ATTENDED.

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 bio-degradable or environmentally friendly products.

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 accessibility to any device that, if operated, could cause unexpected hazardous conditions, thus endangering the persons on board and/or property.

Maintenance and adjustment operations must be carried out by authorized personnel that shall provide for 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 recognised 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.



ENVIRONMENT

During navigation, do not dispose any on-board waste at sea, but keep it and dump it on 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.



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 exactly from this care.

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 conclusion.

Always operate with caution, care and under safety conditions.

Apart from the norms herewith indicated, specific warnings are given in the whole manual. This section is meant to give a safety code for the operation and maintenance procedures.



CAUTION

This section includes a certain number 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; check therefore their efficiency. Ensure the compliance of hoisting gears with local norms and their suitability for the job they have to carry out. Check besides their soundness according to the work to be carried out.

You must therefore read and understand the information given before activating the controls.



CAUTION

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



CAUTION

It is extremely dangerous to operate on the yacht controls under the influence of alcohol or drugs. Keep off from taking alcohol or drugs before and during the work. Do not take medicines causing numbness.



CAUTION

Be highly alerted and use greatest caution for the whole time of the work. Pay 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 engine moving parts are dangerous; do not open hatches while running the yacht.

**CAUTION**

Yacht entrance. Always turn to 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 people 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 approach unprotected flames to 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 approach sparks or a flame nor 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. Before releasing pressure, stop the engine.

**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 verify the presence of:

- Damaged fittings;
- Wear of outer coatings as consequence of rubbing;
- Swelling of 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 strip to verify the possible presence of hydraulic oil. If oil penetrates the skin, ask immediately for a doctor for the relevant treatment.

**CAUTION**

Clean the cylinders of the **interceptors** periodically to remove possible dirt build up, which can jeopardize their efficiency. To reduce the risk of corrosion, pull back the rods each time you leave or you harbour the yacht.

**CAUTION**

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

**CAUTION**

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

**CAUTION**

Seals and O-rings fitted erroneously, 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 under pressure and the hot fluid can spill over when you remove the radiator plug.

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.

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.

At all times the yacht must be equipped with portable extinguishers, located as shown on figure "Safety equipment arrangement".

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

- Having the fire extinguishers and fire-fighting equipment overhauled as scheduled on their label, 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 available also in the passengers' cabins.



CAUTION

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



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.



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 electric or fuel supply systems, without consulting RIVA 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, but use the manual dry-powder fire extinguishers only. After using the extinguishers, leave and ventilate the area immediately before re-approaching it, in order to prevent asphyxia and physical harm. Clean out any fire extinguishing powder out very carefully.

In addition to these requirements, RIVA recommends the following:

- Avoid smoking in the lower deck, especially in the engine room.
- Avoid dropping liquids in the bilge and keep it clean, especially the engine room. 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 light, etc..;
 - In case of 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 hereunder:

- Keep calm and do not spread panic among the passengers;
- Stop the yacht, 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-fighting techniques.

**DANGER**

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

**DANGER**

In the event of on-board fire, attempt to electrically isolate the affected area by disconnecting all the AC and DC input magneto-thermal breakers to prevent the spread of fire and short circuits.

To eliminate any residual possibility of directly or indirectly causing fire, the regular maintenance of the systems and the prudent and appropriate behaviour of those on board is of vital importance.

More than 90% of the probability of successfully fighting a fire depends on the ability to prevent and avoid the conditions that facilitate its spread.

The small percentage remaining depends on the reaction capacity of the crew and, above all, on speed of action.

Almost all fires are easily contained if detected early.

It is therefore necessary to adopt behaviours that preventively identify the latent causes of fire, namely:

- Check the functionality of the yacht's primary equipment/systems;
- Monitor the on-board spaces, in particular the engine room;

- In case of anomalous system behaviour, identify the anomaly and take steps to remedy it effectively;
- Use on-board systems and equipment appropriately.

If fire is detected on board, remove the causes if possible (e.g. for short circuit, disconnect the electrical system), and intervene promptly to douse the fire, then monitor closely (for an extended period if necessary) to prevent reignition.



WARNING

Never use a water jet to extinguish fires involving electrical 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

AMERICAN	EUROPE/ AUSTRALIA/ASIA	FUEL/HEAT SOURCE
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).

Each yacht owner/operator/master must be well informed and proficient regarding the measures to be adopted in the event of a fire and the applicable fire-extinguishing methods.



CAUTION

It shall only be possible to open the closing devices (the connecting openings of the bow garage to adjacent internal spaces) if the gas detection system confirms that the garage is free from the presence of dangerous gases.

Therefore, make sure to close the internal doors of the garage compartment before closing it.



**CLOSE THE HATCHES
BEFORE CLOSING THE
GARAGE TO AVOID
GAS SPILLING**

2.1.4 International rules for prevention of collisions at sea (COLREG 1972)

The pneumatic hoot (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 no.1): the current Norms are applicable to all crafts at high sea and to all waters communicating with it, accessible for sea navigation.
- **Responsibility** (Rule no.2): none of the current rules can exempt a craft, its Owner or the crew from the consequences of any negligence of application of the said rules.
- **Definitions** (Rule no. 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 no. 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 "craft approaching a channel elbow";
 - a prolonged sound "craft answering to previous signal".
 -

• Signals with poor visibility (Rule n°35 and n°37):

- a prolonged sound at two minutes interval "craft at mechanical thrust in fresh way";
- — two prolonged sounds with an interval of two seconds and repeated every two minutes "ship with mechanical thrust in navigation, with engines shut-OFF and without fresh way";
- — — a prolonged sound and two short ones at intervals of two minutes "ship out of control or with manoeuvre troubles or towing";
- — — — a prolonged sound and three short ones at intervals of two minutes "last ship towed answering to ship towing";
- — — — — a short sound, a prolonged one and a short one "ship riding the anchor giving its position to a ship approaching with hazard of collision";
- — — — — five seconds of continuous sound at intervals of one minute "ship riding the anchor giving its position";
- — — — — three short sounds one after the other "craft stranded";
- — — — — four short sounds "pilot craft in service";
- — — — — a continuous sound "danger and rescue need".

2.2 ENVIRONMENT REMARKS

Environmental pollution is determined 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 harbour areas they should be collected into suitable containers and afterwards discharged either while cruising into open sea or by means of special drainage systems fastened to the shore or wheel-conveyed (with optional black water tank).

Soil pollution is 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 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".

2.2.1 Regulations for waste disposal

MARPOL 73/78 is the international convention governing the prevention of pollution from ships.

Those standards apply to all yachts with no limits on tonnage and service, therefore including all pleasure yachts.

The rules cover the entire Mediterranean.



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 cruise 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.



CAUTION

It is forbidden to discharge the waste water tank into the sea within 12 nautical miles of the coast: the discharge pump must be kept deactivated. Block the automatic activation system, if present.



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.



ENVIRONMENT

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

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

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.

2.3 SAFETY EQUIPMENT

All persons on board must know the location and use of the safety equipment.

Safety devices must remain in their original position so that they are easily available in the event of emergency.



CAUTION

The diagram shows the position indicated by the manufacturer for safety equipment; therefore represents a useful guide the placement and number.

To adapt and place the safety equipment in accordance with local, national, and international laws.



CAUTION

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



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.



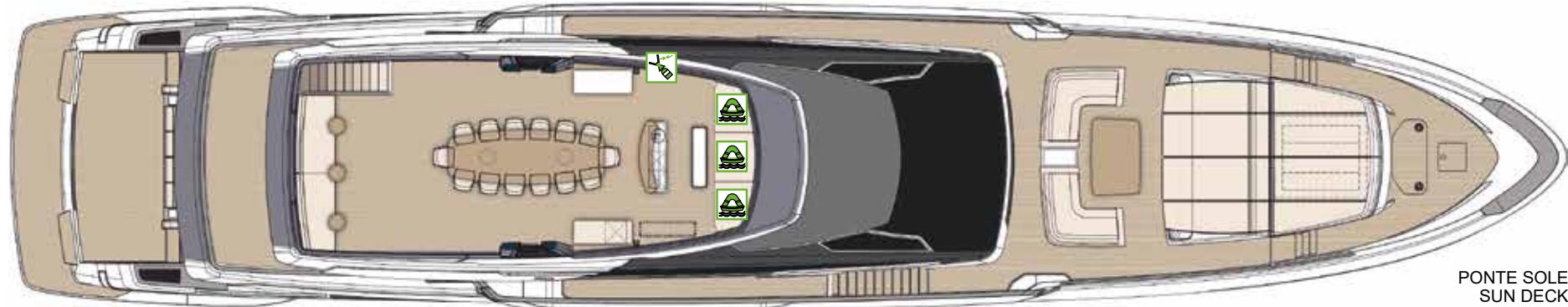
CAUTION

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



CAUTION

The Captain is required to inform the crew on the yacht about the safety equipment, whether in case of fire or in case of sinking and listing.

2.3.1 Layout of safety equipment

PONTE SOLE
SUN DECK



PONTE SUPERIORE
UPPER DECK



PONTE COPERTA
MAIN DECK



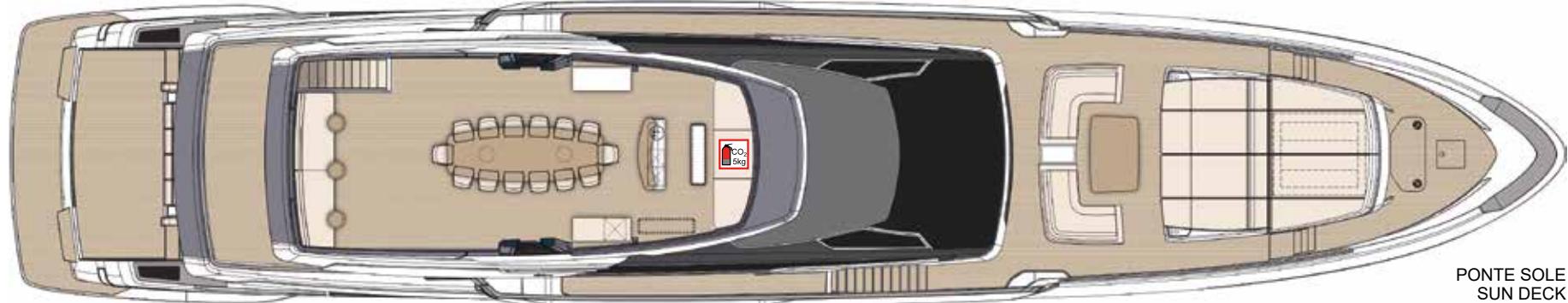
PONTE INFERIORE
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Zattera di salvataggio 10 persone Life raft 10 persons	3
	Salvagente con cima Lifebuoys with lifeline	2
	Salvagente con luce e fumogeno Lifebuoys with light and smoke	2
	Salvagente con luce e fischio per adulti Life jackets light and whistle for adult	20
	Salvagente con luce e fischio per bambini Life jackets light and whistle for children	2
	Giubbotto salvagente gonfiabile Inflatable lifejacket	2
	Tute da immersione Insulated immersion suits	20
	Tute da immersione per bambini Insulated immersion suits for children	2
	Cassetta Primo Soccorso Medical store	1

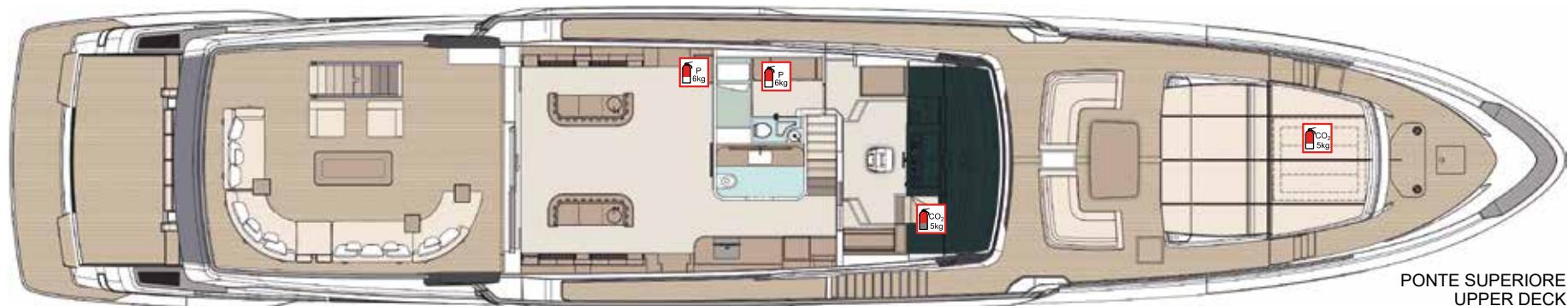
ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Kit di sopravvivenza Grab bag	1
	EPIRB 406 MHz a rilascio idrostatico Epirb 406 Mhz with hydrostatic release	1
	Radar transponder Radar transponder	1
	Sistema di recupero dell'uomo in mare Man overboard recovery system	1
	Sbarco/Scala pilota Disembarkation/Pilot ladder	1
	Lancia cime Line throwing device	4
	Radiotelefono GMDSS portatile Portable GMDSS radiotelephone	2
	Razzi di segnalazione con paracadute Rocket parachute flares	6
	Porta stagna Watertight door	2

2.3.2 Layout of fire-fighting equipment

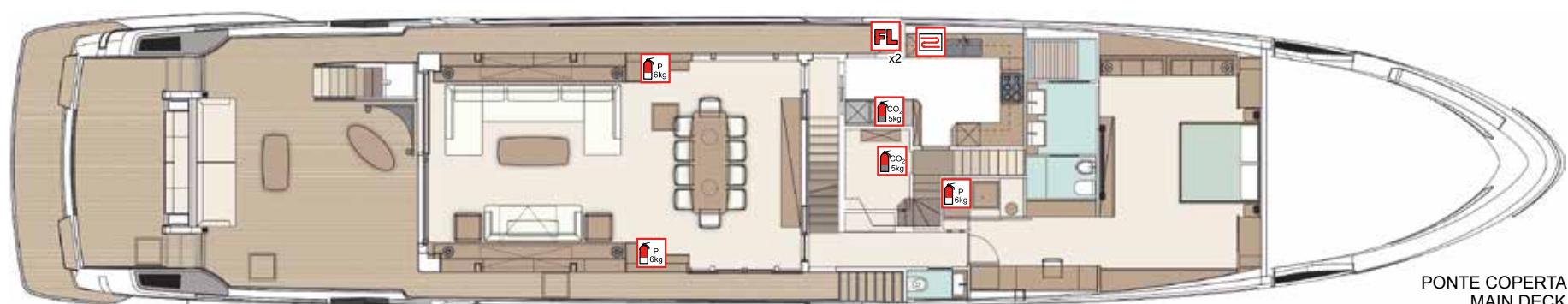
Refer to chapters 2.3.3 and 2.3.4 for more information on the use of portable fire extinguishers.



PONTE SOLE
SUN DECK



PONTE SUPERIORE
UPPER DECK



PONTE COPERTA
MAIN DECK



PONTE INFERIORE
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Coperta antincendio Fire blanket 1 - Cucina ponte principale 1 - Galley main deck	1
	Estintore a POLVERE 6kg POWDER 6kg fire exting. 1 - Atrio area ospiti Lobby guest area 1 - Locali equipaggio Crew mess 1 - Cabina armatore Owner's cabin 2 - Salone ponte coperta Salon main deck 1 - Salone ponte superiore Salon upper deck 1 - Cabina Capitano Captain's cabin	7
	Armadietto del completo da pompiere Fire fighter outfit locker	2

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Estintore a CO ₂ 5kg CO ₂ 5kg fire extinguisher 3 - Sala macchine Engine room 2 - Sala controllo motori Engine control room 2 - Garage poppa Aft garage 1 - Plancia di comando Helm station 1 - Cucina ponte coperta Galley main deck 1 - Ponte sole Sun Deck 1 - Garage prua Bow garage 1 - Locale tecnico sotto Plancia Comando Technical space below Helm Station	12

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Estintore a schiuma 9kg FOAM 9kg fire exting. 3 - Sala macchine Engine room 1 - Sala controllo motori Engine control room 1 - Garage poppa Aft garage	5

WARNING
THIS EXTINGUISHER USES CO_{2H0,5X}

AS AN EXTINGUISHING MEDIUM
IT SHALL BE USED ONLY TO FIGHT
ELECTRIC OR GALLEY FIRES.

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

2.3.3 Extinguishers fire class

The following table contains the classification of the fire types:

SYMBOL	FIRE CLASS	DESCRIPTION	EXTINGUISHING
	A	Solid fuels (Wood, paper, coal, etc.)	Water, foam, chemical powders.
	B	Flammable liquids (bezel, diesel, alcohol, etc.)	Foam, carbon dioxide, chemical powders.
	C	Flammable gases (propane gas, methane, hydrogen, etc.)	Carbon dioxide, chemical powders, halogenated hydrocarbons.

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).

Refer to Chapters 2.3.2 and 2.3.4 for more information on using portable fire extinguishers.

2.3.4 Portable fire extinguishers

In case a fire breaks out, immediately reach a fire-fighting station where a portable fire extinguisher is located.

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 (1) 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 stay 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;
- Head the yacht so that the fire is leeward;
- Persons not engaged with the fire fighting must gather windward from the fire area and if necessary, disembark on a rescue device (tender, rubber dinghy, self-inflatable life raft), that must be linked to the yacht with a line, in order also to embark the persons engaged with the fire fighting;
- If the fire is big the operators must abundantly wet their clothing;
- The engines must be shut-OFF immediately and the fuel must be cut-OFF;
- 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.



**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.

**CAUTION**

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.

The arrangement of the fire extinguishers is indicated in the previous "Location of safety and fire-fighting equipment" diagram.

**CAUTION**

All fire extinguishers should be checked at least every 6 months by qualified staff and in any case, after each navigation.

Even after a partial use, the extinguishers should be recharged by authorized personnel.

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, 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">• Check the condition of the container (cylinder);• Refill the extinguishing medium;• Carry out a hydrostatic test. <p>Have fire extinguishers recharged even after partial use.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">MAINTENANCE<p>At least once a month, and in any case before each navigation, check the charge status of the fire extinguisher.</p><p>At least once a month, and in any case before each navigation, check the external condition of the fire extinguisher. At least every 6 months check the fastening of the fire extinguisher.</p></div>

2.3.5 Self-inflatable life raft



WARNING

Before any trip, check that there are no impediments to its immediate use.

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

- Shut the engines down and wear the life jackets;
- Perform the distress call using the VHF device;
- Uncoil the life line of each raft by 3 to 4 m; 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 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 life raft wear all possible clothing, 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 life raft; throw the life buoy with line, if necessary;



- 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.



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 stabilisers and a floating anchor, for improving its stability and drift. The stabilisers 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.

130 BELLISSIMA

- 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.

2.3.6 Individual life jacket

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****CARING FOR AND INSPECTING THE LIFE JACKETS**

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.

MAINTENANCE

Wash in warm soapy water after use. Dry thoroughly. Store in a dry, ventilated area away from direct sunlight and harmful chemicals. Check the lifejacket regularly to make sure it is in good working condition.

**CAUTION**

Do not use the life jackets as pillows. Practice of their use before you start navigating. For people with problems may not be suitable.

With waterproof clothing or similar you can not reach the optimal use.

The use of lifejackets does not guarantee total safety and the final rescue of the wearer, but it does support in water for a long period.

2.3.7 Life buoy

The life buoy 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.

**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".

2.3.8 Dacon rescue frame

Your yacht is equipped with a Dacon rescue frame.

The Dacon Rescue Frame is a manual rescue “net” for gentle and effective recovery of exhausted, seriously injured or even unconscious persons from the water.

Using the Dacon Rescue Frame the casualty is recovered in a horizontal position and with full-length body support. This may significant for prevention of shock and limitation of any serious injuries the casualty may have sustained.

It is stowed in the bow garage of your yacht.

When deployed, the Rescue Frame hangs down the freeboard forming a cradle in the water.

The casualty is positioned in the cradle and gently rolled on board by lifting the grip bar or the retrieval lines.

Install the Dacon Rescue Frame on the port side of the yacht by attaching the straps to the D-rings provided.

Deployment:

- Release the manoeuvring stick, which is secured parallel to the outer bar to the Rescue Frame when not in use.
- Deploy the Rescue Frame down the yacht side and shake it out to form a cradle in the water.

Rescue sequence:

- Pull the casualty into the cradle formed by the rescue frame in the water by floating him into position or by pushing the free end of the Rescue Frame underneath the person supported alongside the yacht.
- The manoeuvring stick is used to open the cradle of the Rescue Frame and to manoeuvre the person into position. The operation may be assisted by a person entering down the Rescue Frame, by a rescue swimmer or a person on the tender if required.

- The casualty is recovered gently up the yacht side by pulling the grip bar or the manoeuvring stick, or the lifting ropes is fitted, to a height where the person can be lifted on board the yacht.

The following areas should be inspected carefully for wear and damages:

- Attachments to the yacht;
- The webbing: Cuts and general wear;
- The fibreglass rods: Fractures and wear. Damage to the webbing or to the PE wear sleeve on the step may indicate a damaged fibreglass rod;
- 316L Stainless Steel rivets connecting webbing and fibreglass rods along each side of the Rescue Frame;
- Attachment and condition of the manoeuvring stick (if fitted).

2.3.9 Pilot ladder

Your yacht is equipped with a pilot ladder.

It is a rope ladder with wooden steps that normally serves as a rescue device subjected to standards and construction specifications every 10 steps has a 2-metre joist (spreader) between them to prevent them from twisting.

It is stowed in the bow garage of your yacht.

Install the pilot ladder near the side openings of the yacht, which shall be kept closed, by attaching the straps to the d-ring provided.

2.3.10 Line thrower

Your yacht is equipped with a line thrower.

It can be used in all situations where a line is required to be passed accurately and quickly, these include:

- All line-throwing operations at sea between yacht, ship to shore, shore to ship and shore based rescue services.
- Rescue of swimmers in distress,
- Line carrying across obstacles and rough terrain.

The device has a throwing range of between 230m and 250m.

Operation for use:

1. Wear Personal Safety Equipment (gloves, glasses, ear protection, helmet).
2. Remove the front cover and point in the designed flight direction.
3. Pull out safety pin.
4. Aim over the top of target. Be prepared for recoil.
5. Turn grip to left or right to fire.

6. If misfire occurs hold unit in firing position for at least 60 seconds, then dispose of overboard.

**DANGER**

Ejects rocket projectile - do not point at people or property.

**DANGER**

Do not fire in a confined space. Keep out of reach of children.
For emergency use at sea.

**WARNING**

Do not use after expiry date.

**CAUTION**

If damaged or dented do not use.
Keep away from source of heat.

2.3.11 Porthole deadlights

In the event of adverse weather conditions, the portlights and portholes must be fitted in accordance with the captain's instructions.

Portlight deadlights

Each crew cabin must contain a deadlight for each portlight.

Deadlights should be stored in a recognisable area and readily accessible.

Porthole deadlights

VIP and guest cabins are provided with large deadlights located beneath the bed.

Deadlights must be installed on the portholes of heads and cabins.

To install the deadlights, proceed as follows:

- Remove the protection cups on the anchoring points of the porthole frame;
- Remove the deadlights from their containers;
- Install the deadlights as per the instructions (each deadlight is labelled);
- Secure the deadlights with the bolts provided in each cabin.



2.3.12 Signalling fires

Pleasure yacht 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 also necessary to check their expiry date and eventually to replace them.
- The floating smoke signals, visible up to 4 km (2,5 mi), have to be used with the daylight, to indicate the correct position.
- The red light rockets, visible up to 10 km (6,2 mi), 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 crafts.
- Store the signalling rockets far 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.
- Each month, and anyway before each navigation, check that they can be used immediately without obstacles.

**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.

**DANGER**

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

2.4 MAN OVERBOARD RECOVERY

Recover a man overboard before possible hypothermia or drowning.

Rescue is a combination of actions: reach the man overboard, establish a contact and bring him/her on board.

- Keep a visual contact with the man overboard.
- Slow down and go towards the man overboard. At night, direct the best light source available towards the man overboard.
- Launch the life buoy into the sea, towards the man overboard, and fasten it to the yacht by means of a line. It shall be used as a further reference to the rescuers.
- When approaching the man overboard, stop the yacht or slow down.
- When you are near the man overboard, stop the engines with the gear engaged, in order to avoid that the propellers continue rotating.

Help the man overboard board the yacht.

NOTE

If the victim presents drowning symptoms, give specific assistance.

In case of serious danger, immediately make a distress call.

2.5 ESCAPE ROUTES

In order to deal with the different emergency situations that could require 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.

**WARNING**

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

**WARNING**

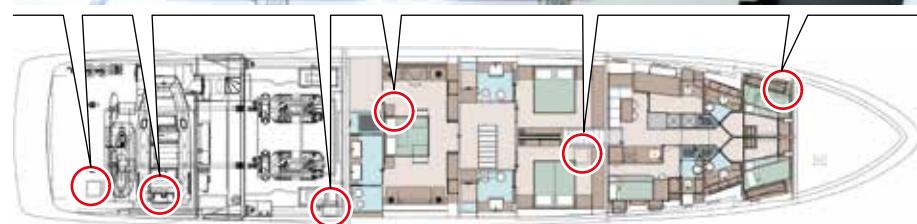
Always keep the escape routes, dry, free and accessible.

**DANGER**

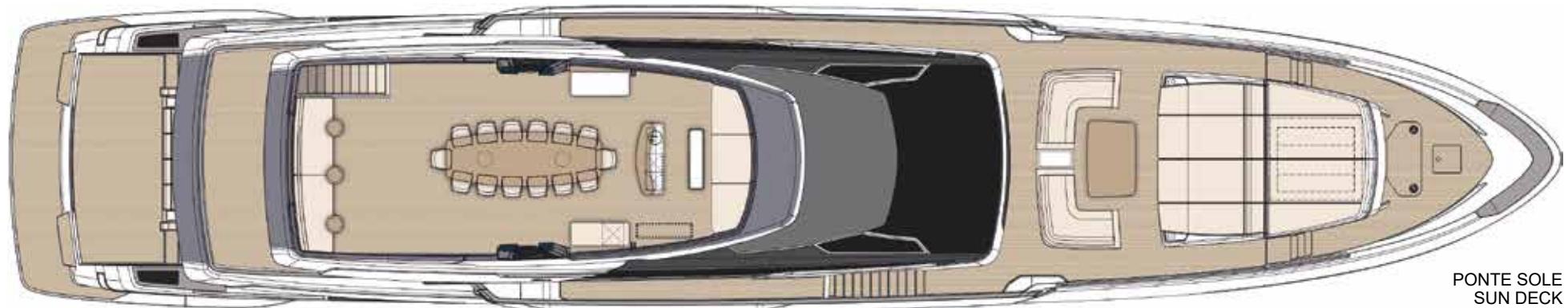
The various yacht's areas have more than one escape route. It is therefore necessary, according to the nature and position of the danger or fire source, to choose very carefully the safest and most suitable escape route.

**WARNING**

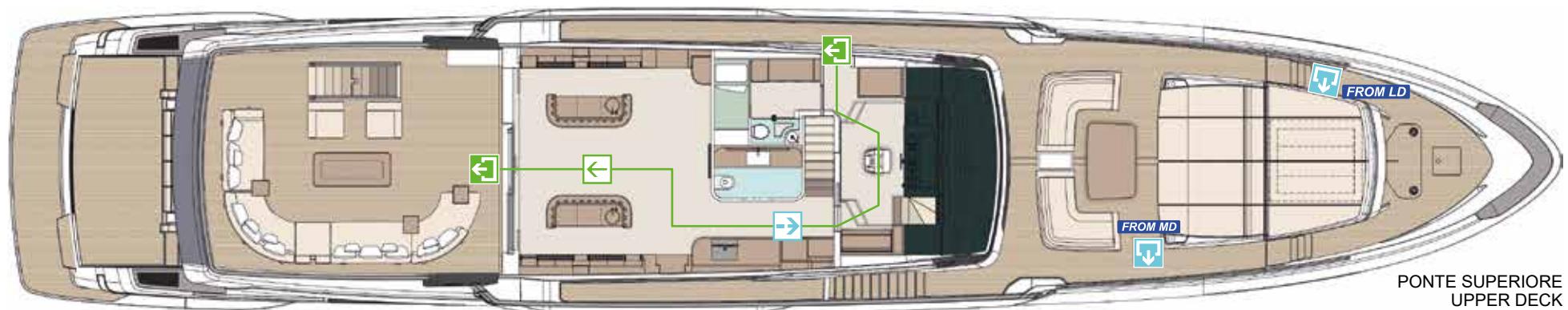
Ladders shall be used with care when navigating.

**DANGER**

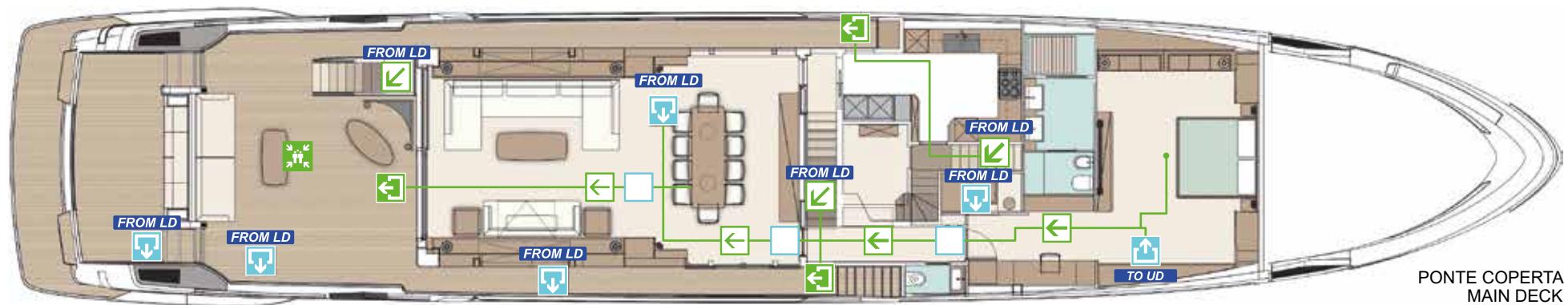
For safety reasons the access door to the engine room must be kept closed at all times and in all situations. Must only be open when crossing.



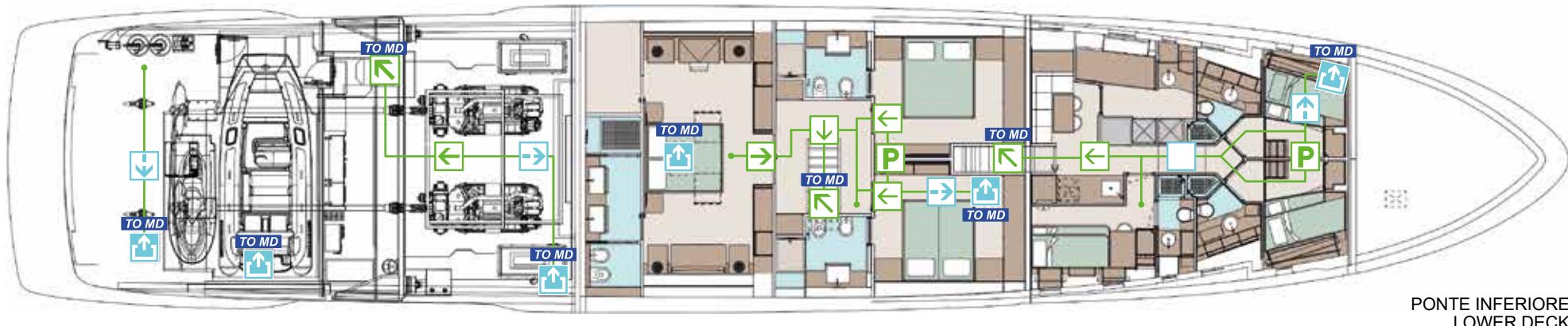
PONTE SOLE
SUN DECK



PONTE SUPERIORE
UPPER DECK



PONTE COPERTA
MAIN DECK

PONTE INFERIORE
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION
	Passaggio per un'altra stanza Passage to another room
	Via di fuga primaria Primary escape route
	Via di fuga secondaria Secondary escape route

ICONA ICON	DESCRIZIONE DESCRIPTION
	Sfuggita principale (porta esterna) Primary escape passage (external door)
	Sfuggita secondaria (portello) Secondary escape passage (hatch)
	Punto di raccolta Muster station

2.5.1 Escape route use

From the owner's cabin or lower deck rooms, it is necessary to use secondary escapes:

1. Pull the belt to remove the ceiling panel to cover the escape.
2. Disengage and extend the escape staircase for escape from the room.
3. Open the escape route by using the release handles.

2.5.2 Abandonment of the yacht

When you must abandon the yacht, swim against the current or windward. The fuel leaks float in the direction of the current and can catch fire.

When you have taken shelter, count the person present on the yacht and help people in need.

Take advantage of the distress call.

Keep all people gathered in order to facilitate the rescue operation.

2.6 FIRE-FIGHTING SYSTEM

The engine room is protected by its own automatic or manual fire-fighting system that uses HFC227 gas as an extinguishing agent.

The manual discharge can be activated using the pulls on the access stairs to the control room.

In case of fire in the engine room or in the technical room, operate as follows:

- Stop the engines (two) by operating the emergency stop buttons on the upper deck helm station dashboard;
- Turn OFF the battery breakers and all magneto-thermal switches of AC uses;
- Cut-OFF the engine and generator fuel supply by pulling the tie rods;
- Close the shutters of the engine room;
- Cut OFF the shutters, air extractors and fuel transfer pump by means;
- Make sure that the engine room is clear of personnel;
- Break the protection on fire-fighting system tie rods;
- Pull the tie rods which controls the discharge of the HFC227 extinguisher;
- If the fire breaks out underway, perform the distress call "Mayday"; if the yacht is in the harbour, advise the Port Authority and nearby yachts and evacuate all unnecessary personnel.



WARNING

Do not open access to the engine room and systems compartment until the fire has been definitely extinguished.



CAUTION

The garage communication door to the technical compartment may only be opened if the gas detection system confirms that the garage is free of hazardous gases.



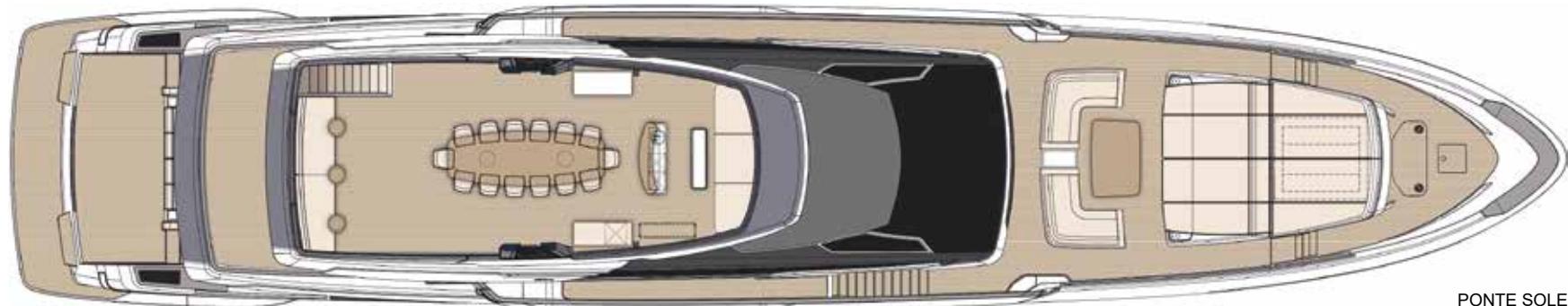
**CLOSE THIS DOOR
IN CASE OF GAS
ALARM TO AVOID
GAS SPILLING**



WARNING

Before activating the fire-fighting system, make sure nobody is inside the engine room and garage.

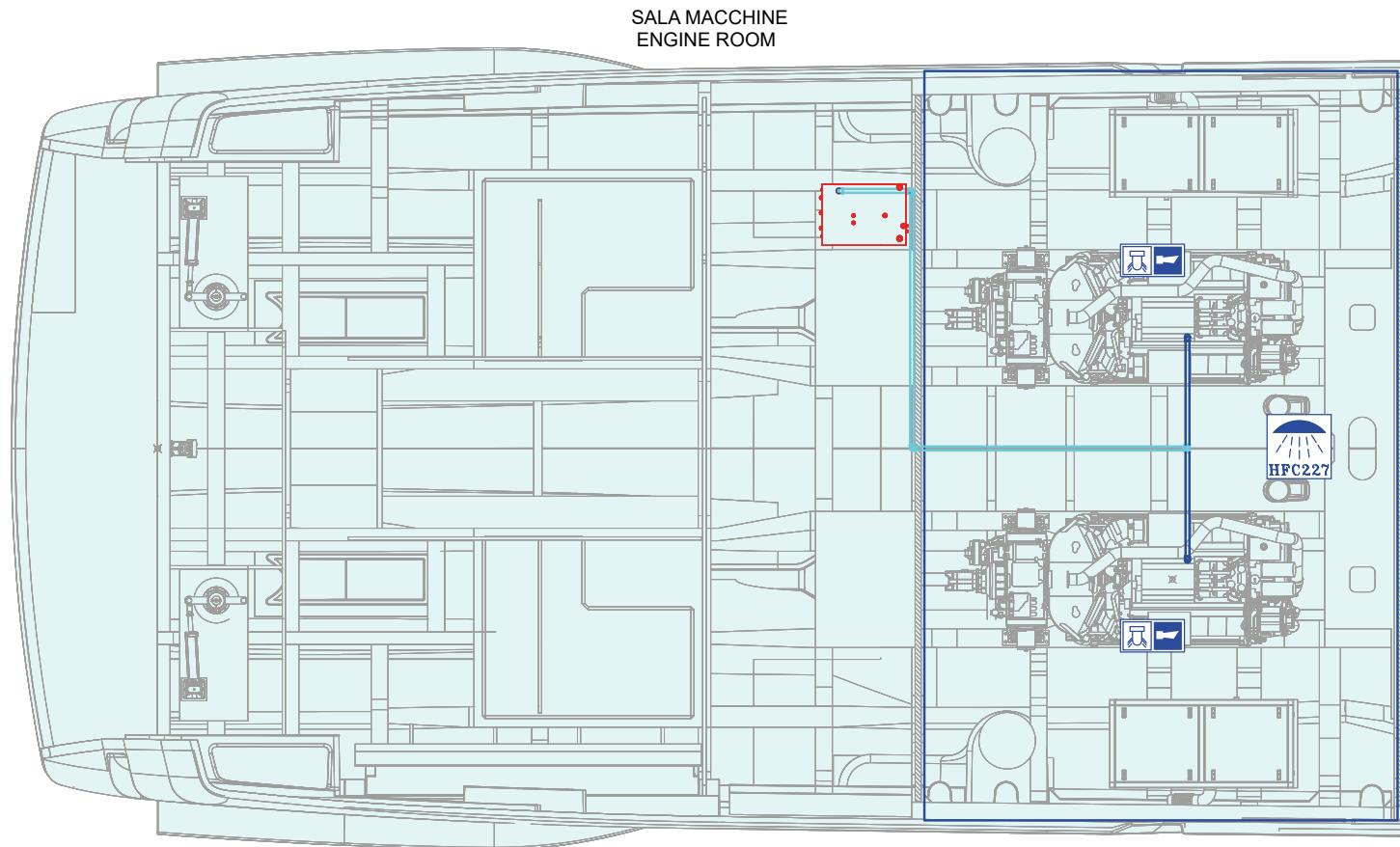
Before entering the engine room, make sure that the fire has been extinguished, then ventilate the room for a long time by opening the hatches and carefully remove the residues.

PONTE SOLE
SUN DECKPONTE SUPERIORE
UPPER DECKPONTE COPERTA
MAIN DECK

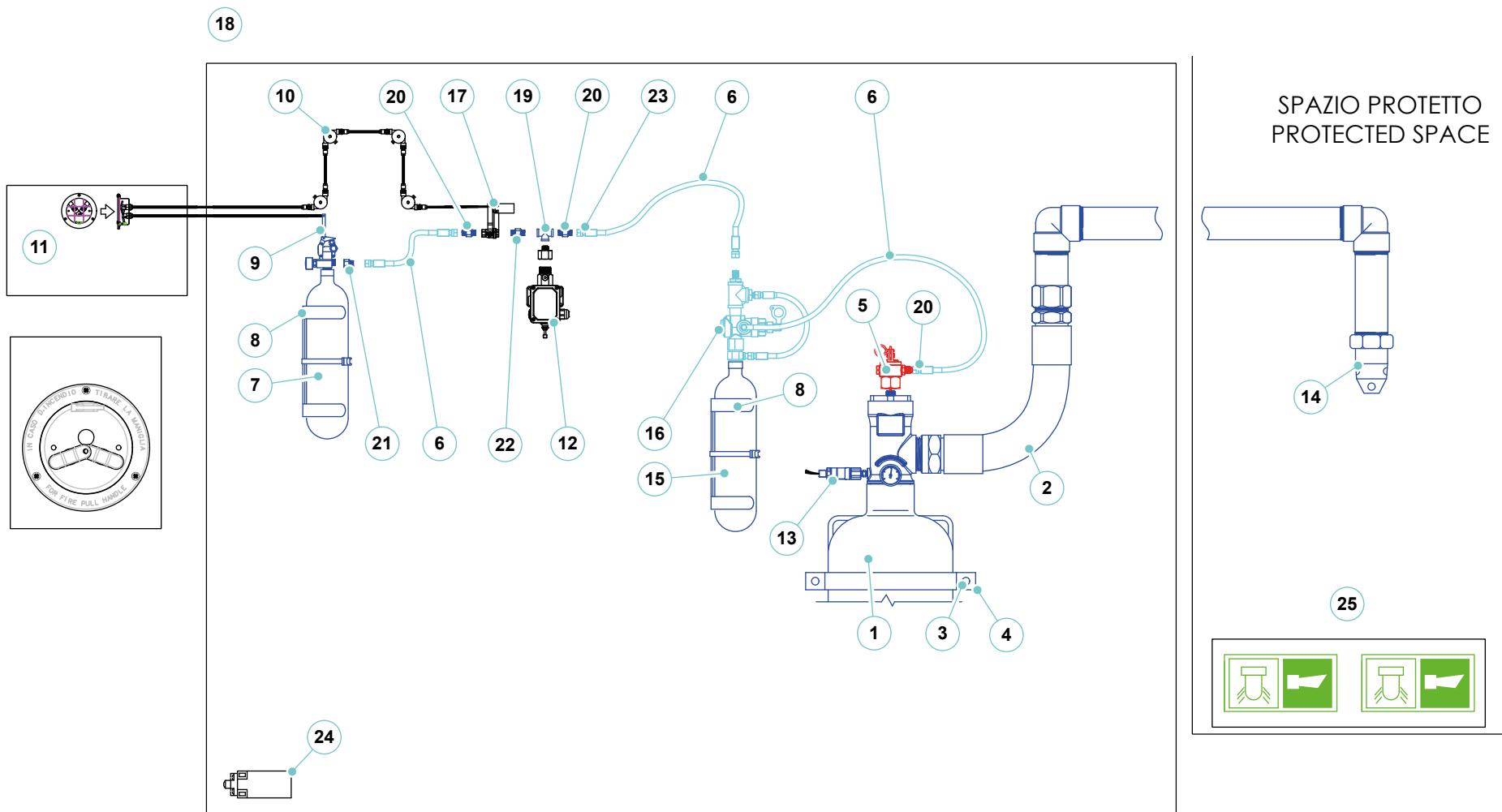
PONTE INFERIORE
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Spazio protetto da FM200 Space protected by FM200	1
	Unità FM200 FM200 unit	1
	Stazione rilascio remoto FM200 FM200 remote release station	1
	Allarme acustico e luminoso Acoustic and flashing alarms	2
	Controllo remoto serranda tagliafuoco Rmt. control fire dampers accomodations	1
	Arresto remoto ventilazione Rmt. vent. shut-OFF accomodations	1
	Serranda tagliafuoco Fire damper accomodation	1
	Controllo remoto serranda tagliafuoco Rmt. control fire dampers mach. space	1

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Arresto remoto ventilazione Rmt. vent. shut-OFF mach. space	1
	Serranda tagliafuoco Fire damper machinery	9
	Valvola chiusura rapida carburante Fuel quick closing valves	7
	Stoccaggio liquidi infiammabili Space for carriage flammable liquids	1
	Divisione di classe B B-class division	1
	Piano Antincendio e Sicurezza Fire and safety plan	2
	Porta antincendio stagna classe B B-class watertight fire door	1

Engine room fire-fighting system

ICONA ICON	DESCRIZIONE DESCRIPTION
	Spazio protetto da HFC-227 Space protected by HFC-227
	Allarme acustico e visivo Acoustical and flash alarm



ICONA ICON	DESCRIZIONE DESCRIPTION
1	Bombola Cylinder
2	Tubo di scarico flessibile Flexible discharge hose
3	Cinghie di montaggio bombola Cylinder mounting straps
4	Base per bombola Cylinder cradles
5	Testa di controllo a pressione di livello Level pressure operated control head
6	Tubo flessibile di azionamento Flexible actuation hose
7	Bombola di azoto pilota Nitrogen pilot cylinder
8	Staffa per bombola con fascetta Bracket for cylinder with clamp
9	Testata di controllo manuale/ a filo d'acciaio Manual/steel wire operated control head
10	Carrucola d'angolo (OPT) Corner pulley (OPT)
11	Scatola di attivazione con microinterruttore Activation box with microswitch
12	Pressostato Pressure switch
13	Pressostato di supervisione Supervisory pressure switch

ICONA ICON	DESCRIZIONE DESCRIPTION
14	Ugello HFC227 HFC227 nozzle
15	Cilindri a ritardo di azoto Nitrogen time delay cylinders
16	Adattatore Adapter
17	Valvola a sfera con microinterruttore Ball valve with microswitch
18	Scatola HFC HFC box
19	Tee Tee
20	Nipplo Nipple
21	Raccordo ottone Brass connection
22	Nipplo Nipple
23	Nipplo Nipple
24	Interruttore di posizione Position switch
25	Allarme audio/video Audio/visual alarm

2.6.1 Engine room and control room fire-fighting controls

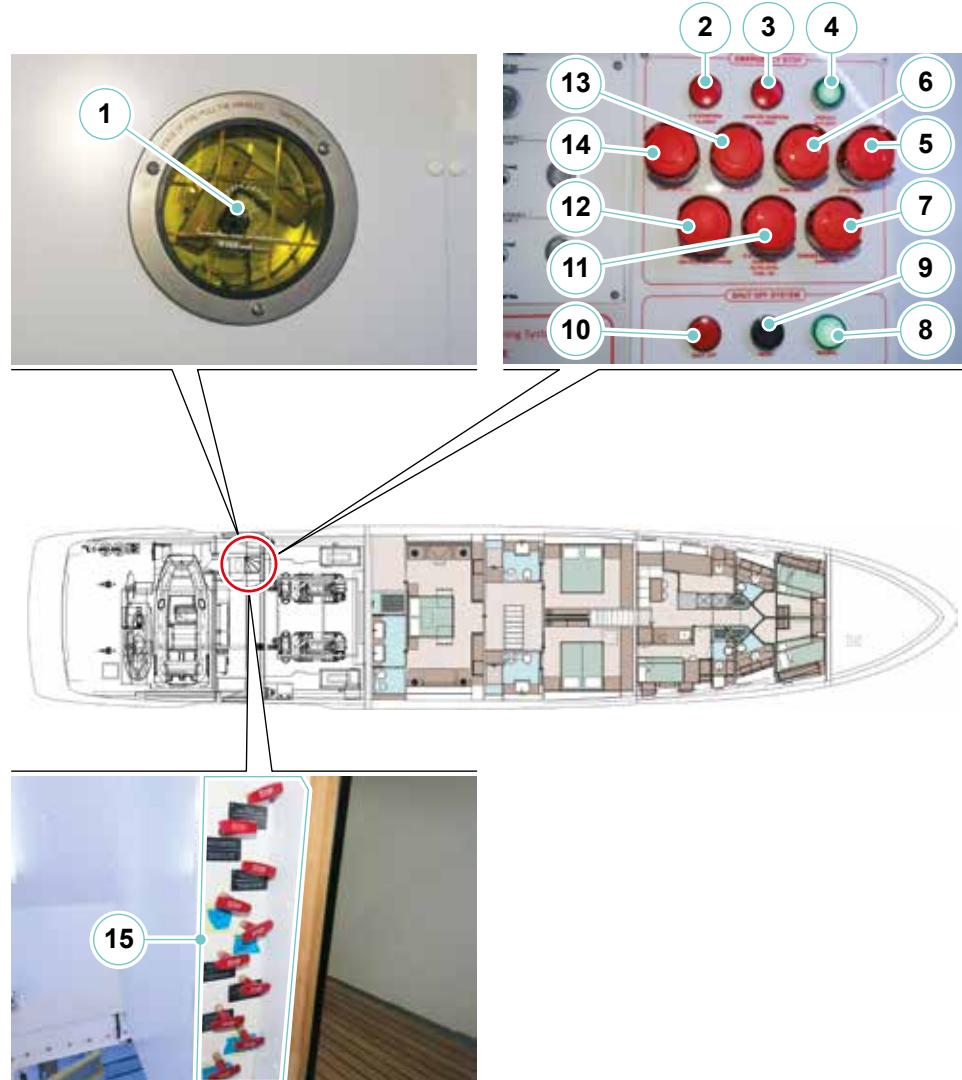
The emergency controls and the fuel shut-OFF and fire-fighting pulls are located on the access stairs to the yacht's engine room.

1. Engine room fire extinguishing system activation tie rod
2. Garage shutter closing indicator
3. Garage shutter closing button
4. Service battery operation indicator
5. Emergency stop starboard generator
6. Emergency stop port generator
7. Emergency stop for air conditioning and ventilation system
8. Normal indicator
9. Reset button
10. Power OFF indicator
11. Engine room ventilation emergency stop, engine room shutter closure, alpha laval and fuel system stop
12. Emergency stop of garage extractors and closing of shutters
13. Emergency stop starboard engine
14. Emergency stop port engine
15. Manual interception and closing rods



CAUTION

Maintain an efficient system of tie rods for fire-fighting controls by periodically carrying out maintenance and functional checks (in accordance with current regulations).



2.6.2 Fixed fire-fighting system maintenance

- Have the system overhauled by a qualified service centre according the manufacturer's instructions. The technician who performs maintenance should attach a tag indicating the date of the check to the system.
- Check the discharge indicator before use, to make sure that the fixed fire-fighting system has not been discharged.
- The fixed fire-fighting systems must be checked at least once a month and in any case, before each navigation.
 - a. For corrosion.
 - b. To make sure that the access to the controls is not hindered.
 - c. To make sure that the cylinders are firmly sitting.
 - d. To make sure that the pulling cables are not broken, loose, damaged or twisted.
 - e. To make sure that the cable connections are fastened properly.
 - f. To make sure that the distribution pipe connections are firmly fastened and that the discharge nozzles are not clogged.
 - g. To make sure that the system has not discharged.



CAUTION

Accidental discharge of the chemical agents for fire extinguishing during handling or installation may cause serious injuries. The chemical agents for extinguishing fires and the residues of a discharge system are toxic. Protect eyes and skin during installation or maintenance of the fire-fighting systems.



CAUTION

The extinguisher CONTAINS TOXIC CONCENTRATED CHEMICAL AGENTS AND SUB PRODUCTS FOR FIRE FIGHTING. Avoid inhaling fumes or long exposure to them.

THE ACCIDENTAL DRAIN DURING USE OR INSTALLATION CAN CAUSE SERIOUS INJURIES. Never let it drop down. Keep it far from extreme heat.



DANGER

The fire-extinguishing cylinder/s 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/s 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 (by means of tie rods).



CAUTION

Carefully read the instruction manual. Before attempting any installation, removal, activation or maintenance of this device.

**CAUTION**

During maintenance operations, pay attention not to break the flasks unintentionally, in order to prevent accidental cylinder releases.

**CAUTION**

Check that at environment temperature the cylinders pressure gauge is set to correct actuation position indicated by the supplier.

**DANGER**

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

**DANGER**

Resetting the fire-fighting system, with the aim of resuming navigation is a recommended operation only in case the fire source has not caused damage 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.

2.6.3 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.

**WARNING**

Please note that once the fire fighting system has been restored, the HFC227 fire extinguisher will be discharged and will no longer be effective in the event of a new fire. Therefore, once the fire extinguisher has been returned to port, it must be recharged immediately by authorised personnel.

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.



CAUTION

Accidental discharge during handling or installation may result in serious injury. Reinsert the factory-fitted safety pin on the cylinder/detector sensor valve until installation is complete or it is checked. Protect eyes during 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.

MAINTENANCE

At least once a month, and in any case, before each navigation, check the charge status of the fire extinguisher.

At least once a month, and in any case, before each navigation, check the external condition of the fire extinguisher. At least every 6 months check the fastening of the fire extinguisher.

2.7 ALARM DEVICES

Alarm devices include a smoke and heat detection unit (1) located on the dashboard and alarm signal groups with siren.

These devices will operate if smoke is detected by sensors in the engine room and other areas of the craft, or by manual activation buttons.

It is also possible to monitor the presence of fumes in the yacht from the touch screen control panel on the control panel.

MAINTENANCE

Perform a function test at least once a month.

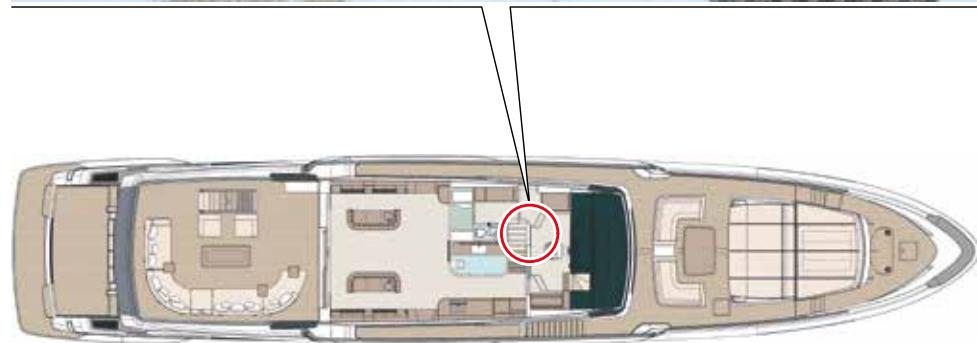


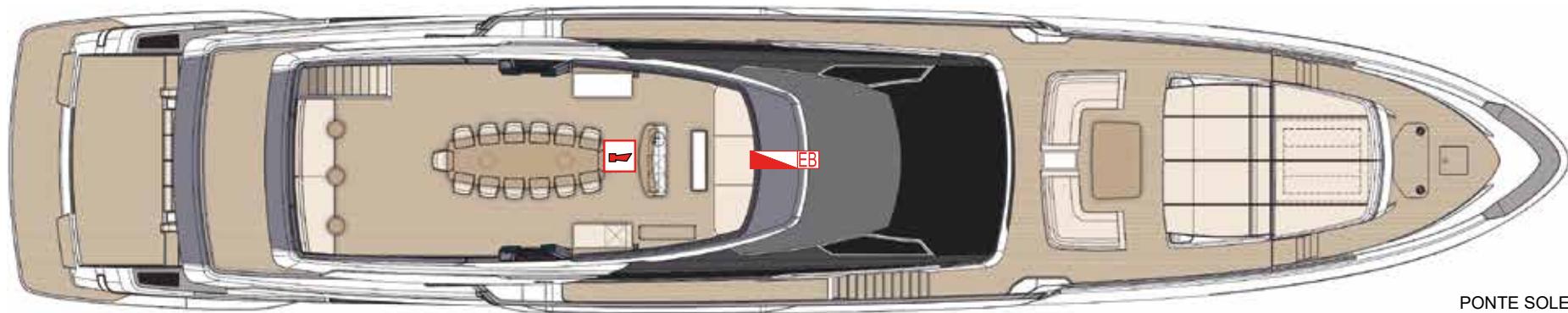
CAUTION

To prevent false alarms, ensure that the system is isolated and disabled before proceeding with maintenance and cleaning of smoke detectors. Once periodic maintenance of all detectors is completed, power and rehabilitate the system.

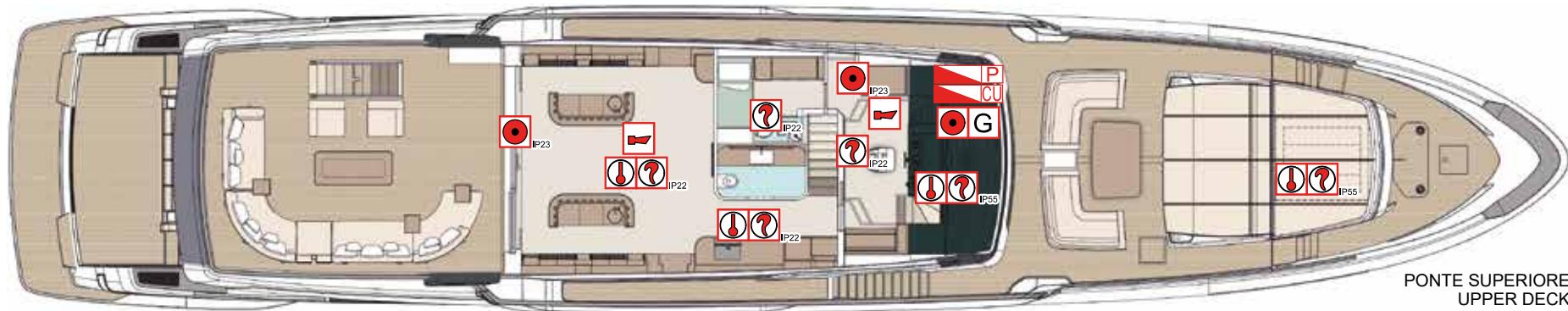
NOTE

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

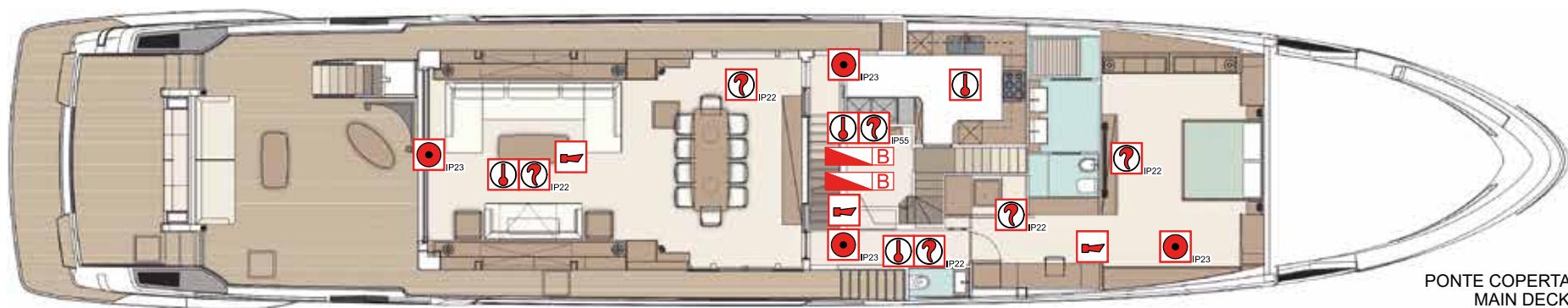


Smoke detection system:

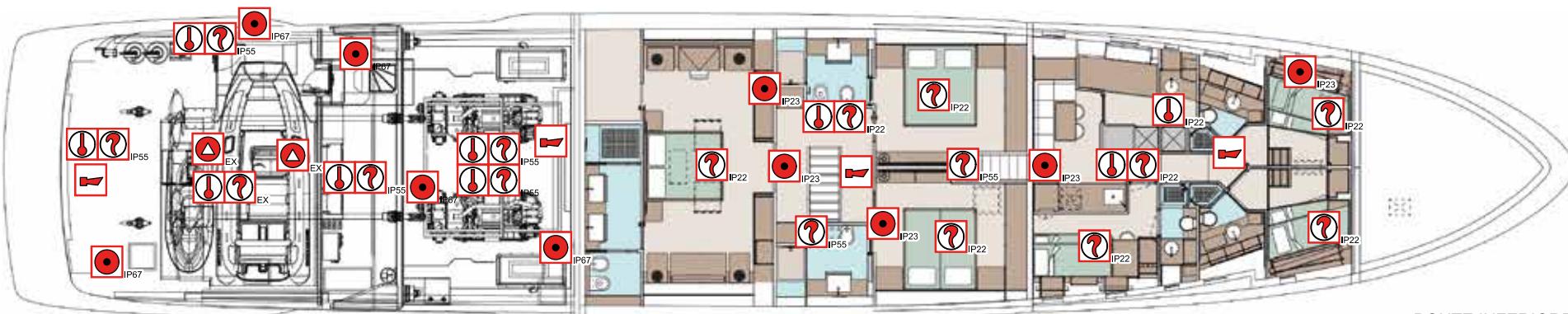
PONTE SOLE
SUN DECK



PONTE SUPERIORE
UPPER DECK



PONTE COPERTA
MAIN DECK

PONTE INFERIORE
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Pannello operatore Operator panel	1
	Unità centrale Central unit	1
	Box batterie Battery cabinet 12V	2
	Armadio per batterie di emergenza Emergency battery cabinet	1
	Punto di chiamata IP23 Manual call point IP23	11
	Punto di chiamata IP67 Manual call point IP67	5
	Pulsante generale allarmi General alarm button	1
	Rilevatore di fumo IP22 Smoke detector IP22	10

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Rilevatore di fumo IP55 Smoke detector IP55	1
	Rilevatore calore Heat detector	2
	Rilevatore fumo e calore IP22 Smoke & heat detector IP22	6
	Rilevatore fumo e calore IP55 Smoke & heat detector IP55	9
	Rilevatore fumo e calore exproof Smoke & heat detector explosion proof	1
	Rilevatore vapori gasolio Gasoline vapour detector	2
	Allarme acustico Alarm sounder	10

2.7.1 High water bilge alarm system

There is a siren type alarm device to signal high bilge water operated by float switches located in the various bilge compartments of the yacht.

The alarm is present on the bridge in the monitoring system by means of a warning light/acoustic signal.

MAINTENANCE

Check the operation of the float switch and siren at least once a week.
Clean the floating switches at least once a month.

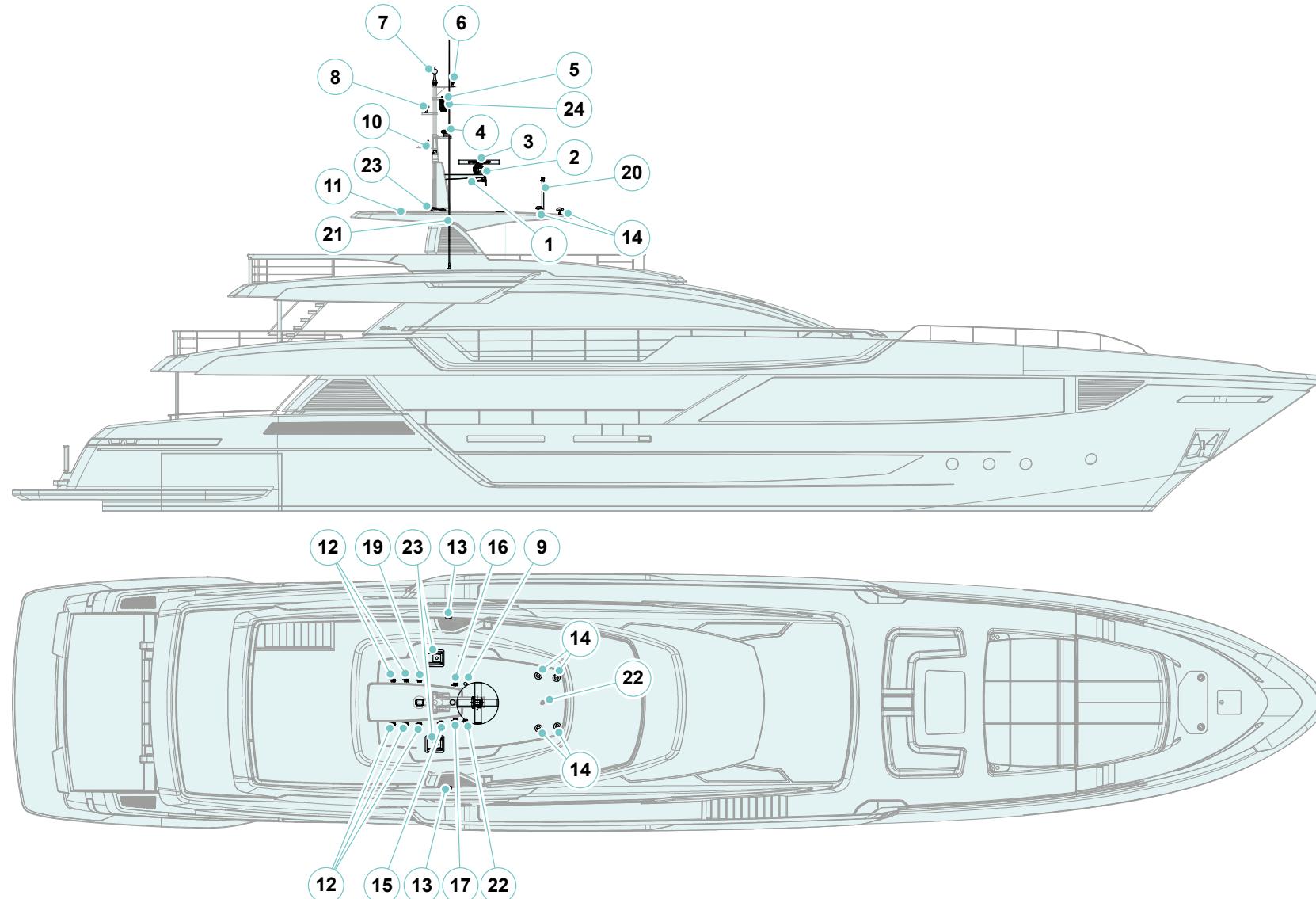


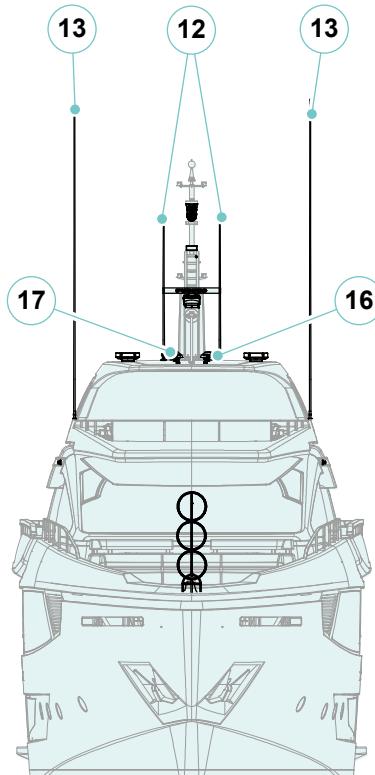
CAUTION

To prevent false alarms, ensure that the system is isolated and disabled before proceeding with maintenance and cleaning of smoke detectors.
Once periodic maintenance of all detectors is completed, power and rehabilitate the system.

NOTE

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

2.8 ANTENNAS, NAVIGATION LIGHTS AND DAYLIGHT SIGNALS**2.8.1 Antennas**



ICONA ICON	DESCRIZIONE DESCRIPTION
1	Tromba Horn
2	Antenna radar Radar antenna
3	Antenna radar Radar antenna
4	Faro orientabile Search light
5	Fanale ancoraggio Anchor light
6	Sensore meteo Weather sensor
7	Parafulmine Lighting rod
8	Antenna Navtex Navtex antenna
9	Riflettore radar Radar reflector
10	Antenna TV terrestre Terrestrial TV antenna
11	Altoparlante Loudspeaker
12	Antenna VHF VHF antenna
13	Antenna SSB-HF SSB-HF antenna
14	5G WiFi - VW 5G WiFi - VW
15	Antenna GPS GPS antenna

ICONA ICON	DESCRIZIONE DESCRIPTION
16	Antenna GPS GPS antenna
17	Antenna GPS GPS antenna
18	Antenna GPS GPS antenna
19	Antenna GPS GPS antenna
20	Fanale testa d'albero Masthead light
21	Sirena antincendio Fire alarm
22	Antenna AIS Classe A AIS A Class antenna
23	Starlink Starlink
24	Telecamera termica Thermalcamera

**CAUTION**

During transmission, keep off more than 2 metres from the TV-SAT aerial.

**CAUTION**

The radome of the antenna must absolutely not be washed with pressure water; we recommend directly cleaning with a sponge or doeskin. For a correct maintenance avoid the penetration of water inside, the radome is not waterproof, in order to allow possible condensation to evaporate.

2.8.2 Navigation lights

LIST OF LIGHTS					
DESCRIPTION	COLOUR	ANGLE	Q.TY	VISIBILITY	LIGHT TYPE
MAST HEAD LIGHT	WHITE	225°	1	5 MILES	LOPOLIGHT - 300 - 036
ANCHOR LIGHT	WHITE	360°	1	2 MILES	LOPOLIGHT - 200 - 012
NAVIGATION LIGHT STDB SIDE	GREEN	112°30	1	2 MILES	LOPOLIGHT - 300 - 001
NAVIGATION LIGHT PORT SIDE	RED	112°30	1	2 MILES	LOPOLIGHT - 300 - 002
STERN LIGHT	WHITE	135°	1	2 MILES	LOPOLIGHT - 300 - 006
NOT UNDER COMMAND LIGHT	RED	360°	4	2 MILES	ACQUA SIGNAL 55

CONDITION	LIGHTS AND SIGNALS	COLREG
GROUNDED DAY TIME	3 BLACK BALLS	30 d
GROUNDED NIGHT TIME	ANCHOR LIGHT AND 2 RED LIGHTS	30 d
NOT UNDER COMMAND DAY TIME	2 BLACK BALLS	27 a
NOT UNDER COMMAND NIGHT TIME	2 RED LIGHTS	27 a
AT ANCHOR DAY TIME	1 BLACK BALL	30 b
AT ANCHOR NIGHT TIME	ANCHOR LIGHT	30 b
SEAGOING	SIDE, MASTHEAD, STERN	30 a

The rules relevant to the navigation lights 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 rules relevant to on board position of lights 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.



CAUTION

The positioning of the navigation lights is optimised by adapting the regulatory requirements to the geometry of the boat, 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 boat is registered.



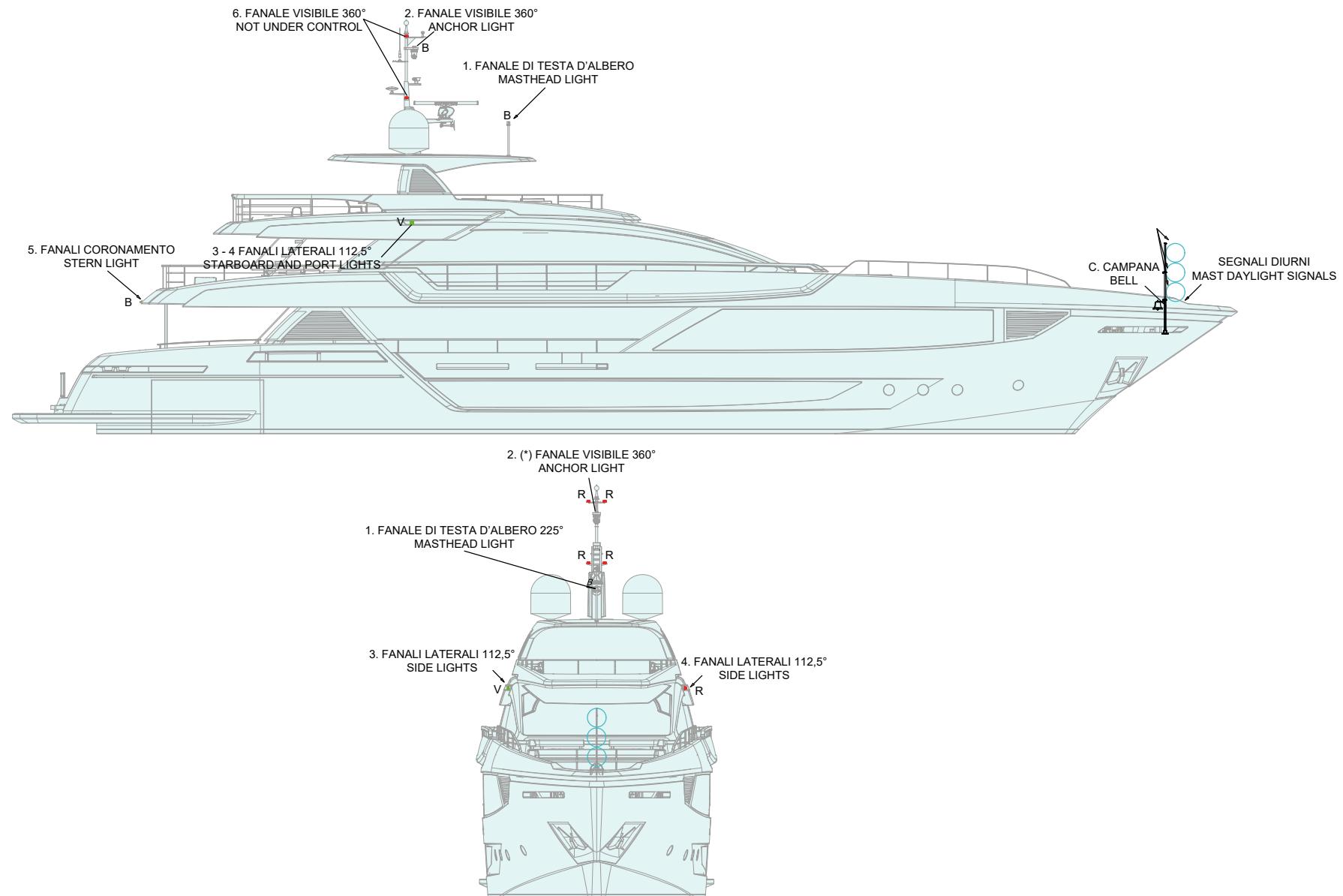
WARNING

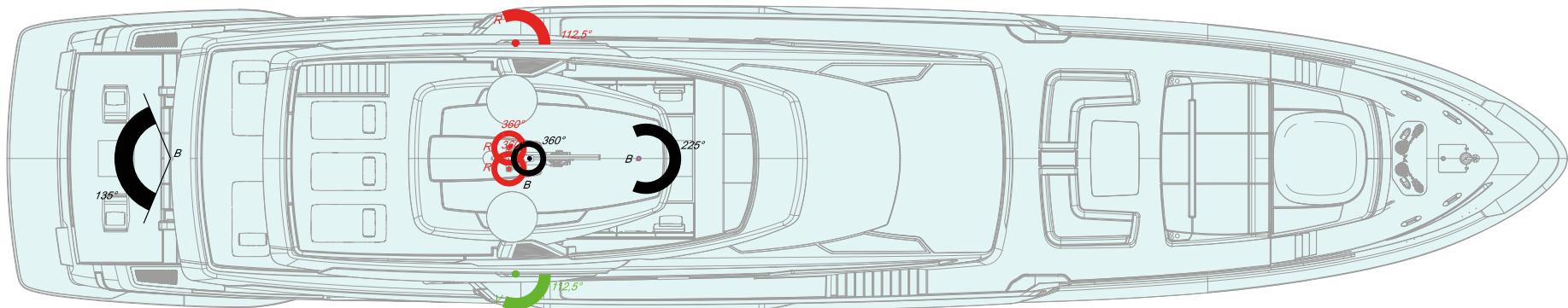
Navigation lights, shapes and sound signals.

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.

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).





CONDIZIONE - CONDITION	LUCI E SEGNALI - LIGHT AND SIGNALS	COLREG
INCAGLIATA DI GIORNO - GROUNDED DAY TIME	3 PALLONI NERI - 3 BLACK BALLS	30 d
INCAGLIATA DI NOTTE - GROUNDED NIGHT TIME	FONDA E 2 LUCI ROSSE ANCHOR LIGHT AND 2 RED LIGHTS	30 d
NON GOVERNO DI GIORNO NOT UNDER COMMAND DAY TIME	2 PALLONI NERI - 2 BLACK BALLS	27 a
NON GOVERNO DI NOTTE NOT UNDER COMMAND NIGHT TIME	2 LUCI ROSSE - 2 RED LIGHTS	27 a
ALL'ANCORA DI GIORNO - AT ANCHOR DAY TIME	1 PALLA NERA - 1 BLACK BALL	30 b
ALL'ANCORA DI NOTTE - AT ANCHOR NIGHT TIME	FONDA - ANCHOR LIGHT	30 b
IN NAVIGAZIONE - SEAGOING	LAT, TESTA D'ALB, CORONAM SIDE, MASTHEAD, STERN	30 a

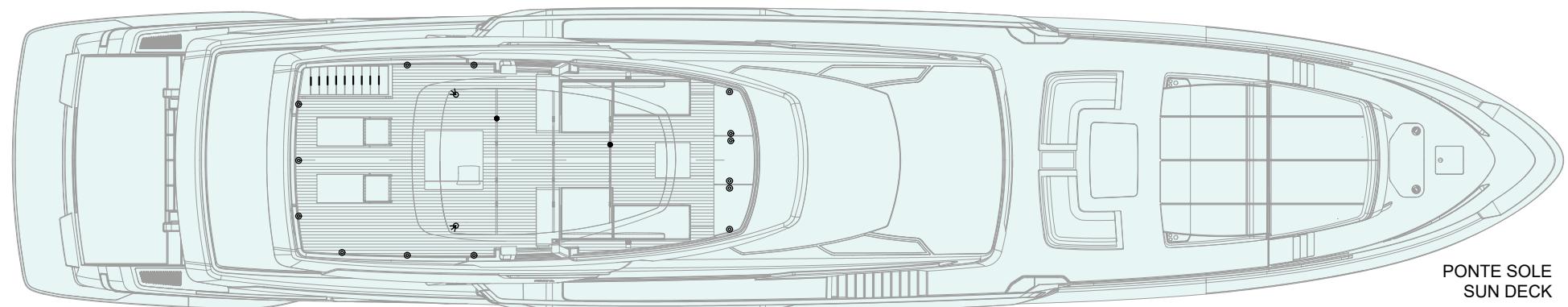
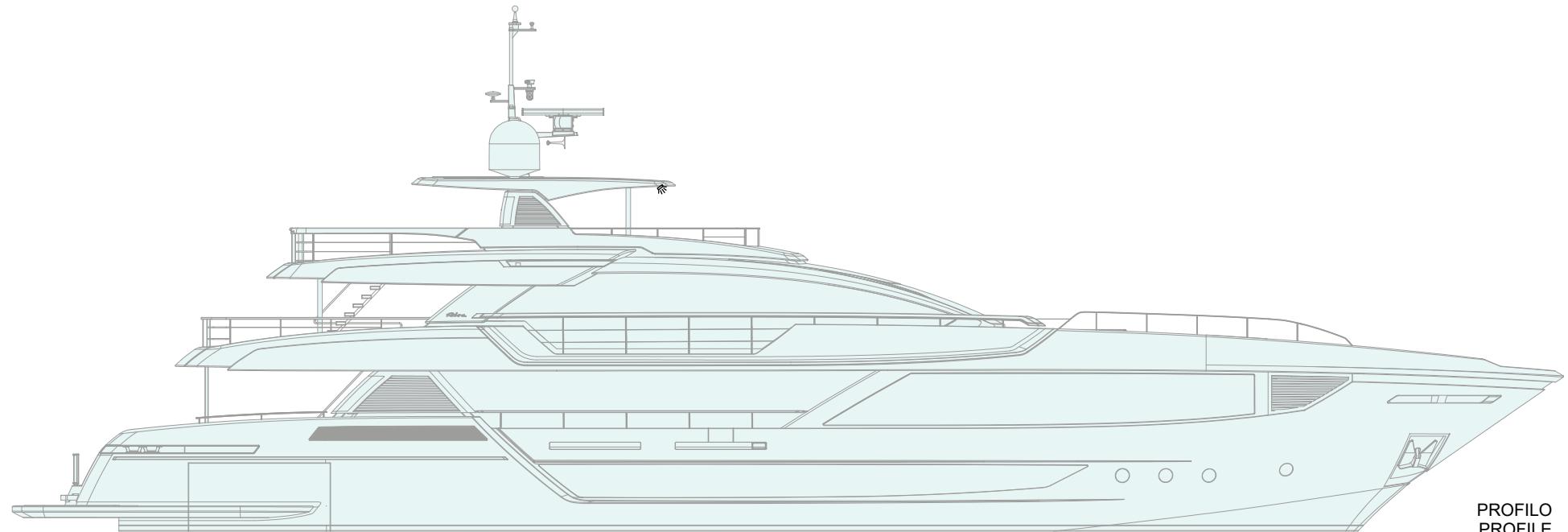
SEGNALI ACUSTICI SECONDO COLREG 1972 ANNESSO III SOUND SIGNALS ACCORDING COLREG 1972 ANNEX III		
ITEM	DESCRIZIONE - DESCRIPITION	QTA - QTY
A	SIRENA - WHISTLE	1
C	CAMPANA - BELL	1

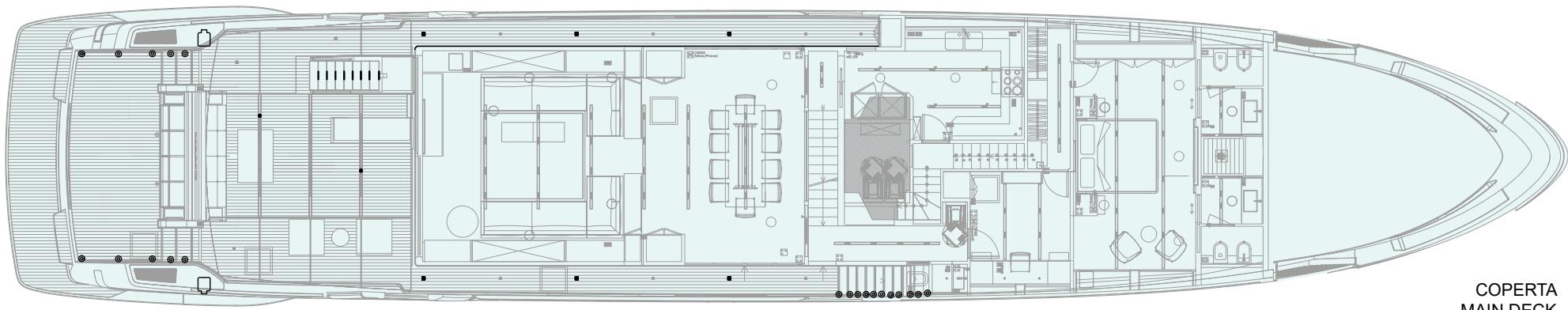
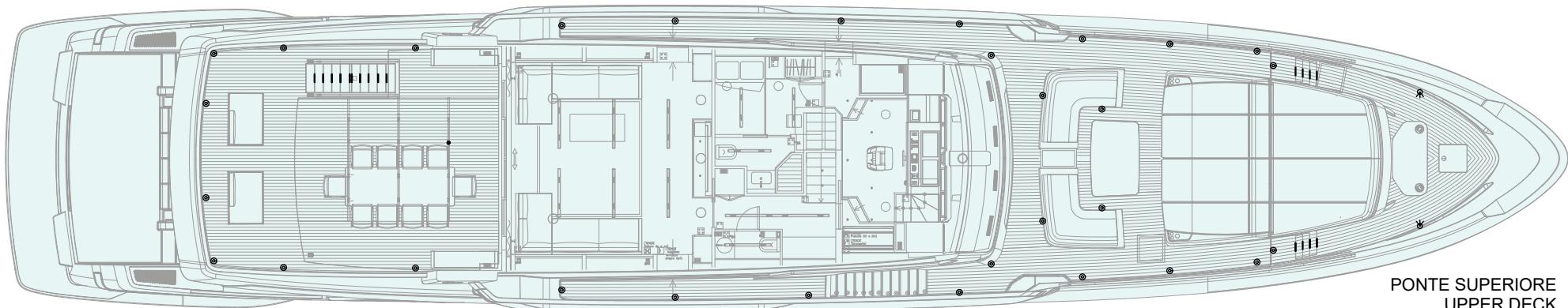
ELENCO FANALI OPT MCA - MCA OPT LIGHTS LIST					
ITEM	DESCRIZIONE - DESCRIPTION	COLORE - COLOUR	ANGOLO ANGLE	QTA QTY	VISIBILITÀ VISIBILITY
1	TESTA D'ALBERO - MASTHEAD DOUBLE LIGHT	BIANCO - WHITE	225°	1	5 MIGLIA - MILES
2	FONDA - ANCHOR DOUBLE LIGHT	BIANCO - WHITE	360°	1	2 MIGLIA - MILES
3	VIA DX- NAV. LIGHT STARBOARD SIDE	VERDE - GREEN	112,5°	1	2 MIGLIA - MILES
4	VIA SX- NAV. LIGHT PORT SIDE DOUBLE	ROSSO - RED	112,5°	1	2 MIGLIA - MILES
5	CORONAMENTO - STERN LIGHT DOUBLE	BIANCO - WHITE	135°	1	2 MIGLIA - MILES
6	NON GOVERNO NOT UNDER COMMAND DOUBLE LIGHT	ROSSO - RED	360°	4	2 MIGLIA - MILES

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Emergency lighting:





ICONA ICON	DESCRIZIONE DESCRIPTION
◎	Faretto led Led spotlights
○	Faretto mini Mini spotlight
■	Barre led Led bars

ICONA ICON	DESCRIZIONE DESCRIPTION
□	Faretto led ethos Ethos led spotlight
□	Proiettore faro zattere Floodlight rafts
□	Faretto Spotlight

2.8.3 Daylight signals

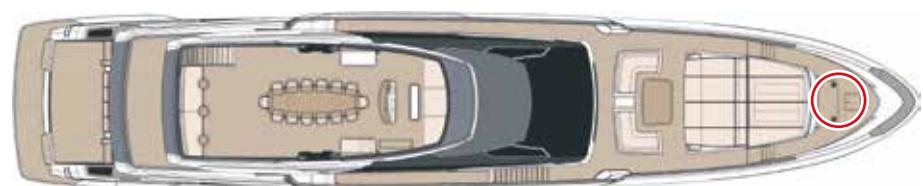
In order to increase the safety of persons on board, the Manufacturer has provided the installation of a daylight mast signals, in accordance with the Directive 2013/53/EU.

NOTE

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

Daylight 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:



- Non under command yacht:



- Stranded yacht:



- Yacht with limited manoeuvrability:



- Yacht to trailer or towed:



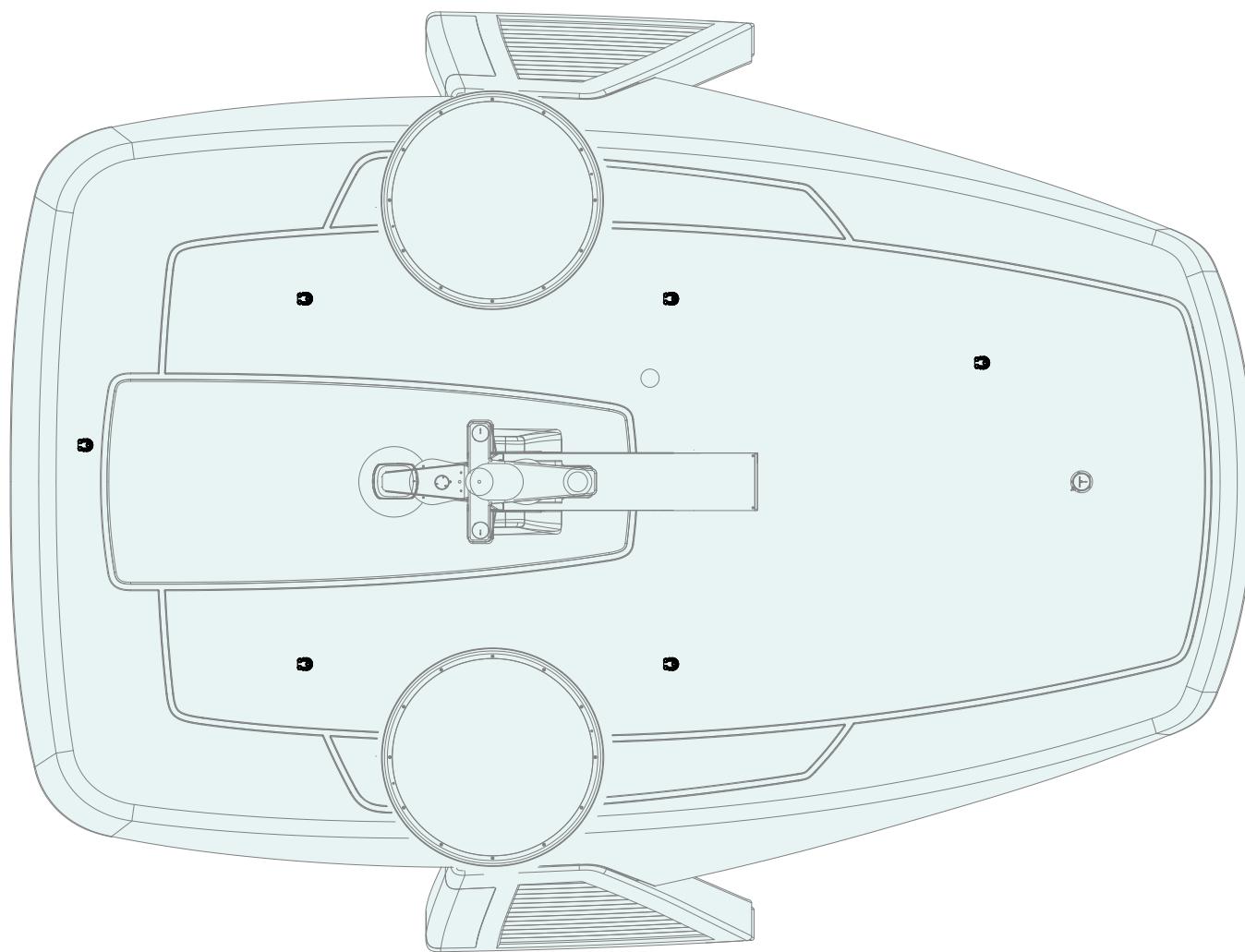
2.9 HOOKING POINTS

Hooking points were provided on board the yacht in order to be able to move around safely.



CAUTION

Access the Hard Top only with safety belt by qualified / trained technical personnel for work at height.



ICONA ICON	DESCRIZIONE DESCRIPTION
	Occhiello abbattibile Folding pad eye

2.10 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 RIVA, 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.



WARNING

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



CAUTION

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

2.11 LOCATION OF 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.

The fire extinguisher plates are located adjacent to each fire extinguisher.



CAUTION

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

2.12 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.									

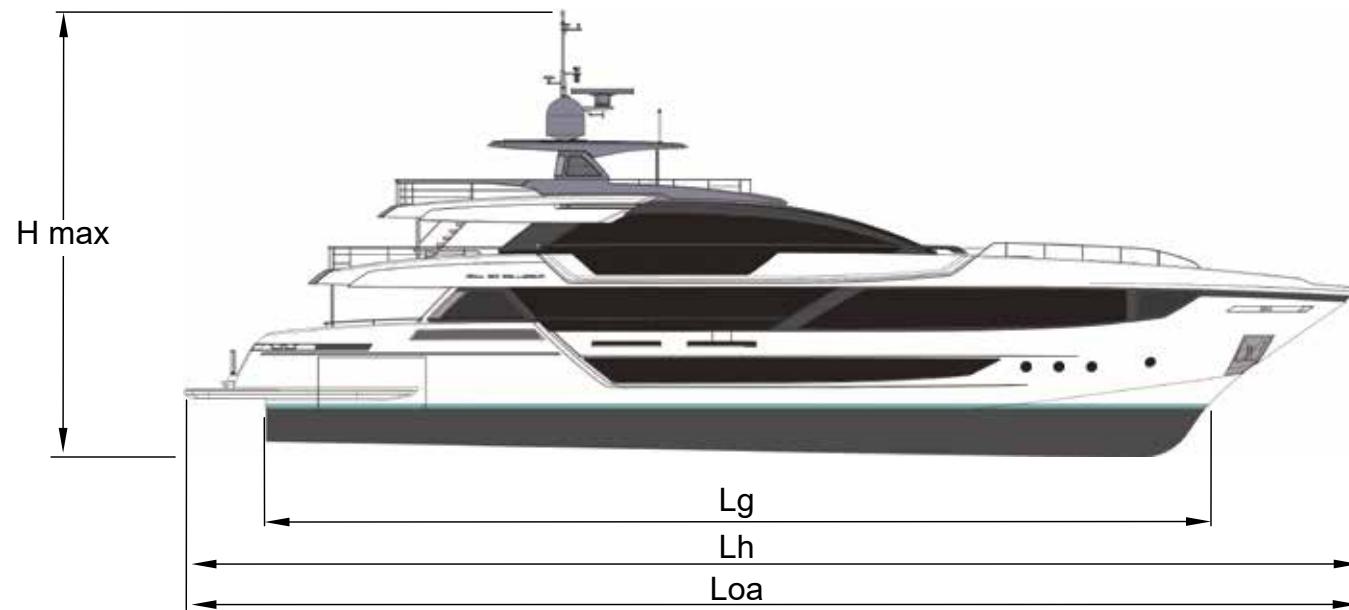
Riva

130 BELLISSIMA

DESCRIPTION OF THE YACHT

CHAPTER 3

3.1 MAIN DIMENSIONS AND CHARACTERISTIC DATA



(Loa) Overall length	40 m	131 ft 3 in
(Lh) Hull length	40 m	131 ft 3 in
(Lg) Waterline length (yacht fully laden)	32,22 m	105 ft 9 in
Maximum beam	7,87 m	25 ft 10 in
Hmax = Overall height from keel to hard top	11,07 m	36 ft 4 in
Depth under propellers (at performance displacement)	2,18 m	7 ft 2 in
Depth under propellers (yacht fully laden)	2,30 m	7 ft 7 in
Displacement unladen	185000 kg	407855 lbs
Displacement laden	215000 kg	473994 lbs

Features		
Hull type		Warped hull with spray rails and aft deadrise 12°
Construction material		VTR
Propulsion	Model	MTU 2000 M 96L
	Configuration	16 cylinders a V
	Power	1939 kW (2638 mhp)
	rpm	2450
Weight (dry)	Kg (lb)	3380 (7452)
Displacement	It (gal)	35,70 (9,43)
Inverter	Model	2 x ZF 5050
Fuel tank capacity	It (US Gal) approximately	17000 (4491)
Fresh water tank capacity	It (US Gal) approximately	3500 (925)
Black water tank capacity	It (US Gal) approximately	1470 (388)
Grey water tank capacity	It (US Gal) approximately	1470 (308)
Total weight of liquids (full tanks)	Kg (lb) approximately	20040 (44181)
On-board power supply	(V)	400 / 230 from generator sets
	(V)	24 by batteries
Power generator (no. 2)	Model	2 x ZENORO ESSENTIAL
	Tension (V)	Three-phase 400 / 230 VAC
	Frequency (Hz)	50
	Power (kW)	80 + 80
Batteries	Engine (N°)	4 x 263 Ah 12 V
	Services (N°)	12 x 696 Ah 2 V
	Generator (N°)	2 x 120 Ah 24 V
	Radio (N°)	2 x 120 Ah 12 V
	Emergency (N°)	6 x 240 Ah 12 V

**CAUTION**

RIVA 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.

**WARNING**

When loading the yacht, never exceed the maximum recommended load. Always load the yacht carefully and distribute loads appropriately to maintain design trim (approximately level).

3.2 GENERAL LAYOUT AND SECTORS OF THE YACHT

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 different devices.

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

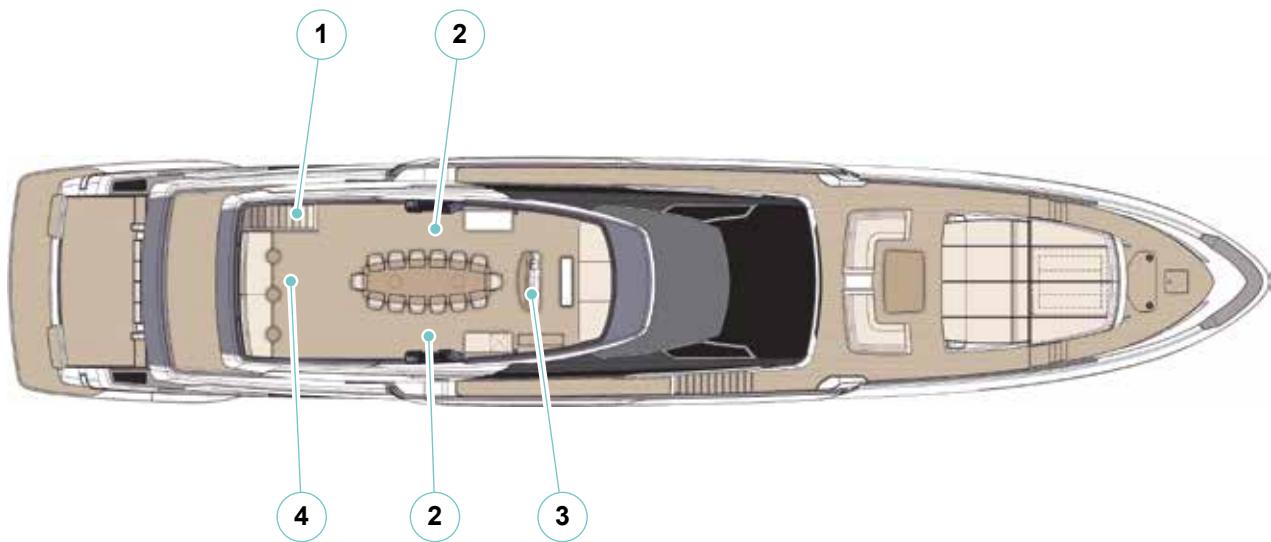
The structure of the yacht has been divided as follows:

- Sun deck
- Upper deck
- Main Deck
- 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.

1. Access from the cockpit
2. Table
3. Services cabinet
4. Sunbathing area



**CAUTION**

Never use denaturised alcohol or acetone to clean Plexiglas parts; they could crack inside.

**CAUTION**

Is not recommended to move during navigation, because a lateral skid of the yacht could have a negative effect on a moving passenger, causing an accidental fall or the impact against a piece of furniture.

**CAUTION**

Keep all on board steps clean and dry.

**CAUTION**

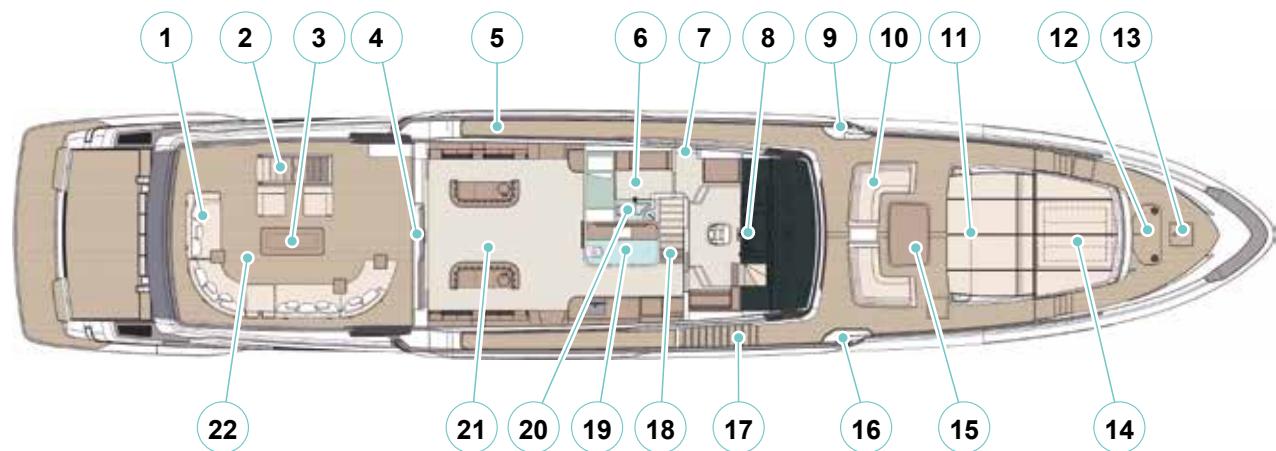
Do not use the whirlpool during navigation (if available).
Empty the whirlpool before starting navigation (if available).

**CAUTION**

Access the Hard Top only with safety belt by qualified/trained technical personnel for work at height.

3.4 UPPER DECK

1. Aft cockpit sofa
2. Access stairs to the sun deck / main deck
3. Aft cockpit table
4. Interior/exterior access sliding door
5. Port-side lateral walkway
6. Captain's cabin
7. Entrance / exit door from the bridge (port side)
8. Helm station
9. Wing station port side
10. Forward cockpit sofa
11. Forward sundeck
12. Forward mooring utilities area
13. Anchor chain stowage compartment and windlass controls
14. Bow storage / minipool (optional)
15. Bow dinette
16. Wing station starboard side
17. Bow area access stairs
18. Main deck access stairs
19. Day head
20. Captain's head
21. Upper deck lounge
22. Upper deck aft cockpit



**CAUTION**

For the adjustment of the saloon door, please contact the RIVA After Sales & Service Department.

**CAUTION**

Never start navigation with saloon door unlocked. Its structure, if free, might develop an inertial force, thus causing danger of cuts or crushing.

**CAUTION**

Keep the access to the helm station reserved to the Captain only, in order to prevent accidental alterations of the instruments carried out by incompetent persons.

**CAUTION**

Before undertaking any navigation, check that the doors are closed and locked. You will avoid unpleasant banging and accidental dangers.

**CAUTION**

Never use denaturised alcohol to clean Plexiglas parts; they could crack inside.

**DANGER**

The personnel operating the yacht during the various activities on board must not be under the influence of alcohol, narcotics or drugs.

**CAUTION**

For the correct use of the various devices installed in the main helm station, see the relevant instruction manuals.

**CAUTION**

It is not recommended to move during navigation, because a lateral skid of the yacht could have a negative effect on a moving passenger, causing an accidental fall or the impact against a piece of furniture.

**CAUTION**

The lounge, like much of the yacht, is equipped with air conditioning. It is therefore advisable to open the window as little as possible when the system is in operation.

An additional monitor for monitoring on-board systems may be located in the captain's cabin.

**CAUTION**

The excessive use of conditioned air may cause infirmities due to the great difference of temperature between the yacht inside and the outside. It is recommended to condition rooms with a temperature difference of maximum 5°C between inside and outside.

**CAUTION**

If you are to open or to close the weather-proof door, check first that the walk-arounds are clear from crew or passengers. Their opening or closing restricts the movement space on the walk-around.

**CAUTION**

The removable awnings and related support poles must always be dismantled and stored in the appropriate seats before starting navigation. When not in use, the poles must be stored in the appropriate seats.

Awnings should only be installed when the yacht is stationary and with favourable weather and sea conditions.

Do not leave the awnings open in the event of heavy rain.

Do not leave the awnings installed on an unattended yacht.

Do not let water pool on the fabric of the awnings.

When not using the awnings, keep the pole engagement holes closed with the appropriate covers.

**CAUTION**

The use of side locking systems, such as Cristal or similar ones, is not allowed during navigation.

**CAUTION**

Turn on the spot lights of the passage ways so as to ensure a proper lighting. Check the operation of the spot lights and, if necessary, replace their bulbs.

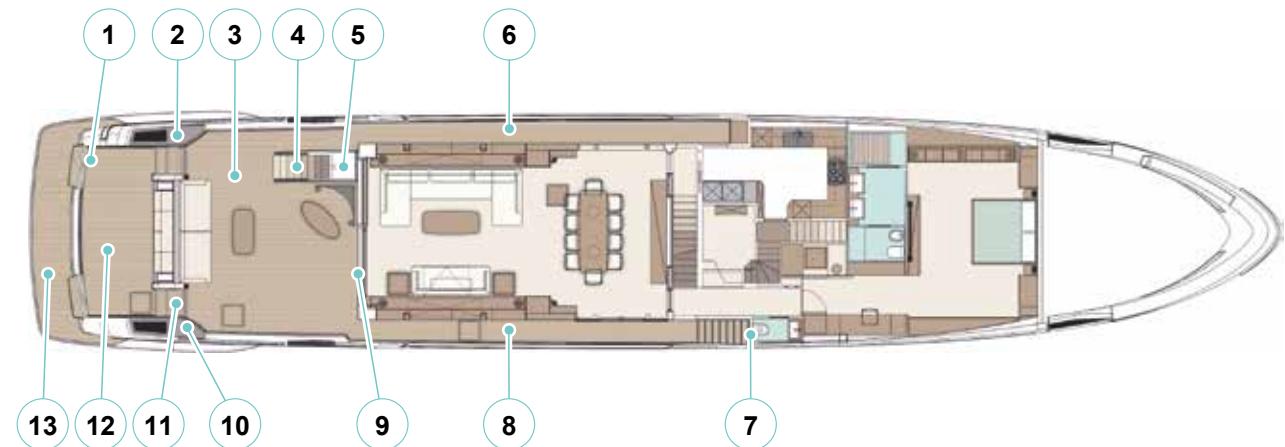
**WARNING**

When navigating, the yacht's normal movement in the water can cause the slipping or falling of persons with the potential hazard of serious injury or even death. Persons should remain seated in secure locations when the yacht is underway.

3.5 MAIN DECK

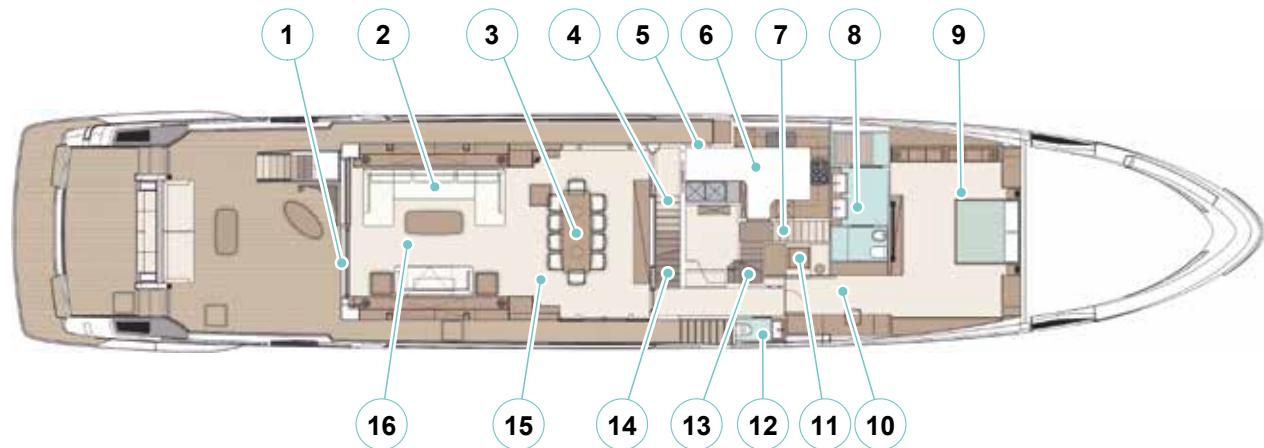
3.5.1 External area

1. Gangway/ swim ladder
2. Port-side mooring stage
3. Aft cockpit
4. Upper deck access stairs
5. Control room / engine room access stairs
6. Port-side lateral walk-around
7. Upper deck access stairs
8. Starboard lateral walk-around
9. Interior access sliding door
10. Starboard mooring stage
11. Aft beach area access stairs
12. Beach area
13. Stern platform



3.5.2 Internal area

1. Exterior access sliding door
2. Lounge sofas
3. Lounge dining table
4. Upper deck access service stairs
5. Port-side lateral walk-around access door
6. Galley
7. Crew area access stairs
8. Owner's cabin bathroom
9. Owner's cabin
10. Owner's office
11. Owner's wardrobe
12. Day head
13. Upper deck access stairs
14. Lower deck access stairs
15. Dining area
16. Lounge



**CAUTION**

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

**DANGER**

It is forbidden to stand on the stern beach during navigation as it is not equipped with safety systems that prevent people from falling into the sea.

**WARNING**

Never navigate with gates, gangway, hatch or garage not properly stowed/closed.

**DANGER**

Do not use the bow compartment to stow fuel.

**CAUTION**

Periodically check that groundings are in order.
Keep connections dry and protected with anti-corrosion grease.

**CAUTION**

Keep the access ladder to the main deck clean and dry.
Get good hold of the steps and handrail when you go up or down a stair to avoid falling down.

**WARNING**

When walking on the lateral walk-arounds, be careful so as to prevent any accidental fall at sea.

**CAUTION**

Do not use the warping winches as permanent mooring points.

**DANGER**

Do not use the cleats on the aft platform for mooring the yacht or for towing. They have the sole function of mooring the tender or jet ski and are not suitable for towing these.

**WARNING**

When leaning on the outside handrail, be careful so as to prevent any accidental fall at sea.

**CAUTION**

Do not obstruct the ventilation grids of the icemaker container, because a wrong ventilation, in addition to generate a performance decrease and a wrong operation, can also cause serious damages to the device.

**WARNING**

Periodically check the oil level inside the ice maker tank.

**DANGER**

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

**CAUTION**

For the adjustment of the saloon door, of the side glass walls and of the balconies, please contact the RIVA After Sales & Service Department.

**CAUTION**

Never start navigation with saloon door unlocked. Its structure, if free, might develop an inertial force, thus causing danger of cuts or crushing.

**DANGER**

Do not use assisted movement if the weather conditions (wind, currents, atmospheric phenomena) are such as to affect yacht stability.

**CAUTION**

Never navigate with the portholes open.
Regularly check the correct operating sequence.

**CAUTION**

The saloon door which gives access to the salon is provided with a double automatic sensor for opening and closing (internally and externally); for a correct operation, they must not be obstructed.

The operation of the glass wall is enabled by a key in the stern cockpit near the opening of the glass wall.

**CAUTION**

For the safety on the people 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, for deteriorated or altered locks, always contact RIVA.

**CAUTION**

The living area, like much of the yacht, is equipped with air conditioning. It is therefore advisable to open the porthole as little as possible when the system is in operation.

**CAUTION**

The extremely precious finishing of woods used is the result of an accurate work, it is 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.

**CAUTION**

The excessive use of conditioned air may cause infirmities due to the great difference of temperature between the yacht inside and the outside. It is recommended to condition rooms with a temperature difference of maximum 5°C between inside and outside.

**CAUTION**

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

**CAUTION**

If you are to open or to close the weather-proof door, check first that the walk-arounds are clear from crew or passengers. Their opening or closing restricts the movement space on the walk-around.

**CAUTION**

During navigation, keep the side doors closed to avoid possible damage to the on-board instruments.

**CAUTION**

Turn on the spot lights of the passage ways so as to ensure a proper lighting.

Check the operation of the spot lights and, if necessary, replace their bulbs, observing following precautions:

- Disconnect the electric power supply of uses, from the main electrical panel;
- Wait until the ceiling light is cold;
- Unscrew and remove the crown and the light protection;
- Take out the lamp body and remove the bulb;
- Reinstall a bulb with connection and power-voltage-amperage features equal to those of the removed one;
- Replace the bulb-holder in the seat;
- Reposition and screw in the crown/light protection;
- If you have to replace an outer watertight light fastened with screw, apply.

3.5.3 Galley

When navigating, it is advisable to close all the doors well. The dishwasher uses water from the cold fresh water system. In the galley, above the electric plates, there is a suction nozzle, to eliminate galley odors.

**CAUTION**

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

**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.

**CAUTION**

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

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Do not put liquid foods into the microwave oven.

**CAUTION**

Do not place metal containers or metal inserts inside the microwave oven.

**CAUTION**

In order to eliminate smells, vapour or fumes, it is necessary to turn on the suction hood at cooking start and to keep it on at cooking end for 10-15 minutes.

**CAUTION**

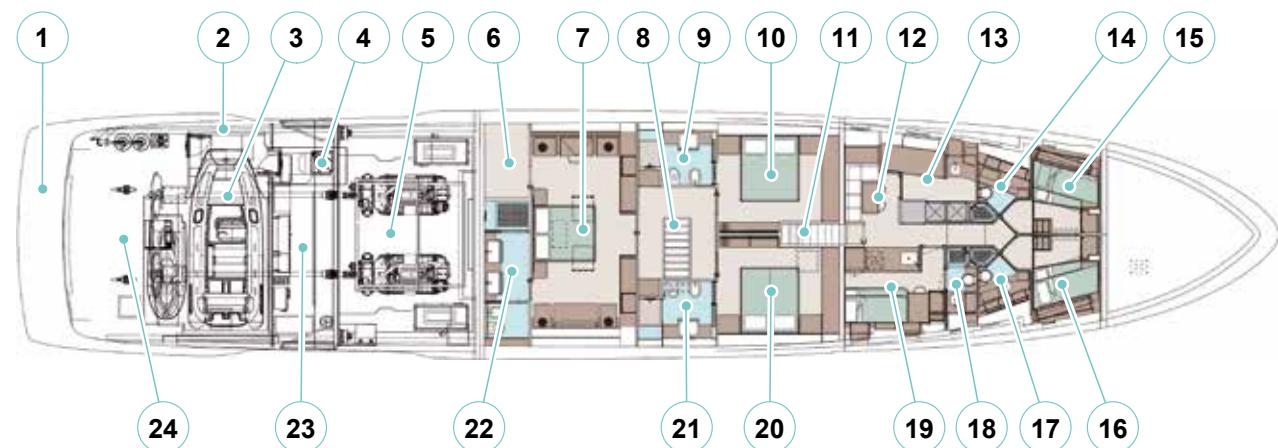
For the procedures and the correct use of the various household devices of the galley, refer to relevant manuals.

**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.

3.6 LOWER DECK

1. Stern platform
2. Garage hatch(closed)
3. Garage
4. Access stairs to main deck from engine room
5. Engine room
6. VIP cabin dress room
7. VIP cabin
8. Main deck access stairs
9. Port-side guest bathroom
10. Port-side guest cabin
11. Access stairs to main deck from crew quarters
12. Crew quarters lounge
13. Laundry
14. Bow Port-side crew cabin bathroom
15. Bow Port-side crew cabin
16. Forward crew cabin
17. Forward crew cabin bathroom
18. Starboard crew bathroom
19. Starboard crew cabin
20. Starboard guest cabin
21. Starboard guest bathroom
22. VIP cabin bathroom
23. Control room
24. Aft technical compartment



**DANGER**

The garage hatch must always be closed during navigation, it can stay open only with stationary yacht and with favourable sea weather conditions. Loads stowed inside the garage, in particular a possible jet-ski, must be fastened with the utmost care. During navigation nobody should stay inside the garage.

**DANGER**

As the opening/closing of the garage hatch is performed by means of power-steered mechanisms, always check that no obstacles or persons are standing nearby before its activation; this operation must be performed exclusively by skilled crew.

**DANGER**

Do not use assisted movement if the weather conditions (wind, currents, atmospheric phenomena) are such as to affect yacht stability.

**CAUTION**

Before undertaking any navigation, check the closure of the cabs access doors. You will avoid unpleasant banging and accidental dangers.

**CAUTION**

Do not store in the bilge material free to move due of the lists of navigation.

**CAUTION**

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

**CAUTION**

Never use denaturised alcohol or acetone to clean Plexiglas parts; they could crack inside.

**CAUTION**

The mosquito net (optional) hinders the tightness of the portholes, take it off before closing the portholes.

**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.

**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.

**DANGER**

You are not allowed to enter the engine room 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 firefighting system.

**DANGER**

In case a fuel can is stowed in the garage, the can must not exceed a capacity of 25/30 litres.

**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**

For the correct use of the various equipment in the control room and in the engine room see the relative user manuals.

In the living room of the crew area there is a multifunction display where it is possible to view the main information of the on-board monitoring system.

3.6.1 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.

**CAUTION**

Close the skylights and skylights when the yacht is navigating or when it is left unattended for a long time.

3.7 ENGINE ROOM AND CONTROL ROOMS

The engine room can be reached by descending into the control room through the access hatch located on the port-side cabinet.

The engine room is accessible through a watertight door from the control room.

Before entering, switch on the engine room lighting.



DANGER

You are not allowed to enter the engine room during navigation.



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.



DANGER

For safety reasons the watertight hatch, giving access to the engine room, must be kept closed by any chance and situation. It must stay open only during the passage.

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HELM STATIONS

CHAPTER 4

4.1 YACHT HELM STATION

All yacht main controls and monitoring devices are located in the main helm station. Besides on the yacht there are other helm stations which facilitate the most difficult manoeuvres, and the emergency ones.

- Main helm station;
- Port / Starboard helm station (external, upper deck);
- Emergency wheelhouse (control room).



CAUTION

Herewith only general information for first start-up is given: in order to practice and for the specific use of the individual systems, see the RIVA suppliers manuals and ask the RIVA After Sales & Service Department.



WARNING

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

The bridge shall be occupied only by the captain or crew members authorised thereby.
The accidental activation of the controls located on the helm station may pose a hazard to the yacht and those on board.



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

HORIZONTAL FIELD OF VIEW -- Aft view.

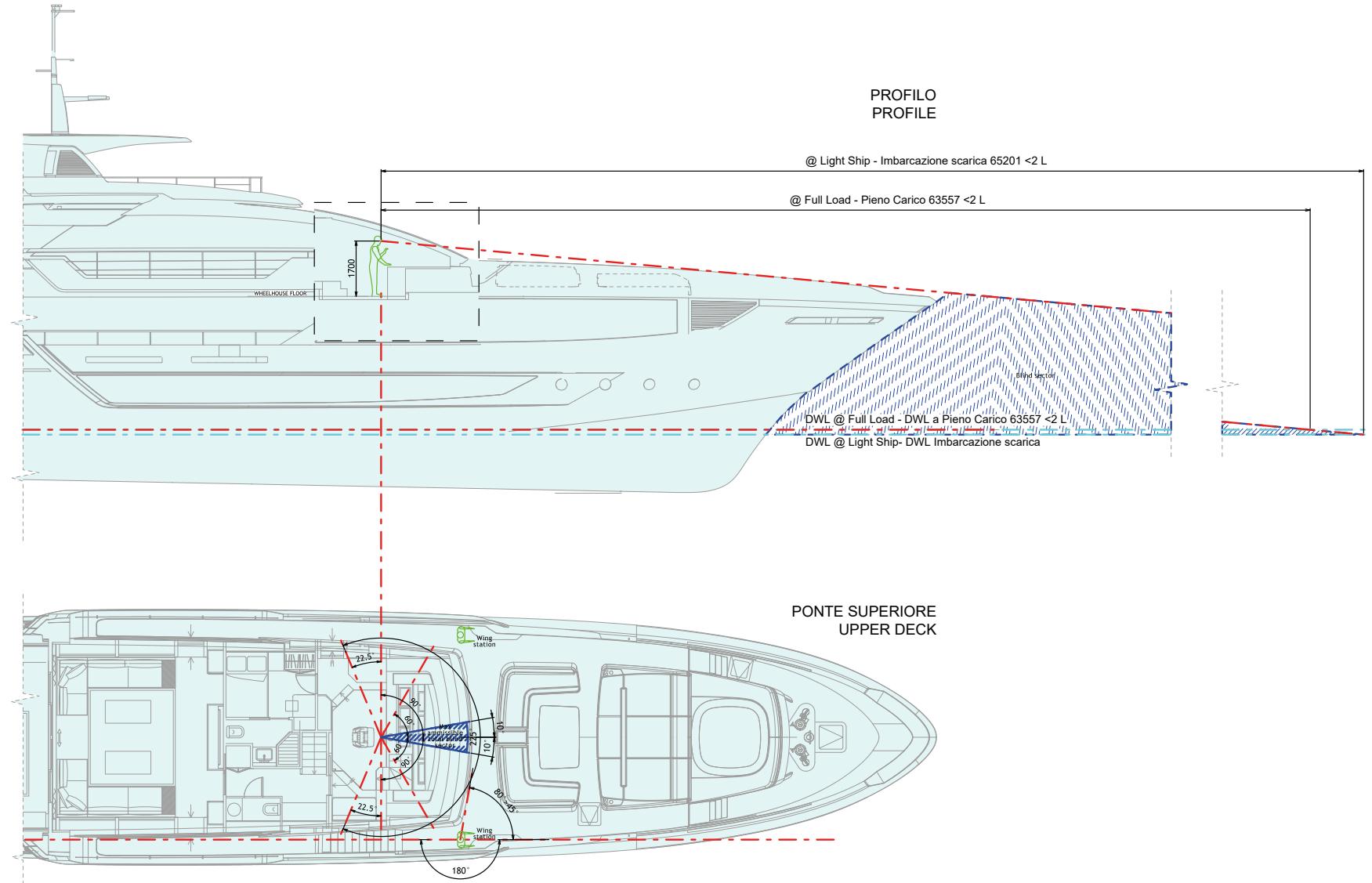
Unit equipped with autopilot. Manoeuvres requiring aft visibility should be carried out from the helm station on the flybridge, in accordance with the provisions of standard ISO11591.



CAUTION

Refer to the specific manuals relating to helm station instrumentation. Strictly adhere to the instructions contained in the manuals.

Field of view diagram:



4.1.1 Main helm station



SECTION A:**1. Synoptic panel****2. VHF radiotelephone**

Radiotelephone with digital selective calling (DSC). The emergency and call buttons are protected from accidental use. Individual or group calls can be conveniently made from the keypad using either the internal directory or by inputting the number directly.

3. Multifunction display

SECTION B:**1. Monitor****2. 24" touch screen monitor (optional)**

Monitoring system touch screen manager.

3. Multifunction display 10"**4. Trackball control panel**

Controls the display of the 15" monitors.

5. Thrusters control joystick

Controls thruster operation.

Contains the START and stop buttons and the two joysticks to control the bow and stern thrusters.

6. Throttle

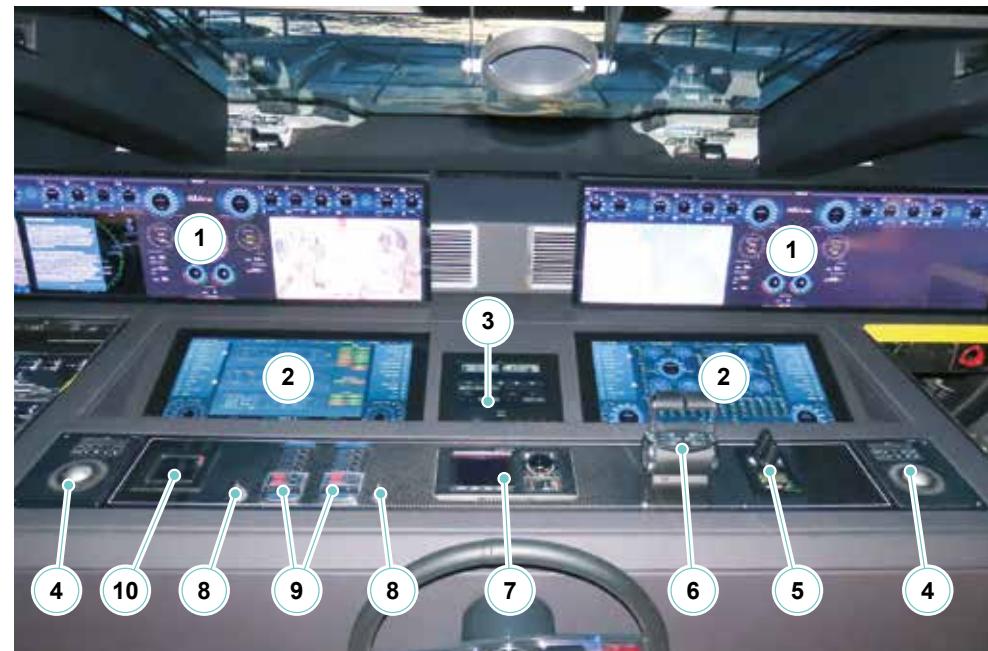
Controls propulsion engine revolutions.

7. Autopilot controls

Controls autopilot operation. Autopilot allows you to maintain a certain preset route without manually operating on the wheelhouse.

**WARNING**

Use of autopilot at high speeds is hazardous and not recommended. Always pay close attention to navigation even when using the autopilot device.

8. Main engine electronic power supply keys

9. Engine control panels

Includes the buttons for starting and stopping the main engines and the related indicators for monitoring.

10. Electronic wheelhouse control display

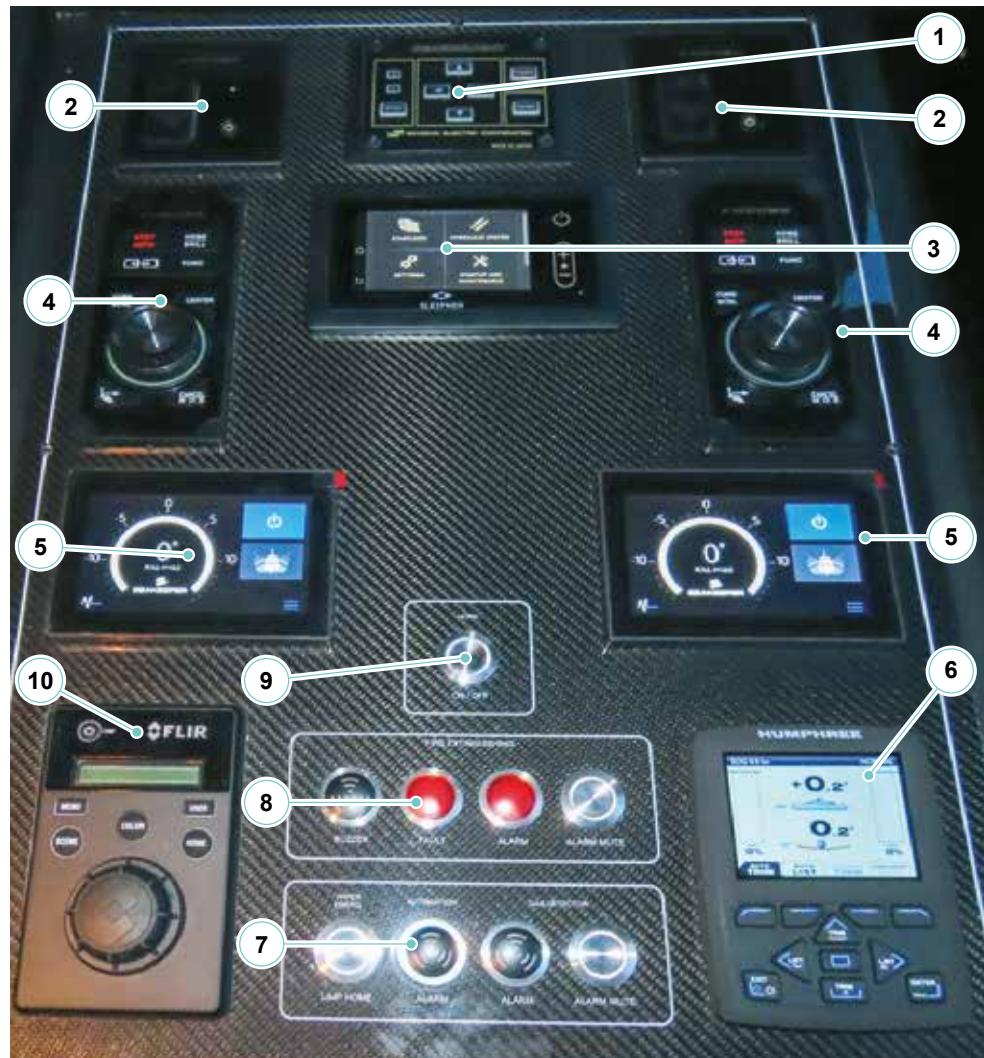
Allows you to monitor and set operation of the electronic wheelhouse.

SECTION C:**1. Searchlight control panel****2. Black box and sd reader****3. Stabilizing fin control display****4. Remote monitor control**

Allows you to control the system if the touch pad malfunctions.

5. Gyroscopic stabilizers control displays**6. Interceptor control display****7. Backup commands**

- Emergency wipers
- Anchor ON/OFF
- Silencer buzzer

8. Fire-fighting system management buttons**9. Horn activation command****10. Thermal camera control panel**

COMMUNICATIONS PANEL:
1. On-board interphone

Allows you to communicate with the various rooms on board for safety and for complete yacht communications.

2. Smoke and heat detection system control unit
3. VHF-DSC radiotelephone

Radiotelephone with digital selective calling (DSC). The emergency and call buttons are protected from accidental use. Individual or group calls can be conveniently made from the keypad using either the internal directory or by inputting the number directly.

4. SSB radiotelephone

The unit is an SSB MF/HF radiotelephone with a surveillance receiver and built-in DSC call. The data is displayed on a large, easy-to-read colour LCD screen.

5. Navtex weather receiver

Receives and displays Navtex weather information.

6. AIS receiver and transceiver

Displays symbols for AIS-equipped yachts.

Selecting a specific target displays information about the yacht (MMSI (or name, if available), heading, SOG, COG, etc.).

7. Bridge Navigational Watch Alarm System (BNWAS)

The purpose of BNWAS (Bridge Navigational Watch Alarm System) is to monitor the operation of the navigation bridge and detect any operator disability that could cause maritime accidents. BNWAS monitors the presence of the captain via the safety system.



4.1.2 Right and left wing station

1. Throttle

Via electrical signals, it controls the revolutions of the propulsion engines and the inverter gears.

2. Thrusters control joystick

Features the commands to control the thruster. The control panel features the START and STOP buttons, the operating lights and the joystick to control the thruster (with the screen-printed side of the arrows) of the stern and bow.

3. Port engine control panel

Includes the buttons for turning on and stopping the left engine and the related monitoring indicators.

4. Port engine rev counter with built-in digital rev counter

Shows the number of revolutions and operating hours of the left engine.

5. Starboard engine rev counter with built-in digital rev counter

Shows the number of revolutions and operating hours of the starboard engine.

6. Starboard engine control panel

Includes the buttons for turning on and stopping the starboard engine and the related monitoring indicators.

7. Tiller angle indicator

Allows you to view the tiller angle.

8. W-tight panel

9. Rudder angle control panel

Allows you to set the angle of the rudders.

10. Horn button

Used to operate the horn.



4.1.3 Helm station in control room

1. Rudder angle indicator

It indicates the position of the rudders.

2. Multifunction display

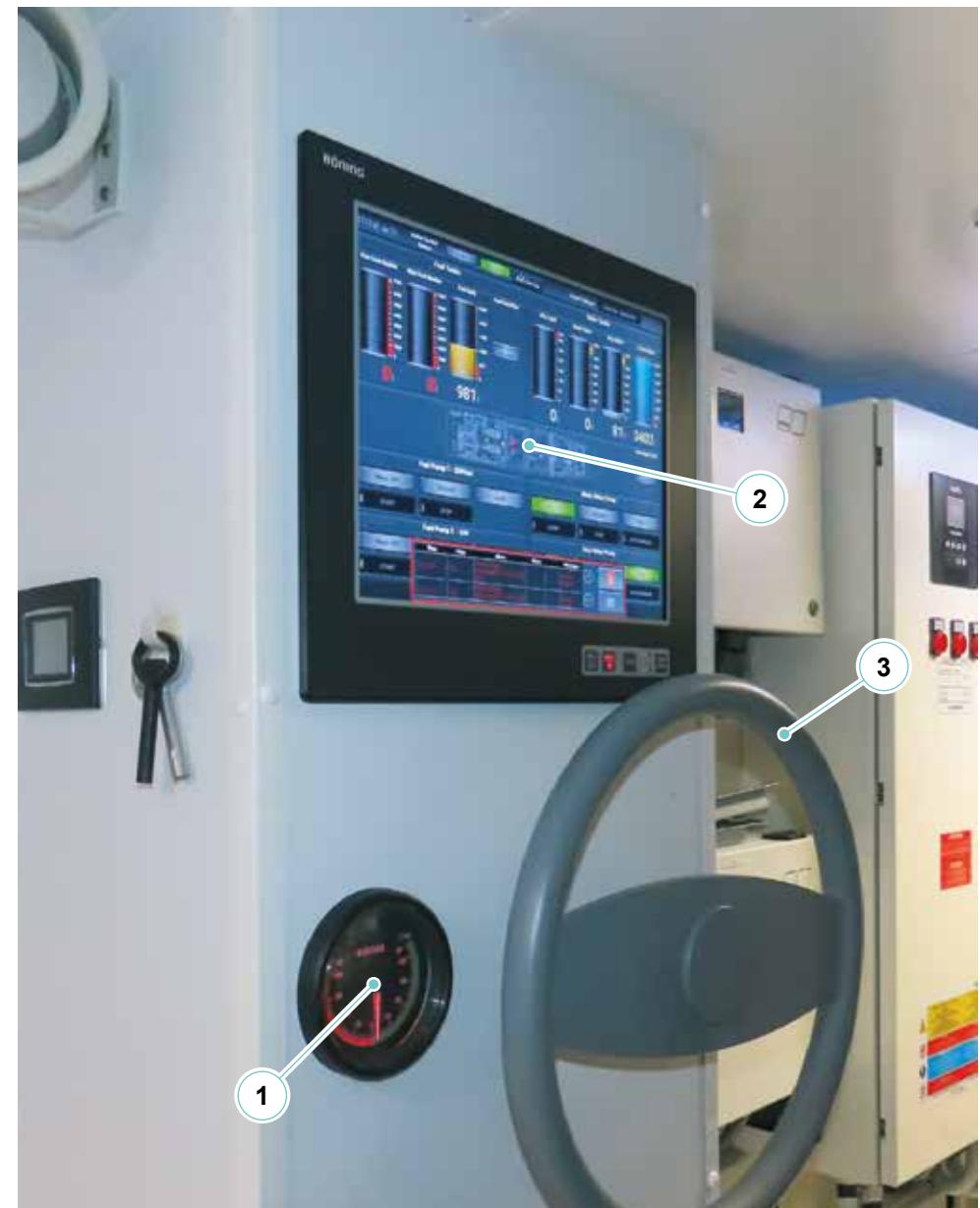
3. Steering wheel

It allows you to steer the ship.



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.



4.2 INSTRUMENTATION

4.2.1 VHF-DSC Radiotelephone

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 at 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/C 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 and hold the DISTRESS button for about 3 seconds. The indicator light then lights 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 not been entered. Consult the manual provided by the manufacturer for the correct entry operations.

- You can press INFO to view the information transmitted by the distress call.

NOTE

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

4.2.2 Throttle

The throttle is a system designed to control the revolutions of the engines and the speeds to the gear boxes by means of electric signals. The throttle have following performance features and functions.

- Sequence setting of gear box with engine speed.
- Start interlocking.
- Low/high idle run.
- Synchronization of engines for several propellers.
- Emergency control against back run.
- Gear box oil pressure interlocking (optional).

These features and operations facilitate the use of the throttles.

- Helm station indicator.
- Six two-coloured LEDs indicating the status and operation mode of control system.
- Acoustic transducer for indication of system status.

Advanced control modes

- **WARM UP:** mode increasing the engine rpm when the transmission is stalling on idle.
- **ONE LEVER:** mode which allows activating more propellers with gear shift and acceleration by means of a single lever control.



Taking control phases

- Set the levers of the throttle to idle position. The station cannot take control with throttle set to other positions. You hear the acoustic sequence of initialization.
- Press **CONTROL/SET** near the station. The **CONTROL LEDS** are steadily green to indicate that the station is taking control and that the operator is sending the idle run control. The acoustic signal is squelched in all stations.

**WARNING**

The next shifting of the throttle will engage the speed.

- Start the engine while sending the idle run control. If the levers of the throttle are not set to idle run, the interlocking start switch will prevent engine start.
- Shift the levers to the forward or backward retainer. The transmission starts and the **CONTROL LEDS** light up steadily red to indicate that the station has taken control and that the operator is sending the forward or backward run control.

**CAUTION**

Only one helm station can be enabled at a time.

Basic operation

The throttle has three detents: astern, idle and ahead.

With levers positioned on idle detent "Neutral detent", the system sends idle run and minimum rpm control to the engines.

By shifting one lever forwards "Astern detent" or backwards "Ahead detent" by 15°, the forward or reverse clutch engages.

The engine holds the minimum rpm. By shifting same lever further, the engine's rpm increases proportionally to the shifting range.

Throttle detents

Indicator	Lever position
A	Full speed astern
B	Astern detent (idle astern)
C	Neutral detent
D	Ahead detent (idle ahead)
E	Full speed ahead



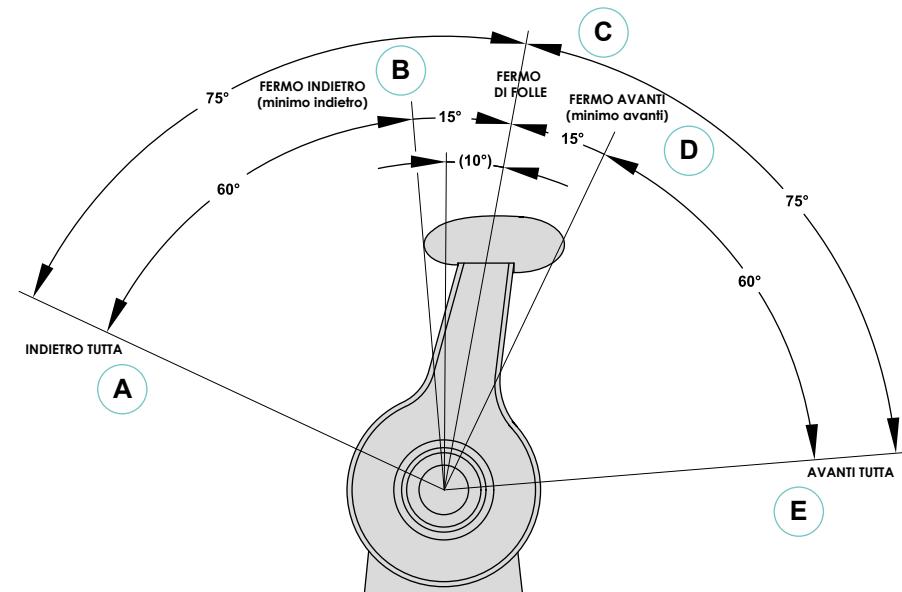
CAUTION

The idle detent (central position in relation to throttles shifting) is 10° ahead.

The shifting degrees are measured according to this position, not to vertical position of the throttle.

NOTE

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



4.2.3 Magnetic compass

A magnetic compass fitted on the dashboard of a yacht is inevitably close to the magnetic fields produced by the electric and electronic systems on board. This condition is called "variation".

Only a skilled technician should set the compass to correct the variation and supply an accurate deviation schedule. This procedure is called "compass compensation" or "compass setting".

Compensate the compass after the yacht launch or when replacing it, in order to eliminate possible mistakes due to the compass position.

Do not approach the compass to steel or iron objects or objects made of other ferrous materials (e.g. tools, wrenches, batteries, etc..). The ferrous materials close to the compass alter the readings and make them unreliable. Remove any unnecessary object near the compass.

NOTE

The compass delivered with the yacht is not compensated for change or deviation. Any electrical or metallic item located in its proximity may influence the compass. The yacht's owner is responsible for the compass compensation. Compensation should be carried out after installing additional electronic equipment or once a year after a prolonged period of mooring or ground lay-up. Compensation should be carried out only by authorized and qualified personnel. As a compass can rarely be set to zero variation on all courses, the technician in charge of its compensation should give you a card containing the corrections to be applied to navigation calculations. Always keep this card available on the main helm station.

NOTE

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

4.2.4 Engine control panel

The panel allows to start, stop and stop in emergency the propulsion engines.



CAUTION

The engines should be started with inverters in neutral and throttle levers at idle.



DANGER

Before starting the engine, make sure no one stands in the danger area in the engine room.



DANGER

Make sure the engines cannot be started by non-authorized personnel.



CAUTION

The emergency stop causes a heavy strain to engines, with a subsequent risk of damaging its parts. Use only in case of real need.



4.2.5 Thrusters control panel

On the control panel are the activation buttons and joysticks for controlling the operating propellers (with the screen-printed side of the side arrows).

NOTE

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

4.2.6 Steering wheel

The rudder wheel is connected by means of an electric actuator to an electro-hydraulic control unit, which moves the rudders via hydraulic drive systems (cylinders).

NOTE

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



4.2.7 Synoptic panel

The synoptic panel, by turning on LEDs, monitors the operating status of the:

- Navigation lights
- Bilge pumps
- Platform Socket Connection
- Bathroom ladder extraction
- Side garage hatch opening

There are also selectors to turn on the navigation lights and buttons to silence the alarms.



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WATER SYSTEMS

CHAPTER 5

5.1 FRESH WATER SYSTEM

The 3500l-capacity fresh water tank is located under the entrance to the guest quarters and is fitted with an inspection cover mounted with all the connections:

- **Water inlet**

Located on the walk-around of the main deck.

- **Fresh water tank vent**

It is located on the port side.

- **Tank level electric check**

It checks the fresh water level in the tank.

The tank level is indicated through the monitoring system.

- **Desalinated water inlet**

In addition to boarding, it is possible to power the system through a watermaker located in the bilge of the fore crew cabin.

The watermakers draw sea water through a centralized sea cock; while the water flows in through the membranes under pressure, the salt is removed and fresh water is then sent to the tank.

For a detailed description and the instructions for use of the various devices, please refer to the Manufacturer's Manuals supplied separately.

The system can be supplied also through shore water inlet.

On the shore supply line there is a pressure relief valve.

The system consists of the following main equipment.

- Autoclave pumps: these are installed in the systems room and draw water from the fresh water tank and then make it available to the various on-board utilities (sinks, showers, etc..);

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- Watermaker: draws sea water and, once desalinated, feeds the fresh water tank;
- Water heaters: these are positioned under the bilge of the starboard crew cabin and crew dining room and serve to heat water;
- Distribution manifolds: they ensure the on-board utilities are fed with fresh water.
- UV steriliser (optional): installed in the control room, it allows for the water present in the fresh water tank to be bacteriologically purified.
- Activated carbon filter (optional): installed in the control room, it allows the purification of fresh water.
- Softener (optional): installed in the system room, allows softening of fresh water.



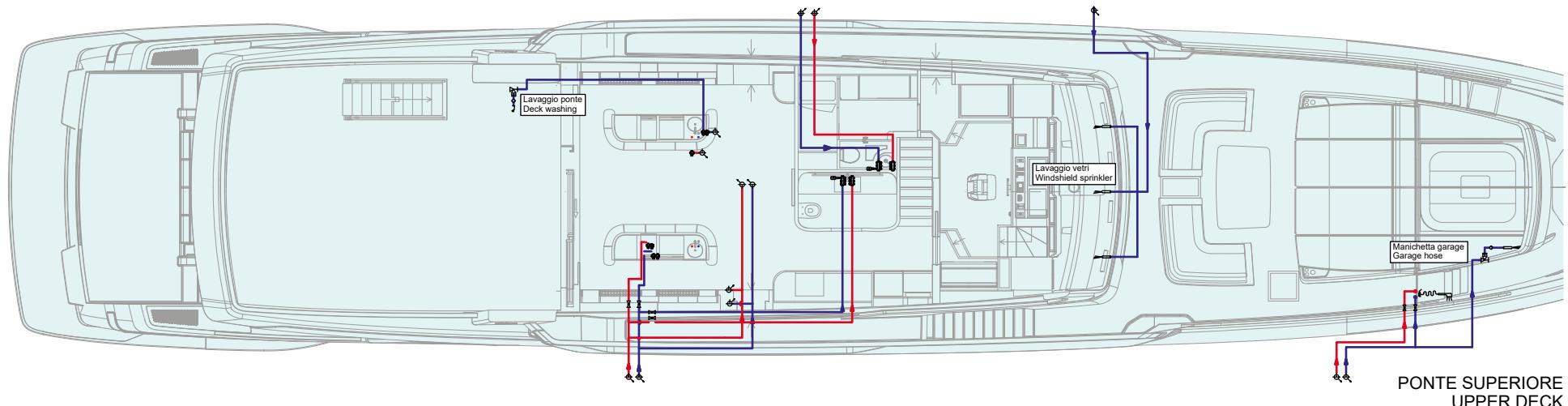
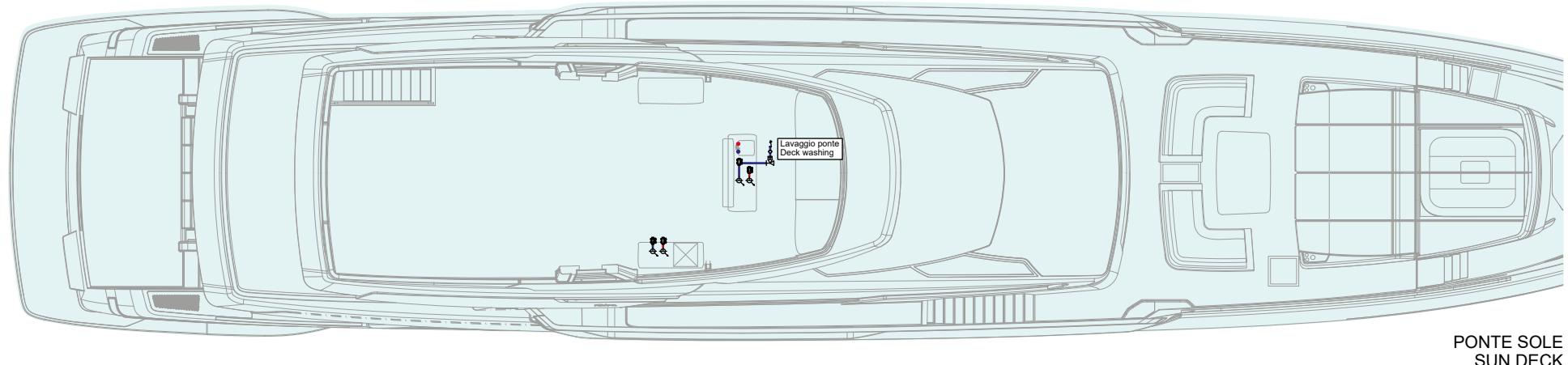
CAUTION

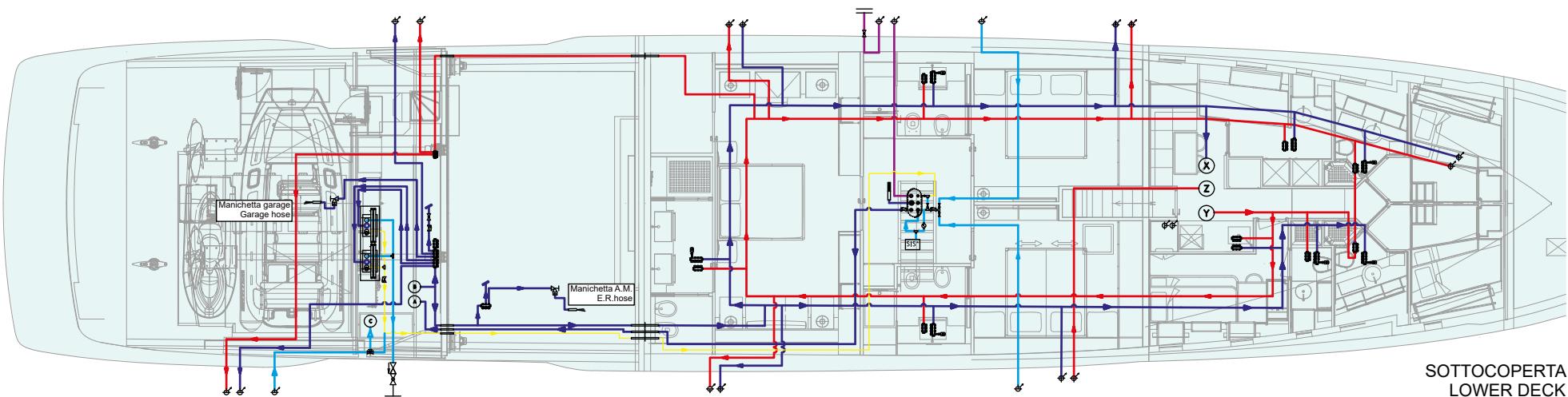
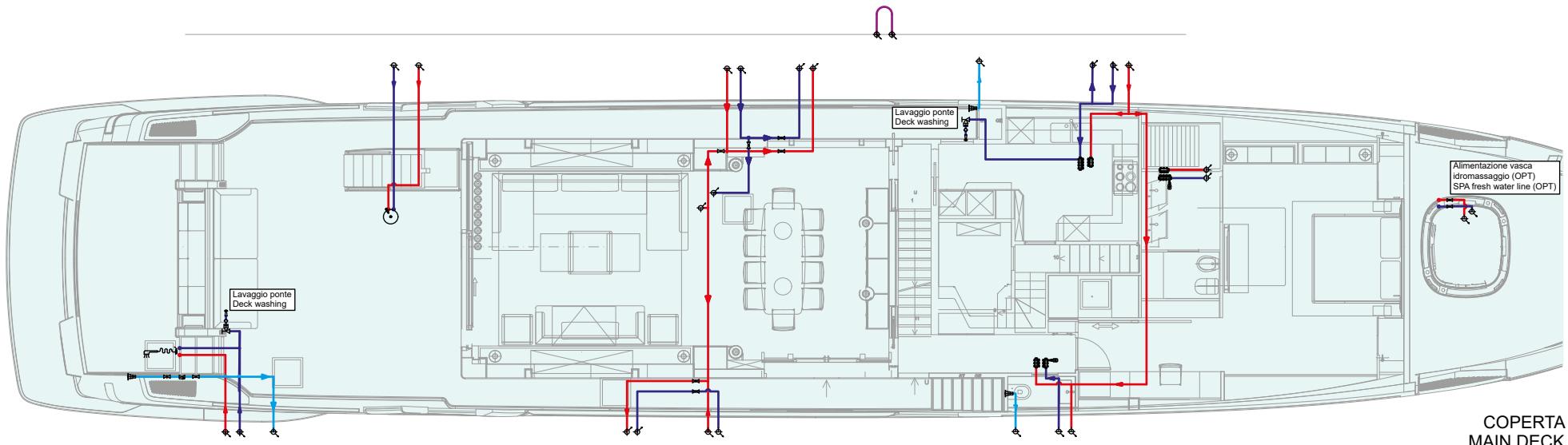
Notwithstanding the presence of a pressure limiter, check the pressure on the pressure gauge installed near the pumps.



CAUTION

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

Fresh water system diagram:



ICONA ICON	DESCRIZIONE DESCRIPTION
	Gruppo autoclave Autoclave pump
	Pompa di circolazione acqua c. Hot water circulation pump
	Sterilizzatore ultravioletti UV sterilizer
	Filtro carboni attivi Carbon filter
	Addolcitore Water softener
	Boiler Water heater
	Dissalatore Watermaker
	Valvola a sfera Ball valve
	Valvola di non ritorno No return valve
	Scarico fuoribordo/sfiato Overboard discharge/air vent
	Valvola riduttrice di pressione Pressure reduction valve
	Valvola attacco manichetta Hose connection valve

ICONA ICON	DESCRIZIONE DESCRIPTION
	Doccetta Shower head
	Attacco rapido Quick connect
	Lavaggio ponte Deck washing
	Manichetta Hose
	Ugello lavavetri Windshield sprinkler
	Livellostato Level alarm
	Passaparafia stagno Watertight bulkhead penetration
	Vaso espansione Expansion tank
	Imbarco acqua Fresh water filling
	Imbarco da banchina Fresh water filling from shore
	Collettore valvolato Manifold with valves
	Passaggio stagno a ponte Deck watertight passage

ICONA ICON	DESCRIZIONE DESCRIPTION
	Contalitri Liter counter
	Dosaggio a ioni di argento Silver ionistation system
	Tubo metallico flessibile Flexible metallic pipe
	Elettrovalvola 24V 24V solenoid valve
	Acqua fredda Cold water
	Acqua calda Hot water
	Imbarco da banchina/dissalatore From dock to tank/watermaker
	Linea manda gruppo autoclave Autoclave suction line
	Linea ricircolo acqua calda Hot water recirculation line
	Scarico fuori bordo Overboard discharge
	Linea OPT e accessori OPT line and accessories
	Linea sfiato cassa Tank vent line

5.1.1 Cold and hot fresh water system

The system is kept under pressure by a pump 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:

- Owner's bathroom
- Crew bathrooms
- VIP bathrooms
- Guest's bathrooms
- Day head
- Galley
- Crew utility room
- Watermaker membrane washing
- Engine room tap
- Showers and faucets main deck
- Glasses wash
- Main deck wash
- Washer-dryer
- Dishwasher
- Sun deck service cabinet
- Upper deck shower
- Whirlpool (optional)
- Deck washdown taps for bow and walkways
- Water heater

Water is drawn from the tank by means of pumps and delivered to the water heater to be heated.

The water heaters each have a capacity of 100L. Each water heater is fitted with a thermostatic valve allowing for temperature regulation.

By means of a distribution manifold, the hot water is conveyed to following uses:

- Owner's bathroom
- VIP bathrooms
- Guests bathrooms
- Day head
- Crew bathrooms
- Galley
- Sun deck whirlpool (optional)
- Sun deck shower
- Sun deck service cabinets
- Yacht bow shower
- Stern shower

The pump recirculates hot water constantly and makes it available as soon as you open the tap.



WARNING

During winter, if you do not use the water, drain the water heaters to avoid cracks due to freezing.



CAUTION

If warm water is not available, because the fresh water circuit is empty, switch OFF the water heaters to prevent damaging its resistor.

5.1.2 Watermaker

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 unit is installed in the engine room. The unit draws seawater through the designated seaward inlet by means of a special electric pump and, after filtering and treating the seawater, 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 seaweeds and impurities in the water, which could clog the inner membranes of the watermaker even very quickly.

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



CAUTION

If the system is still for longer than 5 days, it is necessary to wash it with clean water for 15 minutes, in order to change the water kept in the membranes.



**CAUTION**

The watermakers are kept in good condition by following scrupulously the indication of the specific manual.

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

**CAUTION**

The watermakers do 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.

NOTE

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

MAINTENANCE**WATERMAKER:**

Check the unit for proper function at least once per month.

Periodically perform a washing cycle with fresh water.

Clean the filter when required.

**5.1.3 Maintenance of fresh water system**

To carry out maintenance, or if needed, it is possible to isolate parts of the system or individual services without affecting the operation of the general system by acting on the valves positioned on the distribution manifolds.

**WARNING**

The high temperature may cause the softening of the pipes and the consequent loosening of joints. Then verify the tightness, especially for those positioned in the vicinity of heat sources.

**WARNING**

To stop a failure in the hot water circuit can act on the valves in the inlet to the water heater.

**WARNING**

At least once a month, completely empty the fresh water tank and rinse it a couple of times with clean fresh water. This in order to completely renew the water present in the deposits and at the same time wash the tanks themselves.

Remove the caps, check, clean, disinfect and restore the closures taking care to check the O-ring state.

1 At least once a year to make an internal tank cleaning.

Periodically pour a specific disinfectant into the tank from the fill inlet according to the doses recommended by the Manufacturer in order to prevent colonies of bacteria from forming in the system.

NOTE

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

**WARNING**

If you do not plan to use the yacht in winter, it is best to empty the water heaters to prevent failures due to freezing.

**CAUTION**

The boarding cap has the words "WATER" to prevent the accidental introduction of different liquids.

To avoid damage to the system and the tank, it is advisable to use gravity refuelling rather than pressure refuelling.

**CAUTION**

The fresh water circuit, and in particular the tanks, must be periodically sanitized pouring in embarking a specific disinfectant solution. It is advisable not to drink the water coming from the board.

**CAUTION**

Cater periodically inspect the fresh water circuit of the bilges and to detect the possible presence of leaks.

Repairing leaks by removing the system under pressure in order to avoid furnishing and electrical equipment damage.

**WARNING**

It is advisable to optimise the use of water, especially if you are offshore cruising!

**CAUTION**

If hot water is not available due to emptying of the fresh water system, turn OFF the water heaters to avoid damaging the heating elements.

Component	Maintenance	Notes and precautions
Fresh water tank	Cleaning and check	<p>At least once a month, completely empty the fresh water tank and rinse it a couple of times with clean fresh water. This should be done to completely change the water in the tanks and at the same time wash the tank itself. Check, clean, disinfect and restore the fastenings while taking care to check the condition of the O-ring. Periodically pour a specific disinfectant into the tank from the fill inlet according to the doses recommended by the Manufacturer in order to prevent colonies of bacteria from forming in the system.</p>
Fresh water system	Check	<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>Check if along the hydraulic circuit, where possible, are present leaks due to the damage of piping. The main manifolds are located on the bilge corresponding to starboard crew cabin and in the technical room.</p> <div style="border: 2px solid orange; padding: 5px; text-align: center;">  </div> <p>WARNING</p> <p>In case of need, break or pollution of the tanks, they can be replaced. Contact Service Department.</p> <div style="border: 2px solid yellow; padding: 5px; text-align: center;">  </div> <p>CAUTION</p> <p>The fresh water circuit, and particularly the tanks, must be sanitized periodically by pouring in the case a specific disinfectant solution.</p>

Component	Maintenance	Notes and precautions
Electric pumps	Cleaning and check	<p>Periodically check for the presence of leaks. Before carrying out maintenance on the pumps, prevent their accidental priming. Check daily that the expansion tank located downstream the electric pumps shows the correct pressure in the air cushion. Regularly check that fittings are tightly closed and free from corrosion. Check the conditions and the cleanliness of the pumps and of the expansion tank; if necessary, clean with well diluted detergent and dry accurately.</p> <div style="border: 1px solid gray; padding: 10px;"> <p>NOTE For further information on use and maintenance, please refer to the manufacturer's manual.</p> </div> <div style="border: 2px solid red; padding: 10px;">  <p>DANGER Before carrying out maintenance on the pumps, prevent their accidental priming.</p> </div>
Electric water heaters	Cleaning and check	<div style="border: 2px solid orange; padding: 10px;">  <p>WARNING During winter, if you do not use the yacht, drain all the circuits where there is fresh water to prevent cracks due to freezing.</p> </div> <div style="border: 2px solid yellow; padding: 10px;">  <p>CAUTION If warm water is not available, because of the fresh water circuit discharge, switch OFF the water heater to prevent damaging its resistor.</p> </div>

5.2 GREY AND WASTE WATER SYSTEM

5.2.1 Grey water system

The grey water system consists of one electric pump located in the systems room, one 1470L-capacity holding tank located under the port guest cabin and 6 boxes fitted with overflow alarm.

The water discharged by showers, wash tubs and wash basins falls by gravity inside the cases and is automatically drained into the main tank.

The condensation water produced by the fan coils is collected by gravity inside 4 recovery boxes and from these automatically discharged off board.

All liquids from services on the upper deck or sun deck are discharged directly into the scuppers.

The tank level can then be monitored via the monitors of the monitoring system.



ENVIRONMENT

Grey water must not be discharged in harbour, inside marinas or near beaches: check the level of the crates during the return from navigation, if necessary, discharge always verifying the position of the ship.



WARNING

In the event of an emergency, it is possible to empty the main grey water tank may be emptied through the waste water pump by adjusting the three-way valves on both pumps accordingly.

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Thanks to some selection valves installed under the sinks, the drains of the galley sinks can be conveyed either directly overboard or into the grey water tank.



CAUTION

Before winter storage, completely empty the system and the grey water tank to avoid any freezing issues.



CAUTION

Do not pour corrosive products into sinks or showers or at high temperatures as they could cause serious damage to the grey water system.

The grey water tank is equipped with a system that allows for washing with seawater. To wash the tank, make sure that the special valve on the tank door is open and that the relevant pump is powered.

This operation has to be performed periodically at a variable time interval, according to the use of the tank.

In addition to this, we recommend to constantly check the filling of the tank, so as to disconnect the pump when necessary.



WARNING

The valve for washing the grey water tank must always be closed except during washing operations. If the valve is left open, there is a risk of flooding the tank and embarking seawater.

**WARNING**

The grey water tank must only be washed where permitted by applicable legislation or, in port, only on condition that it is connected to the shore disposal system.

**WARNING**

When using chemical products, follow the manufacturer indications meticulously and use the suitable protection devices.

**DANGER**

The grey water tank must be only be washed by expert personnel and must be carried out thoroughly until the tank is fully empty.

An excessive pump operation, can cause the boarding of a large quantity of water with consequent overfilling and bilge flooding.

5.2.2 Black water system

The waste water system consists of one electric pump located in the Systems Room, one 1470L-capacity holding tank into which toilet waste is discharged and a waste water treatment system (optional) that separates the water from the mud waste. The pump allows for discharge of the waste water tank contents off-board.

The drain flange, located on the aft starboard side, can be used to draw and drain the contents of the waste water tank and mudbox (optional). This task requires activation of the system's ball valves.

The treatment system, if present, is located in the helmstock technical compartment and separates the aqueous part of the waste water discharged outboard from the solid part (mud), which is collected in a designated tank. The system consists of:

- Macerator;
- Microfiltration;
- UV lamp.

NOTE

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

The main electrical panel in the control room features the WC full tank warning lights (deactivated), the full tank pre-alarm and the manual tank emptying activation control.

The discharge of black water from the shore directly into the sewer system properly is the solution of minimal environmental impact to be taken whenever it is moored in place and equipped.

**CAUTION**

Before leaving the harbour, check the level indicators of the waste water box on the main electrical panel to perform suction from the shore if necessary.

**CAUTION**

During the suction black water from the shore is strictly prohibited:

- Using the toilet;
- Press the command button then operate the pump discharge overboard.

**WARNING**

Before use, make sure:

- Enable the utility by setting the WC system magneto-thermal switch to ON if necessary;
- The absence of the light high-level holding tank.

**CAUTION**

We recommend regularly monitor the level black water from monitoring system panel (Levels) to achieve optimum use of the retention system in compliance with environmental regulations locally in force.

**CAUTION**

In case of sinking hazard, if escaping condition allow you this, close the ball valve of the **black water drain**.

**CAUTION**

Totally empty the system and the black water tank before the lay-up period in order to prevent any problems with freezing.

**CAUTION**

For all pleasure yachts, drain at sea of on-board toilets is forbidden inside harbours, landings and moorings dedicated to crafts' anchor riding, and also within the limit of beaches visited by swimmers, as stated in the single decrees of the Port Authorities.

**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**

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

**CAUTION**

Direct sea discharge can only be carried out in the event of an emergency.

The holding tank is equipped with a sea water washing system. In order to wash the tank, you have to open the valve concerned, located on the tank door and to start the concerned pump.

This operation has to be performed periodically at a variable time interval, according to the use of the tank.

In addition to this, we recommend to constantly check the filling of the tank, so as to disconnect the pump when necessary.

**WARNING**

The valve for washing the black water tank must always be closed except during washing operations. If the valve remains open, the tank can be flooded and sea water can be boarded.

**WARNING**

The waste water tank must only be washed where permitted by applicable legislation or, in port, only on condition that it is connected to the shore disposal system.

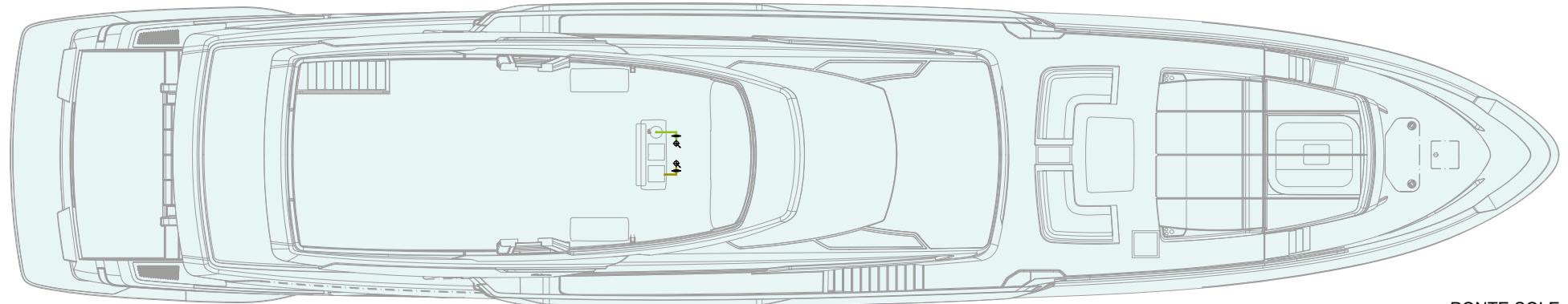
**WARNING**

When using chemical products, follow the manufacturer indications meticulously and use the suitable protection devices.

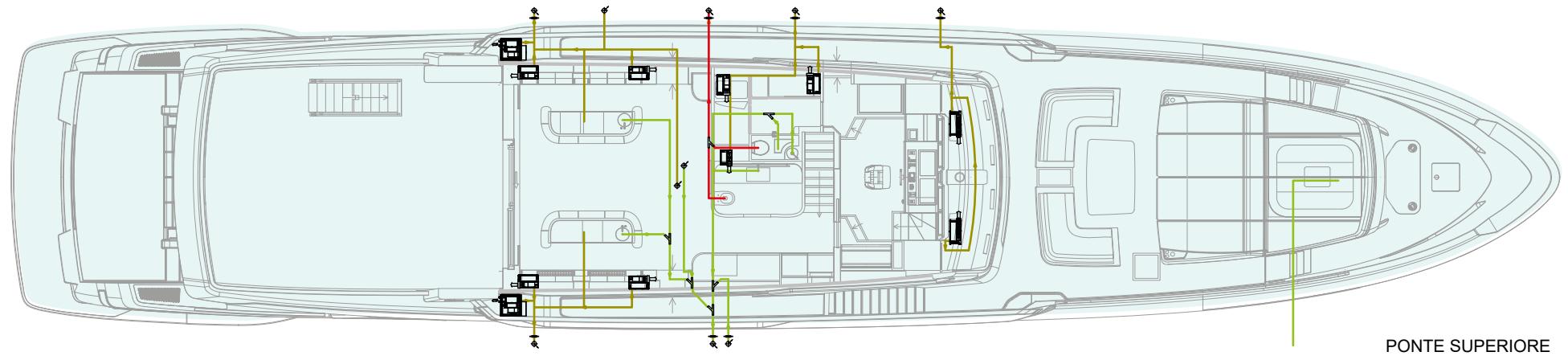
**DANGER**

The washing of the holding tank must be performed by experienced personnel and followed carefully until the tank is empty. An excessive pump operation, can cause the boarding of a large quantity of water with consequent overfilling and bilge flooding.

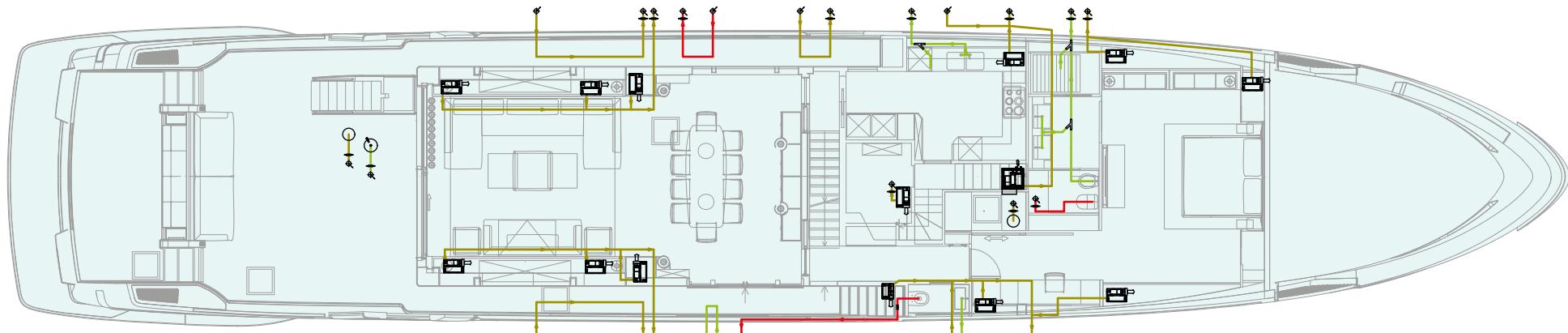
Diagram of grey and waste water systems:



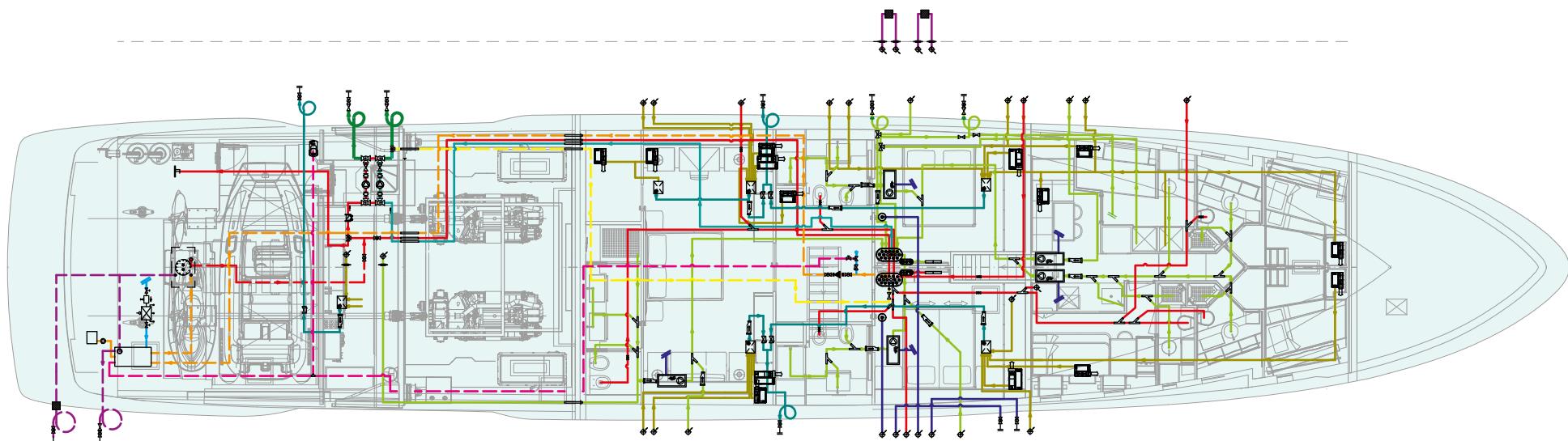
PONTE SOLE
SUN DECK



PONTE SUPERIORE
UPPER DECK



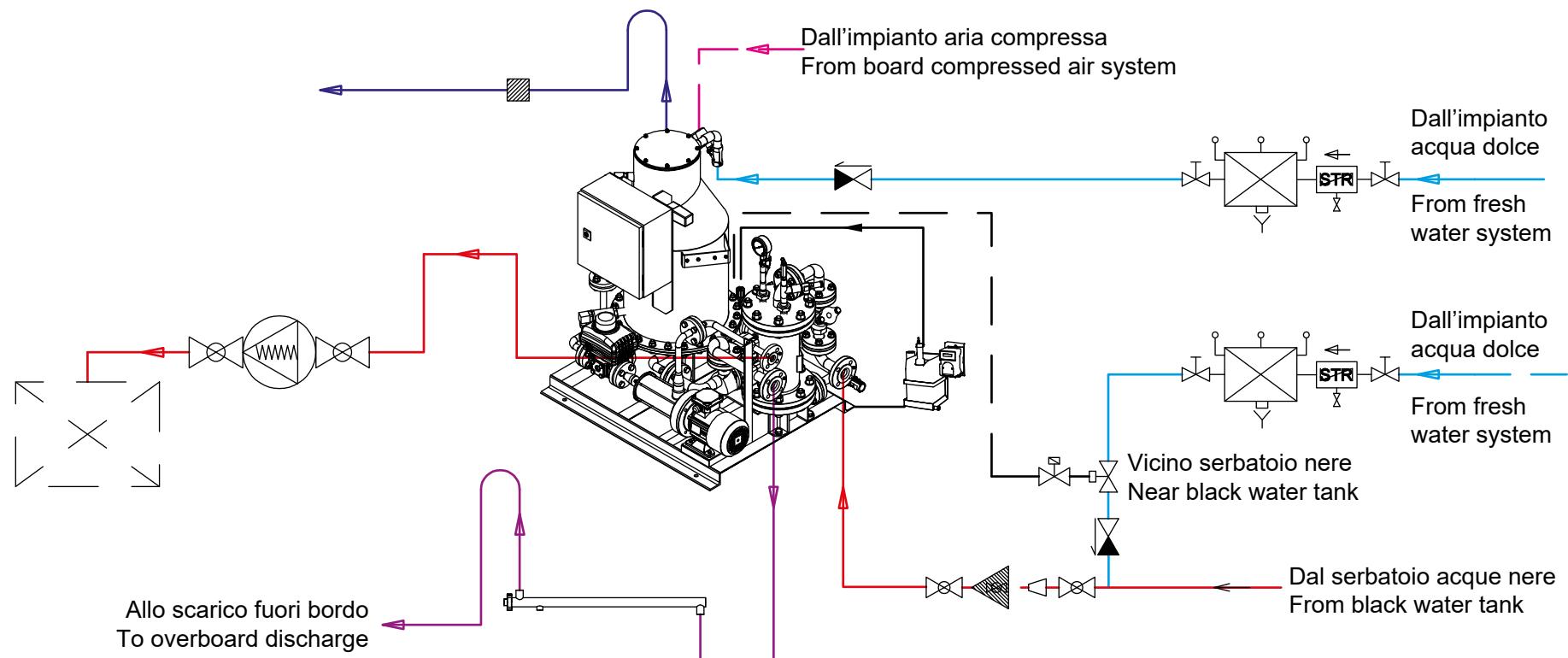
COPERTA
MAIN DECK



SOTTOCOPERTA
LOWER DECK

DETtaglio 1 - SISTEMA DI TRATTAMENTO HAMANN (OPT)

Detail 1 - HAMANN TREATMENT SYSTEM (OPT)



ICONA ICON	DESCRIZIONE DESCRIPTION
	Elettropompa autoadescente Self priming e/pump
	Pompa trasferimento Feeding pump
	Trattamento acque nere (opt) Sewage treatment (opt)
	Pompa dosatrice (opt) Clorine tank (opt)
	Valvola a sfera Ball valve
	Valvola di non ritorno No return valve
	Scarico fuoribordo/sfiato Overboard discharge/air vent
	Tecma sanisplit Tecma sanisplit
	Cassetta raccolta acque Water pumping unit tank
	Filtro antiodori Odor remover filter
	Flangia scarico Discharge flange
	Passaparafia stagno Watertight bulkhead penetration

ICONA ICON	DESCRIZIONE DESCRIPTION
	Passaggio a ponte stagno Crossing through deck
	Livellostato Alarm level switch
	Valvola a 3 vie 3 way valve
	Dispositivo antiriflusso Backflow prevention device
	Cassa fanghi Sewage tank
	Sifone antiodore Odour remover siphon
	Impianto acque nere Black water system
	Impianto acque grigie Grey water system
	Aspirazione imp. acque grigie Grey water suction system
	Impianto hamann Hamann system
	Sfiati Air vent
	Drenaggi fan coil Fancoil drainage

ICONA ICON	DESCRIZIONE DESCRIPTION
	Scarico fuoribordo Overboard discharge
	Collegamento pompa grigie/ cassa acque nere (OPT)
	Grey water pump/black water tank connection (OPT)
	Scarico fuoribordo hamann Hamann overboard discharge
	Impianto aria compressa Compressed air system
	Scarichi fuoribordo fan coil Fancoil overboard discharge

5.2.3 Operation of the toilet

The toilet of the bathrooms are of the "Saninautico" type ceramic, with related control panels on which there are two backlit buttons:

1. Button "before";
2. Button "after".

After 2 minutes of service the backlit buttons 1 and 2 switch OFF and the device sets to energy saving mode.

The pressure of one of the two buttons will restore the backlight.
The toilet will not discharge when the tank sensor indicates the full state.

To force unloading hold the button for more than 6 seconds.

To deactivate or reactivate the tank protection is necessary to press both buttons and for two times in quick succession.



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.



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.



WARNING

When the yacht is not operated for long periods of time, close the toilet overboard drain valve.



CAUTION

Forcing the toilet discharge can cause overfill of the tank.



CAUTION

The full tank condition is indicated by the red icon light on the dashboard synoptic. Forcing the WC discharge can cause the tank's overfilling.



CAUTION

The disabling of toilet drain protection can cause the tank to overfill.

5.2.4 Maintenance of black and grey water system

The tanks should be cleaned two or three times a year, ensuring that the floats and the suction pumps are clean and not clogged.

On each tank there is a tap for washing.

Remember to shunt correctly the valves on the fire-fighting/bilge electric pumps and on the fire-fighting manifold in the technical room.

Before using the tap, activate the switch that turns on the pump to wash the tank.

It is advisable to pour a sterilizing product (Amuchina, Clorichina or similar), into the drains of washbasins, etc., to prevent the formation of bacteria with the resulting bad smell release.

Anyway the best kind of maintenance for this kind of systems, is to use them correctly.

NOTE

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

Descaling of discharge tubes

Before descaling check following:

The majority of the toilet bowls valves are not built for a "return" pressure. To avoid spillages during the descaling treatment the toilet bowls have to be disconnected and the pipes have to be plugged.

How to descale piping:

- Fill the piping with a mix of phosphoric acid (70 -90%) and water: 10% acid and 90% water;
- Make sure that the mix flows. Let the mix flow for 24 hours;
- Rinse with water.

Component	Maintenance	Notes and precautions
Holding and grey water tanks	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; margin-bottom: 10px;"> <p style="text-align: center;"> CAUTION</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; margin-bottom: 10px;"> <p style="text-align: center;"> CAUTION</p> <p>In case of need, break or pollution of the tanks, they can be replaced. Contact the RIVA After Sales & Service Department..</p> </div> <div style="border: 1px solid gray; padding: 10px;"> <p style="text-align: center;">MAINTENANCE</p> <p>At least once a week check the correct operation:</p> <ul style="list-style-type: none"> • Of toilets; • Of the black water pump. <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"> • Of toilets solenoid valves; • The black waters pump. <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	Replacement of impeller and mechanical seal	<p>This is a complex operation and should only be undertaken by skilled personnel.</p> <p> CAUTION</p> <p>The electric motor may become hot when running (see manual of the electric pumps).</p> <p>Pay attention. The electric pump must only be repaired by competent or qualified personnel, using manufacturer's spares; if this procedure is not followed, the manufacturer is relieved of any responsibility and warranty is void and null.</p>

Component	Maintenance	Notes and precautions
Pumps	Operation check and cleaning (at least every month)	<p>Electric pumps usually do not need ordinary maintenance, as long as some precautions are taken, which extend their lives (address to the pumps' Manufacturer).</p> <div style="border: 2px solid red; padding: 10px; margin-top: 10px;">  DANGER <p>Before each intervention make sure that voltage is disconnected and that there is no possibility of accidental connection.</p> <ul style="list-style-type: none"> • If there is a risk of freezing, it is necessary to empty the pump casing from the liquid and to fill it, before restarting the pump. • Make sure that the pump never runs dry. • The DC motor brushes must be periodically checked for consumption and spring pressure. • If the pump does not work for a long time, it is better to empty the pump casing and clean it. • If a strainer and a foot valve are installed, check periodically for their efficiency and cleaning. • Check that the impeller is jammed, this could cause heavy damages to the electric motor; if this happens, descale the impeller and pump body. • At least once a month, have the operation of the grey/black water pumps checked, having their tanks filled with clean water until the pump activates and having the correct overboard draining checked. </div>

5.3 SCUPPERS SYSTEM

Via suitable holes and drainage channels, the scupper system allows rain-water, sea water or other water that may fall onto the yacht to flow quickly off it.

All the water collected by the scuppers is conveyed through collector pipes located along the walls and discharged outboard.

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.

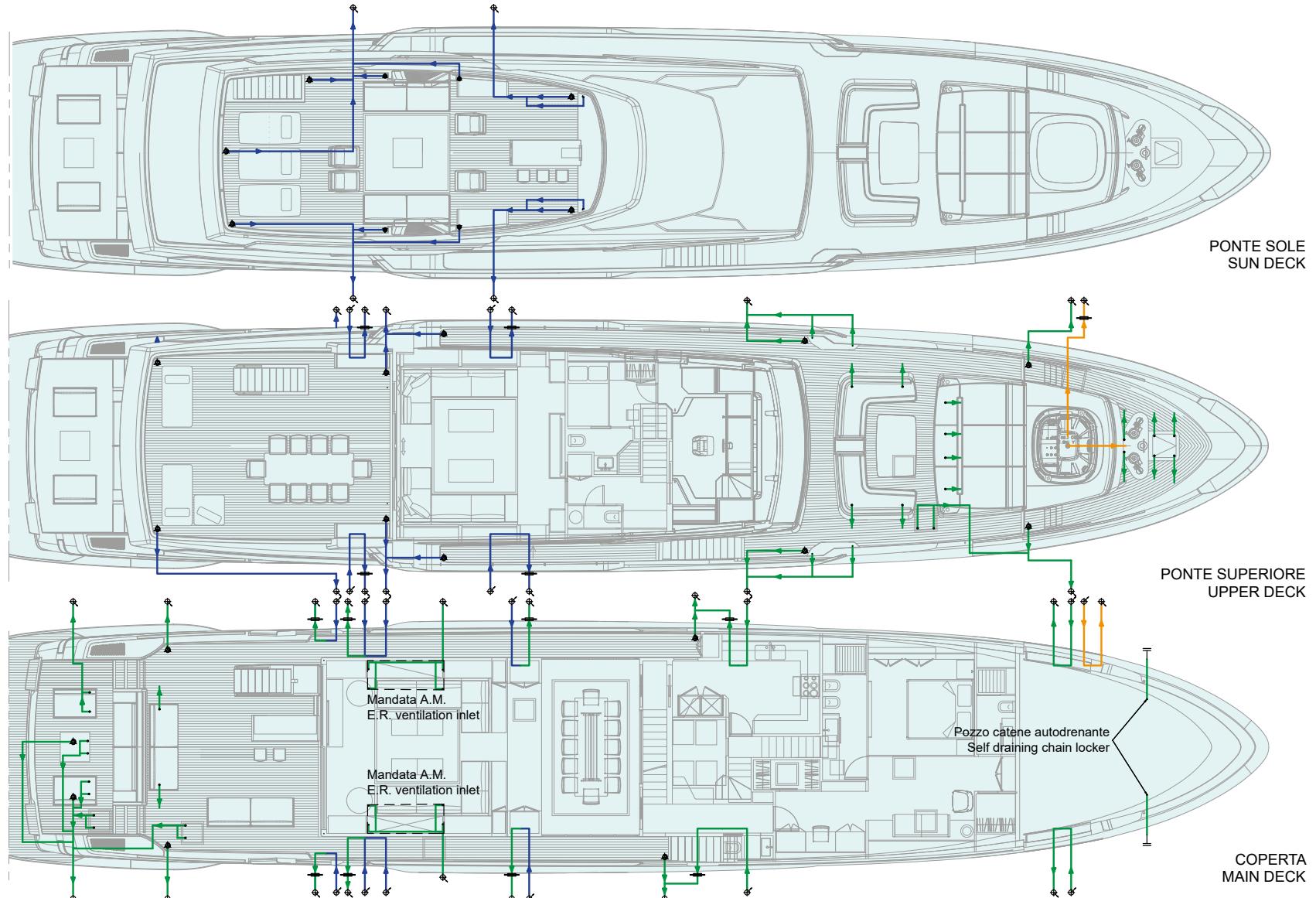
The partial or total clogging of one or more scuppers is a possible cause of damage for the yacht structure and of loss of stability.

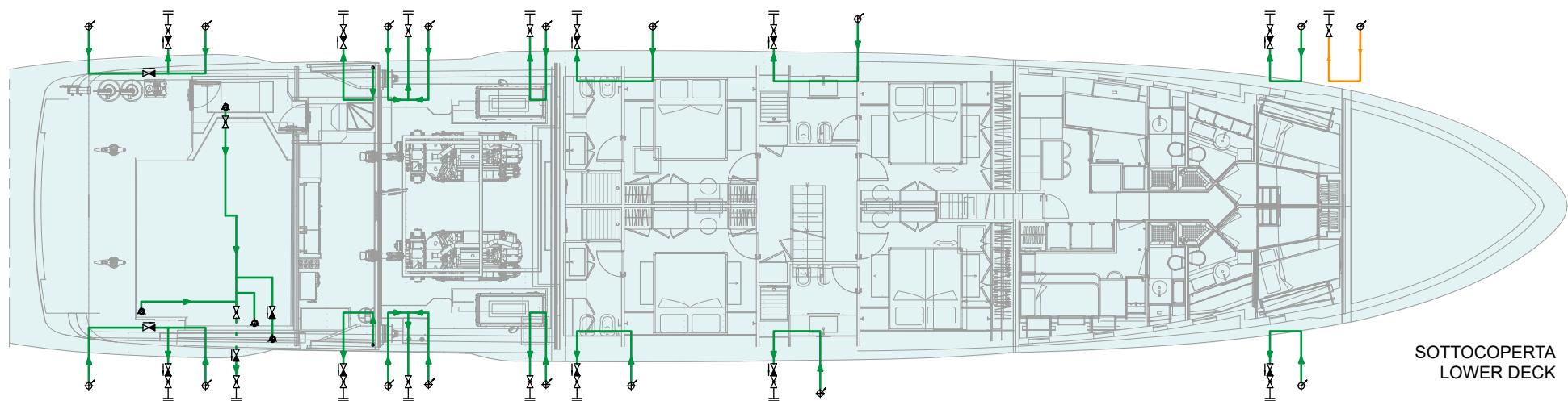


CAUTION

Avoid that incorrectly stowed objects clog the scuppers.

Scupper system diagram:





ICONA ICON	DESCRIZIONE DESCRIPTION
▶	E/P ad azionamento manuale per svuotamento acqua mare garage Garage sea water emptying manual operating e/pump
☒	Valvola a farfalla Butterfly valve
☒	Valvola a sfera Ball valve
▶	Valvola di non ritorno Non return valve

ICONA ICON	DESCRIZIONE DESCRIPTION
⊜	Scarico fuoribordo Overboard discharge
○○○	Ombrinale a ponte Deck scupper
◇	Filtro acqua mare Sea water strainer
○○	Al ponte inferiore Going to a lower deck
○○○○	Al ponte superiore Going to an upper deck
—	Passaggio a ponte Deck crossing

5.4 BILGE SYSTEM

The suction of bilge water is carried out through the central bilge suction system, consisting of a main bilge pump, which by means of a manifold and special pipes equipped with suction pine cones, sucks water from the bilge of the various rooms.

In case of emergency it is possible to suck water from the bilge by means of the fire fighting system sea water pump or by the power pump to fight fire in the bilge.

The valves operating the motor pump are located near the motor pump itself in the engine room.



CAUTION

The bilge must be scrupulously kept clean and dry.

Remove any rags or other materials from the bilge, to avoid clogging the intakes and damaging the pumps.

The engine room contains the bilge emergency draining system, which operates with manually activated selector valves, which allow using the sea water pumps of the propulsion engines as draining pumps.

In emergency case turn the sealed valves of the bilge intakes and close later on the valves of the engines sea cocks; the pumps suction, 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.

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These valves are sealed at the Shipyard in neutral position, because their operation should absolutely be wanted and not accidental.

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.

Two water detection sensors are connected in parallel with a single alarm signal (redundancy).



CAUTION

Be very careful when resetting the valves to sea suction if the bilge is dry, so as not to damage the engine parts.

NOTE

The owner must have at least a bailer or bucket on board, to be placed and fixed in case of accidental leakage.



CAUTION

Check the operation of the bilge pump at regular intervals. Clean the sockets and remove any debris.

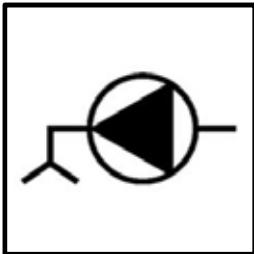
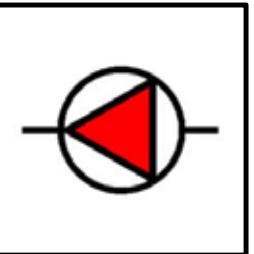


ENVIRONMENT

To avoid oil pollution, when the bilge pump is used as fire pump, please remember to wash the piping system before operating the by pass valves.

**CAUTION**

Adequate washing of the bilge pump shall be carried out before operating the by-pass on the fire-fighting system.

BILGE PUMP**FIRE PUMP**

FLUSHING
↔

**WHEN SWITCHING FROM FIRE FIGHTING
TO BILGE MODE AND V.V. THE SYSTEM
MUST BE CLEANED BY FLUSHING**

**CAUTION**

Keep the bilge dry to allow a prompt detection of water presence and to reduce the risk of slipping, besides creating a less aggressive environment for the fixtures.

**CAUTION**

In case of water presence in some compartments of the lower deck, before getting alert, verify if the bilge water is fresh or salted, this will be of fundamental help with the verification of its source.

**CAUTION**

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.

**ENVIRONMENT**

Sea discharge of oils and fuels is prohibited.

**CAUTION**

The combined capacity of the system is not designed to drain the yacht in case of leakages.

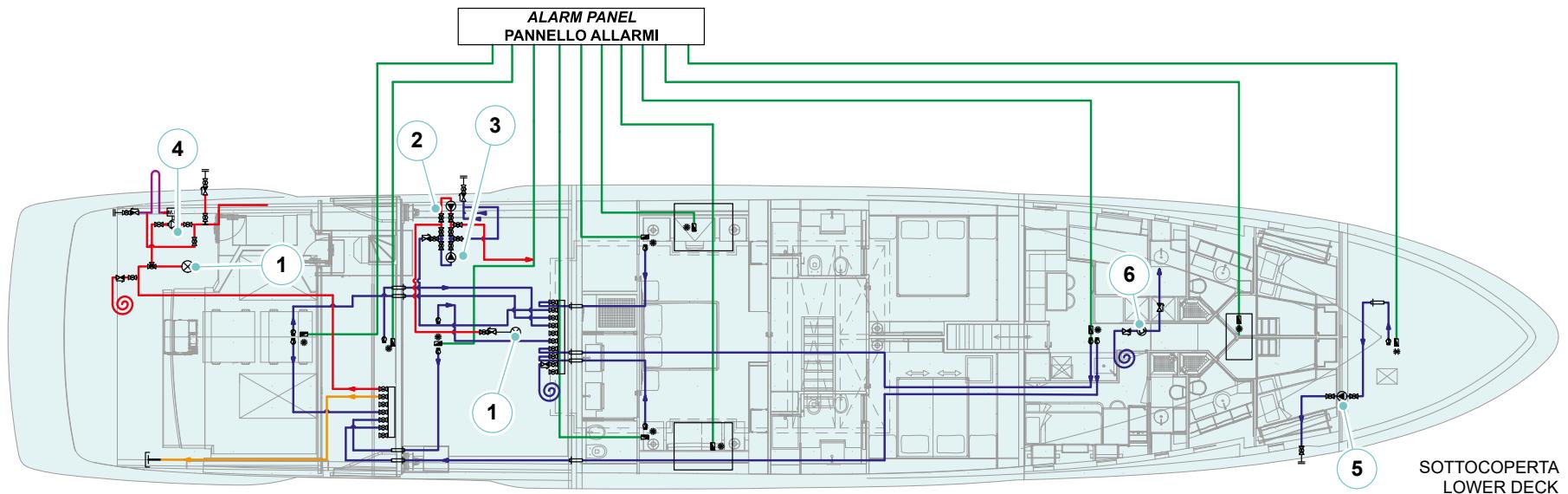
**ENVIRONMENT**

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 switches of the bilge pump automatic suction system, avoiding in this way accidental spillages of liquids and consequently sea water pollution.

**ENVIRONMENT**

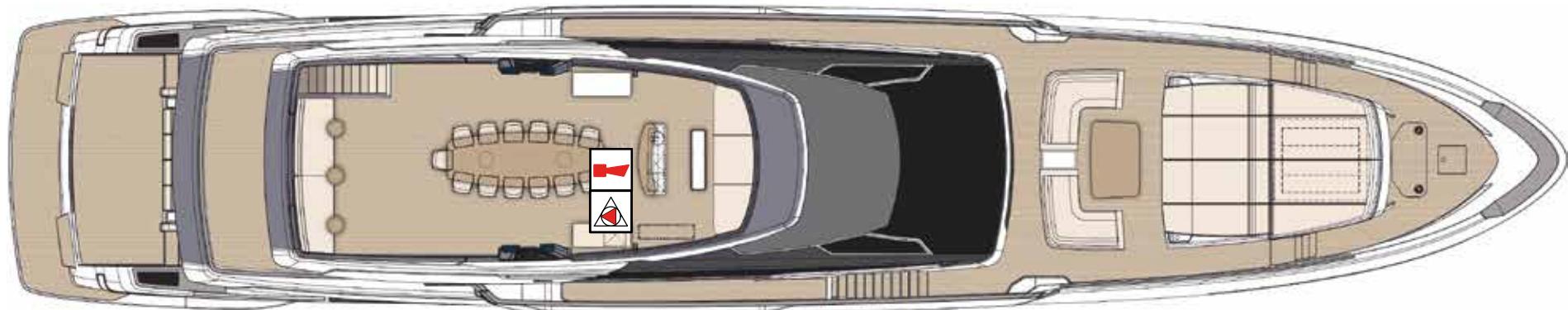
The bilges in the engine room and control room can only be emptied after visually checking for the absence of oil or fuel in the water.

Bilge system diagram:

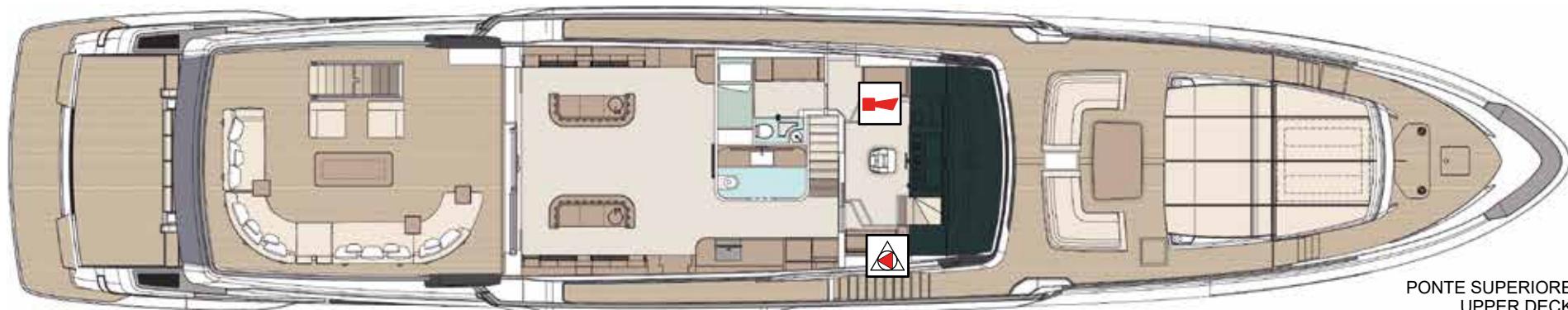


ICONA ICON	DESCRIZIONE DESCRIPTION
—	Tubazione sentina principale Main bilge pipe line
— —	Tubazione sentina secondaria Secondary bilge pipe line
— — —	Tubazione antincendio primaria Main fire pipe line
— — — —	Tubazione antincendio secondaria Secondary fire pipe line
— — — — —	Linea cavi elettrici allarmi sentina Electrical line for bilge alarm
— — — — — —	Tubazione aspirazione marpol Suction marpol line

ICONA ICON	DESCRIZIONE DESCRIPTION
1	Presa a mare con filtro Ball valve and strainer
2	Pompa antincendio principale Main fire pump
3	Pompa sentina principale Main bilge pump
4	Pompa sentina - incendio Bilge-fire pump
5	Pompa manuale Handly operated pump
6	Pompa a girante Impeller pump



PONTE SOLE
SUN DECK



PONTE SUPERIORE
UPPER DECK

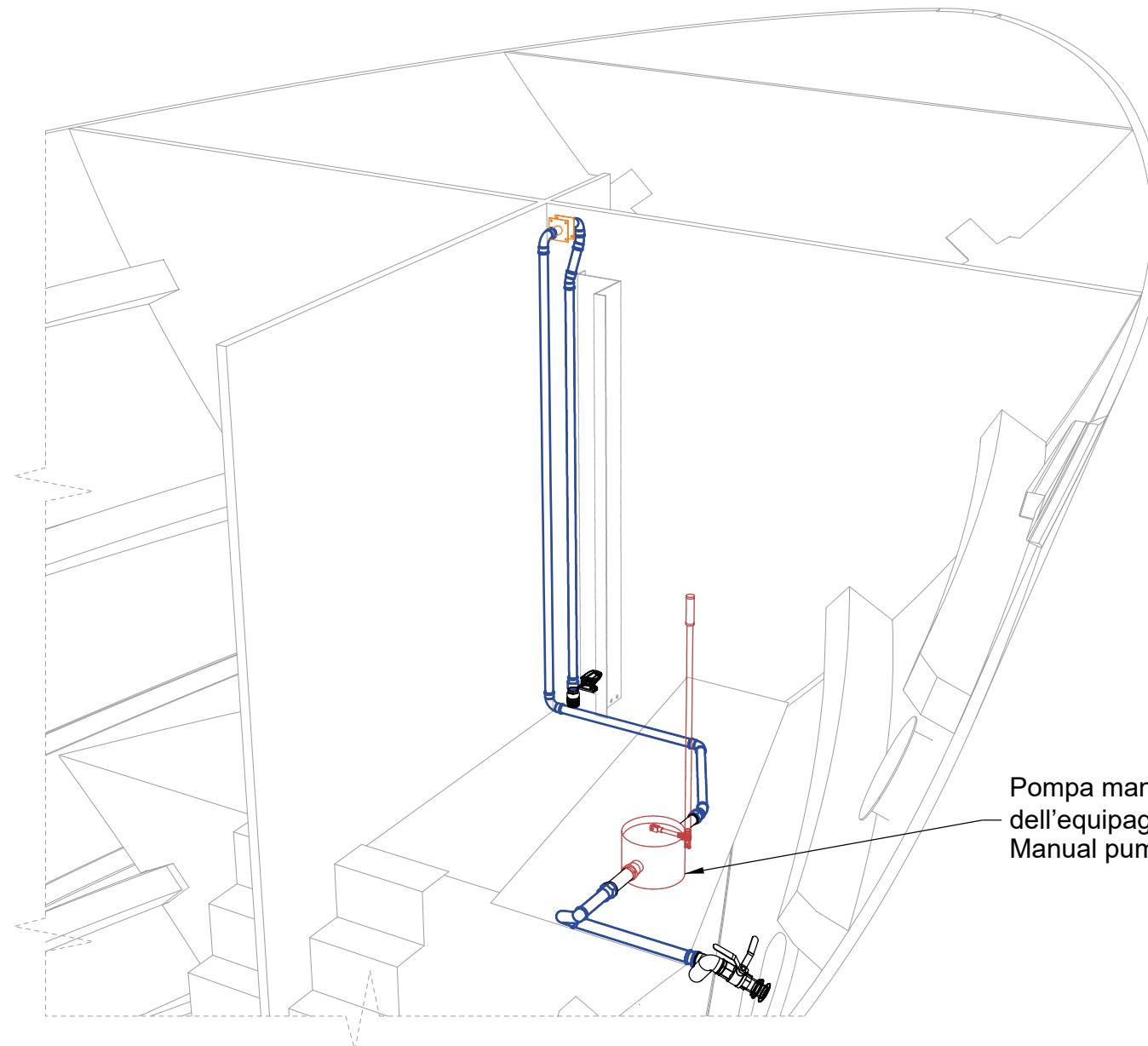


PONTE COPERTA
MAIN DECK



PONTE INFERIORE
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION
	Sirena d'allarme Alarm siren
	Pompa antincendio elettrica principale Main electric fire pump
	Pompa di sentina elettrica principale Main electric bilge pump
	Pompa di sentina/antincendio di emergenza (diesel) Emergency bilge / fire pump (diesel)
	Telecomando per pompa di sentina/antincendio Remote control for bilge / fire pump
	Collettore di sentina Bilge manifold
	Flangia di scarico Discharge flange



5.4.1 Bilge system maintenance

Electric pumps generally do not require routine maintenance, provided that some precautions are taken to prolong their operation.



DANGER

Before any intervention, make sure that the power has been disconnected and that there is no possibility of accidental connections.

Check that the pump axle moves freely by inserting a screwdriver at the back of the drive axle.

Fill the pump body with liquid to cause the pump to start. This operation is very important and must be carried out at the first start-up and whenever the pump body remains empty, in order to avoid damaging the pump itself.

Check the direction of rotation and make sure the pump engine works within its performance range and that therefore the absorbed current on the data plate is not exceeded.

These pumps generally do not require routine maintenance, provided that some precautions are taken to prolong their operation.

- The pump must not be allowed to run dry.
- In direct current motors, the brushes must be periodically checked.
- If the yacht needs to remain inactive for a long period of time, it is advisable to empty the pump body and clean it.
- If a bottom valve and suction filter are installed, check them periodically to ensure they work properly and are clean.
- Check that the impeller is never blocked. This would result in serious damage to the electric motor and if this were to happen provide for the descaling of the impeller and the pump body.

5.5 SEA WATER SYSTEM

The sea water systems on board are:

- Engine cooling system
- Air conditioning heat exchanger cooling system
- Generator cooling system
- Fire-fighting system
- Watermaker system
- Propeller shafts seals cooling system
- Cooling gyroscopic stabilisers (optional)
- Zero Speed system cooling.

The engine cooling system consists of two circuits, one for the starboard engine and the other for the port one.

Sea water is sucked directly by the engine inner pumps by means of a sea cock equipped with cut-off valve and strainer.

The sucked water, flows partially through the strainers and is then delivered to the heat exchangers of the engines, and discharged overboard by means of gas exhaust. Another part is sent to the gearbox exchanger and then discharged outboard.

The power generators cooling system, consists of two circuits, one for each power generator.

Sea water is sucked directly by the inner pumps of the generators by means of two sea cocks equipped with cut-off valve and strainer. The water drawn by the generators, after passing through the filters, is sent to the heat exchangers of the generators and then discharged overboard, together with the gas discharge through the mufflers and gas/water separators.

The sea water fire-fighting system consists of two electric pumps that draw sea water through a sea water intake equipped with a shut-off valve and filter, located in the engine room, and send it to the connections for the fire hoses. Usually a pump works as fire-fighting pump, while the other works as bilge pump.

The yacht is equipped with a seacock with shut-off valve and filter to supply the emergency motor pump: the motor pump is located in the helmstock and the seacock is located in the control room.

In the cooling system for the air-conditioning system, sea water is drawn by two electric pumps through a seacock equipped with a shut-off valve and a filter positioned in the engine room.

The suctioned water is sent to the heat exchanger of the air-conditioning units located in the engine room and then discharged outboard.

The sea water system for the watermaker consists of a sea cock equipped with cut-off valve and strainer, the electric pump of the watermaker sucks sea water. The brine left over after the process is drained overboard.

Gyroscopic stabiliser seawater system, if present, consists of a seacock with shut-off valve and filter. The stabilizer pumps draw sea water to cool the stabilizers. Both the pumps and the filters and the outlets are located in the bilge under the side garage.



WARNING

In case of engine room flooding, it is possible to use the engine cooling system to pump water from the bilge in large quantities as follows:

- Start the engines;
- Close the engine seacocks and by open the bilge suction valves.

The valves activation must absolutely be wanted and not accidental. 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

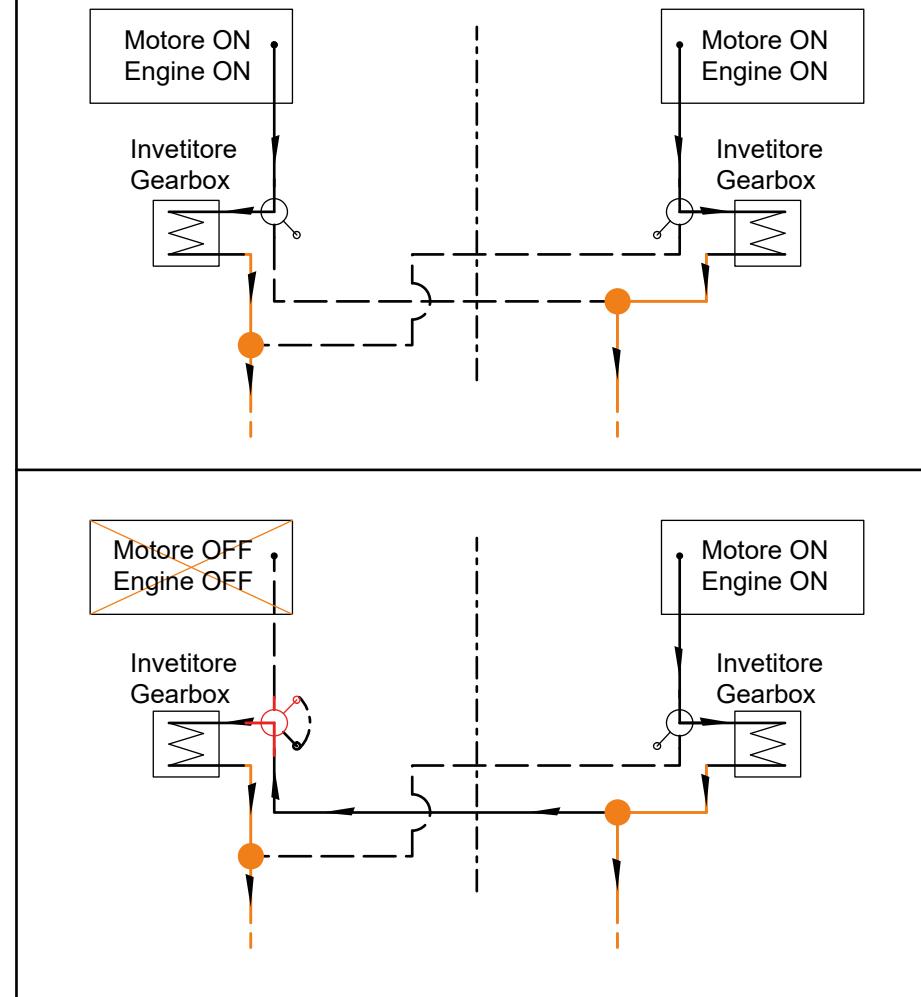
Be very careful when resetting the valves to sea suction if the bilge is dry, so as not to damage the engine parts.

This yacht is equipped with a Trailing Pump on the gearbox module; this system allows navigation with a single engine while safeguarding the mechanical components of the engine switched OFF. For long distances a "sea water" cooling circuit has been provided with the following modes of use.

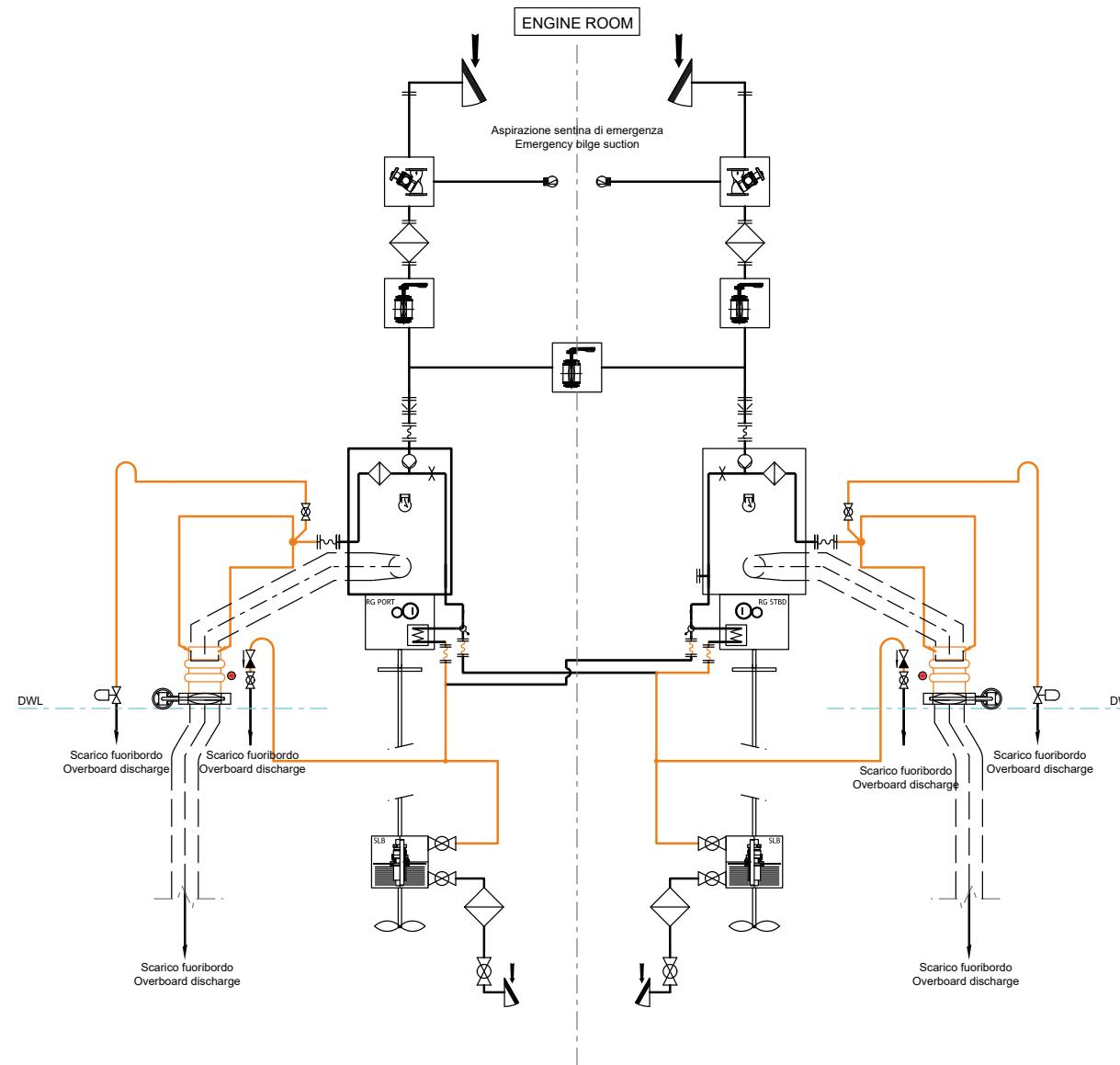
For prolonged navigation with one of the two engines switched OFF, operate as follows:

- With both engines working, the 3-way valves, positioned between the engine and the inverter, must be kept in configuration "A" (no partialization of the water flow towards the other inverter);
- If one of the two engines shuts down or fails (Engine OFF in the figure), the corresponding valve must be set to position "B" (the inverter now receives part of the cooling water coming from the delivery of the gear in operation).

Procedura di funzionamento della valvola a sfera a 3 vie
3 way ball valve operatin procedure

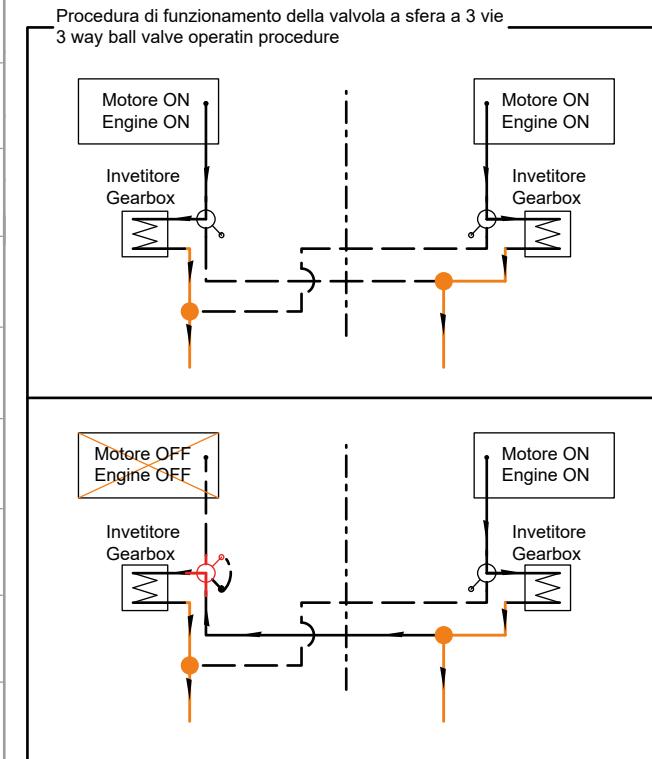


Engine cooling system diagram:

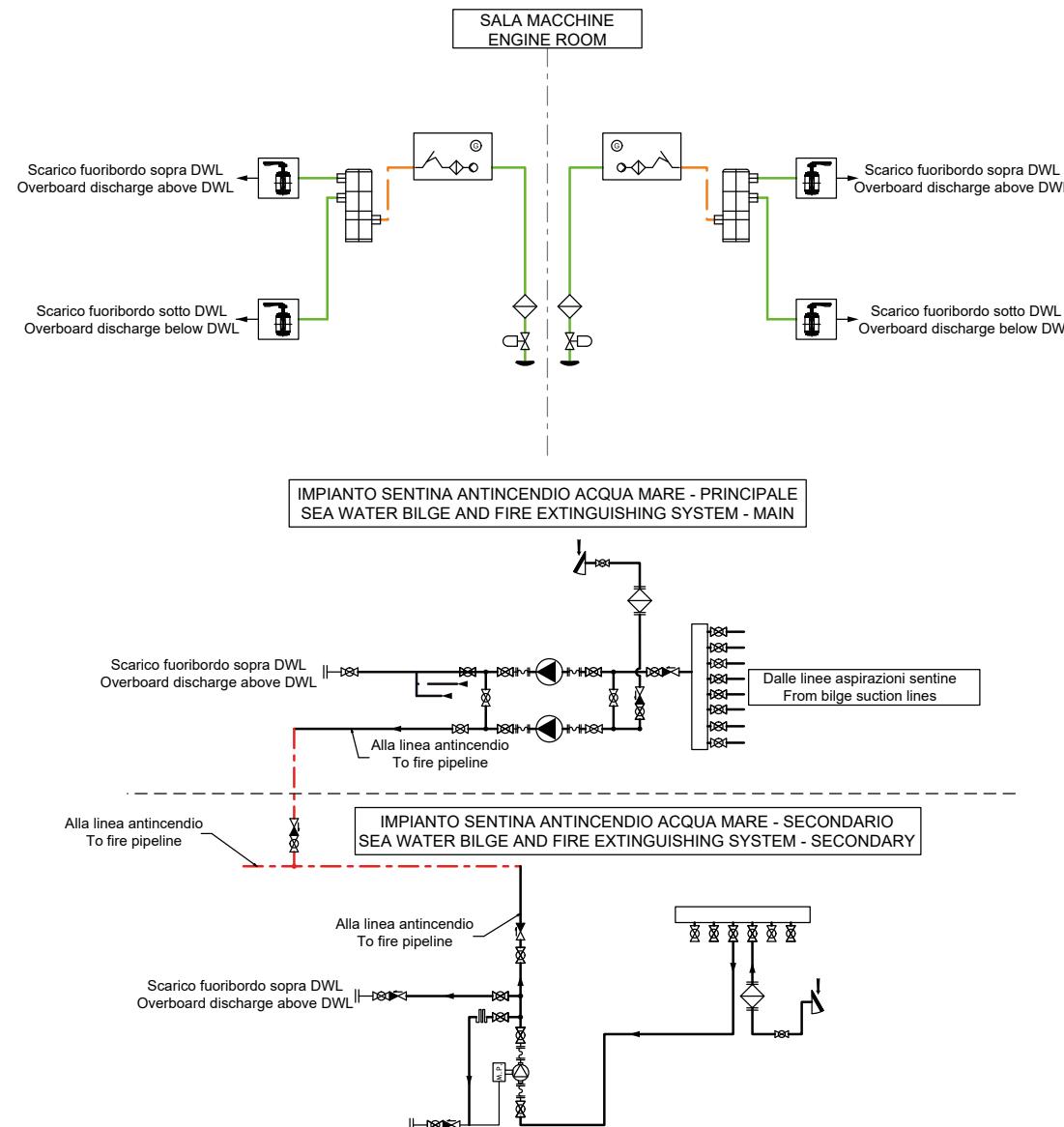


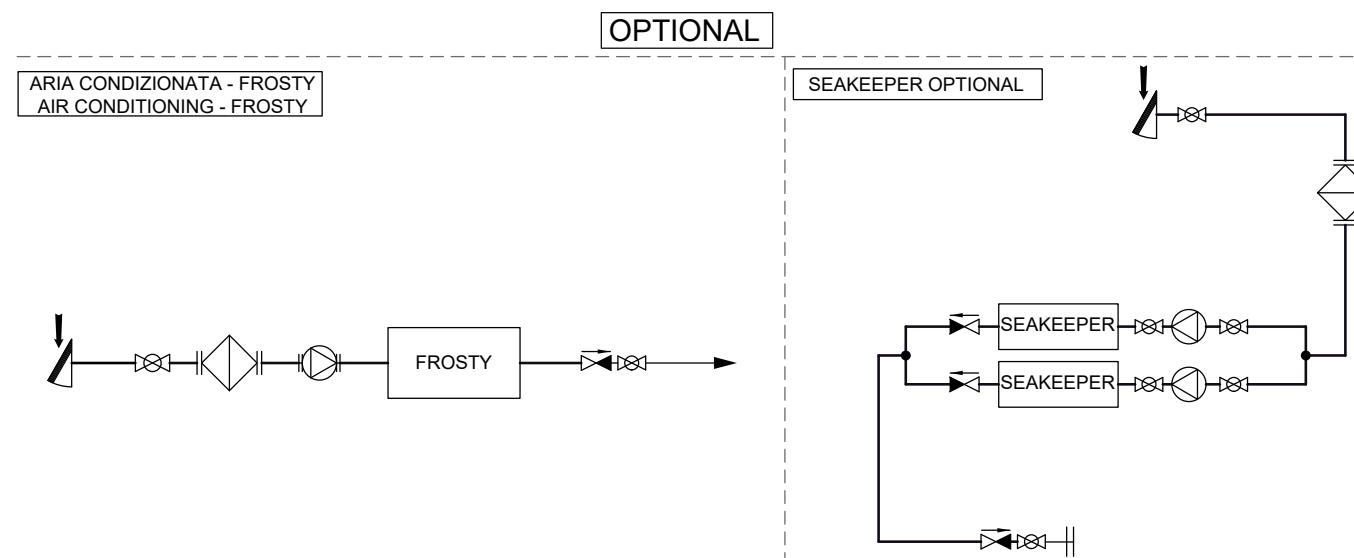
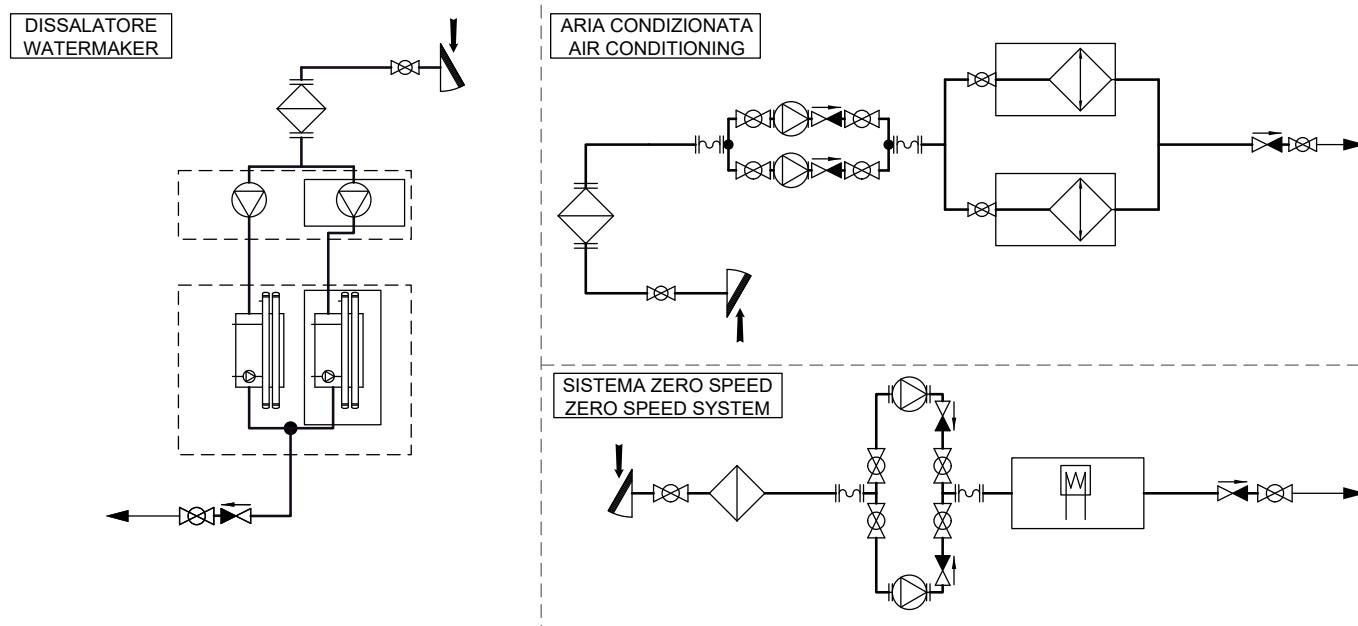
ICONA ICON	DESCRIZIONE DESCRIPTION
	Valvola LUG LUG valve
	Valvola antiblocco Antiblock valve
	Filtro prese mare Seachest strainer
	Motori principali Main engines
	Riduttori Reduction gear
	Presa a mare dinamica Dynamic seachest
	Condotta gas di scarico Exhaust gas system
	Boccola linea d'asse Shaft line bearing
	Valvola di sicurezza Safety valve
	Riduzione diametrale Diam. reduction
	Scarico fuoribordo Overboard discharge
	Valvola a sfera Ball valve

ICONA ICON	DESCRIZIONE DESCRIPTION
	Valvola di non ritorno No return valve
	Valvola a sarracinesca Gate valve
	Pompa raffreddamento thruster Thruster cooling pump
	Lupa Emergency bilge suctin
	Soffietto scarico motori Exhaust expanding
	Giunto compensatore Expansion joint
	Valvola antiblocco Antiblock valve
	Linea di scarico Discharge pipe line
	Linea aspirazione Suction pipe line



Auxiliary seawater services system diagram:





ICONA ICON	DESCRIZIONE DESCRIPTION
	Pompa sistema ZeroSpeed Pump ZeroSpeed system
	Pompa dissalatore Watermaker pump
	Pompa circolazione Circulation pump
	Elettropompa Electropump
	Pompa Frosty (Opt) Frosty pump (Opt)
	Pompa Pump
	Motopompa antincendio Firefighting engine pump
	Collettore sentina principale Main bilge manifold
	Collettore sentina secondario Secondary bilge manifold
	Collettore seakeeper Seakeeper manifold
	Presa a mare dinamica con griglia smontabile Dynamic sea chest with removable grid
	Presa a mare con griglia smontabile Sea chest with removable grid

ICONA ICON	DESCRIZIONE DESCRIPTION
	Filtro acqua mare a cestello Sea water filter - drum type
	Scambiatore acqua-olio Water-oil exchanger
	Scambiatore acqua-acqua Water-water exchanger
	Valvola di non ritorno No return valve
	Valvola a sfera Ball valve
	Valvola a farfalla Butterfly valve
	Riduttore Pipe adapter
	Valvola LUG LUG valve
	Valvola antiblocco Anti-block valve
	Giunto compensatore Flexible joint
	Stabilizzatore giroscopico (opt) Gyroscopic stabilizer (opt)

5.5.1 Seacock and strainer maintenance

Clean the sea cock strainers according to the schedule and to the pollution condition of the sucked waters (seaweeds, mucilages, etc.).

Check and clean sea cock valves and strainers:

- Check for barnacles or corrosion on the control levers of the cut-off valves of the strainer to be checked.
- Clean the control levers of the valves with a brush, lubricate and protect with proper products.
- Move the levers repeatedly.
- Close the cut-off valve upstream the strainer.
- Unscrew screws of strainer cover.
- Remove the filter element, clean it with a brush and rinse it in water (replace as necessary).
- Clean the strainer housing.
- Check and, if necessary, replace the gasket of the strainer cover.
- Fill the strainer with water to avoid the pumps running dry or that the system does not prime.
- Reposition the strainer, the cover and tighten the nuts.
- Reopen the cut-off valve and check whether the strainer cover is leaking.



CAUTION

Before carrying out the cleaning of the sea cock strainers, check that the uses supplied with sea water are switched OFF and not in use.



CAUTION

Isolate the strainer to be cleaned, cutting off relevant valves upstream and downstream.



CAUTION

The air conditioning system is also equipped with a draining valve, located under the water line; perform the same maintenance as for the sea cock valve.



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.



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.

5.6 SEA WATER FIRE-FIGHTING SYSTEM

The sea water fire-fighting system consists of an electric pump which sucks sea water through a sea intake equipped with cut-off valve and strainer and sends it to the connections for the fire-fighting hoses located as follows:

- 1 on the access stair to the systems room;
- 1 on the access stair to the guest rooms;
- 1 in the fore mooring area;
- 1 in the crew quarters dining room;
- 1 in the aft port stanchion on the upper deck;
- 1 on the sun deck on the fore starboard side.

In addition to the fire hoses, the system also supplies:

- Sprinklers, to protect:
 - Aft side garage;
 - Fore garage.
- Chain washing.

The pump can be activated by means of a button located near each fire hose connection. The pump ensures that the water jet from any hydrant has enough pressure to ensure it can reach an area about 12 metres away. The fire hoses are equipped with a three-position nozzle and a UNI 45 hose. To operate the electric pump, it is necessary to properly sort the valves located on the pump itself, bringing them to the fire suction and fire delivery position.

If the fire pump is damaged, the bilge pump or bilge fire pump may be used. This is located in the helmstock and draws seawater through a seacock equipped with shut-off valve and filter. To use, adjust the orientation of the shut-off valves to the desired operation mode.



CAUTION

The solenoid valve for anchor chain washing must normally be kept closed. It may only be opened for the time necessary to wash the anchor chains.



DANGER

Do not use water to fight fires with electric circuits powered, as this could cause electric shocks or short circuits, feeding the fire even further.



CAUTION

Before operating the pump, make sure that the valves are opened correctly.



CAUTION

Before carrying out the seacock strainer cleaning check that the supplied uses are switched OFF and not in use.

NOTE

For further information and for the layout of the systems, please refer to the specific manuals of the different devices installed on board and the technical diagrams provided separately by the Shipyard.

**ENVIRONMENT**

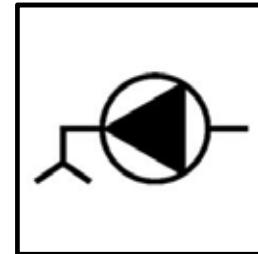
To avoid oil pollution, when the bilge pump is used as fire pump, please remember to wash the piping system before operating the by pass valves.

**CAUTION**

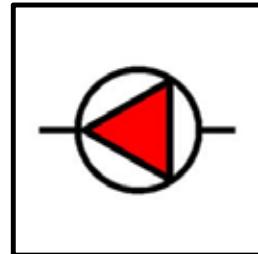
Insulate the filter to be cleaned by intercepting the appropriate valves both upstream and downstream.

**ATTENZIONE**

Adequate washing of the bilge pump shall be carried out before operating the by-pass on the fire-fighting system.

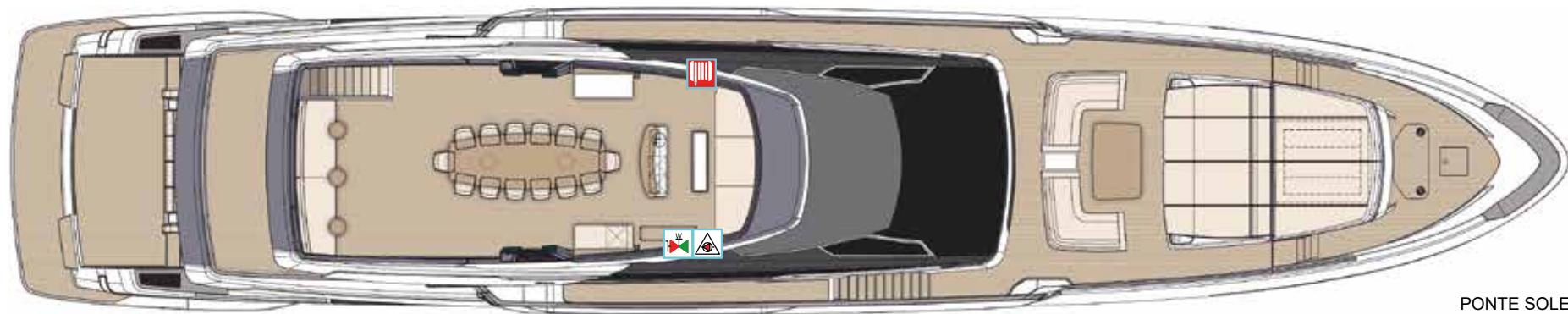
BILGE PUMP

FLUSHING

FIRE PUMP

**WHEN SWITCHING FROM FIRE FIGHTING
TO BILGE MODE AND V.V. THE SYSTEM
MUST BE CLEANED BY FLUSHING**

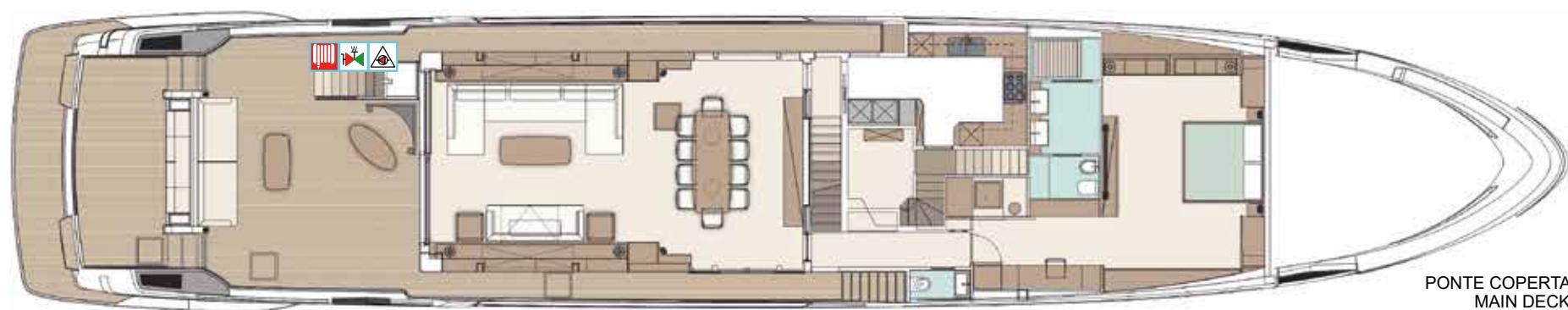
Seawater fire-fighting system diagram:



PONTE SOLE
SUN DECK



PONTE SUPERIORE
UPPER DECK

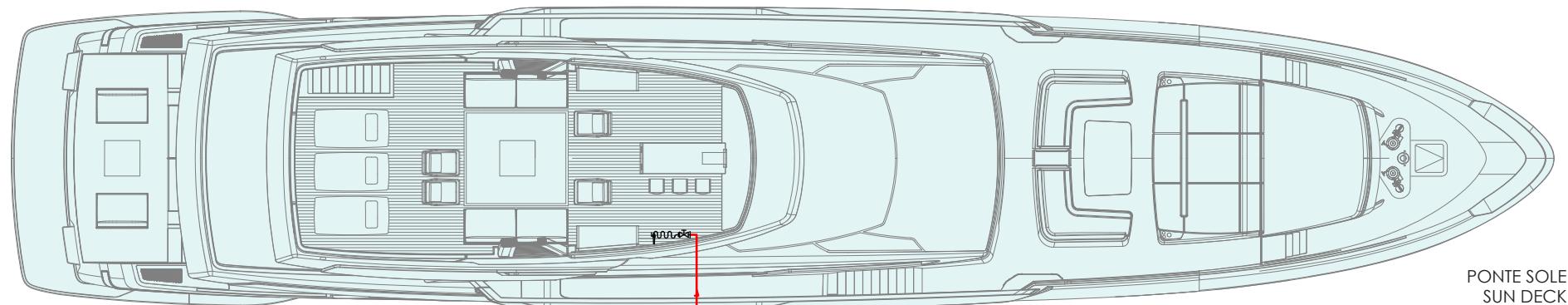


PONTE COPERTA
MAIN DECK

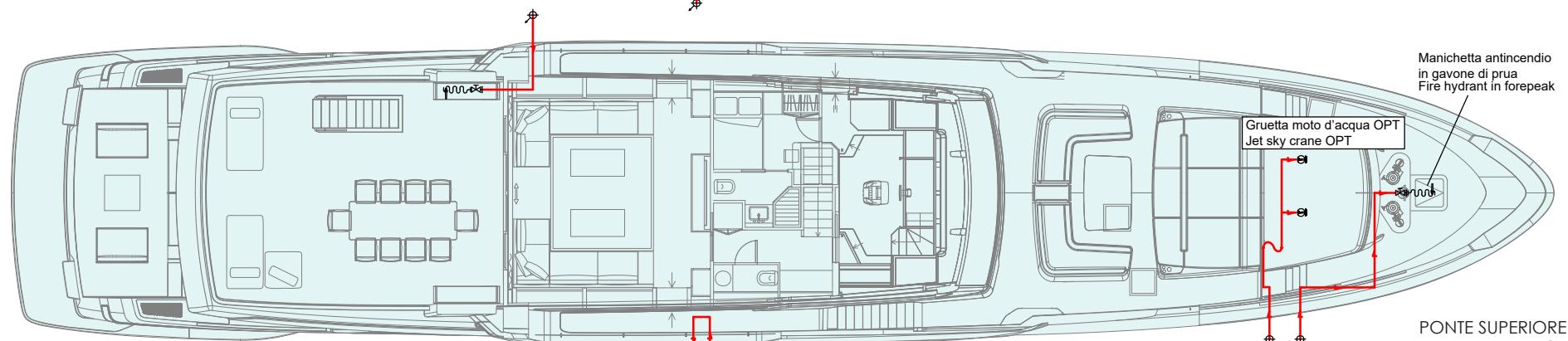
PONTE INFERIORE
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Valvola di isolamento incendio principale/ tubazione di emergenza Isolating valve MAIN/EMG. fire pipeline	1
	Pompa antincendio principale Main fire pump	1
	Pompa di sentina principale Main bilge pump	1
	Pompa di sentina d'emergenza / antincendio Emergency bilge / fire pump	1

ICONA ICON	DESCRIZIONE DESCRIPTION	QTÀ QTY
	Spazio protetto da sprinkler Space protected by sprinkler	1
	Valvola sezionamento sprinkler Sprinkler section valve	1
	Collettore di sentina principale Main bilge manifold	1
	Idrante con tubo e comando remoto Fire hydrant with hose and remote control	6



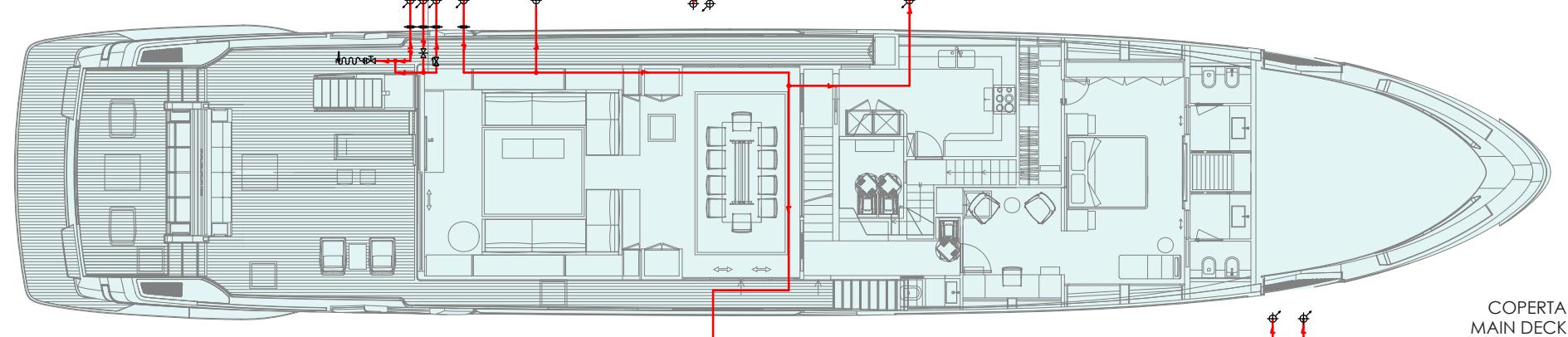
PONTE SOLE
SUN DECK



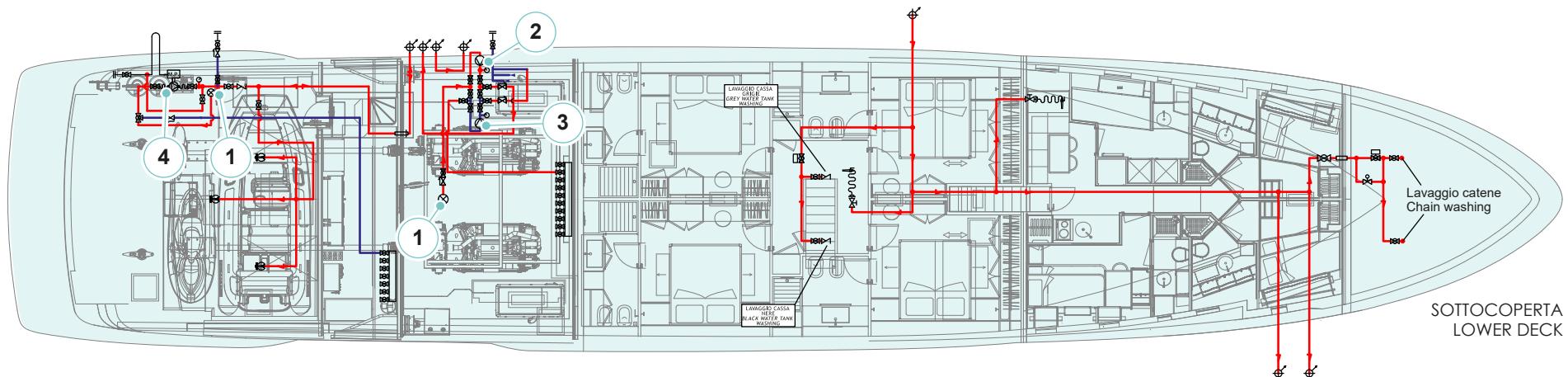
Manichetta antincendio
in gavone di prua
Fire hydrant in forepeak

Gruetta moto d'acqua OPT
Jet sky crane OPT

PONTE SUPERIORE
UPPER DECK



COPERTA
MAIN DECK



ICONA ICON	DESCRIZIONE DESCRIPTION
1	Presamare Sea chest
2	Pompa incendio principale Main fire pump
3	Pompa sentina principale Main bilge pump
4	Motopompa emergenza Emergency diesel engine pump
☒	Valvola a sfera Ball valve
►☒	Valvola di non ritorno No return valve

ICONA ICON	DESCRIZIONE DESCRIPTION
☒	Valvola saracinese Gate valve
⊤	Scarico fuoribordo Overboard discharge
⊕	Passaparafia stagno Watertight bulkhead penetration
⊖	Passaggio a ponte stagno Watertight deck penetration
◐	Sprinkler Sprinkler
☒☒	Rubinetto per manichetta Fire fighting outlet valve for fire hose

ICONA ICON	DESCRIZIONE DESCRIPTION
□	Collettori Manifolds
☒	Valvola comandata Control valve
⌞⌞	Giunto flessibile Flexible joint
☒	Valvola sovrapressione Pressure release valve
☒☒	Valvola a 3 vie 3 way valve
⌚	Manometro Pressure gauge

Riva

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ELECTRIC SYSTEM

CHAPTER 6

6.1 ELECTRIC SYSTEM

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 and is fully compliant with current legislation.

The system was designed and manufactured in compliance with the RINA regulation.

The electrical system of the yacht consists of three separate sections.

- The services electrical system is powered by a nominal 24 Vdc supply provided by twelve series-connected 2 Vdc - 696 Ah battery cells in parallel. This battery bank is recharged by the 100 A service charger output and by the port engine alternator.
- The engine electrical system is powered by a nominal 24 Vdc supply provided by series-connected 12 Vdc - 263 Ah battery cells in parallel constituting one 24 V battery bank. This battery bank is recharged by a 50 A output of the motor charger as well as by the alternator.
- Utility network 400/230 VAC powered by platform REE with frequency converter with output at 400/230 Vac 50Hz, or alternatively, or alternatively, by the two on-board gensets (main generator power 80 kW, secondary generator power 80 kW). Each genset is powered by one 24 Vdc - 120 Ah battery located near the generator and recharged by an alternator driven by the unit itself.

The electrical system installed on board has been designed and built in compliance with current standards, based on the following criteria:

- All wiring, joints and line-feed protection devices such as magneto-thermal breakers, circuit breakers and fuses have been collected and grouped both within and on the front panels of the various on-board electrical panels.

130 BELLISSIMA

- All electrical lines are oversized, ducted and/or inspectable and implemented with flame-retardant cables laid inside special self-extinguishing conduit. All the aforesaid lines are connected with special spring-type terminal blocks, the latter positioned inside the main electrical panel in the control room and in the various electrical sub-panels.
- The system is highly fragmented into sub-circuits and protected with magneto thermal breakers and fuses for each single load or homogeneous load groups in order to simplify the tracing of possible faults which, for any line, can only occur at the load and the electrical panel.

The individual portions of the systems are protected by fuses circuit breakers and differential circuit breakers with different capacities and sized according to the absorption of the individual utilities to be protected, as well as the section of the cables used to power them.

All metallic wet pieces are interlocked with equipotential connections and linked on sacrificial anodes installed on the underwater quick-work.



CAUTION

During navigation both the button-switch of the user batteries and the button switch of the engine batteries must always be connected, that is positioned to ON.



CAUTION

Before undertaking any navigation, check that the batteries are in good condition and that they supply the correct nominal current.

**CAUTION**

Never start navigation without having set to ON both the engines batteries switch and the uses batteries switch and do not disconnect them during navigation.

**CAUTION**

If, during navigation, a remarkable and continuous voltage drop of one nor both battery banks occurs, check the recharging efficiency (alternator recharge on monitoring system) 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 chargers.

**CAUTION**

Use electrical equipment with double insulation or grounding.

**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.

**DANGER**

Before carrying out any intervention on the electric system, disconnect all circuits (shore, generators and inverter):

- Disconnect the shore sockets;
- Set to OFF the magneto-thermal of generators;
- Set to OFF the magneto-thermales at inverter output and turn OFF the inverter (OFF button on the front).

**WARNING**

To reduce to the lowest the hazard 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 source;
- First disconnect the power supply cable from the shore power supply source (shore column), then from the user.

**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".

**CAUTION**

Disconnect the shore power supply connections when the system is not in use.

**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**

Do not modify connectors of shore power supply cable, use only plug compatible connectors.

**DANGER**

The 400/230 VAC system is similar to a domestic system in terms of features and risks and, if "wrongly" used, mishandled or serviced, it statistically represents one of the most frequent reasons for fire on board.

**DANGER**

Switch OFF the generators, disconnect the magneto-thermales, the shore sockets and the inverters, before opening the electrical panel cover.

**CAUTION**

It is forbidden to use pressurized water on light appliances installed outside.

**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 tension, except for the circuits of the bilge automatic suction pumps, of fire-fighting protection and of alarm.

**DANGER**

Electrocution hazard! Turn the power OFF before removing the cover and servicing any electrical equipment internal component.

**DANGER**

All electrical systems (included those at low voltage) if wrongly handled or subjected to overloads, can originate short-circuits and dangerous overheating with potential fire hazards!

The on-board uses are supplied by separate electric systems with different features:

- 24 V Continuous Current
- 400/230 V Alternating Current (50Hz)

**CAUTION**

RIVA suggests examining the whole documentation provided by the manufacturers of the various components very carefully; for any problem regarding maintenance, please directly contact the RIVA After Sales & Service Department.

**WARNING**

Before stopping the power generators, disconnect the various on-board uses supplied by them; stopping the power generators under load can irreparably damage the electronic control units of the various uses, beyond having a negative influence on the generators' operation.

However, please refer to the manuals of the power generators to obtain more detailed information about the starting and stopping procedures.

**WARNING**

Before performing any maintenance, disconnect all sources of electric power.

**DANGER**

The on-board frequency converter is connected in such a way as to provide a continuous galvanic connection between the grounding conductors from the shore and the on-board grounding.

During the periods of yacht's lay-up for maintenance, if the shore electric socket is used to supply the AC on board electric system, make sure to connect the yacht grounding to the shore column grounding to which you are linked, taking advantage of experienced personnel.

**CAUTION**

Any remote control to start and stop the engine control devices needs to be able to be disabled in case of maintenance of the engine starter panel in the engine room.



**DURING MAINTENANCE
& CONTROL CONNECTOR
OF THE MAIN BRIDGE**

**DANGER**

It is normal for the frequency converter to generate and emit a large amount of heat.

Do not surround the frequency converter with stowage material and keep it clear of obstructions to ensure that it always has adequate ventilation.

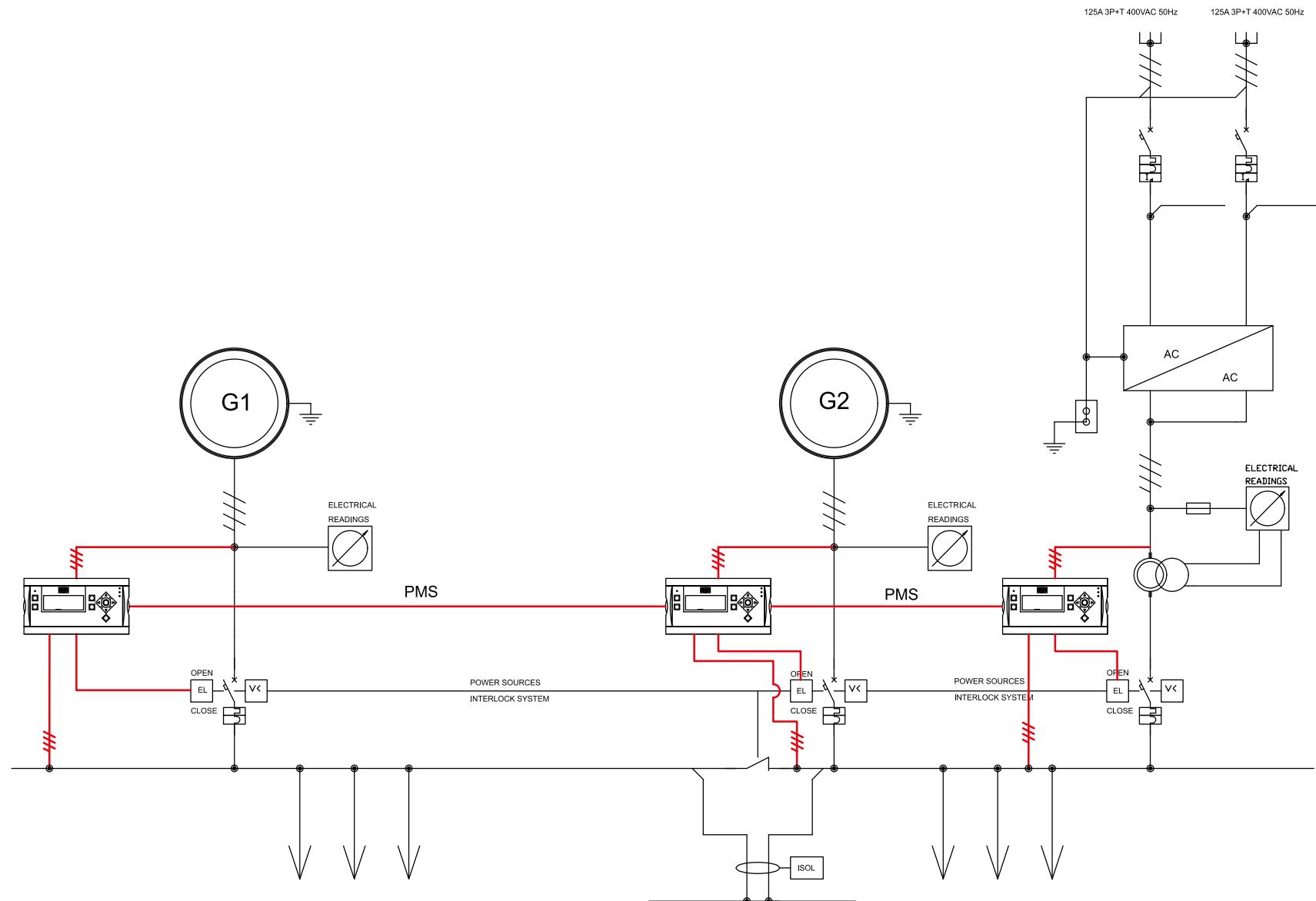
Do not stow flammable material near the transformer.

**DANGER**

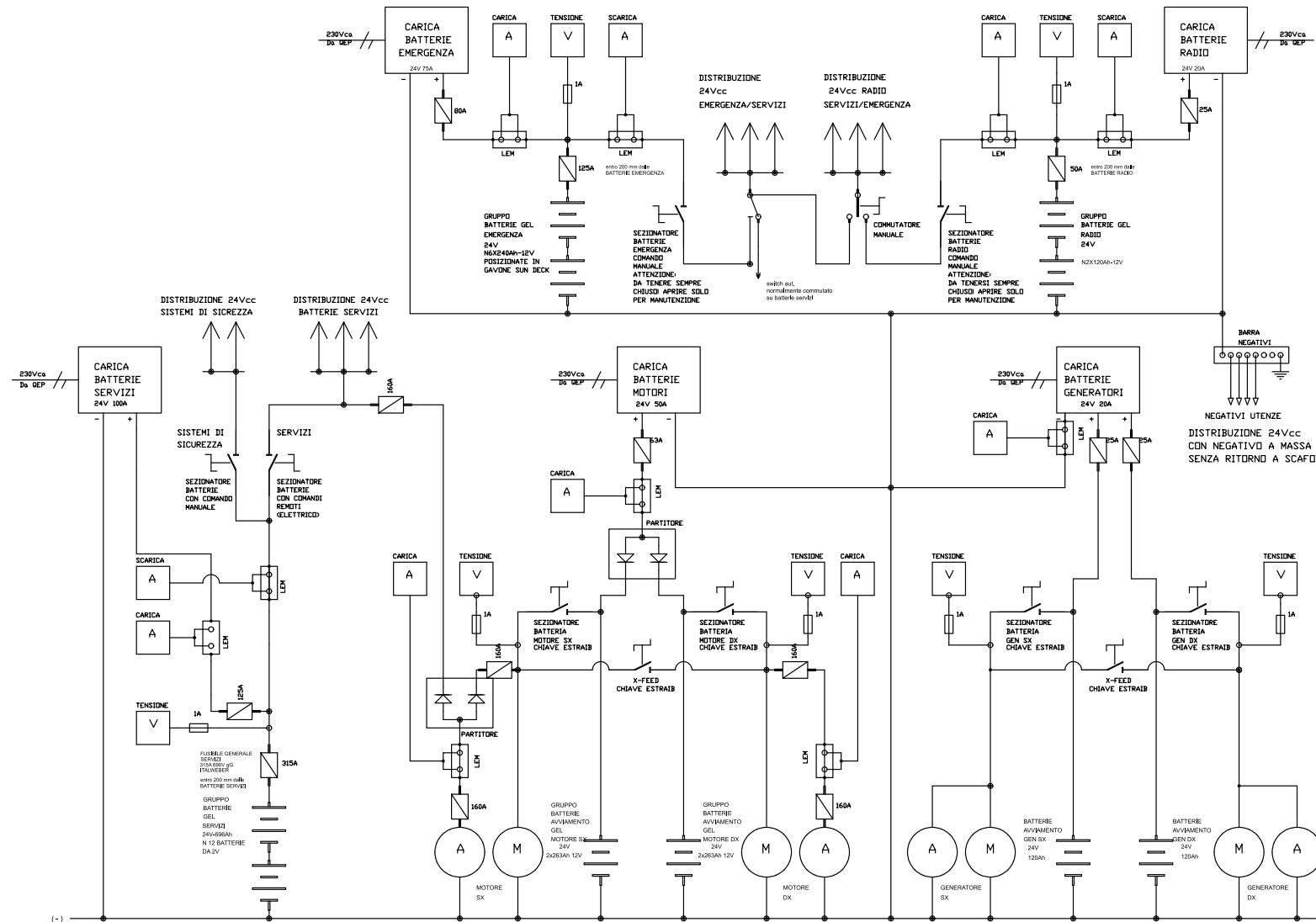
To lower the of electrocution or fire hazard:

- 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.

Alternating current distribution diagram:



Direct current distribution diagram:



6.1.1 Maintenance of the electric system

Component	Maintenance	Notes and precautions
Equipment and circuits	Cleaning and check	<p>At least once every six months, have the various connections of electric boards, panels and boxes checked by experienced personnel. Make sure that ground connections of electric equipment and electrical panels are tight and not oxidized.</p> <p>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 connected the power generator grounding. Moreover, check the condition of the protection anodes and if necessary, replace them. During the lay-up period, do not apply any antifouling on the ground static dischargers.</p>



DANGER

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. Inspect the system at least once a year.



CAUTION

It is forbidden to use pressurized water on light appliances installed outside.



DANGER

Before carrying out any intervention on the electric system, disconnect all circuits (shore, generators and inverter):

- Disconnect the shore sockets;
- Set to OFF the magneto-thermal of generators;
- Set to OFF the magneto-thermales at inverter output and turn OFF the inverter (OFF button on the front).

6.2 ELECTRICAL PANELS



CAUTION

Before opening the front panel for maintenance, stop the generators, disconnect the shoreside sockets, the inverter and the UPS.

NOTE

For a detailed description refer to the electric installation manual.

MAIN ELECTRICAL PANEL:

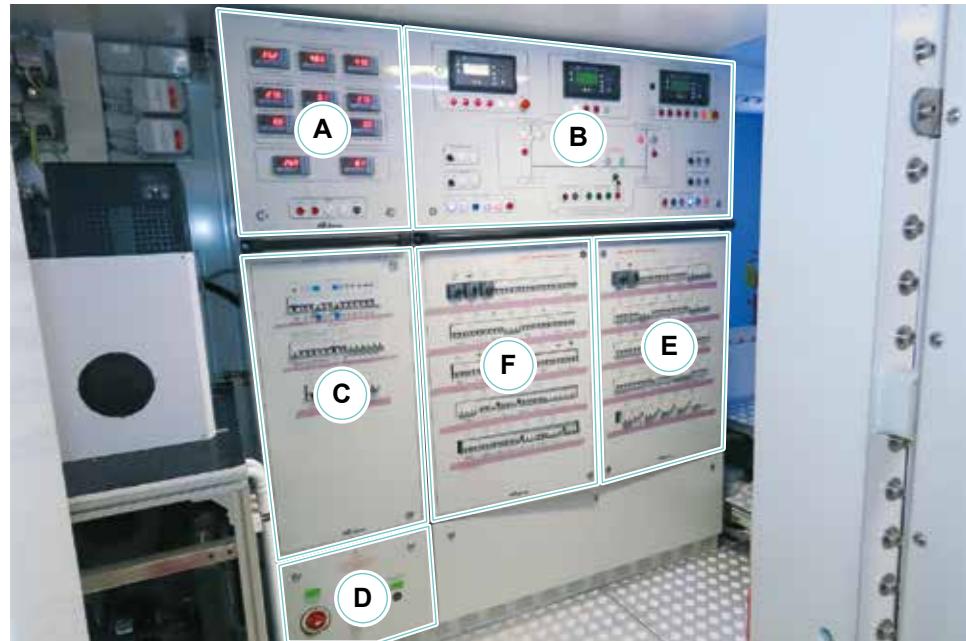
The electrical system is controlled from the panel located in the control room. The following main sections have been identified, in order to make the descriptions easier:

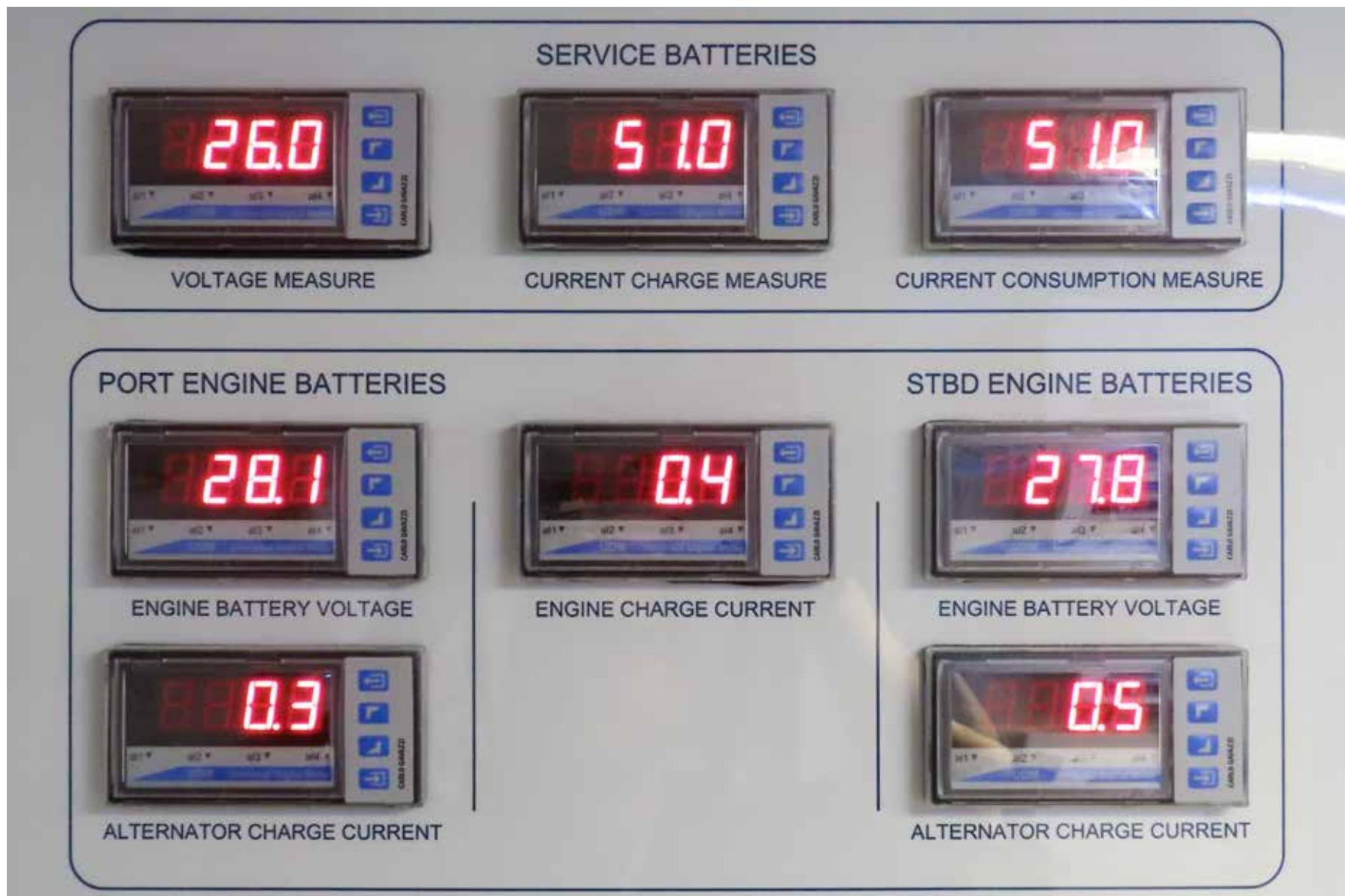
- A. 24 V utility measuring instruments
- B. 400/230 V utility control buttons and voltage measuring instruments
- C. 24 V utility protection magneto-thermals
- D. Battery isolator switch
- E. 400/230 V utility protection magneto-thermals, connection bar A
- F. 400/230 V utility protection magneto-thermals, connection bar B



CAUTION

Always keep the safety systems and gangway powered. Operate the battery disconnect switch for safety systems and gangways only in the event of a short circuit or an emergency.



A. 24 V utility measuring instruments:



B. 400/230 V utility control buttons and voltage measuring instruments:



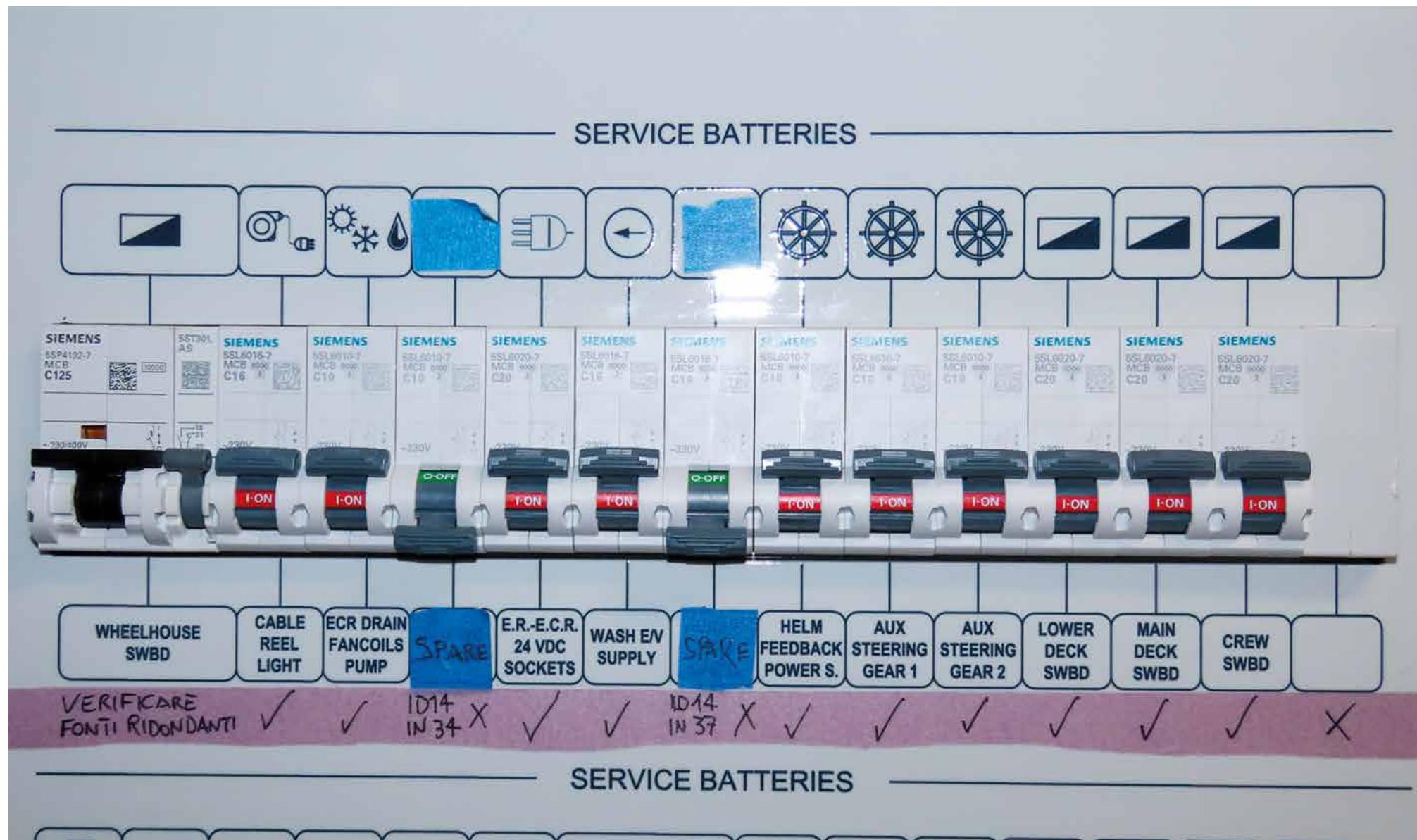


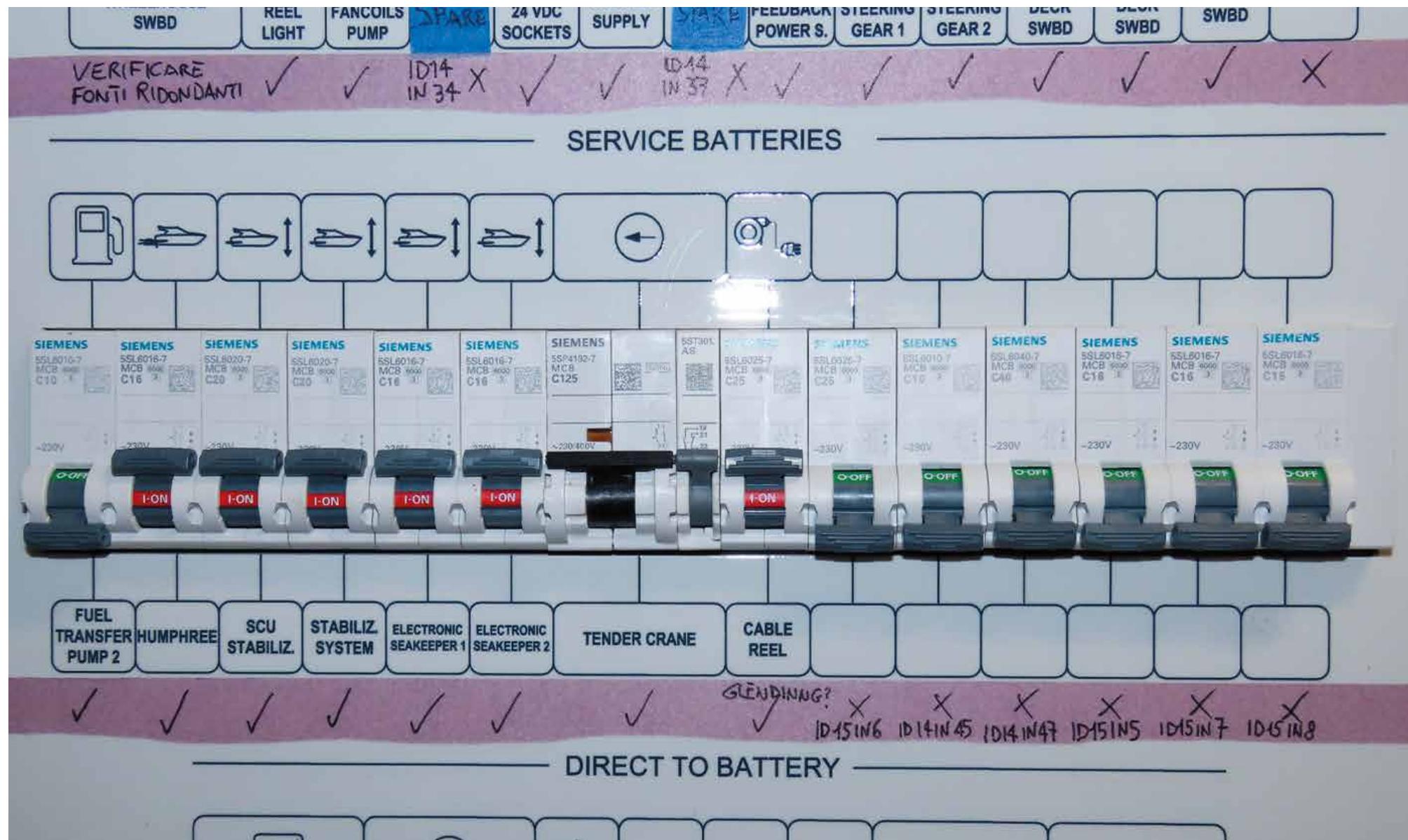


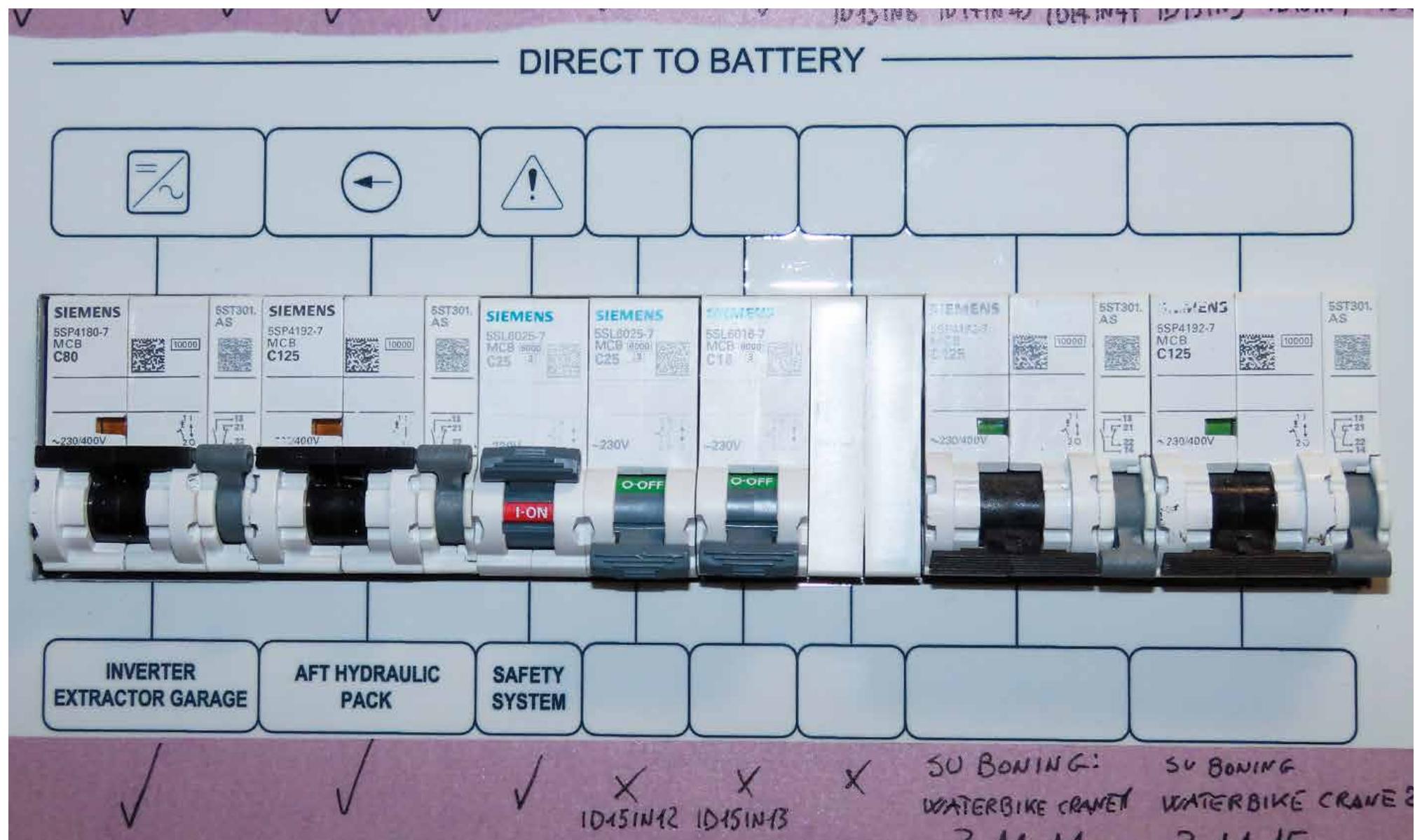




C. 24 V utility protection magneto-thermals:

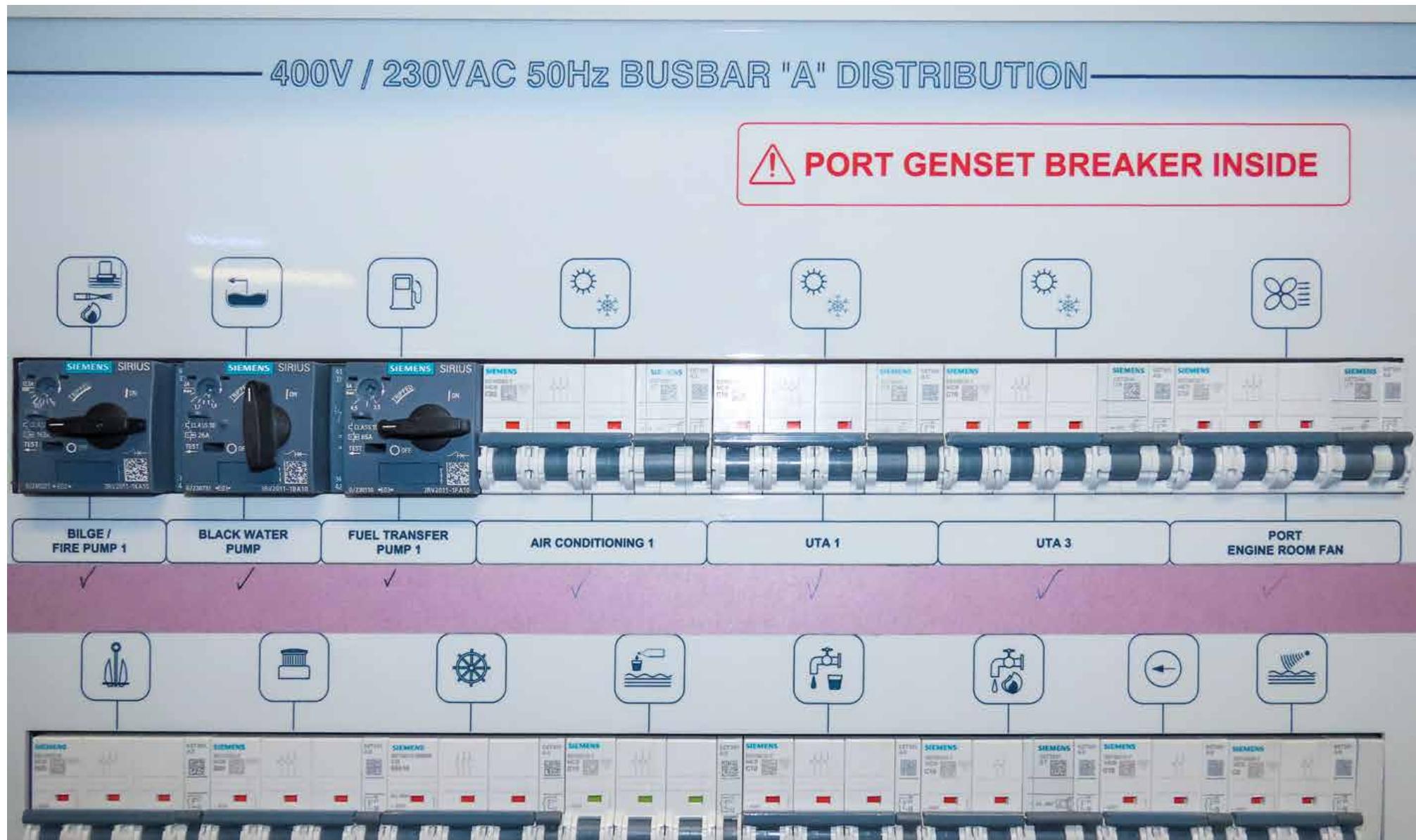




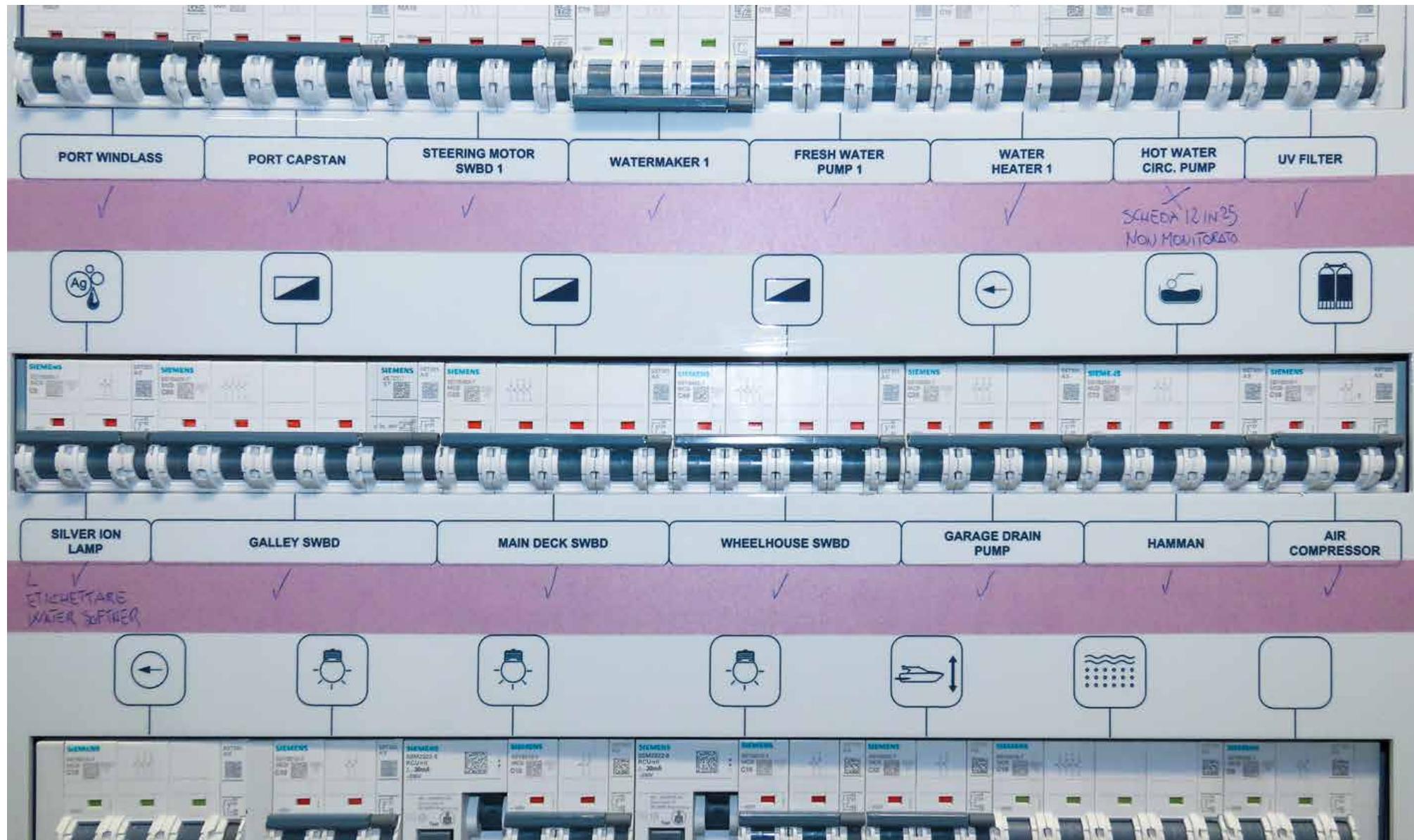


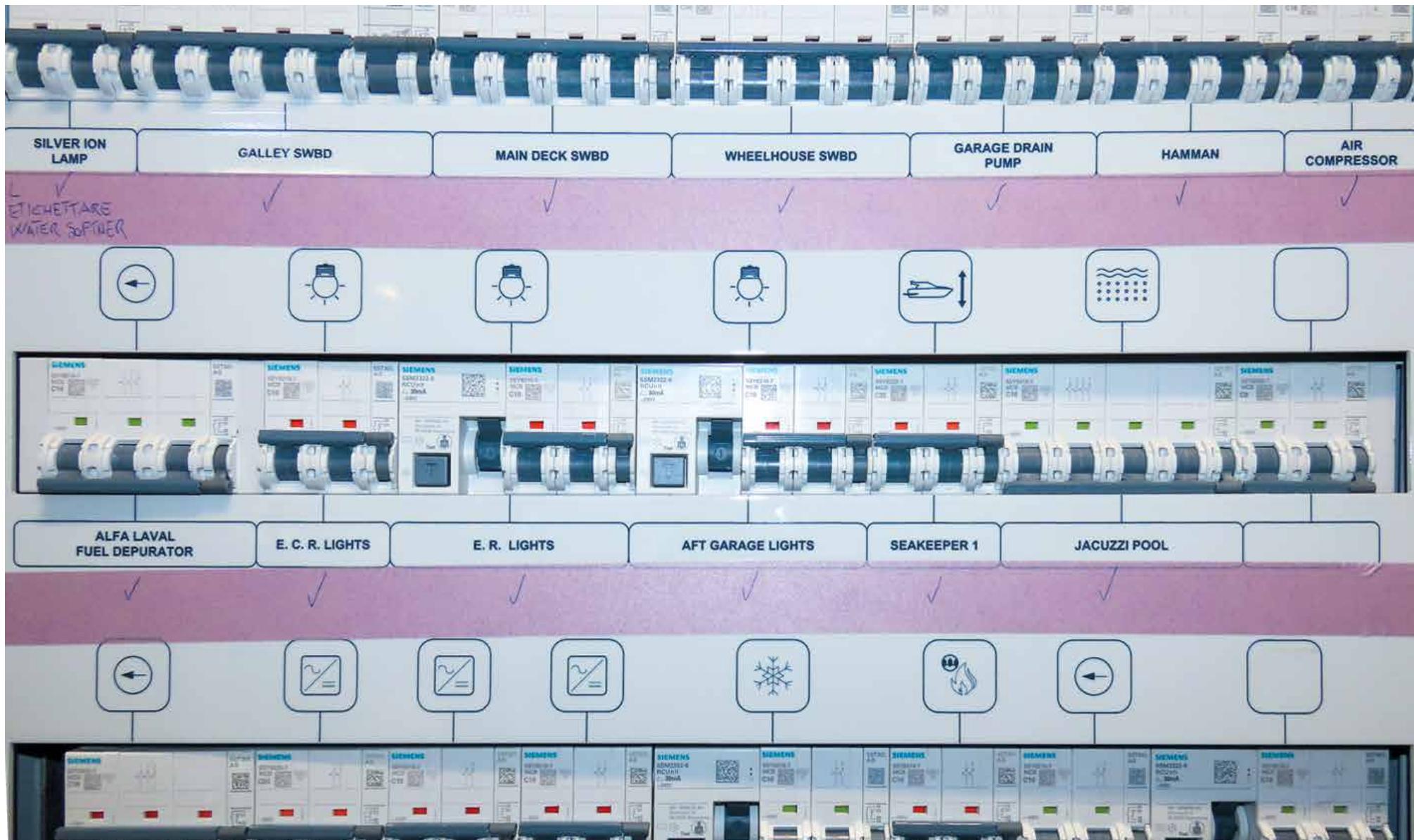
D. Battery breaker:

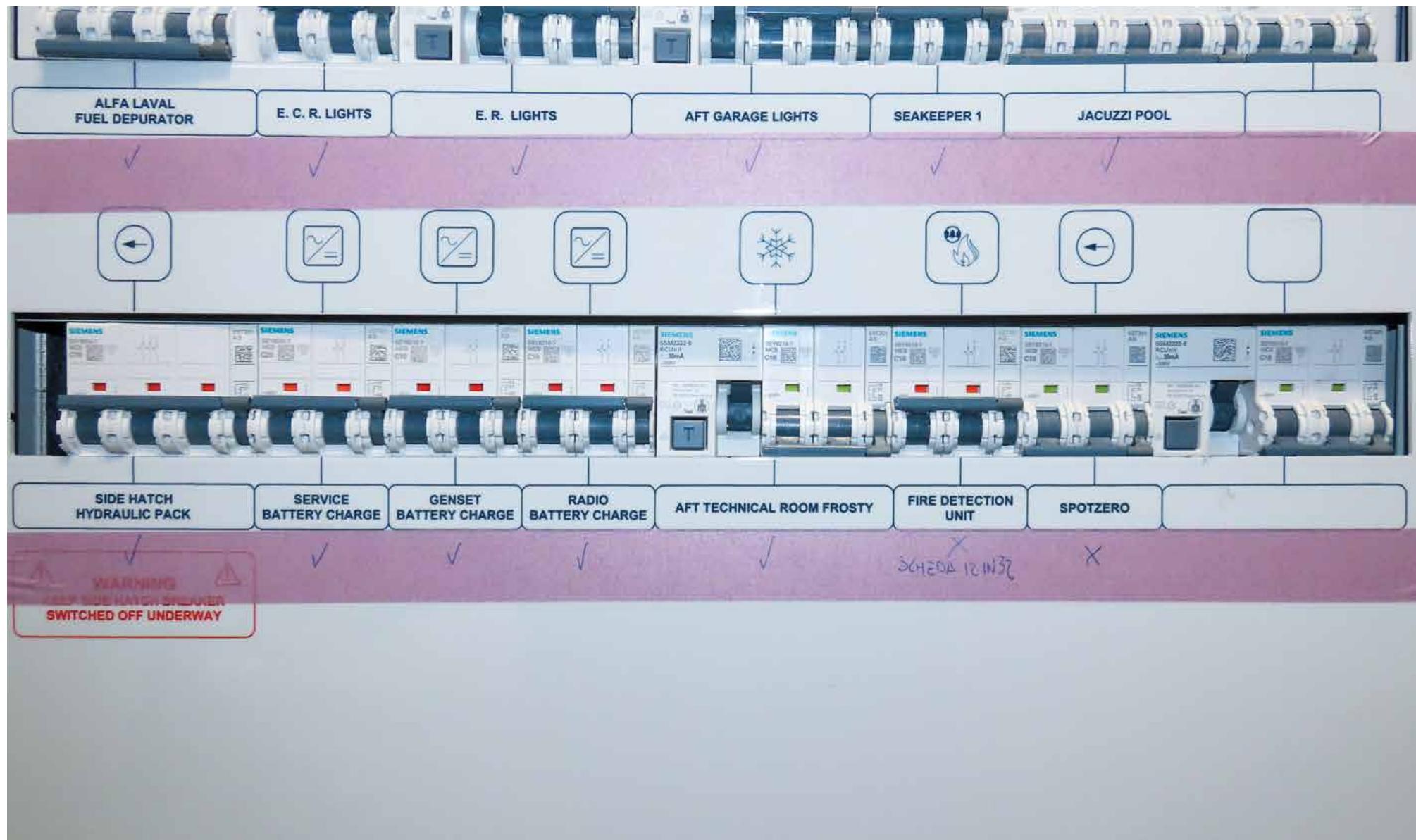
E. 400/230 V utility protection magneto-thermals, connection bar A:



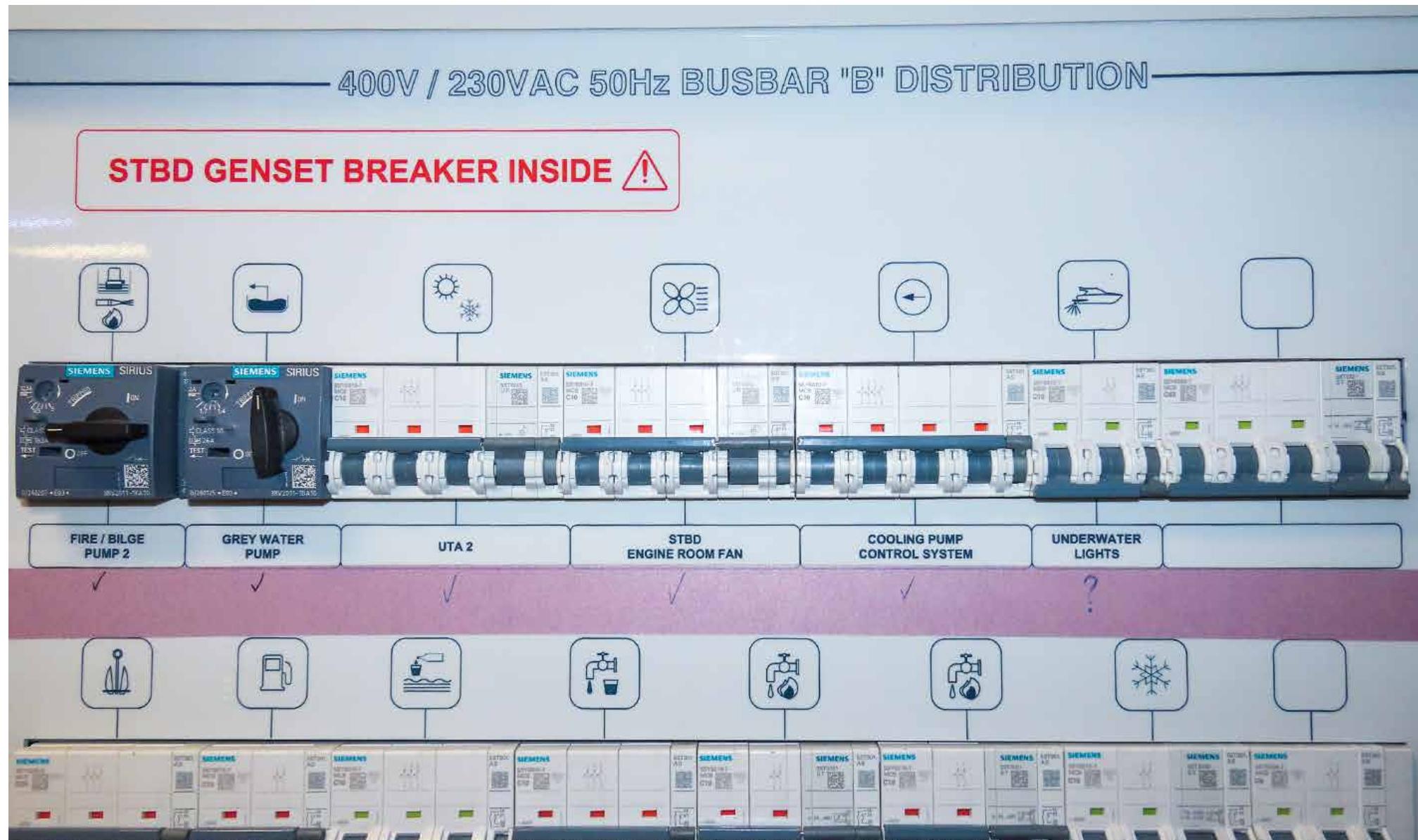


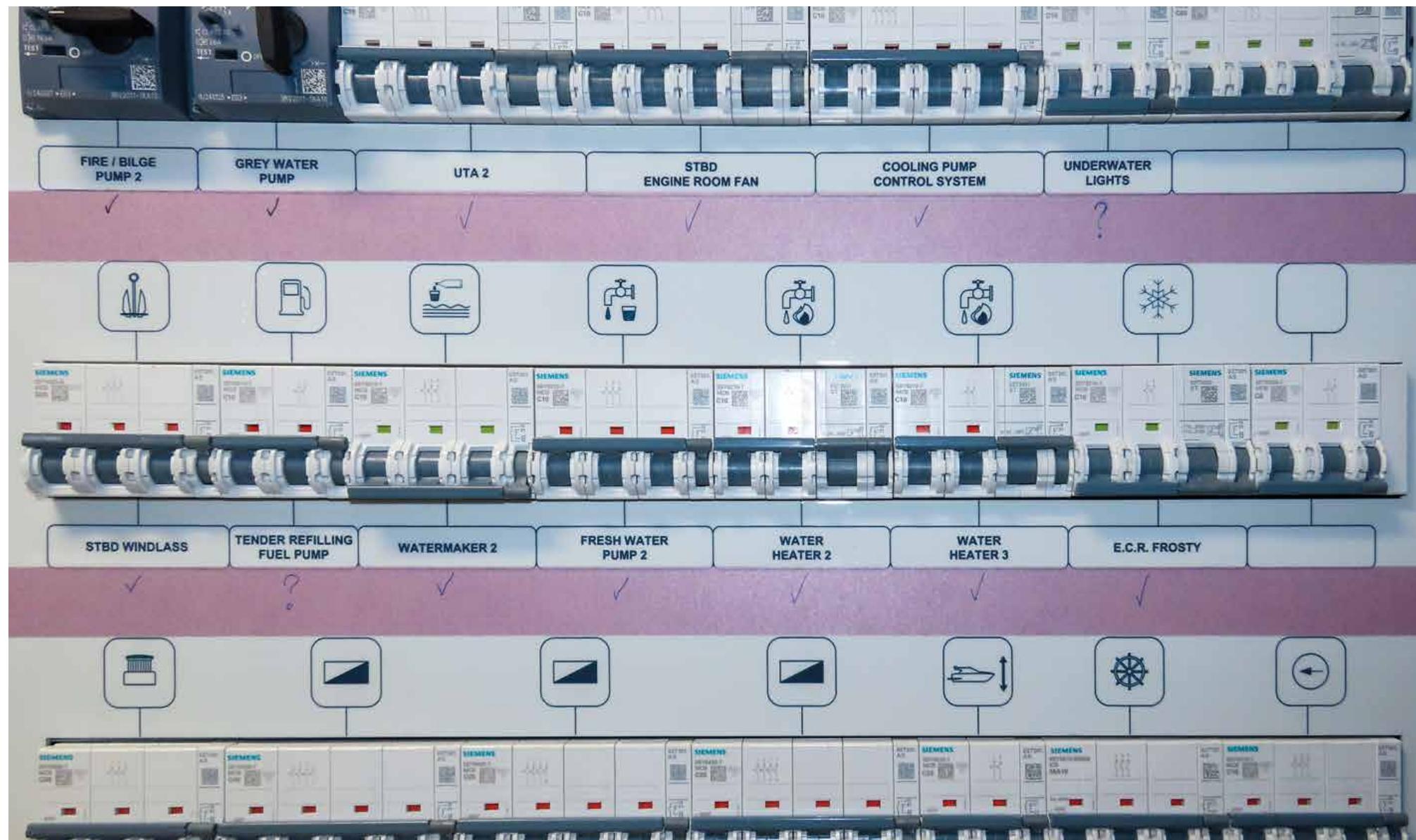


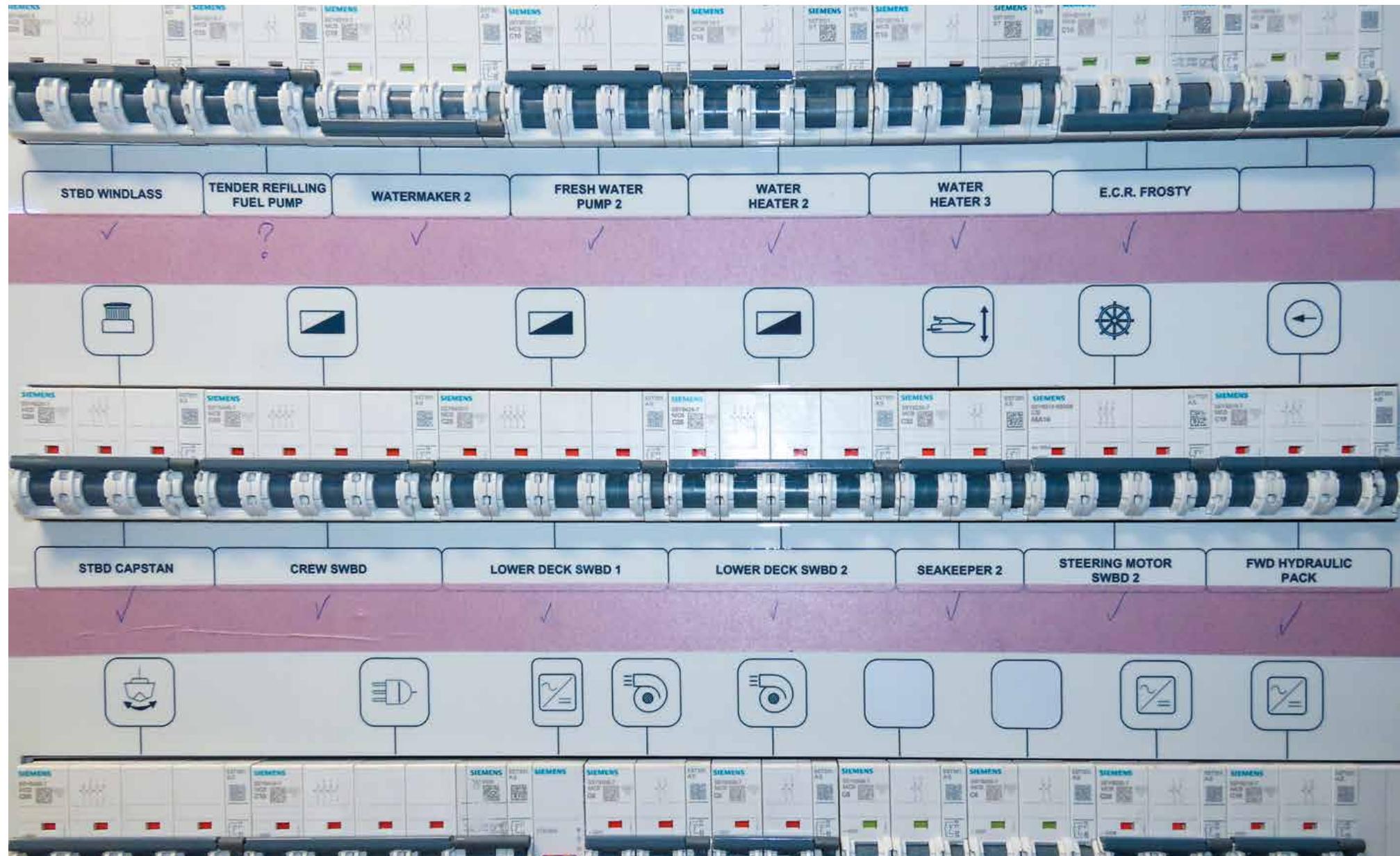


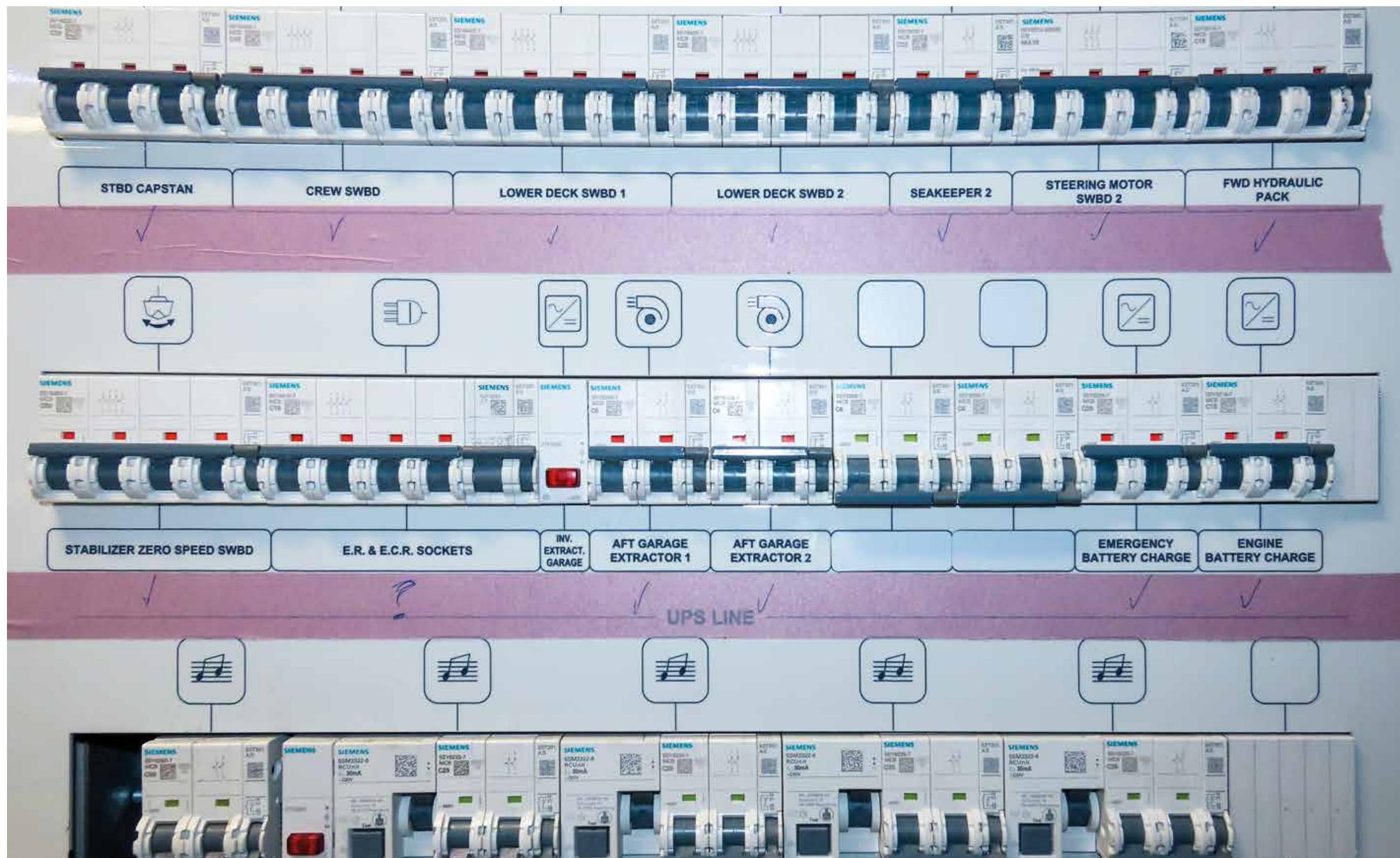


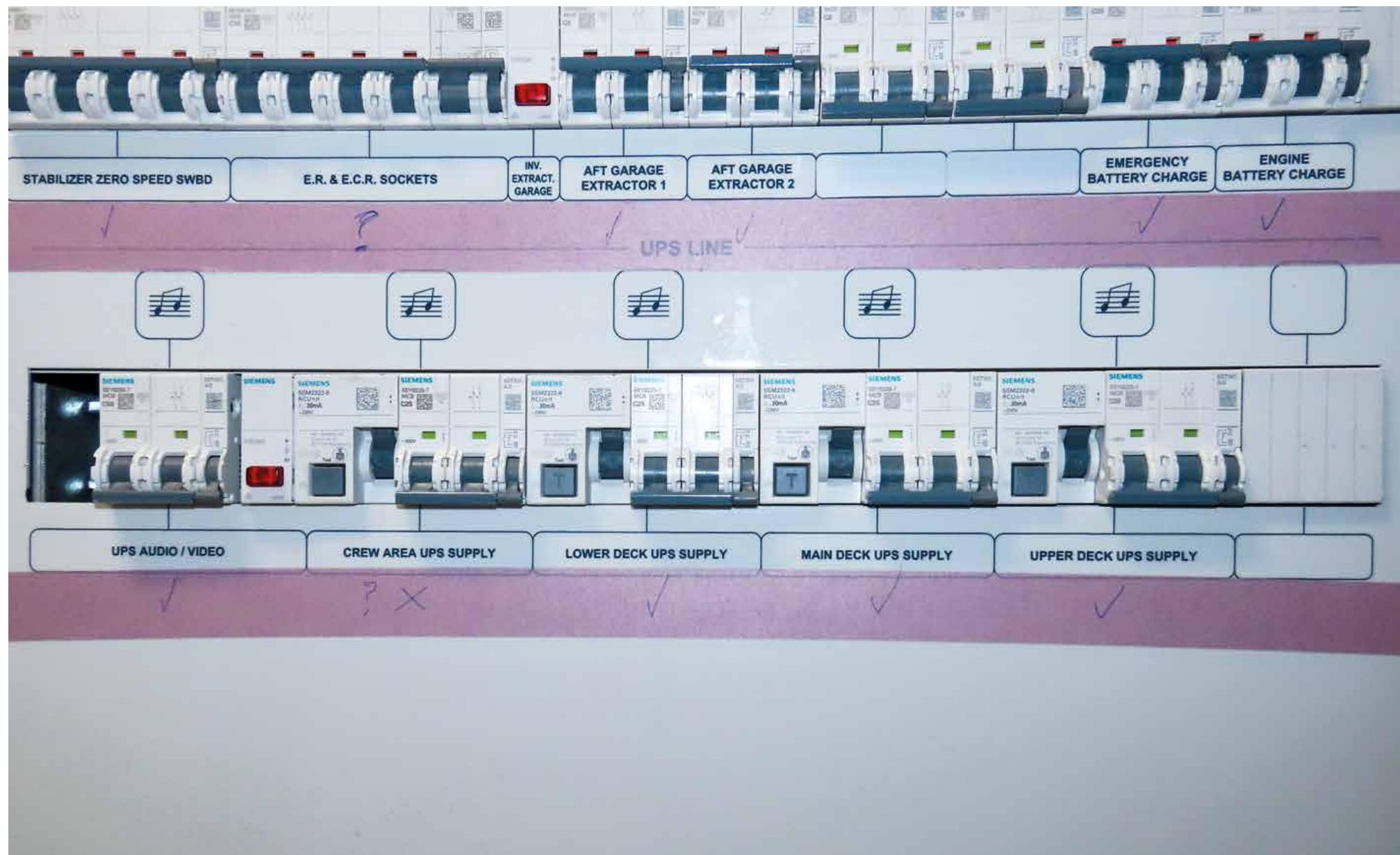
F. 400/230 V utility protection magneto-thermals, connection bar B:









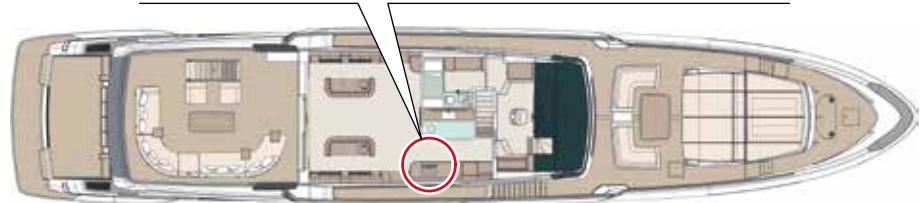
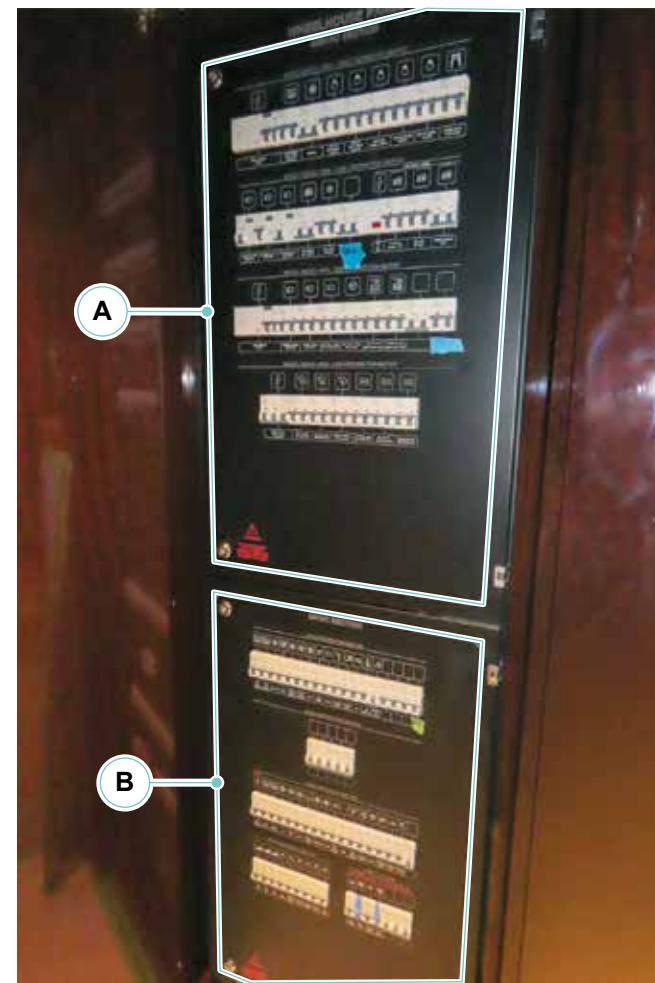


HELM STATION ELECTRICAL PANEL:

The helm station contains the electrical panel.

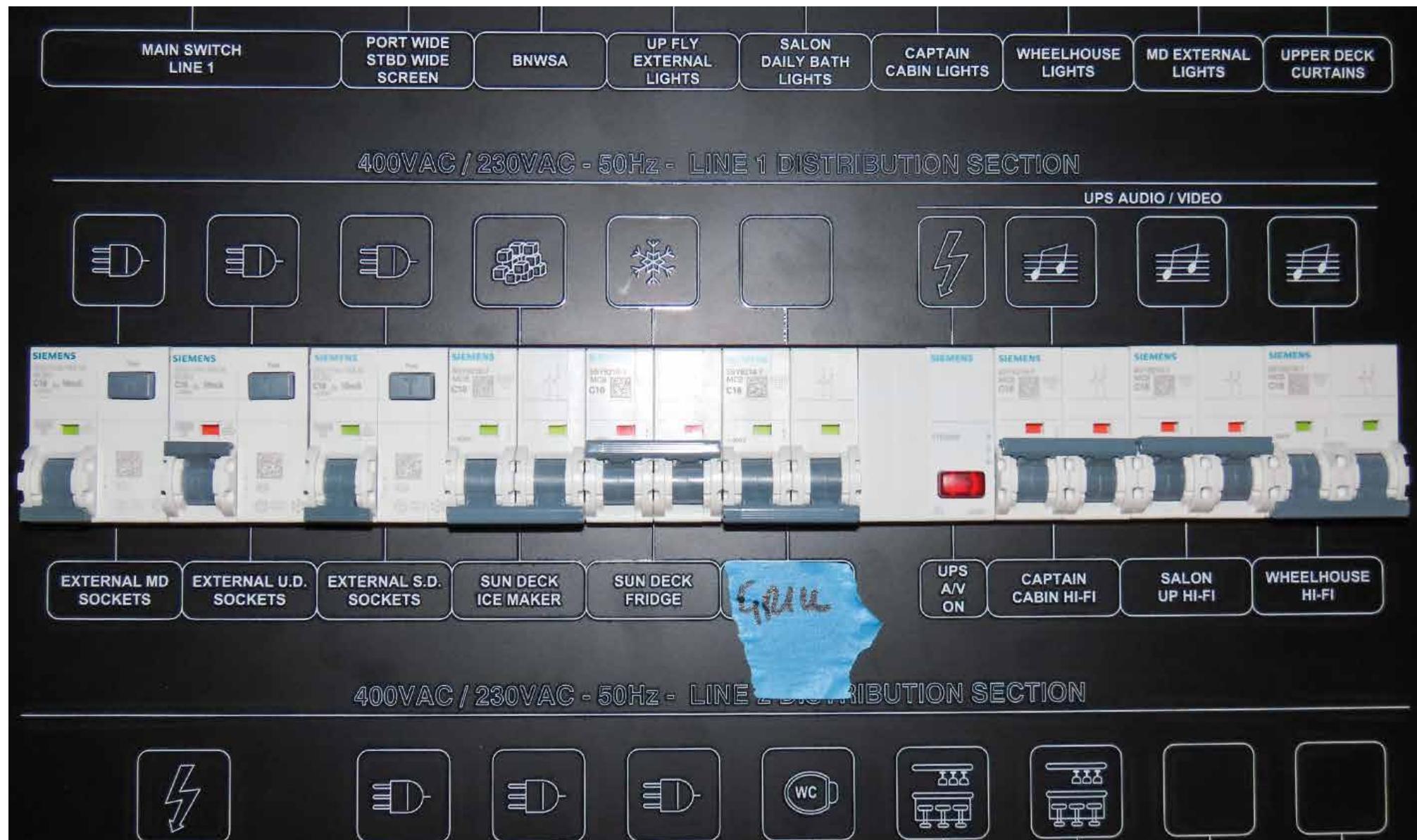
To simplify panel descriptions, the main sections are as follows:

- A.** 400/230 Vac utility protection magneto-thermals
- B.** 24 V utility protection magneto-thermals



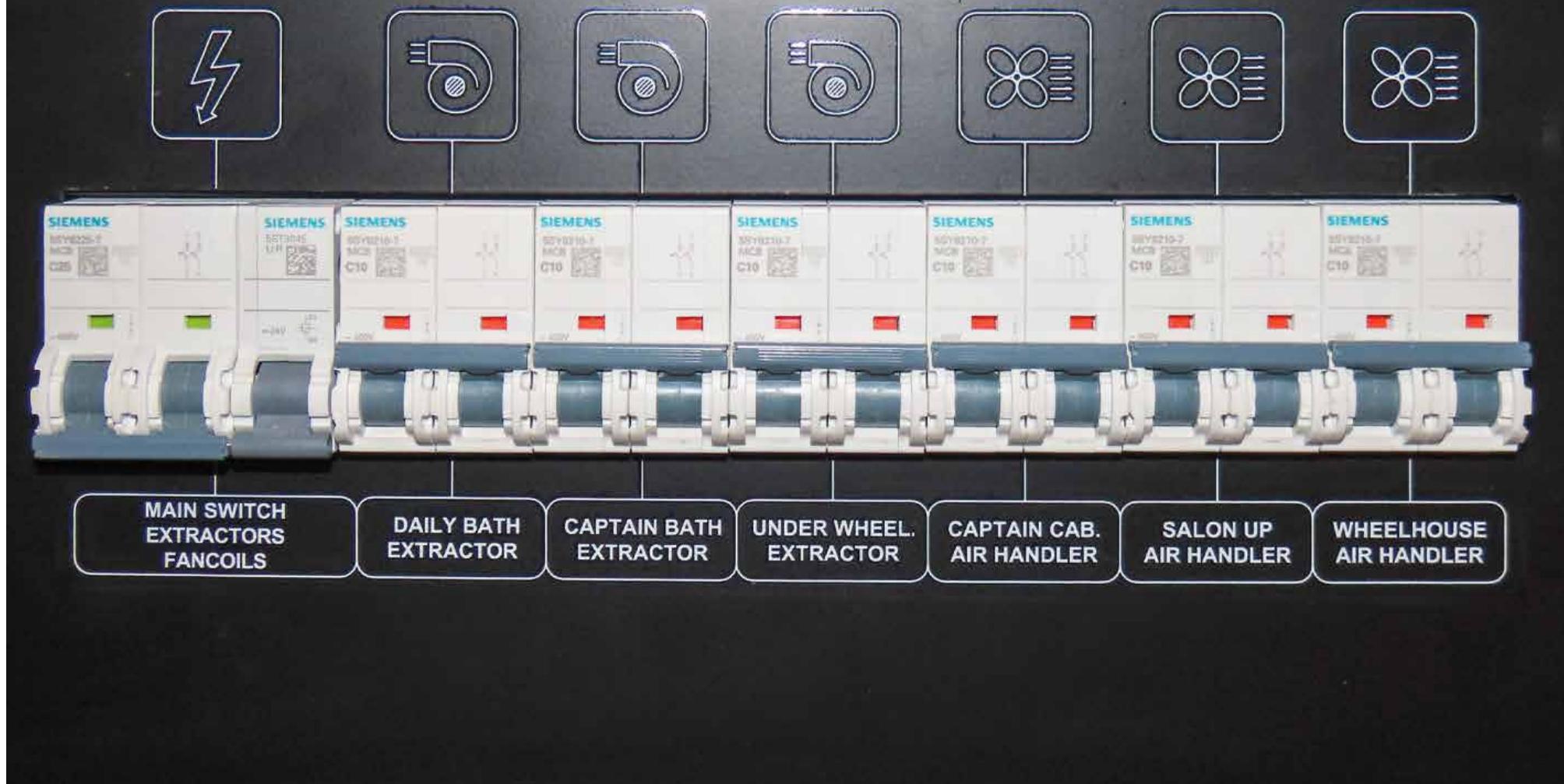
A. 400/230 Vac utility protection magneto-thermals

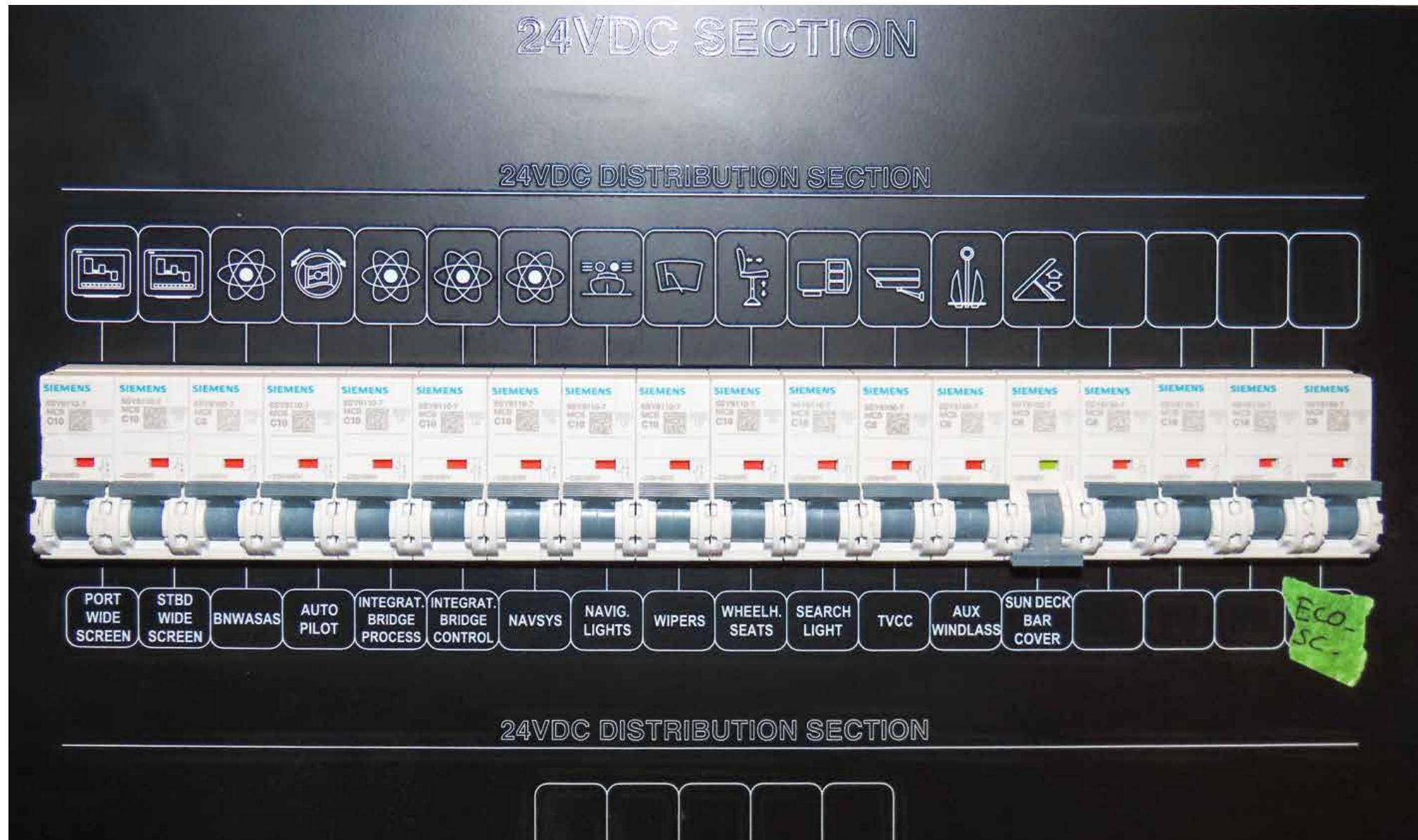


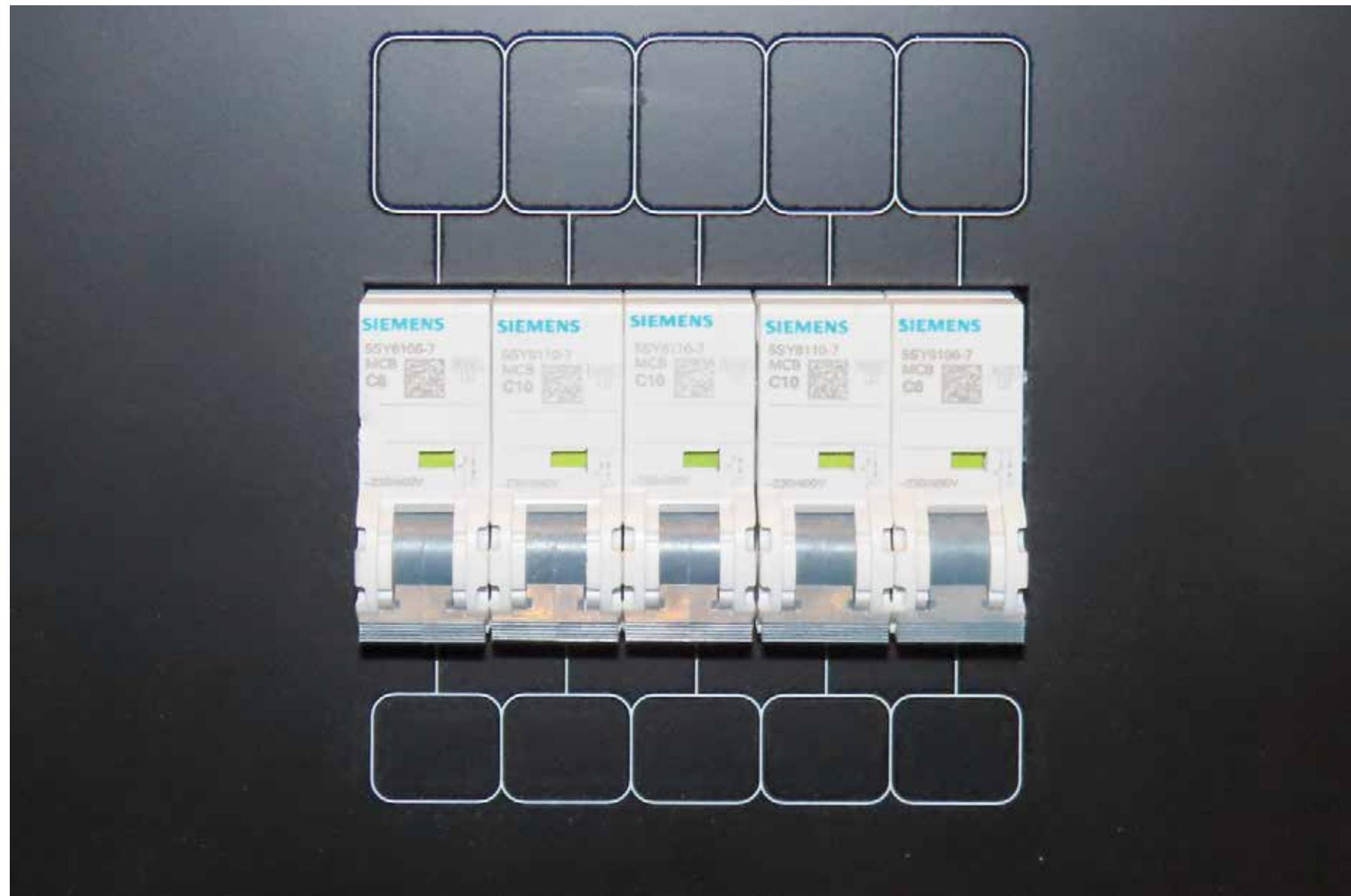


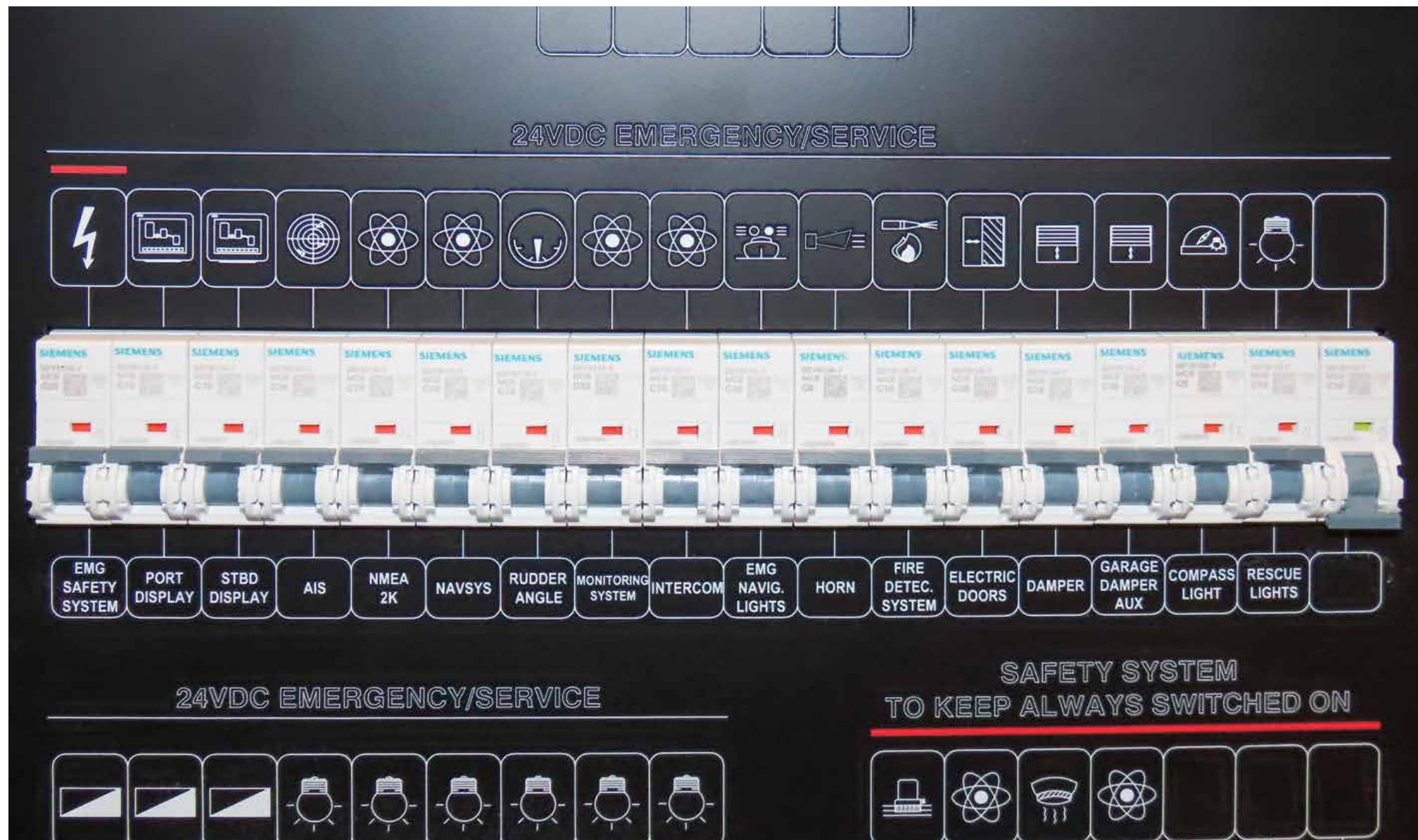


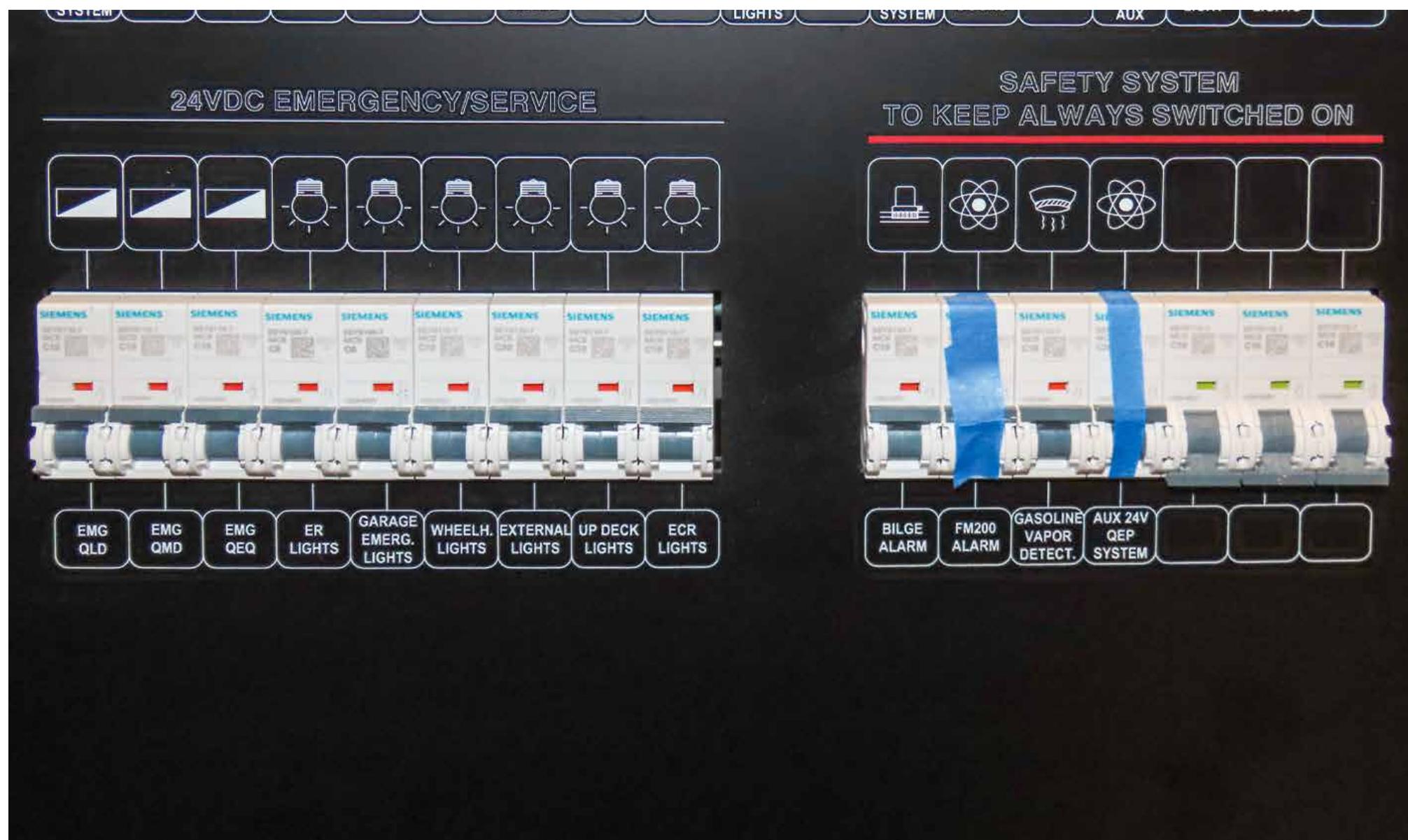
400VAC / 230VAC - 50Hz - LINE 2 DISTRIBUTION SECTION



B. 24 V utility protection magneto-thermals





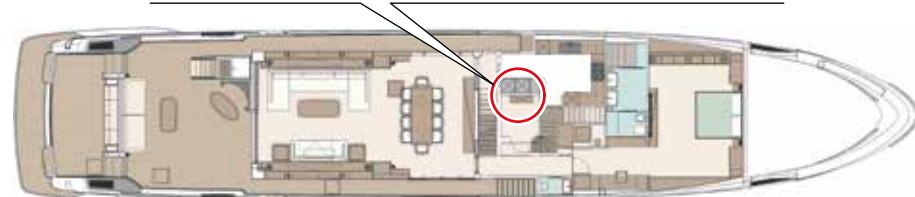


MAIN DECK AND GALLEY ELECTRICAL PANEL:

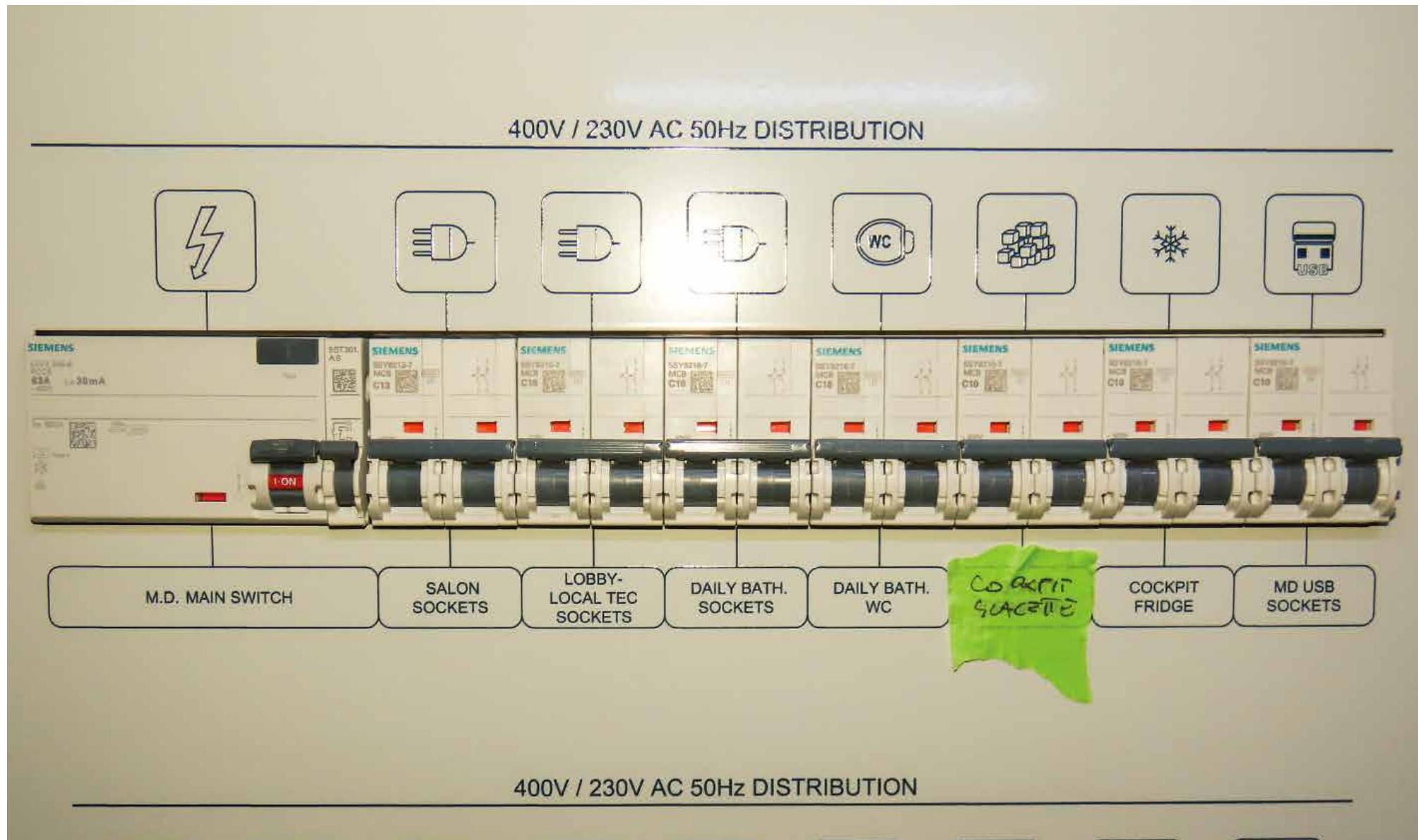
The electrical panel is located in the technical room fore of the dining area.

To simplify panel descriptions, the principal sections are as follows:

- A.** 400/230 Vac main deck utility protection magneto-thermals;
- B.** 400/230 Vac galley utility protection magneto-thermals;
- C.** 24 V emergency utility protection magneto-thermals.



A. 400/230 Vac main deck utility protection magneto-thermals:

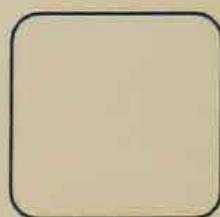
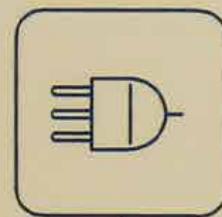


400V / 230V AC 50Hz DISTRIBUTION



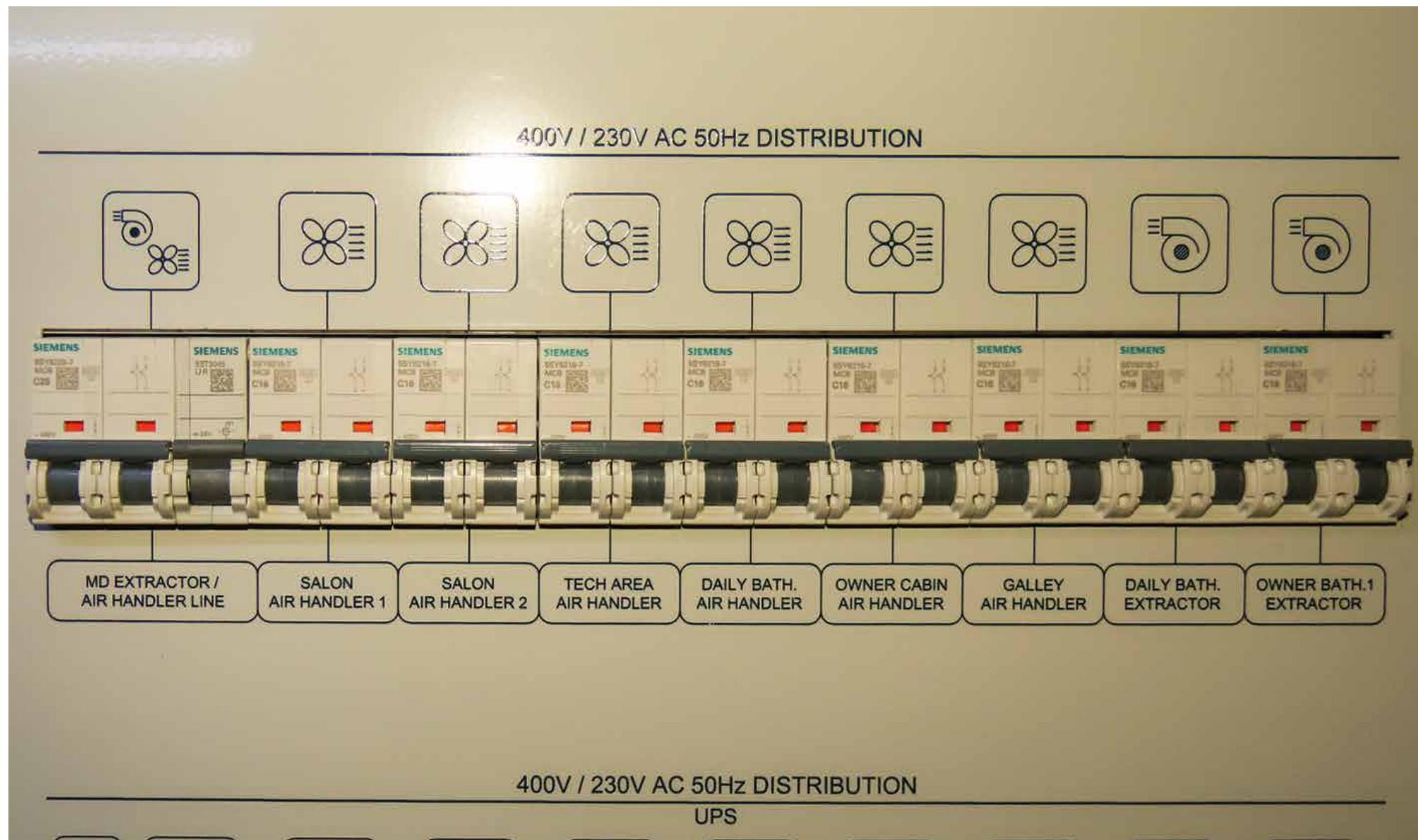
400V / 230V AC 50Hz DISTRIBUTION

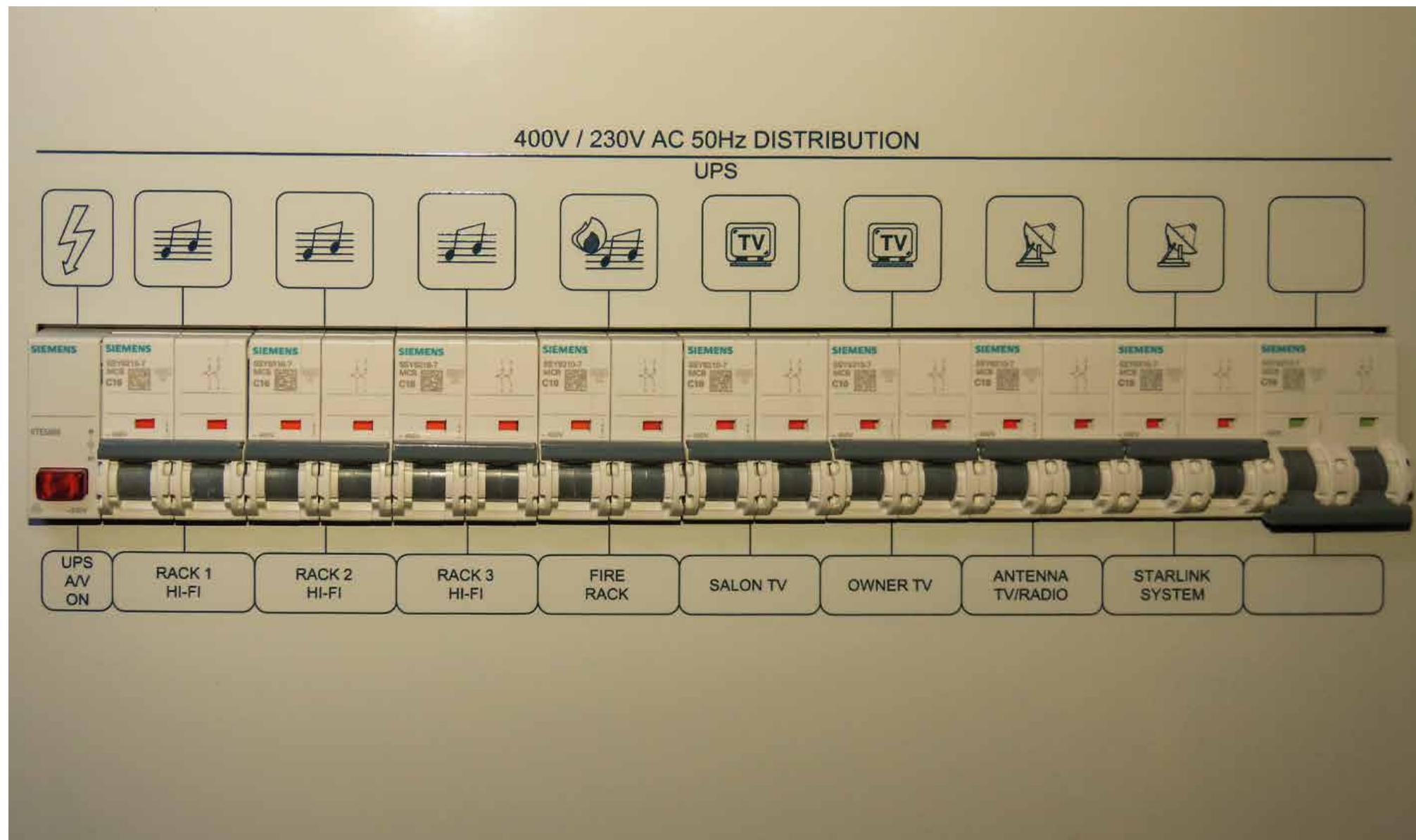
400V / 230V AC 50Hz DISTRIBUTION

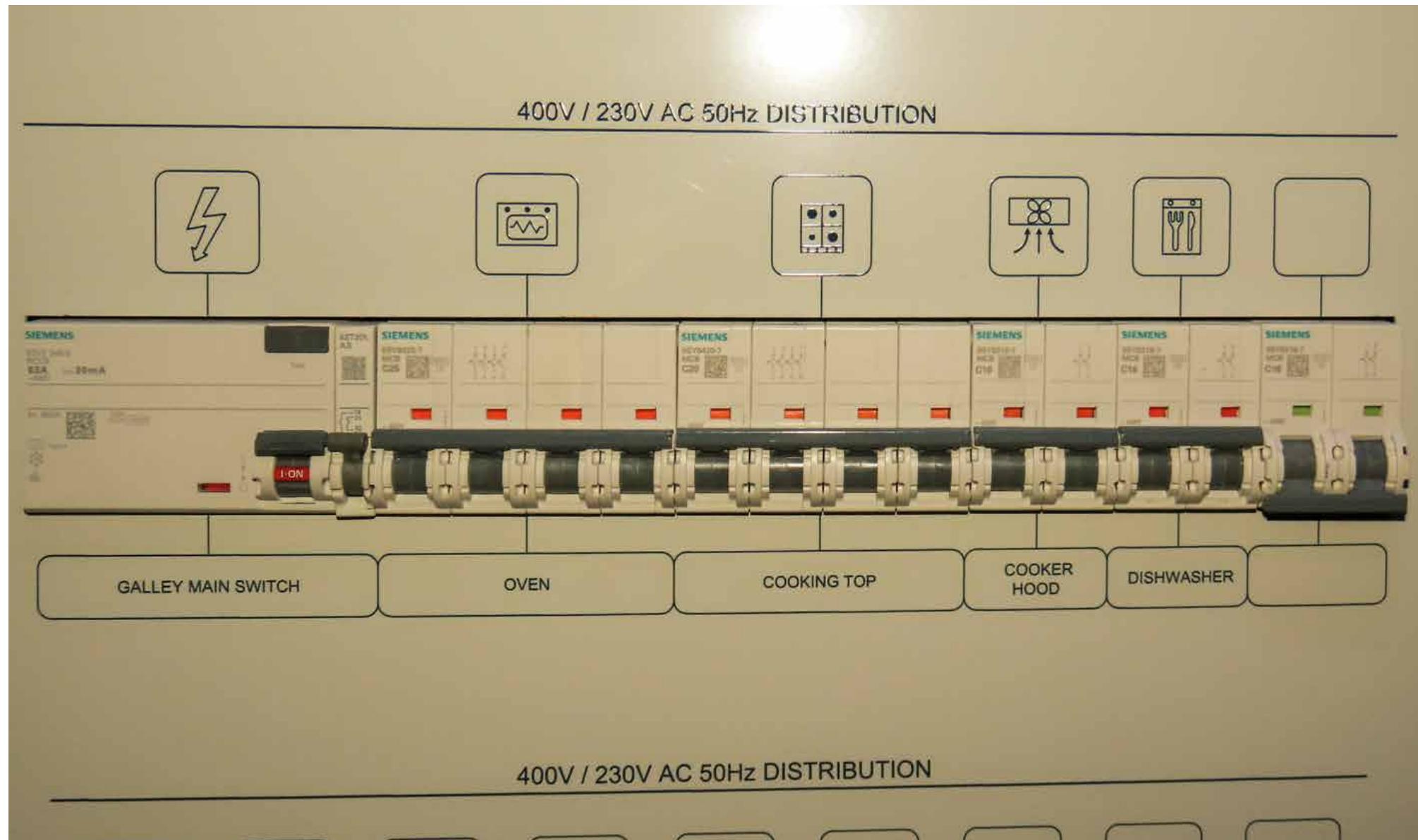
OWNER PANTRY
SOCKETSPANTALLA
ECR (LCD)

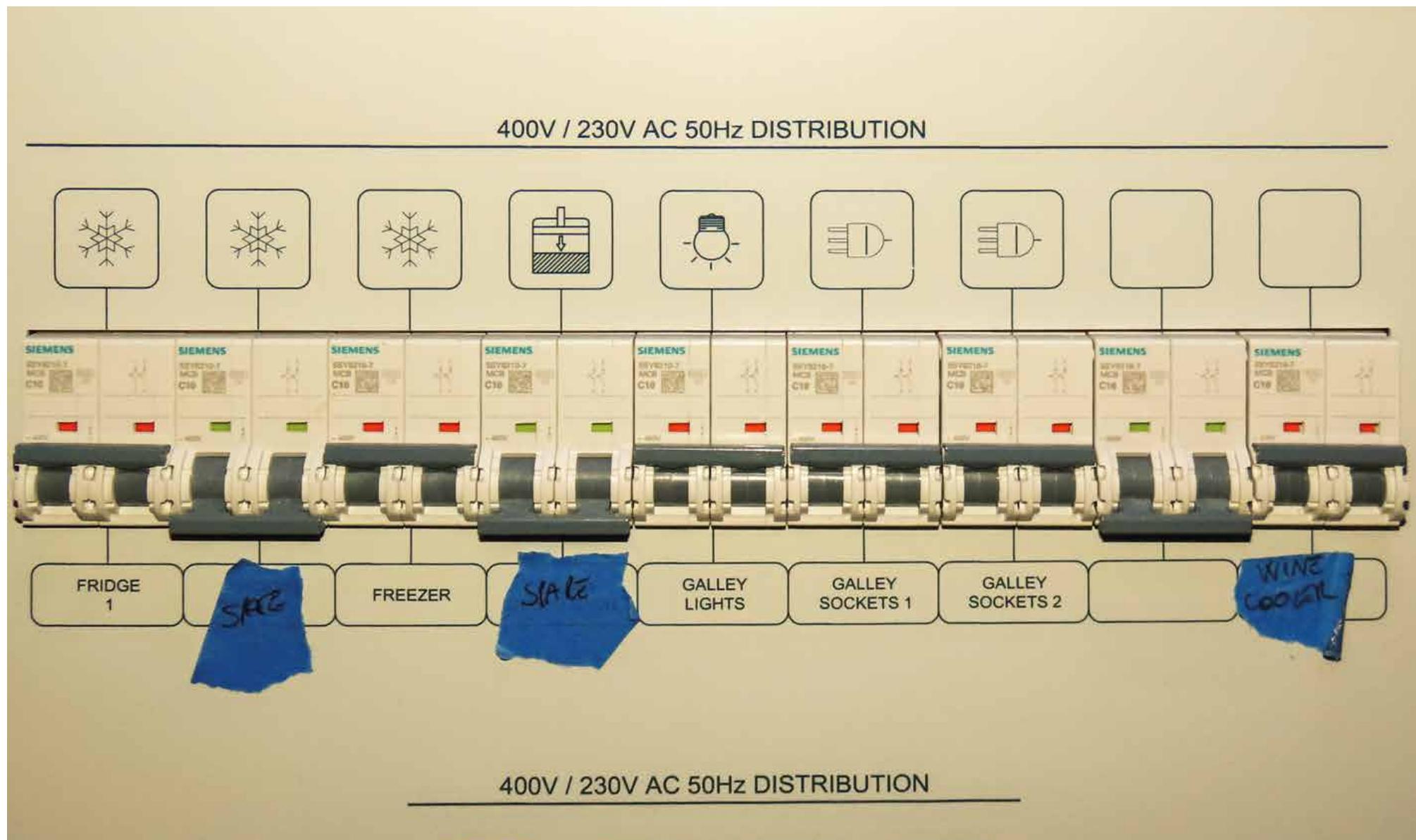
COOLER

SERV. ATURA
SAL. PP.SANISPLIT
ARM.



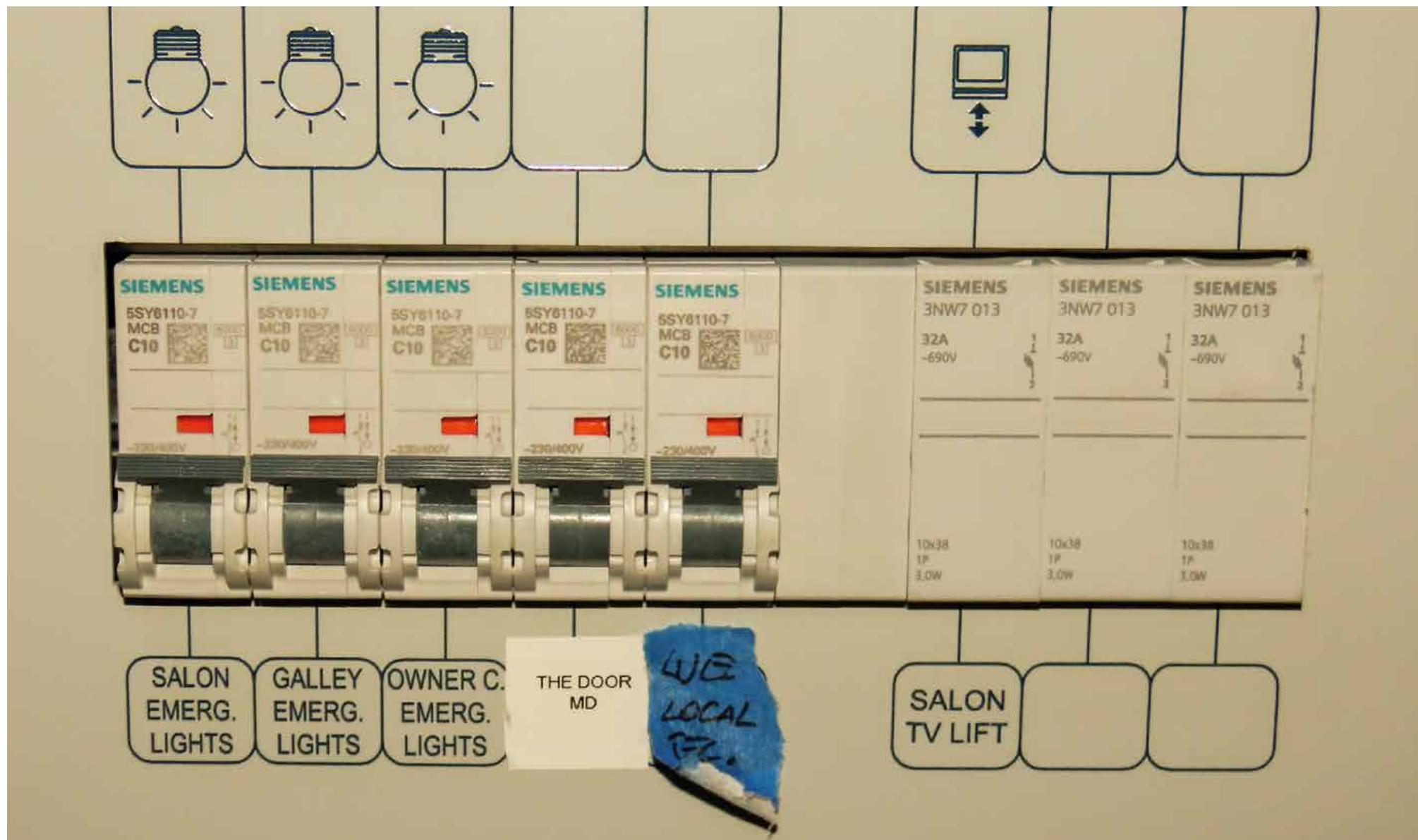


B. 400/230 Vac galley utility protection magneto-thermals:





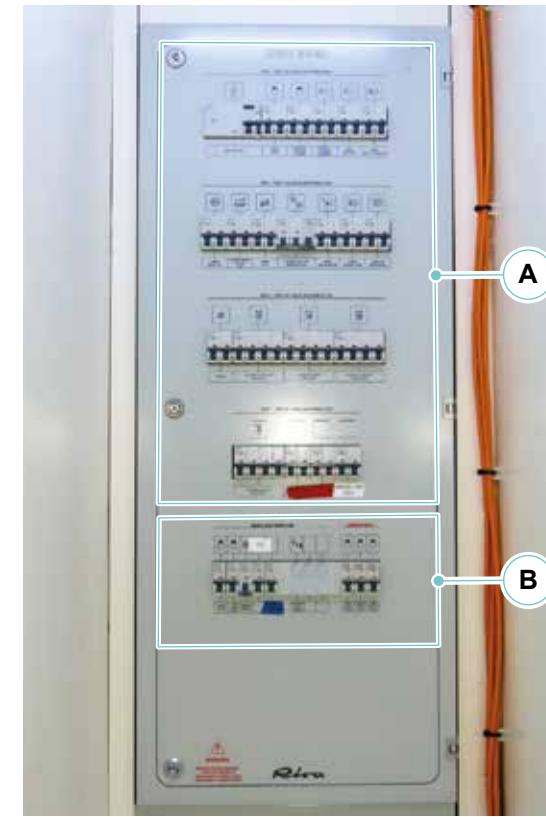
C. 24 V emergency utility protection magneto-thermals:



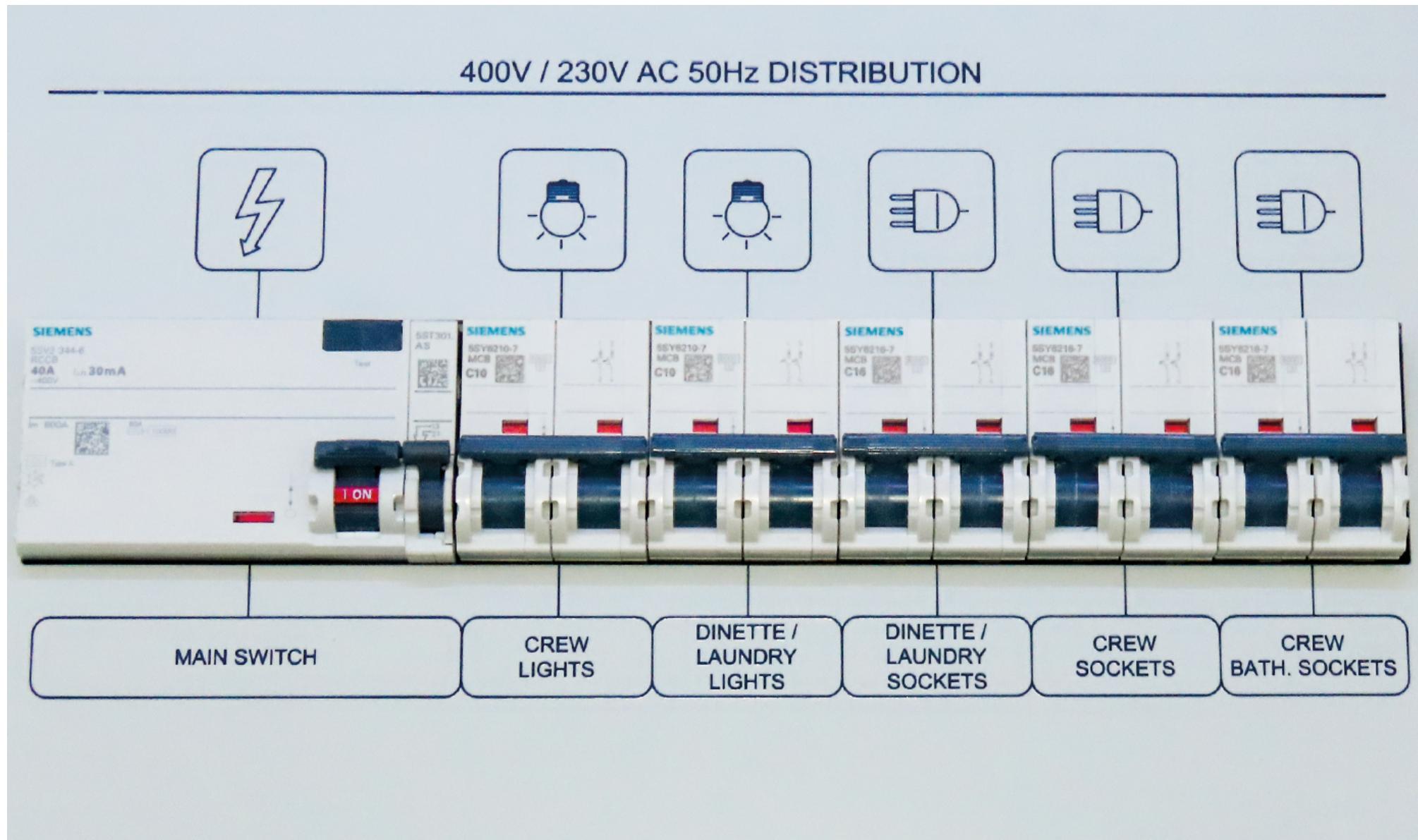
CREW AREA ELECTRICAL PANEL:

The electrical panel installed to protect the utilities in the crew's quarters is divided into the following principal sections:

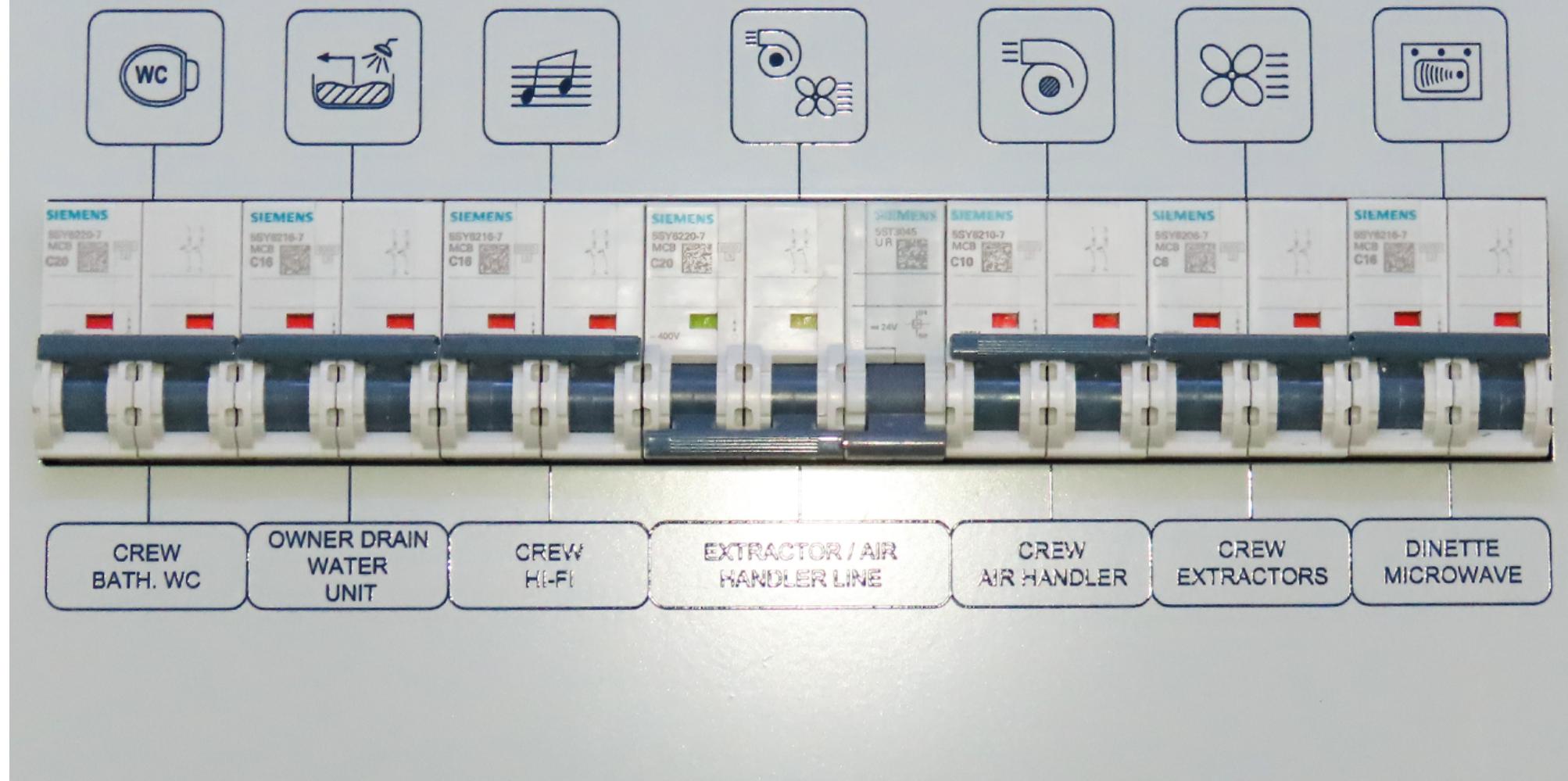
- A.** 400/230 Vac crew quarters utility protection magneto-thermals;
- B.** 24V utilities supplied protection and emergency magneto-thermals.

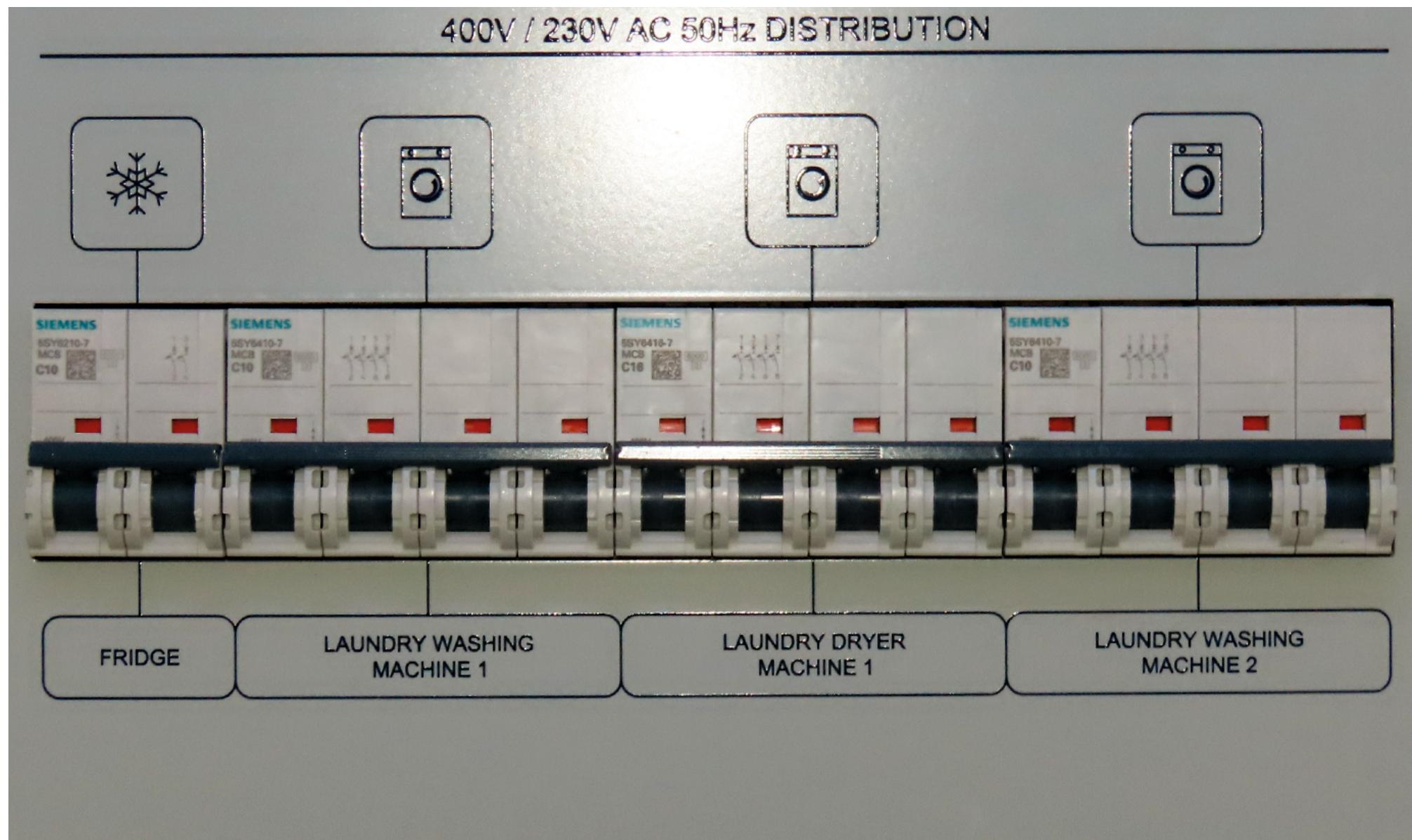


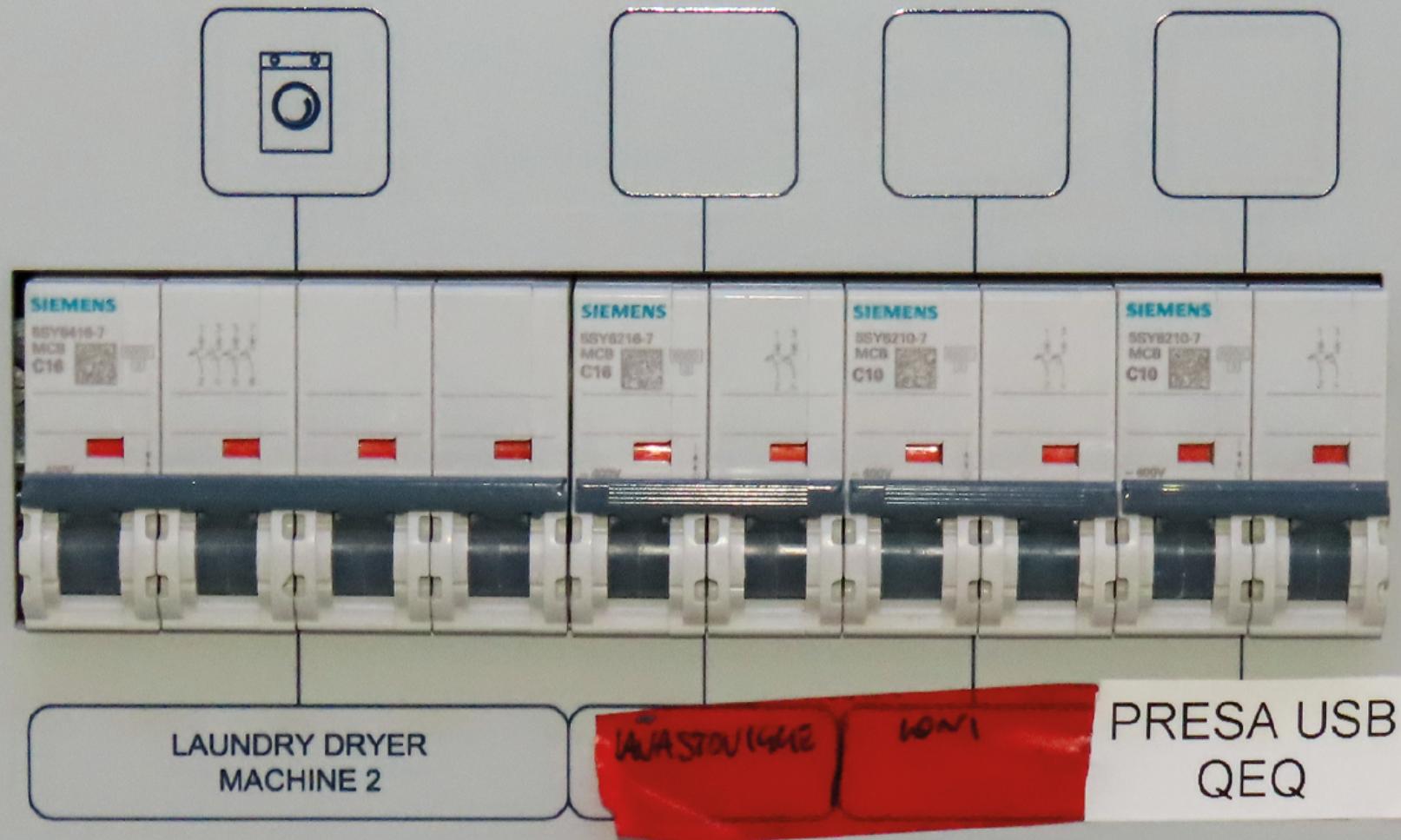
A. 400/230 Vac crew quarters utility protection magneto-thermals:



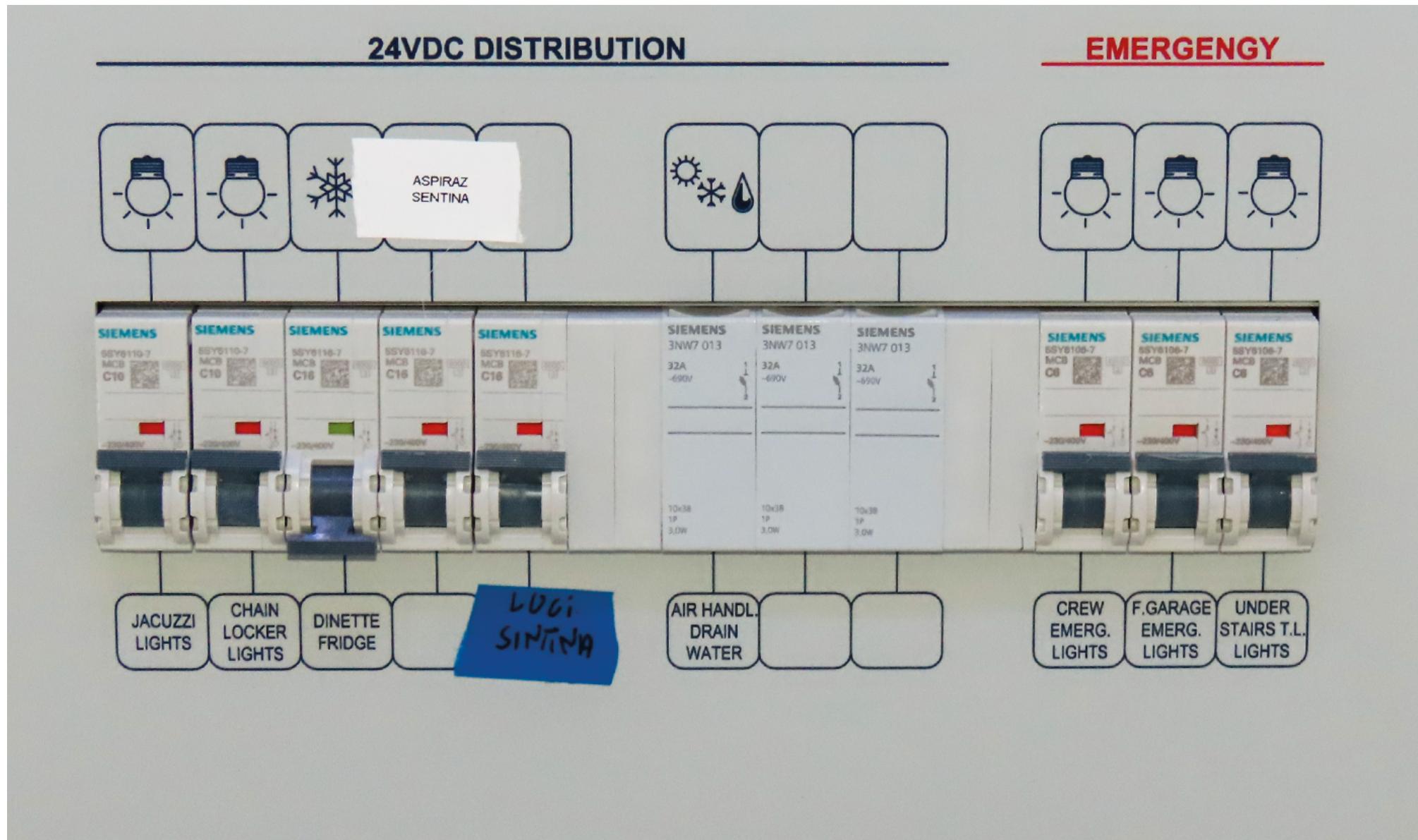
400V / 230V AC 50Hz DISTRIBUTION







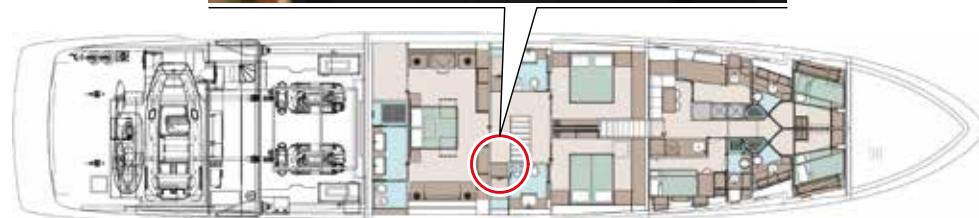
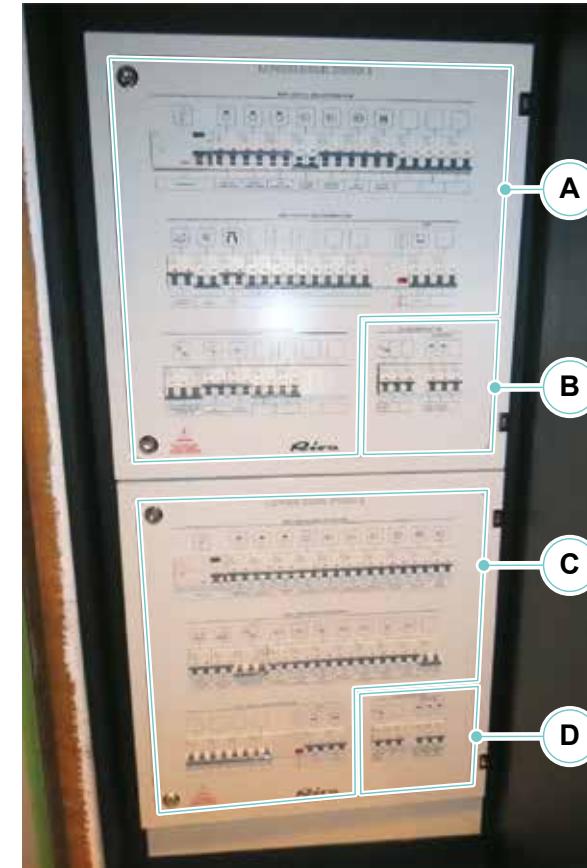
B. 24V utilities supplied protection and emergency magneto-thermals:



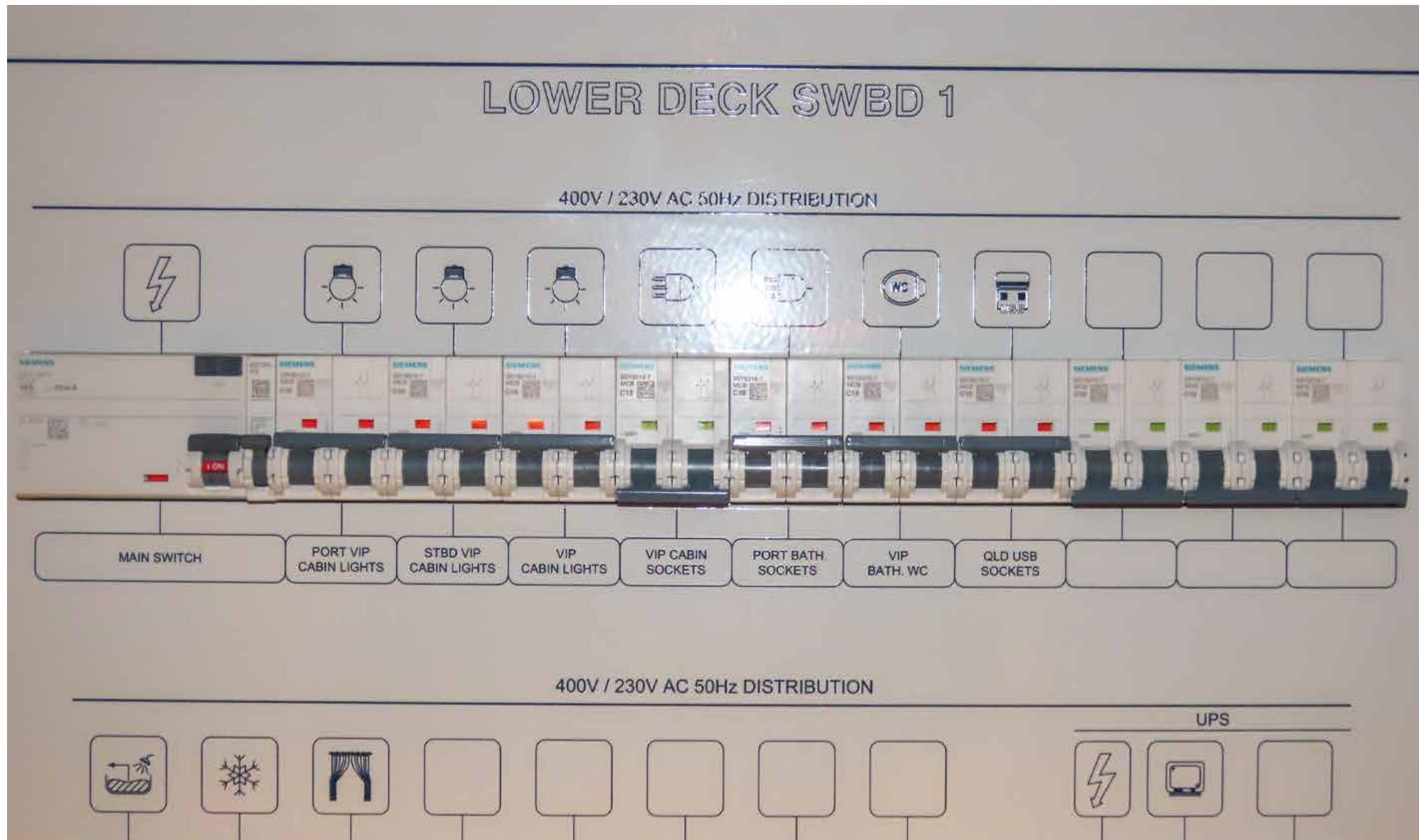
GUEST AREA ELECTRICAL PANEL:

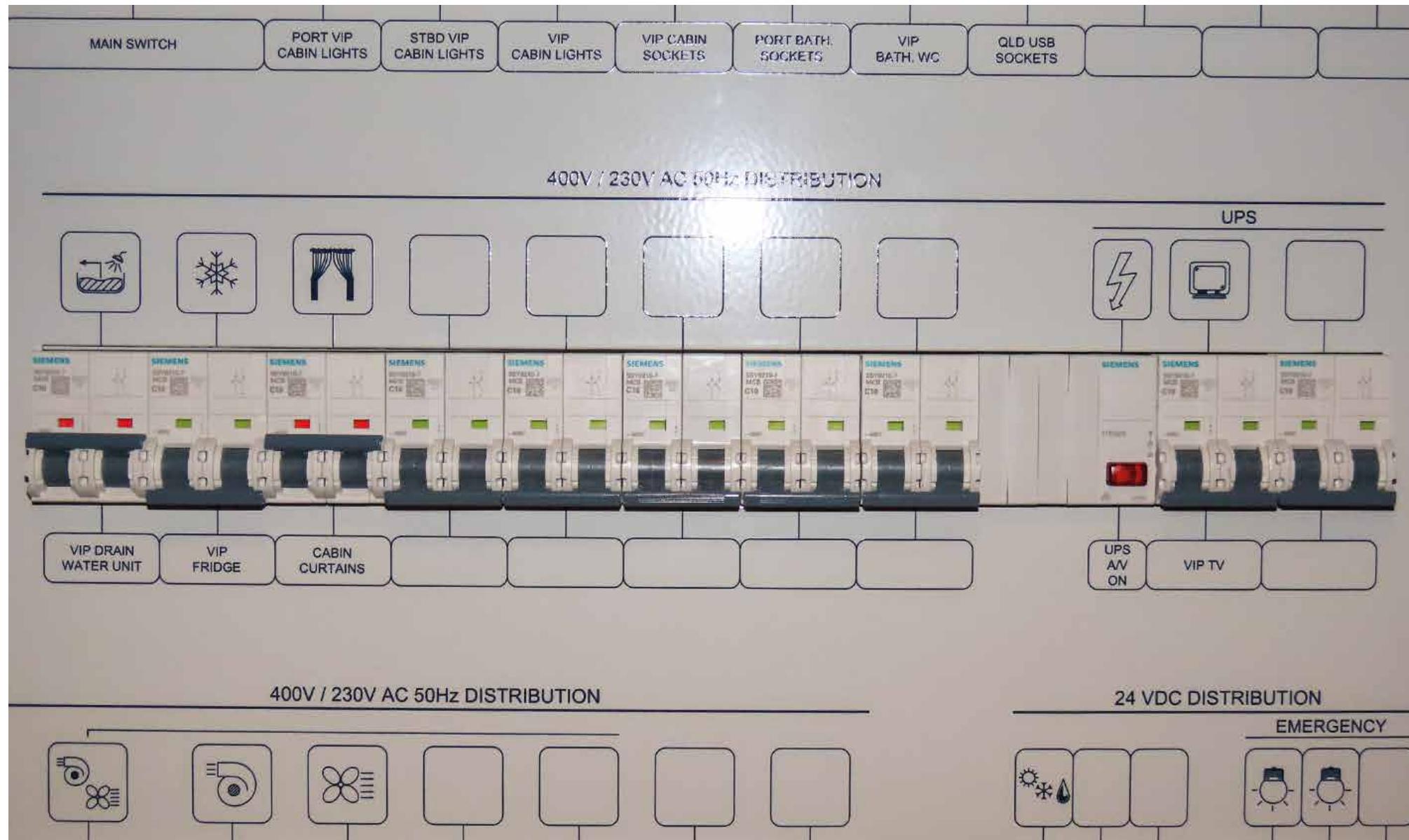
The electrical panel installed to protect the utilities in the guest quarters is divided into the following principal sections:

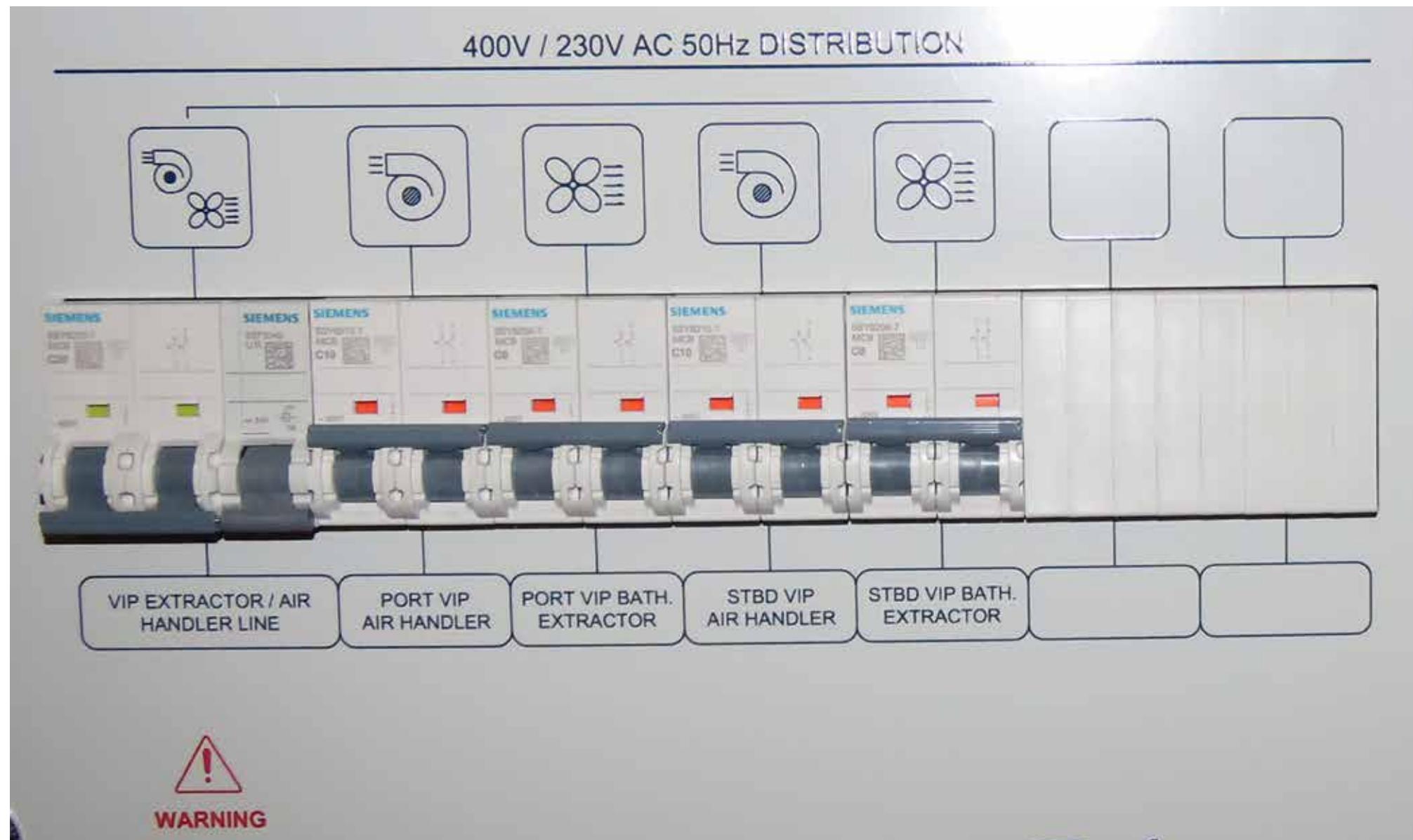
- A.** 400/230 VAC utilities supplied protection magneto-thermals, electrical panel 1
- B.** 24 V utilities supplied protection and emergency magneto-thermals, electrical panel 1
- C.** 400/230 VAC utilities supplied protection magneto-thermals, electrical panel 2
- D.** 24 V utilities supplied protection and emergency magneto-thermals, electrical panel 2



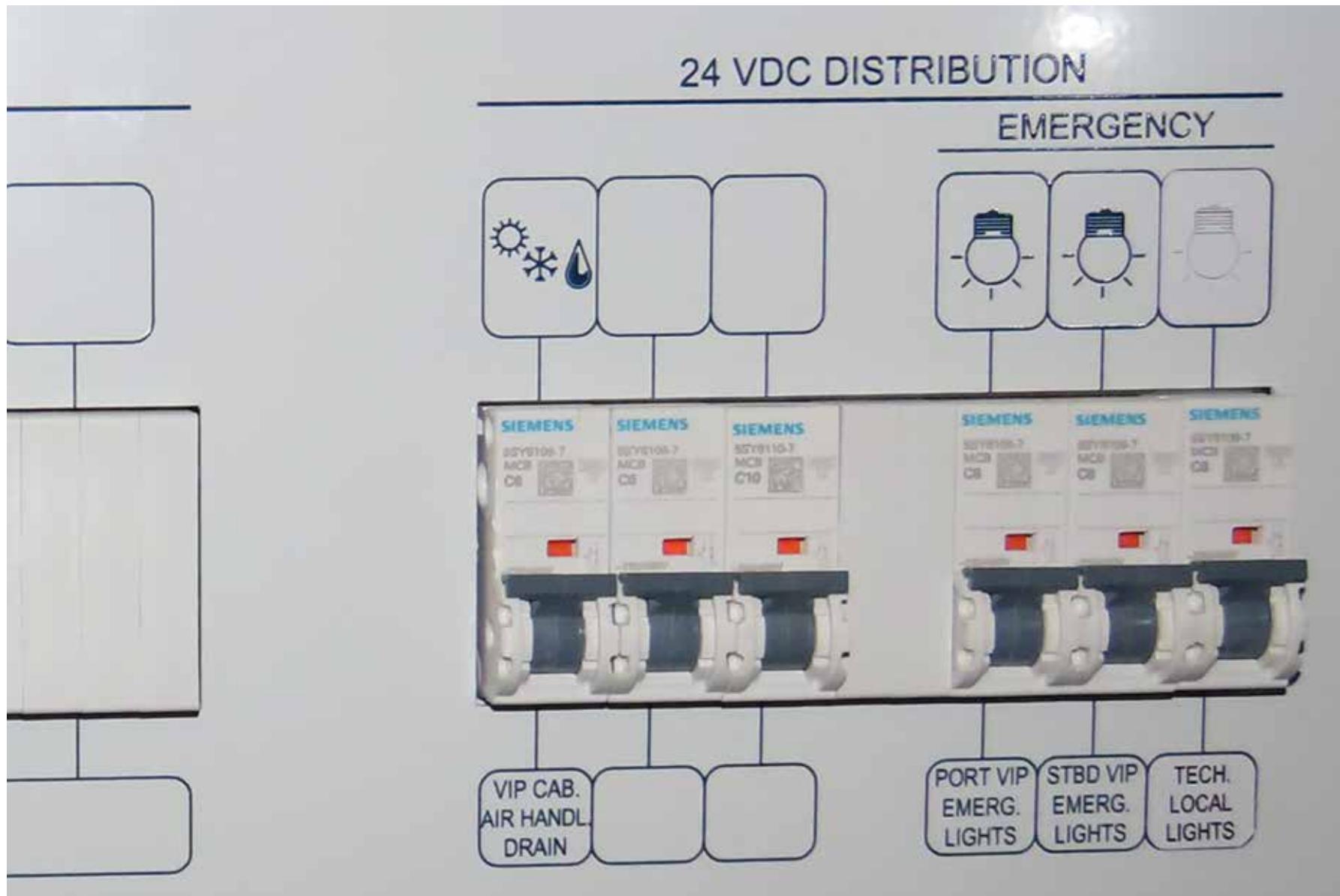
A. 400/230 VAC utilities supplied protection magneto-thermals, electrical panel 1:



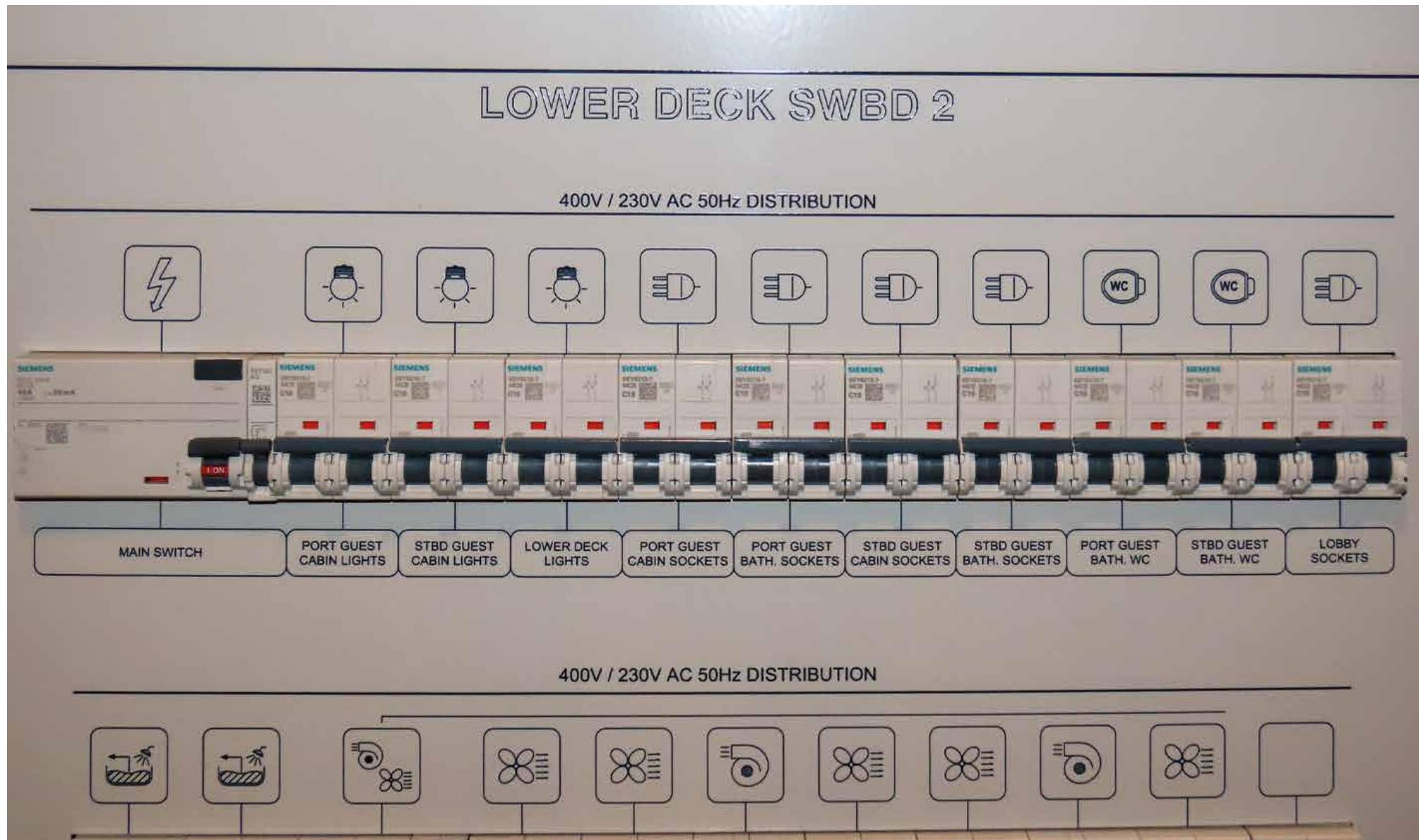




B. 24 V utilities supplied protection and emergency magneto-thermals, electrical panel 1:

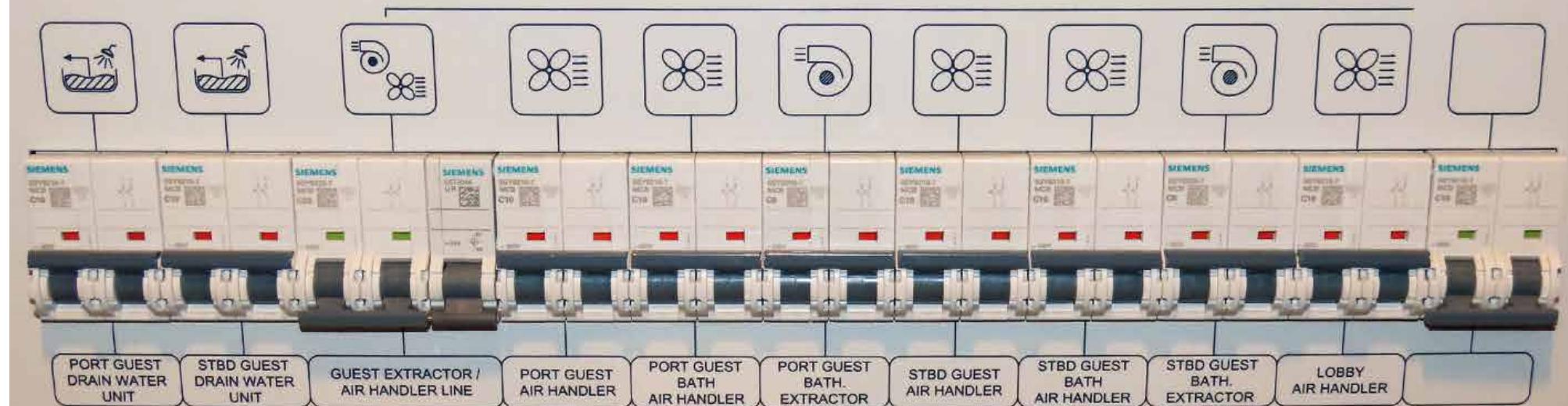


C. 400/230 VAC utilities supplied protection magneto-thermals, electrical panel 2:



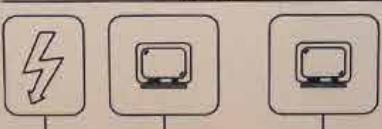
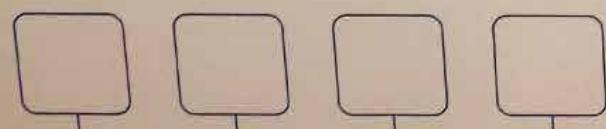
MAIN SWITCH	PORT GUEST CABIN LIGHTS	STBD GUEST CABIN LIGHTS	LOWER DECK LIGHTS	PORT GUEST CABIN SOCKETS	PORT GUEST BATH. SOCKETS	STBD GUEST CABIN SOCKETS	STBD GUEST BATH. SOCKETS	PORT GUEST BATH. WC	STBD GUEST BATH. WC	LOE SOCK
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400V / 230V AC 50Hz DISTRIBUTION



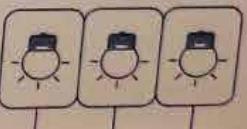
400V / 230V AC 50Hz DISTRIBUTION

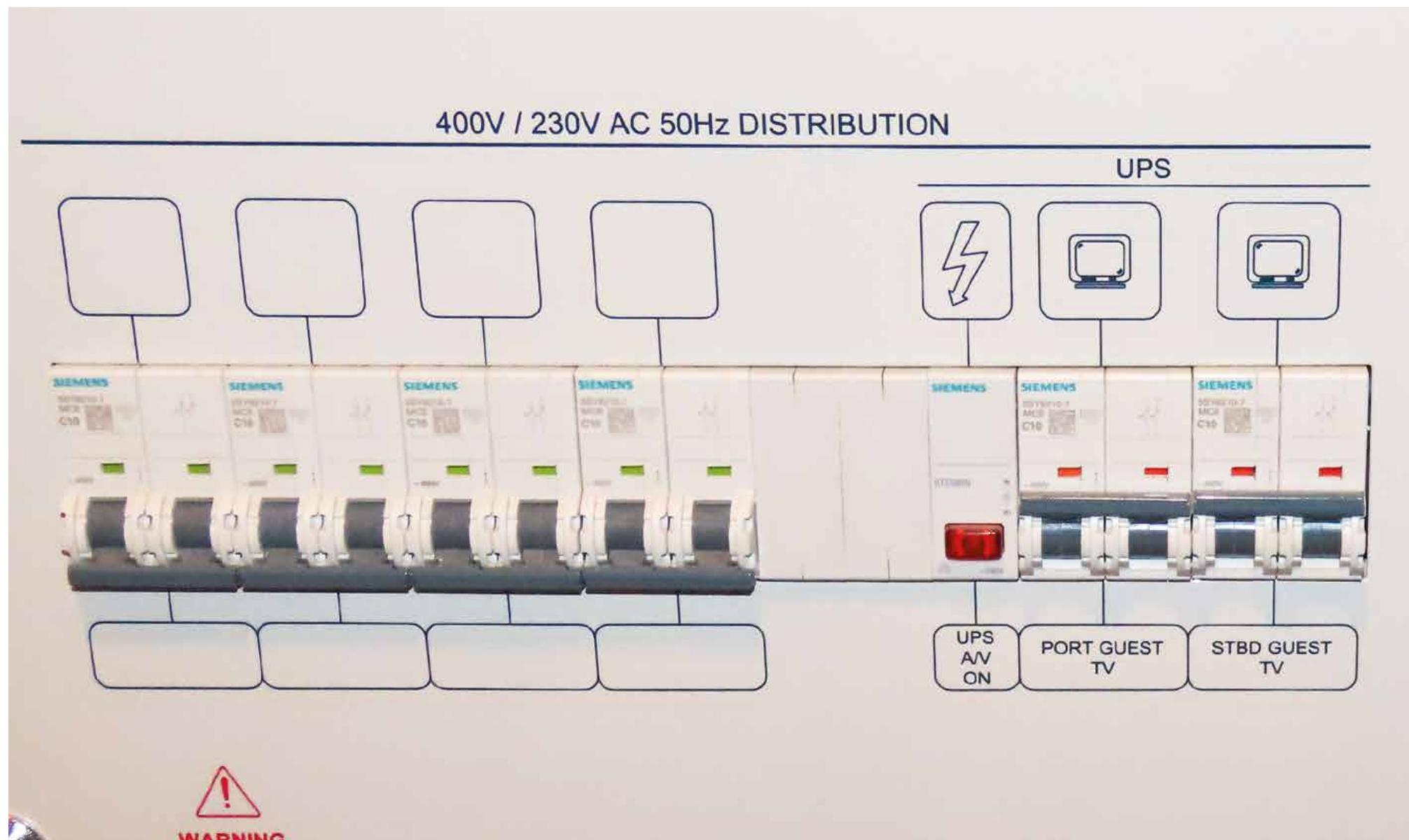
UPS



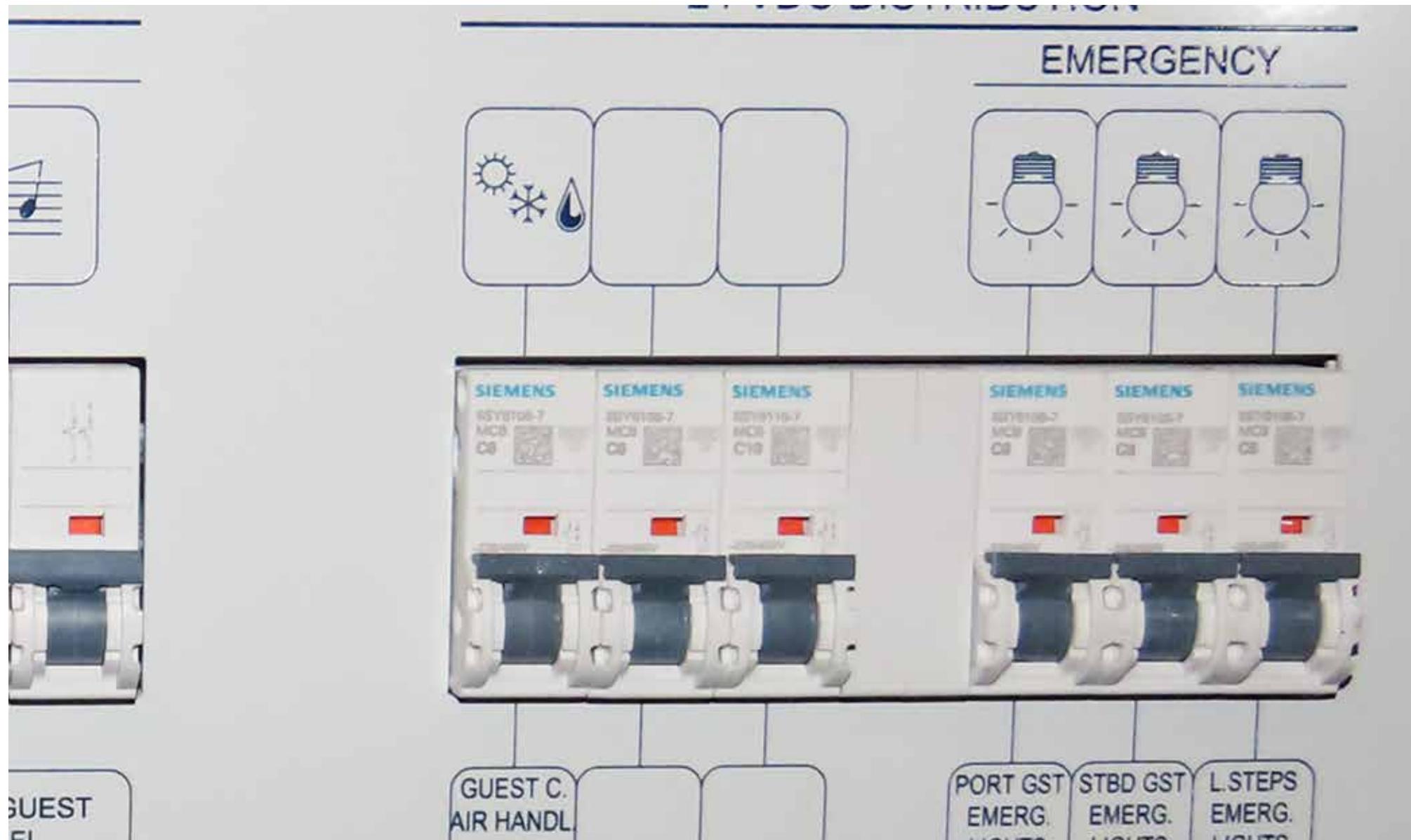
24 VDC DISTRIBUTION

EMERGENCY





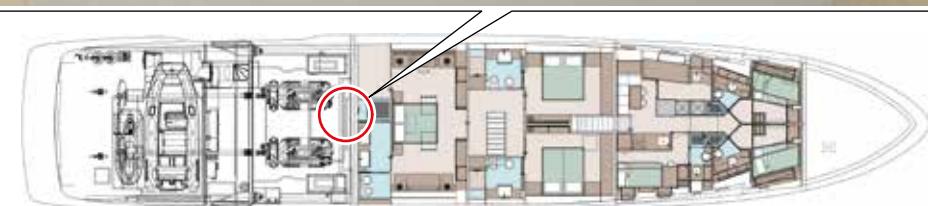
D. 24 V utilities supplied protection and emergency magneto-thermals, electrical panel 2



ENGINE BATTERIES SWITCHBOARD:

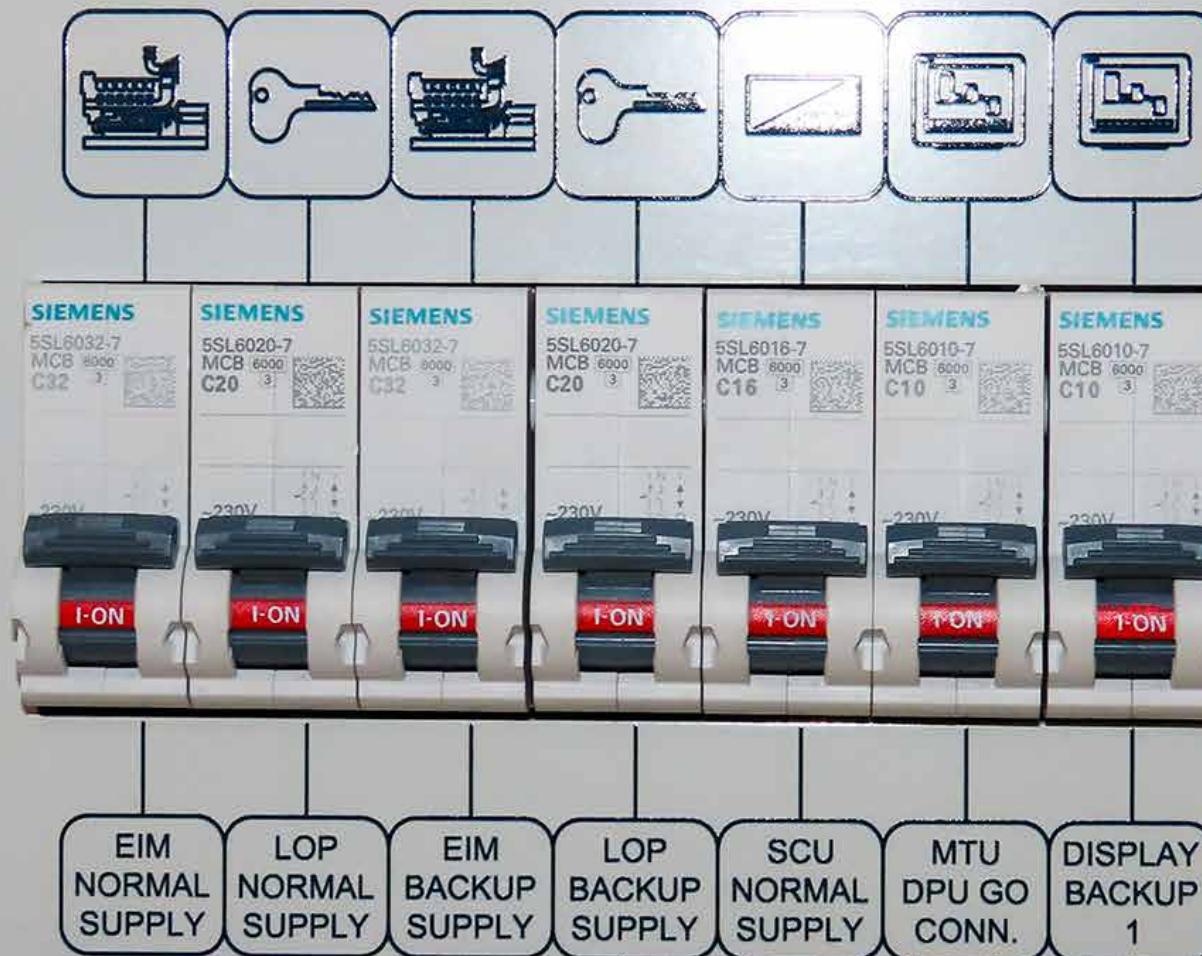
The electrical panel installed to protect the engines battery is divided into the following principal sections:

- A. Port engine distribution
- B. Starboard engine distribution
- C. Battery breakers



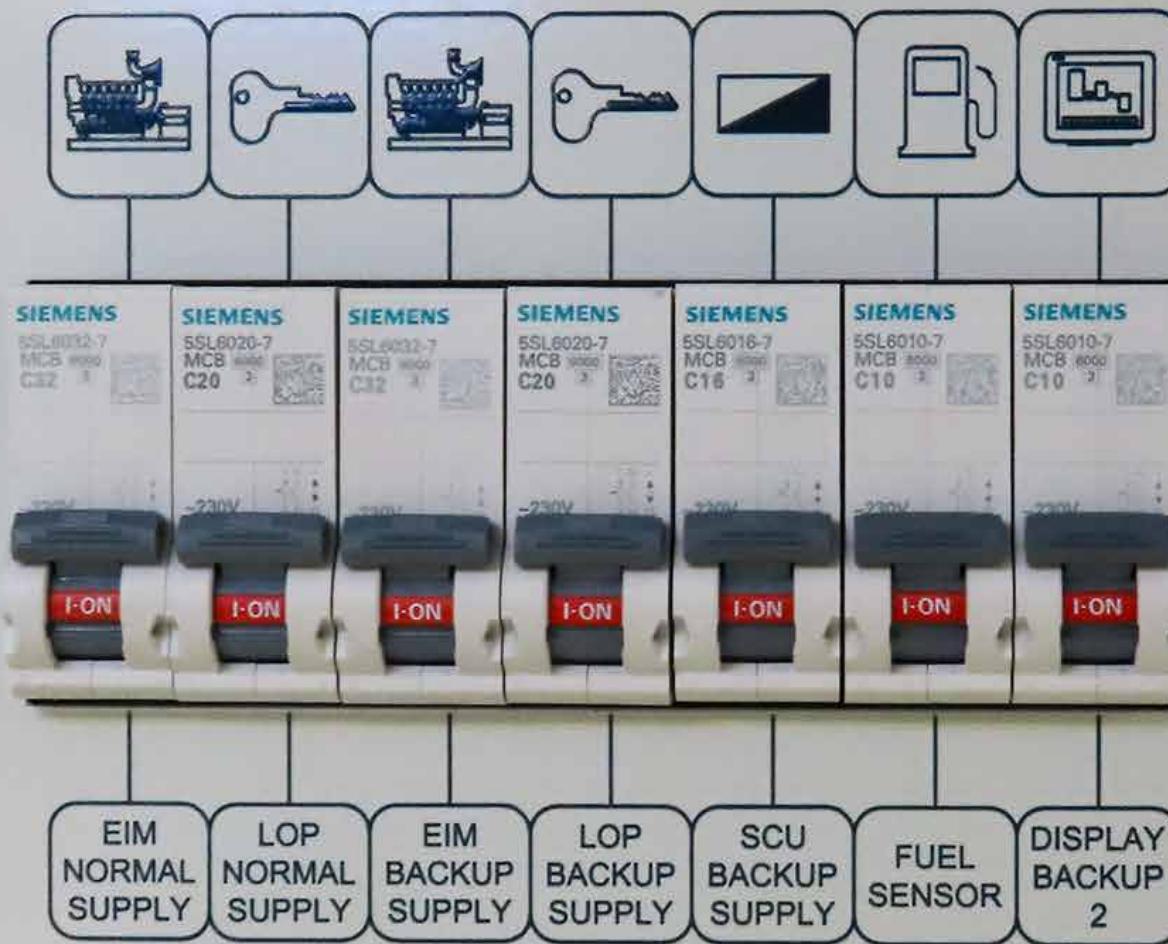
A. Port engine distribution

PORT ENGINE DISTRIBUTION



B. Starboard engine distribution

STBD ENGINE DISTRIBUTION



C. Battery breakers

SUPPLY SUPPLY SUPPLY SUPPLY SUPPLY SENSOR DASH 2

BATTERY BREAKERS**PORT ENGINE BATTERIES****PARALLEL****STBD ENGINE BATTERIES****WARNING**

BEFORE OPENING PANEL
STOP THE GENSETS

6.3 GROUNDING PROTECTION SYSTEM

In order to ensure your safety and that of the yacht, the manufacturer has provided an ground ("grounding") system to protect against electrical discharges.

**DANGER**

It is absolutely forbidden to modify and/or tamper with the grounding system.

**DANGER**

If the yacht is out of the water, position the ground bar near the platform panel in the DRY DOCK position.

**DANGER**

In the event that the yacht is out of the water and connected to the power supply from the shore, check for the presence of the grounding system in the electricity supply system.



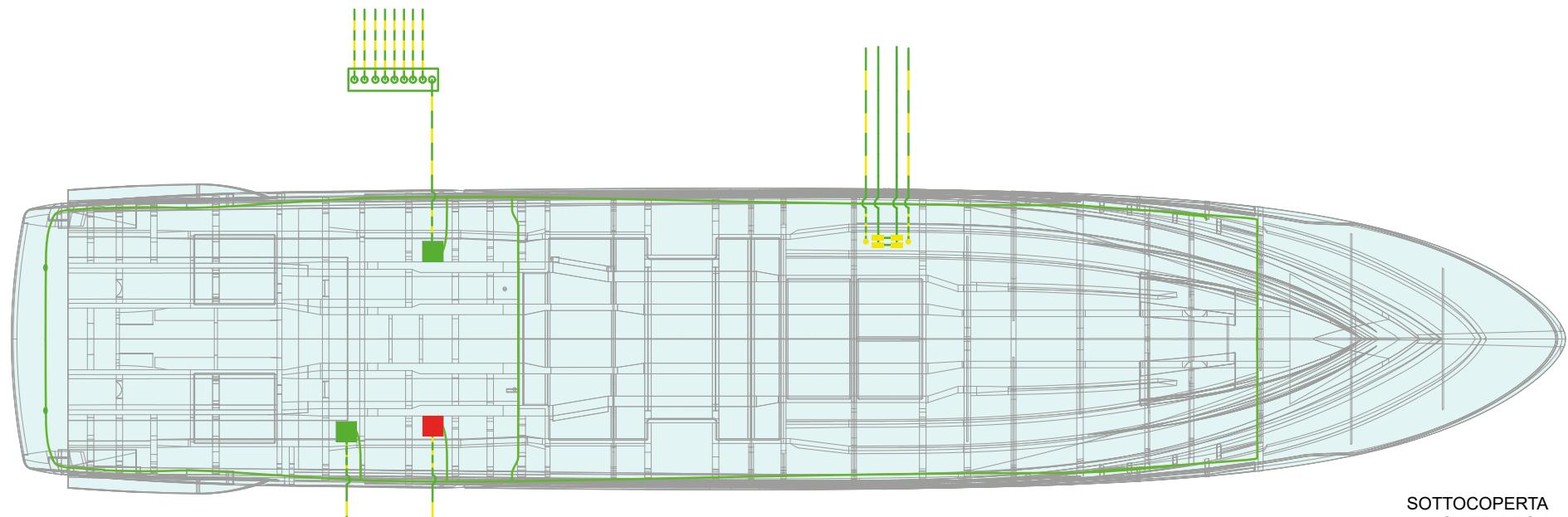
**WARNING**

Periodically check the state of the sacrificial anodes and the porous plate: replace if corrosion has decreased their original mass by more than 50%. If the deterioration is particularly rapid, this may be due to dispersions in the on-board electrical system. Have the electrical system checked by specialist personnel.

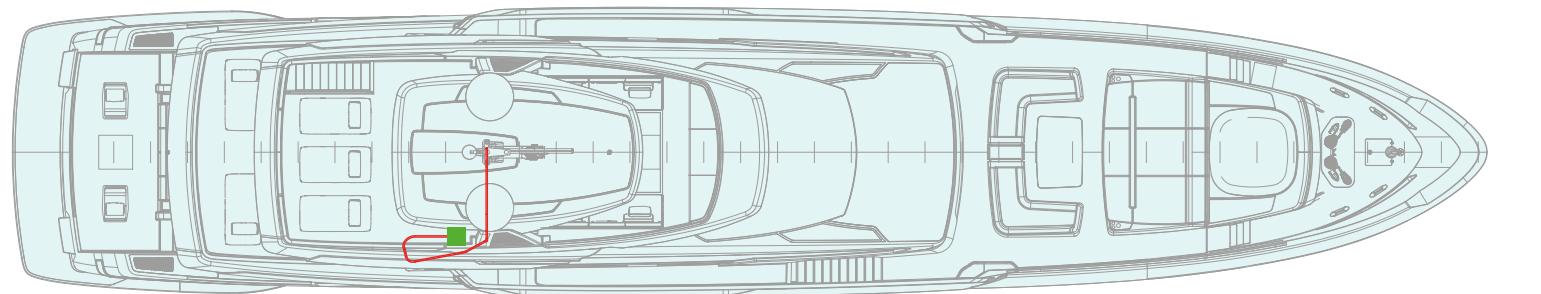
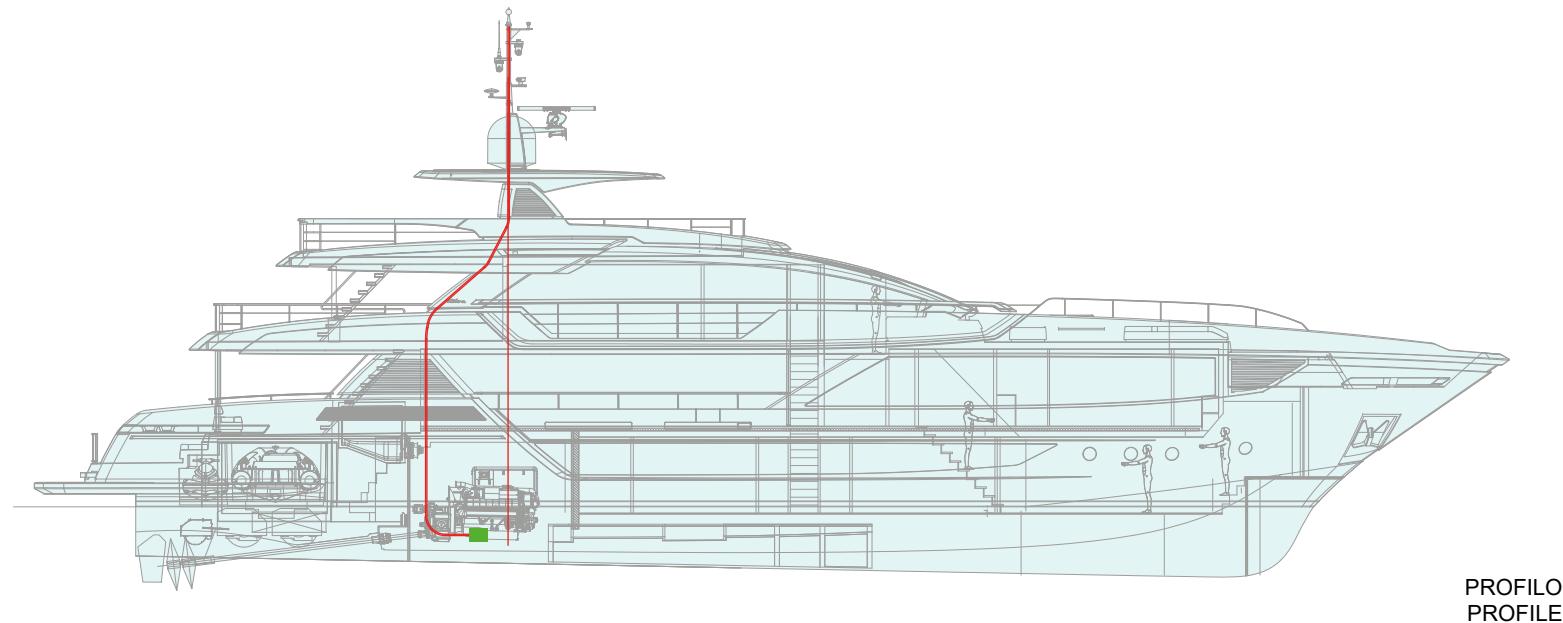
NOTE

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

Ground protection system diagram:

SOTTOCOPERTA
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION
■	Piastra di massa in rame Copper ground plate
●	Anodi di poppa Stern anodes
—	Bandella di rame Copper strip
■	Piastra massa SSB SSB ground plate
○	Piastra massa circolare Round ground plate

6.3.1 Lightning protection system diagram

PONTE SOLE
SUN DECK

6.4 BATTERY SET

The batteries are normally charged by the alternators during the operation of the engines. As an alternative, you can recharge them with the battery charger from shore or with the generator.

Description	Element number	Features element
Engine start	2 + 2	12 V 263 Ah
Generator start	1 + 1	24 V 120 Ah
User batteries	12	2 V 696 Ah
Radio batteries	2	12 V 120 Ah
Emergency batteries	6	12 V 240 Ah



WARNING

The batteries left unloaded over long periods of not operation, loose progressively their charge, until they become completely flat and get irreparably damaged.



WARNING

If the engines are switched on, it is advisable to keep the chargers disconnected to avoid damage to the alternators.



DANGER

NEVER obstruct the air intakes of the battery boxes as natural ventilation must always be allowed so that the batteries 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, sparks or smoke near it. If the battery is used or charged in a closed area, ensure 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.

6.4.1 Battery inspection and 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 the batteries electrolyte wash contaminated part with fresh water for at least 15 minutes and ask for a doctor.

**CAUTION**

It is necessary to keep the batteries charged at all times and to recharge them periodically even when the yacht is left unattended. If the charge level drops to a minimum, it may be irreparably damaged.

**CAUTION**

Remove the bracelets, rings and any other jewelry before working on the batteries

**CAUTION**

Monitor the voltage of the engine and user batteries. During the charging phase 29.1 V can be reached, this is a temporary value, well tolerated, both by the batteries and by the battery charger. This value has to be monitored and if this situation lasts for too long, the magneto-thermales of the battery chargers must be disconnected.

**CAUTION**

Check the state of the batteries checking that there are no traces of electrolytic corrosion on the poles and terminals of the connections; in this case, contact SERVICE and replace the elements that present the problem.

Carry out following checks:

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
- Identify positive and negative cables, prior to connecting (connect the positive terminal first and then the negative, in order to avoid sparkles).

**DANGER**

Batteries may be subject to explosion hazard, with subsequent risks of serious personal injuries. Do not use open flames, smoke, cause sparks or use arc-welders in the area where batteries are located. Do not disconnect battery cables when the generator is running.

Battery acid may cause serious injuries. Wear safety goggles, gloves and protective clothing. 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 address to a doctor.

**DANGER**

Always remove the negative terminal (-) for grounding first and connect it last.

**DANGER**

Electrolyte may cause burns and serious injuries to eyes. Wear safety goggles and protective clothing.

6.5 BATTERY BREAKER PANEL

The manually operated battery disconnection panels are located in the control room and in the engine room, accessible from the stern well on the left side. The battery isolator switches are divided as follows:

- Engine and parallel battery isolator switches;
- Port generator and parallel generator battery isolator switches;
- Starboard generator battery isolator switches;
- Service battery isolator switches;
- Radio battery isolator switches;
- Emergency battery isolator switches;
- Safety systems battery isolator switches.



CAUTION

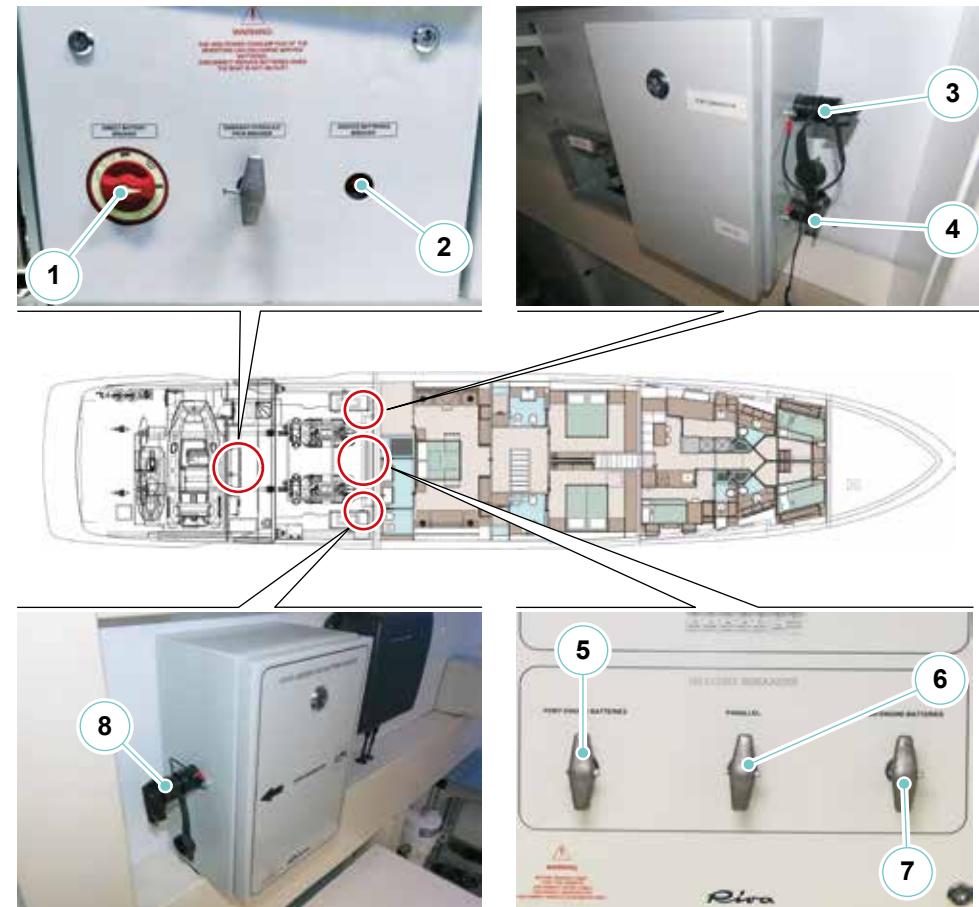
Do not disconnect the battery breaker switches with the engines running because the engine alternators might get damaged.



CAUTION

The "Parallel" isolator switch (engines or generators) must only be used in case of actual need and must be switched OFF as soon as possible.

1. Main electric board battery cutters
2. Battery breaker services
3. Left generator battery cutters
4. Generators parallel battery breakers
5. Left engine battery breaker
6. Engine parallel battery breakers
7. Right engine Disconnect
8. Right generator battery cutters.



**CAUTION**

The parallel engine or generator battery isolator switch must only be used if the engine batteries are not sufficiently charged. The parallel battery switch must only be activated with the battery isolator switches closed.

**DANGER**

Always keep the safety system battery isolator switches closed.
Disconnect only in case of maintenance.

6.6 BATTERY CHARGER

Service and engine battery chargers

On board your yacht there is a fully automatic and high performance service charger and engine battery charger.

The service charger is installed in the Systems Room. The engine charger is installed in the engine room.

Each charger features optimised charging technology to charge batteries quickly and safely while still supplying power to connected utilities.

Every charger is also protected against short circuits, overloads and high temperatures.

A front panel meter on the charger displays information on the remaining battery capacity.

The more LED lights on, the more the battery is charged.

Energisation

The battery charger is energized when the switch is in the ON position. One of the LEDs on the front side turns ON and the charge starts immediately.

De-energisation

The battery charger is de-energised when the switch is set to OFF.

The connection between the electric mains and the battery charger is not interrupted with the switch.

Bulk (LED 1 on)

The battery is discharged only when the first LED Bulk/ON (Quick charge/ON) is lit. Now the battery charger provides full power and the battery voltage increases slowly. After having reached the 27.6 V level, the battery is about 25% charged and the second LED turns on.

(LEDs 1 and 2 on)

The battery has been charged to 25%. The battery charger still provides the maximum output current and voltage increases up to the level of absorption voltage. Phase A can last up to 6 hours max.

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Absorption (LEDs 1, 2 and 3 on)

The battery has been charged to 50%. The battery charger limits the charging voltage to a safe level and the charging current decreases slowly.

(LEDs 1 to 4 on)

The battery has been charged to 75%. The charging voltage is limited to the absorption level, because the battery is nearly full. Current consumption will continue decreasing.

Maintenance (LEDs 1 to 5 on)

When all the LEDs are lit, the battery is fully charged. The slow maintenance/charging programme provides a output voltage, high enough to keep the batteries with a 100% charge, but low enough to prevent that the batteries suffer unnecessary constraints. The battery charger can now deliver full power to the connected utilities/loads.

LEDS ON	MEANING
	Normal operation: the green light of LED no. 6 turns on
1	Battery charger On
1+2	U output > 27.6 V
1+2+3	U output = absorption (28.5 V)
1+2+3+4	3 hours after the max. bulk time has started or I < return amp
1+2+3+4+5	6 hours after the max. bulk time has started or I < return amp. for 15 min or more
9	Recharging current equal to 0-5% of total current
9+10	Recharging current equal to 5-25% of total current
9+10+11	Recharging current equal to 25-50% of total current
9+10+11+12	Recharging current equal to 50-75% of total current
9+10+11+12+13	Recharging current equal to 75-100% of total current
6	Green: normal operation, red: faulty, OFF: stand-by or OFF
7	Green: communication of MasterBus in progress, OFF: no communication of MasterBus

LEDS ON	MEANING
	Failure condition: the red light of LED no. 6 turns on
6 red +1	Battery detection error
6 red +2	Too high temperature of the battery charger
6 red +3	Short-circuit warning: the battery charger will reduce charging current to 25%
6 red +4	CC error: CC voltage is too low or too high
6 red +5	Temperature detection error


CAUTION

Disconnect the dock power supply connections when the system is not in use.

NOTE

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

Generator battery chargers

Your yacht is equipped with an on-board generator charger installed in the engine room.

The charger is activated by pressing and holding the ON/OFF button for about 3 seconds. The MODE LED lights up green. If necessary and if the AC power supply is available, the charger will start charging the batteries.

Press the ON/OFF button again for about 3 seconds to turn OFF the charger.


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.

The status display on the front of the battery charger allows you to control the latter and monitor the charging process.

MENU	LED MODE COLOUR	MEANING
Level 1	Green	Status menu
Level 2	Orange	Output power menu
Level 3	Red	Error menu

STATE

LED	STATUS	MEANING
MODE	Steady green	ON
	Steady red	Standby
	Flashing red fast	Error: navigate to error menu
Battery 1/2/3	Flashing green fast	Battery 1/2/3 in bulk phase
	Flashing green slowly	Absorption phase of battery 1/2/3
	Steady green	Battery 1/2/3 in float phase

LED	STATUS	MEANING
NETWORK	Flashing green	Network communication

OUTPUT POWER

LED	STATUS	MEANING
MODE	Steady orange	Output power menu
Battery 1	Steady orange	Total power output 0-25%
Battery 2	Steady orange	Total output power 26-50%
Battery 3	Steady orange	Total output power 51-75%
NETWORK	Steady orange	Total output power 76-100%

ERROR

LED	STATUS	MEANING	SOLUTION
MODE	Flashes red quickly	Error menu	/
Battery 1	Flashes red quickly	Inverted polarity	Check the battery connection
Battery 2	Flashes red quickly	AC error	Check AC voltage /frequency
Battery 3	Flashes red quickly	DC error	Check battery voltage

LED	STATUS	MEANING	SOLUTION
NETWORK	Flashes red quickly	Temperature sensor error	Check the temperature sensor

NOTE

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

6.6.1 Battery charger check and maintenance

Component	Maintenance	Notes and precautions
Battery charger	Inspection Charge output	<p>At least two or three times a year, have the connection of each wire checked by skilled personnel for looseness or oxidation.</p> <p>Keep the battery charger dry, clean and away from dust in order to ensure a good dissipation of heat.</p> <p>Periodically check the good condition of the cooling fan.</p>



DANGER

Do not work on the battery charger or on the electric system if they are still connected to a current source. 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 RIVA.



DANGER

Have the inner condition of the battery charger checked by skilled staff at least once a year. Faults like loose connections, burnt wires, etc., with following risk of fire spreading, must be repaired immediately.



WARNING

MAINTENANCE

At least once a month check the correct operation of the battery charger.
At least once a month carry out the complete cleaning.
At least once every six months protect the contacts with proper products.

If the engines are on, the alternators are charging the batteries; it is therefore advisable to keep the magneto-thermal of the battery charger to OFF, in order to avoid alternator damage.

Battery charger check:**DANGER**

Before operating on the battery charger, disable the generators start and cut-OFF the dock power supply.

This device can operate in a reliable and optimal way, only if following operations are performed:

- Check that all breakers and indicator lights are working, the wiring does not present any signs of cuts and all parts are clean and free from oxidation;
- Remove the casing and check that circuit boards are free from oxidation. If necessary, clean by using the detergent solution;
- Protect the electric contacts by using an appropriate product (DC4);
- Reinstall the casing after cleaning;
- Check at least once a year the connection of each cable (for loose connections, etc.);
- Keep the battery charger dry, clean and in a dedusted area to ensure a good dissipation of heat.

**WARNING**

All maintenance operations listed must be performed only by skilled personnel.

6.7 ELECTRIC POWER SUPPLY FROM SHORE

The 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 kinds of current, according to the harbour in which you are moored.

Ask the Port Authority for the right supply available from the column you want to get connected to.

By means of the monitoring system it is possible to check and monitor the electric parameters of the shore sockets, allowing a clear and readable visualization of the values measured; this facilitates the prevention of possible faults and malfunctionings and increases the safety of navigation.

In order to power the yacht system in order to provide for the operation of the various on-board systems, two sockets have been provided for the 100 A 50Hz platform electrical connection, each equipped with a frequency converter.

The connections are guided coupling fittings in compliance with safety standards and technologies.

The sockets are equipped with electrical cable reels that allow easy cable recovery and can be activated by the switches located next to the cable outputs.

The electrical cable reels and the "platform socket" panel are located on the aft in the technical compartment of the rudder hook.

To use the shore electric power supply:

- From the Shore power panel located on the starboard side of the control room near the cable reel, open (OFF) the switch corresponding to the power socket.
- Turn the switch on the shore charging point to OFF.
- Insert the on-board electrical socket into the connection on the shore (charging point) by using the cable reel.
- Close (ON) the switch on the shore charging point.

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- Close (ON) the switch of the SHORE POWER panel.
- At this point, the shore socket can be selected as a power source on the general machine panel (located in the control room) or by means of the monitoring system.
- Check the voltage and frequency, switch the selector (phase select) to RST and on the PHASE SEQUENCE display check if the red light on OK is active. If the NO position light is on, the PHASE SELECT selector must be switched to RTS. This operation is necessary in order to verify the correct cyclic direction of the three phases.

PMS CONTROL MODE selector:

The PMS CONTROL MODE selector has the following positions:

- **LOCAL:** sources can only be selected through the buttons on the front panel. The parallel is allowed by pressing the CLOSE buttons of the various sources on the main electrical panel. The tie breaker is always closed. In emergency conditions it can be opened by using the key. Switch the selector only when the bars are not powered.
- **REMOTE:** sources can only be selected through a monitoring system. In this case, the parallel between the two generators can take place entirely in "automatic" mode (software management from the monitoring system) or "semi-automatic" mode by using the buttons on the touch display.



CAUTION

Do not modify connectors of shore power supply cable, use only plug compatible connectors. If the yacht power supply cable cannot be plugged into the shore socket, ask the Port Authority for an adapter.

**CAUTION**

Powering the on-board frequency converter via the ground connections with voltages outside the operating range can cause irreversible damage to the equipment. It is **ALWAYS** necessary to check the value of the phase-to-phase voltage on **ALL** three phase-phase combinations before powering on the electrical panel.

**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..

**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.

**DANGER**

Before carrying out any intervention on the electric system, disconnect all circuits and the shore plug.

**DANGER**

Risk of electric shock from leakage currents. Never swim in waters near harbours or marinas.

MAINTENANCE

At least once every two weeks, have the various connections of 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.

At least once a month check the status of the shore socket and eventually clean it.

**CAUTION**

To stop the power supply from the shore:

- Turn OFF the button on the main electrical panel;
- Turn OFF the main shore socket switch in the stern technical compartment;
- Turn OFF the protection on the shoreside charging point;
- Disconnect the shore power cable.

**WARNING**

Have the frequency converter, circuit breakers, electrical panels and other parts of the electrical system inspected by an electrician authorised by RIVA to ensure correct operation and to detect any signs of overheating.

**DANGER**

The AC system has characteristics 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**

Before carrying out any intervention on the electric system, disconnect all circuits (shore and generators):

- Disconnect the shore socket;
- Turn OFF the magneto-thermal of the generator.

**DANGER**

For the safety and reliability of any electrical system, the related fuse must be replaced with one of the same electrical characteristics: in case of doubt, contact specialised personnel.

**DANGER**

After replacing any of the fuses, make sure they are tightened correctly. Do not leave any foreign objects inside the electrical panel.

NOTE

For a more detailed description refer to the manual of the on-board electrical systems.

6.9 INVERTER

The inverter is a completely automatic device and of high efficiency. The inverter transforms the 24 V DC voltage into 400/230 V AC.

- **ON, Switch**

Position the ON/OFF switch, located on the front panel of the inverter to "ON". The green light "inverter ON" lights up and the inverter starts.

- **OFF, Switch**

Position the ON/OFF switch, located on the front panel of the inverter to "OFF". The inverter stops and all lit lights switch OFF.

Warning lights

The functions of the warning lights located on the inverter front panel are:

- **Inverter ON**

The green light indicates when the inverter is ON.

- **Overload**

Light lights up when the inverter is overloaded. When the inverter is overloaded, the power limiter reduces the voltage output. According to the load, the inverter will switch OFF after a short period.

- **Overload + ON slow**

When the inverter remains overloaded for a long period of time, it will switch OFF and the "overload + ON" indicators will blink slowly. This takes approx. 20 seconds, after which the inverter will restart automatically. This is called "wait state" and gives the inverter time to recover from any heavy surge load and gives the battery time to recover in case it is flat.

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- **Overload + ON fast**

The inverter is switched OFF. When the inverter switches OFF 10 times with intervals no longer than 30 seconds, the inverter will switch OFF permanently and the "overload" and "ON" indicators will blink fast. To switch the inverter ON again, you have to switch the inverter OFF and ON again.

When the output terminal is short-circuited, the inverter will overload. The "overload" and "ON" indicators will blink slowly. The inverter will try to start up ten times. If the short-circuit is not removed, the inverter will switch OFF permanently. Remove the short circuit and reset the inverter by switching it ON and OFF.

- **Low battery (nearly flat)**

The inverter is OFF when the battery voltage is too low. If the voltage increases above certain values, the inverter restart automatically.

- **Temperature**

The inverter switches OFF in environments at high temperature and/ or remarkable overload. After the cooling, the inverter starts automatically.



DANGER

When disconnecting the inverter by means of the switch located on the front panel the connection with the mains is not broken OFF.

NOTE

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

6.9.1 Inverter services maintenance

Component	Maintenance	Notes and precautions
Inverter	Maintenance and check	<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. Periodically check the good condition of the cooling fan.</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"> • Switch OFF the connection with the batteries or remove the inverter fuse; • Make sure that nobody can tamper with the precautions taken.

**DANGER**

Do not work on the inverter or on its system if still connected to a current source. Only qualified staff can carry out interventions on the electric system and only after the approval of RIVA.

MAINTENANCE

At least once a month check the correct operation of the inverter.

At least once a month carry out the complete cleaning.

At least once every six months protect the contacts with proper products.

**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.

6.10 GENERATOR SET

On board your yacht, two generators are installed one above the other, at the entrance of the engine room.

The generator feeds can be identified on the fuel distribution door. These can be interrupted through the two delivery valves, which may be used to interrupt the fuel lines in case of an emergency in order to remove power from the units.

Before being sent to the generators, the fuel passes through separator filters (optional) to remove dirt particles and separate any water present.

The exhaust gases, instead of being discharged directly outside, are conveyed through mufflers, one per generator located near them.

These mufflers, 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.

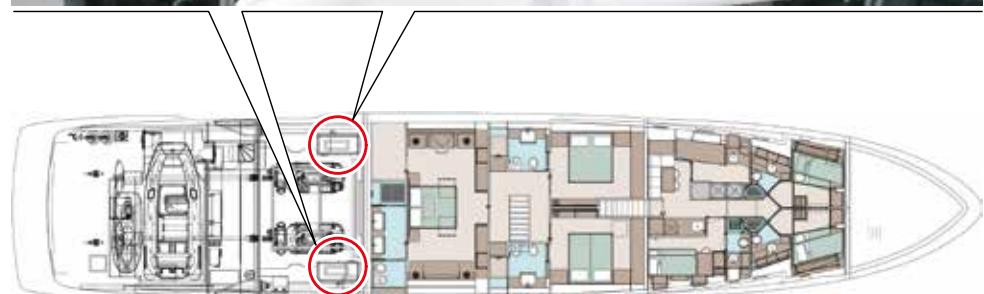
The exhaust gases are then conveyed and subsequently discharged outside.

The sea cocks of the cooling circuit are installed on the hull with the sea water strainers, fastened to a surface close to the sea cocks valves.

Clean the sea cock strainers according to the use frequency and to the condition of the sucked waters (seaweeds, mucilages, etc..).

Before cleaning the strainers, remember to close the sea cock valves, to stop the generators and then to proceed with maintenance.

Once this cleaning operation is completed, reopen the valves supplying the cooling circuit.



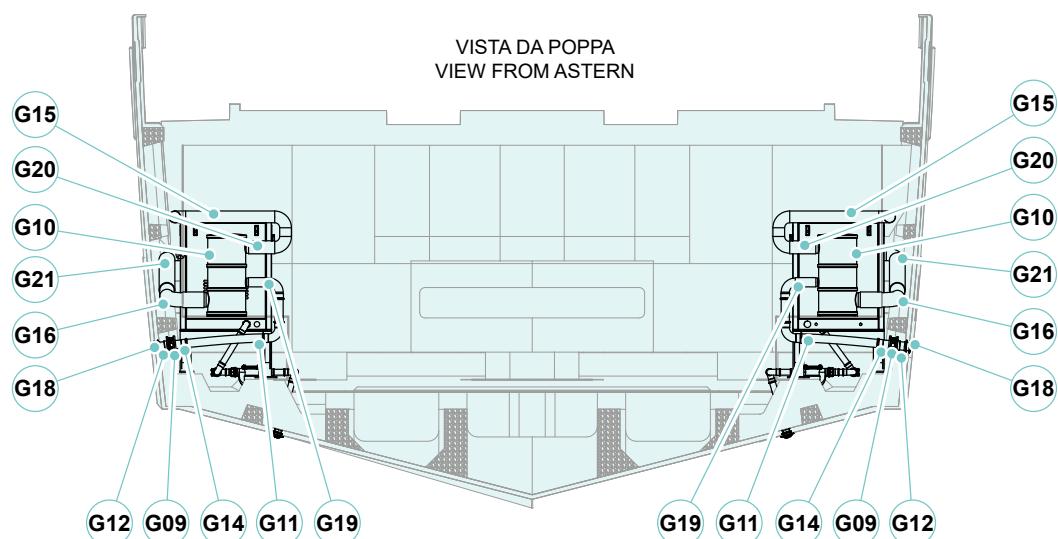
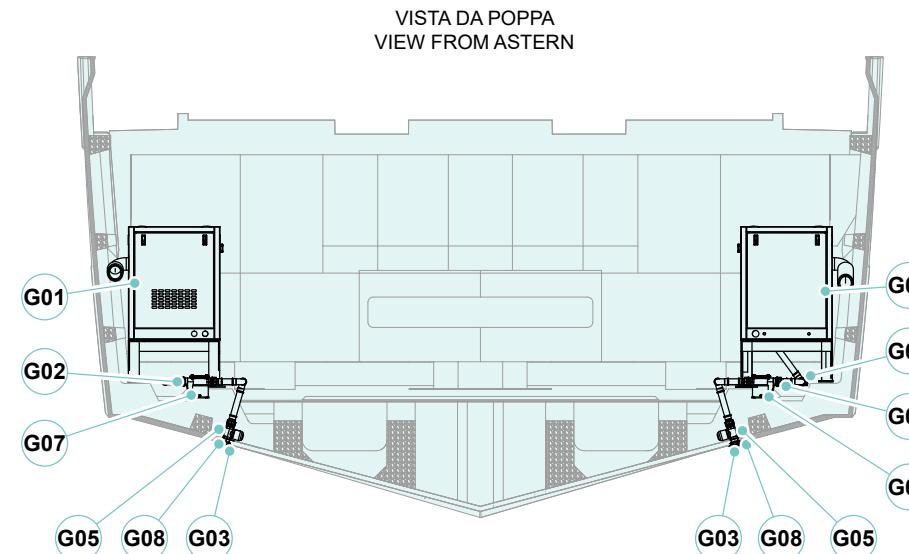
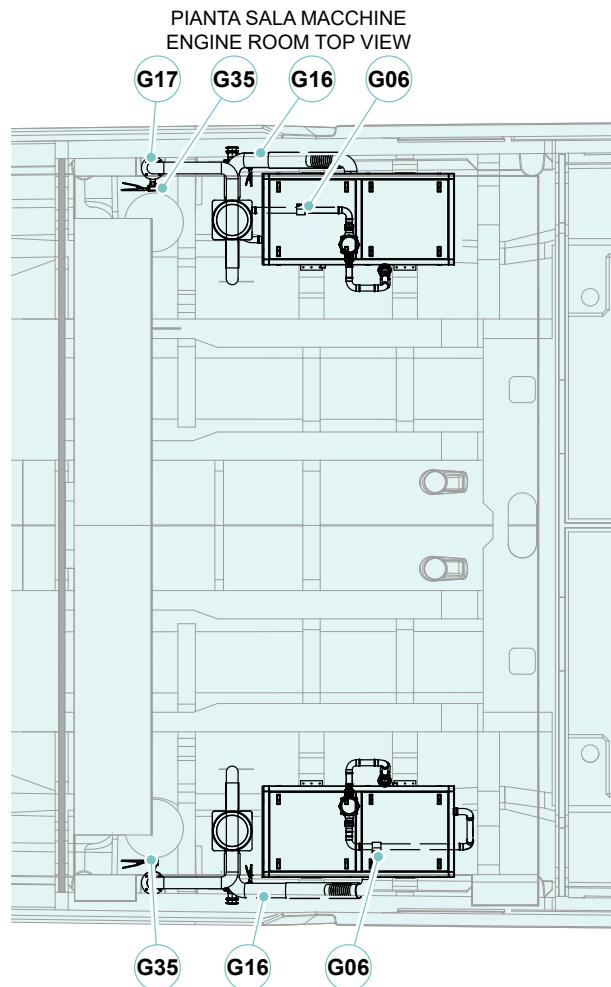
As to the yacht supply, on each power generator set is located the control panel for the check and start/stop operations.

The generators are also equipped with battery breaker switches.

The control panel can be used to monitor and manage the main operating parameters (oil pressure, coolant temperature, number of revs, etc..) of the generators to identify any alarm or potential risk.

NOTE

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



ICONA ICON	DESCRIZIONE DESCRIPTION
G01	Generatori elettrici Electric generators
G02	Bocchettone Nozzle
G03	Cuffia tonda Round perforated cap
G04	Linea acqua mare Sea water line
G05	Valvola antiblocco Anti-block valve
G06	Giunto Joint
G07	Filtro Filter
G08	Scarico a mare Sea discharge
G09	Valvola LUG LUG valve
G10	ComboSep ComboSep
G11	Piping scarico acqua Water discharge piping
G12	Flangia Flange
G13	Flangia Flange

ICONA ICON	DESCRIZIONE DESCRIPTION
G14	Manicotto flangiato Flanged sleeve
G15	Tubature Piping
G16	Tubature Piping
G17	Scarichi a mare Sea discharges
G18	Scarico a mare Sea discharge
G19	Tubo spiralato Spiral hose
G20	Tubo spiralato Spiral hose
G21	Tubo spiralato Spiral hose
G22	Valvola LUG LUG valve

6.10.1 Generator set 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	To change the oil, open the oil drain plug. Place the pipe in the oil collection container. Remove the oil fill 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	<div style="border: 2px solid yellow; padding: 10px; text-align: center;">  CAUTION Do not mix different oils. </div>
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.

Component	Maintenance	Notes and precautions
Cooling system	Cleaning/replacement of the air cleaner	Stop the generator and allow it to cool before filling the cooling system. Close the bleed nipples. To relieve the pressure, slowly turn the cap clockwise until it stops for the first time. Remove the cap after the pressure has been completely removed.
	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.



CAUTION

If the oil level is not positioned between the two reference notches do not activate any device.



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**

Pay special attention to the coolant level.
After emptying it completely, refill until the tank is full.
Periodically check coolant levels.

**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.

NOTE

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

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PROPULSION SYSTEMS

CHAPTER 7

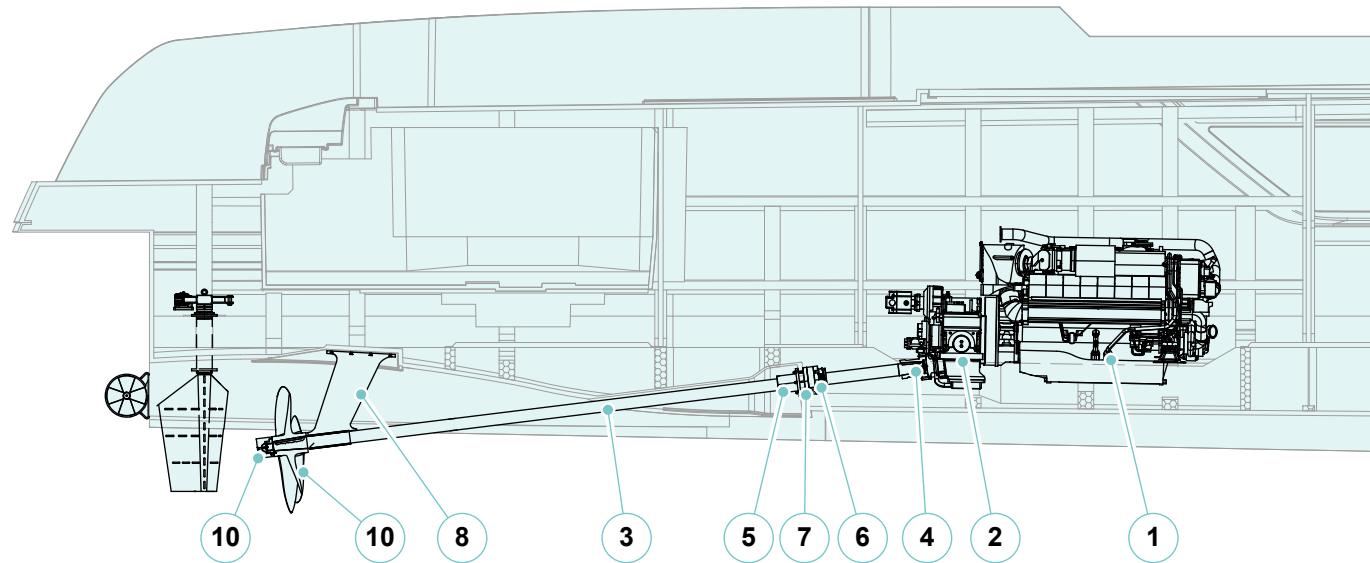
7.1 MAIN PROPULSION SYSTEM

Inside the engine room, in the icebreaker and in the system room all the components for the propulsion of the yacht are assembled.

The propulsion apparatus is based on two equal groups.

Each of them is composed of:

1. "MTU" engine mod. 16V 2000 M96L
2. ZF5050 Inverter
3. Propeller shaft
4. Shaft seal
5. Through-hull for MICROTEM seal
6. MICROTEM seal
7. Watershield for MICROTEM seals
8. Shaft support
9. Gooseberry nuts
10. Propeller



The engines installed on your yacht have the following specifications:

• Model	16 V 2000 M96L
• Brand	MTU
• No. of cylinders	16
• Effective output	1939/2638 kW/mhp
• Rated speed	2450 RPM
• Dry weight	3380 kg

For any problem related to the use or maintenance of the engines, refer to the specific manuals or directly to the Service Centres.

NOTE

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

**CAUTION**

Do not operate the craft with an engine of rated power exceeding the maximum recommended power (actual power 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:

- Replacing the fuel filters.
- Replacing 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.

Besides, the elastic supports easy engine position adjustment, both for a new installation or after the required run in.

7.1.1 Engine control panel

This station must be used only in case of emergency. The controls on the panel allow all procedures for yacht navigation to be executed in "Local" mode.

The engine can be started or stopped using the designated pushbutton panel. The operating status of the engine and any error information is shown on the helm station display.



CAUTION

Any remote-control start/stop of the engine control devices must allow for deactivation when the engine starting panel in the engine room is in operation.



**DURING MAINTENANCE
DISCONNECT THE POWER
& CONTROL CONNECTOR
OF THE MAIN BRIDGE**



CAUTION

When driving with the local station, it is essential to employ three people: the first at the yacht's controls, the second at the engine room door that transmits the indications to the third person who controls the local panel.



NOTE

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

7.1.2 Start of propulsion engines

First start-up

Read the manufacturer's specific documentation carefully before starting up a new or overhauled engine. During the first hours of operation, it is recommended that new engines be operated at a maximum of three quarters of their maximum load and at varying speeds. After this initial run-in, the engine should be brought up to full output gradually.

**CAUTION**

Use only approved technical fluids; otherwise the Manufacturer's warranty will become null and void and the engines can get seriously damaged.

Starting up

Before daily starting of the engine, check fuel level, coolant level and engine oil level and replenish, if necessary.

Before starting the engine each day, check the engine's fuel level, coolant level and oil level. If the oil and coolant levels are depleted, refill the expansion tanks, taking care not to exceed the maximum level.

**CAUTION**

Engines must always be started with gear boxes at idle run and throttle levers must be set at minimum speed.

**DANGER**

Before starting an engine, ensure that nobody is standing in the dangerous area of the engine room.

Cooling liquid

The engine cooling system shall be filled with a mixture of potable water and anti-freeze based on glycoethylene or anti-corrosive. Refer to the manufacturer's specific documentation for this purpose.

- Slowly insert the coolant into the compensation yacht through the coolant filler cap.
- For the amount of coolant, refer to the manual provided by the manufacturer.

Engine oil**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!

Insert the lubricating oil for the engine through the lubrication oil filler hole. Refer to the manufacturer's specific documentation for refuelling quantities.



CAUTION

Do not let raw water pump run dry!

Make sure that all valves of the raw water circuit are open.

Drain the pump in case of freezing danger.

Oil level check

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 lintfree 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.

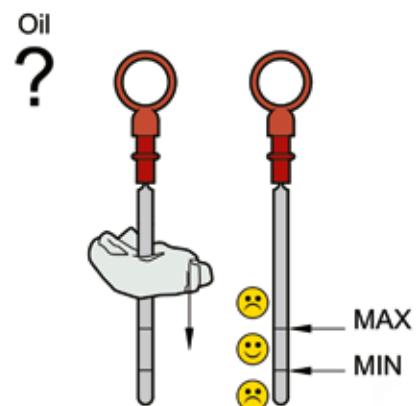
Top up oil as necessary.

Ensure outmost cleanliness when handling fuels, lubricants and coolants.



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

- Verify that the main electrical panel in the crews' corridor and the electrical panels for engine electronics in the engine room are fitted with the following functional uses of the yacht: engine start, exhaust fans, navigation lights, dashboard lights, manoeuvring propellers, mooring winch, horn, VHF, radar, autopilot, control panel, GPS/Navigator, plotter, and depth sounder.
- Move the control levers and to the neutral central position.
- Turn the right engine ignition key to the "ON" position, the thrust levers will emit a short beep, then press the "CMD" button. The "COMMAND" indicator light on the thrust lever block indicates that this helm position now has control. The control system is ready for operation. Then proceed by pressing the engine "START" button.
- Check that the oil pressure settles to the normal value within 10 seconds.
- Check the correct circulation of the cooling water.
- Start the first engine and, only after it has been established that it is running properly, start the second engine as well.
- Start the left engine as described for the right one.
- Turn the left engine ignition key to the "ON" position, the thrust levers will emit a short beep, then press the "CMD" button. The "COMMAND" indicator light on the thrust lever block indicates that this helm position now has control. The control system is ready for operation. Then proceed by pressing the "START" key.
- Heat the engines for about 2-3 minutes at 1000 rpm maximum.
- Check the charge of the alternators.
- Activate the manoeuvring propellers by operating the control panel on the helm station.

- Bring both throttles to the “**NEUTRAL**” position and (vertical levers).
- Press the “**CMD**” button from the workstation you intend to use (the lights indicating successful transfer will light up).
- Press the button corresponding to the mode you want to activate:
 - **CRS**: cruising mode;
 - **SCRS**: Smart cruise mode;
 - **TRL**: Trolling mode;
 - **SYNC**: Synchronisation mode;
 - **SCL**: Single control lever.

**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**

In the event of the intervention of a magneto-thermal protection, do not try repeatedly to reset it, but check the relevant electric system condition.

**CAUTION**

We suggest avoiding slow running for periods longer 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.

Notwithstanding its efficiency and high performance, the use of this motor-yacht requires careful and responsible handling.

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 affected by displacement, weight distribution on board, interceptor position and cruising 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 Assistance Service.

**CAUTION**

Even if the automatic pilot controls the route, navigation must be supervised in any case.

**CAUTION**

During navigation, the rear and side doors shall be kept closed at all times to prevent, in particular conditions of wind direction and force, exhaust gases and any splashes of water from entering the deck spaces.

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, based on cruising conditions and the prevailing wave direction, so as not to subject the yacht's structure to avoidable stress and ensure the comfort of those onboard 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.

7.1.3 Checks after start of propulsion engines

- Check that water is being ejected from the exhaust; if this does not happen, accelerate slightly with the engine in neutral for a few seconds. If there is still no trace of water ejection, stop the engines, identify the fault or call for assistance.
- Run the engines slightly higher than idle run until they have reached the operation temperature.
- Check for abnormal noises or excessive smoke. Otherwise stop engines and call for Assistance Service.
- Check that alternators load the batteries.
- Verify the efficiency of the instrument system from the plotter to the radar, VHF, compass, etc..
- Disconnect the shore connections, if attached.
- 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.

7.1.4 Stopping the propulsion engines

Operation

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 the main helm station

- Set levers to central idle position of gear box.
- Press the STOP buttons.
- Turn the keys to OFF.
- Disconnect magneto-thermales relevant to the start keys of both engines.

From starboard and port manoeuvre stations

- Set levers to central idle position of gear box.
- Press the STOP buttons.
- Go to the inner helm station and turn the keys to OFF.
- Disconnect magneto-thermales 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:

- Disconnect all unnecessary electric uses and check the general status of the switchboard as well as the voltmeters and ammeters indications;
- Check the proper operation of the bilge pumps;
- Check for possible leaks from the shaft lines seals;
- Rinse the yacht with fresh water;
- Connect the shore electric power supply;
- Keep air extractors in the engine room running for about 30 minutes for ventilation and air cooling.

Before leaving the yacht, check following:

- Lower deck lights are not powered;
- Ensure that navigation lights, swinging spotlights and external lights are not supplied;
- Instruments not in use (plotter, radio, anchor winch, etc.) Are not powered;
- Ensure that devices in use are powered (bilge pumps);
- Ensure that the shore plug is properly connected and the cable cannot be damaged;
- Disconnect battery breakers;
- Ensure that the safety equipment (life jackets, yachthook, torches, etc.) Are stowed properly;
- Ensure that all bottles and containers with flammable liquids are properly sealed;
- Make sure that no food residues are left around (they could rot or clog scuppers etc.);
- Ensure that the gangway is in the right position and properly fastened;
- 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;
- Ensure that lower deck compartments are properly closed.

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 yacht is safely moored.



CAUTION

It is advisable to disconnect the electric plug from shore, especially if the yacht is left unguarded for a long period. 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.



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.



CAUTION

The emergency stop generates heavy stress on the engines with consequent hazard of component damage.
Use only in case of real need.



DANGER

Before restarting the engines after an emergency stop, make sure to find and to clear the reason of the fault.

• Fuel tie rods

Use the fuel shut-OFF tie rods located at the entrance to the stairs leading to the control room.

7.1.6 Propulsion engine maintenance

Component	Maintenance	Notes and precautions
Lubrication system	Replacement of the oil separator filter	Replace the separator filter, according to the time intervals suggested by the Manufacturer.
	Diaphragm check and replacement	Check if the diaphragm is damaged; in this case replace it.
	Oil level check	Check the oil level by means of the special dipstick; make sure the level is included in the allowable 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	Fuel filter replacement	Replace fuel filter within the intervals indicated by the Manufacturer.
	Air cleaner replacement	Replace air filter within the intervals indicated by the Manufacturer.
	Check and replacement of air cleaner clogging gauge	Check the condition of the gauge; if it does not reset easily, replace it with a new one. Replace the gauge according to the intervals suggested by the Manufacturer.
Cooling system	Coolant check	Make sure the coolant is in the tank (lever sensor, reference plate, built-in eyelet).
	Cooling system filling	For coolant features refer to the User's Manual of the Manufacturer.
	Cooling system drainage	Drain the coolant only when the engine is stopped; follow the procedure indicated by the Manufacturer.

**CAUTION**

Use only approved fuels, otherwise the Manufacturer's warranty will become null and void.

**DANGER**

Hot oil can contains combustion residues which are harmful to health. Risk of injury and scalding! Wear protective clothing, gloves and goggles/safety mask. Avoid contact with skin. Do not inhale oil vapour.

**DANGER**

Because of 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.

**CAUTION**

It is absolutely necessary to view with RIVA the documentation of the different components provided by the Manufacturer; for any problem relevant to the use or maintenance, please directly refer to the Service Centres, 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**

Do not top up oil in addition to the MAX mark the control rod. With a high oil level faults occur to the engine!

**CAUTION**

Do not use naked flames, do not produce 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 lethal 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 (engine oil, fuel, filters, etc.) 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 procedure on the engines is to be carried out with engines shut off, after they have sufficiently cooled down and after seeing to the prevention of their being switched on by disconnection of the magneto-thermals.

**ENVIRONMENT**

Handle used fuel filters as special waste.

**ENVIRONMENT**

Collect the liquid and dispose of according to current regulations.

**CAUTION**

Cold coolant in a hot engine causes thermal stress with the risk of formation of cracks in the components. Fill/top up only a cold engine.

**CAUTION**

If the oil level is not positioned between the two reference notches do not activate any device.

**DANGER**

High-pressure compressed air may cause injury. Do not direct air jets towards people. Wear protective goggles, safety mask and ear guards.

**CAUTION**

Fill the cooling system only in a cold engine.

**DANGER**

Coolant is hot and under pressure. Risk of injury and scalding! Let the engine cool down and wear protective clothing, gloves and goggles safety mask.

7.2 GEAR BOX

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).

The gear boxes are provided with several documents. We suggest you to read the operating instruction manual carefully and in detail.

7.2.1 Gearbox maintenance

Component	Maintenance	Notes and precautions
Gearbox	Oil level check	For the correct maintenance and check procedures, refer to use manual delivered by the Manufacturer.
	Oil change	For the kind of oil and grade of viscosity recommended by the Manufacturer, refer to the gearbox plate.
	Oil filter change	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. Refer to the Manual delivered by the Manufacturer.



WARNING

Under normal operation conditions, the gear change can be carried out with the engine at low speed. However, in case of emergency, gear shifting can be carried out with the engine at high speed, thus remarkably reducing clutch life though.



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.

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.

It is possible to drain the used oil from the propulsion engines by using a manual pump activated by means of the relevant lever.

**DANGER**

Service the gear box only if engine and propellers are stopped and the magneto-thermal is OFF. 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.

7.3 SHAFT LINE

7.3.1 Propeller shaft and through-hull seal

The propeller shaft (1) is fixed to the inverter with the nut (2) and is aligned on the three points represented by the inverter, by a mechanical seal (3) lubricated with water and by the shaft support (4).

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 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.

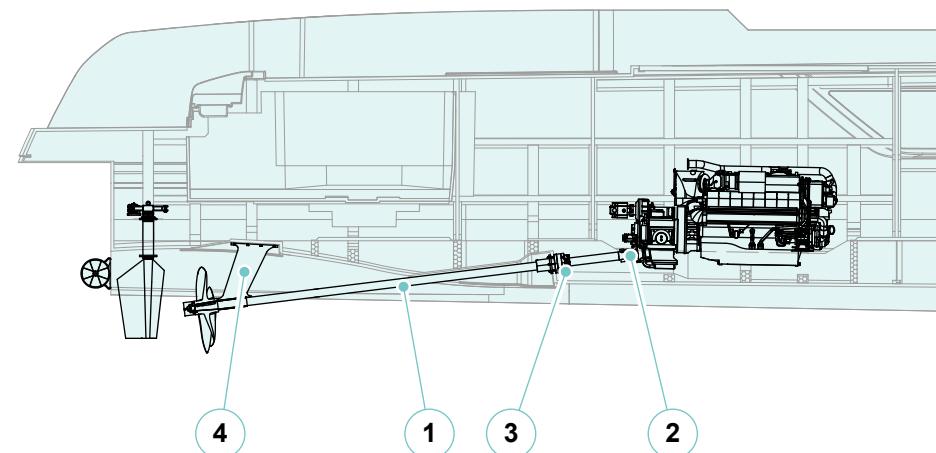
The bushing wear causes a vibrations increase.

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.



Shaft support bushings:**Periodical checks**

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.

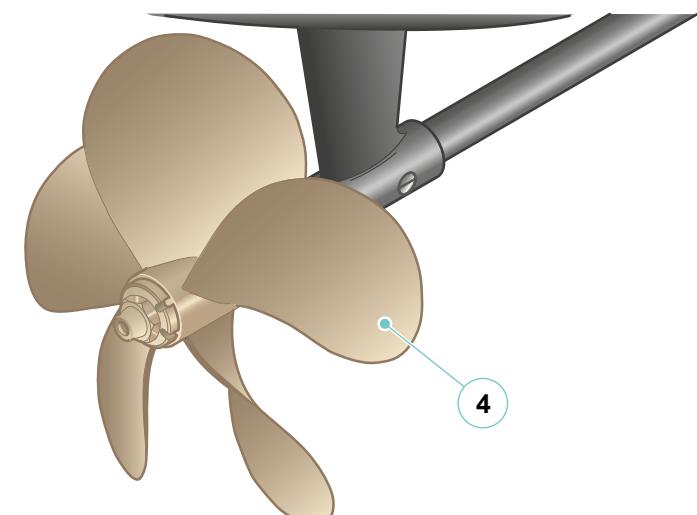
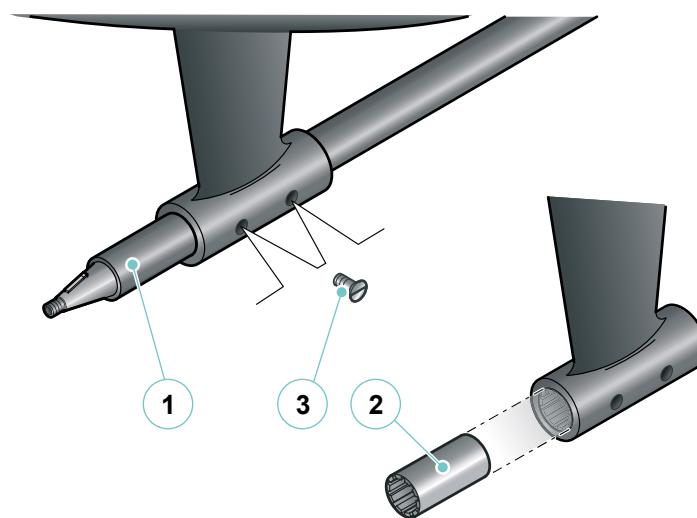
- Do not use grease between propeller shaft and bushing. Remember to fasten the screws (3).

**CAUTION**

For spare part request contact the RIVA After Sales & Service Department.

**CAUTION**

Remember to retighten the fixing screws (3) of the bushing on the shaft support. Never use grease or other lubricant between propeller shaft and Neoprene bushing.



7.3.2 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.



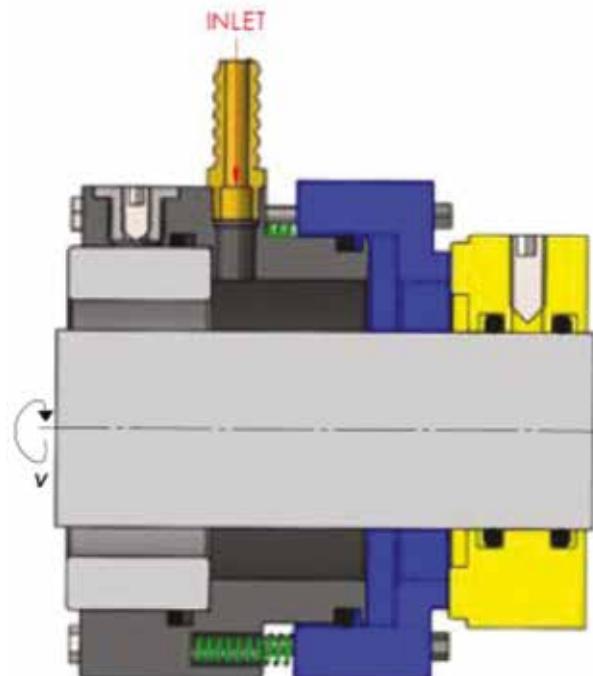
DANGER

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

RIVA 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.

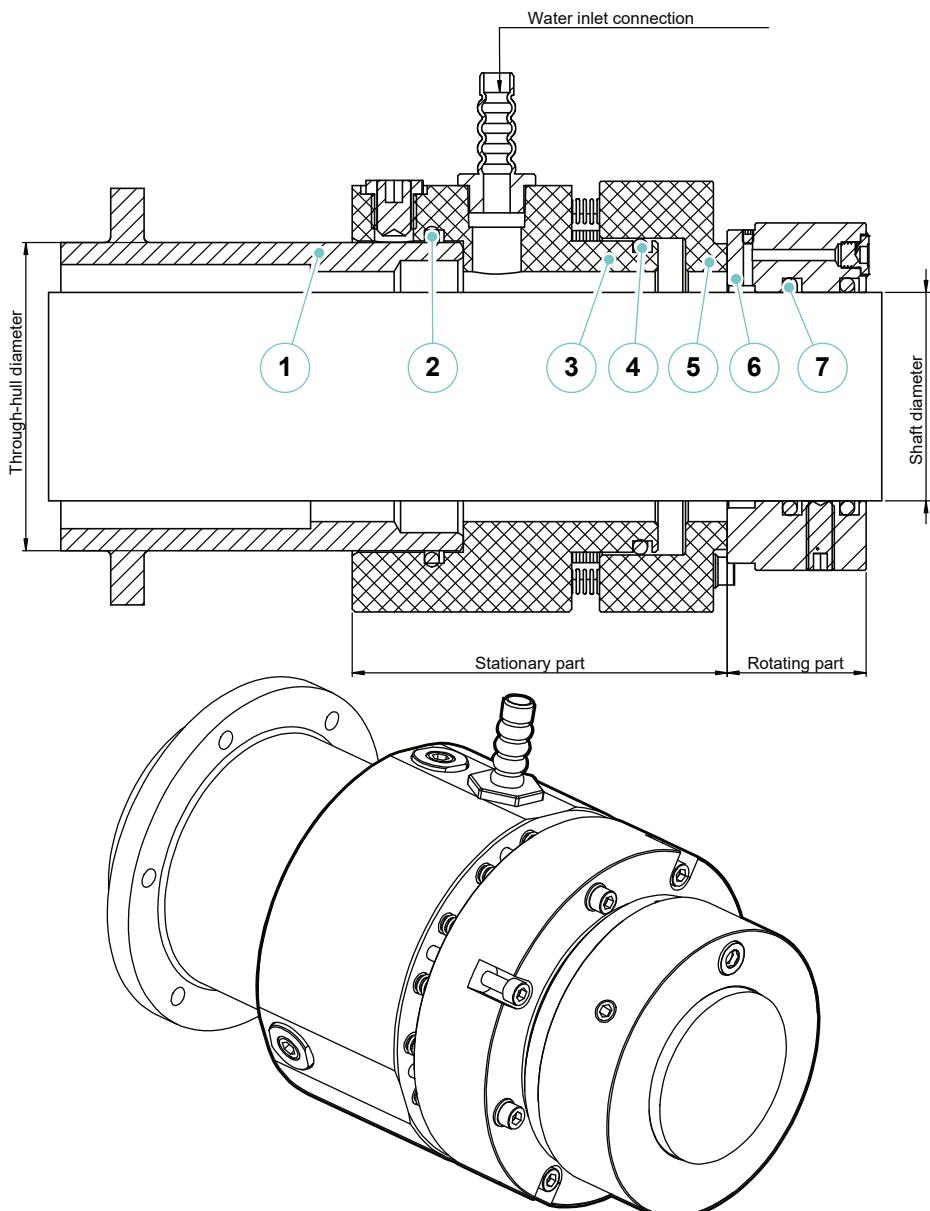
Periodically:

- 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



7.3.3 Shaft line maintenance

Component	Maintenance	Notes And Precautions
Shaft support bushings	Periodical checks (at least once a month)	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.
	Assembly/disassembly	
Stuffing box seal	Maintenance and check	With yacht moored at the marina, daily and before set up navigation.
Shaft lines	Periodical checks (at least once a 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.

7.4 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 case of impact with the depth or submerged/semi-submerged bodies, check propellers and shafts immediately; in case of considerable vibrations, reduce the revolutions to the minimum and steer toward the harbor for repair, as a vibration increase might damage the propelling devices and the yacht structure.

7.4.1 Thruster maintenance and inspection

Component	Maintenance	Notes and precautions
Propellers	Periodical checks	<p>The propeller check should be performed according to the floating waters. Inspection and possible cleaning may be carried out with the yacht in a dry shore or with the help of a diver.</p> <p>Check if the propeller blades have notches, fractures, fouling or barnacles which may have a negative influence on the yacht performances during navigation.</p> <p>If you notice corrosion, check the anodes conditions and replace the propellers for major failures.</p>
	Assembly/disassembly	<p>The starboard and port propeller are not interchangeable between them neither with others as designed according to specific features of your yacht.</p> <p>Replace only with genuine spare parts supplied by the RIVA After Sales & Service Department.</p>

Periodical checks of propellers**DANGER**

To clean and check the yacht in water: disable the engines and generators 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.

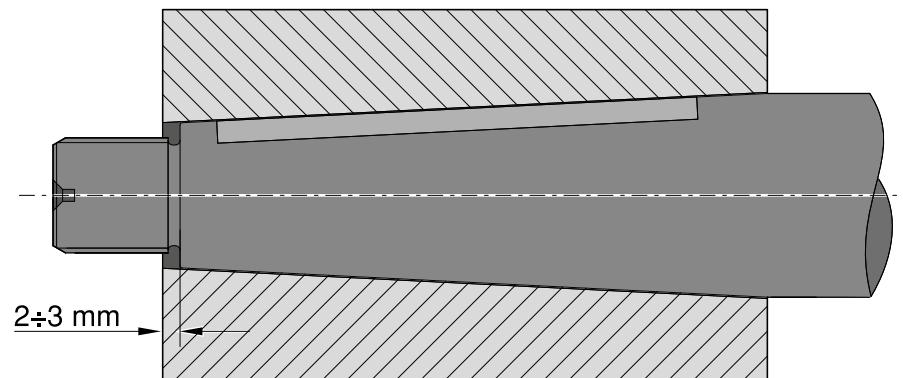
Propellers assembly/disassembly

The propellers (starboard and port) are not interchangeable between them; they are bronze meltings according to specific features of your yacht.

The extreme end of the shaft is conical and a little key allows the coupling with the propeller which must be inserted up to the shaft catch and leaving the propeller stretching out from the shaft plane of $2\div3$ mm.

**CAUTION**

Do not replace the propellers of your yacht with other of doubtful origin. Contact the RIVA 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 on the shaft (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.

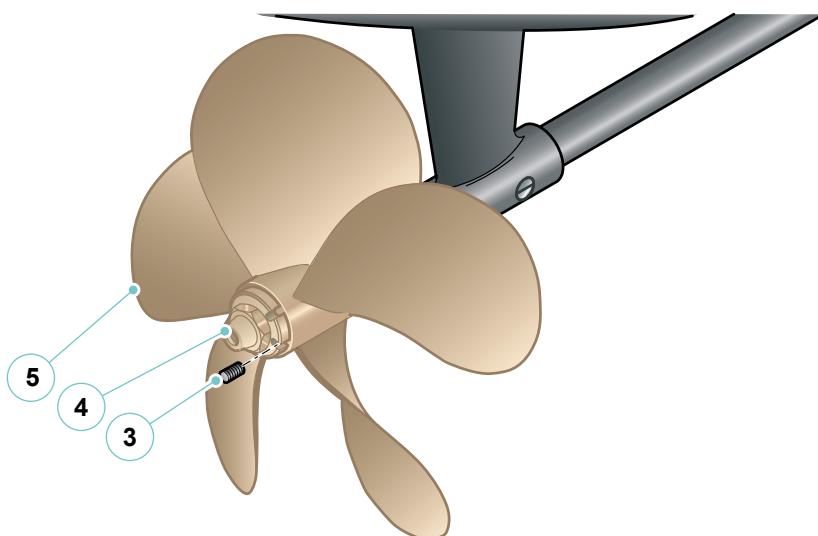
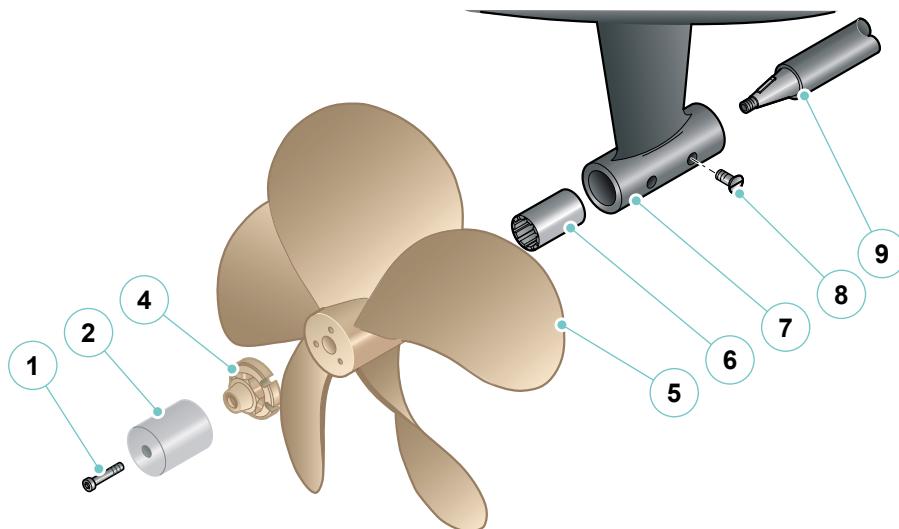


CAUTION

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 a list of the 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



7.5 EXHAUST SYSTEM

7.5.1 Engine exhausts

The on-board engine exhaust system consists of:

1. The first stage consists of insulated, dry-steel marine mufflers suitable for reducing engine noise emissions;
2. The second stage consists of a composite muffler, in which the exhaust gases are cooled and silenced by means of sea water injection.



WARNING

When starting the engines, check that water comes out of the exhausts; this means that the engines cooling system works correctly and that the exhaust is cooled. Accelerate if no water comes out.

If the problem continues, contact the Service Department.

MAINTENANCE

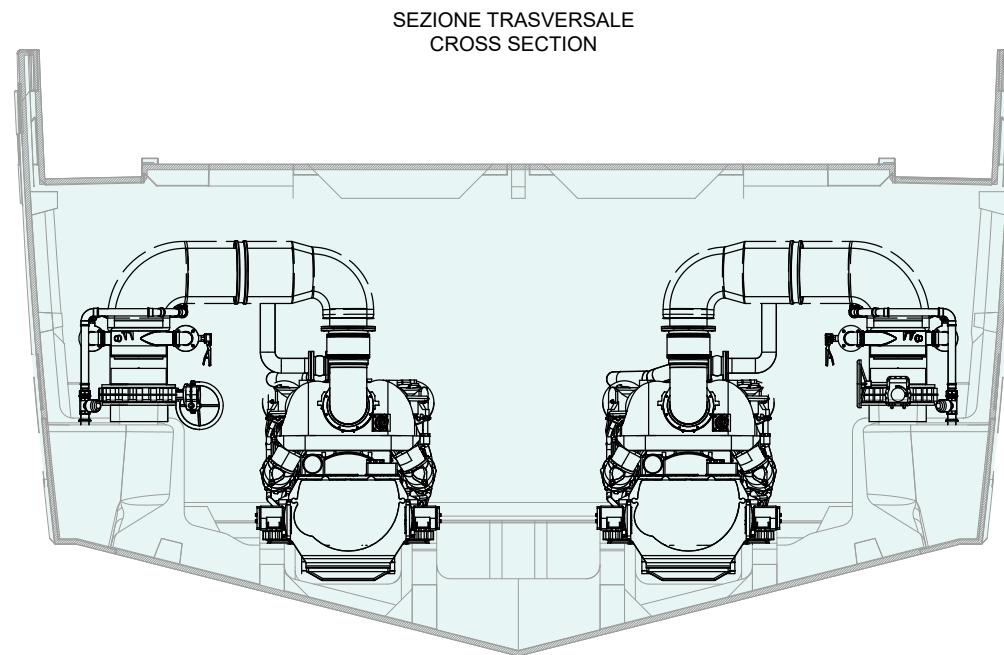
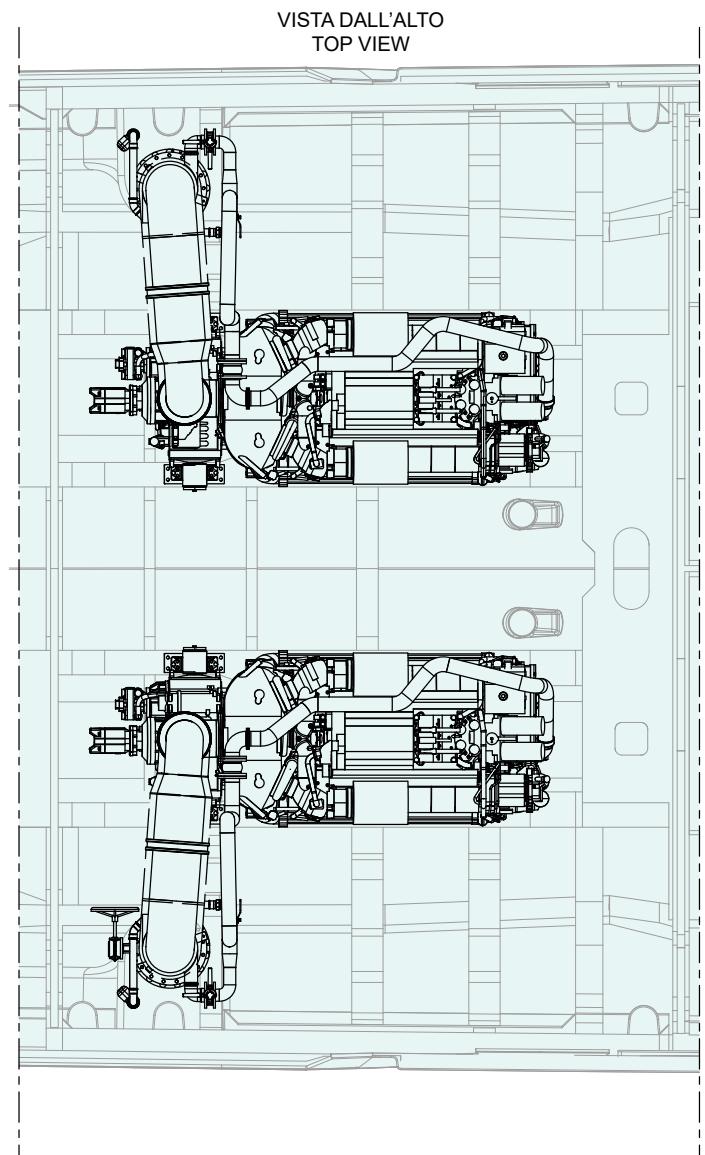
At least once every three months carry out the tightening of the discharge raiser bolts.



CAUTION

A strong smell and a light smoke from exhaust insulation are normal during the first period of use.



Main engine exhaust system diagram:

7.5.2 Engine exhausts maintenance and check

Component	Maintenance	Notes and precautions
Exhausts	Periodical check (as necessary, according to the floating area)	<p>Check the exhaust terminal cleanliness conditions periodically. Clean, if necessary.</p> <p> CAUTION Carbon deposits, marine growths and fouling may affect the engine regular operation, causing performance degradation and serious damages.</p>

For each engine:

- Check whether the parts of the exhaust system (exhaust manifold, mixing elbow, exhaust pipe, hose stop, muffler, etc.). Show signs of cracks, leakage and corrosion.
- Check the hoses for signs of softness, cracks, leaks or dents. Replace them if necessary.
- Check for corroded metal parts or broken. Replace them if necessary.
- Check if there are any loose clamps, corroded or missing.
- Tighten or replace the fasteners and / or the brackets if necessary.
- Check that the exhaust outlet is not blocked.
- Visually check for leaks in the exhaust.
- Check for excess carbon or soot in the exhaust.

These residues indicate the presence of exhaust losses that must be eliminated.

 **CAUTION**
Temperature sensors are installed on both engine exhausts. Illuminated warning lights on the helm station indicate that the temperature inside the exhausts is too high.

7.6 FUEL SYSTEM

The system has a 17000L capacity and can be filled via two refuelling inlets positioned along the yacht's lateral walkways.

System construction is RINA-class compliant and consists of one main tank located on the bottom amidships and one tank for daily use located beneath the VIP cabins.

The level of fuel is indicated by the sensors inserted inside each tank. These sensors are used to display on the monitoring system how many litres there are in the daily tanks and in the main tanks.

The fuel level can be checked on the indicator fitted to the daily tank, which allows for verification that the transduced value matches the actual value of fuel inside the tank.



CAUTION

It is good practice, before tackling a navigation, further verify the fuel level also by means of the optical indicator present on the tank flange.



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.

Fuel is drawn directly from the daily tank and delivered to supply the engines and generators.

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The fuel sucked, before reaching the uses, flows through the water/fuel separator filters holding impurities and separating possible water in the fuel. If the daily tank level reaches minimum, two electric pumps housed in the engine room can be activated using a selector on the main electrical panel in the systems room.

The transfer of fuel from the structural tank to the daily tank is done manually.

The two tanks are continuously communicating with each other and it is necessary to check by means of the optical indicator or through the appropriate monitoring system that the day tank does not go below the minimum level.

In "OFF" mode, transfer between the main tank and the daily tank is blocked and the fuel in the main tank is unusable.

In order for the manual control of the electric pumps to be activated, it is necessary to act on another selector on the general electrical panel where it is possible to select the type of pump 24 V or 400/230V.

During inlet, the fuel flow produces a lot of foam; if it comes out, you might think the tank is full.

Therefore, it is good to wait for a few minutes and then fill, so as to be sure the tank has been filled correctly.



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.

**WARNING**

The sensor reading can be distorted by the temperature, because the specific weight of fuel varies according to this last parameter and to the yacht trim. Therefore before setting-up for navigation, always refer to the visual level in the engine room.

The design of the tanks also ensures the fuel settles inside them. It is advisable to fill the tanks a few hours before departure, so that any fuel impurities and water have time to settle.

The engine and generator fuel intakes can be shut-OFF locally, as well as remotely via quick-closing valves located on the day tank outlets and remotely controlled using the pulls located on the stairwell leading to the systems room to be used only in the event of an emergency.

Operation of the fire prevention system must be preceded by manual closure of the fuel shut-OFF valves.

**CAUTION**

Fuel leaks create a fire and explosion hazard.

For a better understanding of the system, see the manuals of the single devices.

Your yacht can be fitted with a fuel treatment system.

The system eliminates impurities in the fuel and stores them in a special tank in the engine room.

**CAUTION**

Filling lines pressure must be kept constantly under 0.3bar during bunkering operation.

**CAUTION**

It is necessary to empty the fuel tank to the internal structural tank in case the yacht should be in storage or in the hull in dry condition.

**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..).

When working in the engine room, block use of the bilge pump switches to prevent any accidental spillage of fuel, lubricants or other liquids from polluting the water around the yacht.

**CAUTION**

Pay attention not to accidentally damage fuel system lines. Perform a visual inspection of all pipes periodically.

The fire-fighting system drive does not result in the automatic closing of the fuel shut-OFF valves will the arrest of the generators, which must be stopped manually using the appropriate emergency buttons located on the descent to the local technician.

**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.

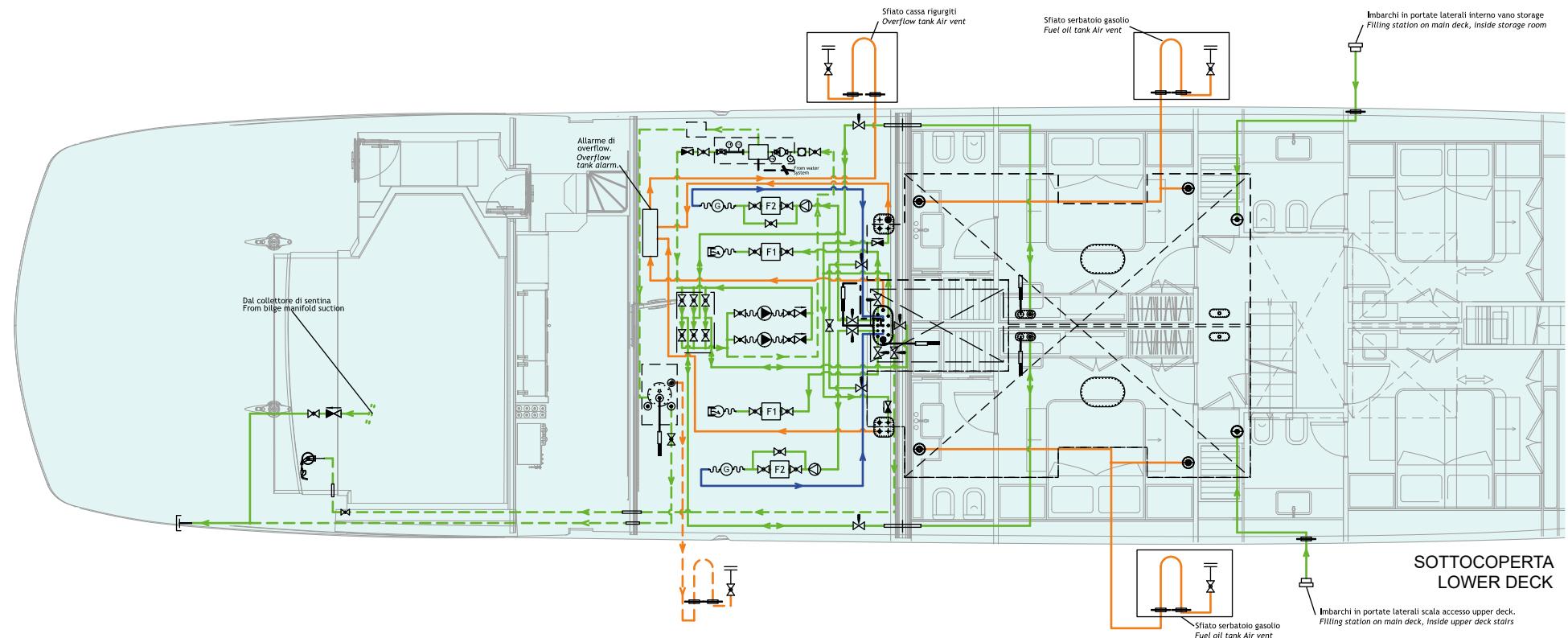
Finally clean the bilges.

**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 over flooding, disconnect the circuit breakers switches of the bilge pump, 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 circuit breakers of the bilge pumps suction system, avoiding in this way accidental spills.

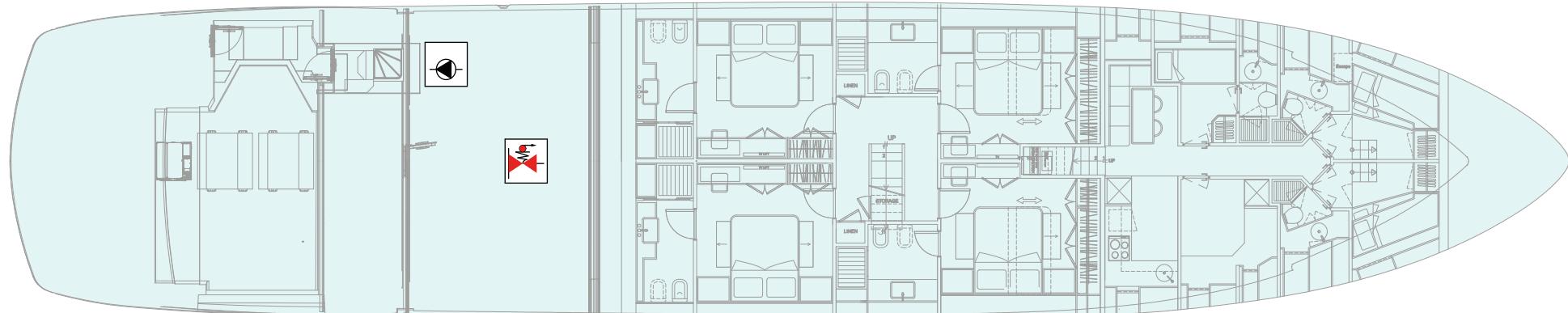
In order to refuel the tender, there may be a refueling station in the stern garage.

Fuel system diagram:





COPERTA
MAIN DECK



SOTTOCOPERTA
LOWER DECK

ICONA ICON	DESCRIZIONE DESCRIPTION
	Motori principali Main engines
	Gruppi elettrogeni Diesel generators
	Stazione rifornimento tender Tender filling station
	Pompa liverani Liverani pump
	Cassa rigurgiti Overflow tank
	Prefiltri gasolio Fuel pre-filter
	Prefiltro gasolio supplementare Additional fuel pre-filter
	Visore di flusso combustibile Flow eye
	Pompa gasolio generatori Generators fuel pump
	Valvola a sfera Ball valve
	Valvola di non ritorno No return valve
	Valvola azionabile a remoto Remote controlled valve
	Scarico fuoribordo Overboard discharge

ICONA ICON	DESCRIZIONE DESCRIPTION
	Passaparata acciaio inox Stainless steel bulkhead pen.
	Passaggio a ponte Crossing through deck
	Bocchettone imbarco gasolio Fuel filling cap
	Livellostato / livello visivo Level switch / visual level
	Connessione a cassa Tank connection
	Connessione di sfiato Air vent connection
	Riduzione Reduction
	Depuratore gasolio Fuel oil purifier
	Valvola riduttrice di pressione Pressure reducing valve
	Pompa trasferimento depuratore Purifier filling pump
	Flangia internazionale International flange discharge
	Kit rimozione liquami Sludge removal kit

ICONA ICON	DESCRIZIONE DESCRIPTION
	Giunto flessibile Flexible joint
	Sistema di filtraggio gasolio Diesel filtration system
	Comando remoto per filtro diesel Remote control for diesel filter
	Sirena d'allarme Alarm siren
	Chiusura ventilazione emergenza Emergency ventilation shut off
	Chiusura ventilazione SM ER ventilation shut off
	Valvola arresto carburante a distanza Remote fuel cutoff valve
	Comando a distanza per l'interruzione del carburante Remote control for fuel cutoff
	Collegamento internazionale a terra International shore connection
	Tubazione gasolio Fuel oil pipe
	Tubazione gasolio - ritorno Fuel oil pipe - return line
	Sfiati Air vent
	Optional Optional

7.6.1 Fuel boarding

The fuel is loaded by means of the special pipe unions (1) on the side walkways.

Fuel may leak during refuelling if the tank is already practically full.

Any fuel leakage from the boarding pipe is collected in a spill tray located in the engine room, which in turn automatically empties into the on board tanks.

The spill tray is equipped with a sensor and filling alarm.



CAUTION

The inlet plug carries the indication "DIESEL" to avoid accidental input of different fuels.

Filling lines pressure must be kept constantly under 0.3bar during bunkering operation.



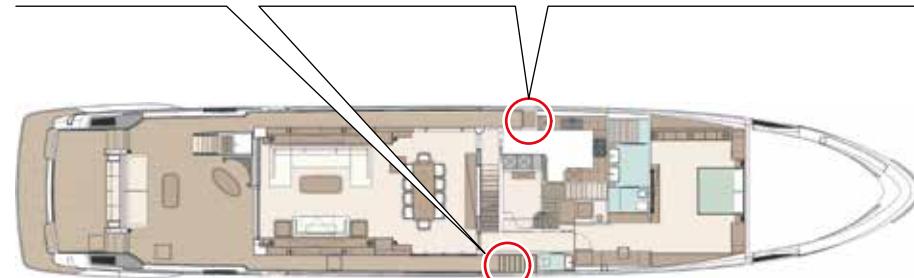
CAUTION

Before refuelling, wash the teak with fresh water to avoid its contamination with fuel.



DANGER

During refuelling operations, do not approach open flames to the yacht; do not smoke. Carry out refuelling with engine shut off. The lack of consideration of these precautions can cause accidents and injuries.



7.6.2 Fuel quality

For the good performance of the engines, the good quality of the fuel is of primary importance.

Therefore, we recommend observing the following indications.

The fuel should be purchased from reliable high sale filling stations, both for the quality and for a probable short stay of the fuel inside the shore tank.

Fuels in line with:

- 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 the engines.



WARNING

Every marina or harbour are equipped with dedicated areas for the disposal of toxic waste. It is recommended not to scatter waste that can contaminate the environment (such as used oil, fuel, oily liquids, batteries, etc.).

When working in the engine room, switch OFF the magneto-thermals to the bilge pumps, to prevent accidental discharge of fuels, lubricants and other liquids.

The tanks have to be periodically drained and cleaned, to avoid the formation of possible build-ups.

Thanks have to be kept full as long as possible, especially during long stays, to avoid the formation of condensate, which may facilitate the formation of oxide or oxidation in the tubes.



WARNING

For the type of fuel to be used, follow the manufacturer's recommendations. Diesel engines require very clean fuel. Keep filters clean.

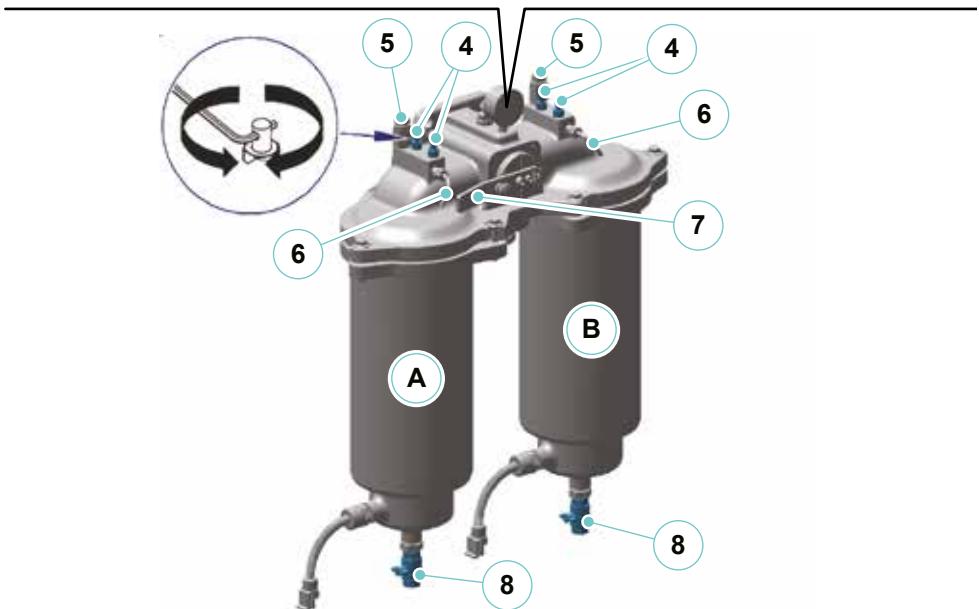
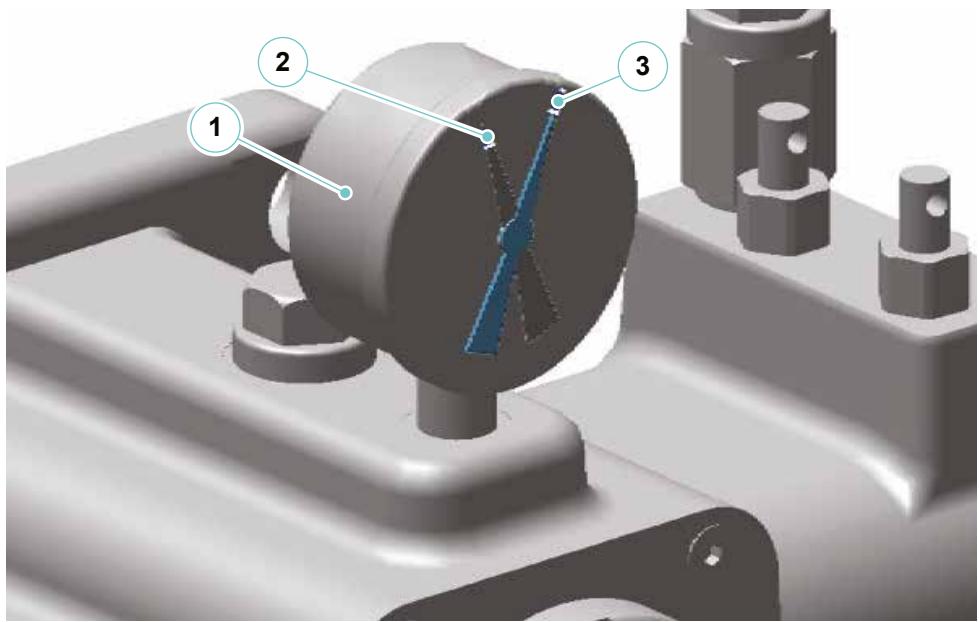
7.6.3 Water/fuel separator filters for engines

Differential pressure – recording of indicator instrument with double switchable filter:

1. When the new cartridge is put into service, make the recording index (2) coincide with the pressure indicator (3) on the pressure indicator device (1);
2. Check the differential pressure as follows:
 - At full load or at rated engine power, read the pressure on the indicator instrument (1);
 - If the differential pressure between the indicator pointer (2) and the pressure indicator (3) is greater than or equal to 0.3 bar, wash the filter cartridge in service.

Drainage of the fuel pre-filter with double switchable filter:

1. Disable the filter to be drained (A) or (B) by turning the handle (7) towards the desired filter;
2. Loosen the vent valve (4) of the filter from which you wish to drain the condensate;
3. Open the drain valve (8) of the filter from which you wish to drain the condensate;
4. Drain the water and impurities from the filter until clean fuel comes out;
5. Close the drain valve (8) opened previously;
6. Connect the feed pump to the filling fitting (5) on the suction side of the filter;
7. Open the vent valve (4) and top up the fuel until fuel leaks from the vent pipe (6);
8. Close the vent valve (4);
9. Slightly turn the handle (7) (about 30°) and open the vent valve(s) (4), until fuel comes out of the vent pipe (6);
10. Close the vent valve (s) (4);
11. Turn the handle (7) to the deactivated drained filter position.

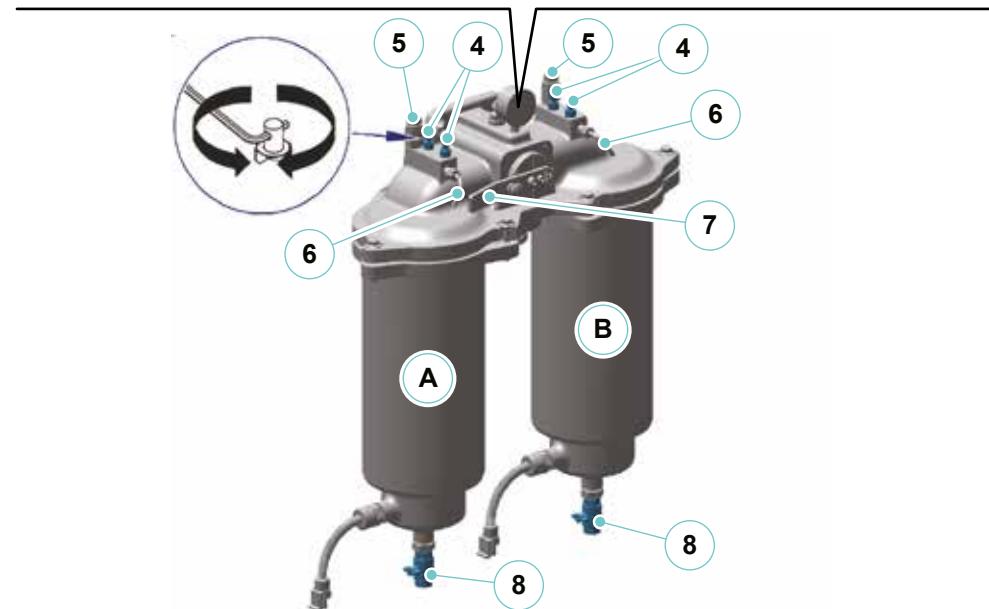
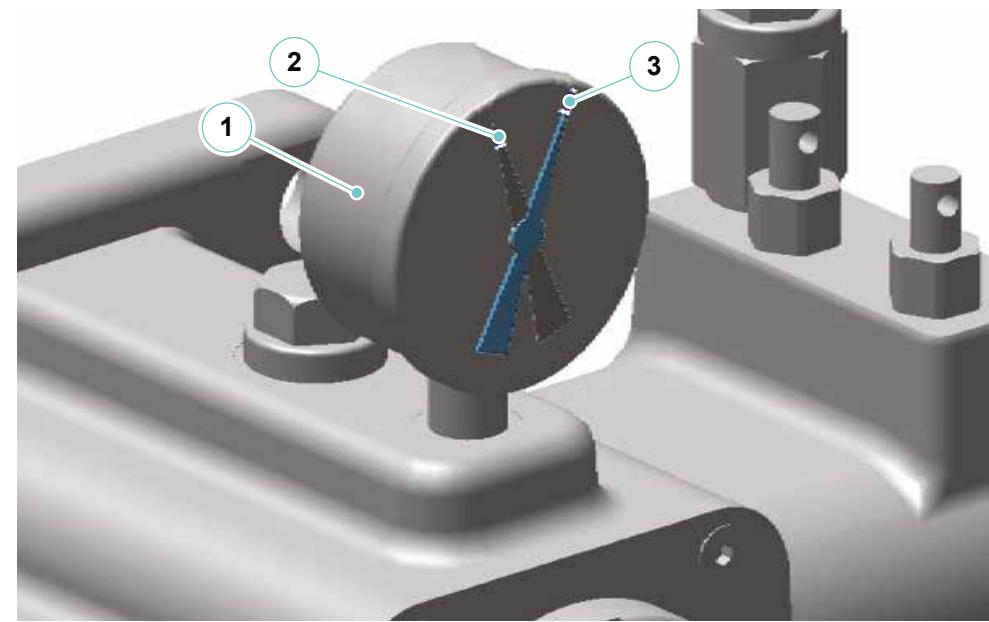


Rinsing of the fuel pre-filter with double switchable filter:

1. Disable the filter to be drained (A) or (B) by turning the handle (7) towards the desired filter;
2. Loosen the vent valve (4) of the filter to be rinsed;
3. Open the drain valve (8) and drain the fuel completely;
4. Close the drain valve (8) opened previously;
5. Close the vent valve (4).

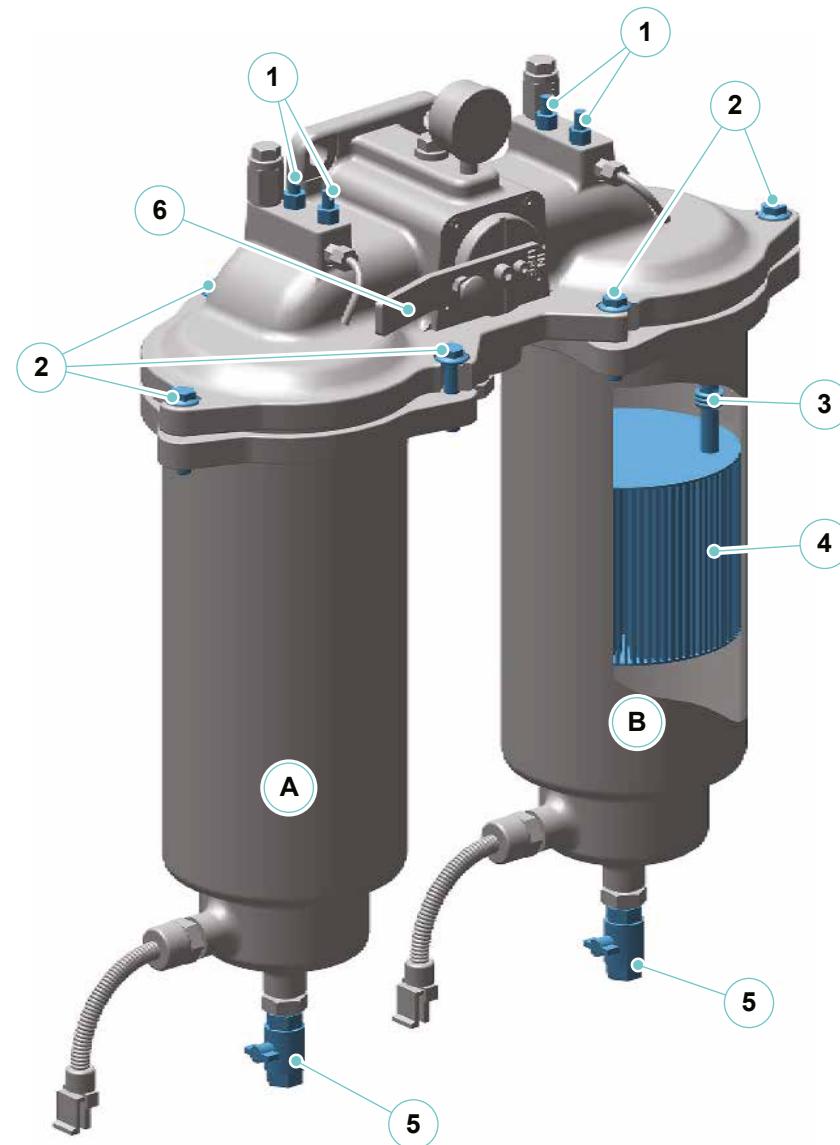
Refilling of the fuel pre-filter with double switchable filter:

1. Turn OFF the engine making sure to prevent any unintentional ignition;
2. Connect the feed pump to the filling fitting (5) on the suction side of the filter;
3. Open the vent valve (4) and top up the fuel until fuel leaks from the vent pipe (6);
4. Close the vent valve (4);
5. Slightly turn the handle (7) (about 30°) and open the vent valve(s) (4), until fuel comes out of the vent pipe (6);
6. Close the vent valve (s) (4);
7. Turn the handle (7) to the deactivated drained filter position;
8. Check the differential pressure as follows:
 - At full load or at rated engine power, read the pressure on the indicator instrument (1);
 - If the differential pressure between the indicator pointer (2) and the pressure indicator (3) is greater than or equal to 0.3 bar, wash the filter cartridge in service.
9. If rinsing has not resulted in an improvement in differential pressure, replace the filter cartridge.



Replacing the fuel pre-filter cartridge with a switchable double filter:

1. Disable the filter to be drained (A) or (B) by turning the handle (6) towards the desired filter;
2. Loosen the vent valve (1) of the filter to be replaced;
3. Open the drain valve (5) and completely drain the fuel, water and impurities contained therein;
4. Close the drain valve (5);
5. Unscrew and remove the filter retaining screws (2);
6. Remove the elastic seal (3) and the filter cartridge (4);
7. Insert the new filter cartridge (4) and the elastic seal (3);
8. Refill the filter with clean fuel;
9. Replace the seal of the filter cover;
10. Place the filter under the cover and tighten the sealing screws (2);
11. Connect the disconnected filter;
12. Tighten the vent valve (1) after the fuel leaks;
13. Record the differential pressure indicator instrument as indicated above.



7.6.4 Water/fuel separator filters for generators

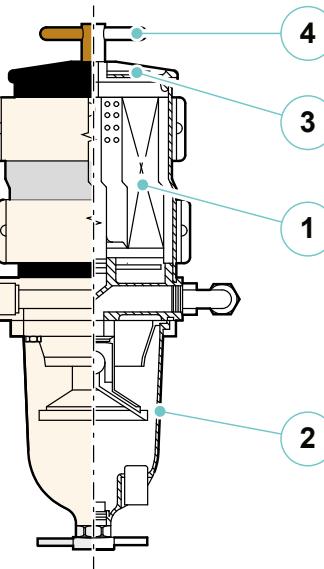
Maintenance and water drain from collection tank

Bleed frequency or the replacement of the filter element (1) are determined by the contamination level of the fuel.

Check or drain the water collection tank (2) daily.

The collection tank must be drained before containments reach the engine.

- After having placed a capacious collection container underneath it, open the drain to discharge containments.
- Remove the cover (3) and fill with clean fuel.
- Close the cover and tighten the T-handle (4) 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.

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 device does not prime or does not hold the idle run, or air bubbles are visible through the check glass, first of all check the cover by means of the T-handle and vent it, if it had not been closed properly.

Then check all connections and lines and make sure that no fuel line is clogged with contaminants.

If the problem persists and the filter element is new, contact RIVA After Sales & Service Department.

7.6.5 Fuel system maintenance

Component	Maintenance	Notes and cautions
Fuel tank	Purging (at least every two to three supplies and at least once every three months)	As indicated in the next sequence.
Filters water separators / fuel for engines	Cleaning and replacement of the water filter more download	As indicated in the next sequence.
Filters fuel / water separators for generators	Maintenance and unloading water Replacing the filter element Fault detection procedure	As indicated in the next sequence.

Fuel tank discharge:

The tank is equipped with a visual indicator for the fuel level to display in the engine room of the actual level.

The geometry of the tank allows the decanting of any impurities and water present in the fuel.

In order to proceed to the water drain and any impurities loaded together with the fuel, it is necessary to wait a few hours, after refuelling in such a way that the particles in suspension, have the time to settle.

During the long periods of inactivity yacht is recommended, when the tank is empty, remove the bunkers on board during refuelling.



WARNING

Internal cleaning of the tank is an extraordinary transaction that must be carried out by specialized personnel. Contact RIVA After Sales & Service Department to receive proper support.

During the replacement of the flange to ensure that the nuts are tightened present in adequate and uniform manner in order to avoid the leakage of fuel vapours. Also check the good condition of the O-ring.

NOTE

During this operation, the staff must always be present as it may cause spillage of fuel in the engine room.

MAINTENANCE

Periodically check the correct operation of the valves.

At least every three months to verify that there are no leaks.

1 At least once every three months to make bleed the tank.

At least once every two years to make a complete cleaning of the tank; in any case verify the bleed as a function of the quality of the performed supplies.

**WARNING**

While cleaning the inside of the tank is good to aerate the environment and long wear all the protections necessary to avoid injury from gas fumes.

**ENVIRONMENT**

Handle and dispose of the water mixed with fuel in accordance with the laws in force. Use only approved disposal procedures and, if in doubt, contact the Harbour.

**WARNING**

The bilges of the engine room must be kept clean, in this way we can identify more easily the losses or leakages of fuel or oil from the engines and from the generator. If this happens, you must stop the engine and let it cool and then repair, if possible, for the loss. Finally clean the bilges.

**ENVIRONMENT**

It is forbidden to discharge bilge water mixed with oil or fuel into the sea, as it can cause serious pollution.

Periodically check the level of any oily water present in the collection tanks located below the engine, in the case where the level is close to that of leak in the bilge OFF the switches of the breakers of the bilge pumps to prevent accidental spillage until all exhaustion of the same with media comply with current regulations for environmental protection.

During maintenance operations in the engine room it is required OFF the switches of the breakers of the bilge pumps avoiding accidental spillage.

**CAUTION**

It is advisable to periodically empty and clean the tank, get help RIVA. Also it remembers that the diesel fuel used again to be filtered.

7.7 THRUSTERS SYSTEM

The thruster is a very simple and robust accessory, but requires some attention:

- The drive thruster should be used at very low speed, or without rudder; at higher speed, more correct reactions are obtained with the staggered use of the inverters;
- Whenever there is a chance to lift the yacht, check the condition of each propeller, the protective anode and the fastening system.

MAINTENANCE

At least once a week check that it is working properly.

At least once every 3 months check the condition of the protective sacrificial anodes plates and replace if necessary.

Add oil when necessary.

NOTE

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



WARNING

When you are finished using the thruster, press the STOP button on the control panel.



CAUTION

For the duration of continuous use of the operating thruster, refer to the operating manual supplied by the Manufacturer.

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CAUTION

Always switch OFF the control when the shunting thruster is not in use.



DANGER

During the bow thruster operation, pay attention to possible swimmers or small yachts which may be close to the thruster 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.



DANGER

Always stop the operating thruster before carrying out checks or maintenance.



CAUTION

Never operate the thruster for more than one second when the yacht is being pulled dry, as this may seriously damage the system.

7.8 CENTRALIZED OIL CHANGE SYSTEM



Your yacht can be equipped with a centralized oil change system.

The system allows the oil contained in engines, gearboxes and generators to be drained and replaced with new oil.

The drained oil must be collected in special containers and properly disposed of.

NOTE

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

**ENVIRONMENT**

Possible oil spilled in the bilge must be collected and stowed. It is forbidden to discharge bilge water mixed with oil 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.

Riva

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Riva

130 BELLISSIMA

YACHT STEERING SYSTEMS

CHAPTER 8

8.1 STEERING SYSTEM

The electro-hydraulic steering system was created to make driving easier during navigation and improve the safety conditions of the system.

The system consists of a control unit mechanically connected to the helm station steering wheel.

The bridge unit is electronically connected to an electronic control unit that controls the operation of an electro-hydraulic control unit, consisting of two pumps driven by electric motors, one tank, one distribution block and one block of solenoid valves that control the actuators which move the rudder bar.

The solenoid valve block can also be used as an interface for the autopilot. On the control valve unit there are some shockproof protection valves.

Along the circuits, between the pump with axial pistons and the electro-hydraulic control unit, there are the non-return valves, preventing the back-flow of the control fluid and ball valve for emergency situation. It is possible to check whether there is enough oil in the tank of the electro-hydraulic units through an optical indicator.

In wheelhouse is located the steering system control panel, through which it is possible to activate/stop steering pump 1 in emergency conditions.

In wheelhouse it is also the emergency button to deactivate the steering system signalled by a red light.

The main system can operate in three different conditions: GUIDE, AUTOMATIC and EMERGENCY.

The switching over from one condition to another has been extremely simplified.

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Guide:

The control units must be powered on. Turn the steering wheel to generate a signal that allows the system to move the rudders.

Steering with autopilot

The control units must be powered on. By entering the desired route, the autopilot generates a signal that allows the system to move the rudders.

Emergency navigation condition

Navigation in emergency mode is possible in case of a fault (fault of the electro-hydraulic control unit, cut-off of main hydraulic line, etc).

The emergency pump is located in the systems room and is hydraulically connected to the actuator cylinders.



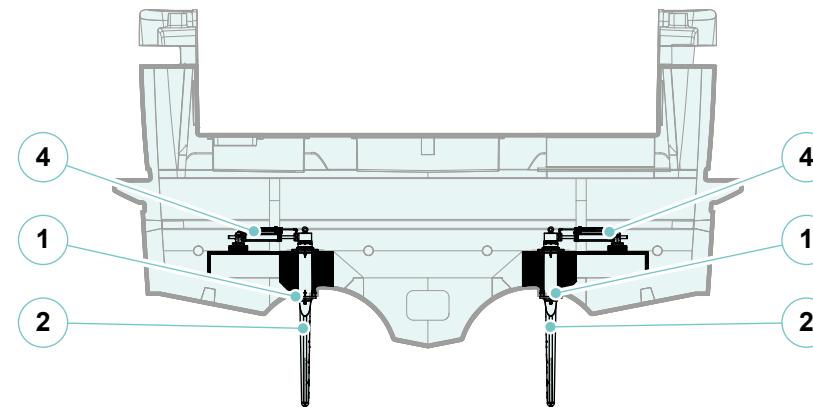
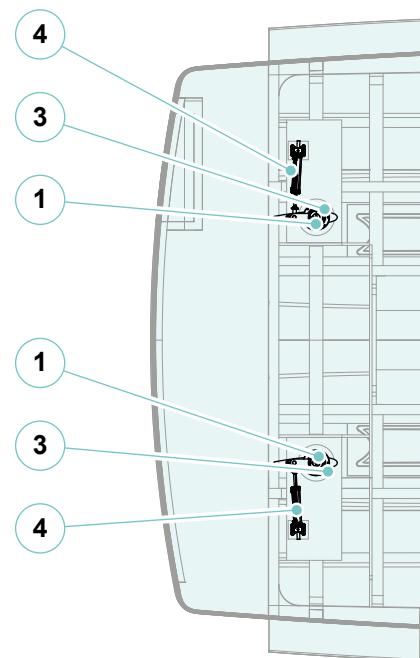
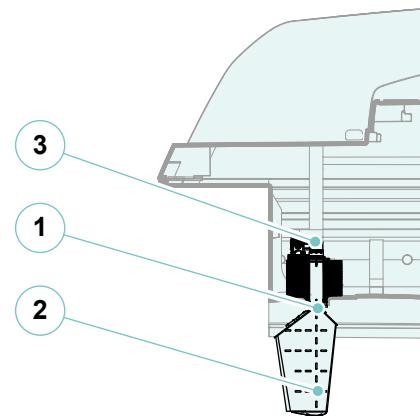
CAUTION

The position of the sensor is adjusted by RIVA; unauthorized crew is not allowed to tamper with it.

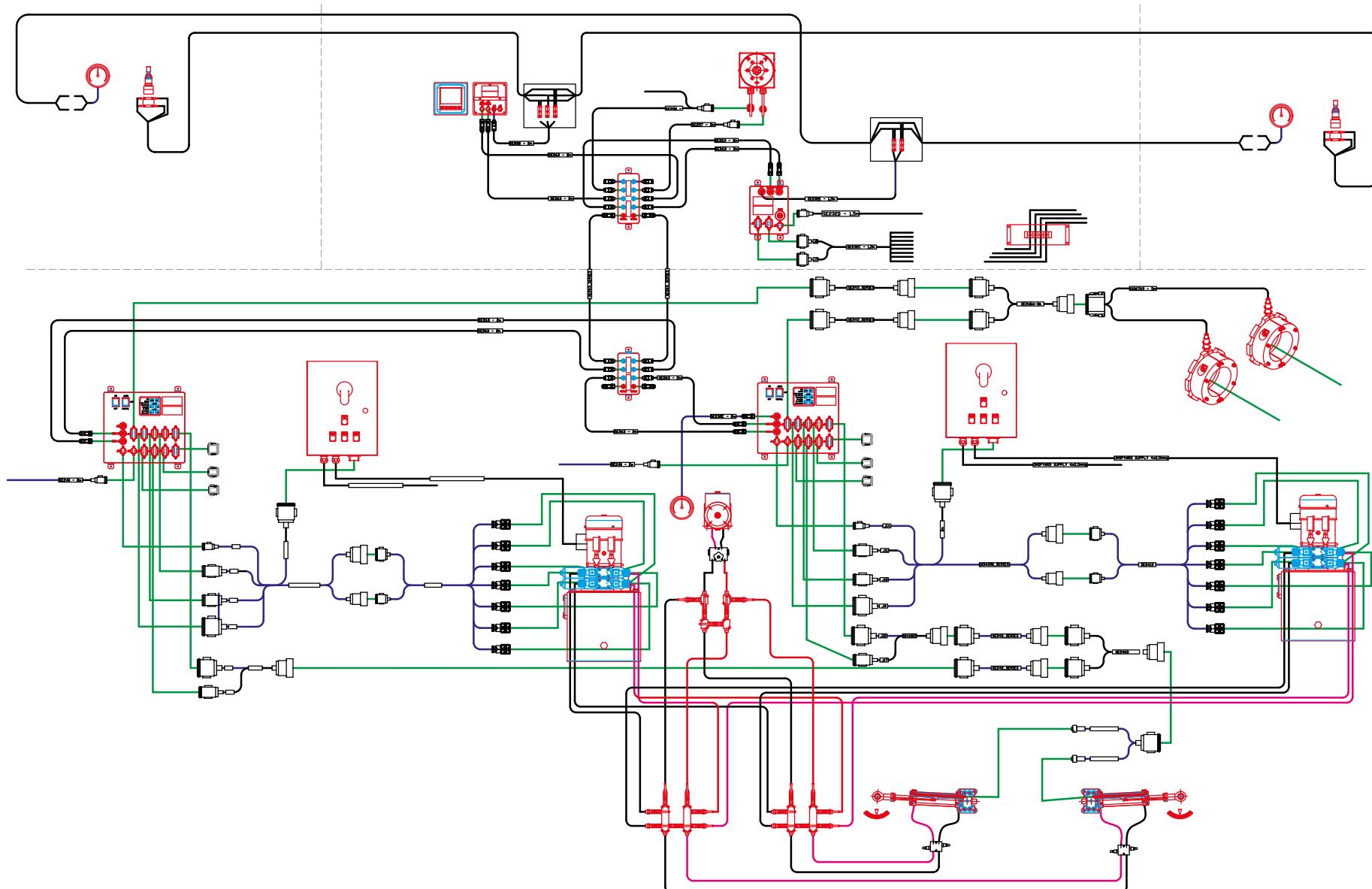
NOTE

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

Wheelhouse system diagram:



ICONA ICON	DESCRIZIONE DESCRIPTION
1	Losca timone Rudder hole
2	Timone scatolato Rudder box
3	Barra timone Rudder bar
4	Timoneria e-steer E-steer rudder



BALL VALVE POSITION						
Valve name	Normal operation	Main, stbd cylinder failure	Main, port cylinder failure	Manual pump steering system	Manual pump with stbd cylinder failure **	Manual pump with port cylinder failure**
A1	OPEN	CLOSED	OPEN	CLOSED***	CLOSED***	CLOSED***
A2	OPEN	CLOSED	OPEN	CLOSED***	CLOSED***	CLOSED***
A3	OPEN	OPEN	CLOSED	CLOSED***	CLOSED***	CLOSED***
A4	OPEN	OPEN	CLOSED	CLOSED***	CLOSED***	CLOSED***
B1	OPEN	CLOSED	OPEN	CLOSED***	CLOSED***	CLOSED***
B2	OPEN	CLOSED	OPEN	CLOSED***	CLOSED***	CLOSED***
B3	OPEN	OPEN	CLOSED	CLOSED***	CLOSED***	CLOSED***
B4	OPEN	OPEN	CLOSED	CLOSED***	CLOSED***	CLOSED***
C1	CLOSED	CLOSED	CLOSED	OPEN	CLOSED	OPEN
C2	CLOSED	CLOSED	CLOSED	OPEN	CLOSED	OPEN
C3	CLOSED	CLOSED	CLOSED	OPEN	OPEN	CLOSED
C4	CLOSED	CLOSED	CLOSED	OPEN	OPEN	CLOSED
D1	CLOSED	OPEN*	CLOSED	CLOSED	OPEN*	CLOSED
D2	CLOSED	CLOSED	OPEN*	CLOSED	CLOSED	OPEN*
E1	CLOSED	CLOSED	CLOSED	OPEN	OPEN	CLOSED
E2	CLOSED	CLOSED	CLOSED	CLOSED	OPEN	CLOSED
E3	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	OPEN
E4	CLOSED	CLOSED	CLOSED	OPEN	CLOSED	OPEN
E5	CLOSED	CLOSED	CLOSED	OPEN	CLOSED	CLOSED

** Open the valve until the rudder will be at zero position then close the valve.

*** It is suggested to power off power unit motor control (three way switch on OFF position) when using manual steering system.

**** We suggest to close also these ball valve when using manual steering, but it is not strictly necessary for the correct operation of the manual steering itself.

8.2 INTERCEPTORS SYSTEM

The yacht is equipped with 4 interceptors, which can be controlled from the bridge. Each interceptor is driven by an electric servomotor.

They allow varying both the longitudinal and the transversal trim of the yacht during navigation.

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.

A correct position of the interceptors allows obtaining a steady and ideal trim, which can increase speed and reduce 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

The use of the stabilizers is quite normal during navigation, in order to make it more comfortable and to improve the yacht's performance.



CAUTION

Raise the stabilizers completely during the reverse gear otherwise they might get damaged.

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By the actuation of one of the buttons on the panel of the main helm station, the control unit receives an electric pulse actuating the motor.

The motor rotates in the chosen direction and therefore determines the descent or ascent of the interceptors.

By pressing the button to other position, you control the opposite motor movement. Each button controls the movement of a interceptors.

It is possible to view, through the control panel on the helm station, the extraction of the interceptors, measured by means of a position transducer placed on each of them.

Some advice will prove useful to familiarize with the interceptors:

- After the hull is brought in gliding way position, adjust interceptor position to find the most favourable angle 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 interceptors 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 the stern", the interceptors that are "up" will tend to raise the bow, thereby avoiding unpleasant nose-diving;
- 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 (withdrawn rams).

**CAUTION**

The interceptors, like the rudder, can generate sudden direction changes of the yacht, if actuated too fast. It is therefore necessary to test the reaction of these devices at open sea and with great care.

**CAUTION**

Always make sure that the passengers are seated before undertaking adjusting manoeuvres on the flaps, especially if navigating at high speed.

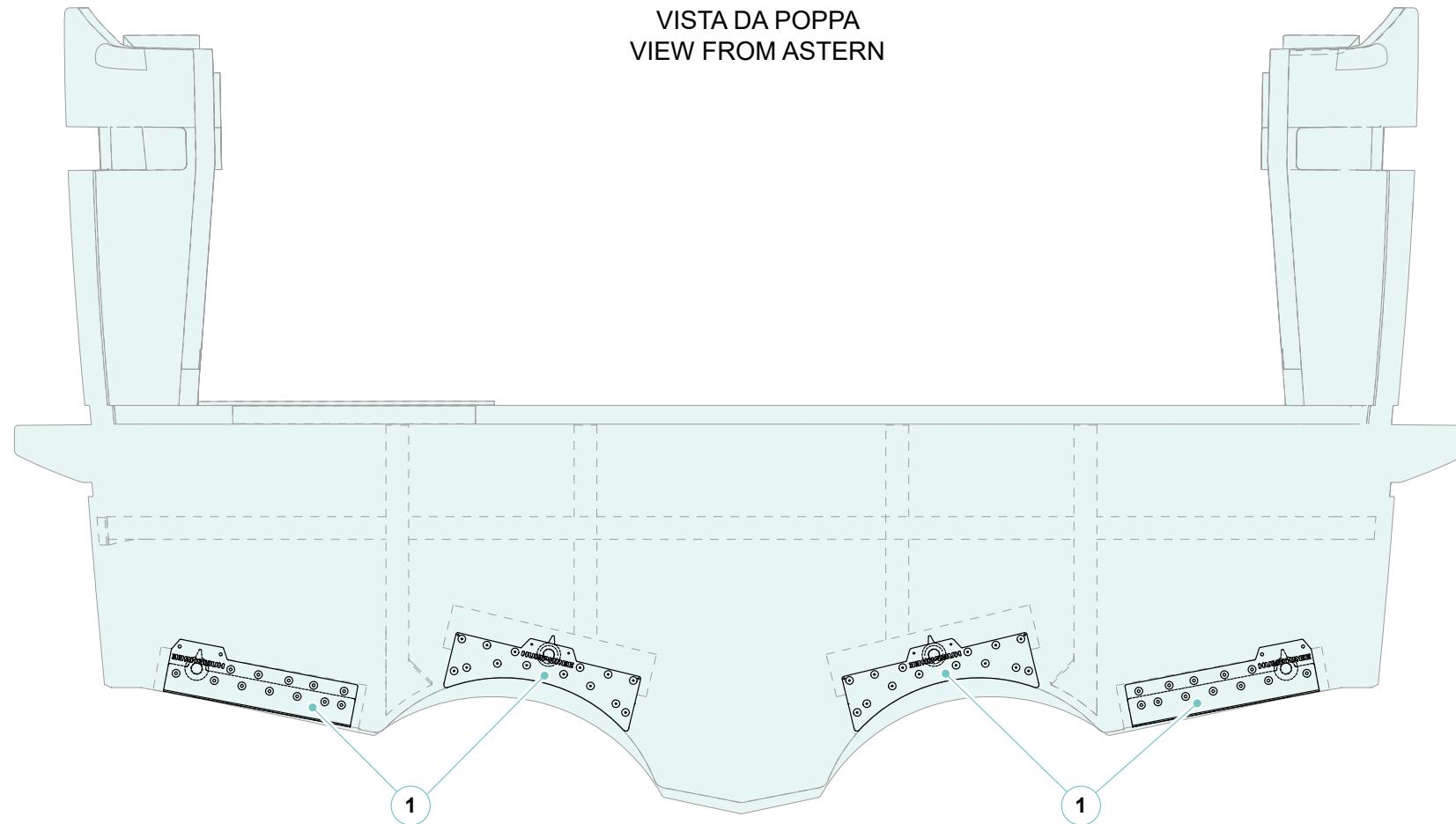
NOTE

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

MAINTENANCE

Clean the interceptors regularly to remove any traces of corrosion which may affect their efficiency.

To reduce the risk of corrosion, close the interceptors when leaving or anchoring the yacht, or when hauling shoreside.

Interceptor system diagram:

ICONA ICON	DESCRIZIONE DESCRIPTION
1	Correttori di assetto Interceptors

8.3 GYROSCOPIC STABILIZERS SYSTEM

To reduce the annoying effect of the wave-induced rolling motion, a system has been installed and it consists of 4 gyroscopic stabilizers capable of generating a rotation equal and opposite to that of the waves. The system combines, in fact, a significant decrease in rolls, both when the yacht is stationary and at sea, with low energy consumption that does not compromise the quality of life on board and leave the performance unchanged.

Thanks to these very important features, the device can be kept active even during the night to maintain greater comfort by damping, almost entirely, the annoying roll motion.

Gyroscopic stabilisers are based on a known physical principle: a gyroscope tries to maintain its own vertical rotation shaft, parallel to the acceleration of gravity.

When an external cause intervenes to change its position, such as the roll caused by the wave, it is opposed by a rotation on one shaft, perpendicular to the shaft of rotation and to that of the heeling cause.

In the case of gyroscopic stabilizers, the operation generated (roll) is attenuated by the presence of dampers specially calibrated according to each yacht's features.

The system consists of 4 stabilizers positioned centrally in the bilge under the left garage.

NOTE

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



CAUTION

Have the expected PERIODICAL INSPECTION conducted by qualified personnel every two years. Contact CUSTOMER SERVICE for more information.



WARNING

During operation, gyroscopic stabilisers, vibration dampers and their housing become hot. Touching the gyroscopic stabiliser may cause burning during operation.



DANGER

Gyroscopic stabiliser housing is not a solid component. If you lay objects or sit on the gyroscopic stabiliser, it may be damaged.



CAUTION

Gyroscopic stabiliser is not watertight. If it is submerged in seawater, it may be damaged.

8.4 STABILIZING FINS SYSTEM

The fins are wing profiles in all respects and they exploit the speed of the water they meet to create lift on the upper or lower surface, according to the position of the fins with respect to their shaft.

Therefore, according to their check logic, by means of hydraulic actuators, they move in a way which gives an immediate response to the rolling action. The higher the hull speed, the higher will be the lift created by the fins which will have almost no influence with the yacht stationary.

When leaving the harbour, simply activate the system and this one in a very independent way, monitors the yacht's trim permanently and efficiently, thanks to the stabilizing fins fitted to the hull.

The system adjusts its operation according to speed, sea conditions and wave direction, and of course to the skidding data received from the sensors.

The stabilizing fins of the system are equipped with very sturdy electromechanical mechanisms, able to ensure an effective duration in the time.

In the helm station there is a control panel equipped with a liquid crystal screen on which you can read all the data detected by the sensors, the status of the fins and the system, as well as any alarms in the event of the need for intervention.

This yacht is also provided with a Zero Speed system, which enables the operation of the stabilizing fins even with the engines turned off.

Your yacht can be equipped with a stabiliser fin rope cutter system.

**CAUTION**

The supply of the stabilizers must always be kept on the main electrical panel, besides if the stabilizing fins are not in use, they must always be kept in central position (see display in the main helm station).

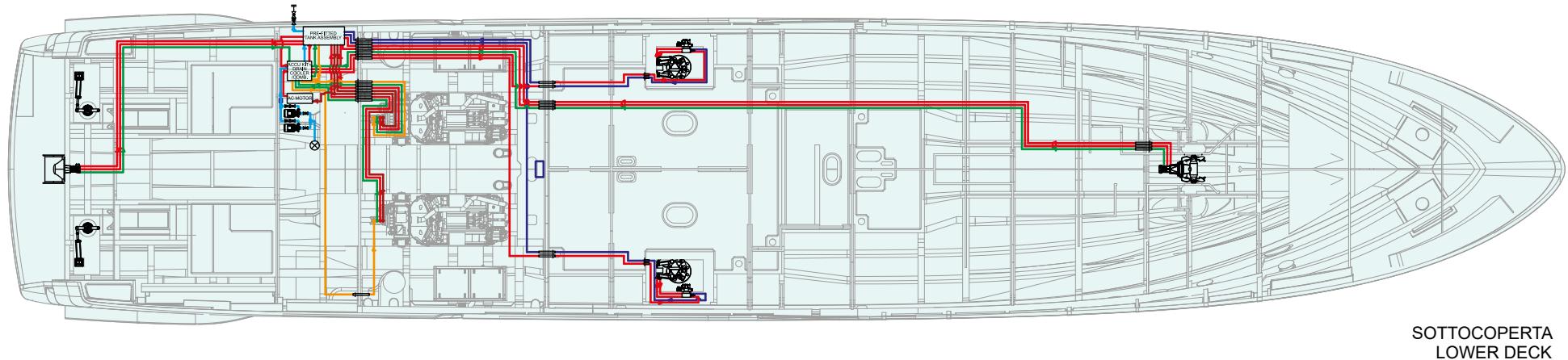
**DANGER**

Stabilizing fins in Zero Speed mode must not be activated when people are swimming around the yacht.

NOTE

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

Stabilizing fin system diagram:



ICONA ICON	DESCRIZIONE DESCRIPTION
—	Linea di drenaggio Case draining line
—	Linea raffreddamento acqua mare Cooling water line
—	Linea di pressione Pressure line
—	Linea di ritorno Return line
—	Linea di aspirazione Suction line
—	Linea LS/pilota LS/pilot line

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AIR CONDITIONING AND VENTILATION

CHAPTER 9

9.1 AIR CONDITIONING SYSTEM

The air-conditioning system consists of two air-conditioning units, which can be used either one at a time or simultaneously. The internal heat exchanger with seawater, is capable of delivering both cold air and hot without the use of a water heater (by reversing the operation of the system).

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.

A circulation pump conveys cooled (or heated) fresh water to the fan-coils, until the set temperature is reached.



WARNING

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 three-phase 400 V AC by means of a magneto-thermal switch located on the general electrical panel in the control room.

The compressor unit is located on the starboard side of the control room.

Your yacht is equipped with three air handling units (AHU).

The AHU manages air treatment and exchange in your yacht's rooms.

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In general, during winter the AHU is responsible for increasing air temperature and humidity, while in summer it decreases the temperature and humidity of the air.

Every room has air-conditioned independent adjustment via Its Command Panel.

The descriptions and information on the use and maintenance are described in the manual supplied by the manufacturer.

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 sea-water intake and outlet valves are both open.

Power the chiller units and fan coils using the switches on the main electrical panel in the control room.



CAUTION

The main electrical panel houses the AIR CONDITIONING, FAN-COIL FAN and AHU magneto-thermals. These must be in the ON position for the proper function of the air conditioning and handling system.

It is advisable to measure the power consumption of the pumps and compare it with the nameplate data.

The group operates normally only when the sea water circulation and the treated water is correct. After a few seconds, the compressor will start.

Its operation will stop when reaching a temperature of 7÷8°C for chilled water.

The chilled water temperature can be controlled by means of the appropriate control panels located in the control room.

The calibration of the chilled water temperature is obtained by means of the thermostat on the unit panel. The chilled water circulation pump will circulate water to the different fan-coils.

Fan-coils will exchange heat with the surrounding environment, the return water will be heated and the thermostat will restart the compressor, in a differential range of 3÷4°C, thus keeping the chilled water temperature in a range from 7 to 11°C.

**WARNING**

The cleaning of the sea intake strainer must be performed with a periodicity related to the use of the system and by the conditions of the aspirated water.

**CAUTION**

Before cleaning the strainer, remember to close the sea cock valve, to stop the unit and then proceed with maintenance. Once this operation is finished, remember to open the valve which supplies the cooling circuit.

NOTE

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

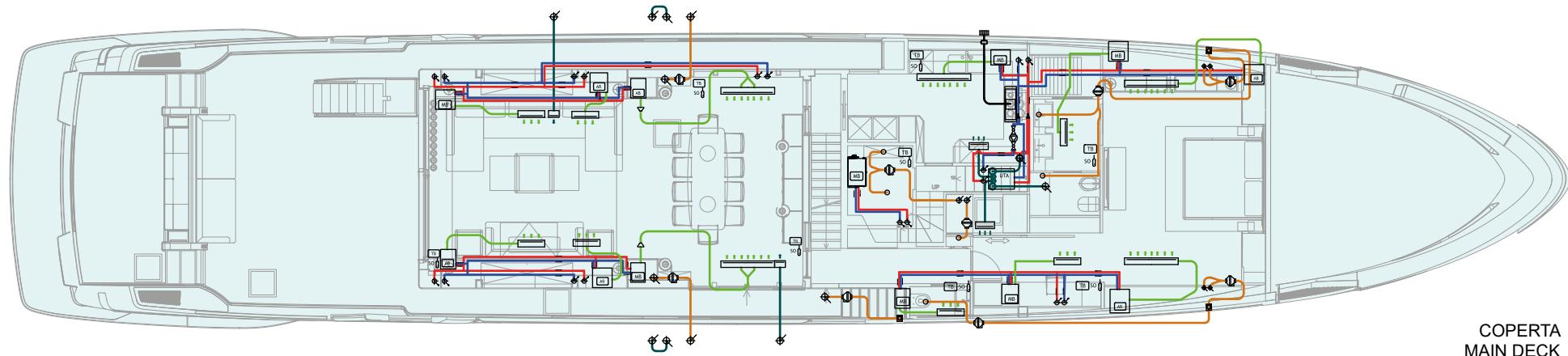
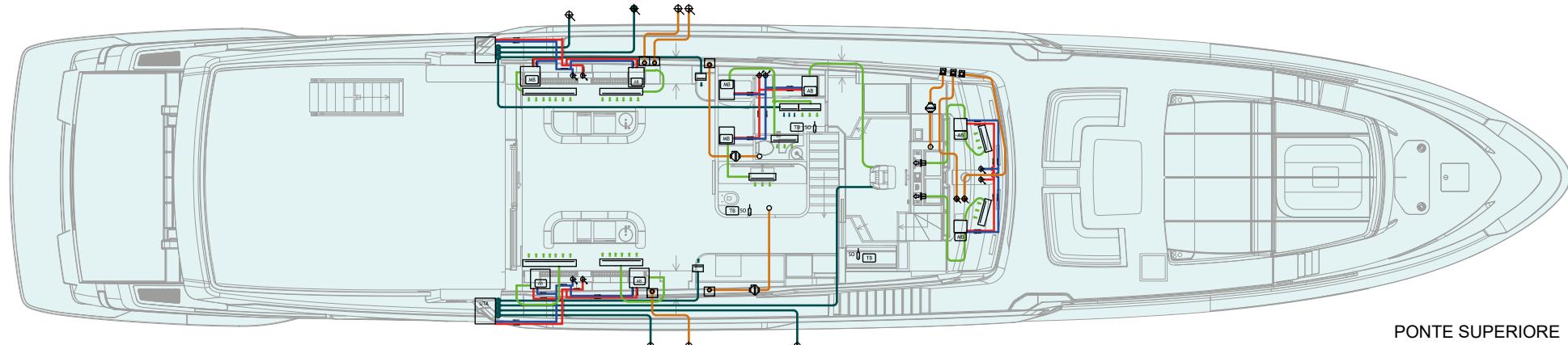
**CAUTION**

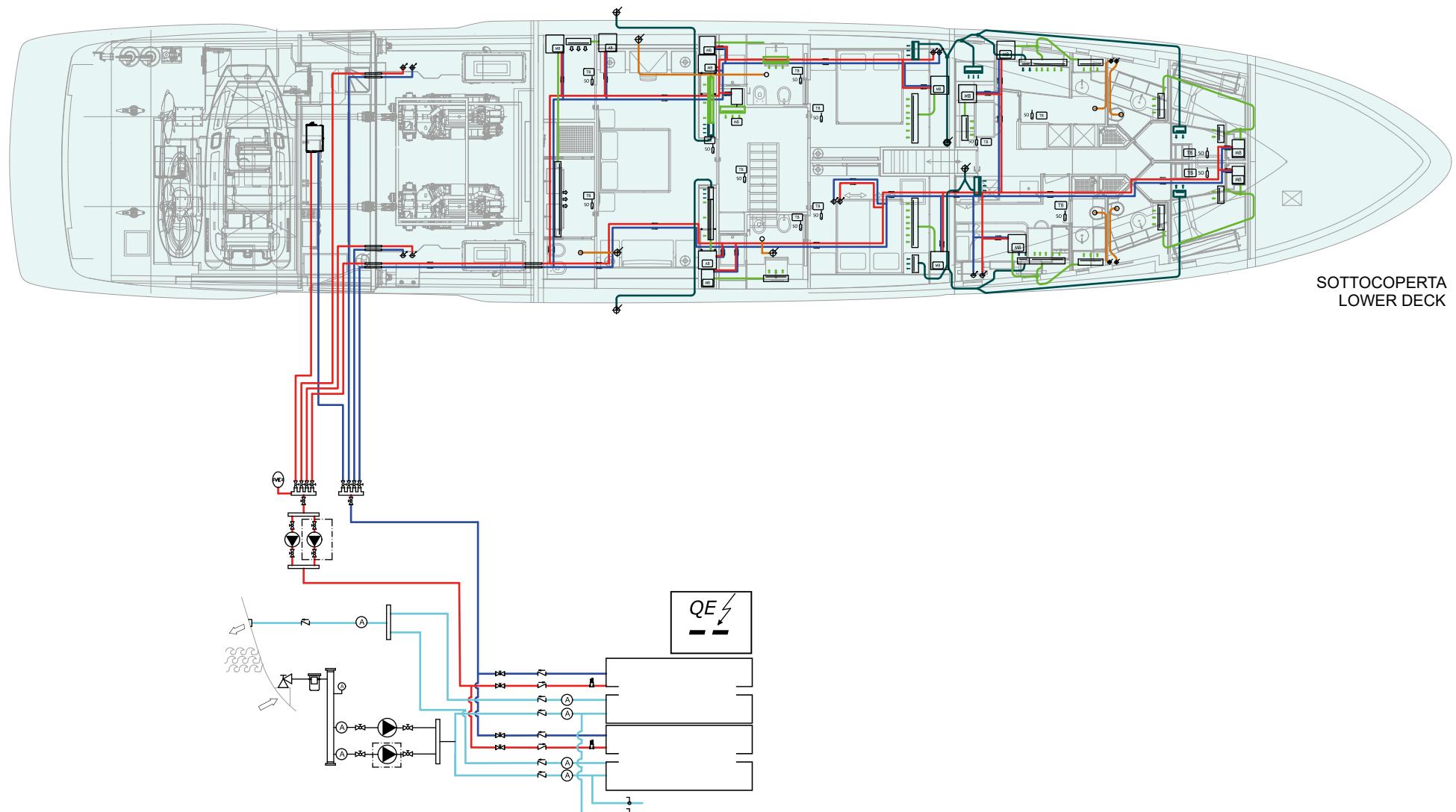
When starting the unit after a prolonged shut down check the correct operation of the sea water pump and make sure of proper circulation.

**CAUTION**

The excessive use of conditioned air may cause infirmities due to the great difference of temperature between the yacht inside and the outside..

Air conditioning system diagram:





ICONA ICON	DESCRIZIONE DESCRIPTION
	Linea mandata acqua Water delivery line
	Linea ritorno acqua Water return line
	Linea acqua mare Sea water inlet
	Mandata FCU FCU outlet
	Mandata UTA UTA outlet
	Estrazione aria Air extraction
	Passaparatio stagno Watertight bulkhead penetration
	Estrattore Blower
	Griglia inox Inox grid
	Griglia aspirazione Air extraction grid
	Sonda temperatura Temperature probe
	Pannello regolazione ambiente Accommodation control panel
	Pompa di circolazione Circulating pump

ICONA ICON	DESCRIZIONE DESCRIPTION
	Scheda madre FCU FCU main board
	Scheda FCU ausiliari FCU auxiliary board
	Al ponte superiore To upper deck
	Al ponte inferiore To lower deck
	Ripresa aria Air intake
	Serranda Damper
	Valvole di sezionamento Cut-OFF valves
	Valvole d'intercettazione Shut-OFF valve
	Valvola di non ritorno Non-return valve
	Anodi di zinco Zinc anodes
	Manometro Manometer
	Flussostato Flow switch
	Diseareatori Diseareators

9.1.1 Refrigerating unit control panel

The control panels of the cooling system located in the control room have the following functions:

1. **“ESC” key**
Allows exiting the menu (6).
2. **“COOL” Key**
When the relative LED is lit, cooling mode is active.
3. Decrease key “▼”
This key allows decreasing a value and scrolling the menu.
4. **“HEAT” Key**
When the relative LED is lit, heating mode is active.
5. Increase key “▲”
This key allows increasing a value and scrolling the menu.
6. **“MENU” Key**
This key allows selecting the desired temperature by means of key (5) or (3).
7. **“ENT” Key**
Confirms the data set.
8. **“I” Key**
This key enables switching the system ON (LED lit) or OFF (LED OFF) without disconnecting it.
9. **Display**
Displays the data.

At first start the chiller unit will operate according to the parameters set.



**CAUTION**

It is strongly recommended that the factory-settings NOT BE CHANGED. This is possible only in exceptional cases and with the help of RIVA staff and Service Departments.

**CAUTION**

The signal of any alarm implies a failure in the operation of the system. INVESTIGATE and ELIMINATE THE REASON FOR THE FAULTY OPERATION before restarting the system.

Refer to the specific manual or refer to the Service Department.

NOTE

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

9.1.2 Fan-coil control panel

The new 2.4" colour LCD touch screen display facilitates user interaction. The background colour (white or black), the unit of measurement (°C/°F) and the brightness of the display can be easily set through the new user menu. The main screen contains the following elements:

- Room temperature detected
- Active operating mode:
 - Heating
 - Electric heating
 - Cooling
 - Only fan
- Fan speed. You can enter the operation selection menu by pressing on the symbol:
 - Auto
 - Manual
- Fan-coil shutdown
- Temperature reached. You can enter the operation selection menu by pressing on the symbol:
 - Cooling
 - Heating
 - Electric Heating
 - Ventilation only
- Temperature setting buttons
- Configuration button

NOTE

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

9.1.3 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. It is important, at least once a year, to have the system rinsed with fresh water for 1 or 2 hours, to remove all sea water residues.

Fan-coil cleaning

At least every fortnight clean the fan-coils inlet net by sucking the dust. The sucked air should not have a pressure higher than 1 and a half Atm. An higher pressure could damage the fan impeller.

Notes on the coolant

In case of coolant leaks, the first thing to do is to stop the A/C unit, to locate the leak and to eliminate it.

Once the leak has been removed, remove the coolant left in the circuit and refill the system completely; have the coolant filled by authorized engineers through the connection of compressor.



CAUTION

If the compressor is too noisy, an electric connection is wrong “compressor wrong rotation direction”, check the electric connections.



CAUTION

Check that the valve lever is in the correct position with respect to the operation of the compressor unit.



WARNING

Wash the sea water circuit with fresh water at least once a year.



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.

9.2 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, so as to keep a safe temperature inside the engine room.

The ventilation system consists of: two side air intakes equipped with dampers positioned in the fore area of the engine room, which allow air to enter the environment and separate any suspended seawater; and two air intakes equipped with extractors and dampers for removing air from the interior to the outside.

In the control room there are two panels used to control the ventilation system of the engine room.

The extractors and the air intakes have a manual closure controlled directly by two tie rods located in the descent area leading to the control room.

Ventilation is not limited to the engine room, but also to the garage. This ventilation is obtained by means of two extractors and an explosion-proof extractor which allow the air to flow outside.

The garage extractor dampers are located inside the garage itself.

In the event of fire in the garage or engine room, immediately close the dampers using the appropriate pulls.



CAUTION

While the engines are running, the extractors must always be activated. It is suggested to keep them on for at least 30 minutes, after anchoring, to eliminate the residual heat.



CAUTION

Do not lay tools or clothing on the extractors or on the air intakes, the emergency closing mechanism might get clogged.



DANGER

POISONING BY CARBON MONOXIDE

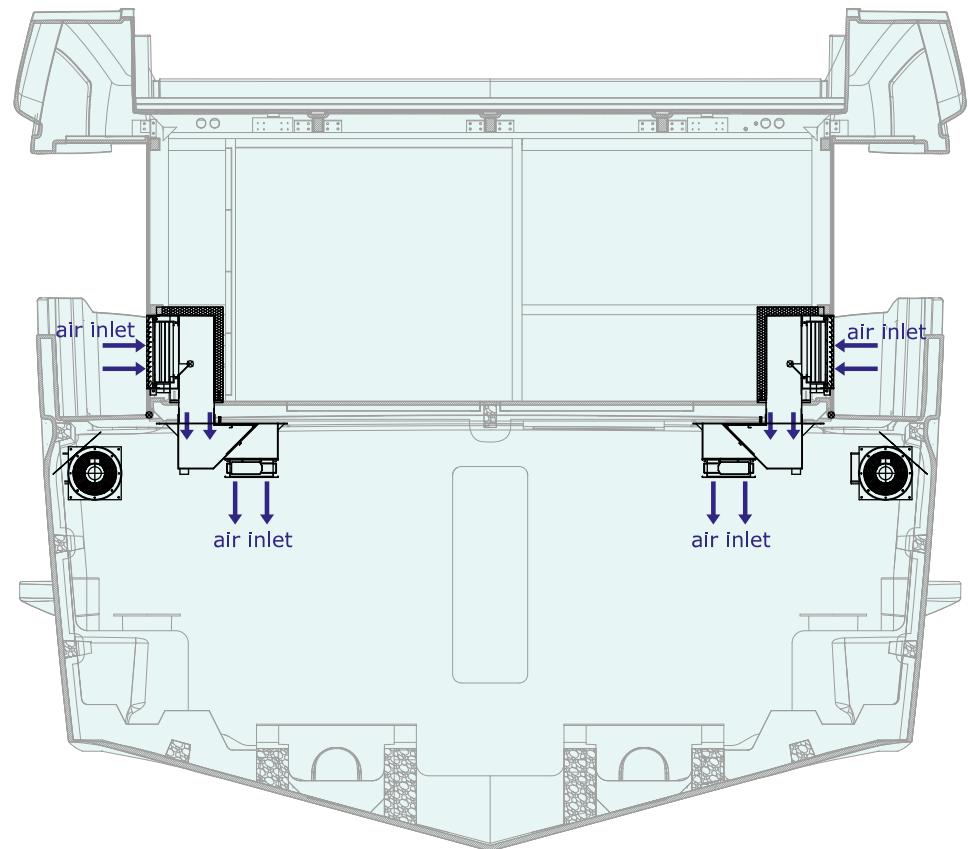
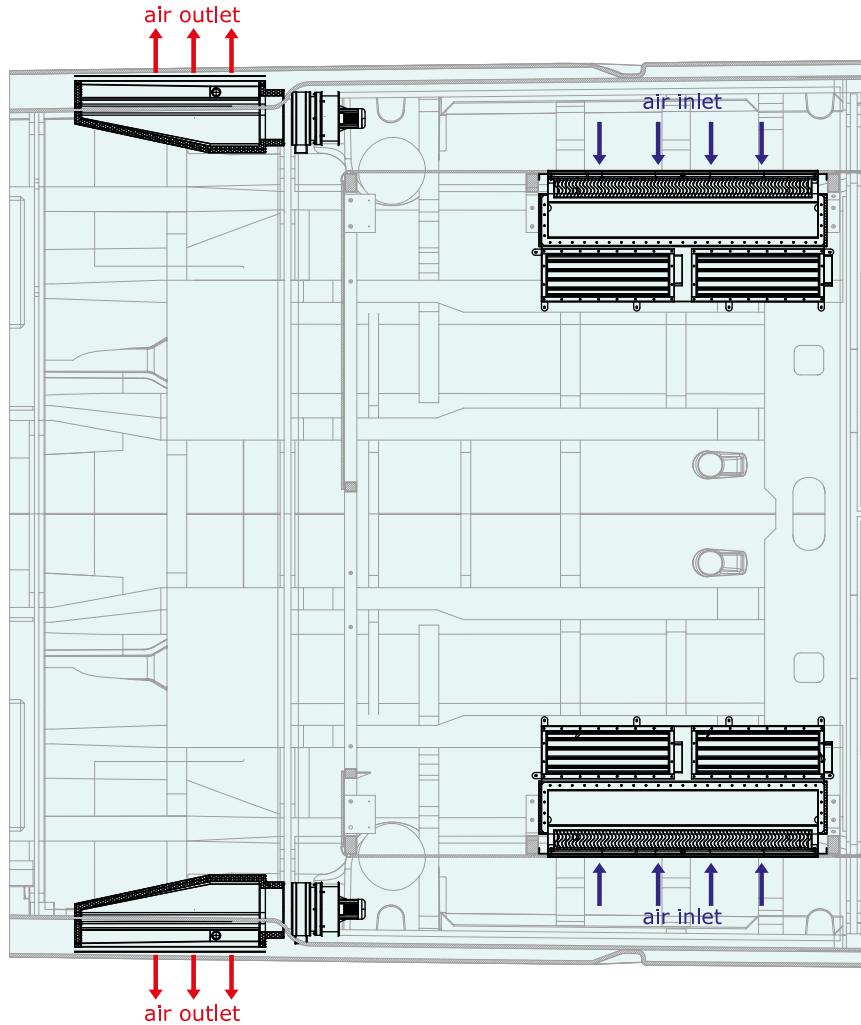
This is a colourless and odourless gas and extremely toxic. Therefore, it is necessary an adequate ventilation yacht when they are switched on the engines or the generator, especially when cruising at low speed or under conditions in which the fumes may fall towards the hull (such as when it is moored at the wharf, or anchored at anchor).

- Make sure the exhaust system of the engine is working properly. Carbon monoxide is extremely toxic.
- The exhaust system eliminates the engine combustion gases and maintains proper ventilation at the stern.
- Frequently Inspect the complete system for leaks. Losses can lead to carbon monoxide exposure.

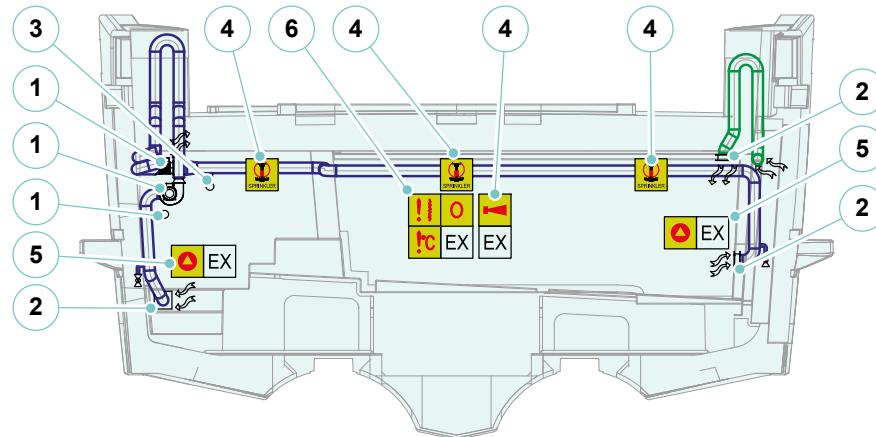
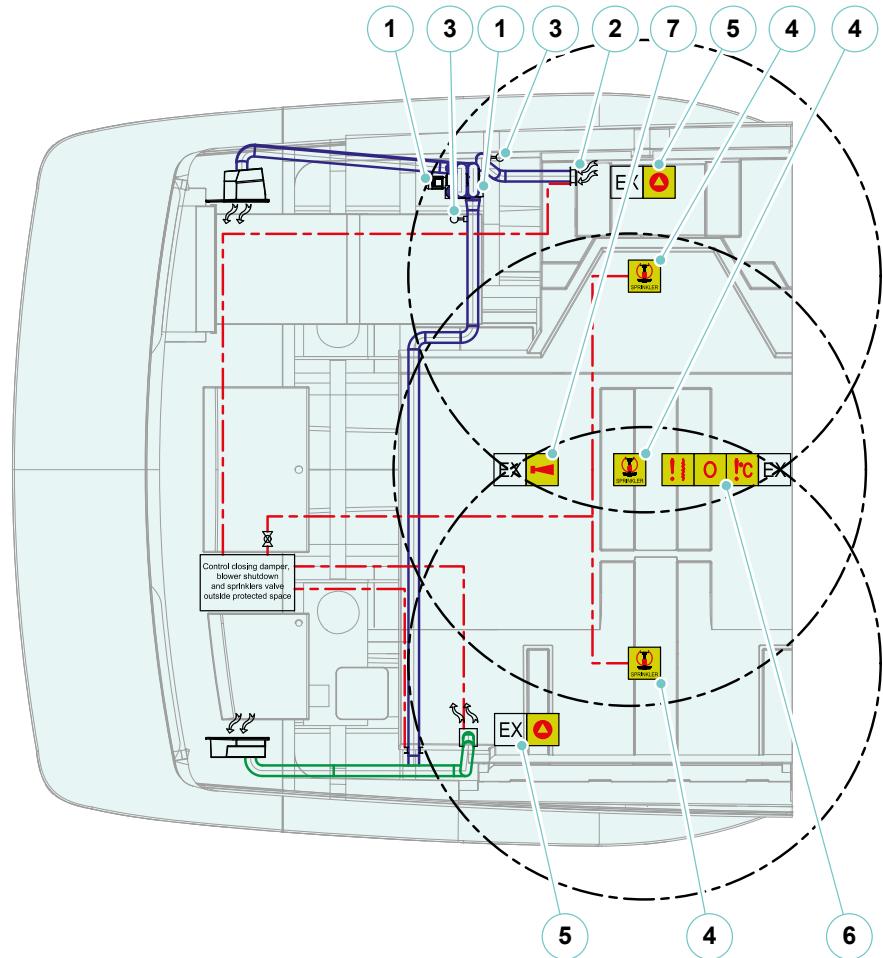


DANGER

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:

Garage ventilation system:



ICONA ICON	DESCRIZIONE DESCRIPTION
1	Ventola estrazione Extractor fan
2	Air shield manuale Manual air shield
3	Trasduttore di flusso d'aria Airflow trasducer
4	Irrigatore Sprinkler
5	Rivelatore di vapori di gasolio Petrol vapor detector
6	Rivelatore di fumo e calore Smoke and heat detector
7	Allarme sonoro Alarm sounder

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AUXILIARY EQUIPMENT ON BOARD

CHAPTER 10

10.1 MOORING AND ANCHORING ARRANGEMENTS

Your yacht is equipped deck instruments necessary for easy and safe mooring.

In addition to the windlass, the mooring equipment is located at the bow, walk-around and stern and consists of cleats, rope bridges and mooring winches:

- Each stern mooring furniture is arranged with two cleats and a mooring winch;
- A cleat is arranged on each side of the walk-around of your yacht;
- At the stern on the beach area there is a retractable cleat on each side of the yacht intended only for the use of a tender or jet ski service mooring;
- In the bow mooring area, four cleats, four rope holder and two anchor winches are arranged.



CAUTION

The mooring at the stern must take place in such a way as to allow for free disembarkation through the gangway.



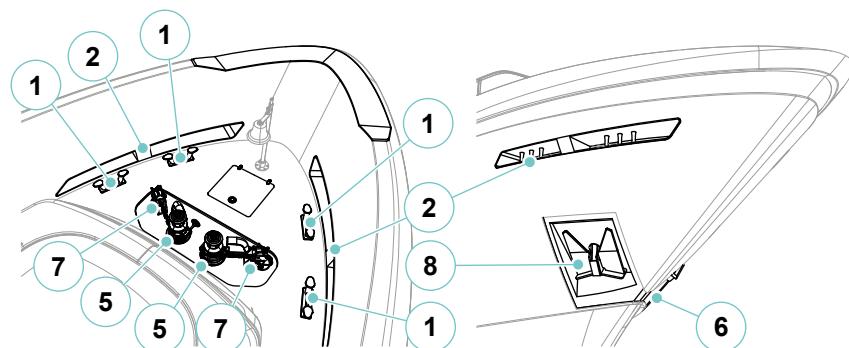
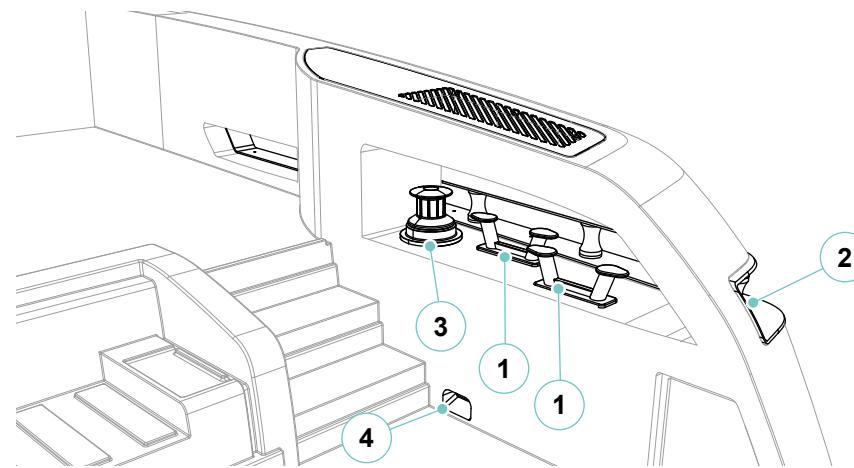
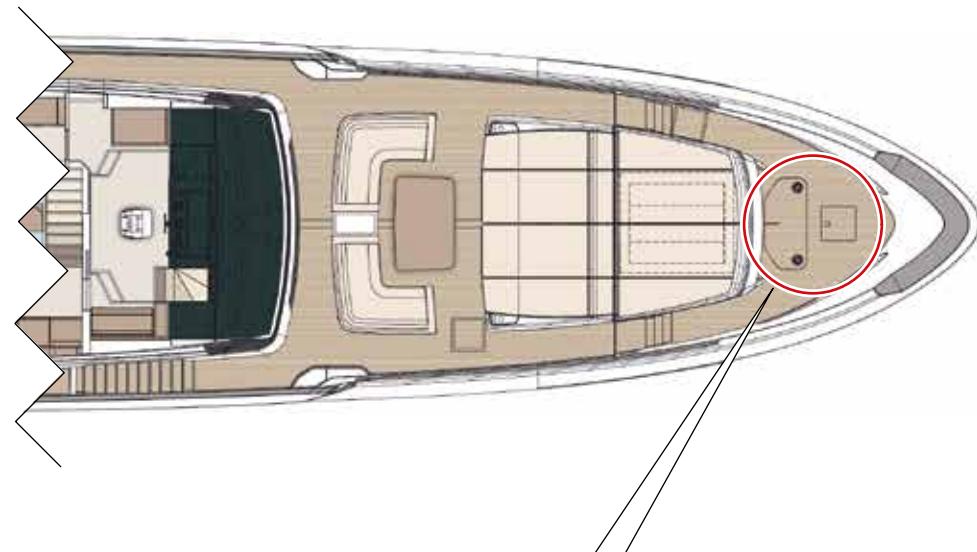
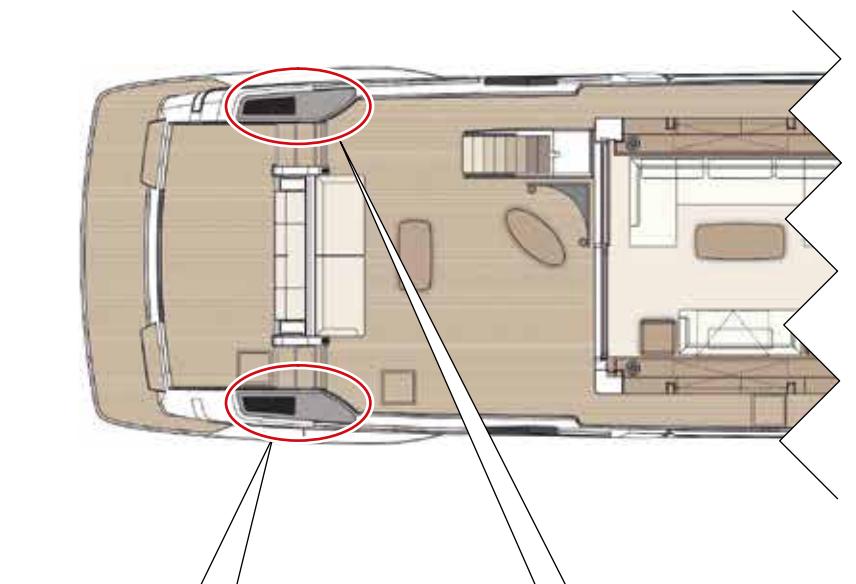
CAUTION

Do not use the stern cleats as permanent mooring points.

They should be used only for the service tender or mooring of watercraft.
Stern cleats cannot be used for towing tenders or chase yachts.

1. Mooring cleat
2. Fairlead
3. Windlass
4. Windlass drive pushbutton panel
5. Anchor winch
6. Hawsehole
7. Anchor chain lock
8. Anchor

Bow and stern mooring:



10.1.1 Anchor winch



The yacht is equipped with two winches that move the anchors housed in the bow.

The anchor chains glide into the yacht through the chain guides and reaches the anchor winches, then winds around the wildcat and glides into the chain pits.

The anchor winches are equipped with control for chain displacement in both directions and with manual brake to lock the chain during mooring.

The winches are equipped with a clutch separating the drive shaft from the wildcat; this allows using it as a warping winch for pulling a line.

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CAUTION

RIVA is exonerated from any responsibility for any accidents or damage to persons or property caused by incorrect use of the device.

Anchor winch activation controls

The winch, positioned in the bow, can be operated via the remote control inside the forepeak.



CAUTION

If you intend to use the anchor, remove the slip lock and the safety anchor lock.



CAUTION

Do not bring body parts or objects near the area where the chain, the line 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

Lock the chain with the appropriate safety lock before leaving for navigation.

**CAUTION**

Do not operate the anchor winch electrically with the lever in the drum housing or in the wildcat cover.

Clutch use

The wildcat is connected to the main shaft by means of the clutch. The clutch opens (disengages) when rotating counterclockwise the lever inserted in the bushing. When rotating clockwise, the clutch will closed (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 radius is technically defined as the ratio between the chain length and the vertical distance from the bow to the sea bottom.

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.

$$\text{Radius} = \frac{\text{Chain length}}{\text{Bow height} + \text{water depth}}$$

As it is necessary to know the length of the chain to be used for mooring.

Chain length = (bow height + water depth) x 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 magneto-thermal 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.

Lock the chain with the appropriate safety lock before leaving for navigation. 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**

Do not use the on board auxiliary equipment for aims or in different ways from those indicated in the manual delivered by the Manufacturer.

Always disconnect the warping winches not in use, to prevent accidental activation.

**DANGER**

Never get too close to moving parts to avoid danger and injury.

**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.

**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.

**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 the anchor winch switch ON, on the main electrical panel;
- When the key-pad is not used, disconnect it to prevent contact oxidation;
- Before operating the anchor winch with the electrical control, ensure that the gypsy clutch is tight and remove the slip lock and the safety anchor lock;
- 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, in order to provide the high current required and reduce the stress by slowly moving the yacht toward 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.

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 on board has been recovered, restore the chain lock 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.

10.1.2 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 because very much exposed to sea salt during navigation specially with choppy sea.

**CAUTION**

The valves that allow the chains to be washed must normally be kept closed.

They must be kept open only during the chain washing stage.

10.1.3 Warping winches

At stern, inside each mooring locker, a warping winch is installed on the side. For their operation it is necessary to wind the line into the barrel and to operate the foot button.

The foot buttons for each winch are located at the base of the relevant mooring locker and can be activated by pressing them with one foot:

- UP: recovers the line;
- DOWN: releases the line.

Near the warping winches are fitted two mooring cleats.

For a safe anchor mooring, the lines used for warping have to be fastened to the proper cleats.

**DANGER**

Do not approach your hands to the sliding area of the mooring rope.

NOTE

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

10.1.4 Warping winches maintenance

Component	Maintenance	Notes and precautions
Reduction motor	Inspection and cleaning	For a correct maintenance and check refer to instruction manual delivered by the Manufacturer.

Reduction motor:



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.

MAINTENANCE

At least once a week:

- Check the operation;
- Wash with fresh water and carry out an accurate cleaning.

At least once every six months grease the terminals of the electric motor.

At least once a year disassemble and check the exposed parts.

10.2 COMPRESSED AIR SYSTEM

In the room below the side garage, the manufacturer has installed a compressed air unit consisting of a compressor unit.

This system supplies with compressed air:

- Horn on the aerials plane;
- Stern mooring air hose connector;
- Bow mooring area air hose connector;
- Bow garage air hose connector;
- Stern garage air hose connector;
- Engine room air hose connector;
- Air hose connector to waste water treatment system (optional);
- Shaft seal air connector (max 3 bar).



CAUTION

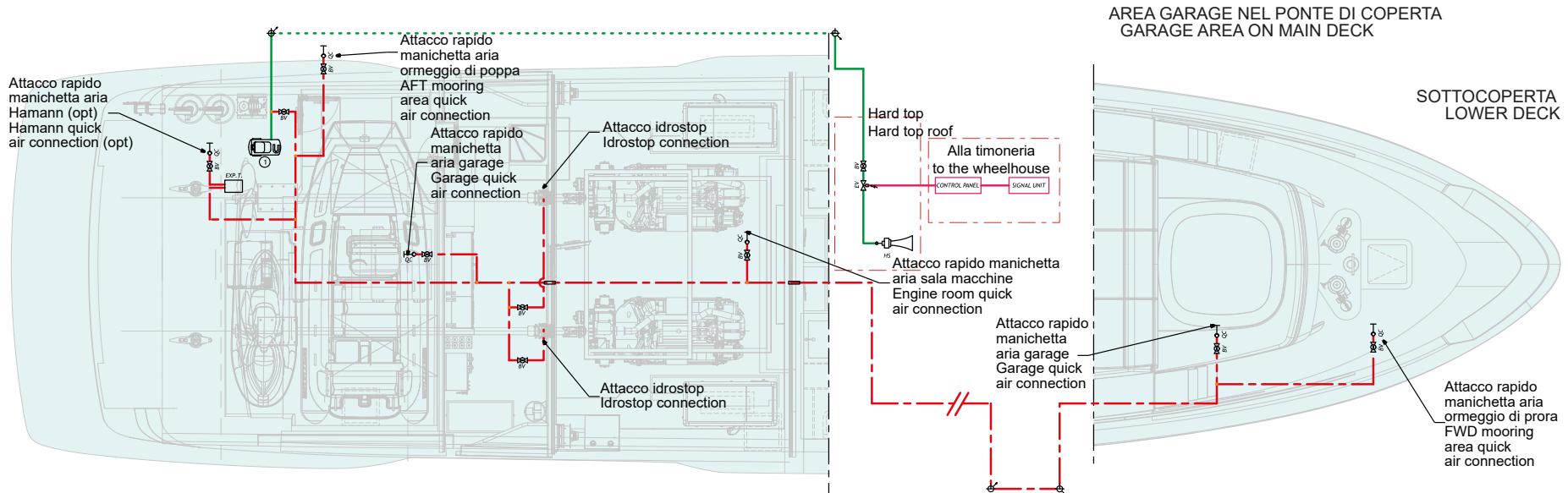
Be very careful when the compressed air use to prevent damage to property and / or people.

NOTE

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



Compressed air system diagram:



ICONA ICON	DESCRIZIONE DESCRIPTION
☒	Valvola a sfera Ball valve
☒ ☐	Elettrovalvola comandata in timoneria Solenoid valve controlled from wheelhouse
○ ☐	Segnale a fischio Horn signal
☒	Compressore Compressor

ICONA ICON	DESCRIZIONE DESCRIPTION
○ -	Attacco rapido Quick connection
—	Passaparafia stagno Watertight bulkhead penetration
□	Accumulatore 6lt Expansion tank 6lt
☒	Al ponte superiore To upper deck

ICONA ICON	DESCRIZIONE DESCRIPTION
☒	Al ponte inferiore To lower deck
—	Tubazione aria compressa tromba Horn compressed air pipe
— -	Tubazione servizi aria compressa (opt) Compressed air pipe service (opt)

10.3 GANGWAY / SWIM LADDER SYSTEM

The system operates via a hydraulic control unit located in the helm machine room.

The gangway / swim ladder (1) is movement assisted for extension/retraction. Once the gangway is fully removed, the free end can be raised or lowered to adjust the trim to dockside height or used with the swim ladder.

The system is powered by pumps that draw oil from the tank and deliver it through the solenoid valve blocks and pipes to the hydraulic pistons operating the gangway. The signal sent by the remote control is picked up by a receiver that transmits it to the hydraulic control unit.

The gangway / swim ladder can be moved using the pushbutton panel (2) located in the main deck aft cockpit.

The functions are to be performed by holding down the respective panel button until the movement is completed.



CAUTION

In order not to jeopardize the gangway of the seals, perform the washing in the box avoiding that water enters under pressure.



CAUTION

The gangway must always be closed during navigation.



**DANGER**

Do not operate the gangway during the passage of people. When using the gangway, exercise due caution and use the rail.

**DANGER**

Do not cruise with the gangway / swim ladder improperly stowed. Ensure that the gangway, garage hatch and swim ladder are properly closed before cruising.

**CAUTION**

The hydraulic gangway, even if easy manoeuvrable, might damage people and things. Its use is recommended only to well experienced people.

**DANGER**

Be careful of moving parts and hands.

MAINTENANCE

At least once a week carry out the washing with fresh water and an accurate cleaning.

At least once a month:

- Check the oil level in the control unit, when necessary top-up;
- Check the possible presence of oil leaks and bleeding;
- Check the operation of the emergency pump;
- Check the possible presence of corrosion;
- Grease the pulley gliding races of the steel cable.

At least once every six months:

- Grease the swivel pins and the gliding sleeves;
- Tighten the locking bolts.

**CAUTION**

Always check for the correct gangway position from the shore. Never jump on the gangway.

**CAUTION**

Position the gangway in such a way that it cannot touch the shore, either because of the normal yacht swinging or of the tide change.

Should the gangway strike against the shore, it could get seriously damaged.

**CAUTION**

Do not use the gangway/swim ladder as a springboard.

**DANGER**

Risk of electric shock from leakage currents. Do not swim in the waters of ports or marinas.

**DANGER**

Under no circumstances use the gangway / swim ladder lowered in water with the engines running. Take care not to approach the interceptor area, as these may be accidentally activated.

**CAUTION**

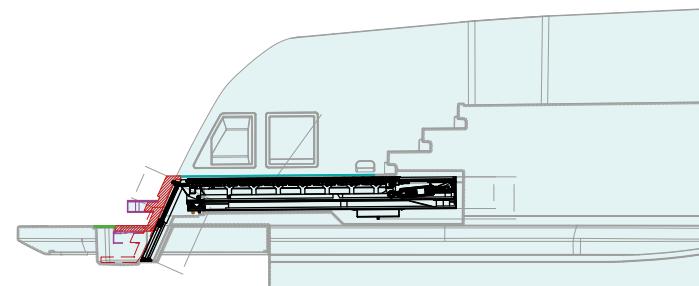
Pay attention because the ladder can be slippery.
Secure the grip before starting the return on board.

NOTE

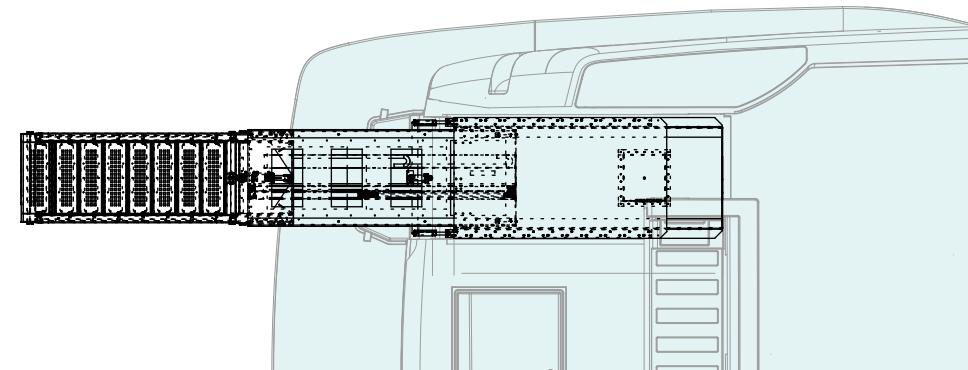
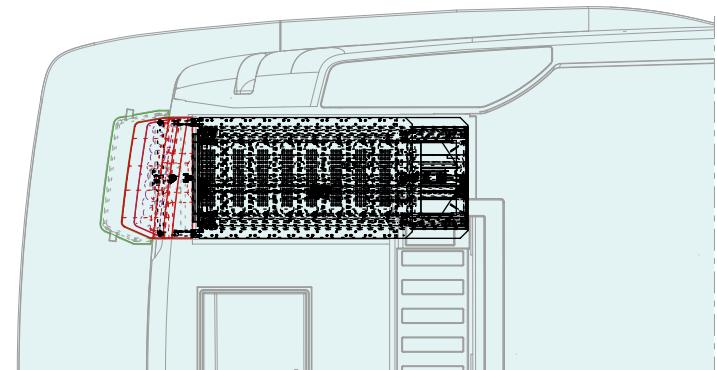
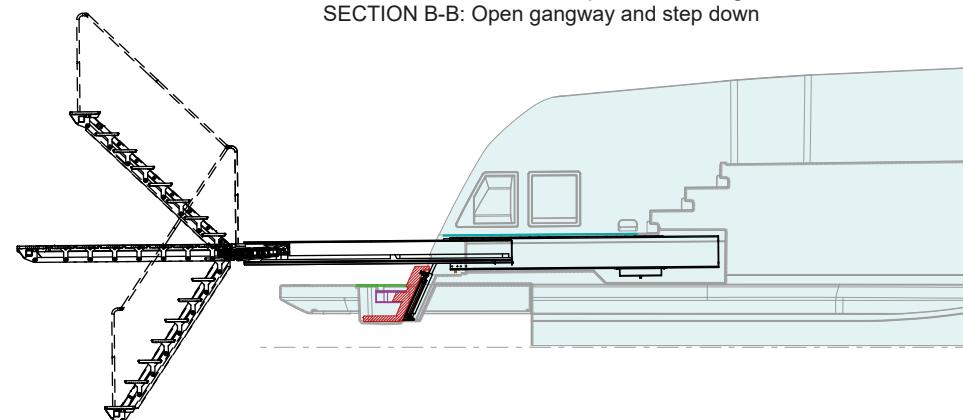
For further information on use and maintenance, please refer to the manufacturer's manual.

Gangway / swim ladder system diagram:

SEZIONE A-A: Passerella chiusa e scalino su
SECTION A-A: Closed gangway and step up



SEZIONE B-B: Passerella aperta e scalino giù
SECTION B-B: Open gangway and step down



10.3.1 Gangway / swim ladder system maintenance

Component	Maintenance	Notes and precautions
Gangway control unit	Oil check and top-up	Check monthly and before each navigation the oil level inside the tank. Top up keeping the oil level at about three-quarters of the tank's capacity, and using the type of oil recommended by the Manufacturer.
Gangway / swim ladder	Outer cleaning Ordinary maintenance	The gangway / swim ladder are uniquely positioned with respect to all other on-board equipment and are in continuous contact with sea water and exhaust gases. The system therefore requires more thorough cleaning.

To keep all our accessories and their parts in good working order, they should be cleaned carefully and thoroughly as often as possible.

For a careful and thorough clearing operation, cover all the steel parts with a layer of paraffin oil. As far as the coated parts are concerned, use a paste/cream. This will prevent the forming of rust stains, that could give the impression the device is built with materials not suitable for its use.



DANGER

Disconnect the power supply during cleaning or maintenance, so that the gangway / swim ladder cannot be moved by any person.



ENVIRONMENT

Do not discharge hydraulic oil in the sea, but in the special areas for toxic waste disposal.

Verify oil level at each beginning and season end, if below minimum level, top up with the oil recommended by the Manufacturer. Verify the correct operation of emergency pump and hand operation of solenoid valves at each season beginning and end.



CAUTION

During assembly and subsequent topping up, ensure there is no infiltration of any slag, shavings, dust, etc.. into the oil tank and therefore also into the hydraulic circuit.



CAUTION

The spares must correspond to the requirements established by the Manufacturer, this is obviously ensured with the use of original spares.

**CAUTION**

The check and maintenance operations must be carried out by skilled technicians, instructed about the control unit operating conditions.

NOTE

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

10.4 SIDE GARAGE HATCH SYSTEM

It is an independent system that works through an electro-hydraulic control unit, essentially constituted by an electric pump, an oil tank and by solenoid valves.

The system is powered by the pump which, by drawing oil from the tank, delivers it through the solenoid valve blocks and pipes to the hydraulic pistons that operate the garage hatch and the flap.

During the activation of the garage hatch (1) it is important to disengage the safety latches by means of the provided control, to allow hatch opening; after closing the hatch, it is possible to engage the safety latches again.



CAUTION

We recommend to carry out the locking/unlocking of the hatch closure from inside the garage, so as to be able to check constantly the correct operating sequence.



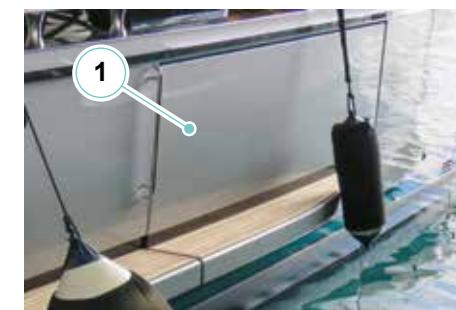
CAUTION

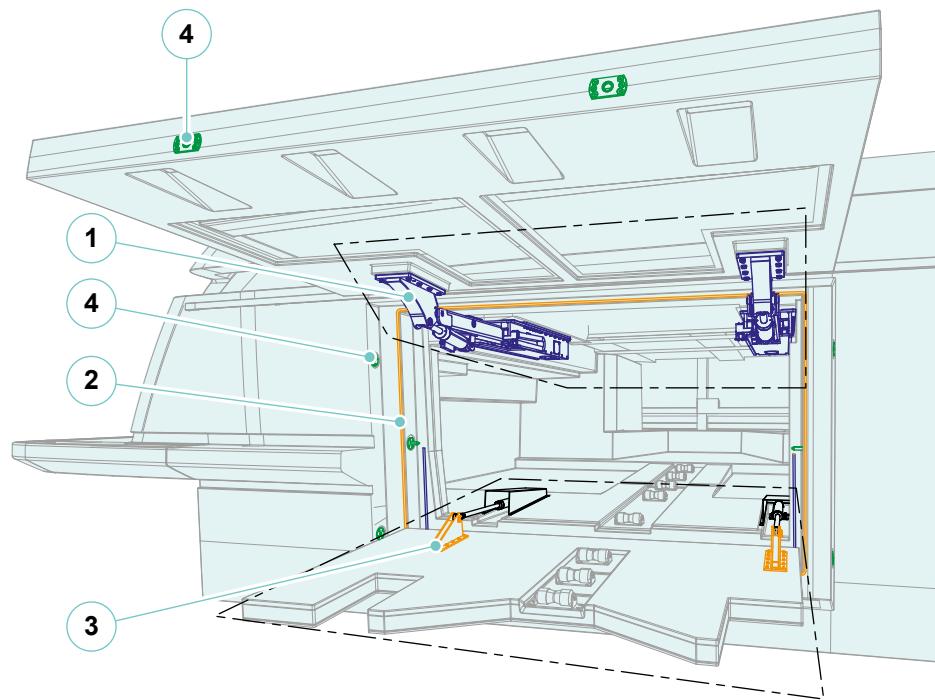
The garage hatch must always be closed during navigation.

In order to launch a tender, it is necessary to first open the garage hatch, then rotate the flap.

In order to be opened, the garage hatch must perform a roto-translational movement towards the outside of the yacht.

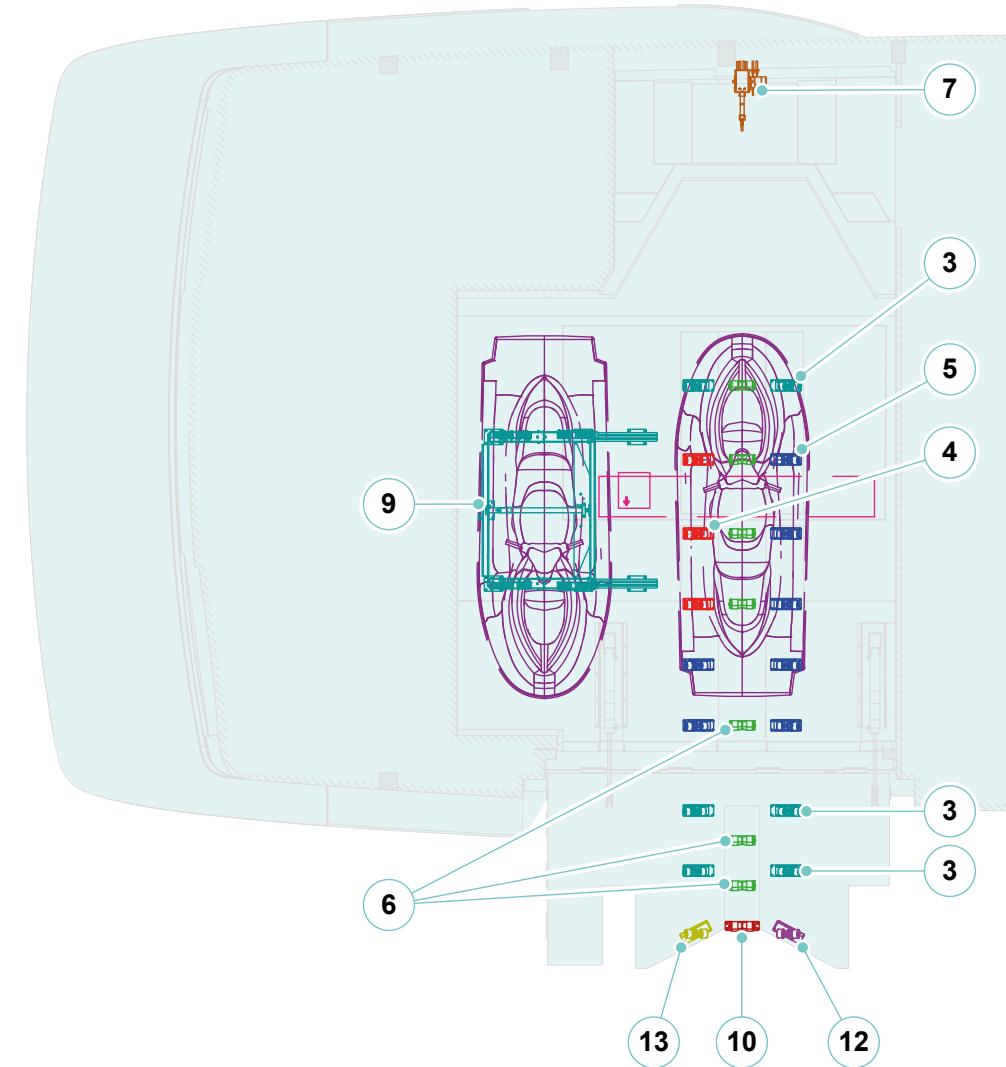
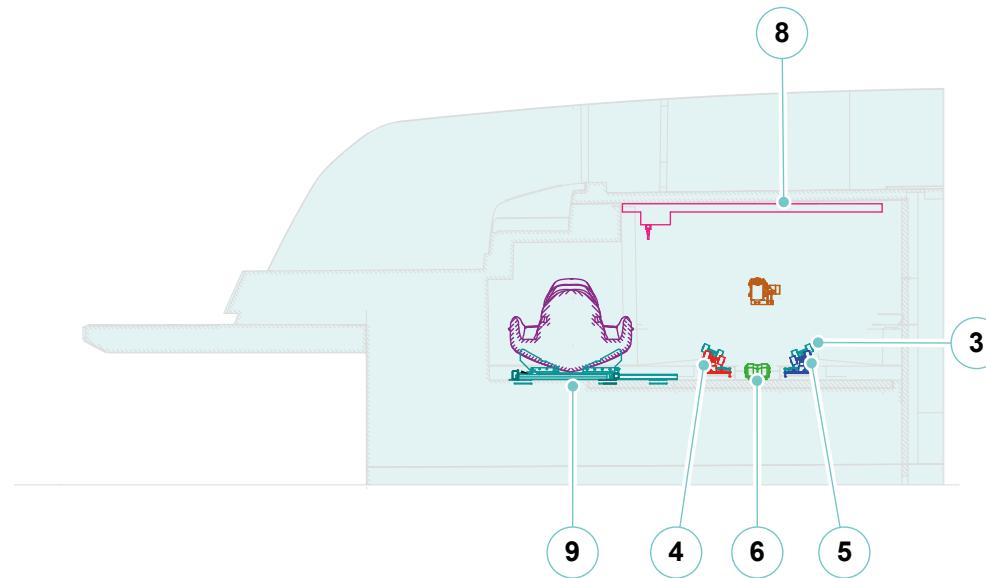
The movement is controlled by a push-button panel (2) located in the control room.

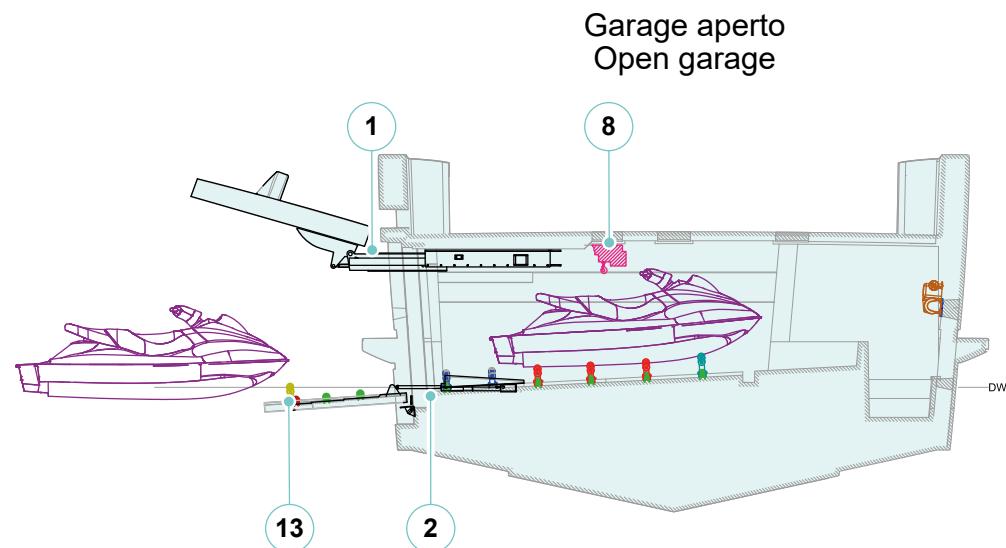




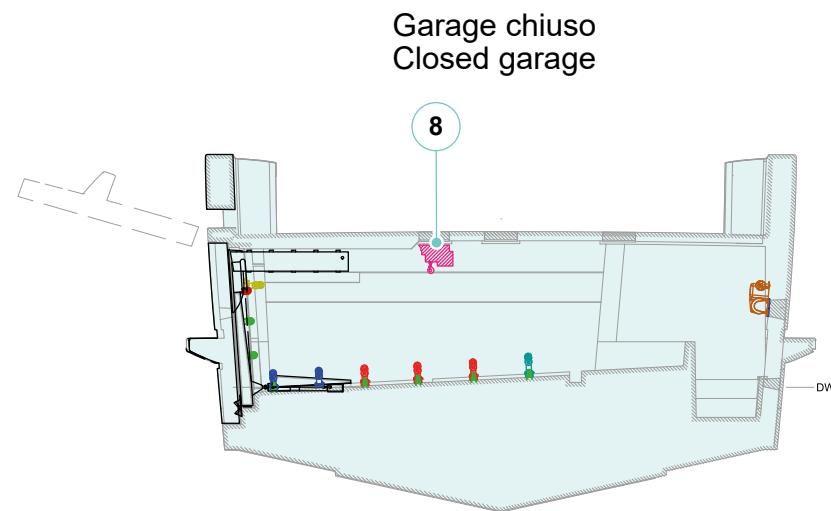
ICONA ICON	DESCRIZIONE DESCRIPTION
1	Movimentazione portello laterale Side hatch movement
2	Guarnizione portello laterale Side hatch gasket
3	Movimentazione ribaltina idraulica garage Hydraulic garage tilt mechanism
4	Castagna rettangolare Rectangular pin

Side garage launch:





Garage aperto
Open garage



Garage chiuso
Closed garage

ICONA ICON	DESCRIZIONE DESCRIPTION
1	Movimentazione portel. later. Side hatch handling
2	Movimentazione ribaltina Tilt handling
3	Rullo varo Launch roller
4	Rullo varo abbattibile Retractable launch roller
5	Rullo varo Launch roller

ICONA ICON	DESCRIZIONE DESCRIPTION
6	Rullo varo ribaltina Tilt launch roller
7	Verricello Winch
8	Gruetta tender Tender crane
9	Slitta idraulica Hydraulic slide
10	Rullo varo ribaltina Tilt launch roller

ICONA ICON	DESCRIZIONE DESCRIPTION
11	Piastre fissaggio verricello Winch mounting plates
12	Rullo varo Launch roller
13	Rullo varo Launch roller

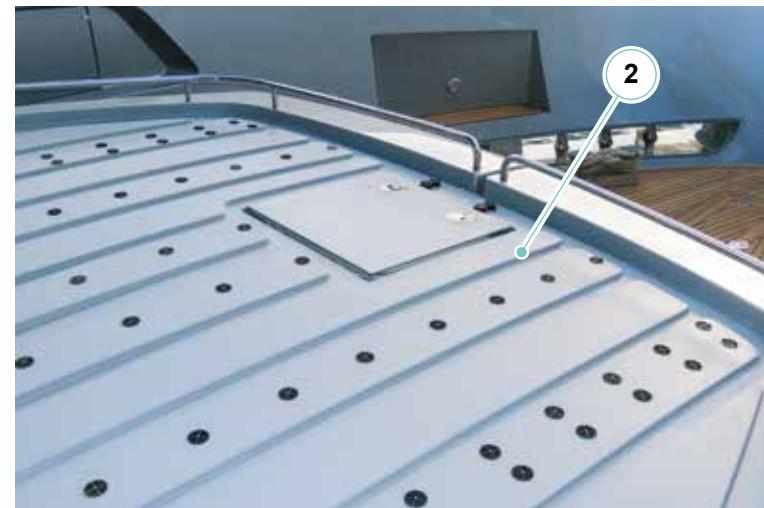
10.5 BOW HATCH AND MINI-POOL SYSTEM

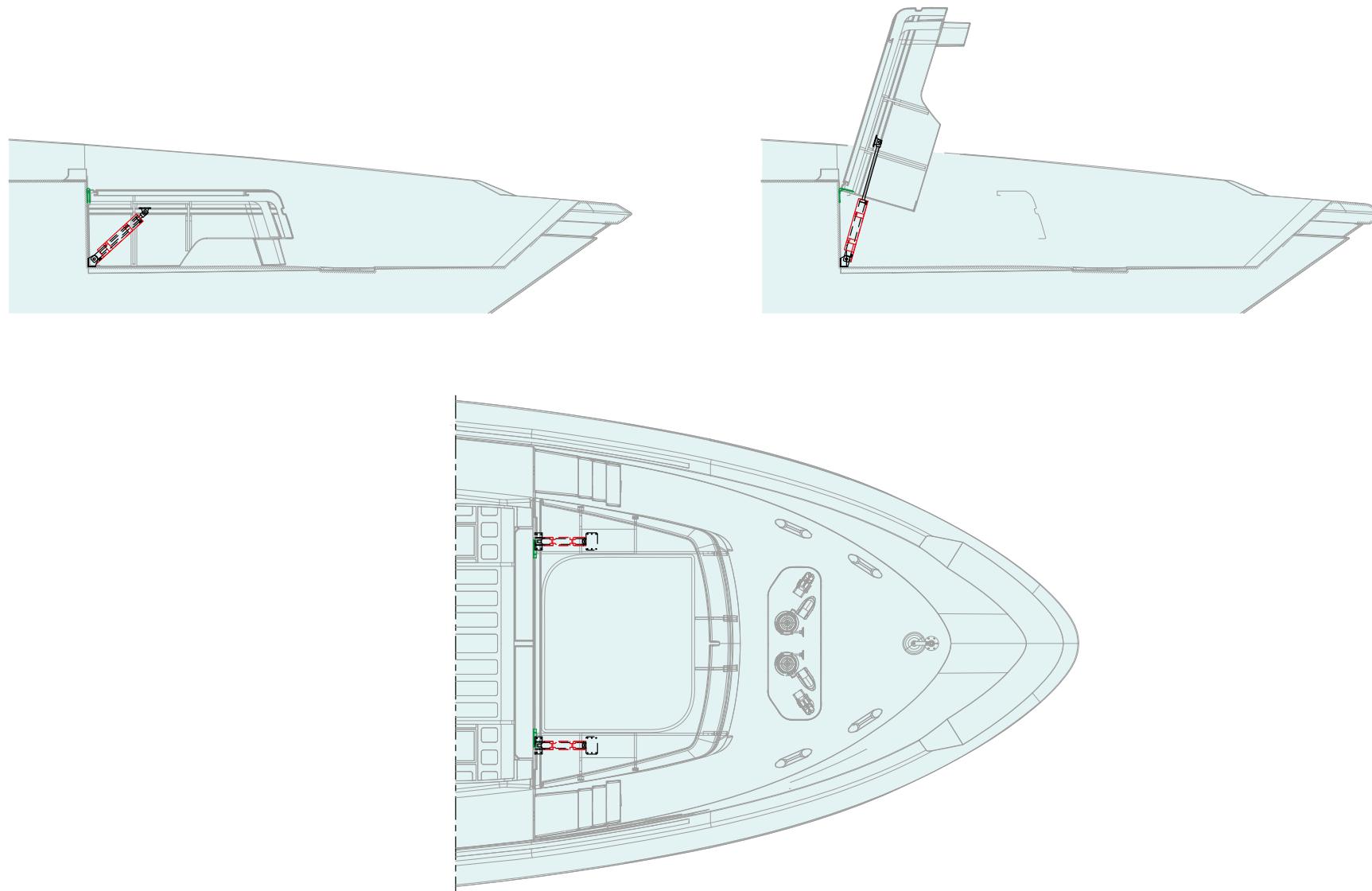
At the bow of the yacht there is a garage hatch (2) to protect the mini-pool (optional).

The movement of the garage is electro-hydraulic and controlled by a push-button panel (1) located on the starboard side of the bow of the yacht.

Through the push-button panel, as well as to move the door, it is possible to manage the lighting of the bow area lights.

The system controls are positioned on the starboard side of the bow.



Bow hatch system diagram:

10.6 WINDSCREEN WIPER SYSTEM

To ensure sufficient visibility in all weather conditions, your yacht is equipped with an efficient windscreen wiper system.

The system allows operation of the windscreen wiper blades by means of mechanical arms and at variable speeds.

The windscreen wiper system is controlled by the on-board monitoring system.

10.6.1 Wiper system maintenance

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 with original spares. If necessary and if the blade rubber results to be deformed or worn out, replace them more frequently
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

With very harsh weather, and with the freezing risk, detach previously the wiping blades from the windscreen surface.



CAUTION

Do not remove foreign bodies activating the blades when the windscreen is dry.

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INFORMATION FOR USE

CHAPTER 11

11.1 GENERAL INFORMATION

This part of the manual describes some basic rules to keep in mind at all times in order to enjoy your yacht safely.

- Make sure that safety equipment is perfectly efficient and available to each passenger.
- 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 compartment, until the fire has been completely extinguished.
- Ventilate the engine compartment before entering. Ventilate the lower deck compartment before entering, if portable extinguishers have been used.
- Oils, used filters, emulsions, coolants and electrolytes are all harmful products: avoid contact with the skin and dispose of them carefully.
- In the engine compartment, be cautious with hot and moving parts.
- Wear hearing protection when entering the engine compartment.
- Do not use open flames and do not smoke, when handling fuel or lubricants.
- Do not scatter fuel in the environment.
- Change the fresh water in the tank frequently and treat with bactericides.
- 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.

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- Before connecting the shore connection, make sure that the switches on the panel in the engine compartment are not activated.
- Before leaving the yacht, turn the battery breakers OFF.
- Handle hot oils carefully, in order to prevent serious burns.
- Do not work on engines or shaft lines without first disabling their start-up.
- 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.
- Do not disconnect the batteries while the propulsion engines are running.
- Do not disconnect the batteries while the generator or propulsion engines are running.



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.

11.2 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 (32°F), 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.

Systems prone to freezing also include freshwater and saltwater cooling systems.

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.

11.2.1 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 (32°F) 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.

Engine cooling systems should be filled with a mixture of 60% water and 40% antifreeze throughout the year to ensure protection against corrosion and freezing down to -27°C (-17°F).

At the beginning of the cold season, the antifreeze content of the coolant must be checked and increased according to the expected outside temperatures.



ENVIRONMENT

Concentrated coolant must be treated as special waste.

When disposing of used coolant, abide by the regulations of the local authority.

NOTE

For information concerning the type of anti-freeze or additive to be used, please refer to the technical documentation supplied by the Manufacturer.



CAUTION

Do not use only water as a cooling liquid, as it is corrosive at the engine operating temperatures and does not protect suitably against boiling and freezing.



CAUTION

We recommend you to use technical liquids approved by the system Manufacturer. Always avoid antifreeze concentration to drop below 40% in volume. Replace the whole cooling liquid according to the schedule indicated by the Manufacturer.

11.2.2 Fuel system

At low temperatures, the fuel forms solidified paraffin suspensions that clog the fuel filters to the point of preventing the regular feeding of the engines.

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.



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.

11.3 PREPARING FOR NAVIGATION

Preliminary checks:

An accurate preliminary preparation is fundamental for a safe navigation. The text below summarizes some important advice to be taken into consideration when setting-up for navigation.

- Gather information on the weather forecast and warnings.
- Consult the navigation charts, and consider particularly the cruise distance, courses, sea bottoms features (low and dangerous).
- Consider the quantity of diesel oil necessary.
- Consider the length of navigation.
- Check the displays of the monitoring system for the possible lighting of the bilge pump lights indicating the presence of water. If they are lit up, press the bilge pump button. If the pump works but no water comes out, it means that the suction inlets are clogged (clean them);
- Check the cleanliness of the seacock strainers. If they are dirty, close the hull valves, remove and clean the traps, carefully reinsert them and reopen the hull valves;



WARNING

Once the hull valves have opened again, make sure that there are no leaks.



WARNING

During navigation, regularly check the cleanliness of the sea water strainer baskets. If the yacht crosses a dirty sea area, check the condition of the traps and clean them. This precaution is very important, to avoid the damage of mechanical parts (like engines, generators, etc.), of the exhausts systems and prevent endangering the yacht safety.

- Check oil level in engines, gear boxes and generators. If necessary, top up.
- Check engines and generators coolant level. If necessary, top up.
- Ensure fuel system separator filters are properly clean. If water is present, drain the filters and replace them if necessary.
- Check the hydraulic oil levels of the gangway, wheelhouse, etc.; top up if necessary;



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 locking of all mobile components located inside the yacht.
- Ensure the load has been distributed evenly, so that the yacht maintains a proper trim.

**CAUTION**

The materials stowed in the storage room can alter the trim, especially the transversal one. Try to arrange load equally and securely, in order to avoid sudden displacements.

- Write the list of the safety equipment.

**WARNING**

The yacht designated captain must make sure that all users are familiar with the location of the current safety systems (fire extinguishers, life raft, life buoys, etc..) And who are aware of how to use them.

**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.

- Check that the life jackets are in good conditions and that they are stored where required and anyway easy to reach (avoid putting obstacles of any kind in front of access hatches).
- Ensure that the collective life rafts are easily accessible and that their mooring and anti-capsize line is in good condition (properly rolled up and not worn out).
- Ensure that the life buoys are stowed in their correct position and fitted with relevant safety rope and that the light buoy battery is charged.

- Check the charge status of the extinguishers. The extinguisher is charged when the pressure gauge indicator is in the green sector.
- Check the operation of the rudders (move steering wheel from end to end, and check their correct operation).
- Check trim tabs operation. If not employed, tabs must be kept in neutral position.
- Check navigation lights and horn operation.
- Check the efficiency of the windlass and the anchor chain safety retainer;
- Check transceivers operation.
- Check documents and nautical charts.
- Check proper closing of portholes and hatches and materials proper arrangement.
- Cast off moorings, ensuring no obstacle can hinder unmooring operations (not aligned cables, chain or anchor log engaged in other yachts moorings, etc.)
- Check that the engine room extractors are operating.
- Ensure no flammable or other improper materials have been stowed in engine room.
- Check that the hull valves are in good working order (valves open);
- Ensure engines and generator fuel circuits are operational (open valves).
- Start the generators and after a few minutes of preheating power on through the control panel;
- Disconnect shore inlets/sockets (electric power, water supply, etc.).
- Connect engines and uses battery breakers.
- Verify the battery charge status on the general electrical panel of the technical room or on the monitoring panels. If necessary, recharge them.
- Connect necessary 24 V uses on electrical panels. Disconnect not connected uses after checking their proper operation.
- Start the engines.

**CAUTION**

The use of side locking systems, such as Cristal or similar ones, is not allowed during navigation.

**CAUTION**

The removable awnings and related support poles must always be dismantled and stored in the appropriate seats before starting navigation. When not in use, the poles must be stored in the appropriate seats. Awnings should only be installed when the yacht is stationary and with favourable weather and sea conditions.

Do not leave the awnings open in the event of heavy rain.

Do not leave the awnings installed on an unattended yacht.

Do not let water pool on the fabric of the awnings.

When not using the awnings, keep the pole engagement holes closed with the appropriate covers.

11.3.1 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 underway;
- A sudden change in wind direction or speed, or an increase in wave height indicates deteriorating weather;
- 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, determine your position, set a safe course, slow down and alert other yachts of your presence with a sound signal.

11.4 FIRST PERIOD OF USE

During the first period of yacht operation, beyond the normal maintenance operations indicated in this Manual, we recommend 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 allow a correct run-in of all systems and on-board components.



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, although in any case, they play an important role for the safeguarding and reliability of the yacht and navigation safety.

- 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.
- Before the engines start, check the correct tension of the v-belts.
- Check the possible presence of unusual 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, generators, gear boxes).
- Through the indicators on the electrical panel in the helm station, check the correct level of charge of the service and engine starter batteries.

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The engine alternators must also properly charge the batteries;

- Verify the efficiency of the rudders (by often checking the tiller angle) and of the interceptors.
- Before and after navigation, check the correct oil level in the rudder systems, hydraulic gangway, operating propeller, etc.;
- After the generator to start, wait several minutes before loading it. Bring it slowly to maximum performance monitoring its correct operation.
- Check the correct load level of all extinguishers (fixed and portable ones) installed on board.
- 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.

11.4.1 Engine drive

Although this yacht is very efficient, due particularly to very sensitive rudders, which allow immediate reaction to controls, its use, considering its high performance and big dimensions, requires a careful and responsible steering.



CAUTION

Even if the automatic pilot controls the route, navigation must be supervised in any case. Adjust the speed of the yacht and the interceptors' position according to the conditions of the sea and the prevalent direction of the waves; in this way, the structure of the yacht is not submitted to useless stress and the passengers can enjoy more comfort during navigation.

The excellent quality of the engines allows keeping the maximum speed ratio for a long time, without problems.

In order to achieve the best compromise between comfort and speed, while minimising consumption, it is recommended to keep the engine speed in the range between 1500 and 2000 rpm less than the maximum permitted revolutions.



CAUTION

During navigation, the lateral sliding door should normally be kept closed, in order to prevent any exhaust gas and water splash from entering deck compartments. This will improve comfort for the passengers and silence inside the compartments.

Avoid keeping the engines at idle speed for long time, they could get overheated.

Once the yacht has reached the cruise speed, engine control devices should settle on steady values. If the instruments show contrasting or abnormal indications during continuous running, check the systems and the equipment.

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.

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- 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 interceptors' position for the best performance.
- 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 specialized technician check the alignment of the propeller shafts.
- Perform a visual inspection of 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.

11.5 REFUELING

Refuel as follows:

- Ensure the ship is properly moored, stop engines and generators, if running;
- Unscrew the cap of the filling nozzle and make sure that the refuelling pump is of suitable size, then insert the pump held still. The fuel filler is positioned inside a special locker on each side walkway of the ship;
- Do not top up the tanks at highest level, so as to allow the fuel to expand without spilling out from vents;
- During the refuelling phase, check that there are no accidental diesel spills/leaks due to air pockets and foam. In the final stage of refuelling (at about two thirds of capacity), it is advisable to pause frequently to allow any foam to dissolve;
- Screw the cap of the filler pipe and wipe any fuel drips on the hull and teak.



CAUTION

Refuelling should be performed in the harbour, in order to allow fuel to cool down, without to condensate. After each refuelling, empty the tanks. Before refuelling, wash the teak with fresh water to avoid its contamination with fuel.



CAUTION

During the refuelling operation ensure that vents are free and open inlet plug on the bulkhead opposite to the one in use, to avoid fuel spills. We also advise to wash the area around the plug with fresh water.



ENVIRONMENT

Do not scatter fuel in the environment but dispose of it in the dedicated areas.



ENVIRONMENT

Dispose of fuel-contaminated polluting waste according to the rules in force.



DANGER

Fuel leak can cause a fire to break. Check periodically the integrity of your system.



WARNING

The inlet plug carries the indication "DIESEL" to avoid accidental input of different liquids.

Line pressure must always remain below 0.3 bar during diesel embarkation.



CAUTION

Explosion/fire/pollution hazard

Fuel system connections that are too loose or too tight can leak, resulting in fuel loss, environmental pollution and explosion/fire danger.

**CAUTION****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.

11.6 WATER SUPPLY

Proceed as follows to refuel the fresh water tank:

- Ensure the ship is properly moored.
- Loosen the filling nozzle and insert the hose, which must have suitable dimensions;
- The water supply ports are located along the ship's walkways;
- At the end of filling, remove the hose and tighten the filler plug or close the tap.



WARNING

The inlet plug carries the indication "WATER" to avoid accidental input of different liquids.



CAUTION

Frequently change the water in the fresh water tank and disinfect it with suitable products if necessary. Avoid leaving the tanks completely full if there is a risk of freezing. When refilling, do not leave the yacht unattended.



CAUTION

Before refilling the fresh water tank, check that the water coming from the shore system is drinkable.



CAUTION

To avoid damage to the system and the tanks, it is advisable to use gravity refuelling rather than pressure refuelling.

11.7 SHORE CONNECTIONS

11.7.1 Water connection

To avoid using fresh water from the tank, the yacht may be connected to an external water system using the intake located on the aft starboard side.

By connecting to this socket, all the utilities on the yacht are powered without having to use the freshwater autoclave pumps located under the crew galley.



CAUTION

The piping must be disconnected during the periods the yacht is unattended.



CAUTION

Do not modify the ground power cable connectors; only use compatible connectors. If the yacht's power cable cannot be inserted into the shore charging point, ask the Harbour Master for an adapter.



DANGER

When plugged in, check that the cable:

- Cannot go in traction due to tide variations, yacht movements, etc.;
- Cannot be damaged by crushing it, etc.

11.8 MOORING AND UNMOORING



CAUTION

Before the unmooring operation, ensure that engines, gear boxes, rudders and bow/stern thrusters are in good working order. During such manoeuvres, the Captain should prevent any unpleasant noise, and/or wake that might bother other people. Before starting this manoeuvre, make sure that doors, hatches, swim ladder, etc. are closed.



CAUTION

The rudder wheels 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 persons on board, do not interfere with the operations and that they stay in safe places, where they cannot get hurt.

The yacht is equipped with very powerful engines, with high-performance rudders and with very efficient thrusters.

Those latter have to be used at very low speed, or without fresh way; at higher speeds, it is possible to obtain a more correct reaction by using the engine throttles in an off-set way.

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The ability to exploit such qualities depends on the “familiarity” the Captain has with his yacht. Practice is the only way to acquire confidence, and finally you will be able to safely perform mooring and unmooring manoeuvres even in very difficult or crowded areas.

A basic rule, that should always be applied, is to 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 in place and well secured (in the event of wind or undertow, equip the crew with fenders to avoid damage);
- That there are no floating objects or loosen ropes which can damage the propellers.

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.

11.8.1 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 casting off the moorings, disconnect the electrical cables and the pipes connecting to the shore.

11.8.2 Mooring manoeuvre

Before setting back for the harbour, stop in free waters and test the gear boxes and the bow/stern thrusters. Besides 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 at shore;
- Check that on the main electrical panel, all necessary uses are supplied (anchor winch, bow/stern thrusters, etc..). Disconnect unnecessary uses;
- That the interceptors are in a raised position;
- That the yacht hook is easily accessible and does not hinder any passage;
- The operation of audible and visual warning devices;
- 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 mooring ropes and fenders are correctly arranged.

If necessary, raise the interceptors and reduce the 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.

11.8.3 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 that the yacht 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 harbour manager of the arrangement of the on-board fire-extinguishing system and the activation of the fire-extinguishing control.



CAUTION

Disconnect all pumps of the yacht.

11.9 OPERATION AND PRECAUTIONS DURING NAVIGATION

During navigation, carry out constantly following checks:

Continually:

- Keep constantly an eye on the parameters indicated by the instruments and verify the absence of alarms.
- Check the values of the ammeters of the engines drives.

Every hour:

- Check that the magneto-thermal protections on the electrical panels have not been triggered.

Every 2 hours:

- By opening the access hatch of the engine room, check for the bilge condition, the presence of unusual noises, the possible presence of smoke or steams.

Every 4 hours:

- Check the condition of the bilge at bow.
- Check all cabins, bathrooms and the closure of portholes and skylights.

11.9.1 Shallow water navigation



DANGER

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.



CAUTION

Constantly check depth and sea bottom shape with the aid of nautical charts and on-board instruments.

11.9.2 Navigation at night

During night navigation, always switch on navigation lights. The same recommendations apply to preparation and checks during navigation as for daytime navigation.



CAUTION

At night, the good sight of the crew can be particularly advantageous. Getting used to darkness requires several minutes, during which the ability to see is strongly hindered.

We recommend absolutely not to navigate at night at high speeds, to avoid hitting against unexpected obstacles (floating or half-submerged bodies).

11.10 NAVIGATION IN SPECIAL CONDITIONS

11.10.1 Navigation with bad weather conditions

Your 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.



WARNING

RINA 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.

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	



DANGER

Manoeuvrability is at high speeds considerably reduced, so speed should be decreased before making sharp turns in either direction to avoid losing control of the yacht.

11.10.2 Navigation with only one engine

Your 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.

Therefore we suggest You to:

- 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 trim tab on the side of the failed system, or reduce the speed;
- Proceed as described in the chapter "Seawater system" to operate the 3-way engine/inverter valve and optimise inverter cooling;
- 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 constantly an 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 also some parts of the gear box are kept rotating.

Should the temperature increase excessively over 80 °C, 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

Your ship has been designed to navigate driven by two engines; please remember 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 if the life of the persons embarked and the safety of the yacht is in danger. However, the engine running must not run at more than 1000 rpm.

11.11 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 normal position, ensure the sea water suction for engine cooling, through the sea cocks and the sea water strainers.

In case of emergency, use the handwheels of both valves, taking them to the emergency position; the suction of the pumps, driven by the engines, is now directly 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

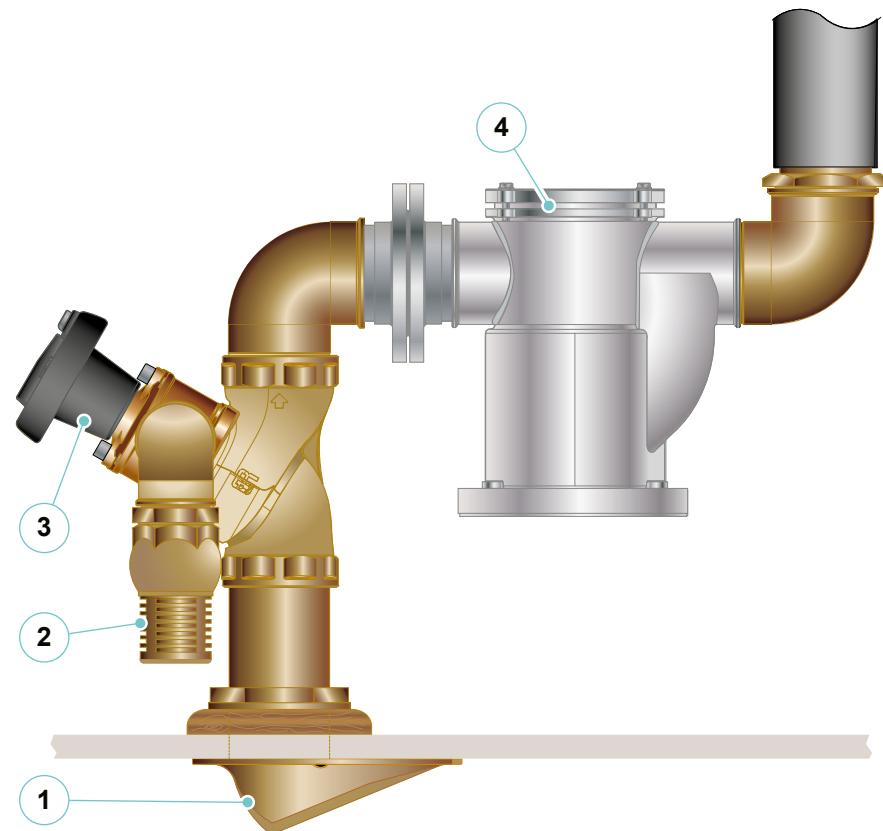
In case of emergency it is possible to suck the water from the bilge through the sea water pumps of each engine.

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.



Operating diagram:

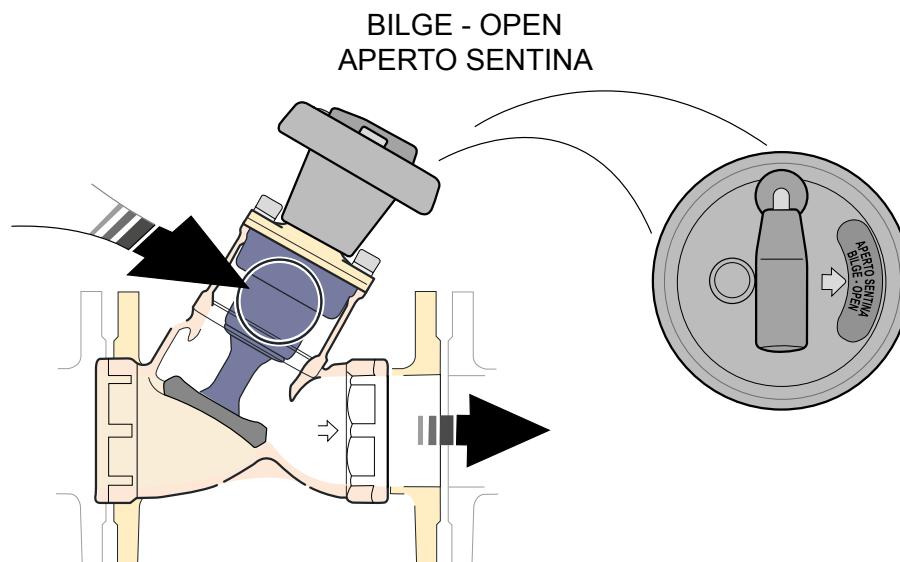
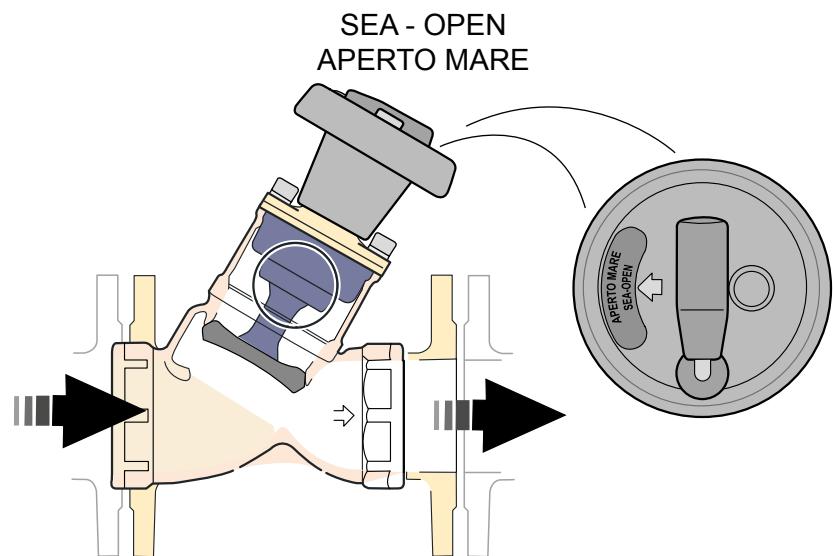
All valves are provided in the SEA-OPEN position.

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 valves can be installed both in a vertical or horizontal position (in the flanged version using the special seals available on request) maintaining the handwheel facing the operator.

The handwheel is provided with a position indicator to simplify its use.

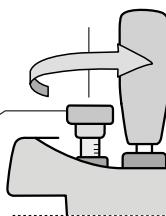


To enable water inlet from **SENTINA / BILGE**, proceed as follows:

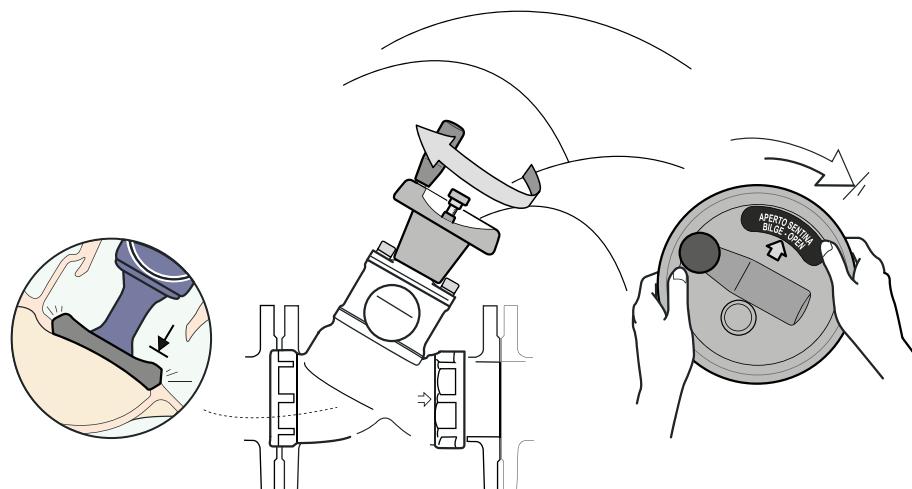
Sollevare la leva del volantino
Raise the handwheel lever



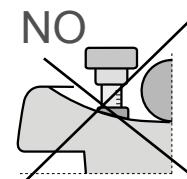
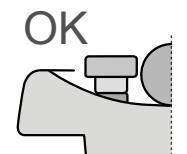
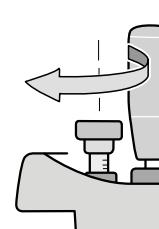
Svitare il perno sino al suo arresto
Unscrew pin until it stops



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.



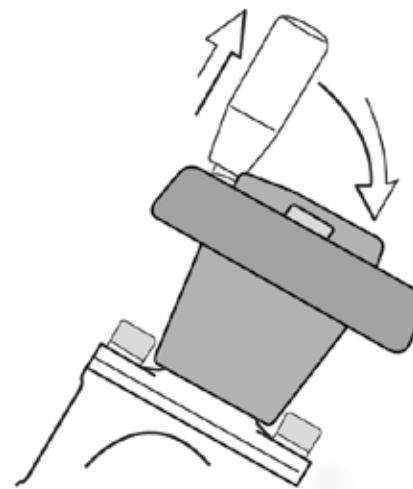
CAUTION

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.



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 the indicator is set to **SEA-OPEN** (first operate the handwheel anticlockwise).
- 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.

11.12 TOWING THE YACHT

The size of the yacht does not allow its transportation by land, therefore, in case of need will have to be towed by a yacht authorized to do so.

In the case of towing or trailer, the peaks must be fixed as shown in the figure to share the effort and centre the shot.

It is good practice, after giving time to the cleats, take the top, giving time to the winch: in this way you will have the advantage of greater strength points. The length of the towing cable must be determined according to sea conditions, so as to amortize the throw without damaging the mooring arrangements.



DANGER

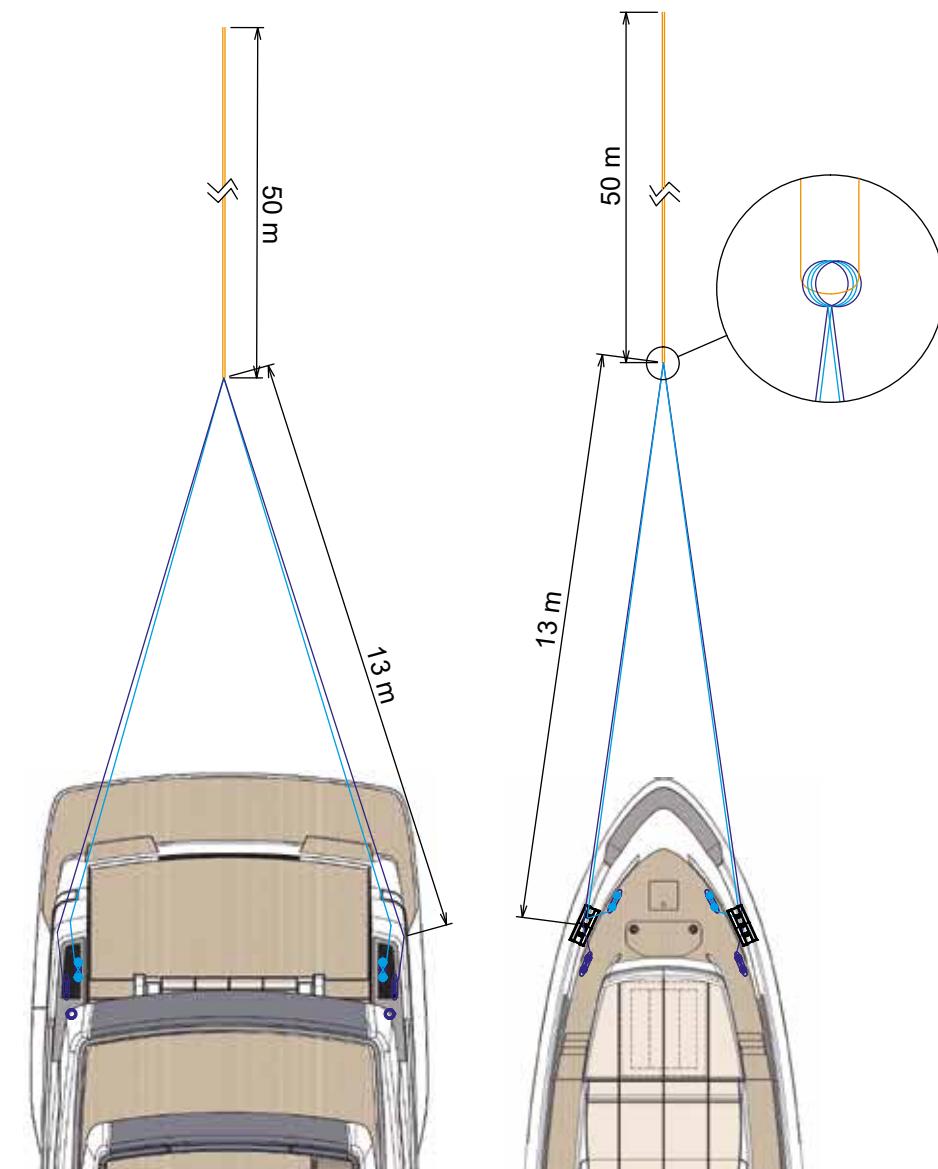
Do not approach and do not carry out any kind of intervention on transmission during the towing because propeller can turn.

Precautions before starting towing:

- Close all the sea valves to avoid accidental water entry;
- Lock the propeller shafts to prevent damage to the gearboxes;
- Maximum towing speed: 5 knots;
- The following procedure applies to calm sea and good weather conditions.

Procedure:

1. Use 2x15m mooring ropes as primary emergency towing arrangement.
 - Prepare both ropes with a bowline knot at one end.
 - Pass the ropes through the roller and fix them on the FWD cleats on the fore deck.
2. Use 2x24m mooring ropes as secondary emergency towing arrangement;
 - Prepare both ropes as above and fix them on the AFT cleat on the fore deck.



- Adjust the length of the rope to be similar to the primary towing arrangement.

3. Use the orange towing rope to connect to the towing yacht.

- Double the rope by passing through the bowline knots.

**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.

If temperature exceeds 80°C, stop navigation and wait until temperature lowers.

When the engine is shut off, the control handle position is unimportant.

**CAUTION**

Always draw other yachts or let your yacht be towed at low speed. Never exceed the speed of the drawing yacht when you are being towed.

**CAUTION**

Fasten your yacht to a towing rope so that it can be released when loaded.

**CAUTION**

It is the Owner's/the operators' responsibility to make sure that the mooring ropes, the towing ropes, the anchor chain(s), the anchor lines and the anchor(s) are suitable for the intended use of the yacht, i.e. the resistance of the ropes or chains must not exceed 80% of the resistance to breaking of the relevant strength point.

The Owner should also determine which action is necessary when fastening a towing rope on board.

**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.).

11.13 YACHT STEERING RULES

Ship in sight

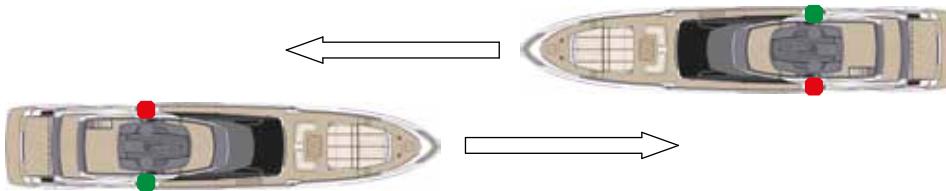
We consider three ways of sighting of another yacht at sea:

- Encounter, cross and getting ahead

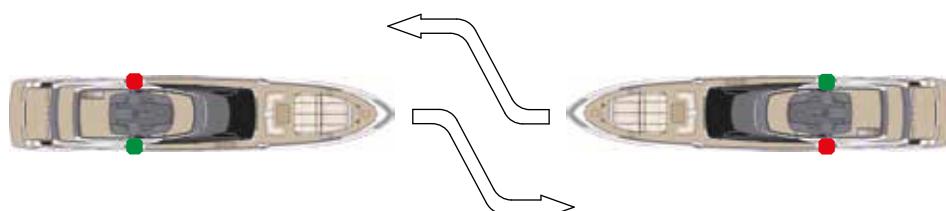
Generally, the yacht with limited ability to manoeuvre has the right of course. We leave free the course and to pass it to stern. The yacht that has right of course is called privileged yacht. It can maintain its speed and course. The ship penalized is that must adjust their speed and/or course to maintain the due distance from the privileged ship.

Encounter

When you meet another yacht that goes in the direction parallel, both yachts must adjust their speed and course.



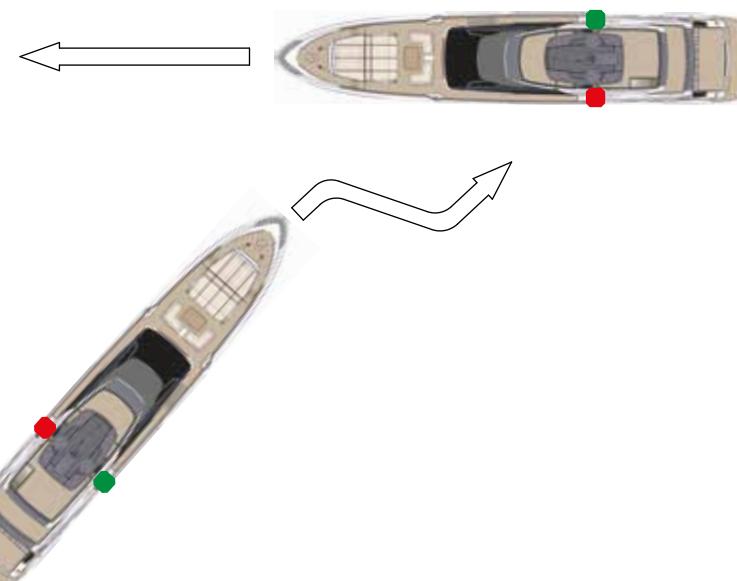
When two mechanical thrust yachts are meeting on intersecting or nearly intersecting courses such as to give rise to the risk of collision, each one must change its course to starboard so that each one passes on the left of the other.



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Crossing

When two mechanical thrust yachts are crossing, creating a risk of collision, the one that has the other yacht at its starboard must move away and, if the circumstances so permit, avoid passing on the bow of the other yacht.

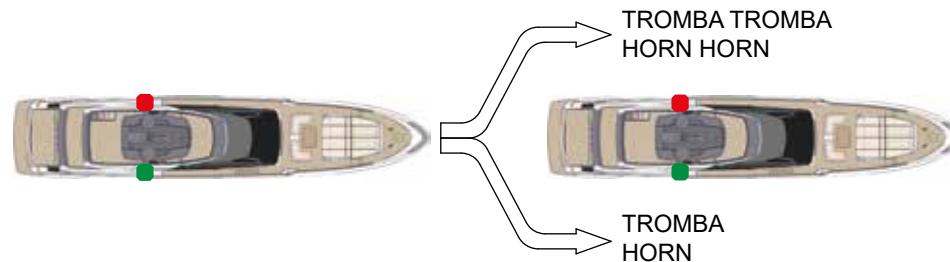


Overtaking

Overtaking is defined as when a ship coming from a direction of more than 22.5 degrees at stern compared to the yacht that it plans to overtake, such that it can only see the light of the yacht stern but neither of the two side lights.

If you find yourself having to pass a yacht proceeding more slowly than you and that is on your course, your yacht is the one penalized. Make all the necessary adjustments to avoid the collision and pass to the bow or starboard. Announce your intentions by sounding the horn twice if you intend to pass on the bow, and one time if you intend to pass at starboard. The yacht that is reached by another yacht takes precedence over the latter and therefore must maintain the same course and the same speed without laying or manoeuvring.

The yacht that has the bow within a 135° angle (formed by the yacht stern light) is considered the yacht that can be reached.

**CAUTION**

Having the right of course does not relieve you from the responsibility of avoiding a collision.

**CAUTION**

Yachts with limited ability to manoeuvre usually have the right of course. In the event of an imminent collision, prudence has priority over right of course.

11.14 HAULAGE AND LAUNCH

**CAUTION**

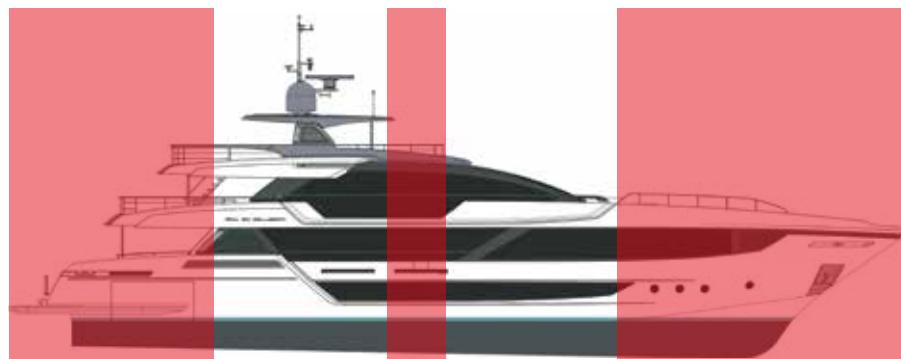
The lifting method depends on the type of lifting equipment adopted therefore it cannot be suggested.

**CAUTION**

Before haulage and launching check: that nobody or unexpected material is on board and that materials are properly rigged and locked.

**WARNING**

Hauling and launching operations have to be carried out only by qualified personnel and in special shipyards and under their direct responsibility. RIVA declines any responsibility for damages to things or persons caused by the wrong performance of hereunder listed operations.

**CAUTION**

Never place the lifting straps in the areas highlighted on the drawing.

- Lifting equipment must be in a good condition. The towing bands must not be deteriorated and, if possible, must be covered with adequate protection so as not to damage the hull and the anti-fouling system of the hull.

- The travel lift capacity must be greater than the yacht weight.
- Test the stability of the system, before lifting the yacht, the yacht gravity centre depends on the load and its displacement.
- On shore the yacht must be placed on a structure with at least 20 support points (10 keel + 10 lateral) of sufficient width and size as to evenly distribute the yacht's weight.
- The hull inclination must be as "natural" as possible, e.g. it must be parallel to the waterline and not to the keel. This to prevent that liquids on board keep a normal level and that rainwater can be drained naturally.

**CAUTION**

Do not put the lifting straps in way of intakes, of sea discharge 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 each time be carefully evaluated, in order to prevent any damage to the yacht.

**CAUTION**

RIVA declines all 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.

Cradles (Optional on request).

RIVA is capable of providing the cradles for a correct support of the yacht (optional on demand). RIVA is not responsible for any damage resulting from the use of cradles different from those expressly produced by RIVA.

Propping

It is a common procedure to use supporting props if no actual storage capacities are available. It is very important to take some basic precautions while positioning the supporting props for the yacht in order to prevent age to the hull structures, accidental falls of the yacht or injury to the involved personnel. The following list contains useful advice.

We also recommend always having propping operations carried out by experienced personnel.

- Use suitably strong and stable struts (each keel strut must support at least 1/10 of the total yacht load);
- Use correctly dimensioned supporting plates to prevent negative weight concentrations.
- Place the props preferably next to transversal structural reinforcements (stringers);
- Locate the props along the supporting fins of the hull;
- Always place at least 10 struts along the keel and 10 lateral struts;
- Start by placing the keel supports appropriately spaced to distribute the load;
- It is important that the props have the same height in order to prevent that the load is concentrated mainly on one of them;
- Lower the yacht **very slowly** until it almost touches the keel struts, adjust the height of the struts until they are contact with the keel, so as to ensure the fair distribution of the load and a neutral buoyancy of the yacht ; keep some of the load on the travel lift;
- Ensure the side struts are properly spaced. Remember that the side struts are intended to ensure stability, but the overall load must weigh mainly on the keel throttle struts;
- Check the support for stability, then completely lower the yacht and remove the belts.

The suggestions above are to be considered as being generally valid for propping the yacht without damaging it or harming the personnel involved; however, since the propping conditions may significantly vary depending on the props used and the surface on which the props rest, the above suggestions must be adapted case by case.

RIVA is therefore not responsible for any damage to the yacht occurring while the yacht is at dry shore on props.

**CAUTION**

RIVA declines all 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.

Riva

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HULL AND FURNITURE MAINTENANCE

CHAPTER 12

12.1 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-thermals of the bilge draining pumps off, to prevent that fuel, lubricants and other liquid spilling causes sea pollution.

**CAUTION**

RIVA 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.

RIVA 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. RIVA 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**

It is forbidden to use pressurized water on light appliances installed outside.

12.2 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 maintenance program of the propulsion engines indicated in the specific use and maintenance manual.

- **Generators**

Use the same procedure as for the engines.

- **Gear boxes**

Carry out the shudled 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**

A proper procedure provided by the supplier in the instruction manual has to be followed when the watermaker 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.

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- **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.

- **Side windows**

Wash with mild soap and water.

**CAUTION**

When using the harness support for personnel involved hanging kit for washing the side windows in the hull are prohibited the use of a single point of attack.

For more information on the use and maintenance of the system, refer to the manufacturer's documentation provided in the appendices to this manual.

- **Sacrificial anodes**

Check their wear and if necessary, replace the hull, propellers shafts and interceptor anodes, etc.

- **LOG Transducer**

Pull out the propeller, clean it and apply the proper propeller 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**

Cleanliness for all and protection for those outside in case the ship remains outdoors.

- **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 external hull and all the components: propeller, anodes, supports, transmission systems, interceptors, seacock, operating propellers.
- 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 recharging area with free flames or sparkles.

Avoid wrong connections; never connect a positive terminal (+) with a negative one (-).

12.3 RE-USE OF THE YACHT AFTER A LONG INACTIVITY



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, interceptor, 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.

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.

- 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 interceptors with brushes (with water) or a jet-cleaner (dry) to remove seaweed and scales.
- Check the paintwork condition of the hull. If necessary, have 2 coats of suitable antifouling paint applied by specialized personnel.

Propellers e 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.

12.4 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 antifouling effects depends mainly on the conditions of the waters where the yacht is stationed.</p> <p> CAUTION To remove the old antifouling, do not use sandblasting systems that could damage the hull. As suggested by the antifouling manufacturers, use paint removers or, as an alternative, wet sanding.</p> <p>The Shipyard uses high-quality ant-fouling paint and applies two layers.</p> <p> CAUTION Bad maintenance condition (barnacles, etc..) may cause cavitation and damage shaft, rudders, propellers, etc..</p> <p> CAUTION Small areas of paint may peel off from the propellers even after a short period of operation.</p>

12.4.1 Bottom hull

Antifouling treatment

If scaling forms on the hull, this causes a considerable slowdown and in the long run can damage the hull. 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 RIVA After Sales & Service Department.

Check/restoration

The cleaning and checks have to be carried with yacht at dry shore or with the help of a diver. Have the repairs done only with yacht at dry shore.



WARNING

To clean or check the yacht in water, disable engines and generators ignition.



CAUTION

There are some areas of the hull (base fixing area for propeller shaft supports, submerged discharge areas, areas around the operating propeller tunnels and shaft outlets, etc..) where work can be carried out after the construction of the hull. Fillers are usually employed in these areas and over time they can produce localised defects, such as bubbles or small cracks. 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.

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- 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 RIVA 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 propeller
- Sacrificial anodes
- Shafts and propellers.
- Underwater lights;
- Hull porous plate;
- Reference anode of the monitoring system.

12.5 GENERAL MAINTENANCE

Component	Maintenance	Notes and precautions
Gel-coat	<p>Formation of bubbles Regular cleaning (as required)</p> <p>CAUTION The alteration of colour and brightness in areas which are highly exposed is considered normal. The necessary polishing has to be considered as normal maintenance.</p>	<p>In some areas of the yacht bubbles can occur on the gel-coat and they may burst over time, thereby showing the underlying structure. The inconvenience is usually found in areas with accentuated edges due to air bubbles that remain trapped between the structure and the gel-coat during processing, despite the checks carried out by Quality and Control personnel. The bubbles that burst can be easily repaired by filling them and touching them up with the gel-coat that you can request from the Site Assistance Service.</p> <p>CAUTION Always wash using neutral products. In case of particularly persistent dirt, do not use products containing ammonia which can turn the surface yellowish.</p>
	<p>Formation of cracks Regular cleaning (as required)</p> <p>MAINTENANCE Thoroughly clean all parts at least once a month. At least once every 6 months check the condition of the fibreglass. Polish all parts as needed and at least once every 2 years.</p>	<p>During navigation, some structural parts of the yacht inevitably undergo bending, causing traction and compression forces on the hull and gel-coat. The different elasticity coefficient of the gel-coat and the hull induces the formation of cracks on the surface of the gel-coat, especially in areas most subject to stress, such as near the cleats, stanchions, etc.. However, this disadvantage does not in any way compromise the mechanical and structural features of the hull.</p> <p>CAUTION Do not use sandblasting systems to remove the gel-coat. As required by gel-coat manufacturers, use appropriate products or alternatively sand.</p>

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.</p> <p>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"> • 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; • Retention of dirt if not cleaned promptly, given the characteristic absorbency of wood fibres. It is recommended to use non-aggressive products; • Scratches and marks if in contact with sharp or metallic objects, due to the inevitable relative "softness" of the wood. <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.</p> <p>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 RIVA After Sales & 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: 20px;">  <p>CAUTION</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	<p>CAUTION</p> <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. RIVA therefore reserves the right to evaluate any problems and its own responsibility according to case.</p> <p>MAINTENANCE</p> <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> <p>CAUTION</p> <p>Current use:</p> <ul style="list-style-type: none"> • Do not walk or jump on the cushions; • Prevent the cushions from turning yellow due to direct exposure to sunlight; • Prevent the absorption of water or moisture by not leaving the upholstery exposed to bad weather, particularly during periods of inactivity. <p>Cleaning:</p> <ul style="list-style-type: none"> • Remove ordinary dirt with a warm water solution and neutral soap: do not use detergents or solvents; • Dry with a soft rag, not leaving any residues. <p>Preservation:</p> <ul style="list-style-type: none"> • Store clean, dry upholstery in a cool, ventilated and dry area; • Do not place heavy objects on upholstery when stored.

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. 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; margin-top: 20px;">  CAUTION <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 be 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	<p>CAUTION</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> <p>CAUTION</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 structure, we recommend wetting the deck 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>

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> <p> WARNING</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> <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>

Component	Maintenance	Notes and precautions
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> <p>MAINTENANCE At least once a year check the fastening of all metallic parts of the yacht.</p> <p>CAUTION The stern glass door is not watertight, so do not point the bolt of water towards the window, when washing.</p> <p>CAUTION 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>

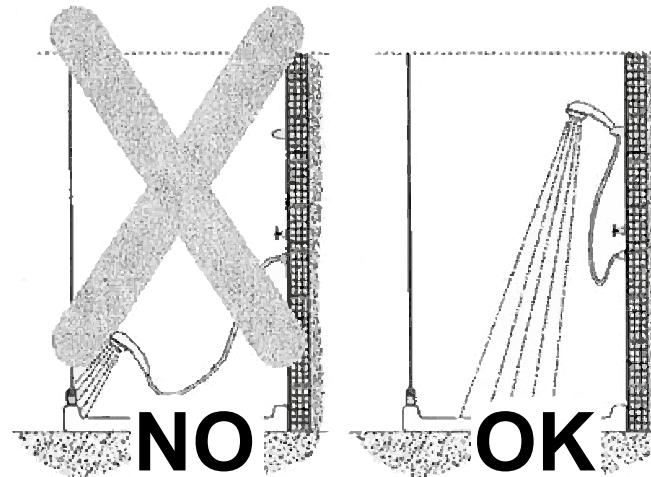
Component	Maintenance	Notes and precautions
Sun-deck cushions	Regular cleaning	<p>Remove the cushions from the seats at regular intervals and let their underside and the seat surface dry. When washing or when it is raining, remove the cushions and stow them in a covered place; however, when cushions are wet, remove them from their seats, to prevent water or moisture from remaining trapped between cushions and underneath surfaces. This could affect the gel-coat and also create osmosis bubbles and deteriorate the cushion cover. The cushions must be washed with running water; do not use jet-cleaners, brushes or abrasive sponges.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">MAINTENANCE</div> <p>At least every 6 months, check seams and fasteners. At least every month carry out the washing of the cushions.</p>
	General Care and Cleaning Guide	<ul style="list-style-type: none"> • For light soiling, a solution of 10% PH neutral soap in warm water applied with a soft damp cloth. Rinse with clean water and dry. • For heavy soiling, dampen a soft white cloth with a one to one (1:1) solution of an all-purpose and dye-free household cleaner and water. Rub gently and rinse with a damp cloth. <div style="border: 1px solid yellow; width: 37px; height: 53px; display: flex; align-items: center; justify-content: center; margin-bottom: 10px;"></div> <div style="text-align: center;">CAUTION</div> <p>Do not use alcohol-based cleaning agents!</p> <div style="border: 1px solid yellow; width: 37px; height: 53px; display: flex; align-items: center; justify-content: center; margin-top: 10px;"></div> <div style="text-align: center;">CAUTION</div> <p>Do not use aggressive detergents and/or solvents, which will cause immediate damage and contribute to the deterioration of the material.</p>

Component	Maintenance	Notes and precautions
Windscreen/windows	Regular cleaning	<p> CAUTION Rags and chamois leathers used for cleaning glass must be replaced at least every 3 months. The inner side of windows and windscreens can be cleaned with non-aggressive and non-acid detergents for glass and a soft or paper cloth.</p> <p> CAUTION 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.</p> <p> CAUTION For cleaning the outer side of coloured or mirrored (pyrolytic) windows and windscreens:<ul style="list-style-type: none">• Evenly wet the whole surface of the glass with plenty of fresh water.• Use a neutral detergent or a delicate commercial product (not alkaline) diluted in fresh water.• Spread the solution with a soft and clean cloth. Frequently rinse the cloth in order to prevent deposits of dust or dirt particles which could scratch the glass or its glazed coating.• Rinse the soapy surface with plenty of fresh (or distilled) water.• We recommend drying the glass with chamois leather only.For cleaning the tinted windows and windscreens it is possible to use the same type of detergent used for internal cleaning (non-aggressive and non-acid).</p>

Component	Maintenance	Notes and precautions
Mirrored glass walls	Regular cleaning	 CAUTION For cleaning mirrored glass walls only use water and neutral soap. Different products could damage the surface coating.
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	 CAUTION 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.
Light fittings	Regular cleaning	DO NOT use alcohol-based products to clean the light bodies.

Component	Maintenance	Notes and precautions
Instrumentation and navigation lights	Regular cleaning (as required)	<p>Use clean wet rags for cleaning.</p> <p>MAINTENANCE</p> <p>At least once a week, check the operation of the navigation lights.</p> <p>At least once a week, carry out careful cleaning of glasses and headlights.</p> <p>At least once every six months, check the presence of corrosion in the connections of the navigation light cables.</p> <p>At least once every six months, tighten the cable connections of the navigation lights.</p> <p>CAUTION</p> <p>Do not use chemical or abrasive products.</p> <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.</p> <p>Preference for antistatic liquid detergent.</p> <div style="border: 2px solid yellow; padding: 10px; margin-top: 20px;">  CAUTION <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)</p> <p>To clean, degrease and polish the Plexiglas, spray a small amount of antistatic liquid detergent on the cloth and wipe the surface.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>If the marks are light and have been caused by wear and not from chemicals, anti-scratch paste can solve the problem.</p> <p>Even for light scratches anti-scratch paste is suitable.</p>

Component	Maintenance	Notes and precautions
Shower	Checking and replacing gaskets	<p>CAUTION Carry out regular maintenance and/or replacement of the shower box seals, in order to prevent water leakage.</p> <p>CAUTION 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>  <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>
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
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. Of course, this glass wall needs particular care during washing, because a lack of care may allow water to penetrate. 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; text-align: center;">MAINTENANCE At least once a week, clean thoroughly. At least once a month, check the operation. At least once every six months, check the locking with open door. When necessary have them adjusted.</div>

12.6 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.

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- 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.

12.7 SPEED MULTISENSOR MAINTENANCE

Component	Maintenance	Notes and precautions
Speed multisensor with valve	Regular check Ordinary Maintenance	<p>As indicated in the Manufacturer's manual.</p> <p>MAINTENANCE</p> <p>At least once every six months check the correct operation. At least once every six months check the connection of the cables. At least once every six months check the propeller and grease the outer Log.</p>

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TROUBLESHOOTING

CHAPTER 13

13.1 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).

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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 to 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.

RIVA 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 RIVA After Sales & Service Department directly.

13.2 PROPULSION ENGINES

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
<p>1. Engine does not turn when starter is actuated:</p> <ul style="list-style-type: none"> - Battery - Starter - Engine wiring - LOP Local Operation Panel - ECU Engine Control Unit - Engine - Start-interlock limit switch 	<ul style="list-style-type: none"> • Low or defective • Cable connections defective • Engine wiring or starter defective • Faulty • Loose seating of assemblies or connectors • Loose plug-in connections • Gear locked (engine cannot start manually) • Limit switch not installed or defective • Wiring defective 	<ul style="list-style-type: none"> • Charge or replace (see Manufacturer's documentation) • Check that cable connections are properly secured (see Manufacturer's documentation) • Check that cable connections are properly secured, contact Service • Contact Service Department • Visual inspection • Check plug-in connections • Contact Service Department • Check limit switch • Check wiring
<p>2. Engine turns but does not fire</p> <ul style="list-style-type: none"> - Starter - Engine wiring - Fuel system - ECU Engine Control Unit 	<ul style="list-style-type: none"> • Poor or defective starter rotation • Faulty • Not vented • Faulty 	<ul style="list-style-type: none"> • Charge or replace battery (see Manufacturer's documentation) • Contact Service Department • Check vent • Contact Service Department

Problem	Cause	Corrective action
<p>3. Engine fires unevenly</p> <ul style="list-style-type: none"> - Fuel injection equipment - Engine wiring - Fuel system - ECU Engine Control Unit 	<ul style="list-style-type: none"> • Injector defective • Faulty • Not vented • Faulty 	<ul style="list-style-type: none"> • Replace • Contact Service Department • Check vent • Contact Service Department
<p>4. Engine does not reach full-load speed</p> <ul style="list-style-type: none"> - Fuel supply - Air supply - Fuel injection equipment - Engine wiring - Yacht - Rudder - Propeller 	<ul style="list-style-type: none"> • Shut off • Fuel pre-filter clogged (water/fuel separator) • Fuel filter clogged • Air cleaner clogged • Injector defective • Injection pump defective • Faulty • Yacht too heavy • Marine growths on hull, propeller shaft, propeller, rudder • Rudder position • After propeller replacement: propeller too small/large 	<ul style="list-style-type: none"> • Open shut-off valve before fuel pre-filter (water/fuel separator) • Replace • Replace • Check air cleaner clogging indicator • Replace • Contact Service Department • Check yacht's load condition, reduce load if necessary • Trim yacht • Clean • Align rudder • Replace only with original spares

Problem	Cause	Corrective action
5. Engine speed not steady - Fuel injection equipment - Speed sensor - Fuel system - ECU Engine Control Unit	<ul style="list-style-type: none"> Injector defective Injection pump defective Faulty Not vented Faulty 	<ul style="list-style-type: none"> Replace Replace Contact Service Department Vent Contact Service Department
6. Charge-air temperature too high - Coolant - Intercooler - Engine room	<ul style="list-style-type: none"> Incorrect coolant concentration Contaminated Air intake temperature too high 	<ul style="list-style-type: none"> Check coolant properties Contact Service Department Check fans and ventilation air supply
7. Charge air pressure too low - Air supply - Intercooler - Turbo charger exhaust	<ul style="list-style-type: none"> Air cleaner clogged Contaminated Faulty 	<ul style="list-style-type: none"> Check air cleaner clogging indicator Contact Service Department Contact Service Department
8. Coolant leaks from intercooler - Intercooler	<ul style="list-style-type: none"> Leaking, major coolant discharge 	<ul style="list-style-type: none"> Contact Service Department
9. Exhaust gas black - Air supply - Fuel injection equipment - Yacht	<ul style="list-style-type: none"> Air cleaner clogged Injector defective Injection pump defective Overload 	<ul style="list-style-type: none"> Check air cleaner clogging indicator Replace Replace Contact Service Department

Problem	Cause	Corrective action
10. Exhaust gas blue - Engine oil - Exhaust turbocharger, piston rings, cylinder liner	<ul style="list-style-type: none">• Too much oil in engine• Oil separator clogged• Faulty	<ul style="list-style-type: none">• Drain engine oil• Replace• Contact Service Department
11. White exhaust gas - Engine - Fuel system - Intercooler	<ul style="list-style-type: none">• Not at operating temperature• Water in fuel• Leaking	<ul style="list-style-type: none">• Run engine to reach operating temperature• Check fuel pre-filter (water/fuel separator filter) and drain pre-filter• Contact Service Department

13.3 GEAR BOX

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. Transmission oil temperature too high	<ul style="list-style-type: none"> Insufficient water flows through oil heat exchanger Drain sludge from oil cooler Undefined range, clutch slipping 	<ul style="list-style-type: none"> Increase water flow Clean oil cooler Adjust mechanism
2. Transmission oil temperature too low	Excessive water flow through heater exchanger	Reduce water flow
3. Oil pressure upstream of oil cooler and filter too high (*)	<ul style="list-style-type: none"> Clogged oil filter Oil cooler dirty 	<ul style="list-style-type: none"> Clean filter and drain off oil sludge Clean oil side of oil cooler
4. No operating oil pressure (*)	<ul style="list-style-type: none"> No oil in transmission Wrong rotation direction at transmission input Faulty display unit 	<ul style="list-style-type: none"> Add oil Use special transmission version Remedy fault

(*) see monitoring data.

Problem	Cause	Corrective action
5. Operating oil pressure too low (*)	<ul style="list-style-type: none"> • Oil viscosity too low • Incorrect oil pump ratio • Defective oil pump • Pressure relief valve leaking • Timeswitch for pressure modulation defective 	<ul style="list-style-type: none"> • Use a prescribed oil grade • Adjust oil pump ratio to suit engine operating speed range • Replace oil pump • Remedy the fault • See Manufacturer's documents
6. Operating oil pressure too high (*)	<ul style="list-style-type: none"> • Oil viscosity too high • Incorrect oil pump ratio 	<ul style="list-style-type: none"> • Use a prescribed oil grade • Adjust oil pump ratio to suit engine operating speed range
7. Drive interrupted between transmission input and transmission output; clutch not transmitting torque	<ul style="list-style-type: none"> • Mechanical transmission actuation: incorrect shift angle • Electrical transmission actuation: electrical system fault • Defective solenoid valve • Longitudinal valve stuck • No operating oil pressure 	<ul style="list-style-type: none"> • Adjust setting • Remedy electrical system fault • Replace • Remedy fault • See "No operating oil pressure" or "Oil pressure too low"
8. Drive between transmission input and transmission output cannot be interrupted; clutch does not disengage	<ul style="list-style-type: none"> • For possible causes and remedial actions, see "clutch not transmitting torque" fault 	<ul style="list-style-type: none"> • Use a prescribed oil grade • Adjust oil pump ratio to suit engine operating speed range

(*) see monitoring data.

Problem	Cause	Corrective action
9. Clutch slips at high engine speed	<ul style="list-style-type: none"> Operating oil pressure too low (*) 	<ul style="list-style-type: none"> 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
10. Oil level decreases rapidly (as indicated on the dipstick). See maintenance job "Oil level check"	<ul style="list-style-type: none"> Leaks on housing joints or oil lines, oil escaping from shaft seals Oil cooler leaking into cooling system 	<ul style="list-style-type: none"> Correct mechanical fault Remedy fault, replace oil cooler if necessary
11. Oil level increases. See maintenance job "Oil level check"	<ul style="list-style-type: none"> Water entering the oil circuit from the cooling system 	<ul style="list-style-type: none"> Correct mechanical fault
12. Transmission is too loud at certain speed ranges	<ul style="list-style-type: none"> Torsional vibration resonance of propulsion system in engine idle speed range 	<ul style="list-style-type: none"> Avoid critical speed range. Use more suitable flexible coupling (see Manufacturer's document)
13. Transmission too loud at engine idle speed range	<ul style="list-style-type: none"> Torsional vibration resonance of propulsion system in engine idle speed range 	<ul style="list-style-type: none"> Increase engine idle speed range
14. Engine stalls following rapid change from "Ahead" to "Astern"	<ul style="list-style-type: none"> Engine idle speed too low Change in direction made too quickly or made at excessive craft speed 	<ul style="list-style-type: none"> Increase engine idle speed range Change direction (see Manufacturer's document)

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.

13.4 GENERATOR

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. Fluctuating or low oil pressure	<ul style="list-style-type: none">• Oil level too low• Dirty oil	<ul style="list-style-type: none">• Stop the generator immediately and top up with suitable oil• Replace dirty oil with new suitable oil
2. Cooling water temperature too high	<ul style="list-style-type: none">• Excessive load• Air in the cooling circuit• Coolant low level or wrong mixture• Sea water intake is obstructed or sea water intake strainer is clogged	<ul style="list-style-type: none">• Reduce the load• Bleed the circuit• Restore the cooling water level and correct percentage• Clean sea cock and strainer
3. Black smoke	<ul style="list-style-type: none">• Engine room insufficient ventilation• Excessive load• Unsuitable fuel• Cooling water temperature too high• Lack of maintenance	<ul style="list-style-type: none">• Check that air intakes are not obstructed• Reduce the load• Replace with suitable fuel• See step 2• Have the scheduled maintenance operations carried out

Problem	Cause	Corrective action
4. Blue smoke	<ul style="list-style-type: none"> Excessive oil Dirty oil Lack of maintenance 	<ul style="list-style-type: none"> Discharge the excess oil by draining oil filters Replace dirty oil with new suitable oil Have the scheduled maintenance operations carried out
5. White smoke	<ul style="list-style-type: none"> Cold generator Generator with too low load 	<ul style="list-style-type: none"> Let the generator warm up Increase the generator load
6. Lack of power	<ul style="list-style-type: none"> Engine room insufficient ventilation Fuel filter clogged Unsuitable fuel Cooling water temperature too high Lack of maintenance 	<ul style="list-style-type: none"> Check that air intakes are not obstructed Clean Replace with suitable fuel See step 2 Have the scheduled maintenance operations carried out
7. Excessive or unusual noise	<ul style="list-style-type: none"> Insulation cover not properly fastened Leakage from the exhaust Exhaust not properly fastened Lack of maintenance 	<ul style="list-style-type: none"> Check Check the exhaust Check the exhaust Have the scheduled maintenance operations carried out

13.5 BATTERY CHARGER

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. Batteries not fully charged	<ul style="list-style-type: none">• Charge current too low• Current to load too high• Charge time too short• Battery temperature too low• Defective battery (short circuit in cell)	<ul style="list-style-type: none">• See "charge current too low"• Decrease the battery load• Replace the battery• Use temperature sensor• Replace the battery
2. Battery loses charge quickly	<ul style="list-style-type: none">• Battery capacity reduced because:• Wastage• Sulphating/stagnation	<ul style="list-style-type: none">• Replace batteries• Charge/discharge several times, this might help, otherwise replace batteries
3. Batteries are warm	<ul style="list-style-type: none">• Defective batteries (short circuit in cell)• Battery temperature too high• Charge voltage too high	<ul style="list-style-type: none">• Replace batteries• Use temperature sensor• Check the switches setting
4. Batteries not fully charged	<ul style="list-style-type: none">• Charge current too low• Current to load too high• Charge time too short• Battery temperature too low• Defective battery (short circuit in cell)	<ul style="list-style-type: none">• See "charge current too low"• Decrease the battery load• Replace the battery• Use temperature sensor• Replace the battery

Problem	Cause	Corrective action
5. Battery loses charge quickly	<ul style="list-style-type: none">Battery capacity reduced because:<ul style="list-style-type: none">- Wastage- Sulphating/stagnation	<ul style="list-style-type: none">Replace batteriesCharge/discharge several times, this might help, otherwise replace batteries
6. Batteries are warm	<ul style="list-style-type: none">Defective batteries (short circuit in cell)Battery temperature too highCharge voltage too high	<ul style="list-style-type: none">Replace batteriesUse temperature sensorCheck the switches setting

13.6 INVERTER

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. No output voltage and no lighting of warning lights (LED off)	<ul style="list-style-type: none"> • High output voltage • DC fuse burnt out • Switch set on remote control, but this is not available 	<ul style="list-style-type: none"> • Check the battery voltage and switch off the charger • Replace the fuse • Place the switch to ON
2. No voltage in output, LED of battery charge is ON	<ul style="list-style-type: none"> • Batteries flat 	<ul style="list-style-type: none"> • Charge the batteries, the inverter will switch on when the battery voltage exceeds 24 V
3. No voltage in output, temperature LED ON	<ul style="list-style-type: none"> • The inverter is overloaded 	<ul style="list-style-type: none"> • Reduce the charge and let the inverter cool down
4. No output voltage, LED "ON" is lit	<ul style="list-style-type: none"> • Inverter is in stand-by 	<ul style="list-style-type: none"> • Connect a charge or modify the jumper's settings
5. Low voltage in output	<ul style="list-style-type: none"> • Low power supply = jumper adjustment 	<ul style="list-style-type: none"> • Connect a charge > 30 W or modify the jumper's settings
6. The inverter turns on and off, the "ON" LED and the battery charger LED flash in turns	<ul style="list-style-type: none"> • Batteries flat • Wires are too thin • The connections are corroded or faulty 	<ul style="list-style-type: none"> • Disconnect the charge and charge the batteries • Replace with wires of correct diameter • Tighten connections. If wires are burnt out, replace them
7. 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"> • The inverter is overloaded • The inverter has been switched off ten times as a result of an overload or short-circuit condition 	<ul style="list-style-type: none"> • Reduce the inverter load • Reduce the load or the short-circuit. Reset the inverter manually through ON/OFF switch

13.7 UTILITIES

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. A connected utility will not receive power supply	<ul style="list-style-type: none">• Power line fuses blown• Wiring disconnected• Connections oxidised maintenance	<ul style="list-style-type: none">• Check the line and replace the fuses• Check wiring connections• Check and carry out proper maintenance

13.8 FUEL SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. Irregular fuel supply to engines and generators and engines	<ul style="list-style-type: none">• Circuit valves closed or not fully open• Filters clogged	<ul style="list-style-type: none">• Check/Open• Clean

13.9 BLACK WATER DISCHARGE SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. Holding tank or grey water tank drain irregular	<ul style="list-style-type: none">• Circuit valves closed or not fully open• Lack of maintenance• Abnormal pump operation	<ul style="list-style-type: none">• Check/open• Carry out maintenance• Check

13.10 FRESH WATER SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. No water to outlets	<ul style="list-style-type: none">• Circuit valves closed or not fully open• Tanks empty• Pump not receiving electric power supply• Protection pump mode	<ul style="list-style-type: none">• Check/open• Fill the tanks and bleed the circuit• Check• Reset
2. Pump starts even with outlets closed	<ul style="list-style-type: none">• Circuit leaking	<ul style="list-style-type: none">• Eliminate leakage
3. The pump gets continuously on/off	<ul style="list-style-type: none">• The tank has no air inside the membrane	<ul style="list-style-type: none">• Contact the Service Department

13.10.1 Watermaker

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. The pump runs but can't reach the pressure as indicated	<ul style="list-style-type: none">• The pump sucks air• Worn valves• Worn seat of pressure relief valve• Improper or worn nozzle• Worn gaskets	<ul style="list-style-type: none">• Check the intake pipes. They must be well air-tight• Check and/or replace• Check and clean• Check and/or replace• Check and/or replace
2. Irregular pressure variations	<ul style="list-style-type: none">• Worn intake and/or pressure relief valve• Presence of foreign bodies in valves• Air suction• Worn gaskets• Relief valve too open	<ul style="list-style-type: none">• Check and/or replace• Check and clean• Check intake pipes• Check and/or replace• Close the valve nut clockwise
3. Drop in pressure	<ul style="list-style-type: none">• Worn nozzle• Worn intake and/or pressure relief valve• Presence of foreign bodies in valves	<ul style="list-style-type: none">• Replace• Check and/or replace• Check and clean
4. Noise	<ul style="list-style-type: none">• Air suction• Broken or unloaded spring of intake and/ or pressure valves• Presence of foreign matters• Worn bearings• Exceeding temperatures of pumped fluid	<ul style="list-style-type: none">• Check the suction pipes are well air-tight• Check and clean• Check and clean valves• Replace• Decrease the temperature

13.11 STEERING SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. Air bubbles or foam in the system	<ul style="list-style-type: none">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 timePossible openings and little holes on the suction pipes or faulty pump seals, which allow air to penetrate	<ul style="list-style-type: none">CheckCheck
2. The pump does not deliver oil	<ul style="list-style-type: none">Wrong rotation directionObstructed ducts or suction strainersOil level in the tank too lowAir leakages in the suction systemOil too viscous with some difficulties in passing throughThe shaft or other components of the pump are broken	<ul style="list-style-type: none">CheckCheckCheckCheckCheckReplace
3. Lack of pressure in the system	<ul style="list-style-type: none">The pump does not deliver oilRelief valve is not calibratedFree discharge of oil to the tank somewhere in the system	<ul style="list-style-type: none">CheckCheckCheck

Problem	Cause	Corrective action
4. The pressure of the system is low or fluctuating	<ul style="list-style-type: none"> • Possible leaks in the piping or elsewhere in pressurized parts of the system • Relief valve set at a too low rate • The relief valve remains open or oscillates in its housing • Restriction of pump suction pipes or possible obstruction of filter • Air in leaks in suction pipes or by pump seals • Worn pump 	<ul style="list-style-type: none"> • Check • Check • Check • Check • Check • Check
5. Pump too noisy	<ul style="list-style-type: none"> • Wrong pump rotation direction • Oil with air bubbles • Oil viscosity causing obstructions to the suction system • Irregular flow of oil into the pump, caused by an insufficient filtering capacity of the filter (the filter could be dirty or not suitable) • Big lacks of charge along the suction line • Worn pump components • Relief valve vibrations • Mechanical vibrations due to bad anchor action 	<ul style="list-style-type: none"> • Check • Bleed • Check • Check/Clean • Check • Check/Replace • Check • Check

Problem	Cause	Corrective action
6. Too high temperature	<ul style="list-style-type: none">• The pump is working at a higher pressure than permitted• Faulty or worn pump which causes internal leaks• Excessive blow-by through valves and cylinder• Oil too viscous• Continuous overloaded operation• Temperature too high in the room where the pump unit is placed	<ul style="list-style-type: none">• Check• Check• Check• Check• Check• Check
7. Leaks from the seals	<ul style="list-style-type: none">• Possible abrasive substances have entered into the oil circulation, damaging the pump's shaft• Seals are faulty, broken or mounted in a wrong way• Too hot oil	<ul style="list-style-type: none">• Check• Check• Check
8. Pump overcharging the motor	<ul style="list-style-type: none">• Too viscous oil• Obstructed delivery line or excessive resistance	<ul style="list-style-type: none">• Check• Check

13.12 AIR CONDITIONING SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. High crankcase temperature	<ul style="list-style-type: none"> • Overheating • Poor circulation of treated water (winter cycle) or condensation water (summer cycle) 	<ul style="list-style-type: none"> • Check coolant charge • Correct circulation
2. Low suction pressure	<ul style="list-style-type: none"> • Low coolant charge • Poor circulation of condensation water (winter cycle) or treated water (summer cycle) 	<ul style="list-style-type: none"> • Add • Correct circulation
3. System noisy	<ul style="list-style-type: none"> • Loose fastening bolts • Unit base improperly insulated • Improper support or insulation of piping • Piping vibrations 	<ul style="list-style-type: none"> • Tighten bolts • Insulate foundation • Use correct piping techniques and support piping with suitable hangers • Clip pipes correctly. Check the couplings
4. Compressor does not start	<ul style="list-style-type: none"> • Power off • Thermostat broken • Pressure switch open • Faulty wiring • Pumps not operating • Flow-switch does not close • Gas discharging unit 	<ul style="list-style-type: none"> • Check the supply. Check fuses and/or magneto-thermals • Adjust thermostat • Reset switch and check proper calibration, 20 bar (h.p.) and 2.5 bar (l.p.) • Check diagram and rewire • Check pumps free rotation. Check the magneto-thermals • Restore correct treated water circulation • Check coolant circuit for possible breaks due to transport and installation

Problem	Cause	Corrective action
5. Compressor cycles intermittently	<ul style="list-style-type: none">• Low pressure switch erratic in operation• Low coolant charge• Internal protection tripped	<ul style="list-style-type: none">• Check pressure switch setting. Check good circulation of condensed water• Add• Check for any voltage drop, correct
6. High delivery pressure with compressor stop (high pressure switch).	<ul style="list-style-type: none">• Coolant overcharge• Insufficient or no condenser water flow; clogged condenser or sea-water strainer• Condensed water pump off• Poor treated water circulation (winter cycle)• Air in coolant circuit	<ul style="list-style-type: none">• Remove excess coolant• Adjust water regulating valve to condenser; clean condenser or sea-water strainer• Check pump and start• Check for air in the circuit. Check for possible clogging• Restore vacuum and refill with coolant

13.13 GANGWAY

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. The system does not react to the controls	<ul style="list-style-type: none">• Flat battery• 3 A fuse	<ul style="list-style-type: none">• 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• Check that the hydraulic control unit is correctly supplied; check for the integrity of the 3 A fuse.
2. The gangway does not move	<ul style="list-style-type: none">• The hydraulic power unit has a thermal protection	<ul style="list-style-type: none">• 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.

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