CUSTOM LINE

BEYOND THE LINE

Navetta 30

Owner's Manual

CUSTOM LINE

BEYOND THE LINE

A FERRETTIGROUP BRAND

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1 - FOREWORD

2 - SAFETY RULES

3 - DESCRIPTION OF THE YACHT

4 - DESCRIPTION OF THE CONTROLS

5 - INSTRUCTIONS FOR USE

6 - OPERATIONAL AND SERVICE SYSTEMS

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1

Foreword

1.1 GENERAL INFORMATION

NAME OF THE YACHT _____ **NAVETTA 30**
TYPE OF YACHT _____ **MOTOR YACHT**
PROJECT CATEGORY _____ **A**

CAUTION

The yacht shall be integrated with the equipment required by the local flag authorities.

CAUTION

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

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.

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

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

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

1.1.2 Layout of the manual

For an easy and quick reading, the manual is divided into the following sections.

FOREWORD: containing general information and identification data of the yacht.

SAFETY RULES: safety general requirements, safety devices, suggestions,failures, etc..

DESCRIPTION OF THE YACHT: dimensions and technical data of the yacht.

DESCRIPTION OF THE CONTROLS ON BOARD: operation of systems, parts and use of the yacht.

INSTRUCTIONS FOR USE: description and operation of the operative controls for navigation.

OPERATING SYSTEMS AND FACILITIES: containing all operating diagrams installed on the yacht.

MAINTENANCE: this section contains the maintenance procedures aimed to the efficiency of the systems, instruments and components.

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 PURPOSE OF THE MANUAL

Finding yourself on board this prestigious yacht or seeing one at sea is an unforgettable experience. To became the Owner creates emotions and sensations of euphoria, which may lead to navigate immediately to open sea.
This manual has been realized by the Builder in their mother language (Italian) and translated into other languages, to satisfy the customer's requirements, and has been issued with the purpose of assisting you with the use of your yacht in full safety and with complete satisfaction.

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

The little time dedicated to reading the manual will enable you to obtain information on the practical use of the ship, to get to know the operating systems, the devices installed and to get acquainted with the on-board controls, thus ensuring the safety of persons and property.

A great passion for sea and the prestige of this yacht are elements that encourage periodic and regular maintenance to ensure long periods of navigation and an ensuing improvement in safety.

The daily verifications and the periodical maintenance are important to keep the devices in the best efficiency conditions and must be carried out by expert crew and authorized by the Captain, according to the procedures indicated in this manual and in compliance with national and international regulations.

For a better reading and consultation, the information have been organized in several sections; the topics have been exposed with the principle of "see - think - use". By means of the general index and glossary, it will be easy to locate the information of interest, and then, by looking at the illustrations, you can to go back to the information needed.

1.3 NOTICES

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

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.

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.

ENVIRONMENT

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

MAINTENANCE

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

NOTE

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

1.4 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.

1.5 SERVICE REQUIREMENT METHOD

The extensive CUSTOM LINE 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:

CUSTOM LINE AFTER SALES & SERVICE DEPARTMENT
Via Ansaldo 7 - 47122
Forlì - Italy
Tel +39 0543 787511
Fax +39 0543 473069
e-mail: customer.service@customline-yacht.com

CUSTOM LINE 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.

WARNING
CUSTOM LINE decline all responsibilities if third parties tampered with the equipment installed by 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.

CAUTION
CUSTOM LINE declines all responsibility for damage due to improper preservation and poor maintenance.

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 CUSTOM LINE After Sales & Service Department.

CAUTION
CUSTOM LINE declines all responsibilities for the installation and operation of electrical, electronic and mechanical equipment improperly installed by third parties in any unauthorised way by the yacht's builder.

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 CUSTOM LINE 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. CUSTOM LINE will not be liable for undelivered Warranty Certificates.

1.6 MANUFACTURER IDENTIFICATION

Information about the yacht's references can be found in the various documents left by CUSTOM LINE inside the yacht itself.

1.7 GLOSSARY AND TERMINOLOGY

Various technical or nautical terms are applied throughout this manual, a clear explanation of their meaning follows to make it easier to understand.

Fresh way: speed that a yacht gain at propulsion engines start, and speed that the yacht holds when the engines shut down.

Through-hull stuffing box: propeller shaft support, placed where the shaft comes out from the hull, that allows shaft rotation thus keeping the hull tight.

Port: left side in bow direction.

Beam: supporting beam for deck, connecting the bulwarks.

Cleat: little column for yacht mooring.

Anchor chock: bow opening, equipped with rollers and steel and Teflon protections, through which anchor and chain glide.

Hatchway: watertight door.

Wildcat: used for anchor weighing, to engage anchor chain in the winch barrel.

Rub rail: shelter placed at yacht's sides near the water line.

Walkway: lateral passage of main deck allowing to reach the bow.

Bottom hull: lower part of the hull, usually submerged.

Universal joint: joint allowing the transmission of motion between two shafts with concurrent axes, e.g. from engine to gear box or to V-Drive (according to the kind of shaft line).

Keel: central part of bottom hull.

Deck: part of the yacht closing and covering the hull on which the superstructure is fixed.

Anchor roller: opening for anchor chain passage and gliding.

Displacement: weight of the water moved by the submerged part of the yacht, equal to the weight of the yacht itself.

Starboard: right side in bow direction.

Quarter: each side of the hull aft end.

Washboard: curved table placed along the top of the bulwark, lifting it so as to prevent the water penetration leeward.

Trim tab: wing hinged to the stern edge of the bottom hull, that during navigation, allows longitudinal and transversal trim variations.

Gear box: device consisting of mechanical gears, which allow reversing the rotation direction of the propeller shaft with respect to the engine shaft.

Inverter: electric device converting direct current into alternated current.

Sponson beam: structural element of hull reinforcement placed longitudinally to the yacht.

Rudderhole: hole in the hull for the rudder.

Stringer: structural element of hull reinforcement placed transversally to the yacht. The stringers form with the sponson beams the "skeleton" of the yacht.

Loof (if quarters are fitted): each side of the bow structure.

Bulwark: each side of the yacht above the water line.

Scupper: draining mouth of water splashing against the bulwark and sea drainage of deck water.

Skylights: shelter against harsh sea conditions for the decks openings, to lighten and ventilate the rooms below.

Manhole: opening of the deck allowing the passage of a person.

Deck: each "floor" separating the yacht in height.

Cockpit: embedding the stern used as a shelter for the crew.

Aft: direction indication on board: i.e. "- aft cabin...-".

Bow: front part of the yacht with tapered shape so as to break the waves.

Fore: direction indication on board: i.e. "- fore cabin...-".

Hull: floating section of a yacht.

Bilge: the inner lowest section of a yacht, in which possible water infiltrations are collected.

Aft transom: back section of the yacht.

Tonnage: "taxable" loading capacity of the yacht.

Sun deck: open deck in the highest part of the yacht.

Handrail: structure firmly connected to the deck or superstructure, able to ensure a safe hold.

Starboard: right side in bow direction.

1.8 KNOW YOUR RESPONSIBILITY AS OWNER / OPERATORS OF YACHT

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 pleasure yacht.

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 boats. Study the techniques of navigation and safety practices to run your yacht and its equipment.

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

Each yacht owner or operator must be well informed about the yacht and its systems.
Since you are responsible for the operation of your yacht, we provide you with information about these topics.
For every system on board we have planned a detailed description, including diagrams where appropriate, as well as information about the Maintenance and troubleshooting.

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

1.9 CERTIFICATION, CLASSIFICATION AND IDENTIFICATION

CUSTOM LINE, has been operating in the international market for many years, with the purpose of building safe and high-quality yachts; for this reason, their yachts undergo rigid and accurate tests required by the Authorities to issue a CLASSIFICATION CERTIFICATE.

The NAVETTA 30 yacht, on which you are about to navigate, has obtained the RINA S.p.A (REGISTRO NAVALE ITALIANO) classification after supervision of the hull lamination, of the reinforcement structures, of the power system and of the safety equipment on board.

1.9.1 Yacht identification specifications

Manufacturer	**FERRETTI S.p.A.**
Model	**CUSTOM LINE NAVETTA 30**
Hull	**26**
Type of yacht	**NAVETTA**
Identification number CIN (Craft Identification Number)	**IT-FERN3026A626**
Navigation class	**A (open sea navigation): the wind force can be higher than 8 and the wave height can exceed 4 metres**
Certification and forms	**“EC Conformity” according standard stated by the Directive 2013/53/EU**
International tonnage certificate	**ITC69**
Classification	**B+F+A1 (sound emission)**
Classification Authority	**RINA Spa (REGISTRO ITALIANO NAVALE)**

1.10 LOAD-CARRYING CAPACITY

Maximum number of passengers 20
Maximum load recommended 4620 kg
Berths n° 15
Located in:

- n° 2 in the Owner's cabin (double bed);
- n° 2 in port vip cabin, bow lower deck (separable double bed);
- n° 2 in starboard VIP cabin (separable double bed);
- n° 2 in starboard guest cabin (single beds);
- n° 2 in port guest cabin (single beds);
- n° 1 in Captain cabin (single bed);
- n° 2 in port crew cabin (single beds);
- n° 2 in starboard crew cabin (single beds).

WARNING

Never exceed the total weight of passengers and the load-carrying capacity.
Regardless of the number of persons on board, the sum of the weight of persons and baggage must never exceed the maximum transportable load. Always use the seats and seating areas provided.
People and loads should be distributed evenly on board.
Make sure that safety equipment is perfectly efficient and available to each passenger.

WARNING

The standard safety equipment furnished by the Shipyard is for seventeen passengers. If a higher number of passengers (however, no more than 20) is boarded on the yacht, the above-mentioned safety equipment should be increased so that the real number of boarded passengers is reached.

CAUTION

The maximum load that the Manufacturer recommends does not include the content of the fixed fuel and water tanks when full. It must not exceed the total load that may be added to the displacement with yacht unladen and dry.

CAUTION

When the yacht is being loaded, never exceed the maximum load recommended by the Manufacturer. 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.

CAUTION

Any changes in the disposition of the masses on board, as for example the addition of weights at the top, a structure or the replacement of components with different specifications, can significantly affect the stability, the trim and the driver's performance.
In these cases, contact the CUSTOM LINE After Sales & Service Department.

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

CAUTION

Manufacturer's plate - Part of the information is provided on the nameplate affixed to the yacht. A full explanation of this information is provided in the relevant sections of this manual.
Always keep the plate readable, and, if impaired, or tampered with, contact CUSTOM LINE.

CAUTION

A Category: This yacht is designed to operate in winds that may exceed wind force 8 (Beaufort scale) and in significant wave heights of 4m and above, and is largely self-sufficient.
Abnormal conditions such as hurricanes are excluded. Such conditions may be encountered on extended voyages, for example inter-oceanic, or near the coast, exposed to the wind and waves for several hundred nautical miles.

The significant wave height is the average height of the waves that make up the highest third of the same, which is approximately wave height estimated by an experienced observer. Some waves are twice this height.

MAIN DECK

CUSTOM LINE

BEYOND THE LINE

Navetta 30

2

Safety Rules

2.1 SAFETY RULES

The yacht builder has to pay great attention to safety issues, both during the design and the construction of the yacht; special care has been taken to avoid risks to the health and safety of people, who come into contact with the yacht (Captain, crew, Owner and guests).

Apart from respect being shown to the various laws applicable, all rules covering good construction techniques have been adopted. The aim of this information is to make aware users about the need of paying particular attention so as to prevent any risk.

The navigation safety, especially with difficult weather conditions, depends mainly on the Captain choices and behaviour, who would have to adopt all possible measures for a proper yacht steering, in order to ensure a comfortable navigation.
The precaution is however irreplaceable.

All persons on board are responsible for their safety and for the safety of the others and should always adopt some precautions:

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

Read carefully the instructions in this manual and fitted throughout the yacht, especially those regarding safety. A little time spent reading can prevent unpleasant accidents; it is always too late, after the event, to remember what you should have done.

Do not tamper with, avoid, eliminate, or by-pass the safety systems installed aboard. 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 originate serious risks to the safety and health 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.

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.

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.

2.2 SAFETY RULES FOR OPERATION AND USE

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.

DANGER

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

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 be aware of the common reactions of this yacht.

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

The principle operations, such as leaving port, navigation, anchoring, or mooring, should be carried out in a thorough and competent manner, particularly preparations before leaving port, should be made in an especially scrupulous manner.

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 dropping anchor in free waters, ascertain the kind of sea bottom to prevent damaging sea life in the area.

Never throw garbage overboard whilst at sea, keep it on board and then dispose of it in an appropriate manner.

Arrange the loads 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 compliance with the Relevant Classification Society Rules and is in all respects seaworthy and capable of navigation without restrictions.
The Builder however warns the Buyer about the dangers and difficulties of navigation in adverse sea and weather conditions.
Such navigation must be carefully afforded by the yacht's Captain who will be solely and exclusively responsible for leaving any port or shelter notwithstanding adverse sea and weather conditions forecast or adverse sea and weather conditions in act and for adopting the appropriate speed, engine revolutions and course.
The Builder declines any responsibility for improper use and navigation of the yacht in adverse sea and weather conditions.

DANGER

CARBON MONOXIDE POISONING

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

WARNING

The Captain is the only 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.

CAUTION

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

CAUTION

The garage hatch and the gangway must always be closed during navigation.

DANGER

It is forbidden to stand or sit on the forward cockpit during high-speed navigation.

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.

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.

CAUTION

Close portholes, windows and skylights during navigation, especially in poor weather conditions.
Also, make sure that you have closed or locked doors to prevent collisions with objects or people.

DANGER

It is forbidden to perform sudden manoeuvres at high speed.
This can result in accidents for people on board.

WARNING

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

CAUTION

When using a jet-ski, every passenger must wear a life jacket; The driver must also have a valid license and follow the rules of the country where it is located.

CAUTION

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

2.3 SAFETY RULES FOR ADJUSTMENTS AND MAINTENANCE

Keep the yacht in the very best working order by following the regular maintenance procedures recommended by the Manufacturer. 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 any maintenance and calibration work on board, activate all safety equipment and evaluate if it is necessary to inform everybody aboard. In particular, place warning signs in the nearby areas where operations are performed and cut off power supply to any device that, if operated, could cause unexpected hazardous conditions, thus endangering the persons and/ or property on board.

The maintenance and adjustment operations must be out only by authorised personnel. The personnel has to act cautiously and carefully, so as to ensure the safety of the persons on board.

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.

Access to the engine room during navigation must be limited only to authorised personnel.
Inspect the sea water system inlets and outlets as well as the bilge systems.

These checks are essential to guarantee the buoyancy of the yacht.

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.

ENVIRONMENT
During navigation, do not dispose any on-board waste at sea, but keep it and dump it in waste containers ashore.
Remember that it is forbidden to dump oils and fuels into the sea, therefore it is recommended to clean the engine room bilge by using absorbent materials to be thrown 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 with this type of attention.

Do not start any work before ensuring that people on board run no risks.
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 regulations stated in this manual, specific warnings are given throughout. This section is meant to give a safety code for the operation and maintenance procedures.

CAUTION

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

CAUTION

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

CAUTION

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

DANGER

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

CAUTION

It is extremely dangerous commands act on the yacht while intoxicated or under the **influence of medication**.
Refrain from using alcohol or drugs before and during work.
Do not take medicines that cause dizziness.

CAUTION

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

CAUTION

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

CAUTION

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

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

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

CAUTION

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

CAUTION

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

DANGER

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

CAUTION

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

CAUTION

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

CAUTION

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

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

CAUTION

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

CAUTION

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

CAUTION

Clean the cylinders of the **flaps** 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

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

CAUTION

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

DANGER

Hot coolant. When the engine temperature is high, the cooling system is under pressure and 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.

2.3.1 Fire prevention rules

DANGER

On all yachts, fire is a major danger. Therefore, 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 in the figure: "Safety equipment arrangement".

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

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

CAUTION

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

WARNING

NEVER:

- To obstruct access to passageways and escape routes;
- Hinder access to safety devices, such as fuel valves, electrical switches, etc..;
- Obstruct access to fire extinguishers stowed inside the lockers;
- Leave the yacht unattended, when burners or heat generating equipment are on;
- Use naked flames;
- Modify electrical or fuel supply systems, without consulting CUSTOM LINE 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 inspect it frequently for any oil or fuel leakage.

CAUTION

In case fire breaks out in proximity to electrical equipment, do not use water, use the manual dry-powder fire extinguishers only. After using the extinguishers, leave and ventilate the area immediately before reapproaching it, in order to prevent asphyxia and physical harm.
Clean out any fire extinguishing powder very carefully.

CAUTION

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

CAUTION

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

DANGER

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

CAUTION

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

WARNING

EXPLOSION HAZARD

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

2.4 NOTES ON THE ENVIRONMENT

Environmental pollution is caused by three kinds of polluting agents:
- Water polluters;
- Air polluters;
- Soil polluters.

Non oily and black waters (containing only human organic waste) can be discharged into the open sea. In harbour areas they should be collected into suitable containers and afterwards discharged either during navigation 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 as urban waste that must be hermetically sealed in plastic bags and thrown into waste dumpsters.

- Special waste must be disposed of into suitable containers or, if these are not available, it must be delivered to local waste disposing areas, in compliance with the rules in force, issued by the local Port Authority.

- The following waste is considered special waste:
  - Water and oily mixtures (e.g.: Bilge water)
  - Oils (fuel, additives and lubricants)
  - Poisonous chemical substances (like battery acids, paints, thinners and the relevant containers)
  - Spray cans containing C.F.C. gas
  - Batteries
  - Spent flares
  - Expired pharmaceutical products
  - Products containing lead or asbestos
  - Etc..

- Fuel and oil leaks.

- Waste discharge and disposal.

- Excessive noise.

- Wake / wake from board.

- Exhaust fumes.

- Paints, detergents and other agents.

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

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

During navigation, it is always necessary to behave suitably and to respect the safety and the comfort of your guests and of persons on nearby boats. Therefore:

- Avoid excessive noise;
- Do not leave the engines running for long periods without moving off;
- Do not navigate 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 be disposed of beyond 12 miles.

CAUTION

Within 12 nautical miles from the coast it is forbidden to discharge into the sea the black water: you must keep off the drain pump, excluding the automatic activation 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.

CAUTION

When garbage is mixed with other harmful substances having different disposal or discharge requirements, the more stringent disposal requirements apply.

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

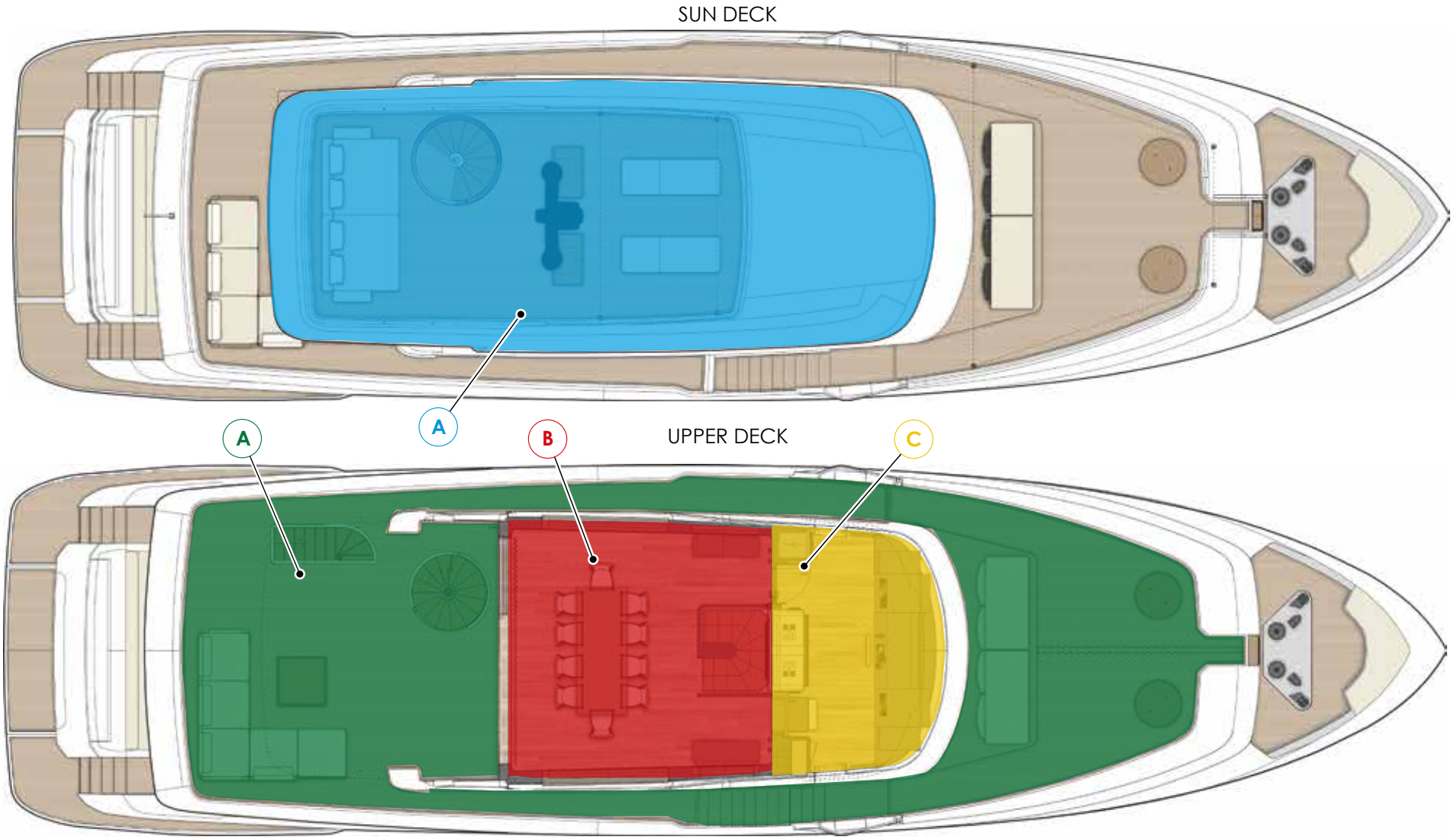
2.5 YACHT'S AREAS

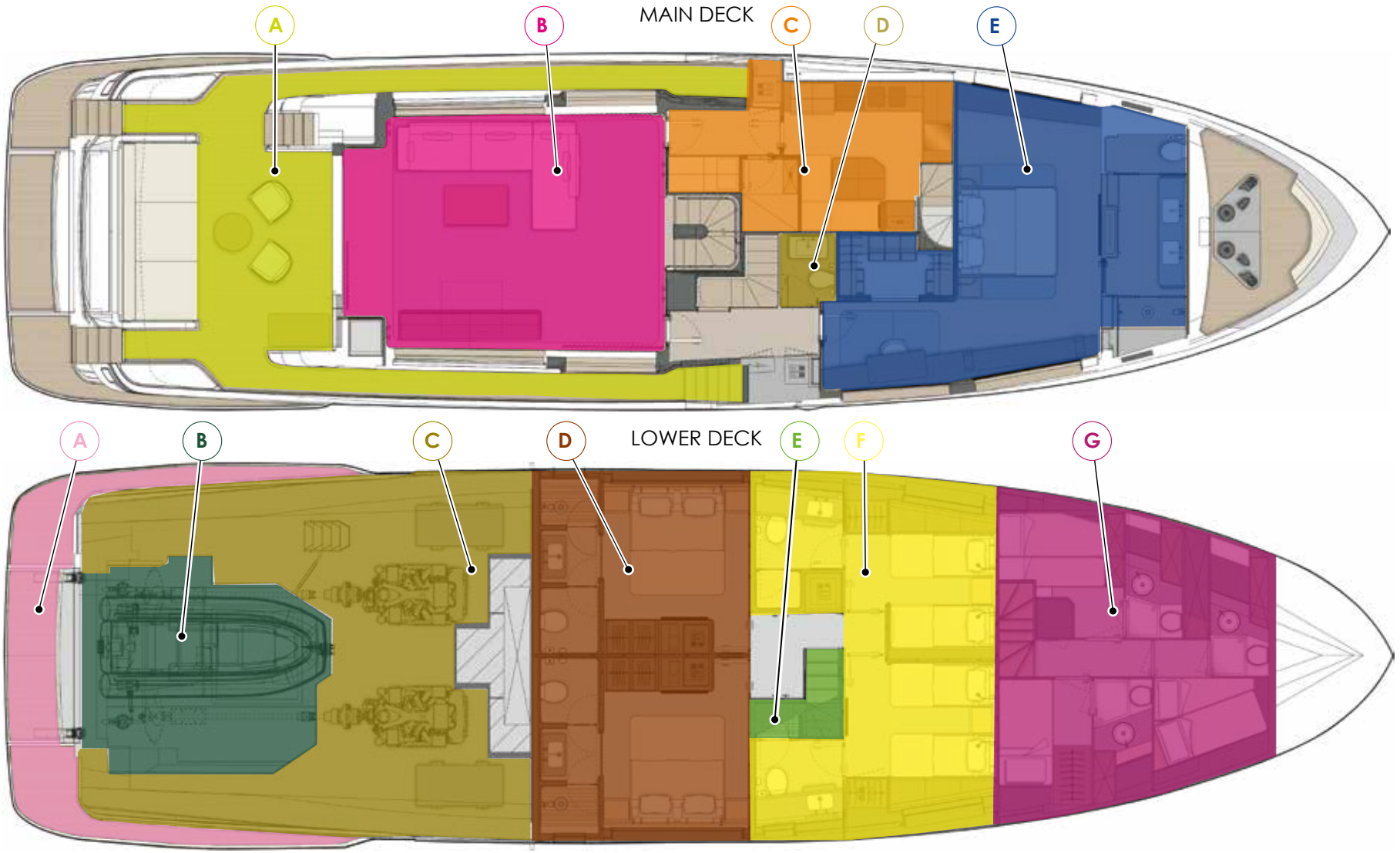
Sun deck
A. Sun deck/service area

Upper deck
A. External area
B. Panoramic lounge
C. Wheelhouse

Main deck
A. Stern cockpit and sidewalks
B. Sector salon and dining room
C. Galley and Pantry Sector
D. Service bathroom
E. Owner bathrooms and cabins Sector

Lower deck
A. Stern platform area
B. Garage sector
C. Engine room sector
D. VIP cabins and bathrooms sector
E. Access to the lower deck
F. Guest cabins and bathrooms sector
G. Crew cabins and bathrooms sector


SUN DECK
A
A
B
C
UPPER DECK


A
B
MAIN DECK
C
D
E
A
B
C
D
LOWER DECK
E
F
G

2.5.1 Forbidden area during navigation

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.

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

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

DANGER
On board the yacht, some areas are "dangerous", and need plenty of care, and possibly require wearing protective equipment, in order to safeguard the integrity of people on board.
During navigation, the risks relating to any hazardous area increase significantly; we recommend, therefore, scrupulously observing the safety rules indicated in this manual.

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

The areas are following:

- **Engine room:** area with a high level of noise, presence of moving components, burns hazard, tripping and falling hazard. The access to the engine room is exclusively allowed to trained and expert crew, prepared for the risks and equipped with proper safety devices.
- **Stern platform:** outer area non protected by rails against the fall at sea. During navigation access to this area is forbidden. Accessing and staying in this area is allowed only when the yacht is idle and with the engines shut off.

- In case of a fall overboard, the following rescue devices can be used:
  - Individual life jackets;
  - Life buoy.

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

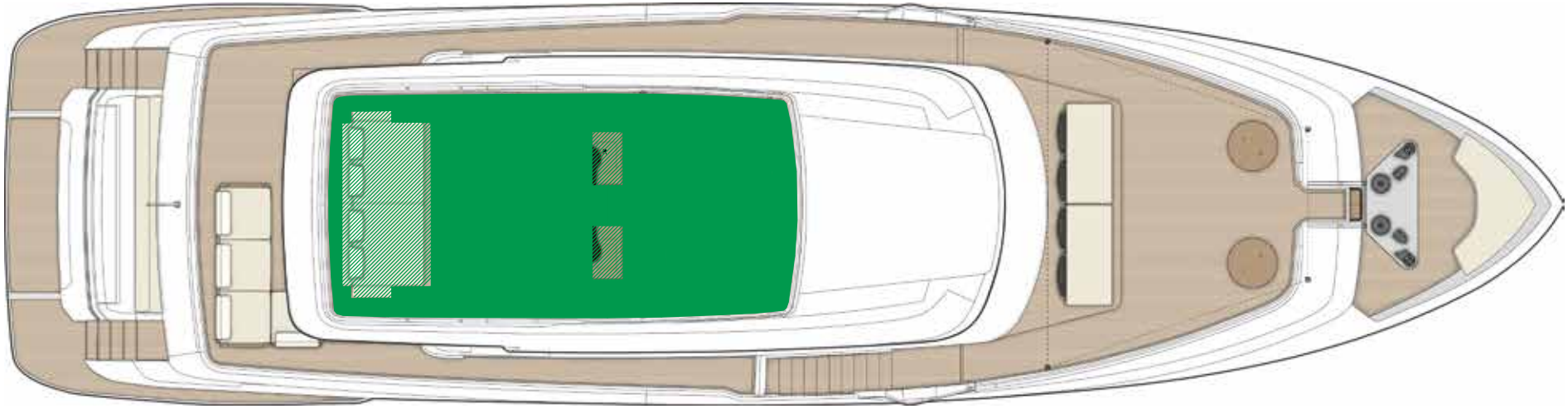
CAUTION

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

CAUTION

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

SUN DECK



UPPER DECK

MAIN DECK

LOWER DECK

ICON	DESCRIPTION
	Red Area (forbidden)
	Green Area (free-working deck)

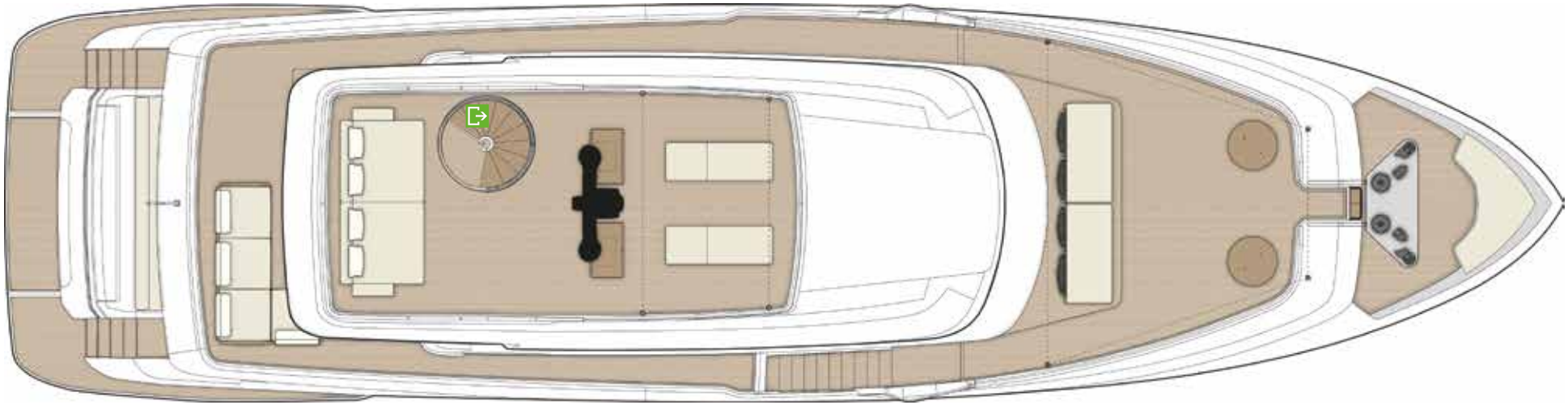
2.6 ESCAPE ROUTES

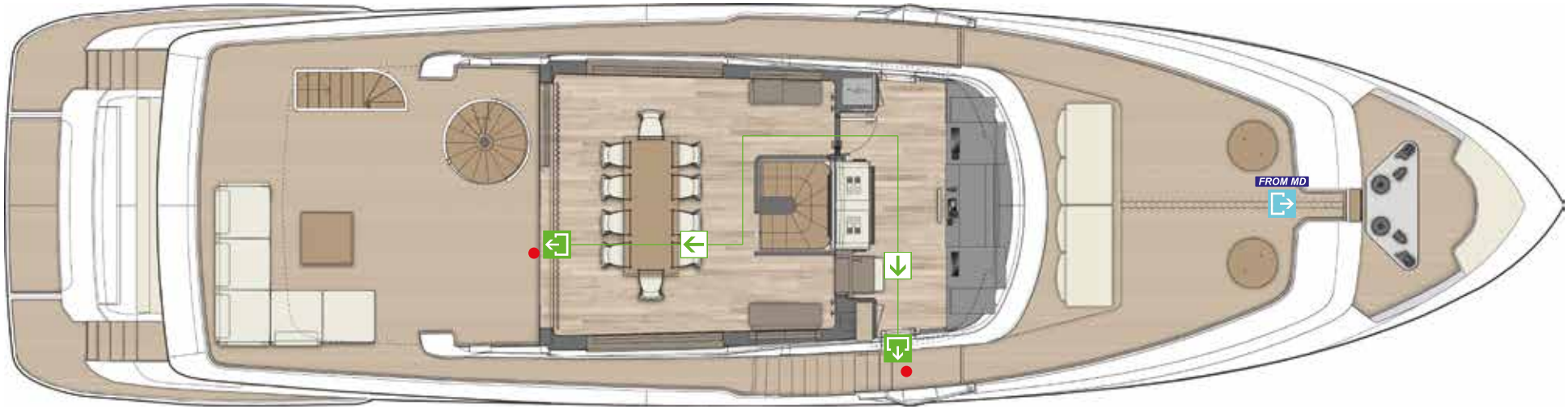
In order to deal with the different emergency situations that could require the abandonment of the yacht (fire, collision with sinking hazard etc..) in the quickest and safest way, the rules in force require an "escape plan" informing about the safest and most secure, as well as the quickest, paths (from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

WARNING
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 the safest and most suitable escape route very carefully.

DANGER
For safety reasons the watertight hatches, giving access to the technical room and to the engine room, must be kept closed in any occasion and situation. They must be open only during the passage.




FROM MD

ICON	DESCRIPTION
	Primary escape route
	Secondary escape route

ICON	DESCRIPTION
	Secondary mean of escape
	Assembly point

ICON	DESCRIPTION
	Primary mean of escape
●	Door openable without tools from inside and outside when closed and unlocked

2.6.1 Escape route use

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

- Pull the belt to remove the ceiling panel.
- Open the escape route by using the release handles.
- Disengage and extend the escape ladder to escape from the room.

2.7 STANDARD SAFETY EQUIPMENT

Everybody on board must know the location and the use of safety equipment, that is: life jackets, life buoys, life buoys with line for "man overboard", life rafts, extinguishers and fire extinguishing systems (i.e. in engine room, etc..) and radiotelephone.

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

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

CAUTION

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.

CAUTION

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

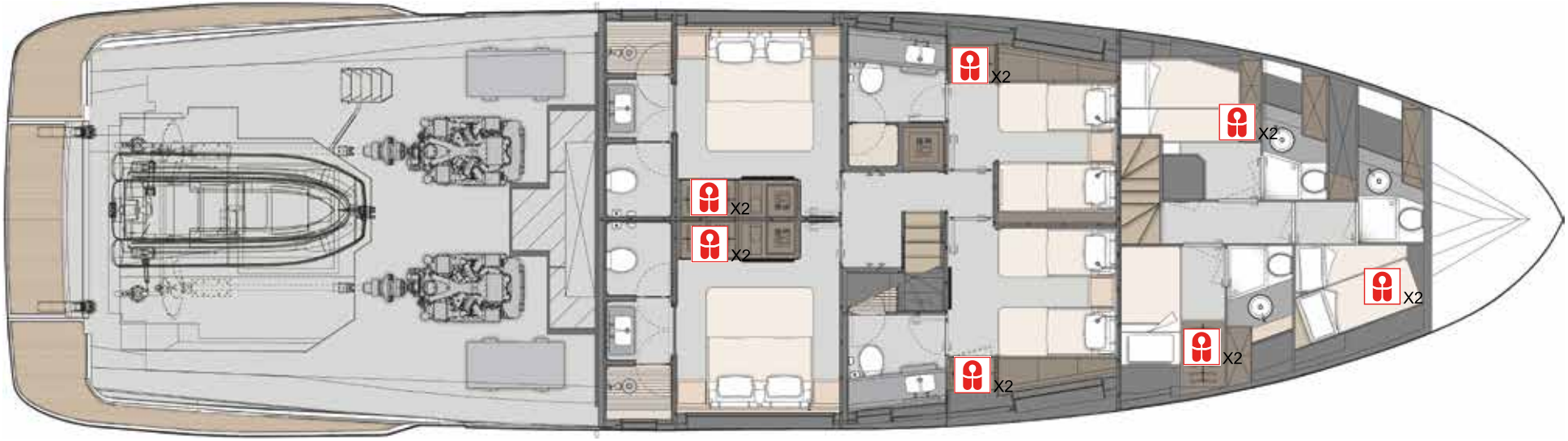
CAUTION

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

DANGER

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

2.7.1 Safety equipment position



ICON	DESCRIPTION	
	Life rafts for 10 people	2
	Lifebuoys with light	2
	Life jackets light and whistle for adult	20
	Life jackets for children	4
	Built-in emergency ladder	1

2.7.2 Extinguishers fire class

The following table contains the classification of the fire types:

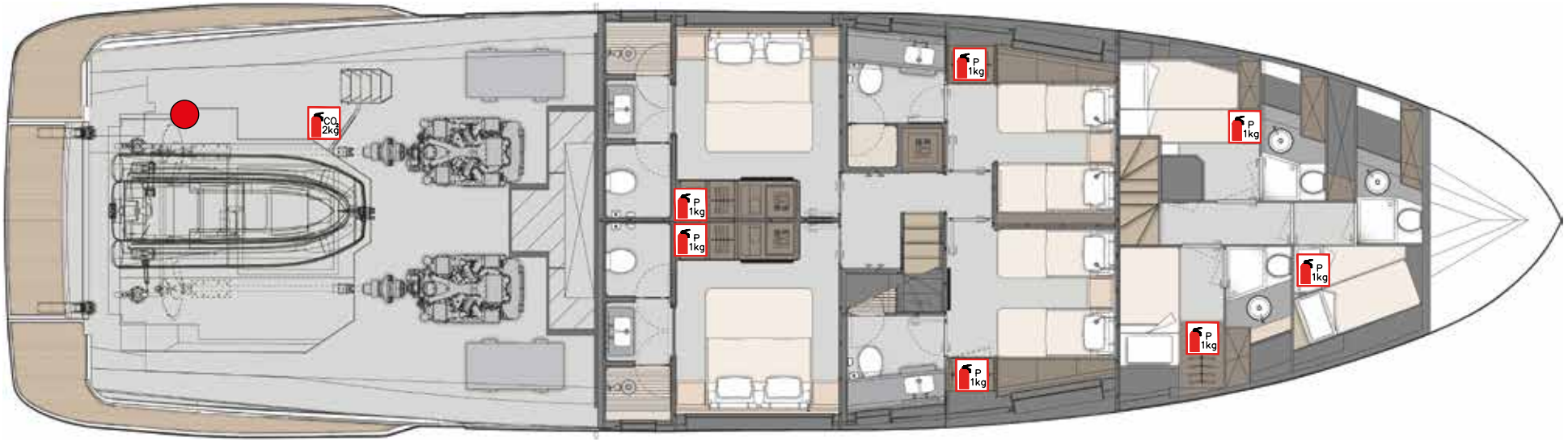
SYMBOL	FIRE CLASS	DESCRIPTION	EXTINGUISHING
	**A**	Solid fuels (Wood, paper, coal, etc..)	Water, foam, chemical powders.
	**B**	Flammable liquids (bezel, diesel, alcohol, etc..)	Foam, carbon dioxide, chemical powders.
	**C**	Flammable gases (propane gas, methane, hydrogen, etc..)	Carbon dioxide, chemical 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 for more information on using portable fire extinguishers.

2.7.3 Extinguishers position

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



ICON	DESCRIPTION
P 1kg	POWDER 1kg Fire Extinguisher
P 6kg	POWDER 6kg Fire Extinguisher
CO2 2kg	CO_2 2kg Fire Extinguisher
●	Fire port

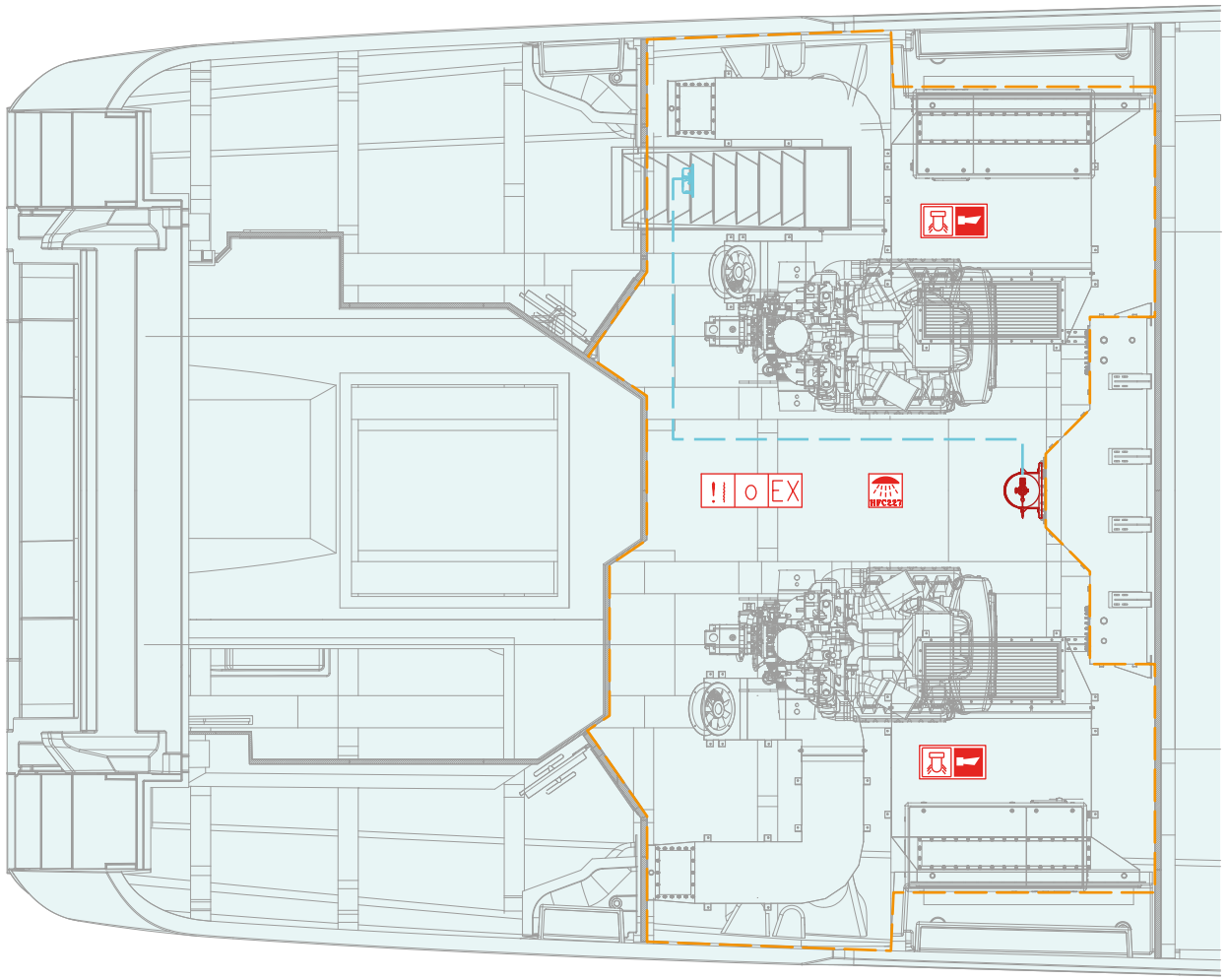
Warning label for CO_2 extinguisher

⚠ 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
AFTER DISCHARGE
LEAVE THE AREA IMMEDIATELY AND
VENTILATE BEFORE ENTERING

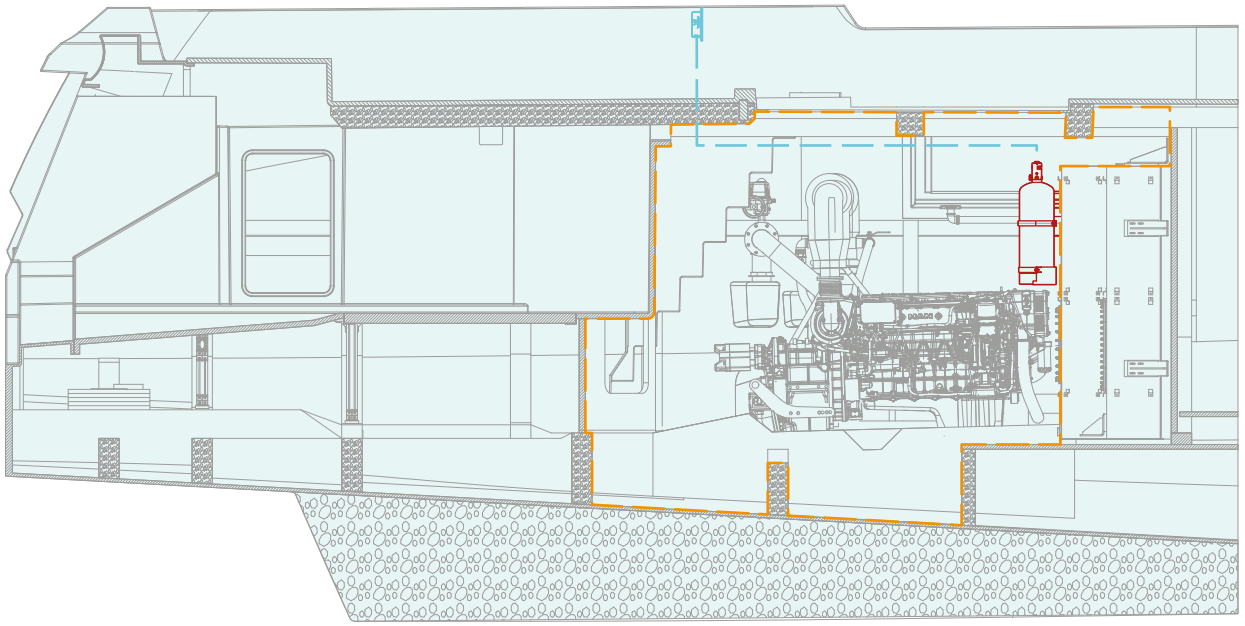
2.7.4 Fixed fire extinguishing system



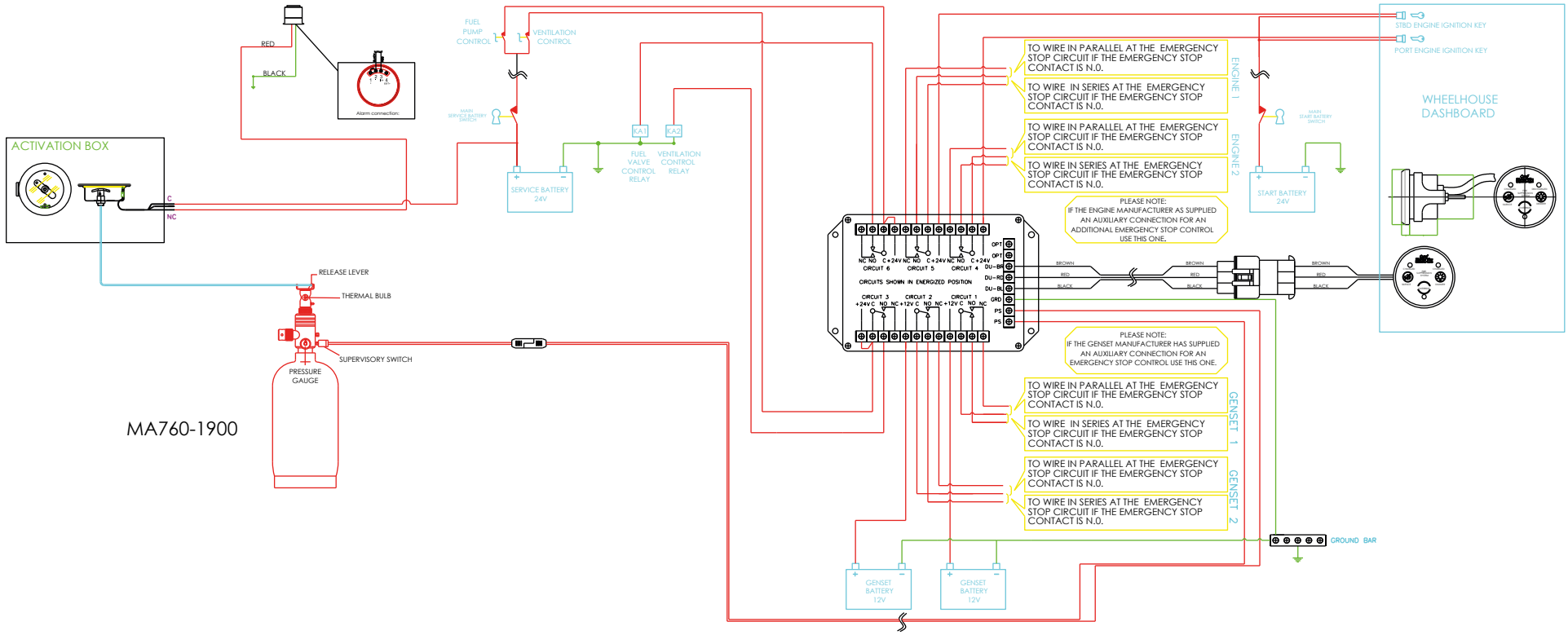
ICON	DESCRIPTION
	FM 200 - BSCO SERIES 760-1900
	Activation box

ICON	DESCRIPTION
HFC227	Space protected by HFC-227
	Acustical and flash alarm

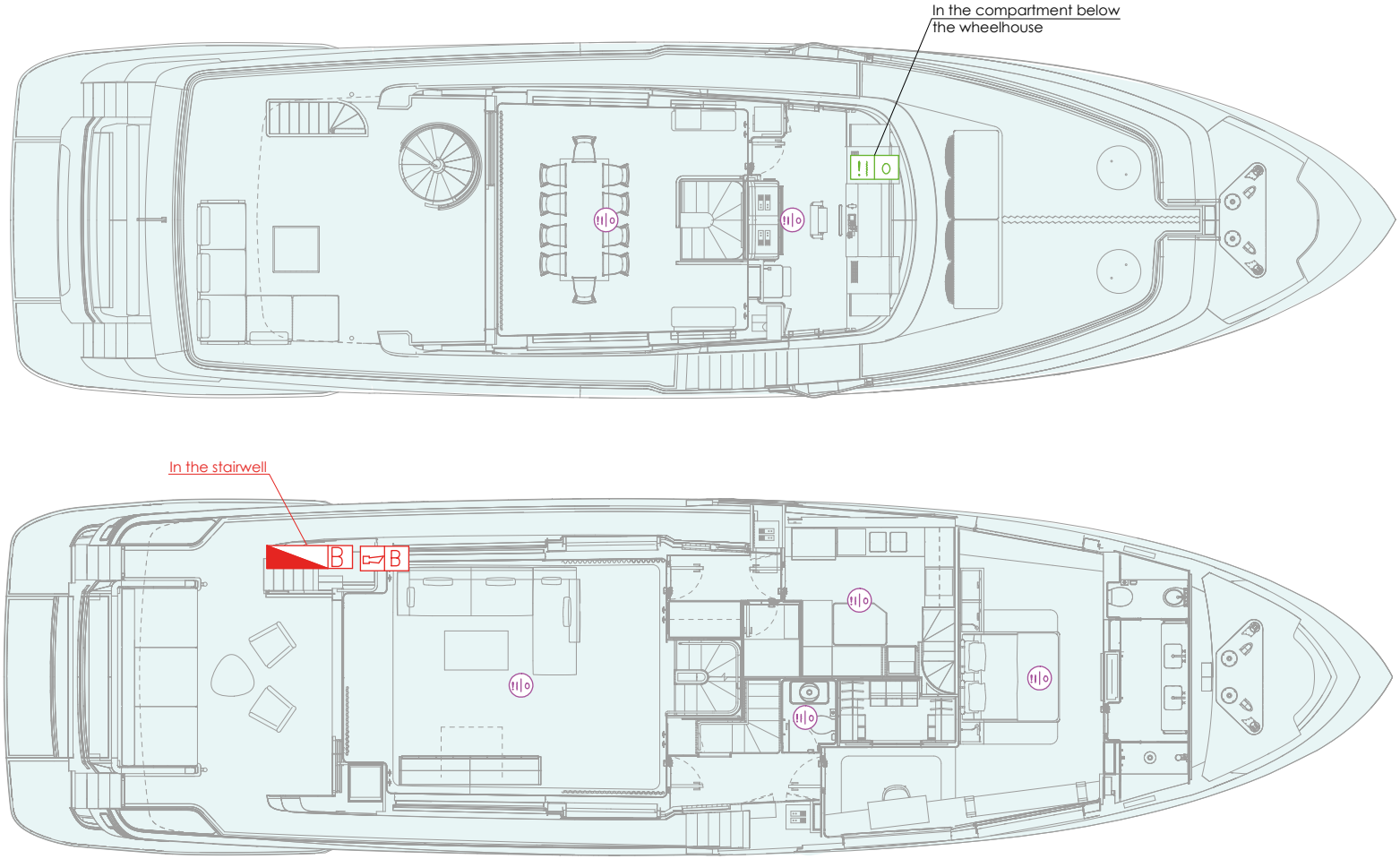
ICON	DESCRIPTION
! | o | EX	Smoke and heat detector ex



ICON	DESCRIPTION
	FM 200 - BSCO SERIES 760-1900
	Activation box
	Space protected by HFC-227
	Acustical and flash alarm
	Smoke e heat detector ex

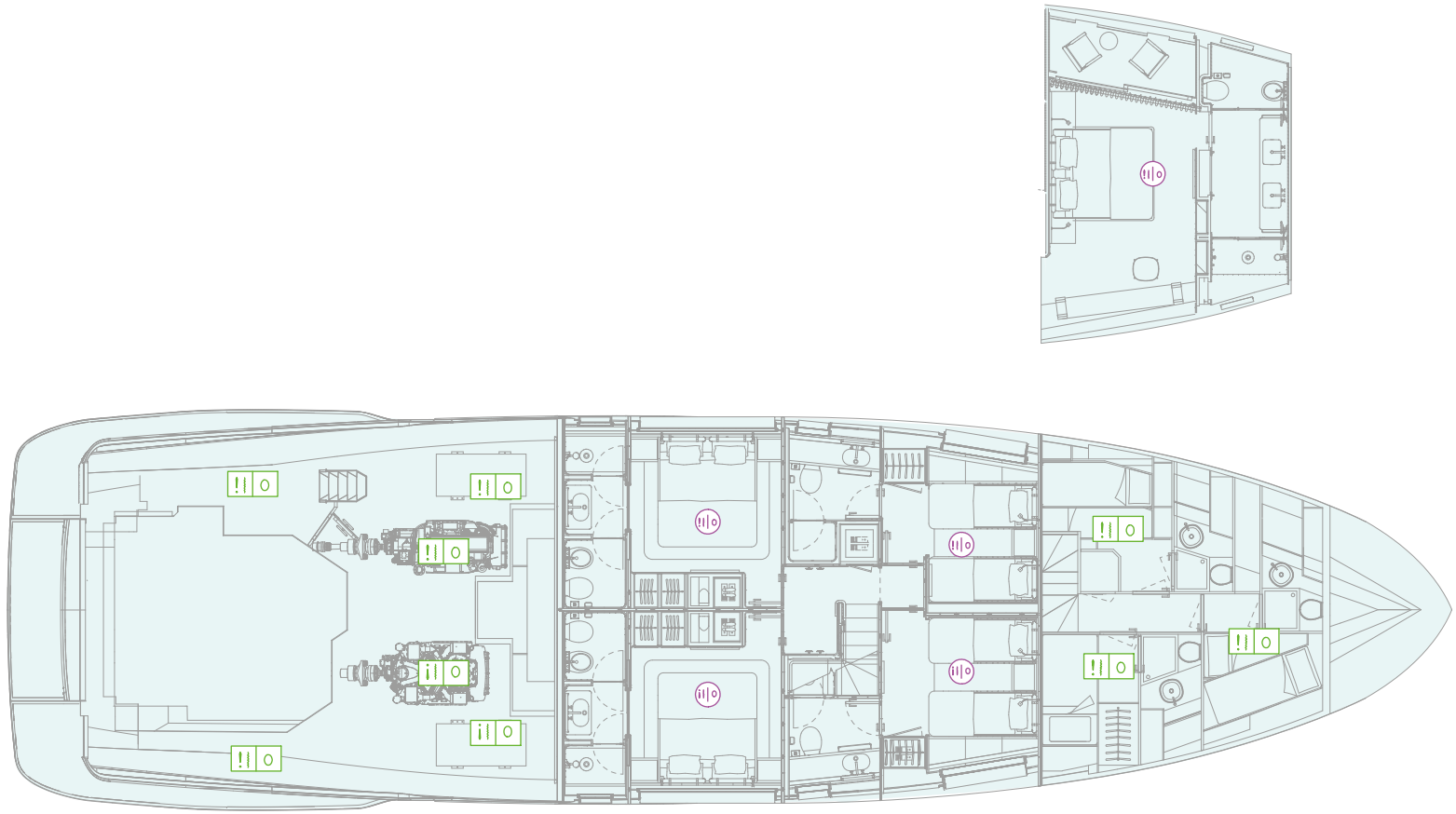

ACTIVATION BOX
C
NC
RED
BLACK
Alarm connection:
FUEL PUMP CONTROL
VENTILATION CONTROL
MAIN SERVICE BATTERY SWITCH
CA1
CA2
FUEL VALVE CONTROL RELAY
VENTILATION CONTROL RELAY
SERVICE BATTERY 24V
RELEASE LEVER
THERMAL BULB
SUPERVISORY SWITCH
PRESSURE GAUGE
MA760-1900
CIRCUITS SHOWN IN ENERGIZED POSITION
CIRCUIT 6
CIRCUIT 5
CIRCUIT 4
CIRCUIT 3
CIRCUIT 2
CIRCUIT 1
OPT
OPT
DU-BR
DU-RD
DU-BL
GRD
PS
PS
BROWN
RED
BLACK
TO WIRE IN PARALLEL AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
TO WIRE IN SERIES AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
TO WIRE IN PARALLEL AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
TO WIRE IN SERIES AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
ENGINE 1
ENGINE 2
PLEASE NOTE:
IF THE ENGINE MANUFACTURER AS SUPPLIED AN AUXILIARY CONNECTION FOR AN ADDITIONAL EMERGENCY STOP CONTROL USE THIS ONE.
START BATTERY 24V
MAIN START BATTERY SWITCH
STBD ENGINE IGNITION KEY
PORT ENGINE IGNITION KEY
WHEELHOUSE DASHBOARD
PLEASE NOTE:
IF THE GENSET MANUFACTURER HAS SUPPLIED AN AUXILIARY CONNECTION FOR AN EMERGENCY STOP CONTROL USE THIS ONE.
TO WIRE IN PARALLEL AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
TO WIRE IN SERIES AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
TO WIRE IN PARALLEL AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
TO WIRE IN SERIES AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
GENSET 1
GENSET 2
GROUND BAR
GENSET BATTERY 12V
GENSET BATTERY 12V

2.7.5 Fixed fire detection system



ICON	DESCRIPTION
B	Fire detection unit
B	Siren fire detection system

ICON	DESCRIPTION
	Optical smoke sensor
	Optical glass smoke sensor with ring nut



ICON	DESCRIPTION
B	Fire detection unit
B	Siren fire detection system

ICON	DESCRIPTION
	Optical smoke sensor
	Optical glass smoke sensor with ring nut

2.7.6 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 life line. If you did not have the time to make the distress call or you did not receive an answer, prepare for a long wait; in this case, plan for survival, taking the following items, as well as the equipment included in the kit: floating smoke signals and rockets, a knife, drinking water and energy foods that do not cause thirst. Before boarding the raft wear all possible garments, except for shoes that could injure other shipwrecked persons or damage the life raft;
- Embark possible clothes and supplies;

- If somebody falls overboard, help him/her up into the raft; 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, by using the oars;
- When the overpressure valves have stopped hissing, close them by tightening the safety plugs.

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

DANGER

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

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 in water. The anchor prevents excessively rapid drifts.
- When the life raft is towed, weigh the floating anchor on board.
- If the waves are high and the wind is strong, the life raft may capsize; in such case, move the personnel weight to the side that tends 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 then 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 does capsize, roll it over and return on board.

2.7.7 Personal flotation devices and rescue equipment

All of personal flotation devices (to put on and launch) used on the yacht must be approved by the applicable regulatory authorities.

In the US the Federal Government, through the Coast Guard, it specifies the characteristics necessary for personal flotation devices and safety equipment which must be on board pleasure yachts.

Do not hesitate to request that persons wear personal flotation devices. You can wear them in all weather conditions, at sea, in the shore or at anchor.

People can fall from the yacht at any time.

- Those who can not swim and children must always wear a personal flotation device.
- People who work on deck should always wear a personal flotation device.
- Wear personal flotation devices in indoor when navigating in cold water (lower water temperature at 20°C/68°F).
- In an emergency, passengers must wear personal flotation devices.

Personal flotation devices of inflatable are easy to wear and some types inflate automatically if you fall overboard. These personal flotation devices have excellent safety equipment to be kept on board for yourself and for your guests. Hold on board inflatable life jackets or inflatable life jackets "belted" for you and your guests.

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

CAUTION
Check the efficiency of personal flotation devices at least once a year and before any trip.

CAUTION
Children and people who can not swim should always wear personal flotation devices when they are on board. If a personal flotation device is not worn, it becomes useless in an emergency. The law requires that personal flotation devices are always accessible means outside of storage containers and unhooked.

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

CAUTION
The life raft has a limited validity in time, check its expiry on the certificate. The raft is overhauled by an accredited body that extends their validity. Is there a penalty for non-compliance with this rule.

Personal flotation devices of individual
For all persons on board must be a personal flotation device. Children should wear a device just for them. The captain must ensure that the people on board know the storage position of its individual flotation device, they know how to wear it and stop to the body.

They need to know where the whistle and / or light and how light it.

Personal flotation devices launch-able
This category includes lifesaver ring, horseshoe buoy horse and pillows.

The captain shall ensure that passengers' awareness:
- The location of the ring;
- How and where to launch a lifesaver;
- What to do in case of "man overboard".

The owners and the captains of the yachts must regularly carry out exercises of "man overboard" so that the people on board familiarization procedures to save a person who falls into the sea.
- At least 1 time per month:
  - Check the attachment of the floating rope;
  - Check the charge status of the batteries of the light buoy.
- At least once every six months to check the status of the floating rope

DANGER
All persons on board must know the location where the rafts rescue and proper operating procedures are pinned.

DANGER
With very high waves and strong winds there is a danger that the raft can be mirrored, move the weight of the people on board on the side that tends to get up.
If the raft, despite everything, you flip, straighten it and get back on board.

2.7.8 Signalling rockets

Pleasure yachts are obligated to carry 4 manual rockets with red light and 4 manual orange smoke signals as required.
Always verify the legislation of the Country in whose waters the yacht is going to navigate.

- The signalling rockets have a limited lifetime; it is therefore necessary to check their expiry date and eventually to replace them.
- The floating smoke signals, visible up to 4 km, have to be used with the daylight, to indicate the correct position.
- The red light rockets, visible up to 10 km, are designed for night use, but they can also be seen during the day.
- Before using the signalling rockets, always wait for the arrival of an air plane or to see persons on the shore or on other boats.
- Store the signalling rockets away from flammable liquids and from other fuels.
- As the content of the signalling rockets absorbs the moisture, make sure to have them located in a dry and accessible place.
- All persons boarded must know the place of the signalling rockets and the method of use.
- Carefully follow the activation instruction for all signalling rockets.
- Every month, and in any case before any trip, check that there are no obstacles to their immediate use.

DANGER

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

DANGER

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

WARNING

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

2.7.9 First aid kit

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

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

ENVIRONMENT

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

This is the minimum quantity of the medicines recommended for the Owner to keep on board:

- Disinfectant for external use;
- Ammonia;
- Bandages of various sizes;
- Plasters;
- Medicated plasters;
- Cotton wool;
- Scissors;
- Compressed hydrophilic gauze of various sizes;
- Compressed Vaseline gauze of various sizes;
- Tourniquet;
- Splints for fractures.

DANGER

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

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

Inform all passengers of this.

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

2.7.10 Portable fire extinguishers

In order to supply an easy, ready and quick fire-fighting system on board of your ship, portable fire extinguishers have been set out, designed to be carried manually, and in compliance with the rules in force.
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 ship must make sure that all passengers know the locations and how to operate the fire extinguishers on board correctly.

WARNING

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

DANGER

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

The positioning of the portable fire extinguishers is indicated on the diagram of the previously-reported chapter "2.7.3 Extinguisher Positions".

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.

WARNING

For further information relevant to the use of the different systems and equipment, see the various manufacturers manuals, delivered separately.

2.7.11 Portable fire-extinguishers maintenance

Component	Maintenance	Notes and precautions
Portable fire extinguishers	Checks and tests	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. If they are found to be discharged or insufficiently charged, or at least every 10 years, have qualified technicians: • Check the condition of the container (cylinder); • Refill the extinguishing medium; • Carry out a hydrostatic test. Have fire extinguishers recharged even after partial use. **MAINTENANCE** At least every 12 months, and, in any case, before each journey to sea, check the state of charge of the fire extinguisher. At least every 10 years, and in any case before each journey to sea, check the external state of the fire extinguisher. At least every 6 months check the fastening of the fire extinguisher.

2.7.12 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.

To avoid energy waste it is necessary to float 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 life jackets as pillows.
Practice 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.

2.7.13 Life buoy

The life buoy is equipped with a life-line of 30 m and with an automatic light buoy.

The life line is not twistable and it is orange in order to be easily seen in water.
At least once a month:

- Check the securing of the floating rope;
- Check the charging status of the light buoy batteries;
- At least once every 6 months, check the condition of the floating rope.

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”.

2.7.14 VHF-Radiotelephone (standard)

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 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, if possible send a "**MAYDAY RELAY**, **MAYDAY RELAY**, **MAYDAY RELAY**" forwarding the communication of the person who requested the rescue.
It can in fact happen that the distress call, carried out on the open sea or by means of a poorly powered sender, is not received by the rescue team.
Acting as a spokesman, you can help the message reach its destination successfully.

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

The use of the standard procedure avoids creating confusion and shortens the transmission time. In case of danger, use only the phonetic alphabet recommended.
The VHF device is a vital and important communication line; please remember some fundamental rules:

- No transmission should be performed without reasons;
- 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 faily 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 the transmission if required by a coastal station;
- Retune the radio when the call is ended.

CAUTION
For more details on the operating instruction's VHF, refer to the manual provided by the manufacturer.

MANUAL DISTRESS CALL:

- Select the distress channel by pressing the key 16/9 or by scrolling the channels with the volume keys.
- Press the transmission key "PTT" on the radiotelephone and make the call.

MAYDAY - MAYDAY - MAYDAY THIS IS:
repeat the yacht's name for 3 (three) times.

MAYDAY THIS IS:
repeat the yacht's name.

AT POSITION:
specify the position of the yacht.

SPECIFY THE DISTRESS CAUSE.

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

AUTOMATIC DISTRESS CALL:

- Lift the cover and press the DIST key; the display will show the wording "Distress call Undefined".
- DIST hold for about 3 seconds, then displays the message: "DISTRESS CALL SENDING" and the radio beeps acoustic alarm.

- The distress message will be sent automatically and repeated at irregular intervals on Channel 70. Channel 16 will be available for communication after each transmission.
- If you receive no response after a short time, try to send the distress message manually.

WARNING

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

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

RESEND
Displays "HOLD DISTRESS 3 SECONDS TO SEND". You can then:
- Hold down the red "DISTRESS" key for 3 seconds to resend the call, or
- Press the "EXIT" soft key to return to waiting for an acknowledgement.

PAUSE
Pauses the call repeat mode. You can then:
- Press the "EXIT" soft key to resume the same call.

CANCEL
Displays "DISTRESS CALL SEND CANCEL." You can then:
- Press the "NO" soft key to send the DISTRESS CANCEL signal.
- Press "PTT" and report your situation using the handset.
- When finished talking, press "X" to return to standby mode.

2.7.15 Embedded emergency ladder

The yacht has an emergency ladder built into the aft structure, above the waterline.

CAUTION
The built-in ladder is used only in the case of an emergency, and can be used by just one person and in water without any outside help.

Instructions:
The person in the water pulls the ring of the closing cap and in this way the ladder comes out of its housing.
Let the ladder totally extend into the water.
Climb back on board using the rungs of the ladder.

2.7.16 Porthole deadlights

In the event of adverse weather conditions, the portlights and portholes deadlights 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.

2.7.17 EPIRB (OPTIONAL)

It is a distress transmitter whose purpose is to signal the position of boats and ships in serious emergency situations.
It essentially consists of a radio transmitter that interfaces with the satellite system for search and rescue operations.

When in use, the EPIRB emits signals on emergency frequencies that are picked up by the network of satellites in orbit and transmitted back to the ground at the rescue coordination centres.

The correct procedure for activating the EPIRB is as follows:

- When abandoning the yacht, take the EPIRB and place it on the life raft;
- Untie the line attached to the device and secure it to the life raft;
- Activate it according to the model;
- The EPIRB will start flashing;
- Make sure that there are no obstacles in the sky so that the signal reaches the satellites.

2.7.18 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 CUSTOM LINE, 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 that 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.

2.7.19 Minimum safety equipment to carry on board by the yacht owner

- N° 3 smoke buoy;
- Binoculars;
- N° 4 hand flares red light;
- N° 4 rockets to light red parachute.

CAUTION
Read up at the Harbour for provisions and changes in the applicable safety regulations in the country of origin.

WARNING
The rockets have a long life, and written on the case. At the end turn to suppliers of rockets that provide a disposal service. Do not ignite them unnecessarily, you could put emergency services on alert.

2.7.20 Fire prevention

DANGER

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

Before running 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".

CAUTION

- The batteries gas can explode. Keep batteries away from sparkles and flames. Use a light to check the electrolyte level.
- The sulphuric acid of the batteries is poisonous. It can hurt the skin, corrode clothes and cause blindness if it reaches the eyes.
- To avoid dangers:
  - Top-up batteries in a well ventilated area.
  - Wear protective glasses and rubber gloves.
  - Avoid inhaling vapours when filling distilled water.
  - Avoid spilling or dropping the electrolyte.
- If the acid hits the body:
  - Wash skin with water.
  - If the acid is splashed into the eyes, wash with water for at least 15 minutes. Ask immediately for a doctor for the relevant treatment.
  - If the acid has been swallowed, ask immediately for a doctor for the relevant treatment.

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.

WARNING

NEVER:

- To obstruct the access to passageways and escape routes;
- To hinder the access to safety devices, such as fuel valves, electrical switches, etc..;
- Obstruct the access to fire extinguishers stowed inside the lockers;
- Leave the yacht unattended, when burners or heat generating equipment are on;
- Use open flames;
- Modify electrical or fuel supply systems, without consulting custom line beforehand;
- Smoke near or when handling flammable materials;
- Stow highly flammable materials (such as fuel, diluents, etc..) In proximity of 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 come accidentally into contact with engine rotating parts, or obstruct access to the engine room.

Keep the bilge clean and inspect it frequently for any oil or fuel leakage.

CAUTION
The garage of this yacht is equipped with a dry powder fire-fighting system.

CAUTION
The engine and technical rooms of this yacht are equipped with a FM-200 fire fighting system.

CAUTION
In case fire breaks out in proximity of 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 any fire extinguishing powder out very carefully.

In addition to these requirements, CUSTOM LINE recommends what follows:

- Do not smoke below deck and especially in the garage, technical room and engines room area;
- Keep the bilge clean by avoiding pouring liquids, especially in the engine room. Should engines or generators leak fuel in the bilge, 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 of heat sources, like engines, burners, halogen lamps, etc..;
- In case the yacht leaks, 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 pleasure yacht must be perfectly aware of the basic fire fighting techniques and how to use the extinguishers.

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

- Keep calm and do not spread panic among the passengers;
- Stop the yacht, close sea cocks and drains;
- Set the battery breaker to "off";
- Close the air intakes in the engine room;
- Locate the fire place and its origin;
- Avoid breathing smoke;
- Extinguish the fire, by following the standard fire extinguishing techniques;
- For fires in the engines room and in the garage see "fire-fighting system in the engines room and garage" in the following pages of this manual.

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

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

2.7.21 General information to prevent fire

Regular and correct maintenance of the systems and prudent behaviour of all passengers are indispensable measures for preventing any risk of fire.
Over 90% of the probabilities of fighting a fire successfully, depends on the ability to prevent and avoid any condition that may help a fire to spread.

The small remaining percentage depends on the crew's reaction ability, and most of all, their rapidity to enter into action.
Nearly all fires, if detected early, can be extinguished easily.
For these reasons, it is necessary to carry out preventive surveys on a regular basis and identify all possible fire sources, and in particular:

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

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

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

CAUTION
The ability to operate the fire extinguishers properly can ensure the success of the operation.
It is vital that the fire fighting operations are performed by people competent in this type of emergencies.
It is in any case necessary to be aware of the minimum fire-prevention and fire-fighting rules; the first defence is to prevent fires before they start spreading.

The following table contains the classification of the fire types:

Comparison between fire classes

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

It is very important to use the correct extinguishing agent according to each fire class; normally, water can be used only for class A fires, together with chemical extinguishing agents (portable or fixed devices).
Each yacht owner/operator/master must be well informed and proficient in regards to the measures to be adopted in the event of a fire and fire-extinguishing techniques.

2.7.22 Engine room, technical rooms and garage fire-fighting controls

This panel is located on the main deck, on the way down in the engine room to the left of the ship.

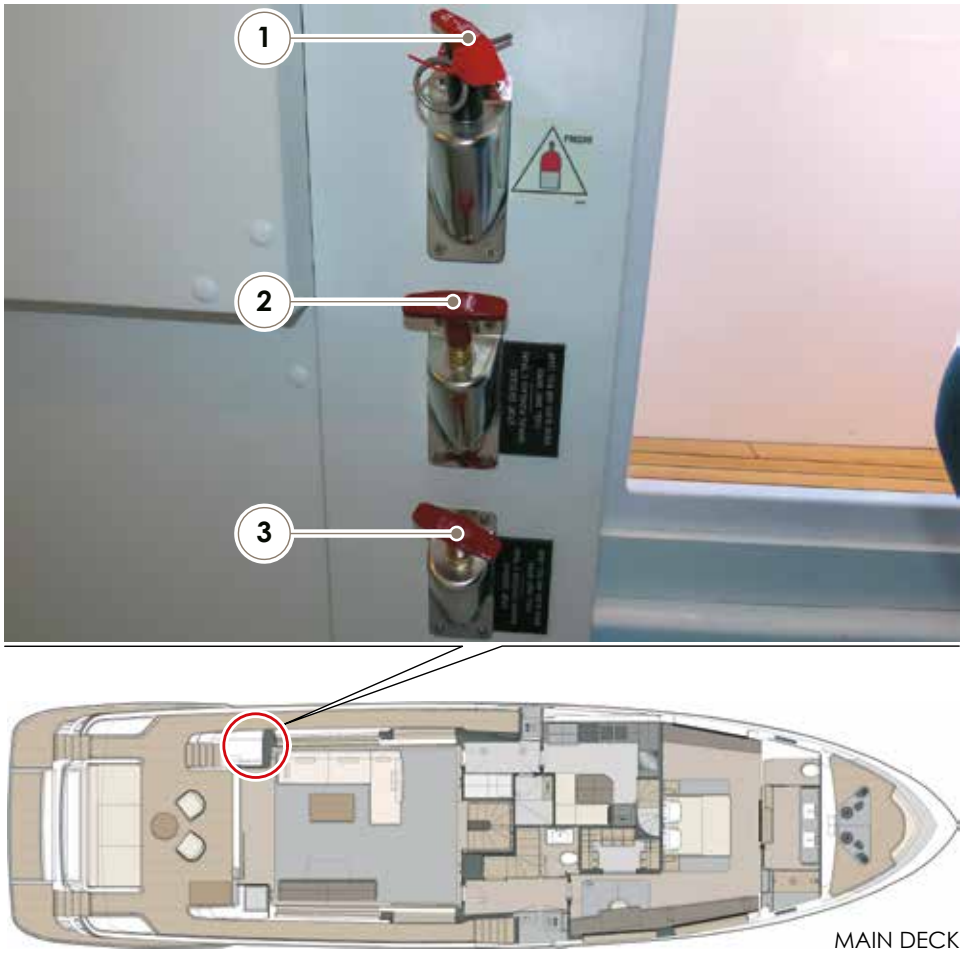
1. FM-200 fire extinguisher tie rod.
2. Switch tie rod between the main fuel tank and the daily tank.
3. Switch tie rod between the day tank to the utilities.

CAUTION

Before setting up for navigation, it is necessary to open the locks and to have the fire-fighting control panel inside the peak accessible.

CAUTION

Keep the fire fighting operating control tie rods efficient, service them and check for their operation at regular intervals (as per rules in force).



2.7.23 Smoke detection control unit

Designed and built in accordance with current rules in force, is a central fire detection able to identify and diagnose abnormal situations by offering a spectrum of visual signals: alarm, pre-alarm, fault, bypass, test, monitor. All reports are visible both and on display on both LEDs.
The control panel has a number of areas which can be connected to the detectors.
Each detection unit is equipped with its own output of alarm repetition, allowing the alarm to be repeated on the monitoring system.
Both the smoke control unit and the signal light/acoustic alarm unit are supplied with a buffer battery, in this way danger can be detected even without power supply.
If the main 24 V power supply of the control unit should fail, the malfunction is indicated visually (alarm warning light) on its control panel.
If both power supplies (main and buffer battery) should fail, the control unit activates the smoke alarm siren.
For a detailed description consult the relevant specific use and maintenance manual.

CAUTION
The control unit has been set and tested by CUSTOM LINE. Do not alter the programming controls, read the user manual for a correct operation reset, or better, address CUSTOM LINE After Sales & Service Department.

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

Use of the smoke control unit and of the signal light/ acoustic alarm unit

The batteries fitted to these units are maintenance free, they do not need to be filled with distilled water. Keep the terminals on the battery top clean at all times to prevent the battery discharge. Check the battery terminals, they should not be loose and must not have any sign of rust or oxidation.
Apply some Vaseline on the terminals to prevent their corrosion.

ENVIRONMENT

Handle and dispose of batteries according to the rules in force. Use only authorised disposal procedures. In case of doubts, contact the Port Authority.

WARNING

Keep spare batteries on board if possible.

2.7.24 Engine room and technical room fire-fighting system

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

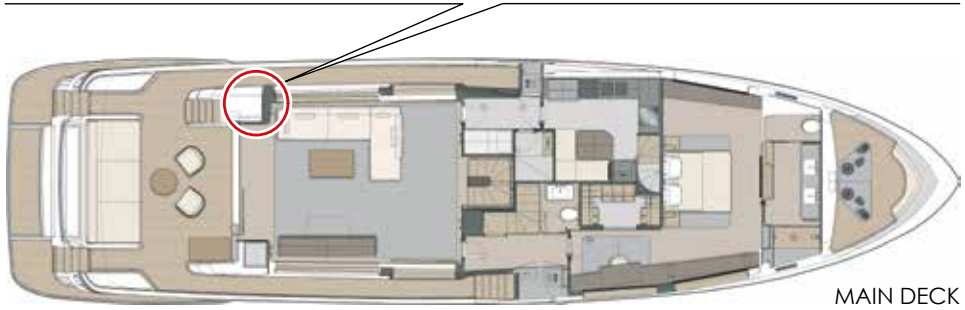
- Stop the engines (two) by operating the emergency stop buttons on the upper deck helm station dashboard;
- Turn OFF the battery breakers and all magneto-thermal switches of AC uses;
- Cut-off the engine and generator fuel supply by pulling the tie rods;
- Close the shutters of the engine room;
- Cut 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 rod which controls the discharge of the FM-200 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 boats and evacuate all unnecessary personnel.

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.

WARNING

Do not open the engine room, the technical room and the garage accesses, until the fire is completely extinguished.



MAIN DECK

For more information, refer to the technical diagram of the ship's electrical system.

WARNING

In case of fire close the garage vents present in the cove tops of mooring furniture.
The closure must be carried out by installing the cap.

2.8 SAFETY PLATES

The plates applied on the yacht are used to point out special risks: each plate is located on the part of the yacht which can be a source of risk. Before working with or on this part of the yacht, read the safety warning carefully.

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

The fire extinguisher positioning plates are located close to the extinguishers.

CAUTION
It is prohibited to remove or damage the safety plates on the yacht.

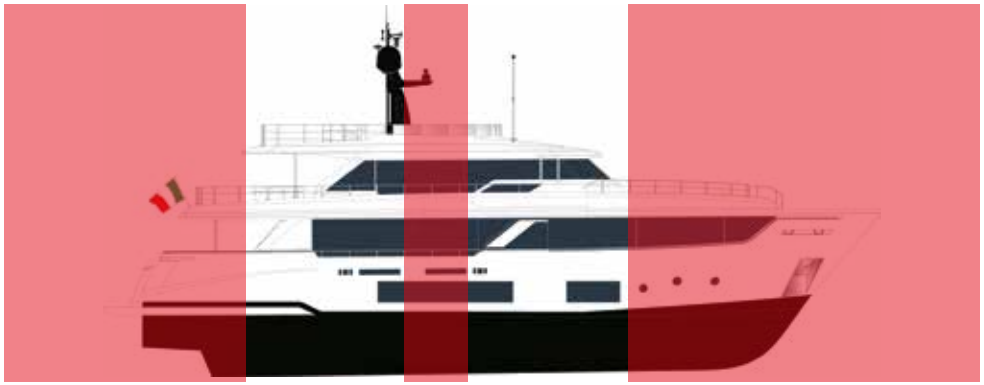
2.9 HAULAGE AND LAUNCH

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.
CUSTOM LINE 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.



- I Lifting equipment must be in a good condition. The lifting straps must not be worn out, and should be covered with suitable protections to preserve the bulwarks gel-coat and the anti-fouling paint on the hull bottom.
- The travel lift capacity must be greater than the yacht weight.
- If only one crane is available, use a "spacer" to give the lifting straps an angle greater than hull width.
- Test the stability of the system, before lifting the yacht, the yacht gravity centre depends on the load and its displacement.
- When ashore, the yacht must be placed on a cradle with at least five supports in the width and with suitable sizes so as to evenly distribute the yacht weight.
- When ashore, the yacht must be placed on a cradle with at least five supports in the width and with suitable sizes so as to evenly distribute the yacht 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

If the lifting straps are placed in correspondence of the exhaust ports, pay very much attention and apply provided protections, so as to avoid their damage.

CAUTION

Do not put the lifting straps in way of intakes, of sea exhausts or of other protrusions.
Lifting straps must be positioned according to the loading conditions of the yacht at the moment of its lifting, because these vary remarkably, for instance, when the yacht is unloaded and dry or when the yacht is fully loaded. The lifting straps arrangement must each time be carefully evaluated, in order to prevent any damage to the yacht.

CAUTION

CUSTOM LINE 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).
CUSTOM LINE is capable of providing the cradles for a correct support of the yacht (optional on demand). CUSTOM LINE is not responsible for any damage resulting from the use of cradles different from those expressly produced by CUSTOM LINE.

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 props with adequate strength and stability (each keel prop must support at least 1/5 of the whole weight of the yacht).
- 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 5 props along the keel, 3 props starboard and 3 props port in order to guarantee stability and weight distribution.
- Start positioning the three keel supports along a straight line, appropriately spaced to distribute weight.
- It is important that the props have the same height in order to prevent that the load is concentrated mainly on one of them.
- Have the yacht lowered very slowly until it almost touches the keel props, adjust the height of the props until they are in contact with the keel, in order to guarantee a uniform load distribution and a neutral trim of the yacht; keep part of the weight supported by the crane.
- Position the adequately spaced lateral props; it is important to remember that the lateral props must guarantee stability, but the whole weight must be supported mainly by the keel props.
- 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.

CUSTOM LINE is therefore not responsible for any damage to the yacht occurring while the yacht is at dry shore on props.

CAUTION
CUSTOM LINE 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.

2.10 DRAWING THE YACHT IN CASE OF FAILURE (OR HAULING)

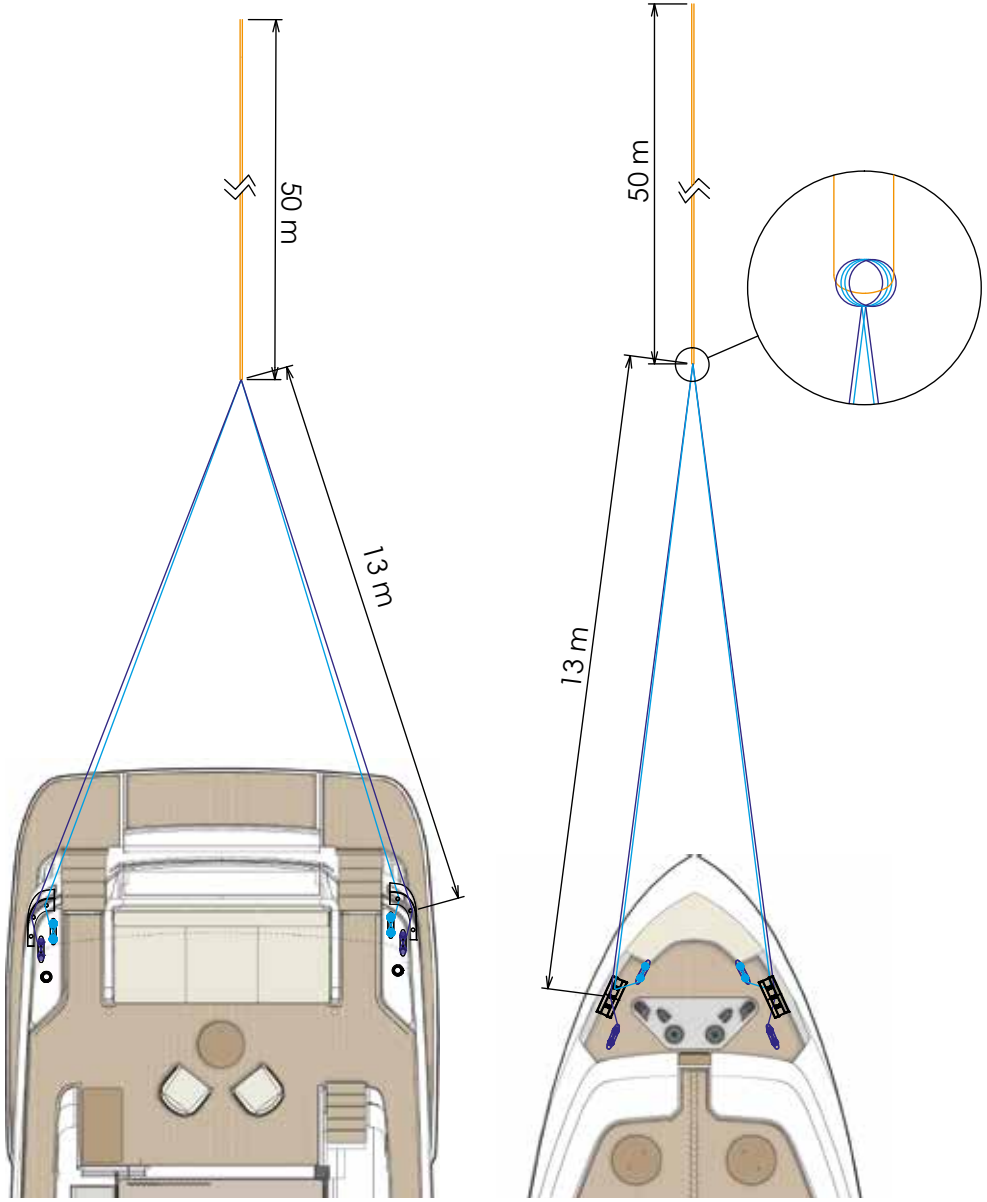
The size of the yacht does not allow its transportation by land, therefore, in case of need will have to be towed by a yacht authorized to do so.

In the case of hauling or towing, 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 hauling 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 hauling because propeller can turn.



WARNING

In case it is necessary to tow another yacht, do this under calm sea and calm wind conditions only, and tow boats with a displacement not exceeding 50% of your yacht displacement; in case of emergency, if hauling 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

Hauling 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 the temperature lowers.
When the engine is shut off, the throttles position is unimportant.

CAUTION

Always draw other boats 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 hauling rope so that it can be released when loaded.

CAUTION

It is the Owner's/operators' responsibility to make sure that the mooring ropes, the hauling 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 hauling rope on board.

CAUTION

Do not stand near the ropes during drawing (or hauling) operations, a rope that breaks can be extremely dangerous ("whip lash effect").

DANGER

During hauling navigation, the propeller shaft has to be kept turning by the water flow through propeller. We recommend not carrying out any kind of service on the propulsion devices (engines, gear boxes, shafts, etc..).

2.11 ITEMS USEFUL TO HAVE ON BOARD

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

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

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.									

CUSTOM LINE

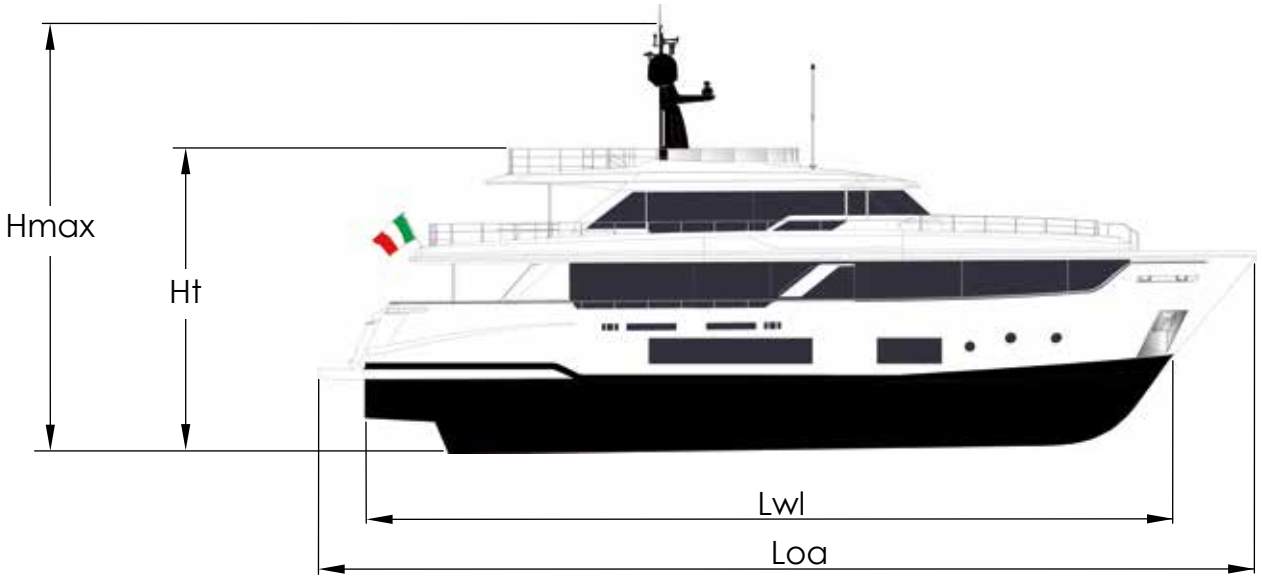
BEYOND THE LINE

Navetta 30

3

Description of the yacht

3.1 TECHNICAL DATA



MAIN DIMENSIONS		
(Loa) Overall length	28,43 m	93 ft 3 in
(Lh) Hull length	23,98 m	78 ft 8 in
(Lwl) Waterline length (yach fully laden)	23,91 m	78 ft 5 in
Maximum beam	7,31 m	24 ft 0 in
Depth under propellers (yacht fully laden)	2,20 m	7 ft 3 in
P = Bow and stern protrusions	4,45 m	14 ft 7 in
Displacement unladen	135 ton	297624 lbs
Displacement laden	115 ton	253532 lbs
H = Overall height from keel to antennas mast	11,78 m	38 ft 8 in

FEATURES		
Hull type		Semi-displacement with soft-chine
Construction material		GRP
Propulsion	Model	2 x MAN V8 1000
	Configuration	8 V-cylinders
	Power	1000 mph - 735 KW
	rpm	2300
	Weight (dry)	1780 KG (3924 lbs)
	Displacement	16,16 l
Gearbox	Model	ZF 2150 A
Capacity of fuel tanks		14500 lt - 3830 gal
Capacity of fresh water tanks	About	2500 lt - 660 gal
Black water tank capacity	About	895 lt - 236 gal
Gray water tank capacity	About	895 lt - 236 gal
Total liquid weight (full tanks)	(kg)	16397
On board electric power supply	(V)	230 V single-phase by power generators
	(V)	24 V by batteries
Power generator (no. 2)	Model	2 x 28 kW - 50 Hz
	Tension (V)	230 V single-phase
	Frequency (Hz)	50
	Power (kW)	28 + 28
Batteries	Engine (no.)	4 x 12 V - 70 Ah
	Services (no.)	12 x 2 V - 696 Ah
	Generator (no.)	2 x 12 V - 120 Ah
Bilge pumps	Engine room (no.)	2
	Garage area (no.)	1
	Crew area (no.)	1
	Mid yacht (no.)	2

CAUTION

CUSTOM LINE 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.

3.2 GENERAL DESCRIPTION OF THE YACHT

The current generation of CUSTOM LINE yachts is undoubtedly the most advanced produced up to date, which thanks to its high level technology, guarantees safety during navigation and is capable of outstanding performance and high speeds.

This requires a careful steering, cautious and suitable to the sea conditions.

In this way, you will fully enjoy the use of this yacht and at the same time demonstrate a responsible and respectful behaviour for the surrounding environment and for yours as well as for the others' safety.

Main units

The illustrations in the following pages indicate main components and areas subdivided into the following main units:

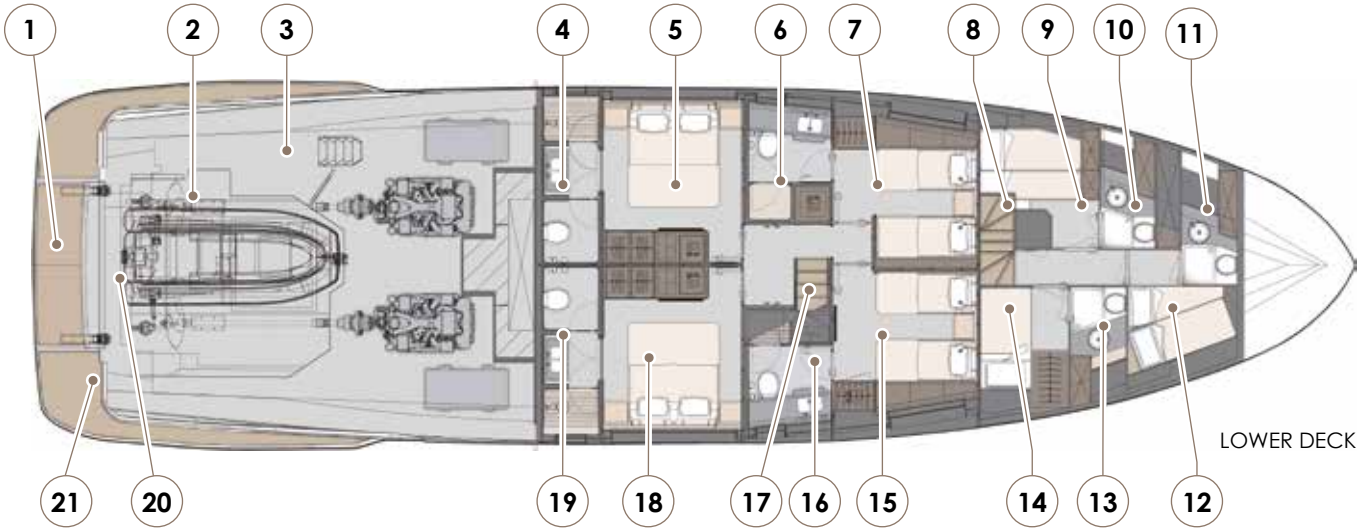
- Lower deck
- Main deck
- Upper deck
- Sun deck

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.

3.3 LOWER DECK

LEGEND	
1	Stern extended swim platform
2	Garage
3	Engine room
4	Port VIP bathroom
5	Port VIP cabin
6	Port guest cabin bathroom
7	Port guest cabin
8	Crew cabins access ladder
9	Port crew cabin
10	Port crew bathroom (stern)
11	Port crew bathroom (bow)
12	Starboard crew cabin
13	Captain's bathroom
14	Captain's cabin
15	Starboard guest cabin
16	Starboard guest bathroom
17	Main deck access ladder
18	Starboard VIP cabin
19	Starboard VIP bathroom
20	Garage hatch
21	Gangway



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

CAUTION
Do not introduce into the engine room and/or bilges any items that are free to move with the heeling of navigation.

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

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 fire-fighting system.

WARNING
Check periodically the oil level inside the bow/stern thruster tanks.

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

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.

DANGER

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

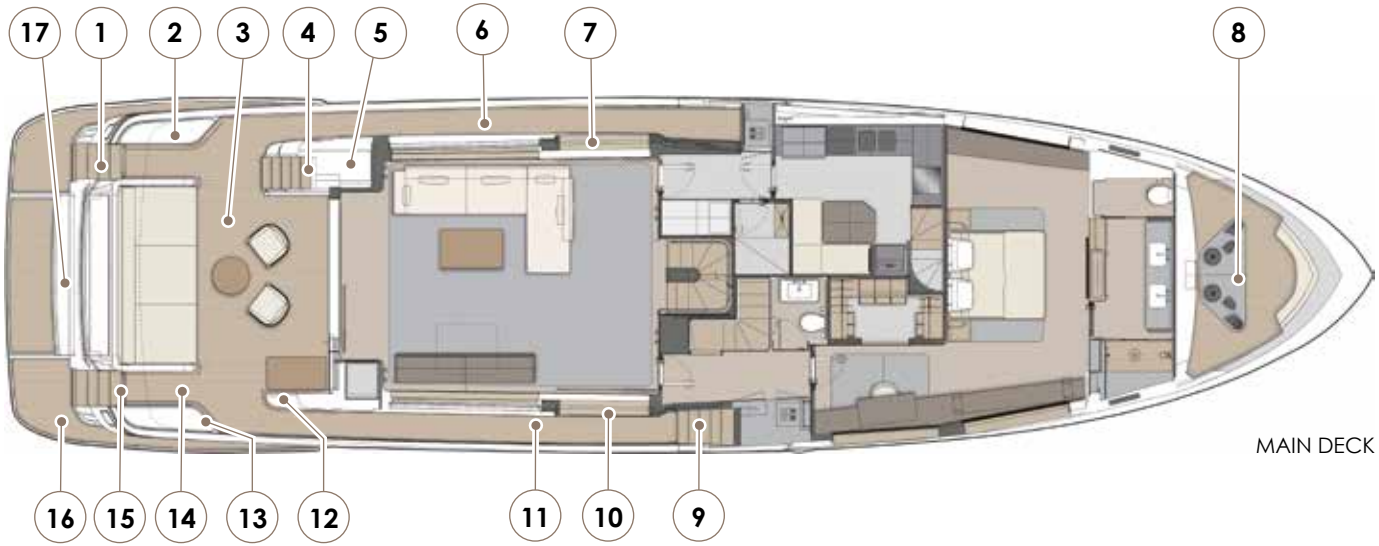
CAUTION

For a correct use of the various equipment of the technical rooms, see the relevant instruction manuals.

The cabins of your boat can be equipped with a crew call system.

3.4 MAIN DECK - EXTERIOR

LEGEND	
1	Stern platform access ladder
2	Port mooring furniture
3	Stern cockpit
4	Upper deck access ladder
5	Technical room / engine room access ladder
6	Port side walk-around
7	Port salon door
8	Bow mooring area
9	Upper deck access ladder
10	Starboard salon door
11	Starboard side walk-around
12	Stern cockpit control station
13	Starboard mooring furniture
14	Gangway
15	Stern platform access ladder
16	Stern platform
17	Garage hatch



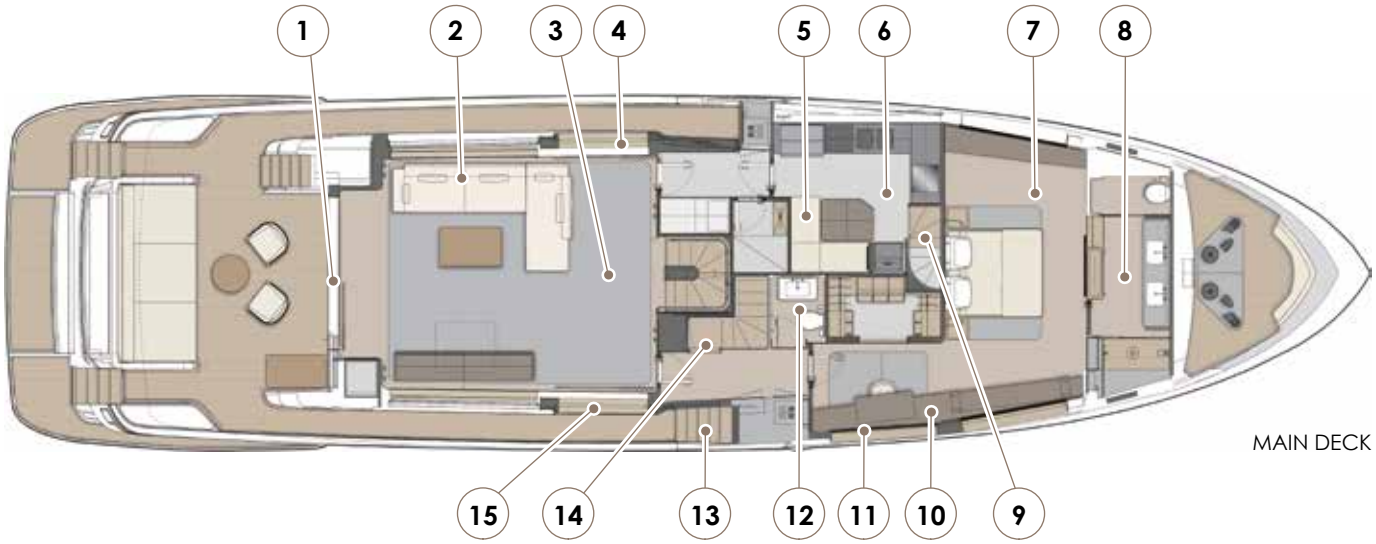
MAIN DECK

CAUTION

The removable awnings and their support poles must always be dismantled and stored in the appropriate places before starting navigation. When the poles are not in use, they should be stored in the appropriate places. The awnings should only be installed when the yacht is stationary and the weather conditions are favourable. Do not leave the blinds open in heavy rain. Do not leave the awnings installed when the yacht is unattended. Do not allow water to stagnate on the fabric of the awnings. When the awnings are not in use, keep the pole holes closed with the appropriate lids.

3.5 MAIN DECK - INTERIOR

LEGEND	
1	Salon door access to the cockpit
2	Salon sofa
3	Salon
4	Access door to port walk-around
5	Pantry
6	Galley
7	Owner's cabin
8	Owner's bathroom
9	Crew area access ladder
10	Owner's studio
11	Owner's studio panoramic window
12	Day head
13	Upper deck access ladder
14	Lower deck access ladder
15	Access door to starboard walk-around



MAIN DECK

WARNING

In the salons sliding doors **(1)** the locking pin shall NOT be used in "automatic door mode".
If used in "semi-automatic mode" with the door fully open, please check that the pin is fully slid up and fixed.
Before closing the door the pin shall be moved down and locked in its position.

CAUTION

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

DANGER

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

WARNING

Never start navigation with gates, swim ladder, gangway and garage hatch not correctly stowed/closed.

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

Since the garage hatch is opened and closed through servo-assisted mechanisms, it is always necessary to check that there are no objects or people in the vicinity before starting the movement, which must in any case be carried out exclusively by the crew members.

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

Never use foldaway cleats for the yacht mooring or hauling. They have the sole function of mooring the tender or jet-ski and are not suitable for hauling them.

CAUTION

Never start navigation with the stern mooring decks lifted.

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

CAUTION

For the adjustment of the salon door, of the side glass walls and of the balconies, please contact the CUSTOM LINE After Sales & Service Department.

CAUTION

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

DANGER

Stop using the handling (garages, side doors, cranes, glass walls) if the sea-weather conditions (wind, currents, weather factors) could jeopardize the yacht's stability.

CAUTION

Never navigate with the side windows open. Always check the correct sequence of functioning.

DANGER

Never start navigation with open side glass walls.
Constantly check the correct operating sequence.

CAUTION

The salon 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 CUSTOM LINE.

CAUTION

The living room is equipped with an air conditioning system, as most of the yacht's rooms; therefore, we recommend opening the glass-wall as little as possible when the system is operating.

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 de-activate them in case they are not used.

CAUTION

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

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

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

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

CAUTION
Do not put liquid food into the oven.

CAUTION
Never place metal containers with metal inserts in the oven.

CAUTION
Please remember that the plate, even after use, can still be very hot for a long time, and that it may cause damage to property or scalds.

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

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

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 light body and unscrew/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;
- Grease on the screw heads.

CAUTION

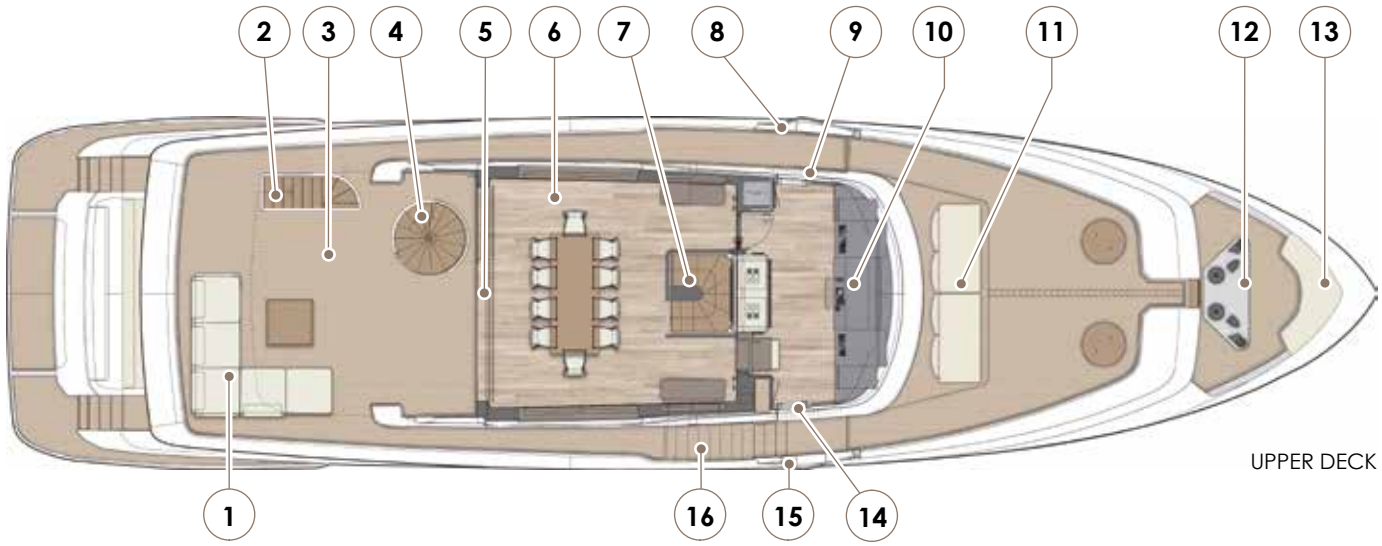
CUSTOM LINE declines all responsibility for any accident to persons or damage to property caused by any special equipment stored in the garages by the Owner or by the crew.

CAUTION

Before moving the retractable TV on the ceiling of the living room, check that there are no people within the TV's range of movement.

3.6 UPPER DECK

LEGEND	
1	Stern cockpit sofa
2	Main deck access ladder (external)
3	Stern cockpit
4	Sun deck access ladders
5	Salon door internal / external access
6	Salon
7	Main deck access ladder (internal)
8	Port side control dashboard
9	Helm station entry / exit door (port side)
10	Helm station
11	Bow cockpit
12	Bow mooring area
13	Anchor chain stowage compartment and anchor winding controls
14	Helm station entry / exit door (starboard side)
15	Starboard side control dashboard
16	Main deck access ladder (external)



UPPER DECK

WARNING

In the salons sliding doors (**5**) the locking pin shall NOT be used in "automatic door mode".
If used in "semi-automatic mode" with the door fully open, please check that the pin is fully slid up and fixed.
Before closing the door the pin shall be moved down and locked in its position.

CAUTION

For the adjustment of the salon door, please contact the CUSTOM LINE After Sales & Service Department.

CAUTION

Never start navigation with salon 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 Plexiglass 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 living room is equipped with an air conditioning system, as most of the yacht's rooms; therefore, we recommend opening the glass-walls as little as possible when the system is operating.

CAUTION

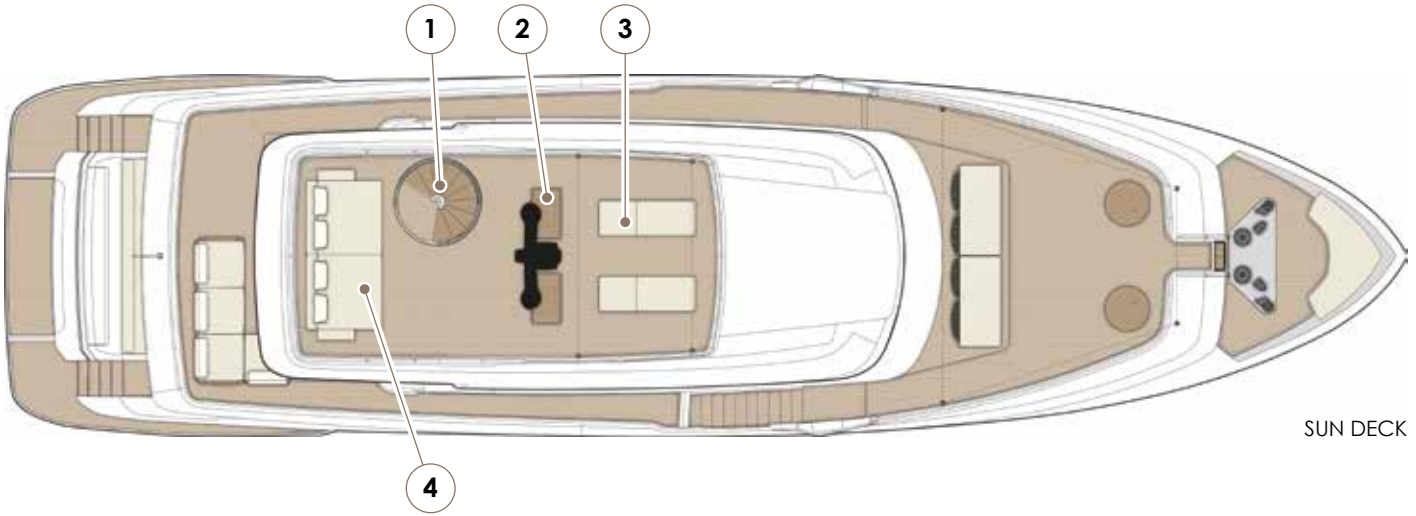
The excessive use of conditioned air may cause infirmities due to the great difference of temperature between the yacht inside and the outside.
It is recommended to condition rooms with a temperature difference of maximum 5 °C between inside and outside.

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.

3.7 SUN DECK

LEGEND	
1	Upper deck access ladder
2	Sun deck furnishing
3	Sundeck area
4	Sofa



SUN DECK

CAUTION

Never use denaturised alcohol or acetone to clean Plexiglass 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.

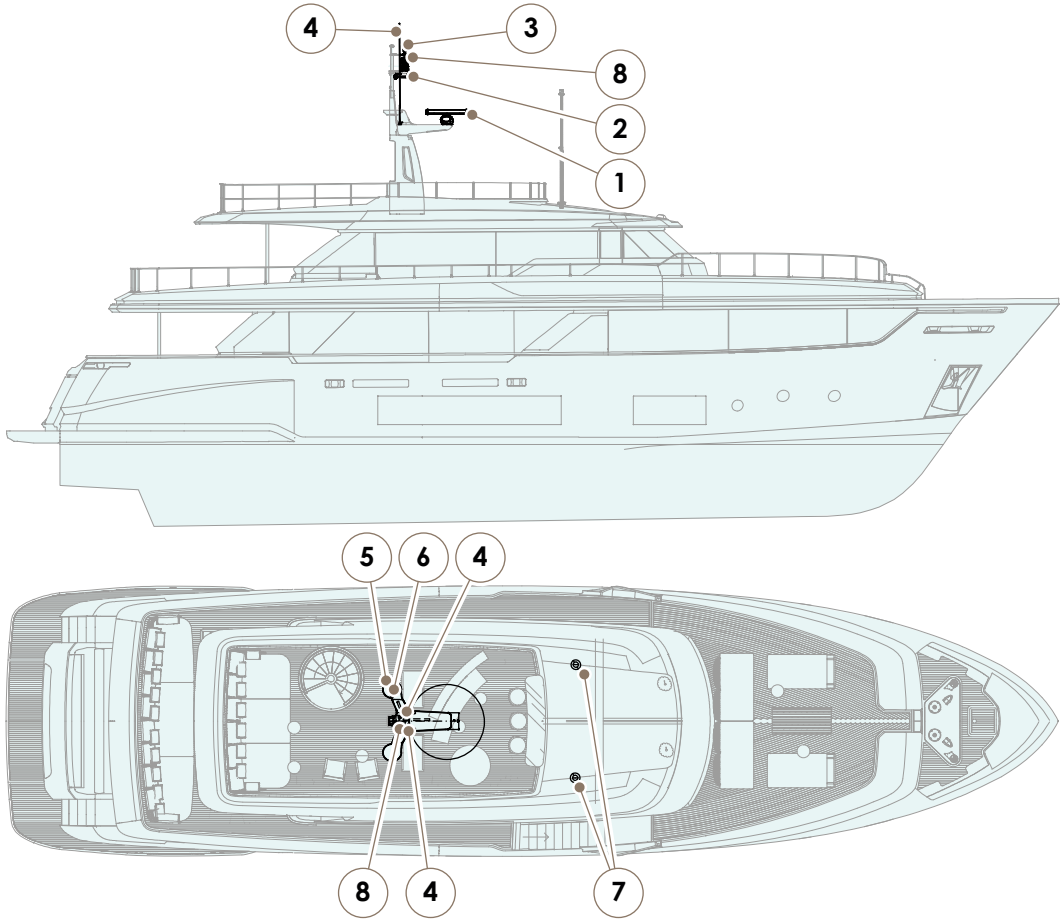
CAUTION

Keep all on board steps clean and dry.

WARNING

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

3.8 ANTENNAE AND AERIALS



ICON	DESCRIPTION
1	Halo antenna
2	Horn
3	Meteo station

ICON	DESCRIPTION
4	VHF antenna
5	GPS antenna
6	GPS antenna

ICON	DESCRIPTION
7	5G antenna
8	Thermal camera

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.

3.9 NAVIGATION LIGHTS

3.9.1 Navigation lights of the yacht

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.

It has to be remembered 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 boats.

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

DANGER
Solvents may damage the lens of the navigation lights.
The lights must exclusively be cleaned with fresh water not containing solvents or abrasive substances.
Remove the bulbs before the application of any paint.

CAUTION
Before undertaking any navigation, the Captain should make sure that all navigation lights are operating correctly. Use the navigation lights in compliance with the regulations in force.

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.

WARNING

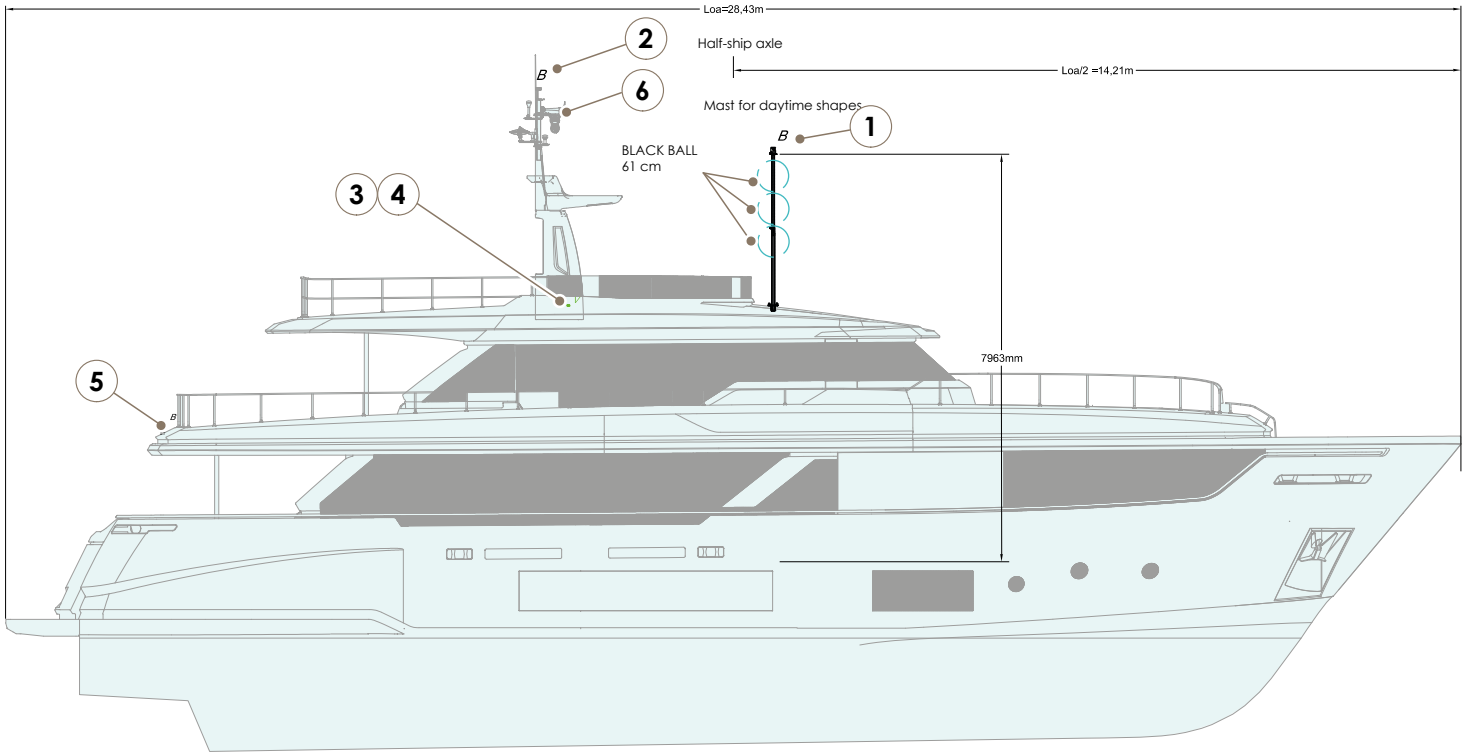
Navigation lights, shapes and sound signals.
Where navigation lights, shapes and sound signals are installed, they must be in conformity with COLREG 1972 (II International Regulations for Preventing Collisions at Sea) or CEVNI (European Code for Inland Waterways). Regulations depending on the case.

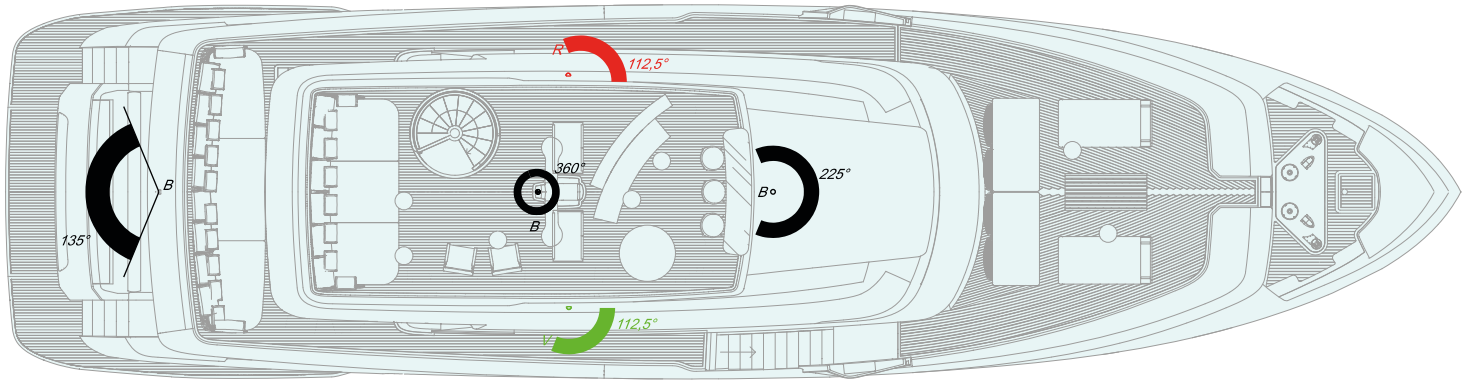
CAUTION

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

The use of headlights during the various situations of use of the yacht during night navigation will be 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).


Loa=28,43m
2
Half-ship axle
Loa/2 =14,21m
6
Mast for daytime shapes
B
1
BLACK BALL
61 cm
3
4
7963mm
5


R
112,5°
B
135°
360°
B
B
225°
V
112,5°

LIGHTS LIST					
ITEM	DESCRIPTION	COLOR	ANGLE	QNT	VISIBILITY
1	Masthead light col. grey	White	225°	1	5 Miles
2	Anchor light col. grey	White	360°	1	2 Miles
3	Nav. light STDB side col. grey	Green	112,5°	1	2 Miles
4	Nav. light PORT side col. grey	Red	112,5°	1	2 Miles
5	Stern light col. grey	White	135°	1	2 Miles
6	Not under command double light	Red	360°	2	2 Miles

CONDITION	LIGHT AND SIGNALS	COLREG
Grounded night time	Anchor light and 2 red lights	30 d
Not under command night time	2 red light	27 a
At anchor night time	Anchor light	30 b
Seagoing	Side masthead stern	30 a

ITEM	DESCRIPTION
R	Red
B	White
V	Green

3.9.2 Mast for daytime shapes

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

NOTE
The combined use of shapes, sound signals and navigation lights increases the visibility of the yacht, reducing the risk of collisions.

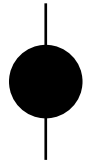
Daytime signals have the same function as navigation lights but are more visible during the day than navigation lights.

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

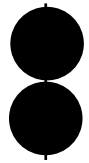
UPPER DECK

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

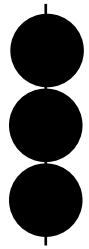
Yacht at anchor:



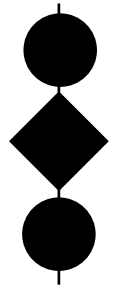
Not under command yacht:



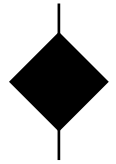
Stranded yacht:



Yacht with limited manoeuvrability:



Yacht to trailer or towed:



CONDITION	LIGHT AND SIGNALS	COLREG
Grounded day time	3 black ball	30 d
Not under command day time	2 black ball	27 a
At anchor day time	1 black ball	30 b

CUSTOM LINE

BEYOND THE LINE

Navetta 30

4

Description of the controls

4.1 LOCATION OF THE MAIN CONTROLS

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);
- Cockpit helm station;

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 CUSTOM LINE suppliers manuals and ask the CUSTOM LINE After Sales & Service Department.

WARNING

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

CAUTION

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

The variable possible causes that may compromise or obstruct the field of view from the main steering position are:

- Sea conditions;
- Reduced visibility due to atmospheric conditions (such as rain, darkness and fog).

4.2 MAIN HELM STATION DASHBOARD

In order to make the description of the control devices on the upper deck easier, the following main sections have been identified:

A. Central control panel section
B. Backup panel

UPPER DECK

SECTION A - Dashboard - Central section

1. **Multifunction display**
2. **Multifunction display**
   It allows the on-board systems to be monitored and managed.

3. **Magnetic compass**

4. **Multifunction display**

5. **Monitoring display**
   This allows the on-board systems to be monitored and managed.

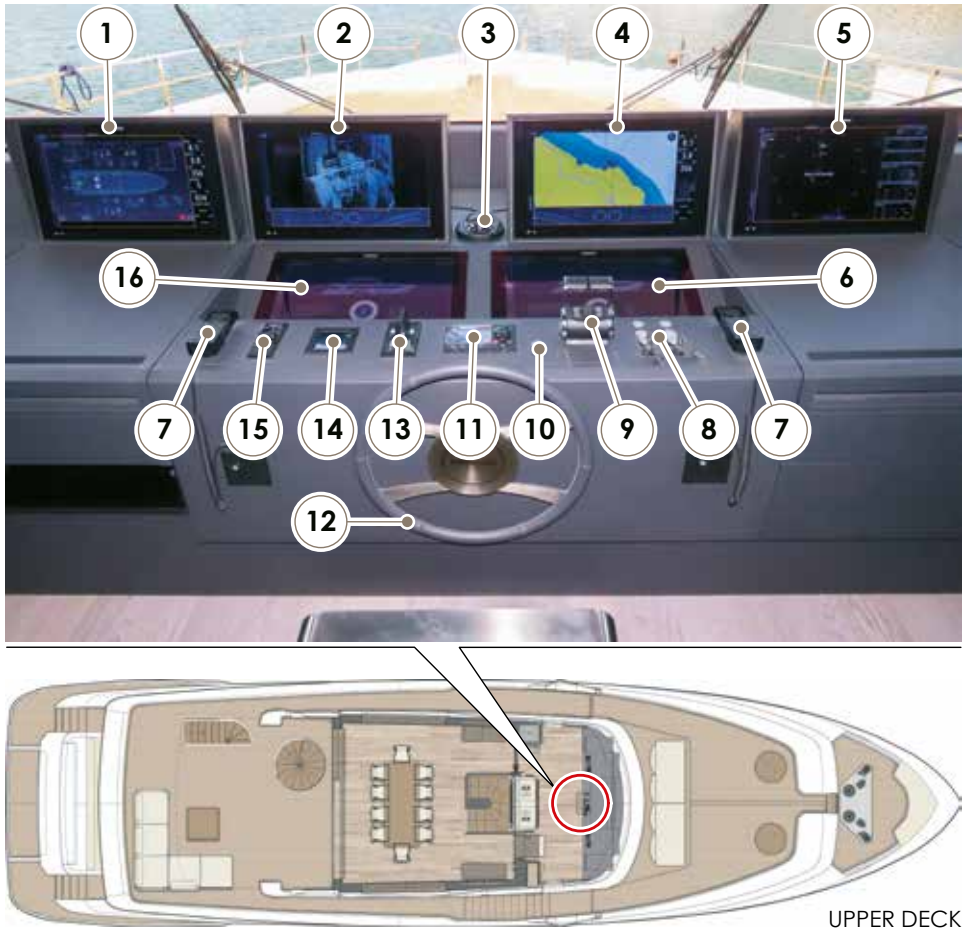
6. **Touch screen display**

7. **VHF**
   It is a radiotelephone with digital selective calling (DSC).
   Distress keys and call are protected by the use accidental.
   Single calls or group can be adequately performed from the keyboard using both the internal list or typing the number directly.
   Your yacht is equipped with a AIS system.
   AIS (automatic identification system) is a communication system for the exchange of navigation data.

8. **Engine management button**
   It allows you to:
   - Start the engines;
   - Stop the engines;
   - Stop the engines in emergency;
   - Monitor the operation of the engines.

9. **Throttle**
   They allow you to control the operation of the engines and inverters.

10. **Horn activation button**



UPPER DECK

11. Automatic pilot control panel
It allows to monitor and set the parameters of the autopilot.

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.

12. Steering wheel

13. Thrusters control panel
It enables operation and handling of the thrust generated by the thrusters.

14. Electronic steering control display
Enables the electronic steering to be monitored and managed.

15. Monitoring system control panel
Enables the management of multifunction displays.

16. Touch screen display

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

SECTION B - Dashboard - Backup Panel

The backup panel is located under the right dashboard section and has the following utilities:

1. **Fire control unit**

2. **SD reader**

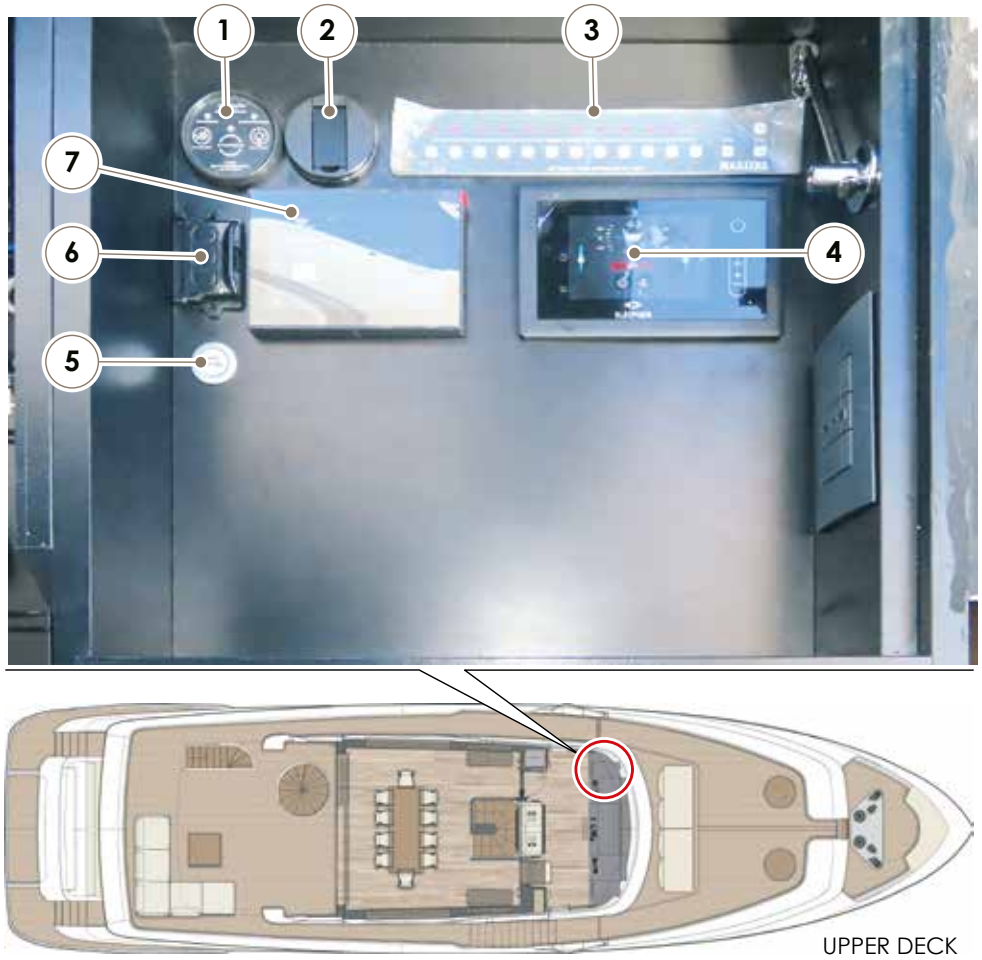
3. **Cyclic selector**
   Controls the operation of closed circuit surveillance cameras on board.

4. **Stabilizing fins and bow/stern thrusters control display**
   It controls and monitors the operation of stabilizing fins and bow/stern thrusters.

5. **N.U.C. activation button**

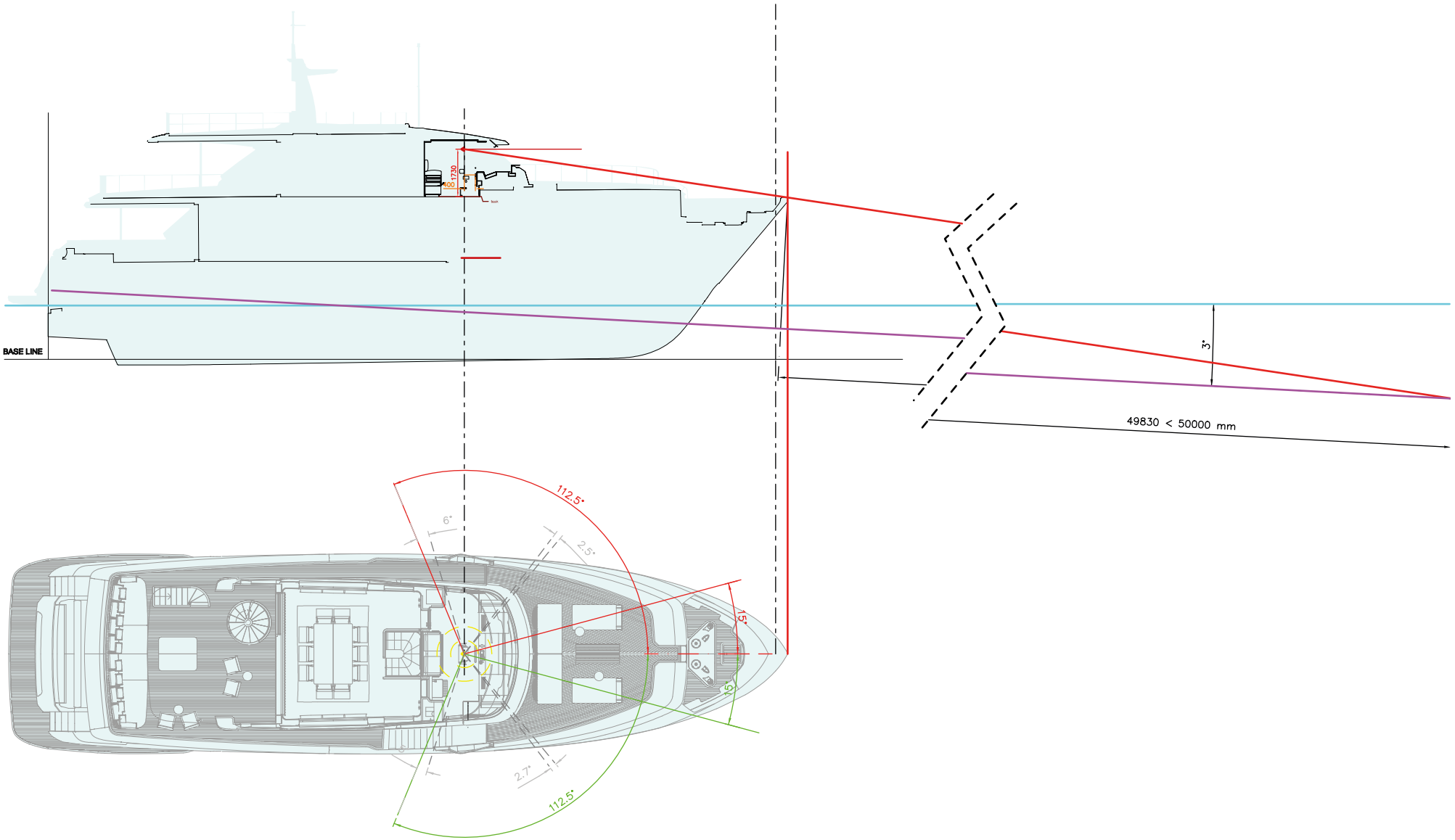
6. **OBD socket**

7. **Gyroscopic stabilizer control panel**
   It allows monitoring and setting the functioning of the gyroscopic stabilizer.



UPPER DECK

Field of view from main helm position



4.2.1 Synoptic panel

This panel allows you to manage:

1. **Navigation lights**

2. **Windlass commands**

3. **Bilge pumps**

4. **Grey water pump**

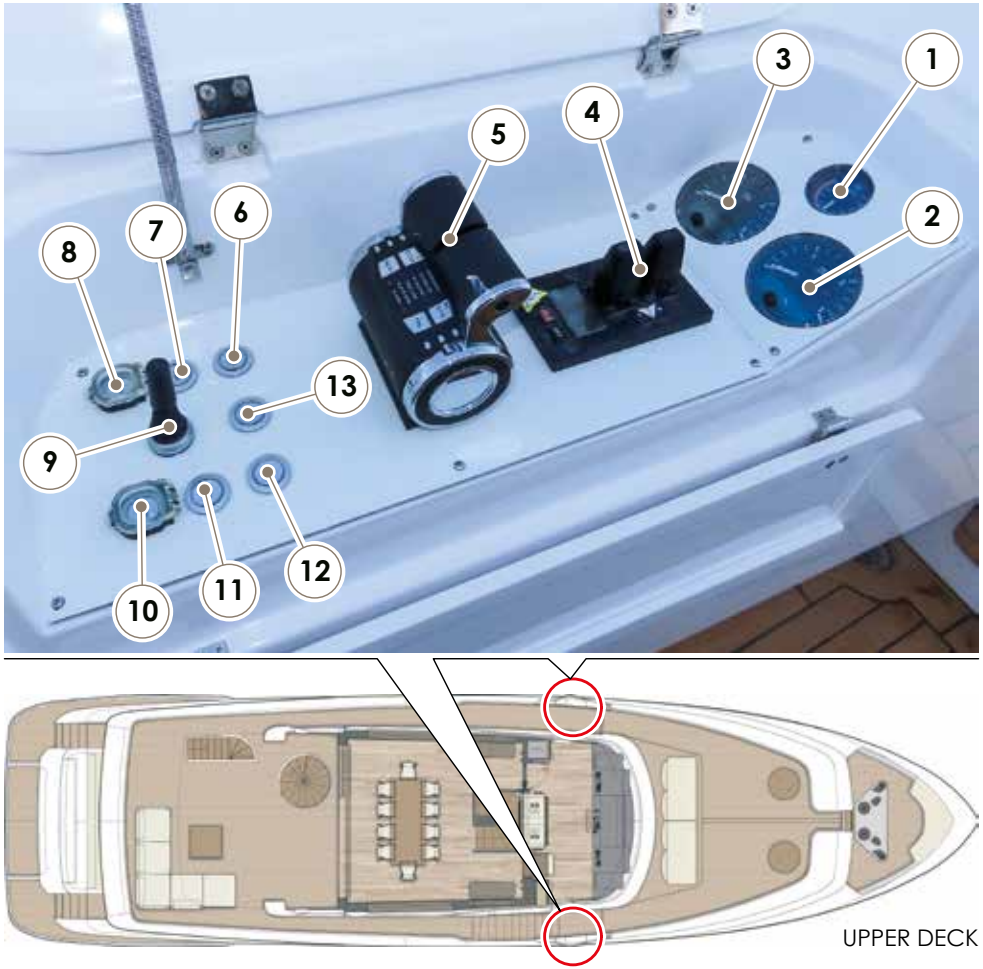
5. **Black water pump**

6. **Warning lights:**
   The warning lights present are:
   - Garage hatch open;
   - Swim ladder extracted;
   - Stern swim platform not in navigation position.

It also enables the following lights to be viewed:
- Grey and black water tank levels
- Bilge alarms in the cabins
- Stern windlass operation
- Engine room ventilation operation

4.3 RIGHT AND LEFT MANOEUVRING POSITION

1. **Rudder angle indicator**
2. **Right engine RPM indicator**
3. **Left Engine RPM Indicator**
4. **Thrusters control panel**
   It enables operation and handling of the thrust generated by the thrusters.
5. **Throttle**
   They allow you to control the operation of the engines and inverters.
6. **Left engine start button**
7. **Left engine stop button**
8. **Left engine emergency stop button**
9. **Tiller control**
   It allows the joystick to control the rudders.
10. **Right engine emergency stop button**
11. **Right engine stop button**
12. **Right engine start button**
13. **Horn button**



UPPER DECK

4.4 HELM STATION IN CONTROL ROOM

1. 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.

LOWER DECK

4.5 INSTRUMENTATION

4.5.1 VHF-DSC Radiotelephone (standard)

For use of the radiotelephone:

- Supply the device by the magneto-thermal switch located on the general electrical panel.
- Press the ON/C key; the appliance goes on by default on the priority channel frequency (16). If the "LAST USED CHANNEL" function has been previously set, the radio telephone will turn on on the frequency of the last set channel.

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

WARNING

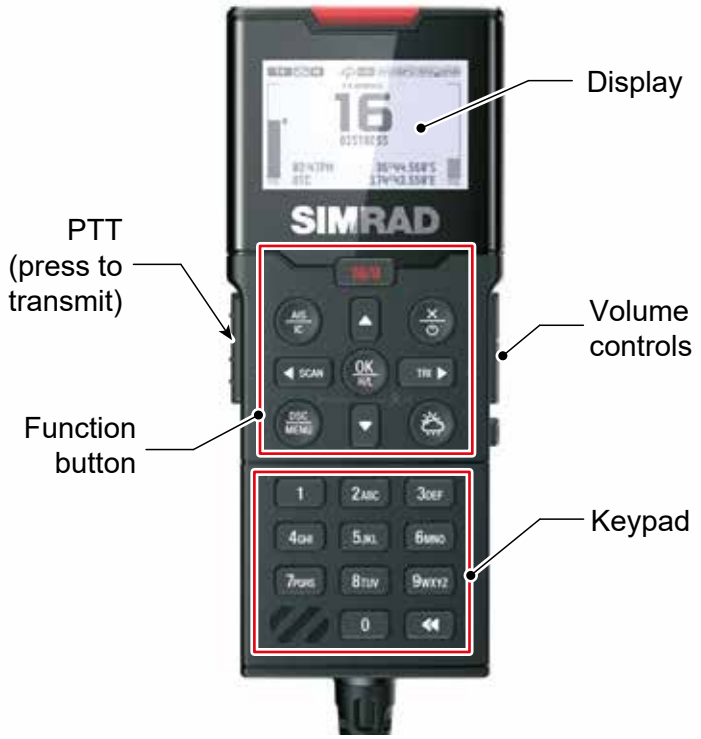
For channel selection operations and the activation of the specific radiotelephone functions, please refer to the dedicated manual provided by the Manufacturer.

The keyboard has digital keys for the selection of the channels and function keys for the adjustment of the volume and the squelch.
The SHIFT key serves to access the secondary functions.

The PTT key (press to transmit) situated on the left side of the appliance is active when the telephone is removed from the support.
The 16 key allows to select the channel for distress vocal transmissions.
It is also possible to make digital selective calls, much quicker and easier than the traditional ones. For this purpose, raise the protective door situated on the front side of the radiotelephone.

Then, press the DISTRESS key to access the various functions.

Radiotelephone keyboard



Use the▲ and ▼ keys to scroll the various danger categories available:
- Not defined (default setting)
- Abandonment
- Piracy
- Man over board (MOB)
- Fire
- Flooding
- Collision
- Hauling
- Listing
- Sinking
- Drifting

Hold the DISTRESS key to start the 5-second countdown before the message is sent.
Press ON/C to return to normal operating mode.

CAUTION
The DSC-call should only be made if the yacht is in a real distress situation. Otherwise, to send a DSC-call with no need is considered as an infringement.

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

4.5.2 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. Owns 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).

Taking control phases
- Set the levers of the throttle to idle position. The station cannot take control with handles set to other positions. You hear the acoustic sequence of initialization.
- Press **COMMAND (CMD)** via the station. The **COMMAND LED LIGHTS** flash.
- Move the control levers to any position.

- The control LED lights emit a continuous light.

WARNING
Subsequently moving the lever of the lever group will engage the gear.

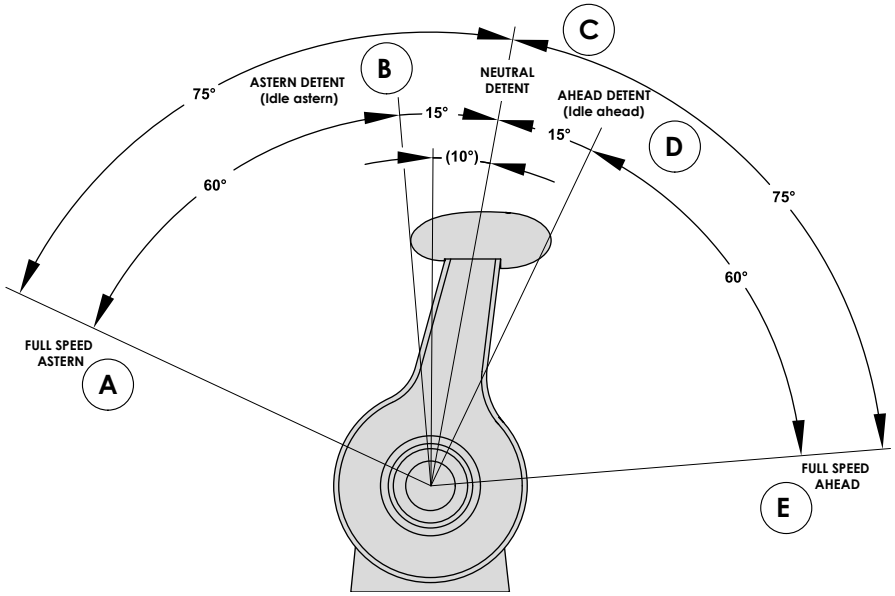
- Start the engine while sending the idle run control. If the levers of the throttle are not set to idle run, the interlocking start switch will prevent engine start.
- Shift the levers to the forward or backward retainer. The transmission starts and the **CONTROL LEDS** light up steadily red to indicate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

4.5.3 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.

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.

4.5.4 Thruster control panel

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

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

4.5.5 Steering wheel

The rudder wheels are connected via electric actuators to an electro-hydraulic control unit which, by means of hydraulically-operated systems (cylinders), allow the rudders to be moved.

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

4.5.6 Automatic pilot (autopilot)

The operation modes of the autopilot are following:

- AUTO (automatic control of the current heading as set course);
- NO DRIFT (advanced control of bow heading, cancelling the effects of wind, tides and rolling);
- NAV (track control);
- STBY (yacht control by means of the steering wheel).
- FOLLOW-UP (it is possible to use the on-board and starboard buttons on the controller).
- NOT FOLLOW-UP (it is possible to turn the rotating knob and adjust the set rudder angle).

The autopilot functions are checked by simply pressing the keys.

NOTE

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

DANGER

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

WARNING

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

MAINTENANCE

At least once a week check the correct operation.
At least once every six months check all connections.
When necessary have it calibrated.

4.5.7 WATCHIT system (optional)

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

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

CAUTION

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

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

The system has 4 modes of operation:

- **Normal Mode** – In this mode the system will generate a vocal an obstacle alert in case it has detected a potential hazard on the yacht's path. The alert will be heard 30 seconds before impact in order to allow enough time for the skipper to react.
- **Crowd Mode** – Whenever the system detects multiple objects in the near surrounding and the yacht speed is less than 15 Knots - the system will automatically switch to Crowd Mode and the vocal alerts will be replaced with Beeps to inform the captain about any potential risks. The beeps frequency will increase as the risking

object will get closer to the yacht.

- **Anchor Mode** – Whenever the system has detected that the yacht has stopped – it will automatically switch to Anchor Mode. Incase the system has detected the yacht is drifting, it will popup a Drifting Notification. After 5 minutes incase no one acknowledge the notification – a drifting alert will be triggered.
- **Marina Mode** – Whenever the yacht has entered a marina, the system will switch to Marina Mode. In this mode no vocal alerts will be heard.

NOTE

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

4.6 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 hauling";
  - — – – – a prolonged sound and three short ones at intervals of two minutes "last ship towed answering to ship hauling";
  - – — – 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".

CUSTOM LINE

BEYOND THE LINE

Navetta 30

5

Instructions for use

5.1 NAVIGATION SET UP PROCEDURES

Preliminary checks
An accurate preliminary preparation is fundamental for a safe navigation. The text below summarizes come 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 main electrical panel and on the monitoring system display the possible lighting of the warning lights for the bilge pumps, indicating the presence of water. If the indicators are lit, turn on the bilge pump buttons. If pumps work without interruption and discharge water, this means that the float switches are jammed or damaged (have them checked). If pumps work, but water does not come out, this means that the suctions are clogged (clean them).
- Check sea cock strainers for engine and generator cooling and for the supply of the air conditioning system. If they are dirty, close hull valves, remove and clean the baskets, then reinsert them and close the hull valves with care.

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 is crossing a dirty sea area, check the condition of the strainers and proceed with their cleaning. This precaution is very important, to avoid the damage of mechanical parts (like engines, generators, etc..), of the exhausts systems and to 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 gangway, trim tabs, steering system, etc.. If necessary, top up.
- Check liquid levels (fuel, fresh water) in the tanks.

WARNING
To carry out the above mentioned checks and the top-ups, refer to specific manuals supplied by the Manufacturer.

- 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 loads 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 are boarded to 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).

CAUTION

The removable awnings and their support poles must always be dismantled and stored in the appropriate places before starting navigation. When the poles are not in use, they should be stored in the appropriate places. The awnings should only be installed when the yacht is stationary and the weather conditions are favourable. Do not leave the blinds open in heavy rain. Do not leave the awnings installed when the yacht is unattended. Do not allow water to stagnate on the fabric of the awnings. When the awnings are not in use, keep the pole holes closed with the appropriate lids.

- 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 anchor winches and the anchor chain stopper.
- 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 boats moorings, etc..).
- Check that the engine room extractors are operating.
- Ensure no flammable or other improper materials have been stowed in engine room.
- Ensure that hull valves for engine and generator cooling and for air conditioning system are operating (open).

- Ensure engines and generator fuel circuits are operational (open valves).
- Start the generator and, after a few minutes of preheating, load electric power by means of 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 24V uses on electrical panels. Disconnect not connected uses after checking their proper operation.
- Start the engines.

CAUTION
The use of lateral closure systems, such as Cristal or similar, is not permitted during navigation.

5.2 START OF PROPULSION ENGINES

5.2.1 Setting into operation

During the first few hours of operation, it is recommended that new engines run at a maximum of three-quarters of their maximum load and at varying speeds. After this initial run-in, the engine can be gradually brought up to full output.

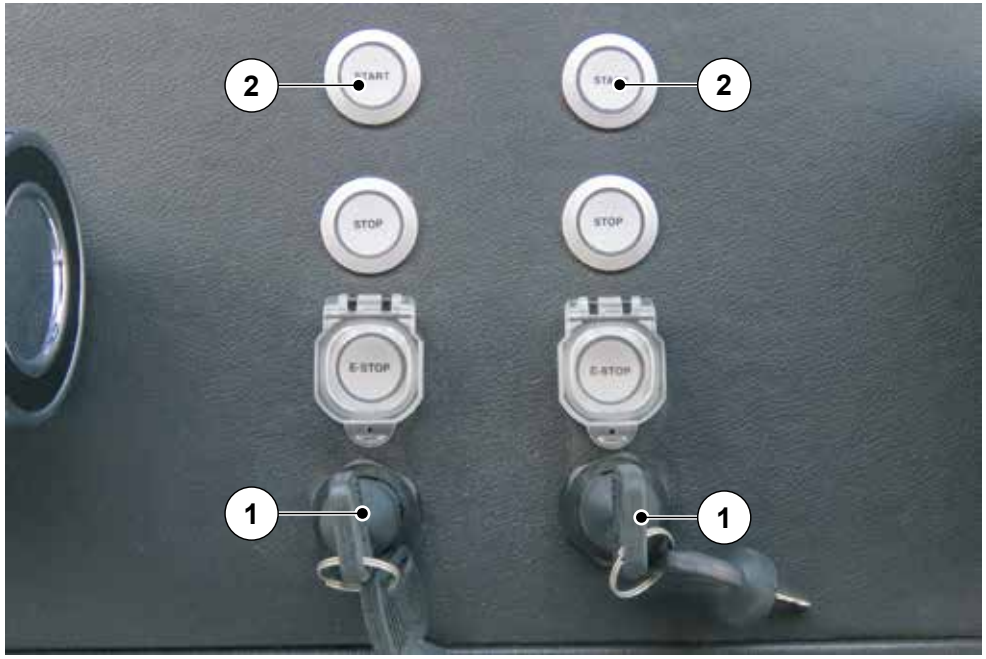
WARNING
Engines should be started and conducted only by authorized personnel. Take necessary measures to avoid that the engine can be started, by not authorized personnel, without notice.

CAUTION
Before starting an engine, read carefully the instruction manual. Should doubts persist, ask for the help of a person in charge.

5.2.2 Engine start

Before daily start of the engine, check fuel level, coolant level and oil level in the engines and in the generators.

- Check engine oil level only approx. 20 minutes after the yacht has been switched off.
- Verify that operational uses of the yacht are connected on the electrical panels.
- Start the generators.
- Check if cooling water temperature and generator oil pressure are correct. We recommend to pre-heat for some minutes, before supplying the generators with electric load.
- Set the gearbox to neutral;
- Insert the ignition key (**1**) and turn it so as to give the engine start consent;
- Click the "Start" button (**2**) to start the engine (not more than 10 seconds).
- After start, release button and adjust the throttle on the required rpm.
- Check if oil pressure reaches the normal value within 10 seconds.
- Verify the correct temperature of engine cooling water.
- Start the first engine when you are sure it operates correctly; then start the second engine with the same procedure used for the first.
- Warm up the engine up for about 2-3 minutes at 1000 rpm max.
- Check the alternators charge.
- Activate the bow/stern thrusters by means of the relevant control panels of all helm stations.



CAUTION

In the case of a engine malfunction alarm, the luminous ring of the relevant Start button on the helm station will light up red in a flashing manner.
Acknowledge on the helm station or in the engine room.

5.2.3 Testing after the start of the propulsion engines

- Check that water comes out from the minimum exhaust pipe and if it comes accelerate lightly with engine idle for a few seconds. Failure to stop the engine, locate the fault or call technical assistance.
- Spin engines just above the minimum until they have not reached operating temperature.
- Check that there are no unusual noises or excessive smoke. Failure to stop the engine and call technical assistance.
- Check the efficiency of the equipment by the plotter radar, VHF, compass, etc..
- Remove the shore cables if inserted.
- Remove the moorings and verify that there are no peaks in the notice or floating objects that prevent the movement of the propellers.

DANGER

Make sure that there is no staff at the discharge of the gas and in the vicinity of the mooring lines.

5.3 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 to allow a correct run-in of all systems and components on board.

WARNING

We recommend consulting the technical documentation provided by the Manufactures 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).
- Check, by means of indicators installed on the electrical panel of main helm station, the correct load condition of the batteries starting the engines and utilities. Moreover, the engine alternators must correctly charge the batteries.
- Check the efficiency of the rudders (by often checking the tiller angle) and of the interceptors.
- Before and after navigation, check the correct level of oil in the following systems: steering system, interceptors, hydraulic gangway, bow/stern thruster, 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 back wall, considering that it is not watertight.

5.4 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.

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.
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 boats, you will not cause any serious damage.

Before unmooring check the following:
- That there are no other yachts manoeuvring nearby;
- That the mooring ropes are not damaged;
- That the fenders are positioned and well fastened (in case of wind or surf prepare a passenger with fender to avoid damages);
- That there are no floating objects or loosen ropes which can damage the propellers.

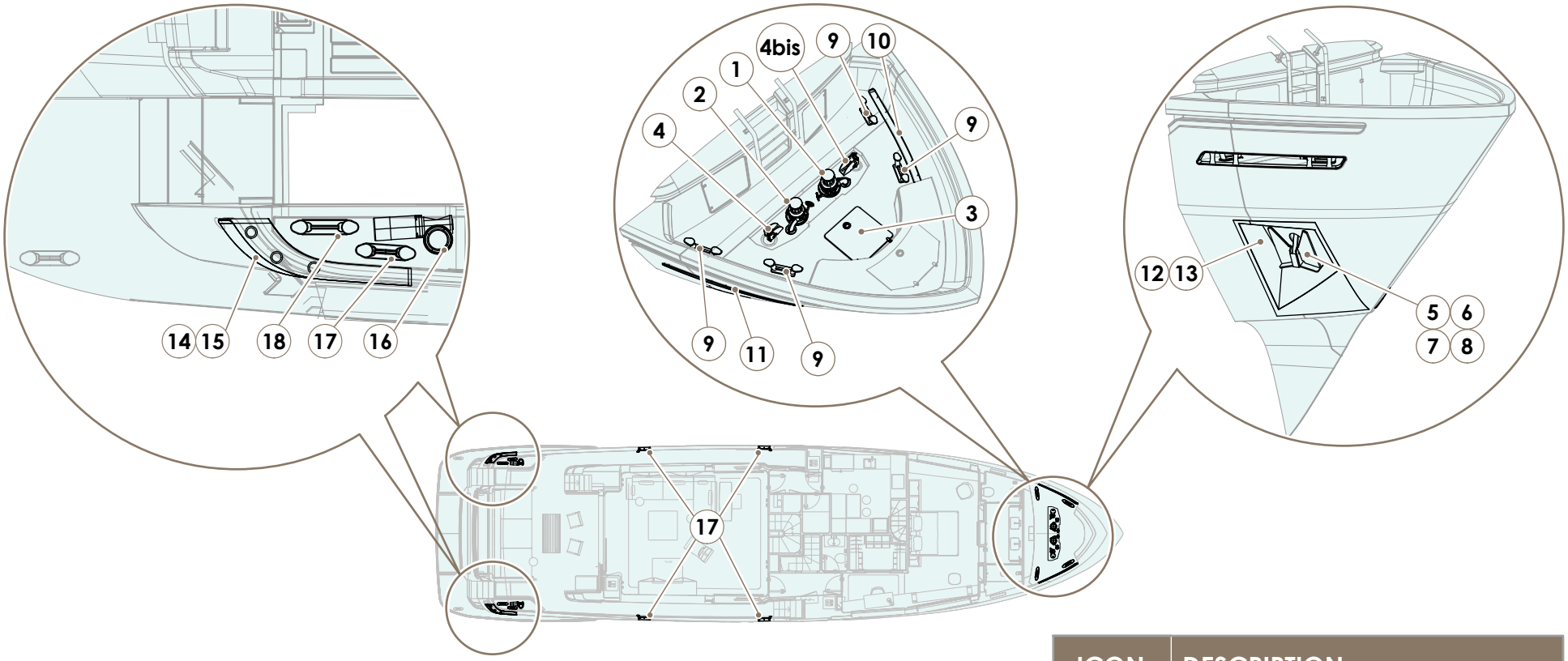
If the yacht is moored with the stern to the shore:
- Undo the stern lines, haul in the chain, until distant from the shore, and head to the exit.

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.

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 never to leave the steering wheel unattended, 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 bow/stern thrusters rpm and to the fresh way of the yacht, especially with headway, as a result, with an high rpm and an high speed the rudder efficiency is high; on the contrary, when the engines are idling and low fresh way the reaction of the tiller angle is almost negligible.

CAUTION
Do not use the stern platform cleats as permanent mooring points of the yacht. They should only be used for tender or jet-ski mooring. The stern cleats must never be used for the tender or chase boat hauling.

5.4.1 Mooring points



ICON	DESCRIPTION
1	Port bow windlass
2	Starboard bow windlass
3	Watertight push-button panel
4	Chain guide roller
4bis	Chain guide roller
5	Anchor

ICON	DESCRIPTION
6	Galvanized chain
7	Anchor swivel
8	Adaptor piec
9	Mooring cleat
10	Port bow fairleads
11	Starboard bow fairleads

ICON	DESCRIPTION
12	Port bow hawse
13	Starboard bow hawse
14	Port fairleads stern
15	Starboard fairleads stern
16	Stern windlass
17	Mooring cleats
18	Mooring cleats

5.5 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 minimizing fuel consumption, it is recommended to keep the engine operating speed in the range between 1500 and 2000rpm.

CAUTION

During navigation, the rear 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.

Avoid harsh accelerations or decelerations and consequently excessive stress for the engines.

Keep the engines at idle run for some minutes before stopping them, so that they can gradually cool down.

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.
- 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 boats, 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.

5.6 CHECKS 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 on electrical panels no thermal switches have tripped.

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.

5.7 TIPS FOR NIGHT NAVIGATION

During night navigation, always switch on navigation lights. As to the prearrangement and checks during navigation the same recommendations contained at section "Engine drive" are valid.

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 hit against unexpected obstacles (floating or half-submerged bodies).

5.8 OPERATING IN SHALLOW WATER

DANGER

COLLISION HAZARD

Use extra caution in shallow water or where underwater/floating objects may be present. Hitting an object at high speed or at an acute angle can seriously injure people and damage the yacht.

CAUTION

Constantly check depth and sea bottom shape with the aid of nautical charts and on-board instruments.

5.9 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
CUSTOM LINE 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	Aver-age	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	

5.9.1 Navigating with bad weather conditions

The navigation safety (especially with bad weather) mainly depends upon the choices taken by the Captain and by his behaviour, he should sometimes, according to the sea condition, decrease the speed of the yacht remarkably.

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.

5.10 OPERATIONS TO CARRY OUT WHEN APPROACHING THE HARBOUR

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 berth and the berthing course are free from incoming, leaving or moored yachts or yachts with the signal of unsteered craft at shore;
- That, on the electrical panels, all necessary services are supplied (winch, thrusters, etc..); Disconnect unnecessary services;
- That the boathook is easily accessible and does not hinder any passage;
- The operation of acoustic signals and of swinging spotlight;
- In case of at-night mooring, have a torch light (possibly operating) handy;
- That the passengers will not interfere with operations and, if participating;
- They know whom to listen to and what to do;
- Ensure that bilge, grey water tanks and holding tanks are empty;
- That mooring ropes and fenders are correctly arranged.

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.

5.11 PREPARATION FOR ANCHORING

The anchor winches, located at bow, can be operated with the remote controls located in the bow peak. In the main helm station there is a button activating for washing the anchor and the relevant chains.

CAUTION
If you wish to use the anchors, remove the safety locks.

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 supplied 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 winches (remote button boards) might accidentally activate them.

CAUTION

Lock the chains with its safety retainer, before setting up for navigation.

CAUTION

Do not operate the anchor winch electrically with the lever in the drum housing or in the wildcat cover.

We remind you that the anchor winch system has no safety end stroke controls, therefore it is advisable to manoeuvre "manually" the last chain metres, by means of the remote control buttons, in proximity of the roller or when you reckon to ease away almost the whole chain.

Both winches are equipped with remote control.

To avoid overheating of the anchor winch, it is advisable to help recovering the chain, by moving slowly the yacht toward the chain, without approaching it too closely, so as not to damage the hull.

If the chain has been weighed, after an anchoring on muddy or sea weedy bottom, we suggest washing it, by means of washing system on the anchor roller; supplied by the wash/fire-fighting pump.

5.11.1 Anchor weighing

Start the yacht's engine. Press the control button available and start to weigh the anchor.

If the anchor winch stops without any reason, the anchor might be stuck and therefore the anchor winch thermal switch trips, due to the effect of the effort. In this case, if after several attempts the anchor winch remains stuck, we suggest to manoeuvre the yacht, to refloat the anchor.

Check the raise of the last metres/feet in order to avoid bow damage.

5.11.2 Anchor lowering

Lower the anchor by means of the electric controls or manually. To carry out this operation manually, unlock the rotation, let the wildcat turn freely on its shaft and the chain fall into the water. Remove anchor safety retainers.

To lower the anchor electrically, press the control button at your disposal. In this case the anchor lowering is perfectly controllable and the unrolling of the chain or of the line is regular. Once the yacht is anchored, lock the chain with the safety cable.

The anchor and the chain may cause damages to 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.

CAUTION

Pay utmost attention: never get too close to moving parts to avoid danger and injury.

CAUTION

The chain is fastened to the yacht by means of a slip hook. If it is not possible to remove the anchor from the sea bed this system will make it possible to resume navigation.

CAUTION

The anchoring area is a circle with the centre at the anchoring point and a radius equal to the chain length plus the yacht length. The entire anchoring area must be free, in case of sudden variations of wind and/or current direction, especially in case of night anchoring. At night, before dropping the anchor, check that the white anchor light works.
Before anchoring, check the nautical charts: anchoring is prohibited in certain areas, in weed covered sea bottom, anchoring is unsafe and harmful to the environment, on rocky sea bottom, the anchor may get stuck 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.

WARNING

When the winch is operating, be extremely cautious of rotating parts; keep your feet, hands and the remote control cable at safe distance.

5.11.3 Anchoring operations

- Switch on the anchor winch switches on the general electrical panel of the technical room;
- When the winch hand-held control is not used, disconnect it and stow it away, in order to prevent contact oxidation;
- Before operating the anchor winch with the electric control, make sure that the wildcat clutch is properly engaged and remove the safety retainer;
- 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.

WARNING
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.

This is carried out easily by releasing the bush located on the barrel, by means of levers stowed in the chain pits.

CAUTION
During navigation, both the clutch and the chain stopper must be securely locked.

5.11.4 Weighing the anchor

To weigh the anchor, perform the same operations previously described above, in reverse order. In windy or strong current conditions, start the engines and keep the bow toward the anchor position to avoid the breakage of the chock.

Once the anchor is on board, fasten the chain stopper before resuming navigation.

CAUTION
Prior to departing, check that the chain stopper is properly fastened.

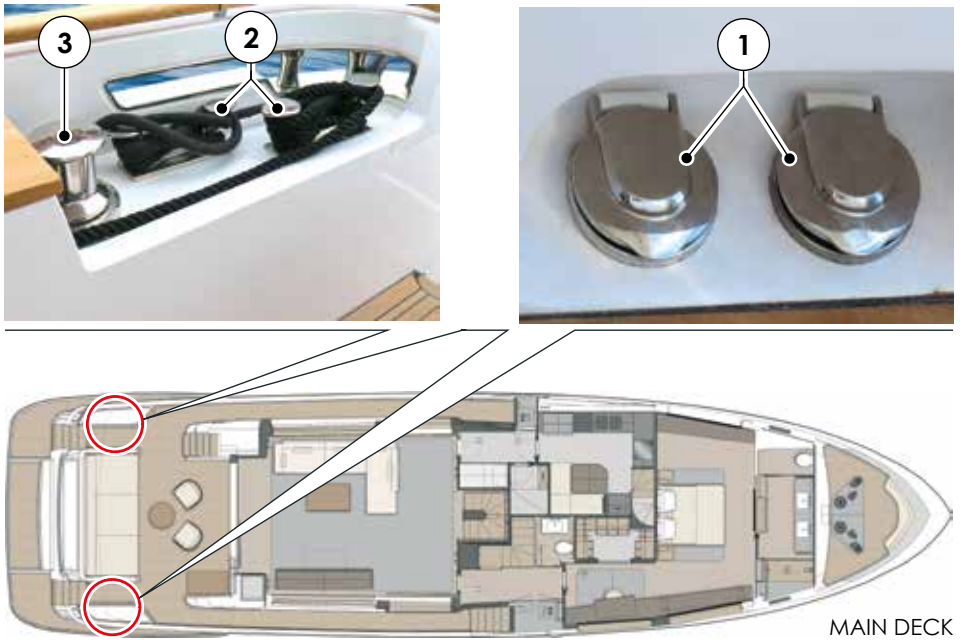
5.12 WARPING WINCHES

Operation
On both sides of the yacht, at stern, inside the mooring locker, there is a warping winch **(3)**.
For the operation it is necessary to fit the line into the barrel and to operate foot button.
The foot buttons **(1)** for each winch are located at the base of the relevant mooring locker and can be activated by pressing them with one foot:

- Red button: recovers the line;
- Grey button: releases the line.

Near the warping winches are fitted two mooring cleats **(2)**.

For a safe anchor mooring, the lines used for warping have to be fastened to the proper cleats.



CAUTION
Do not approach your hands to the sliding area of the mooring rope.

DANGER
Before carrying out any maintenance operation on the anchor winch cut-off the electric power connected with it and remove with care the chain from the wildcat.

CAUTION
Do not activate electrically the winch with lever inserted into the drum.

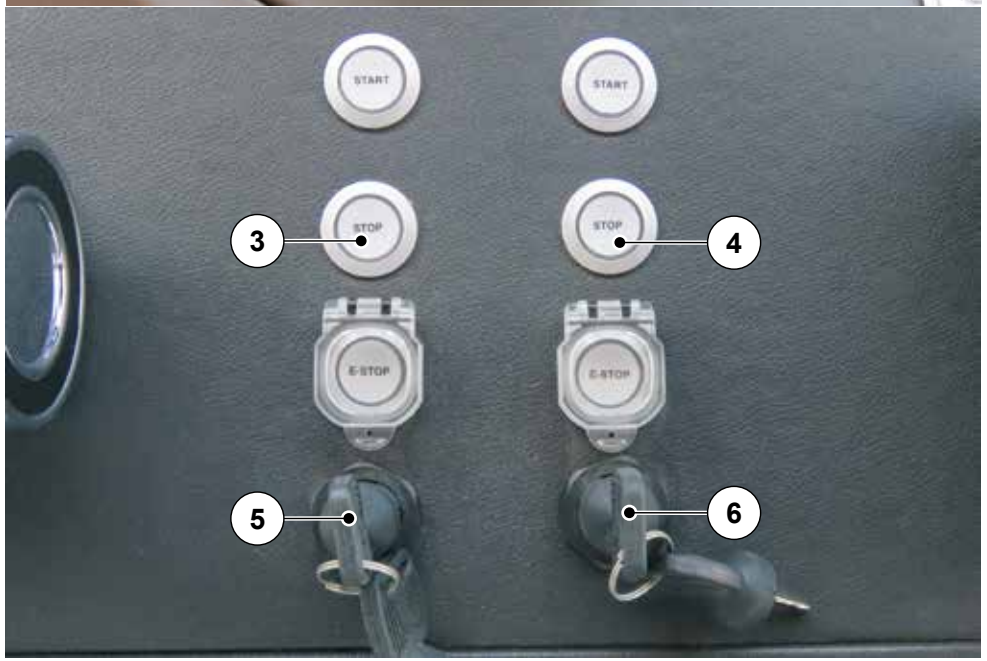
5.13 STOP OF PROPULSION ENGINES

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 (**1**) and (**2**) to central idle position of gear box.
- Press the **(3)** and **(4)** STOP buttons on the engine control panels.
- Turn the keys (**5**) and (**6**) to OFF.
- Disconnect magneto-thermal switches 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-thermal switches relevant to the start keys of both engines.

DANGER
Make sure that the engines cannot be started by unauthorized staff.



CAUTION

With engines stopped carry out following:

- Disconnect all unnecessary electric uses and check the general status of the switchboard as well as the voltmeters and ammeters indications;
- Check the switches of the bilge pumps and their regular operation;
- Check for possible leaks from the shaft lines seals;
- Rinse the yacht with fresh water;
- Connect the shore electric power supply;
- Keep 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 (automatic 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, boathook, 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.

5.14 ENGINE EMERGENCY PROCEDURE

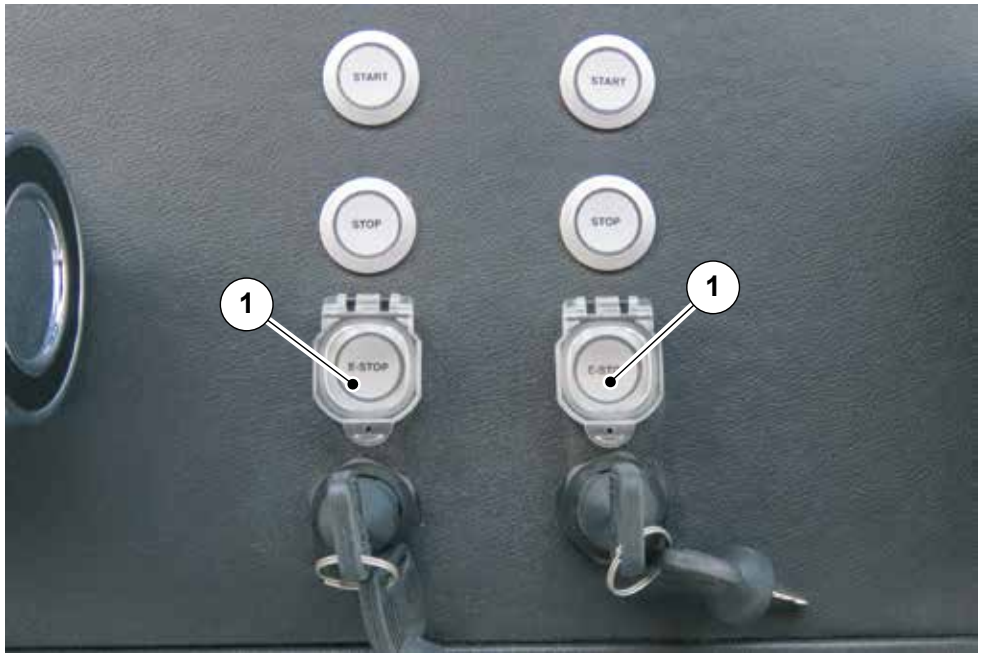
Due to a mechanical or electrical fault, the normal procedures for engine stop might not be sufficient; it is therefore necessary to stop the engines with the EMERGENCY procedures.

- **EMERGENCY STOP buttons (1)**
  In the dashboard of the main deck and the engine room of the control panel, the STOP buttons are positioned. Keep pressing them until actual stopping of the engines.

In the case of a engine malfunction alarm, the luminous ring of the relevant start button on the helm station will light up red in a flashing manner.
Acknowledge on the helm station or in the engine room.

WARNING
After stopping the engines with the STOP buttons after 5 attempts, the engines' electronics stall and must be reprogrammed. Have the engines reprogrammed by Assistance Service.
These switches must be used only if strictly necessary.

WARNING
STOP control stops the engine. Only 5 emergency stops are allowed, after which an attachment will start, limiting the maximum engine speed at 1600 rpm. Have the engine memory re-programmed at the Service Centres.



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 right and left fuel tank interception tie rods located at the entrance to the stairs for access to the engine room.

5.14.1 Navigation with one only 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.

In this case, we recommend that you:
- Shut off the failed propulsion engine;
- Set the position of the steering wheels in the opposite direction of the failed propulsion system; in case the steering wheels cannot contrast the asymmetric push of the operating system, lower the trim tab on the side of the failed system, or reduce the speed;
- Head to the nearest landing at a reduced speed;
- Keep the yacht at a speed that allows the best manoeuvrability.

In case one engine stops due to a failure and the gear box is in idle position, during navigation keep a constant eye on the oil temperature of the gear box connected with the failed system.

The propeller shaft is kept rotating thanks to the water flow through the propeller; under these conditions some parts of the gear box are also kept rotating.

Should the temperature increase excessively over 80 °C, 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 in case of life danger for the persons on board and for the safety of the ship itself; however when the engine is running it should not run higher than 1000 rpm.

5.15 ENGINE EMERGENCY SUCTION FROM THE BILGE

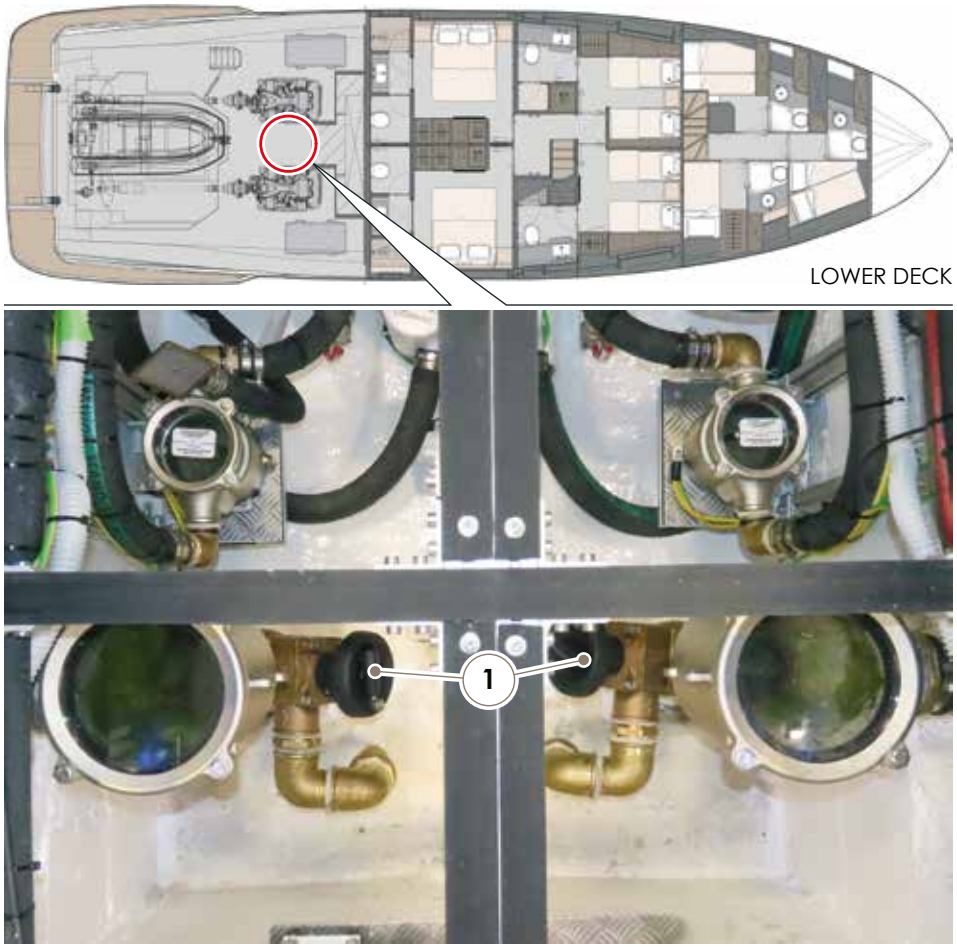
In the engine room there is the bilge emergency draining system, which operates with shunters (**1**), which allow using the sea water pumps, driven by the propulsion engines as draining pumps.

The diverters (**1**) are valves which, in their normal position, ensure sea water suction for engine cooling, through the sea cocks and the sea water strainers.

In case of emergency, 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 becomes 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.

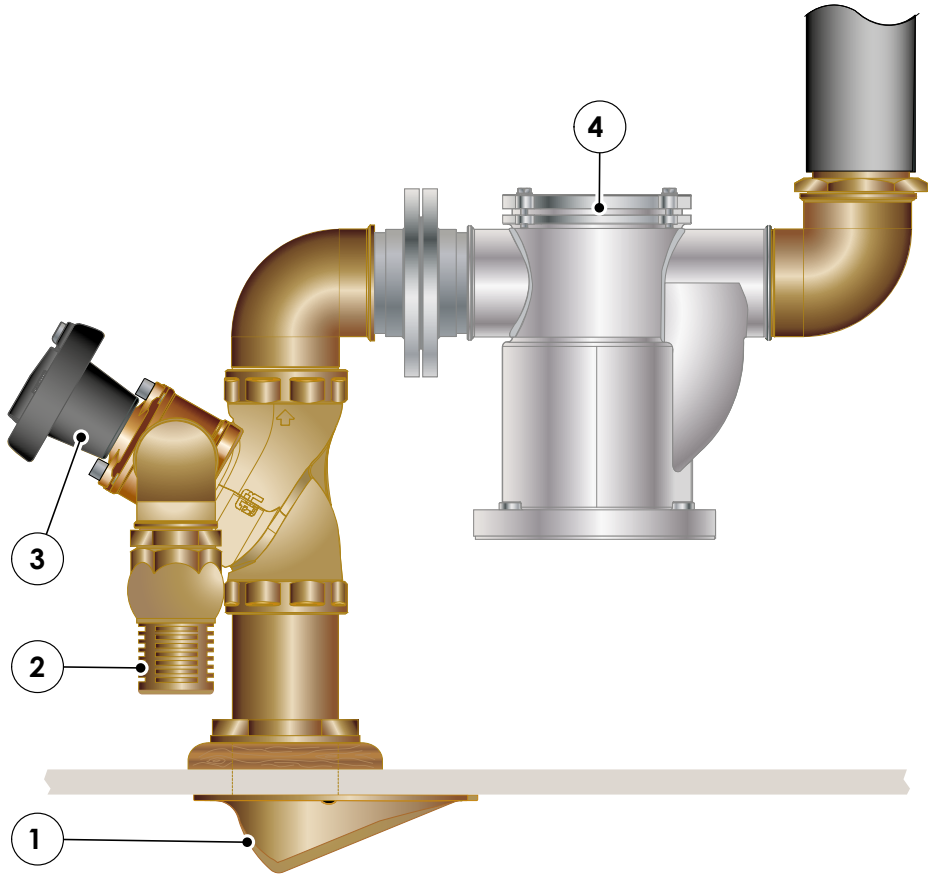
CAUTION
In case of emergency it is possible to suck the water from the bilge through the sea water pumps of each engine.



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.



5.15.1 Operating diagram

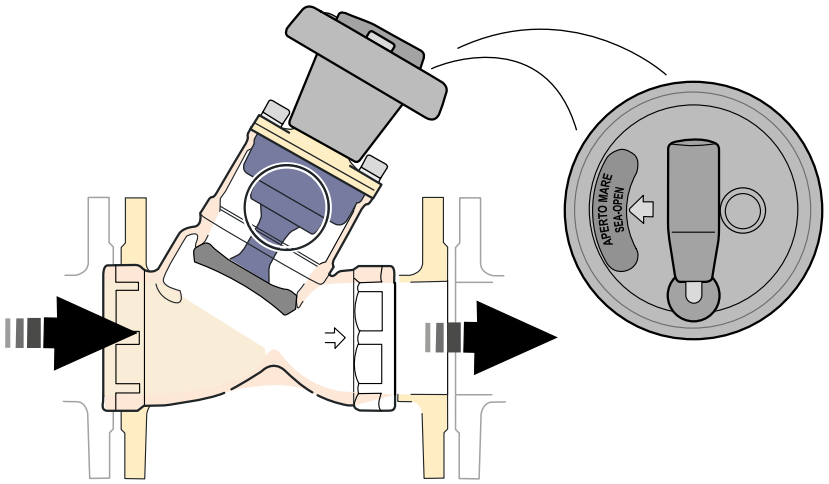
All valves are provided in the **SEA-OPEN** position.

Before proceeding with the installation, visually check the passage and that the wording through the handwheel window reads: **APERTO MARE / SEA-OPEN**.

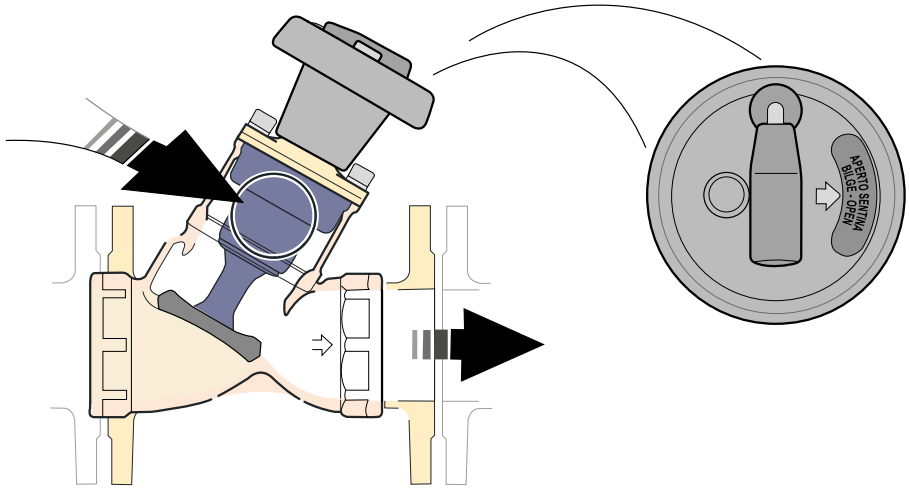
The direction of the water flow through the valve must align with the arrow on each valve.
The valves can be installed both in a vertical or horizontal position (in the flanged version using the special seals available on request) maintaining the handwheel facing the operator.

The handwheel is provided with a position indicator to simplify its use.

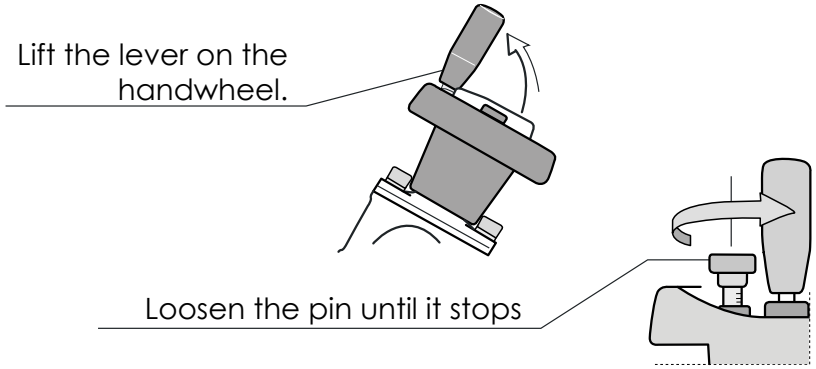
SEA-OPEN



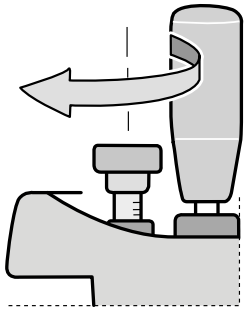
BILGE-OPEN

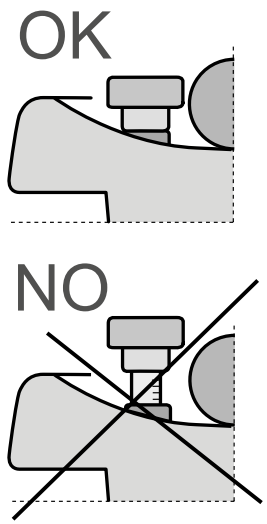


To enable water inlet from **SENTINA / BILGE**, proceed as follows:

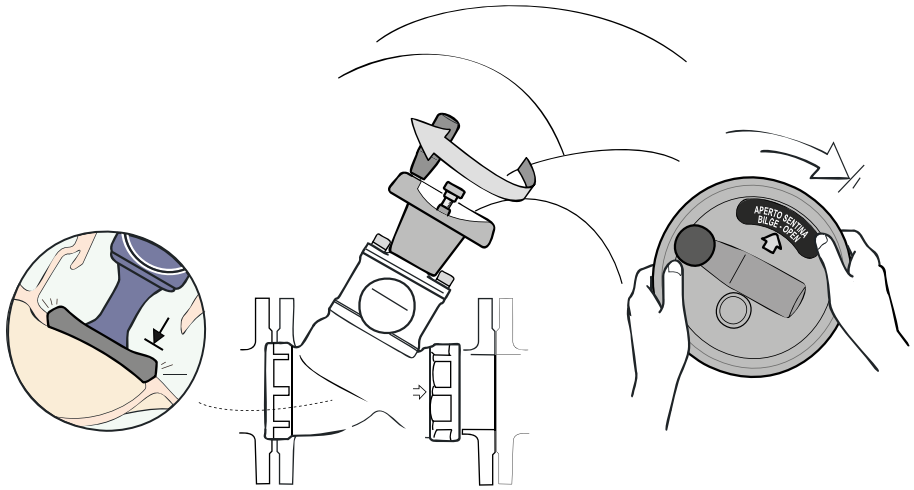


Tighten the pin until it stops.





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.



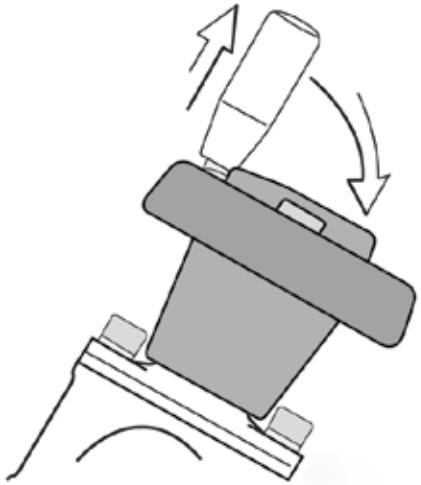
CAUTION

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.



5.15.2 Maintenance

During ordinary maintenance, which must be carried out while the yacht is in dry shore, it is recommended to extract the valve control block as follows: make sure that the indicator is positioned to **SEA-OPEN** (first turn the handwheel counterclockwise).

Loosen the screws with an Allen wrench and extract the mechanism from its body, paying special attention to the rubber components (gaskets).

DO NOT remove the handwheel from its seat!

If necessary, clean the rubber components with fresh water and soap, do not use any chemical cleaners and pay attention not to damage the gaskets. If necessary, the control block can be replaced with a new one.

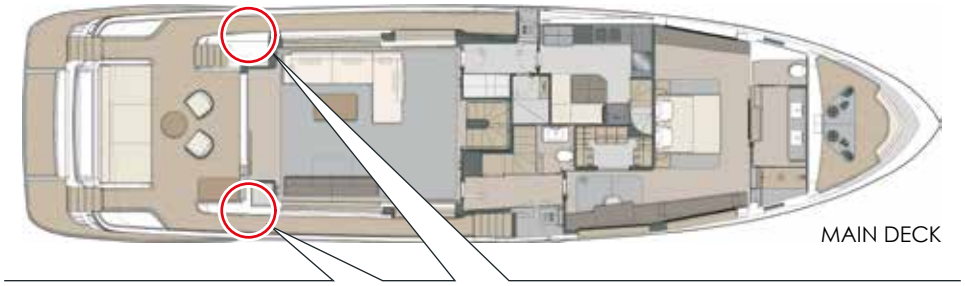
When reassembling, use silicone grease, and pay special attention to the seats of the gaskets.

Make sure to insert the mechanism in "**APERTO MARE - SEA OPEN**" position (first turn the handwheel counterclockwise as indicated in the INSTRUCTIONS).

Tighten the screws with a torque of approx. 9 Nm.

5.16 REFUELLING

- Ensure the ship is properly moored, stop the engines and generators, if running.
- Unscrew the cap (**1**) 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 refuelling, monitor the vents, so as to check for accidental fuel spillages, due to the formation of air pockets and foam. In the final phase of refuelling (at about two thirds of capacity), it is advisable to carry out frequent stops to allow foam to dissolve.
- Screw the cap (**1**) 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 condensation. Drain the tanks by each refuelling. 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 disperse 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.

CAUTION

Filling lines pressure must be kept under 0.3 bar during bunkering operation.

DANGER

Explosion/fire hazard

- Stow flammable material in a safety-approved container. Never stow flammable material in non-vented areas.
- Check bilge and engine room for fumes.
- Keep the ventilation system free of obstructions. Never modify the ventilation system.
- Inspect the fuel system for leaks.

DANGER

Explosion/fire/pollution hazard

Fuel system connections that are too loose or too tight can leak, resulting in fuel loss, environmental pollution and explosion/fire danger.

DANGER

Carbon monoxide poisoning

Make sure that the exhaust system of the engine is working properly. Carbon monoxide is extremely toxic.

- The drain 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.

5.17 WATER SUPPLY

- Ensure the ship is properly moored.
- Loosen the filling nozzle (**1**) and insert the hose, which must have suitable dimensions.
- The water supply openings are located on the sides of the yacht inside a special locker along the walk-around.
- At the end of filling, remove the hose and tighten the filler plug or close the tap (**1**).

WARNING

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

CAUTION

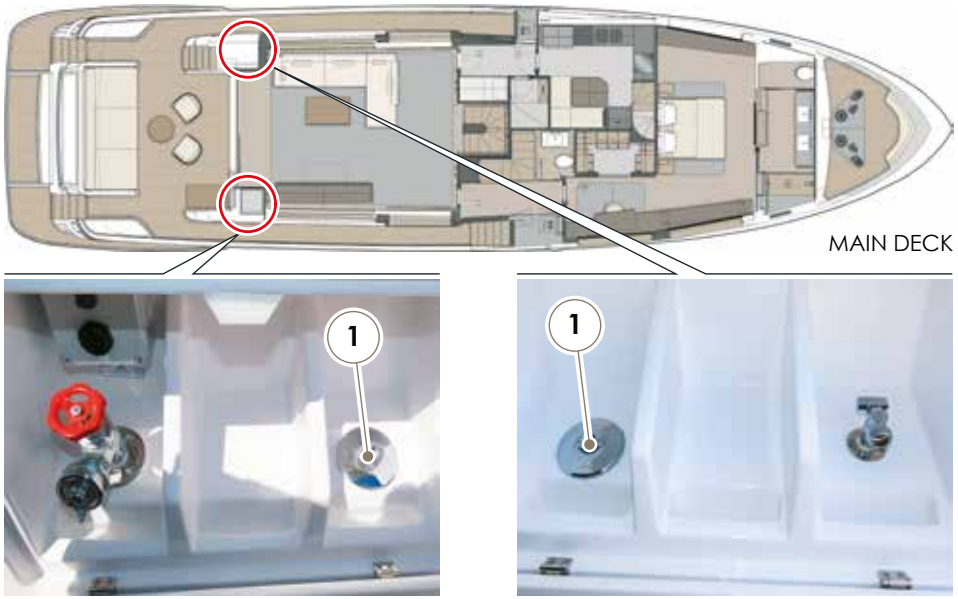
Often replace fresh water in the tanks and, if necessary, disinfect it with suitable products. Avoid leaving the tanks full in case of frosting risk. Do not leave the ship unattended while filling.

CAUTION

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

CAUTION

To avoid damage to the system and tanks, we recommend replenishing by gravity and not by pressure.



5.18 WATER SUPPLY FROM SHORE

To avoid using the fresh water of the tank, it is possible to get connected with an external water system through the inlet **(1)**.

By means of this connection, all uses on board are supplied, without using the fresh water pumps located in the engine room.

Once you have connected the system, check the pressure of incoming water by means of the pressure gauge located in the engine room and, if necessary, set the pressure by means of the relevant knob of the pressure relief valve.

CAUTION
The piping must be disconnected during the periods the yacht is unattended.


MAIN DECK

5.19 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.

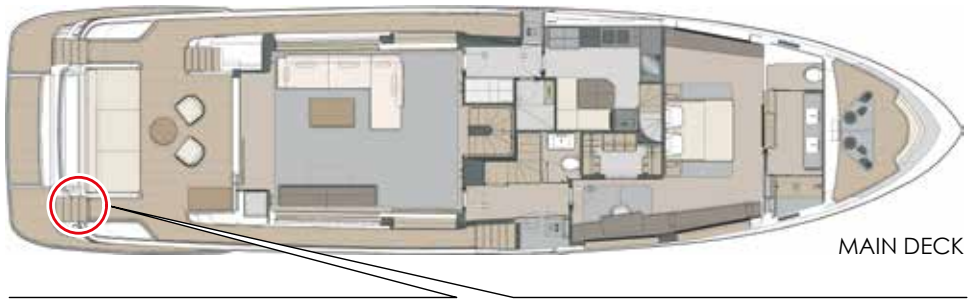
Ask the Port Authority for the right supply available from the column you want to get connected to.

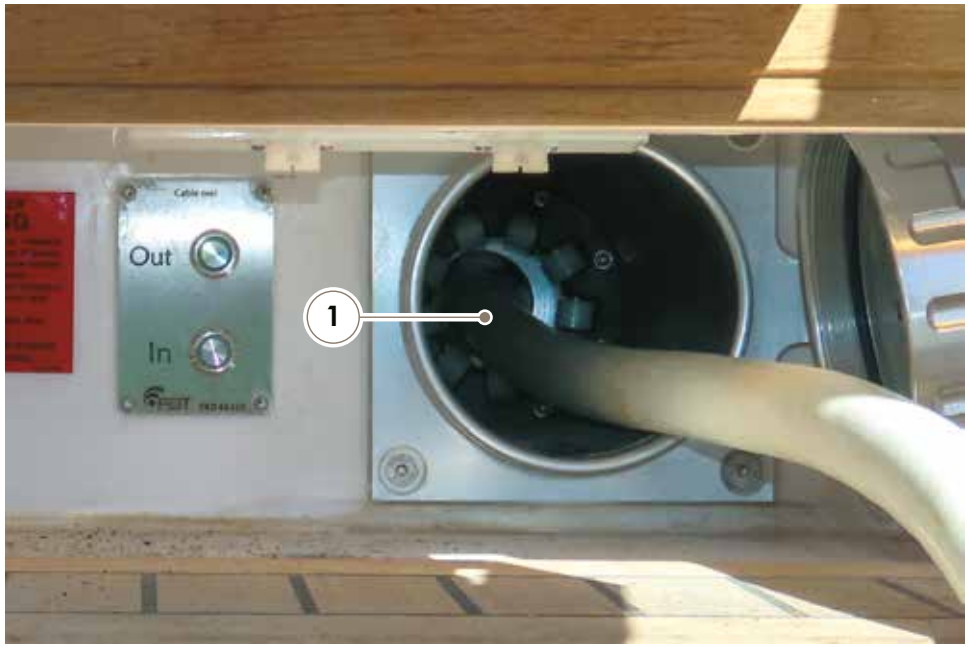
By means of the monitoring system it is possible to check and monitor the electric parameters of the shore socket, allowing a clear and readable visualization of the values measured; this facilitates the prevention of possible faults and misfunctionings and increases the safety of navigation.

In order to power the yacht's system to provide for the operation of the various on-board systems, a 125A socket for electrical connection from the shore has been prepared **(1)** equipped with a isolating transformer or a frequency converter (optional).

The connections are of plug-sealed type driven in accordance with the rules and security technologies.

The socket can be provided with an electric cable reel that allows easy recovery of the cable and is activable by the switch placed in the output cable side.


MAIN DECK



The converters ensure constant voltage on board, without needing to keep the generators running.

The electric cable reel and the SHORE POWER CONTROLS panel are located in the starboard technical room.

The converters are located in the engine room.

To use the electric power supply from shore:

- From the SHORE LINE SWITCH panel in the SHORE LINE section, open the power outlet switch from the platform;
- Bring OFF switch on this column at the shore;
- Insert the electric cable reel into the shore socket;
- Close the switch on the SHORE POWER CONTROLS panel;
- Turn ON the switch on the shore column.

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.

DANGER

Check the specifications of the frequency converter for the entire input range.
Check the correct voltage before switching on each input power switch.
Maintenance must be carried out by qualified staff. Turn off the power and disconnect the ground wires before maintenance.

CAUTION

Powering the on-board converter through the ground sockets with voltages outside the operating range (170-520V) can cause irreversible damage to the equipment. You should ALWAYS check the value of the phase voltage of ALL and three phase-to-phase combinations before giving voltage to 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

- Put in OFF switches on Shore Line Switch electrical panel
- Put in OFF protections on the pedestal of the shore.
- Disconnect the power cord from the ground power source (from the shore pedestal).
- Securely close the lid of the power supply from shore.

WARNING

Have the frequency converter, RCDs, electrical panels and other parts of the electrical system inspected by an electrician authorised by CUSTOM LINE 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 switch of the generator.

DANGER

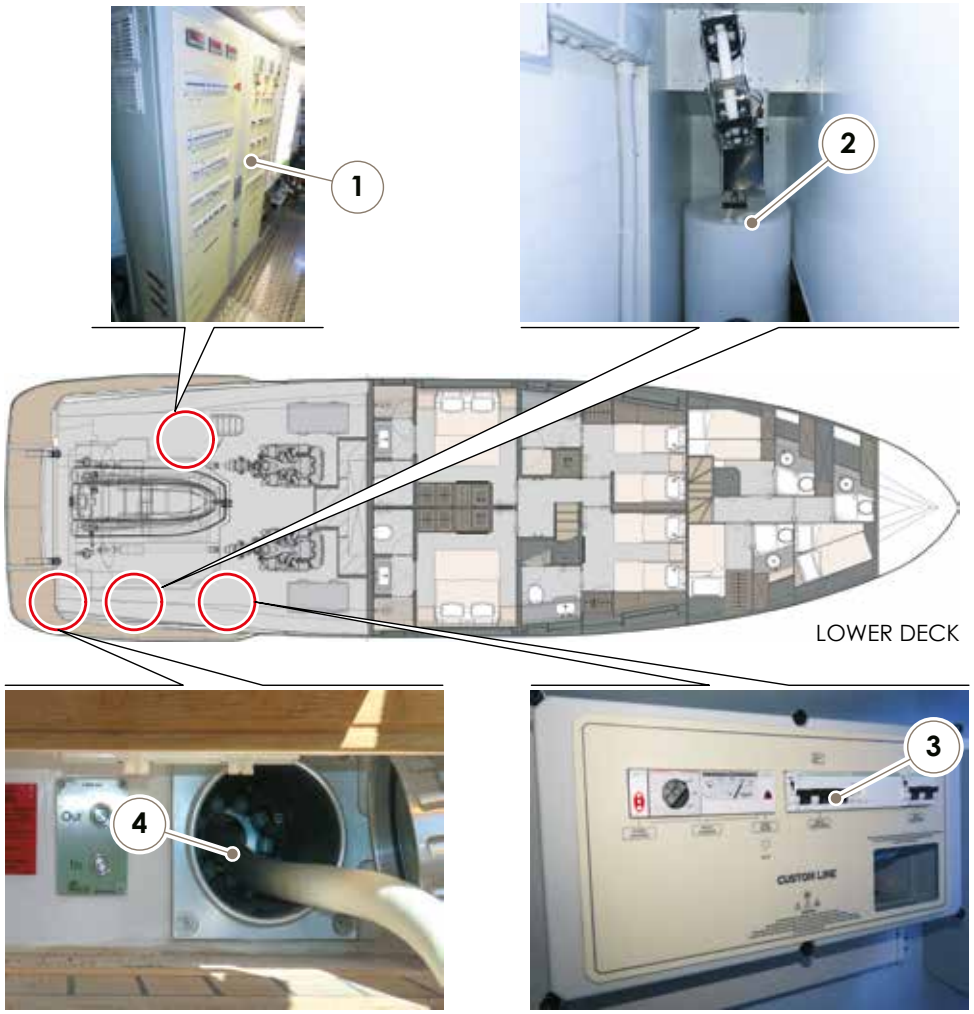
FIRE DANGER

It is normal for converters to generate and emit a lot of heat.
Take CAUTION not to surround drives with stowage material and keep them clear of obstructions to ensure they always receive adequate ventilation.
Do not store flammable material near the converters.

DANGER

The converter installed on board, separates galvanically the shore electric system from the electric system of the yacht. 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.

1. Electrical panel - Power management system
2. Automatic cable reel (optional)
3. Control Panel - Shore socket
4. Shore power with Glendinning (optional)



CUSTOM LINE

BEYOND THE LINE

Navetta 30

6

Operational and service systems

6.1 FRESH WATER SYSTEM

The fresh water tank has a capacity of 2500 l and is equipped with an inspection lid on which all connections are fitted:

- **Water inlet**
  Located on the walk-around of the main deck.

- **Fresh water tank vent**
  It is located on the starboard 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**
  The system can be supplied not only from shore, but also by the watermakers located in the technical room.

The water makers 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.

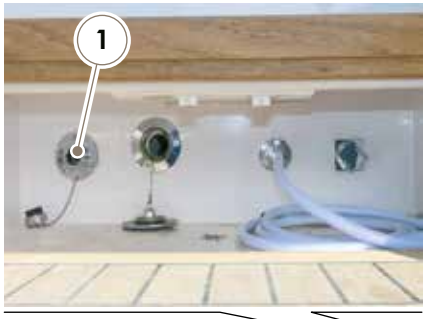
- Autoclave pumps: installed under the stern garage, they draw water from the fresh water tank and make it available to the various on-board utilities (sinks, showers, etc.)
- Watermaker: draws sea water and, once desalinated, feeds the fresh water tank;
- Water heaters: placed under the crew area, they heat the water;
- Distribution manifolds: they ensure the on-board utilities are fed with fresh water;
- UV water sterilizer (optional);
- Activated carbon filter (optional);
- Water softener (optional).

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

When filling fresh water by means of the direct inlet from shore, the fresh water tank is not filled. The fresh water tank can be filled only by means of the side inlet filler.

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

1. Water connection from the shore
2. Freshwater autoclave pump
3. Watermaker
4. Distribution manifold
5. Deck washing socket
6. Freshwater boarding nozzle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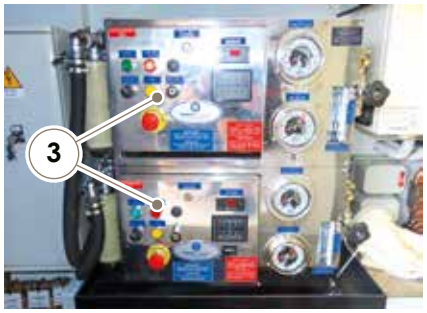
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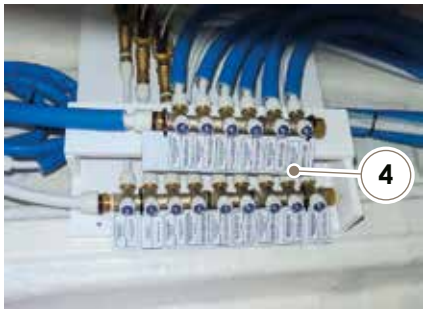

4

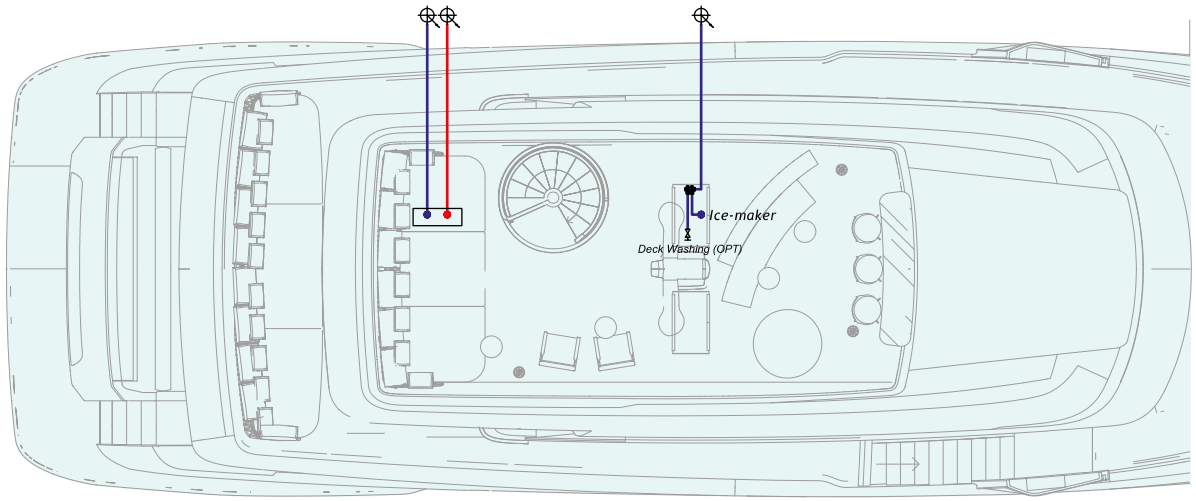

LOWER DECK


5


MAIN DECK
UPPER DECK


6
5

Fresh water system diagram

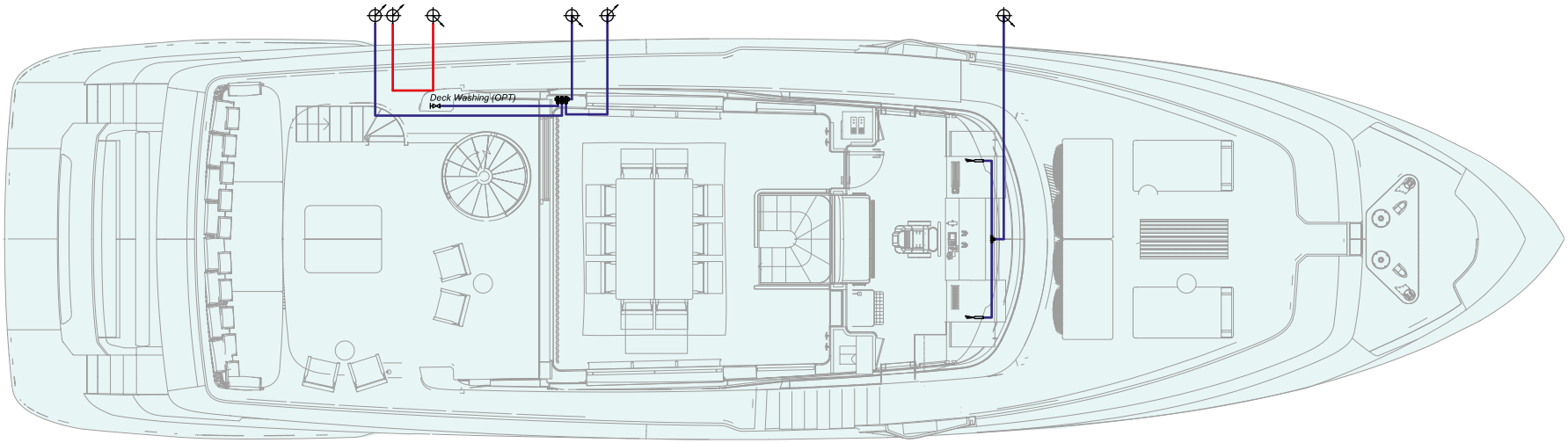


SUN DECK

ICON	DESCRIPTION
	Ball valve
	No return valve
E.V.	Electrovalve with filter
	Deck washing station with ball valve
T. A. 1	Water softner
T. A. 2	Carbon filter
T. A. 3	Sterilizer
	Washer nozzle
	Pressure reduce
	Fresh water filling

ICON	DESCRIPTION
	Bulkhead penetration
	Overboard
	To upper desck
	To lower desck
	Water pressure system
	Water recirculation pump
ARISTON 80H	Boiler horizontal
	Watermaker
	4-way Manifold with valves
	3-way Manifold with valves

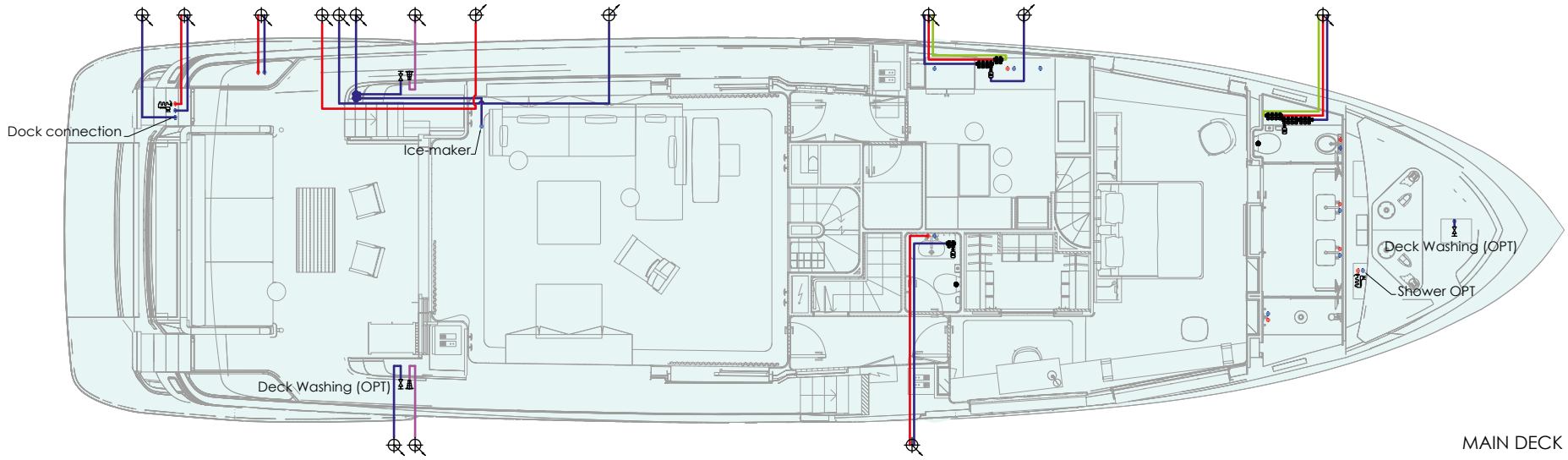
ICON	DESCRIPTION
	Fresh water line
	Insulated hot water line
	Hot water circulation line
	Air vent line
	Eletrical cable
	OPT
	2-way manifold with valves
	1-way manifold with valve
	Shower head



ICON	DESCRIPTION
	Ball valve
	No return valve
E.V.	Electrovalve with filter
	Deck washing station with ball valve
T. A. 1	Water softner
T. A. 2	Carbon filter
T. A. 3	Sterilizer
	Washer nozzle
	Pressure reduce
	Fresh water filling

ICON	DESCRIPTION
	Bulkhead penetration
	Overboard
	To upper desck
	To lower desck
	Water pressure system
	Water recirculation pump
ARISTON 80/H	Boiler horizontal
	Watermaker
	4-way Manifold with valves
	3-way Manifold with valves

ICON	DESCRIPTION
	Fresh water line
	Insulated hot water line
	Hot water circulation line
	Air vent line
	Eletrical cable
	OPT
	2-way manifold with valves
	1-way manifold with valve
	Shower head

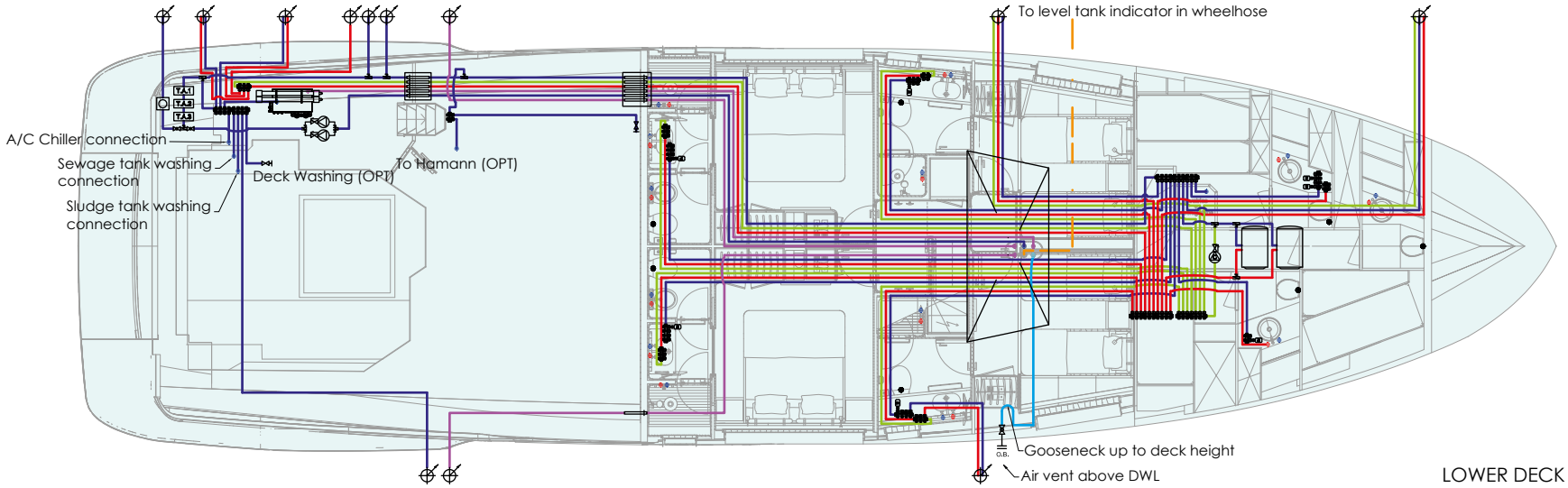


MAIN DECK

ICON	DESCRIPTION
	Ball valve
	No return valve
E.V.	Electrovalve with filter
	Deck washing station with ball valve
T. A. 1	Water softner
T. A. 2	Carbon filter
T. A. 3	Sterilizer
	Washer nozzle
	Pressure reduce
	Fresh water filling

ICON	DESCRIPTION
	Bulkhead penetration
	Overboard
	To upper desck
	To lower desck
	Water pressure system
	Water recirculation pump
ARISTON 80/H	Boiler horizontal
	Watermaker
	4-way Manifold with valves
	3-way Manifold with valves

ICON	DESCRIPTION
	Fresh water line
	Insulated hot water line
	Hot water circulation line
	Air vent line
	Eletrical cable
	OPT
	2-way manifold with valves
	1-way manifold with valve
	Shower head



ICON	DESCRIPTION
	Ball valve
	No return valve
E.V.	Electrovalve with filter
	Deck washing station with ball valve
T. A. 1	Water softner
T. A. 2	Carbon filter
T. A. 3	Sterilizer
	Washer nozzle
	Pressure reduce
	Fresh water filling

ICON	DESCRIPTION
	Bulkhead penetration
	Overboard
	To upper desck
	To lower desck
	Water pressure system
	Water recirculation pump
ARISTON 80/H	Boiler horizontal
	Watermaker
	4-way Manifold with valves
	3-way Manifold with valves

ICON	DESCRIPTION
	Fresh water line
	Insulated hot water line
	Hot water circulation line
	Air vent line
	Eletrical cable
	OPT
	2-way manifold with valves
	1-way manifold with valve
	Shower head

6.1.1 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 watermakers are installed in the technical room and, by means of electric pumps, suck sea water through the sea cock and, after filtering and treating it, send it to the on-board tanks.

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 can produce bacteriologically pure water and, therefore, which can be used for all on-board applications.
Excess water and salt concentrate are discharged overboard.

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

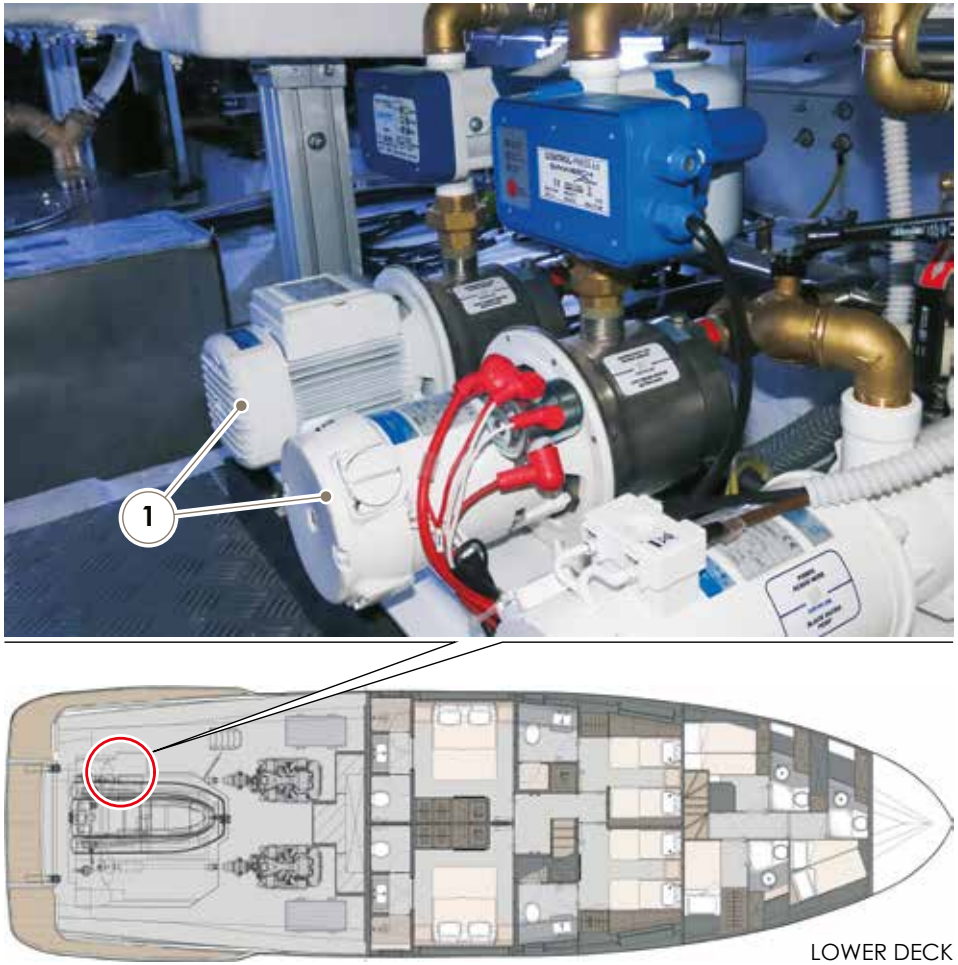
MAINTENANCE
WATERMAKER
At least once a month verify:
- The correct operation;
- The oil level in the pump.

Periodically perform a fresh water washing cycle.
At least once a year, change the oil of the pump.
When necessary clean the filter.

6.1.2 Cold water system diagram

The system is kept under pressure by a pump (**1**) 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
- Service bathroom
- Galley
- Crew utility room
- Water maker membrane washing
- Garage tap
- Showers and taps main deck
- Glasses wash
- Washing machine
- Dishwasher
- Deck washdown taps for bow and walk-arounds
- Water heater
- Sun deck service cabinet



6.1.3 Hot water system

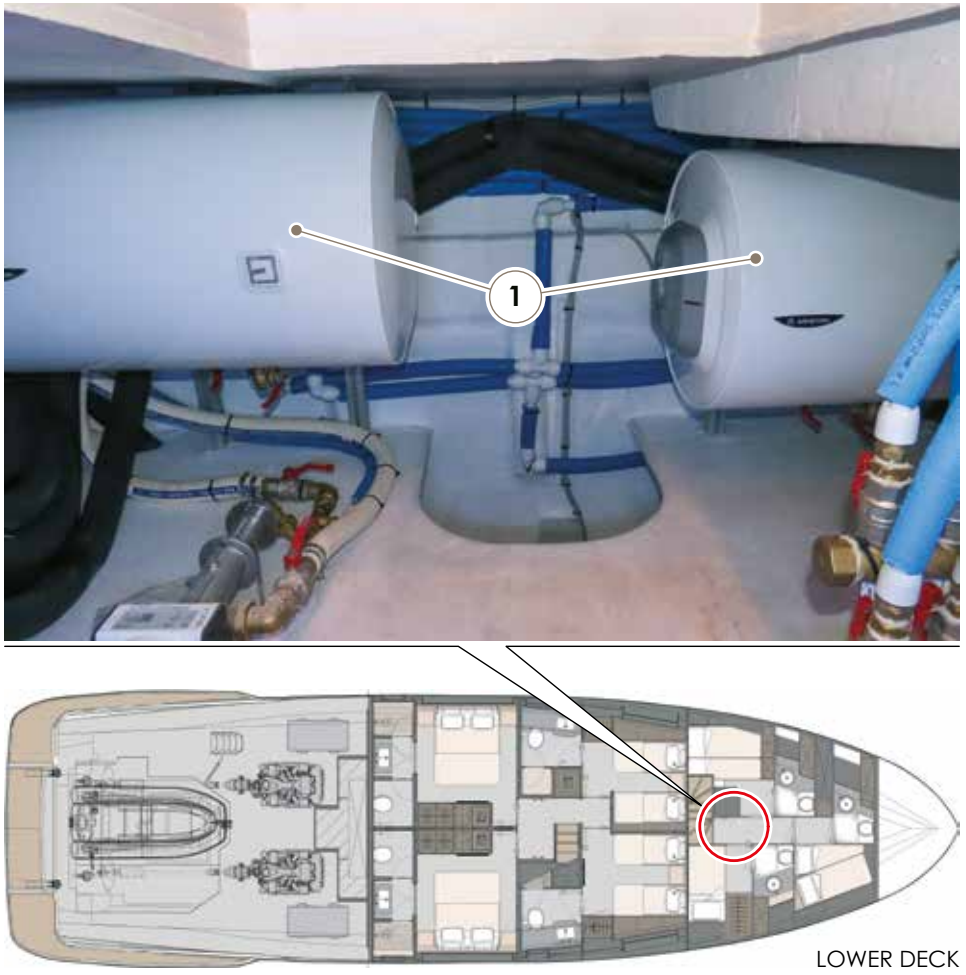
Water is drawn from the tank by means of pumps and delivered to the water heater (**1**) to be heated.
Both water heaters have a capacity of 80 l. Each water heater is equipped with a thermostatic valve that allows the temperature control.
By means of a distribution manifold, the hot water is conveyed to following uses:

- Owner's bathroom
- VIP bathrooms
- Guests bathrooms
- Service bathrooms
- Crew bathrooms
- Galley
- 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 it resistor.



6.1.4 Maintenance of fresh water system

In case of maintenance or of need, it is possible to cut out parts of the system or single uses, without involving the operation of the general system, by handling on the cocks installed on the main 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 every month, providing a completely empty the fresh water tank and rinse a few 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.
Pour periodically inside the tanks, of the filler loading of a specific disinfectant in the doses recommended by the manufacturer, in order to avoid the formation of colonies of bacteria in the system.

NOTE
For further information, refer to the specific manuals of the various equipment installed on board and the technical schemes provided in part by the shipyard.

WARNING
During winter, if you do not use the yacht, drain the water heaters to prevent cracks 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 to the tanks, it is recommended to supply to fall and not a pressure.

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 navigating offshore!

CAUTION
In case you do not have hot water, due to system fresh water emptying, switch off the water heater in order to avoid damage to the resistance.

Component	Maintenance	Notes and precautions
Fresh water tank	Cleaning and check	At least every month, drain the fresh water tank completely and rinse them a couple of times with clean fresh water. This in order to change completely the water stowed in the storing tank and at the same time to wash them too. Check, clean, disinfect and restore the closures and verify the O-ring condition. Periodically pour a specific disinfectant, in the quantity recommended by the Manufacturer, into the tank, through the intake filler, in order to prevent the formation of bacteria in the system.
Fresh water system	Check	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. 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 and port crew cabin, and in the technical room. **WARNING** In case of need, break or pollution of the tank, it can be replaced. Contact Service Department. **CAUTION** The fresh water circuit, and particularly the tank, must be sanitized periodically by pouring in the case a specific disinfectant solution.

Component	Maintenance	Notes and precautions
Electric pumps	Cleaning and check	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 (see Specific Manual).  **DANGER** Before carrying out maintenance on the pumps, prevent their accidental priming.
Electric water heaters	Cleaning and check	 **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. **CAUTION** If warm water is not available, because of the fresh water circuit discharge, switch off the water heater to prevent damaging it resistor.

6.2 SEA WATER SYSTEM

The sea water systems on board are:
- Cooling system for air conditioning heat exchanger;
- Cooling system for engines;
- Generator cooling system;
- Seawater washing/fire prevention system;
- Water maker system;
- Cooling system of propeller shafts seals;
- Gyroscopic stabilizer cooling system;
- 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. A further part of water is delivered to the heat exchanger of the gear box and then drained overboard through the exhaust pipe.

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 (3). The water sucked by the generators, flows through the strainers, and is then delivered to the heat exchangers of the same generators and then discharged overboard, together with the exhaust gases by means of wet mufflers and water/gas separators.

The seawater/fire-fighting washing system consists of an electric pump that sucks sea water through the manifold of the centralised seawater intake and sends it to the connections for the fire-fighting hoses and washing the black and grey water tanks and washing the anchor chain.

In the cooling system for air conditioning sea water is sucked by two electric pumps by means of a sea cock equipped with cut-off valve and strainer.
The sucked water is delivered to the heat exchanger of the air conditioning unit, located in the engine room, and then drained overboard.
The sucked water is sent to the heat exchanger of the air conditioning unit located in the bilge under the aft garage and then discharged outboard.
The filtered seawater intake and the two electric pumps for the air conditioning unit are located in the bilge below the aft garage.
The seawater system for the watermaker consists of an electric pump that sucks sea water through the centralized seawater intake manifold. The brine remaining after the desalting process is discharged overboard.
The seawater system for cooling the gyroscopic stabiliser consists of an electric pump that sucks in seawater through a seawater intake equipped with an interception valve and strainer.

The yacht is also equipped with two sea water intakes equipped with strainers for cooling and lubricating the shaft seal.

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.

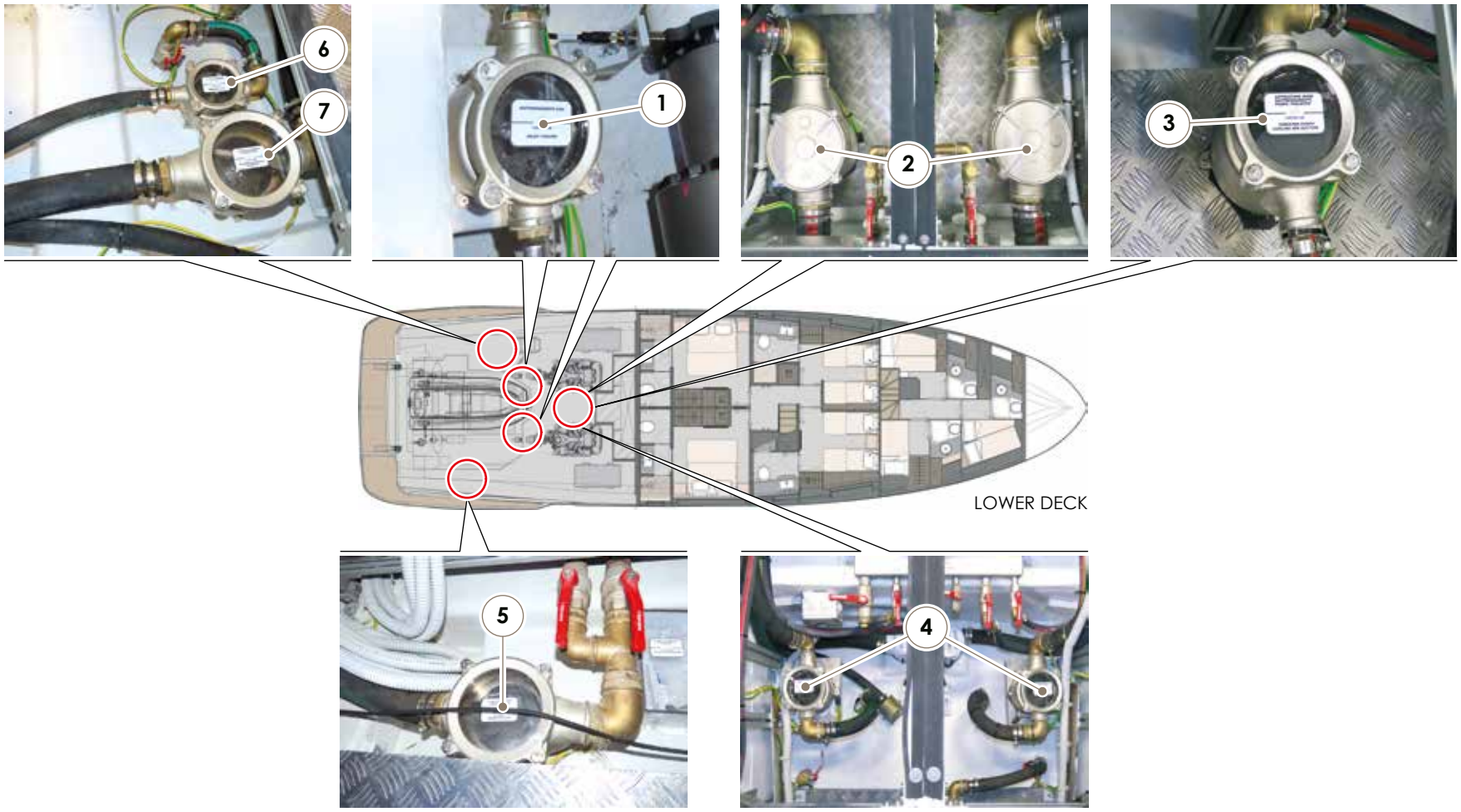
DANGER

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.

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.

1. Propeller shaft sea water intake
2. Engines seawater intake
3. Thruster pump seawater intake
4. Generators seawater intake
5. Air conditioning seawater intake
6. Gyroscopic stabilizer seawater intake
7. Multipurpose seawater intake

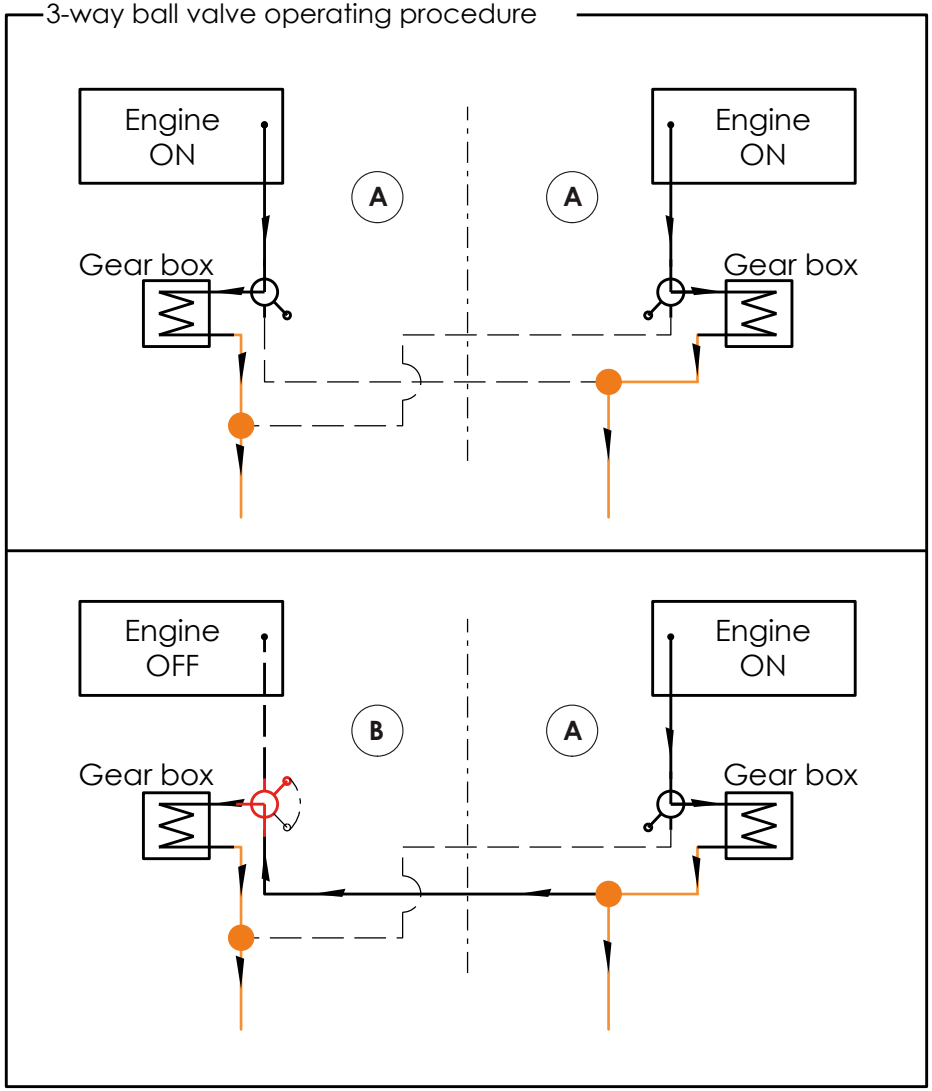

6
7
1
2
3
LOWER DECK
5
4

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).

3-way ball valve operating procedure



6.2.1 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.

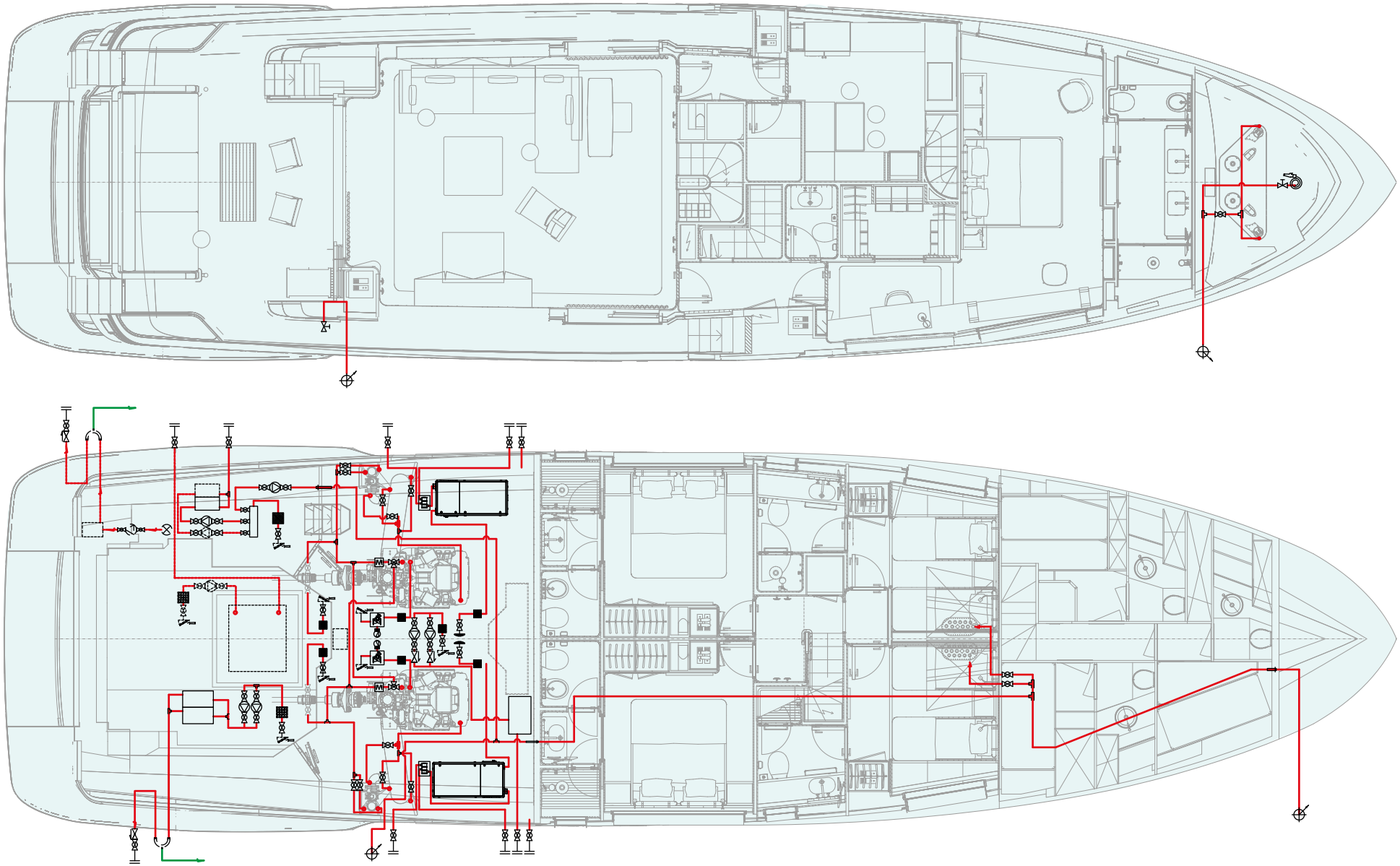
WARNING

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.

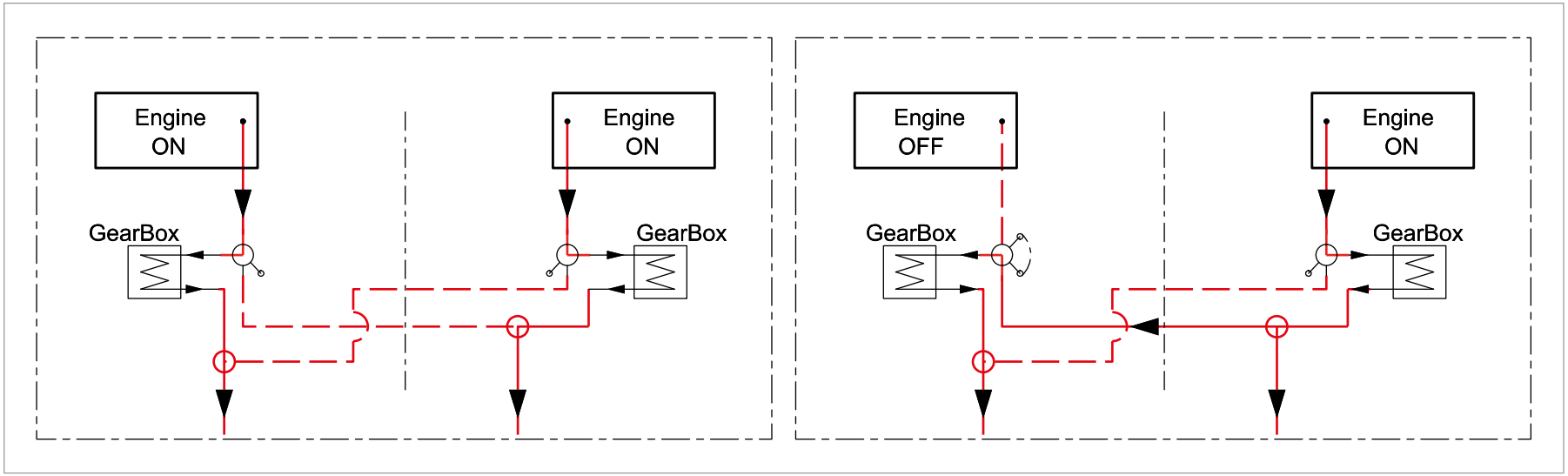
DANGER

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.

6.2.2 Sea water service system diagram



6.2.3 Engine cooling system diagram



ICON	DESCRIPTION
	Ball valve
	Over board discharge
	Anti-block valve
	Non return valve
	Sea water strainer
	Dynamic sea chest
	Static sea chest

ICON	DESCRIPTION
	Bulkhead penetration
	Fire hose - UNI 25
	Fire nozzle - UNI 25
	Sea water pump
	Gear-box heat exchanger
	3 way ball valve
	Bilge strum with no-return valve

ICON	DESCRIPTION
	Sea water system mainfold
	Valve 1" - UNI 25
	Combo sep - centek
	Sea water pipes
	Sea water pipes

6.3 BILGE SYSTEM

6.3.1 Main bilge system

The centrifugal submersible bilge suction pumps, controlled by special floats, suck the water from the bilge and send it overboard. Another alarm activation float, placed higher than the first, activates the alarm siren.

The pumps are connected directly to the batteries and can therefore start even if the battery master switch is positioned to OFF, thus ensuring water drain at any time (keep the magneto-thermal breakers on the electrical panel to ON).

The suctions of the pumps are equipped with net strainers; their purpose is to prevent the penetration inside the circuit of foreign bodies, which may damage the pump or cause pipe clogging.

- Engine room bilge pumps (230 l/min);
- Crew bilge pump (230 l/min);
- VIP cabin bilge pumps (230 l/min);
- Garage bilge pump (230 l/min).

The bilge pumps can operate both in automatic mode, thanks to float switches and in manual mode.

To activate the pump manually it is necessary to activate the relevant buttons located on the synoptic panel in the helm station. To enable the running of the bilge pumps, switch on the relevant thermal breakers located on the main electrical panel of the engine room.

WARNING
In case of emergency it is possible to extract the bilge water in the engine room through the sea pumps placed on each engine.

WARNING
Keep the bilge dry to allow the detection of water and to reduce the risk of slipping, as well as creating a less aggressive environment for the fixtures.

Should the automatic bilge pumps of the engine room, as well as the auxiliary bilge pump not be able to drain the bilge water, the engine room is equipped with the bilge emergency draining system, operating by means of flywheel valves with manual activation, as a draining pump.

In case of emergency, use the handwheels of both valves, taking the valves to the emergency position; the suction of the pumps, driven by the engines, is diverted towards the bilge.

Should it be necessary to use this draining system, the bilge level must be checked continuously, because in case of complete drainage, the engines will not be cooled down.

CAUTION
Be careful to replace the valves to sea water suction position, when the water level in the engine room bilge is under control, so as not to impair the engine components.

CAUTION
A suction basket to collect accidental oil leakage is located under the engines and does not communicate with the bilge.

ENVIRONMENT
Sea discharge of oils and fuels is prohibited.

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

WARNING
The bilges must be kept dry and clean.
Remove any rags or other residues from the bilge, to prevent any clogging of the pump intakes, causing serious damage to the pumps and impairing the safety of the yacht.

WARNING
The system total capacity is not designed for yacht draining in case of a hull leaks.

ENVIRONMENT
Possible oil or fuel spilled in the bilge must be collected and stowed.
It is forbidden to discharge bilge water mixed with oil or diesel fuel into the sea, because this can cause pollution.
During the maintenance operation in the engine room, it is compulsory to disconnect the magneto-thermal breakers of the bilge pump automatic suction system, avoiding in this way accidental spillages of liquids and consequently sea water pollution.

6.3.2 Maintenance of bilge automatic suction system

Component	Maintenance	Notes and precautions
Bilge pumps	Operation check	As shown in the following sequence.
Non-return valves	Operation check	As shown in the following sequence.

Bilge pumps - Operation check

DANGER
Before each intervention make sure that voltage is disconnected and that there is no possibility of accidental connection.

CAUTION
Before any intervention, make sure that the voltage is disconnected and that there is no possibility of accidental connections.

Check that the pump shaft turns freely (this is possible by inserting the screwdriver in the back end of the engine shaft).

Check the rotation direction, that the pump motor works within its output range and that the absorbed current is not higher than the one indicated in the tag.

These pumps, normally, do not need ordinary maintenance, provided that some measures are taken which extend their operation.

- Make sure that the pump never runs dry.
- The brushes, on DC motors, must be checked at regular intervals.
- If the yacht must remain inoperative for a long period, it is advisable to drain the pump body and to clean it.
- If a strainer and a foot valve are installed, check their efficiency and cleaning periodically.
- Check that the impeller is not jammed, this could cause serious damages to the electric motor; if this happens, descale the impeller and pump body.

Bilge pump operation check

- Have the operation of each bilge pump checked, having the bilge filled with clean water up to the activation of each pump and having the correct draining overboard checked.
- Have the operation of each bilge pump checked, including the manual one (at checks end the pumps switches must be on "AUTO").

CAUTION

Never run the electric pumps dry.

CAUTION

Check all bilge pump operation at regular intervals. Clean the pump intakes. The hull valves installed in the bow and stern peak walls must be kept closed; they must be opened only to drain the water from the main bilges.

Non-return valves"

The on-board hydraulic system consists of check valves (or non-return valves) "EUROPE" type (**1**) and "CLAPET" type (**2**).
They require extraordinary maintenance only,due to their lack of operation, which can be caused by a foreign body inside the valve itself, or by a mechanical break; in both cases, check the failure, if it is not removable, carry out the replacement.

6.3.3 Multi-purpose pump system

The yacht is equipped with a multi-purpose pump (**1**) 165 l/min, which can be used, in case of emergency, to help or to replace the various automatic bilge pumps, in order to drain water from the bilge.

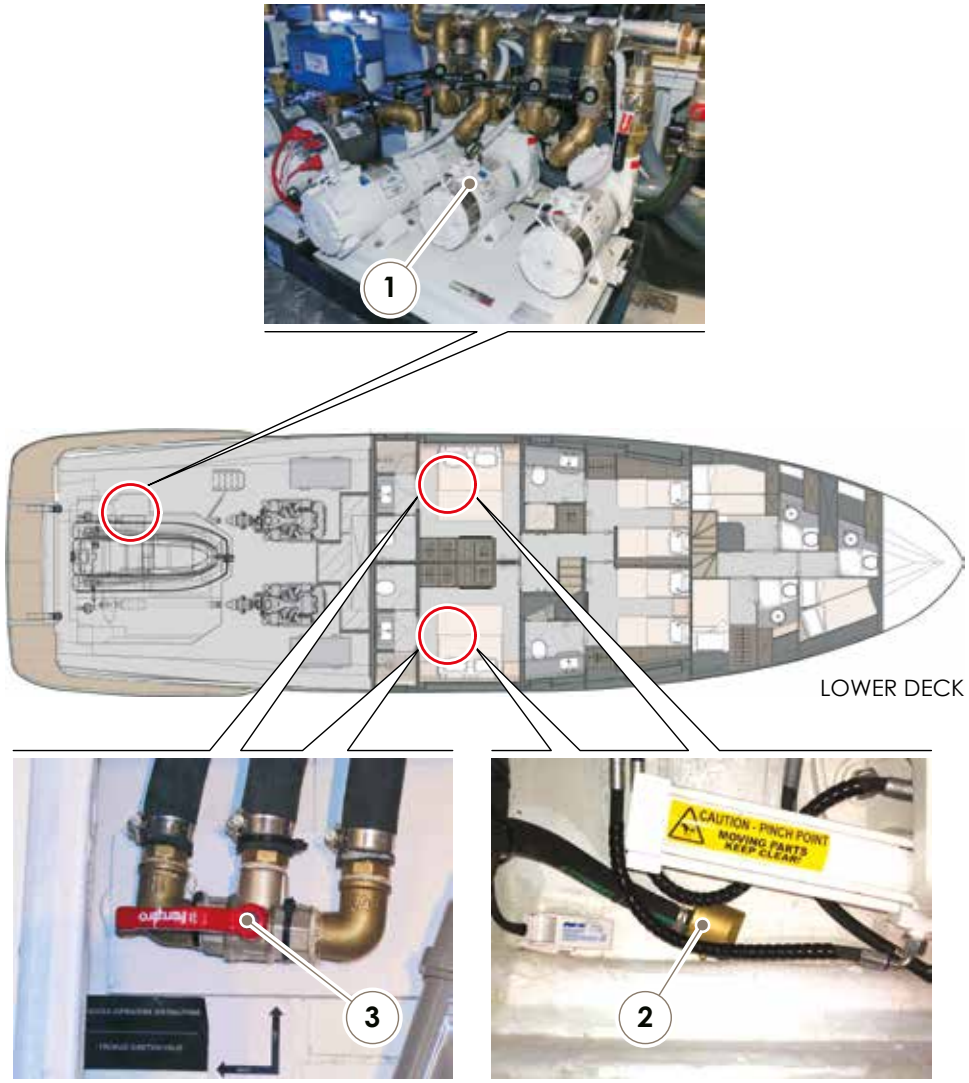
In addition to the pump, the system consists of suction units located in the various areas of the yacht.

One of these suctions **(2)** is located inside the stabiliser fin compartment. To carry out the suction, it is necessary to act on the three-way valve **(3)** present in the bilge opposite the entrance to the VIP bathrooms.

The multi- purpose pump, activated manually, by correctly shunting the valves on the relevant manifold, can replace the following pumps:

- The black water pump;
- The grey water pump;
- The automatic bilge pumps.

In case of failure of black or grey water pumps, the multi-purpose pump replaces the suction of one of the two pumps, by means of two deflecting valves installed on the multi-purpose pump manifold.



CAUTION

After the use of the multi-purpose pump, it is advisable to carry out a check of the impeller. For the procedure ask the CUSTOM LINE After Sales & Service Department.

CAUTION

To use the multi-purpose pump, activate the magneto-thermal switch located on the general electrical panel.

ENVIRONMENT

The bilge drains can be discharged at sea only if they do not contain polluting substances.
If polluting agents are present in the bilge waters, dispose of them using the suitable containers for polluting agents located in harbours.

CAUTION

Never run the electric pumps dry.

6.3.4 Maintenance of multi-purpose bilge pump system

Component	Maintenance	Notes and precautions
Pumps	Operation check and cleaning (at least every month)	Electric pumps usually do not need ordinary maintenance, as long as some precautions are taken, extending their lives. 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 their efficiency and cleaning periodically. Check that the impeller is jammed, this could cause heavy damages to the electric motor; if this happens, descale the impeller and pump body.
	Replacement of impeller and mechanical seal	This is a difficult operation and should only be undertaken by skilled personnel.

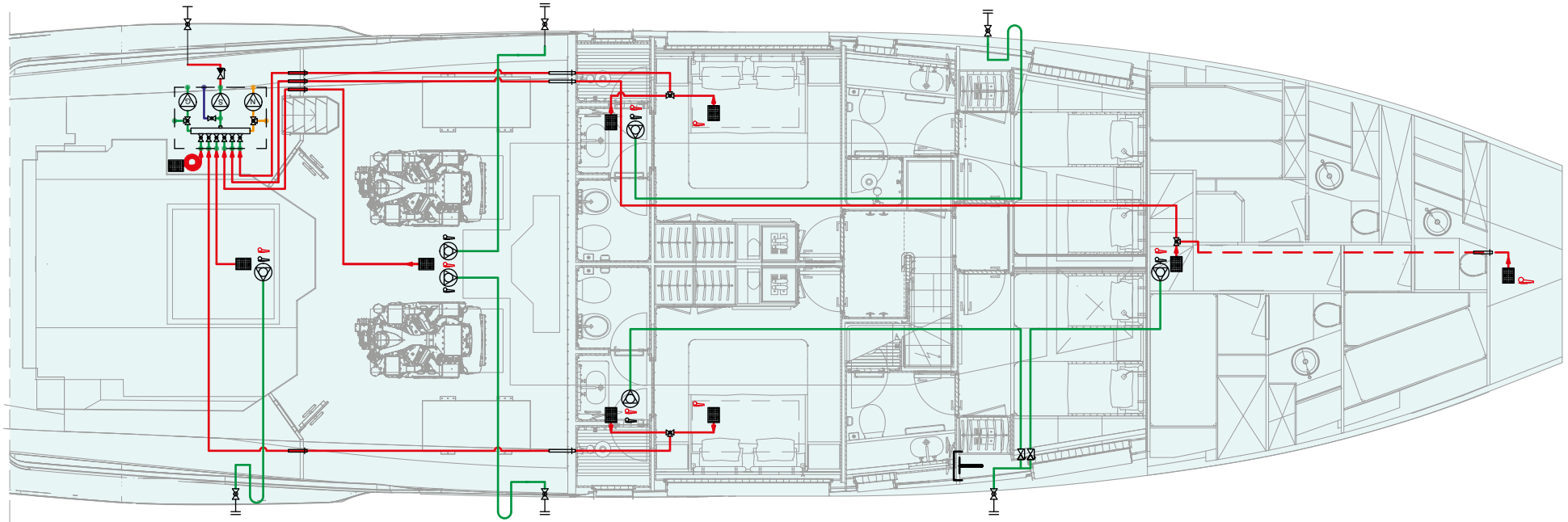
DANGER

Before each intervention make sure that voltage is disconnected and that there is no possibility of accidental connection.

CAUTION

The electric motor may become hot when running. 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 declines any responsibility and the warranty will become void and null.

6.3.5 Bilge suction system



ICON	DESCRIPTION
	Primary bilge pipe
	Sludge pipe
	Bilge strum box with stainless steel gauze
	E/Pompa

ICON	DESCRIPTION
	Centralized watertight bulkhead penetration
	Ball valve
	Non return valve
	Over board

ICON	DESCRIPTION
	Float switch - alarm
	Float switch - pump start
	Assembled pumps . Bilge pump . Grey water pump . Black water pump

6.4 GREY AND BLACK WATER SYSTEM

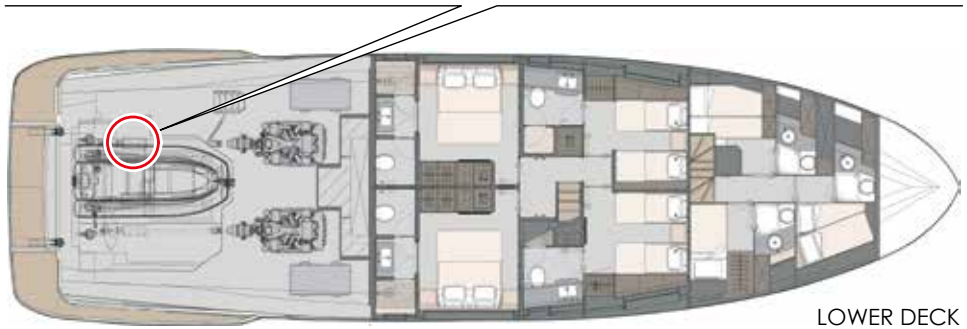
The grey water system consists of an electric pump (**1**) located aft of the engine room, a collection tank, located under the bed of the guest cabin on the right by 4 boxes with overflow alarm and 4 grey water booster boxes.

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 black water system consists of an electric pump (**2**), next to the grey water one, a collection tank located under the bed of the guest cabin on the left, into which the waste from the toilets is discharged. The two pumps are normally manually operated and the two tanks are drained overboard (grey water system) or directly into the shore (black water system) by means of the flanged connection.

It is advisable to check the tank indicators at all times or, in any case, to empty them manually before entering the port, in order to avoid having to return to the sea to empty the tanks. The buttons for selecting the manual control are located on the synoptic on the dashboard, together with the warning lights for high level in the tank.

1. Grey water pump
2. Black water pump



LOWER DECK

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

ENVIRONMENT
Do not discharge grey and black waters inside harbours, marinas or near beaches: check the tank level when entering the harbour and consider very carefully the position of the ship if discharge is necessary.

WARNING
In case of emergency it is possible to drain the main grey waters tank, by means of the black waters pump, by duly shunting the 3-way valves, located on both pumps.
In case of emergency it is possible to drain the holding tank, by means of the grey waters pump, by duly shunting the 3-way valves, located on both pumps.

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
Within 12 nautical miles from the coast it is forbidden to discharge into the sea the holding tank; it is necessary to keep off the drain pump, exclude the automatic activation if present.

Your yacht can be equipped with a black water treatment system that separates the water from the muddy part of the waste.

The treatment system separates the aqueous part of the black water, which is discharged outboard, from the solid part (mud), which is collected in a dedicated tank.
The system consists of:
- Macerator;
- Microfilter;
- UV light.

If necessary, it is possible to wash the black water tank by mixing it with grey water. This is so as not to compromise the operation of the treatment system.

For more information, consult the manual provided by the manufacturer.

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 indicators of level of the black water tank on main deck panel to perform, if necessary, the suction from the shore supply.

Procedure for draining by WASTE outlet.

- Handle the hose by paying attention not to soil the deck teak, and dampen it ahead of time.
- Correctly fit the outlet for shore drain by means of the screw connection.
- Take advantage of harbour services for sewage intake with vacuum system.
- Once the operation is completed, disconnect the hose correctly by paying attention again so as not to soil the deck teak. If necessary, rinse.

We recommend monitoring the tank level before entering the harbour, to evaluate whether to drain it at sea or to take advantage of the shore services, checking beforehand that the harbour towards which you are navigating has the facility to drain the tank by means of the WASTE outlet, located on the starboard side walkway.
To increase the reliability and safety of the system, in case of a fault in the black water pump, it is possible to drain by means of the grey water pump. Under such conditions, it is necessary to ensure the proper opening of the concerned manifold valves.

CAUTION

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

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

WARNING

Before use, make sure:

- To enable services, if necessary, setting to ON the toilet system breaker on the general electrical panel in the engine room;
- The absence of the red 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 regulations 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 course and at the maximum speed allowed, anyway not lower than 4 knots.

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 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 constantly checking the filling of the tank, so as to disconnect the pump when necessary.

WARNING

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

WARNING

The holding tank washing must be performed only in compliance with legislation in force, in the harbour, only under provided it is connected to the disposal facilities on land.

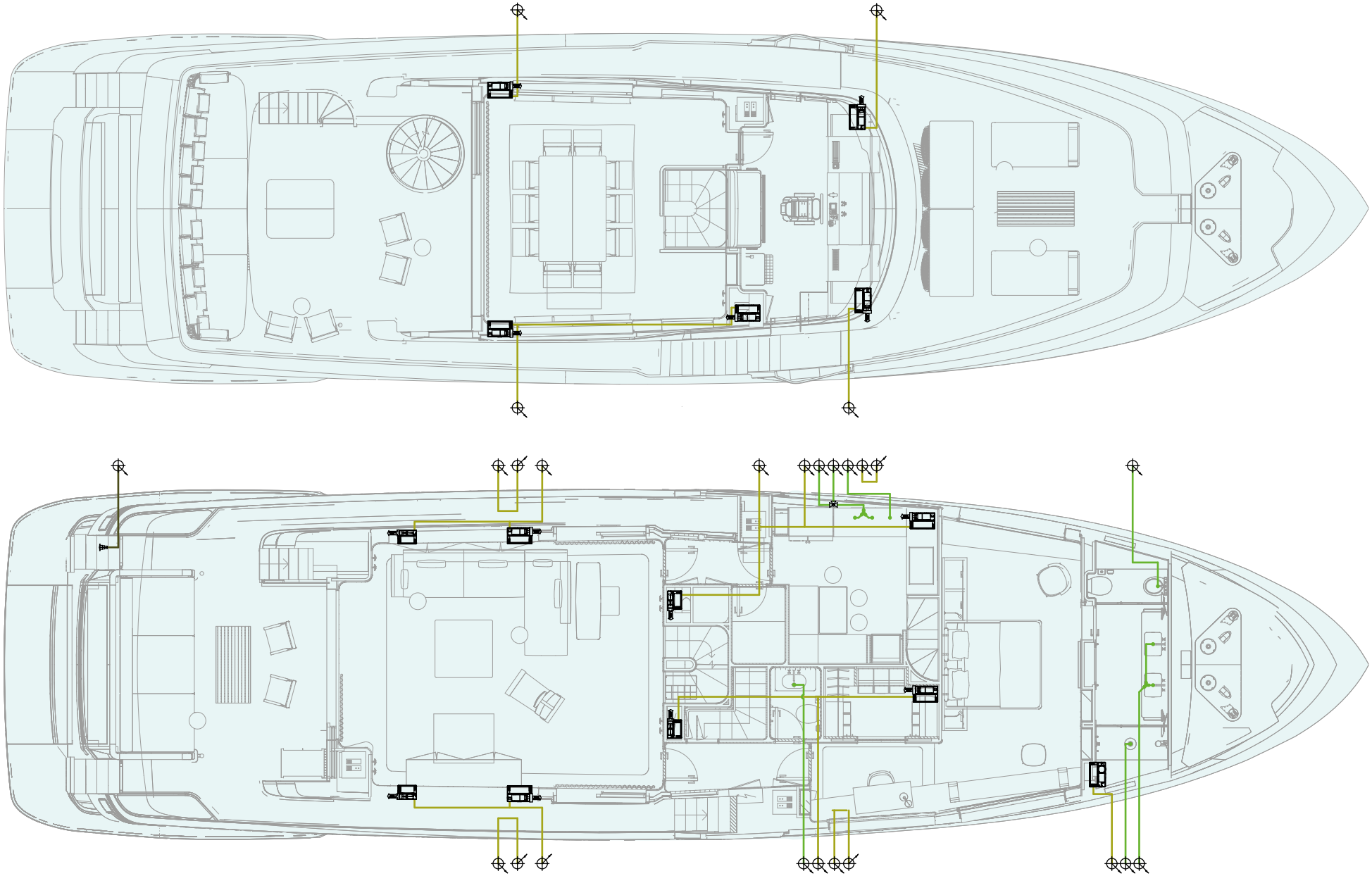
WARNING

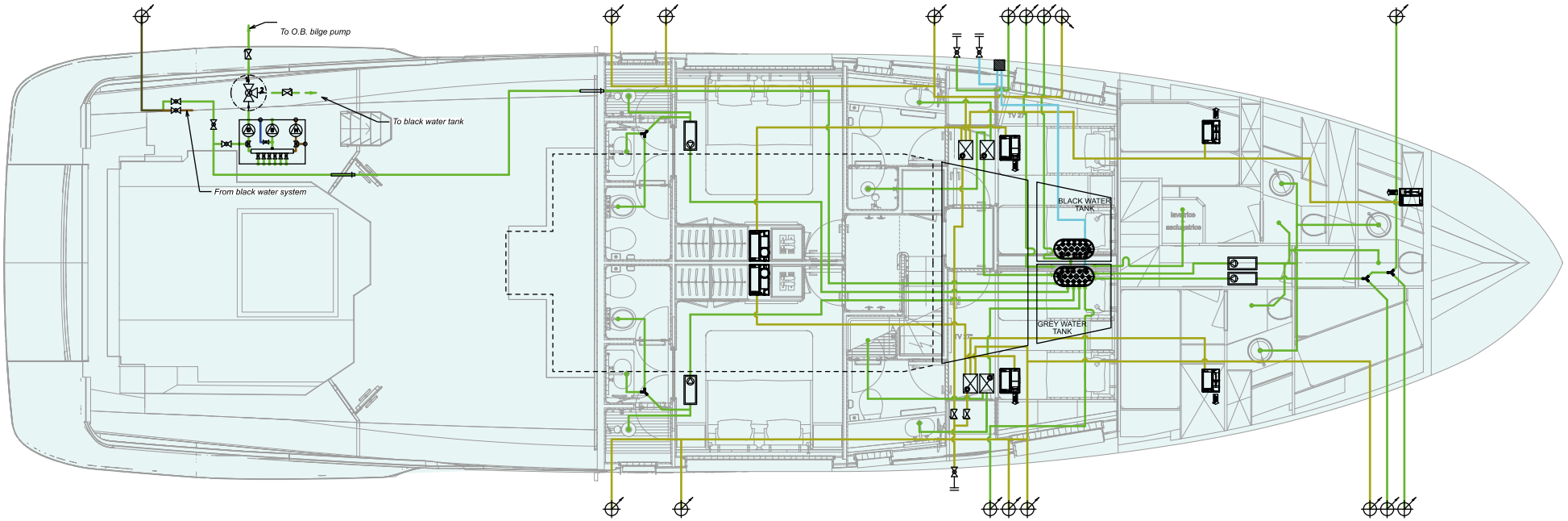
When using chemical products, follow the manufacturer indications meticulously and use the suitable protection devices.

DANGER

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

Grey and black water system diagram

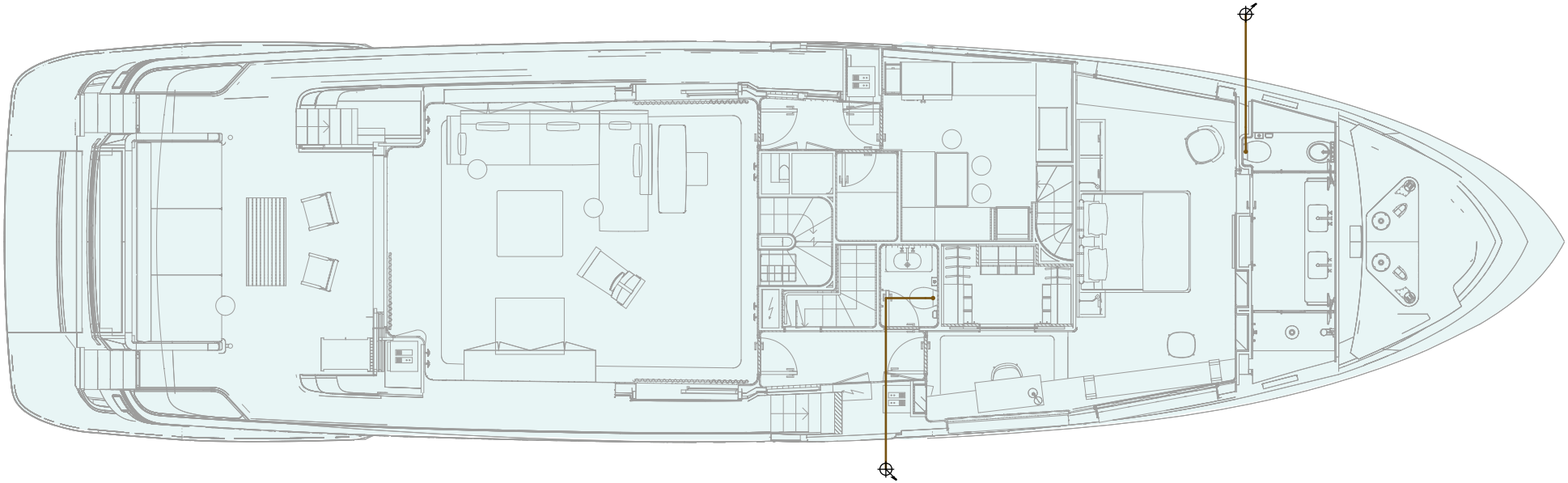


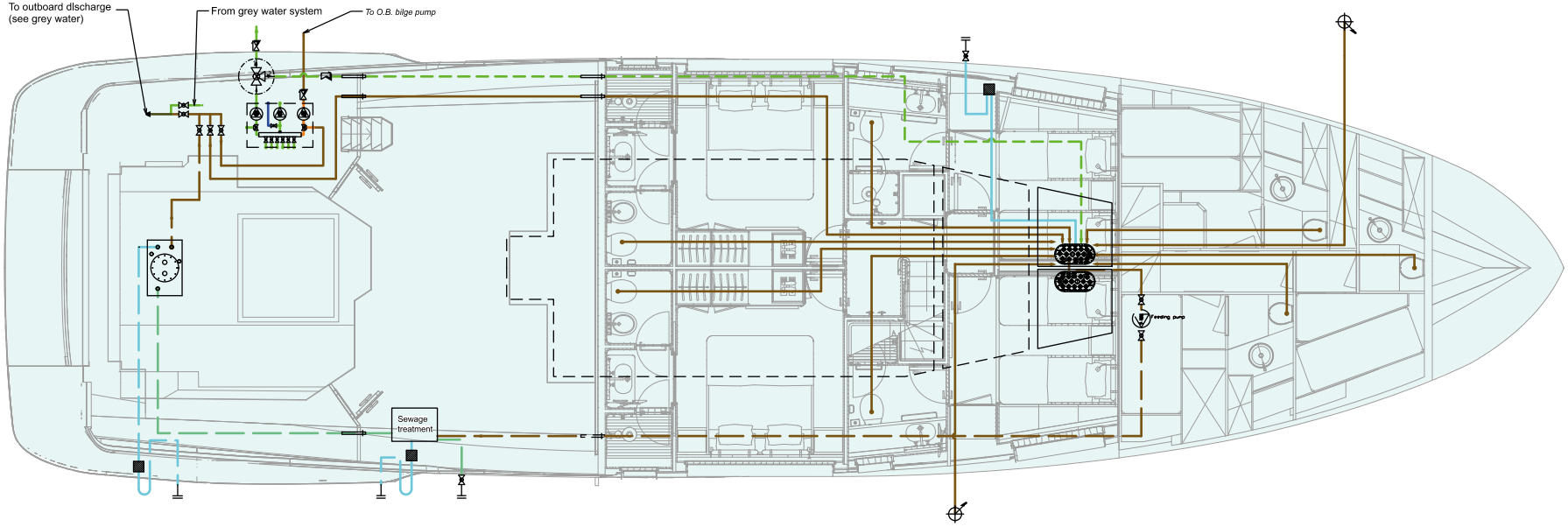


ICON	DESCRIPTION
	Ball valve
	Non return valve
	3 way valve
	Outboard dishcharge
	NO-Smell filter
	Centralized watertight bulkhead penetration
	Over board

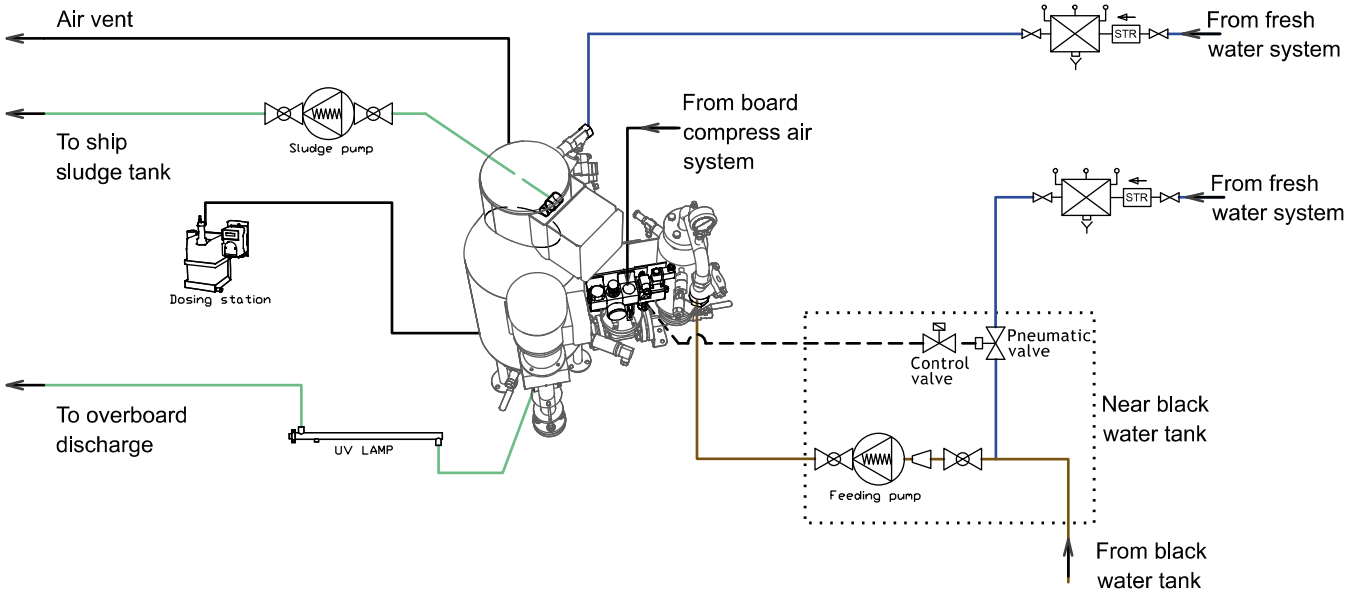
ICON	DESCRIPTION
	To upper deck
	To lower deck
	Automatic grey water pumping unit
	Water pumping unit tank
	Assembled pumps . Bilge pump . Grey water pump . Black water pump

ICON	DESCRIPTION
	Black water line
	Fancoil drainage
	Grey water line
	Discharge line
	Air vent line




To outboard dlscharge
(see grey water)
From grey water system
To O.B. bilge pump
Sewage
treatment

HAMANN COMPACT SYSTEM



ICON	DESCRIPTION
	Ball valve
	Non return valve
	3 way ball valve
	Over board
	NO-Smell filter
	Centralized watertight bulkhead penetration
	Sea chest

ICON	DESCRIPTION
	Sewage tank
Sewage treatment	Sewage treatment
	Black water line
	Hamann line
	Grey water line
	Air vent line
	OPT line

ICON	DESCRIPTION
	To upper deck
	To lower deck
	Siphonbraeak
	Assembled pumps . Bilge pump . Grey water pump . Black water pump

6.4.1 Tank maintenance

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.

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.
For maintenance of the WC itself, refer to the relevant manual.

Descaling of exhaust 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.

If sediments are still there, repeat the above procedure with a mix of 10% of pyropotassic tetraphosphate.

6.4.2 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:

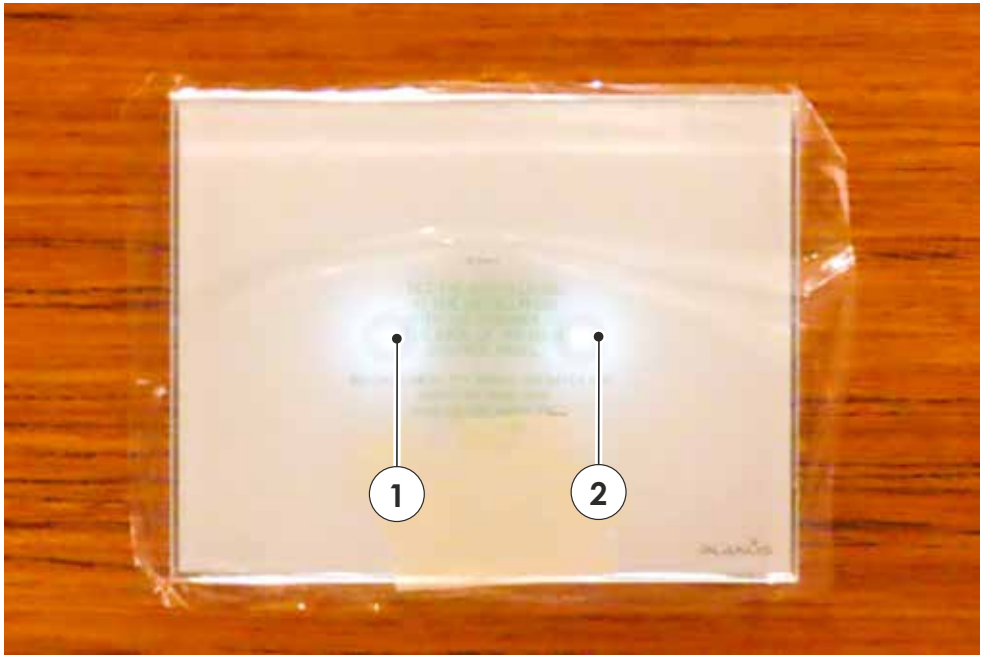
1. Button **"before use";**
2. Button **"after use".**

After 8 hours of service the backlit buttons 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 **"after use"** for more than 6 seconds.

To deactivate or reactivate the tank protection is necessary to press both buttons 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.

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

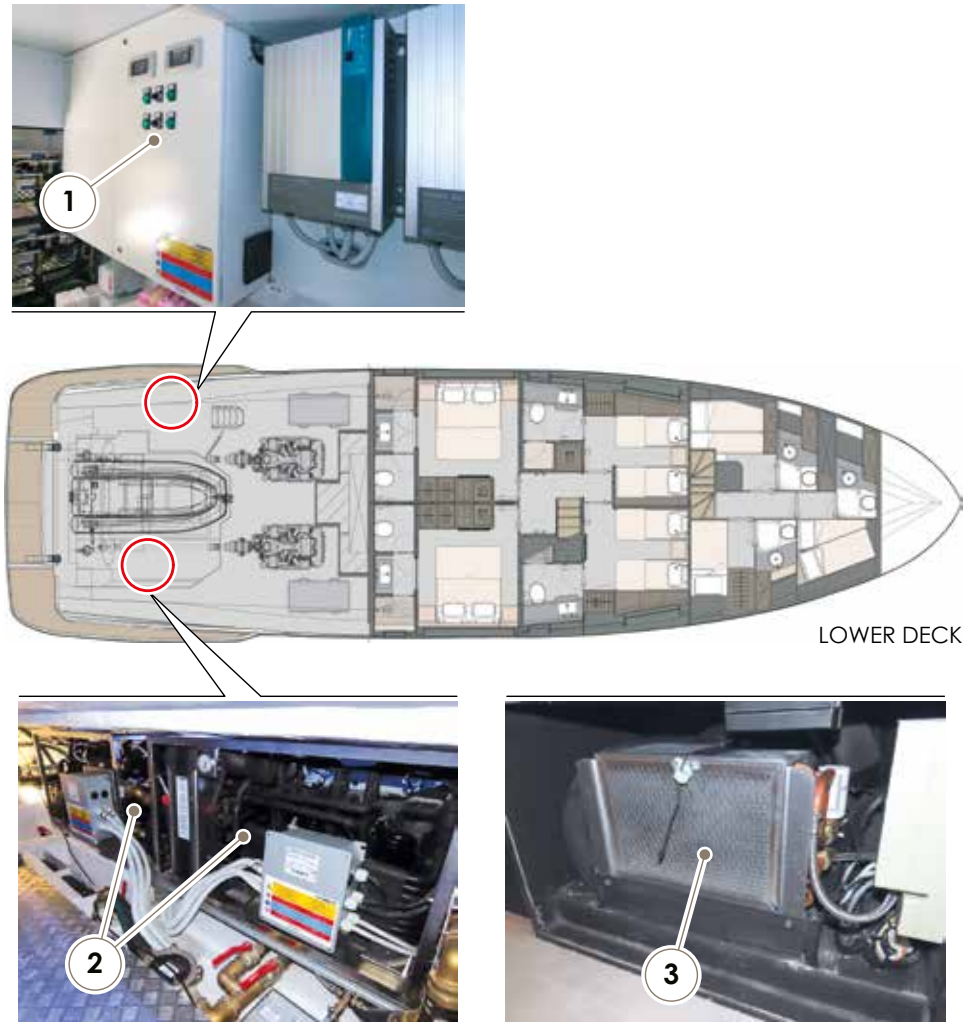
6.5 AIR CONDITIONING SYSTEM

The air conditioning system consists of an air conditioner group consisting of 2 chiller unit, which can be used either individually or at the same time. 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.



1. Compressor groups control panel
2. Compressor groups
3. Fan-coil unit

The entire system is powered at 230V AC by means of a magneto-thermal switch located on the general electrical panel in the engine room. The compressor unit is located under the aft garage on the starboard side.
To power the chilling unit, activate the button on the separated control panel.

The air conditioning system can be controlled and monitored Even through the monitoring system.

Your yacht can be equipped with three air handling units (AHU).

The AHU manages air treatment and exchange in your yacht's rooms.

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.
Apply power to the refrigeration unit and to the fan-coils by means of the switches arranged on the main control panel in the technical room.

CAUTION
On the main electrical panel there are two circuit breakers AIR CONDITIONING and FANS FAN-COIL, both must be in the ON position to operate correctly the air conditioning system.

Check the correct rotation of the sea water pumps and water treated, observing the arrows located on the body of the same pumps.

The group operates normally only when the sea water circulation and the treated water is correct. After a few seconds, the compressor will start. At the start of the compressor, it will turn the operation light on the framework.

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 engine room.

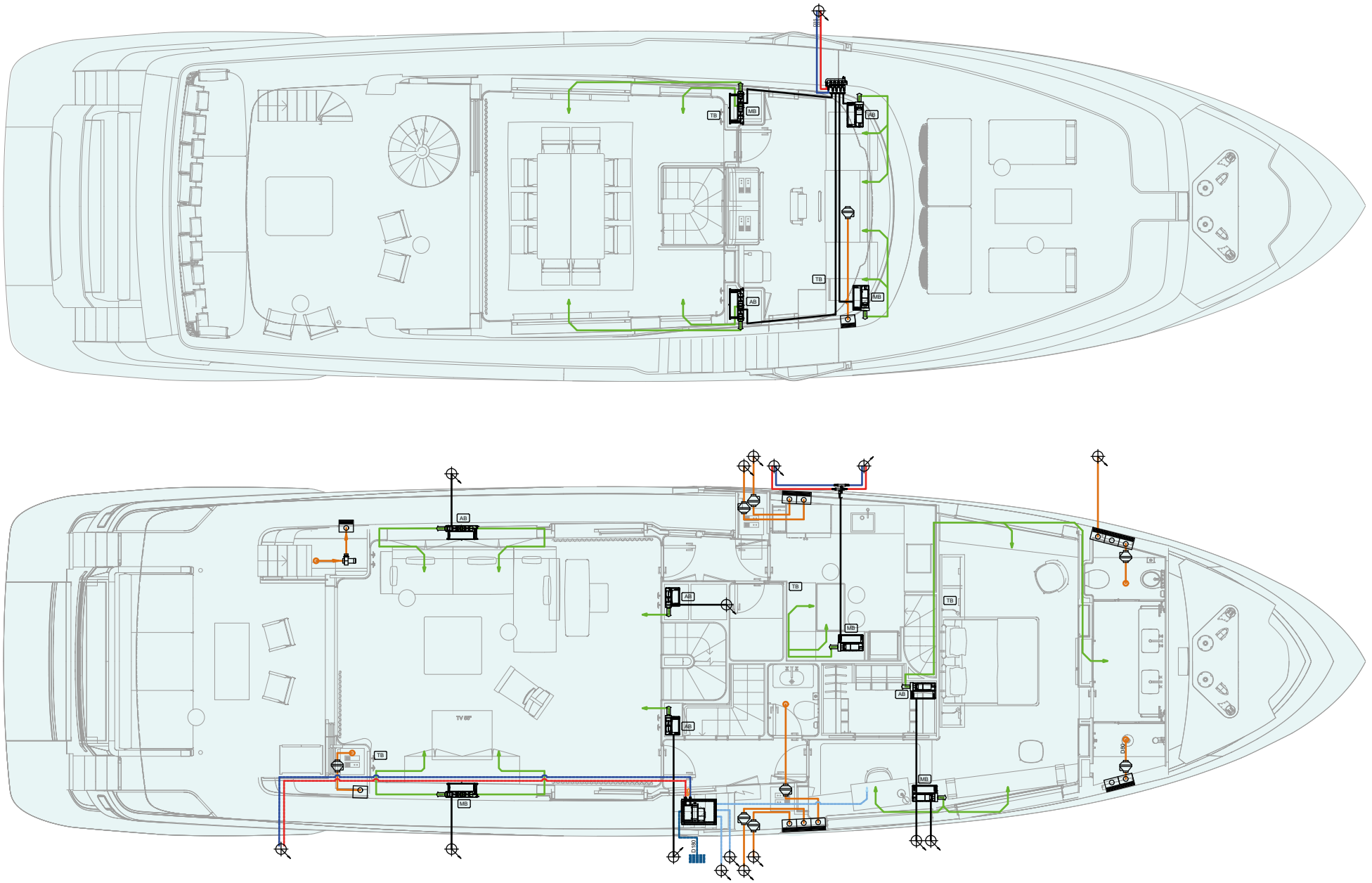
The chilled water circulation pump will circulate water to the different fan-coils.
Fan-coils will exchange heat with the surrounding environment, the return water will be heated and the thermostat will restart the compressor, in a differential range of 3÷4°C, thus keeping the chilled water temperature in a range from 7 to 11°C.

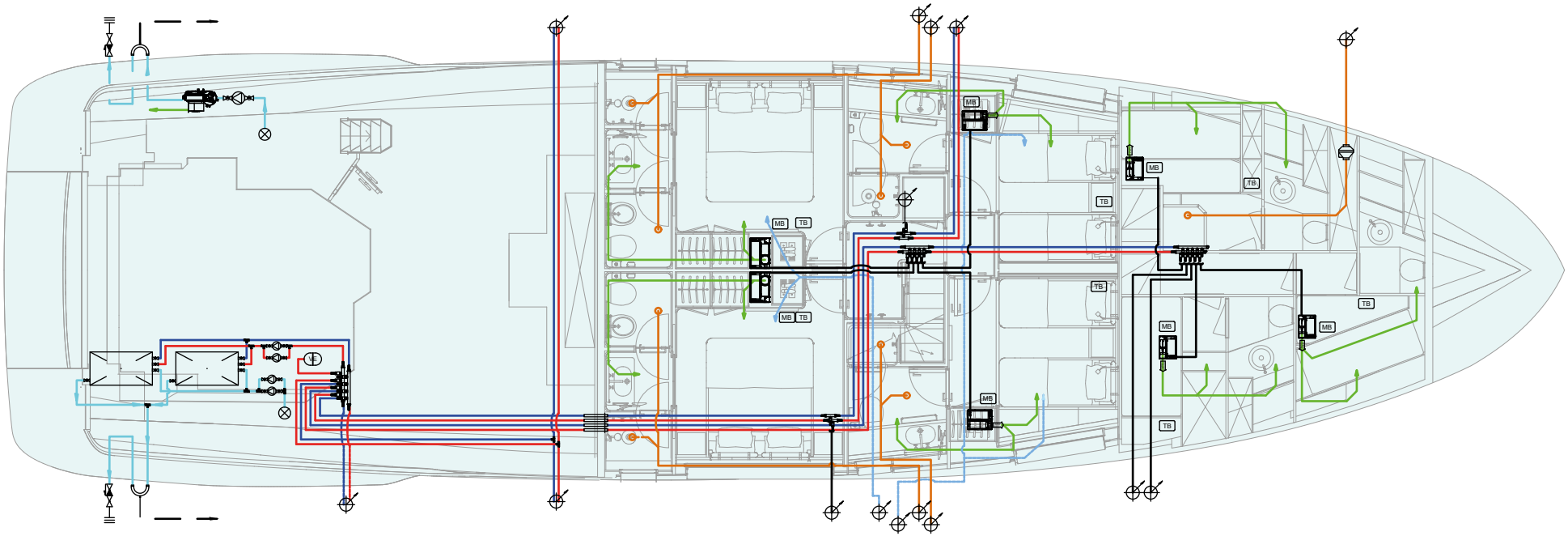
WARNING
The cleaning of the sea intake strainer must be performed with a periodicity related to the use of the system and by the conditions of the aspirated water.

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.

Air conditioning system diagram





ICON	DESCRIPTION
	Water delivery line
	Water return line
	Raw water inle
	FCU air outlet
	Air extraction

ICON	DESCRIPTION
	Blower
SO	Temperature probe
TB	Accomodation control panel
MB	FCU main board
AB	FCU auxiliary board

ICON	DESCRIPTION
	Watertight bulkhead penetration
	Blower 24V
	To lower deck
	To upper deck

6.5.1 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
The topping-up of the chilling liquid must be carried out by skilled and qualified personnel, according to the indications of the Manufacturer.

CAUTION
The air inlets of the air conditioning system must always be free; their obstruction beyond involving the system performance, can also generate serious problems.

CAUTION
If the compressor is too noisy, an electric connection is wrong "compressor wrong rotation direction", check the electric connections.

WARNING
Wash the sea water circuit with fresh water at least once a year.

6.5.2 Refrigerating unit control panel

The control panels of the cooling system located in the engine room and in the main helm station have the following functions:

1. Alarm indicator: If pressed, the button shows the active alarms on the display.
2. Program mode: Press to enter the menu.
3. Escape to exit: Press to exit the menu.
4. Scroll up: Press to scroll up.
5. Enter: Press to select and confirm the highlighted option.
6. Scroll down: Press to scroll down.
7. Display

At first start the chiller unit will operate according to the parameters set.

NOTE

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

CAUTION

It is strongly recommended that the factory-settings NOT BE CHANGED. This is possible only in exceptional cases and with the help of CUSTOM LINE staff and After Sales & Service Department.

CAUTION

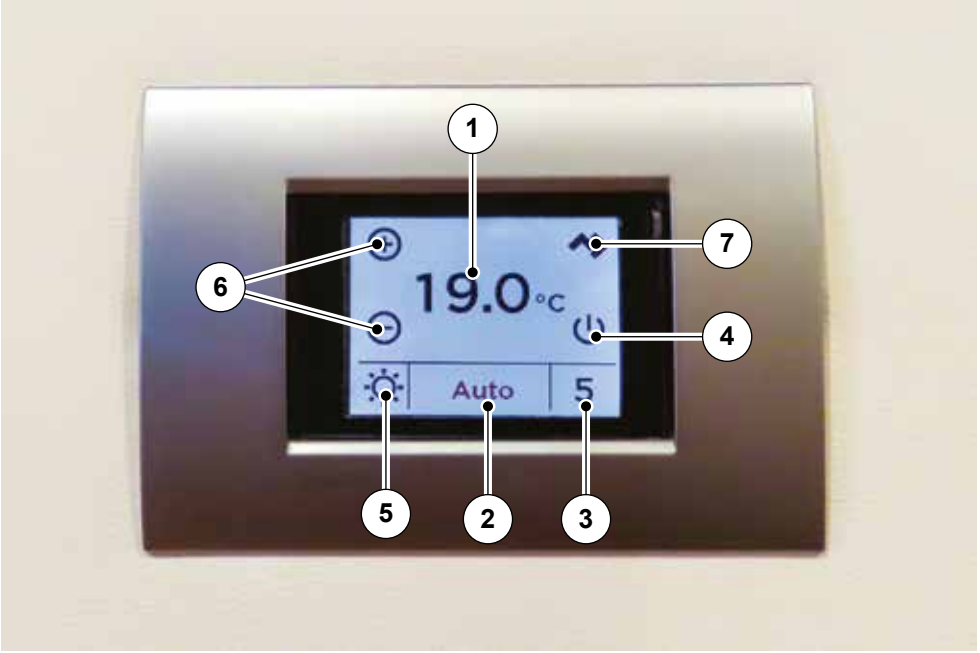
The signal of any alarm implies a failure in the operation of the system. INVESTIGATE and ELIMINATE THE REASON FOR THE FAULTY OPERATION before restarting the system. Refer to the specific manual or refer to the Service Department.

6.5.3 Fan-coil control panel

The fan-coil control panel located in each room, as shown in the air conditioning control diagram, has the following functions:

1. Ambient temperature read at the selected probe.
2. Active operating mode (HEATING, electric HEATING, cooling, fan only).
3. Fan speed (AUTO, MANUAL). By clicking on the symbol to access the function menu:
   - AUTO
   - MANUAL
4. Disconnection of the fan-coil.
5. Temperature reached. By pressing the symbols in the function menu:
   - Cooling
   - Heating
   - Electric heating
   - Fan only
6. Temperature set keys
7. Configuration key

The system automatically switches over to heating or air conditioning, based on the temperature detected.



NOTE

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

6.6 FUEL SYSTEM

The system has a capacity of 14500 liters and can be filled by means of two refuelling fillers, located inside two proper peaks, placed along the walk-arounds of the yacht.
The system is built in accordance with the RINA class and consists of a main tank located on the bottom amidships and a tank for daily use, located in the engine room.
The fuel visual level can be seen by means of one detector inside the tank. This sensor allow displaying the number of litres contained in the daily tank and main tank on the monitoring system.
On the daily tank it is possible to directly detect the fuel level through an indicator in order to verify if the transducer value coincides with the actual fuel value 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.

The fuel is sucked directly from the daily central tank and is sent to the distribution manifold which supplies the engines and the generators.
Inside the bow garage, a fuel filling station has been installed to allow the refuelling of the tender or jet-ski.
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 level in the daily tank is too low, it is possible to activate two electric pumps located in the engine room, by means of a selector installed on the general electrical panel in the technical room.

The transfer of fuel from the structural case to the dailies cash is carried out 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" the transfer among the main tanks and the daily tank is prohibited and the fuel of the main tanks cannot be used.
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 24V or 240V.

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 particular geometric shape of the tank allows besides the decantation of impurities in the fuel tank. It is suggested to fill the tank some hours before leaving; in this way possible dirt particles in the fuel have the time to settle down and the water to decant.

The fuel aspirations of the engines and generators, as well as on site, can be remotely intercepted by a quick-closing valves, located on the distributor and remotely controlled by a rod to be operated only in case of emergency placed on the descent to the system room.

The operation of the fire-fighting system must be preceded by the manual closing of the fuel shut-off valves by means of the relative tie rod located on the way down to the system room.

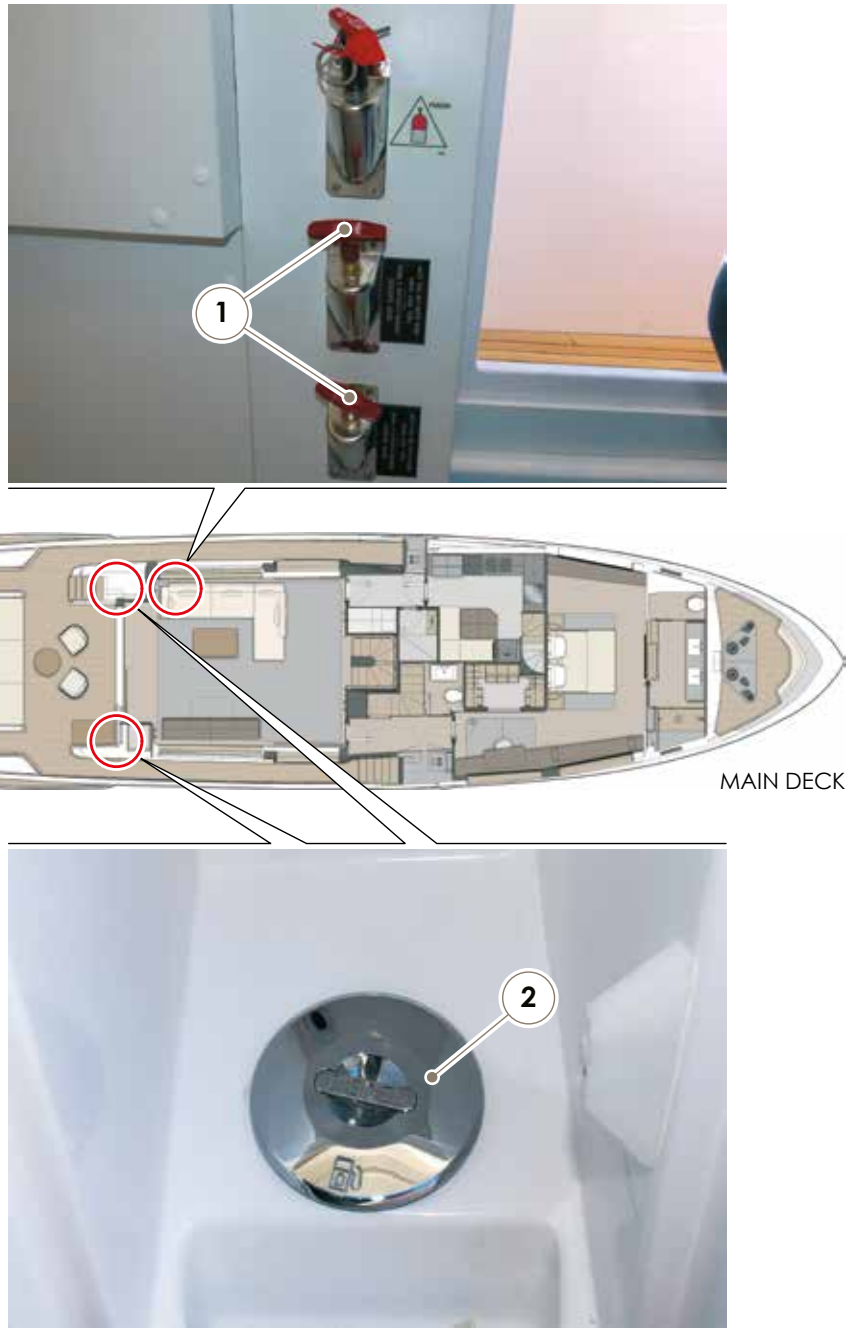
CAUTION

Fuel leaks create a fire and explosion hazard.
It is not allowed to stow fuel inside the stern garage into cans or containers different from the fixed ones of tender and jet-ski.

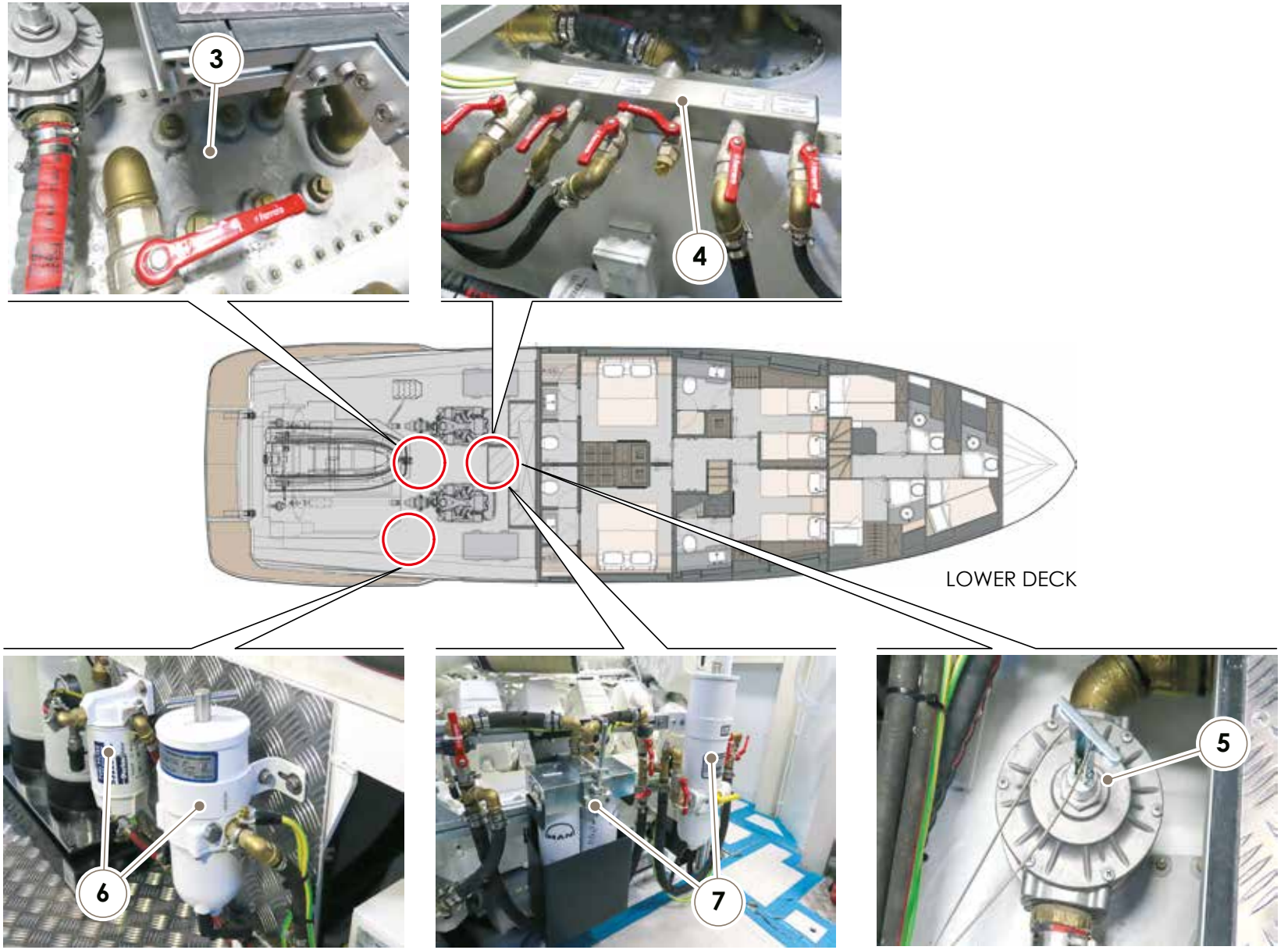
The yacht is equipped with a fuel treatment system that separates (through a centrifugal action) the diesel from any impurities (water or sludge).

NOTE

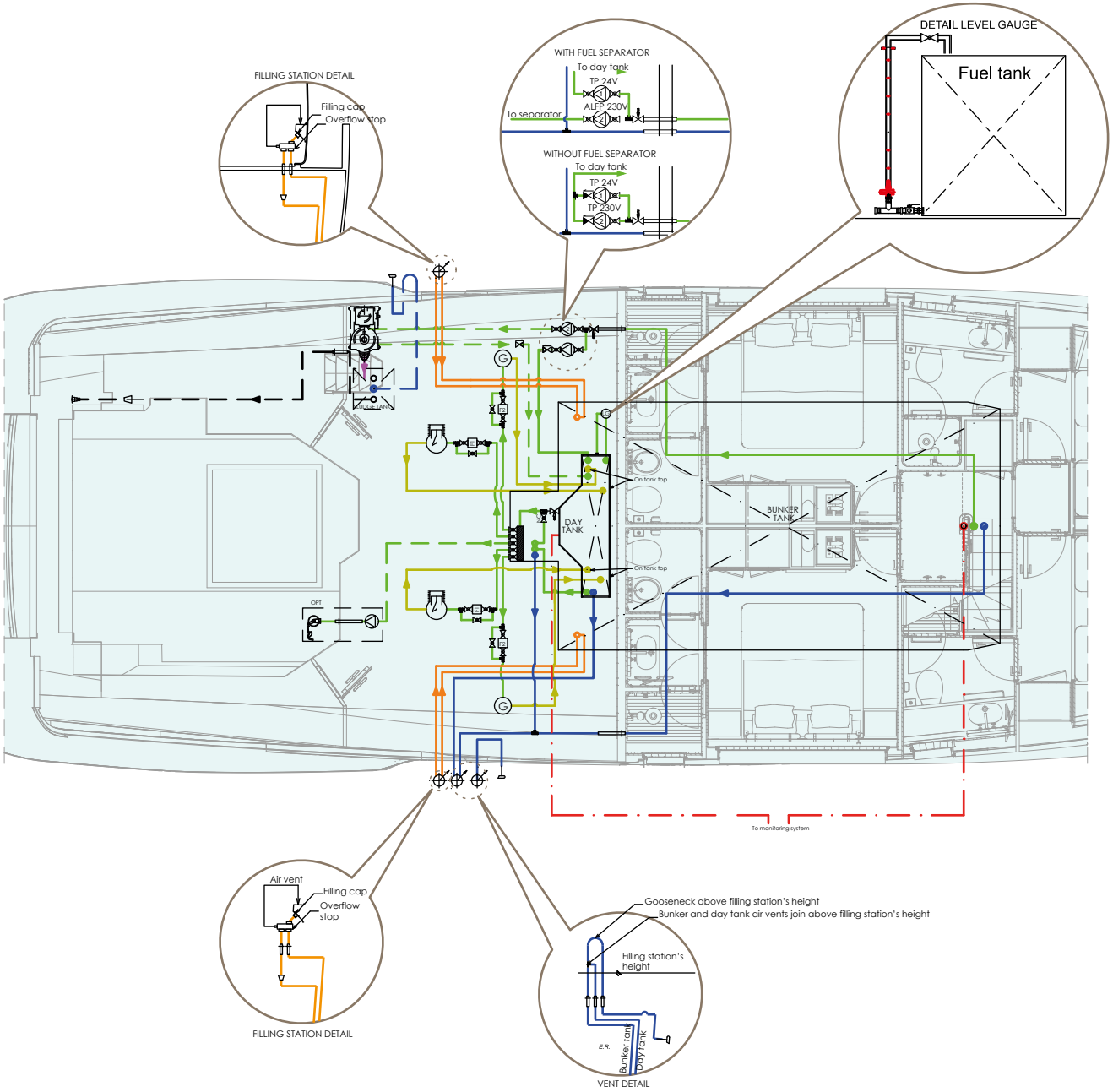
For further information on use and maintenance, please refer to the manufacturer's manual.



1. Fuel section tie rods
2. Fuel loading filler
3. Fuel tank
4. Fuel collector
5. Fuel tank interceptions
6. Generators fuel filter and prefilter
7. Engine fuel filter and prefilter


3
4
LOWER DECK
6
7
5

Fuel system diagram



ICON	DESCRIPTION
	Ball valve
	Valve with remote control (rina type approval)
	Non return valve
	Supply manifold
	Return manifold
	Diesel engine
G	Diesel generator
F1	Fuel prefilter
F2	Generator fuel filter
	Air vent over board
	Filling cap

ICON	DESCRIPTION
TP-1	Transfert pump
TP-2	Fuel oil transfer pump or fuel feeding pump (opt)
	Sleeve reduction
LG	Level gauge
	Tank connection with suction
	Tank top connection
	Garage filling station
	Bulkhead penetration
	Overflow stop
	Alfa laval (opt)
	Pump out cap (opt)

ICON	DESCRIPTION
	Fuel tank air vent pipe
	Transfert-feeding fuel pipe
	Fuel filling pipe
	Generator return fuel pipe
	Sludge pipe
	Eletrical cable

6.6.1 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.

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-thermal switches 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.

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 overflooding, disconnect the circuit breakers switches of the bilge automatic pump system, to avoid accidental spills, until the tanks have been completely drained in accordance with the environmental legislation.
During the maintenance operation in the engine room, it is compulsory to disconnect the circuit breakers of the bilge pumps automatic suction system, avoiding in this way accidental spills.

CAUTION
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.

CAUTION

Carry out the drainage procedure by each refilling.

ENVIRONMENT

Handle water mixed with fuel and dispose of it according to the rules in force. Use only authorized disposal procedures; in case of doubt, refer to the Port Authorities.

DANGER

EXPLOSION/FIRE/POLLUTION DANGER

Fuel system connections that are too loose or too tight can leak, resulting in fuel loss, environmental pollution and explosion/fire danger.

DANGER

It is forbidden to smoke, use naked flames or keep mobile phones switched on during refuelling.

CAUTION

We recommend periodically empty and clean the tank, least once a year.
Also keep in mind that the oil must be filtered reused.

DANGER

EXPLOSION/FIRE DANGER

- 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.

CAUTION

The draining should never be conveyed to the bilge. If accidentally the draining is conveyed to the bilge, disconnect the bilge pumps and clean accurately.

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 you to wash the teak in proximity of the plug with fresh water.

The fuel aspirations of engines and generators as well as on-site are intercepted at a distance of two rods to be operated only in case of emergency placed on the descent to the local technician.

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..).
Prior to perform any job in the engine room, disconnect the bilge pumps switches, to prevent accidental fuel, lubricant or other liquid leaks and therefore the pollution of the yacht surrounding waters.

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.

6.6.2 Fuel boarding

The boarding fuel takes place by means of suitable openings present on the side walk.

The release of fuel can take place during refuelling operations, if the tank is already practically full.

CAUTION

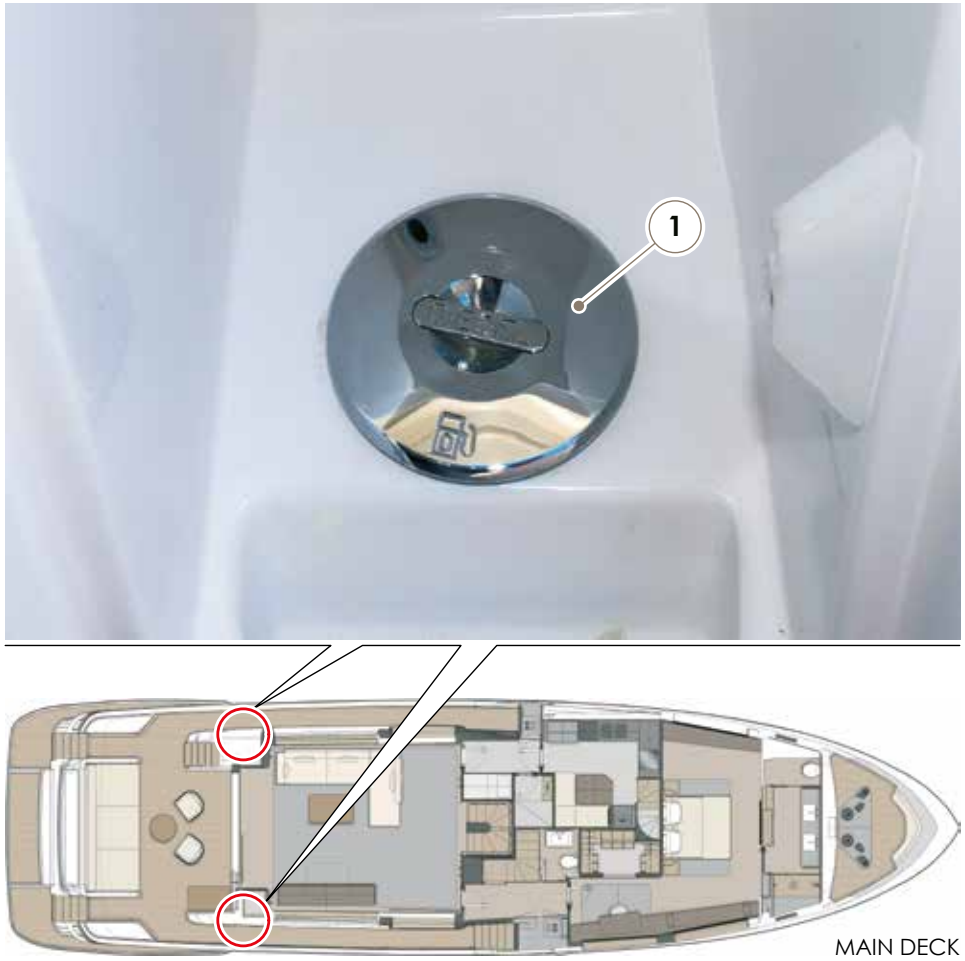
The boarding cap presents the "DIESEL" indication in order to avoid the accidental intrusion of different liquids. To avoid damage to the system and to the tanks, it is recommended to supply to fall and not a pressure.

CAUTION

Stop the engine during refuelling.

CAUTION

Before filling, sprinkle with fresh water teak to avoid being soiled with fuel.



MAIN DECK

6.6.3 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.

6.6.4 Fuel tank

Bleeding

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 Support CUSTOM LINE 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.

CAUTION

It is advisable to periodically empty and clean the tank, get help CUSTOM LINE.
Also it remembers that the diesel fuel used again to be filtered.

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.

6.6.5 Water/fuel separator pre-filters for engines

Maintenance and water drain from collection tank

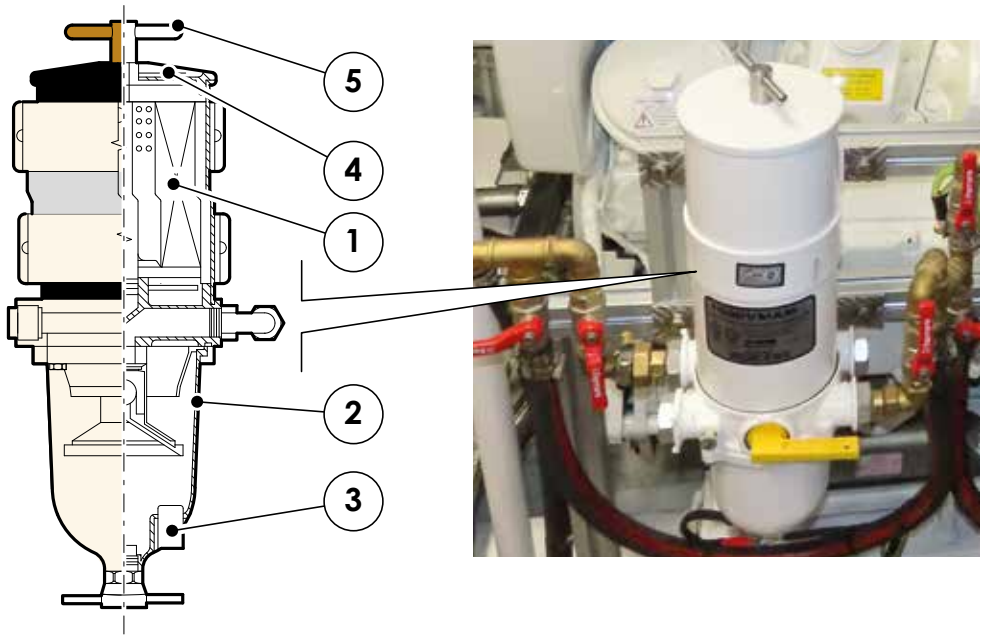
Bleed frequency or the replacement of the filter element **(1)** are determined by the contamination level of the fuel.
Check or drain the water collection tank **(2)** daily.
The collecting cup must be drained before polluting agents reach the turbine end, i.e. when the water detector **(3)**, connected to the warning lights of the main helm station, sends the alarm signal indicating the need to drain water.

- After having placed a capacious collection container underneath it, open the drain to discharge containments.
- Remove the cover **(4)** and fill with clean fuel.
- Close the cover and tighten the T-handle **(5)** firmly by hand.

Replacement of filter element

Replace the element according to the schedule recommended by the manufacturer or if a lack of power is noticed. Power loss indicates that the element is indeed clogged. Other elements like a too full tank or excessively contaminated fuel can also clog the filter.

- Close the seacock.
- Remove the cover.
- Remove the element by holding the handle and by pulling lightly forward with a twisting movement.
- Insert a new filter having the same filtering features of the one replaced.
- Check and, if necessary, replace the filter cover gasket. Apply a layer of clean fuel or engine oil on the seal before reinstalling it, insert the new element with a slow twisting movement downwards.
- Fill with clean fuel, then replace the cover. Tighten the T-handle manually and reopen the valve.
- Start the engine and ensure there are no leaks. Repair any leaks with engine shut off.



MAINTENANCE

At least once a month check the operation.
At least once a week, and anyway before each refuelling, check for the presence of water in the fuel.
If necessary drain the water present.
When necessary, but at least once a year, replace the cartridge of the filters.

Troubleshooting procedure

The main reason for a poor start-up or lack of power is the result of a clogged filter or of an air leak in the fuel system.
If the 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 fuel tank is equipped with an incorporated filter, check for its possible clogging. If the problem persists and the filter element is new, address to Dealer.

CAUTION

The pre-filters' alarm lights are activated and visible from the helm stations of the main deck and of the upper deck.

CAUTION

The separators have to be checked at regular intervals as suggested by manufacturer, so as not to impair the engines operation.

MAINTENANCE

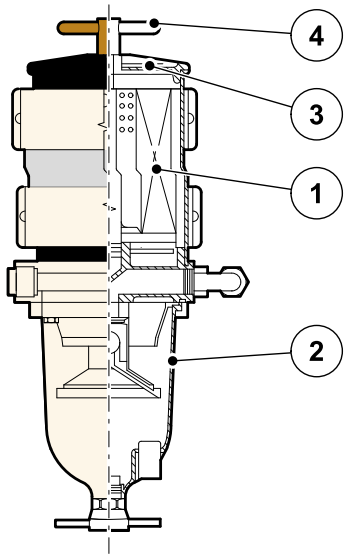
At least once a month check the operation. At least once a week, and anyway before each refuelling, check for the presence of water in the fuel.
If necessary drain the water present. When necessary, but at least once a year, replace the cartridge of the filters.

6.6.6 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 fuel tank is equipped with an incorporated filter, check for its possible clogging. If the problem persists and the filter element is new, address to Dealer.

6.7 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 lateral air intakes equipped with shutters and located along the two bulwarks of the engine room; they allow the penetration of air inside the room separating the suspended sea water, and of two air intakes equipped with extractors and shutters withdrawing the inside air and conveying it outside.

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.

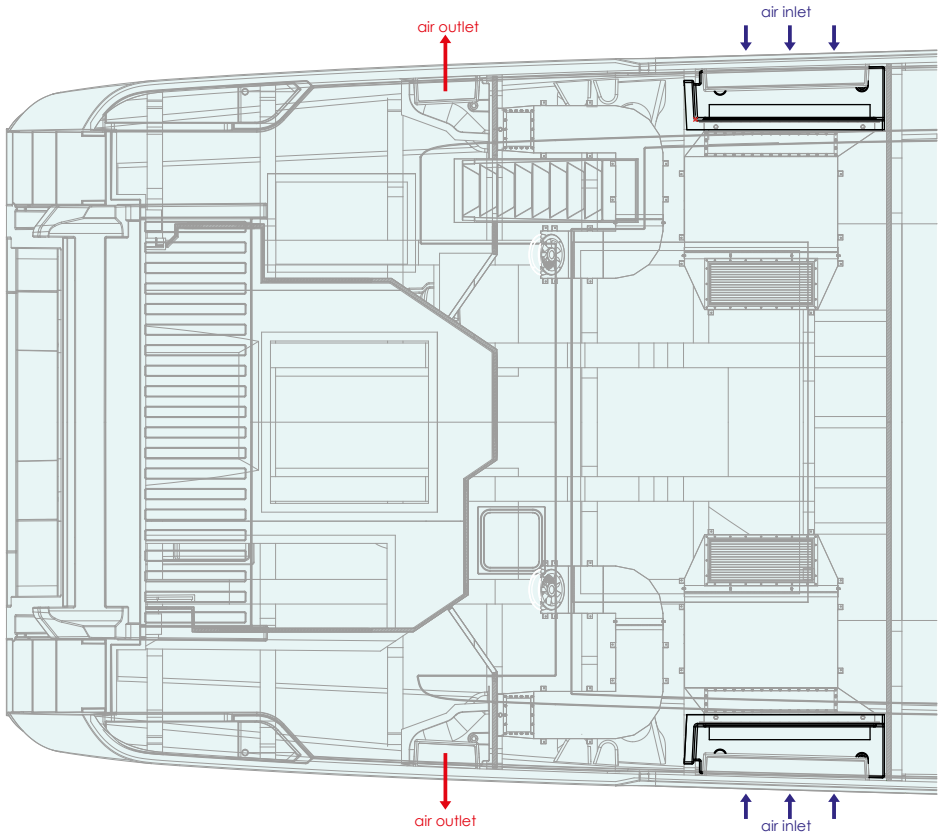
CAUTION
Do not lay tools or clothing on the extractors or on the air intakes.

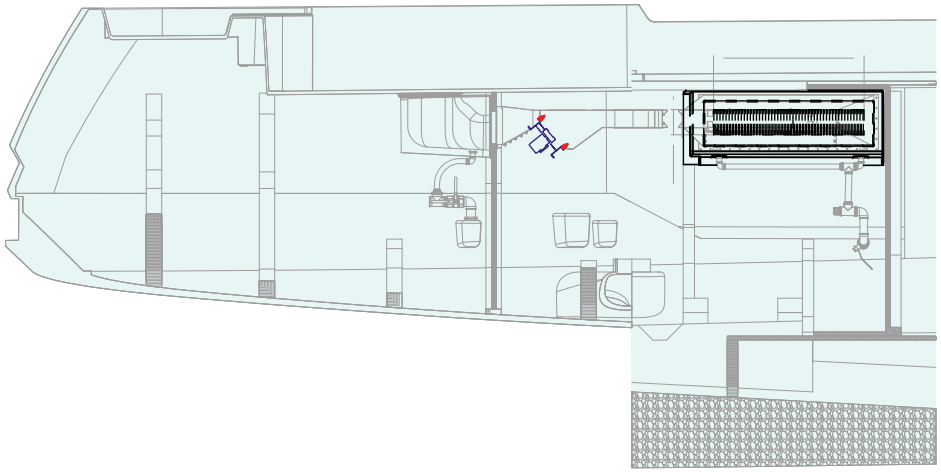
DANGER
POISONING BY CARBON MONOXIDE
This is a colourless and odourless gas and extremely toxic.
Therefore, it is necessary an adequate ventilation yacht when they are switched on the engines or the generator, especially during navigation at low speed or under conditions in which the fumes may fall towards 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.

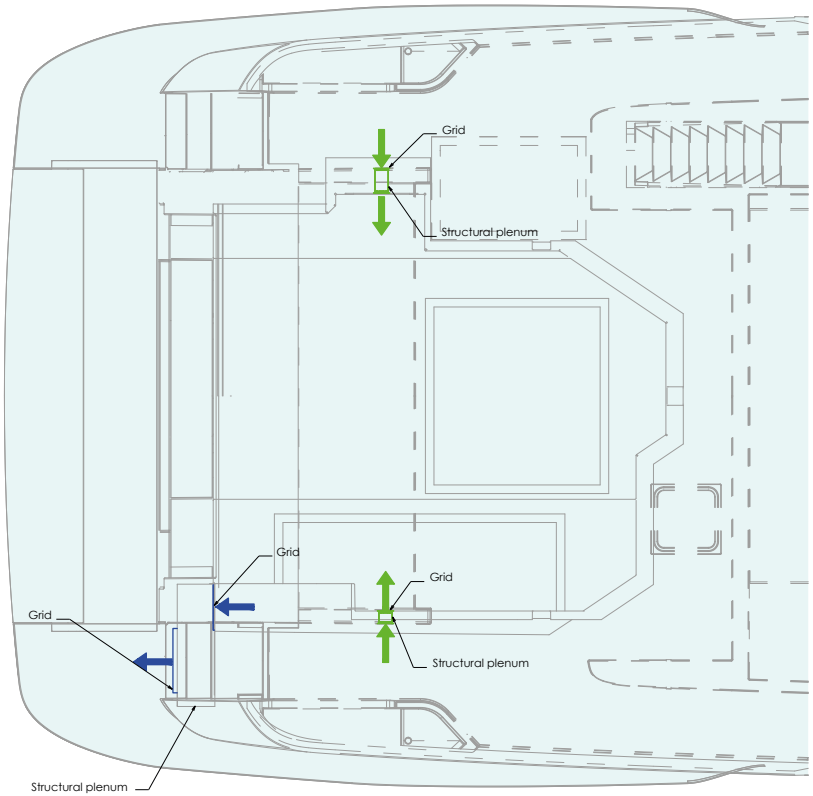
DANGER
It is strictly forbidden to insert your hands or tools inside the fan when operating or when electrically connected. Before starting the fan, make sure that this one is protected against tampering, in compliance with the laws in force.

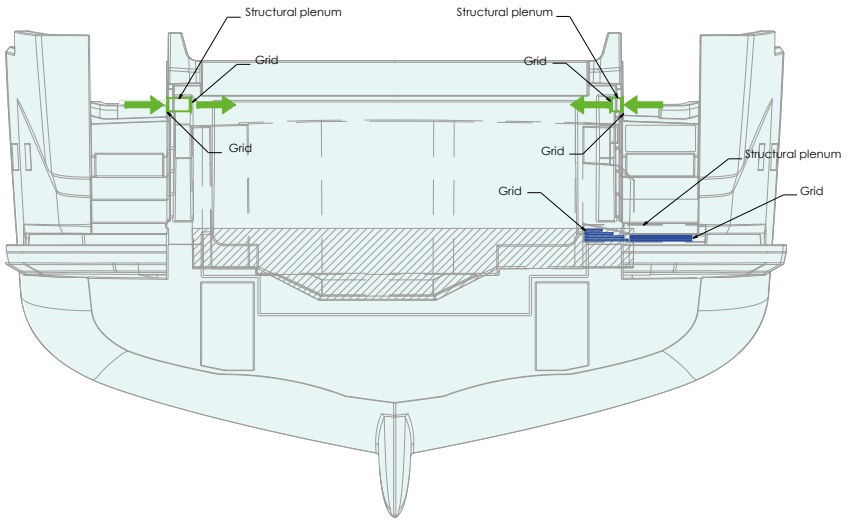
Engine room ventilation system



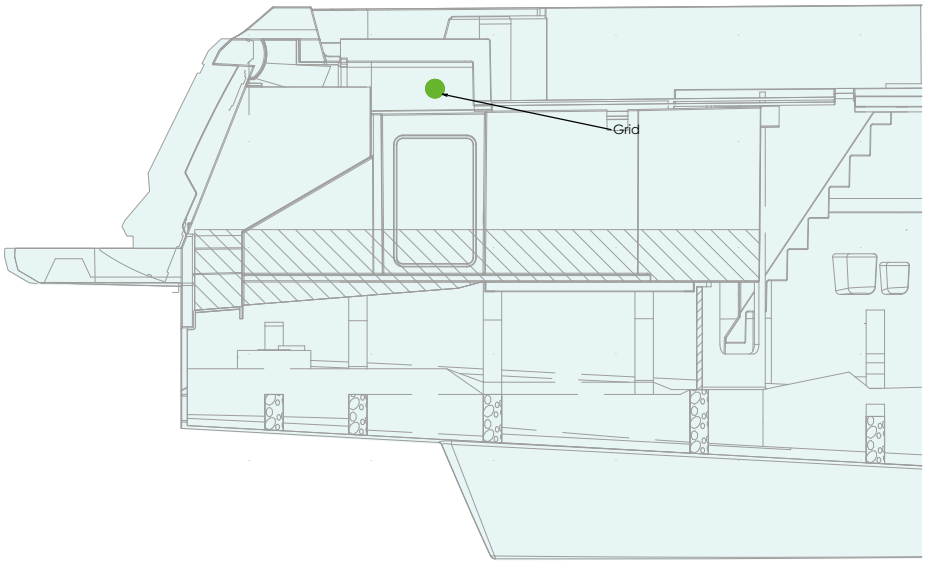


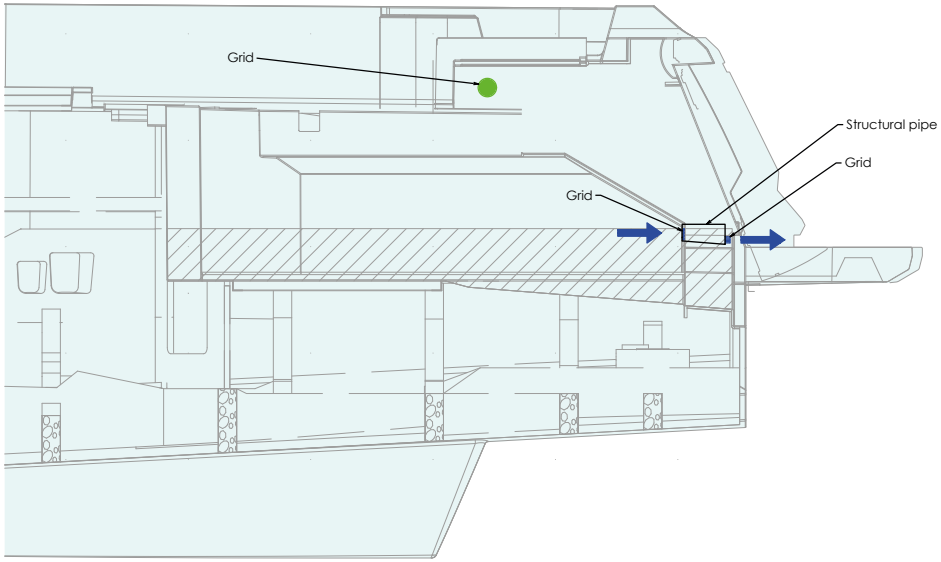
Garage ventilation system diagram





ICON	DESCRIPTION
→	Air entrance
→	Air exit





ICON	DESCRIPTION
→	Air entrance
→	Air exit

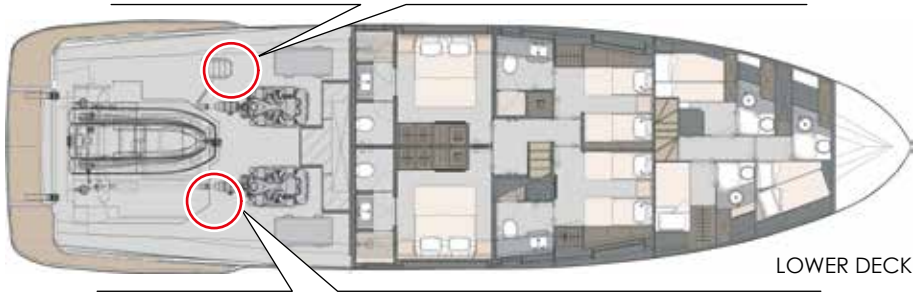
6.8 COMPRESSED AIR SYSTEM

This system supplies with compressed air:
- Horn on the aerials plane;
- Hose connections on various decks;
- Air inlet for sealing Idrostop (max 3 bar).

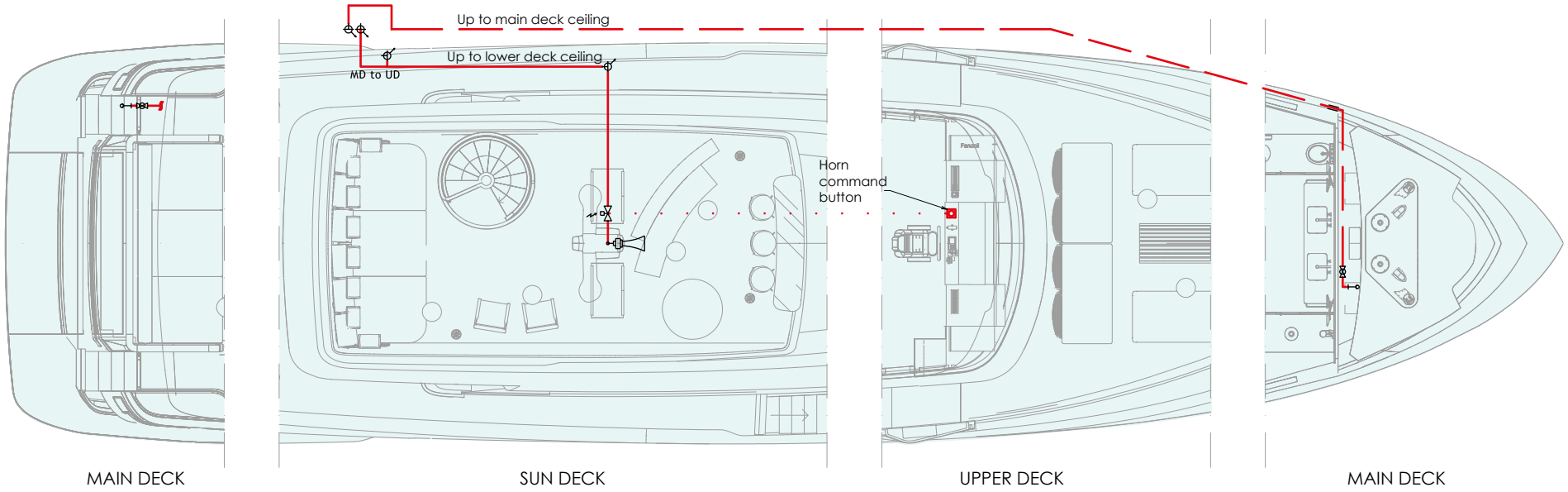
CAUTION
Be very careful when the compressed air use to prevent damage to property and / or people.

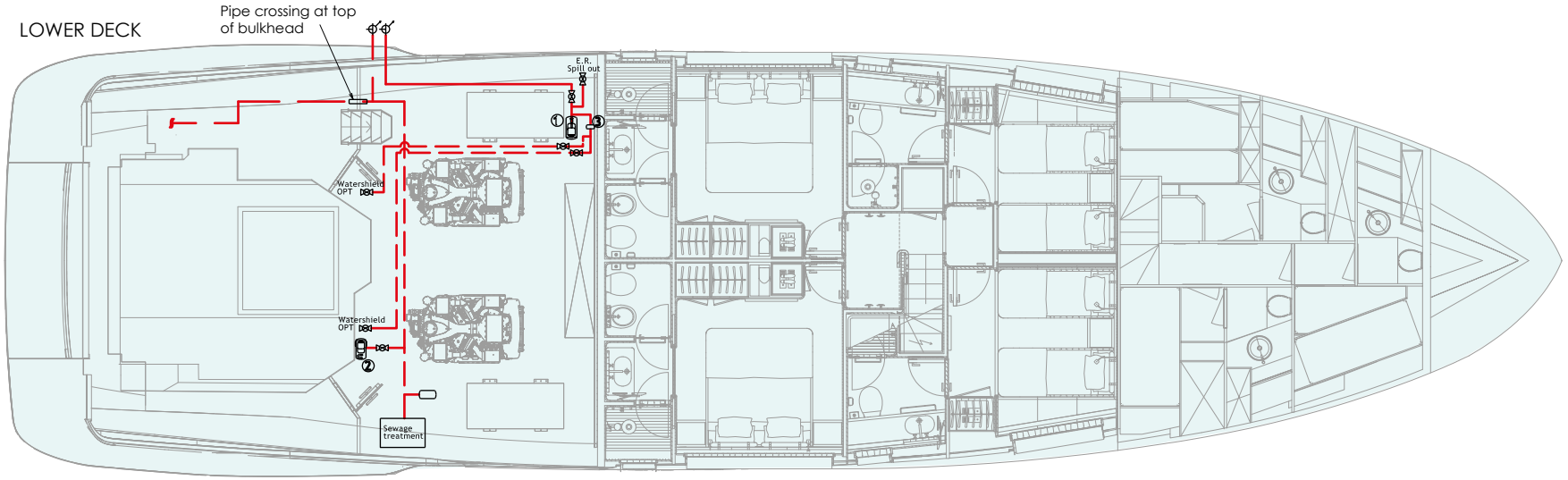
NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

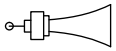
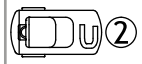
The manufacturer has set one two compressed air units inside the engine room.
- On the port side of the engine room, there is a standard compressor unit (**1**).
- On the starboard side of the engine room, there is a optional compressor unit (**2**).



Compressed air system diagram





ICON	DESCRIPTION
	Ball valve
	Quick connection
	Solenoid valve controled from wheelhouse
	Horn signal in compliance with RINA
 ①	Compressor
 ②	Compressor 6 l
 ③	Pression recucer 0-6 bar
	Bulkhead passage

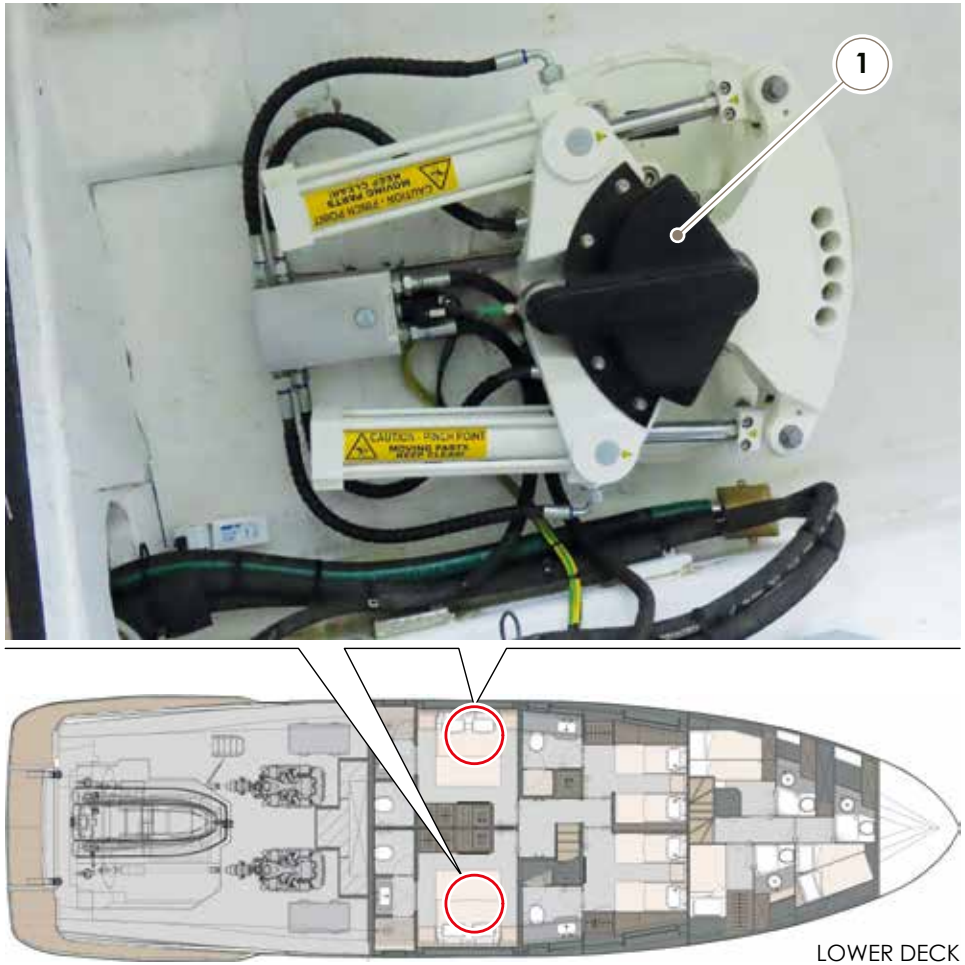
ICON	DESCRIPTION
	Expansion tank
	To upper deck
	To lower deck
	Pipe
	Pipe

6.9 BOW/STERN THRUSTERS AND STABILIZING FINS SYSTEM

Stabilizing fins

The fins (**1**) 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.
This yacht is also provided with a Zero Speed system, which enables the operation of the stabilizing fins even with the engines turned off.



LOWER DECK

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

CAUTION
The supply of the stabilizers must always be kept on the main electrical panel, besides if the stabilizers fins are not in use, they must always be kept in central position (see display in the main helm station).

Bow/stern thrusters

The thrusters is a very simple and sturdy firm device but they requires some special care:

- The thruster must be used at a very low speed, or without fresh way; at higher speed, more correct reactions can be obtained with the offset use of the gear boxes;
- Each time the yacht is lifted up, check the condition of the thruster, of the protection anode and of 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

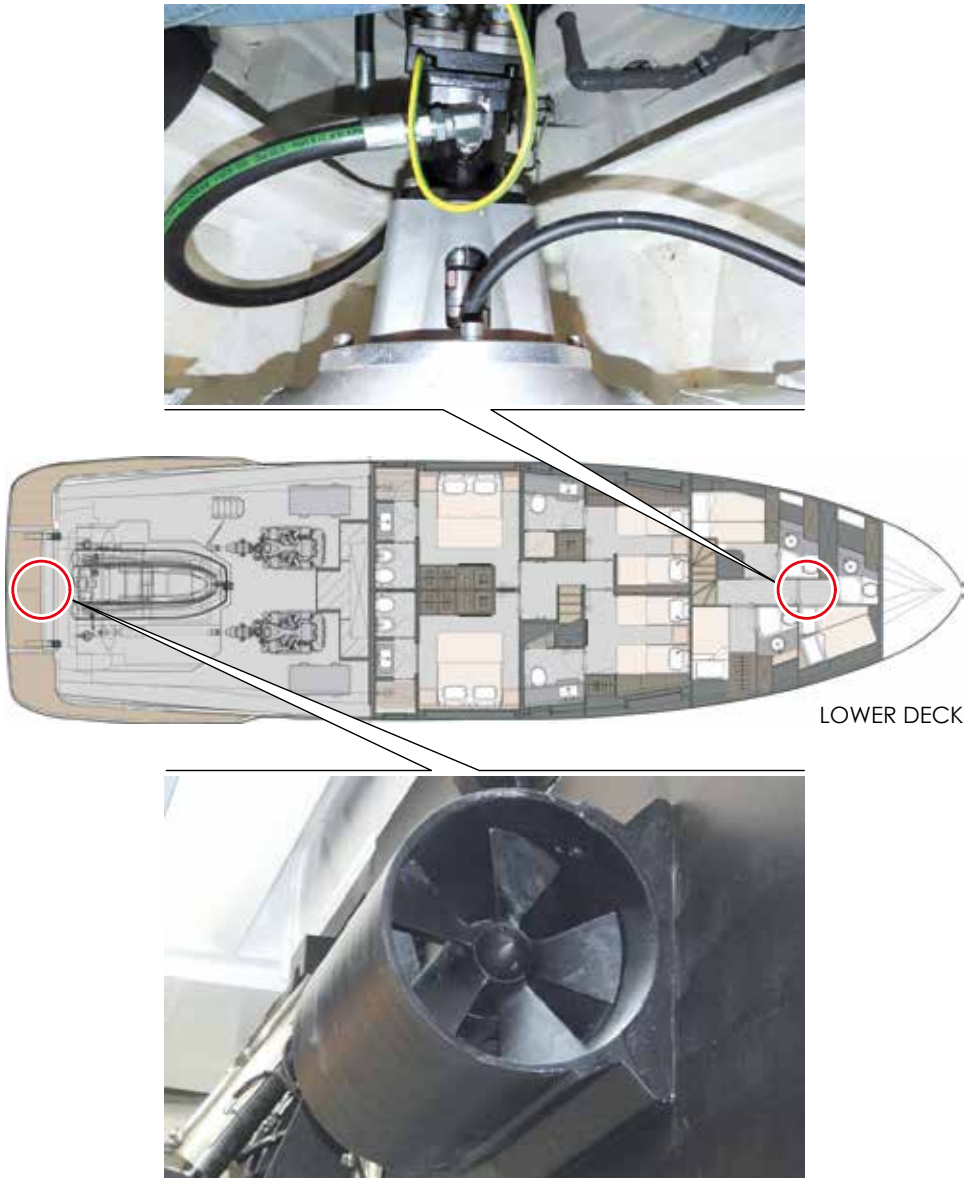
For further information on use and maintenance, please refer to the manufacturer's manual.

Use of the thrusters

Enable the relevant commands via the monitoring system and press the ON button on the joystick control panel where you intend to operate. The light that lights up indicates that the appliance is ready for use. The thrusters are controlled via the control joysticks.

WARNING

When you are finished using the propeller, press the OFF button on the control panel.



WARNING

On the synoptic panel on the helm station there is an indicator light which, if lit, indicates that the bow thruster is powered.

CAUTION

For the duration of continuous use of the operating propeller, refer to the operating manual supplied by the Manufacturer.

DANGER

During the bow/stern thruster operation, pay attention to possible swimmers or small boats 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 a safe distance from the thruster tunnel.

CAUTION

When the bow/stern thruster is not used, always disconnect the control unit.

DANGER

Always stop the bow/stern thruster before undertaking inspection or maintenance tasks by disconnecting the switches.

CAUTION

Never activate the bow/stern thruster longer than one second when the yacht is at dry shore, because this can damage the motor seriously.

6.9.1 Hydraulic system for stabilizer fins and bow/stern thrusters

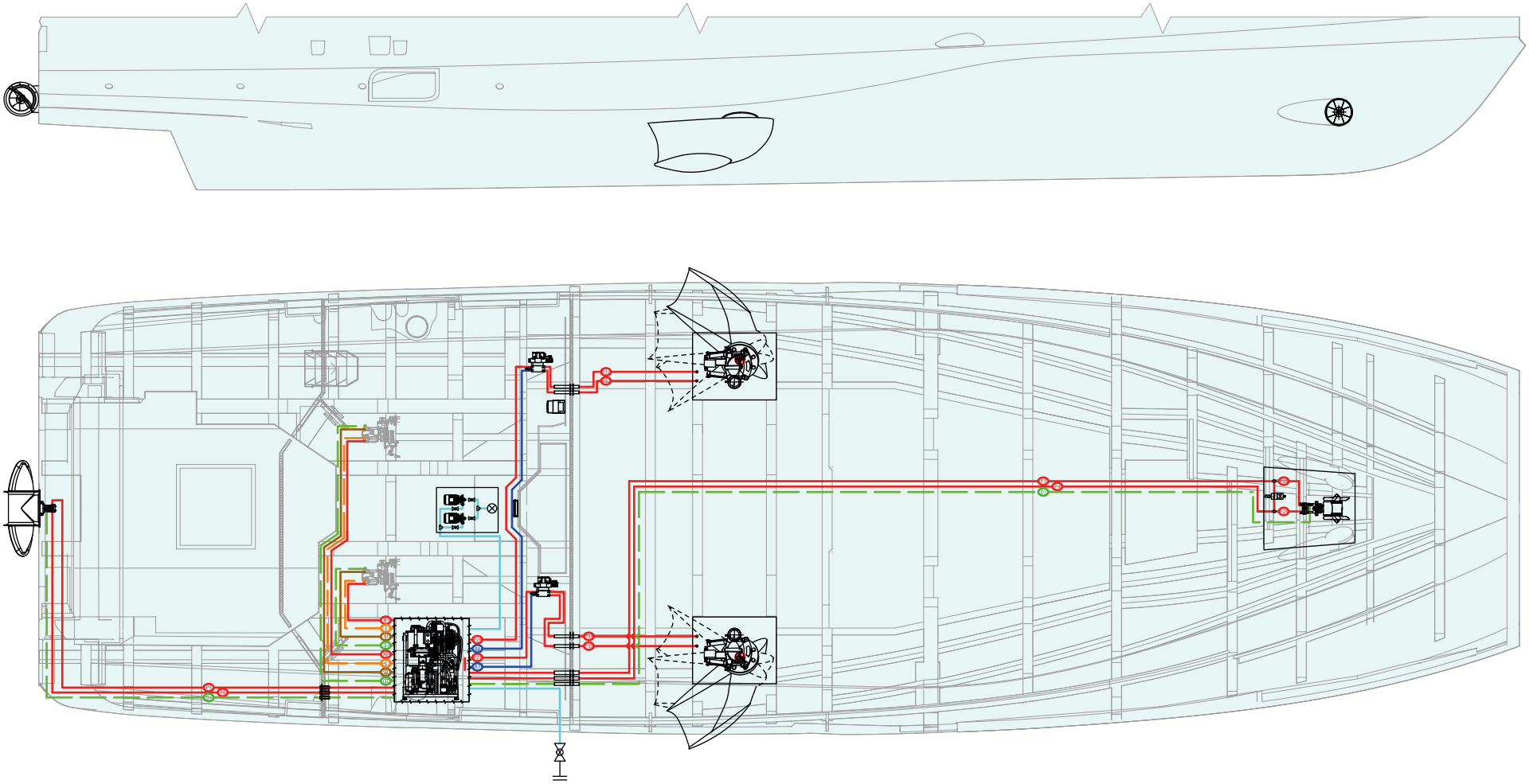
This is an independent system operating by means of one hydraulic pump (fitted on a gear box), which suck oil from a suitable tank and convey it to a control valve.

From the control valve depart two lines: one supplies the stabilizer group, the other the bow/stern thruster. In the stabilizer assembly, the oil flows out of the control valve and reaches two separated blocks of solenoid valves, each of which drives the hydraulic cylinders of each stabilizer.

In the other line of the bow/stern thruster, oil supplies a further block of solenoid valves, that activates the hydraulic motor on which the bow/stern thruster is fastened.

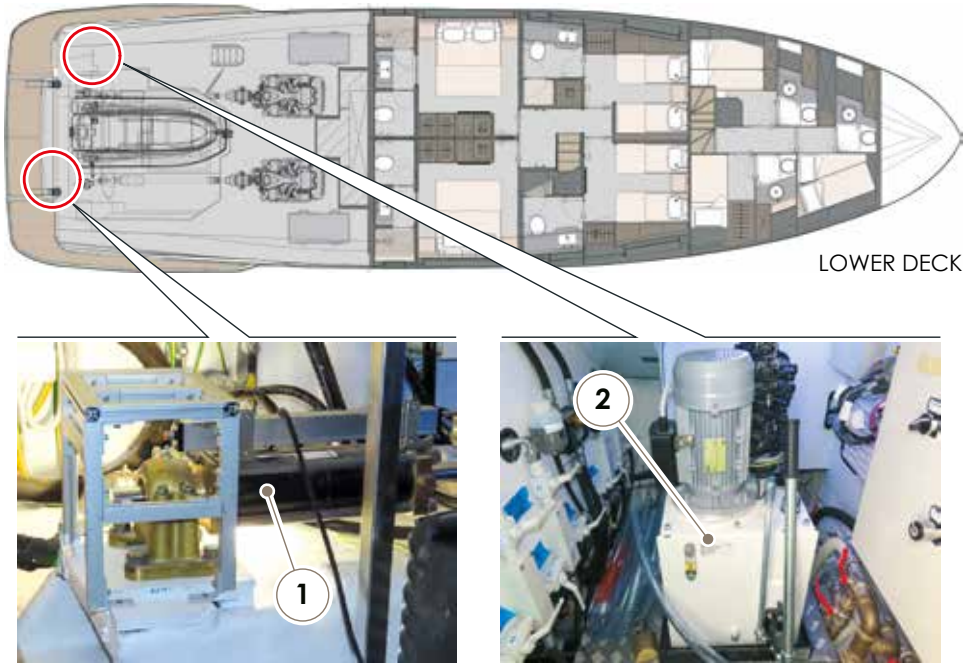
A heat exchanger is connected to the hydraulic tank, which uses sea water to cool down the oil, in order to keep oil temperature constant, a pressure gauge, to keep the oil pressure under control, and a visual gauge to monitor the level.

Bow/stern thrusters and stabilizing fins system diagram



6.10 STEERING SYSTEM

The rudder wheel is electronically connected to an electronic control unit that controls the operation of the hydraulic control unit (**2**) consisting of two pumps driven by electric motors, a tank, a distribution block, and a block of solenoid valves that control the actuators that move the rudders.
The electronic control unit also acts as an interface for the autopilot.
Above the hydraulic pistons (**1**), there are anti-shock protection valves.
Non-return valves are installed along the circuits to prevent backflow of the operating fluid. It is possible to check the insufficiency of the oil level in the electrohydraulic control unit tank through an optical indicator.
The main system can operate in three different conditions: MANUAL, AUTOMATIC, and EMERGENCY.
To pass from one condition to another, use the selector on the electronic control unit.



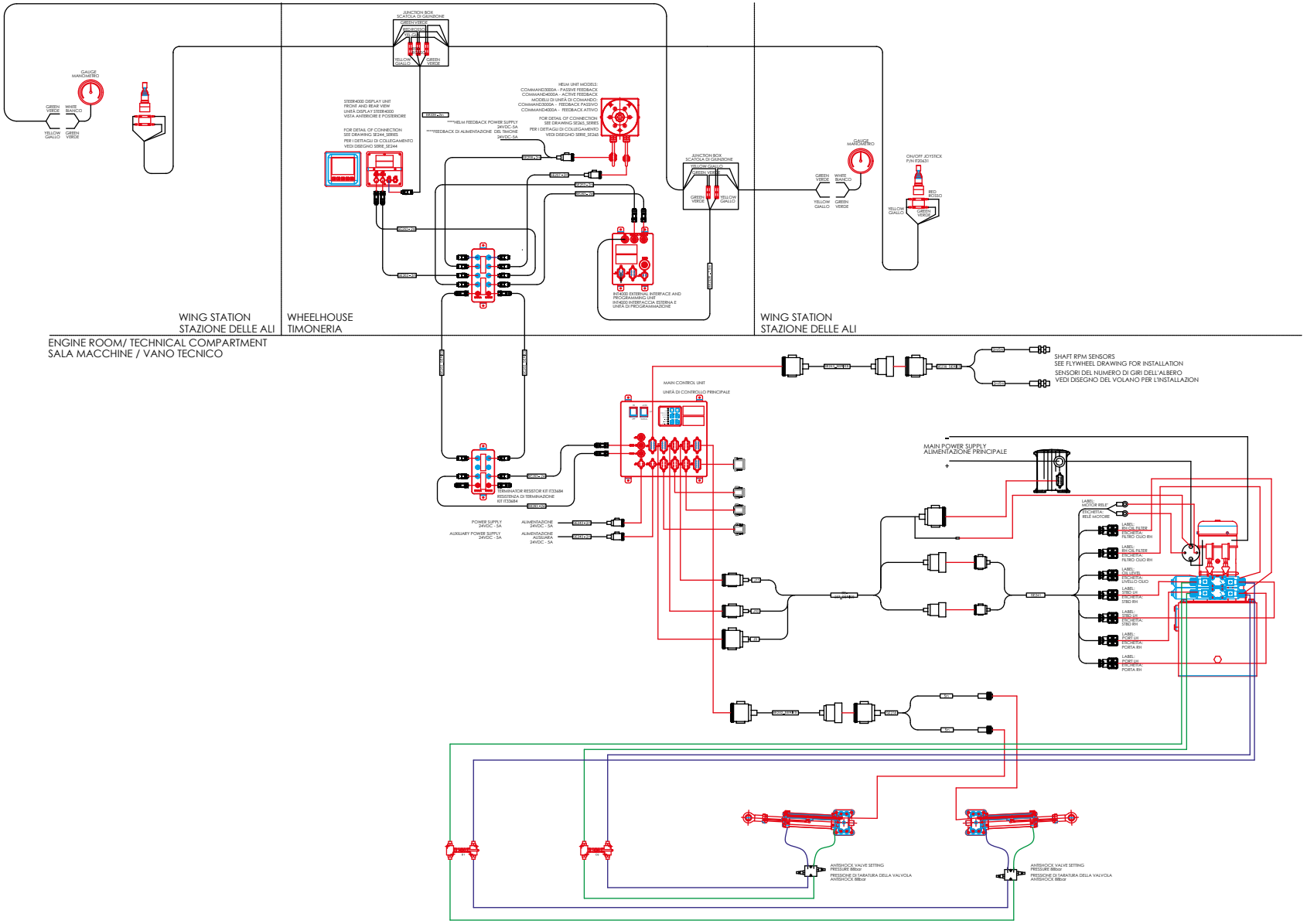
Automatic Drive
The control unit must be powered. By turning the steering wheel or using the automatic pilot, a signal is generated which, received by the electronic control unit, controls the operation of the electro-hydraulic control unit, which moves the pistons and consequently the rudders.

Manual drive
The electronic control unit must be powered. Use the control buttons on the electronic control unit to control the operation of the electro-hydraulic control unit.

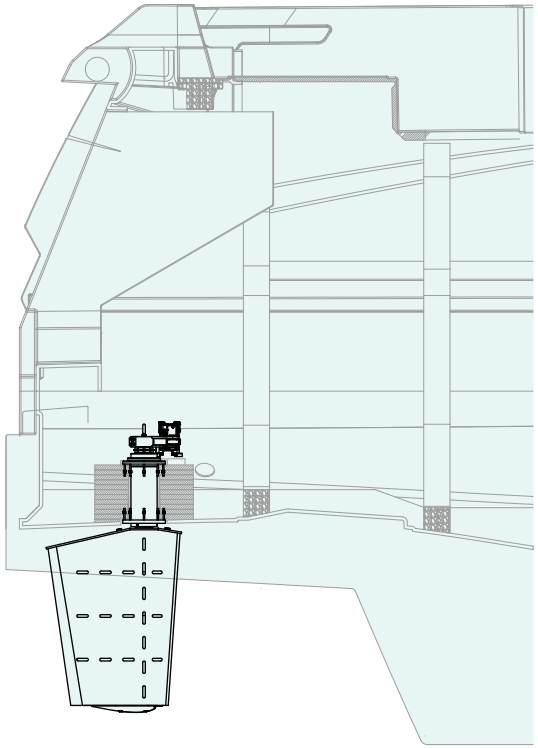
Emergency drive
The electronic control unit must be switched off.

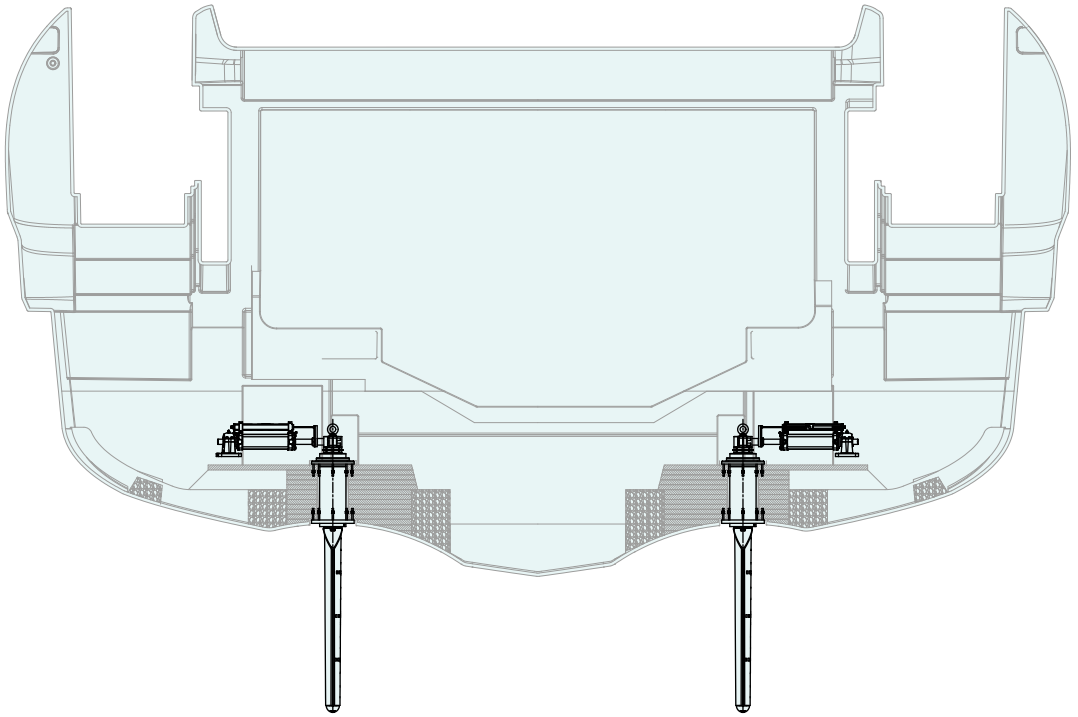
NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

Steering system diagram



Steering diagram





6.11 GYROSCOPIC STABILIZER

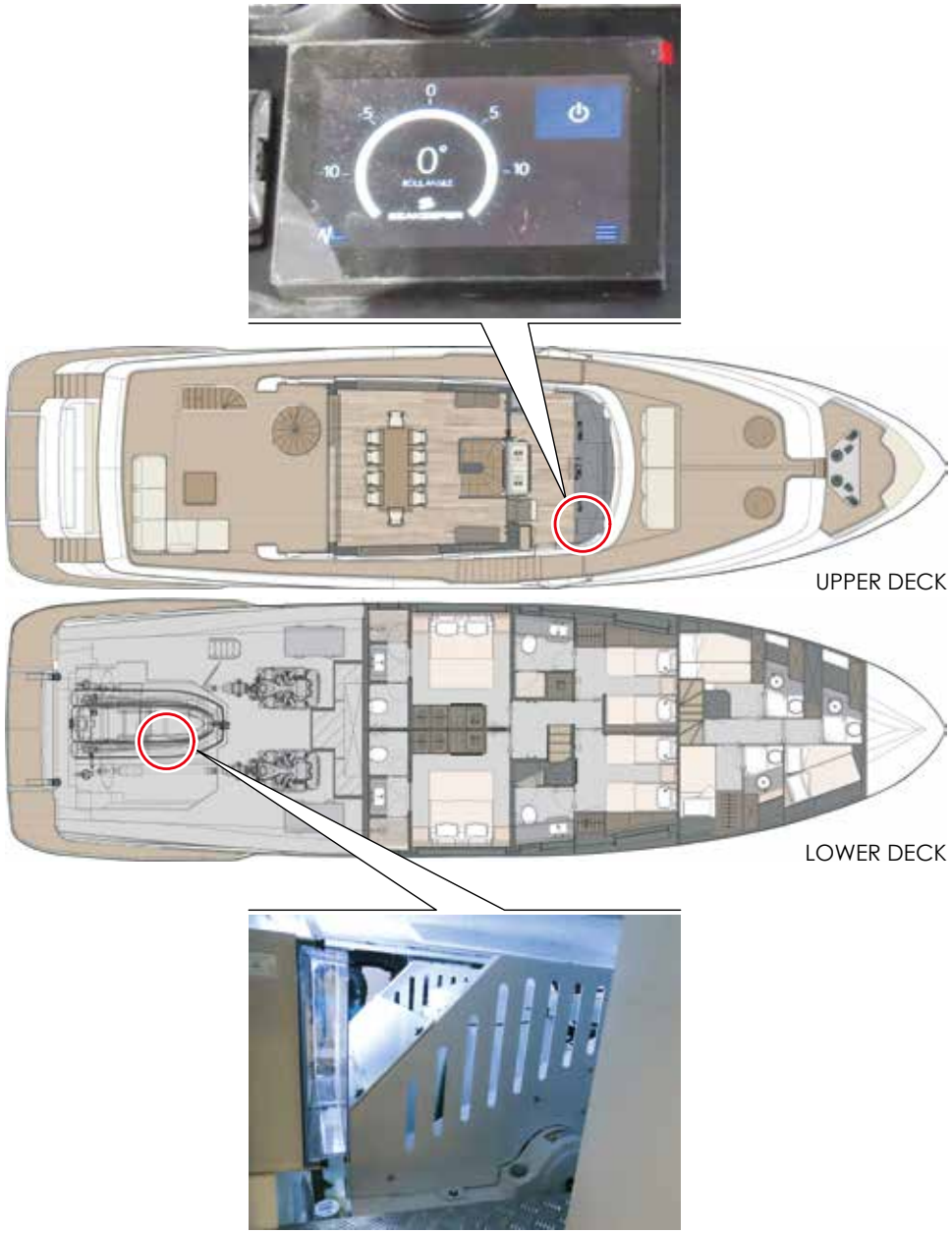
To reduce the annoying effect of the oscillatory motion of the roll, determined by the wave motion, a system has been installed consisting of two gyroscopic stabilizers able to generate a rotation equal and opposite to that of the waves. In fact, the system combines a significant reduction in roll both when the yacht is stationary and during navigation 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 damping almost completely the annoying motion of roll.

Gyroscopic stabilizers are based on a know physical principle: a gyroscope tends to keep its axis of rotation vertical, parallel to the acceleration of gravity.

When an external cause intervenes to vary its position, such as the roll determined by the wave motion, it opposes with a rotation on an axis perpendicular to its own rotation axis and to that of the cause of the heeling.
In the case of gyroscopic stabilizers, this operation generated (roll) is attenuated by the presence of two dampers specially calibrated according to the characteristics of each yacht.

The system consists of a stabiliser positioned centrally in the system room under the garage.



CAUTION

Have the expected PERIODICAL INSPECTION conducted by qualified personnel every two years. Contact CUSTOMER SERVICE for more information.

WARNING

During operation, gyroscopic stabilizers, vibration dampers and their housing become hot. Touching the gyroscopic stabilizers may cause burning during operation.

DANGER

Gyroscopic stabilizers housing is not a solid component. If you lay objects or sit on the gyroscopic stabilizers, it may be damaged.

CAUTION

Gyroscopic stabilizers is not watertight. If it is submerged in seawater, it may be damaged.

NOTE

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

6.12 GANGWAY/GARAGE HATCH SYSTEMS AND HYDRAULIC PLATFORM

6.12.1 Gangway system

The system works through a hydraulic control unit located in a technical room on the starboard side.

The system is fed by the pumps that, by sucking oil from the tank, send it through the solenoid valve blocks and pipes to the hydraulic pistons activating the gangway. On the aft transom starboard, is installed the receiving photocell, which detects the signal sent by the radio control and transfers it to the hydraulic control unit.

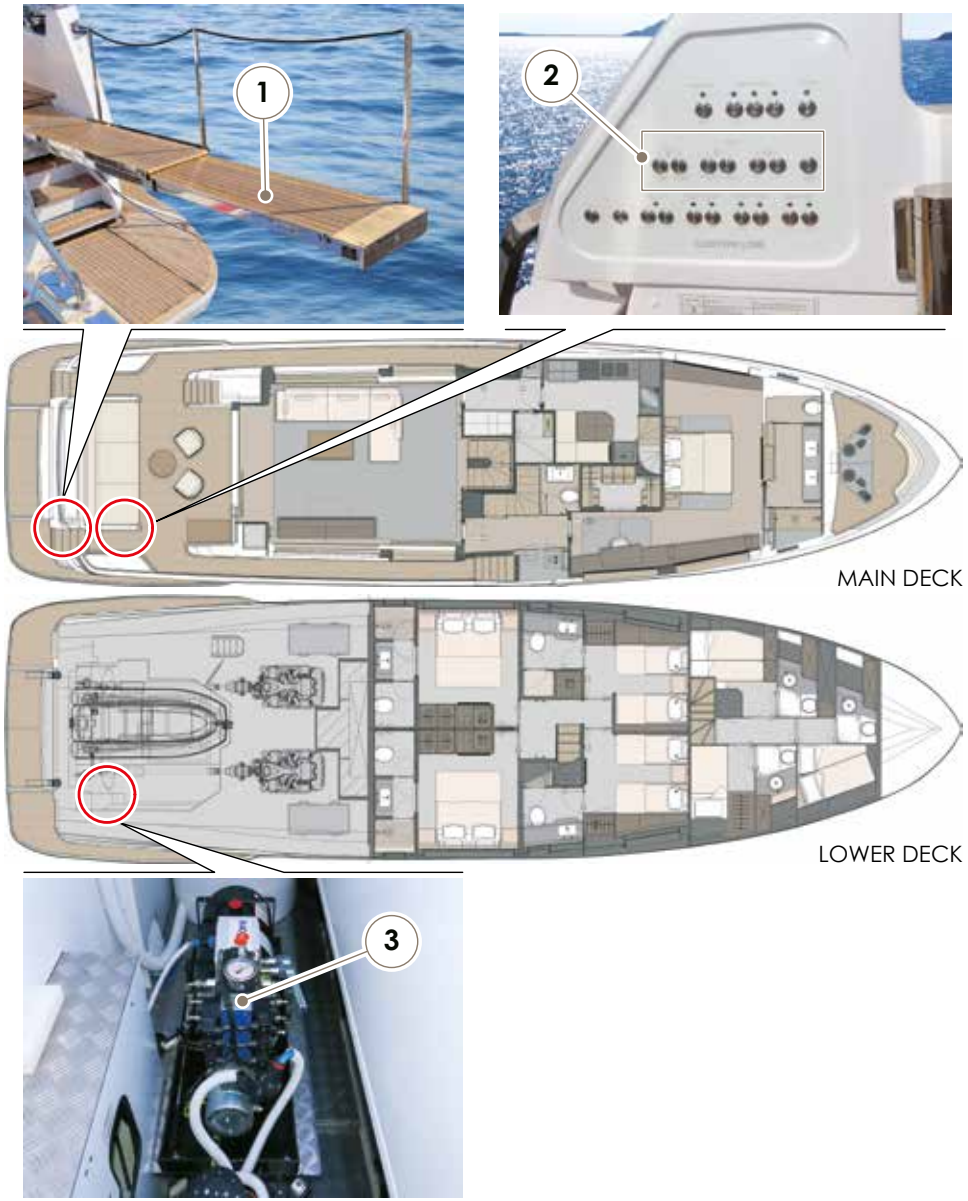
The radio control must be directed towards the photocell and no obstacles must stay in their way.

If the automatic gangway retraction control does not work, for alignment and re-entry it is possible to close the gangway manually using the procedure described below, which requires two operators.

Operator 1 will have to act on the electric control unit located inside the hull's system room while **Operator 2** manages operations from the control panel or remote control while maintaining constant visual contact with the gangway.

1. Gangway
2. Gangway push button panel
3. Electrohydraulic control unit

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



Phase 1:
- **Operator 1:** insert the key in the "Safety By-pass" selector on the electric control unit box;
- **Operator 2:** return the second extension.

Phase 2 (With the selector kept in the "Safety By-pass" position):
- **Operator 1:** keep the rotary selector in the by-pass position;
- **Operator 2:** press the "Raise" or "Lower" button until it reaches a perfectly horizontal alignment "0 position" between the first extension and the box (it is possible to use a spirit level).

Phase 3 (With the selector held in the "Safety By-pass" position):
- **Operator 1:** keep the rotary selector in the by-pass position;
- **Operator 2:** press the "Automatic re-entry" button while maintaining visual contact with the gangway in order to start the re-entry of the first section of the gangway inside the box. If necessary, correct the alignment of the gangway in order to make it return to a perfectly horizontal position.

Phase 4:
Operator 1: Remove the key from the "Safety By-pass" selector.

CAUTION
In order not to jeopardize the walkway of the seals, perform the washing in the box avoiding that water enters under pressure.

CAUTION
The gangway must always be closed during navigation.

6.12.2 Garage hatch and hydraulic platform system

It is an independent system that works through an electro-hydraulic control unit (24V) essentially constituted by an electric pump, an oil tank and by solenoid valves.

The system is powered by the pump which, by suctioning the oil from the tank, sends it through the solenoid valve blocks and pipes to the hydraulic pistons that operate the garage hatch.

When the garage hatch is operated, the pawls are automatically activated in order to release and/or lock the door.

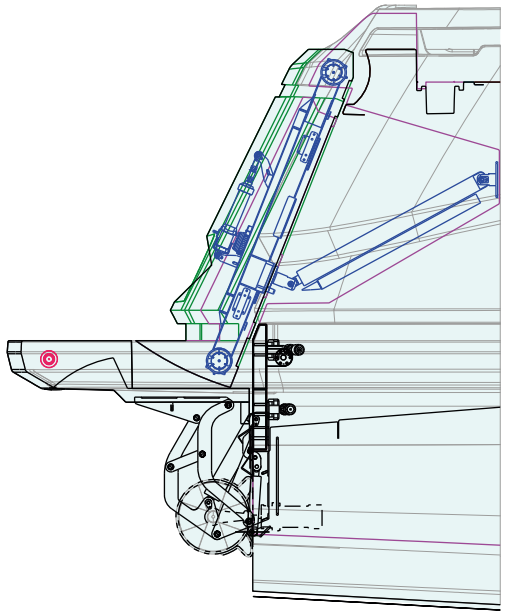
The garage hatch and the stern platform are controlled by the push button panel located on the starboard access ladder to the aft cockpit.

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.

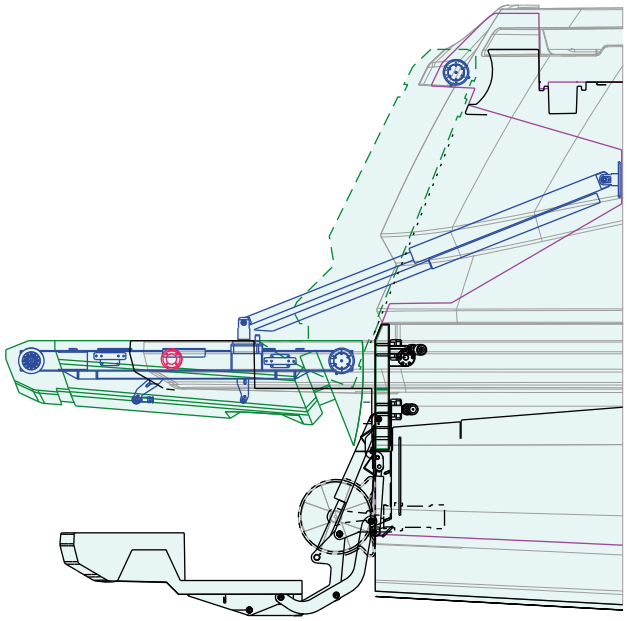
NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

Garage hatch handling diagram

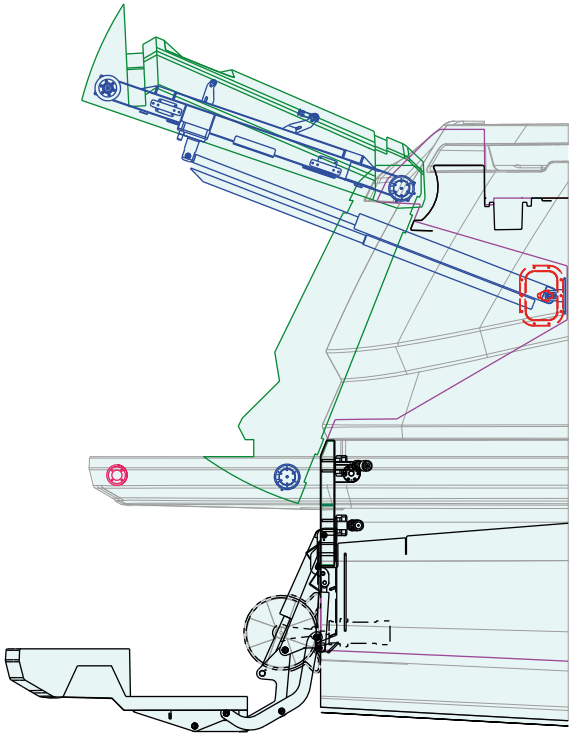
SIDE VIEW
HATCH CLOSED
CLOSED PANTOGRAPH
FOLDING SLIPWAY ON



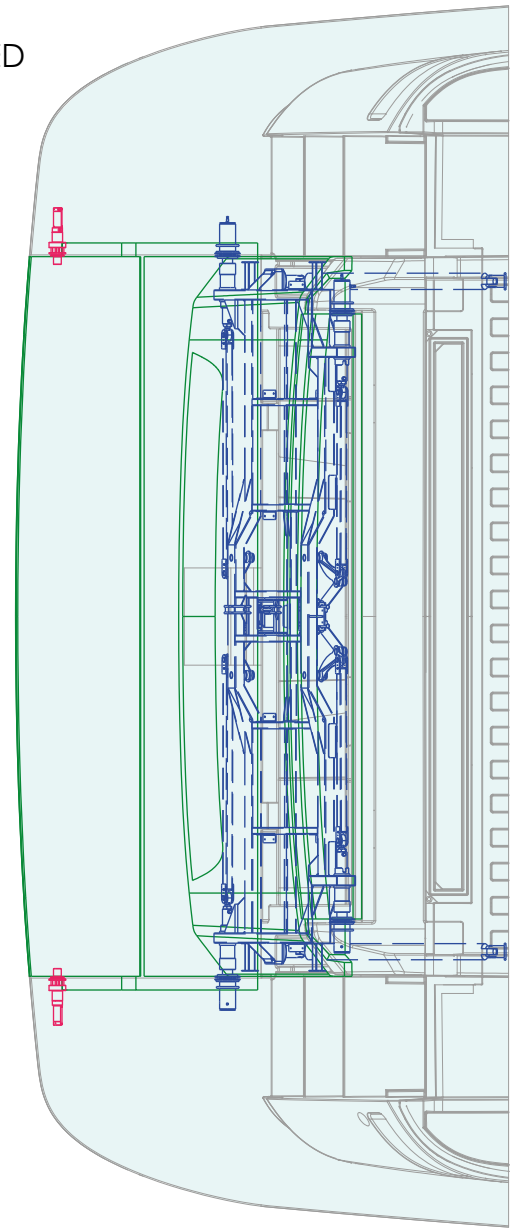
SIDE VIEW
BEACH HATCH
PANTOGRAPH DOWN
FOLDING SLIPWAY ON



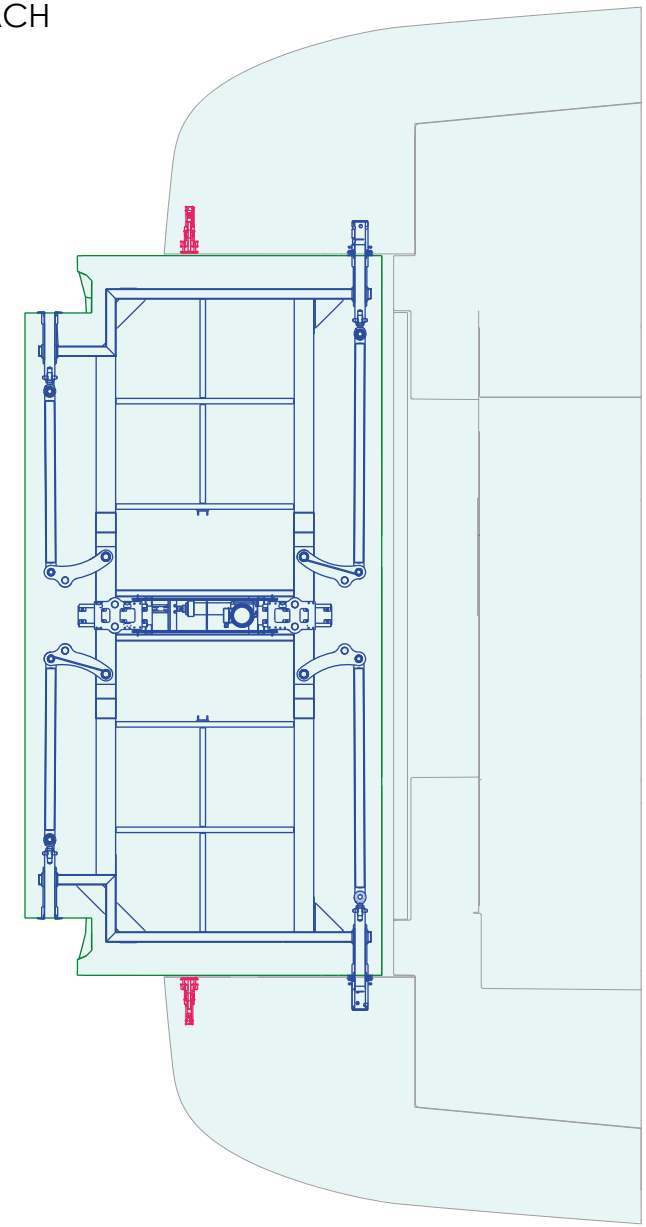
SIDE VIEW
UP HATCH
PANTOGRAPH DOWN
FOLDING SLIPWAY ON

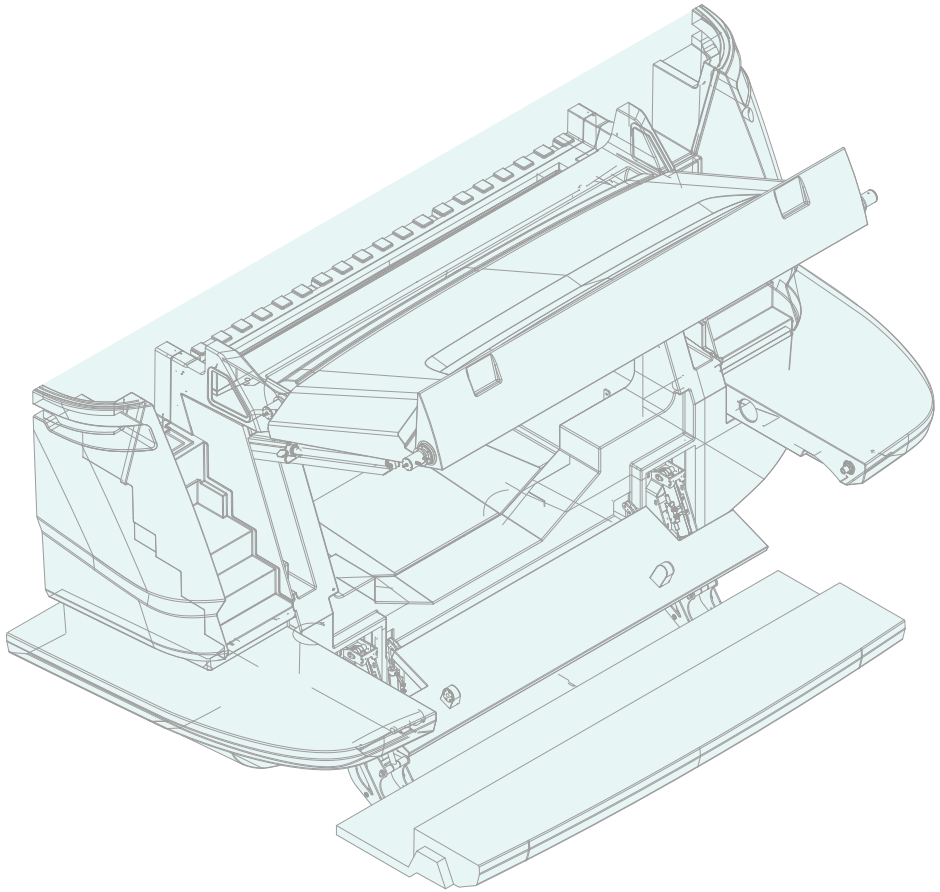


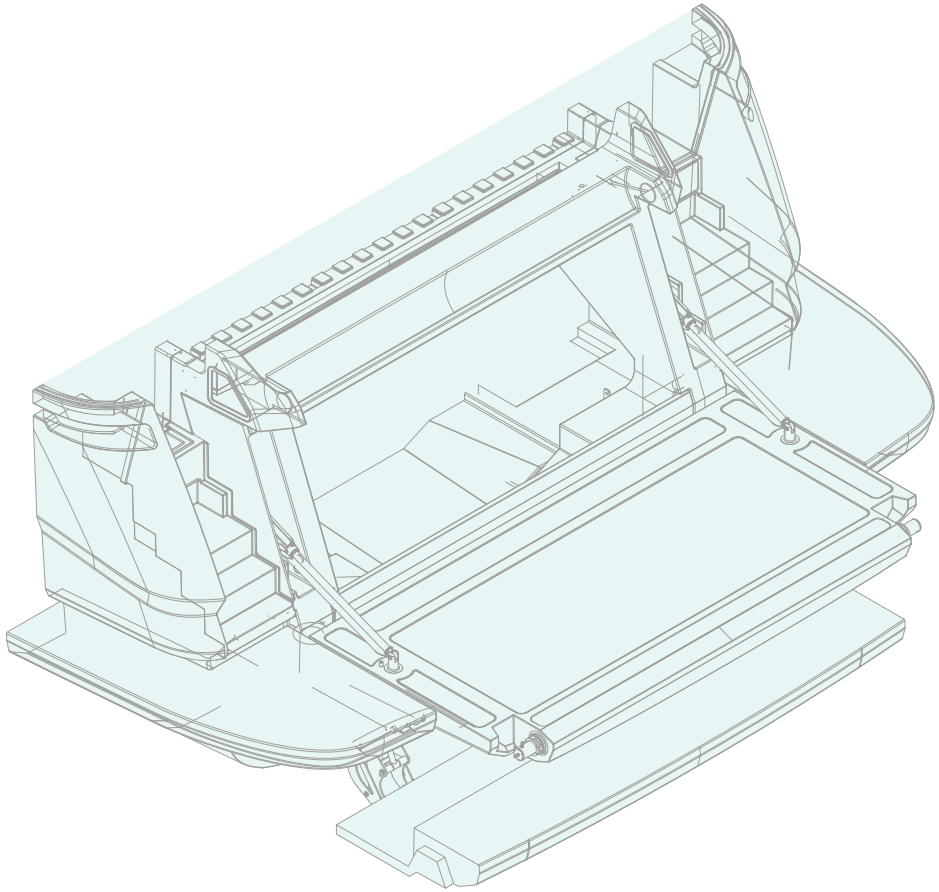
PLAN VIEW
GARAGE HATCH CLOSED
CLOSED PANTOGRAPH
HAULING STATION
FOLDERS ON



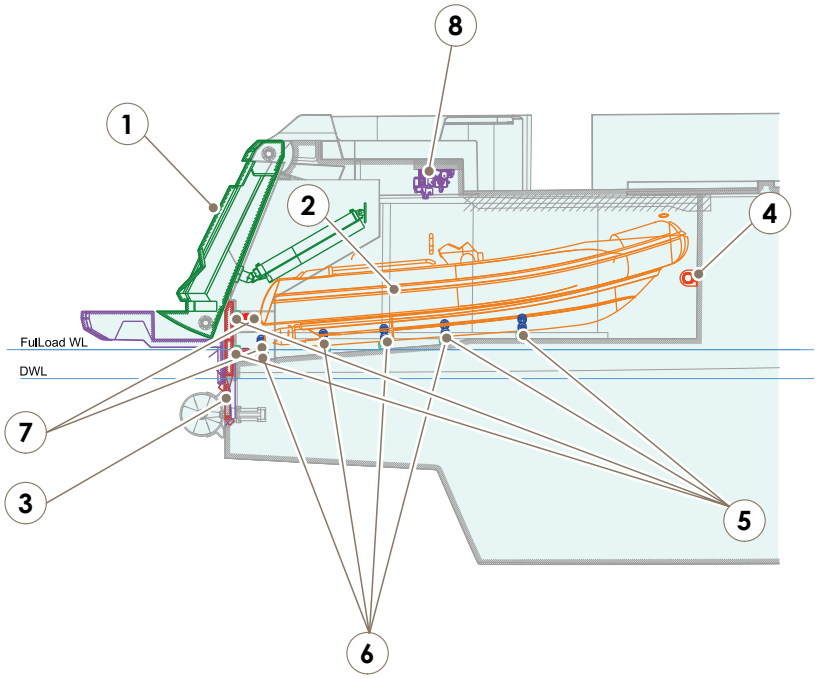
HATCH IN BEACH

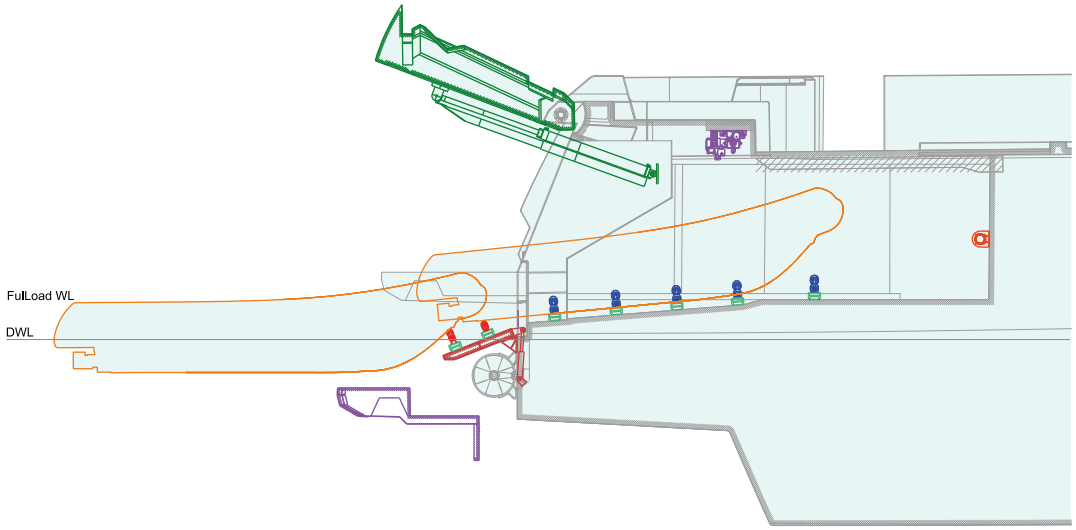






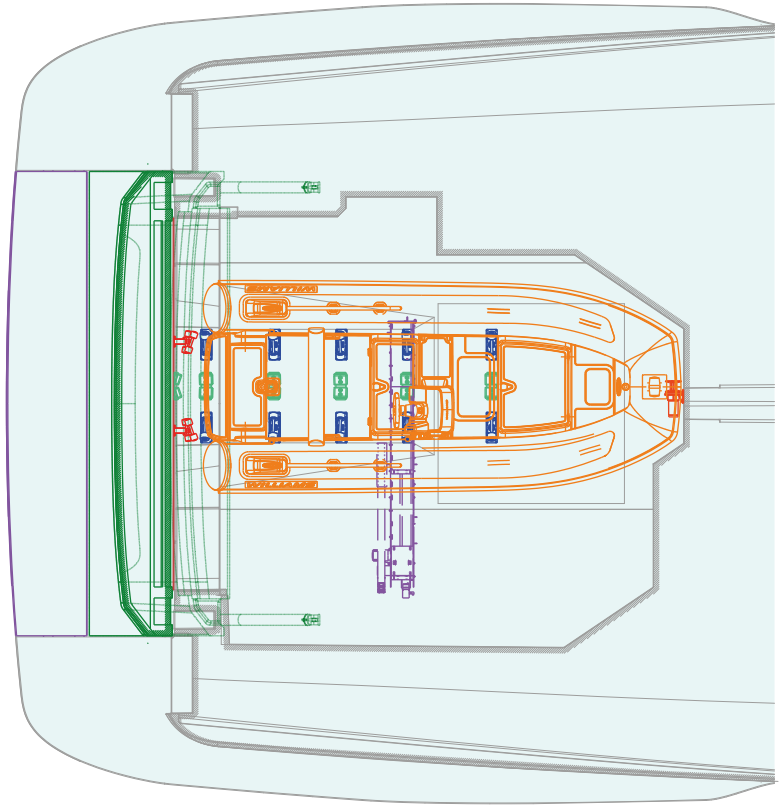
Stern hauling and launching tender diagram

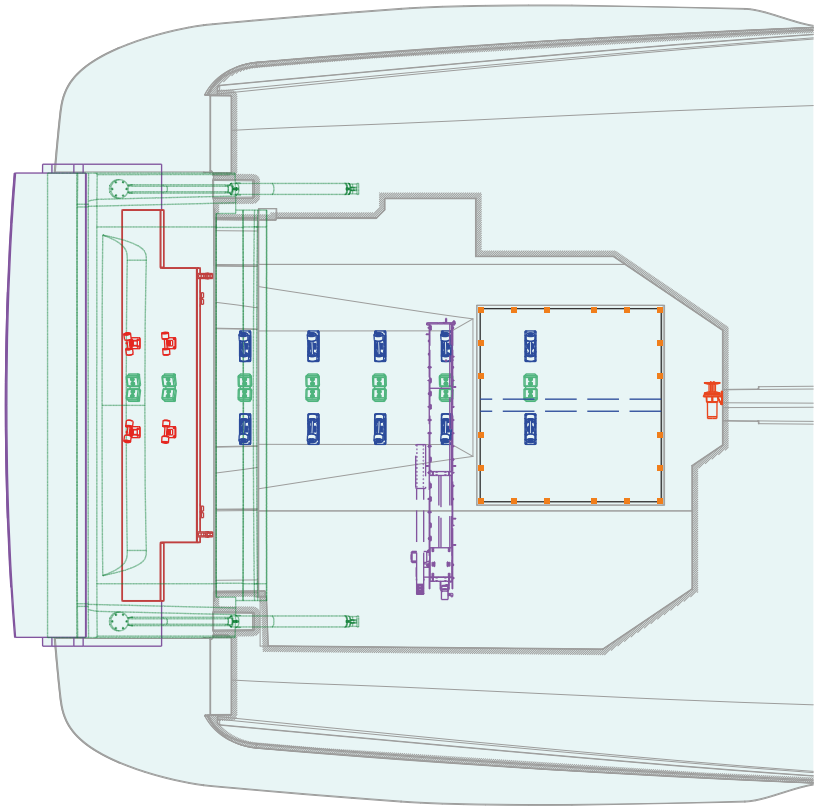




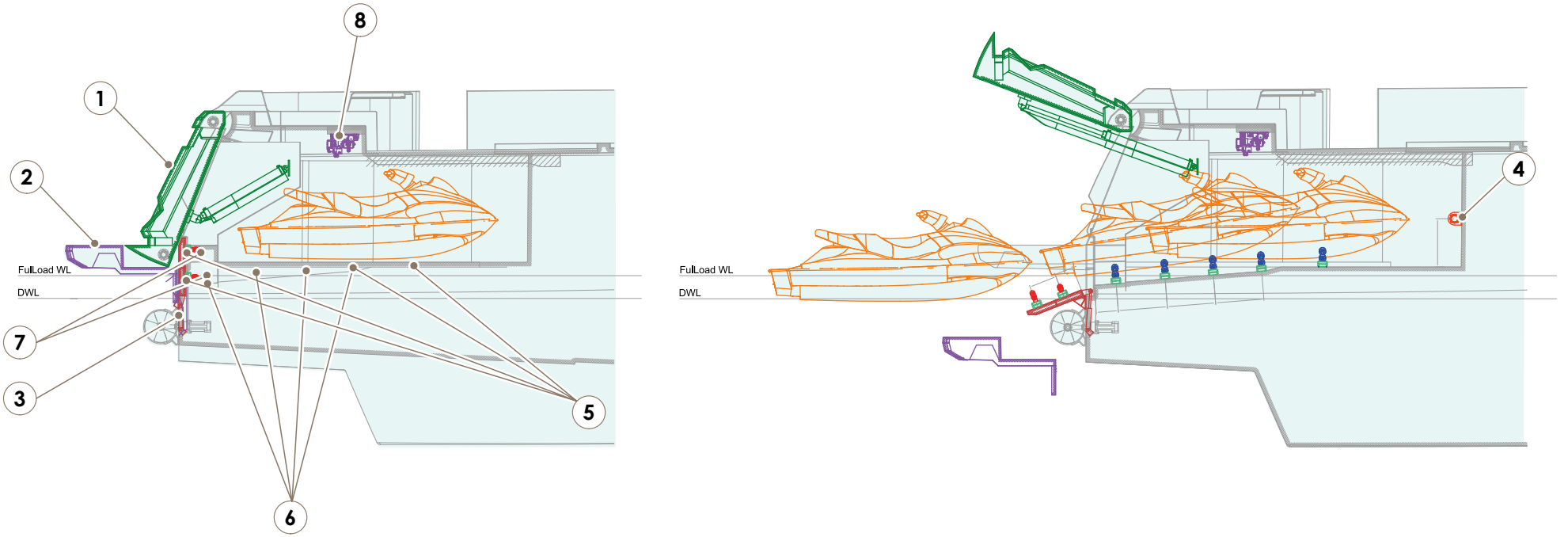
ICON	DESCRIPTION	
1	Handling door pp kit (DMT) NA30	1
2	Movement of the pantograph platform kit NA30	1
3	Garage flap movement pp kit NA30	1
4	Windlass quick totem G1100 ISO 8846	1

ICON	DESCRIPTION	
5	Tender sleigh rev.2	8
6	Roll varo water toys adjustable rev.2	10
7	Roll varo water toys R88 regulations rev.1	4
8	KIT movimentaz jet ski c/central CL108	1





Stern hauling and launching jet ski diagram



ICON	DESCRIPTION	
1	Handling door pp kit (DMT) NA30	1
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4	Windlass quick totem G1100 ISO 8846	1

ICON	DESCRIPTION	
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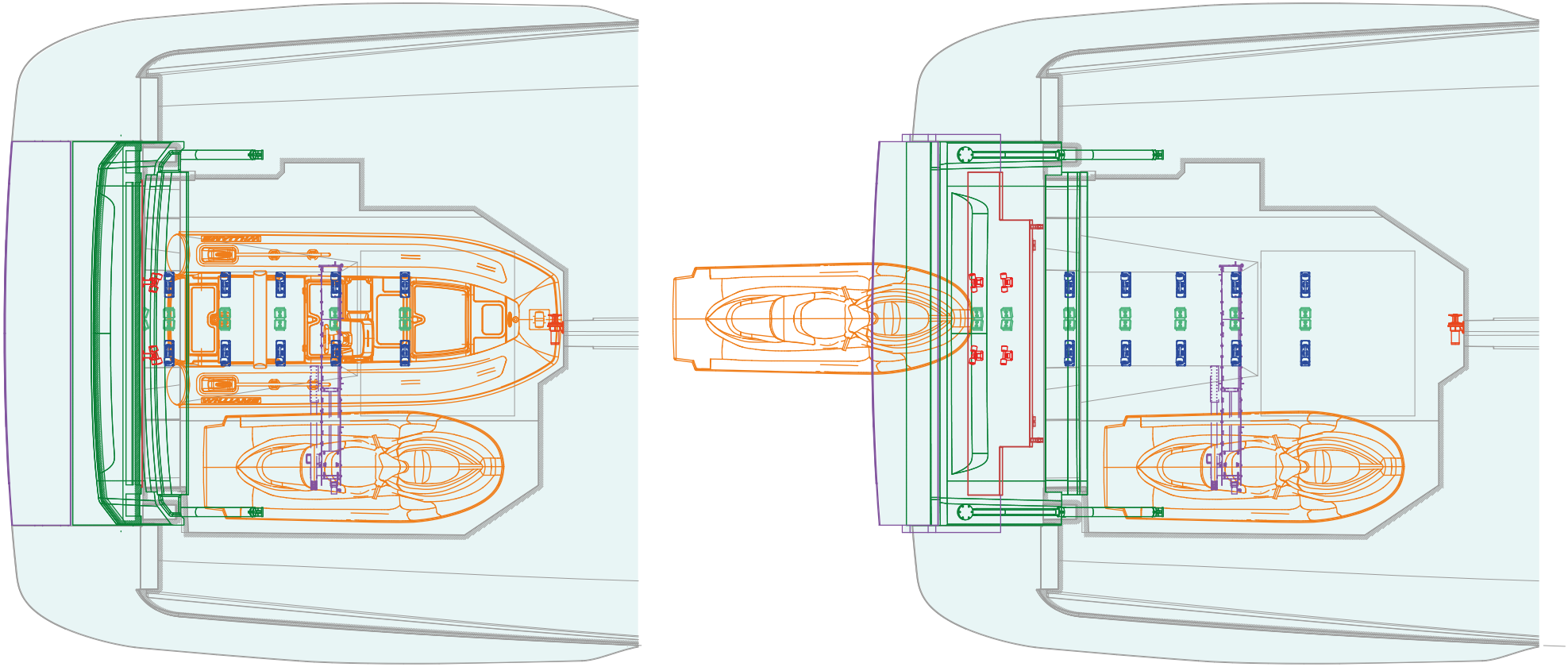


6.12.3 Maintenance and checks of gangway systems and garage hatch

Oil level check
Check the oil level as indicated every important manufacturers, if below the minimum level, to integrate.
Verify the proper operation of the pumps, gauges and manual activation of the solenoid valves.

From time to time verify the integrity of the electric contacts by spraying a protective agent against corrosion, due to sea salt.

It is advisable to verify anchorage bolts locking and a little joints greasing at each beginning and season end.

The procedure of air bleeding in the plants is not necessary because it is automatically performed by the control units gradually that the hydraulic oil circulates in the pipes.

CAUTION
An improper use of the garage hatch and of the relevant safety closing system of the garage deck and of the gangway, the alteration of the valves' setting values and/or the failure to comply with the handling procedures indicated in this manual, relieves CUSTOM LINE from any responsibility.

ENVIRONMENT
Do not discharge hydraulic oil in the sea, but in the special areas for toxic waste disposal.

System failure
In case of electric system or electric current failure, it is possible to handle the gangway, the garage hatch and the garage deck by means of the emergency manual pump.
To make the handling operations with the manual pump proceed as follows for both the walkway garage control unit:

- Insert the handle provided with the control unit in the seat of the manual pump;
- Positioning the hood, hooked through the appropriate chain of brass on the engine control unit, the solenoid valve on the end concerned, in such a way that the screw positioned inside the cap, to be inserted into the side hole of the solenoid coil itself.
- Then proceed to the actuation of the manual hydraulic unit pump.

By shifting the plug on top of the different solenoid valves, it is possible to perform all operations manually.

Outer cleaning
To keep all our accessories and their parts in good working order, they should be cleaned carefully and thoroughly as often as possible.

The gangway, the garage hatch and the platform are in a very critical position with respect to all the on-board accessories, being in continuous contact with water, acid exhaust fumes, and therefore require more thorough cleaning.

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.

CAUTION
During cleaning or maintenance operations, make sure that nobody can activate the gangway, garage deck and garage hatch, as this could cause heavy injury to the people working.
Cut off power supply.

CAUTION
The check and maintenance operation must be carried out by skilled technicians, instructed about the operation of the garage deck, garage hatch and gangway.

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

CAUTION
Pay attention to moving parts.

CAUTION
The gangway, the garage hatch, and the hydraulic platform must always remain closed during navigation.

DANGER
Never navigate with the gangway, garage hatch, and hydraulic platform incorrectly and not completely closed.

WARNING
Always check the correct position of the garage hatch and gangway from the shore.

CAUTION
Do not use the gangway as a springboard.

CAUTION
Pay attention to moving parts.

WARNING
Use and suggest to passengers comfortable shoes and eventually help them with the boarding.

WARNING
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.

DANGER

Never use the gangway to lift persons, even though the same is provided and tested to lift much heavier weights. Always make sure that the maximum load suggested by the Manufacturer is not exceeded. Never operate the gangway when someone is passing nearby. When walking on the gangway, be cautious and keep hold to the handrail; as it is made of rope, it cannot be considered a rigid and safe support, but simply a help to keep balance.

CAUTION

Always pay the utmost attention to the movements of the gangway; in case of emergency, press any button of the remote control or of the panel to stop the gangway.

CAUTION

The hydraulic gangway, even if easy manoeuvrable, might damage people and things. Its use is recommended only to well experienced people.

DANGER

Never operate the gangway when someone is passing nearby. When walking on the gangway, be cautious and keep hold to the handrail; as it is made of rope, it cannot be considered a rigid and safe support, but simply a help to keep balance.

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

CUSTOM LINE declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board devices or systems.

6.13 SWIM LADDER (OPTIONAL)

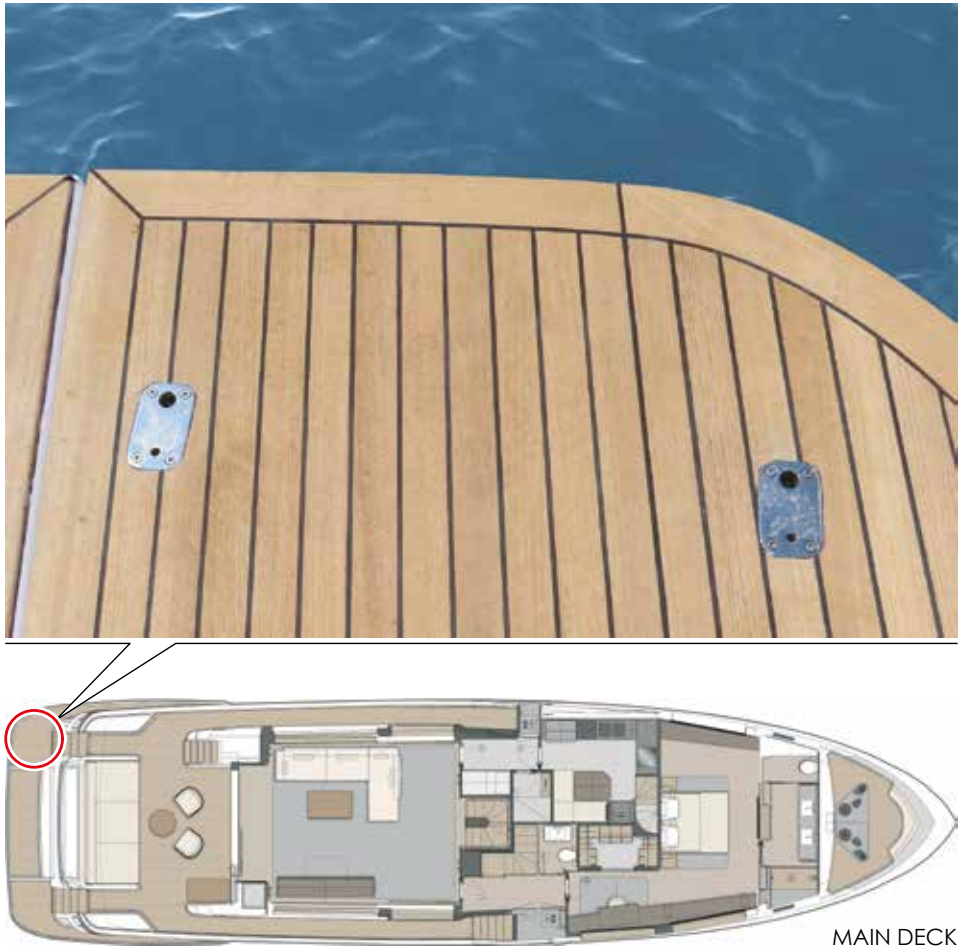
The yacht can be equipped with a removable swim ladder which is to be installed on the stern platform.

DANGER
Before going down into the water, make sure that the ladder is properly installed.

DANGER
Risk of electric shock from leakage currents. Do not swim in the waters of ports or marinas.

DANGER
Never use the swim ladder when the engines are running.
Pay utmost attention to not approach to the thrusters area, because they could be accidentally activated.

CAUTION
Pay attention because the ladder can be slippery.
Secure the grip before starting the return on board.



MAIN DECK

DANGER
Never navigate with a swim ladder that is not properly stowed.

CAUTION
Do not use the swim ladder as a springboard.

CAUTION
CUSTOM LINE declines all liability for any accident to persons or damage to property caused by a wrong use of the device.

MAINTENANCE
At least once a week, wash with fresh water and clean thoroughly.
At least once a month:
- Grease the grooves of the steel cable sliding pulleys.

CAUTION
Control and maintenance operations must be carried out by specialised maintenance staff who are informed about the operating conditions of the ladder.

6.14 GENERAL ELECTRIC SYSTEM

The electrical system on board consists of two lines at 230V (50Hz) and 24V dc, which feed the utilities.
It comprises the following main elements:

- Port and starboard generators (28 kW);
- Shore socket 125A 3 poles;
- Transformer;
- General lighting system (24V);
- Emergency Lighting System (230V);
- 12V batteries for engine starting (n°4) with its charger;
- 12V batteries for generators starter (n°2) with its charger;
- 2V services batteries (n°12);
- 24V charge batteries (n°2) for engines and services;
- Parallel connection between the starter battery;
- Cathodic protection with sacrificial anodes;
- Battery switches;
- Batteries for radio and emergency with its charger.

WARNING
If there is the necessity of having to replace a fuse, proceed to its replacement with a new one having the same characteristics in order to avoid damage to the load board.

NOTE
For the placement of fuses, refer to the wiring diagrams.

CAUTION
If your are compelled to use the "battery parallel connection", turn off all electronic devices, so as not to jeopardize their correct operation.

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

DANGER
Beware of electric shock hazard! Turn the power off before removing the cover and servicing any electrical equipment internal component.

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

CAUTION
All systems (included those operating at low voltage), if wrongly handled or overloaded, can originate short-circuits and heavy overheating, with consequent danger of fire spreading.

CAUTION
Do not modify the electric systems or relevant drawings. The installation, the modifications or the maintenance must be carried out only by a skilled naval electrician. Inspect the system at least once a year.

CAUTION

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

DANGER

It is normal that the frequency converter generates and gives out a lot of heat.
Pay attention not to cover the frequency converter with stowing material and keep it free from obstructions, to ensure a proper ventilation. Do not stow flammable material close to the frequency converter.

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;
- Disconnect the shore power supply cable (shore columns);
- Firmly fasten the lid of shore power supply socket.

WARNING

NEVER:

- Work on the electric system while under voltage;
- Change an electrical system on the yacht or pertinent drawings: the installation, changes and maintenance must be performed only by a qualified 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.

CAUTION

Remember to periodically check the battery status.
It also does not obstruct the vents.

CAUTION

Never reactivate magneto-thermal switches and circuit breakers forcibly, prior to location of the causes for the current cut-out.

CAUTION

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

CAUTION

Refrain from performing any modification or intervention on the system and on the panel and take advantage of experienced Companies and skilled staff. Avoid particularly derivations on electric lines and splices of uses not provided for on the same panel. Finally, if uses have to be connected to the available switches, check that their amperage is suitable for the device installed.

CAUTION

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

CAUTION

Always remember to disconnect the batteries before leaving the ship.

CAUTION

CUSTOM LINE suggests to examine very carefully the whole documentation delivered by the manufacturers of the various components; and for any problem relevant to maintenance, to contact directly CUSTOM LINE After Sales & Service Department.

CAUTION

Always keep batteries charged, also before leaving the ship for a long period, because the batteries discharge up to low level and following they can get irreparably damaged.

CAUTION

For a correct use of the power generators and for all prescriptions regarding their maintenance, carefully read the enclosed user instruction manual.

WARNING

Before carrying out the switching over of the AC sources (generator/shore), it is advisable to disconnect all AC uses currently operating, to prevent damaging the electronic boards of the relevant devices.

DANGER

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

DANGER

During the periods of yacht's lay-up for maintenance (out of water), if the shore electric socket is used to supply the AC on-board electric system, always make sure that the yacht's grounding system is connected to the grounding system of the shore column to which you are connected; do this with the aid of experienced personnel.

WARNING

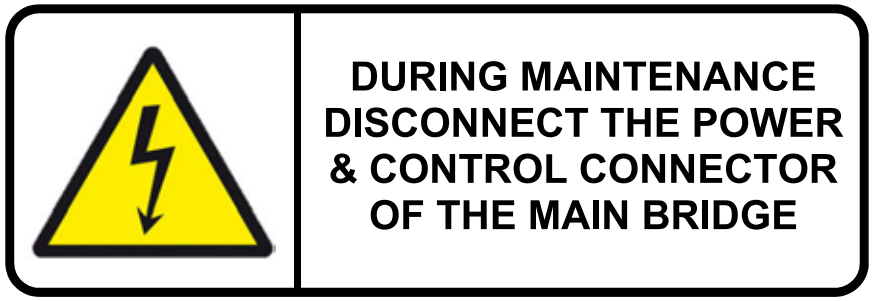
Before stopping the power generators, disconnect the various on-board uses supplied by them by following the correct procedures for switching off; stopping the power generators under load can irreparably damage the electronic control units of the various uses, beyond having a negative influence on the generators' operation. In any case, refer to the manual of each power generator to obtain detailed information about the procedures for switching it on and off.

CAUTION

The on-board lights (except for the engine room) are supplied with 24V.
Avoid touching them. In case it is necessary to replace, make sure that the relevant supply switches located on the electrical panel are set to OFF.

CAUTION

Any remote start and stop control of the engine control devices shall be capable of being disabled when the engine starting panel in the engine room is maintained.



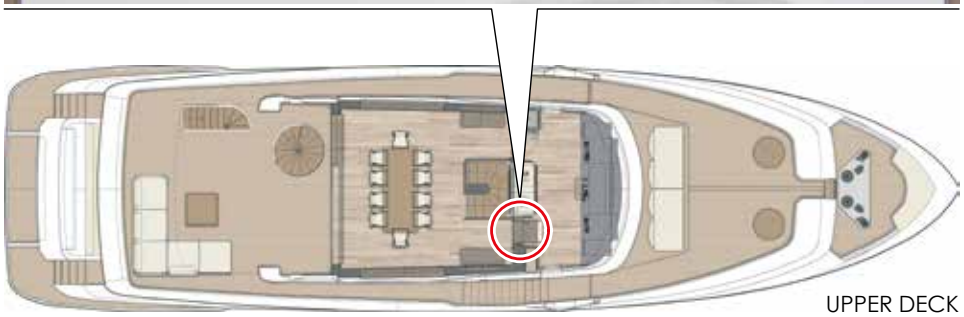
WARNING

EXPLOSION HAZARD

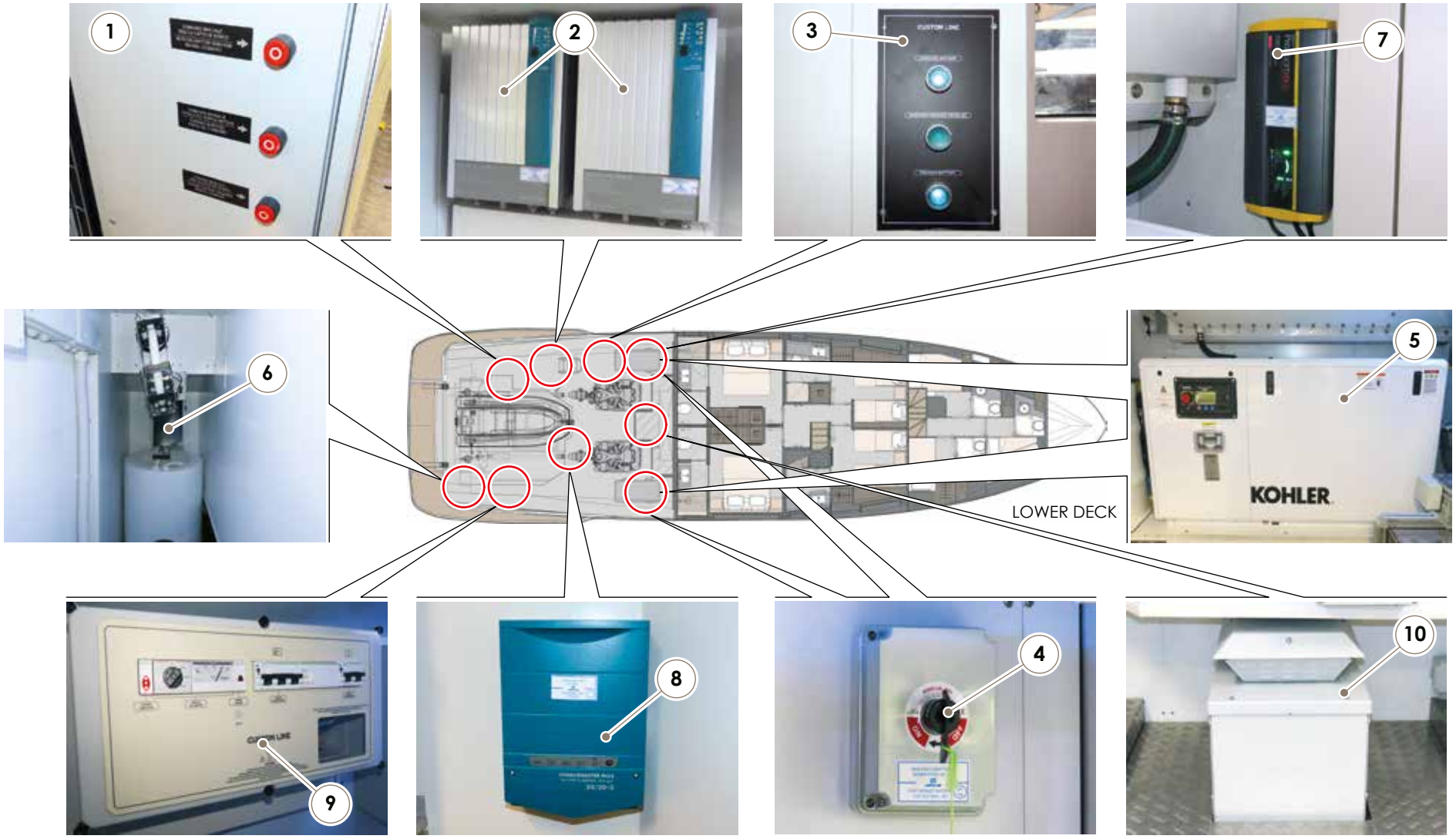
Any lithium battery powered device on board must be recharged only in open air areas, connected to a suitable charging system. Also please refer to the device dedicated Use and Maintenance Manual.

The following illustrations indicate the positions of the main components.

1. Manual controls
2. Service charger
3. Battery switch panel
4. Generator battery switch
5. Generator
6. Automatic cable reel
7. Generator battery charger
8. Engine battery charger
9. Shore side connection electrical panel
10. Transformer



UPPER DECK

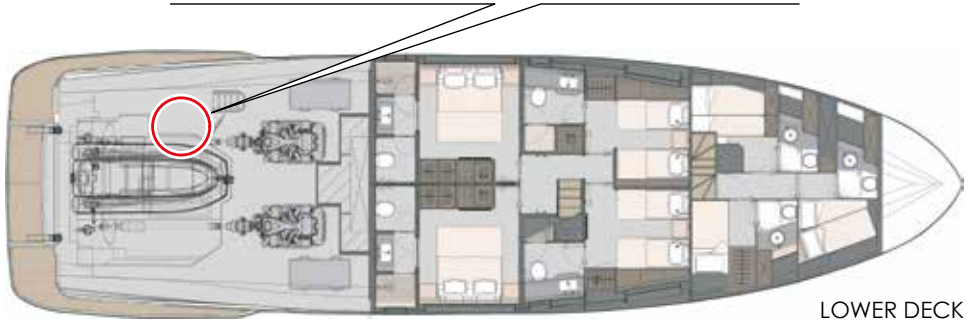

1
2
3
7
6
5
KOHLER
LOWER DECK
9
8
4
10

6.14.1 Electrical panels

MAIN ELECTRICAL PANEL

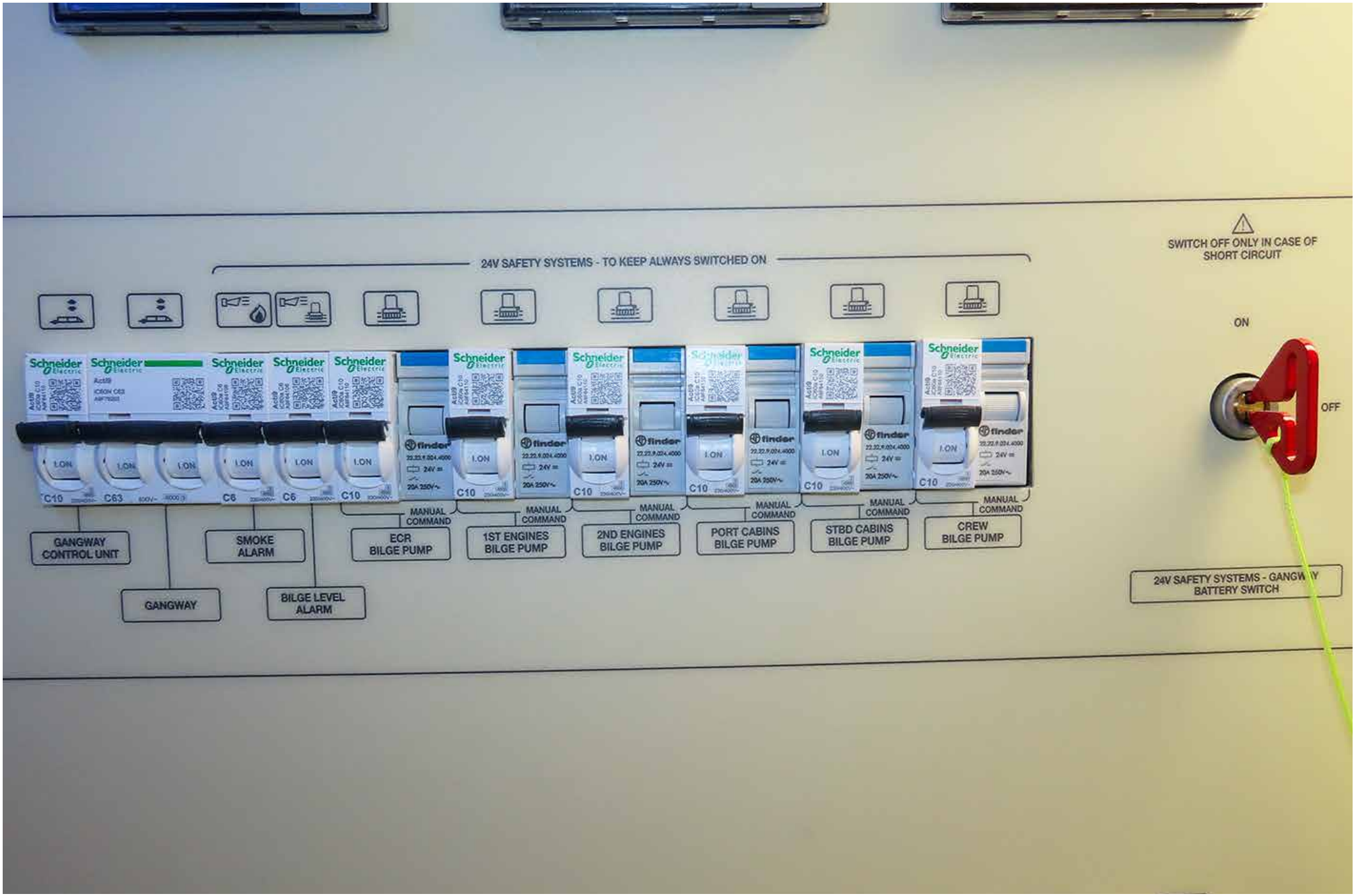
The electrical system is controlled from the panel located in the control room.
The following main sections have been identified, in order to make descriptions easier:

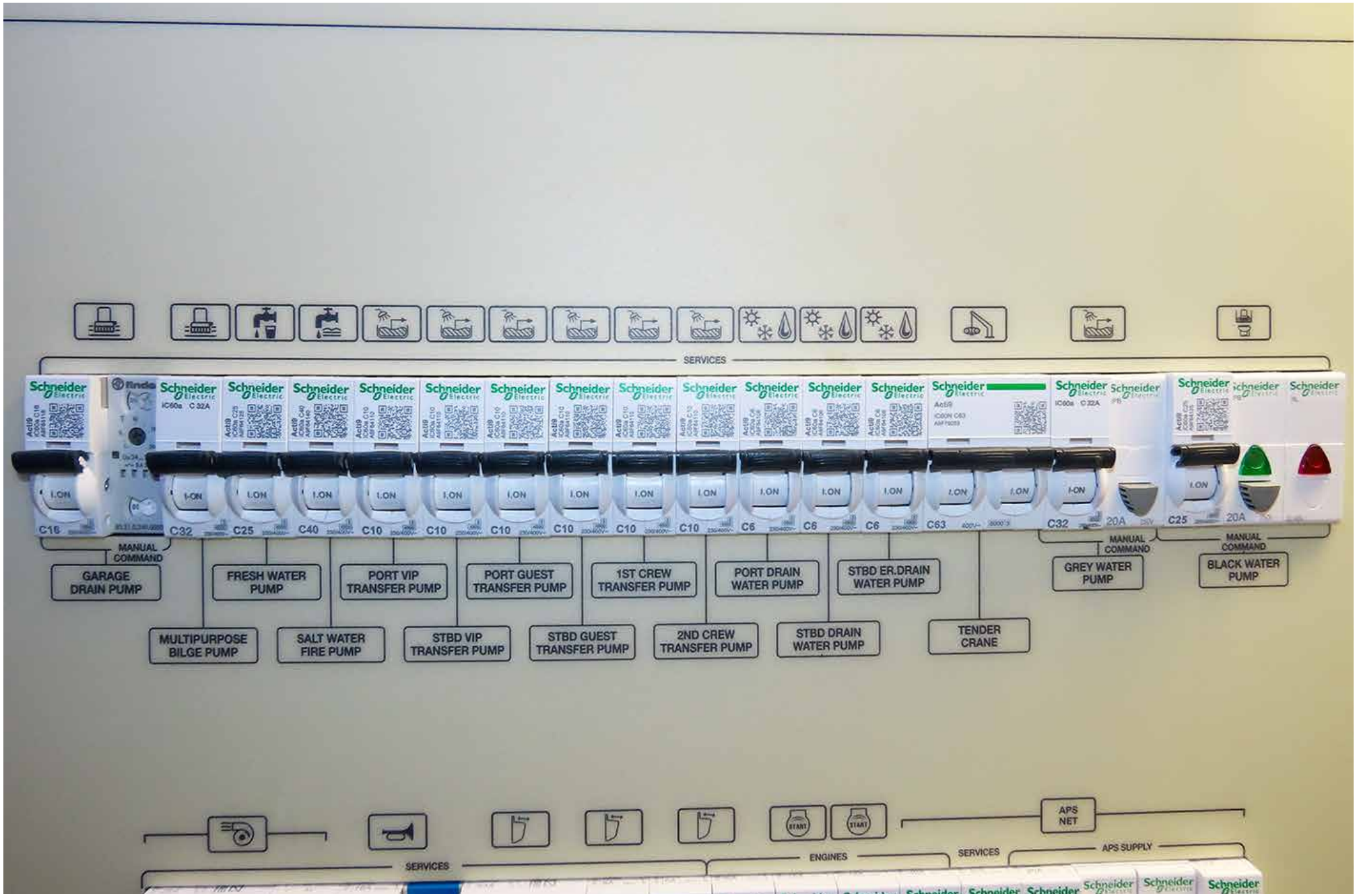
A. 24V uses measuring instruments and magneto-thermal breakers
B. 230V uses measuring instruments and magneto-thermal breakers

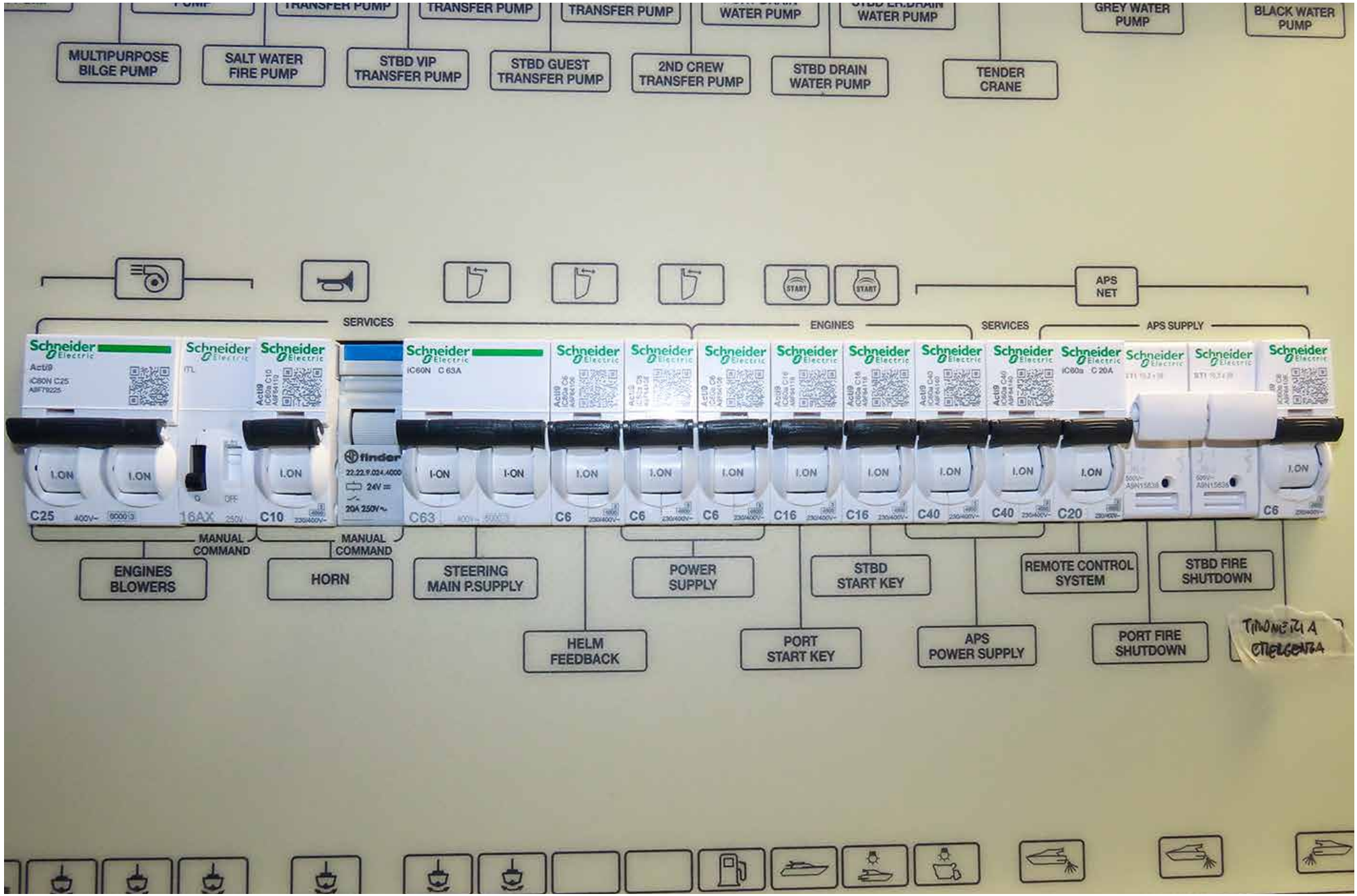


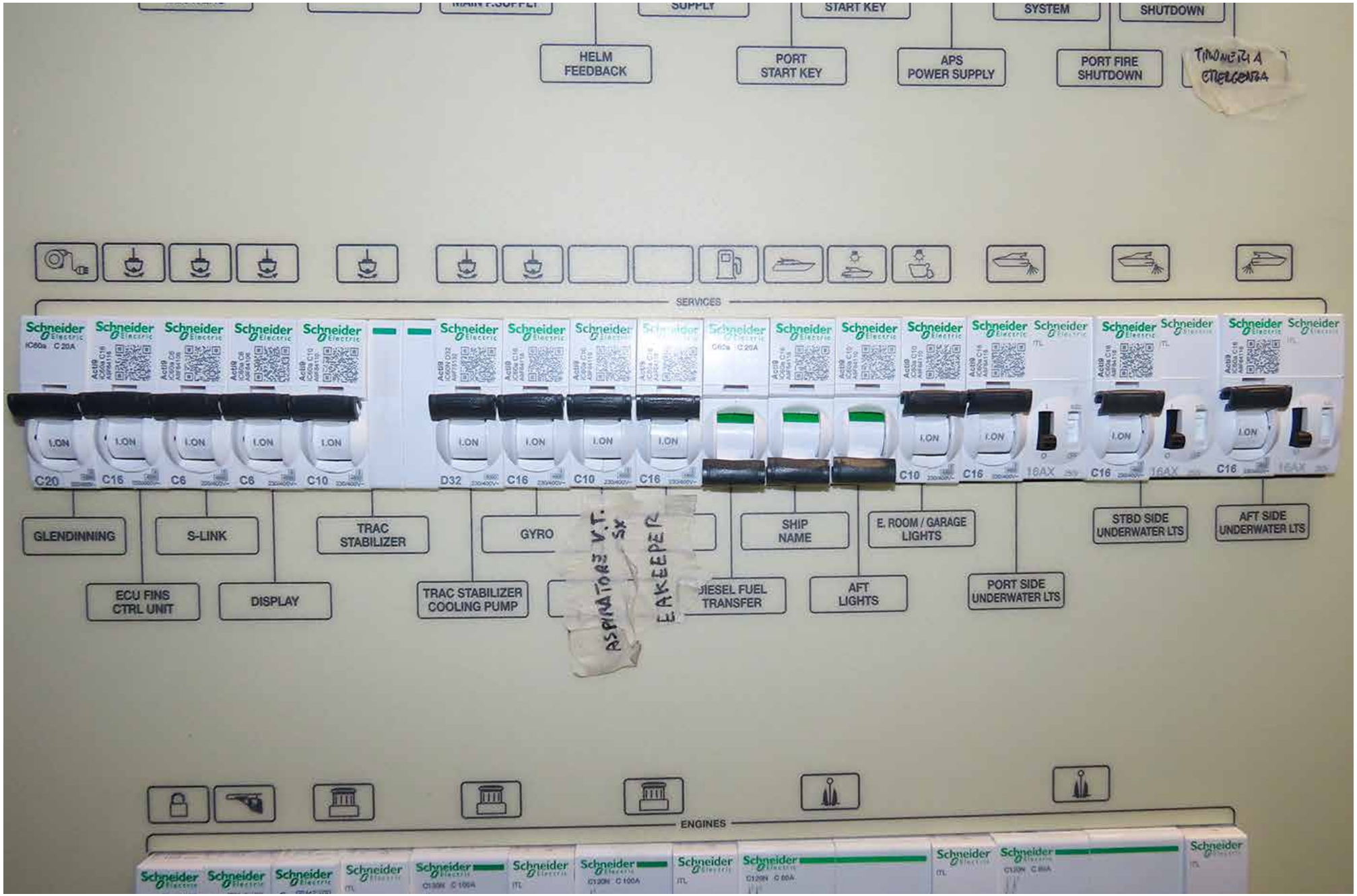
LOWER DECK

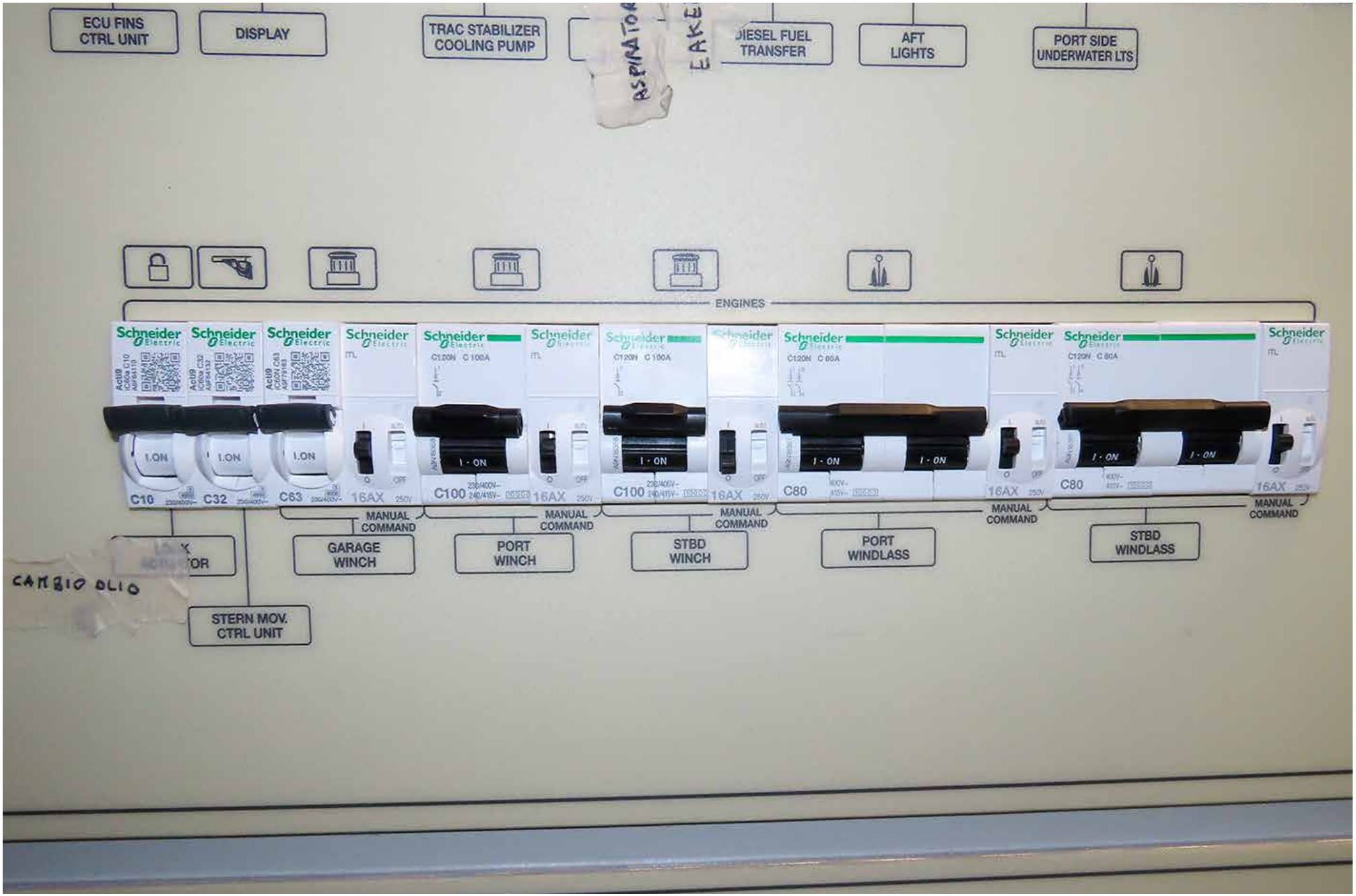
24V uses measuring instruments and magneto-thermal breakers


24V SAFETY SYSTEMS - TO KEEP ALWAYS SWITCHED ON
SWITCH OFF ONLY IN CASE OF SHORT CIRCUIT
ON
OFF
GANGWAY CONTROL UNIT
GANGWAY
SMOKE ALARM
BILGE LEVEL ALARM
ECR BILGE PUMP
1ST ENGINES BILGE PUMP
2ND ENGINES BILGE PUMP
PORT CABINS BILGE PUMP
STBD CABINS BILGE PUMP
CREW BILGE PUMP
MANUAL COMMAND
24V SAFETY SYSTEMS - GANGWAY BATTERY SWITCH

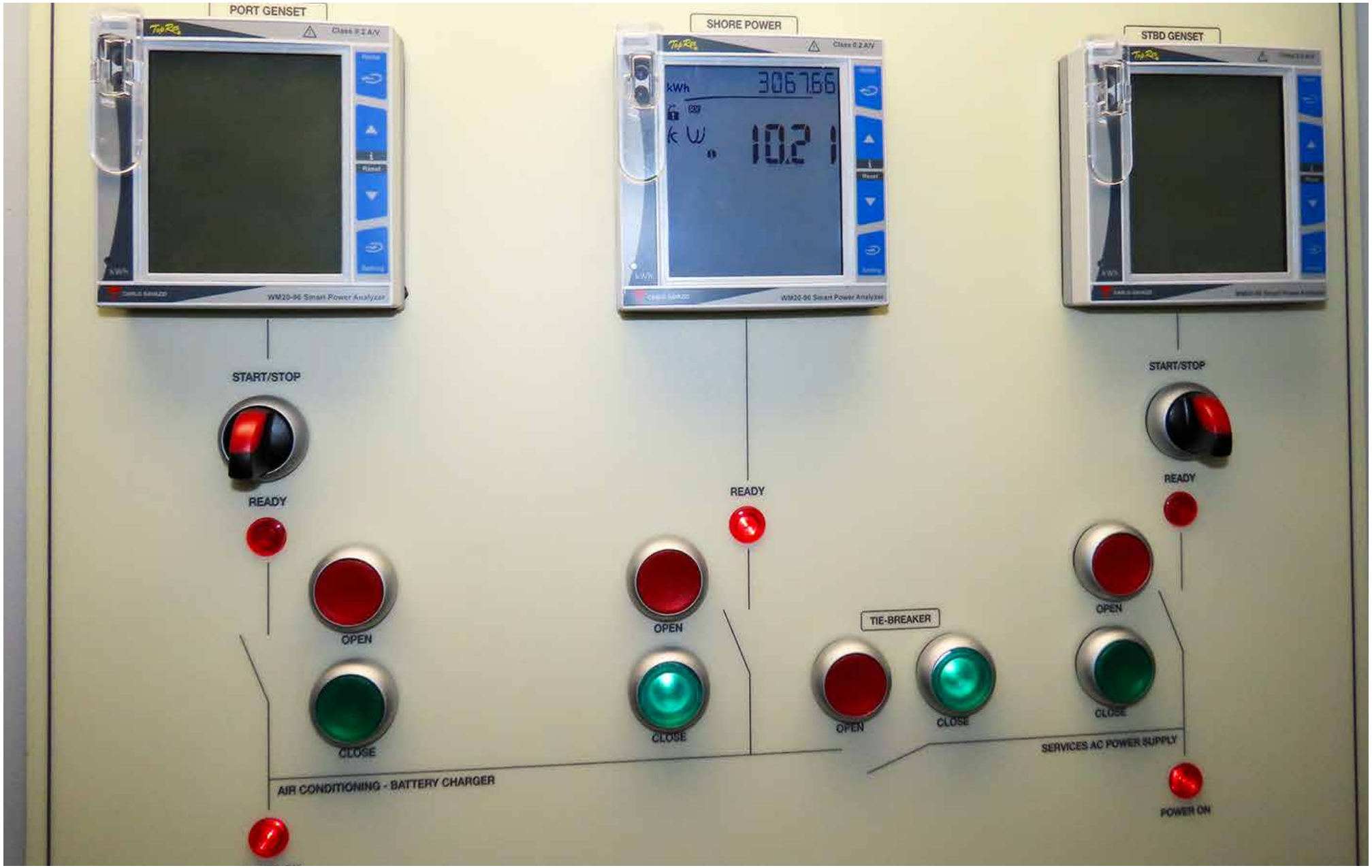

SERVICES
C16
C32
C25
C40
C10
C10
C10
C10
C10
C10
C10
C6
C6
C6
C63
C32
20A
C25
20A
MANUAL COMMAND
GARAGE DRAIN PUMP
FRESH WATER PUMP
PORT VIP TRANSFER PUMP
PORT GUEST TRANSFER PUMP
1ST CREW TRANSFER PUMP
PORT DRAIN WATER PUMP
STBD ER.DRAIN WATER PUMP
MANUAL COMMAND
GREY WATER PUMP
MANUAL COMMAND
BLACK WATER PUMP
MULTIPURPOSE BILGE PUMP
SALT WATER FIRE PUMP
STBD VIP TRANSFER PUMP
STBD GUEST TRANSFER PUMP
2ND CREW TRANSFER PUMP
STBD DRAIN WATER PUMP
TENDER CRANE
APS NET
SERVICES
ENGINES
SERVICES
APS SUPPLY

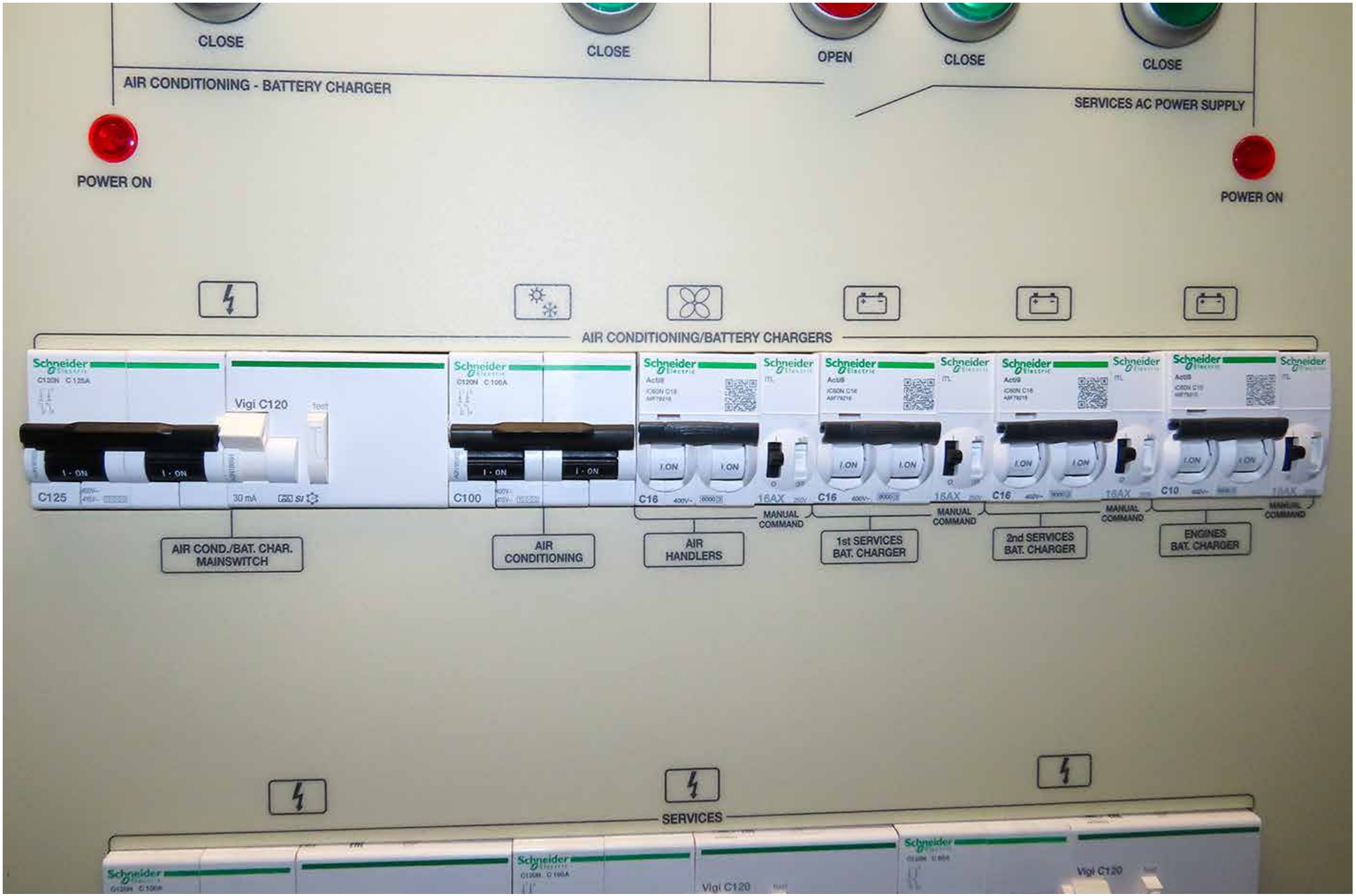

MULTIPURPOSE BILGE PUMP
SALT WATER FIRE PUMP
STBD VIP TRANSFER PUMP
STBD GUEST TRANSFER PUMP
2ND CREW TRANSFER PUMP
STBD DRAIN WATER PUMP
TENDER CRANE
GREY WATER PUMP
BLACK WATER PUMP
APS NET
SERVICES
ENGINES
SERVICES
APS SUPPLY
C25
16AX
C10
C63
C6
C6
C6
C16
C16
C40
C40
C20
C6
MANUAL COMMAND
MANUAL COMMAND
ENGINES BLOWERS
HORN
STEERING MAIN P.SUPPLY
HELM FEEDBACK
POWER SUPPLY
PORT START KEY
STBD START KEY
APS POWER SUPPLY
REMOTE CONTROL SYSTEM
PORT FIRE SHUTDOWN
STBD FIRE SHUTDOWN


HELM FEEDBACK
PORT START KEY
APS POWER SUPPLY
PORT FIRE SHUTDOWN
SERVICES
GLENDINNING
S-LINK
TRAC STABILIZER
GYRO
SHIP NAME
E. ROOM / GARAGE LIGHTS
STBD SIDE UNDERWATER LTS
AFT SIDE UNDERWATER LTS
ECU FINS CTRL UNIT
DISPLAY
TRAC STABILIZER COOLING PUMP
AFT LIGHTS
PORT SIDE UNDERWATER LTS
ENGINES

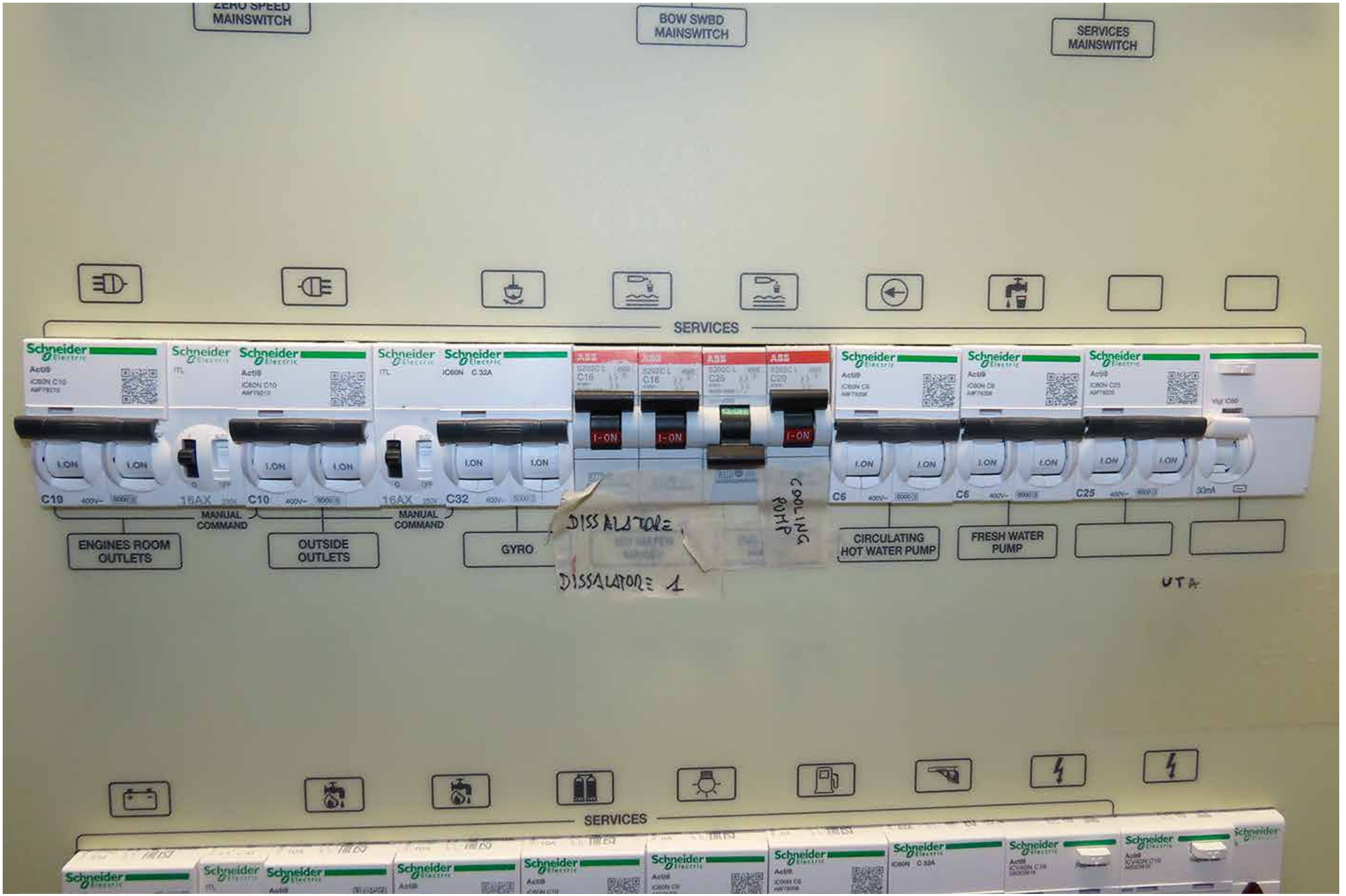

ECU FINS CTRL UNIT
DISPLAY
TRAC STABILIZER COOLING PUMP
DIESEL FUEL TRANSFER
AFT LIGHTS
PORT SIDE UNDERWATER LTS
ENGINES
C10
C32
C63
16AX
C100
C80
MANUAL COMMAND
GARAGE WINCH
PORT WINCH
STBD WINCH
PORT WINDLASS
STBD WINDLASS
STERN MOV. CTRL UNIT
CAMBIO OLIO

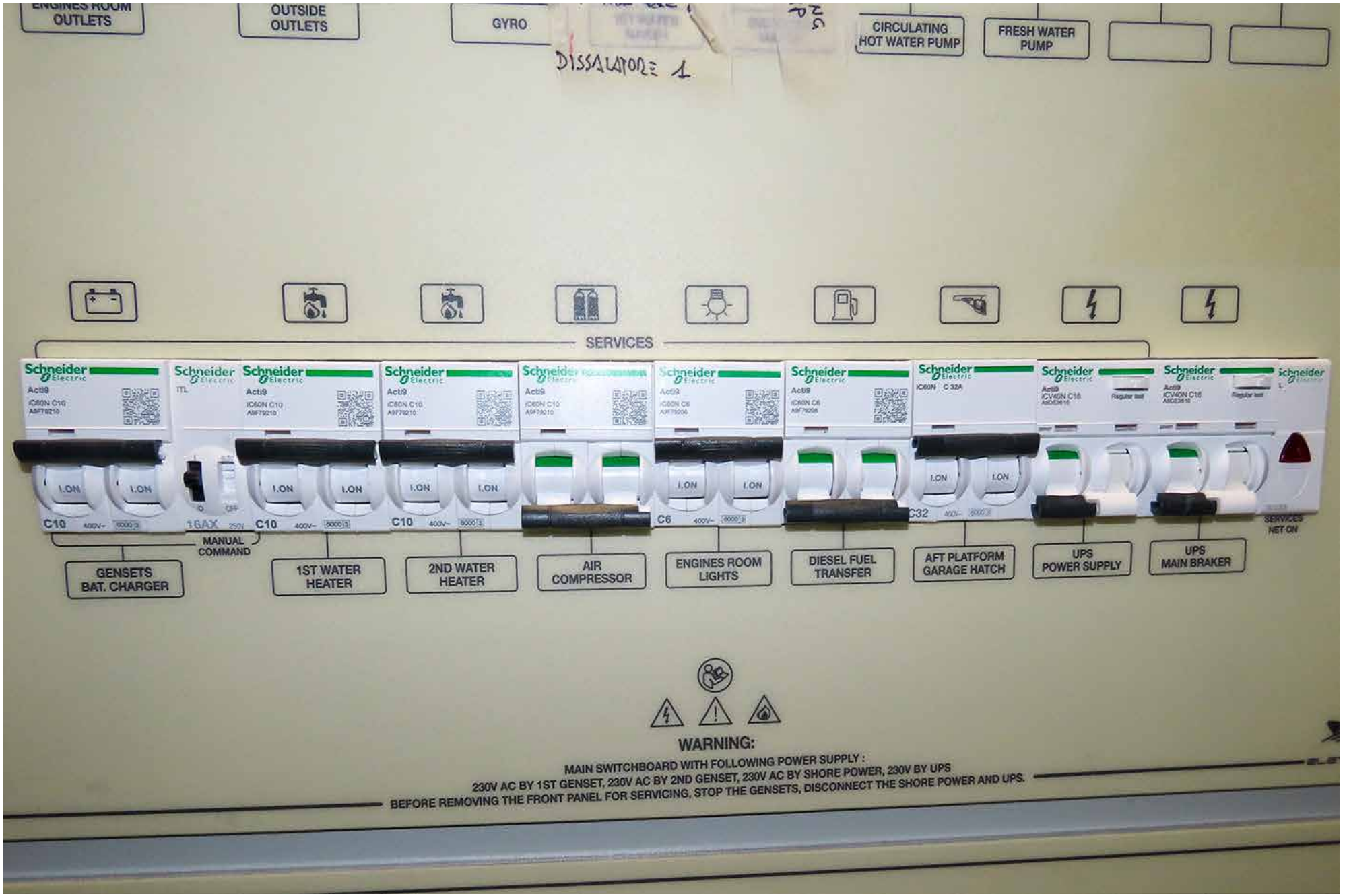
230V uses measuring instruments and magneto-thermal breakers




CLOSE
CLOSE
OPEN
CLOSE
CLOSE
AIR CONDITIONING - BATTERY CHARGER
SERVICES AC POWER SUPPLY
POWER ON
POWER ON
AIR CONDITIONING/BATTERY CHARGERS
Vigi C120
C125
C100
C16
C16
C16
C10
16AX
MANUAL COMMAND
AIR COND./BAT. CHAR. MAINSWITCH
AIR CONDITIONING
AIR HANDLERS
1st SERVICES BAT. CHARGER
2nd SERVICES BAT. CHARGER
ENGINES BAT. CHARGER
SERVICES
Vigi C120
Vigi C120

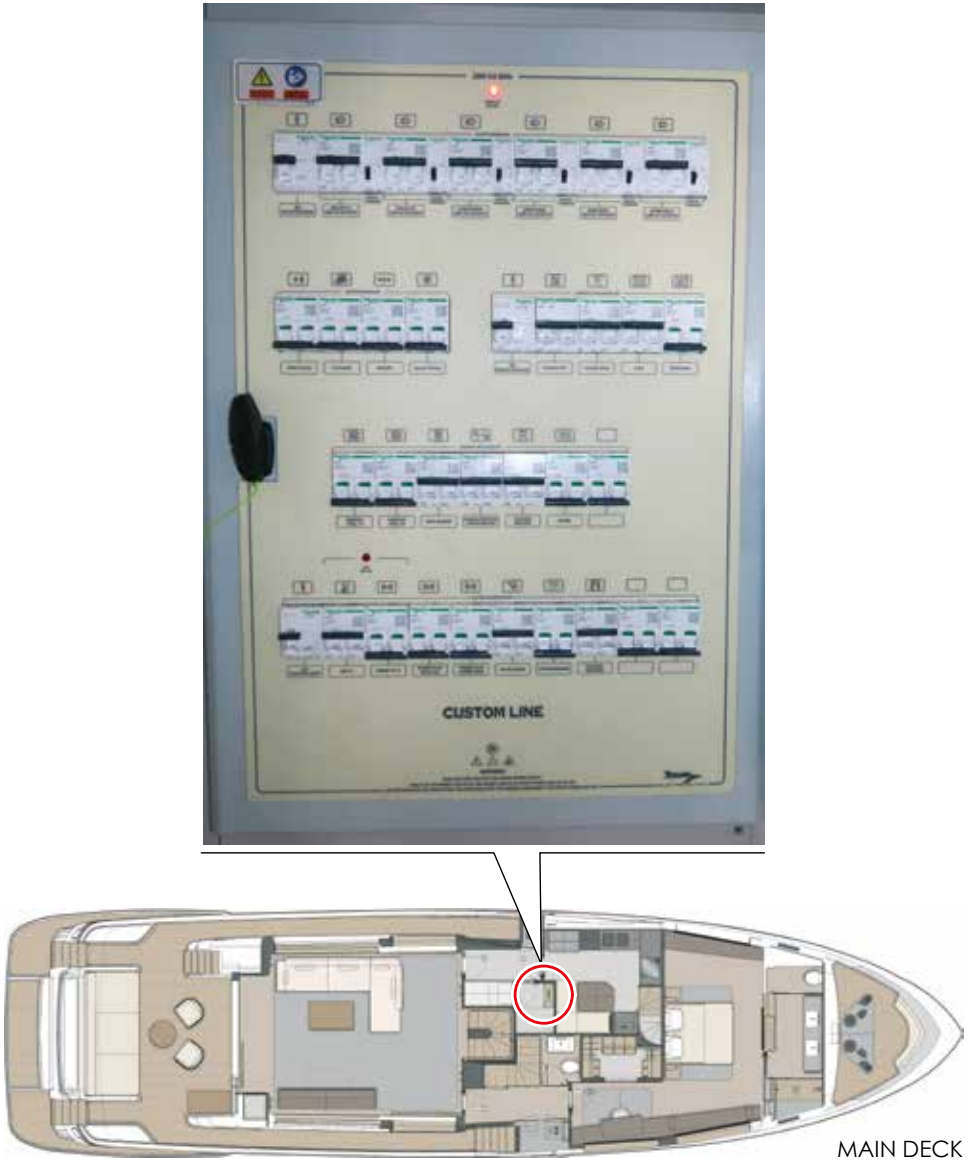

MAINSWITCH
CONDITIONING
HANDLERS
BAT. CHARGER
BAT. CHARGER
BAT. CHARGER
SERVICES
Schneider
C120N C 100A
Vigi C120
test
I - ON
C100
30 mA
Schneider
C120N C 100A
Vigi C120
test
I - ON
C100
300 mA
Schneider
C120N C 80A
Vigi C120
test
I - ON
C80
30 mA
ZERO SPEED MAINSWITCH
BOW SWBD MAINSWITCH
SERVICES MAINSWITCH
SERVICES

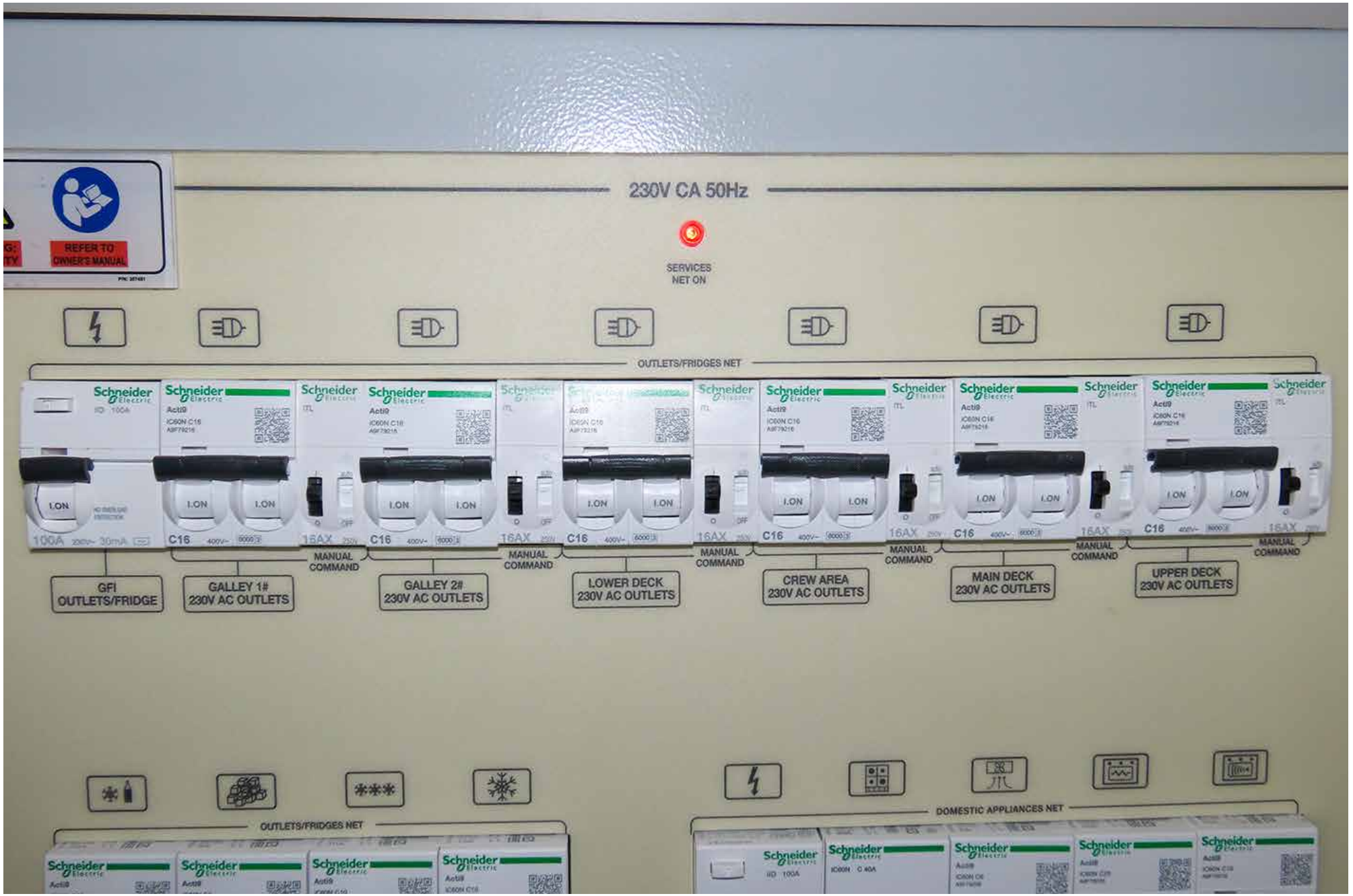

ZERO SPEED MAINSWITCH
BOW SWBD MAINSWITCH
SERVICES MAINSWITCH
SERVICES
C10
C10
C32
C16
C16
C25
C20
C6
C6
C25
MANUAL COMMAND
MANUAL COMMAND
ENGINES ROOM OUTLETS
OUTSIDE OUTLETS
GYRO
COOLING PUMP
DISSALATORE 1
CIRCULATING HOT WATER PUMP
FRESH WATER PUMP
UTA
SERVICES

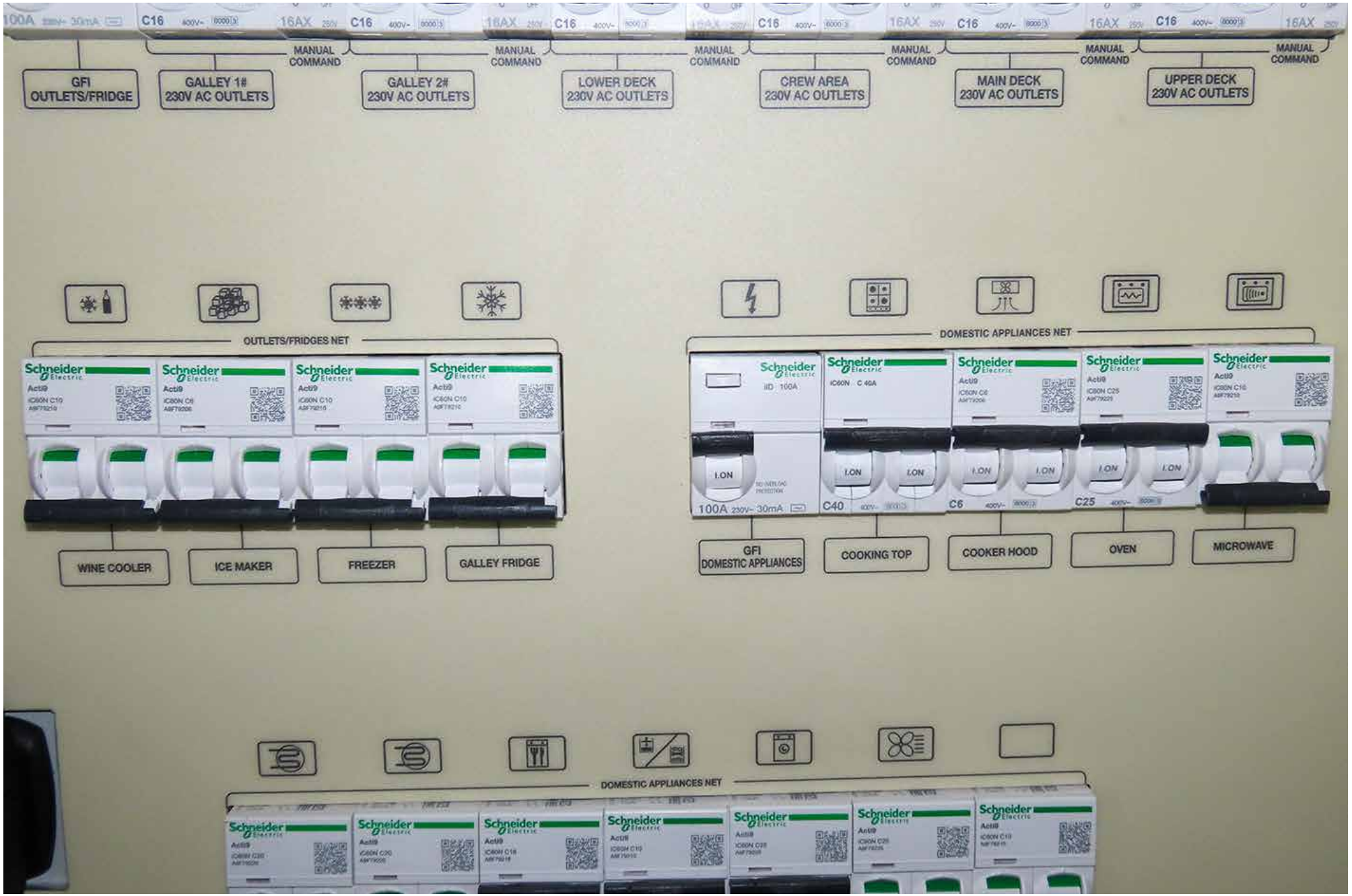

ENGINES ROOM OUTLETS
OUTSIDE OUTLETS
GYRO
DISSALATORE 1
CIRCULATING HOT WATER PUMP
FRESH WATER PUMP
SERVICES
C10
C10
C10
C6
C32
16AX
MANUAL COMMAND
GENSETS BAT. CHARGER
1ST WATER HEATER
2ND WATER HEATER
AIR COMPRESSOR
ENGINES ROOM LIGHTS
DIESEL FUEL TRANSFER
AFT PLATFORM GARAGE HATCH
UPS POWER SUPPLY
UPS MAIN BRAKER
SERVICES NET ON
WARNING:
MAIN SWITCHBOARD WITH FOLLOWING POWER SUPPLY :
230V AC BY 1ST GENSET, 230V AC BY 2ND GENSET, 230V AC BY SHORE POWER, 230V BY UPS
BEFORE REMOVING THE FRONT PANEL FOR SERVICING, STOP THE GENSETS, DISCONNECT THE SHORE POWER AND UPS.

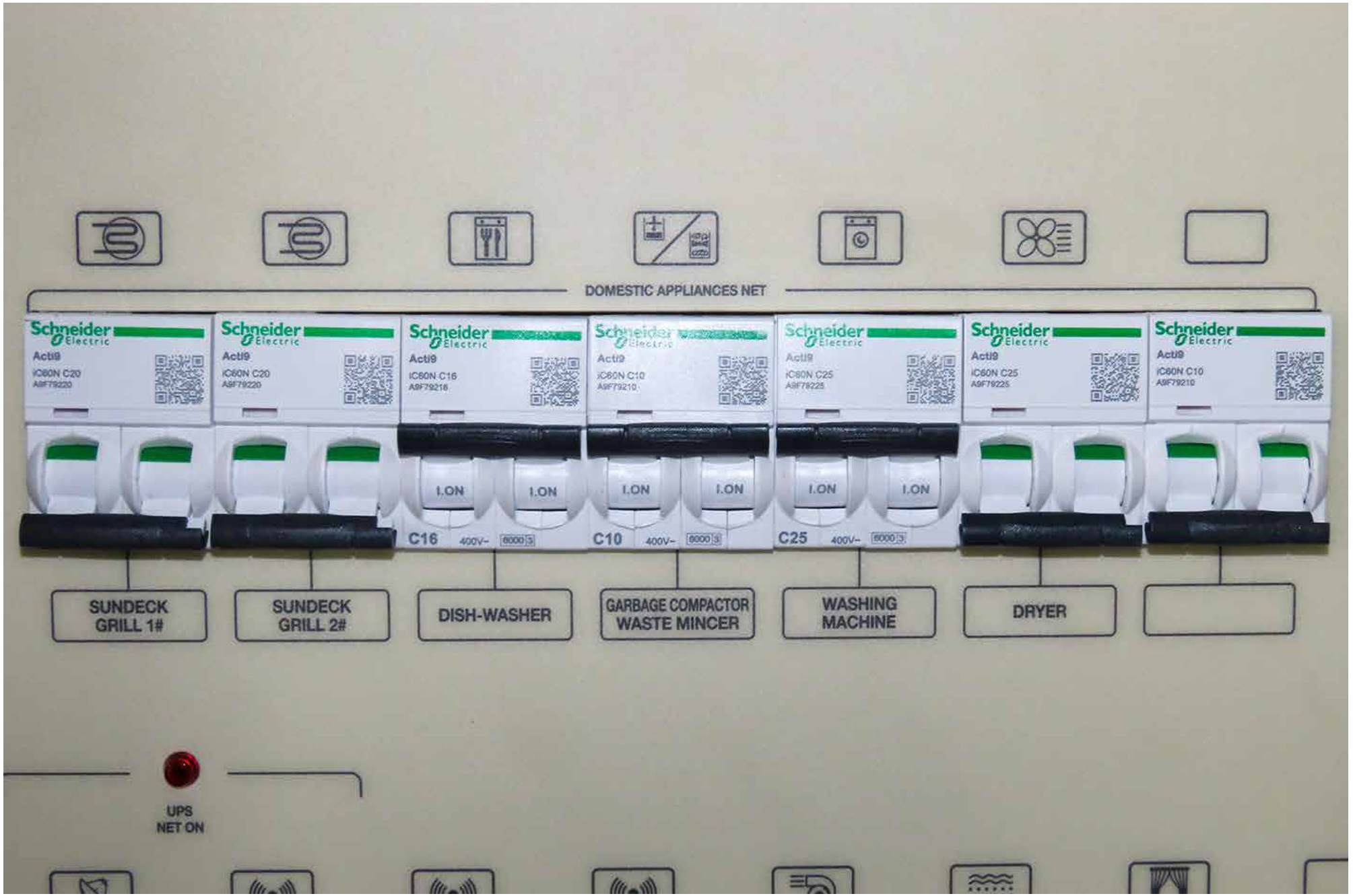
MAIN DECK 230V ELECTRICAL PANEL

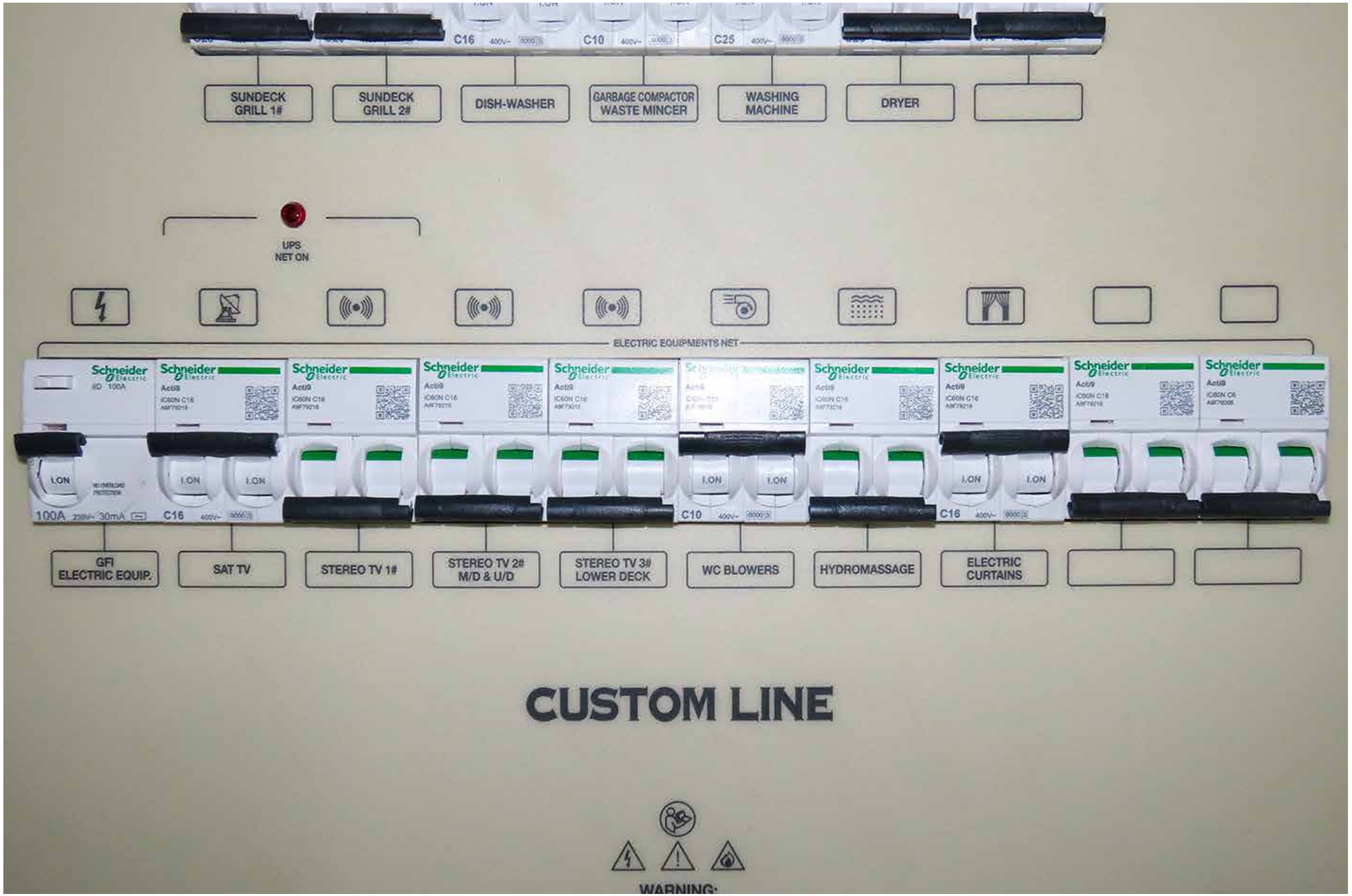
The 230V on-board uses can be controlled from the panel located on the port side of the main deck.




230V CA 50Hz
REFER TO OWNER'S MANUAL
SERVICES NET ON
OUTLETS/FRIDGES NET
GFI OUTLETS/FRIDGE
GALLEY 1# 230V AC OUTLETS
GALLEY 2# 230V AC OUTLETS
LOWER DECK 230V AC OUTLETS
CREW AREA 230V AC OUTLETS
MAIN DECK 230V AC OUTLETS
UPPER DECK 230V AC OUTLETS
MANUAL COMMAND
OUTLETS/FRIDGES NET
DOMESTIC APPLIANCES NET

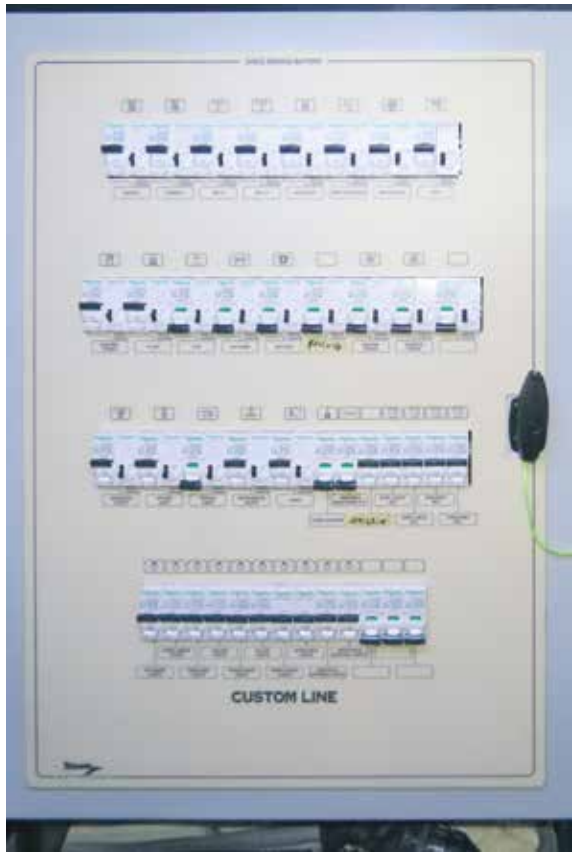

GFI OUTLETS/FRIDGE
GALLEY 1# 230V AC OUTLETS
GALLEY 2# 230V AC OUTLETS
LOWER DECK 230V AC OUTLETS
CREW AREA 230V AC OUTLETS
MAIN DECK 230V AC OUTLETS
UPPER DECK 230V AC OUTLETS
MANUAL COMMAND
OUTLETS/FRIDGES NET
WINE COOLER
ICE MAKER
FREEZER
GALLEY FRIDGE
DOMESTIC APPLIANCES NET
GFI DOMESTIC APPLIANCES
COOKING TOP
COOKER HOOD
OVEN
MICROWAVE
DOMESTIC APPLIANCES NET

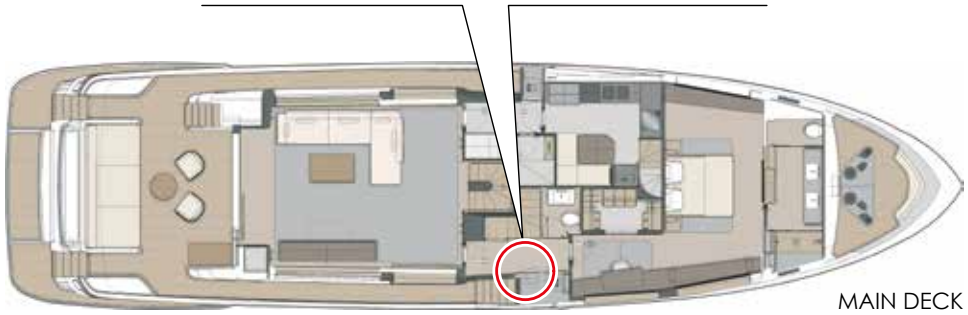

DOMESTIC APPLIANCES NET
Schneider Electric
Acti9
iC60N C20
A9F79220
Schneider Electric
Acti9
iC60N C20
A9F79220
Schneider Electric
Acti9
iC60N C16
A9F79216
Schneider Electric
Acti9
iC60N C10
A9F79210
Schneider Electric
Acti9
iC60N C25
A9F79225
Schneider Electric
Acti9
iC60N C25
A9F79225
Schneider Electric
Acti9
iC60N C10
A9F79210
I.ON
I.ON
I.ON
I.ON
I.ON
I.ON
C16 400V~ 6000 3
C10 400V~ 6000 3
C25 400V~ 6000 3
SUNDECK GRILL 1#
SUNDECK GRILL 2#
DISH-WASHER
GARBAGE COMPACTOR WASTE MINCER
WASHING MACHINE
DRYER
UPS NET ON


C16
C10
C25
SUNDECK GRILL 1#
SUNDECK GRILL 2#
DISH-WASHER
GARBAGE COMPACTOR WASTE MINCER
WASHING MACHINE
DRYER
UPS NET ON
ELECTRIC EQUIPMENTS NET
100A
C16
C10
C16
GFI ELECTRIC EQUIP.
SAT TV
STEREO TV 1#
STEREO TV 2# M/D & U/D
STEREO TV 3# LOWER DECK
WC BLOWERS
HYDROMASSAGE
ELECTRIC CURTAINS
CUSTOM LINE
WARNING:

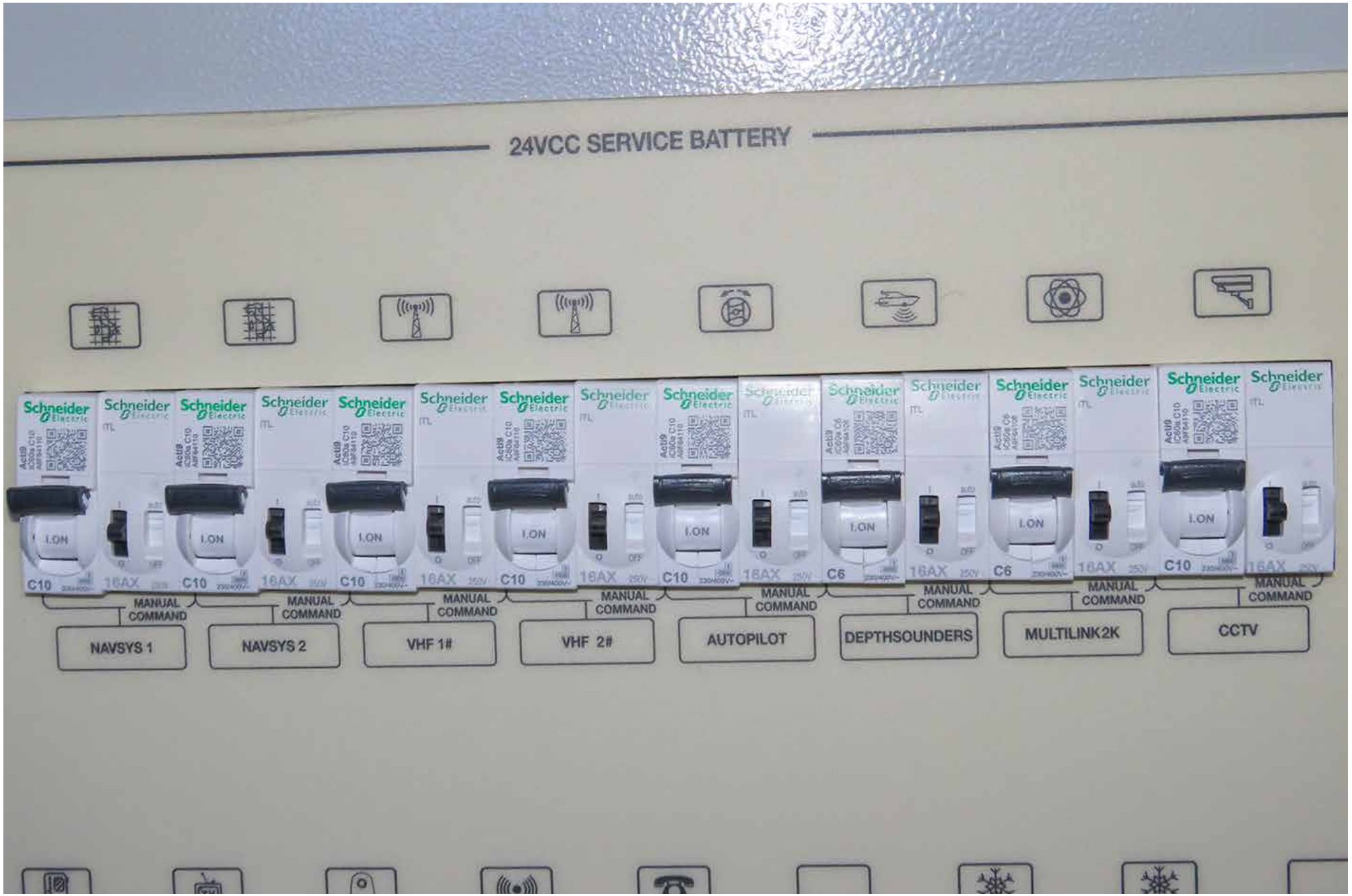
MAIN DECK 24V ELECTRICAL PANEL

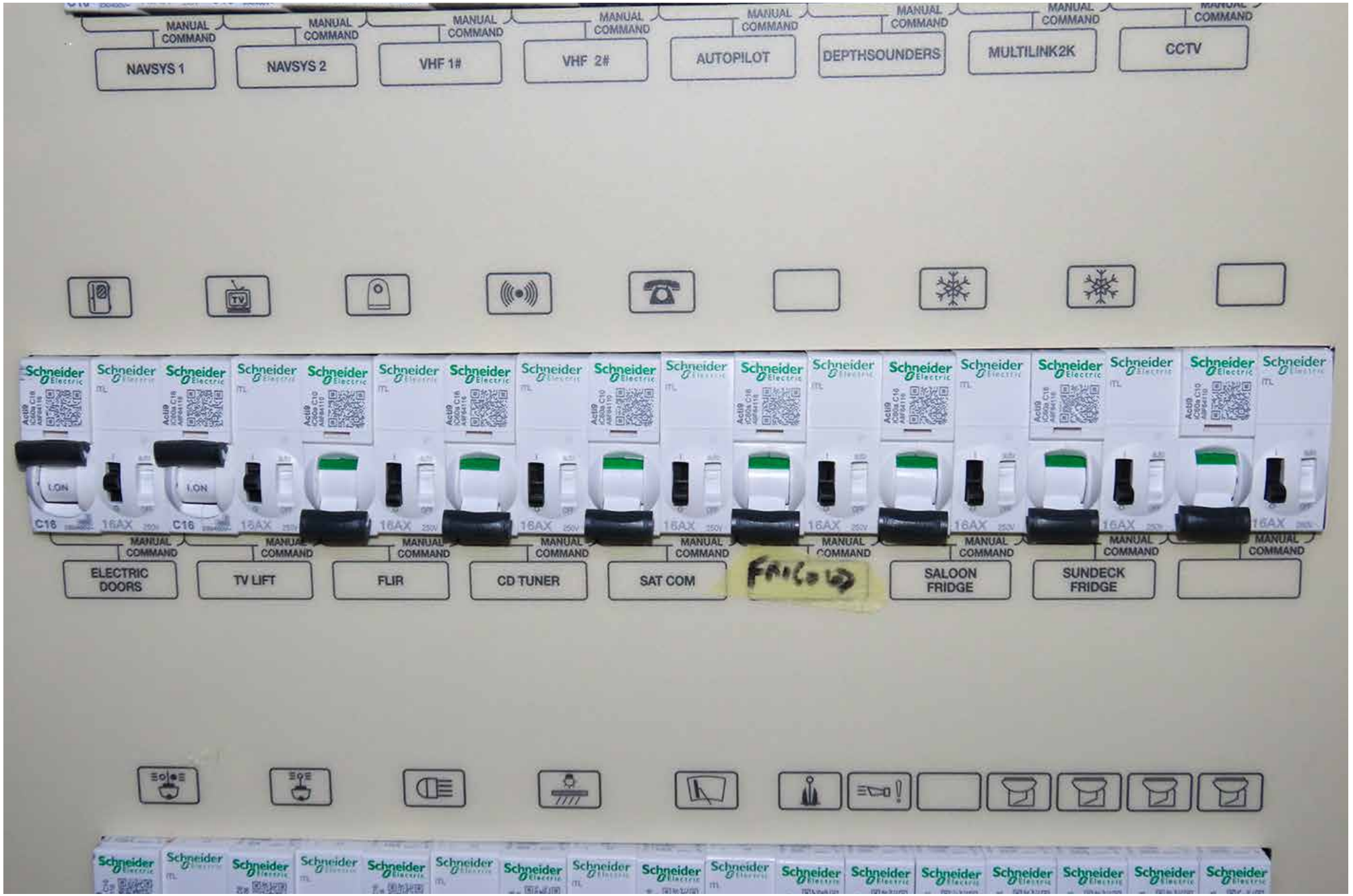
The 24V on-board uses can be controlled from the panel located on the starboard side of the main deck.

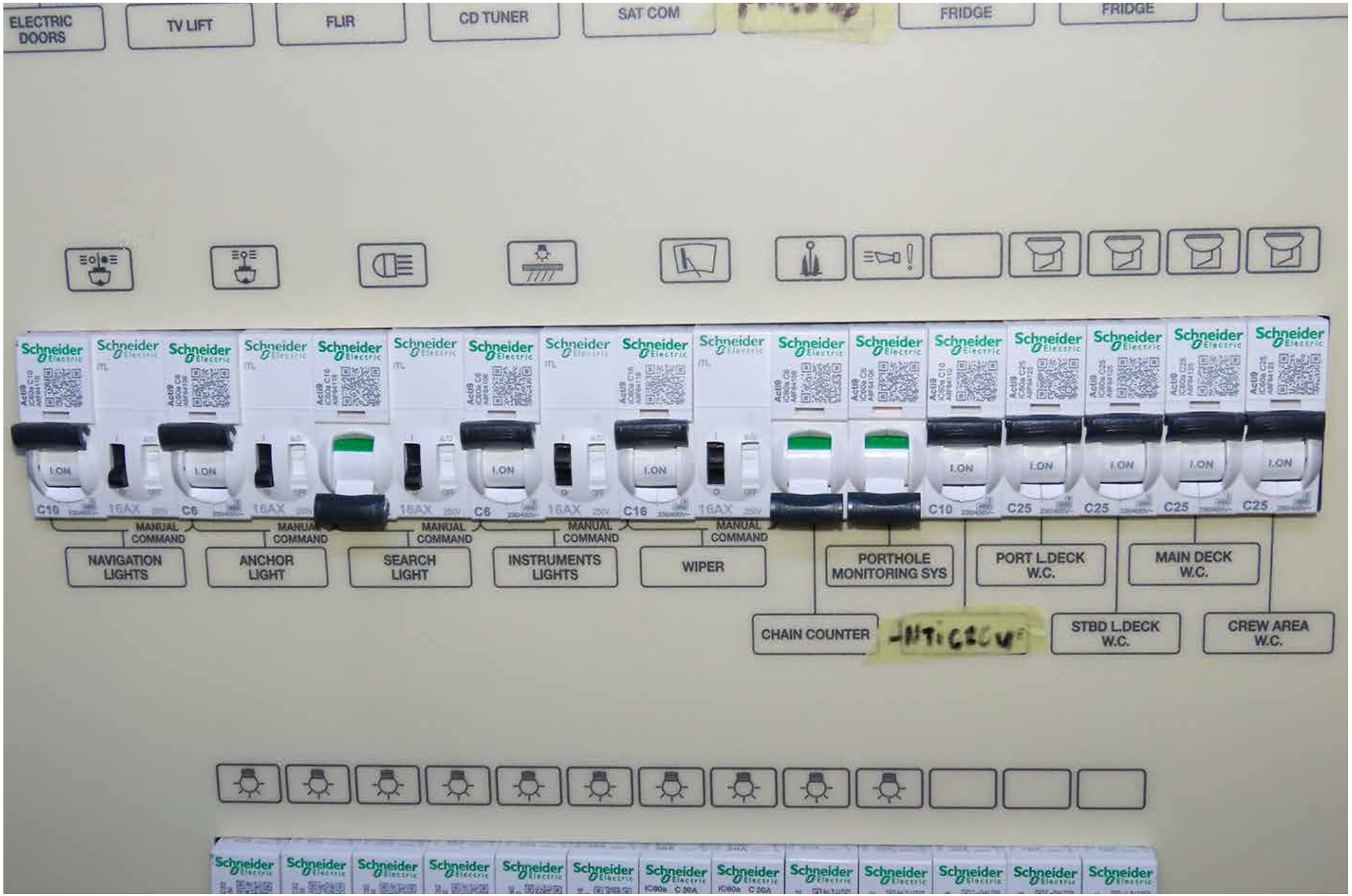


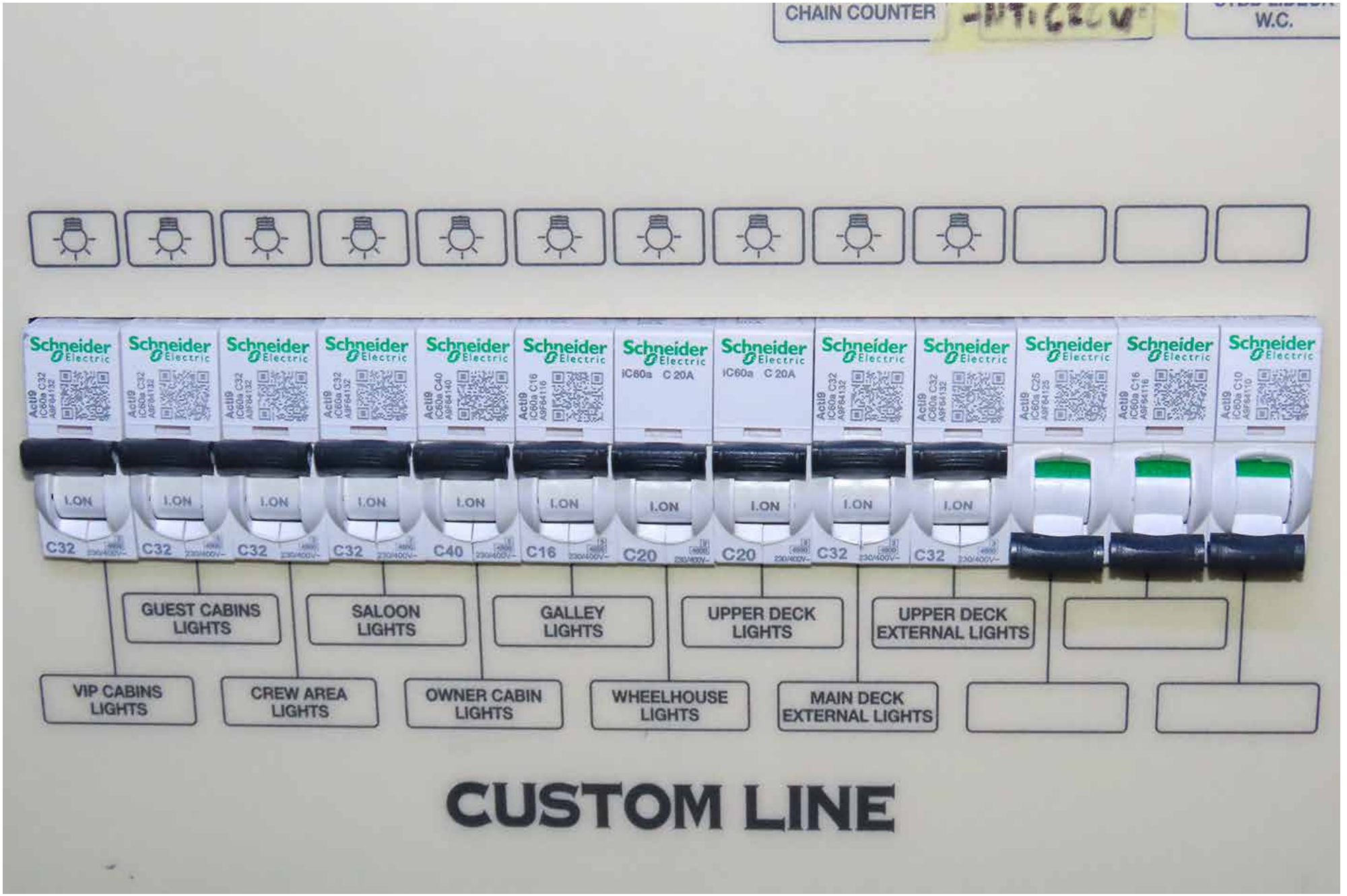


MAIN DECK

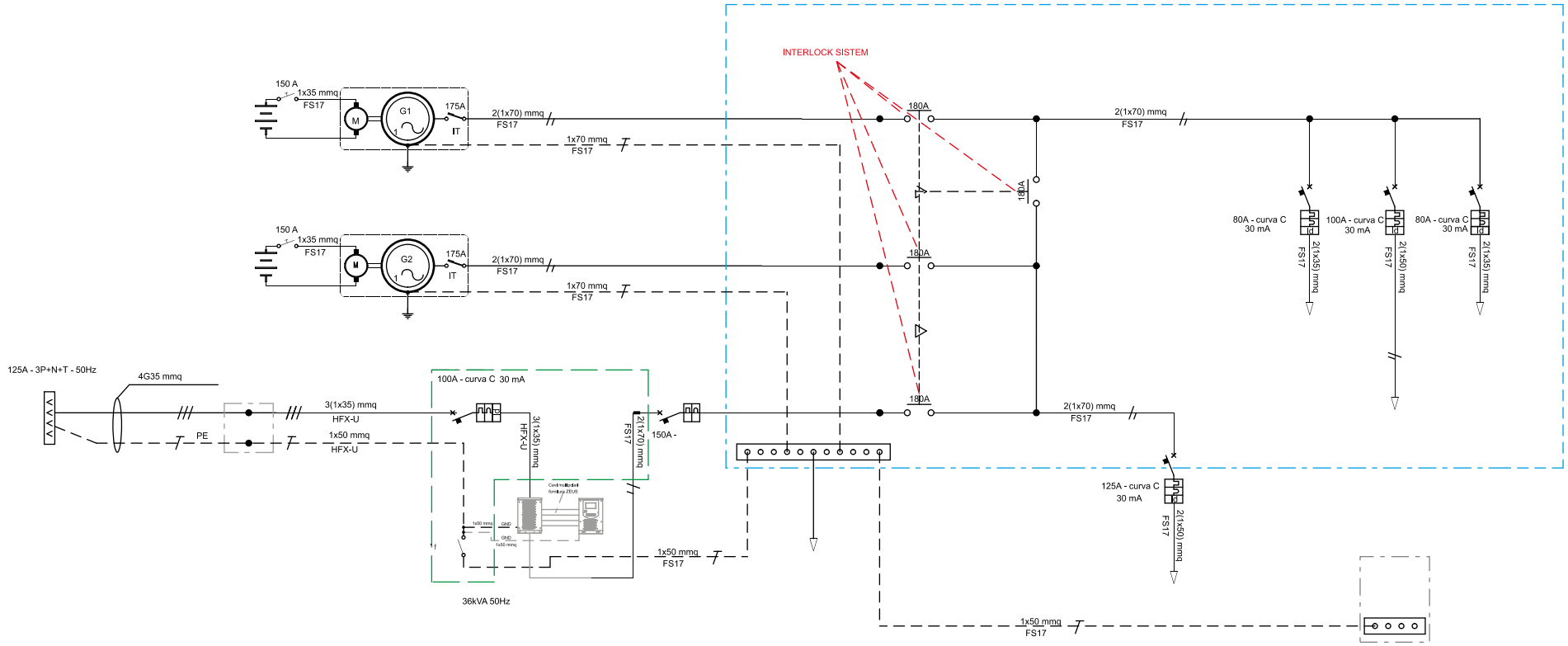

24VCC SERVICE BATTERY
Schneider Electric
I.ON
C10
16AX
C6
MANUAL COMMAND
NAVSYS 1
NAVSYS 2
VHF 1#
VHF 2#
AUTOPILOT
DEPTHSOUNDERS
MULTILINK2K
CCTV


MANUAL COMMAND
NAVSYS 1
NAVSYS 2
VHF 1#
VHF 2#
AUTOPILOT
DEPTHSOUNDERS
MULTILINK2K
CCTV
Schneider Electric
I.ON
C16
16AX
ELECTRIC DOORS
TV LIFT
FLIR
CD TUNER
SAT COM
FAILED
SALOON FRIDGE
SUNDECK FRIDGE

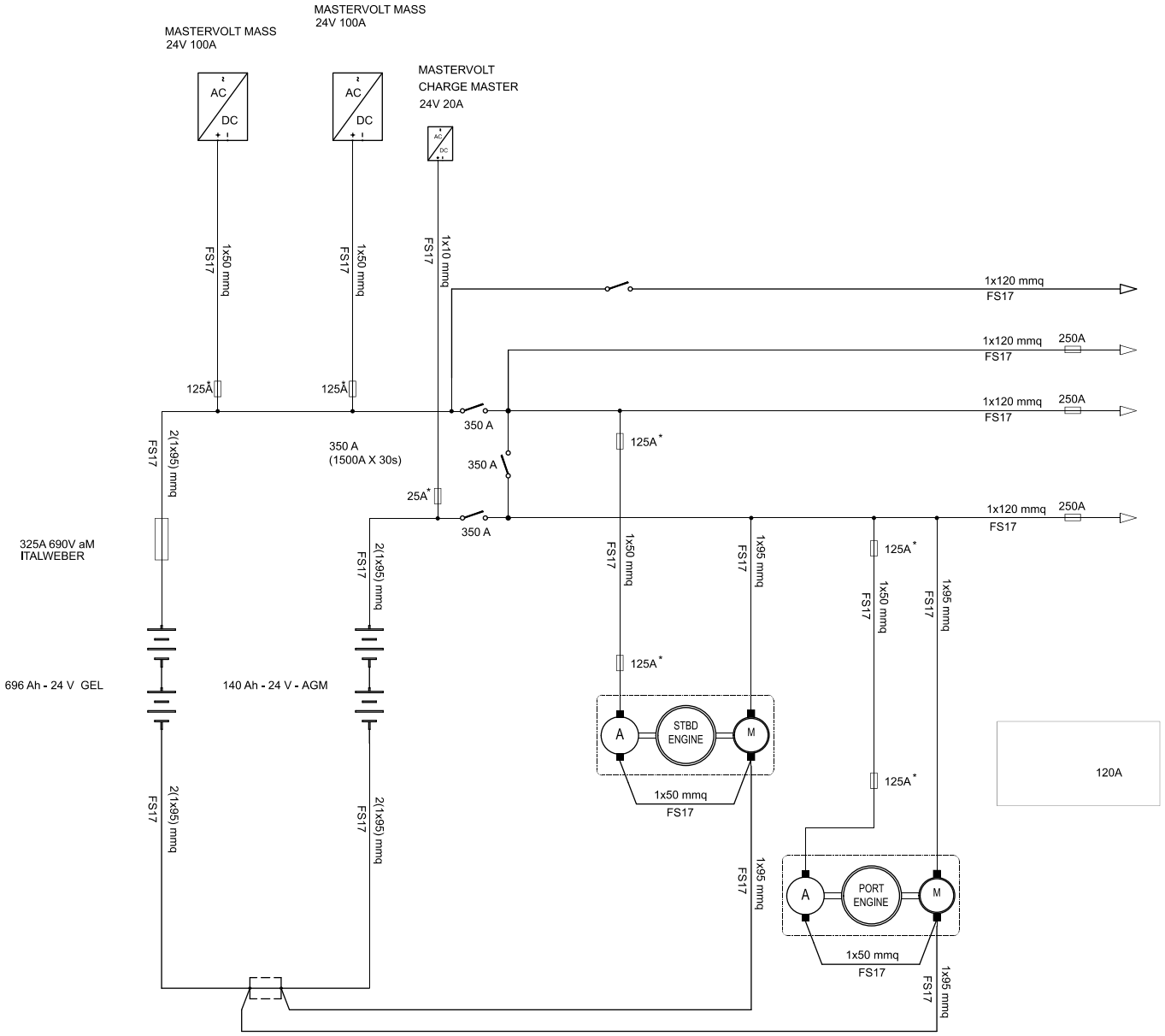

ELECTRIC DOORS
TV LIFT
FLIR
CD TUNER
SAT COM
FRIDGE
FRIDGE
C10
C6
C6
C16
C10
C25
C25
C25
C25
MANUAL COMMAND
NAVIGATION LIGHTS
ANCHOR LIGHT
SEARCH LIGHT
INSTRUMENTS LIGHTS
WIPER
PORTHOLE MONITORING SYS
PORT L.DECK W.C.
MAIN DECK W.C.
CHAIN COUNTER
STBD L.DECK W.C.
CREW AREA W.C.


CHAIN COUNTER
W.C.
Schneider Electric
IC60a C 20A
I.ON
C32
C40
C16
C20
GUEST CABINS LIGHTS
SALOON LIGHTS
GALLEY LIGHTS
UPPER DECK LIGHTS
UPPER DECK EXTERNAL LIGHTS
VIP CABINS LIGHTS
CREW AREA LIGHTS
OWNER CABIN LIGHTS
WHEELHOUSE LIGHTS
MAIN DECK EXTERNAL LIGHTS
CUSTOM LINE

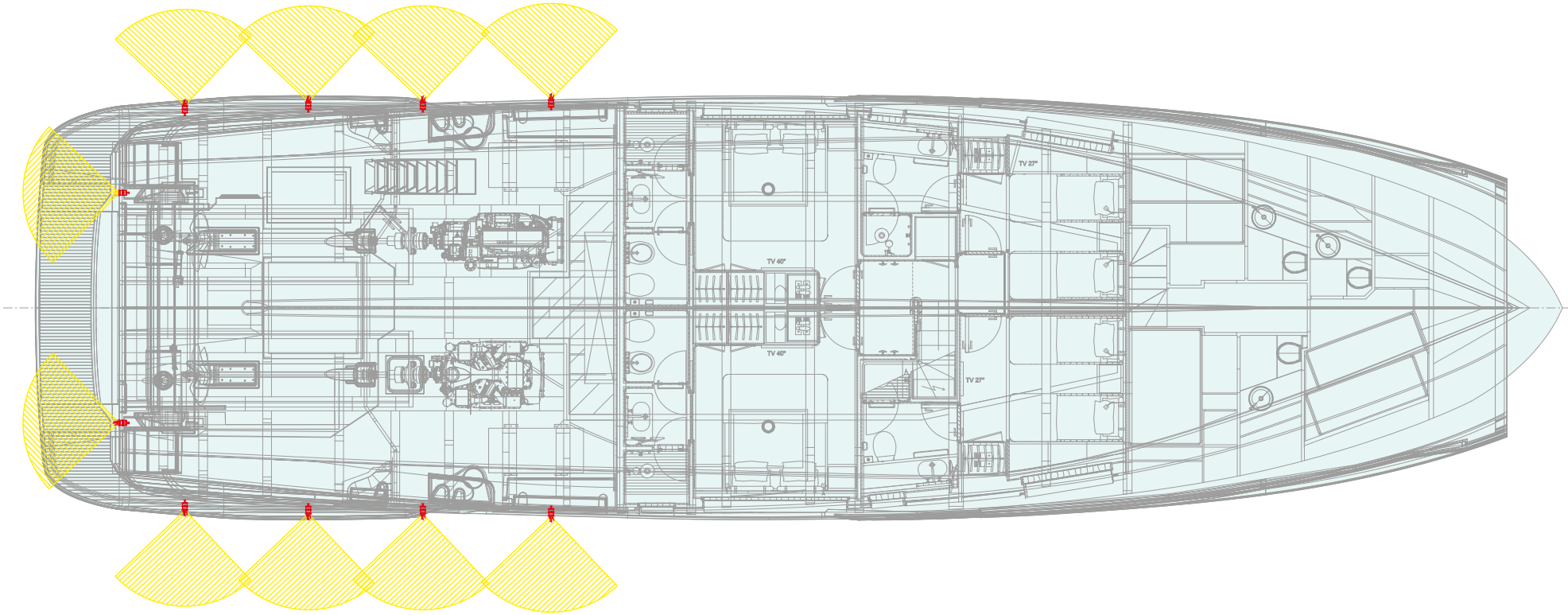
6.14.2 AC distribution diagram



6.14.3 DC distribution diagram



6.14.4 Underwater lights



6.15 GROUNDING SYSTEM

To ensure your safety and the safety yacht, the manufacturer has provided a grounding (exhaust system) that protects against electric shock.

DANGER

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

NOTE

For more information, contact the manufacturer's assistance service.

6.16 OIL CHANGE SYSTEM (OPTIONAL)

The yacht is equipped with an automatic oil change system.

The system consists of a pump connected via a manifold to:
- Engines;
- Generators;
- Inverters.

The system removes waste oil from the utilities and replaced with new oil.

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


LOWER DECK

CUSTOM LINE

BEYOND THE LINE

Navetta 30

7

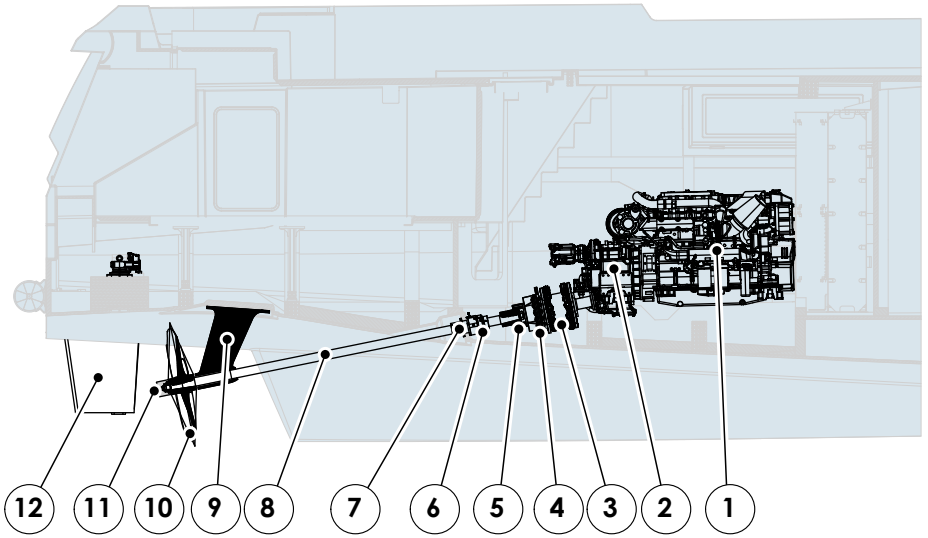
Propulsion Systems

7.1 PROPULSION SYSTEMS

In the engine room and steering unit compartment are gathered all components for the yacht propulsion. The propulsion system consists of two equal units.

Each one includes:

1. "MAN" engine model V8 1000
2. Inverter
3. Cylindrical flange coupling
4. Thrust bearing
5. Thrust bearing
6. Shaft seal
7. Sealing through-hull
8. Propeller shaft
9. Propeller shaft support
10. Propeller
11. Nut with spinner
12. Rudder



7.2 ENGINES

They have following features:

• Model		V8 - 1000 CR
• Brand		MAN
• No. of cylinders		8
• Effective output	kW/bhp	735/1000
• Rated speed	RPM	2300
• Dry weight	kg (lbs)	1780 (3924)
• Displacement	l	16.16

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.

Among all the possible interventions to carry out on the engines in case of need (see the operating instruction manual) hereunder are the most useful, according to our experience:

- Replacement of the fuel filters.
- Replacement of the oil filters.

CAUTION

The engine data boards are very important in case of repairs. Therefore keep them with care together with the warranty.

Remember that you can obtain a flawless operation and a high power only by respecting the prescribed maintenance intervals and by using the specified fuels and lubricants.

The engines have been installed on suitable elastic supports, which absorb vibrations and allow the minimal motion of the engines; in this way structures and devices connected with them are not damaged.

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

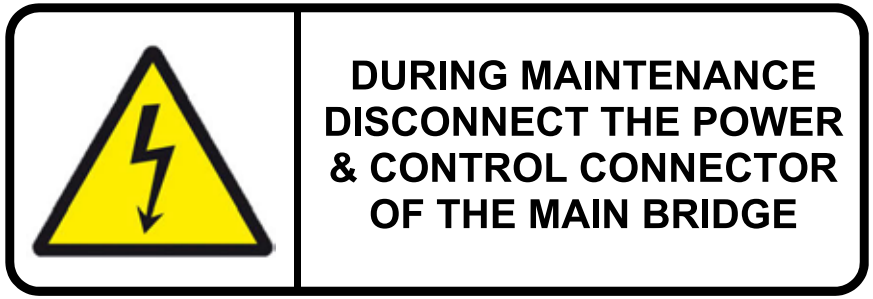
7.3 ENGINE CONTROL PANEL

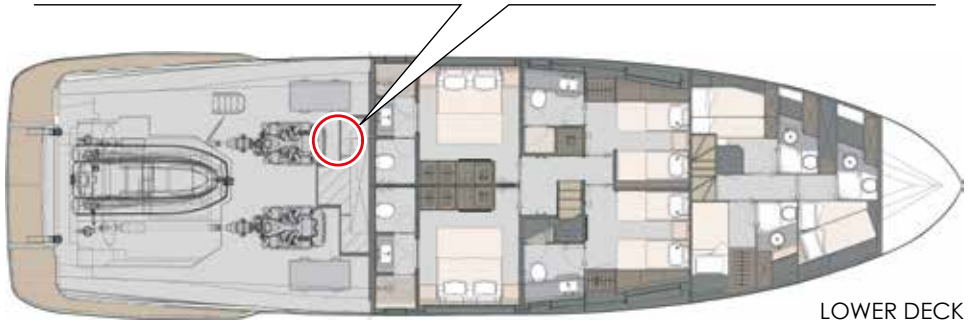
This station must be used only in case of emergency. The controls on the panel allow all procedures for yacht navigation to be executed in "Local" mode.
The engine can be started or stopped via the selector.

The states of the engine operating and information that occurred about errors are displayed on the display located on the helm station.

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.

CAUTION
Any remote start and stop control of the engine control devices shall be capable of being disabled when the engine starting panel in the engine room is maintained.





LOWER DECK

7.4 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 the engine, check fuel level, coolant level and engine oil level and replenish, if necessary.

If the oil levels and coolant were insufficient refill inside of the expansion vessels, taking care not to exceed the index of the maximum level.

CAUTION
Engines must always be started with gear boxes at idle run and throttle levers 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 **(1)**.
- For the amount of coolant see "Technical data" in the manuals supplied 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 **(2)**. Refer to the manufacturer's specific documentation for refuelling quanti-ties.

Sea water suction pumps

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 **(1)** for oil level check.
- Wipe it with a clean, dry and lint free cloth.
- Place it back up to retainer.
- Pull out dipstick again.

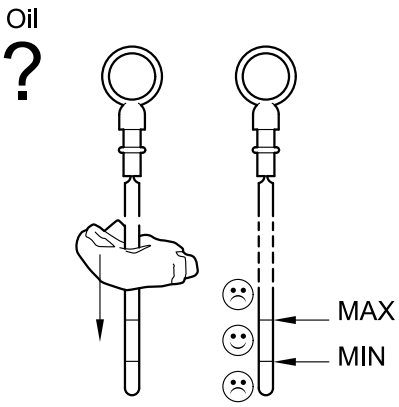
The oil level should be between the two notches in the dipstick and must never fall below the MIN notch.

Top up oil as necessary.

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!



7.5 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 no 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 be come 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 CUSTOM LINE 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 open flames, do not generate electric sparks.
Do not smoke.
Avoid ignition sources. Risk of fires and explosions!

DANGER
A wrong use, a wrong maintenance, tampering and replacement of pieces, can cause serious damages or mortal events, beyond damaging the equipment.

The interventions on the electrical and mechanical equipment must be carried out by qualified staff after having examined the Manual delivered by the Manufacturer.

ENVIRONMENT
Dispose of waste materials (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-thermal switches.

ENVIRONMENT

Handle used fuel filters as special waste.

ENVIRONMENT

Collect the liquid and dispose of according to current regulations.

CAUTION

Fill the cooling system only in a cold engine.

DANGER

Compressed air at high pressure may create the risk of injuries. Do not direct compressed-air jets at persons. Wear protective goggles, safety masks and ear protectors.

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.

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.

7.6 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.

NOTE

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

7.7 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 gear-box 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.

CAUTION
The use of the gearbox with a low quantity of oil may damage the gears.
An excessive quantity of oil may cause seals and vents to leak and can remarkably increase the operation temperature.

WARNING
Under normal operation conditions, the gear change can be carried out with the engine at low speed.

However, in case of emergency, gear shifting can be carried out with the engine at high speed, thus remarkably reducing clutch life though.

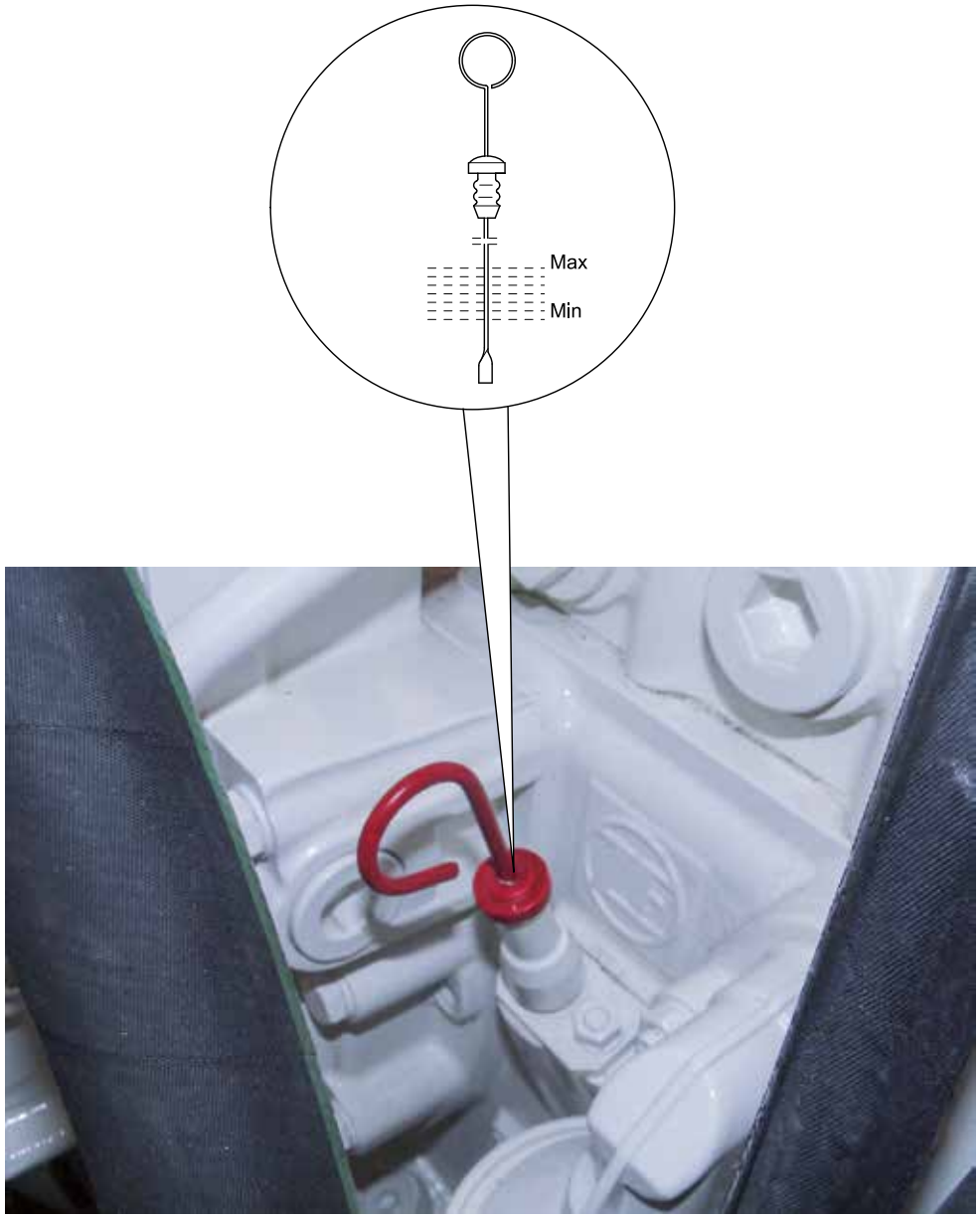
7.8 GEARBOX CHECK

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. The correct oil level is between the highest and the lowest rod notch oil level measurement.

CAUTION
Before starting checking the oil level, check that the gearbox oil temperature complies with the normal operating specifications.

ENVIRONMENT
Recover waste oil following the norms in force, relevant to special waste disposal.

DANGER
Service the gear box only if engine and propellers are stopped and the thermal switch 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.



7.9 EXHAUST SYSTEM

7.9.1 Engine exhausts

The on board engine exhaust system is equipped with a double smoke treatment system:

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.

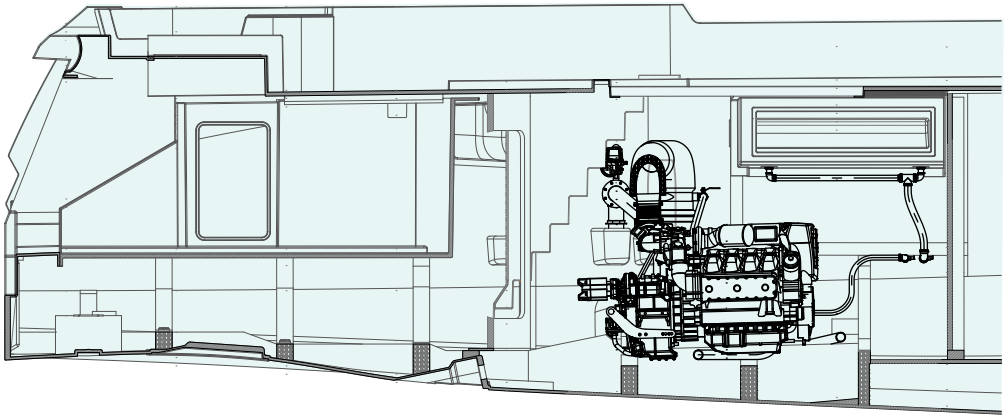
MAINTENANCE

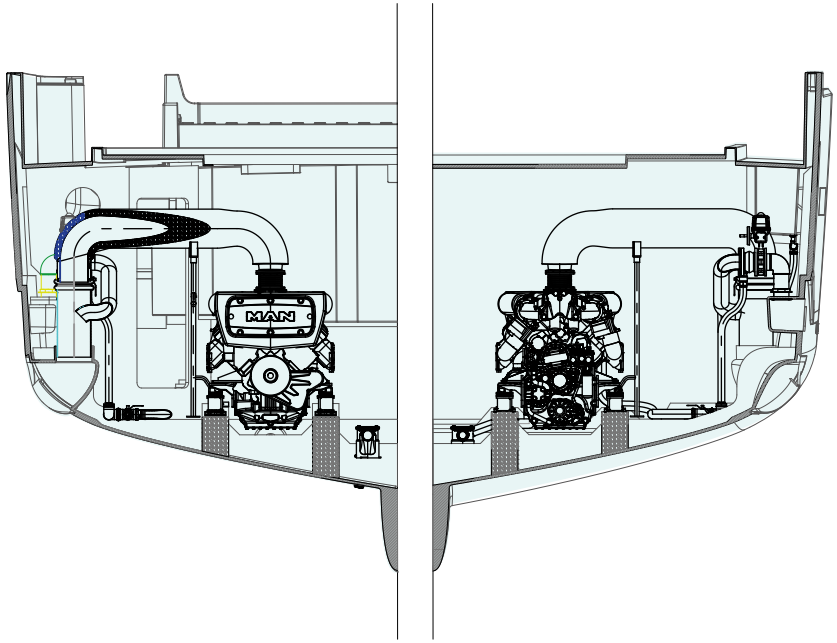
At least once every three months carry out the tightening of the discharge raiser bolts.

CAUTION

A strong smell and a light smoke from exhaust insulation are normal during the first period of use.

7.9.2 Main engines exhaust diagram





7.10 ENGINE EXHAUST SYSTEM CONTROL

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.

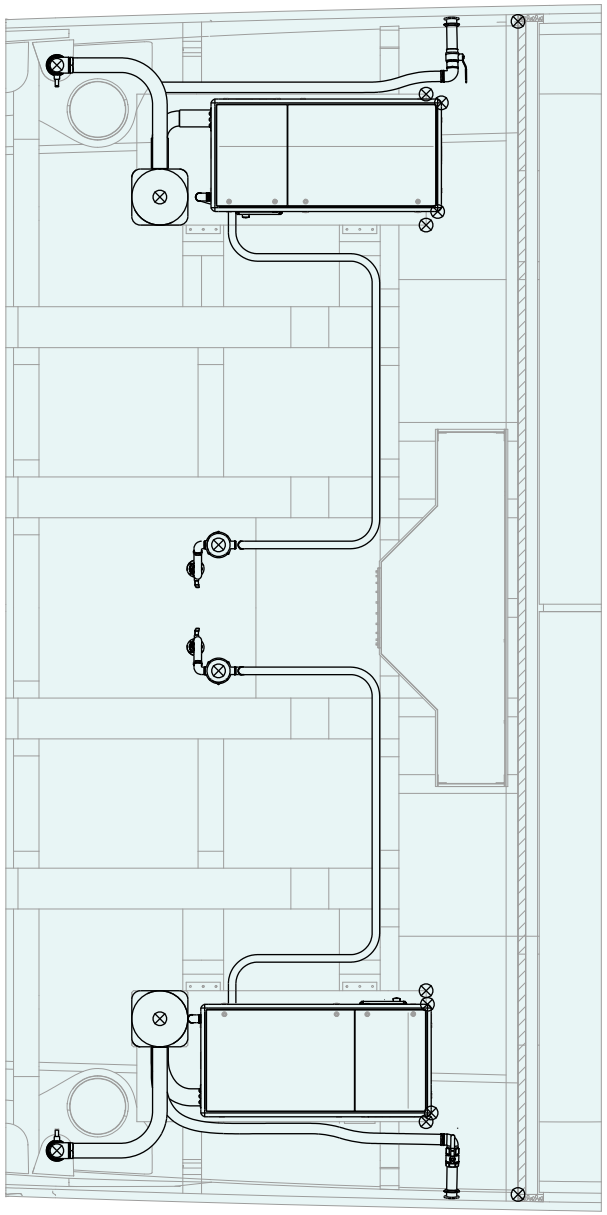
CAUTION

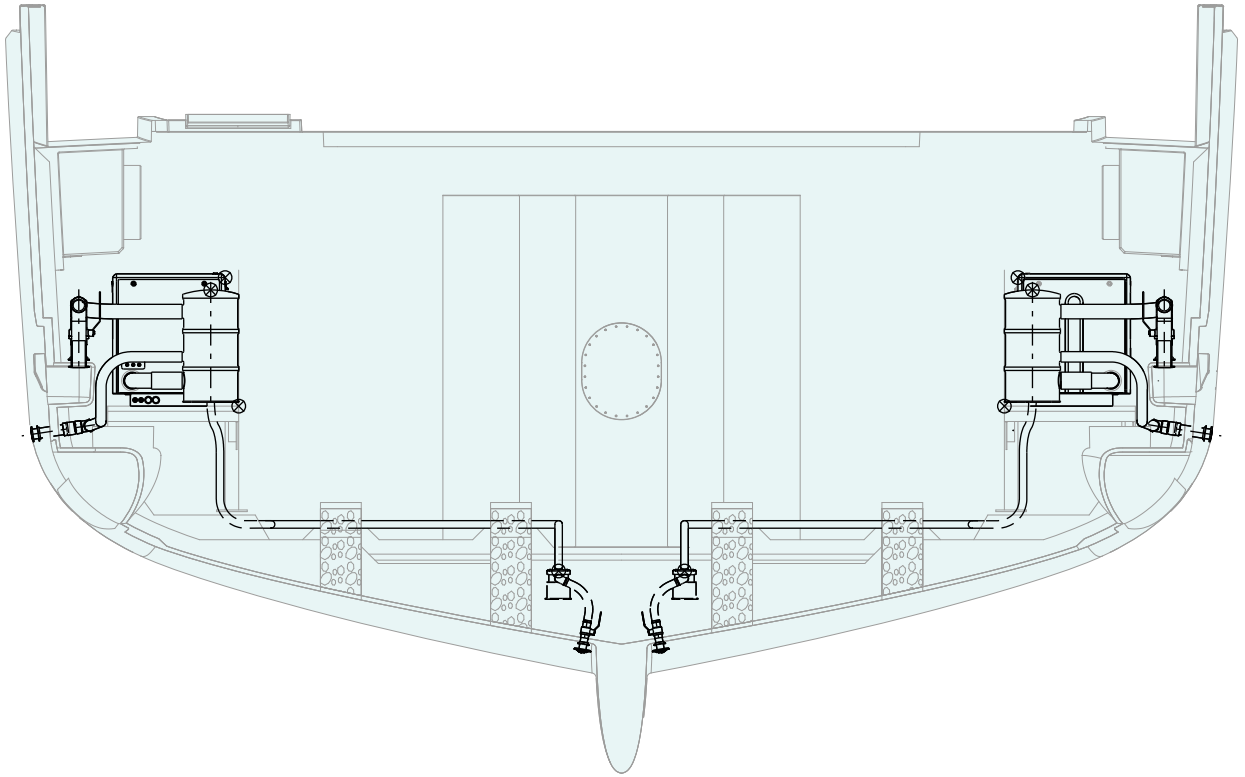
Some temperature sensors have been installed on both engine exhausts, the warning lights are visible on the fly and on the engine control panels in the helm station and they light up to indicate that the temperature inside the exhausts is too high.

7.11 MAINTENANCE OF THE ENGINE EXHAUSTS

Component	Maintenance	Notes and precautions
Exhausts	Periodical check (as necessary, according to the floating area)	Periodical check (as necessary, according to the floating area). **CAUTION** Carbon deposits, marine growths and fouling may affect the engine regular operation, causing performance degradation and serious damages.

7.12 GENERATOR EXHAUSTS SYSTEM DIAGRAM





7.13 ENGINE COOLING SYSTEM

For the cooling of the engines is used sea water that is sucked directly from the internal pumps of the engines. The sucked water, after passing through the filters, is sent to the engines, then to the inverters and finally discharged into the sea. In the event of flooding of the engine room you can use this system to pump water from the bilge in large quantities proceeding as described in "emergency bilge suction engines".

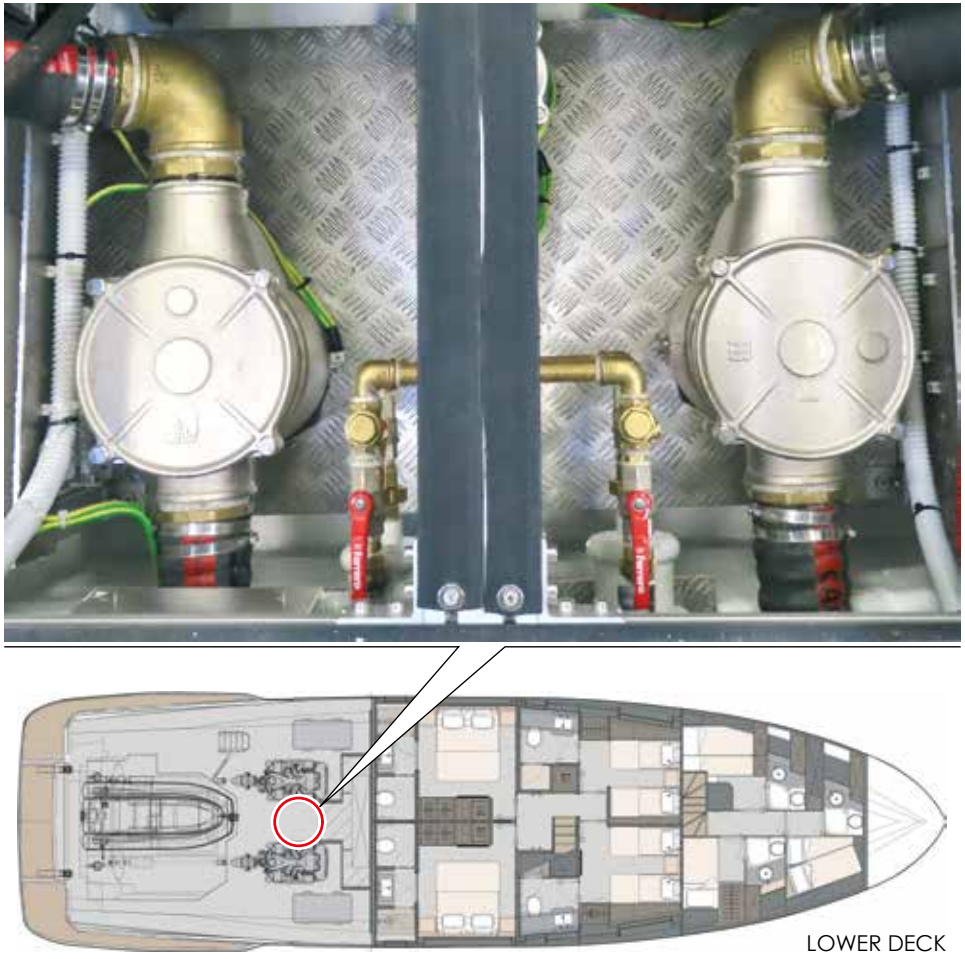
CAUTION

When the bilge is nearly dry, remember to turn the valves back to sea water intake position, in order to avoid engine damages.

WARNING

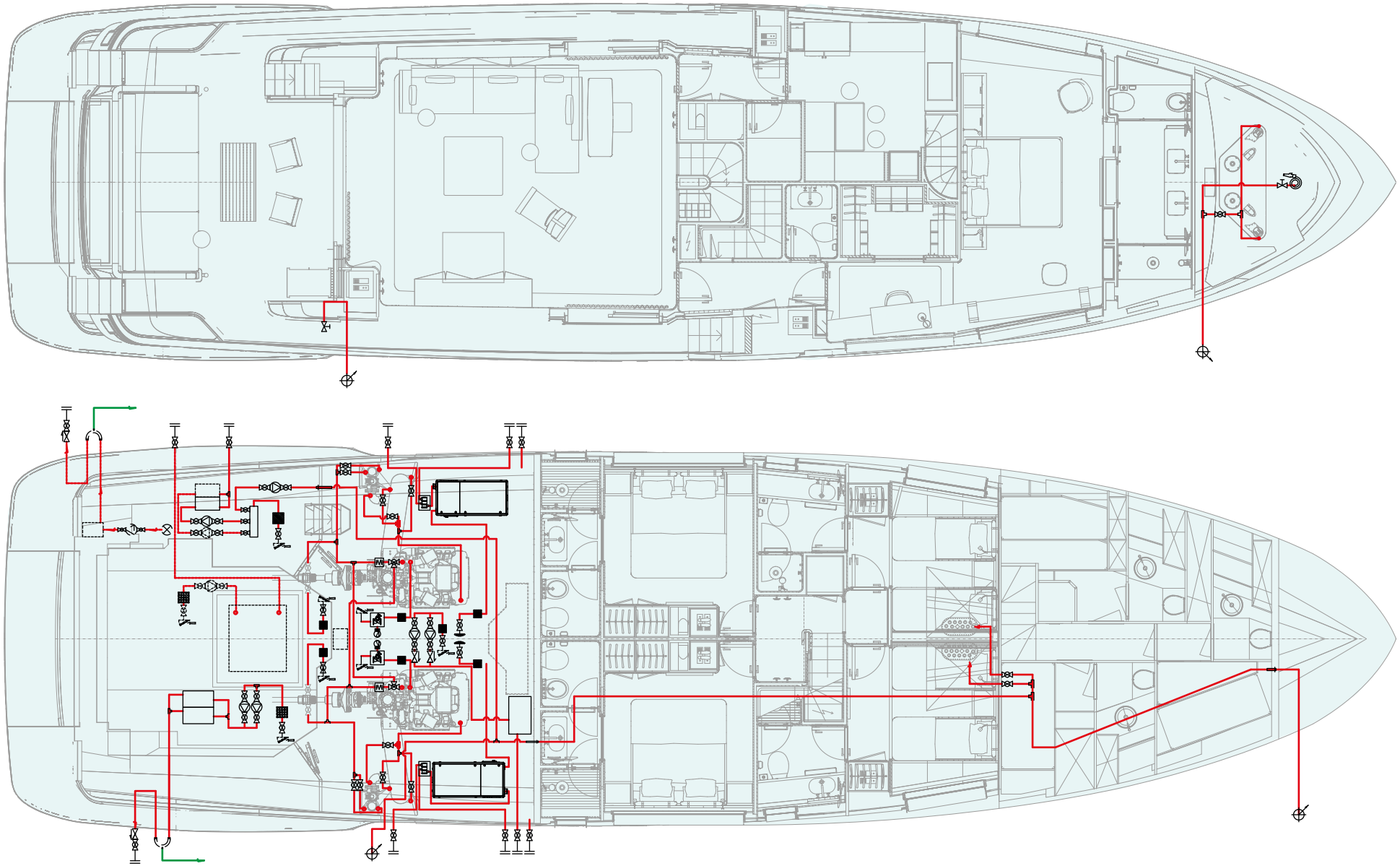
Before opening the sea cock strainer for cleaning, remember to close the cut-off valve in the hull.

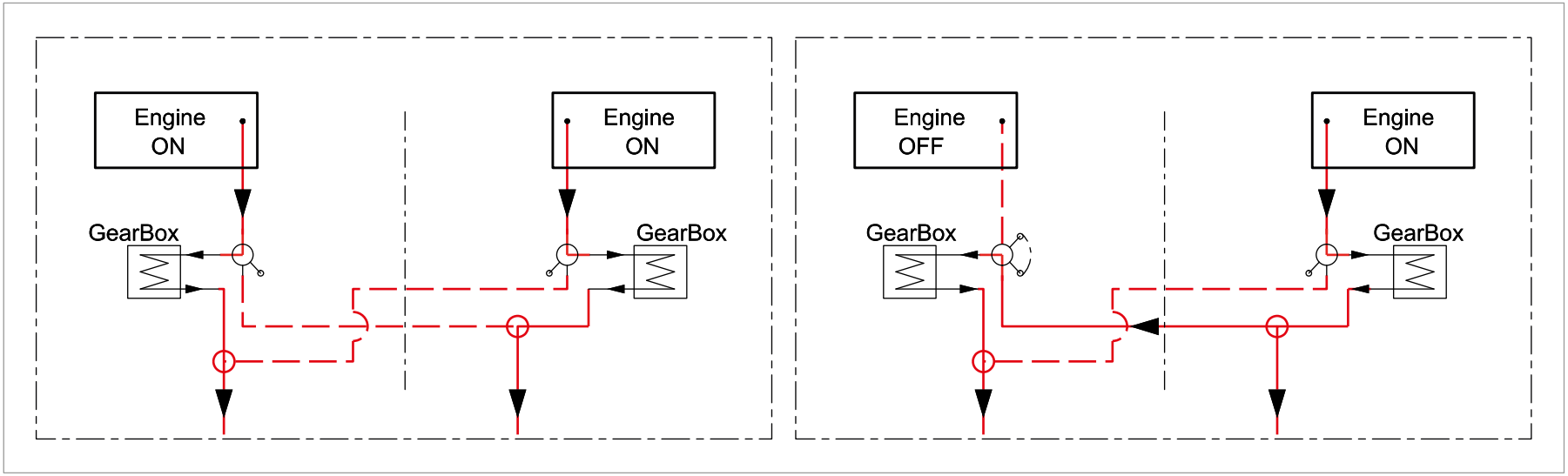
If the yacht is not used, close as a precaution, all cut-off valves of the sea cocks; as soon as the yacht is reused, remember to open them.



LOWER DECK

Engine cooling system diagram





ICON	DESCRIPTION
	Ball valve
	Over board discharge
	Anti-block valve
	Non return valve
	Sea water strainer
	Dynamic sea chest
	Static sea chest

ICON	DESCRIPTION
	Bulkhead penetration
	Fire hose - UNI 25
	Fire nozzle - UNI 25
	Sea water pump
	Gear-box heat exchanger
	3 way ball valve
	Bilge strum with no-return valve

ICON	DESCRIPTION
	Sea water system mainfold
	Valve 1" - UNI 25
	Combo sep - centek
	Sea water pipes
	Sea water pipes

7.13.1 Maintenance of valves, sea cocks and strainers

Component	Maintenance	Notes and precautions
Sea cocks, strainers and valves	Cleaning (as required according to shoring area, but at least every months)	**MAINTENANCE** At least once a week check for the correct water flow through the filters. At least once a month: • Check the integrity of the filters; • Check the correct operation of the sea cock valves; • Clean filter and the suction valve. At least once every six months: • Check the condition of the cover seal; • That the valve does not show corrosion signs; • Carry out a protection treatment by means of proper products. Cleaning is necessary more frequently if the sucked waters are particularly dirty (sea-weed, mucilage etc..). **WARNING** Before removing the filter, it is necessary to close the valve fitted to the sea cock, to prevent flooding the bilge with water. **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.

7.14 SEA INTAKE, STRAINERS AND VALVES

Inspection and cleaning

This operation has to be carried out outside, therefore the yacht must be in a dry shore or you can ask for the intervention of a diver.

- Have the sea cocks cleaned (removal of seaweed or barnacles. If necessary have them cleaned with a brush).

DANGER

If the ship is in the water, before starting to work on the shaft lines, block the start of the engines, the generators and the sea water pumps.

- Check for barnacles or corrosion on the control levers of the cut-off valves of the filter to be checked.
- Clean the control levers of the valves with a brush.
- Move the levers repeatedly.
- Close the cut-off valve upstream the strainer.
- Remove the filter cover by loosening the screws.
- Remove the filter element, clean it with a brush and rinse it in water.
- 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 for leaks from the cover.

WARNING

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

DANGER

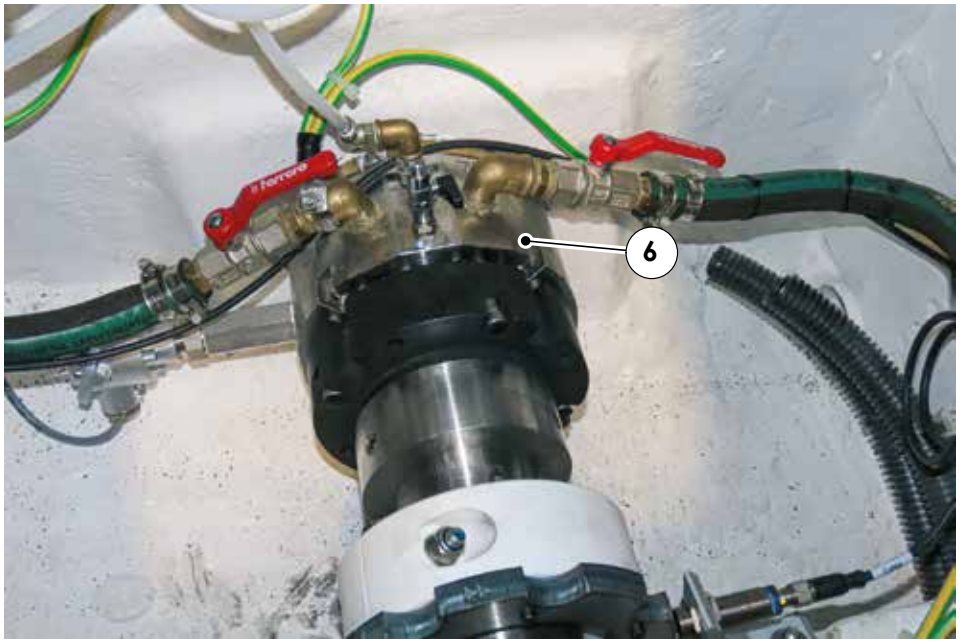
Before servicing the sea water lines, disable the operation of the connected utilities.

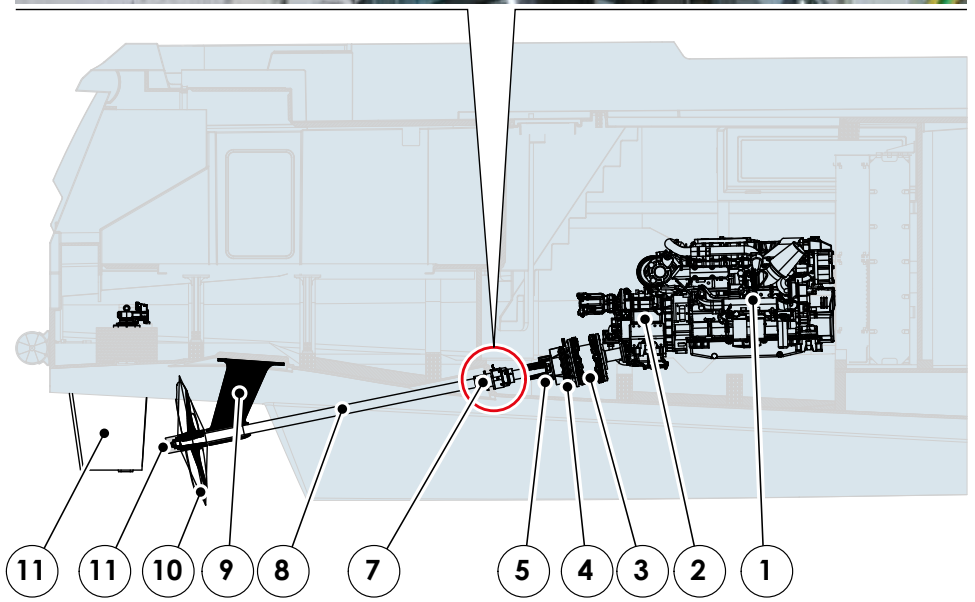
7.15 SHAFT LINE

7.15.1 Propeller shaft and through-hull seal

The propeller shaft is fastened to the gearbox by means of the flange coupling and is aligned on the three points represented by the gearbox, by a water-lubricated stuffing box seal and by the shaft support . 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.

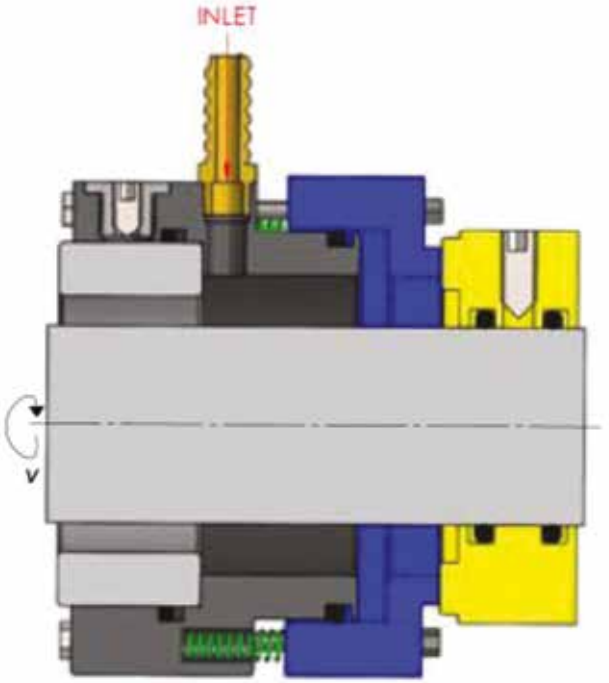




1. "MAN" engine model V8 1200
2. Inverter
3. Cylindrical flange coupling
4. Thrust bearing
5. Thrust bearing
6. Shaft seal
7. Sealing through-hull
8. Propeller shaft
9. Propeller shaft support
10. Propeller
11. Nut with spinner
12. Rudder

7.15.2 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 on.
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. On the yacht, there is the Idrostop system, which is installed between the through-hull and the fixed element.
In emergency situations, and in case of water infiltration by the through-hull, it can be put under pressure through the special pneumatic connection (Max 3 bar), returning to port, safely keeping the shaft stationary and at reduced speed.



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.
- Periodic check of the state of consumption of the galvanic/sacrificial anode.

DANGER

Never approach the shafts while they are rotating.

CAUTION

After using the Idrostop system (opt), it is necessary to contact the CUSTOM LINE After Sales & Service Department.

CAUTION

In order not to compromise the seal, it is essential never to operate it without cooling water.

WARNING

CUSTOM LINE 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.

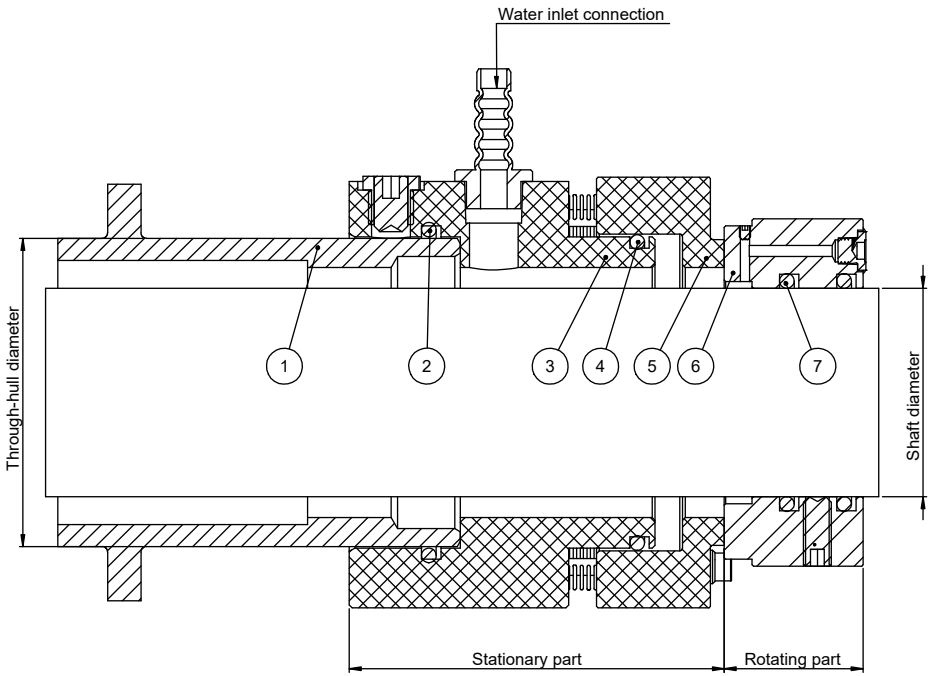
MAINTENANCE

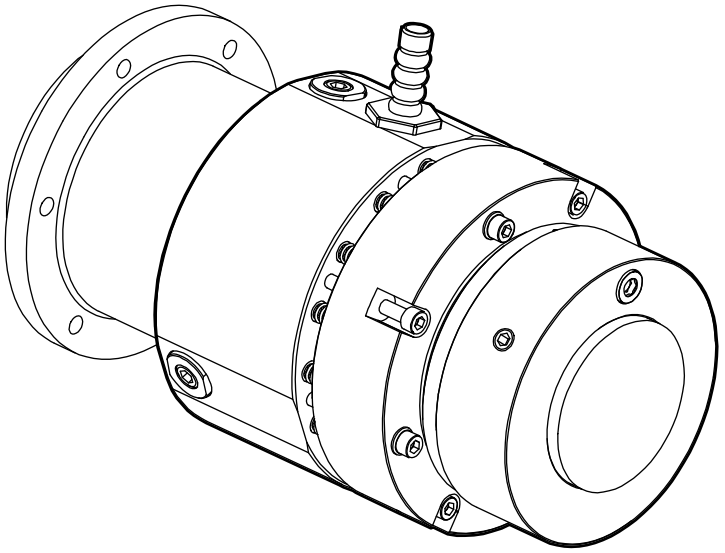
At least once a week, check that there is no water seepage.
At least once a month carry out a cleaning.
Periodically:

- 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

7.15.3 Maintenance of the shaft line and of the stuffing box seal

Component	Maintenance	Notes and precautions
Shaft support bushings	Periodical checks (at least once a month) Assembly/disassembly	The Neoprene bushing of the shaft support, during navigation 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.
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.

7.16 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

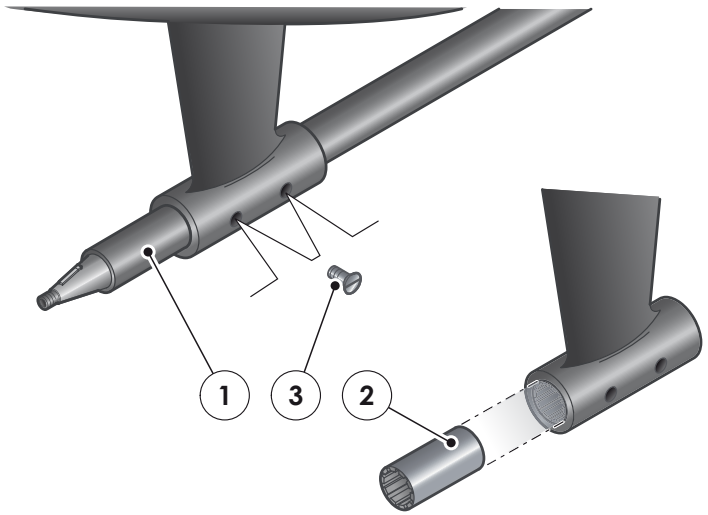
- If the propeller shaft **(1)** shows backlash, the water lubricated neoprene bushing **(2)** could be worn out; in this case replace it.
- Remove completely the antifouling to reveal the screwdriver screws **(3)** which lock the bushing positioned.
- After the propeller **(4)** and the shaft **(1)** 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)**.

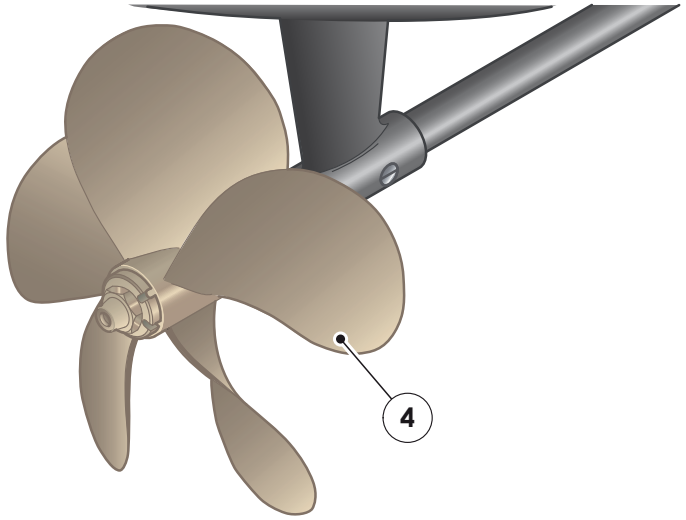
CAUTION

For spare part request contact the CUSTOM LINE 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.





7.17 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 harbour for repair, as a vibration increase might damage the propelling devices and the yacht structure.

CAUTION

CUSTOM LINE yachts are designed to obtain a correct transversal trim with full optional equipment, and with spare propellers and shafts.
If the yacht is not provided with full optional and with spare propellers and shafts, some weights are inserted to correct the transversal trim.
The above-mentioned weights can be removed or displaced as soon as the yacht is provided with a new equipment.

7.17.1 Maintenance of the propellers

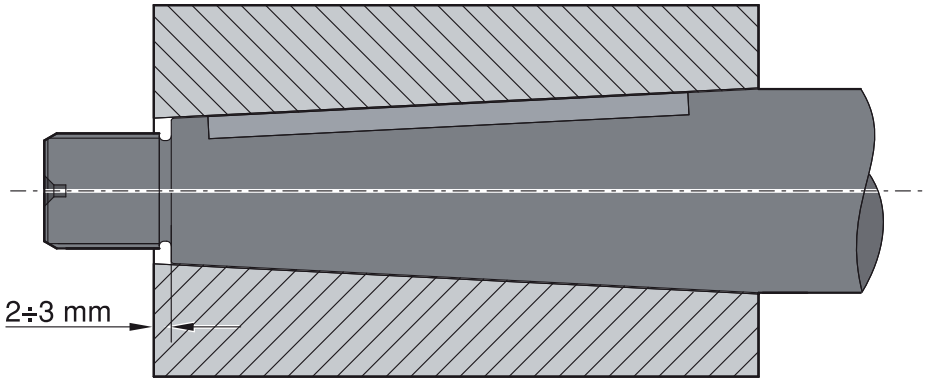
Component	Maintenance	Notes and precautions
Propellers	Periodical checks	The propeller check should be performed according to the floating waters. Inspection and possible cleaning may be carried out with the yacht in a dry shore or with the help of a diver. Check if the propeller blades have notches, fractures, fouling or barnacles which may have a negative influence on the yacht performances during navigation. If you notice corrosion, check the anodes conditions and replace the propellers for major failures.
	Assembly/disassembly	The starboard and port propeller are not interchangeable between them neither with others as designed according to specific features of your yacht. Replace only with genuine spare parts supplied by the CUSTOM LINE After Sales & Service Department.

7.17.2 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 **(1)** is conical and a little key allows the coupling with the propeller **(4)** which must be inserted up to the shaft catch and leaving the propeller stretching out from the shaft plane of 2÷3 mm.

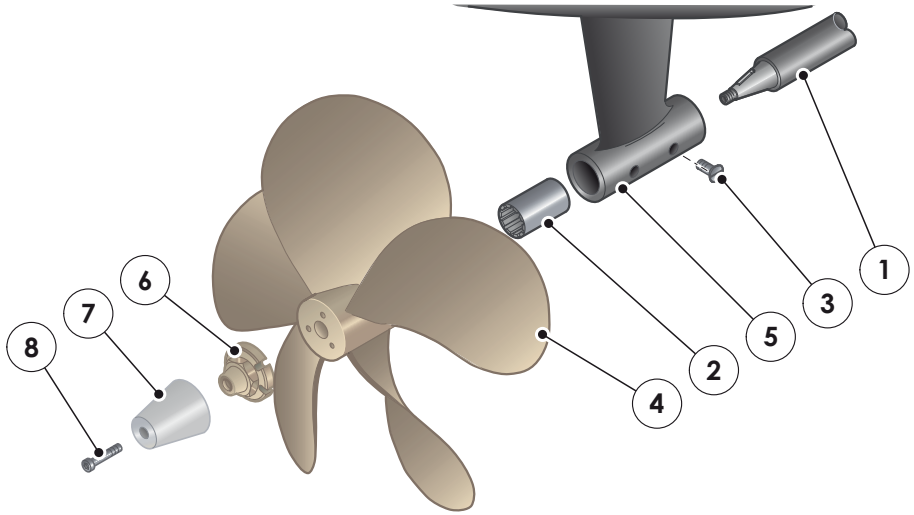


CAUTION
Do not replace the propellers of your yacht with other of doubtful origin.
Contact the CUSTOM LINE After Sales & Service Department.
Each yacht model has its own propeller.

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 **(6)** locking the propeller **(4)** on the shaft **(1)**;on the propeller hub there are three holes to 120°. Tighten as necessary to insert the dowel **(9)**,to avoid natural loosening.
For disassembly keep an extractor at disposal so as not to deform the propeller **(4)**.
In case of obstacles or excessive sticking, heat the propeller **(4)** to expand the coupling and ease the removal.

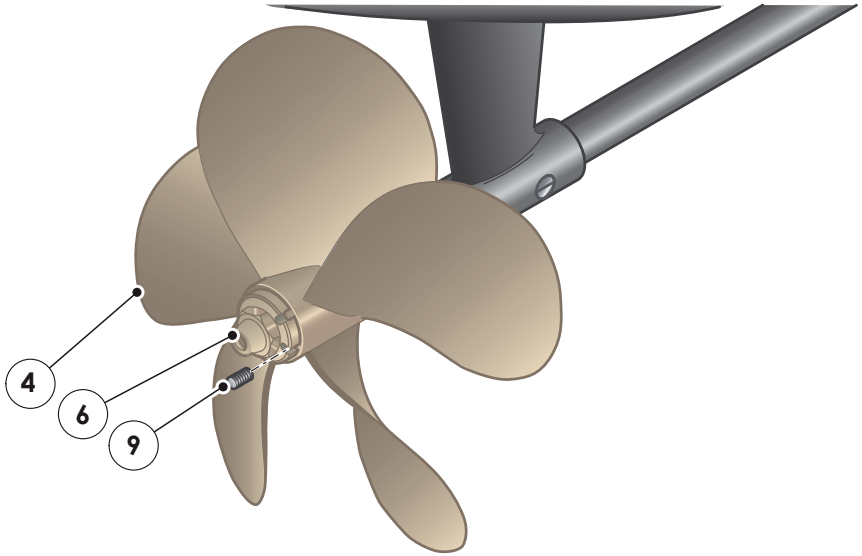
CAUTION

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. Propeller shaft
2. Shaft support bushing
3. Countersunk screws with notch
4. Propeller
5. Shaft support
6. Nut
7. Propeller anode
8. Screw
9. Dowel



CUSTOM LINE

BEYOND THE LINE

Navetta 30

8

Maintenance

8.1 GENERAL MAINTENANCE OUTLINES

The yacht is equipped with large number sophisticated devices and systems, which require not only a certain care when it comes to use, but also regula 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.
For further specific information referring to the maintenance schedule, see the Manufacturer Manuals for on-board devices/components, issued by the various Manufacturers.

CAUTION

Check periodically that all equipment containing water is filled with the correct amount 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 both the sea water systems (for instance the engine cooling system, the generator cooling system) and the fresh water systems (for instance the windscreen washer system, the fresh water pump, etc..), that is: all systems and devices containing either fresh or sea water.

WARNING

Prior to carry out any maintenance and adjustment task on the yacht, turn all necessary safety devices on and consider informing all personnel operating nearby. In particular, place warning signs in the areas concerned and prevent any device, if operated, from causing unexpected hazardous conditions, thus endangering the persons on board and/or property.
To avoid pollution, do not scatter any type of waste in the environment, and only use the dedicated disposal areas in the harbours.

CAUTION

When working in the engine room, switch magneto-thermal switches of the bilge automatic pumps off, to prevent that fuel, lubricants and other liquid spilling causes sea pollution.

CAUTION

CUSTOM LINE declines all responsibility for the installation and operation of electric, electronic and mechanical equipment improperly installed by third parties in a manner not authorized by the Shipyard.
CUSTOM LINE declines all responsibility with regard to tampering carried out by third parties on equipment installed in the Shipyard. Such unauthorized tampering, besides causing the immediate lose of warranty rights, can cause damages to the yacht and to persons on board.
CUSTOM LINE declines all responsibility concerning regular maintenance activities scheduled by the Shipyard or by Manufacturers, but not carried out, of equipment/components, for which it is necessary to refer to their own Technical Manuals.

8.2 SAFETY FOR MAINTENANCE

CAUTION

Prior to carry out any maintenance and adjustment task on the yacht, turn all necessary safety devices on and consider informing all personnel operating nearby. 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.

Do not scatter any type of waste into the environment, to avoid pollution, and use only the dedicated disposal areas in the harbours.

The yacht is equipped with a great deal of complex equipment and systems, that require periodic checks and maintenance.

One factor that can lead to breakdowns or inconveniences is the irregular use of the yacht.

It is in fact known, that mechanical devices have less troubles if used regularly.

We recommend therefore, to have all on board devices regularly operate, to avoid unpleasant surprises.

If you have to leave the yacht unattended for a long period, (as often happens during the winter), we advise you to cover it in a dry shore and carry out all pre and post dry shore operations.

CAUTION

While working in the engine room, it is obligatory to disconnect the magneto-thermal switches of the pumps of the bilge automatic draining system, in order to prevent fuel, lubricants and other liquids to accidentally spill out, thus polluting the waters around the yacht.

8.3 MAINTENANCE SCHEDULE

The services schedules in the table are described in the single operation diagrams.

Before each start-up	Check oil and engines water levels Check generators oil level
Before navigation	Check oil level and pressure in the steering system
Every 10 hours service	Check oil levels of all electro-hydraulic systems
Every 24 hours	Check the condition of the stuffing box cases

CAUTION

After approximately 10 hours of navigation, tighten all hoses clamps, this operation has already been done at pre-start, but has to be repeated because of settlings and expansions.

8.4 LONG PERIODS OF YACHT INACTIVITY

The following list only represents a general guide to give the customer an idea of the ordinary maintenance operations 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.

- **Engines**
  Before winter time let fresh water flow into the sea water circuit, check the antifreeze liquid, the sacrificial anodes against the galvanic currents, remove salt build-ups and spray protective agents. Carry out the scheduled maintenance of the propulsion engines, indicated in the Use and Maintenance section.

- **Generator**
  Use the same procedure as for the engines.

- **Gear boxes**
  Carry out the scheduled maintenance for gear boxes.

- **Batteries**
  Check the liquid level and regularly charge the batteries, protect the terminals with vaseline grease; even better would be to disconnect the batteries from the system and to charge them periodically with a separate battery charger, but this is not always possible on ships.

- **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.

- **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 inner tapestry**
  Cover the cushions of sofas with cloths and above all cover all windows with the relevant covering cloths, so that as less 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 for washing the deck mechanical means or the forced water jet (eg. Power washers etc..), since such force alters the wood by caulking and sealants (detached microparticles) causing damage in some cases even radical (eg. detachment of the seam from the daggers).

CAUTION

DO NOT use for washing the deck alkaline based detergents, acidic or with aggressive agents (soda, solvents, ammonia. etc..); their aggressive degreasing action erodes the wood (eliminates its natural water repellency, and it whitens its natural colour), while the sealant by caulking modifies the physical and chemical quality, softening the part surface, damaging the waterproofing, sealing el ' 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 for wear and, if necessary, replace the hull anodes, prop shafts, and trim tabs, 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 winches**
  Protect the electrical components with a suitable protective spray and lubricate with silicon grease clutches and wildcat.

- **Grey water tank**
  Pour sterilizing products into the washbasin drains, showers sterilizing products. Empty the tank and clean verifying the floating efficiency.

- **Black water tank**
  Pour a sanitary product containing Paraformaldehyde (for instance T5 available in camping equipment shops) into the WCs and rinse the tank with this mix a couple of times. Drain the tank completely.

- **Tender engine**
  Wash with the fresh water contained in the cooling system of the engine. Carry out the maintenance as recommended by the supplier.

- **Air conditioning**
  Before winter:
  - Let water flow in the sea water system.

  After winter:
  - Check the anti-freeze mixture 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.

- **Jet-ski**
  Wash with fresh water contained in the cooling system.
  Carry out the maintenance suggested by the supplier.

- **Bow/Stern thrusters**
  Protect the electrical components with proper spray and check the oil level.

- **Electro-hydraulic control units**
  Protect with the proper sprays and check the oil level.

- **Hydraulic steering system**
  Check the operation and top up oil if required.

- **Refrigerators**
  Cleaning and protection for those located on the sun deck should the yacht remain in the open.

- **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..

- **Water tanks**
  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 into the fuel.

- **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.

- Check all deck, upper deck and sun deck lights.
- Clean all cabins and inspect all dunnages on-board.
- Check all hatches seals and lubricate their contact with appropriate silicone lubricant.
- Clean fan coils with an air jet, sucking the dust from the back net.
- Inspect the outer hull and all components: propellers, anodes, shaft lines, supports, rudders, interceptors, fan coils, sea cocks, bow/stern thrusters.
- 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.
- Repair damaged equipment. If necessary, fit new ones;

DANGER

During charging, the batteries produce explosive gas. Do not approach the recharging area with free flames or sparks.
Avoid wrong connections; never connect a positive terminal (+) with a negative one (-).
During battery recharge, remove the caps of the relevant elements.

8.5 RE-USE OF THE YACHT AFTER LONG INACTIVITY

- **Engines:**
  After the winter, check engine and gear box oil and change, 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.
- Start the engine of the power generator.
- Verify the hull.
- Have the bottom hull accurately cleaned, as well as the rudders and trim tabs with brushes (water) or a jet-cleaner (dry) to remove seaweed and scales.
- Have the paint of the bottom hull checked. If necessary, have 2 coats of suitable antifouling paint applied by specialized personnel.
- Verify the propeller condition and possible leaks from the seals of the shaft lines, if necessary adjust them.
- Check the conditions of the sacrificial anodes; if necessary, replace them.
- Check the charge of the batteries, and that their terminals and housings are dry and clean.

CAUTION

As consequence of a long yacht inactivity carry out all above listed operations and following checks:

a) Check the condition of all hoses and connections of the steering system, interceptors, gangway.
b) Start the engines.
c) Stop the engines.
d) Clean fuel filters. Replace engine oil filters and add oil to the engines if necessary.
e) Check all bilge pumps and their operation.
f) Check the operation of the black water, grey water and sea water pumps.
g) Check the operation of all board instruments used for navigation.

8.6 MAIN MAINTENANCE OPERATIONS

8.6.1 General maintenance - Hull and Furniture

Component	Maintenance	Notes and precautions
Gel-coat **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. **MAINTENANCE** At least once a month perform an accurate cleaning of all fibreglass parts. At least once every six months check the status of the fibreglass. When necessary, but at least once every two years, polish all fibreglass parts.	Formation of bubbles Regular cleaning (as required)	In some areas of the yacht, bubbles may generate on the gel-coat; these bubbles can break over time, thus exposing the fibreglass underneath. The drawback occurs generally in vicinity sharp angles, and depends on air bubbles that, during fabrication, remain entrapped between fibreglass and gel-coat, although quality checks are carried out by specialised personnel. Broken gel-coat bubbles are easy to repair by filling the voids and touching up with gel-coat that can be requested from the Service Department of the Shipyard. **CAUTION** Always wash using neutral products. In case of particularly persistent dirt, do not use products containing ammonia which can turn the surface yellowish.
	Formation of cracks Regular cleaning (as required)	When underway, some structural parts of the yacht are subject to bending, and create tension or compression stresses in fibreglass and on gel-coat, the different elasticity of gel-coat and fibreglass, can cause small cracks on the gel-coat surface, in particular in the more stressed areas, e.g. near cleats, stanchions, etc.. Such drawback, however, does not compromise fibreglass mechanical and structural characteristics. **CAUTION** To remove possible gel-coat, do not use sandblasting methods that may damage the surface of the anti-osmosis resin applied and could expose fibres. As suggested by gel-coat Manufacturers, use suitable products or, as an alternative, wet sand.

Component	Maintenance	Notes and precautions
Wood and upholstery	Regular cleaning (as required)	Light and moisture are the worst enemies of these materials; do not expose them to direct light as often as possible, and ventilate the indoor spaces whenever allowed by the weather. It is extremely important the use of windows covers: any kind of wood, both natural and coated, will experience discolouring when exposed to sunlight. The types of wood used for equipment and facilities of the yacht are exclusively natural-based materials that are carefully selected and the painting cycles with which they are treated are compliant with environmental standards. Owing to the natural origin both of the materials and the treatments, the wooden furniture not suitably treated and maintained could be subject to: • Variations in colour shade due to a direct, continuous exposure to light. It is advisable to shade the highly exposed parts with the inner curtains supplied with the yacht. • Dirt retention if not immediately cleaned, owing to the characteristic absorbency of the wood fibres. It is advisable to use non-aggressive products. • Scratches and markings if in contact with sharp or metallic objects due to the inevitable "softness" of wood. Although the manufacturing processes had been deeply studied and tested, the furniture, equipment, and facilities made of natural wood can be subject to variations in colour shade over time as a consequence of the "natural" maturation due to ageing. In spite of the painting cycles developed after so many years of experience, wood remains a "living" material and is therefore subject to movement and settlement. Scratches causes by bumps must be repaired immediately, to avoid the blackening of the wood below. The technical staff of the CUSTOM LINE 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. **CAUTION** 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.

Component	Maintenance	Notes and precautions
Wood and upholstery	Regular cleaning (as required)	**CAUTION** 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. CUSTOM LINE reserves the right to evaluate any problems and its own responsibility according to case. **MAINTENANCE** 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. **CAUTION** Current use: • 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. Cleaning: • Remove ordinary dirt with a warm water solution and neutral soap: do not use deter- gents or solvents; • Dry with a soft rag, not leaving any residues. Preservation: • Store clean and dry upholstery in a cool, ventilated room with no moisture; • Do not place heavy objects on upholstery when stored.

Component	Maintenance	Notes and precautions
Ceilings Panels	Regularly check the flatness of the panels and / or any discontinuities or steps between the ceilings panels.	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. **WARNING** 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. 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.

Component	Maintenance	Notes and precautions
Light alloys and stainless steel	Regular cleaning (as required)	It is a good rule to accurately wash the entire yacht after each navigation, in particular all metal parts that may be damaged by saline humidity. Spray plenty of fresh water on handrails, windows, skylights, rub rail, anchors, cleats and ladder. Regularly protect all metal parts with Vaseline oil. **CAUTION** The main deck and panoramic deck windows are not watertight; therefore, do not direct the water jet towards them when washing. **MAINTENANCE** At least once a year check the fastening of all metallic parts of the yacht. **CAUTION** Never use brushes or abrasive cloths on metal fittings, not even on rusty spots, scratches on the surface, as this will cause a less shiny appearance and diminish the mechanical features.

<table>
<tr><th>Component</th><th>Maintenance</th><th>Notes and precautions</th></tr>
<tr><td>Sun-deck cushions</td><td>Regular cleaning
(as required)</td><td>Remove the cushions from the seats at regular intervals and let their under side 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.

CAUTION
Current use:
• Do not walk, nor jump on the cushions;
• Prevent the cushions from becoming yellowish due to direct exposure to sun rays;
• Prevent the absorption of water or of moisture by leaving the tapestry exposed to bed weather, particularly during periods of inactivity.
Cleaning:
• 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.
Preservation:
• Store tapestries clean and dry into a fresh and ventilated room without moisture;
• Do not place heavy objects on the tapestries when stored.

MAINTENANCE
At least every 6 months check seams and fasteners.
At least every month carry out the washing of the cushions.</td></tr>
</table>

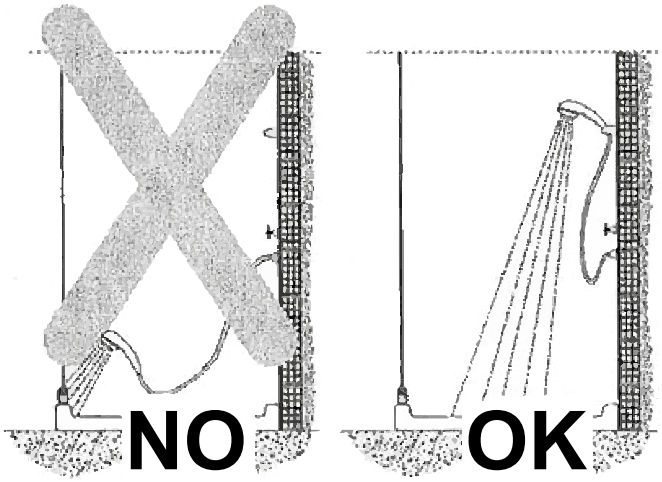
Component	Maintenance	Notes and precautions
Sun-deck cushions	General Care and Cleaning Guide	• For light soiling, a solution of 10% PH neutral soap in warm water, applied with a soft damp cloth. Rinse with clean water and dry. • For heavy soiling, dampen a soft white cloth with a one to one (1:1) solution of an all-purpose and dye-free household cleaner and water. Rub gently and rinse with a damp cloth. **CAUTION** Do not use with alcohol-based cleaning agents! **CAUTION** Do not use aggressive detergents and/or solvents, which will cause immediate damage and contribute to the deterioration of the material.
Metallic parts and connectors	Periodical cleaning (as required)	Grease connectors and metal parts of the devices installed and exposed to moist and salty environment to prevent oxidation; pay particular care and attention to the above-mentioned components of the steering system, gangway, hatches and control units, etc..

Component	Maintenance	Notes and precautions
Windscreen/windows	Regular cleaning	**CAUTION** Rags and chamois leathers used for cleaning glass must be replaced at least every 3 months. The inner side of windows and windscreen can be cleaned with non-aggressive and non-acid detergents for glass and a soft or paper cloth. **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. **CAUTION** For cleaning the outer side of coloured or mirrored (pyrolytic) windows and windscreen: • 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 windscreen it is possible to use the same type of detergent used for internal cleaning (non-aggressive and non-acid).

Component	Maintenance	Notes and precautions
Windscreen and deck-house 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 wear, please contact the Service Department.
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 blades conditions regularly, and replace the blades if worn; this prevents bad visibility problems.
Plexiglass	Regular cleaning (as required)	It is very important, especially after a wave sailing, the plexiglass to be washed very well. You still have to pay close attention to well remove the salt formations exclusively with a fresh water jet, because any rubbing of salt crystals scratched inevitably the plexi-glass surface. The intermittent treatment with polish or wax will make the plexiglass as “brilliant” and protect them better against the elements.

Component	Maintenance	Notes and precautions
Instrumentation and navigation lights	Regular cleaning (as required)	Use clean wet rags for cleaning. **MAINTENANCE** At least once a week check the operation of the navigation lights. At least once a week carry out careful cleaning of glasses and headlights. At least once every six months check the presence of corrosion in the connections of the navigation light cables. At least once every six months, tighten the cable connections of the navigation lights. **MAINTENANCE** At least once a week check the operation of the gauge cluster in the fly and of all instruments on board. At least once a week carry out cleaning. At least once every six months, protect the piston for fly gauge cluster opening with proper products. **CAUTION** Do not use chemical or abrasive products. After navigation, it is advisable to cover the instruments and equipment.
Light fittings	Regular cleaning (as required)	DO NOT use alcohol-based products to clean the light bodies.

Component	Maintenance	Notes and precautions
Teak	Periodical cleaning (as required)	The teak characteristic is to be very resistant to weathering and therefore does not require maintenance. The teak wood over time tends to assume a particular silver colour that might not like; in this case, wanting to restore the colour that teak does when the yacht delivery, you need to paint it periodically with specific products (eg teak wonder). If the wood has smears that is not able to remove with normal washing, it is necessary to sand the wood to remove stains, and then repainted with wonder teak. **CAUTION** Do not clean the teak with stiff brushes, as exercising the longitudinal rubbing the vein, it removes the softer grain of the wood. 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.

Component	Maintenance	Notes and precautions
Shower	Checking and replacing gaskets	**CAUTION** Carry out regular maintenance and/or replacement of the shower box seals, in order to prevent water leakage. **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.  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.

Component	Maintenance	Notes and precautions
Bottom hull	Periodical cleaning and check of antifouling treatment (as required according to stationary area, but at least every three months) Check/restoration Preparation of the surface of an already treated yacht	The length of the antifouling effects depends mainly on the conditions of the waters where the yacht is stationary. **CAUTION** To remove the old antifouling, do not use sandblasting methods, as this may damage the gel-coat surface and the anti-osmosis resin applied by the Manufacturer. As suggested by the antifouling manufacturers, use paint removers or, as an alternative, wet sanding. The Shipyard uses high-quality ant-fouling paint and applies two layers. **CAUTION** Bad maintenance condition (barnacles, etc..) may cause cavitation and damage shaft, rudders, propellers, etc.. **CAUTION** Small areas of paint may peel off from the propellers even after a short period of operation.

8.6.2 Bottom hull

Antifouling treatment
If scales builds up on the hull, this causes a remarkable speed reduction and with time may damage the "gel coat". When you choose an antifouling paint for your yacht, it is important that you find the proper product, suited for your yacht and for the waters in which you are going to navigate.

Ask CUSTOM LINE After Sales & Service Department for advice.

Check/restoration
The yacht cleaning and checks have to be carried with yacht at dry shore or with the help of a diver. Have the restoring only with yacht at dry shore.

WARNING
When cleaning or checking, in the water, engines and generators start up must be inhibited.

CAUTION
Some bottom hull areas (fastening area of thruster shaft support base, submerged drainage areas, around the thrusters and shaft exits, etc..) where machining can be carried out after hull pressing; in this areas fillers can be used which may produce local faults, like bubbles or small cracklings.
These little faults do not impair the hull mechanical strength at all. To repair them just sandpaper the area, remove the bubbles, and apply fillings suitable for the bottom hull.

- Have the bottom hull accurately cleaned, as well as the rudders and trim tabs with brushes (water) or a jet-cleaner (dry) to remove seaweed and scales.
- Let check the paint situation of the bottom hull. If necessary, have 2 coats of suitable antifouling paint applied by specialized 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. Verify that the new product is compatible with the old one.
Ask CUSTOM LINE After Sales & Service Department for advice.
If the old anti-fouling 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 paddle wheel;
- Sacrificial anodes;
- Shafts and propellers;
- Porous copper plates.

8.6.3 Maintenance of the electric system

Component	Maintenance	Notes and precautions
Equipment and circuits	Cleanliness check	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. Have the absorption of the different electric motors periodically checked by skilled personnel. When cleaning the bottom hull, carefully clean the electronic instrument ground static discharger and the porous plate to which is connected the power generator grounding. 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. **MAINTENANCE** At least once a week check the operation of all electrical panels. At least once every six months: • Check the possible presence of damaged cables; • Protect the various contacts.  **DANGER** Before starting to work on electrical panels or devices, prevent the generators' operation by disconnecting the electric power supply from shore and the inverters.  **DANGER** Do not modify the electric systems or relevant drawings. The installation, modifications or maintenance must be carried out only by skilled naval electricians. Periodically inspect the system.

8.6.4 General maintenance - Propulsion devices

Component	Maintenance	Notes and precautions
Shaft and propellers	Periodical checks (as necessary, according to the floating area)	The propeller shaft is fastened to the gear box by means of a bolted flange and is aligned on the three points represented by the gear box, by the stuffing box seal and by the outer support arm. All you need is a regular inspection. Seawater dynamically cools the seal as the yacht moves, the water passes through the engine seawater filter. We recommend you to consult the instruction manual supplied by the Manufacturer. **CAUTION** Continuous navigation at a low speed, both forwards and backwards (such as for fishing), can cause the seals to overheat and, consequently, their irreparable damage. **CAUTION** At least once a week check for water penetration. At least once a month carry out the cleaning. Periodically: • Check the status of the seals; • Check the compression of the seal and when necessary carry out the compression. • Check and service the cooling circuit of the seals in order to prevent dirt, seaweeds and foreign bodies from blocking the cooling water flow, thus causing the seals to overheat and, consequently, their irreparable damage.

Component	Maintenance	Notes and precautions
Shaft support bushings	Periodical checks (as required according to stationary area, but at least every month)	The outer support arm includes a Neoprene bushing which uses the sea water as a lubricant. The Neoprene bushing, during navigation 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.
Trough-hull stuffing box	Periodical checks (as required)	We suggest to clean periodically the suction strainers for the seal cooling. Cleaning depends on the conditions of the sucked waters (seaweeds, mucilages, etc..). Before removing the filter, it is necessary to close the valve fitted in the sea cock, to prevent flooding the bilge with water. A spare propeller shaft should always be kept on board (an housing for a spare shaft has been arranged in the engine room, the shaft can be removed from the aft transom).
Propulsion engines	Periodical cleaning (as required)	For inspection and maintenance refer to specific manual.

8.6.5 General maintenance - Hull

Component	Maintenance	Notes and precautions
Sacrificial anodes	Periodical checks (as necessary, according to the floating area)	The submerged metallic parts are protected against galvanic corrosion (caused electrolytic currents due to the approach of different metallic bodies as steel or aluminium) by means of sacrificial anodes (zincs) fitted on the bottom hull, on the interceptors and on the propeller shafts. Check for the anodes wear very frequently, as it depends also (and highly) on environmental factors like sea chains nearby, metal posts or shores, metal hulls moored nearby, electric devices, etc.. The replacement is necessary if wear exceeds 50%,i.e. when the anodes volume has halved. The check must be carried out with yacht in a dry shore or with the help of a diver.
LOG - speed multi-sensor with valve	Periodical checks (as required according to stationary area, but at least every month)	We suggest you to keep the LOG paddle wheel always clean, because possible deposits or sea buildups could alter its rotation and the data sent by the transducer. Clean the surface of the multi-sensor with detergent. If scales are resistant use an hart brush paying attention not to scratch the surface. To carry out cleaning pull out transducer from its seat. When the yacht is not operated for long periods of time it is advisable to use the blanking plug. **MAINTENANCE** 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.

8.7 MARBLE MAINTENANCE

THE WORST ENEMIES OF MARBLE ARE:
Some substances damage marble more than others.
Keeping them away from surfaces, or at least removing them promptly as soon as they come into contact with the marble is very important if you want to preserve its appearance.

The worst enemies of marble surfaces are:
1. Water: a enemy of marble, especially that with a high presence of limestone. If it settles on marble surfaces and is not dried, it can ruin them in the long run.
2. Coffee, wine and dyes: as dark substances, coffee, wine and other food dyes can damage marble when they come into contact with it.
3. Tomato sauce: tomato sauce, when it stains, is very difficult to remove, and the same applies to marble.
4. Polishing wax: marble should be polished from time to time, but never apply too much wax to avoid risking obtaining the opposite effect, i.e. making it dull.
5. Sugary substances: fruit, juices and sweet substances, if deposited on marble, can corrode it, ruining its natural lustre. If they accidentally fall on the marble, they need to be cleaned quickly.

HOW TO CLEAN MARBLE:
1. Damp cloth: If the stain to be removed is not particularly stubborn, a damp cloth can be used to clean marble surfaces and achieve an excellent effect.
   It is important to always remember to dry the surface, otherwise, limescale will damage it.
2. Marseille soap: Marseille soap is also perfect for cleaning marble surfaces. Lightly dampen a cloth and rub it lightly on the soap, then wipe the marble. After rinsing, carefully dry the surface, which will look as good as new.
3. Hydrogen peroxide: Hydrogen peroxide is another product that can have infinite uses, including cleaning marble.
   Put a drop of hydrogen peroxide on a damp cloth and rub it on the marble surface to quickly restore its shine.
4. Baking soda: Baking soda is another useful substance for cleaning marble.
   Put a tablespoon of baking soda in a glass or container and mix. The resulting compound is a slightly abrasive paste that will penetrate the marble, freeing it from foreign substances, the stains.
   Baking soda is also perfect for polishing, so the marble will look shinier after the treatment.
5. Detergents for marble: On the market, you can find numerous special detergents for cleaning marble surfaces.
   They are very useful for those who have large marble surfaces to wash, such as floors.
   Make sure that the detergent is not too acidic and aggressive, or the surface will be weakened over time and more susceptible to stains.

HOW NOT TO CLEAN MARBLE:

CAUTION
Do not use generic household cleaners of any kind.

Cleaning marble with products purchased in non-specialised shops that contain acids, alkalis and other chemicals can mark or damage the surface, leaving the stone more vulnerable to staining.
The most common and popular household cleaners are too aggressive for use on marble and can cause damage.
Trying to save time by using low-end products such as general surface cleaners will only lead to expensive repairs or marble restoration.

CAUTION
Do not use vinegar, ammonia or lemon juice.

Powders and even “soft” creams contain abrasives that can scratch and dull the surface.
Detergent soap scum and water are the main contributors to bathroom wear.
Use only specific detergents for marble to avoid most marble cleaning problems.

CAUTION
Do not place toiletry products on the worktop.

Hair products, toothpaste, perfumes, colognes, nail products, creams, lotions and potions can stain or mark the surface leaving dots, rings or dull areas.
Protect surfaces by making sure these products do not come into contact with the marble.

8.8 TROUBLESHOOTING

The yacht is equipped with a large number of complex devices and installations.
These require regular checks and maintenance to keep their operation correct.

One of the factors that might lead to problems or faults, is usually the irregular use of the yacht and, as a consequence of this, of the on-board devices.

Experience has shown that the regular use of the devices normally means fewer problems and , therefore, we recommend regularly operating all on-board devices for short periods.

When an on-board problem is detected, it is essential to carry out a quick check in order to understand its cause and, if possible, to find a remedy. In order to analyse a malfunction it is appropriate to ask the following questions:

- Is the malfunction caused by a human error?
- Is the malfunction due to bad weather conditions?
- Is the malfunction due to a device failure or to a fault of another external device, but in some way connected to the first one?
- At what stage does the malfunction occur: at the start, at steady state, at device switch OFF?
- Does the malfunction occur repeatedly; if yes in which way?
- What does the malfunction imply from an operating point of view?
- Does the malfunction trigger any signals (luminous and/ or acoustic: sirens, buzzers, etc..) and/or messages on a display and/or anomalous noises (like whistles, beats, buzzes, etc..) and/or anomalous smells (burning smell)?
- Does the malfunction interfere with the operation of other devices?
- Is the malfunction a real apparent fault (that is, it can be cleared after a device reset and following switch ON).

The best, most complete answer we can give to the previous questions, will give us a malfunction analysis.
This section of the Manual analyses the most likely causes, that may lead to the malfunctioning of a component of the main components/ devices on board. For any possible analysed cause, a corrective action is advised, in order provide a solution to the problem that is as effective as possible.

WARNING
We recommend, in order to operate with peace of mind, in full safety, taking good note of the Safety Rules relevant to Maintenance described in the “SAFETY RULES”.

WARNING
Corrective actions may only be carried out by specialised and authorised personnel.
CUSTOM LINE decline any responsibility for proposed corrective action carried out by unskilled personnel.

CAUTION
For more detailed information refer to the various Manufacturers’s Service Departments or contact the CUSTOM LINE After Sales & Service Department directly.

CUSTOM LINE

BEYOND THE LINE