OWNER'S MANUAL

PARDO 43

GRAND SOLEIL

CANTIERE DEL PARDO

ED. EN-CDP43-07/2017

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1.1 GENERAL INFORMATION

NAME OF THE YACHT _____ **PARDO 43'**
MAIN PROPULSION _____ **MOTOR YACHT**

1.1.1 Foreword to the use of the manual

Prior to operating 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 sailing, 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 we suggest you request the service of specialized technicians or contact our Service Department.

CAUTION

Do not make any modifications of any kind to the yacht or its equipment. If you nevertheless intend to do this, contact your boat dealer or the builder's assistance centre. The builder's assistance service is at your disposal for advice, service and support.

NOTICE

Your yacht may differ somewhat from the one presented in this manual due to special equipment requested, equipment installed after preparation of the manual, or changes introduced after the set-up works carried out at the yard. If in doubt, or if the on-board layouts and the descriptions in the manual do not correspond, we recommend that you immediately contact your dealer or builder's assistance centre to receive the necessary instructions.

1.1.2 Organization of the manual

For an easy and quick consulting, the manual is subdivided in the following sections:
FOREWORD
SAFETY
BOAT DESCRIPTION
ON-BOARD SYSTEMS
ELECTRIC SYSTEM
THRUST SYSTEM
CONTROL STATIONS
EQUIPMENT ON BOARD
INFORMATION FOR USE
MAINTENANCE

CAUTION

Please, keep this manual carefully in a safe, dry and easily accessible place for an easy consultation. When you decide to change the yacht, deliver this manual to the new owner in its integrity.

1.2 MANUAL INTRODUCTION

The documentation provided by Cantiere del Pardo to the Owner consists in two types of documents:
- the "**Owner's Manual**", edited by experienced professional staff in compliance with the regulations in force;
- the **Technical Document Collection**, concerning the on-board devices/systems (engine, air conditioning, etc.): it consists in a series of independent manuals, delivered by the relevant Manufacturer and/or Suppliers.

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

The associated Technical Documentation Collection makes up the set of the Reference Documents that are required to complete the information provided in the Owner's Manual.
Since these documents are independent and aimed at giving information on specific single components, it is necessary to refer to them when indicated by the Main Document.

CAUTION

Cantiere del Pardo recommends carefully reading the whole documentation delivered by the Manufacturers of the various components.

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

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

This manual has been issued in compliance with the Directive 2013/53/EU, with UNI EN ISO 10240:2004 rules and with RINA S.p.A. (REGISTRO ITALIANO NAVALE)

This manual has been realized by Shipyard in their mother tongue (Italian) and translated into other languages, to satisfy the customer requirements. It has been issued with the aim to assist you with the use of your yacht, in full safety and with complete satisfaction.

This manual contains a detailed description of the yacht, of the systems and devices installed and practical information about its use and maintenance.

We highly recommend to read it carefully and to become familiar with its contents before starting to seal for the first time.

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

THIS MANUAL IS TO BE STORED AND WILL ALWAYS BE ON THIS YACHT AT EVERY TRANSFER OF PROPERTY.
SANCTIONS ARE ENVISAGED IF THE YACHT IS NOT EQUIPPED WITH THE "OWNER'S MANUAL".

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

1.3 SERVICE REQUEST PROCEDURE - WARRANTY

The broad Cantiere del Pardo service network is happy to provide You with any information regarding issues not addressed to in the manual.
Customers may contact Dealers, Sale Offices, Service Centres or directly:

AFTER SALES & SERVICE DEPARTMENT
Cantiere del Pardo *S.p.A*
Via F.lli Lumière, 34 - 47122 Forlì (FC)
47122 Forlì (FC) - Italy
Tel. +39.0543.782404
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Cantiere del Pardo 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.

The Cantiere del Pardo warranty applies only to the first buyer and refers only to products manufactured by Cantiere del Pardo (for the products not manufactured by Cantiere del Pardo, any manufacturer warranties are transferred to the buyer with disclaimer for Cantiere del Pardo); also in the case of hull in blue gel-coat, the warranty is limited to only the structural strength and not to the aesthetic/cosmetic steadfastness of the colour. The guarantee takes effect from the date of delivery, and is valid for 24 (twenty-four) months.
The guarantee is valid only if any defects encountered are notified in detail and in writing to Cantiere del Pardo within 2 (two) months of their discovery.
Should Cantiere del Pardo ascertain the existence of a lack of conformity reported by the buyer within the above terms, the latter will be entitled only to the free replacement or repair of the defective materials with the exception of labour and any transfers of specialized personnel, whose cost will be charged to the buyer at cost, to be carried out within the normally required time frame. The buyer must also arrange to deliver the yacht at its own expense to the place indicated by Cantiere del Pardo where the work covered by the guarantee is to be carried out. If such delivery is impossible for objective reasons, such as safety while sailing, Cantiere del Pardo will send its technicians to the place where the yacht is located, with expenses to be borne by the buyer.
If it is necessary to transfer the yacht to the builder's yard, the respective expenses will be charged at cost price to the buyer.
The guarantee will be invalidated if the defect in question is found by the technicians of Cantiere del Pardo to be attributable to any of the following:

- use of the yacht in ways other than as described in the "Owner's Manual" supplied together with the yacht at the moment of delivery;
- use of the yacht in ways that fail to conform to correct nautical practice and normal criteria of prudence and proficiency;
- use of the yacht in regattas, charter hire services, events or any other circumstances that are not for purely private and personal use;
- replacement or modification of components or structures of the yacht that are not expressly approved and authorized in writing by Cantiere del Pardo, or any tampering with components or structures of the yacht;
- fitting of components not approved in writing by Cantiere del Pardo and any other type of tampering with the materials covered by the guarantee;
- natural wear and tear, negligent use or excessive and uncontrolled strains and stresses;
- total or partial non-fulfilment by the buyer of the payment obligations;
- causes extraneous to the production process applied directly by Cantiere del Pardo.

The buyer must also take all necessary steps to limit the consequences of the defects encountered and notified.
The work to be carried out as covered by the guarantee can be requested by the buyer only at authorized assistance points, which will be notified by Cantiere del Pardo, unless otherwise indicated by the same. Work covered by the guarantee will be carried out in normal working hours, and authorization for this work must always be sent directly by Cantiere del Pardo.
Any work carried out under cover of the guarantee will be guaranteed by Cantiere del Pardo for 12 (twelve) months, but for no longer than the natural expiry of the original guarantee on the yacht as described above, following the release of a written report by the assistance point authorized to carry out the work.
Work covered by the guarantee will be carried out according to the instructions and technical decisions of Cantiere del Pardo, and no delays in its completion will give any right to compensation for damages or any other indemnities.
This guarantee is the sole guarantee offered by Cantiere del Pardo. No other guarantee, compensation or indemnity of either a legal or contractual nature may be claimed by the buyer.

CAUTION

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

CAUTION

Cantiere del Pardo S.p.A. declines all responsibility for damage due to improper preservation and poor maintenance.

CAUTION

Cantiere del Pardo S.p.A. declines all responsibilities for the installation and operation of electrical, electronic and mechanical equipment improperly installed by third parties in a fashion not authorized by the yacht's builder.

WARNING

Cantiere del Pardo S.p.A. 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.

WARNING

Equipment and devices: Engine, generator, household devices and other devices are guaranteed by their manufacturers, who will service them directly through their service points. In case of need Cantiere del Pardo S.p.A. After-Sales Service Department will support Your requests, so as to provide quick service and the respect of the rules applicable. Upon yacht purchase, the Owner must send the Warranty Certificates of the relevant Manufacturers, in order to start the warranty period. Cantiere del Pardo S.p.A. will not be liable for undelivered Warranty Certificates.

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 Cantiere del Pardo S.p.A. Service Department.

CAUTION

If original parts are not used, the validity of the various warranties is forfeited.

1.4 NOTICES

To highlight major relevance sentences and/or to indicate some important requirements, some symbols have been defined as follows.

CAUTION

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

WARNING

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

DANGER

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

ENVIRONMENT

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

NOTICE

Draw your attention on information and important memos.

MAINTENANCE

This symbol indicates the timetables for maintenance on the various on board devices.

1.5 SPECIFIC SAFETY WARNINGS

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

Fire hazard:
To indicate a specific fire hazard.

DANGER

The cause of fire breaking is described here.

Electric shock hazard:
To indicate a specific electrocution risk.

DANGER

The cause of electrocution is described here.

Burn hazard:
To indicate a specific burn hazard.

DANGER

The cause of burn is described here.

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

DANGER

In this area is described the forbidden area: for forbidden area are meant dangerous places or the approaching to mechanical moving parts.

1.6 CERTIFICATION, CLASSIFICATION AND IDENTIFICATION

Cantiere del Pardo S.p.A. 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 Pardo 43, on which you are about to sail, has obtained the ENAVE (ENTE NAVALE EUROPEO S.R.L.) classification, after supervision of the hull lamination, of reinforcement structures, of the power plant and of the on-board safety equipment.

1.6.1 Yacht identification specifications

Manufacturer	**Cantiere del Pardo**
Model	**PARDO 43'**
Interior and exterior design	**Zuccheri Yacht Design & Cantieri del Pardo**
Designer	**Maurizio Zuccheri**
Navigation class	**B+C**
Classification	**"CE" conformity according to the standards stated by the Directive 2013/53/EU**
Classification body	**ENAVE (ENTE NAVALE EUROPEO S.R.L.)**

Two nameplates, detailed in the figure, are installed on board:

- The CIN of your IT-CDP Unit _____
  Unit ID number (Craft Identification Number).

- Builder's plate with EC certification and classification.

CAUTION

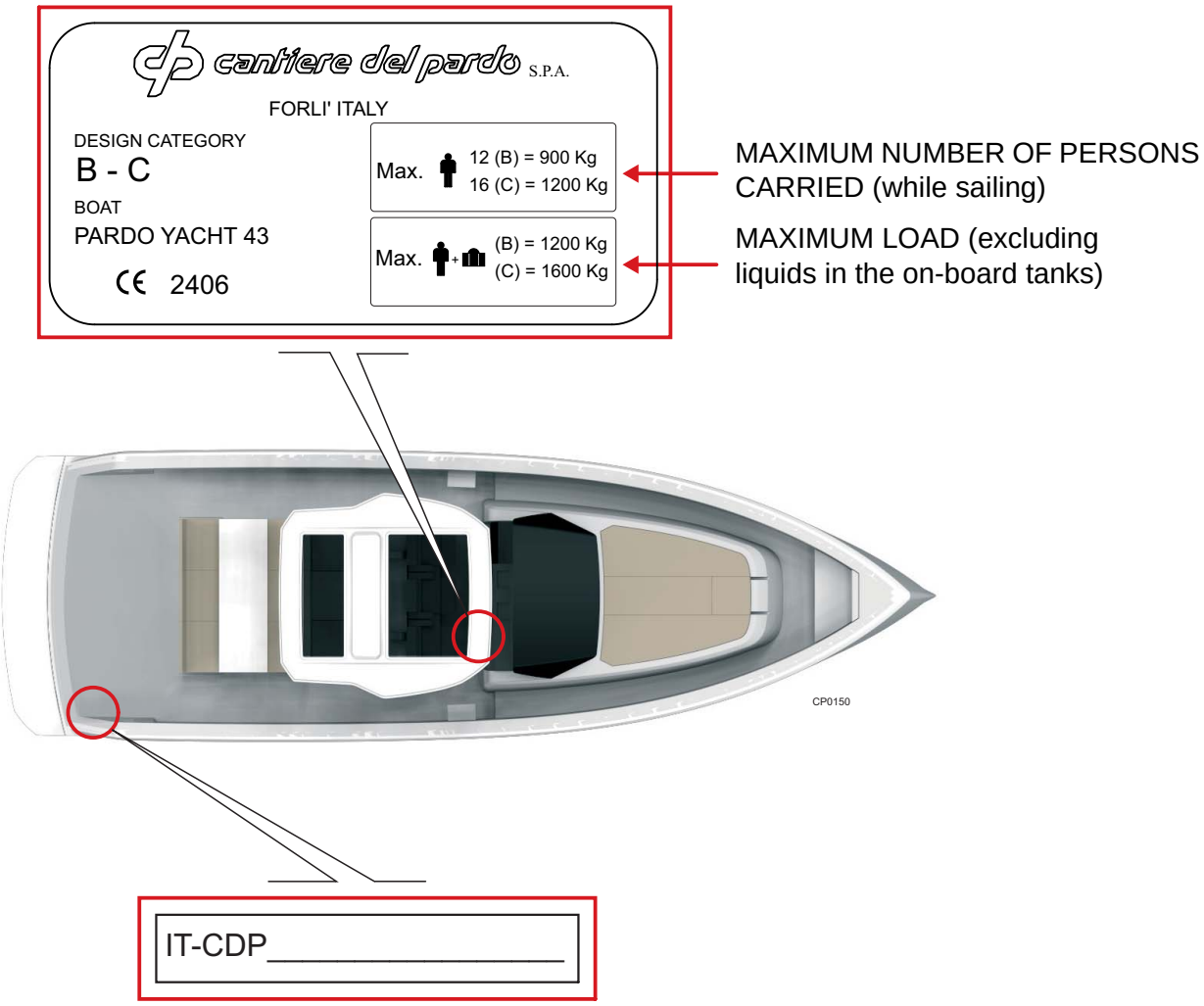
Always keep the plate legible, and if it has deteriorated or been altered, please contact Cantiere del Pardo.

NOTICE

Builder's plate: parts of information are described on plate, those remaining are described in the specific chapters of the Owner's Manual.

NOTICE

The CIN is shown in the manual during delivery of the yacht. This operation is the responsibility of whoever delivers the unit.


cantiere del pardo S.P.A.
FORLI' ITALY
DESIGN CATEGORY
B - C
BOAT
PARDO YACHT 43
CE 2406
Max.
12 (B) = 900 Kg
16 (C) = 1200 Kg
Max.
(B) = 1200 Kg
(C) = 1600 Kg
MAXIMUM NUMBER OF PERSONS CARRIED (while sailing)
MAXIMUM LOAD (excluding liquids in the on-board tanks)
CP0150
IT-CDP_____

1.7 GENERAL DIMENSIONS AND TECHNICAL CHARACTERISTICS

MAIN DIMENSIONS

ISO 8666 Length Hull (Lh) ..... 12.80 m (42’ 00")
Length overall (with stern platform) (Loa) ..... 14.00 m (45’ 11")
Length overall (with fixed stern platform) (Loa) ..... 13.50 m (44’ 5")
Length at waterline at full load Lwl ..... 12.46 m (41’ 07")
Max. width Bh ..... 4.20 m (13’ 09")
Beam centreline Bc ..... 3.60 m
Beam of waterline at full load Bwl ..... 3.68 m
Building height DLWL/2 ..... 2.42 m
Hull draft at full load Tc ..... 0.66 m
Draft under propellers at full load ..... 1.05 m
Deadrise angle ..... 16 °
Angle of list during navigation (±) tau ..... 4.0°
Centre of gravity 0° LCG ..... 4.58 m
Lcg/Lwl 0.367

MAX WEIGHTS AND LOAD

Project category EC	**B**	**C**
Number of passengers	no. 12	16
Crew limit at 75 kg per person	kg 900	1200
Displacement + personal effects	kg 300	400
Fuel	kg 960	960
Fresh water tanks	kg 300	300
Other liquids on board	kg 100	100
Optional equipment and devices not included	kg 100	100
Liferaft	kg 100	100
Basic safety equipment	kg 200	200
Total maximum load - mMTL	kg 2960	3360
Weight in vacant vessel conditions - mLCC	kg 10000	10000
Displacement fully laden - mLDC	kg 12960	13360
Minimum crew number	kg 150	150
Basic safety equipment	kg 200	200
Spares not subject to consumption	kg 100	100
Liferaft	kg 100	100
Load in minimum operating conditions - mL	kg 790	790
Weight in minimum operating conditions - mL	kg 10790	10790

TANKS

Fuel supply ..... 1200 l (317 USg)
Fuel supply ..... 960 kg
Water supply ..... 300 l (106 USg)
Grey water tank (max) ..... 20 l (10 USg)
Black water tank (max) ..... 80 l (21 USg)

ENGINES

Total weight ..... 2X 900 kg
Electric system ..... 12 V
Weight/power ratio, empty ..... 59.31 kw/ton
Weight/power ratio, fully laden ..... 49.38 kw/ton

MOORING

Bow anchoring ..... 48.91 kN
Stern anchoring..... 34.09 kN
Anchor chain diameter..... Ø 8/10 mm
Minimum stern mooring ropes diameter ..... Ø 18 mm

CAUTION

The capacity of the tanks on board does not correspond to the quantity of liquid that it is effectively possible to draw from these tanks, due to liquid that cannot be sucked up. this depends on the position and shape of the suction pipe, the shape of the tank and also on boat movements and trim. It is advisable to consider that at least 10% of tank contents are unavailable in this way.

CAUTION

For fuel and freshwater tanks, the last 20% of tank contents should be considered as a "reserve".

NOTE: The European Directive also establishes new requirements for noise emission, and this boat has been designed and built to comply with the envisaged limits. The owner must ensure that modifications or malfunctions of onboard systems or equipment do not cause increased noise emission.
We therefore advise you to request an inspection at least once a year from the builder's assistance service, from the assistance service of the engine manufacturers or from specialized technicians, so as to ensure that noise emission does not increase.
Every month, check that exhaust ducts are free from visible damage and deterioration.

1.8 LOAD-CARRYING CAPACITY

Part of the information is indicated on the builder's plate fixed on the boat. The explanations of this information are provided in the specific chapters of this manual.

Note: BUILDER'S PLATE: The complete explanation of the information given on this plate is presented in this section.

12 (B) 16 (C) indicates the maximum number of persons (adults) allowed on board while sailing, based on the project category.
900, 1200 or 1600 kg indicates the maximum weight of persons plus other loads (excluding liquids in fixed onboard tanks) allowed on board while sailing.

Information about displacement and maximum load:
The maximum load includes:
- the weight of the maximum number of persons permitted on board while sailing (calculated with a standard weight of 75 kg per person).

If there are children on board, the total number of persons can increase (two children each weighing 37.5 kg are equivalent to one adult, but the boat must also carry a sufficient number of life jackets of a suitable size), but the maximum load must remain within the envisaged limits,
- the maximum weight of safety equipment,
- other equipment and items, including personal effects, spare parts and tools, portable tanks or other containers with reserves of liquids.

The total weight indicated on the builder's plate must not be exceeded.
However, if the total weight of equipment, provisions and personal effects exceeds the indicated value, the weight and therefore the number of persons permitted on board must be reduced as appropriate, or other items loaded on board must be reduced.
It may be necessary to limit fuel and freshwater reserves to ensure that the maximum load indicated by the builder is not exceeded, and in this way cruising range is reduced.
The maximum load **excludes** the anchor and chain at the bows, mattresses and awnings, mooring cables and fenders, as this equipment is considered to be always present on board.
If for example the items to be loaded on board include another large inflatable dinghy with heavy motor, a spare anchor with a very long and heavy chain, fishing tackle, tools, spare parts, a large supply of bottled water and other accessories, thereby exceeding the quantities envisaged for these items in the design of the boat, it will no longer be possible to permit the maximum number of persons on board, or it will not be possible to fully fill tanks.
It is the responsibility of the boat's commander to ensure that the maximum load defined by the builder is never exceeded.
The builder's plate located astern on the starboard side shows the maximum load permitted on board, and this load refers therefore to the weight of all items the owner may decide to bring on board, but excluding the weight of liquids with which the fixed tanks of the boat can be filled.

CAUTION

When loading the craft, never exceed the maximum recommended load. Always load the craft carefully and distribute loads appropriately to maintain design trim (approximately level). Avoid placing heavy weights high up.

CAUTION

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

WARNING

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

CAUTION

The standard safety equipment is not furnished by the shipyard. If a higher number of passengers (however, no more than 16) 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.

1.9 CATEGORY OF PROJECT

Category A: Ocean
Boat designed for sailing with winds that can exceed 8 on the Beaufort scale and waves with significant height of 4 metres and above.
These boats are for the most part self-sufficient. Unusual conditions such as hurricanes are excluded.
Such conditions may be encountered during long crossings, for example across oceans, or in the vicinity of the coasts exposed to wind and waves over hundreds of nautical miles.

Category B: Offshore
Boat designed for sailing with winds that do not exceed 8 on the Beaufort scale and with corresponding waves (waves with significant height less than or equal to 4 metres). These conditions can be found sailing offshore for sufficient time or close to the coast exposed to the wind and waves for several dozen nautical miles.
These conditions can be found in inland seas large enough to generate the wave height in question.

Category C: Near the coast
Boat designed for sailing with winds that do not exceed 6 on the Beaufort scale and with corresponding waves (waves with significant height less than or equal to 2 metres). These conditions can be found in exposed inland waters, in estuaries and in coastal waters with moderate weather.

Category D: In protected waters
Boat designed for sailing with winds that do not exceed 4 on the Beaufort scale and with corresponding waves (occasional waves with a maximum height of 0.5 metres).
These conditions can be found in sheltered inland waters and in coastal waters is good weather.

NOTE:

- The significant wave height is the average height of one-third of the heights of the highest waves, which corresponds approximately to the height of the wave evaluated by an experienced observer. Some waves will have a height that is twice this value.
- Determination of the various design categories is mainly justified by the need to distinguish different levels of risk related to the construction of the boats. The characteristic parameters are drawn up to define the navigation conditions which may occur in each category; they are intended solely for evaluating the concept of boats and should not serve to limit the geographical areas where the boats can be used.
- A boat can be classified simultaneously by different categories of design, with different maximum capacities for each.

WARNING

The capacity to face adverse weather and sea conditions in safety depends not only on the boat's design and construction characteristics, and the materials and components used, but also on its state of maintenance and efficiency, on the relative age and deterioration of its systems and equipment, on the skills and fitness of the crew and on their knowledge of the boat and the waters in which they are sailing.

WARNING

We remind you that the boat's "EC" marking imposes safety standards throughout Europe which, in your own interest, regard all on-board systems and accommodations. Do not make any modifications to the boat or its equipment. This could have severe repercussions on safety. If you nevertheless intend to do this, contact your boat dealer or the builder's assistance centre for all necessary help and advice.

WARNING

The design category assigned to the yacht indicates its capacity to sail safely for long distances in adverse ***but not extreme*** *wind and sea conditions. It is the responsibility of the yacht's commander to check, before sailing, that the craft has sufficient resources to safely sail the intended route, to consult weather forecasts, and to check at all times that the yacht and its crew are in a condition to be able to* ***safely*** *sail the intended route at the chosen speed, and to take prompt action whenever necessary* ***to change schedules and to take all other necessary measures to maintain ample safety margins****.*

1.10 STABILITY AND BUOYANCY

STABILITY DATA

- Displacement fully laden was used to evaluate the stability and buoyancy of this boat. You can find the value of this displacement in the "Technical characteristics" paragraph, at the beginning of this manual.
- Any change in the arrangement of weights on board (for example, the addition of an elevated structure for fishing, radar, furling mast, engine gearbox, etc.) may have a significant influence on the stability, trim and performance of the boat;
- It is advisable to keep the water in the bilge at a minimum;
- The addition of weights in the high parts affects stability;
- In the case of bad weather, close the skylights, peaks and hatches to minimise the risk of water penetration;
- Stability may be reduced when towing a boat or when heavy weights are lifted with a davit or with the boom;
- Breaking waves are a serious stability hazard.

WARNING

Reduce speed in waves.

Always adapt the speed and direction of the boat to the sea conditions.

All water-tight hatches must be kept closed while sailing.

SAFETY

2.1 SAFETY RULES

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

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

The time spent in reading such instructions will prevent unpleasant accidents; it is always too late to remember what was supposed to be done, after the fact. Remember that you are responsible for your safety and the safety of your passengers, and that you may jeopardize the safety of other boats.

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

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.

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

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

- 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;
- the engine room must be properly ventilated when the engines are running;
- everybody on board must be able to release and launch the life belt and the life raft at sea;
- access to the technical compartments must be allowed only to authorized personnel, aware of possible dangers like:
  - moving mechanical parts;
  - hot parts and components;
  - circuits with pressurized, hot or irritating fluids;
  - circuits with flammable fluids;
  - high noise when engines are running;
  - possibility to shift unintentionally valves important for navigation safety.

Do not tamper, do not disconnect, do not eliminate or by-pass the safety devices installed on your yacht. Periodically check their real efficiency with time to ensure, in case of need, that they can be used. 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 yacht life 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 yacht integrity.

Avoid that the parts not stored or not secured correctly, can move during navigation, hinder the passage, prevent the opening of inner hatches, fall against the persons on board, damage or hinder the quick finding of necessary pieces.

It is the responsibility of the owner/user of the yacht to make sure that the fire-fighting equipment is easy to reach when the yacht is occupied, and to inform the crew members on:

- the position and operation of the fire-fighting equipment.
- the position of the discharge openings in the engine room.
- the position of the escape routes and exits.

WARNING

Keep all sea cocks and all other opening/closing and discharge devices of the hull closed or open, as the need requires, in order to minimise the risk of sinking.

2.1.1 Use-related rules

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 engine 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 docked or anchored or riding the anchor).

Arrange the load evenly so as to keep the correct trim.
Do not overload the yacht especially at bow and aft.
Observe the rules to prevent a sea collision and the speed limits, moreover pay always the highest attention during navigation.

WARNING

The Captain is the sole responsible for driving the yacht.

Prior to departure, the Captain must ensure that the safety equipment required by law is present on board and perfectly working.

The Captain should always have the requirements and specific qualification to steer this yacht as requested by the laws in force in the country of use.
The Captain, after having collected duly information on the yacht operation and controls, should at first use simulate some test manoeuvres, to locate the controls and to be aware of the common reactions of this yacht.

WARNING

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

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

WARNING

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

All refuelling phases have to be carried out with the necessary precautions to avoid even the smallest spillage of products which could pollute the environment.
When navigating near harbours, beaches and docks, observe the directives issued by local port authorities, particularly as to the speed; high speed can originate wake waves which can jeopardize the safety of the environment and of people.
Before lowering the anchor in free waters, be aware of the kind of sea bottom underneath and near your R.I.B., to avoid damaging it.

2.1.2 Maintenance rules

Keep your yacht in the highest efficiency condition, carrying out all scheduled maintenance of the devices on board. A good maintenance will allow obtaining 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.

ENVIRONMENT

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

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

Before carrying out maintenance and adjustment operations on your yacht, activate all safety devices provided and evaluate if it is necessary to inform all persons on board. In particular, place warning signs in the nearby areas and prevent accessibility to any device that, if operated, could cause unexpected hazardous conditions, thus endangering the persons on board and/or property.

Maintenance and adjustment operations must be carried out by authorized personnel that shall provide for all necessary protections according to the procedures provided by the Manufacturer.

All maintenance operations requiring a precise technical knowledge or particular skills must be carried out exclusively by qualified personnel with a recognised experience, acquired in the specific field of intervention.
To carry out maintenance in an area that is not easily accessible, or dangerous, take all of the necessary safety measures, according to rules and standards applicable to safety at work.

ENVIRONMENT

Any maintenance operation must be carried out in the strict respect of the surrounding environment. Take all necessary measures to avoid that even one single “oil drop” may be spilled: the protection of our environment starts exactly from this care.

Access to the technical compartments during navigation must be limited only to authorized personnel duly dressed.
Inspect the sea water system inlets and outlets as well as the bilge systems. These checks are vital to ensure yacht’s buoyancy.
Do not perform any maintenance operations or adjustments other than those indicated and/or suggested by the Manufacturer. If necessary, contact the Service Centre for more precise instructions.
Keep all yacht’s components clean by following the procedures and using the specific products suggested by the Manufacturer.
Replace all worn out parts using exclusively original spares.
Use oils and greases recommended by Manufacturer. All this can ensure the yacht's functionality and the expected safety level.

2.2 SAFETY RULES FOR YACHT MAINTENANCE

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

CAUTION

This section includes a certain number of information to maintain the components without dangers. Remember that each time you activate the controls you are in fact the pilot.

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

CAUTION

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

CAUTION

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

CAUTION

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

CAUTION

*Be highly **alerted and use greatest caution** for the whole time of the work. Pay great care to avoid possible dangers.*

CAUTION

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

DANGER

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

CAUTION

Yacht entrance. *Always 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. Better to take the shoes off. Do not jump down the yacht, do not use the yacht controls as handholds; use the handles.*

CAUTION

To activate the ***control handles*** *from outside the control station can cause heavy accidents even mortal ones: controls must exclusively be operated while standing in the correct position in the control station.*

CAUTION

Metallic chips *whirling while 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, push away the other persons from the risky areas (rotary blades and engine belt, tools and movements, engine inner and rear part). 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 engine shut off. The lack of consideration of these precautions can cause accidents and injuries.

CAUTION

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

DANGER

*The **battery** releases explosive gases: do not approach sparkles or a flame nor smoke near it. If the battery is used or charged in a closed area, check for good ventilation. Do not check the battery charge by short-circuiting the terminals with metal tools: use a density gauge or a voltmeter.*

CAUTION

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

CAUTION

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

CAUTION

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

- *damaged fittings;*
- *wear of outer coatings as consequence of rubbing;*
- *swelling of outer coatings;*
- *bent or squashed hoses;*
- *fittings not properly located.*

CAUTION

***Oil** is poisonous: do not swallow. The engine oil contains dangerous polluting agents which can generate skin tumours. Handle oil as less as possible, protect your skin with creams and gloves. Wash accurately with warm water and soap the skin eventually polluted with oil: 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, nor approach your face 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

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

CAUTION

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

DANGER

Hot coolant. *When the engine temperature is high, the chilling 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.*

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 sparkles.*

2.2.1 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 on figure “Safety equipment arrangement”.

The yacht’s Owner and the Captain are directly responsible for:
- having the fire extinguishers and fire-fighting equipment overhauled as scheduled on their label, and having them replaced, as required by the rules in force; with similar or equivalent or higher capacity ones;
- informing the crew about the location and use of fire extinguishers and fire-fighting systems and escape routes;
- ensuring that fire extinguishers are available also in the passengers’ cabins.

Precautions that must be adopted by the owner
- Keep bilges clean and frequently check for the possible presence of fuel vapours or gas, or for fuel leaks.
- When components of fire prevention systems are replaced, it is compulsory to use only original spare parts, or parts with equivalent technical qualities and characteristics of fire resistance.
- Curtains and other fabrics must be kept away from cooking stoves and naked flames.
- Do not stow inflammable materials in the engine compartment (or in the optional generator compartment). If non-inflammable items are stowed in the engine compartment, they must be secured so as to prevent the risk of falling on moving parts or of obstructing free passage or access.
- If the yacht is equipped with winter heating (optional), remember that the boiler and its exhaust duct in the afterpeak can reach high temperatures: always check that any materials and objects stowed in the afterpeak cannot come into contact with these components. Particular care must be taken with tanks containing inflammable liquids.
- Never:
  - obstruct access to exits, skylights or hatches;
  - obstruct access to safety controls, such as fuel valves, gas valves or electrical system switches;
  - obstruct access to hand-held fire extinguishers located in lockers;
  - leave the boat unattended when cooking stoves or heaters are being used;
  - use gas-fired lamps on board;
  - modify any onboard systems (particularly electrical, fuel or gas systems) or allow unqualified persons to make such modifications;
  - fill fuel tanks or replace gas canisters when the engine is running or with cooking stoves or heating in use;
  - smoke while handling fuel or gas.

CAUTION

The engine compartment of this yacht is equipped with a gas fire-fighting system.

WARNING

NEVER:

– *obstruct the passageways and the 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 electric or fuel supply systems without consulting the yacht manufacturer beforehand;*

– *smoke near or when handling flammable materials;*

– *stow highly flammable materials (such as fuel, diluents, etc.) near heat sources such as the engine, the 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 bilges clean and inspect them frequently for any oil or fuel leakage.

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 damages.

Clean any fire extinguishing powder out very carefully.

In addition to these requirements, Cantiere del Pardo recommends what follows:

– Avoid smoking under deck, especially in the technical compartments.

– Avoid dropping liquids in the bilge and keep it clean, especially the technical compartments. In case of fuel leaks from the engine or from the generator in this area, operate as follows:
  - immediately stop the engine;
  - locate the leak cause and, if possible, repair it after closure of supply valves;
  - dry and clean the bilge before restarting the engine, without draining at sea or in the harbour;
  - do not stow flammable items near heat sources such as engine, burners, halogen lamps, etc.;
  - should the yacht leak, try to remedy with plugs and/or rags, if possible, from outside;
  - in case a system of the yacht breaks, close all hull valves, locate and repair the leak if possible. Remember to reopen all hull valves not involved.

CAUTION

The Captain of a leisure craft 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 the sea cocks and the drains;
- set the battery breaker to “OFF”;
- close the air intakes in the technical compartments;
- locate the fire place and its origin;
- avoid breathing smoke;
- extinguish the fire, by following standard fire extinguishing techniques.

DANGER

In case of 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.

DANGER

Do not stow transportable tanks containing petrol on board

2.3 ENVIRONMENT REMARKS

Environmental pollution is determined by three kinds of polluting agents:

- water polluters
- air polluters
- soil polluters

The non oily and black waters *(containing only human organic waste)* can be discharged into open sea. In the harbour areas they should be collected into suitable containers and afterwards discharged either while sailing into open sea or by means of special draining systems fastened to the dock or wheel-conveyed.

Soil pollution is caused by discharging waste at shore.

International rules for leisure crafts essentially prescribe the following:

- During navigation it is forbidden to discharge into open sea any non biodegradable product, both of food origin as well as of commercial origin.
- In the harbour, normal waste is considered as urban waste that must be closed hermetically in plastic bags and thrown into waste dumpsters.
- Special waste must be disposed of into suitable containers or, if they are not available, it must be delivered to local waste disposing areas, in compliance with the norms in force, issued by the local Port Authority.
- It is considered as such the following waste:
  - water and oily mixtures (e.g.: bilge water)
  - oils (fuel, additives and lubricants)
  - poisonous chemical substances (like battery acids, paints, diluents and the relevant containers)
  - spray cans containing C.F.C. gas
  - batteries and piles also flat
  - expired 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 abusive discharge. Should in the harbour area specific cases be missing, the Authority in charge for the disposal is the Port Authority section “Waste Disposal”.

2.4 REGULATIONS FOR WASTE DISPOSAL

The following chart is based on Appendix 5 of the International Convention for the prevention of pollution from ships (Marpol 73/78).
These regulations are applicable to all ships, regardless of their displacement and service; therefore, leisure crafts are also included.
The regulations apply to the entire Mediterranean Sea.

WARNING

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

WARNING

When sailing, it is always necessary to have an adequate behaviour 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 engine running for long periods without moving off;*
- *do not sail at high speed or beyond the permitted limits when leaving or entering harbours, marinas, etc., to prevent causing excessive wash or wave motion.*

CAUTION

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

- Discard the packs in the recyclable waste containers provided for this purpose.
- When a device is completely out of order, inquire at the nearest recycling centre or from your dealer on requirements related to its disposal.
- Dispose of the device in accordance with local laws.
- Some on-board equipment may have harmful effects on the environment and human health due to the specific substances their contain: do not throw any device into the household waste containers, least of all at sea.
- Used batteries are harmful to health and environment. As a result, the batteries cannot be disposed of with household waste but should be recycled separately.
- Contact the Port Authority or specialised companies for their disposal.

CAUTION

Stay informed of local regulations concerning the environment and follow the codes of good practice.

Do not evacuate the toilet or the contents of the black water tanks near the coast or in areas where this is forbidden. Use the suction systems of the harbours or marinas to empty the contents of the black water tanks before leaving harbour.

Learn about the international regulations against marine pollution (International Convention MARPOL) and respect it as much as possible.

2.4.1 Table of waste categories and at-sea disposal regulations

WASTE CATEGORY	OUTSIDE SPECIAL AREA	IN SPECIAL AREAS
Plastics – includes synthetic ropes and fishing nets and plastic bags	DISPOSAL PROHIBITED	DISPOSAL PROHIBITED
"Specials" – includes batteries, waste chemicals, solvents, paints. Rags impregnated with oil, paint, solvents, chemicals, sanding dust.	DISPOSAL PROHIBITED	DISPOSAL PROHIBITED
Floating dunnage, lining and mooring material.	> 25 miles offshore	DISPOSAL PROHIBITED
Paper, rags, glass, metal, crockery and similar waste.	> 12 miles offshore	DISPOSAL PROHIBITED
All other garbage including paper, rags, glass, etc. comminuted or ground	> 3 miles offshore	DISPOSAL PROHIBITED
Food waste not comminuted or ground.	> 12 miles offshore	> 12 miles offshore
Food waste comminuted or ground.	> 3 miles offshore	> 12 miles offshore
Mixed waste types.	Note	Note

Comminuted or ground garbage must be able to pass through a screen with a mesh no larger than 25 mm.

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 SAFETY EQUIPMENT

Everybody on board must be aware of the location and use of safety equipment, i.e. individual life belts and jackets, life belt with “man overboard” lifeline, life raft, extinguishers and fire extinguishing systems (i.e. in engine and generator compartment, etc.).

CAUTION

The diagram indicates the location of the portable extinguishers approved for the European (EC) model and is therefore a guide to the location of the portable extinguishers.

CAUTION

The manufacturer does not provide for the standard safety equipment but only as Optional.

The lay-out indicates the ranking provided by the manufacturer for the various safety equipment; it represents therefore a reference as to position and code. The Owner is responsible for the updating and ranking of the various safety equipment in compliance with the local, national and international legislation in force.

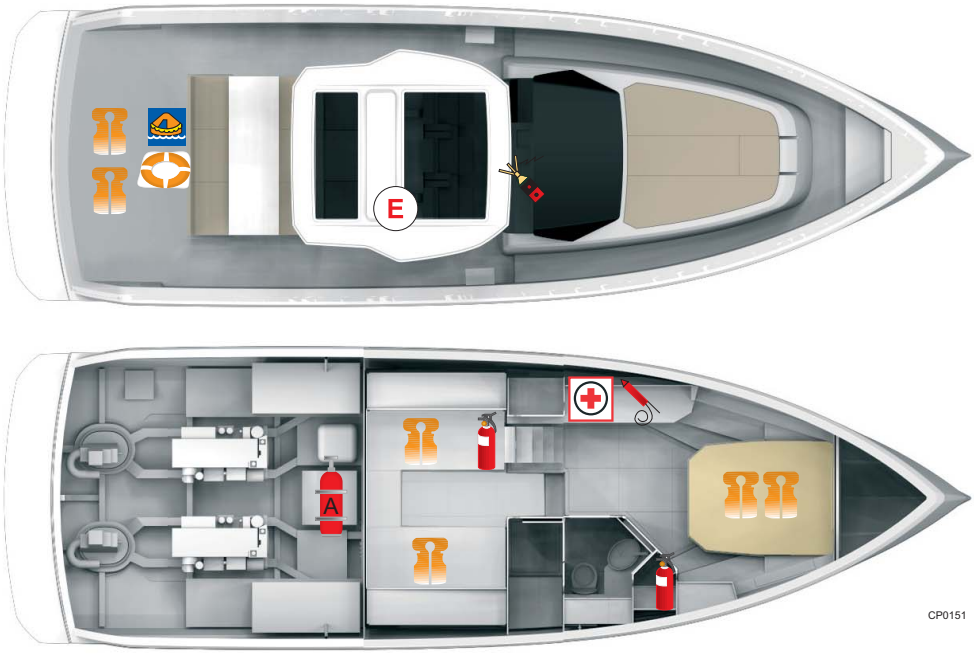
CAUTION

The above mentioned safety systems must comply with existing local and international navigation regulations, and that 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.

2.5.1 Safety and fire-fighting equipment arrangement (standard)



Self-inflatable raft: no. 1, 8 seats (optional)

Solas life belt with line and light buoy
(floating, not twistable line) (optional)

Life jackets for adults 150N with whistle (optional)

Emergency controls of fixed engine room fire-fighting system

Portable 1-kg dry-powder fire extinguishers, type 5A/34B--C

Fixed engine room extinguishing system

VHF-DSC (optional)

First aid kit (optional)

Rocket kit (optional)

2.5.2 Self-inflatable life raft (optional)

The self-inflatable raft must be used only in case of real emergency implying the abandonment of the yacht.
The yacht must in fact be abandoned in case of serious sinking hazard, or in case of fire out of control. In all other cases it is necessary a careful evaluation, because to leave the own yacht, even though on a self-inflatable life raft, could mean a more difficult identification on the side of the rescue team. As a matter of fact, the search for the shipwrecked will start exactly from the last known position of the yacht.
In case the use of self-inflatable life raft becomes necessary, perform the following operations:

- stop the yacht's engine and wear life jackets;
- perform the distress call by means of VHF device;
- uncoil 3 to 4 metres of each raft's lifeline; 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, the 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 performed 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 perform the distress call or you did not receive an answer, prepare for a long wait; in such a case plan for survival, trying to board on the raft, beyond the equipment included in the kit, also following: floating smoke signals and rockets, a knife, drink water and energetic food that does not stimulate thirst. Before boarding the raft wear all possible garments, except for the shoes that could injure other shipwrecked persons or damage the life raft;
- embark possible clothes and supplies;
- if somebody falls overboard, help him/her to climb into the raft; throw the life belt with line, if necessary;
- make sure that everybody is on board, take the knife out of its sheath, cut the line that ties the life raft to the boat;
- 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).

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

- The life raft is fitted with stabilisers and a floating anchor, for improving its stability and drift. The stabilisers give stability to the raft. Keep the floating anchor into the water.
  The anchor prevents too 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 rise.
- If the life raft in spite of all does capsize, roll it over and return on board. If the sea is rough, it is convenient 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 rip 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 bubble.
- Keep hold for some time and inflate again, after one hour.

DANGER

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

DANGER

With very high waves and strong wind there is the risk that the raft may overturn: shift the weight of persons on board towards the side tending to raise.

If the life raft in spite of all does capsize, roll it over and return on board.

2.5.3 Signalling rockets (optional)

The leisure crafts have the obligation to transport on board 4 manual rockets with red light and 4 manual smoke orange signals prescribed. Anyhow, always verify the legislation of the Country in whose waters the yacht is going to navigate.

- The signalling rockets have a limited life in time; it is also 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 airplane or to see persons on the shore or on other crafts.
- Store the signalling rockets far from flammable liquids and from other fuels.
- As the content of the signalling rockets absorbs 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 modality of use.
- Follow with great care the activation instruction of all signalling rockets.

DANGER

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

DANGER

Once the signalling rocket has been lighted, never direct it towards persons, because they can get burnt or scalded.

WARNING

The signalling rockets have a limited life in time, indicated on their containers. Once expired, address to the rockets suppliers which offer a disposal service. Do not light them useless because they can activate the Emergency Services.

2.5.4 First aid kit (optional)

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

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

ENVIRONMENT

It is forbidden to throw 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 be kept on board:

- 1 disinfectant bottle for outer use 250 cc;
- 1 dark glass bottle of ammonia;
- 5 packs of bandages of various sizes;
- 1 pack of plasters;
- 1 pack of medicated plasters;
- 1 250 g pack of cotton wool;
- 1 pair of scissors;
- 1 pack of compressed hydrophilic gauze of various sizes;
- 1 pack of compressed Vaseline gauze of various sizes;
- 1 tourniquet;
- 1 pack of splints for fractures.

DANGER

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

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

Inform all passengers of this.

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

2.5.5 Portable fire extinguishers

The yacht is equipped with portable fire extinguishers, 1 kg each 5 A/34B-C, indicated by proper plates applied by the Manufacturer.
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;
- direct the extinguisher always toward the flame bottom;
- 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 with water to prevent the flame to spread again;
- act always dressed;
- 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 to embark also the persons engaged with the fire fighting;
- if the fire is big the operators must wet abundantly their clothing;
- the engine must be shut-off immediately and the fuel must be cut-off;

- isolated objects in flames must immediately be thrown overboard;
- all openings than 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 enter it, and remove powder deposits.

DANGER

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

WARNING

We advise to periodically check 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 flies the yacht.

DANGER

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

In order to supply an easy, ready and quick fire-fighting system on board of your yacht, portable fire extinguishers have been set at disposal, designed to be carried manually, and in compliance with the rules in force.
The fire extinguishers have been installed in visible and easily accessible places, and their position is indicated by proper plates.
The arrangement of the fire extinguishers is indicated in the previous “Location of safety and fire-fighting equipment” diagram.

CAUTION

All fire extinguishers should be checked at least every 6 months by qualified staff and anyway 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 vertical position.
After the use of a dry-chemical fire extinguisher, clean carefully the parts that came in contact with the powder because it is highly corrosive.

2.5.6 Portable fire-extinguishers maintenance

Check at least once every 6 months, and anyway before each navigation, the charge condition of each extinguisher through the relevant pressure gauge installed on it. The extinguisher is correctly charged if the weight correspond to that indicated on the extinguisher's plate and the charge indicator located on the pressure gauge, is positioned in the green field. Have the preservation status of the container (cylinder) checked by qualified technicians at least at the beginning of each season and, if necessary, proceed to a recharge of the extinguishing agent.
When prescribed by the rules in force, the extinguishers must undergo an overhauling by authorized Centres.
Have the extinguishers charged even after a partial discharge.
Periodically shake each extinguisher so as to avoid that with time the dry-chemical agent compacts excessively.
Check before undertaking navigation:

- check the charge level of each extinguisher;
- check the relief valve and nozzles condition;
- check the correct location of each extinguisher.

Check every six months:

- the condition of metallic parts and proceed if necessary to cleaning and lubrication;
- check the pressure gauge and if necessary replace the seal.

MAINTENANCE

At least once a month, and anyway before each navigation, check the charge status of the fire extinguisher.
At least once a month, and anyway before each navigation, check the external condition of the fire extinguisher. At least every 6 months check the fastening of the fire extinguisher.

2.5.7 Individual life jacket (optional)

The life jacket is an individual safety device, consisting in an orange jacket so that it is easily visible in water and resistant to the effects of sea water, hydrocarbons and low temperatures.
Besides, the individual life jacket is equipped with floating facilities consisting of foam blocks with closed cells, keeping their volume unchanged, they too very resistant to sea water and to hydrocarbon and low temperatures.
This kind of life jacket assures, by means of a suitable distribution of the floating material, the support of a body with the face out of water, apart from the position taken by the body when diving in the water.
These life jackets must be worn correctly and firmly tied by means of strong laces.
It is important to learn, particularly for children, as to float in water with the life jacket.
To avoid energy waste it is necessary to float by keeping as far as possible legs and arm folded 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 its 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 beyond 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 on board must know the location of life jackets, how to wear them, how to tie them properly to the body, and where the whistle is located.

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 perfectly adheres. Check that the reflecting strip, whistle and light are firmly secured and that the light battery has not yet expired.

CAUTION

Do not use as a cushion.

Train yourself in the use of the device.

May not be suitable for persons with physical disabilities.

Full performance may not be achieved using waterproof clothing or in other circumstances. Refer to leaflet.

The use of this lifejacket does not guarantee the safety and ultimate rescue of the wearer but the lifejacket will afford support in the water for an extended period.

MAINTENANCE

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

DANGER

If you are to choose a life jacket for a child, care 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.

2.5.8 Life belt (optional)

The life belt is classified and resistant to sea water to hydrocarbon and to low temperatures; it is orange in order to be easily seen in water.
The life belt is equipped with a lifeline of 30 m and with an automatic light buoy.
The life line is not twistable and orange in order to be easily seen in water.

CAUTION

All passengers must know the stowing place of life belt.

CAUTION

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

– *how and where to throw it;*
– *how to behave in case of “man overboard”.*

2.5.9 VHF-Radiotelephone

The VHF device allows communicating on channels dedicated to Porth Authority, rescue and radio stations.
To ask for rescue it is necessary to use the suitable VHF/FM channel: after each hour, as a law rule, 6 minutes of silence follow, from minute 0 to minute 3 and from minute 30 to minute 33, so as to enable a better listening of the distress communications.
If the VHF is used, the distress call must be preceded and ended by the wording "**MAYDAY**, **MAYDAY**, **MAYDAY**". It is therefore necessary to give your position, the yacht's name, the kind of damage and the kind of help you require (medical, mechanical, etc.).

CAUTION

*Perform the "**MAYDAY**" rescue call, only in case of real need.*

If, listening to the distress channel, a distress call that has not yet received an answer is picked up, it is possible to send a "**MAYDAY RELAY**, **MAYDAY RELAY**, **MAYDAY RELAY**", forwarding the communication of the person who requested rescue. It can in fact happen that the distress call, carried out at open sea or by means of a poorly powered sender, is not received by the rescue team. Acting as a spokesman, you can make 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 uselessly engage the distress channel.*

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

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

MANUAL DISTRESS CALL:

- Select the distress channel by pressing key 16 or by scrolling the channels with the volume keys.
- Confirm the channel by pressing the OK key.
- Press the transmission key (PTT) on the radiotelephone and perform the call.

MAYDAY - MAYDAY - MAYDAY
THIS IS: (repeat the yacht's name 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.

For instructions on VHF device use, refer to the chapter "Control stations" of this manual, or refer to the Manufacturer's manual.

2.5.10 Escape routes on standard layout

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

WARNING

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

WARNING

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

DANGER

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

DANGER

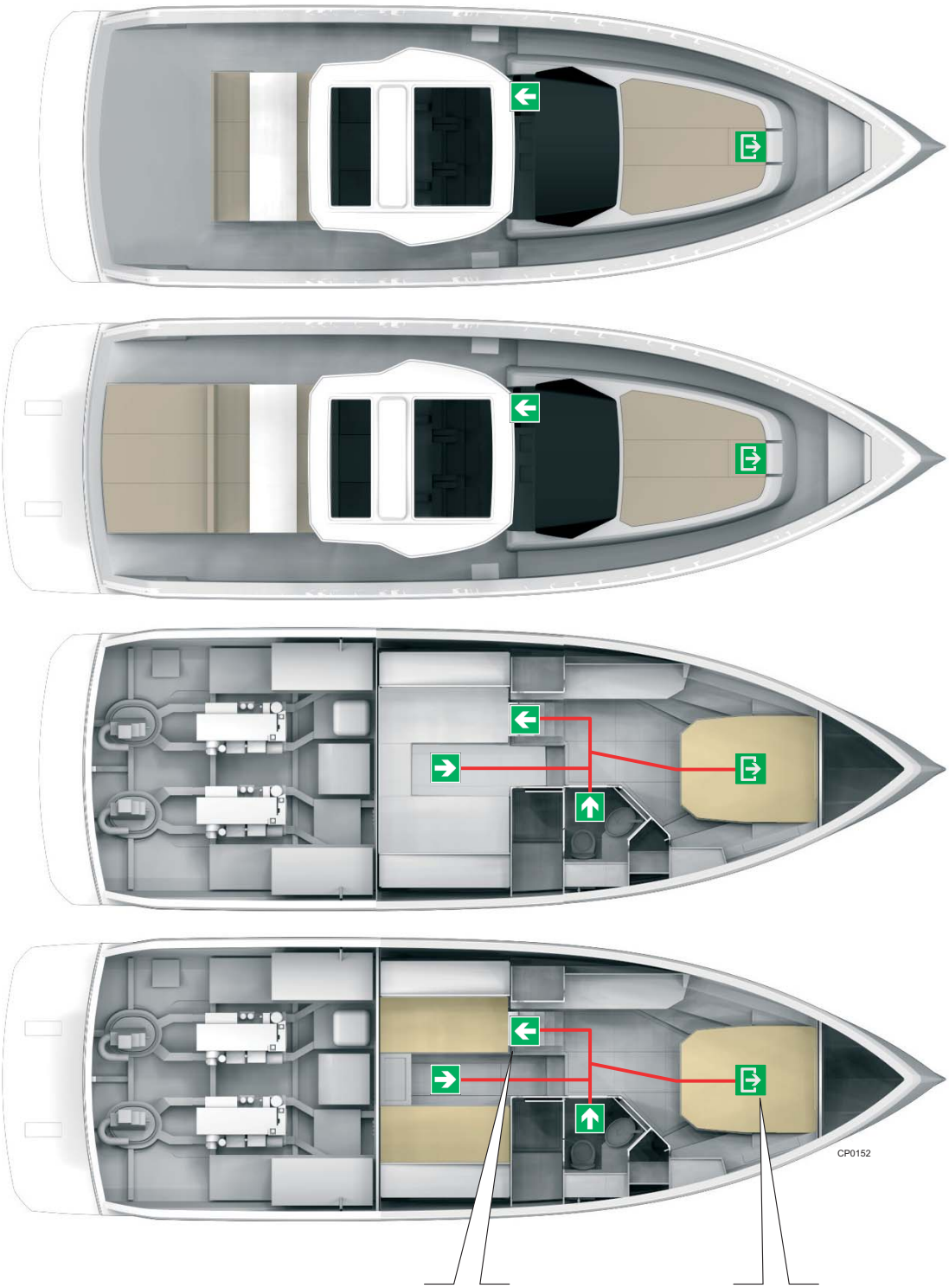
For safety reasons the engine room inspection hatch must be kept closed. It must be opened only during maintenance.

CAUTION

Do not walk on or force the transparent deck hatches when they are partially open to prevent damage to the hinges or the suspension arm.

WARNING

The ladder must be carefully used during navigation.



Escape route

Exit

Companion

Bow cabin skylight

2.5.11 Prevention of falling overboard and boarding aid tool

Red Area

Areas excluded from the deck work area.

Orange Area (restricted)

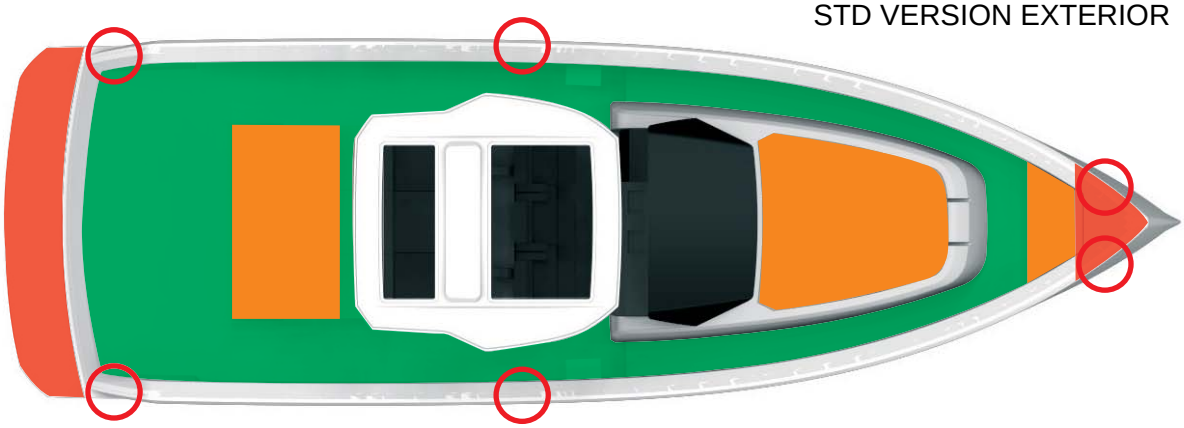
Areas that can be used on a restricted basis.
Sitting and lying is allowed in the sun-deck areas and on the sofas highlighted in orange which, anyway, are not considered as a “working deck”.

Green Area (free-working deck)

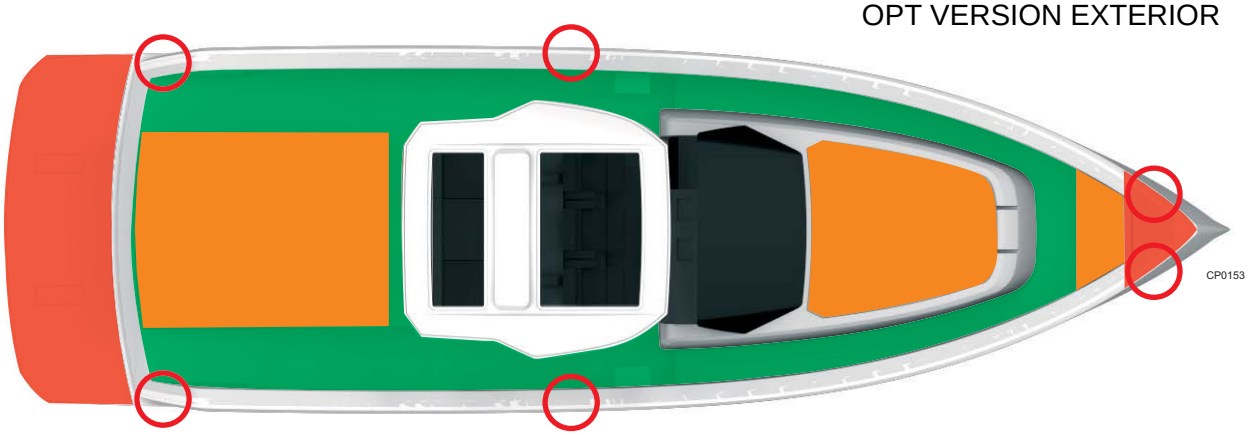
Deck areas for normal transit or stopping when navigation and sea conditions so allow.

Mooring cleats (correspond to the anchoring points of the life-line)

STD VERSION EXTERIOR



OPT VERSION EXTERIOR



WARNING

Controlling and checking compliance with the safety rules are the yacht’s captain responsibility.

CAUTION

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

DANGER

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

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

DANGER

Areas of the boat not identified in the previous chapter: access to these areas is FORBIDDEN. Only professional personnel, on their own responsibility, can gain access to them when the yacht is moored in a safe harbour or in a lay-up shipyard if they are wearing shoes with anti-slipping sole and belt/safety equipment tied to a safe point of the yacht to prevent falling.

The areas are following:

- **engine room**: area with a high level of noise, presence of moving components, hazard of burns, hazard of stumbling and falling.
  The access to the engine room is only 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 the access to this area is forbidden. accessing and staying in this area is allowed only when the yacht is idle and with the engines shut off.
- **bow:** outer area non protected by rails against the fall at sea. During navigation the access to this area is forbidden. Accessing and staying in this area is allowed only when the yacht is idle and with the engines shut off.

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

- life belt;
- individual life jackets:

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

CAUTION

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

2.6 ENGINE COMPARTMENT FIRE-FIGHTING SYSTEM (standard)

The engine room is protected by a fixed fire-fighting system, with automatic or manual activation, which uses ABC powder as extinguishing agent.
The fire-extinguishing is placed in the engine room starboard.
The fixed fire-fighting system operates automatically when temperature in the engine room exceeds 79 °C/ 175 °F.
The discharge is controlled by an automatic system consisting in two glass flasks filled with liquid and installed on both sprinklers placed on the engines, respectively. When the temperature around the flask reaches the preset level, the liquid expands until the flask breaks and the extinguisher activates.
The system can also be activated manually.
The handle for manual activation is located on deck starboard near the stern dinette.
In case of fire, an automatic control unit stops the engines immediately, the power generator and the electric extractor.
In this way the extinguishing agent is not sucked by the engines and the system is ineffective. A panel located in the main control station on the deck bridge controls this system.
In case of fire in the engine room, operate as follows:

- shut down both engines by means of the stop buttons on deck bridge dashboard;
- turn off the battery breaker switches and all magneto-thermal switches, thus cutting off supply to the AC users;
- pull tie rod for extinguisher discharge. The extinguisher can be automatically discharged, but pull the tie rod anyway.

If a fire breaks out while underway, perform the “may day” distress call; if the yacht is in the harbour, warn the Port Authority and evacuate all unnecessary personnel. Do not delay fire fighting to perform a rescue call.
.

NOTICE

THE EXTINGUISHER CONTAINS CONCENTRATED CHEMICAL AGENTS AND SUBPRODUCTS FOR FIRE FIGHTING. Avoid to inhale steams or long exposure to them.
THE ACCIDENTAL DRAIN DURING USE OR INSTALLATION CAN CAUSE SERIOUS INJURIES. Never let it drop down. Keep it far from extreme heat.

DANGER

The automatic fire-fighting system does not cut-off the fuel supply, only the relevant tie rods can do it.

WARNING

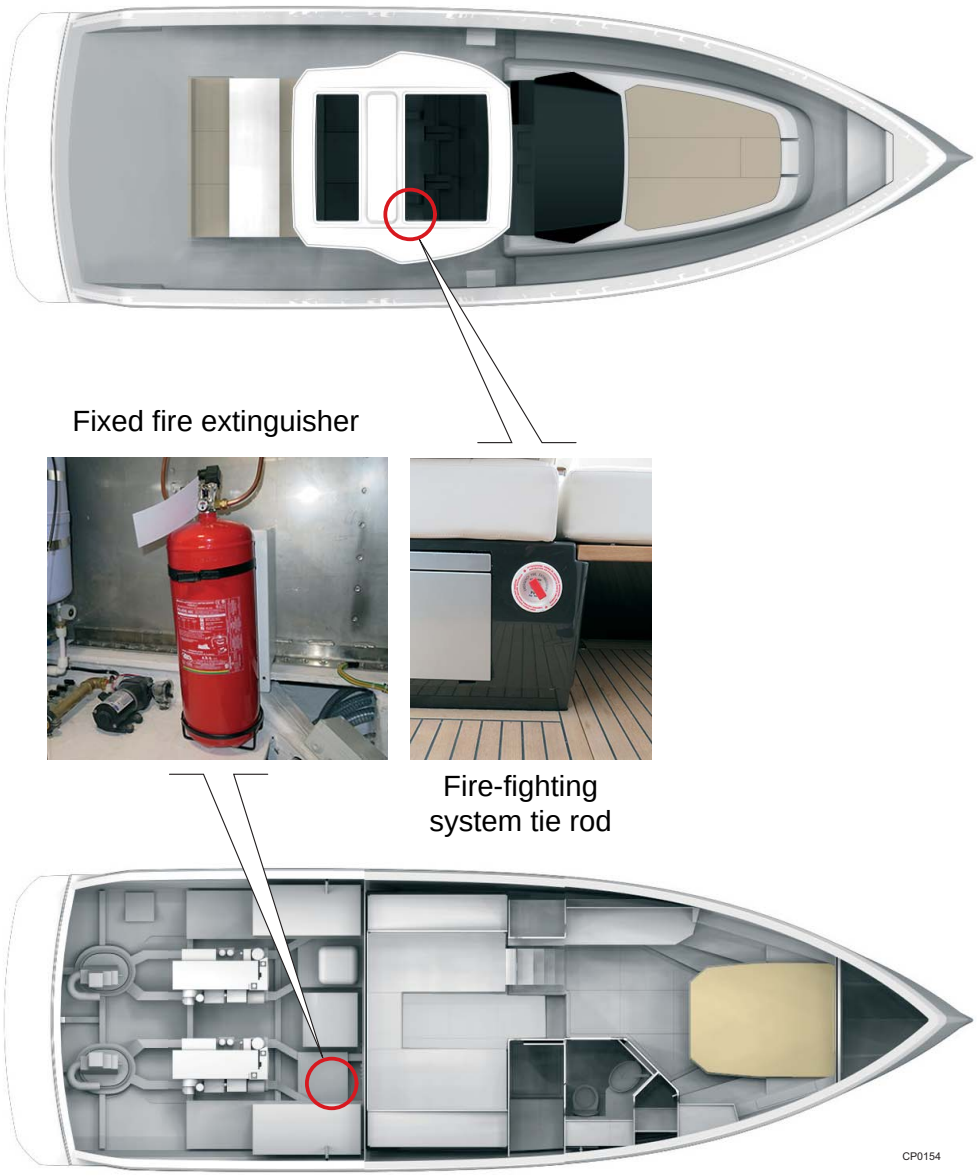
In case of fire in the engine room, stop the engine compartment blower immediately by switching off the respective breaker.

DANGER

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

CAUTION

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



2.6.1 Fire-fighting control tie rods

1. **Engines' fuel cut-off**
   This control closes the fuel supply valves of the thrust engines (starboard tank and port tank).
2. **Generator fuel cut-off**
   This control closes the fuel supply valves of the generator.
3. **Extinguisher discharge**
   Switch on the automatic discharge of the fixed extinguisher installed in the engine room.

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).

CAUTION

To shut the engines down, not only push the stop buttons but also always turn the keys.

WARNING

When operating the fire extinguishing system, close the engine compartment air intakes. Once the fire is extinguished, ventilate the compartment for a long time without activating the extractor. Clean out all the deposits very carefully, to prevent corrosion.

DANGER

Before activating the fire extinguisher, make sure nobody is near the engine compartment.

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

Wear eyes and skin protections when disposing the chemical products for fire extinguishing.

WARNING

Do not open the engine room hatch until the fire is completely extinguished.

DANGER

The chemical agents for extinguishing fires and the residues of a fire extinguisher are toxic. To avoid diseases, injuries or death caused by the breathing of the fumes, make sure that nobody stays in the engine room during the fire extinguisher discharge.

WARNING

Before ventilating the engine room after a fire, make sure that this has been completely extinguished. Before entering this room ventilate it by opening the hatchways.

WARNING

An automatic fire extinguisher can cause fire to spread out again. If fire spreads out again the passengers on board are in danger. Even the opening of the engine compartment access hatch can cause, through oxygen, a new spread of fire. If fire spreads out again, to avoid heavy injuries or even death, do not open the access to engine compartment until fire and embers have been completely extinguished.

2.6.2 Restoring conditions after a fire in the engine/generator compartment

If a fire has been extinguished, it is necessary to restore the essential conditions for navigation, in order to quickly reach the nearest harbour in which to carry out the due checks.
To resume navigation, the ventilation system of the engine room and the fuel system of the thrust engine must be brought back to normal working condition.

DANGER

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

DANGER

To reset, with the aim of resuming navigation is a recommended operation only in case the fire source has not produced damages to the yacht's structure or to important devices of the same.

In such a case, or should you have any doubt, it is essential, to wait for rescue without resuming navigation.

WARNING

Remember that the fire extinguishers on board will no longer be fully charged after a fire. Therefore, once returned to the harbour, you must have the fire extinguishers immediately recharged by authorised personnel.

To allow the starting of the thrust engine, it is necessary to activate manually the engine supply valves, placed on the fuel tanks.

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

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

2.6.3 Maintenance of fixed fire-fighting systems

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

CAUTION

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

2.6.4 General information to prevent fire

A regular and correct maintenance of the systems and a 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 favour a fire to spread.

The remaining percentage depends on the crew's reaction ability, and most of all, their rapidity to enter into action.
Nearly all fires, if early detected, 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 bilges, engine room, technical compartments and main control station frequently.
- after each use, thoroughly clean the surfaces of the engine room to eliminate oily patina that may have deposited.
- if a system does not work correctly, identify the failure and take the appropriate corrective actions
- operate all systems and equipment as specified;
- do not stow flammable materials on board where not envisaged.
- do not neglect the small premonitory signals; if something seems to be working strangely, investigate and discover the causes.

If a fire is detected, determine 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.

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

WARNING

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

WARNING

Many upholsteries, mattresses and cushions are flammable and, in case of fire, burn rapidly, consuming oxygen and developing toxic vapours. It is more practical and quicker to throw the solid material that begins to burn into the sea, if possible.

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).

2.6.5 Safety plates

The decals applied on the yacht are used to point out special risks: each decal 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 decals clean and readable, replace them if missing or damaged.

2.6.6 Visibility plane

The operator's view from the steering station can be obstructed by high attitude angles of the unit and other factors caused by one or more of the following variable conditions:

- opening of the bimini top (opt),
- load and load distribution,
- speed,
- rapid acceleration,
- sea conditions,
- rain and spray,
- darkness and fog,
- interior lights,
- people or movable mechanisms in the visual field of operator.

The International Regulations for Preventing Collisions at Sea (COLREGS) and road regulation require that appropriate supervision be maintained at all times and respecting the right of way. Compliance with these regulations is essential.

CAUTION

The visual field of the steering stations is limited. Avoid collisions. When these steering stations are used, be alert toward the yacht's bow and stern as required by COLREG and road regulation. Warn all crew to maintain increased surveillance.

2.7 MANDATORY SAFETY EQUIPMENT

In order to ensure the maintenance of the intrinsic safety conditions of the yacht, the Owner must keep the yacht in good operational conditions (as regards to the hull, and the propulsion, electrical and fire-fighting systems), and also to provide for the replacement of any system, rescue and safety equipment showing signs of wear or deficiencies capable of impairing their efficiency.
In addition to the equipment provided by Cantieri del Pardo, 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 they are launched there are no obstacles to free floating and must be equipped with proper fitting allowing for quick release from the boat when at sea.

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

CAUTION

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

2.7.1 Minimum rescue and safety facilities to be kept on board of yachts and pleasure boats with according to the distance from the coast or shore

TYPE OF NAVIGATION - (The x indicates that the item is compulsory - the adjacent number indicates the quantity)

A) Safety equipment for pleasure crafts (with or without EC marking)								
	without any limit	within 50 miles	within 12 miles	within 6 miles	within 3 miles	within 1 mile	within 300 metres	rivers, streams and waterways
Self-inflatable life raft (for all persons on board)	x	x						
Floating devices (for all persons on board)			x					
Life belts (one for each person on board)	x	x	x	x	x	x		x
Life belt with line	x1	x1	x1	x1	x1	x1		x1
Light buoy	x1	x1	x1	x1				
Smoke buoy	x2	x2	x2	x2	x1			
Compass and deviation charts (a)	x	x	x					
Clock	x	x						
Barometer	x	x						
Binocular	x	x						
Nautical charts of navigation area	x	x						
Plotting tools	x	x						
Red light hand fires	x4	x3	x2	x2	x2			
Red signal rockets with parachute	x4	x3	x2	x2				
First aid kit (b)	x	x						
Prescribed lights (c)	x	x	x	x	x			
Acoustic signalling equipment (d)	x	x	x	x	x			
Position indicating radio beacon (Loran, Gps)	x	x						
VHF equipment	x	x	x					
Radar reflector	x	x						
E.P.I.R.B. (emergency position indicating radio beacon)	x							
B) Further safety equipment for crafts without EC mark								
Pump or other draining equipment	x	x	x	x	x	x		
Fire-fighting equipment - fire extinguishers: as shown in the attached Table A) according to Ministerial Decree 21/01/1994 n° 232 (e)	x	x	x	x	x	x		

2.8 ITEMS USEFUL TO HAVE ON BOARD

In addition to the standard safety and marine equipment, required by the existing regulations for leisure crafts, we recommend to keep 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 transmissions
- 5 kg of anti-freeze liquid
- 1 kg of oil for each thruster
- 10 kg of oil for the electro-hydraulic system
- 1 set of navigation light bulbs
- 10 spare halogen bulbs for little spot lights
- 2 spare bulbs for engine room lights
- insulating tape
- stainless steel pipe clamps of various size
- 1 underwater lamp
- 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
- fuses for synoptic panel
- noise-proof earphones
- batteries for signal light unit

2.9 SCHEDULE

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

	2017	2018	2019	2020	2021	2022
Self-inflatable life raft (for all persons on board)						
Individual life belt (for each person on board)						
Life jacket with rope (1) (floating type and unwindable)						
Light buoy (1)						
Smoke buoy (3)						
Red light hand fires (4)						
Red signal rockets with parachute (4)						
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.						

NOTES:

3.1 TECHNICAL SPECIFICATION

GENERAL DIMENSIONS AND FEATURES

MODEL ..... Pardo 43
PROJECT ..... Zuccheri Yacht Design
DESIGN ..... Zuccheri Yacht Design & Cantiere del Pardo
BUILDER ..... Cantiere del Pardo
EC CATEGORY ..... B
Length overall (LOA) ..... 13.45 m
Length overall with long stern platform ..... 14.00 m
Beam ..... 4.20 m
Draught ..... 1.05 m
Number of passengers ..... 12 B /16 C pax
Displacement ..... 9.9 ton approx.
Engines ..... 2 Volvo IPS 500 (2 x 370 hp) Std
2 Volvo IPS 600 (2 x 435 hp) Opt
Fuel tank ..... approx. 1200 l
Water tank ..... approx. 300 l
Version ..... EU, AUS (USA, JPN Opt)

HULL AND DECK CONSTRUCTION

Variable-geometry hull with stern dihedral angle 16° and bow angle >50° ensures the yacht's stability at sea, and quick and easy manoeuvring.
Hull made of vinylester resin infusion with monolithic bottom and keel, and side and deck made of high density PVC sandwich to get greater structural rigidity and thermal and acoustic insulation. Structural bulkheads made of composite material.
Deck hardware AISI 316L stainless steel. Bronze sea cocks.

DECK

Deck, platform and washboard in solid teak
Walkway handrail made of stainless steel
Sun-deck handrail made of stainless steel
Control station handrail made of stainless steel
Side fenders compartment
Side foldable steps
Engine room manhole
Stainless steel and tinted plexiglass door leading to cabins
Bow sun-deck
Fixed benches astern
Fixed centre table
Fixed stern platform
Engine hatch opened by electric motors
Cold and hot water extractable shower
Dock power supply socket
Fuel and water inlet caps
Swim ladder

CONTROL CONSOLE
3 silvertex pilot's seats
Adjustable steering wheel
Cup holder on steering wheel side
Footrest
Handrail
Windscreen without pillars

GALLEY
Black
2 electric burners
1 square stainless steel sink
1 refrigerator with stainless steel door

T-TOP
Black carbon reinforcements
2 red LEDs in the centre
8 extra LED lights (opt)
Stern sun-shading cover with removable posts (opt)
Bow sun-shading cover with removable posts (opt)
Electric stern bimini top (opt)

OPTIONALS ON REQUEST
Galley in different colours
1 Barbecue or induction cooker
1 Drawer refrigerator
1 Ice maker (12V) or coffee maker
Electric folding table with two bases
Swim ladder with boarding aid handholds

INTERIOR LAYOUT
The interior is made in oak or painted on request (opt)
The interior lights are LED and dimmer adjustment is available (opt)

OWNER'S CABIN
Double bed (1.60 X 2.00 m)
Peaks and Drawers
Single-door wardrobe
2 Wardrobes with chests of drawers
Shelves to the sides of the bed
1 Openable skylight with room-darkening curtains
3 Portholes
LED courtesy lights
12/230 V electric outlet
Air conditioning and Heating (opt)

BATHROOM
Electric toilet
Ceramic sink
Mirror, peak and shelf
Electric draining pump
Separate shower
1 Openable satin-finish porthole
Shower seat
Plexiglass shower door

STOWAGE CABIN (STANDARD)
Side stowage peaks
LED lights
2 openable skylights with room-darkening curtains

GUESTS' CABIN (ON REQUEST)
2 Single beds (1.90 m x 80 cm) (opt)
Wardrobes (opt)
Shelf between the two beds (opt)
Supplementary light (opt)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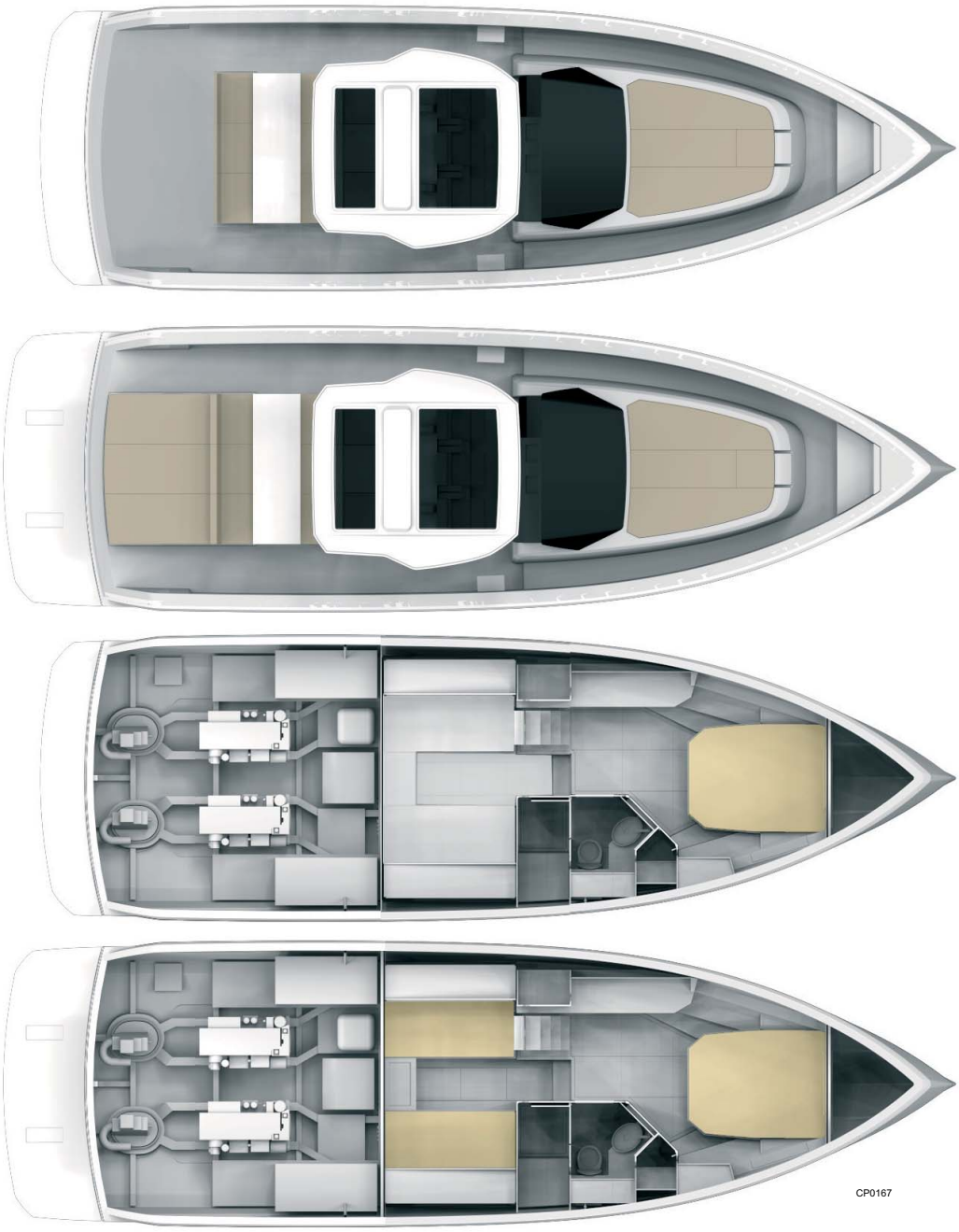


ON-BOARD SYSTEMS
All the on-board systems are made using top quality materials and are compliant with the EC mark, according to the construction standards of the yard.

BILGE PUMPS
12V electric circuits
4 Electric pumps with automatic floaters and alarms in the control station

BATTERIES
12V electric control panel
12V socket
2x95 Amp engine
2x95 Amp services

230 V ELECTRIC PANEL
Safety circuit breaker
230 V socket (dock electric socket)
Separate switch for water heater

BATTERY CHARGER
Battery charger 12V/80 Amp.
Battery main switch

12V ELECTRIC CONTROL PANEL
12V socket
Water gauge
Battery gauge

LIGHTS
Ceiling lights
Reading lights
Bathroom lights
Supplementary lights
Dimmer-adjustable lights (opt)

ENTERTAINMENT
Fusion system (opt)
1 22” LED TV (opt)

ENGINE
2 x Volvo IPS 500 (2 x 370hp)
2 x Volvo IPS 600 (2 x 435hp) (Opt)
Volvo Interceptors
IPS Joystick
7” screen
12” or 16” Raymarine or Garmin screens (opt)
Dual circuit cooling system for sea water
Steel fuel tank
Fuel filter
Engine compartment - totally soundproof
Automatic fire fighting system
Stabilizer (opt)

TANKS
Fuel tank capacity ..... approx. 1200 l
Water tank capacity ..... approx. 300 l
Black water tank ..... approx. 62 l
Hot water heater ..... 30 l

ENGINE ROOM
12V socket
Fuel cut-off solenoid valves
Fisher Panda 5000i, 4kw/5kva generator (opt)
Fire extinguisher

NOTE

The technical specifications and the performances indicated are merely indicative, and do not represent an offer with the value of a contract in any way, and refer to standard models of 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.

CAUTION

Any change in arrangement of the loads on board may significantly affect stability, trim and performance of the yacht.

CAUTION

Cantiere del Pardo are projected to obtain a correct trim with full optional equipment.

CAUTION

- *Bilge water should be kept to a minimum.*
- *Stability is reduced by any weight added high up.*
- *Stability may be reduced when towing or lifting heavy weights using a davit or boom.*
- *Breaking waves are a serious stability hazard.*

CAUTION

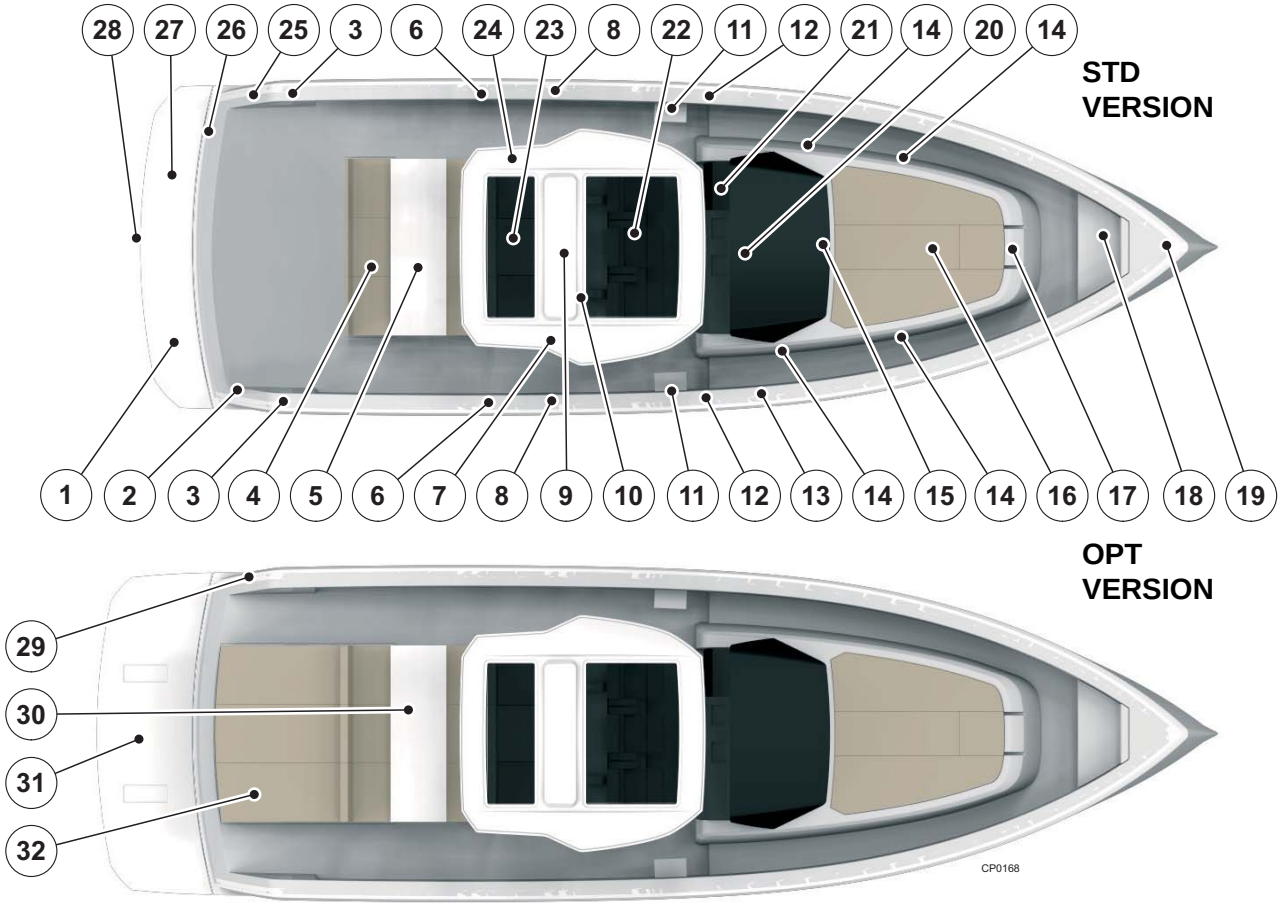
Cantiere del Pardo reserves the right to modify, improve, replace and remove the equipment mentioned above, as well as to cease the distribution, sale or production of some equipment, without notice. Therefore, no compensation, claim or dispute will be raised against Cantiere del Pardo SPA.

3.2 GENERAL ARRANGEMENTS

3.2.1 Arrangements and operation

This chapter contains a general description of the yacht and is supported by a set of illustrations, thanks to which it is possible to easily locate the main areas and the various devices. Advice and information on the correct use of the various instruments are also given.
The 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 MAIN DECK



1. Stern platform
2. Fresh water inlet filler neck and extractable shower
3. Stern mooring cleat
4. Stern bench
5. Fixed stern table
6. Fuel inlet filler neck
7. Hard-top
8. Side fenders compartments
9. Utility/galley cabinet and engine room inspection hatch
10. Engine room fire-fighting system tie rods
11. Side foldable steps
12. Mid yacht mooring cleat
13. Waste drain outlets
14. Ventilation skylight
15. Windscreen
16. Sun-deck with cushions
17. Emergency/escape skylight
18. Anchor chain and winch compartment
19. Bow mooring cleats
20. Control station
21. Underdeck access sliding door
22. Pilot's seats
23. Seat with refrigerator drawers (optional)
24. Cockpit table controls (optional)
25. Dock electric socket and gangway controls
26. Gangway extension

27. Fixed stern platform
28. Handhold for climbing on board
29. Platform-lift controls and engine inspection hatch
30. Electrically folding table (optional)
31. Platform-lift
32. Stern sun-deck with cushions/engine inspection hatch

CAUTION

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

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 Cantiere del pardo.

WARNING

Never start navigation with swim ladder, gangway and platform-lift not correctly stowed/closed.

DANGER

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

CAUTION

Do not use the winches (optional) as permanent mooring points.

CAUTION

Keep the steps of the side accesses closed during navigation in order to not create an encumbrance or obstacle on the main deck.

WARNING

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

Before starting navigation, check that the side steps are closed and that there are no ropes or fenders that might obstruct passageways.

DANGER

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

CAUTION

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

DANGER

Only allow authorized and qualified personnel to use the devices installed in the control station.

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

CAUTION

An open skylight creates a block, an obstacle on the main deck.

DANGER

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

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

DANGER

Stop using the on-board handlings if the sea-weather conditions (wind, currents, weather factors) could jeopardize the yacht's stability.

CAUTION

The yacht is equipped with underwater lights (optional). Keep them clean and for further informations see the relevant manual delivered separately.

CAUTION

Never start navigation with the access companion to the underdeck unlocked. Its structure, if free, might develop an inertial force causing dangers of cuts or crushing.

CAUTION

Never navigate with the bimini top (optional) mounted. It is a good habit to stow away the bimini top (optional) always dry. If you are forced to store it wet, reopen it as soon as possible and let it dry.

This because the moisture trapped in the canvas would cause mildew that could irreparably stain the tissue. The stainless steel arches too must be kept clean and lubricated with vaseline oil, to prevent the formation of rust which, in contact with tissue, could stain it.

CAUTION

To clean the bimini top (optional), do not use hydro-cleaners and aggressive detergents.

DANGER

To keep the bimini top (optional) open, make sure that the safety locks have been engaged, in order to ensure the safety of passengers.

CAUTION

Do not leave the bimini top (optional) open in the event of heavy rain. Do not leave the bimini top (optional) open with the yacht unattended. Do not let water become stagnant on the cloth and canopy of the bimini.

CAUTION

It is absolutely forbidden to walk on the movable bimini top (optional) structure.

CAUTION

Before moving the movable structure of the bimini top (optional), verify that there are no obstacles that can impede its movement.

MAINTENANCE

DECK LIGHTING SYSTEM
At least once a week, carry out an accurate cleaning.
At least once a month, check the operation.
At least once every three months, check for the presence of corrosion.

WARNING

Fasten or secure all objects that during navigation can move, fall or be in the way.

DANGER

Never lean on the hard top support.

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by any special equipment stored in the on-board peaks by the Owner or by the crew.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the equipment.

CAUTION

For a correct use of the various equipment see the relevant instruction manual.

CAUTION

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

CAUTION

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

CAUTION

Please remember that the burners, even after cooking, remain very hot for a long time and may cause damage to property or burns.

DANGER

Do not use the burners without the protection screens in place. Danger of fire or damage to the surrounding furniture.

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

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

CAUTION

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

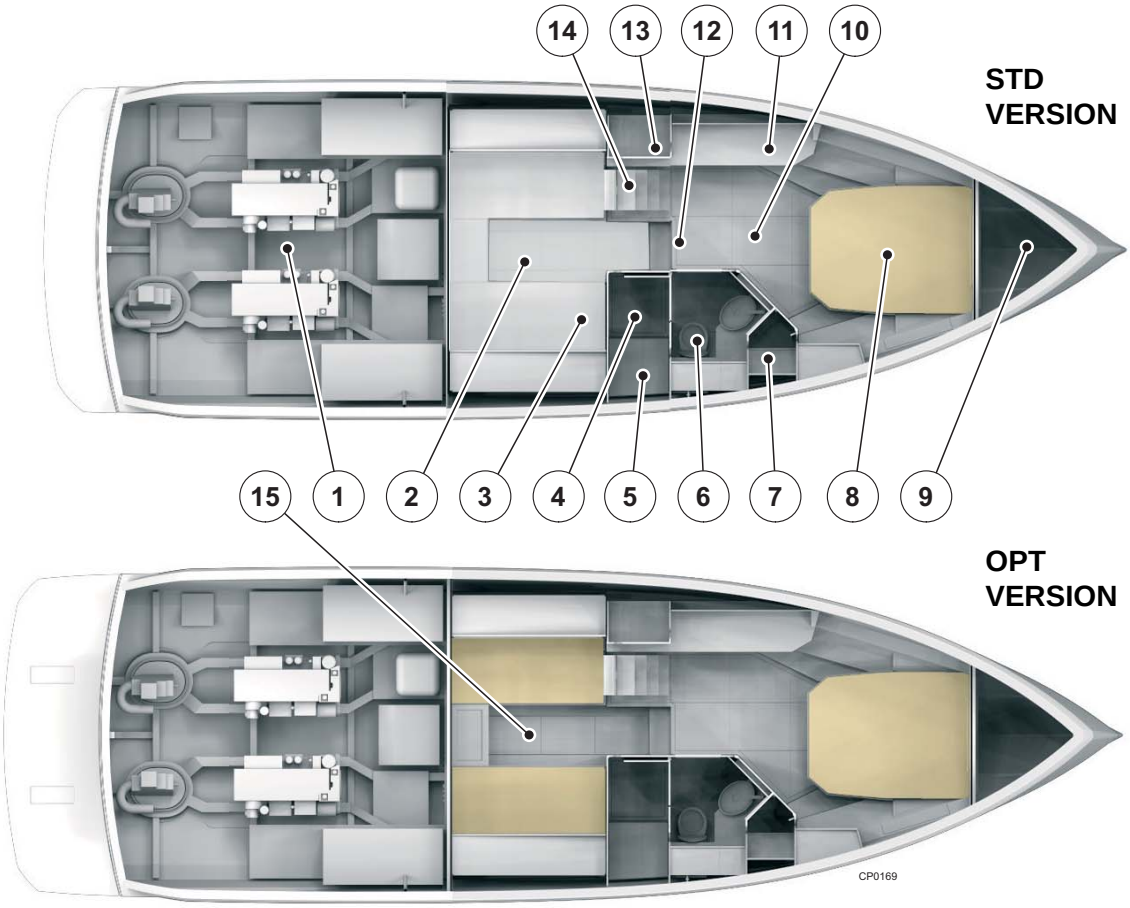
CAUTION

Keep access to the on-board instruments reserved for the captain only in order to prevent accidental alterations of the instruments by unskilled persons.

DANGER

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

3.4 UNDER DECK



1. Engine room
2. Stowage cabin (standard)
3. Black water sea drain valve
4. Shower box
5. Black water tank
6. Day head
7. Cabinet
8. Double bed
9. Anchor and chain compartment.
10. Fresh water tank flange
11. Utility cabinet
12. Grey water tank with relevant draining pump and autopilot transducer
13. General electric panel
14. Deck access stair
15. Stern cabin with two single beds (optional)

CAUTION

Please contact the Cantiere del Pardo Service Department for companion adjustment.

CAUTION

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

CAUTION

The companion should be closed while navigating to avoid accidental water penetration.

WARNING

The companion at salon entry must be secured properly during navigation to prevent that the yacht's listing closes it unexpectedly, causing damage to property and harm to persons. Before moving the salon companion, check that there are no objects or people within its range.

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

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

CAUTION

Never use any type of cooker to heat the interior rooms.

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

Keep all on board steps clean and dry.

CAUTION

During navigation, keep the vents closed to prevent unpleasant water penetration.

CAUTION

Keep the watertight hatch closed during navigation. Do not use solvents to clean windows or painted products. To prevent accidents caused by a falling cover, keep limbs away from narrow zones.

CAUTION

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

CAUTION

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

MAINTENANCE

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

CAUTION

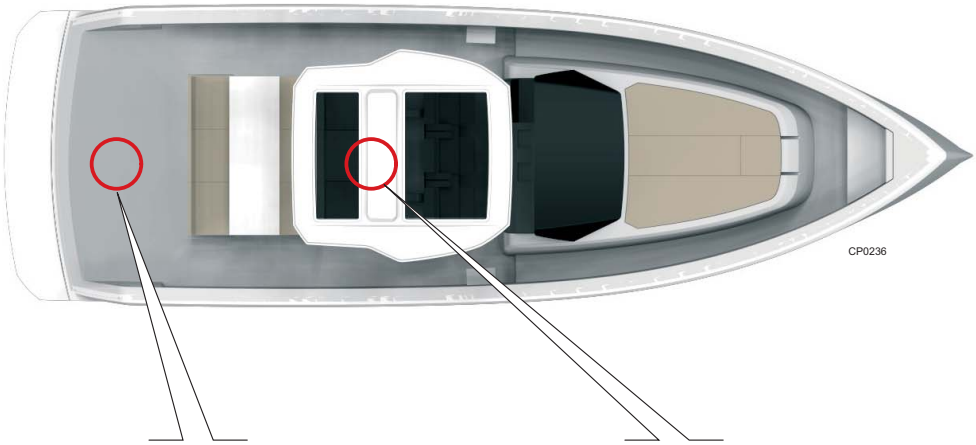
Never use denaturised alcohol or acetone to clean Plexiglas parts; they could crack inside.

CAUTION

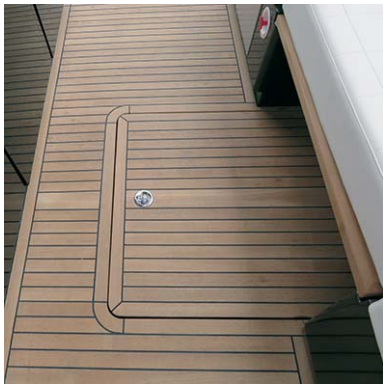
Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the equipment.

3.4.1 Engine room

The engine room can be accessed through the hatchway opening on deck in front of the utility/galley cabinet.
The engine room also has a secondary access, through the opening of a hatchway underneath the lazarette hatch (if installed).



Secondary access



Main access

CAUTION

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

DANGER

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

DANGER

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

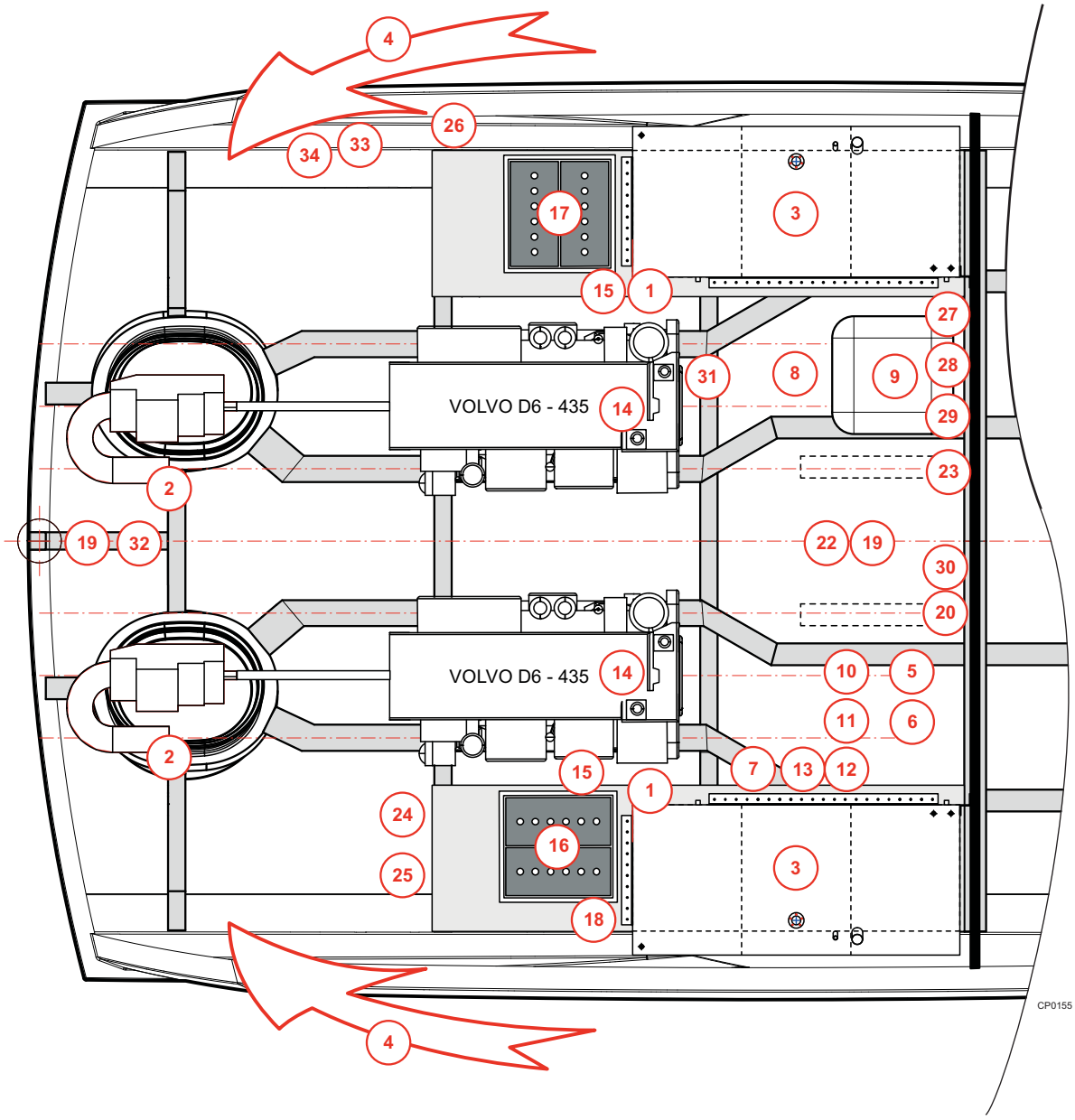
CAUTION

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

CAUTION

Cantieri del Pardo S.p.A. decline any responsibility for any accident or damage to persons or things caused by a wrong use of the devices installed on board.

Engine room components lay-out



1. Fuel solenoid valve
2. Engine exhaust piping
3. Fuel tank
4. Engine room air duct from deck
5. Fresh water system pump
6. 230V water heater
7. Automatic fire extinguisher
8. Generator battery
9. Generator
10. A/C recirculation pump (optional)
11. A/C unit (optional)
12. A/C control unit (optional)
13. A/C unit sea water strainer (optional)
14. Volvo engine
15. Fuel prefilters
16. Engines start batteries
17. User batteries
18. Battery panel
19. Bilge pumps
20. Service/ignition battery charger
21. ISO 4589 sound insulator
22. Gyroscopic stabilizer
23. Stabilizer panel
24. Gangway electro-hydraulic control unit
25. Stern platform electro-hydraulic control unit
26. Dock socket thermal switch box
27. Generator battery breaker
28. Generator electronics panel
29. Stabilizer thermal switch box
30. Battery charger
31. Sea cock for generator cooling
32. Volvo control unit
33. Generator separator and silencer
34. Generator exhaust

3.5 NAVIGATION LIGHTS OF THE YACHT

A three-colour light is placed on top of the hard top and contains the various navigation lights:

Mast head light (white)
Visibility range 225°.
Shown by every engine-driven yacht.

Side lights or navigation lights (red port, green starboard)
Visibility range 112° 30' each.
Shown by any moving yacht and caused by any reason.

Aft light (white)
Said also stern light, visibility range 135°.
Shown by any moving yacht and caused by any reason.

Anchor riding light (white)
Visibility range 360°, can be seen from any point of the horizon.
Seen from every anchored or under navigation yacht, or in specific circumstances.

The rules relevant to the navigation lights 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 and international rules relevant to lighting can slightly vary, we suggest therefore to gather information about the local rules of your area. Night navigation requires more precaution. All rules are applicable but apart from the right of course, it is advisable to slow down and to keep the proper distance from other vessels.
It is a good rule to remember that bright lights reduce visibility at night.

The navigation light control buttons are installed in the main control station, while the thermal switch protecting the navigation lights is installed on the main electric panel.

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.

NOTES:

4.1 WATER SYSTEMS

4.1.1 Foreword

It is important to rinse the entire water circuit on board the first time you use the boat (in the yard the water circuit is protected by an antifreeze for systems used for food).
The water tanks can be treated against the formation of algae with a copper sulphate-based product. We recommend applying the treatment again, depending on where the boat will sail.
Clean and empty all water circuits before winter storage (especially the cockpit shower and the water heater) to prevent damage caused by intense cold. Regularly clean/change the filters.

CAUTION

Regularly check the water-tightness of the connections in the various water systems. Check if the screws and bolts are tight and replace them if they are worn or corroded.

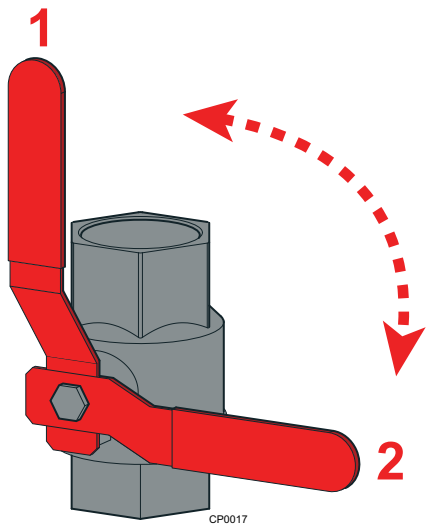
Disconnect the direct water intake from the dock (optional) before sailing.

If the boat sails at temperatures below zero, you can use antifreeze in the water circuits: use non-toxic antifreeze recommended for food use. NEVER USE CAR ANTIFREEZE RISK OF POISONING

The shut-off valve is closed when its lever is perpendicular to the hose. It is open when valve lever is parallel to the hose.

CAUTION

The valves last about five years. A qualified marine technician must check all valves every five years and replace them if necessary.



1. Valve open
2. Valve closed

4.1.2 Fresh water system

The fresh water system has a capacity of 300l in the standard version. The tank is located in the bilge under the quarters area.
The fresh water system is fitted with a pump installed in the engine room that distributes the water to the various users. When the pump is electrically powered, it starts and stops automatically because it is controlled by a system that senses the pressure of the downstream circuit. The pump supplies the system by drawing water from the tank; the water flowing through pipes and manifolds supplies the various on board users.
The water inlet filler neck is installed astern and starboard
In case of technical problems, see the instruction manual of the pump unit or address to the Service Department.

CAUTION

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

CAUTION

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

CAUTION

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

WARNING

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

CAUTION

Never let the fresh water pump run dry.

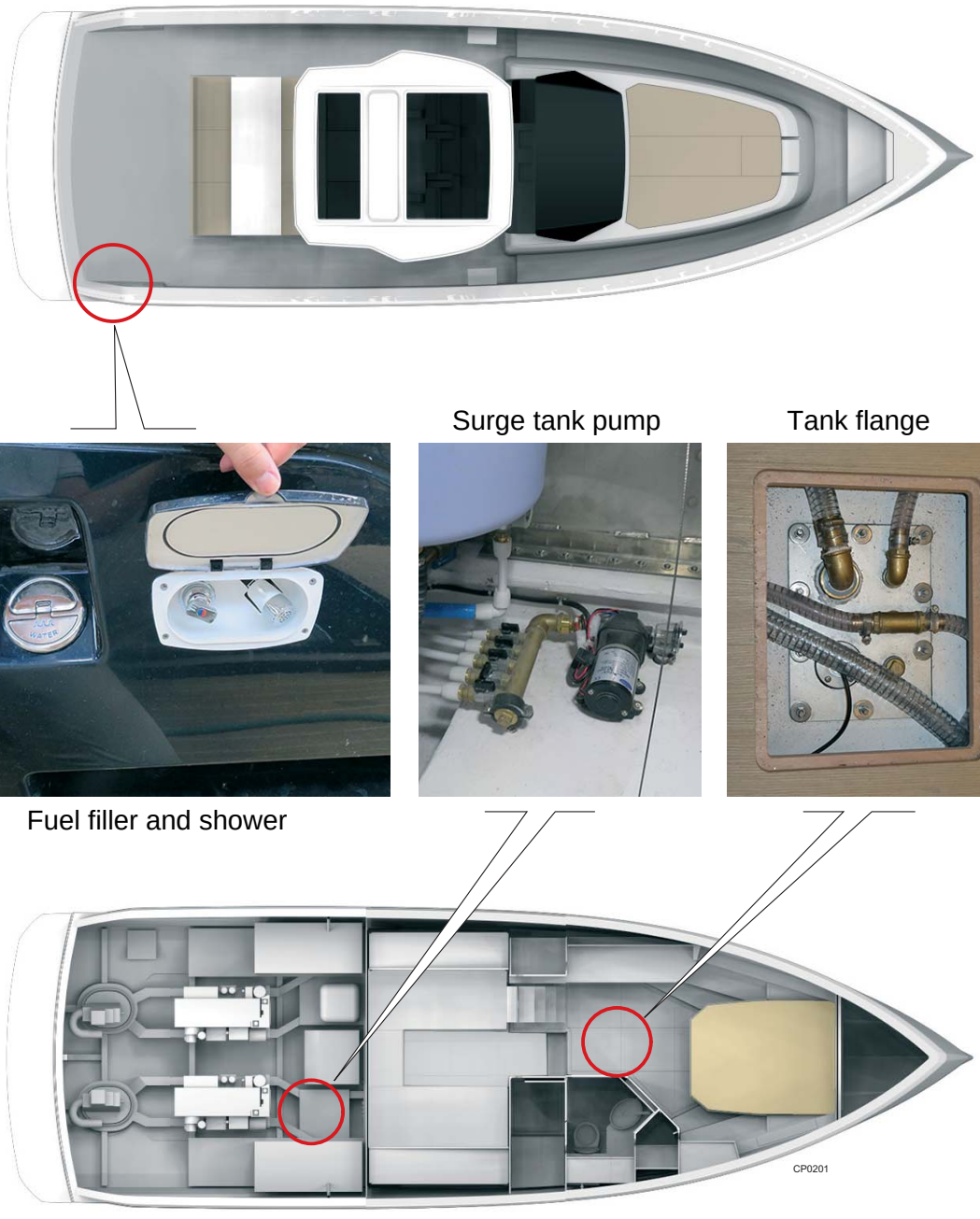
CAUTION

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

CAUTION

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

Cantiere del Pardo declines all responsibility concerning periodical 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.



4.1.3 Hot fresh water system

Water is drawn from the tank by means of a pump and is delivered to the water heater (30l) in the engine room. The pump keeps the circuit always under pressure, allows the hot water's constant circulation and makes it available by tap opening.
A thermostatic valve located on the water heater enables setting the water temperature at the taps. The water heater is supplied by the 230 V mains (generator or dock electric power).
The water heater is also equipped with a water connection with engine cooling circuit sealed. With this system, the water heater can heat fresh water on board when the engines are running. This is very inexpensive and recovers thermal energy that would otherwise be dispersed in the sea with the thrust engine cooling system.

Thermostatic valve

If the hot water circuit is not used for more than one day, you have to make sure that the water heater is filled with water by opening a tap (turned to hot water) and letting the water flow for a few seconds before you put the water heater in operation.

In order to use hot water, it is necessary that:
- the water heater (230 V section of electric panel) and autoclave (12 V section of electric panel) magneto-thermal switches are set to ON;
- ensure that a power supply is connected (generator or dock);
- the user battery breaker is set to ON.

Water heater

NOTICE

The boiler is not a storage yacht: wait for it to heat up.

4.1.4 Maintenance of hot and cold fresh water system

FRESH WATER TANK

Cleaning and check

At least every month, drain the fresh water tank completely and rinse it a couple of times with clean fresh water. This in order to change completely the water stored and at the same time also to wash the tank.

At least once a year carry out the inner cleaning of the tank.

Regularly pour a specific disinfectant inside the tank and in the filling plugs basin, in manufacturer-recommended doses, thus avoiding forming of bacteria inside the system.

Electric water heater

Cleaning and check

WARNING

During winter, if you do not use the R.I.B., drain the water heater to avoid cracks due to freezing.

MAINTENANCE

At least once a month check the operation of the water heater.

At least once a month check the operation of the relief valve.

At least once a year carry out the thermostat calibration, and if necessary, have it calibrated again.

At least every two years descale the resistor.

CAUTION

If warm water is not available, because the fresh water circuit is empty, switch off the water heater to prevent damaging it resistor.

FRESH WATER SYSTEM

Cleaning and 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 users, without involving the operation of the general system.

At least once every six months check for leakages along the system.

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

WARNING

The high temperature can cause the softening of the pipes and the following slackening of the fittings. Always check the pipes tightening, especially those located near heat sources.

AUTOCLAVE PUMP

Cleaning and check

The pump should be serviced by qualified personnel only, after having been disconnected from the power mains.

No routine maintenance is required so long as the following precautions are taken:

- In case of freezing risk, it is necessary to empty the pump body; then refill the pump before operating it but make sure the ambient temperature is higher than the water freezing temperature.
- Make sure the pump never works dry.
- If the pump remains unused for a long time, it is better to empty the body and clean it.
- Periodically check the efficiency of valves and filters, if any.
- On D.C. motor the brushes must be periodically checked for consumption and spring pressure.

Protect electric components of the pump with proper products.

For further information, see the Manufacturer's Manual.

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.

WARNING

The surge tank pump is self-priming but it needs though, in order to operate, to have its body filled with liquid.

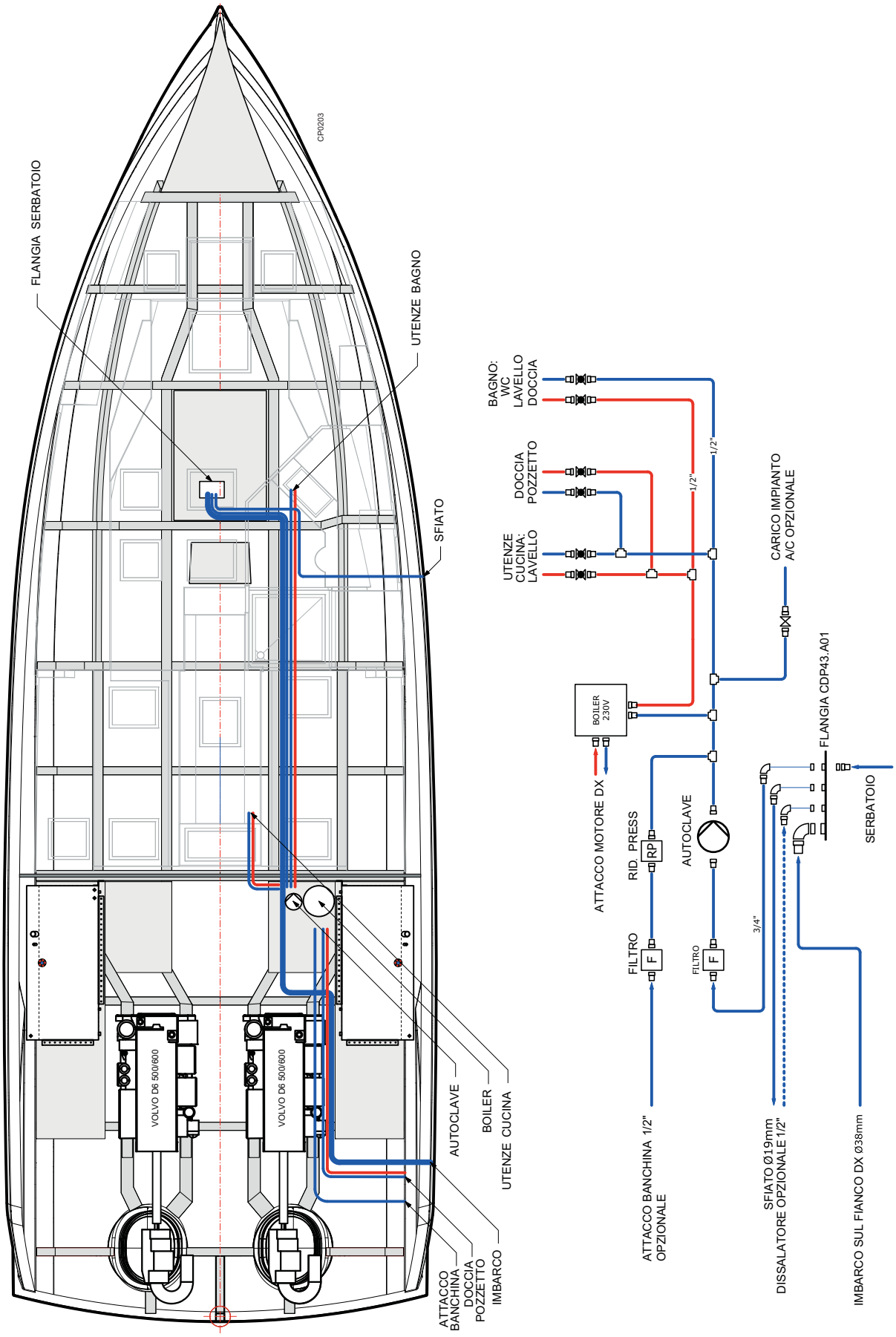
For a correct use, we recommend at first priming or after a long period of idling, to fill the pump body with liquid, to check the pressure inside the tank (it must have the same pressure priming the electric pump) and to verify the clockwise rotation of the pump (seen from the engine side).

Besides, if on the synoptic panel the pump operating led remains always lit, but the enslaved users are not in use, check for leaks.

DANGER

Before carrying out maintenance on the pumps, prevent their accidental priming.

Fresh water system



4.2 SEA WATER SYSTEM

The sea water systems on board are:

- **Engine chilling system**
  It consists of a circuit with sea water sucked directly by the engine inner pump by means of a sea cock on the IPSs equipped with cut-off valve and strainer. The sucked water flows through the strainer, is delivered to the heat exchanger of the engine and marine gear and is finally discharged overboard through the engine gas exhaust.
- **Generator cooling system**
  Sea water is directly sucked by the generator pump by means of a sea cock provided with cut-off valve and strainer.
  The water sucked by the generator, flows through the strainer and is then delivered to the heat exchanger and after that discharged overboard through the gas discharge plus water separator.
- **Chilling system for air conditioning (optional)**
  Sea water is sucked directly by an electric pump and a sea cock equipped with cut-off valve and strainer. The sucked water is sent to the heat exchanger of the air conditioner and then discharged overboard.

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

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

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

CAUTION

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

CAUTION

Before cleaning the sea cock strainers, check that the users supplied with sea water are switched off and not in use.

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. Caution is very important to prevent damaging the mechanical parts (engines, generator, etc.), draining systems and to prevent jeopardizing the safety of the yacht.

WARNING

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

CAUTION

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

WARNING

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

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

WARNING

Avoid running the user sea water pump dry for more than a few minutes.

DANGER

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

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 each navigation and at regular intervals during navigation, the condition of the seacock strainers of the different equipment.

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment or systems.

4.2.1 Maintenance of sea cocks and strainers

SEA COCKS AND STRAINERS

Cleaning (as required depending on the docking area, but at least every month)

Sea cock cleaning

This operation has to be carried out outside, therefore the yacht must be in a dry dock or you can ask the intervention of a diver.

Have the sea cocks cleaned (removal of seaweed or barnacles. If necessary have them removed with a brush).

DANGER

If the boat is in water, before starting working on the shaft lines, disable the start of engine, generator and sea water pumps.

Inspection and cleaning valves and filters

Cleaning is necessary more frequently if the sucked waters are particularly dirty (seaweeds, mucilage presence 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.

Inspection and cleaning valves and filters

- 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, lubricate and protect with proper products.
- Move the levers repeatedly.
- Close the cut-off valve upstream the filter.
- Unscrew screws of filter cover.
- Remove the filter element, clean it with a brush and rinse it in water (replace as necessary).
- Clean the filter 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 filter, the cover and tighten the nuts.

Reopen the cut-off valve and check whether the strainer cover is leaking.

WARNING

Before servicing the sea water lines, disable the operation of the connected utilities. Before restarting the user, make sure that the cut-off valve is completely open.

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. Caution is very important to prevent damaging the mechanical parts (engines, generator, etc.), draining systems and to prevent jeopardizing the safety of the yacht.

Electric pumps

Cleaning and check

At least each week, check the operation of the salt water pump.

WARNING

The pump is self-priming but, in order to operate, it needs to have its body filled with liquid.

For a correct use, we recommend at first priming or after a long idling period, to fill the pump body with liquid and to verify the rotation direction of the pump (it should be clockwise, seen from the engine side).

Besides, if on the synoptic panel the pump operating led remains always lit, but the enslaved users are not in use, check for leaks.

DANGER

Before servicing the pump, disable its operation.

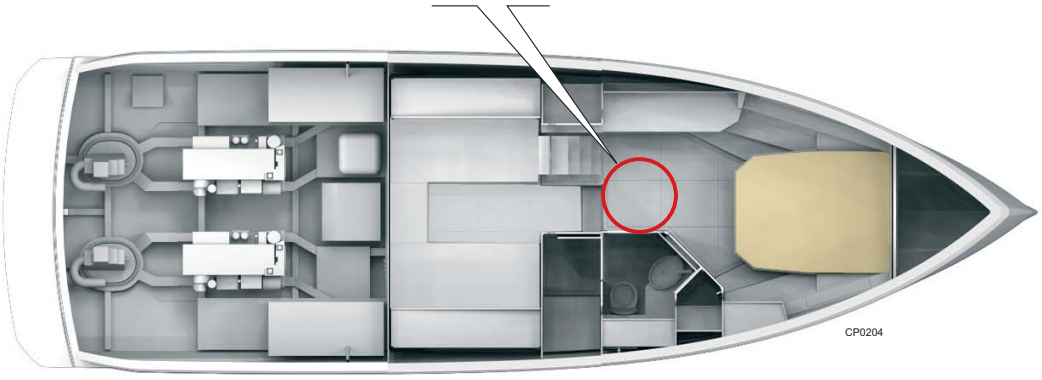
- Have the inner cleanliness of the pump checked; possibly, have it cleaned with well diluted detergent and dried.
- Have the fittings for well tightening and corrosion checked.
- Frequently check and keep the suction filter clean.
- Check that the electric power supply cables are in good conditions.

For further information, see the Manufacturer's Manual.

4.3 GREY WATER SYSTEM

The water draining from the sink and bathroom shower is collected by a case containing a draining pump that automatically activates when the float reaches the maximum level and deactivates when it reaches the minimum level.
The grey water collection case is installed in the bilge of the quarters area.
The utility cabinet sink on deck drains directly overboard by means of a dedicated drain.

Grey water collecting tank



If the air conditioning system is installed, a fan-coil condensate collection tank containing a draining pump that automatically activates when the float reaches the maximum level and deactivates when it reaches the minimum level is installed.

CAUTION

Before using the bathrooms and the galley, make sure their drain valves are open

CAUTION

Close the valves after each use and especially when no one is on board.

CAUTION

Observe the regulations locally in force regarding the grey water discharge.

CAUTION

Totally empty the system and the grey water collection tanks (optional) before the lay-up period in order to prevent any problems with freezing.

MAINTENANCE

At least once every three months:
- *clean the shower tanks and condensate collection tanks;*
- *completely clean the pumps;*

At least once every six months check the status of the pumps.
- *Regularly check the tightening of the supports and the hose joints.*
- *Check operation and water tightness of the valves and sea exhausts.*
- *Check that the siphon break devices are operating properly.*

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment or systems.

4.4 BLACK WATER SYSTEM

The water used for the WC wash is taken from the cold water system by means of a distribution manifold. A WC solenoid valve relevant has been installed on the manifold; it allows the flush of water each time the buttons “Before use” or “After use” are pressed.
Activate the WC pump with its switch on the electric panel in the quarters area (12V users).
The tank containing black water has a 60l capacity (STD) and is installed in the starboard bulwark near the shower cabinet.
We advise you to monitor the tank level before entering the harbour and to evaluate whether to drain it at sea or to take advantage of the dock services, checking previously if the harbour you are navigating into has the facility to drain the tank by means of the special WASTE outlet.

The tank can be emptied in two ways:
- with connection to a pumping system that empties the tank by suction.
  This system uses the “WASTE” filler on deck (starboard).
- through the drain valve directly to sea (provided that this procedure is authorised by the law of the country where the boat sails).

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 dock 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.

CAUTION

The full tank condition is indicated by a red LED present on the WC control panel.

Discharging the WC using an excessive amount of water can cause the tanks to overfill.

CAUTION

Use only water-soluble toilet paper to prevent clogging.

CAUTION

*In case of sinking hazard, if the escaping conditions allow it, close the ball valves of the **black water drain.***

CAUTION

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

CAUTION

All leisure crafts classified for a number of passengers exceeding the 15 units and equipped with toilets can drain the untreated sewage at sea according to MARPOL rules, only BEYOND the limit of 12 (twelve) miles from the coast, while navigating at fixed track and at the maximum speed allowed, anyway not lower than 4 knots.

CAUTION

In case of need, break or pollution of the tanks, they can be replaced.
Contact Cantiere del Pardo Service Department.

CAUTION

Forcing the WC discharge can cause overfill of the tank.

CAUTION

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

WARNING

The overboard draining valves must be closed when the toilets are not in use.

4.4.1 WC panel operation and use

Press “BEFORE USE” before using the toilet. This will fill the toilet with a small amount of water.
Press “AFTER USE” after using the toilet; this will start the flushing cycle; at the end of the cycle the toilet will remain empty.
If you use a standard unit, it is possible to adjust the amount of water used during each discharging cycle. Turn the adjusting stud on the rear side of the standard control panel to easily adjust the amount of clean water to be used.
Recommended water level is 1 cm above ceramic discharge hole.

CAUTION

The “TANK LEVEL” LED indicates the tank filling status. It is only a warning. Do not press flushing button when led is red.

CAUTION

Do not exceed the maximum capacity of the tank when the indicator is red, lockout mode.

CAUTION

If the toilet is connect to any through-hull fittings, always close or turn off all the seacocks when the yacht is unattended – even if only for a minimal time.

For further information, see the separate specific Manual.

4.4.2 Maintenance of black and grey waters draining system

Holding and grey water tank

Rinse the tanks (at least every month)

Have the tanks filled with clean water and drain them two or three times. To prevent the formation of bacteria and of bad smell, pour periodically a disinfectant into the toilet, sink and bidet drains.

CAUTION

Should deodorants or disinfectants be used, avoid abrasive substances or acids, because they could damage tubes and seals.

MAINTENANCE

At least once a week check the correct operation:
- *of Toilets;*
- *of toilet pumps.*

At least once every three months check the status of the tubes and connections.
At least once every six months protect with proper products:
- *of Toilets solenoid valves;*

When necessary, at least once a year, carry out the accurate cleaning of the holding tanks.

Pumps

Operation check and cleaning (at least every month)

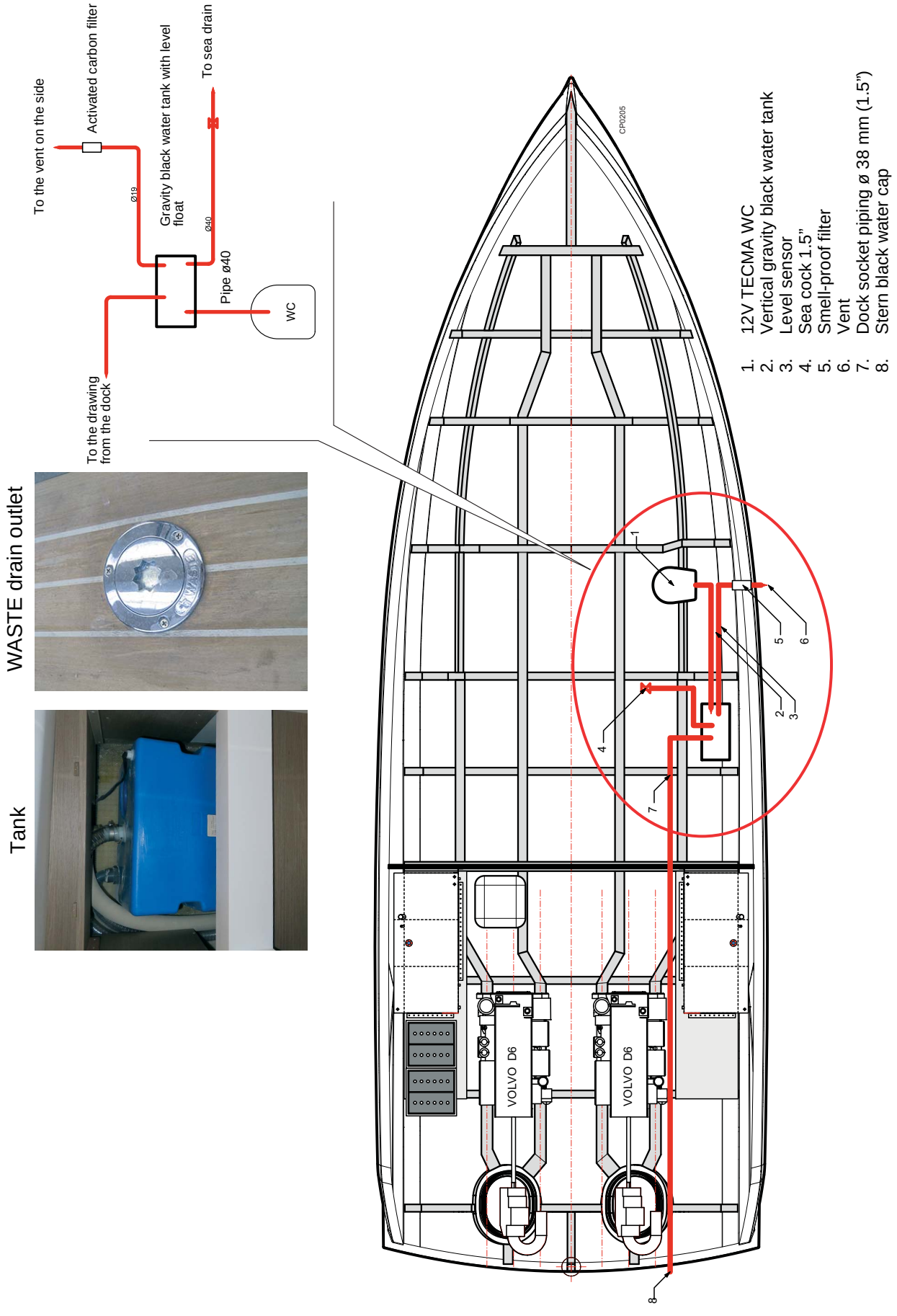
Electric pumps usually do not need ordinary maintenance, as long as some precautions are taken, which extend their lives (address to the pumps' Manufacturer).

DANGER

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

- If there is a risk of freezing, it is necessary to empty the pump casing from the liquid and to fill it, before restarting the pump.
- Make sure that the pump never runs dry.
- The DC motor brushes must be periodically checked as regards wear and spring pressure.
- If the pump does not work for a long time, it is better to empty the pump casing and clean it.

Black water system



4.5 MAIN BILGE SUCTION SYSTEM (AUTOMATIC/MANUAL)

The yacht is equipped with four electric bilge pumps with automatic operation and manual backup control.
The pumps suck respectively:
- 2 x Rule pump 900 gph in engine room (56 l/min flow rate).
- 1 Rule pump 900 gph at mid yacht (56 l/min flow rate).

The centrifugal diving pumps for bilge suction, driven by suitable float switches, suck water from the bilge and deliver it to the overboard drain. Another float for alarm activation, located a little higher than the first one, actuates the acoustic alarm behind the switchboard in plotting area.
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 switches on the electric panel to ON). The suctions of the pumps are equipped with net strainers, whose purpose is to prevent the penetration inside the circuit of foreign bodies, which may damage the pump or cause pipe clogging. Besides, where necessary, a further metal protection has been added.
The bilge pumps can operate both in automatic mode, thanks to float switches and in manual mode. To manually activate the pumps, it is necessary to press the respective buttons on the electric panel in the quarters area. The controls that manage operation of the AUTO or MANUAL pumps and alarm warning lamps are installed in the main control station.

WARNING

The system total capacity is not designed for boat draining in case of leaks.

CAUTION

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

WARNING

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

All pumps can be cut off to prevent possible accidental discharges.

ENVIRONMENT

The discharge at sea of oils and fuels is forbidden.

ENVIRONMENT

Possible oil or fuel spilled in the bilge must be collected and stowed. It is forbidden to discharge bilge water mixed with oil or diesel fuel into the sea, because this can cause pollution.

During the maintenance operation in the engine room, it is compulsory to disconnect the magneto-thermal switches of the bilge pump automatic suction system, avoiding in this way accidental spillages of liquids and consequently sea water pollution.

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.

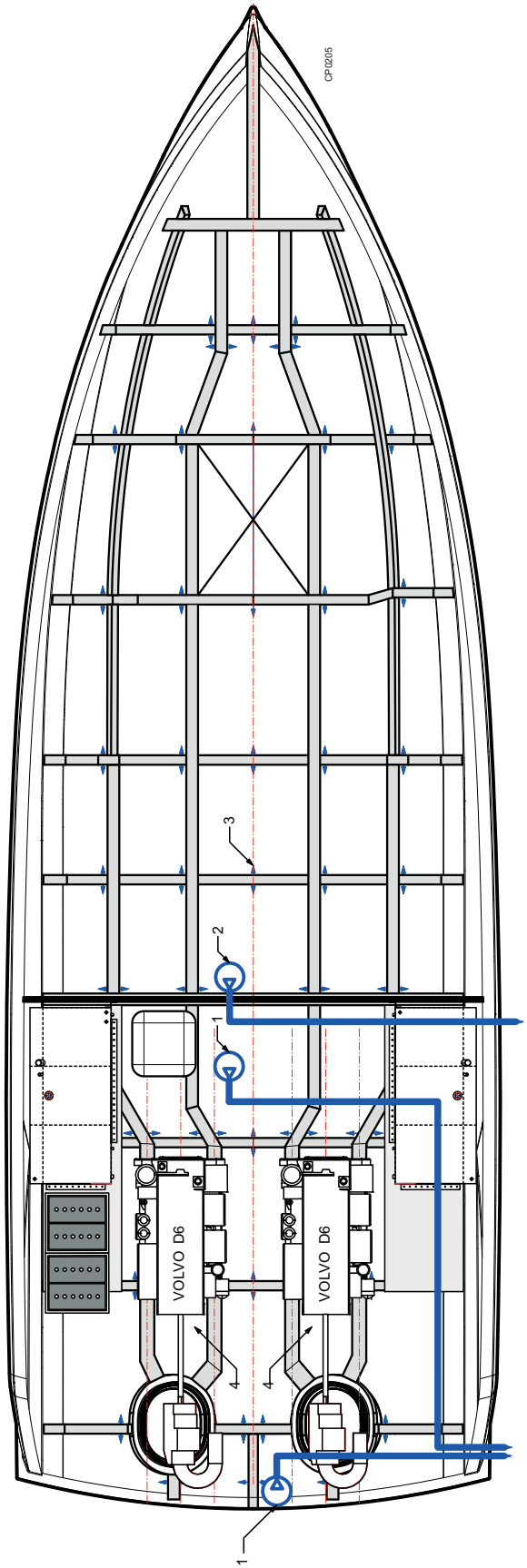
Bilge water system

1. Engine room bilge pumps
2. Bow bilge pump
3. Bilge water passages
4. Lay-out of devices to prevent accidental discharges of oily bilge water overboard; the bilges under the engines and gear boxes are not connected to the other bilges.

Bilge draining system in compliance with the ISO 15083 standard.
All pumps are operated by automatic floats and can be operated separately also from the control station.

Electric panel

Main control station controls



4.6 Maintenance of bilge automatic suction system

BILGE PUMPS

Bilge pumps operation check

DANGER

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

Check that the pump shaft turns freely (this is possible by inserting a screwdriver in the back end of the engine shaft). Fill the pump body with liquid so as to allow the pump to prime. This operation is very important and must be carried out at the first pump start and each time the pump body is empty, to avoid pump damaging.
Check the rotation direction, that the pump motor works within its output range and that the absorbed current is not higher than that 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 the DC motor, 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 filter and a foot valve are installed, check periodically for their efficiency and cleaning.
- Check that the impeller is jammed, this could cause heavy damages to the electric motor; if this happens, descale the impeller and pump body.

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 even in manual mode, activating them with the relevant switches or handling directly on the activation floaters.

CAUTION

Never run the electric pumps dry.

CAUTION

Check all bilge pump operation at regular intervals. Clean the pump intakes.

MAINTENANCE

At least once a week check the operation of pumps and floaters.
At least once a month:
- *check the condition of connections;*
- *carry out an accurate cleaning of pumps and floaters;*
- *carry out an accurate cleaning of the bilge.*

At least once every six months check the presence of clogging in the piping.

4.7 THE LIMBERHOLES

By means of appropriate holes and drains, the limberhole system allows the rain water, marine water or other types of water that may fall on the deck quick to quickly flow overboard.
All waters collected by the limberholes are conveyed by means of manifold tubes, placed along the bulwarks.
The draining of water by means of the limberholes is not only necessary for the comfort on board but also to prevent damage to the equipment or to the furniture.
In addition to this, the total or partial clogging of one or of more limberholes must absolutely be prevented, because it is a cause of flooding and consequent loss of stability by the boat and its structures.

CAUTION

Always check the correct water flow towards the limberholes.

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

CAUTION

Avoid that incorrectly stowed objects clog the scuppers.

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment or systems.

4.8 FUEL SYSTEM

The yacht has two steel fuel tanks installed in the engine room for a total capacity of 1200 l.
The tanks are filled by means of two filler necks positioned on the deck, one on the starboard side and one on the port side, and are marked “DIESEL”.

CAUTION

It is a good rule of thumb to check the fuel level before sailing.

CAUTION

Because of the proximity of the filler necks, before starting operations make sure you are using the right neck.

CAUTION

While checking for consumption and distances, it is a good rule to always keep plenty of margin, so as to be able to face bad weather conditions or other possible unexpected events.

The tanks are connected to each other by a system of valves that select the fuel path.
Each tank has its own vent.
It is possible to check the level in the tanks also by means of a visual gauge, attached directly on the fuel tanks in the engine room. Activate the push-button valve to check the real fuel level inside the tank.
At least once a month check the correct operation of the level gauge.
NOTE: The level indicated without operating the valve refers to the last check.

The fuel sucked, before reaching the engines, is first conveyed through the water/fuel separator pre-filters, so as to hold impurities and to separate the water contained in the fuel and then in the engine fuel filters. Only a part of the fuel that reaches the engine is burned in the cylinders, while a significant part returns from the pump to the tank after having lubricated and cooled the injection parts (fuel return). Therefore, during sailing the tank will tend to increase in temperature: this is normal and does not involve malfunctions.
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.
The particular geometric shape of the tank allows besides the decantation of impurities in the fuel tank.
It is appropriate to fill the tank some hours before setting up for navigation; in this way, the impurities in the fuel will settle down and water will decant as they are both heavier than fuel.

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.

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.

CAUTION

A fuel leak can generate fire and explosion hazard. Stowing fuel on board is strictly forbidden.

DANGER

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

DANGER

Due to the high temperature in the engine and generator compartment, oil or fuel leaks can evaporate and create a serious risk of fire.

ENVIRONMENT

Every marina has dedicated toxic waste disposal areas. It is recommended not to scatter waste that can contaminate the environment (such as used oil, fuel, oily liquids, batteries, etc.).

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

DANGER

Fuel leak can cause a fire to break. Check regularly the integrity of the system.

WARNING

The bilges must always be kept clean so that fuel or oil leaks or penetrations from the engine or the generator can be easily noticed. If leaks are noticed, it is necessary to stop the engine and to let it cool down, then repair the leak, if possible. Finally clean the bilges.

ENVIRONMENT

Dispose of fuel-contaminated polluting waste according to the rules in force.

ENVIRONMENT

It is forbidden to discharge bilge water mixed with oil or diesel fuel into the sea, because this can cause of serious pollution. Periodically check the level of any oily waters contained in the collecting tank under the engine. Should their level be close to bilge overflooding, disconnect the magneto-thermal switches of the bilge automatic system pumps off to avoid accidental spills,until the tanks have been completely drained in accordance with the environmental legislation. During maintenance operations in the engine and generator compartments, it is compulsory to disconnect the magneto-thermal switches of the bilge automatic pump system, thus avoiding accidental spills.

CAUTION

Pay attention not to accidentaly damage fuel system lines.

Perform a visual inspection of all pipes periodically.

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment or systems.

4.8.1 Refuelling

- Ensure the yacht is properly moored, stop engines and generator, if running.
- The fuel filler necks are located on the deck bridge: one starboard and the other port. Wash the teak with fresh water ahead of time to prevent soiling it accidentally.
- Loosen the filler plug with the relevant key and make sure that refuelling pump has suitable dimensions, then insert the pump and hold it still.
- When refuelling, check the embarked fuel level .
- Top up the tanks but not to the highest level; this is to allow the fuel to expand into the tanks without spilling out from vents.
- 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.
- Tighten filler neck and remove any drops of fuel.
- At least once a month check the correct operation of the level gauge.

CAUTION

The inlet plug carries the indication "DIESEL" to avoid accidental input of different fuels.

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

CAUTION

Refuelling should be performed at the end of navigation, in order to allow fuel cooling down, without condense. Drain the tanks, every 2 or 3 refuelling. Before refuelling, wash the teak with fresh water to avoid its contamination with fuel.

DANGER

When refuelling, do not smoke, do not leave the yacht unattended, and do not leave the engine and generator, if installed, running.

ENVIRONMENT

Do not scatter fuel in the environment: it causes pollution.

CAUTION

Explosion/fire hazard

- *Stow flammable material in a safety-approved container. Never stow flammable material in not suitably 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

Explosion/fire/pollution hazard

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

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment or systems.

4.8.2 Fuel quality

The quality of the fuel is crucial for good performance of the engines and generator (optional) installed on your yacht.
Fuel should be purchased from reliable high-sale filling stations, for both the quality and a probable short stay of fuel inside the shore tank.
Follow the specifications provided in the engine manual concerning the characteristics of the required fuel.

WARNING

For the type of fuel to be used, follow the manufacturer's recommendations. A Diesel engine requires very clean fuel. Keep filters clean and clear.

WARNING

During the tank inner cleaning, it is a good norm, to ventilate the room for a long time with the help of fans and to wear all necessary protections, to avoid injuries caused by gas fumes.

CAUTION

We advise you to empty and clean the tanks periodically. Contact service Cantiere del Pardo.

Please remember that re-used fuel must be filtered.

4.8.3 Fuel filters

Engine operating problems may have different origins, and one of them is unclean fuel. The injection pump can be quickly put out of service by the presence of water. The water may originate from the condensation that takes place when the tank is not sufficiently filled, by a filler loosely closed or whose seal has deteriorated.
To prevent any infiltration of water, the fuel passes through two strainers:

- One strainer is an integral part of the engine and serves to finely filter the fuel. For any assistance or information on frequency of replacement, please refer to the separate Manufacturer's Manual.
- The second filter is installed on the piping that connects the tank to the engine and serves as a water decanter and pre-filter.

Fuel filters

Fuel pre-filters

CAUTION

The separators must be checked at regular intervals as suggested by the Manufacturer in order not to impair the engine' s operation.

CAUTION

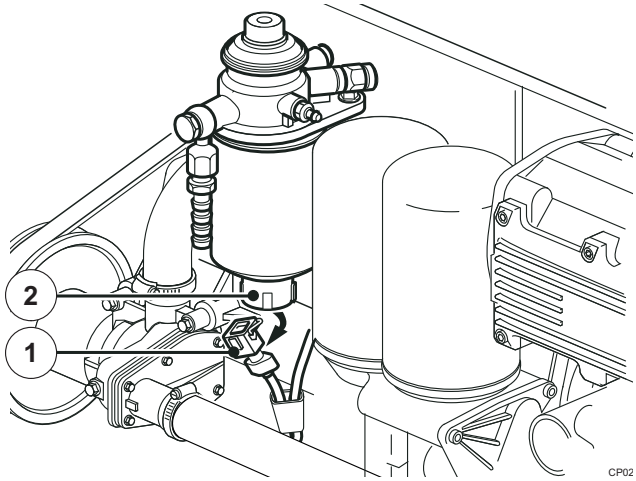
Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment or systems.

4.8.4 Water in Fuel

If the EVC system warns for too much water in the fuel filter, the water separator needs emptying. Do not continue operating if there is water in the water separator, it can damage the engine.

Draining the fuel filter

- Stop the engine and turn off the ignition.
- Remove the connector piece (**1**) from the sensor (**2**).
- Place a container under the fuel filter and carefully unscrew the sensor (**2**). Let the water run out. When diesel runs out, screw in the sensor until you feel slight resistance. Then tighten an additional 1/4 to 1/2 turn.



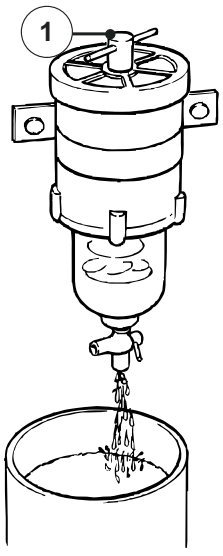
CAUTION

If the sensor is torqued more than 1/2 turn, the sensor can be damaged.

- 4 Refit the connecting piece (**1**).

Draining the fuel pre-filter (extra equipment)

- Place a container beneath the fuel filter.
- Open the bleed screw (**1**) on the fuel filter about 4 turns.
- Drain the water and contaminants via the plug in the bottom of the filter.
- Bleed the fuel system.



Fuel system

Fuel inlet filler necks

1) SERBATOIO COMBUSTIBILE SX - CAPACITA' 600 LITRI
2) SERBATOIO COMBUSTIBILE DX - CAPACITA' 600 LITRI
3) TUBAZIONE IMBARCO COMBUSTIBILE DA PONTE
4) SFIATO SERBATOIO COMBUSTIBILE CON FILTRO PARAFIAMMA - 20mm
5) PRESA DA SERBATOIO CON ELETTROVALVOLA N/C 12V
6) PREFILTRO RACOR CON SEPARATORE ACQUA
7) TUBAZIONE ALIMENTAZIONE MOTORE SX - 1/2"
8) TUBAZIONE ALIMENTAZIONE MOTORE DX - 1/2"
9) TUBAZIONE ALIMENTAZIONE GENERATORE - 1/2"
10) TUBAZIONE DI RITORNO AL SERBATOIO - 1/2"
11) VALVOLA 1/2"TUBAZIONI COMBUSTIBILE A NORMA ISO 7840SERBATOI ED IMPIANTO COMBUSTIBILE A NORMA ISO 10088

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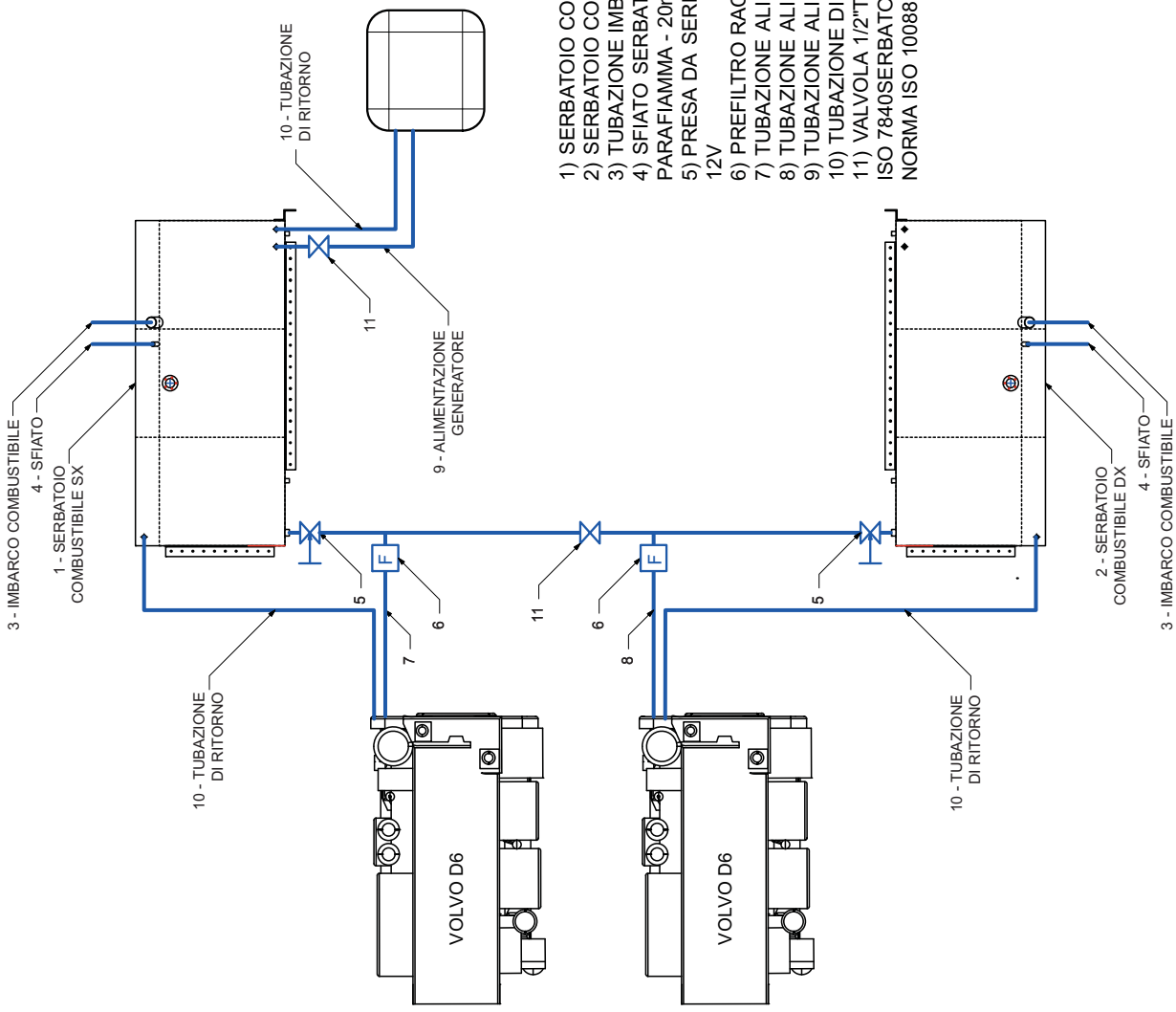
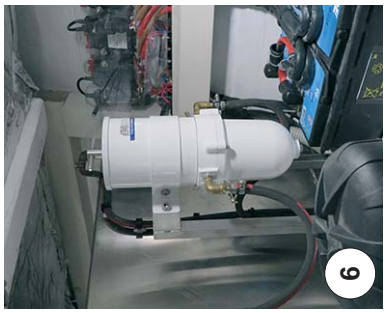


Tank visual level



Fuel pre-filter

4.9 AIR CONDITIONING SYSTEM (OPTIONAL)

The air conditioning system planned consists of the air conditioning unit by heat pump, by internal heat exchanger at sea water, which cools (or heats, during winter) fresh water of a closed circuit. This unit is used to cool water used as a thermal exchange with the air of the rooms to be cooled down. In winter the inversion of the cooling circuit (by heat pump) allows the water to heat instead of cooling, in this way the rooms get warmed up.
The fresh water is sent to the fan-coils by means of a circulation pump: in this way each room can reach the requested temperature.
The whole system is supplied at 230 V AC, by means of a magneto-thermal switch located on the general electric panel in the quarters area.
The compressor's set, on which is installed the separated control panel, is located in the engine room.

CAUTION

Check that fresh water circulates regularly. Because of a pressure drops or of a long period of inactivity, stop the system and top up water through supply valve until the requested pressure is achieved, this will be indicated by proper pressure switch installed on the unit. After this, close the supply valve.

Each conditioned room is equipped with self-adjusting control panel.
For operation and maintenance descriptions and information, please refer to the relevant Manufacturer's Manual.
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. Switch on the refrigerator by means of selector placed on the machine front side or on the separated electric panel.
Check the correct rotation of sea water and treated water pumps, by looking at the arrow that is marked on the pump body.
It is advisable to check the power absorbed by the pumps and to compare it with the plate data.
The unit will work normally if the circulation of sea water and treated water is correct.

CAUTION

Each time before starting the system, make sure that both the valves of the sea cocks and the valves of the overboard drain are completely open and check the cleanliness of the filter.

WARNING

Clean the strainer of the centralized sea cock according to the frequency of the system use and to the pollution conditions of the sucked waters (seaweeds, mucilages, etc.).

CAUTION

Before cleaning the strainer, remember to close the sea cock valve, to stop the generator and then proceed with maintenance. Once this operation is finished, remember to open the valve which supplies the cooling circuit.

CAUTION

The excessive use of conditioned air may cause infirmities due to the great difference of temperature between the yacht inside and the outside.

CAUTION

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

CAUTION

When starting the unit after a prolonged shut down check the correct operation of the sea water pump and make sure of proper circulation.

CAUTION

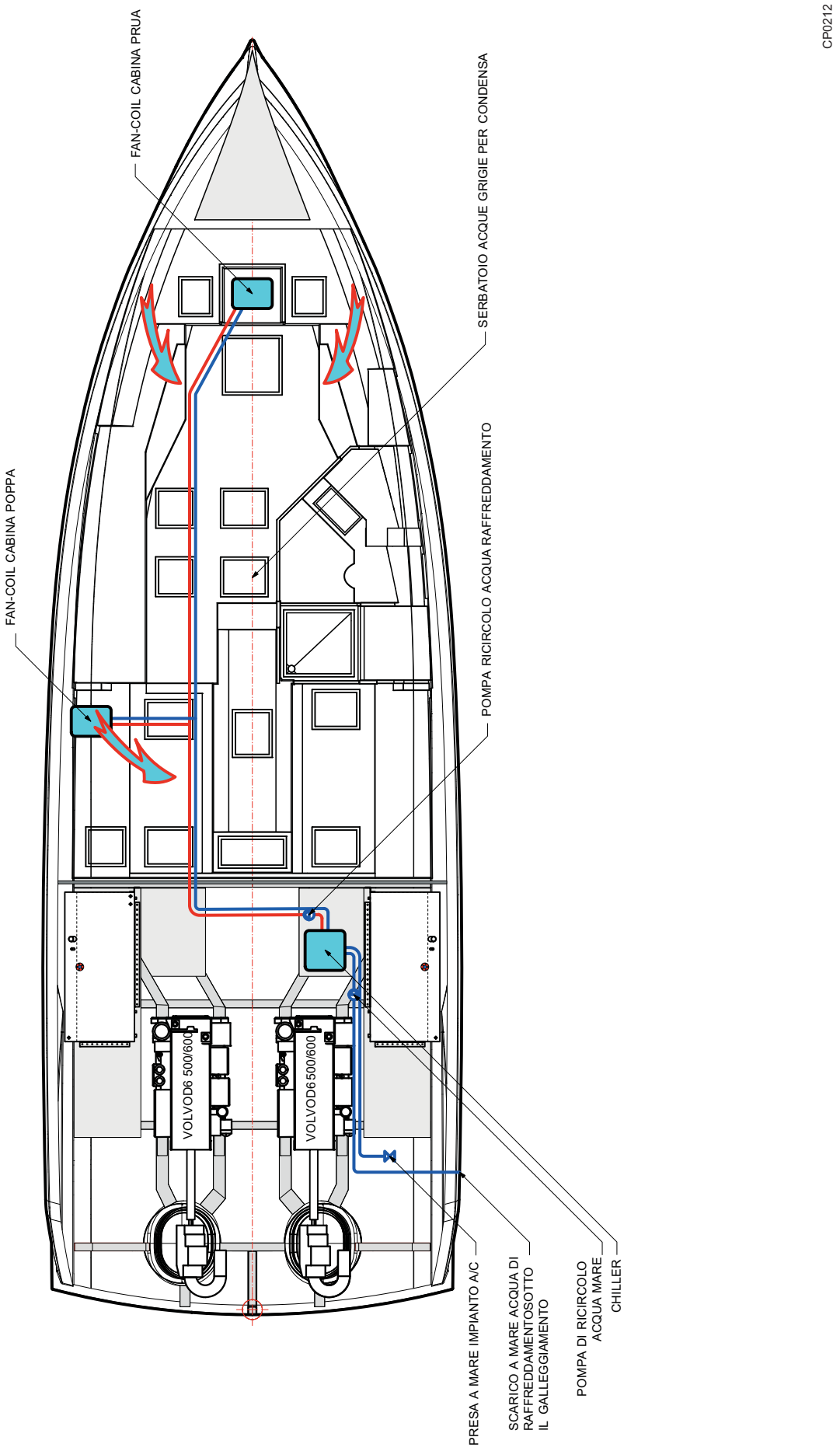
The signal of any alarm implies a failure in the operation of the system. INVESTIGATE and ELIMINATE THE REASON FOR THE FAULTY OPERATION before restarting the system.

Refer to the specific manual or refer to the Service Department.

CAUTION

It is strongly recommended that the factory-settings NOT BE CHANGED.

Air conditioning system



NOTES:

5.1 ELECTRIC SYSTEM

The electric system consists of two separate sections: one 230V AC 50 HZ and one12 V DC.

- 230 V users mains, supplied by the dock mains, or alternatively, by the power generator on board (opt). Each power generator is supplied by a battery located near the generator and is recharged by an alternator driven by the generator.
- User mains, supplied at a rated voltage of 12V DC, by accumulator sets (standard 4-battery version).

The users less than 230 V AC can be supplied through an inverter (optional) that in turn is powered by the user batteries.
The engine and user batteries can also be recharged by a charger installed inside the engine room when the dock socket is connected and powered by the dock mains (230V AC).

CAUTION

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

CAUTION

Never start navigation without having set to "ON" both the selector of engine batteries/generator and that of the user batteries, and do not disconnect them during navigation.

CAUTION

If, during navigation, a remarkable and continuous voltage drop of one or both battery banks occurs, check the recharging efficiency (alternator recharge on monitoring system) of the relevant alternator. If the alternator is not operating, it is necessary to start the power generator and to activate the relevant electric battery charger (if installed).

CAUTION

The engine control system: accelerator and gear engagement remote controls are electronic. Their reliability is very high, but in case of a sudden black-out, it is necessary to immediately switch off the engine which is not controllable any more by means of the relevant buttons located in the main control station.

CAUTION

Do not modify the electric systems or relevant drawings. The installation, the modifications or the maintenance must be carried out only by a skilled naval electrician. Frequently inspect the system.

CAUTION

Use electric devices with double isolation or earthing (ground).

WARNING

Do not allow that cable end of dock power supply to floats in the water. This can cause an electric field and following injuries or even the death of the swimmers nearby.

CAUTION

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

WARNING

To reduce to the lowest the hazard of electrocution or fire:

- *turn OFF switch for connection to dock supply of the unit, before connecting or disconnecting the dock power supply cable;*
- *connect the dock power supply cable to the intake socket of the unit, before connecting the dock power supply source;*
- *disconnect the dock power supply cable first from dock source supply (dock columns);*
- *firmly fasten the lid of dock power supply socket (on unit).*

CAUTION

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

CAUTION

The information contained in the manual for on-board electric systems are an integral part of this Owner's Manual.

WARNING

NEVER:

- *work on the electric system while under voltage;*
- *change an electrical system on the unit 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 power, except for the circuits of the bilge automatic suction pumps, of fire-fighting protection and of alarm.*

DANGER

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

DANGER

Operate all electrical equipment and systems (including low voltage systems) with special attention and avoid any excessive overload, to prevent short circuits and dangerous overheating with potential fire hazards!

DANGER

We recommend, in order to operate in complete safety, to carefully read the safety rules relevant to the maintenance and contained into the “Safety rules”.

DANGER

The on-board system has characteristics and risks similar to those of 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.

DANGER

Stop the generator and the inverters (if installed), then disconnect the magneto-thermal switches and the dock socket before opening the electric panel door.

CAUTION

Only a skilled naval electrician can perform maintenance on the yacht electrical system.

DANGER

Never for any reason whatsoever replace a protection fuse with another of higher capacity. This could cause fire to break out.

DANGER

Poor electrical contacts may cause overheating and fire.

WARNING

If a fuses blows repeatedly, there is a fault that must be traced and rectified.

WARNING

If a breaker trips, do not make repeated attempts to reset it, but trace and rectify the cause of the malfunction.

WARNING

Utilities exceeding a total power of 800 W (e.g. electric heaters or hairdryers) must not be connected to 230V on-board sockets.

WARNING

Before stopping the power generator, disconnect the various on-board users supplied by it; stopping the power generator under load can irreparably damage the electronic control units of the various users, further to having a negative influence on the generator operation.
However, please refer to the manual of the power generator to obtain more detailed information about the starting and stopping procedures.

CAUTION

Cantiere del Pardo suggests carefully reading the whole documentation provided by the manufacturers of the various components; for any problem relevant to maintenance, it is recommended to directly contact the Cantiere del Pardo Service Department.

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment and systems.

5.1.1 Maintenance of the electric system

Equipment and circuits

Cleaning and check

At least once every 2 weeks, have the status of the connections in the electric boards, panels and boxes checked by experienced and equipped personnel. Make sure that ground connections of electric equipment and electric 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 the power generator earthing is connected. Moreover, check the condition of the protection anodes and if necessary, replace them. During the lay-up period, do not apply any antifouling paint to the dischargers, the sensor for measuring the protection voltage of the grounding system and to possible underwater spotlights.

MAINTENANCE

At least once a week check the operation of all electric panels.
At least once every six months:
- *check the possible presence of damaged cables;*
- *protect the various contacts.*

DANGER

Before starting to work on electric panels or devices, disconnect the generator, the electric power supply from dock and the inverters (if installed).

DANGER

Do not modify the electric systems or relevant drawings. The installation, the modifications or the maintenance must be carried out only by a skilled naval electrician. Frequently inspect the system.

5.2 GENERAL ELECTRIC PANEL

The general electric panel is located next to the stair in the underdeck. The panel contains the switches to power both 12 V DC and 230 V AC services.
Two displays for controlling consumption of the user mains and the charge status of the batteries are also installed on the panel.
The power switches of the DC section have an automatic line protection system that is triggered in case of excessive power absorption, automatically restoring the power supply when this excessive absorption terminates.
The AC section switches are conventional breakers that are tripped in case of excessive power absorption and must then be manually reset.
If the onboard 230 V AC system fails to operate or if there are malfunctions with any of the associated services (water heater, battery charger or 230 V AC sockets), check the following:

- that the shore power connector is correctly connected;
- that the shore power connector is correctly powered by the onshore power system;
- that the indicator light for voltage presence on the switchboard is lit;

Beneath the MS, behind an openable panel, there is the terminal board that contains all electrical connections of both the 12 V DC and 230 V AC systems. The terminal board also has a series of fuses that power and protect several 12 V DC services. To identify these fuses, consult the electrical system manual supplied separately.
Attention is drawn in particular to the protection fuses for the regulation navigation lights.

WARNING

Never for any reason whatsoever replace a protection fuse with another of higher capacity. This could cause fire to break out. If a fuses blows repeatedly, there is a fault that must be traced and rectified.

WARNING

If a breaker trips, do not make repeated attempts to reset it, but trace and rectify the cause of the malfunction.

CAUTION

Before removing the front panel for maintenance, stop the power generator, the inverters and disconnect the dock socket.

CAUTION

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

CAUTION

It has to be remembered that the services batteries have a limited charge, therefore, during their use check periodically their charge status and eventually proceed with recharging.

CAUTION

The high absorption of inverters (refrigerator/user) (OPTIONAL) may discharge the user battery set, therefore disconnect it if you are to leave the yacht.

CAUTION

For a detailed description refer to the electric installation manual.

DANGER

*All these magneto-thermal switches, **for users driven by batteries**, MUST CONSTANTLY BE KEPT CONNECTED, also with unattended yacht. Disconnection of these switches prevents operation of the systems.*

CAUTION

Periodically check the status of the fuses.

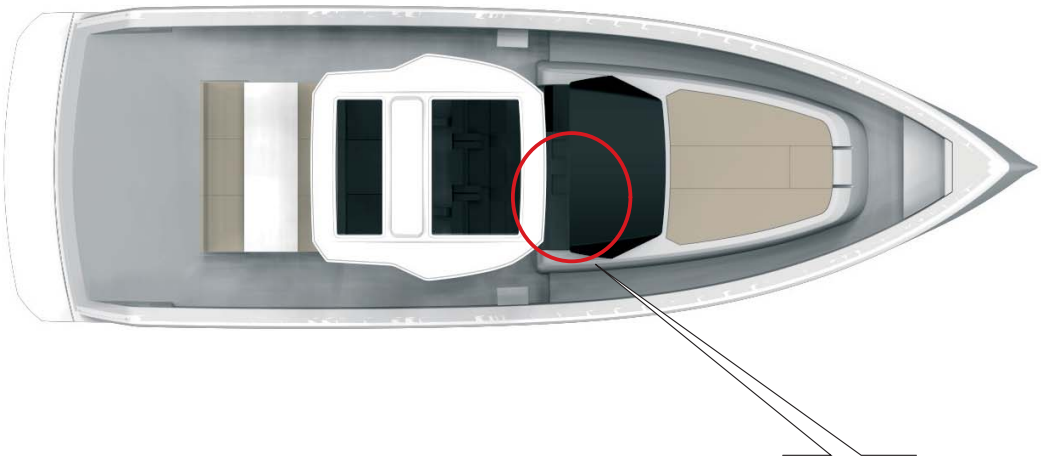
CAUTION

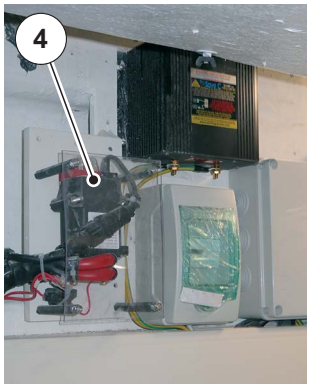
Use the "Emergency parallel" switch only if strictly necessary and disconnect it as soon as possible.

5.3 BATTERY SET

The batteries are installed in the engine room. The batteries are normally charged by the alternators during engine operation. As an alternative, you can recharge them with the battery charger supplied from dock or with the generator.
The manual battery breakers are near the relevant batteries in the engine room, while the electronic battery breakers (service, stbd engine, port engine) are on the electric panel in the quarters area.
A parallel between the two engine batteries is planned in case of an emergency, and the control is in the control station.

1. 95 Ah user batteries
2. 95 Ah engine batteries
3. 70 Ah generator battery
4. User battery breaker
5. Engine battery breaker
6. Generator battery breaker
7. General electric panel electronic battery breakers
8. Control to activate emergency parallel between the engine batteries

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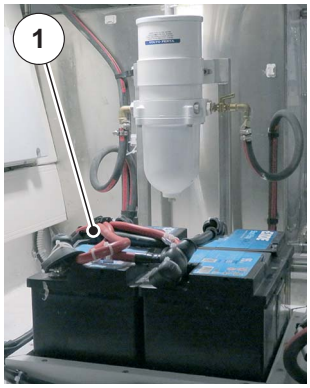
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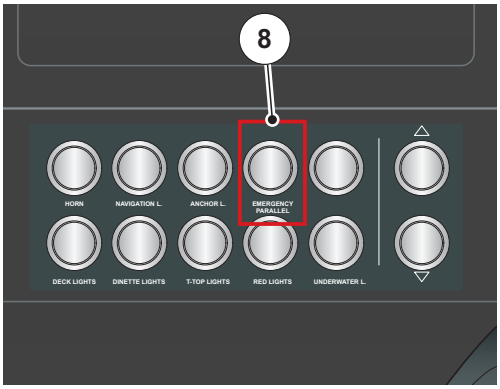
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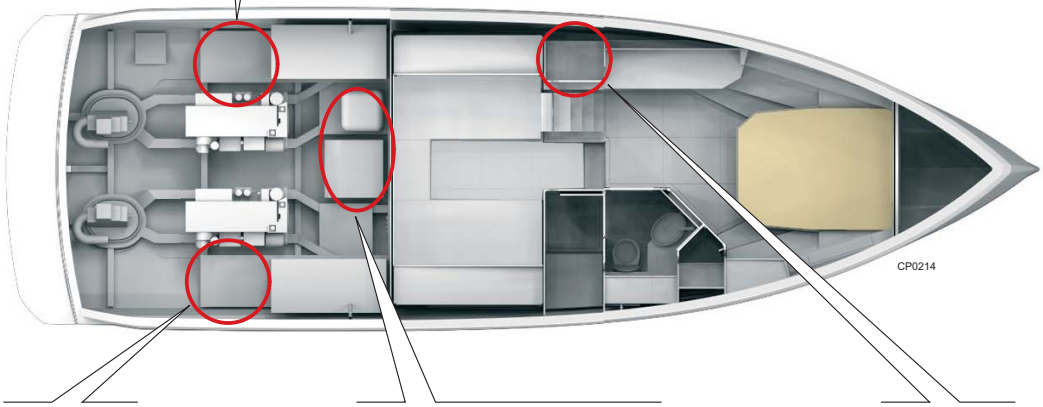
HORN
NAVIGATION L.
ANCHOR L.
EMERGENCY PARALLEL
DECK LIGHTS
DINETTE LIGHTS
T-TOP LIGHTS
RED LIGHTS
UNDERWATER L.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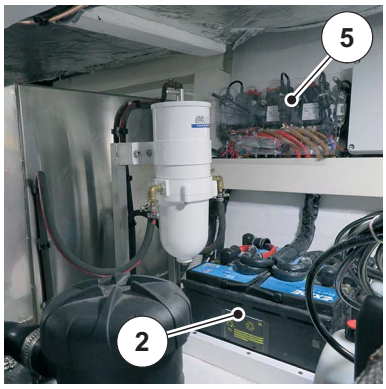
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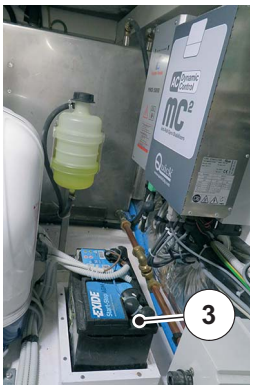
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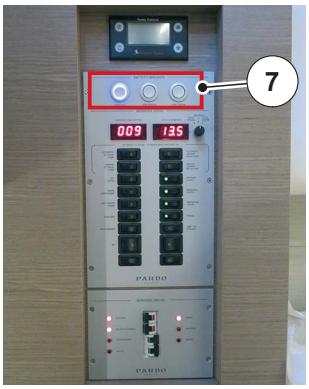
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WARNING

The batteries left uncharged over long periods of non-operation progressively lose their charge until they become completely flat and irreparably damaged.

WARNING

Do not lay objects directly on the batteries.

DANGER

Keep the terminals of the battery poles protected and isolated.

Poor electrical contacts may cause overheating and fire.

CAUTION

Check the condition of batteries for the presence of galvanic corrosion on connection poles and terminals; if some is noticed, address to the Service Department and have the pieces showing this kind of problem replaced.

CAUTION

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

DANGER

The battery releases explosive gases: do not approach sparkles or a flame nor smoke near it. If the battery is used or charged in a closed area, check for good ventilation. Do not check the battery charge by short-circuiting the terminals with metal tools: use a density gauge or a voltmeter.

5.3.1 Maintenance of the batteries

Batteries

Battery check (accumulators)

During the periods when the yacht is not in use, have the battery terminals disconnected, or leave them all connected and have periodically all batteries charged (generator included).

CAUTION

It is important to periodically check the electrolyte level inside the batteries (at least every three months).

CAUTION

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

CAUTION

Never top-up with sulphuric acid or other solutions different from demineralised or distilled water.

CAUTION

Always keep the batteries charged and recharge them periodically even if the yacht is left unattended. If the charge level drops to the minimum, the batteries can get irreparably damaged. Check each week the charge status.

CAUTION

Check the condition of batteries for the presence of galvanic corrosion on connection poles and terminals; if some is noticed, address to the Service Department and have the pieces showing this kind of problem replaced.

5.3.2 Battery check (accumulators)

Carry out following checks:
Electrolyte level
– Restore level of distilled water removing the caps from the battery elements. The electrolyte level must be between the Max. and Min. references of the same battery.

Terminals inspection
– Check that the battery containers are clean and dry and that the terminals are coated with silicon grease and properly fastened. Clean and grease as required. Check at least every six months.
– Identify positive and negative cables, prior to connecting (connect the positive terminal first and then the negative, in order to avoid sparkles).

DANGER

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

DANGER

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

This maintenance operation must be carried out by expert staff only.

DANGER

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

Battery acid may cause serious injuries. Wear safety goggles, gloves and protective clothing.

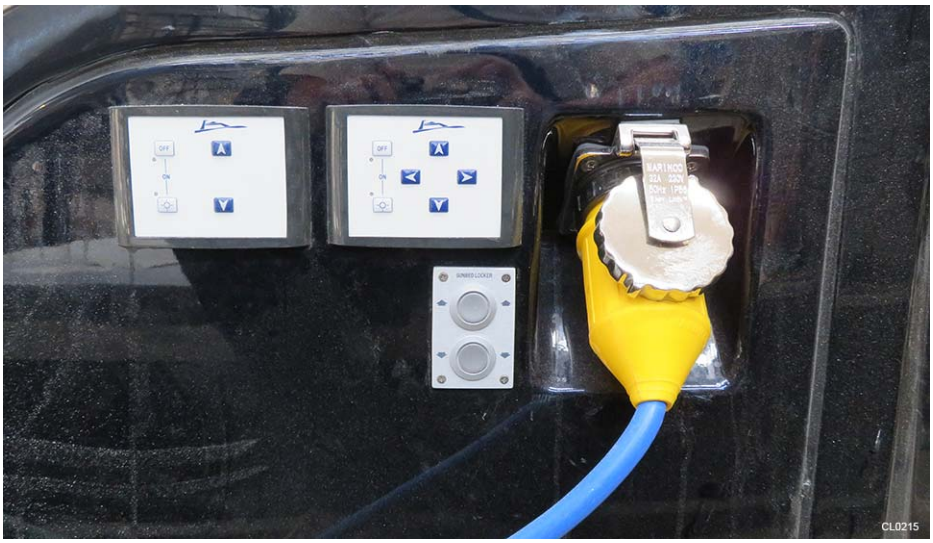
Do not wear any bracelet, ring or any other jewel when operating on batteries.

In case of contact with battery acid, wash the contaminated part with fresh water for at least 15 minutes and address to a doctor.

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment and systems.

5.4 ELECTRIC POWER SUPPLY FROM DOCK



DANGER

Before connecting the dock socket, ensure the type of voltage and the sockets available, their integrity and the absolute absence of moisture on the wire, on the socket and on the plug.

With plug connected check that wire:

- *cannot get in traction as a result of tide variations, yacht movements, etc.;*
- *cannot get crushed, etc.;*
- *does not dive into water.*

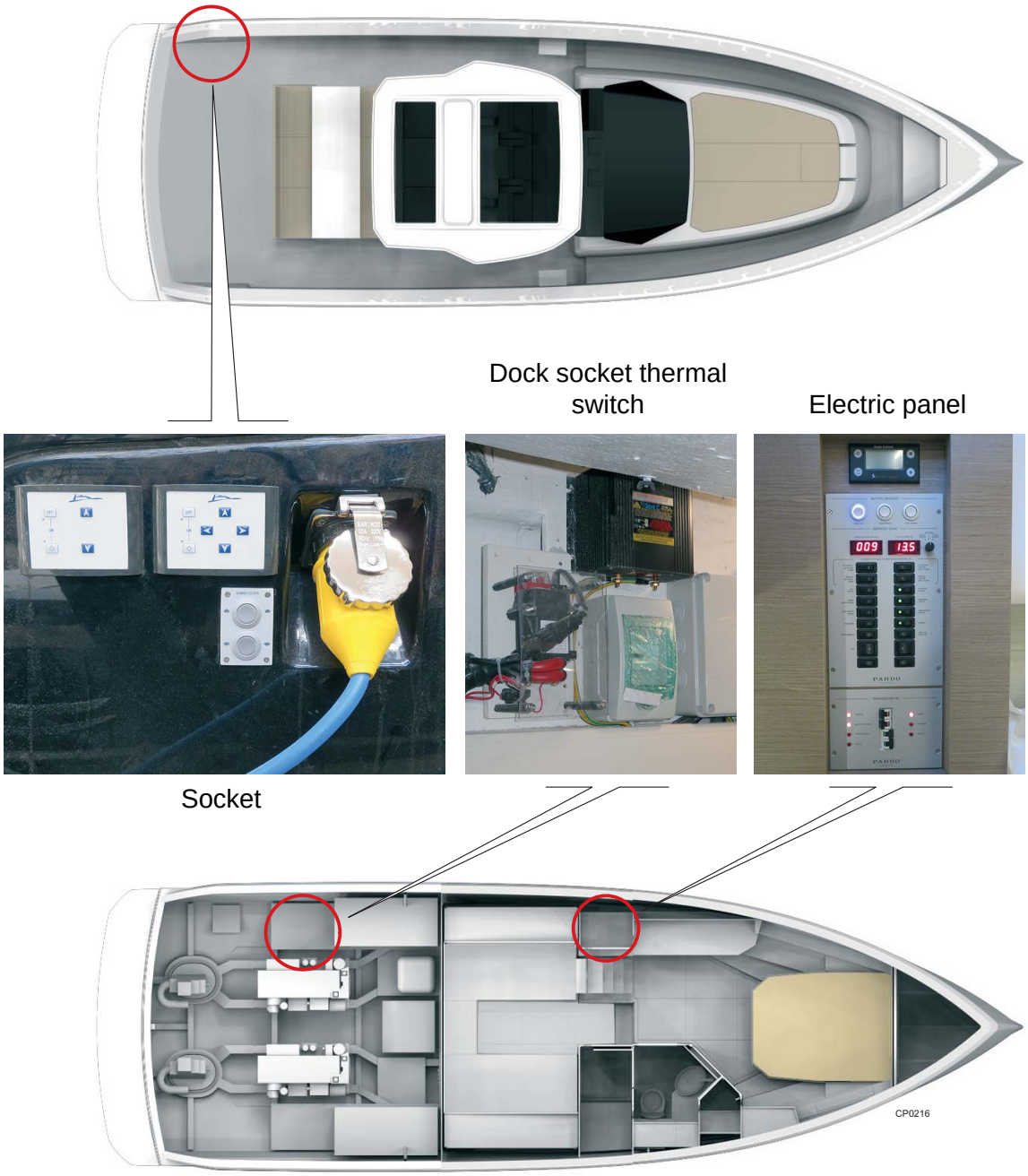
The harbour docks are equipped with little columns carrying the connections for the supply of the electric system on your yacht.
The shore columns can supply different types of voltage, according to the harbour you are moored into; address to the Port Authority for the correct power supply of the column you are going to be connected.
In order to power the yacht's electrical system in order for the various systems on board to function, a connection for 230 V/16 A electric power supply from the dock has been arranged on the stern, starboard side. The connection is driven according to the safety rules and technologies.

CAUTION

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

MAINTENANCE

At least once a month check the status of the outer sheath.
At least once a month check the status of the electric contacts and eventually protect them with proper products.
At least once a month check the status of the dock socket and eventually clean it.



To use the electric power supply from dock:

- Turn OFF the general AC dock magneto-thermal switch for dock socket located in the engine room on the port side.
- Turn OFF the switch on the dock column.
- Connect the power supply cable; connect the (female) socket of the boat first, then connect the (male) plug on the dock column.
- Turn ON the switch on the dock column.
- Turn ON the general AC magneto-thermal switch for dock socket.
- It occurs very often to find dock plugs with dimensions not compatible with those on the ship; in this case it is necessary to address to the Port Authority and to get a new plug or an adapter.

Follow the opposite procedure to disconnect dock electric power supply.

CAUTION

To cut the electric power supply from dock:

– turn OFF the magneto-thermal AC general switch located on the dock panel;
– set to OFF the protection on dock column;
– first disconnect the power supply cable, then the power supply source from dock (dock column);
– firmly fasten the lid of dock power supply socket (on unit).

CAUTION

If the warning lamp on the general electric panel is on this means that the electric socket for dock power supply is plugged.

DANGER

Do not leave dock power supply connected if nobody is on board.

WARNING

Do not allow that cable end of dock power supply to floats in the water. This can cause an electric field and following injuries or even the death of the swimmers nearby.

CAUTION

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

DANGER

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

CAUTION

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

CAUTION

The connection must be performed under safety conditions with not powered connections and by paying attention to carry out a correct grounding.

DANGER

Before carrying out any intervention on the electric system, disconnect all circuits (dock, generator and inverter):
- *disconnect the dock socket;*
- *set to OFF the magneto-thermal switch of the generator and turn off the generator.*
- *set to OFF the magneto-thermal switches at inverter output and turn off the inverter (OFF button on the front).*

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment and systems.

5.5 BATTERY CHARGER

Automatic and high-performance battery chargers can be installed on board the yacht (optional). The battery charger uses an optimized charging technique to rapidly and safely charge the batteries, while also supplying the connected users. Besides, the charger is protected from short-circuits, overcharges and high temperatures.
The front side of the battery charger is equipped with LEDs indicating the status of the delivered current.
The charger is powered by alternating current.
A circuit breaker protects the electric circuit.
The charger charges all of the on board batteries while keeping the services area isolated from the engine area.
Within the limits of its power, it can supply power directly to the on-board DC equipment.

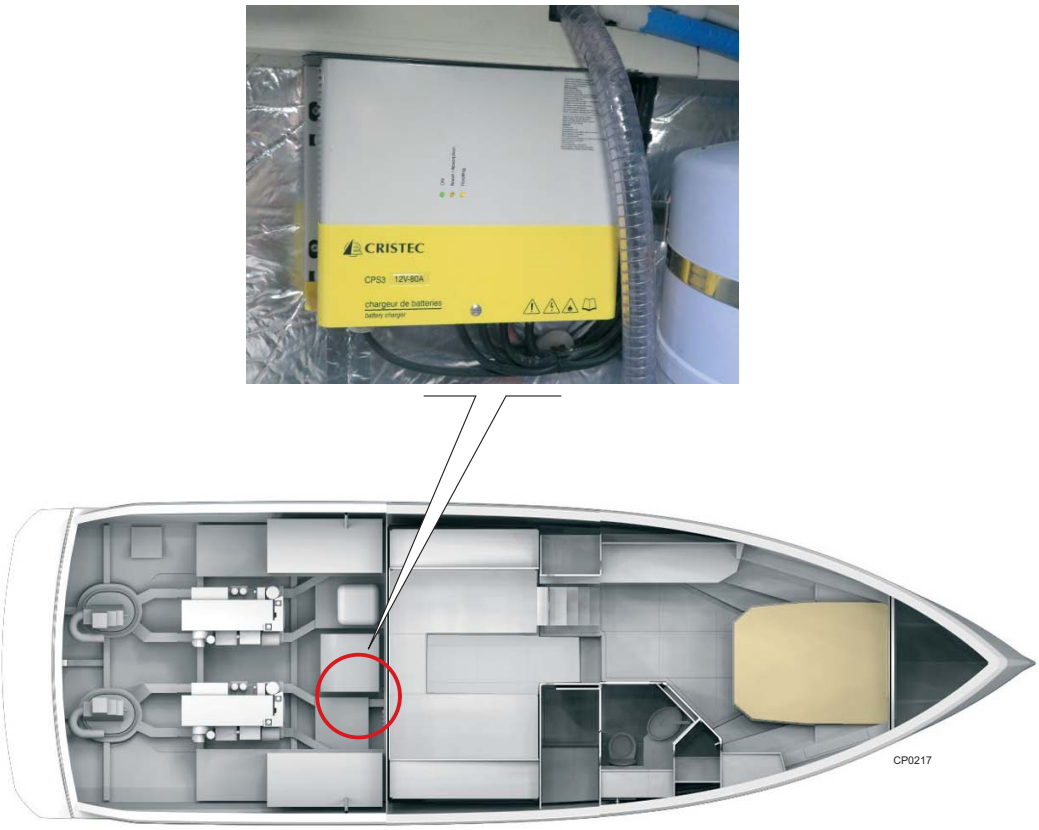
CAUTION

For detailed information, see the separate Manufacturer's Manual.

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment and systems.

Oversized battery charger (opt)



5.5.1 Battery charger maintenance

BATTERY CHARGER

Charge check and performance

At least two or three times a year, have the connection of each wire checked by skilled personnel for looseness or oxidation.

Keep the battery charger dry, clean and away from dust in order to ensure a good dissipation of heat.

Periodically check the good condition of the cooling fan.

DANGER

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

Modifications to the electrical system must be carried out only by skilled personnel and only after the approval of the manufacturer.

MAINTENANCE

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

DANGER

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

WARNING

If the engine is on, the alternator is obviously charging the batteries; it is therefore advisable to keep the thermal switch of the battery charger (optional) on OFF in order to avoid alternator damage.

Battery charger check

DANGER

Before operating on the battery charger, disable the generator start and the dock power supply.

This device can operate in a reliable and optimal way, only if following operations are performed:
- check that all breakers and indicator lights are working, the wiring does not present any signs of cuts and all parts are clean and free from oxidation;
- remove the front panel and check that circuit boards are free from oxidation. If necessary, clean by using the detergent solution;
- protect the electric contacts by using an appropriate product (DC4);
- reinstall the front panel after cleaning;
- check at least once a year the connection of each cable (for loose connections, etc.);
- keep the battery charger dry, clean and in a dedusted area to ensure a good dissipation of heat.

WARNING

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

Charge output

For a good operation, batteries must not be discharged below 30-40% of their capacity, therefore, always start recharging them, when this charge level is reached.
The battery charger is equipped with a temperature sensor located close to the batteries. According to the temperature value detected, together with the value of residual capacity of the batteries, the charger automatically adjusts the charging voltage according to temperature, thus remarkably increasing battery life. Moreover, besides the thermal compensation, the battery charger can also compensate the voltage drop due to the dispersion of the connection cables. The battery charger is provided with an integrated warning lamp which activates in case certain adjustment values are exceeded.

CAUTION

Should the battery voltage drop under 18 V, the battery charger will supply a current corresponding to the 25% of the maximum one and the recharge time will consequently increase.

5.6 INVERTER

The yacht can be equipped with a 2500 W inverter (opt.). This device supplies power at 230 V AC by taking energy from the on-board user batteries.
It converts a DC voltage to a pure AC sine wave voltage. Under normal circumstances there is no need for adjustment or operation besides switching on and off. The inverter (if present) is installed inside the generator compartment.

DANGER

Do not work on the inverter or on its system if still connected to a current source. Only qualified personnel can perform work on the electrical system and only after the approval of the manufacturer.

DANGER

Have the inner condition of the inverter checked at least once a year by skilled personnel. Faults like loose connections, burnt wires, etc., with following fire break risks, must be removed immediately.

WARNING

The users supplied by the inverter highly stress the batteries that could discharge as a result.

MAINTENANCE

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

CAUTION

For detailed information, see the separate Manufacturer's Manual.

CAUTION

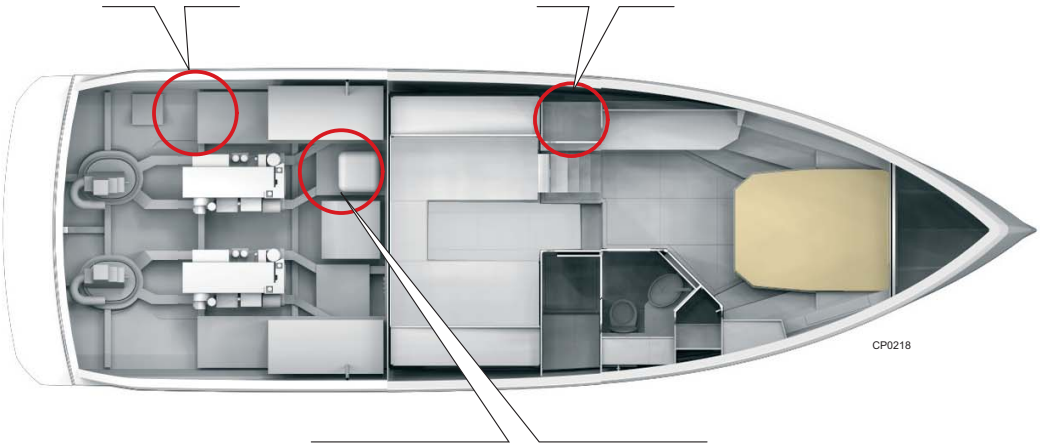
Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment and systems.

5.7 GENERATOR SET

Your yacht can be equipped with a generator set (optional).
FISCHER PANDA 5000i 230V-4kW 2200-2800 rpm generator
The generator is run by a diesel engine sized so as to satisfy power needs that have been properly foreseen in the electric balance for the various navigation trims.
The generator is fundamental when 230 V equipment must be used while underway, or when it is not possible to connect to the dock power supply mains.
The generator is located in the engine room on a bed capable of supporting its weight and the vibrations it produces. The generator is contained in a sound-proof box, made of removable and insulating panels in painted marine aluminium. This solution allows easy access to the engine and to the alternator for maintenance and inspection, and at the same time a remarkable reduction of noise.
The battery, battery breaker and relevant magneto-thermal switch are near the generator.

Sea intake and strainer for generator cooling

Generator control panel



Generator

Thermal switch and battery breaker

Cooling

The engine is cooled by means of a heat exchanger, by the sea water sucked through an independent sea cock.
The sea cock of the cooling water circuit of the generator is not dynamic, as for the thrust engine, but direct, in order to prevent damaging pressures on the circuit during navigation with the power generator turned off.
The inspectable filter of the sea water intake efficiently protects the cooling circuit from the harmful entering of mud, sand and seaweeds.
Before reaching the generator, fuel is led through the separator filter that holds the dirt particles and separates possible water.
The exhaust gases, instead of being discharged directly overboard, are conveyed through a silencer located under the generator.
This silencer, through the injection of water into the exhaust tube, allows cooling down the fumes and, at the same time, reducing the noise produced by water outflow.

Fuel supply

The generator's diesel engine is supplied with fuel sucked from the tank, through a dedicated duct and filtered by a special cartridge filter inside the generator.
The generator is supplied with fuel through a duct installed on the left tank and is provided with a cut-off valve.
The fuel supply to the generator can be remotely cut off by means of a tie rod located in the main control station area, starboard side.
The excess fuel which cannot be burnt by the generator is drained again into the fuel tank through the return duct.

CAUTION

Carbon monoxide poisoning:
– *start the generator only in a well ventilated area. The carbon monoxide generated by the inner combustion of the engine is extremely toxic.*

CAUTION

Explosion/fire hazard
Check for the presence of fumes in the generator area.

CAUTION

Repeated start-up attempts with negative result may cause an excessive build-up of water in the draining system, with possible serious consequences for the engine.

If the engine is hard to start, it is vital not to attempt the start-up for a long time, without having previously closed the sea cock.

Open it again after start-up was successful.

WARNING

Before stopping the power generator, disconnect the various on-board users supplied by it; stopping the power generator under load can irreparably damage the electronic control units of the various users, beyond having a negative influence on the generator's operation.
However, please refer to the manual of the power generator to obtain more detailed information about the starting and stopping procedures.

CAUTION

In case of fire, do not open the sound shield. Avoid serious injury or death from fire. Shut down engine, power generator and blowers. Immediately discharge entire contents of gaseous portable fire extinguisher through this port.

5.7.1 Starting the generator set

The generator set can be started and stopped from the dedicated control panel installed in the quarters area above the general electric panel.

- Visually inspect for water, coolant, fuel and exhaust leaks. Do not start the generator set if there is a leak. Repair fuel leaks immediately.
- Push and hold the START button on the control panel until the generator set starts.
  The generator set status lamp flashes when the engine is cranking and comes on and stays on when the generator set starts and runs.
- For longer engine life, let the engine warm up for two minutes before connecting other large electrical loads.
- If the generator set fails to start, cranking will discontinue in 20 to 60 seconds, depending on engine temperature.
  The status lamp on the control panel will indicate the fault.

WARNING

Do not continue cranking and risk burning out the starter or flooding the engine.

Find out why the generator set does not start and make necessary repairs.

– If the generator set shuts down, the status lamp on the control panel will indicate the fault. See Troubleshooting on the generator's User Manual (delivered separately).

5.7.2 Stopping the generator set

Disconnect all electrical loads. After 2 minutes, push and release the STOP button on the control panel.
The generator set status lamps will go out.

WARNING

"After Boil" can force large amounts of coolant through the pressure cap and coolant recovery tank. Always let the engine cool down before stopping the generator set. Check for loss of coolant after every emergency stop of fault shutdown. Refill and clean up as necessary.

Emergency stop

Push the EMERGENCY STOP SWITCH to OFF. After all necessary repairs have been made, push the switch to ON so that the generator set can be operated.

For further information, see the Manufacturer's Manual.

5.7.3 Generator Maintenance

Lubrication system

Oil specifications

Use specified oils according to Manufacturer's indication.

Oil check

Check the oil level in the crankcase daily or before each start-up to ensure that the level is in the safe range.

Remove the dipstick and wipe the end clean, reinsert as far as possible, and remove. Maintain the oil level between the level marks (Min and Max).

Oil change

For the oil change remove the draining hose from its holder.

Position the hose in the oil collecting container. Remove the oil filling plug. Open the oil draining valve located on the engine and drain the oil completely in the container.

Change oil according to intervals suggested by the Manufacturer.

Oil filter change

Remove the oil filter by turning it counter clockwise by means of a suitable wrench. Apply a thin layer of oil to the rubber seal of the new filter. Replace the oil filter according at time intervals recommended by the Manufacturer.

Fuel system

Cleaning and replacement of fuel pre-filter

Replace fuel pre-filter at time intervals recommended by the Manufacturer.

Cleaning and replacement of fuel filter

Close the fuel supply valve. Loosen the fuel filter by turning it counter clockwise. Remove the filter and clean the contact surface. Tighten the filter on the adapter until the seal comes in contact. Replace fuel filter within the intervals indicated by the Manufacturer.

Cooling system

Cleaning/replacement of the air cleaner

Release the two spring clamps and remove the cover of the air intake. Clean the cover and the base with a clean cloth so as to remove the dirt. Refit the filter and the cover at the base of the filter air intake. Replace the filter at time intervals recommended by the Manufacturer.

Cooling liquid top up

Before filling the cooling system stop the generator and let it cool down. Close the draining taps. In order to discharge the pressure turn slowly the plug clockwise up to the first stop. Remove the plug after the pressure has been completely released.

Sea water strainer

At least once a week check for the correct water flow through the filters.

At least once a month check the integrity of the filters.

At least once a month clean the suction filter.

At least once every six months check the condition of the cover seal.

ENVIRONMENT

Recover all waste materials (engine oil, fuel, filter, etc.) according to the rules in force concerning the special waste disposal.

DANGER

Hot coolant and steams may cause heavy injuries or even death.

CAUTION

Failure to observe the oil specifications may cause inadequate lubrication/oil pressure and cold-starting difficulties.

CAUTION

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

CAUTION

Pay special attention to the coolant level. After the coolant drains, allow time when re-filling the coolant for a complete refill of the engine water jacket. Check the coolant level as prescribed in the Pre-start Checklist.

CAUTION

Do not add coolant if the engine is still hot. Adding coolant to an hot engine can cause the cylinder block or cylinder head to crack. Wait until the engine has cooled down.

CAUTION

Damage due to sea water. *Sea water quickly deteriorates metals. Wipe up sea water on and around the generator set and remove possible salt deposits from metal surfaces.*

CAUTION

Cantieri del Pardo declines all responsibility for any accident to persons or damage to property caused by a wrong use of the on-board equipment and systems.

CAUTION

For detailed information, see the separate Manufacturer's Manual.

NOTES:

6.1 THRUST SYSTEM

The engines installed in the standard configuration are two VOLVO PENTA IPS 500 (2x370hp).
Optional engines:

- VOLVO PENTA IPS 600 (2x435 hp)

General Data

System name
Volvo Penta .....IPS IPS500... IPS600
Displacement, ...l 5.5..... 5.5
Cylinder configuration..... six in line
Power at drive shaft..... kW (Hp) @ 3500 rpm 272 (370) - 320 (345)
Power at propeller shaft..... kW (Hp) @ 3500 rpm 259 (352) - 307 (418)
Aftercooler supply, Volumetric turbocharger
Weight of assembly .....kg 887..... 901
Propeller series..... T2..... T10
Voltage ..... 12V or 24 V
Application .....Dual installations in planing vessels
Speed range ..... from 25 to 45 knots
Drive shaft ..... Compact (standard), secondary shaft optional
Technical Data according to ISO 8665
Minimum calorific value 42,700 kJ/kg and density of 840 g/l at temperature of 15°C.
Fuels on the market might differ from these specifications, and this will affect the power of the engine and fuel consumption.
The engines meet the requirements of the rules on exhaust fumes IMO NOx, US EPA Tier 2 and EU RCD. Contact the local Volvo Penta dealer for more information.

With the standard version, the cruising speed should be kept below 2300 rpm to get an optimal hourly fuel consumption. (fuel consumption is based on the displacement of the cleaning condition of hull and engine filters).
The engines are equipped with an alternator for charging the dedicated batteries.
The engines can be inspected not only from the manual hatch in front of the utility/galley cabinet, but also through the opening of the stern hatch to make maintenance work easier. The controls and control panels of the engines are installed in the main control station.
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 engine has been installed on suitable elastic struts, whose task is to absorb their vibrations and allow for a minimum movement which does not cause any damage to the structures and to the devices connected with it.
Besides, the elastic struts allow an easy engine position adjustment, both for a new installation or after the required run-in.

Manoeuvres and driving characteristics
Manoeuvres, driving characteristics and the pleasure of navigating are the fields in which the Volvo Penta IPS truly sets a totally brand-new standard. The reasons for this incredible manoeuvrability are:
– The propulsion units are steerable so the entire thrust can be directed in the desired direction. This means that efficiency is much higher and response to the pilot's commands is much quicker.
– Two back rotating propellers on each propulsion unit means there are no sideways thrusts to take into account and movement is totally rectilinear.
VOLVO PENTA IPS 500/600
– The electronic controls produce a distinct and precise sensation, and the gear shift is immediate. Thanks to the progressive electronic steering system, the rudder turns more easily at low speed, which further reduces the pilot's exertion.

Comfort
On-board comfort is one of the main factors contributing to the pleasure of navigation.
Minimising noise, vibrations and exhaust fumes makes life on board much more enjoyable. The new Volvo Penta IPS technology has improved all the factors contributing toward enhanced comfort.
– The propulsion forces and vibrations are absorbed by the suspension, which acts as a seal and is made of rubber.
– A cardan joint on the drive shaft allows the engine to be mounted on elastic struts, which efficiently reduce vibrations.
– The propellers work in the water turbulence-free and cavitation-free at a good distance from the hull.
– A higher number of propeller blades better distributes the forces. This means that the pressure impulses created by the propellers have much lower effects on the hull.
– Exhaust fumes are reduced to a minimum. In the first place, the new engines produce very low emissions. In the second place, the exhaust is discharged through the propulsion unit into the propeller's wake, and is then carried far away from the yacht' stern.

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

CAUTION

We suggest you read the VOLVO instruction manual carefully and in detail.

DANGER

One of the combustion products of any diesel engine is carbon monoxide gas. this is poisonous, colourless and odourless. Check wind direction to avoid the return of exhaust gases on board. Regularly check exhaust pipes and discharges.

CAUTION

The engine configuration sheets are very important in case of repairs carried out on the engine. Therefore keep them with care together with the warranty.

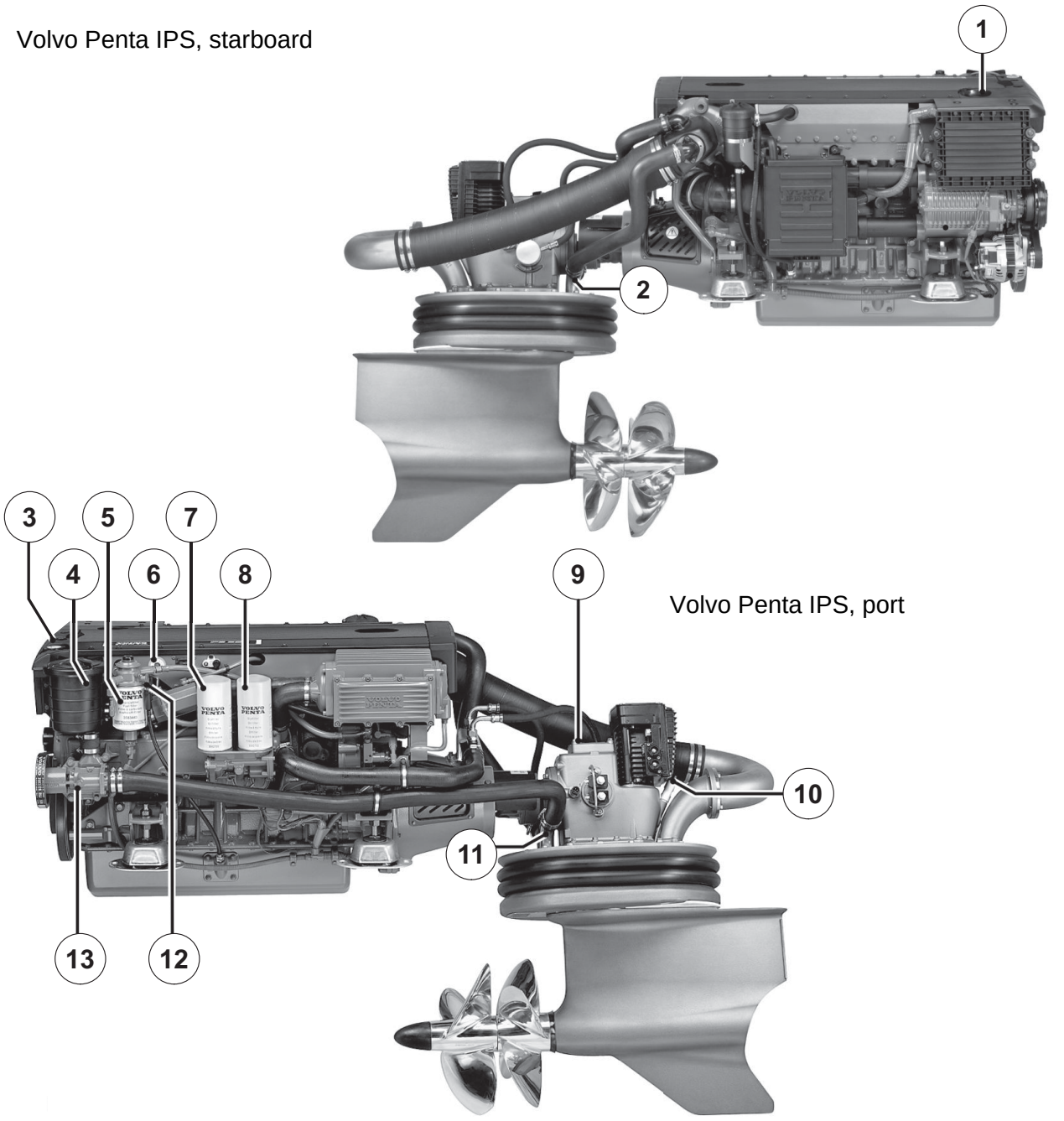
NOTICE

Instruction manuals compiled by the engine manufacturer are provided separately: we advise you to read them carefully and to follow the indications given.

The engine is covered by the manufacturer's guarantee. Only technicians authorized by the manufacturer should be allowed to work on them. Failure to comply with this requirement will lead to the invalidation of the guarantee. We strongly advise you to learn to recognize the main engine components by consulting the explanatory diagrams in the instruction manual (various types of filter, fuel injectors, manual pump for fuel supply priming, drive belt, manual stopping, throttle control) and to become familiar with some of the most frequent operations (checks on oil and freshwater levels, manual stopping, oil and filter changes, correct tension of drive belt, etc).

Volvo Penta IPS, starboard

Volvo Penta IPS, starboard



Volvo Penta IPS, port

1. Oil top-up plug
2. Water shut off valve, propulsion unit
3. Expansion tank
4. Sea water strainer
5. Fuel filter
6. Aux stop
7. Oil bypass filter
8. Oil filter
9. Oil filler cap, propulsion unit
10. Oil dipstick, propulsion unit
11. Water shut off valve, propulsion unit
12. Engine oil dipstick
13. Sea water pump

6.2 START OF THRUST ENGINES

Setting into operation
Before putting a new or overhauled engine into operation, carefully read the “VOLVO instruction manual for the assembly of sea engines”. During the first service hours it is advisable to have new engines run not over 75% of their maximum load and at variable speeds. After this initial run-in, the engine can be gradually brought up to full output.

CAUTION

Use only approved technical fuels, (see brochure “Operation Materials for Volvo Diesel Engines”); otherwise the Manufacturer’s warranty will become null and void and the engine can get seriously damaged.

Start-up
Before daily start-up, check fuel level, coolant level and oil level in the engine. If oil and coolant levels are too low, top them up through the expansion tanks, paying attention not to exceed the maximum level reference.

CAUTION

The engine must always be started with gear box at idle run and throttle lever set to minimum speed.

DANGER

Before starting an engine, make sure that nobody stays within the dangerous area of the engine room.

Cooling liquid
Fill the chilling system of the engine with a mixture of drink water and antifreeze or anti-corrosion agent.
See the print-out “Operation Materials”.
- Pour coolant slowly in the expansion tank through proper filler.
- Make sure that the water and antifreeze mixture ratio is always correct.
- For the proper quantity of coolant, see the “Technical Data” section in the manuals supplied by the Manufacturer.

The engine is cooled by a sealed circuit of fresh water, in turn cooled by sea water. The sea water circuit is provided with an openable filter for cleaning.
The sea cock valve of the engine cooling is located in front of the engine.

CAUTION

Keep the sea cock valve of the engine cooling closed when the engine is not used

CAUTION

Do not let raw water pump run dry! Make sure that all valves in the engine coolant circuit are open. Drain the pump in case of freezing danger.

CAUTION

The fresh water level of the sealed circuit must be checked before start-up.

CAUTION

The cooling sea water is discharged with the exhaust gases.

With powered navigation, it is necessary to continuously check the correct ejection of cooling sea water from the exhaust at stern.

WARNING

The engine cooling sea water can reach very high temperatures and cause burns. Open the expansion cap with extreme caution.

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!*

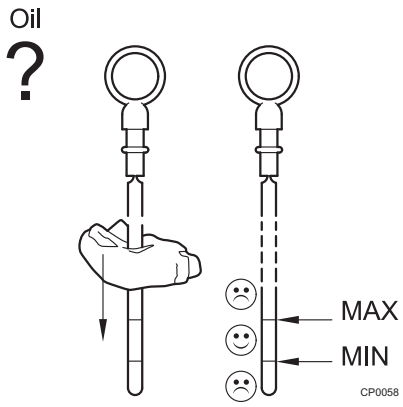
Pour lubricating oil for the engine through the appropriate filler neck. For the quantity required, see the “Technical Data” section in the manuals supplied by Volvo.

Oil level check

Check engine oil level only approx. 20 minutes after the unit has been switched off.

– Pull out the dipstick for oil level check.
– Wipe it with a clean, dry and lint-free cloth.
– Place it back up to retainer.
– Pull out dipstick again.

The oil level should set 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.



> ***WARNING***
>
> *By each change of oil, also replace the filter cartridge.*

6.2.1 Starting and stopping procedures

Before starting the engine, you must:

– Open the fuel supply valve;
– Open the engine sea water supply valve;
– Open the stuffing box sea water supply valve;
– Turn on the electric circuit activating the battery breakers;
– Put the control lever in the neutral position from the control station.
– Turn the starter key and press the START button.

Get into the habit to check if sea water together with exhaust gas ejects when the engine is started. Immediately stop the engine if the water does not come out.
Check the cooling water circuit.

Do not immediately stop the engine after a full-load operation, but let it run idle (for approx. 5 minutes) to balance the temperature differences.

– Recall the levers to the central idle position of the gear box from the control station.
– Press the STOP button and turn the engine key to OFF.

> ***CAUTION***
>
> *If you have to connect the batteries in parallel for the start-up of the thrust engine, it is suggested to disconnect the electric devices in order to avoid current rushes or drops.*

CAUTION

Should a magneto-thermal switch trip, do not try repeatedly to reset it, but check the relevant electric system condition.

CAUTION

We suggest avoiding slow running for periods longer than 5 minutes. The slow run implies major wear of the engine mechanical parts and is the most harmful from the point of view of polluting exhaust.

CAUTION

Before using the engine, carefully read the user manual supplied by the engine manufacturer.

WARNING

Start the engine with control lever in the neutral position.

WARNING

Learn how to determine the distance required to a complete boat stopping (reverse is not a brake).

DANGER

Make sure that the engine cannot be started by unauthorized staff.

CAUTION

With engines stopped carry out following:
- *disconnect all unnecessary electric users 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 dock electric power supply;*
- *keep the engine room extractor running for about 30 minutes, for ventilation and air cooling.*

CAUTION

The emergency stop causes a heavy stress to the engines with consequent hazard of component damage. Use only in case of real need.

WARNING

The engine emergency stop controls must be used only in case of real emergency.
Never use these systems during normal engine stop procedures.

DANGER

Before restarting the engine after an emergency stop, make sure to find and to clear the reason of the fault.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the equipment.

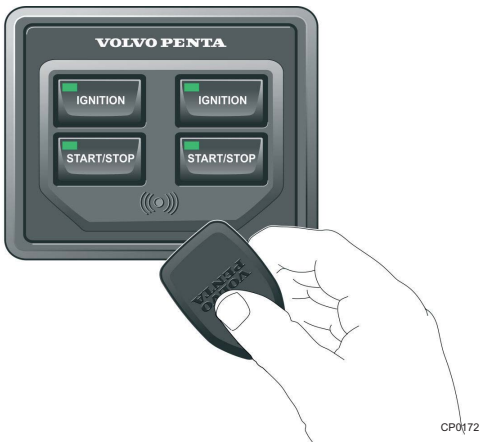
6.3 INSTRUMENTS AND CONTROLS

6.3.1 Start switch

There is always a helm station with an e-Key panel on a yacht.

e-Key panel

The Volvo Penta e-Key consists of a panel and a key fob.
Hold the key fob in front of the symbol on the panel to unlock the EVC system.
A sound confirms the system is unlocked.
When the electrical system is locked, a red light willflash under the symbol.
The lamp goes out to indicate the system is unlocked.



Key Management

Two key fobs are provided at the time of delivery.
It ispossible to add additional keys; the system allows upto four keys.
With a key already registered to thesystem other keys can be added or removed, see Key Management.

Safety Lanyard

A safety lanyard (optional extra) can be connected to the panel.
Should the safety lanyard be removed, the engines will stop, the system alerts and a warning message will be displayed in the Information Panel.

e-Key Remote

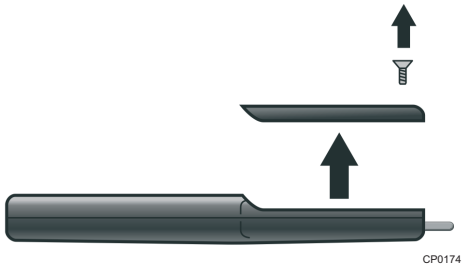
e-Key Remote Sender locks and unlocks the yacht's electrical system and starts the engine's ignition via the e-Key Remote Receiver. On the key there are also two buttons that control relays to optional functions such as deck light or anchor winches.
ON – turns on the start switch and other selected switches.
OFF – turns off the start switch and other selected switches.
1 and **2** – the buttons are used to turn optional yacht functions off and on.

Battery replacement

Undo the screw on the battery cover and replace the battery. Battery types: CR2032.

Battery installation

Place the battery cover back fasteners and secure the gasket by pressing on the cover. Install the screw to secure the cover placement.



6.3.2 Start-up

Make a habit of visually checking the engine, engine bay and transmission before start. This will help you to discover quickly if anything abnormal has occurred, or is about to occur. Also check that instruments and warning displays show normal values when you have started the engine.
To minimize cold start smoke we recommend you install an engine heater or engine bay heater if temperatures below +5°C (41°F) are encountered.

WARNING

Never use start spray or similar agents to start an engine.
This may cause an explosion in the inlet manifold.
Risk of personal injury.

Before start-up

- Check the engine and drive units oil level.
- Check the coolant level.
- Open the sea cock.
- Open the fuel cock.
- Turn the main switches on.

CAUTION

Never disconnect the current using the main switches when the engine is running or by disconnecting the battery cables.

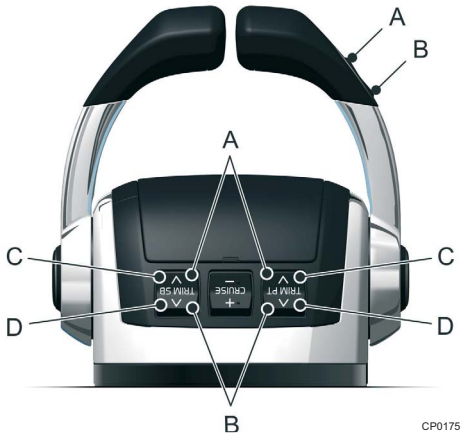
The alternator and electronics could be damaged.

- *Unlock the EVC system.*
- *Start the engine bay fan, where fitted, and allow it to run for at least four minutes.*
- *Check there is sufficient fuel for the planned trip.*

Manual control using control buttons

Manual control of the interceptors is performed using the control lever buttons and the buttons at the back of the control.

A. All interceptors are trimmed upward simultaneously. The bow is raised.
B. All interceptors are trimmed downward simultaneously. The bow is lowered.
C. Port and starboard interceptors are trimmed upward individually.
This configuration is used to balance the lateral inclination.
D. Port and starboard interceptors are trimmed downward individually.
This configuration is used to balance the lateral inclination.



If both the port and starboard buttons at the back of the control are pressed at once all interceptors are trimmed in the same way as when using the control lever button.

Screen Display
Interceptor blade position, i.e. how far the blades are extended, can be presented in one of the EVC system displays. The display will also indicate if the system is in auto or manual mode.

Cleaning
The system automatically performs self cleaning by extending and retracting the blades once every 24 hours to prevent fouling of the interceptor blades. Self cleaning is performed whether or not the boat is in use.
Self cleaning is performed whether or not the yacht is in use.
During prolonged inactivity, e.g. winter lay-ups, self cleaning can be switched off by turning off the circuit breaker or disconnecting power.

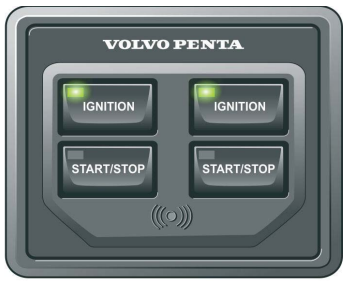
Starting the Engine
Shifting and adjusting speed is only possible at an active station.
The main station is automatically activated when the EVC-system is unlocked with the e-Key panel and the ignition is switched on.
On a boat with two or more stations the engine(s) can be started from another station with a start/ stop panel – if the engine(s) are turned off.
The station automatically becomes active when the engine(s) is/are started.

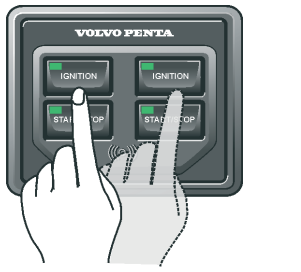
Put the Gear in Neutral (N)
Put the drive/reverse gear in **Neutral** by moving the control lever(s) to **Neutral (N)** at all stations.

Turn on the ignition
A green light in the IGNITION button indicates that the ignition is on.
Press the IGNITION button to switch on the ignition if the green light is not shining.

Check the instruments
If a fault is registered, it will be shown in the display; please refer to fault handling for further information and recommended actions.

Starting Using the e-Key Panel
To start, press the START/STOP button once for each engine.





Read the instruments and warm the engine up
Allow the engines to idle for the first ten seconds.
Check that instruments and warning displays show normal values.
Check that no messages are displayed and no warning signs are showing.
If a fault is registered, please referto section fault handling for further information and recommended actions.
Warm the engine up at low speed and low load, so normal operating temperature is reached before full power is used.

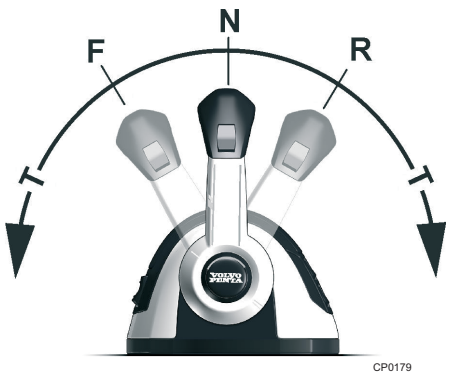
CAUTION

Never race the engine when it is cold.

Racing the engine when it is cold may damage the engine components and decrease the engine lifetime.

Information Display
The information display shows engine and operational information, messages and alarms.
The information shown can be set up according to personal preferences. The basic settings show:
- Engine speed
- Oil pressure
- Coolant temp
- Battery voltage

Controls on board
N. Neutral position. Reverse gear/drive disengaged and engine at idle.
F. Reverse gear/drive engaged for forward motion.
R. Reverse gear/drive engaged for rearward motion.
T. Engine rpm control (throttle).

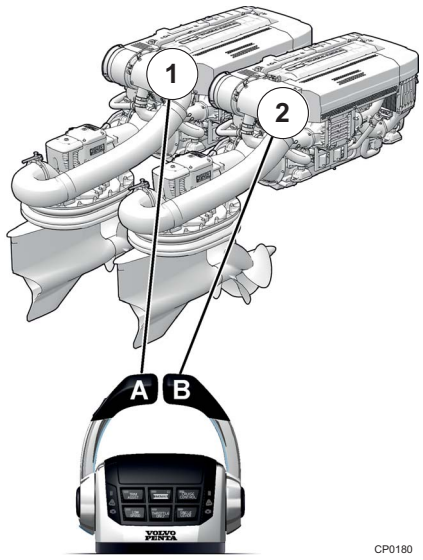


Twin Installation

Both the adjustment of engine speed and the gear shift function are controlled using the control levers.

The port side control lever (**A**) controls the port side engine and propulsion unit (**1**).

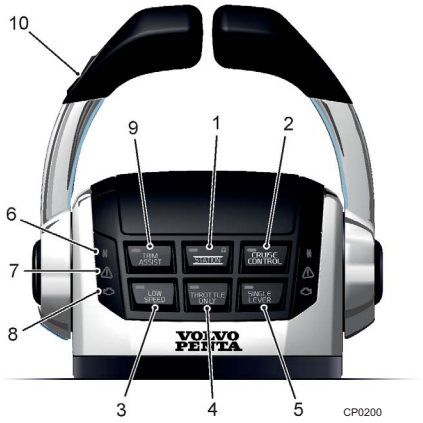
The starboard control lever (**B**) controls the starboard engine and propulsion unit (**2**).



Electronic controls

Engine and drive features are controlled with push buttons on the control.

The buttons and functions available depend on the installation.



1. **STATION**
   The button lamp is lit if the helm station is active. Refer to Operation for further information.
2. **CRUISE CONTROL**
   Switch on Cruise Control by pressing the button (**2**).
   Fine tune the locked engine speed by increasing (+) or reducing (-) engine rpm with the button at the back of the control.
3. **LOWSPEED**
   Refer to Features for information about the Lowspeed function.
4. **THROTTLE ONLY**
   By activating THROTTLE ONLY, the shift function is disconnected and the control lever only affects the engine speed.
5. **SINGLE LEVER**
   Switch on the single lever function by pressing the button. The lever that is moved from its position first becomes the control lever for both engines. The other control lever has no function as long as the single lever function is activated. The button lamp lights up to show that the function is active.
   Exit the single lever function by pressing the button again.
6. **N**
   Neutral position. The symbol shows that the drive/reverse gear is disengaged.
7. ⚠
   The warning triangle lights up if the system discovers a fault.
   Refer to Fault Handling for more information about system faults.
   The warning triangle lights up on the same side as the drive line with the indicated fault.
8. **For gasoline engines only**

9. TRIM ASSIST (optional)
Switch on the automatic interceptor control functionality by pressing the button (**9**).
The interceptors are then automatically adjusted when needed.
Refer to Optional for more information.

10. TRIM (optional)
Manually adjust the interceptors. Manual adjustment using the TRIM button (**10**) will over ride the automatic function, if enabled.
For twin engine installations, the adjustment of the drives are synchronized.

The picture along side shows the other side of the control.

1. TRIM (optional)
Manually adjust the interceptors. Manual adjustment using the TRIM button (**1**) will over ride the automatic function, if enabled.
For twin engine installations, the adjustment of the drives are synchronized.

2. TRIM PT and TRIM SB (Optional)
Manually adjust the interceptors individually by using the TRIM PT button (**2**) for portside interceptor adjustment, and the TRIM SB button (**2**) for starboard interceptor adjustment.

Joystick
Volvo Penta Joystick is a control used for docking and manoeuvering. Practise using the joystick and its functions in a safe and proper manner. Practise how to operate the yacht with both joystick docking and steering functions.
The features are controlled with push buttons on the control. The buttons and functions available depend on the installation.

1. Docking
For operation and further function information, refer to Features.

2. Dynamic Positioning System
For operation and further function information, refer to Optional.

3. Joystick Driving
For operation and further function information, refer to Joystick Driving.

4. High Mode
For operation and further function information, refer to Features.

Joystick for Docking

When the docking function is activated, engine revolutions are limited and the yacht can only be steered by the joystick.
In order to activate the docking function, the following must be fulfilled:

- engines running
- control levers in neutral
- helm station active
- joystick in center position

Activating the docking function

Activate docking mode by depressing the dockingbutton (**A**) on the joystick.
A sound signal and warning light on the button confirm activation of the mooring function.

Exiting the docking function

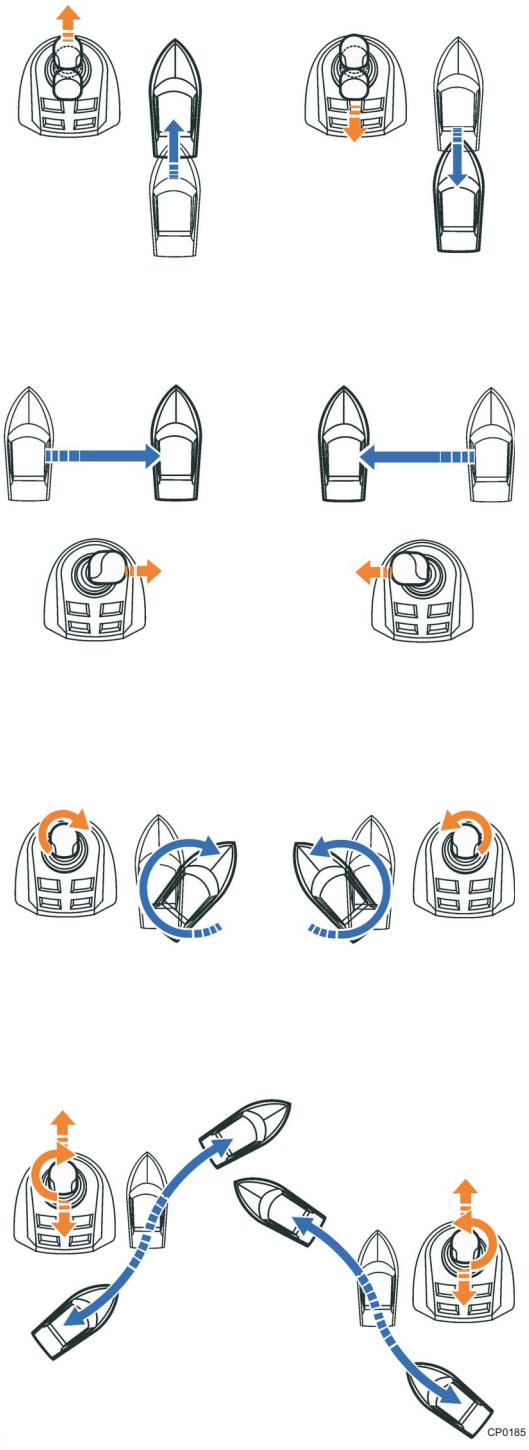
To exit the function, press the joystick docking button (**A**).
An audible signal will sound twice to confirm that docking mode is deactivated, and the docking light will go out.
The mooring function also becomes disabled if the controls are moved from the idle position.

CAUTION

The yacht will continue to move in the selected direction even when the joystick has been released. To slow the boat or reverse its direction, move the joystick in the opposite direction.

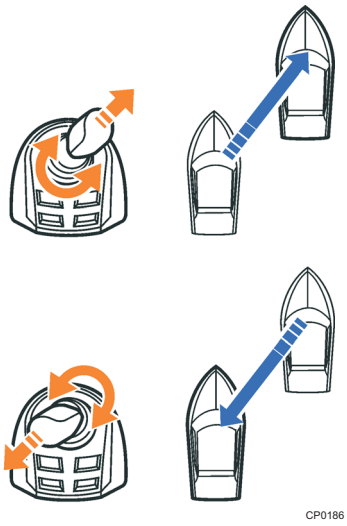
The docking function is designed to be used when docking or maneuvering in close quarters. Use the steering wheel and throttle control levers in all other situations.

The boat is maneuvered by moving the joystick forward, aft, abeam, twisting the top of the joystick and combinations of the movements.



CAUTION

In order to achieve a diagonal movement, move the joystick diagonally and use the joystick knob to adjust the yacht's direction accordingly.



High Mode

If extra power, e.g. when there is a strong wind or strong current, the High Mode function may be engaged.

Activate High Mode

Activate the joystick by depressing the docking button (**A**). An audible signal confirms that the joystick is activated and the docking button lights up.
Activate the High Mode function by depressing button (**B**) on the joystick.
An audible signal confirms that the function is activated and the high Mode button lights up.

Disengage High Model

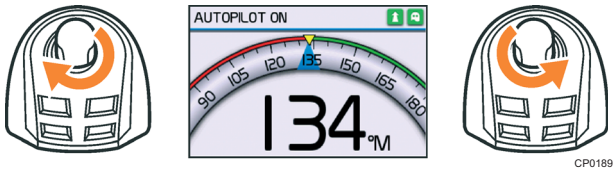
Disengage the function by pressing the button again.
A double sound signal and warning light switching off confirm function disabling.
Now the system has returned to the normal mooring function.

Joystick Driving

CP0188

Function Joystick Driving only works together with Volvo Penta autopilot.
The Joystick Driving function allows the joystick to be used during passage to adjust the yacht's heading and maneuver the yacht in the same way as with the autoplilot and helm steering unit.
Throttle and gear shift controls work in the normal manner.
Learn to maneuver the yacht with the joystick in calm, open waters.
Joystick Driving is activated and de-activated by pressing the button on the joystick.
When Joystick Driving is activated the autopilot is also started. While the yacht is under joystick control the autopilot is in standby mode; when the joystick is released to its central position the autopilot is activated and locks in on the new heading after a few seconds.
Like the autopilot, the helm steering unit is locked when the function is active but
it may always be used, for example, for changing course or giving way for an obstacle
Twist the top of the joystick or move it sideways to reengage Joystick Driving.
If the autopilot is put in standby mode manually by means of the STBY button, Joystick Driving switched off and must be reengaged using the button on the joystick.

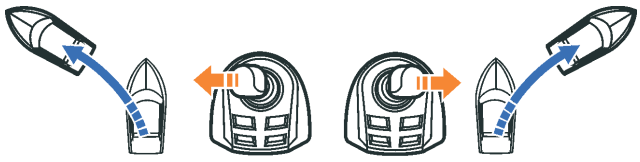
<u>Heading adjustments</u>



CP0189

Twist the top of the joystick to change heading incrementally.
A short twist changes the heading by a fixed increment while a twist held firm will change the heading through several increments.
The autopilot shows the heading with a digital value and a indicator in shape of a blue triangle, a yellow arrow shows the new heading that the yacht will be set to.

Manoeuvres


CP0190

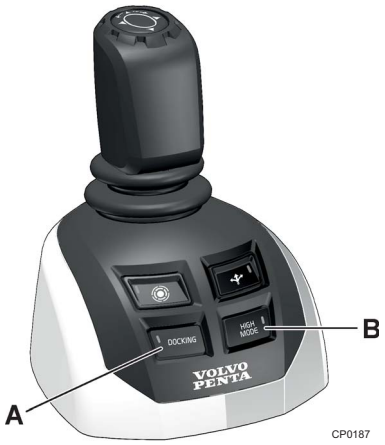
The joystick can also be used to maneuver the yacht in the same manner as with a helm steering unit. Move the joystick sideways to steer the yacht in the same direction. When the joystick is released the autopilot will set a new heading that corresponds to yacht heading.

NOTICE

Full joystick movement to one side corresponds to full helm. Maneuvering abeam provides a faster response than adjusting the heading by twisting the top of the joystick.

High Mode

If extra power, e.g. when there is a strong wind or strong current, the High Mode function may be engaged.



Activate High Mode

- Activate the joystick by depressing the docking button (**A**).
  An audible signal confirms that the joystick is activated and the docking button lights up.
- Activate the High Mode function by depressing button (**B**) on the joystick.
- An audible signal confirms that the function is activated and the high Mode button lights up.

Disengage High Model

Disengage the function by pressing the button again. A double sound signal and warning light switching off confirm function disabling.
Now the system has returned to the normal mooring function.

Dynamic Positioning System

Volvo Penta IPS Dynamic Positioning system (DPS) is a function that aids holding a selected position and compass heading by means of a GPS signal. The function is intended as an aid e.g. while waiting for a berth or for a bridge to open.
From a legal standpoint, the yacht is under way when the DPS is activated.
The operator has the same responsibility regarding supervision and maneuvering as when making way through water. The helm station must remain attended.

It is the operator's responsibility to inform passengers of the risks and make sure no persons or any other yacht or object that can be affected by the operation of the DPS function are in the water near the yacht.
When DPS is active, precision is affected by wind, waves, current, and GPS signal strength.
Keep away from swimmers or any other boat or object when DPS is active.
The dynamic positioning system can be affected by strong electromagnetic signals as created by radar and radio transmitters.
Maintain a safe distance, with a minimum of 2 yacht lengths to any object.

Show consideration! When the DPS is active, it gives rise to noise and heavy propeller wash that may annoy those around.
You are responsible for the wake from your yacht.

6.3.3 Operation

Learn to handle the engine, controls and other equipment in a safe and proper manner before casting off on your maiden voyage. Remember to avoid sudden and extreme rudder maneuvers and gear shifts.
There is a risk for passengers and crew falling over or falling overboard.

WARNING

A rotating propeller can cause serious injury.

Check that nobody is in the water before engaging ahead or astern.

Never drive near bathers or in areas where people could be in the water.

Reading the Instruments
Read all instruments and alarm displays directly after starting, and then regularly during the voyage.

Alarms
All alarms and messages are shown in the information display.
Some alarms also have an audible alarm and/or flashing light indication.

- Read the message.
- Acknowledge the alarm.
- Perform any necessary action to remedy the fault, refer to Fault Code Register.

The fault will be stored in the system as long as it remains.
It is possible to access the error code at an upcoming service.

Manoeuvres

Shifting between forward and reverse is done at idling. Shifting at higher engine speeds can be uncomfortable for passengers and cause unnecessary stress on the transmission or cause the engine to stop.

If you attempt to shift gear at a high engine speed, a safety function is automatically activated, and will delay shifting until engine speed has fallen to 1000 rpm.

Execute a Forward/Reverse Operation as Follows:

– Reduce engine speed to idle and let the yacht, more or less, lose way.

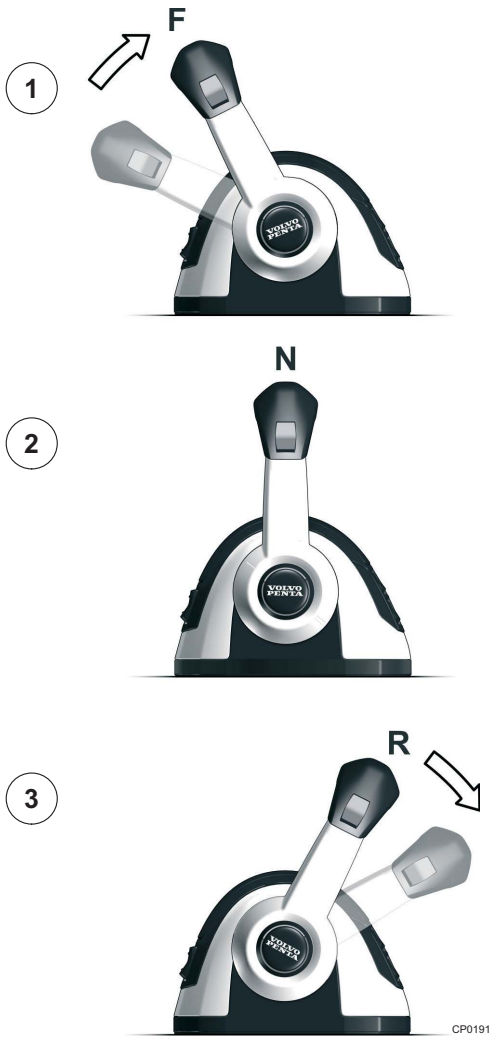
WARNING

Never shift to reverse when the yacht is planing.

– Move the control lever to **Neutral** (**N**) with a rapid, distinct movement.
– Make a brief pause.
– Move the control lever to **Reverse** (**R**) with a rapid, distinct movement and increase engine speed.

CAUTION

To avoid water entering the stationary engine via the exhaust pipe, it is important that all engines are running during reverse manoeuvers.



6.3.4 Stop

Engine stop

CAUTION

Never disconnect the current using the main switches when the engine is running or by disconnecting the battery cables.
The alternator and electronics could be damaged.

CAUTION

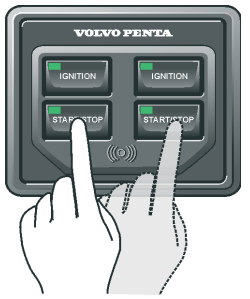
Make sure the ignition is turned off before the main switches are switched off.
Otherwise the alternator and electronics could be damaged.

Stopping Using the Start/Stop Panel

- Disengage the drive/reverse gear by putting the control lever in neutral.
- Stop the engine(s) by pushing the START/STOP button(s).

Stopping Using the e-Key

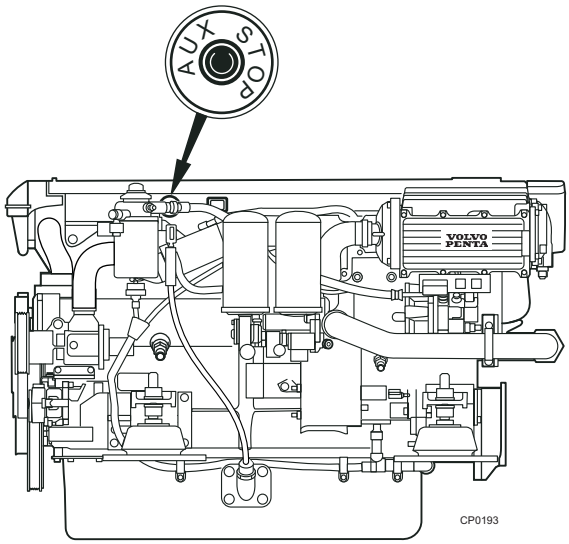
- Disengage the drive/reverse gear by putting the control lever in neutral.
- Push the stop button(s).
- Release the button(s) when the engine(s) has/have stopped.



Turn the ignition off and lock the EVC system
To turn the ignition of, press the IGNITION button.
The green lamp in the IGNITION button goes out to indicate the ignition is off.
To lock the EVC system, hold the key fob in front of the symbol on the e-Key panel.
A flashing red light indicates the system is locked.

Auxiliary stop

If the engine cannot be stopped in a normal procedure, it is possible to stop the engine via the auxiliary stop mounted on the side of the engine.



After engine shutdown

- Check the engine and engine bay for leakages.
- Close the fuel tap.
- Close the sea cock where fitted.
- Take an hour meter reading and carry out preventive maintenance according to the maintenance schedule.
- Boats with stern drives: Trim the stern drive down to maximum to protect the trim ram piston's untreated surfaces from fouling.
  If there is a risk of the yacht striking bottom with the stern drive, the drive must instead be trimmed up to the maximum lift position.
- Turn off the main switch before any long stoppage.

NOTICE

Depending on the model and setup, there could be more than one switch.

NOTICE

Do not turn off the main switch within 30 seconds after turning off the ignition. This in order to save engine data to the engine control unit.

Operation break

Operation break with the yacht in water

If the yacht is not used, but left in the water, we recommend you to warm up the engine at least once every fortnight. This will prevent corrosion damage in the engine.

If you expect the yacht to be unused for two months or more, we recommend you to preserve the engine, please refer to Storage.

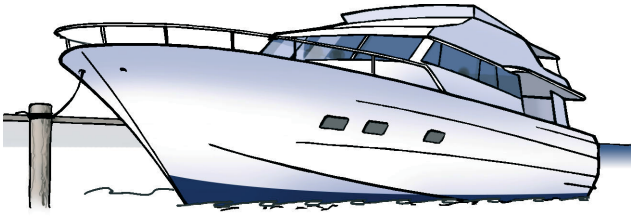
Cold weather precautions

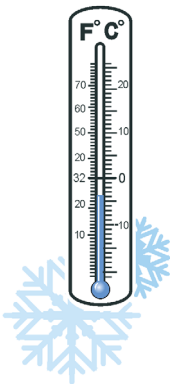
If the engine bay cannot be kept frost free, the sea water system must be drained and the freshwater system coolant must have sufficient frost protection to prevent frost bursting.

Check the charge status of the battery.

A poorly-charged battery can freeze and burst.

For further information, see the separate specific engine Manual.





CP0171

6.3.5 Maintenance

Make frequent checks on the pipes, joints clamps and electrical connections of the engine. These can be loosened by vibration, causing serious malfunctions.
Always promptly clean away any leaks of oil and fuel.
Always keep the engine, marine gear and engine compartment bilge clean so as to be able to easily detect even the slightest loss of fuel, oil or cooling water.
The bilge section beneath the engine is isolated from the other bilge compartments, to prevent small losses of fuel or oil from being discharged overboard by automatic bilge drainage systems. To drain the engine bilge section, a small hand pump can be used (not supplied).

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 engine is to be carried out with the engine shut off, after it has sufficiently cooled down and after seeing to the prevention of its being switched on by disconnecting the magneto-thermal switches.

WARNING

Use only approved fluids (see “Volvo/Yanmar Operation Materials” table), otherwise the warranty given by the Manufacturer expires.

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!

CAUTION

Do not use open flames, do not generate electric sparks. Do not smoke. Avoid ignition sources. Risk of fires and explosions!

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

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

Due to the high temperature in the engine room, oil or fuel leaks can evaporate and create a serious risk of fire. Check regularly the integrity of the system.

CAUTION

It is absolutely necessary to view the documentation for the different components supplied by the Manufacturer together with Cantiere del Pardo; for any problem relevant to use or maintenance, please contact the Service Centres listed in the documents provided by the Manufacturer directly. In any case there are some small procedures that can be carried out by the crew on board, after consulting the operation manual.

ENVIRONMENT

Handle used fuel filters as special waste.

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.

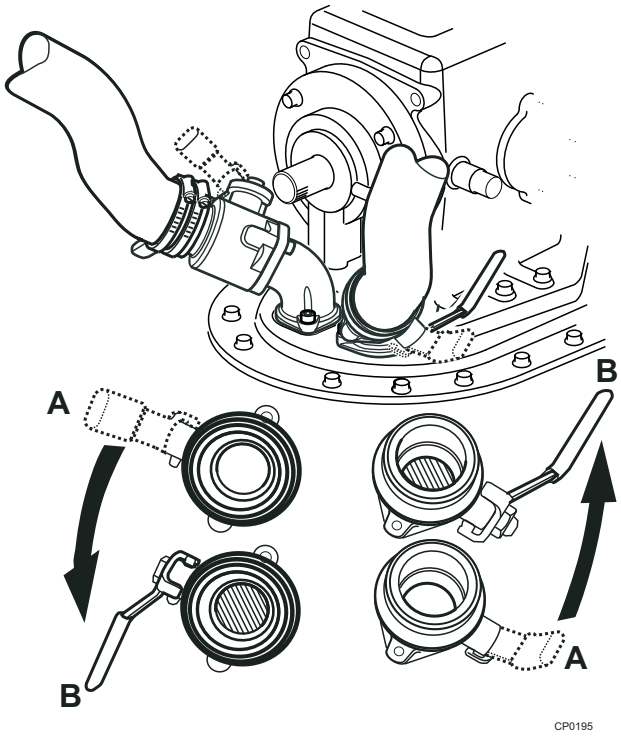
CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the equipment.

6.3.6 Sea water system

The raw water system is the engine's external cooling system. On IPS engines, the raw water pump sucks in water via the IPS cooling water inlet, through the IPS unit oil cooler to the raw water pump. The water then passes through the raw water filter before being pumped through the fuel cooler, intercooler, engine oil cooler and heat exchanger. Finally the water is fed out through the exhaust elbow, where it is mixed with the exhaust gases.

A. Open
B. Closed



WARNING

If the yacht is in the water while working on the seawater system the two seawater cocks on the propulsion units must be closed. Otherwise there is a risk of flooding of the engine compartment and sinking of the yacht.

The yacht must be brought up on land if this is not possible.

6.3.7 Sea water system, draining

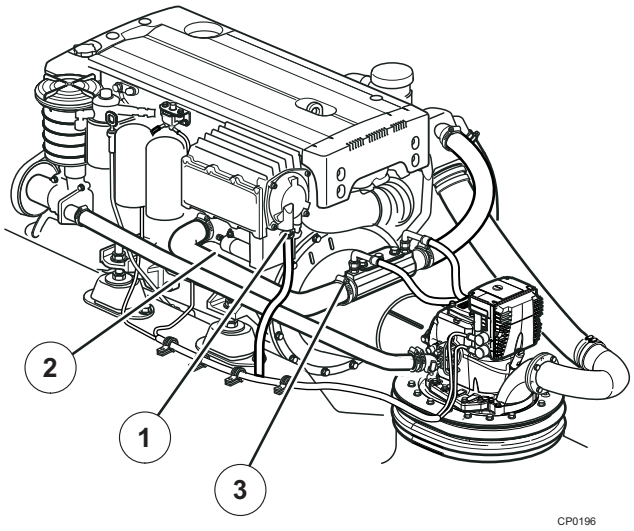
WARNING

Risk of water infiltration. Close the sea water tap before beginning any work on the sea water system.

To prevent frost damage, the raw water system must be drained during cold weather if there is a risk for frost. An alternative to draining is to keep the engine room warm using an approved heater fan.

Draining:

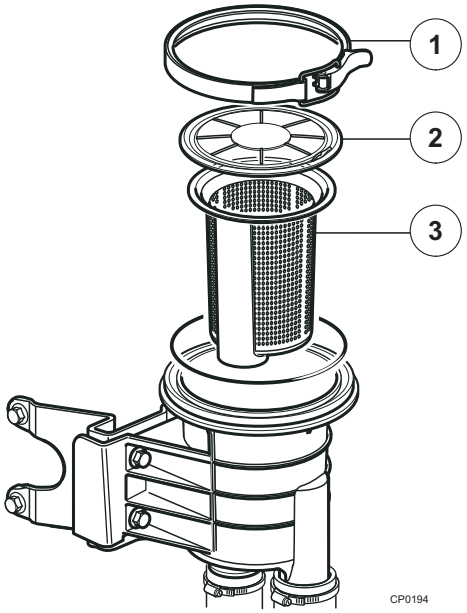
- Close the sea cocks.
- Open the drain stop cock (**1**) by unscrewing it carefully.
- Drain the coolant into a container. Screw in the stop cock by hand.
- Move the hose on the stop cock (**1**) and connect to stop cock (**2**).
- Open stop cock (**2**) and drain all coolant. Close the stop cock.
- Refit the drain hose to stop cock (**1**).
- Remove hose clamp (**3**) and release the end of the hose. Drain the coolant from the hose and oil cooler.
- Refit the end of the hose.
- Open the sea cocks and check for leaks.



6.3.8 Check and clean sea cock valve, strainers and valves

Risk of water infiltration. Close the sea water tap before beginning any work on the sea water system.
The strainer should be checked more often than shown on the diagram if the water in which the yacht is navigating is very polluted or full of seaweed or similar. In fact, there is the risk of the filter becoming clogged, leading to overheating of the engine.

- Close the sea water tap.
- Unscrew the cover (**1**) and remove the sealing plate (**2**).
- Lift the insert (**3**) and clean it.
- Reassemble the parts as illustrated in the figure.
- Open the sea water tap and check for the presence of leaks.



DANGER

If the boat is in the water, before starting to work on the sea cocks disable the start of the engine, generator and sea water pumps.

CAUTION

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

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. Caution is very important to prevent damaging the mechanical parts (engines, generator, etc.), draining systems and to prevent jeopardizing the safety of the yacht.

WARNING

Before removing the filter, close the valve fitted on the seacock so as to not sink.

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.*

6.4 ENGINE ROOM VENTILATION SYSTEM

The engine sucks the air directly into the engine compartment, which is fitted with two air intakes. This ensures a change of air during operation.
The ventilation system is made up of two air intakes, one on the starboard side, the other on the port side.

CAUTION

Do not lay tools or clothing on the air inlets since this would jeopardize their operation.

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 docked or anchored or riding the anchor).

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the equipment.

MAINTENANCE

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.*

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the equipment.

6.5 TRANSMISSION

The IPS transmission is hydraulic. This means that shifting from forward gear to reverse gear and disengagement of the transmission are hydraulic, with the solenoid valves electronically controlled by the EVC system.
The propulsion unit's lubrication system is equipped with an oil filter and an oil cooler.
The propulsion unit is protected against galvanic corrosion.
This protection consists of sacrificial anodes. An active corrosion protection, ACP, is optional. Faulty electrical installation can also cause the breakdown of the galvanic protection. Damage dueto electrolytic corrosion occurs rapidly and is often extensive.

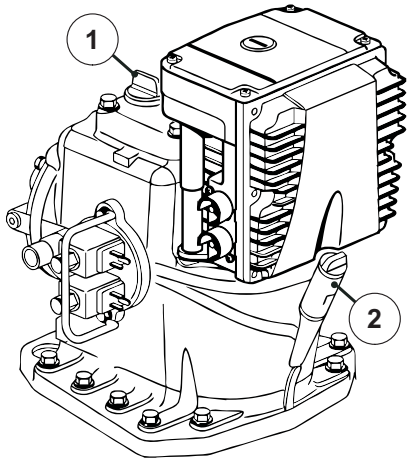
6.5.1 Transmission lubricant, checking and topping up

CAUTION

The propulsion unit must be shut down for at least 12 hours before a correct oil level check can be done.

Check the oil level every day before starting the engine.

Open the oil filler cap (**1**) slowly so that any overpressure is released.
Remove the dipstick (**2**) by turning it anti clockwise.
Dry the dipstick and put it back into the propulsion unit. When checking the oil level, do not screw in the dipstick. Remove the oil dipstick again and check the oil level. The correct oil level is inside the marked area.
If necessary, top up the oil through the filling hole (**1**). For more information on the types and quantities of oil.
While checking the oil level, ensure there are no signs of water dilution. The oil should have a golden brown hue. If the oil is thin and greyish it is probable water diluted. If so, always let the propulsion unit be checked by a Volvo Penta workshop.



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6.6 PROPELLER

The propeller supplied with the boat has undergone tests carried out in collaboration with the engine manufacturer.
Never replace the propeller without consulting a qualified marine technician. The propeller turns in a clockwise direction.
During the dry dock, check the propeller: it must rotate freely on its axis and not show any clearance.
Periodically check if the propeller is too “dirty” (at least once every six months), as this leads to a fast performance decrease and to a vibration increase.
In case of impact with the seabed or submerged/semi-submerged bodies, check propeller and transmission 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 engine and the boat structure.

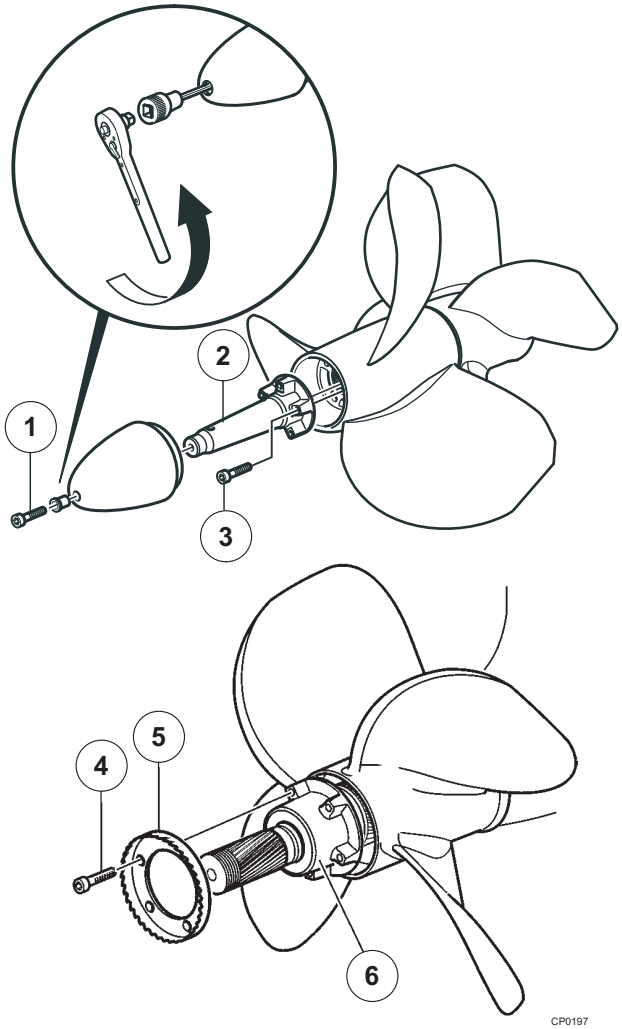
WARNING

Make sure that the engine cannot start during work on the propeller(s). Ensure that ignitions keys are removed or that the ignition is turned off on the Start/Stop panel.

Damaged propellers must be replaced as soon as possible. If you have to drive a yacht with a damaged propeller, do so with extreme caution and only at reduced rpm.
A special tool for removing and reinstalling propellers is supplied with the IPS unit.

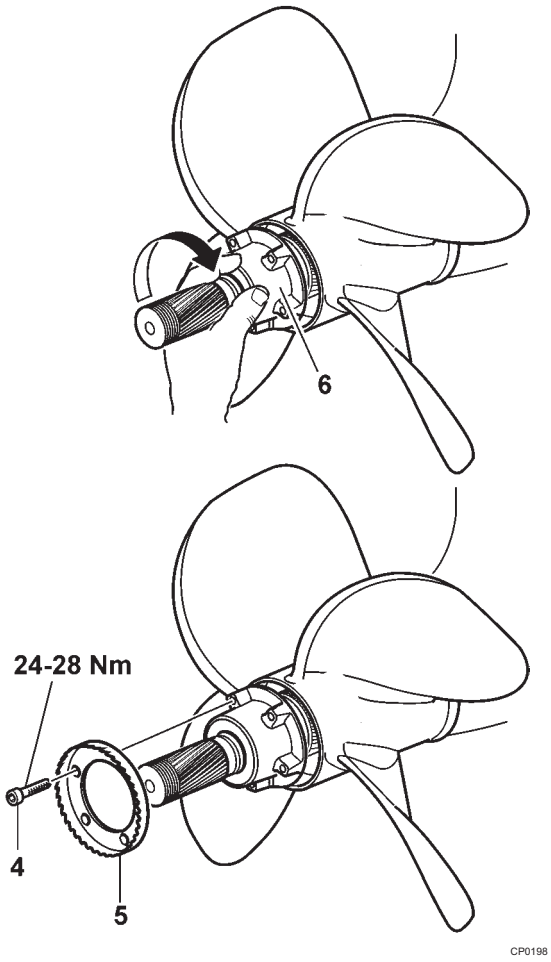
Disassembly

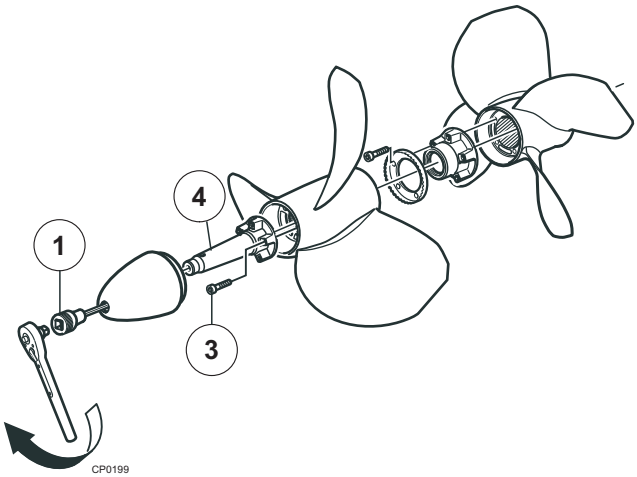
- Remove the ignition keys from the ignition switches.
- Unscrew the screw (**1**) using the special tool and remove the propeller cone.
- Remove the nut (**2**) by unscrewing the four hexagonal screws (**3**) using the special tool. Remove the forward propeller from the propeller shaft.
- Unscrew the four hexagonal screws (**4**) using the special tool and remove the line cutter (**5**) from the rear propeller shaft. Remove the nut (**6**) and the rear propeller from the propeller shaft.
- Wipe the propeller shafts clean.



Installation

- Brush waterproof grease, product no. 828250, onto the propeller shaft splines and threads on both propeller shafts.
- Install the aft propeller. Then install the aft nut (**6**) and tighten it by hand until it bottoms. Attach the line cutter (**5**) and tighten with the accompanying special tool and four hexagonal screws (**4**).
  Tightening torque 24-28 Nm (17.7–20.7 ft.lb.).
- Install the forward propeller on the propeller shaft. Tighten the nut (**2**) by hand.
  Tighten the nut with the accompanying special tool and four hexagonal screws (**3**).
  Tightening torque 24-28 Nm (17.7–20.7 ft.lb.).
- Press the propeller cone onto the propeller nut (**2**) until it bottoms.
- Tighten the screw (**1**) to a tightening torque of 24-28 Nm (17.7–20.7 ft.lb.).





6.6.1 Maintenance of the propellers

Propeller
Periodical checks
The propeller check should be performed based on the stationary water.
Inspection and possible cleaning may be carried out with the yacht in a dry dock 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.

Periodical checks
Assembly/disassembly
Replace only with genuine spare parts supplied by the Cantiere del Pardo Service Department.

DANGER

To clean or check the yacht in water: disconnect the engine and generator start.

CAUTION

Do not replace the propeller of your yacht with others of doubtful origin. Please contact the Cantiere del Pardo Service Department.

Each boat model has its own propeller.

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.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the equipment.

7.1 CONTROL STATION

This Chapter describes the controls, the instruments and the devices installed and the main functions of the control station on the deck bridge.
NB: The description given regards the controls and instruments normally fitted; your yacht may be fitted with different components or equipment fitted after delivery to the first owner, and may therefore differ partially from the description given in this chapter. In case of doubt, do not hesitate to contact your boat dealer or the builder's assistance service for full explanations.

CAUTION

Herewith are given only general information for first start-up: in order to practice and for the specific use of the individual systems, see the manufacturers' manuals and contact the Cantiere del Pardo Service Department.

CAUTION

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

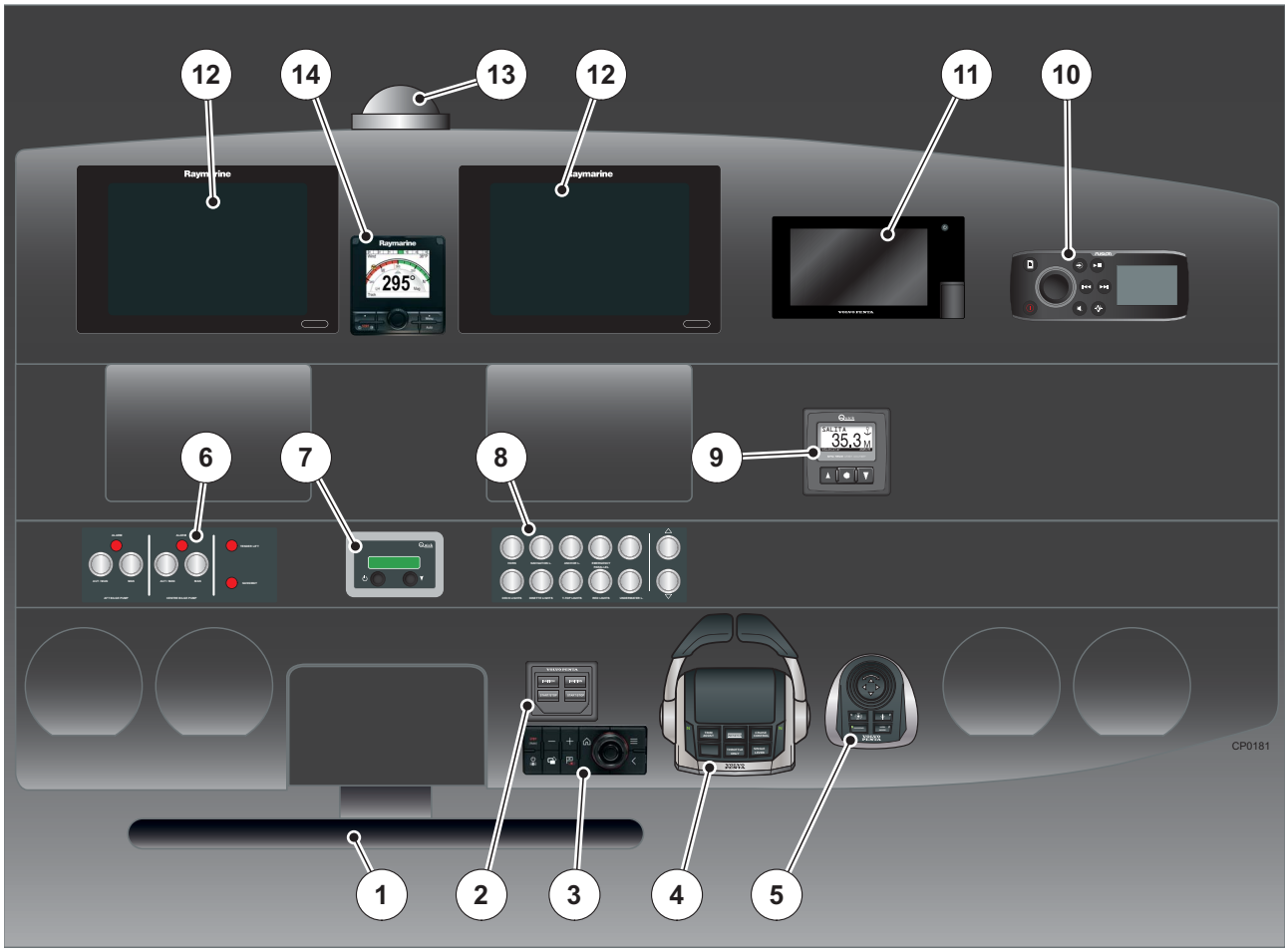
CAUTION

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

CAUTION

Always ensure that the waters around you are kept under constant observation, so as to avoid all possible obstacles.

The descriptions given may refer to both standard and optional systems and equipment.



1. **Steering wheel**
   By turning the steering wheel you activate an hydraulic pump driving the pistons located inside the engine room and directly connected to the rudders, being able in this way to steer the yacht.
2. **Engine Start/Stop panel**
   This is where the engines can be started and stopped using the e-key.
3. **Radar/Chartplotter/Fishfinder control unit**
   This unit allows managing the radar/chartplotter/fishfinder displays.
4. **Handle block (engine control system)**
   This block controls, by means of electric signals, the revolutions of the thrust engines and the functions of the transmissions.
5. **Manoeuvring and mooring joystick**
   The joystick is used for mooring and low-speed manoeuvring. The yacht is manoeuvred by moving the joystick forward, back and sideways, or by turning its top.
6. **Bilge and gangway and platform-lift state controls**
   These controls manage operation of the bilge pumps and signal activation of the gangway and platform-lift.
7. **Gyroscopic stabilizer panel**
   It allows commanding and controlling the operation of the gyroscopic stabilizer installed in the engine room.
8. **Controls**
   - Horn
   - Navigation lights
   - Anchor riding lights
   - Stern light
   - Emergency parallel
   - Service lights (deck - dinette - T-top)
   - Underwater lights
   - Anchor winch controls
   - Available button

9. **Digital chain counter**
   This device activates the anchor winch and, at the same time, shows the length of the lowered chain, by means of a graphic LCD display.
10. **HI-FI system**
11. **Engine displays**
    The various operation parameters of the engines and transmissions can be monitored on this display.
    Based on the functions installed on the yacht, the following can be viewed:
    - engine speed
    - rudder angle
    - coolant temperature
    - battery voltage
    - oil pressure
    - turbocharger pressure
    - engine hours
    - transmission oil, pressure
    - transmission oil temperature
12. **Multifunction monitor(s)**
    Plotter/radar/fishfinder and data box navigation system display monitor. Data are managed using the relevant keyboard.
13. **Magnetic compass**
14. **Automatic pilot (autopilot)**
    This device allows holding a certain pre-set track, without having to manually operate on the steering system.

GPS - Plotter (optional)

This instrument has an electronic chart system and is interfaced with a GPS satellite receiver that gives the position of the boat with great accuracy.
For details on its use consult the specific instructions provided separately by the manufacturer.

CAUTION

Remember that electronic chart systems can never be a complete substitute for conventional official charts, particularly for giving warning of underwater obstacles or navigation hazards.

WARNING

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

DANGER

Radiation danger.

The radar antenna emits radiations, which can damage the human body, especially the eyes. When the radar is operating, never look straight at the transmission aerial from a distance shorter than 1 m.

During the radar operation it is necessary to keep out of the antenna transmission flow.

Switch off the radar if not expressly necessary to navigation.

CAUTION

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

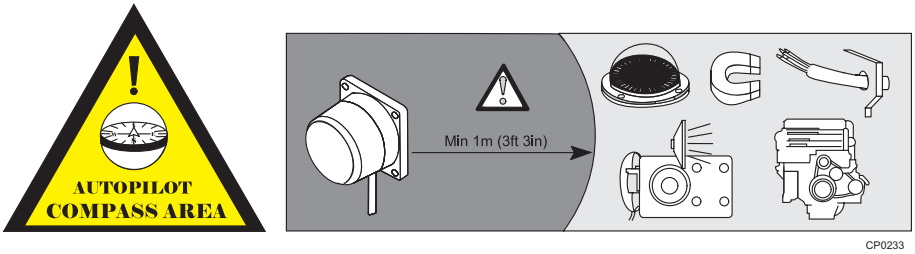
MAINTENANCE

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

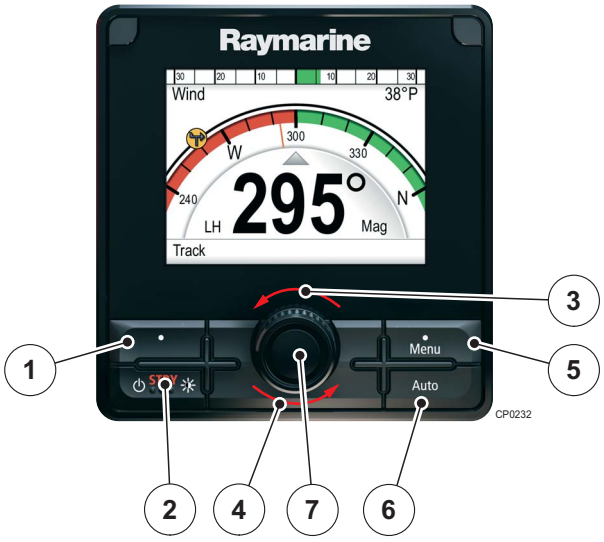
7.1.1 Autopilot (optional)

It utilizes a self-learning and adaptive software algorithm, and plays an ultimate roll in course keeping capability which dynamically adjusts essential parameters for navigation to the various factors, i.e., yacht speed, trim, draught, tide and wind effects, dead band, weather, etc.
These parameters are stored in system memory and continuously optimized from the first configuration in the dock to the last journey made.
For a detailed description, see the specific manual of the multifunctional display.

The compass transducer of the autopilot is located in the bilge below the dunnages of the cabin area.



1. LEFT SOFT BUTTON
   Cancel, Back, mode selection.
2. STANDBY BUTTON
   Disengage pilot, Manual control, Power, Brightness.
3. ROTARY CLOCKWISE
   Down navigation in list, Adjust Up, Increase angle (locked heading), adjust numerical values, power steer.
4. ROTARY ANTI-CLOCKWISE
   Up navigation in list, Adjust Down, Decrease angle (locked heading), adjust numerical values, power steer.
5. RIGHT SOFT BUTTON
   Menu, Select, OK, Save.
6. AUTO BUTTON
   Engage Auto pilot.
7. ROTARY END PUSH BUTTON
   Menu, Select, OK, Save.



The pilot controller supports the following combination button presses:

Keys	Action
STANDBY and AUTO.	Puts pilot in to Wind Vane mode.
-1 and -10 or +1 and +10.	AutoTack (in wind vane mode), AutoTurn

Turn on the autopilot control unit
Keep the STANDBY key pressed for 1 second, until the Raymarine logo is displayed.
The autopilot control unit displays the operation modes page.

Turn off the autopilot control unit
Keep the STANDBY key pressed on any data page.
A pop-up window for switching off is displayed after 1 second.
Continue to press the STANDBY key for another 3 seconds to complete the switching off operation.

Note: The pilot control unit cannot be switched off when the AUTO mode is enabled.

Standby Mode
In Standby mode you return to manual control and the displays shows the current heading of the yacht.
You can disable autopilot mode and return to manual control at any time by pressing STANDBY.

Auto Mode
Making for a heading in Auto mode
The autopilot system can be used to automatically make for a heading.
Put the yacht on the desired heading.
Press AUTO. SmartPilot is not in AUTO mode and will guide the yacht to the stored heading, which is shown on the display.
You can disable autopilot mode and return to manual control at any time by pressing STANDBY.

Changing the course in Auto mode
To change the course in AUTO mode:
Use keys -1 and -10 or turn the knob counterclockwise to change the course to port.
The course is changed to port by 1° when -1 is pressed, and by 10° when -10 is pressed.
The course will change to port by 1° when the knob is turned one click counterclockwise.
Use keys +1 and +10 or turn the knob clockwise to change the course to starboard.
The course is changed to starboard by 1° when +1 is pressed, and by 10° when +10 is pressed.
The course will change to starboard by 1° when the knob is turned one click counterclockwise.

For example, the course changes to port by 4° when key -1 is pressed four times or the knob is turned 4 clicks counterclockwise.

Alarms
Alarms are used to alert you to a situation or hazard requiring your attention.
Some examples of alarms are:

Anchor alarm - Used when anchored, this alerts you to a change in depth which could mean that the chain length requires adjusting.
Depth and speed alarms - These alarms alert you when your depth or speed moves outside of specified limits, for example a minimum depth.
MOB (Man Overboard) alarm - Received from an MOB system.

When an alarm occurs, a message is displayed and an audible alarm may sound.

WARNING

Take care not to place metal objects or equipment that could interfere with the flux gate in its vicinity.

WARNING

When running on autopilot, always keep a careful watch for other boats or possible hazards.

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 set the device to stand-by in order to definitively take control of the yacht. Once by-passed the obstacle the device can be switched on by setting the track again.

MAINTENANCE

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

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.

WARNING

An autopilot is a very useful navigational aid, but DOES NOT under any circumstances replace a human navigator.

Do not use automatic steering when:

- *in heavy traffic areas or in narrow waters;*
- *in poor visibility or extreme sea conditions;*
- *when in areas where use of autopilot is prohibited by law.*

When using an autopilot:

- *do not leave the helm unattended;*
- *do not place any magnetic material or equipment near heading sensor used in the autopilot system;*
- *verify at regular intervals course and position of yacht.*
- *always switch to Standby mode and reduce speed in due time to avoid hazardous situations.*

WARNING

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

Engine monitoring and control panel

All operating parameters for the main engine and marine gear are displayed and monitored on this panel. These parameters are checked and correctly adjusted in our yard before the boat is delivered. However, it is advisable to have them checked every time that maintenance work is carried out on the engine, and at least once a year, making checks in particular on the correct operation of alarm lights and the alarm buzzer.

The manuals supplied separately by the manufacturers give the normal ranges of variability for correct engine and marine gear operating parameters.

Remember that the normal values of these parameters when the propulsion system is running can also depend on external factors such as temperature, clogging of filters and the viscosity of lubricants.

For further information, see the separate Manufacturer's Manual.

Engine controls

CAUTION

The engine must be started with the marine gear securely in neutral and the throttle set to minimum or only slightly higher.

CAUTION

The starter motor must not be operated for more than 10 seconds at a time. Wait 2 minutes before attempting to use it again, to allow it to cool down.

CAUTION

Avoid warming up the engine at minimum speed for more than 3 to 5 minutes. This is a risk both for the engine and for the marine environment.

CAUTION

If no oil pressure is indicated within 15 seconds of starting the engine, stop it and trace the cause.

CAUTION

Do not leave your moorings if the engine control system is not functioning properly.

CAUTION

Reversals of direction should be made slowly and with the engine at minimum speed, otherwise the engine, marine gear and propeller could be damaged.

CAUTION

Consult the manufacturer's manual delivered separately for the correct engine use and maintenance procedures.

Compass

Remember to have the compass compensation correctly set, and to have it checked periodically afterwards. Compass readings can be influenced by the presence of magnetic fields generated by metallic masses or electrical circuits in the vicinity.
Avoid causing further interference by placing other objects near the compass that could disturb the magnetic field.

CAUTION

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

MAINTENANCE

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

7.1.2 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 # 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 # 35 and 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 “craft at mechanical thrust in navigation, with engines shut-off and without fresh way”
  — – – a prolonged sound and two short ones at intervals of two minutes “craft out of control or with manoeuvre troubles or towing”
  — – – – a prolonged sound and three short ones at intervals of two minutes “last craft towed answering to craft towing”
  – — – a short sound, a prolonged one and a short one “craft riding the anchor giving its position to a ship approaching with hazard of collision”
  – – – – – five seconds of continuous sound at intervals of one minute “craft 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”

8.1 PREPARATION FOR MOORING

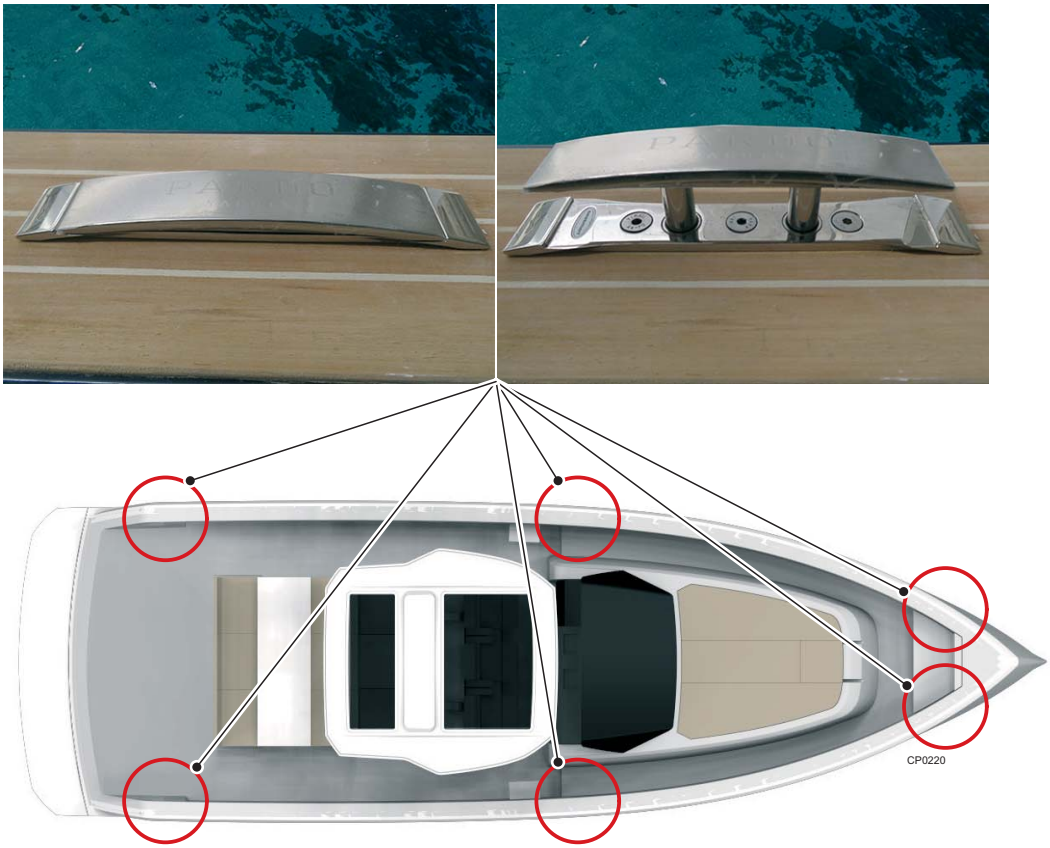
Your yacht is equipped with the deck-tools necessary for easy and safe mooring.
Besides the anchor winch, the mooring equipment is arranged at bow, on the side walk-arounds and at stern.
The yacht is equipped with

– on each mooring area of the stern there is a foldaway cleat;
– on both sides of the yacht there is a foldaway cleat
– in the anchoring area at the far bow are placed two foldaway cleats and an anchor winch.

CAUTION

Strength values of the strong points:

- *(stern anchoring) = horizontal load 48.91 KN*
- *(bow anchoring) = horizontal load 34.09 KN*



8.2 ANCHOR WINCH

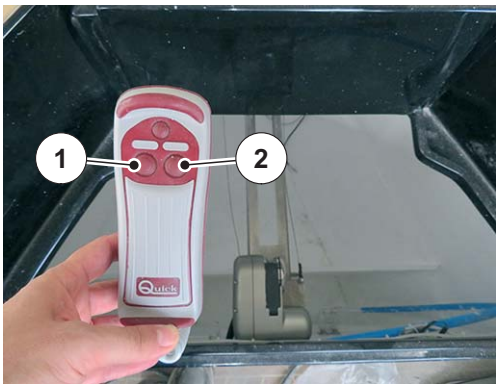
The yacht is equipped with a 2300W electric anchor winch for handling the anchor housed at bow. The anchor remains concealed inside the hull and when a special linkage is operated, first a part of the hull opens up and then the anchor comes out.
The anchor chain glides into the yacht through the chain guide and reaches the anchor winch, then winds around the wildcat and glides into the chain pit. The anchor winch is equipped with control for chain displacement in both directions and with manual brake to lock the chain during mooring.

CAUTION

Check that the anchor cover system moves correctly

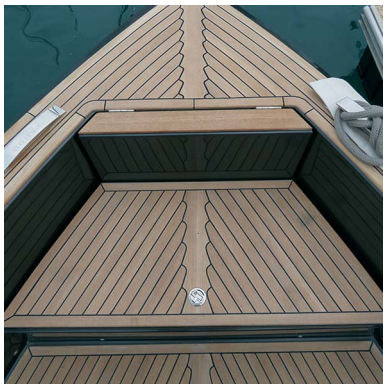
Before undertaking navigation check that it is closed completely

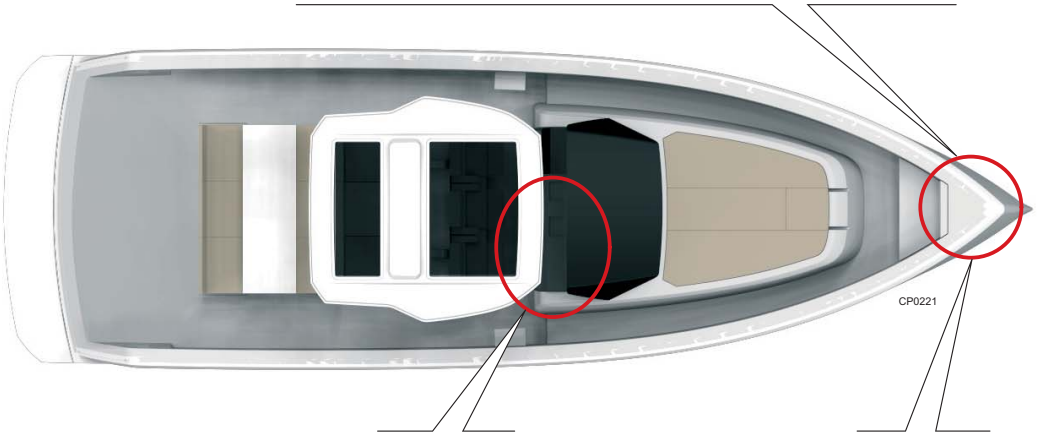
Control

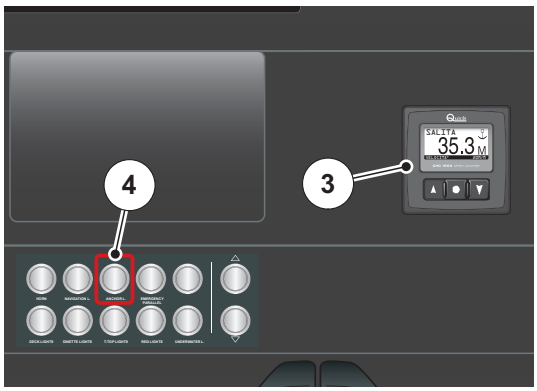


Winch

Housing







Main control station controls

Anchor hatch

Anchor winch activation controls

The anchor winch can be operated both using the controls in the main control station or using the control with cable near the anchor winch.

1. **“UP” button**
   This button allows weighing the anchor chain.
2. **“DOWN” button**
   This button allows lowering the anchor chain.
3. **Chain counter display (optional)**
   It lets you weigh and lower the anchor and at the same time see the measurement of the lowered/ weighed anchor.
4. **Anchor peak service light button**
   It allows you to operate the service light.

CAUTION

If you wish to use the anchor, loose the wildcat lock and remove the safety wire.

CAUTION

Always keep the anchoring rope free and without knots;

Please proceed with care and with proper footwear;

Avoid loose clothing, long hair and jewellery that could get caught in moving engine parts.

CAUTION

In the case of dual control, be sure to use only one control at a time.

DANGER

Do not bring body parts or objects near the area where the chains, the lines and the wildcat run. Make sure the electric motor is not powered when acting manually on the anchor winch (also when you use the lever to loosen the clutch): people having the remote controls of the anchor winch (remote push-button panel) might accidentally activate it.

CAUTION

When use of the winch key-pad is completed, disconnect the pad, place it in its housing and close the socket with the specific cover.

Clutch use
The wildcat is connected to the main shaft by means of the clutch. The clutch opens (disengages) when rotating counterclockwise the lever inserted in the bushing. When rotating clockwise, the clutch will closed (engage).

Anchoring
The wind and the sea conditions highly affect an anchored yacht. Make sure the anchor is set in any situation. It is necessary to understand the principles of the chain length and its effect on the anchor performance.
The radius is technically defined as the ratio between the chain length and the vertical distance from the bow to the sea bottom.
The chain length depends on the type of anchor, on the sea bottom, on the tide, on the wind and on the sea conditions.
The chain length is 5 times the depth of calm sea; it is 7:1 in normal conditions and up to 10:1 in critical conditions.

$$\text{Radius} = \frac{\text{Chain length}}{\text{Bow height + water depth}}$$

As it is necessary to know the length of the chain to be used for mooring.
Chain length =
(bow height + water depth) x radius

Anchor weighing
Start the yacht's engine. Make sure the clutch is engaged and pull out the lever. Press the control button available and start to weigh the anchor. If the anchor winch stops without any reason, the anchor might be stuck and therefore the anchor winch thermal switch trips, due to the effect of the effort.
In this case, if after several attempts the anchor winch remains stuck, we suggest to manoeuvre the yacht, to release the anchor.
Check the raise of the last metres/feet in order to avoid bow damage.

Anchor lowering
Lower the anchor by means of the electric controls or manually. To carry out this operation manually, open the clutch and let the wildcat rotate freely on its shaft and the chain fall into the water. To brake the anchor chain fall, turn the lever clockwise.
To lower the anchor electrically, press the control button at your disposal. In this case the anchor lowering is perfectly controllable and the unrolling of the chain or of the line is regular.
Once the yacht is anchored, lock the chain with the safety cable.
The anchor and the chain may 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.

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

CAUTION

Lock the chain with its safety cable before setting up for navigation.

CAUTION

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

DANGER

Do not use the on board auxiliary equipment for aims or in different ways from those indicated in the manual delivered by the Manufacturer.

DANGER

Never get too close to moving parts to avoid danger and injury.

CAUTION

The anchor chain is fastened to the yacht by means of a line and an hook system. If it is impossible to remove the anchor from the sea bottom, this system will ease up to resume navigation.

DANGER

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

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 engine running, both for safety reasons and to compensate the electrical consumption of the winch.

Check the anchoring point frequently.

The distance from obstacles or other yachts must be, at 360°, greater than the length of chain dropped.

During anchor riding it is advisable to leave the winch powered.

Do not reverse the winch rotation suddenly.

CAUTION

For more detailed information, see the separate Manufacturer's Manual.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the device.

Anchoring operations

- make sure that the engines battery breaker is on;
- turn on the anchor winch switch on the general electric panel;
- when the key-pad is not used, disconnect it to prevent contact oxidation;
- before operating the anchor winch with the electric control, check that the wildcat clutch is properly engaged and remove the wildcat stopper and the safety wire;
- let the yacht move backward slowly; if necessary, use the engine;
- lower the anchor until just below the waterline, and hold;
- lower the anchor until it reaches the sea bottom;
- once the anchor holds, leave the lock and the brake engaged.

CAUTION

We recommend to reduce load (chain and anchor) on the windlass, when riding at anchor.
You must use an appropriately sized rope, fixed to the chain and then tensioned to a cleat.

CAUTION

Operate the anchor winch with the engines running because of the high current absorption and to reduce the stress by slowly moving the boat towards the anchor.

Lower and raise the anchor always by using the electrical control, after engaging wildcat and barrel. This latter can be disengaged both for casting off the anchor in case of need and to operate the barrel as a warping winch. To disengage the wildcat, undo the clutch located on the barrel, by using the lever stowed in the chain pit.

CAUTION

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

Weighing the anchor

To weigh the anchor, perform the same operations previously described above, in reverse order.
In windy or strong current conditions, start the engine and keep the bow towards the anchor position to prevent breaking 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.

8.2.1 Anchor winches maintenance

GEARMOTOR
Check and cleaning (before each navigation)
When you weigh the chain, after an anchor mooring in a muddy or weedy sea bottom, we advise you to wash the chain using the proper system. The outer part of the winch requires frequent washes with fresh water because very much exposed to sea salt during navigation specially with choppy sea. It is a good norm, at season begin, to carry out maintenance by disassembling the wildcat and the drum in order to remove oxidation in the rubbing and gliding points and to restore correctly the lubrication in the required points.

Connection spindle between anchor and chain
Check
At least every three months.

Chain links status
Check
At least each year.

Anchor winch
Check the operation
At least once a week.
Disassembly and check of all parts
At least once a year.

Electric motor terminals and control box
Check the connections
At least once a month.

Locking system still idling
Check reliability
At least once a month.

8.2.2 Gearmotor

Cleaning and check

CAUTION

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

Remove the layer of salt which builds up on the anchor winch outer surfaces as often as possible, to avoid dangerous corrosion, which could jeopardize its integrity. Wash with fresh water and clean the surfaces, particularly those hidden and hardly reachable and into which the salt remains trapped. At least once every two months disassemble the exposed parts, clean and check all pieces so that they do not show signs of corrosion and grease the thread of the shaft with sea grease. In case of anchor winch long inactivity, we advice you to have the motor run idle for a couple of minutes in both directions. If the electric motor turns with problems we advice you to clean or replace the brushes. We strongly recommend to separate the anchor winch from the main deck at least twice a year to remove the salt deposits building up under the base.
Should oil bleed from the body because of the seals wearing out, it is necessary to disassemble the gear box to replace the seals. A complete kit of spares parts is at disposal for this purpose.

Check and top up

Top up the gearmotor body with oil through the level check cap. Check regularly the condition of the electric motor terminals and of the gear motor, removing possible drifts and spreading the terminals with grease.

8.2.3 Chain counter (optional)

Chain counter operation

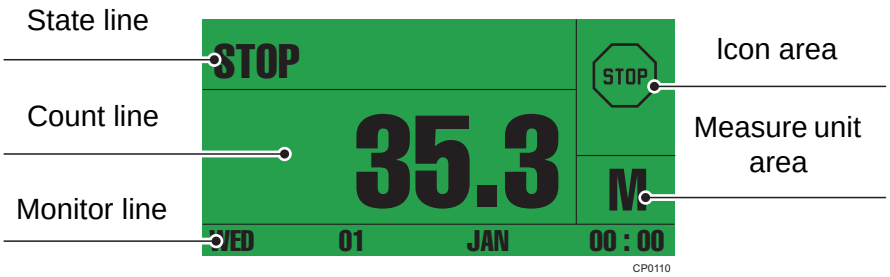
Three elements are employed between user and counter Interface:

- a graphic display screen
- control keys
- buzzer

The graphic display will show the length of the chain lowered, the instrument state and other information.
The control panel comes with three keys. The two largest keys are used to move the anchor up (▲, UP key) or down (▲, DOWN key), move within the system menus or modify the value of parameters.
The central button (●, SELECT) is used to select the various monitoring modes, to enter the system menus and to confirm parameters. The buzzer signals when the keys have been pressed or when it is necessary to call the user's attention.
Use the switch on the power supply line to turn the chain counter on and off.

Main window

Once the initialization procedure has been completed, the main window is displayed:

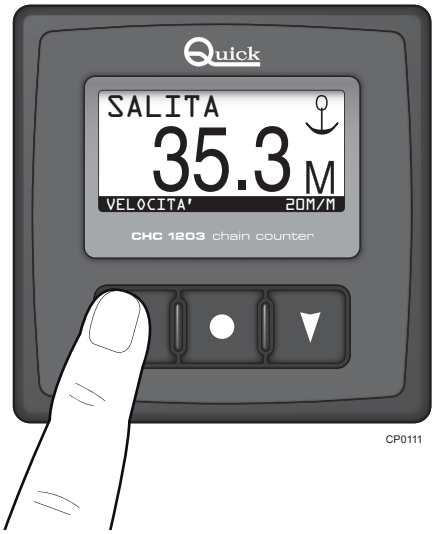


This window is divided into the following sections:
Count line: the length of the chain lowered is shown in this area.
Measure unit area: the unit of measurement currently being used is shown in this area. The values may be displayed in "M" for meters and "FT" for feet.
State line: messages regarding the state of the chain counter or faults detected are shown here.
Icon area: the icons regarding the state of the chain counter or faults detected are shown here.
Monitor line: the following information may be displayed here, depending on the selections made by the user: date and time, supply voltage and chain speed.

Windlass electric drive

Getting the anchor aweigh

To get the anchor aweigh press key ▲ (UP). Hold the key pressed until the anchor reaches the desired position and then release it. While moving up, the chain counter displays a window similar to the one shown below.
It is also possible to get the anchor aweigh with an other electric control; the chain counter will measure the length of the chain lowered in any case.



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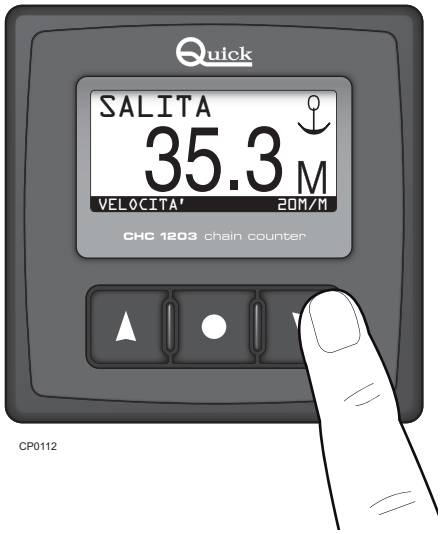
Lowering the anchor

To lower the anchor press key ▼ (DOWN). Hold the key pressed until the anchor reaches the desired position and then release it. It is also possible to lower the anchor with an other electric control; the chain counter will measure the length of the chain lowered in any case.



CP0112

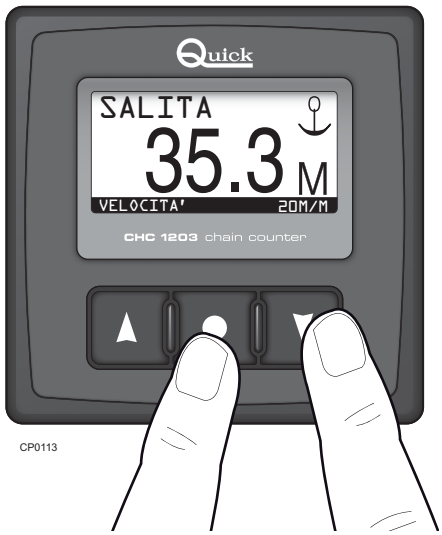
Automatic down function

This function can be used only if it was previously set and activated on the FUNCTIONS/AUTO DOWN menu.

CAUTION

Regular operation of the windlass has to be checked when moving down automatically.

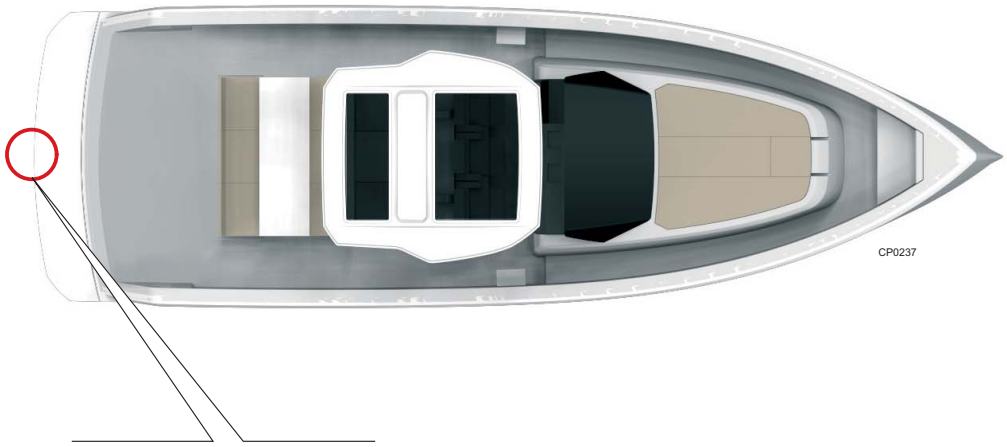
To lower the anchor automatically to the set depth, press keys ● (SELECT) and ● (DOWN) simultaneously for more then three seconds.
Once the procedure has started, both keys can be released.
The chain counter will lower the anchor to the set depth. While moving down automatically, the chain counter displays a window similar to the one shown below. The automatic lowering procedure can be interrupted by pressing any key of the chain counter from which the procedure was activated, by activating the up function from an external device (from another chain counter or other control) or by shutting off the chain counter.



For more information and a detailed description consult the specific manual.

8.3 SWIM LADDER

The yacht is equipped with a manual swim ladder which allows easy access from the sea to the stern platform, and vice versa.
The swim ladder is centrally retracted inside the structure of the stern platform, so as not to hinder navigation and mooring and unmooring operations. The swim ladder does not require ordinary maintenance; anyway, being particularly exposed to sea corrosion, it is advisable to wash it accurately with fresh water after each use.
An optional swim ladder fitted with handles that help climbing back on board can be installed.
For further information, see the separate specific manuals delivered by the manufacturer.



Swim ladder (STD)

Swim ladder (OPT)

DANGER

In no way use the swim ladder when the engines are running.

DANGER

Make sure that the swim ladder is correctly extracted and positioned before going down to water.

CAUTION

Pay attention because the ladder can be slippery. Ensure a safe grip before climbing on board.

DANGER

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

DANGER

Never start navigation if the swim ladder in not correctly retracted. Before starting navigation check that the swim ladder is properly locked.

CAUTION

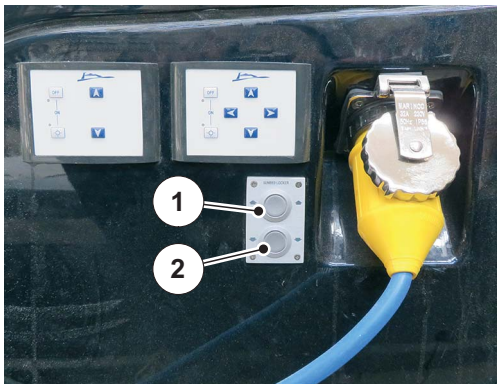
Make sure that the swim ladder is correctly positioned before going down to the water. Pay attention because the ladder can be slippery. Ensure a safe grip before climbing on board. Do not use the swim ladder as a springboard.

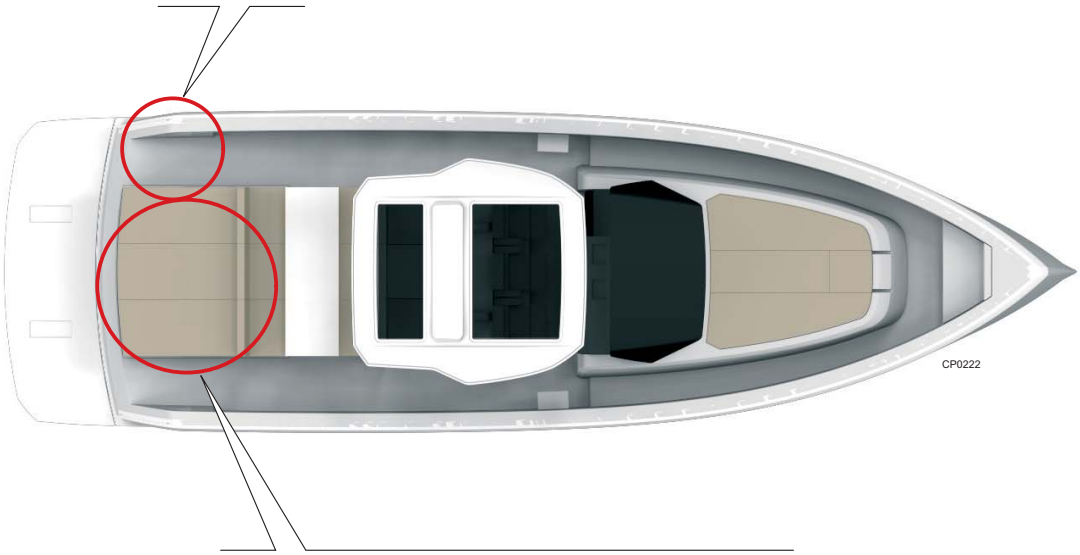
8.4 ENGINE ROOM/LAZARETTE HATCH (OPTIONAL)

The yacht is equipped with an electric movement hatch for inspecting/accessing the engine room. When the hatch is opened, the entire stern sun-deck area lifts up and access is granted to a large peak where the inspection hatch of the engines/access to the engine room is located centrally.
The controls for moving the electric cylinders that raise and lower the hatch are located astern on the port side, while the dedicated thermal switch is on the general electric panel.
The operations are to be performed by keeping the panel switch pressed.
The lazarette hatch can be also operated by remote control.

1. Hatch closing button (UP)
2. Hatch opening button (DOWN)

Controls





Hatch open

Hatch closed

DANGER

Open the hatch only with the yacht stationary and in good weather and sea conditions. Move the hatch only if fully visible movement is guaranteed in order to avoid improper or sudden use.

CAUTION

Before activating the hatch, make sure that nobody and no material are standing on it.

CAUTION

Do not sail or leave the yacht with the hatch open.

Always keep the engine room hatch completely closed when the unit is out of use.

CAUTION

Do not stow unsecured material in the engine room.

Pay attention to the weight distribution inside the engine room.

DANGER

A fuel leak can generate fire and explosion hazard. Do not stow fuel in the engine room or in the peak underneath the sun-deck.

CAUTION

Before undertaking navigation, always check that the hatch is completely closed.

Never start navigation with the hatch open.

WARNING

During cleaning or maintenance, make sure that nobody can operate the system, thus causing injuries to persons.

DANGER

Pay attention to moving parts and to your hands.

MAINTENANCE

At least once a week carry out an accurate washing.
At least once a month:
- *check for corrosion signs;*

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the device.

8.5 GANGWAY SYSTEM

This is an independent system, operated by an electro-hydraulic control unit, located in the engine room on the starboard side, essentially consisting of an electric pump, an oil tank and a solenoid valve block. The system is supplied by a pump, which sucks oil from the tank and sends it, through the solenoid valve block and pipes, to the hydraulic pistons driving the gangway.
The gangway is housed in the engine room on the port side and comes out from the deck bridge through a specific compartment.
The gangway handling is power steered and allows extending or retracting it.
Once the gangway has been completely extracted, it is possible to lift or to lower the free end in order to adapt its trim to the dock height.

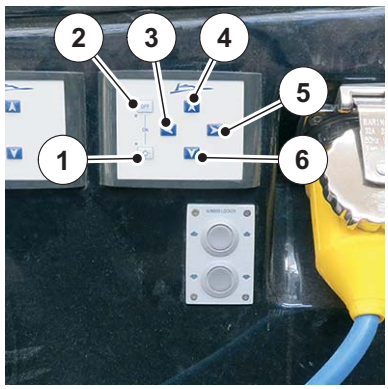
8.5.1 Gangway controls

The control panel for gangway handling, is located in the the port side of the stern cockpit.
To enable the panel, press buttons OFF + ☼ =ON buttons simultaneously.
The operations are to be performed by keeping the relevant panel button pressed.
It is possible to handle the gangway also by means of a remote control; when LED lights up, the command has been transmitted.
The radio control must be directed towards the gangway and no obstacles must stay in their way.

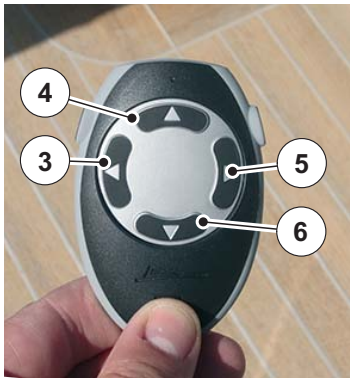
1. Gangway lights/activation
2. Gangway off/activation
3. Gangway extension
4. Gangway lifting
5. Gangway retraction
6. Gangway lowering

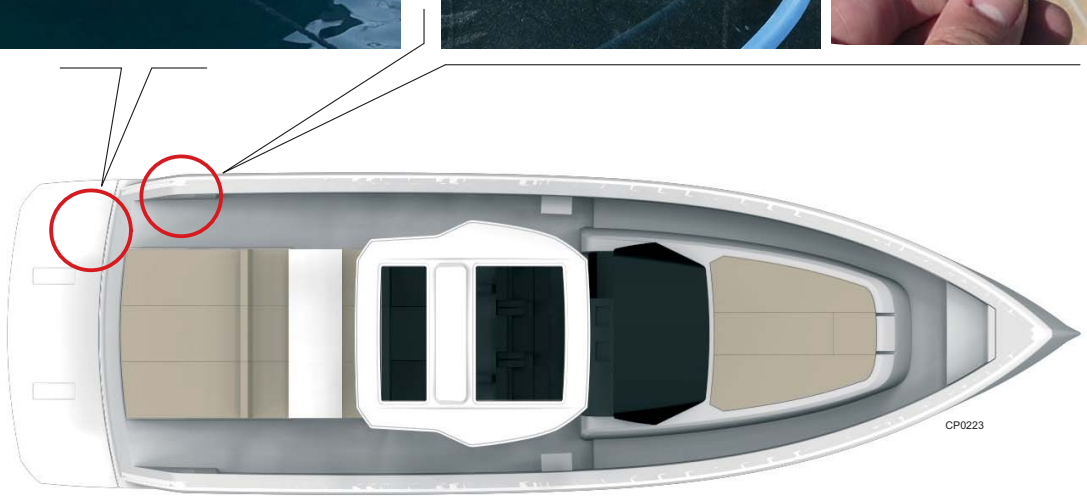
Gangway

Controls



Radio control





8.5.2 Gangway remote control operation

Press the two buttons on the sides at the same time.

While keeping the two buttons pressed, press the button for the desired movement (the red LED comes on).
When the LED flashes every two seconds, replace the battery. Loosen the four screws and remove the lid; use R2032 lithium batteries only.

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.

CAUTION

Maximum cossing load 150 kg.

DANGER

Never start navigation if the gangway in not correctly retracted.

Make sure that the gangway is properly closed.

DANGER

Pay attention to moving parts and to your hands.

CAUTION

The hydraulic gangway, even if easy manoeuvrable, might damage people and things. Its use is recommended only to well experienced people.

CAUTION

The passage of one person at a time is allowed on the gangway.

CAUTION

Always check for the correct gangway position from the dock. Never jump on the gangway.

CAUTION

Position the gangway in such a way that it cannot touch the dock, either because of the normal yacht swinging or of the tide change.

Should the gangway strike against the dock, it could get seriously damaged.

CAUTION

Do not use the gangway as a springboard.

CAUTION

Do not use the gangway as a springboard, since this practice can cause extreme momentary efforts, capable of damaging the gangway or its fastening system.

Only climb the gangway when sober and fine, keeping balance and using the line of the handrail.

Never take substances that may affect your balance; alcohol, smoking, exciting substances must be avoided; do not climb the gangway if you are in a condition of physical disease without being helped.

Never allow more than one person at a time on the gangway.

Never jump, run or stand on the gangway.

Never walk on the gangway when the stanchions and handrail rope are not fixed.

Never climb the gangway by forcing the stanchions and handrail rope (the stanchions are not structured to withstand the weight of a person).

Never climb the gangway with shoes with high heels or leather soles. Always give advance notice of gangway operations when people are on the dock.

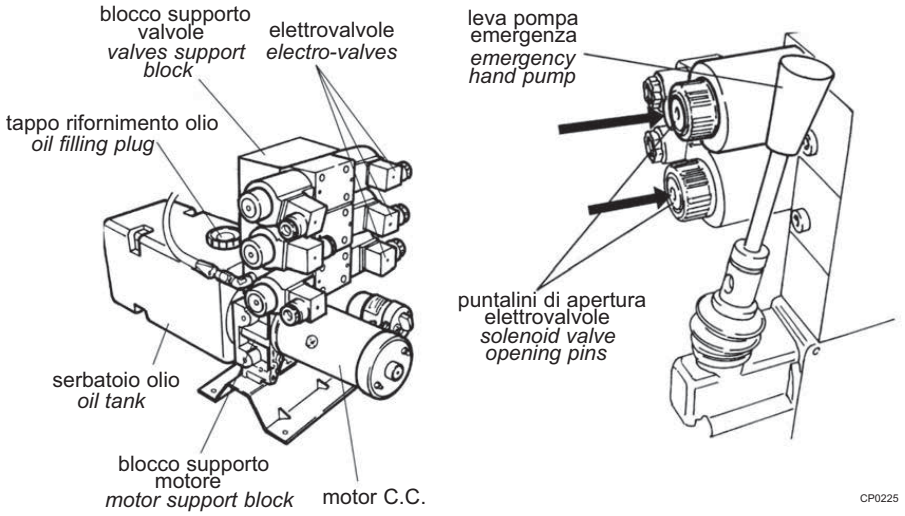
Always manoeuvre keeping visual contact with the gangway.

Never manoeuvre the gangway when there are people on the dock within its range.

Always take on loads of considerable weight or size using suitable davits.

8.5.3 Gangway emergency manoeuvres

In case of faults of the electric or electronic systems it is possible to manually operate the hydraulic control unit which is equipped with an emergency hand pump; the solenoid valves can be opened manually.
To pressurize oil, operate with one hand the control lever of the manual pump and, with the other hand, press and hold the manual opening tip of the solenoid valve using a suitable tool that does not scratch the seat of the cylinder (rounded tip max ø 3 mm). In this way, the valve will open, and by pumping the hand pump, pressurized oil will be sent to the desired piston (operate several times to remove air and pressurize the system).
Movements shall be slow but effective.



CAUTION

In MANUAL mode it is necessary to constantly monitor the position of the gangway/swim ladder during movement since the end of stroke sensors are cut out to collisions and resulting damage to the system or yacht.

It is necessary to check that the gangway (or swim ladder) is properly aligned with its housing in order to retract it.

NOTICE

Use the MANUAL operation mode VERY CAREFULLY.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the device.

8.6 PLATFORM-LIFT

The yacht is equipped with an electro-hydraulically moving platform completely at stern.
Thanks to its vertical motion below the floating line, the stern platform allows hauling or launching a tender or a jet-ski without the help of davits or lifting means.
This is an independent system, operating by means of an electro-hydraulic control unit located in the engine room, essentially consisting of an electric pump, an oil tank and a solenoid valve block. The system is supplied by a pump, which sucks oil from the tank and sends it, through a solenoid valve block and pipes, to the hydraulic pistons driving the platform.

CAUTION

Do not exceed the maximum load as stated in the platform-lift technical characteristics, max 600 kg.

DANGER

***NEVER** use the platform to lift people, even if it can lift much heavier loads. Always make sure that the maximum load suggested by the Manufacturer is not exceeded.*

DANGER

Be careful not to put the platform into water with swimmers around.

CAUTION

Use the stern platform only when the weather and sea conditions make it possible.

CAUTION

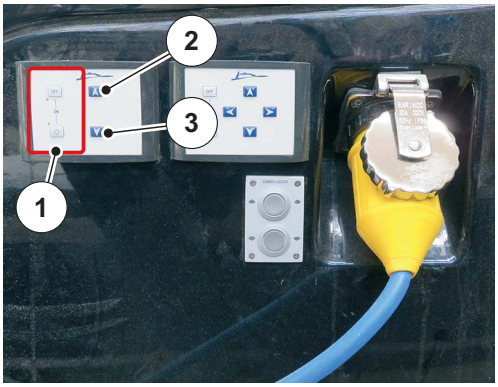
During platform lifting pay great attention to the cables (electric and/or hydraulic) for dock connection as they might get crushed.

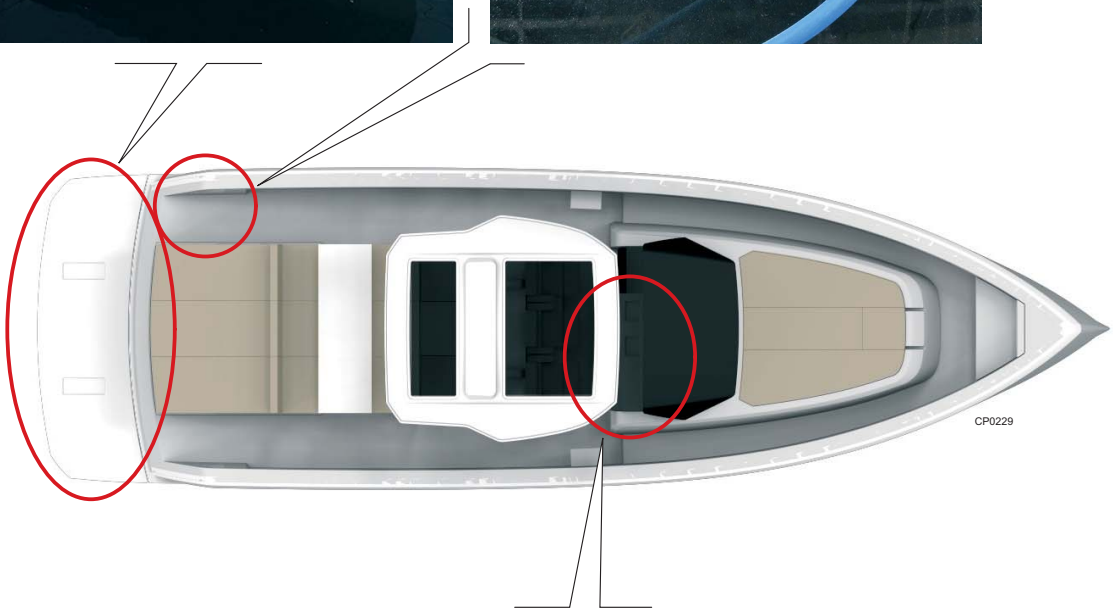
8.6.1 Platform-lift controls

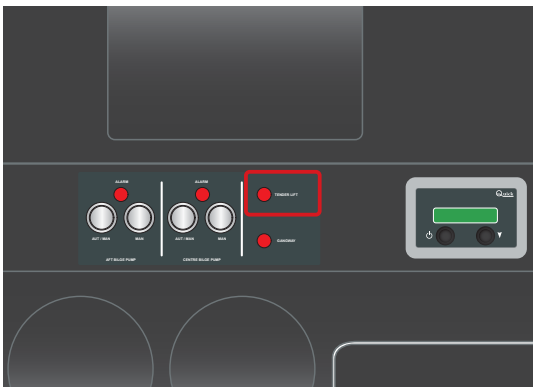
The platform-lift control panel is located port at cockpit entry.
To enable the panel, press buttons (**1**) (OFF + ☼ =ON) simultaneously; button (**2**) allows the tender lift to be raised while button (**3**) lowers it.
The operations are to be performed by keeping the relevant panel button pressed.
There is a warning lamp in the main control station that signals when the platform-lift is lowered.

Platform-lift

Platform-lift controls







Platform-lift warning lamp

DANGER

NEVER start navigation if the platform is not fully raised *and do not use the platform with the engines running.*

DANGER

NEVER *access or stay on the stern platform during navigation, because it becomes a highly dangerous area.*

DANGER

Pay attention to moving parts and to your hands.

MAINTENANCE

At least once a week carry out an accurate washing.
At least once a month:
- *check the control unit oil level*
- *check for oil leaks and oil bleeding;*
- *check the operation of the emergency pump;*
- *check for corrosion signs;*
- *grease the pulley gliding races of the steel cable.*
- *tighten the locking bolts.*

At least once every three months, grease the swivel pins and the sliding sleeves.
When necessary top-up the pump oil.

8.6.2 Haulage and launch of the tender (or of the jet-ski) OPTIONAL

Launching

For tender launching operations, follow the procedures below:

- Make sure that the thrust engines of the boats have been stopped and cannot be started.
- Free the tender from the retaining sheets.
- Lower the stern platform below the floating level of the yacht: the tender raises from the saddle.
- Move the just launched tender away from the stern platform, without the help of the engines.
- Set the stern platform back to the raised position.

Haulage

For tender launching operations, follow the procedures below:

- Lower the stern platform below the floating level of the yacht
- Approach the platform with the tender.
- Stop the tender engine
- Move the tender over the saddle and keep it in this position.
- Start raising the platform; the tender is raised and lays down on its saddle.
- At the end of platform raising, fasten the tender with the special retaining saddles.

CAUTION

Hauling and launching operations should be carried out only by skilled personnel.

CAUTION

Check for the correct position of the tender on the saddle when raising the platform*.*

If the tender position is not correct, lower the platform *and repeat hauling.*

8.6.3 Maintenance of gangway/tender lift system

Component	Maintenance	Notes and precautions
Gangway/ tender lift control unit	Oil level check	Check monthly and before each navigation the oil level inside the tank. Top up keeping the oil level at about three-quarters of the tank's capacity, and using the type of oil recommended by the Manufacturer.
	Cleaning	As the gangway and the platform-lift are located in a very critical position compared to all other on-board equipment, being continuously in contact with water, salt and exhaust gas, they require a more accurate cleaning.

DANGER

During cleaning or maintenance operations disconnect the power supply, so that nobody can start the stern platform and gangway.

ENVIRONMENT

Do not discharge hydraulic oil in the sea, but in the special areas for toxic waste disposal.

MAINTENANCE

At least once a month grease all mechanical parts.

CAUTION

During the cleaning or maintenance operation, make sure that nobody can activate the platform or gangway, because it could cause heavy injuries to persons working. Cut off power supply.

CAUTION

We recommend that you pay the utmost care during assembly and subsequent top-ups, so that there is no infiltration of possible waste, chips, dust, etc. into the oil tank, and thus also into the hydraulic circuit.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the device.

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.
As the stern platform is located in a very critical position compared to all other devices on board, being in constant contact with water and acid exhaust fumes, it requires a more accurate 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.

Ordinary maintenance

Mechanical joints
Mechanical joints and sliding parts are greased during installation. It is advisable to verify anchorage bolts locking and a little joints greasing at each beginning and season end.
Hydraulic system
Verify oil level at each beginning and season end, if below minimum level, top up with the oil recommended by the Manufacturer. Verify the correct operation of emergency pump and hand operation of solenoid valves at each season beginning and end.
Electric system
Check the battery charge and the liquid level according to the procedures advised by the Manufacturer. “Daily” check the integrity of the keyboard. Possible damages to hydraulic system or to mechanical joint caused by impacts and collisions, need a specialised maintenance. Pay attention to possible water intrusions which may damage the connections and the electronic card.
Make sure that all jack plugs are well connected and well tight. In case only one of those is not properly connected, the electronic system operation is jeopardized. Do not carry out modifications to the receiver cable (because screened). The engines and the whole system, are sized for a normal use of the gangway. The continuous and uninterrupted use of the system may cause overheating of the motor.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the device.

8.7 SACRIFICIAL ANODES

The metallic parts of the yacht are protected against galvanic corrosions by means of anodes installed on all the immersed metal parts. A sacrificial anode is subject to deterioration and with its oxidation protects the immersed metal parts. A more oxidising metal than the metal to be protected is used as the anode. On a new boat, all immersed metal parts are designed to achieve the same electrical potential and this very quickly deteriorates the anodes in the early weeks of launching the boat.
Check for their wear very frequently, as it depends also (and highly) on environmental factors like sea chains nearby, metal posts or docks, metal hulls moored nearby, electric devices, etc.

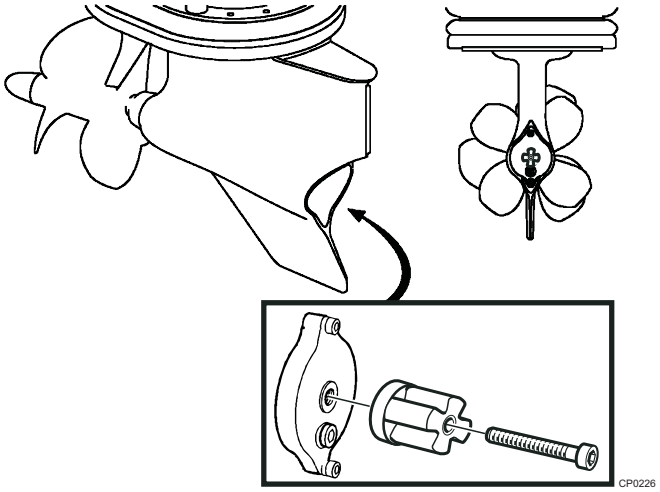
CAUTION

Each time the yacht is lifted, check for the condition of the propeller, of the protection anodes and of the fastening system.

Replace the anode frequently.

Check/change corrosion protection – Protection anodes

Check the protection anodes regularly.
There are two types of anode per drive; one is fastened to the drive and the other to the transom. Refer to the illustrations. Replace with new anodes when approximately 1/3 of an anode has corroded away.
When the yacht is stored ashore, corrosion protection deteriorates due to protection anode oxidization.
Even new anodes have surface oxidation. Before the yacht is launched, the protection anodes must be cleaned.
The anode in the exhaust outlet is of iron and does not need cleaning.

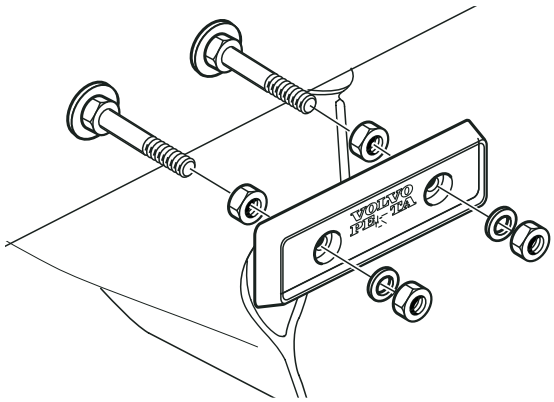

CP0226

CAUTION

Use emery paper. Do not use a wire brush or other steel tools when cleaning, as these may damage the galvanic protection.

Replacing corrosion protection

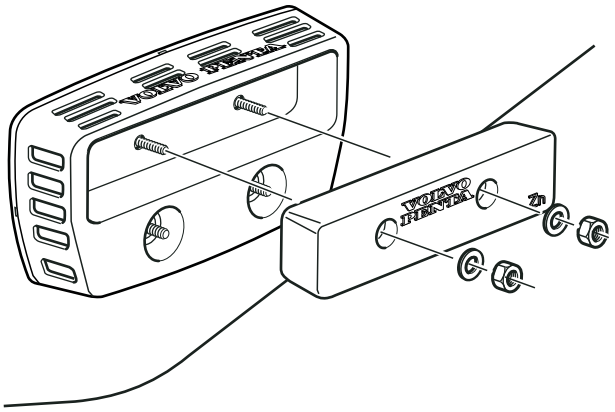
All anodes are fastened by bolts or nuts. Undo the anode retaining bolts or nuts. Clean the contact surface and fasten the new anode. Tighten the new anode so that it has good electrical contact.



CP0227

ACP, Active Corrosion Protection

Boats equipped with ACP (option) have a zinc anode integrated into the ACP unit. Change the anode when around 1/3 has corroded away.



CP0228

8.7.1 Maintenance of sacrificial anodes

Sacrificial anodes
Periodic check (at least once a month, or even more frequently depending on the docking area)
Assembly/disassembly
Metal parts are protected against galvanic corrosion (caused by electrolytic currents due to the approach of different metal bodies such as steel or aluminium) by means of sacrificial anodes (zincs), fitted on the bottom hull, on the propeller shaft, etc. The wear of the anodes may depend on environmental factors such as nearby chains, hulls or metallic docks, or bad insulation of ground electric systems.
Inner electrical connections
Periodical check at least every six months
Connection protection.

Periodical check
This operation must be carried out with yacht on dry dock or with the help of a diver.
- Have the outer profile of the sacrificial anodes (zincs) and porous plate checked. Have them replaced if they show evident signs of corrosion or if their volume is reduced to about 50%.
- Use anodes corresponding to the navigation area: fresh water/magnesium anode; sea water/zinc anode.
- When the boat is kept in a dry dock, a light layer of powder deposits on the anodes: Clean the anodes before putting the boat in the water.

Anode cleaning
- Use emery paper. Do not use a metallic brush or other cleaning tools: the galvanic protection might become damaged.

WARNING

To clean or check the yacht in water: disconnect the engine and generator start.

CAUTION

Check the wear conditions of anodes and porous plate very frequently (when the yacht is on a dry dock or with the help of a diver) and replace them as soon as wear exceeds 50%.

CAUTION

Fail to replace the anodes, and the porous plate causes the spreading of corrosion on the other metallic parts.

CAUTION

Do not cover the contact surface between anode and hull with silicone.

CAUTION

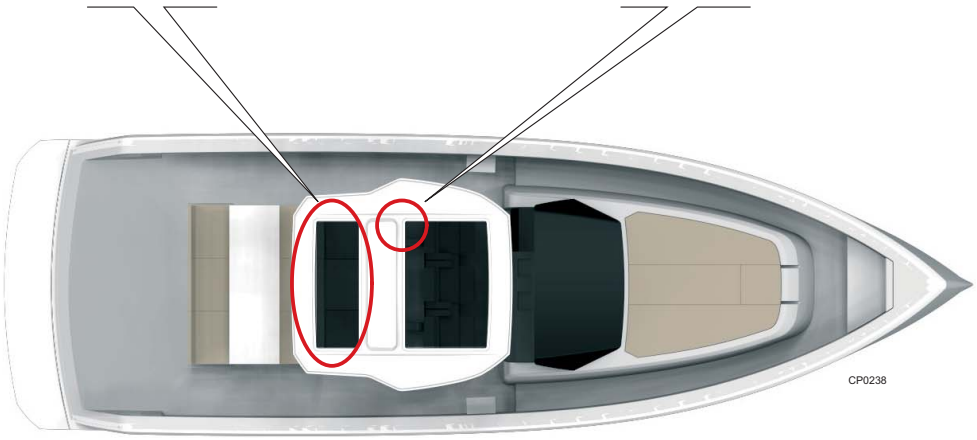
Never cover the anodes with antifouling paint.

8.8 ELECTRIC STERN BIMINI TOP (OPTIONAL)

The yacht can be fitted out with an electrically operated bimini top that protects the entire stern dinette. The structure of the bimini top is installed in the lower part of the hard top.
The bimini controls are installed on the utility/galley cabinet.
The operations are to be performed by keeping the relevant panel button pressed.
For further information, see specific manual supplied by the Manufacturer.

Housing

Controls



CAUTION

Never navigate with the bimini top (optional) mounted. It is a good habit to stow away the bimini top (optional) always dry. If you are forced to store it wet, reopen it as soon as possible and let it dry.

This because the moisture trapped in the canvas would cause mildew that could irreparably stain the tissue. The stainless steel arches too must be kept clean and lubricated with vaseline oil, to prevent the formation of rust which, in contact with tissue, could stain it.

CAUTION

To clean the bimini top (optional), do not use hydro-cleaners and aggressive detergents.

CAUTION

Do not leave the bimini top (optional) open in the event of heavy rain. Do not leave the bimini top (optional) open with the yacht unattended. Do not let water become stagnant on the cloth and canopy of the bimini.

CAUTION

It is absolutely forbidden to walk on or lean on the movable bimini top (optional) structure.

CAUTION

Before moving the movable structure of the bimini top (optional), verify that there are no obstacles that can impede its movement.

MAINTENANCE

DECK LIGHTING SYSTEM
At least once a week, carry out an accurate cleaning.
At least once a month, check the operation.
At least once every three months, check for the presence of corrosion.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the device.

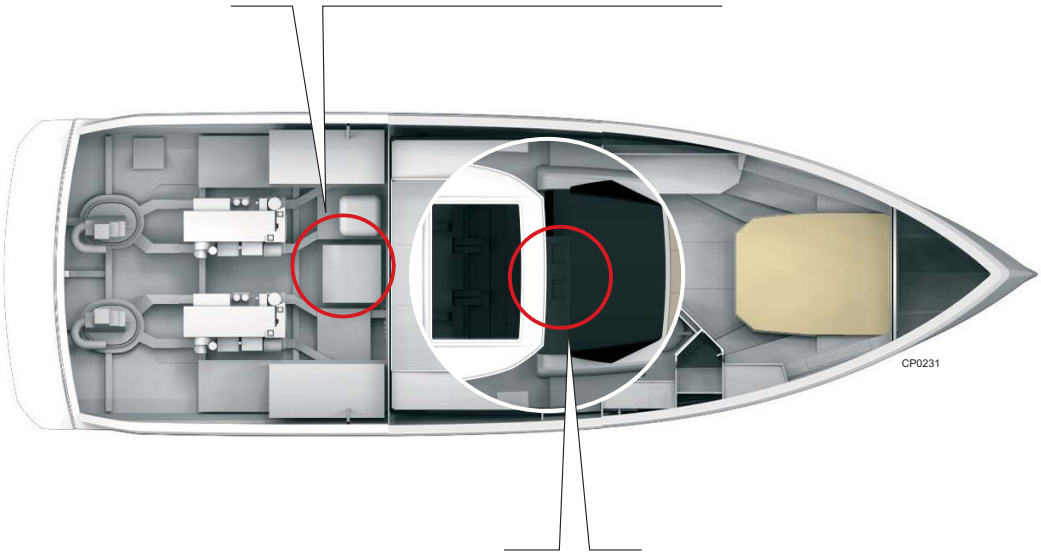
8.9 GYROSCOPIC STABILISER (OPTIONAL)

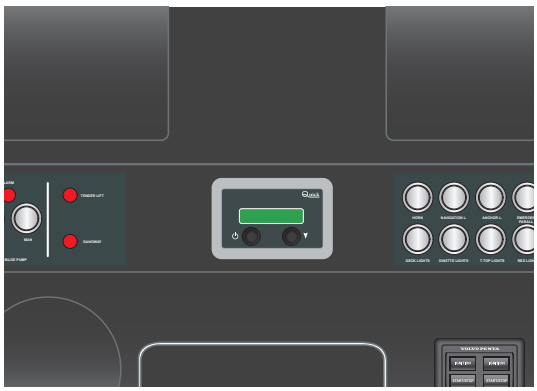
The yacht can be fitted out with a gyroscopic stabilizer installed in the engine room.
The control panel is installed in the main control station.
For further information, see specific manual supplied by the Manufacturer.

Models	MC^2 10
Boat weight	10 ton
Angular momentum	1,900 N-m-s
Torque output	5,586 N-m
Rated speed	6,000 rpm
Acceleration time	20 min
Absorption	1,500 W
Supply	220 VAC
Noise output (1m)	< 71 dB
Dynamic control speed	< 0.001 Sec
Roll reduction	65-85%
Dimensions	48X48X49.5 cm - 18.9x18.9x19.5 in
Weight	266 kg FM200

Stabilizer

AC Dynamic control





Controls

CAUTION

The stabilizer is not watertight. If it is submerged in sea water, it could get damaged.

CAUTION

Cantieri del Pardo decline any responsibility for any accident or damage to persons or things caused by a wrong use of the device.

9.1 GENERAL INFORMATION

- Make sure that safety equipment is perfectly efficient and available to each passenger.
- Keep a safe distance when anchoring.
- Check that all yacht safety equipment on board are in good conditions and no maintenance activity is overdue. (Note: the Manufacturer provides some equipment required by the international regulations. The Owner is responsible for the provision of any safety devices required by existing national regulations).
- If a fixed fire-fighting system is used, do not ventilate the engine compartment, until the fire has been completely extinguished;
- Ventilate the engine compartment before entering. Ventilate the under deck compartment before entering, if portable extinguishers have been used.
- When operating the gangway, be sure that nobody is in the way (optional).
- Oils, used filters, emulsions, coolants, electrolytes are all harmful products: avoid contact with the skin and dispose of them carefully.
- In the engine comparment, be cautious with hot and moving parts.
- Do not use open flames and do not smoke, when handling fuel or lubricants.
- Do not scatter fuel in the environment.
- Replace the fresh water stored in the tanks frequently and apply bactericides as needed.
- Do not exceed speed limits in harbour and confined waters.
- Reduce speed in proximity of other yachts or swimmers.
- Adjust speed according to sea conditions.
- Before connecting to dock, make sure that the main switch on the switch panel is disconnected.
- Before leaving the yacht, turn the battery breakers off.
- Handle hot oils carefully, in order to prevent serious burns.
- Do not work on engine, shaft lines or generator without disabling their activation beforehand.
- Open the coolant tanks very carefully, in order to prevent serious burns.
- Do not perform any work on generator energised electric boards: risk of electric shock.
- Do not inhale exhaust fumes: risk of serious injuries or death.
- Before disconnecting a battery, check if the battery charger is operating. If it is, disconnect it and remove the negative wire first and then the positive one. When reconnecting the battery, proceed in the reverse sequence (the positive wire first and then the negative one).
- Replace immediately any part showing signs of corrosion.
- Never disconnect batteries when the generator is running.
- Switch the radar off, prior to performing any work on the aerial.

9.1.1 Precautions for harsh climates

Periodically check that all equipment and machinery containing water is protected with the correct proportion of non-toxic antifreeze. If the outside temperature is below or close to 0 °C, the fresh water and sea water systems run the risk of freezing.
Piping and hoses may break due to freezing and this could cause damage to the yacht.

The systems subject to the risk of freezing include, but are not limited to, the engine and generator sea water and fresh water cooling systems, the watermaker system, the fresh water system (cold and hot water piping, pumps and tanks) the toilet system (piping, pumps and black water tanks), the air-conditioning pumps and piping, all sea water pumps and piping, the icemakers and refrigerators, etc.

Winter lay-up

- Take a complete inventory of the material.
- Check the expiry dates of the safety material.
- Have the self-inflatable life raft checked.
- Empty the entire internal and external hydraulic circuit, and rinse it with water and vinegar (do not use chlorine-based products).
- Empty and rinse the black water circuit.
- Empty and clean the bilge.
- Grease and close all valves and stuffing boxes.
- Close all valves of the boat.
- Retract the depth sounder and log heads.
- Put the protections on the electronic displays.
- Place a humidifier in the area, leaving the doors of the cabin and wardrobes open.
- Leave the cushions and upholsteries outdoors for a long time and then put them back inside the boat, arranging them on one side in order to minimise the contact surfaces.
- Close the room-darkening curtains.
- Leave the refrigerator and icebox doors open, to avoid the formation of mould and bad smells.
- Carefully protect the boat with fenders.
- Make sure the boat is properly moored.
- Grease all mechanical and moving parts (hinges, locks).
- Lower the sails and store them in a dry and cool place.
- Store the cockpit and deck cushions indoors.
- Disconnect the battery set. Recharge the batteries during the winter lay-up if the boat will remain unused for a long time.

For more information on the maintenance and service requirements of your yacht and its equipment, and for special information about maintenance with cold weather, see the sections in this manual that make reference to the single components, devices and equipment, but especially consult the User Manuals provided by the Manufacturers for specific information.

9.1.2 Cooling system

The antifreeze liquid is advised for all kinds of climates: it enlarges the working temperature range, lowering the freezing point and increasing the boiling point.
When the temperature comes close to 0 °C it is necessary, in order to avoid the risk of freezing, to make sure that the cooling lines are filled with antifreeze mixture. Otherwise, replace the cooling liquid with such a mixture.
Before carrying out the system filling with antifreeze mix, it is necessary to wash the cooling circuit.
We recommend the use of antifreeze liquid of which we indicate in the hereunder table the mix percentages according to the outer temperature.

ENVIRONMENT

Concentrated coolant must be treated as special waste.
When disposing of used cooling liquid, keep to prescription of Authority locally in charge.

CAUTION

Check periodically that all devices containing water are filled with the correct quantity of anti-freeze if necessary.
Each time that the outer temperature drops below 0 °C the water (fresh or sea) inside the ducts may freeze and consequently break.
All systems and equipment containing water, both sea water systems (engine cooling system, generators cooling system, etc.) and fresh water systems (fresh water pump, etc.), may run this risk.

9.1.3 Fuel system

With low temperatures, Diesel fuel forms some solidified paraffin suspensions obstructing the fuel filters; in this way the normal engine supply is impossible.

The fuel as per European standard EN590 guarantees fluidity up to 0 °C during the summer period, and up to -20 °C during the winter period.

WARNING

There is a special type of fuel (Arctic or Alpine) for the countries subject to very low temperatures.

CAUTION

Do not add petrol to fuel, in order to avoid serious engine damage.

CAUTION

Always refer to the manual delivered by the engine's Manufacturer.

9.1.4 Weather

Learn to understand weather patterns and signs of change. Bad weather and sea conditions can cause an uncomfortable and unsafe situation. Here are a few basic weather-related rules:

- check the forecast and sea conditions before leaving and while underway;
- a sudden change in wind direction or speed, or an increase in wave height indicates deteriorating weather;
- if a storm approaches, immediately seek a safe harbour;
- if a storm hits, head the bow of your yacht into the wind;
- if you encounter fog, determine your position, set a safe course, slow down and alert other boats of your presence with a sound signal.

9.2 NAVIGATION SET UP PROCEDURES

Accurate preliminary checks carried out with time, are fundamental for a safe navigation.
Here is some fundamental advice to consider when setting up for navigation:

- Gather information on weather forecast and warnings.
- Consult the pilot's book.
- Consult the navigation charts, and consider the cruise distance, courses, dangerous sea bottoms and flats.
- Consider the quantity of diesel oil necessary.
- Consider the length of navigation.
- On the monitoring panel (optional) and on the synoptic panel of the main control station, check for a possible lighting of the warning lamps of the bilge pumps, indicating the presence of water in the bilge.
  If the indicators are lit, turn on bilge pump switches.
  If pumps do not prime, batteries may be discharged (have them recharged).
  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 the cleanliness of the sea cock strainers for engine and generator cooling and for the supply of the air conditioning system.
  If they are dirty, check closing or close hull valves (pipe perpendicular valve manual levers), remove and clean the baskets, then replace them and close the filter housings; clean and open hull valves.

WARNING

During navigation, regularly check the cleanliness of the sea water strainer baskets. If the yacht is crossing a dirty sea area, check the condition of the strainers and proceed with their cleaning. Caution is very important to prevent damaging the mechanical parts (engines, generator, etc.), draining systems and to prevent jeopardizing the safety of the yacht.

WARNING

Once the hull valves have been reopened, make sure that no leaks are present.

- Make sure that engines and generator V-belts are properly adjusted. If necessary, restore correct tension.
- Check oil levels of engine, gear box and generator.
  If necessary, top up.
- Check engine and generator coolant level.
  If necessary, top up.
- Ensure fuel system separator filters are properly clean. If water is present, drain the filters by mean of tap.
- Check the hydraulic oil levels of the various control units of gangway (optional) and lazarette hatch. If necessary, top up.

WARNING

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

- Check liquid levels (fuel, fresh water) in the tanks.
- Ensure everything necessary has been loaded (provisions, nautical charts, documents, rockets, first aid kit, etc.).
- Check the proper fastening of all mobile components, on the main deck and under deck.
- Ensure the load has been distributed evenly, so that the yacht maintains a proper trim.

CAUTION

The materials stowed in the storage room can alter the trim, especially the transversal one. Try to arrange load equally and securely, in order to avoid sudden displacements.

WARNING

The Captain must ensure all passengers are perfectly aware of safety equipment location and use (fire extinguishers, life rafts, life belts, etc.).

CAUTION

Safety equipment should always be checked before each navigation, in order to ensure the good condition of the safety devices and to become familiar with their location and use. The little time spent may be very useful in case of need.

- Create a checklist of safety equipment, as indicated herein after.
- Ensure that life jackets are in good conditions, that the inflating device is in working order and that the jackets are in the correct location and easily accessible (do not obstruct access hatches with anything).
- Make sure that the collective life raft is easily accessible and that its mooring and anti-capsize line is in good condition (properly rolled up and not worn out).
- Ensure that the life belt is in its correct location and fitted with relevant safety rope.
- Check extinguishers charge level.
  The extinguisher is charged when the pressure gauge indicator is in the green sector.
- Check the operation of the rudder (move it from end to end, check its correct operation, then return it to central position).
- Check navigation lights and horn operation.
- Check the efficiency of the anchor winch and chain stopper.
- Check radiotelephone operation.
- Check documents and nautical charts.
- Check proper closing of portholes, hatches and materials proper arrangement.
- Cast off moorings, ensuring no obstacle can hinder unmooring operations (not aligned cables, chains, anchor log engaged in other boats moorings, etc.)
- Check that the extractor in the engine compartment is operating.

- Ensure no flammable or other improper materials have been stowed in the engine compartment.
- Ensure that the hull valves for the engines, generator and air conditioning system cooling are open.
- Check that the cooling circuits of the engine and generator can be operated (valves open).
- Ensure engine and generator fuel circuits are operational (open valves).
- Start the generator and, after a few minutes of pre-heating, load electric power by means of the control panel.
- Make sure all the equipments and loads on board are properly fixed.
- Disconnect dock inlets/sockets (electric power, water supply).
- Connect engines and users battery breakers.
- Verify on general electric panel the battery charge status. If necessary, recharge them.
- Connect the 24 V users on the electric panel.
  Disconnect not connected users after checking their proper operation.

9.3 FIRST PERIOD OF USE

The first commissioning of your boat requires a lot of skill and care. The good future operation of all the equipment of the boat depends on the quality with which the commissioning operations are carried out. This is why the first launch of the boat must be done under the responsibility of your authorized dealer.
During the first period of yacht operation, beyond the normal maintenance and check operations indicated in this manual, we recommend to carry out following additional operations and more accurate checks.
The duration of this period varies according to the frequency and use modes, such anyway to allow a correct run-in of all systems and components onboard.

Following the first period of use, the hereunder listed additional operations and checks, should be performed at longer time intervals, playing anyway an important role for the safeguard and reliability of the yacht and navigation safety.

- It is recommended that new or overhauled engines should not be operated at higher loads than 75% of their maximum load and at variable speeds. After this initial run-in, the engine can be gradually brought up to full output.
- After engine start, 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 each engine start, check for the correct tensioning of the V-belts.
- Check the possible presence of anomalous noise from the engine exhaust.
- Before and after navigation, check for possible leaks in the IPS engine lines.
- During navigation monitor constantly the temperatures and operation pressures of the devices on board (thrust engines, generator, gear boxes).
- Check, by means the monitoring system, the correct load condition of the batteries starting the engines and users. Moreover, the engine alternators must correctly charge the batteries.
- Before and after navigation, check the correct level of oil inside the hydraulic systems such as hydraulic gangway and platform-lift.
- After the generator 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; the indicator needle on the pressure gauge should be set in the green range.
- Check on the indicator of main pressure gauge, possible pressure drops inside the system.
- Check before and after navigation 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 companion, considering that it is not a watertight door.

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.

DANGER

Before performing the listed checks and maintenance operations, we recommend to read careful the Safety Rules relevant to maintenance, contained in this Manual.

DANGER

Do not stay on board or under the boat during maintenance operations.

CAUTION

Make sure that the positioning marks are always visible when adjusting the belts.

- Immerse the belt when it passes under the engine base.

WARNING

Should more or less serious faults be noticed, contact as soon as possible the Cantiere del Pardo Service Department.

CAUTION

Cantiere del Pardo S.p.A. decline all responsibilities if third parties tampered with the equipment installed by the shipyard. Such tampering or unauthorized installations will not only immediately void the warranty, but may cause damage to the yacht and injuries to the people on board.

Cantiere del Pardo S.p.A. declines all responsibility concerning periodical 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.

9.3.1 Mooring manoeuvre

Before setting back for the harbour, stop in free waters and test the gear box and the bow/stern thrusters (if installed).
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;
- check that on the electric panel, all necessary users are supplied (anchor winch, bow/stern thrusters, etc.). Disconnect unnecessary users;
- that the boat hook is easily accessible and does not hinder any passage;
- the operation of acoustic signals and of swinging spotlight (if installed);
- in case of at-night mooring, have a torch light (possibly operating) handy;
- that the passengers will not interfere with operations and, if participating, they know whom to listen to and what to do;
- that bilge, grey water tanks and holding tanks are empty;
- that mooring ropes and fenders are correctly arranged.

If the yacht is moored with the stern to the dock:
- warp on stern ropes and on an anchor log, so as to haul the pier.

If the mooring is on the side:
- warp on bow and stern ropes, so as to haul parallel to the pier.

Once moored:
- stop the engine;
- ensure that indication lights on the dashboard are off and remove start keys;
- disconnect all unnecessary electric users and check the general status of the general control panel as well as the voltmeters and ammeters indications;
- check bilge pump switches and their regular operation;
- check bilge and dry it;
- ensure there are no leakages from the transmission cases;
- rinse the yacht with fresh water;
- connect dock electric power supply;
- stop the generator, once cooled down.

Before leaving the yacht, check following:
- under deck lights are not powered;
- ensure that navigation lights and external lights are not powered;
- ensure that unnecessary devices (plotter, radiotelephone, anchor winch, etc.) are not supplied;
- ensure that devices in use are powered; (automatic bilge pumps);
- ensure that the dock plug is properly connected and the cable cannot be damaged;
- disconnect battery breakers;
- make sure that the devices (life jackets, boat hook, torches, etc.) are in their correct positions;
- ensure that all bottles and containers with flammable liquids are properly sealed;
- make sure that no food residues are left around (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;
- that under deck compartments are properly closed;
- that all portholes are well closed;

9.3.2 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 electric panels and disconnect all unnecessary users.
- Check all on board compartments, portholes, skylights and bilge.
- Ensure the ship is safely moored.
- Disconnect all unnecessary users.

CAUTION

It is advisable to disconnect the electric plug from dock, 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.

Disconnect all pumps of the yacht

CAUTION

Inform the Port Authority about the location of the on-board fire-fighting system (if installed) and hand them the keys for cockpit opening the fire-fighting control peak.

9.4 BOAT OPERATION DURING NAVIGATION

WARNING

Persons operating your yacht must never be under the influence of alcohol or drugs. The yacht's pilot should be experienced in the use of all instruments and controls, and know the handling characteristics of the yacht at all speeds and sea conditions.

You should be certain that persons intending to operate your yacht are completely knowledgeable about its proper operation. If you are not certain about an individual's qualifications or competence, the person must be supervised by a qualified operator.

WARNING

At high speed, the use of the autopilot (optional) is dangerous and not recommended. Anyway, be always very careful during navigation also when the autopilot is in use.

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.

The high quality engines allow running the yacht safely at cruising speed for extended periods of time.

9.4.1 Operating in shallow water

CAUTION

Before navigation you must be aware of the characteristics of the seabeds and what weather conditions will be found during the route.

CAUTION

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 injure persons and damage your yacht.

WARNING

Cantieri del Pardo declines any responsibility for the improper use of the yacht, in relation to the seabed conditions/height.

9.5 PRECAUTIONS DURING NAVIGATION

- Move on board always maintaining a low centre of gravity (squatting, crawling, sitting) and never standing in an upright position.
- Always hold on to something that is solid, even when you work: a hand for yourself and one for the boat.
- Always move on the lee side of the boat, if possible.
- With rough sea use the safety belts.
- During navigation put on the life jackets.

WARNING

Before starting a new manoeuvre alert all yacht components.

- During navigation do no unlock the chain stopper because you can seriously damage the yacht bow.
- It is very important during navigation with 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.
- Maintain a safe speed for the sea conditions, visibility, and when near other yachts.
- Do not exceed speed limits in harbour and confined waters.
- Follow all navigation rules applicable to the waters in which you are operating.
- Provide laminated plastic reference cards for the Rules of Navigation and have them available for quick reference at each control station.
- Consult charts for information on locations of reefs, rocks, shoals, or other hazards to make sure that the yacht is not at risk of grounding or collision with fixed or floating structures.
- Frequently check that your route ahead and around the yacht is unobstructed (no boats or objects in the expected route or approaching your yacht).
- Frequently confirm the yacht's position as you cruise, using all available aids, such as charts, visual observations and bearings, depth soundings, GPS, radar, etc.
- If the yacht is controlled by the autopilot, be especially careful to keep a good visual watch. The autopilot cannot see.
- Before night navigation, make sure that navigation lights and search lights are operational. Ensure that the correct navigation lights are turned on for operation at night. Do not keep the anchor riding light on while the yacht is navigating.
- Use navigation lights in all conditions of reduced visibility, such as fog and rain and at all times between sunset and sunrise.

WARNING

When navigating at night, visual sharpness is crucial for a safe passage. To avoid collisions, reduce speed at night to compensate for limitations of visibility. Avoid switching on inner lights that may affect the pilot's night vision.

- Know the characteristics of the sea bottom prior to anchoring. Keep well clear of other anchored yachts.
- During anchoring, pay special attention to avoiding rotating parts of the winch and take precautions when handling the anchor chain as it comes off the winch. Caution is needed to avoid injury to hands and fingers. Also, take care to avoid entangling feet and legs in the anchor rode.
- While the yacht is underway, all persons on board must be seated in the designated seating areas in order to prevent injury due to falls caused by yacht movements with rough sea and in active wake areas or in the event of sudden changes in yacht speed or during manoeuvring.

WARNING

Cantiere del Pardo declines any responsibility for the improper use of the yacht, in relation to the wave height conditions.

WARNING

Before undertaking navigation, it is necessary to be aware of the sea and weather conditions you will find along the transfer route and in the area you want to reach.

BEAUFORT SCALE	DESCRIPTIVE TERM	WIND SPEED		PROBABLE WAVE HEIGHT (metres)	
		m/sec	knots	average	max
0	Calm	0 + 0.2	up to 1	-	-
1	Light air	0,3 - 1,5	1 - 3	0.1	0.1
2	Light breeze	1.6 - 3.3	4 - 6	0.2	0.3
3	Gentle breeze	3.4 - 5.4	7 - 10	0.6	1.0
4	Moderate wind	5.5 - 7.9	11 - 16	1.0	1.5
5	Gentle wind	8.0 - 10.7	17 - 21	2.0	2.5
6	Fresh wind	10.8 - 13.8	22 - 27	3.0	4.0
7	Strong wind	13.9 - 17.1	28 - 33	4.0	5.5
8	Gale	17.2 - 20.7	34 - 40	5.5	7.5
9	Strong gale	20.8 - 24.4	41 - 47	7.0	10.0
10	Storm	24.5 - 28.4	48 - 55	9.0	12.5
11	Violent storm	28.5 - 32.6	56 - 63	11.5	16.0
12	Hurricane	over 32.7	over 64	14.0	

9.5.1 The wind rose

The wind rose is the schematic representation of the cardinal points and the winds associated with each cardinal point meant as direction of origin (North, South, East, West) and the directions they mark out. It is particularly used in meteorology since it concisely represents the distribution of wind speed by direction in a particular place.
It is a polar graph in which the points are coloured with bands corresponding to the classes of wind speed for each direction.
The length of the points changes depending on the wind frequency in each direction.

The simplest wind rose is that with 4 points formed by only the four cardinal points:

- North (N 0°) from which the north wind blows
- East (E 90°) from which the east wind blows
- South (S 180°) from which the south wind blows
- West (W 270°) from which the west wind blows

Four intermediate points can be established between the four cardinal points:

- North-East (NE 45°), from which the north-east wind blows
- South-East (SE 135°), from which the south-east wind blows;
- South-West (SW 225°), from which the south-west wind blows;
- North-West (NW 315°), from which the north-west wind blows.

Therefore by listing clockwise the eight principal winds are:

NORTH (N)	0°	Tramontana north wind	It is very intense and often in bursts, usually very cold or even frozen. Usually it anticipates dry weather and clear sky.
NORTH-EAST (NE)	45°	Grecale or Greco	It blows from the north-eastern Balkans area although the name indicates an origin further south "from Greece", due to the "Wind rose" position. As the Tramontana north wind, it blows in bursts. It is a cold wind and brings dry weather.
EAST (E)	90°	Levante east wind	It name indicates “where the sun rises” direction. It is rather weak and simply is an advance of the Scirocco and therefore an announcement of deteriorating weather.
SOUTH-EAST (SE)	135°	Scirocco south-east wind	The name indicated the Syria origin. It is a warm wind that creates rough seas and that it becomes very humid in the northern regions due to the passage on the Mediterranean sea. It indicates the arrival of disturbances.
SOUTH (S)	180°	Mezzogiorno or Ostro south wind	It is weak and on the Italian regions not very perceived except in the Adriatic sea.
SOUTH-WEST (SW)	225°	Libeccio south-west wind	The name indicated the Lybia origin. It born in a rapid way reaching also considerable force. It drops suddenly and usually remains a situation of good weather. When it blowing is annoying and dangerous for the navigation: causes a strong wave motion.
WEST (W)	270°	Ponente west wind	It indicates the sinking direction. It is more common in summer and usually blows in the afternoon. It indicates, however, good weather.
NORTH-WEST (NW)	315°	Maestrale north-west wind	The name refers to Rome, "Magistra" for the ancient people. It is a cold wind, stronger and more constant of the Tramontana. It sweeps away the clouds of disturbances and brings good weather, clear skies and dry weather.

These four winds combined with those coming from the four cardinal points form the wind rose to 8 points.
Among the eight points identified above can indicate other eight, intermediate between the earlier, resulting a wind rose to 16 points.
The new eight points are clockwise: north-north-east, east-north-east, east-south-east, south-south-east, south-south-west, west-south-west, west-north-west and north-north-west.

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The maximum extension of the wind rose is divided into:

- four quarters of 90°, which leads to a division into 4 points
- each quarter is divided into two winds of 45°, thus arriving at 8 points
- every wind is divided into two half winds from 22°30', thus reaching at 16 points
- each mean wind is divided into two fourths (or rhombs) from 11°15', thus reaching at 32 points
- every fourth is divided into two half fourths from 5°37’30”, thus reaching at 64 points
- every half fourth is divided into two fourths from 2°48’45”, thus reaching at 128 points

In ancient times each compass had the image of a wind rose to 32 points on the background. The horizon was thus divided into thirty-second parts, which were called the fourth, they were used as the approximate unit during the approach maneuvers (e.g. lay two fourths starboard). Due to the shape that is created in drawing them, they are also called rhombs.
Once in Italy, cartographic representations included a wind rose pointing to the cardinal points.
Today it is used to indicate the four cardinal directions and the component directions with (clockwise from North) : N, NE, E, SE, S, SW, W, NW, then with the terms Tr (tramontana north wind), G (greco north-east wind) + (a cross pointed to the east), S (scirocco south-east wind), O (ostro south wind), L (libeccio south-west wind), P (ponente west wind), M (maestro north-west wind).

9.5.2 Wind classification

All types of winds existing on our planet.

CLASS	NAME	FEATURES
Constant Winds that blow throughout the year, always in the same direction.	Trade winds	They blow in the areas between the equator and the tropics: from north-east to south-west in the southern hemisphere, they are generated in tropical anticyclonic areas converging towards the equatorial zones.
	Extratropicals	They blow in the equatorial zones where, due to the heating, masses of hot and humid air ascending are formed.
	Westerly winds	They blow between 35° and 60° in correspondence of the temperate zones: from the south-west to north-east in the northern hemisphere, from north-west to south-east in the southern hemisphere. They are regular winds of the temperate zone.
Periodical winds Winds that periodically reverses the direction; they may be seasonal period, as the monsoons and Etesian winds, or in daytime period day as the breezes.	Monsoons (from the Arab word mausim, meaning season)	They are wind systems characteristic of the Indian Ocean and China seas; they blow during the summer semester (April-October) from the ocean (anticyclone) to earth (India and Asia north-eastern, cyclonic areas); during the winter months from India to the ocean (East Africa).
	Etesian winds (from the Greek word étos, meaning year)	They blow during the summer, from the Aegean sea to Egypt, and in the opposite direction during the winter.
	Breezes	Moderate winds in daytime period. They are distinguished into sea and land breezes: blow throughout the day from sea to land and at night from land to sea, mountain and valley breezes: by day blow from the valley to the mountains and by night from the mountain to the valley; lake and shore breezws: they act as the previous.
Variable or Local winds Winds that irregularly blow in the temperate zones every time that cyclonic or anticyclonic areas form.	Scirocco south-east wind (from the Arab word shulùq, meaning noon wind)	Warm wind that comes from the Sahara desert, proceeding from the south-west to north, becomes laden with moisture over the Mediterranean and reaches Europe humid and violent.
	Mistral (fronancient Provencal maestral)	Very cold wind that blows from the Central French Massif and reaches the maximum power in the Rhone valley.
	Fohn or west wind (from the Latin Favonius, favère, meaning to make grow)	Hot, dry wind that mainly blows in spring and autumn in the alpine valleys to Austria and Switzerland, and sometimes reaches the Po Valley.

CLASS	NAME	FEATURES
	Ghibli (from the Arab word qibli, meaning southern wind)	Wind of the desert, very hot and filled with sand, which blows for about thirty days a year on the territories of Tunisia, Libya and Egypt.
	Khamsin ((from the Arab word khamasin, 50)	Hot, dry wind that blows in the Nile Delta from April to June. Lasts 3 to 5 days.
	Harmattan (from the Sudanese word haameta'n)	Hot dry wind that blows very violent on the territories of West Africa. It coming from the north-west in winter and spring.
	Bora (from the Greek word boréas, north)	Cold and very violent wind that blows from the Illyrian mountains in the former Yugoslavia to the coasts of Istria and Dalmatia and also arrived in Trieste. It blows only in winter.
	Austro south wind (from the Latin auster, south wind)	Warm wind that blows from the south.
	Gregale north-east wind (from the late Latin Graecalis, of the Greeks)	Wind blowing from the north-east to south-west on the central and southern Mediterranean sea during the cold seasons.
	Maestrale north-west wind (from maestro as main)	North-west wind. It is one of the winds that predominate on the Mediterranean sea.
	Tramontana north wind (from Latin trans montanus, beyond the mountains)	Cold wind, sometimes violent, coming from the north in winter season and that can invest across the Italian peninsula
	Libeccio south-west wind (from Libycos, coming from Lybia)	Wind from the west or from south-west, it is violent in all seasons. It blows over Corsica and on Tyrrhenian Italy.
	Chinook (from the name of a Native American tribes of the north-west of the United States of America)	Hot, dry wind that blows from the north-west on the Rocky Mountains (USA) mainly in spring and autumn.
	Pampero (from pampas)	Cold and humid wind blowing from the west between July and September especially on the Rio de la Plata (Argentina).
Irregular or cyclonic winds	Cyclones	They are defined irregular winds and are violently destructive with whirling motion; they take different names by town: Hurricanes in the Antilles and American coasts of the Atlantic, typhoons (from the Chinese t'ai fung, violent) in the Yellow Sea and the Philippines; Tornado (whirl, vortex) in the Great USA Plains and Australia.

9.6 HAULAGE AND LAUNCH

CAUTION

The lifting method depends on the type of the lifting equipment, therefore it cannot be suggested.

CAUTION

Before the haulage and launching operations, check that no foreign materials are on board, that all items are properly rigged and that nobody is on board.

WARNING

Hauling and launching operations have to be carried out only by skilled personnel and in qualified shipyards and under their direct responsibility.

Cantieri del Pardo declines all responsibility for damage to property and harm to persons caused by the wrong performance of the operations listed below.

Hauling up and launching your yacht are the most difficult and potentially hazardous operations to which it will ever be subjected.
To be able to successfully complete these operations, the following aspects must be taken into particular consideration:

- assessment of the effective weight of the yacht (checking for the possible presence of bilge water, the weight of which can be easily underestimated);
- correct positioning of the lifting straps (with respect to the centre of gravity of the boat and to any hull attachments that might be damaged);
- pressure exerted by the straps on the sides of the boat and on the joint between the hull and the deck;
- possibility of the straps slipping on the hull during lifting operations;
- contacts between the hard top and parts of the crane or travel lift;
- take care to make as few movements as possible with the boat suspended before placing it in a safe position (resting on a support structure or floating in the water);
- firmness and stability of the ground in the area in which the boat will be hauled up (it must not give way under concentrated and localized loads).
- cleanness of straps in contact with the hull (possible insertion of clean pads of felt or carpet);
- seawater intakes and through-hull discharges open during lifting and closed during launching;
- log sensor extracted, with plug in hull fitted;
- support cradle checked and correctly positioned before starting lifting operations;
- spacers, wooden chocks, wedges and props all ready to support the boat safely in a level position.
- the lifting straps must not be worn out, and should be covered with suitable protections to preserve the bulwarks' gel-coat and the bottom hull antifouling paint;
- 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 before lifting the yacht, its centre of gravity depends on the load and its displacement.

During lifting, if a crane is being used and not a travel lift, check that the lifting straps do not excessively compress the sides of the boat, because this could damage hull structures, the glued joints of internal bulkheads, the joint between the hull and the deck, stanchions or the handrail. It is always preferable to use an adjustable lifting bar that allows the fixing points of the ends of the lifting straps to be correctly positioned, in a way that eliminates or reduces lateral pressure, and that prevents the longitudinal position of the lifting straps from damaging the saildrive and other hull fittings.
It is good practice to link the lifting straps together (in the bow-to-stern direction) and to lift the boat keeping it level longitudinally (with neither bow nor stern lowered) to prevent the hull from slipping on the lifting straps.
When declaring the weight of the boat, before lifting add a safety margin with respect to the figures indicated in the manual, to take into account any additional weights that may have been added.
If the crane or travel lift is equipped with a dynamometer (ask the crane operator for information), make a note of the value indicated when the boat is lifted, for future reference.
Before launching the boat, check that all seawater intakes and through-hull discharges are closed, and that the log sensor has been extracted (plug fitted). Open and leave open all floor panels.
After launching, open through-hull valves one at a time, waiting a few minutes and checking that there are no leaks on the associated piping systems.

- Ashore, the yacht must be located on a cradle with at least six supports positioned on the structural bulkheads of width and size adequate to distribute the yacht weight evenly.
- The hull inclination must be as “natural” as possible, e.g. it must be parallel to the waterline and not to the keel. This to prevent that liquids on board keep a normal level and that rainwater can be drained naturally.

CAUTION

Do not put the lifting straps in way of intakes, of sea exhausts or of other protrusions like the IPSs.

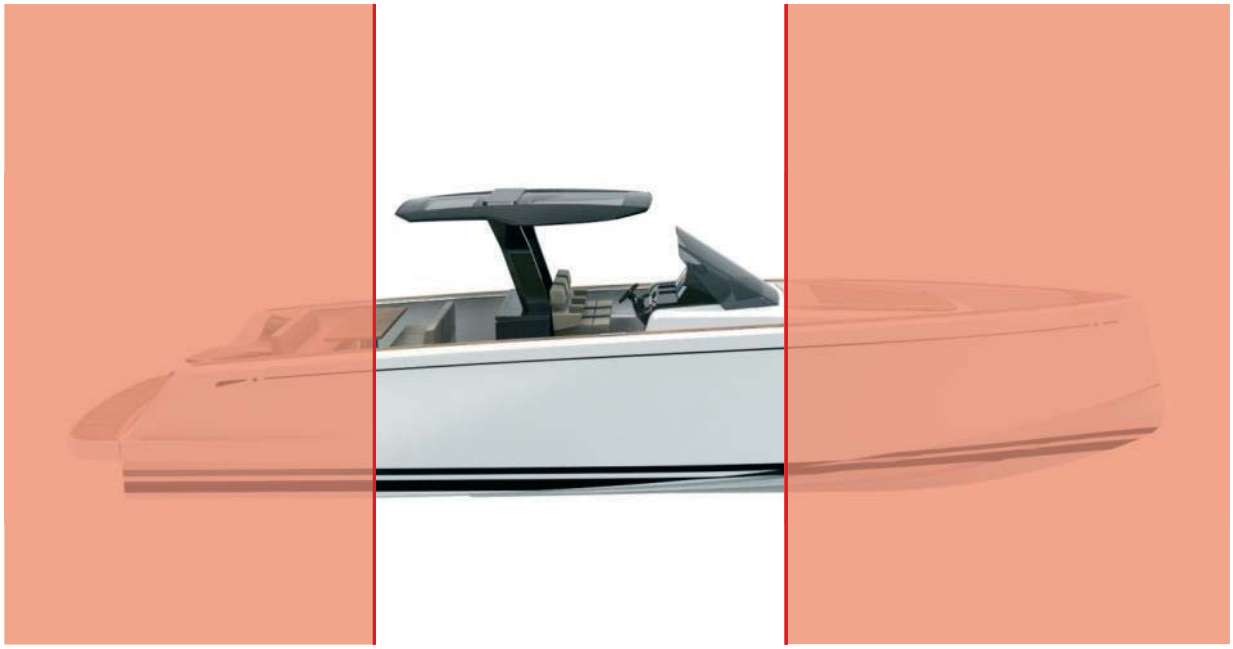
Lifting straps must be positioned according to the loading conditions of the yacht at the moment of its lifting, because these vary remarkably, for instance, when the yacht is unloaded and dry or when the yacht is fully loaded. The lifting straps arrangement must be carefully evaluated each time, in order to prevent any damage to the yacht.

DANGER

During haulage and launch, never stay underneath or in proximity of the yacht.

CAUTION

***Never** position the lifting straps in the areas highlighted on the drawing.*



CP0157

CAUTION

Cantiere del Pardo S.p.A. declines any responsibility for the location of the lifting straps, the lowering of the yacht to the ground and the support points carried out in other Shipyards.

Cradles

Cantiere del Pardo S.p.A. is capable of providing the cradles for a correct support of the yacht (optional on demand).
Cantiere del Pardo S.p.A. is not responsible for any damage resulting from the use of cradles different from those expressly produced by Cantiere del Pardo S.p.A.

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 damaging 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 and bulk-heads).
- Always place at least 5 props along the centre 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.

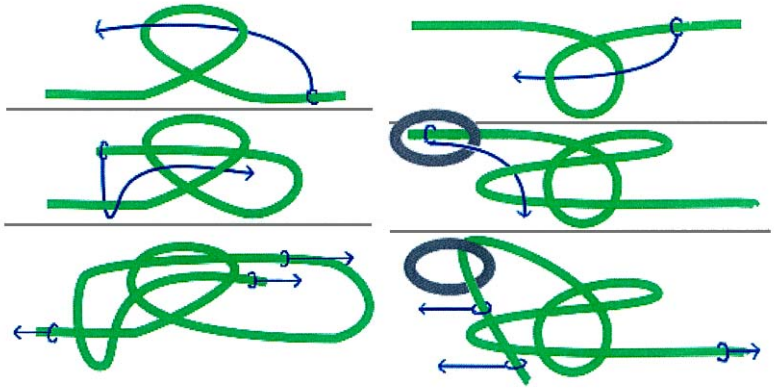
The suggestions above are to be considered as being generally valid for propping the yacht without damaging it or harming the personnel involved; however, since the propping conditions may significantly vary depending on the props used and the surface on which the props rest, the above suggestions must be adapted case by case. Cantiere del Pardo S.p.A. is therefore not responsible for any damage to the yacht occurring while the yacht is at dry dock on props.

CAUTION

Cantiere del Pardo S.p.A. 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.

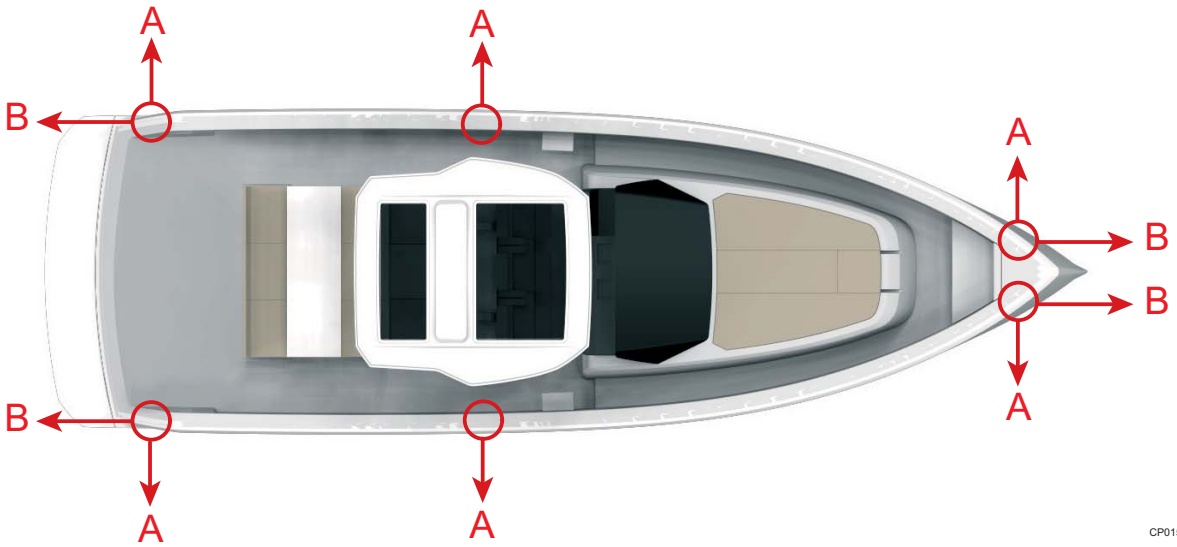
9.7 DRAWING THE YACHT

The yacht is drawn only to get help in an emergency situation, not as a way to transport it.
In case the yacht needs to be drawn or towed, fasten the towing lines as shown in the figure, in order to distribute the load evenly and pull in the middle.
The towing rope length depends on the sea conditions, and must be adjusted in such a way to limit the pulling forces without damaging the deck fittings.



CP0051

Position of anchoring points



CP0158

A = Mooring cleats (correspond to the anchoring points of the life-line)
B = Towing (at the bow, to be towed - at the stern, to tow)

WARNING

It is the responsibility of the owner to assess what actions are necessary when fixing a towing cable on board.

Cantiere del Pardo declines any responsibility for damage to persons or property.

DANGER

Do not stop the yacht with a yacht hook, a foot, a hand or any part of the body.

DANGER

Do not approach and do not carry out any kind of intervention on transmission during the towing because propeller can turn.

DANGER

Drawing is always done at low speeds, max. 10 knots (11.5 mph).

If the yacht has to be drawn over long distances, the propellers are to be removed.

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 towing is not possible, give help by taking on board people of the other yacht, as many as permitted and possible, and reach the nearest harbour.

Anyway, inform immediately the Port Authority.

WARNING

Towing navigation can be carried out continuously for 8 hours, provided that you constantly monitor the gear box oil temperature, which must not exceed 80 °C.

If temperature exceeds 80 °C, stop navigation and wait until temperature lowers.

When the engine is shut off, the control handle position is unimportant.

CAUTION

Always draw other boats or let your yacht be towed at low speed. Never exceed the speed of the drawing boat when you are being towed.

CAUTION

Fasten your yacht to a towing rope so that it can be released when loaded.

CAUTION

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

CAUTION

If non-metallic anchoring points are installed on the boat, take their limited life into account. They must be replaced as soon as they show signs of deterioration, cracks of the visible surfaces or a permanent deformation.

CAUTION

It is the Owner's/the operators' responsibility to make sure that the mooring ropes, the towing ropes, the anchor chain(s), the anchor lines and the anchor(s) are suitable for the intended use of the unit, i.e. the resistance of the ropes or chains must not exceed 80% of the resistance to breaking of the relevant strength point.

The Owner should also determine which action is necessary when fastening a towing rope on board.

DANGER

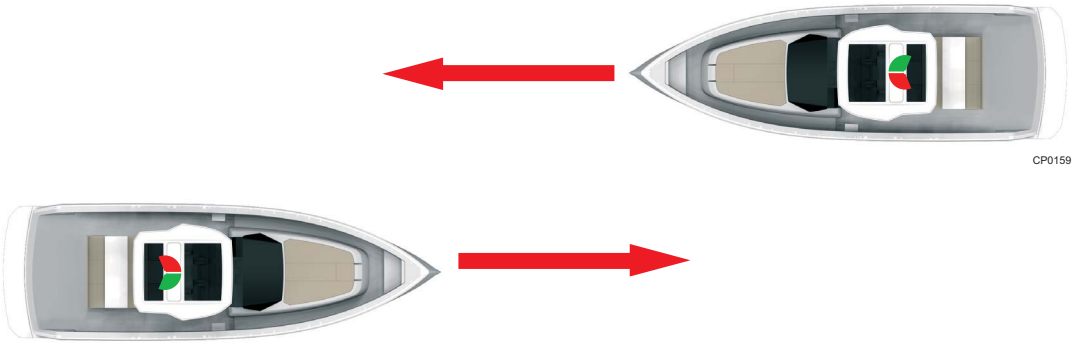
During towing navigation, the propellers have to be kept turning by the water flow. We recommend not to carry out any kind of service on the thrust devices (engine, gear box, IPS, etc.).

9.8 YACHT STEERING RULES

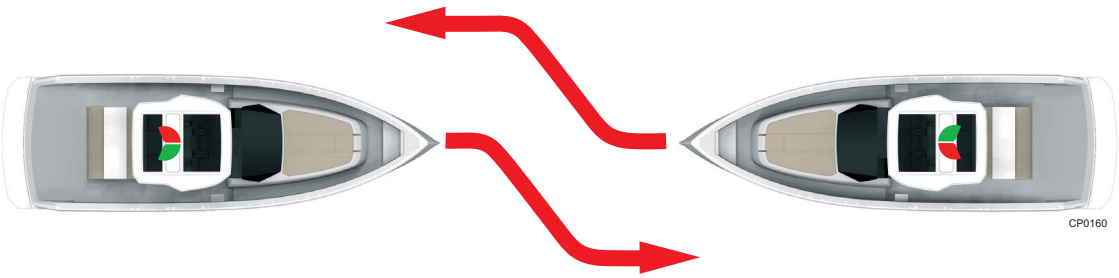
Ship in sight
We consider three ways of sighting of another yacht at sea:
– encounter, cross and getting ahead

Generally, the yacht with limited ability to maneuver has the right of course.
We leave free the course and to pass it to stern. The yacht that has right of course is called privileged yacht. It can maintain its speed and course. The ship penalized is that must adjust their speed and/ or course to maintain the due distance from the privileged ship.

Encounter
When you meet another yacht that goes in the direction parallel, both boats must adjust their speed and course.

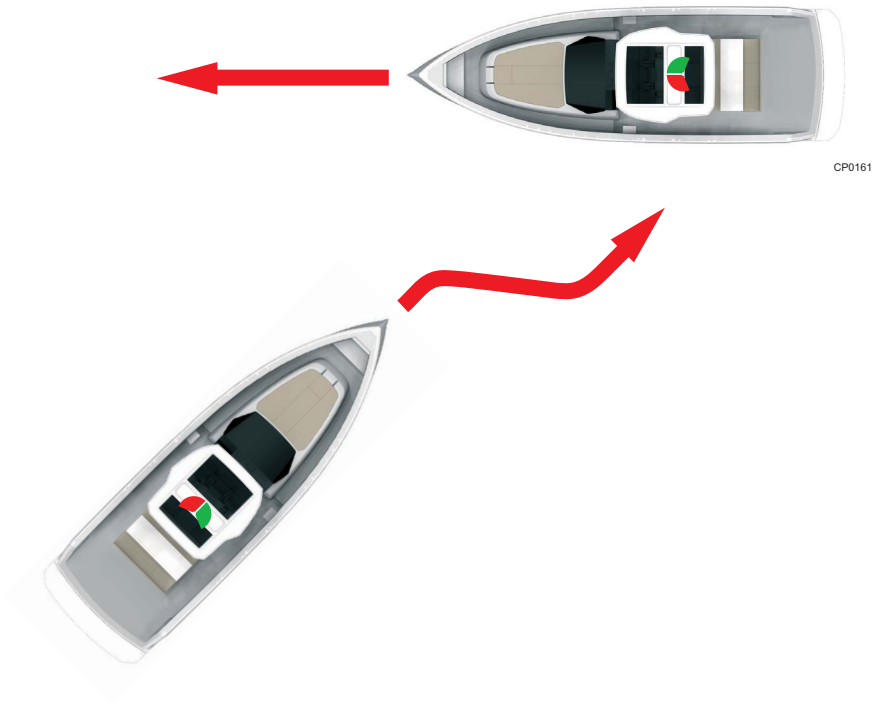


When two mechanical thrust yachts are meeting on intersecting or nearly intersecting courses such as to give rise to the risk of collision, each one must change its course to starboard so that each one passes on the left of the other.



Crossing

When two mechanical thrust boats are crossing, creating a risk of collision, the one that has the other yacht at its starboard must move away and, if the circumstances so permit, avoid passing on the bow of the other yacht.



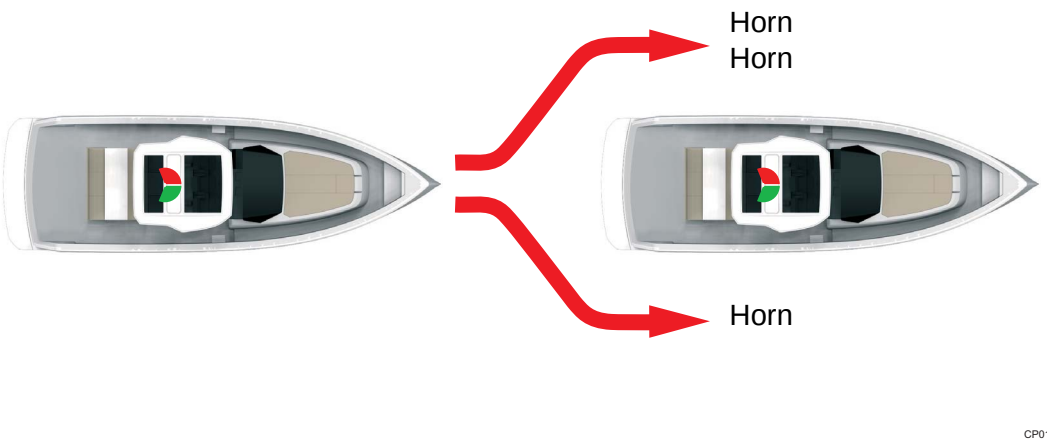
Overtaking

Overtaking is defined as when a ship coming from a direction of more than 22.5 degrees at stern compared to the yacht that it plans to overtake, such that it can only see the light of the yacht stern but neither of the two side lights.

If you find yourself having to pass a yacht proceeding more slowly than you and that is on your course, your yacht is the one penalized. Make all the necessary adjustments to avoid the collision and pass to the bow or starboard. Announce your intentions by sounding the horn twice if you intend to pass on the bow, and one time if you intend to pass at starboard.

The yacht that is reached by another yacht takes precedence over the latter and therefore must maintain the same course and the same speed without laying or manoeuvring.

The yacht that has the bow within a 135° angle (formed by the yacht stern light) is considered the yacht that can be reached.



CAUTION

Having the right of course does not relieve you from the responsibility of avoiding a collision.

Who exits from the harbor: has precedence over who enters and who passes in front of the harbor.
Rivers and canals: who navigates with the current has precedence.

Evasive manoeuvre
The vessel that notices the other to its starboard and verifies that a risk exists manoeuvres in due time with a wide and easy to notice turn to starboard.
In the case it cannot turn starboard, it reduces speed or stops the machines.
When they are engine propulsion vessels, it must avoid turning to the left.
The vessel with precedence maintains constant course and speeds.
In the case the bearing changes appreciably, there is no collision course and the vessels maintain constant course and speeds.

Evasive manoeuvre in the case the obliged vessel does not manoeuvre
If the unit that has precedence notices that the unit obliged to give it precedence does not manoeuvre in reasonable time and spaces, at this point it has the duty to manoeuvre turning starboard until it makes a 360° turn, and then resumes its course.
The MINIMUM SAFETY DISTANCE from the other vessel to start the evasive manoeuvre depends on the vessel's displacement and ability to manoeuvre, the speed, visibility, traffic, weather conditions, and whether navigation is at night or in the daytime.
In any case it is a good rule of thumb to start the evasive manoeuvre well in advance, when the distance from the other yacht is still considerable, rather than waiting until it is too short.

Responsibility between vessels
It is necessary to observe the following regulations, except when in conflict with other rules:

Mechanical propulsion vessels navigating must leave the course free to:
- Vessels that are unable to steer.
- Vessels with limited ability to maneuver.
- Vessels busy with fishing.
- Sailing boats.

Sailing boats navigating must leave the course free to:
- Vessels that are unable to steer.
- Vessels with limited ability to maneuver.
- Vessels busy with fishing.

When navigating, vessels busy with fishing must, as far as possible, leave the course free to:
- Vessels that are unable to steer.
- Vessels with limited ability to maneuver.

CAUTION

Vessels with limited ability to maneuver usually have the right of course.
In the event of an imminent collision, prudence has priority over right of course.

10.1 GENERAL MAINTENANCE OUTLINES

The yacht is equipped with high quantity sophisticated devices and systems, which require not only a certain care of use, but also a periodical maintenance to obtain a correct operation.

One of the factors that might determine troubles or faults, is usually the irregular use of the yacht and as a consequence of this, of the on board devices.

The experience indicates that the regular use of the devices gives normally a less quantity of troubles, therefore, we recommend to have all on board devices regularly operate, for short periods.

Daily checks and periodical maintenance are important for maintaining equipment/components in the best efficiency conditions. If the periodical maintenance schedule is not correctly followed, the equipment performance can decrease, causing an efficiency reduction, a shorter life and the occurring of unexpected problems which can compromise safety at sea.
The maintenance schedule is based on time or running hours intervals. For example, if a maintenance task is scheduled every 100 hours or 3 months, such 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 inactivity period (for example during winter) it is advisable to lay up the yacht, possibly under cover.

CAUTION

Some general information about ordinary maintenance tasks, their schedule and procedures is provided herein with.

For further specific information referring to maintenance schedule, see Manufacturer Manuals of on board devices/components, issued by the various Manufacturers.

CAUTION

Check periodically that all equipment containing water is filled with the correct quantity of anti-freeze.

If the outside temperature drops below 0 °C, all fresh or sea water systems, are exposed to the risk of freezing and consequent breakage.

Systems especially subjected 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

Before carrying out any maintenance and adjustment operation on the yacht, turn all necessary safety devices on and consider informing all personnel, in particular persons operating nearby. In particular, place warning signs in the concerned areas and prevent that any device, if operated, can cause unexpected hazardous conditions, thus endangering the persons on board and/or property.

Do not scatter any type of waste in the environment, to avoid pollution, and only use the dedicated disposal areas in the harbours.

CAUTION

When working in the engine and generator compartment, switch magneto-thermal switches of the bilge draining pumps off, to prevent that fuel, lubricants and other liquid spilling causes sea pollution.

CAUTION

Cantiere del Pardo declines all responsibility for the installation and operation of electric, electronic and mechanical equipment improperly installed by third parties in a fashion not authorized by the Shipyard.

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

Cantiere del Pardo declines all responsibility concerning periodical 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.

10.2 LONG YACHT INACTIVITY

Following list only represents a general guide to give the customer an orientation on the ordinary maintenances which should be carried out when the yacht remains stationary for a rather long period without being used. We recommend carefully checking the instruction manuals of the single devices, because they often contain detailed information and very important specifications relevant to the maintenance of each device.
The following instructions NEVER REPLACE the specific instructions concerning each single device and issued by the device's Manufacturer.

- **Engine**
  Before winter time let fresh water flow into the salt water circuit, check the antifreeze liquid, the sacrificial anodes against the galvanic currents, remove salt build-ups and spray protective agents. Check oil and fuel filters and replace them if necessary. Carry out a maintenance schedule for the thrust engine as indicated by the Use and Maintenance instruction delivered by the Engines Manufacturer.
- **Generator**
  Use same procedure as for the engine.
- **Gear boxes**
  Carry out maintenance schedule for gear boxes.
- **Batteries**
  Check the liquid level and periodically 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 yachts.
- **Washing machine and dishwasher (optional)**
  Carry out a void washing cycle, carefully remove all detergent residues and accurately dry. Clean the filters.
- **Water maker (optional)**
  A proper procedure delivered by the supplier in the instruction manual which has to be followed when the water maker is not used for a long time.
- **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 rug 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. If strictly necessary sandpaper.
- **Zincs**
  Verify their wear and if necessary replace the hull anodes, propeller shafts, etc.
- **LOG Transducer**
  Pull out paddle-wheel, clean it and apply the proper blanking plug.
- **Anchor winch**
  Check the oil level in the gear box, where possible. Protect the electrical components with a suitable protective spray and lubricate with silicon grease clutches and wildcat.

- **Air conditioning (optional)**
  Before winter:
  • let water flow in the salt 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.
- **Grey water tanks**
  Pour into the washbasin, showers and bidets drains sterilizing products. Empty the tank and clean verifying the floating efficiency.
- **Holding tanks**
  Pour into the WCs a sanitary product containing Paraformaldehyde (available in the camping equipment shops) and rinse with this mix the tank for a couple of times. Drain the tank completely.
- **Tender engine (optional)**
  Wash with the fresh water contained in the cooling system of the engine. Carry out the maintenance suggested by the supplier.
- **Bow thruster**
  Protect the electrical components with proper spray and check the oil level.
- **Electro-hydraulic control units**
  Protect with proper sprays and check the oil level.
- **Refrigerators**
  Cleaning and protection for the outer one, should the yacht remain in the open.
- **Fire extinguishers**
  Verify the loading condition and expiry date of periodical checks.
- **Safety equipment (optional)**
  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 tanks**
  Carry out cleaning by means of a decanter especially if there are traces of water into the fuel.
- **Engine room**
  As to the engine room, we suggest to carry 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 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, struts, rudder, 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.
- Disconnect all unnecessary users.

DANGER

During recharge the batteries produce explosive gas. Do not approach to recharging area with free flames or sparkles.

Avoid wrong connections; never connect a positive terminal (+) with a negative one (-).

During battery recharge, remove the caps of the relevant elements.

10.3 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 tension of the alternator belts both of the thrust engine and of the generator.
- Fill the fuel tank. Vent the air of the fuel system.
- Start thrust engines.

CAUTION

After a long yacht inactivity, carry out all above-listed operations and following checks:

a) Check the condition of all hoses and connections of the transmissions, IPS, gangway.

b) Start the engines.

c) Stop the engines.

d) Clean fuel filters. Replace engine oil filters and add oil to the engine if necessary.

e) Check all bilge pumps and their operation.

f) Check the operation of the WC, grey water and sea water pumps.

g) Check the operation of all board instruments used for navigation.

- Let the engines 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 hull and rudder thoroughly cleaned with brushes (in water) or with a water-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.
- Check the condition of the propellers and possible leaks from the seal of the shaft line, if necessary adjust it.
- Check the conditions of the sacrificial anodes; if necessary, replace them.
- Check the loading condition of the batteries, and that their terminals and housings are dry and clean.

10.4 HULL MAINTENANCE

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 anti-fouling effects depends mainly on the conditions of the waters where the yacht is stationed.

CAUTION

To remove the old antifouling, do not use sandblasting methods, as it may damage 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, rudder, propellers, etc.

CAUTION

Small areas of paint may peel off from the propellers even after a short period of operation.

10.4.1 Bottom hull

Antifouling treatment
If scales build up on the hull, these cause 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, suitable for your yacht and for the waters in which you are going to navigate. Please contact the Cantiere del Pardo Service Department.

Check/restoration
The cleaning and checks have to be carried with yacht at dry dock or with the help of a diver. Have the repairs done only with yacht at dry dock.

WARNING

To clean or check the yacht in water: disconnect the engine and generator start.

CAUTION

Some bottom hull areas (fastening area of thruster shaft support base, submerged drainage areas, 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 accurately cleaned the bottom hull and the rudder with brushes (water) or with a water-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. Please contact the Cantiere del Pardo Service Department. If the old antifouling is crusty, thick and tends to scale off, then remove it and start the treatment as for a new boat.

CAUTION

Antifouling is poisonous and should never be burnt, use only authorized disposal procedures and in case of doubts contact the authorities in charge. The sandblasting operations and removal of antifouling must be carried out with suitable clothes and protections.

WARNING

During the application of antifouling, make sure that following parts of the bottom hull are not painted:

- *depth sounder transducer*
- *LOG speed sensor paddlewheel*
- *sacrificial anodes*
- *shaft and propeller*

– Before the first application of antifouling paint on the hull, the hull can be sanded lightly with 400 µm or more grain water sandpaper.
– The boat's hull will be coated with antifouling paint to prevent attachment of marine vegetation.
– The nature of water in which you navigate determines the antifouling choice, as well as the frequency of dry dock maintenance.
– The bronze or steel surfaces must be protected with suitable antifouling.
– When in dry dock, check anodes, thrust bearing and propeller.

CAUTION

Before applying the antifouling paint, NEVER:

– *Sandblast;*
– *Use solvents other than ethyl alcohol;*
– *Use pressurised detergents;*
– *Use scrapers;*
– *Use sandpaper.*

If you must clean the antifouling paint with high pressure:
– The water temperature should be a maximum of 15°C;
– The maximum jet pressure must be 15 bar;
– The minimum distance between the nozzle and the hull should be 10 centimetres.

CAUTION

– *During application of antifouling paint, carefully follow the manufacturer's instructions.*
– *Never cover with antifouling paint:*
- *anodes;*
- *the earthing plates (Generator / AC/DC Converter);*
- *the sea water suction roses;*
- *the electronic device sensors.*

– *Avoid using a copper or tin based antifouling paint: they are prohibited in some countries.*

10.5 GENERAL MAINTENANCE

GEL-COAT

Formation of bubbles

Periodical cleaning

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 to the Service Department of the Shipyard.

CAUTION

Always wash using neutral products. In case of particularly persistent dirt, do not use products containing ammonia that turn the surface yellowish.

CAUTION

The alteration of colour and brightness in correspondence of areas which are highly exposed is considered as 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 cracks

Periodical cleaning

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 the gel-coat Manufacturers, use suitable products or, as an alternative, sand.

WOOD AND TAPESTRY

Periodical cleaning

Light and humidity 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.

In spite of the painting cycles developed after so many years of experience, wood remains a “live” material and is therefore subject to movement and settlement.

Scratches causes by bumps must be repaired immediately, to avoid the blackening of wood below. The technical staff of the Cantiere del Pardo Service Department will advise you about the maintenance level to be carried out at each season end. A correct maintenance will allow you to avoid deteriorations, reparable only at high costs.

CAUTION

Upholstering and wooden parts: the leather and wooden parts have to be treated as natural products, subjected only to colour alteration, particularly if the necessary precautions for a good maintenance are not taken. Cantiere del Pardo therefore reserves the right to evaluate troubles and its own responsibility each time.

MAINTENANCE

At least once a week carry out accurate washing and cleaning of all teak outside parts, and at least once a year perform a protective treatment with suitable products.

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.*

TEAK

Periodical cleaning

Teak is a valuable tropical timber that is an ideal decking material.
In addition to stability of form, long duration and unparalleled resistance to the marine environment and ultraviolet light, it also offers a safe non-slip surface when both dry and wet, has a surface that is heated only to a limited extent by sunlight, possesses excellent elasticity combined with extreme mechanical strength, is relatively easy to work with, requires little maintenance and is reasonably compatible with metallic fasteners, without rotting when in contact with them and when exposed to dampness from leaks.
These remarkable characteristics derive from the presence of a significant quantity of highly persistent natural oils in the wood fibres.
Teak must however be worked and laid by experts, and only in this way can it maintain its capacity to adapt to the local microclimate over time, constantly moving, contracting and expanding. It must therefore be installed taking a number of specific precautions.
A deck built with planks and with joints caulked with a rubberized compound is the configuration that ensures the best adaptability and durability, and is therefore the most traditional and appreciated method in the nautical sector for the construction of decks exposed to the marine environment.
Untreated teak rapidly takes on a silver-grey colour caused by natural micro-oxidation, without losing however its great resistance and other mechanical and physical characteristics of excellence.
The initial light yellow colour of a teak deck that has just been laid and smoothed lasts only a very short time, but this change has no effect on the qualities for which this timber is chosen and installed.
Given the typical durability of teak and its excellent resistance to atmospheric agents, the use of protective varnishes or special coatings or treatments is neither necessary nor advisable.
The experts that produce and supply preformed teak decks do not endorse the use of the many products commonly sold for the protection and cleaning of teak.
We limit ourselves therefore to giving a few practical indications on care and maintenance, based on our experience.
Protective oils for wood penetrate beneath the surface, and heat and damp can produce negative reactions on the adherence of the rubberized caulking materials used in joints.
The seal between the rubberized caulking material and the sides of joints can therefore be compromised, allowing water to enter.
Varnishes and lacquers are decorative coatings that when applied to teak decks dry to form a continuous film over rubberized caulking materials.
Some of these coatings may fail to dry sufficiently in the zone of contact with rubberized caulking materials, leaving a sticky surface. Over time, most of these coatings will peel away along joint lines, ruining the appearance of the deck and in some cases causing breakage and the opening of joints.
Teak cleaners can be used only if free from active ingredients other than normal soap with a neutral pH rating.
Commonly used additives such as phosphoric and oxalic acids are corrosive substances that can attack both caulking materials and the wood itself, causing premature ageing.
Strong acids or alkalis have a harmful effect on the durability of joints and on the essential characteristics of teak.
if these corrosive substances attack the natural oily contents of this timber, its lifespan can be seriously compromised, and there is a far greater likelihood that the caulked joints will start to open.

It is virtually impossible to predict the effects of the innumerable substances present in the new cleaning products released continuously onto the market, with the promise of being “extremely simple to use” and giving “excellent results”. In our frequent experience, the outcome is invariably the probable deterioration of the deck microstructure, and in particular of the rubberized caulking materials used to seal the joints between planks, followed by damage to the characteristics of the teak.

It should also be taken into account that the rubberized material used to seal joints is no longer available only in the traditional colour of black, in which carbon black is added to a rubber binder, but also in other colours such as grey or white. It has been noted however that caulking materials that are lighter in colour are more exposed to attack by the aggressive agents contained in products marketed as being suitable for deck maintenance and cleaning, and can therefore be more easily damaged or detached.
We recommend that teak decks should be cleaned using only soft brushes and water, with the occasional addition of a small quantity of a neutral soap if needed to facilitate the removal of greasy carbon dust caused by atmospheric pollution.
The brushes used must have very soft bristles, and must usually be used in a direction perpendicular to the wood fibres of the teak planks, as otherwise they would rapidly dig into the soft pulp of the teak cells located between the harder cell fibres, which are the parts of the microstructure that ensure a non-slip surface.
The use of pressure washers is not recommended, as high-pressure water jets can cause ruptures between caulking materials and the sides of joints, and can also damage the soft pulp of the teak cells.
If teak fibres are previously moistened, they do not easily absorb oily substances. The deck should therefore be thoroughly dampened with water before handling and loading oily substances like fuel oil and oils of other types.
If oily marks are formed despite these precautions (tanning oils and creams, grease, cooking oils, fuel, etc), the most effective remedy is to spray them with a fabric stain remover (e.g. Shout or similar) immediately after the spillage, without waiting too long, to prevent the natural oils of the timber from absorbing too much of the cleaner. As soon as the product has dried to a dusty white powder, it can be removed with a soft brush. Rather than leaving the cleaning product to soak in, it is advisable to repeat the application and removal procedure several times, until the marks have completely disappeared.
In long periods of hot, dry weather, teak decks should be wetted at regular intervals to prevent the wood from completely drying out.
Excessive moisture loss causes the wood to contract, subjecting the joints to considerable mechanical stress.
In unfavourable conditions this can result in premature ageing and weakening of the sealed joints, leading in extreme cases to breakage.
If deck areas are protected by awnings, sunshades, canopies or other coverings, they must nevertheless be well-ventilated to prevent the growth of mould that if not adequately treated could cause the teak to start rotting, making repairs by specialist carpenters necessary.
If these few simple rules are followed carefully, the normal useful life of teak decks can be significantly extended.
In case of need, the builder's assistance service is at your disposal for advice and support.

CAUTION

DO NOT USE for washing the deck mechanical equipment or a jet of pressurised water (hydro-cleaners, for example) since this force alters the wood and the caulking sealants (detaches the micro-particles), causing even radical damage in some cases (e.g. detachment of the caulking between the slats).

DO NOT USE for washing the deck alkaline or acid-based detergents, or however aggressive agents (soda, solvents, ammonia, etc.). Their aggressive degreasing action corrodes the wood (eliminates its natural water-repellent properties and bleaches its natural colour), while the physical-chemical properties of the caulking sealant are altered, with its surface portion becoming softened and the impermeability, sealing and anchorage of the deck becoming damaged.

CAUTION

Be careful when cleaning the external painted parts. The use of alkaline or acid-based soaps or detergents that are normally used for removing grime or salt from bulkheads, cabin. So when these washings are used, it is necessary to isolate the teak and sealant mentioned from any deposits, even temporary, of soaps and/or detergents. If it is impossible to cover the deck while cleaning the GRP, we recommend you dampen it with lots of fresh water so that any accumulation of detergent slides away and off the deck.
The same procedure is recommended when refuelling; if it is impossible to cover the deck, always dampen it with plenty of fresh water before each refuelling. If the fuel penetrates the wood or caulking sealant, the deck will be irreparably damaged.
Use a neutral detergent for cleaning teak. If some or all the external wooden parts have been painted or soaked with copal, linseed oil, teak oil, etc., it is necessary to carefully follow the instructions provided by the manufacturer for daily cleaning operations.

LIGHT ALLOYS AND STAINLESS STEEL

Periodical cleaning

It is a good rule to accurately wash the entire yacht after each navigation, in particular all metal parts that may be damaged by salty humidity. Have plenty of fresh water sprayed on handrail, windows, skylights, rub rail, anchors, cleats and ladder.
Protect all metal parts with Vaseline oil periodically.

MAINTENANCE

At least once a year check the fastening of all metallic parts of the yacht.

CAUTION

The stern glass wall is not watertight, so do not point the bolt of water towards the window, when washing.

CAUTION

Never use brushes or abrasive rags on metallic fittings, not even on rusty spots, scratches on the surface result in a less shiny appearance and diminish the mechanical features.

SUN-DECK CUSHIONS

Periodical cleaning

Remove the cushions from the seats on a regular interval and let their bottom 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 that water or humidity remain entrapped between cushions and underneath surface. 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.

MAINTENANCE

At least every 6 months check seams and fasteners.
At least every month carry out the washing of the cushions.

LEATHER

Maintenance

The leather should be cleaned and degreased regularly.
Clean the leather with a damp cloth. This operation removes the dust.
Every six months, or up to one year at the most based on how much the boat was used, apply a specific cleaning product on the leather and then apply a cream that moisturizes and protects it.

Stain-removal

In case of stains, immediately absorb their excess with a paper towel, without rubbing. Proceed towards the centre to prevent the stain from spreading.

- Dab with cotton impregnated with wood alcohol (ink spots and food stains).
- On grease stains, apply absorbent powder (such as talc).
- Wait a few hours, then brush off the excess powder.
- Other: Apply white vinegar or acetic acid diluted in fresh water.

CAUTION

- *Before using it, test the product on a hidden part of the fabric.*
- *Avoid excess moisture.*
- *Do not rub the leather.*

If you notice leather colour traces on the cloth, immediately stop the operation.

ALCANTARA (microfibres)

Stain-removal

It is imperative to dust the fabric before cleaning it. For this purpose, vacuum until it is perfectly clean.
Rub with a cloth soaked in a solution composed of 10% diluted ammonia.
The dilution will depend on how much the alcantara can endure. Test on a hidden corner, for example on the edge, and if the colour remains on the cloth or the alcantara's appearance changes, dilute further.
Rub the alcantara in all the directions, insisting on the stains.
Rinse the product with a damp cloth.
Air dry.
After the stain-removal, wipe a soft brush over the alcantara to make it soft again.
For resistant stains, we recommend dry cleaning.

SYNTHETIC FABRICS

Stain-removal

If the fabric can be removed:

- Machine wash (delicate programme) at 30°C.
- Do not iron.
- Never use bleach.
- Do not dry clean.
- Never tumble dry.

If the fabric cannot be removed:

- Vacuum,
- Clean with synthetic foam (see the instructions for use of the foam).

UPHOLSTERY FABRICS (PVC)

Maintenance

- The PVC must be cleaned regularly with soap and water to preserve its appearance and prevent the accumulation of dirt. The following products are highly recommended against: lacquers, aggressive cleaning products, detergents, xylene or acetone based products can cause irreparable damage and contribute to the deterioration of the fabric. The use of such products is at owner's risk.

Stain-removal

- All stains should be cleaned rapidly to prevent the formation of permanent stains.
- Use a gentle soap to remove the stains on the fabric surface. Only use a clean, damp and white cloth.
- The most difficult stains can be treated with a mixture of water (25%) and white spirit (kerosene).
- Rinse with water.
- Dry with a soft cloth.

ACRYLIC FABRICS (bimini fabric type)

Maintenance

To preserve the quality of the fabric, it is recommended to clean it regularly with nebulized clean water and brush it with a soft brush (such as a clothes brush). We recommend complete cleaning every 2 years.

Stain-removal

For routine cleaning, proceed as follows:

- Remove the dirt with a soft brush;
- Dampen the cloth with water using an atomizer;
- Prepare a diluted cleaning solution with non-aggressive soap in fresh water (without detergent);
- Wash with a soft brush;
- Allow the soap and water to become absorbed;
- Rinse thoroughly with fresh water;
- Air dry.

PLEXIGLASS

Periodical cleaning

To clean the plexiglass use only products that do not contain aggressive substances such as alcohol, ammonia or the like.
Preference for liquid detergent antistatic.
Use cloth of soft material (such as cotton or felt)

CAUTION

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

To clean, to scour and to polish the plexiglas, spray a small amount of liquid detergent antistatic on the cloth and wipe the surface.
The antistatic effect of the cleaner is very useful to prevent dust from being attracted by static electricity generated during the rubbing and that makes very difficult to clean the entire surface smoothly.
If the cause of opacity is dirt, simply use an anti-static cleaning fluid and a soft cloth to remove smears: the plexiglass will clean and bright. If opacity is due to the contact with aggressive substances, it means that the surface has been compromised in the structure and the plexiglass can not return as before.
If the marks are light and have been caused by wear and not from chemicals, anti-scratch dough can fix it.
Even for light scratches anti-scratch dough is perfect. Do not ruin the surface and restores clarity to plexiglass.
Anti-scratches dough removes surface scratches from normal wear.
Those deep caused by sharp objects will not be eliminated but only mitigated.

FENDERS

Periodical cleaning (as required)

Always keep all the fenders and their socks clean by washing regularly with fresh water, in order to prevent the salt deposited on them scratching the paint of the hull.

INSTRUMENTATION AND NAVIGATION LIGHTS

Periodical cleaning (as required)

We recommend keeping them clean by washing them with moist and clean rags; we recommend using a microfiber cloth.

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.
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 instrumentation and equipment.

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 transmissions, IPS, gangway, hatches and control units, etc.

BACK GLASS WALL

Cleaning

Of course, this glass wall needs a particular care during washing, because an inaccurate washing may cause water to penetrate.
To avoid this problem, we advise to take great care to the direction of the water jet for rinsing: it should not be directed frontally and with pressure, but the water should be let flow down from above.

MAINTENANCE

At least once a week carry out accurate cleaning.
At least once a month, check the operation.
At least once every six months check the locking.
When necessary have them adjusted.

SPEED MULTISENSOR (LOG SENSOR)

Periodical check

Ordinary maintenance

As indicated in the Manufacturer's Manual.

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.

10.6 TROUBLESHOOTING

The yacht is equipped with a high quantity of complex devices and installations.
These require periodical check and maintenance to keep their operation correct.
One of the factors that might determine troubles or faults, is usually the irregular use of the yacht and as a consequence of this, of the on board devices.
The experience indicates that the regular use of the devices gives normally a less quantity of troubles, therefore, we recommend to have all on board devices regularly operate, for short periods.
When a trouble on board is detected, it is essential to carry out a quick verification in order to understand its cause and, if possible, to find out a remedy.
In order to analyse a malfunctioning it is appropriate to answer the following questions:

- is the malfunctioning caused by a human error or not;
- is the malfunctioning due to a bad weather condition or not;
- is the malfunctioning due to a device fail or to a fault of another outer device, but in some way connected with the first one;
- at what stage does the malfunctioning occur: at the start, at steady state, at device switch off;
- does the malfunctioning occur repeatedly; if yes in which way;
- what does the malfunctioning imply from a functional point of view;
- does the malfunctioning cause the emission of signals (luminous and/or acoustic: sirens, summers etc.) and/or messages on a display and/or anomalous noises (like whistles, beats, buzzes, etc.) and/or anomalous smells (burning smell);
- does the malfunctioning interfere with the operation of other devices;
- the malfunctioning is a real apparent fault (that is: able to clears off, after, for instance, a device reset and following switch on).

The best answer we can give to the previous questions, the most complete will result the malfunctioning analysis.
This Manual section analyses the most likely causes, that may lead to the malfunctioning of a component of the main components/devices on board. For any possible analysed cause a corrective action is advised, in order to solve efficaciously, and as far as possible, the fault.

WARNING

We recommend, to operate in full safety and tranquillity, to take good note of the Safety Rules relevant to Maintenance described in "SAFETY RULES".

WARNING

The corrective actions have to be carried out only by specialized and authorized personnel.

Cantieri del Pardo decline any responsibility for proposed corrective action carried out by unskilled personnel.

CAUTION

For more detailed information, please refer to the various Manufacturers's Service Departments or address directly to the Cantieri del Pardo Service Department.

NOTES:

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RECEIPT FOR CONSIGNMENT “OWNER’S MANUAL”

I THE UNDERSIGNED _____

RECEIVE, TODAY (date) _____

AT (place) _____

THE “OWNER’S MANUAL” IN THE ENGLISH LANGUAGE

OF THE YACHT MODEL _____

CIN _____

IN THE CAPACITY OF THE OWNER/OWNER’S REPRESENTATIVE

(_____)

OF THE YACHT SPECIFIED ABOVE.

SIGNATURE FOR ACCEPTANCE AND RECEIPT

_____

NOTE THIS FORM MUST BE COMPLETED AND SENT TO THE BUILDER:

Cantiere del Pardo S.p.A.
Via F.lli Lumiére, 34 - 47122 FORLÌ (FC)
ITALY