cantiere del pardo

Grand Soleil 50’

Owner’s Manual 2004

cantiere del pardo

ALL YOU NEED TO KNOW ABOUT THE GRAND SOLEIL 50’

Project Classification

A

“OCEAN”: yacht designed for long voyages where conditions may exceed wind force 8 (Beaufort Scale) and significant wave heights of 4 m and above. Yacht widely self-sufficient.

IDENTIFICATION NUMBER

_____

CE

USE AND MAINTENANCE OF THE SINGLE PARTS

cantiere del pardo

Grand Soleil 50'
Owner's Manual
Introduction

This manual has been conceived with the aim to provide you with an effective helpful instrument in order to use your yacht safely and with great satisfaction. It contains all details about the boat, the on-board installed systems or the ones you might want to install later, the equipment and other instructions for the practical use and general maintenance.

We recommend you to read it carefully in all its parts in order to become familiar with your yacht before using it.

Each detail has been studied and calculated to guarantee the highest level of safety even in the worst sailing conditions. However, wrong manoeuvres or lack of timing, in case of adverse meteorological conditions, could endanger the yacht's integrity and the people's safety.

For this reason, if this is your first yacht or if it is a new model which is not familiar to you, for your safety and fulfilment, please be sure to have attained a good experience in manoeuvring and using it before tacking over its command. Your dealer or the official Sailing Federation of your country will be glad to recommend you a local nautical school or a qualified instructor.

PLEASE KEEP THIS MANUAL WITH CARE IN A SAFE PLEACE AND GIVE IT TO THE NEW OWNER IN CASE YOU DECIDE TO SELL YOUR YACHT.

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Preface

This manual has been conceived by Cantiere Del Pardo to provide the owner of the Grand Soleil 50’ with an instrument that allows him to perfectly know his yacht and then better appreciate its qualities, exploiting entirely its technical power.

Obviously, this manual cannot replace the fundamental knowledge and sophisticated seamanship required to sail and keep in perfect working order a yacht of the same class as the Grand Soleil 50’.

It goes without saying that the user of such a yacht as the Grand Soleil 50’ should have gained the necessary experience, which a manual can neither substitute nor complete.

We strongly recommend the user to follow very carefully all advices and warnings provided by the Builder in this manual, so as to be able to take full advantage of the yacht’s performance, in full safety.

The Grand Soleil 50’ is a yacht built first of all with the aim to guarantee the best possible performances while sailing. It is the result of a great effort made by Cantiere del Pardo to build an extremely pleasant and comfortable boat, selecting very carefully the most qualified systems and equipment, to obtain a very innovative product.

In addition to all technical data provided by the yacht’s manual, **we recommend you to read carefully all attached manufacturers’ manuals and booklets about the various components and equipment installed on the yacht**. Therefore, please consult all available information provided for a correct use and maintenance of the various systems and components.

This manual includes information and advices about most of the equipment that can be installed on the boat, regardless of whether it is standard or optional. **Therefore, only the list in force at the moment when you buy the yacht will tell which equipment or components are standard and which ones are optional.**

Cantiere del Pardo reserves the right to modify or change the type and position of any equipment, accessories and design described in this manual, completely at its discretion.

We recommend the user not to take anything for granted, but to always consult this manual before carrying out any intervention which is not routine boat steering or maintenance.

We remind the user that the yacht is delivered with the optimal structures and in the optimal conditions for people and things safety. All modifications must be carefully studied and calculated in order not to jeopardize the yacht’s integrity.

Cantiere Del Pardo

How to consult this manual

This manual contains all information, illustrative diagrams and illustrations concerning not only the knowledge, use and maintenance of the yacht, but also its systems and accessories.

Each chapter is highlighted as follows:

Electrical system

The subjects dealt with in each chapter are presented as in the following layout:

Instructions

The subjects are analysed as follows:

- description
- instruction for use
- warning and caution
- maintenance.

Where necessary for a better clarity, references to the illustrative diagrams are made specific.

Each chapter deals not only with a particular subject, but also with its related systems and accessories.

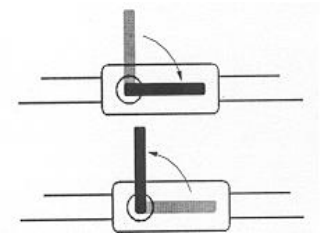
Glossary of terms

Starboard – Port

The terms "**starboard**" or "**port**" refer to the direction from which we look at the boat, that is **from stern to bow**. When an explicit reference is made to another direction the term *starboard* is replaced by **right**

Closed - Open

The terms "**closed**" or "**open**", when referring to a 90° control closing valve, always indicate the position of the open/close lever:



- when the lever is **parallel** to the valve itself and to the pipes, the valve is **open**;
- when the lever is **transverse** to the valve itself and to the pipes, the valve is **closed.**

Reference symbols

Danger

They indicate the possible presence of a grave risk that could cause death or serious accidents if the appropriate precautions, according to the type of danger indicated by the symbols, are not taken.

Warning

It indicates the presence of a risk that could cause accident or death if the appropriate precautions are not taken.

Caution

It indicates a recall to the application of safety regulations or a warning on unsafe behaviours that could cause accident to people or damages to the boat and its components.

Attention

It recalls the attention to the **waste of dangerous substances in the environment.**

Maintenance

It recalls the attention to the necessity to take precautions or observe safety regulations for a correct maintenance.

Use

It recalls the attention to the necessity to adopt maintenance rules regarding a particular dealing subject.

Notes on environmental pollution and accident prevention regulations

The following brief summary of the current EC regulations on environmental pollution and accident prevention is valid only if the boat is used for private use without crew officially employed on board.
These regulations derive from the **International Convention for the safety of life at sea** signed at London on the 1st of February 1974, and following revisions and modifications.

Environmental pollution and waste disposal

The environmental pollution is divided into three main categories:

Water
Air
Soil

- Oil-free and black waters (*those containing only human organic wastes*) can be discharged in open sea. Within costal area they should be kept in suitable tanks and then discharged either in open sea or through adequate fixed emptying systems available on the quay or by trucks for sewage draining.

- The regulations on the air pollution produced by a boat essentially prohibit the use of spray cans containing C.F.C. gas and limit the external noises that, at a distance of 5 m from the perimeter of the boat, should not exceed 65 dB (a) (decibels) from 6h to 22h and 55 dB (a) from 22h to 6h.

- The soil pollution concerns the wastes discharged on land.

The EC regulation n. 91/689 concerning pleasure boats provides as follows:

- While sailing, it is forbidden to discharge into the sea any kind of non-biodegradable products, both foodstuffs and commercial products.

- Within costal area "**normal wastes**" are considered the same as "**urban wastes**" and therefore can be kept in hermetic plastic bags and then thrown into the trash bins.

- The "**special wastes**" must be placed into suitable containers or, if not available, given to the local collectors in conformity with the current regulations issued by the local harbour-master's office. These special wastes are:
  - oily waters and mixtures (*such as bilge water*)
  - black and/or grey waters from toilet or sinks
  - oils (*fuels, additives and lubricants*)
  - chemical substances labelled "**TOXIC-NOXIOUS**" (*battery acid, paints, thinners, including their containers*)
  - spray cans containing C.F.C. gas
  - exhausted batteries in general
  - expired flares
  - expired medicines
  - products containing lead, mercury or asbestos
  - etc.

Remember that, according to the EC laws, until the above-mentioned wastes will not be given to the *collectors,* you will be considered *holder* and consequently prosecuted in case of illegal dumping. Should the trash bins not be available in the harbour area, the competent authority for the dumping is always the harbour-master's office.

Main accident prevention regulations (See also the chapter on Safety at page 104)

Although most of the recommendations concerning the accident prevention are dealt with in each chapter, we think useful to remind you some general rules.

- First of all, it is important to make sure that all compulsory safety equipment is approved by the law (with a clearly visible label) and that the periodic check is valid. The above-mentioned equipment includes:
  - floating devices (life jackets, lifebelts or "horseshoe-shaped" lifebelts with light buoys and life rafts o auto-inflatable life rafts);
  - distress signals (flares and smoke signals, EPIRB and/or LOCAT, VHF and SSB);
  - fixed and portable fire extinguishers (an adequate number, easily accessible and well indicated);
  - approved first aid kit with valid medicines.

Advices

- Make sure that the safety equipment (life raft, lifebelt, etc.) is always available and ready for use, communicating its position and showing its use to all passengers.
- Do not leave the portholes, hatches and peaks wide open. They could be dangerous pitfalls!
- Check that all handrails, deck walkways and the nonslip surface on the deck hatches Plexiglas and on the stairs are well fixed, in good conditions and free from slippery and oily substances.
- Check periodically the efficiency of the equipment: steering gear, standing and running riggings, winches, blocks, etc.
- Avoid approaching the engine when it is in motion.
- Cantiere Del Pardo delivers all its boats completely well finished and therefore free from dangers of accidental abrasions. In case you add extra fittings, make sure that you do not leave exposed sharp and cutting objects such as screws, bolts or sharp edges in general.
- We also want to remind you that the above-mentioned International Convention for the safety of life at sea provides, among other things, that it is compulsory, at least once a year and, in any case, before any international voyage, to carry out a rescue simulation at sea introduced by seven or more whistles or short siren soundings followed by a longer one and that, at the end, this operation has to be described and recorded in the log book.
- Finally, we recommend you to use sailing gloves and deck shoes while manoeuvring.

Main fire-proof regulations

Although the best materials are used, like fibreglass and wood, which contribute to the creation of a valuable boat, they easily burn. Therefore, do not hesitate to scold people, when necessary, to avoid and prevent dangerous behaviours that could cause fire risk.

One of the main fire causes is the failure of the electrical system, caused by the devastating action of the marine environment that oxidizes and corrodes the electrical contacts, and that becomes an even more dangerous risk in case of neglected maintenance.

We recommend you to follow the advices contained in this manual and in those of the manufacturers of the other equipment, in order to minimize the fire risks. In particular:

- do not smoke while inspecting the bilges, the batteries container, or while reaching the engine or the fuel tank room;
- do not use any fire or flames, either inside or outside the boat;
- do not stow containers or cylinders containing inflammable or dangerous substances in the peaks;
- observe all use and maintenance rules listed in the paragraph on the gas system;
- do not use portable or provisional heating devices, especially if they have flames;
- check frequently the rooms and bilges next to the engine room in the very first hours of sailing.

If, notwithstanding all precautions taken, a fire happens, intervene as soon as possible cutting off the electrical current from all systems, and remember to use:

- fire extinguishers or water in case of solid materials like cloths, coverings, wood, etc.;
- portable dry powder extinguishers in case of electrical components, fuel, oil, etc..

Finally, we want to remind you that the owner has to equip the boat with the necessary portable fire extinguishers to promptly intervene in case of fire.

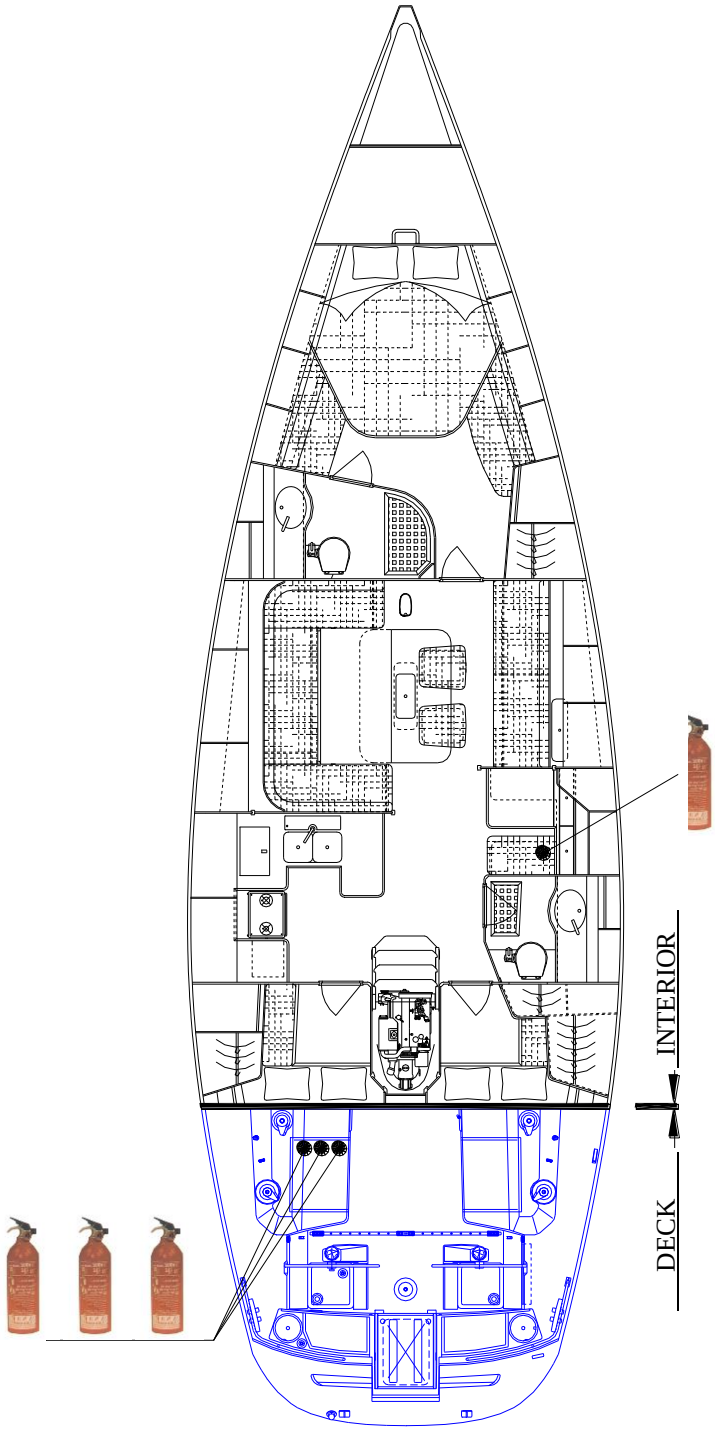
According to the Safety Regulations in force, for boats with diesel engine of less than 73,5 Kw (100 HP) power, at least 1 kg. portable dry powder extinguishers duly approved by RINA must be available in easily accessible locations and ready for use in the following strategically most dangerous places (see diagram at the next page for the location suggested by Cantiere del Pardo):

- N° 1 for the galley, instruments and electrical equipment in the chart area and in the cabins;
- N° 2 (or one of 2 kg.) for the engine and its systems;
- N° 1 for the aft peak and deck equipment.

Since the Safety Regulations for pleasure boats transfer any responsibility for the efficiency and good preservation of the fire extinguishers to the shipowner, we advise you to check them, or make experts check them, asking for the appropriate receipt, frequently or at least at the beginning of each season.

We remind you that you have to indicate the position of each fire extinguisher by applying the special red signs in well visible points.

Suggested location for the portable fire extinguishers



- **In case of fire it is advisable to gather all extinguishers together in order not to allow the fire to regain its strength while you are changing extinguisher.**

- After using a dry powder extinguisher, it is advisable to immediately clean up the affected areas to avoid its damaging and corrosive effects.

Technical data

Designer	Builder
JUDEL/VROLIJK-ROSEO	**Cantiere Del Pardo**

Specifications

Hull material		PRFV
Length overall ISO 8666	m	14,97
Length overall hull ISO 8666	m	14,92
Length waterline ISO 8666	m	13,20
Maximum beam ISO 8666	m	4,58
Width waterline ISO 8666	m	3,75
Moulded depth	m	1,87
Lead bulbs (shallow/medium/deep bulb)	Kg	3.850
Draft (shallow/medium/deep bulb)	m	2,30
Full load displacement	Kg	15.187
Displacement	Kg	13.080
Downflooding angle	Degrees	113
Berths	n°	6/10
Passengers maximum capacity	n°	12
Maximum load (passengers + luggage)	Kg	1372
Fuel tank capacity	Kg/l	235/300
Water tank capacity (n° 2)	Kg/l	500
Propulsion (masts n° 1)		Sail
Sail area	m^2	152,75
Diesel inboard aux engine (n° 1) max.	Kw/HP	55,2/75
Rudder control		Remote control
Gross tonnage	Tsl	27,80

Certification

Certifying Authority

I.M.C.I - INTERNATIONAL MARINE CERTIFICATION INSTITUTE
Rue Abbé Cuypers 3 - B-1040 Brussels (BELGIUM)

Certificate n° …….. Issued ……

Sail area

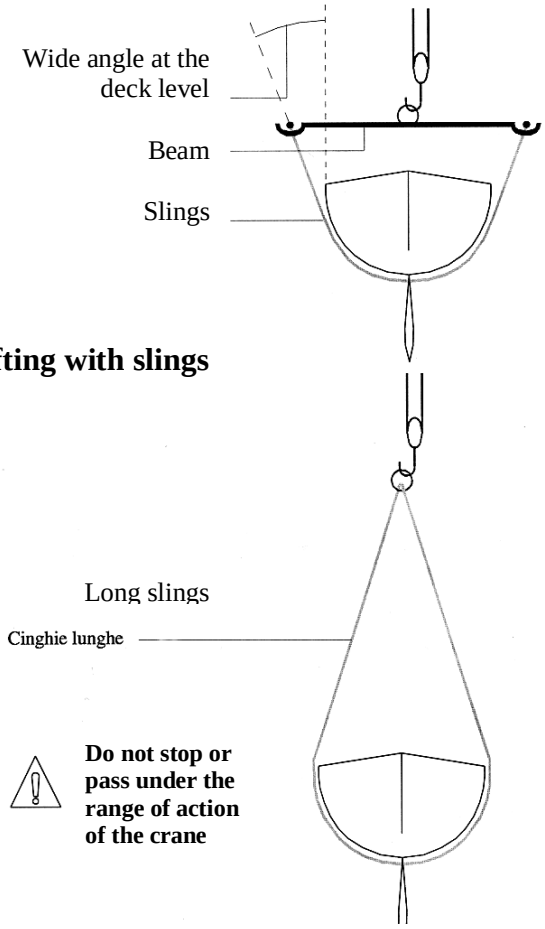
		Standard Mast
Mainsail	m^2	54,69
Maximum genoa	m^2	69,49
J = 5,84 LP = 8,176	P =	16,40
	E =	5,80
	I =	17,00

Haulage and launch

The haulage and launch of boats like the Grand Soleil 50' is a delicate operation to be carried out only in well-equipped shipyards under the supervision of skilled technicians.

Lifting

Lifting with beam



Lifting with slings

Do not stop or pass under the range of action of the crane

Before starting the lifting operation, carry out the following checks:

- In order to avoid an excessive slings pressure at the deck level, we recommend you to join the slings to a beam large enough to allow them to stay vertical or preferably with a wide angle at the deck level while being tightened.
- If you are unable to find a beam, make sure that the lifting slings are long enough to avoid a too narrow angle at the deck level, which could cause an excessive pressure.
- Rinse the internal part of the slings and, if possible, cover it with packing plastic to prevent the slings, while being tightened, from scratching, dirtying and removing the antifouling paint of the bottom or the gel coat of the sides.
- Remove the label from the log transducer, if installed.
- Make sure that the slings are steadily fastened or joined together in order to prevent them from sliding towards the extremity of the hull releasing the hold.
- Make sure that the lifting slings have been positioned in a correct way so as not to damage the S-Drive step with its propeller.

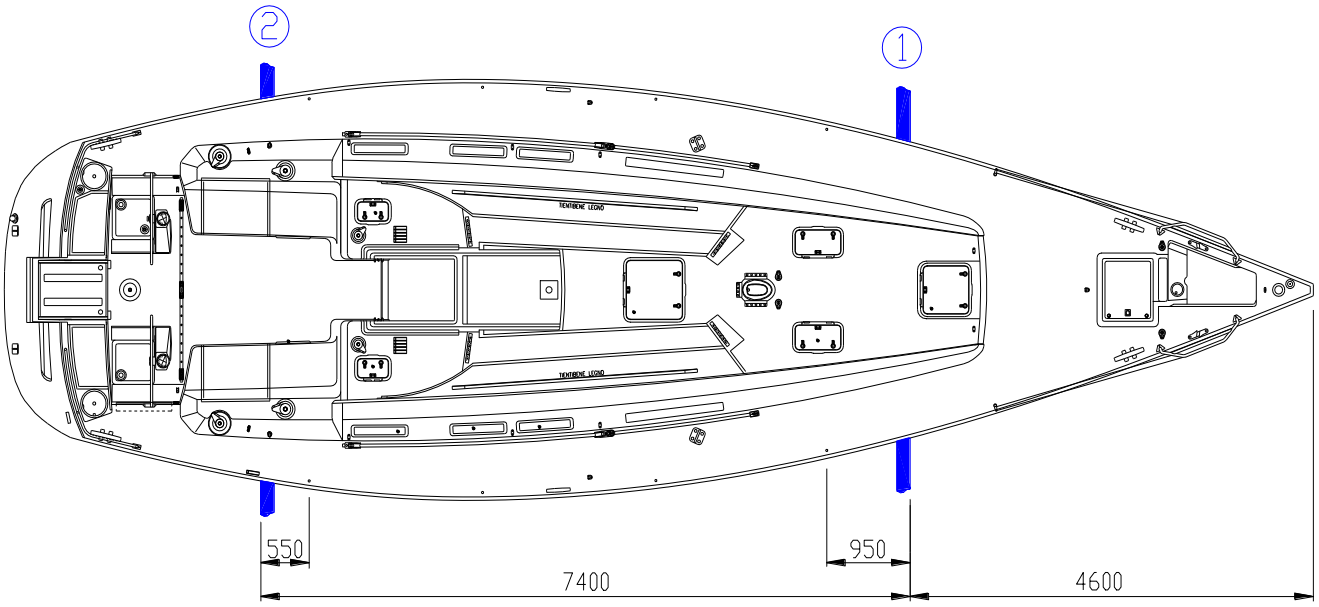
- Do not stop or pass under the range of action of the crane.

For a well-balanced lifting of the Grand Soleil 50' we advise you to position the slings as follows (see also diagram at the next page):

- **Fore sling:** 4,60 m from the extreme bow, that is about 95 cm abaft the 2nd stanchion (from the bow).
- **Aft sling:** 7,40 m abaft the previous sling, that is about 55 cm abaft the last stanchion towards the stern.

Sling points for lifting

1. Fore sling
2. Aft sling



Attention

The recommendations given are valid only in case of regular yacht's trim and well-balanced loads on board.

Warning: **While positioning the slings, pay attention to the S-Drive step, the propeller and the log transducer.**

Mast

The mast, with 9/10 rig, is equipped with two sets of swept spreaders (that is to say slightly tilted astern of about 20°) and, passing through the deck, fits itself into a suitable slot in the metal mast-step, which is directly leant and fastened on the hull ribbings.

Transverse supporting

The entire transversal supporting is made of stainless steel spiral cable or, upon request, of stainless steel rod. On the transversal side the mast is supported by: higher continuous shrouds; discontinuous intermediate shrouds and lower shrouds, all aligned with the same axis (see figure "A").

Longitudinal supporting

On the longitudinal side, the mast is supported only by the forestay and the backstay (see figure "B"). The spreader swept allows to not use loose baby stays and shrouds. A double backstay is also inserted, to adjust the mast curvature in certain sailing points or to keep the forestay always tightened if the genoa furler is installed.
The entire longitudinal supporting is made of stainless steel spiral cable or, upon request, of stainless steel rod.

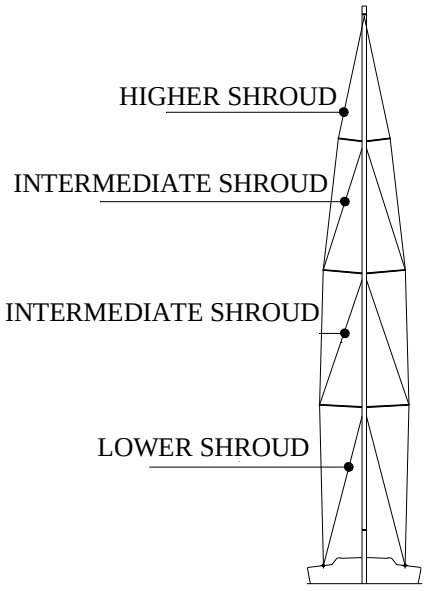


FIGURE "A"

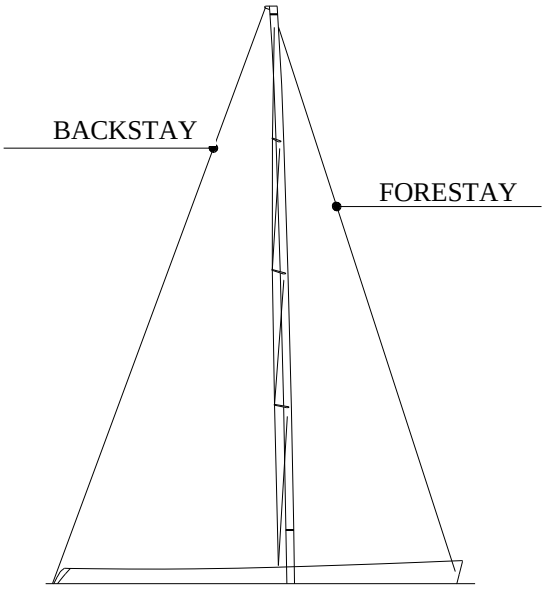


FIGURE "B"

General guidelines on standing rigging adjustment

The mast of the Grand Soleil 50' has been studied and calculated according to the highest safety standards.

The yacht is normally delivered with the rigging already adjusted by specialized staff and sealed with lead in order to avoid tampering which could endanger the people's and the yacht's safety.

After some weeks a new rigging adjustment could be necessary because of the normal stretching of the rigging, particularly sensitive if it is made of spiral cable. Cantiere del Pardo is able, at the customer's request, to put at his disposal a skilled technician for the above-mentioned final adjustment.

In that occasion, all adjustment systems will be sealed with lead again. It is important not to remove any piece without the written consent of Cantiere del Pardo for the whole warranty period.

In any case, we recommend you to be careful, taking the necessary precautions, as an incorrect use of the standing and running rigging regulation system, could subject the mast and the rigging itself to anomalous, excessive and then unnecessarily risky effort.

Backstay: instructions and warning

The backstay, doubled in order to be connected to the two chain plates fixed to the transom, can be adjusted by the provided turnbuckle, which is usually mechanical or, upon request, hydraulic. Should a hydraulic turnbuckle be mounted, its manual pump is installed on the starboard cockpit vertical side, towards the stern. Inside the peak, under the starboard cockpit seat, there is the storage tank for the hydraulic liquid.

Please find some general directions for adjusting the backstay:

- When sailing close-hauled the turnbuckle has to be adjusted according to the force of the wind in order to reduce the forestay sag: the stronger is the wind, the higher will be the tension.

- When sailing off wind, reduce the tension just enough to eliminate the excessive forestay slack which could prejudice the mast support.

- We also remind you to occasionally check the hydraulic liquid level in its tank.

Rigging adjustment

Looking at the mainsail split from the bottom upwards, when the mast is under heavy loading, it should be as straight as possible to the transversal plane.
It is advisable to check periodically the rigging tension and eliminate any further slack with one or more turns of the turnbuckle.

- If, for any reason, you need to tune the mast again or to check the overall condition of the rigging adjustment, to ensure the maximum safety of the boat and the optimisation of its performance, we advise you to consult the Cantiere Del Pardo technicians or other experts of the field.

Advices on rigging adjustment

These directions and advices for the rigging adjustment are intended for the technicians who will carry out the operations described below.

Please find, purely as information, a brief memorandum on rigging adjustment:

- when the boat is at the dock with lower sail, check that the backstay is not in tension;
- tighten enough all shrouds in order to eliminate their slack;
- now, looking at the mainsail split from the bottom upwards, it should be as straight as possible;
- tighten the higher shrouds with two or three full turns of the turnbuckle;
- then, before adjusting the lower shrouds, it is necessary to gradually put the mast under sail at heavy load, preferably at bowline and with the backstay tightened;
- adjust the shrouds on the leeward side on both tacks so that the attachments of the boom, of the spreaders and of the tightened mast are all on the same transversal plane.

Mast periodic checks and warning

- Check frequently the halyards conditions: if you notice any wear sign, replace them immediately.
- When hoisting the sails, tighten the last centimetres of the halyards with great caution, as, if you tighten too much, the splice to which the shackle and the snap shackle are attached may enter in the mast pulley and consequently get caught or be damaged.
- In this connection, we recommend you to install the special nylon stop-balls on the halyards ends; they prevent the splice from entering into the pulley.
- In any case, we recommend you to mark on each halyard, with indelible ink, the security point beyond which you must never tighten the halyard.
- Check frequently the wear conditions of the shrouds and the stays, in particular near the splices.
- If the mast is equipped with spiral cables, check frequently the cables in general as well as the splicing point. If you notice even one single broken wire, replace immediately the shroud or the stay.
- Check periodically that there are no cracks in the point where the spreaders are attached to the mast; if you see any crack, consult immediately a technician of the mast manufacturer.

- Check the turnbuckle thread: the males with right and left thread must be screwed into the females with the same number of turns and for a sufficient length to ensure the hold, that is a distance at least equal to the diameter; check the fixing of the security split pins to avoid tearing the sails.

- Make sure that the padding of the spreaders ends is always in good condition to avoid tearing the sails.

- Check periodically that there are no water infiltrations from the gasket of the mast partner on the deck.

Mast maintenance

- Wash frequently with fresh water the turnbuckles and the halyards lead-blocks.

- Never cover the turnbuckles with plastic pipes or adhesive tape since they prevent ventilation.

Caution on mast stepping and unstepping

These directions are intended for the technicians who will carry out the operations described below.

Stepping and ustepping the mast are delicate operations which should be carried out very carefully to avoid injures to people and damages to the boat and things.

The section of the mast below deck is positioned between the dinette table and bulkhead towards the bow and leans on the provided mast-step, which is fixed on the hull.

Before stepping or unstepping the mast, we recommend you to follow these directions:

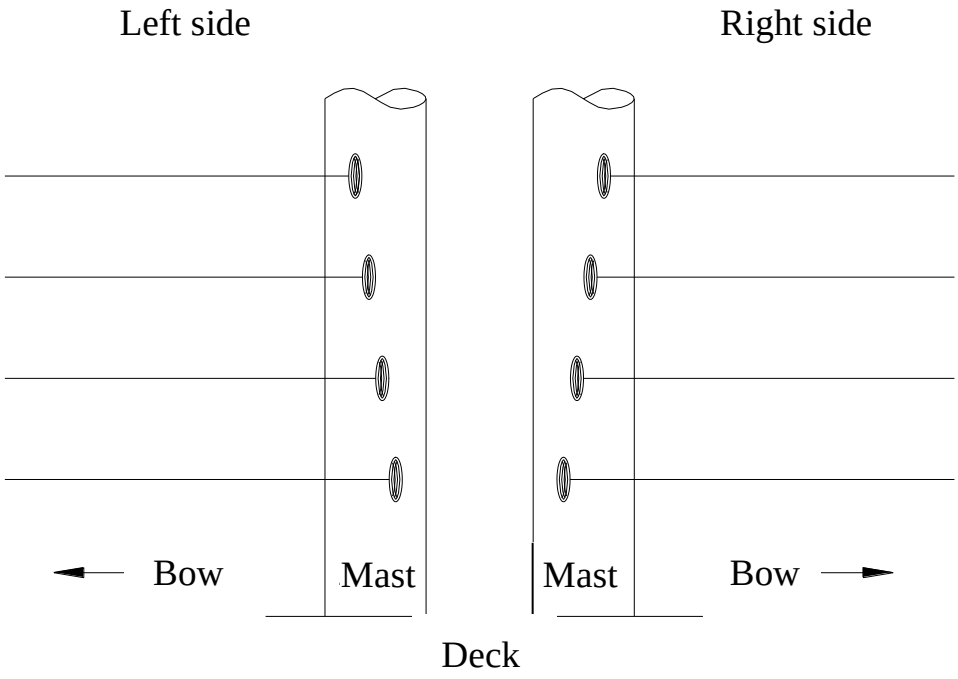
- Make sure that mast raising sling is in good condition, suitable for the effort and firmly fixed.
- It must be positioned above the mast centre of gravity (that is towards the mast head), so that, when you raise the mast, this will naturally hang vertically.
- Tie the two long ropes at the lower spreaders ends; they will serve as "bridles" to adjust the transversal position of the mast and to fit together the step and the mast slot.
- While the mast is hanging, do not stop either under its possible falling range or under the action range of the crane.
- Operate preferably with the boat on the cradle. If you operate while mooring your boat, choose a quiet moment with calm sea.
- Unplug the different electrical and equipment cables coming out near the mast partner and check that they are fixed so as not to be crushed during the operation.
- Remove the shrouds with turnbuckles used for securing the mast to the deck. The plastic partner between the mast and the deck should follow the mast while extracting it, with no need for you to intervene.
- Before raising the mast in order to install it again, check that the masthead equipment (VHF aerial, wind equipment, Windex, lights, etc.) is installed.
- Check that the pivots, the cotter pins and the attachments of the shrouds are firmly fixed.
- Check that the shrouds and the halyards are not twisted.
- Check the padding of the spreaders ends: if in bad condition, replace them. They are fundamental to avoid tearing the sails.
- Pay particular attention to the mast descent and ascent in its slot in order to give the exact directions to the crane operator.

- Finally, we remind you to install very well and properly adjust the shrouds with the turnbuckles for securing the mast to the deck and to plug in the electrical cables.

- Pay particular attention to the backstay or to the genoa furler, if installed: hitting them accidentally or bending them excessively could irreparably damage them.

Diagram of halyards exits on the mast

Since it is possible to install different kinds of masts, both in terms of materials and equipment, according to the shipowners' specific requirements and the suppliers' building choices, we cannot establish a common standard layout of the halyards exits on the mast. In any case, we insert the following diagram and advise the shipowner to complete it, in order to have a useful memorandum when stepping the mast or replacing a halyard.



Anti-corrosion anodes

The following anti-corrosion anodes are installed on the Grand Soleil 50' protecting the metal parts exposed to the galvanic currents. They are mounted on:

◊ **S-Drive step**
◊ **Engine** (see manufacturer's manual)
◊ **Water heater** (see manufacturer's manual)
◊ **Generator engine** (if provided) (see manufacturer's manual)
◊ **Grounding plates in the bottom of the hull** (if provided)

These anodes must be checked as follows:

S-Drive step

The S-Drive step anode is the most exposed to the galvanic currents. It is installed on the step itself, facing the propeller.

- It must be inspected every time the boat is hauled or at least 2 or 3 times per season.
  If it is more than 50% corroded, replace it as soon as possible. To judge its corrosion level, compare it with a new one.

Propulsion engine and generator engine

- To position the anode on the engine please consult the engine use and maintenance manual, delivered separately.
- Inspect and replace it according to the manufacturer's directions.

Water heater

- To position the anode in the water heater and to inspect and replace it, please consult the water heater use and maintenance manual, provided by the manufacturer and delivered separately.

Grounding plates

If installed, you will find them in the bottom of the hull, next to the keel.

- For inspection and replacement, please refer to the directions given for the S-Drive step anode.

General warning

- If you realize that one or more anodes deteriorate very quickly, it could be caused by a possible leak in the electrical system of the boat, or it could be due to the proximity of conductive masses in very salty waters.

- In the first case, the entire electrical system should be checked by a competent naval electrician.

- If, on the contrary, no signs of deterioration are present at the end of the season, it is advisable to check the contact between the anodes and the wires.

Yacht’s trim

In normal load conditions, the Grand Soleil 50’ perfectly floats and sails.

However, as for any other boat, if the normal rules for the loads distribution on board are not observed, the boat could get out of its ideal trim and turn out to be too down by the stern, the head or the side.

These drawbacks, within limits, do not create serious problems, but may prejudice the sailing performances of the boat and, more generally, the sailing comfort.

For this reason, we recommend you to follow these rules when loading on board any sort of material:

1. limit the load of weights carrying on board only necessary items;

2. distribute uniformly the load throughout the boat, trying to concentrate the heaviest items in the lower central part of the boat;

3. do not overload excessively the extremities of the boat, in particular the bow, as, if it is too immersed, the navigation will become worse and the pitching will increase;

4. if possible, also distribute uniformly the load throughout the transversal plane; anyway, if you realize that the boat leans to one side after loading it, do not worry, as the transversal trim is not as important as the longitudinal one;

5. in any case we remind you to observe the directions in the “Builder’s plate”, posted on the cockpit sternpost, indicating the maximum number of passengers (12) and the maximum total weight of passengers, luggage and life raft (1372 kg.) allowed.

Deck fittings and hardware

The deck equipment components of the Grand Soleil 50' are the best one available in the market.

The hardware and carpentry components are made of AISI 316 stainless steel, the best one for the marine environment.

The hardware and carpentry components are mirror polished and protected by appropriate packing during the entire production cycle.

In the diagram at the next page you can find the list of almost all fittings you can install and their position. The last lines (the first ones of page 27) can be used as a memorandum, noting down the position of the various halyards and sheets wound around the winch on the deck house (at position 49, the starboard halyards and at position 50, the port halyards). We advise you to do it, as you will find it very useful as time goes by.

Deck fittings identification

Should a detailed identification of the deck fittings be required, we advise you to refer to the data printed on the fittings themselves and to contact the manufacturer.

General warning

- Do not attach any rope, such as sheets lead-blocks or others, to the teak toerail or to the stanchions, but only use the provided fittings for their specific purpose.

Maintenance

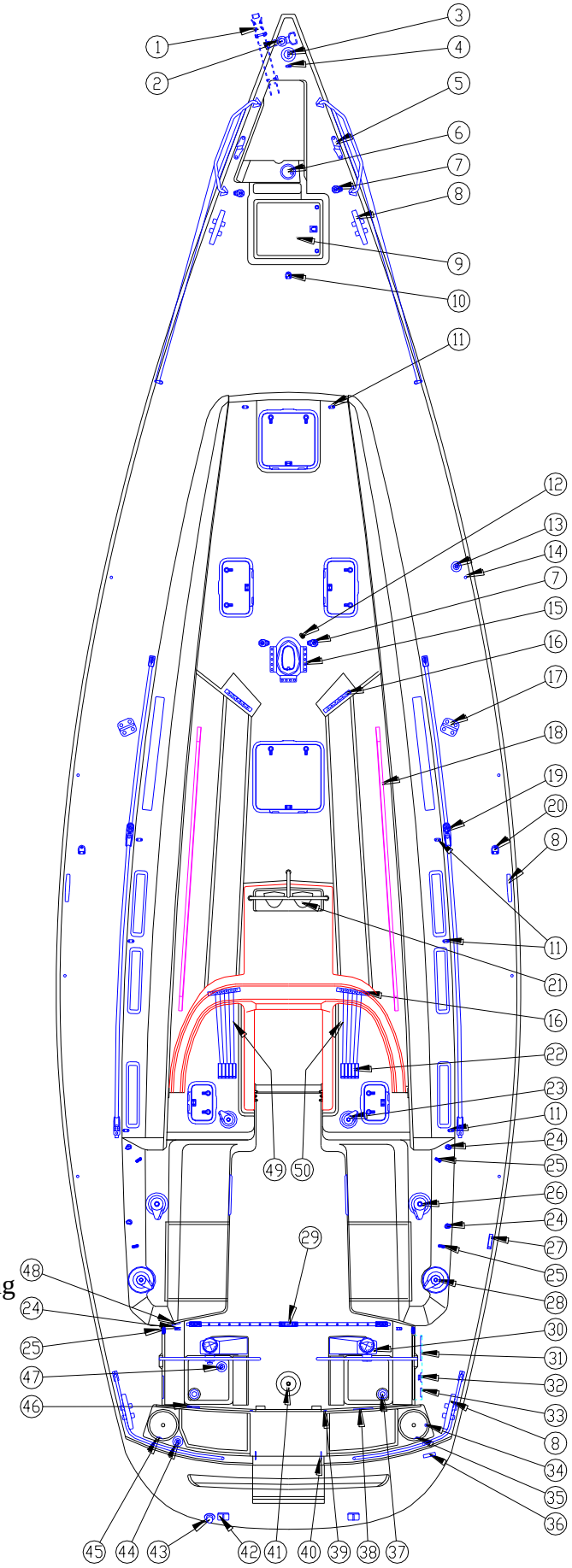
- Despite its name, the stainless steel is subject to corrosion and oxidation; the marine and mooring environment can damage this material in case of inadequate maintenance.

- What we have just mentioned also applies to each metal component of the deck, including the anodized aluminium alloy fittings, such as tracks, the hatches and portholes frames, etc.

Deck fittings and hardware location

1. Anchor bow roller
2. Anchor bow roller catch
3. Forestay chain plate (internal)
4. M.P.S. eyebolt
5. Mooring rope fairlead
6. Windlass (inside anchor peak)
7. Lead-block
8. Mooring cleat
9. Sail locker hatch
10. Wichard eyebolt diameter = 8 mm
11. Deck fairlead
12. Mast cables exit
13. Black waters suction fitting
14. Black water tank vent stanchion
15. Fastening points for lead-blocks on mast step
16. Single cheek block for halyards
17. Side shrouds chain plates
18. Deck handrails
19. Genoa track with sheet traveler
20. Wichard eyebolt diameter = 10 mm
21. Dorades with stainless steel protection
22. Stopper for halyards etc.
23. Winch for halyards etc.
24. Lead-block for genoa track ropes
25. Jam cleat for genoa track ropes
26. Spi sheet winch
27. Stopper for genoa furler rope
28. Genoa sheet winch
29. Mainsail sheet track and traveler
30. Steering wheel pedestal with compass
31. Engine control panel
32. Accelerator/reverse gear control
33. Cockpit shower with tap
34. Fuel tank vent
35. Starboard water tank vent
36. HIN (Hull Identification Number)
37. Cockpit drain scupper
38. Builder's plate
39. Safety belt fastening
40. Engine ventilation grille
41. Cap for accessing the rudder spare shaft housing
42. Backstay chain plate
43. Engine exhaust
44. Fuel filler
45. Port water tank vent
46. Manual bilge pump
47. Water filler
48. 220 Vac outlet for shore supply

- continued -



49a	…….……..	50a.	…….
49b	…….……..	50b.	…….
49c	…….……..	50c.	…….
49d	…….……..	50d.	…….
49e	…….……..	50e.	…….
49f	……. ……..	50f.	…….

Running rigging (sheets, halyards, etc.)

On the Grand Soleil 50’ there are entirely textile halyards.

Warning and caution

- Check frequently all running rigging wear; if you notice any broken or worn wire, replace the cable as soon as possible.

- When the sail is hoisted, tighten the last centimetres of the halyards with great caution, as, if you tighten too much, the halyard end, to which the shackle and the snap shackle are attached, may enter in the mast pulley and damage it.

    - In this connection, we recommend you to install the special nylon stop-balls on the halyards ends; they prevent the halyard end from entering into the pulley.

    - In any case, we recommend you to mark on each halyard, with indelible ink, the security point beyond which you must never tighten the halyard.

Running rigging tables

The Grand Soleil 50' is normally intended for experienced crews that could have different knowledge and habits. Therefore, the yacht could be equipped with considerably different equipment, as far as its location and brand names are concerned, and each boat could have a different type and length of the running rigging. For this reason, it is impossible for us to fill in exhaustively the following two tables.
In any case, we advise the shipowner to fill in them, so that he can have a useful memorandum to consult, if necessary.

Running rigging	**Type**	**Mast size (ml)**		**Ø** (mm)	**Mast end**
		Standard	**Taller**		
Mainsail halyard					
Boom topping lift					
Outhaul					
I° reef band					
II° reef band					
III° reef band					
Genoa halyard n°1					
Genoa halyard n°2					
Spi halyard n°1					
Spi halyard n°2					
Spinnaker pole uphaul					

Running rigging	**Type**	Length	**Ø**
Sheets and tackles		(mm)	(mm)
Mainsail sheet			
Vang			
Main traveler (x2))			
Genoa sheets (x2)			
Spi sheet n°1 (x2)			
Spi sheet n°2			
Spinnaker pole downhaul			

Useful tools aboard

On the Grand Soleil 50’ no standard supply of tools is provided.

We recommend you to carry on board at least the following basic supply of tools:

- a set of flat and cross screwdrivers of different sizes;
- a hammer and a mallet;
- a hand or battery drill, with bits of different diameter;
- some pairs of pliers, included at least one pair of grip pliers;
- a set of adjustable spanner wrenches, both open ended and close ended;
- a set of Allen spanners;
- some file and rasps;
- big and small wire cutters;
- a punch;
- a saw and some spare blades;
- some knives;
- a metre stick;
- a tape measure;
- lubricants and anti-corrosive sprays;
- a small tank and a synthetic sponge;
- insulating tape, plastic-coated adhesive tape and some waterproof fabric;
- spare bulbs for the running lights;
- strong ropes for mooring and possible drawing;
- pipe clips, stainless and metric self-threading screws of various size and nuts;
- working gloves, rags, plastic funnel.

Genoa furler

The following directions do not replace the instructions provided in the manufacturer's manual, delivered separately.

◊ The genoa furler is an instrument which allows to quickly and easily furl the genoa around the stay.
The genoa furler also allows to sail with a partially reduced genoa; however, consider that in this case the windward performance is considerably worse than the one you can obtain with a proper jib of the same size.
Also notice that the considerable weight of the cloth and the small surface that can be furled reduce the yacht's performance with light breezes, compared to the ones you can obtain with a standard genoa.
In any case, we recommend you to install a furling genoa expressly designed for this purpose, with U.V. rays protection and opportunely reinforced in its fitting points.

Instructions

In order to avoid as much as possible the furling rope strain when hauling the sail, please follow these recommendations:

- Tighten the backstay to avoid excessive forestay sag, which could hamper the normal furling.
- Ease the genoa sheet so that at least ¾ of the remaining sail can always flap during the furling operation.
- Check that the spi halyard or other halyards are not fastened on the pulpit or on the handrail, but at the mast step, and that they are well tightened, to avoid jamming while furling up. We also advice you to slightly tighten the sheet so as to allow a tidy furling of the genoa.
- When unfurling the genoa we recommend you to gradually ease out the rope, leaving at least a turn around the winch to avoid sudden hits to the equipment.

Maintenance

- Replace the furling rope as soon as you notice any sign of wear.
- The bearings and the other parts of the furler must be frequently rinsed with fresh water according to the manufacturer's directions.

Water heater

The following directions do not replace the instructions provided in the manufacturer's manual, delivered separately.

- The water heater, which has a capacity of 25 litres and an electrical resistor of 1200 Watts, is installed in the room immediately above the engine and can be accessed by opening the highest door in the side bulkhead of the engine room, from both aft cabins (see diagram at page 69).

- It is made of treated and glazed steel, conveniently insulated and equipped with a safety valve and a drain tap.

Instructions

You can heat the fresh water by using:

- the electrical resistor in the boiler, supplied by the 220 V electrical circuit;

- the engine cooling water, that flows in the boiler through a by-pass on the engine and a coil in the boiler.

Please follow these instructions for starting the water heater:

- Check that the boiler is full by turning on a hot water tap.

- Turn on the FRESH WATER PUMP switch in the 12 Vdc electrical panel or check that it is already turned on, to enable the fresh water pump and pressurize the cold and hot fresh water of the system.

- Then, to heat the water by using the electric power you just need to turn on the WATER HEATER switch in the 220 Vac electrical panel (see page 57) (To be able to use 220 V power see the relevant chapter at page 50).

- To heat the water by using the engine please follow these instructions:

  - Check that the valves on top of the engine, that from now on we refer to as "engine-boiler circuit valves", are open. These valves, with their pipes, usually made of black rubber, link the engine cooling system to the fresh water heating coil; unless there is something wrong with the water heater or the circuit, they must be always open.

  - Start the yacht propulsion engine and the water heater will automatically begin working (provided that the engine-boiler circuit valves are open); normally, the water reaches a temperature of 50°-60°C after approximately 15 minutes, with the engine running at 1500 revs.

Warning and maintenance

The water heater contains hot water working under pressure.
Therefore, we recommend you to:

- check periodically the functioning of the drain valve in the lower part of the water heater;

- if you notice any water leak, immediately shut off the engine-boiler circuit valves, and/or the electrical resistor control switch, called WATER HEATER in the 220 Vac electrical panel;

- check the possible presence of leaks in the connecting pipes;
- replace the drain valve and the anti-corrosion anode following the manufacturer's instructions;
- in winter, drain all the water in the boiler through the drain valve into a bucket; this will avoid any serious damage from freezing.

We remind you that the water heater is equipped with:

- an adjustable thermostat which cuts the power supply when a certain temperature is reached, normally 60° C;
- a further safety thermostat, which also cuts the power supply, should the other one not work and should then the water overheat. In case this further thermostat cuts the power supply, it can be manually restored after detecting the malfunction causes.

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Battery charger

The following directions do not replace the instructions provided in the manufacturer's manual, delivered separately.

- The battery charger is an electrical device which works under tension. Supplied by 220 Vac current, it transforms and rectifies this current in order to supply it at a suitable voltage for charging the batteries.

- The type usually installed has a charging capacity of 60 Ah and is well visible under the chart seat (see diagram at page 60).

- It has its own ventilation system for the necessary cooling, while in the bottom of the room where it is located there are appropriate ventilation holes.

- The battery charger has an automatic monitoring device that supplies the necessary current to the battery, avoiding possible damages caused by excessive voltage load.

Instructions

The battery charger has to be supplied by 220 Vac electrical current to function. This power can be supplied by the shore network or by the on board generator, if provided.

To operate the battery charger, do as follows:

- Make sure that all magneto-thermal switches of the 220 Vac electrical panel (see page 57) are disconnected.

- Check that the 220 Vac SELECTOR handle is in OFF position (in the 220 Vac electrical panel).

- Connect the 200 Vac shore supply plug, rotating it halfway in the appropriate outlet located on the head abaft the port cockpit seat.
  Never operate either with wet hands or barefoot, especially when there is water.

- In addition to the above mentioned shore supply, you can also operate the on board generator, if available, to be supplied with 220 Vac electrical current.

- Once you have chosen one of the two solutions described above, you have to set the 220 Vac SELECTOR to the relevant position:

  - S. SUPPLY if using the shore supply.

  - GENERATOR if you are operating the generator.
    A red LED will indicate it is connected.

- Start the 220 Vac installation "Main Breaker" switch, located in the 220 Vac electrical panel (see page 57).

- Turn on the "Battery Charger" switch in the 220 Vac electrical panel (see page 57). A warning light on the instrument indicates it has been started up and its functioning condition. We remind you that the battery charger charges all on board batteries at the same time, regardless of the position of the heavy duty battery switches.

- The 12 Vdc Voltmeter ("Dc Voltage"), located in the 12 Vdc electrical panel, indicates the tension in the 12 Vdc installation (see page 57)

Warning and caution

- The normal 220 Vac electrical supply may have considerable sudden changes in tension.

Warning: The 220 Vac installation cannot tolerate changes in tension of over 5%; therefore, if this should happen, you have to cut off immediately the 220 Vac supply by the 220 Vac Main Breaker switch, located in the 220 Vac electrical panel (see page 57).

Warning: in case of anomalous functioning, the battery charger could be source of electrocution and, in some cases, it could trigger combustion.

Therefore, be careful to:

- never leave the boat with the battery charger on;

- never open the protective cover of the battery charger without having previously disconnected the 220 V supply, by the above-mentioned "220 Vac Main Breaker" switch;

- avoid stowing objects in very close contact with the battery charger, as they could reduce the ventilation or short-circuit the cables.

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Propeller

- The Grand Soleil 50' is equipped with a standard 3 fixed blades propeller:

  Diameter: 17 inches (430 mm) - Pitch: 13 inches (330 mm) LH (counterclockwise)

- For a 3 folding blades propeller we suggest:

  Diameter: 17 inches (430 mm) - Pitch: 13 inches (330 mm LH (counterclockwise).

- With regard to the propeller, we remind you that the YANMAR standard engine of 55,2 Kw is equipped with a reverse gear which works with the same efficiency both clockwise and counterclockwise. This characteristic allows you to install both right-handed and left-handed propellers, by simply changing opportunely the joining position of the reverse gear remote control, so that pushing the control lever forward, when the engine is working, the yacht moves forward.

Warning

- If, while sailing, you hear the propeller spinning, it means that the forward gear is not in. It is better to put the engine in the reverse gear.

- Do not let the propeller spin while sailing.

- While normally using the engine, always wait some seconds for the engine idling before putting in or changing the speed. A too abrupt change of speed could damage the mechanisms of the reverse gear and/or of the adjustable or folding propeller.

- Do not change the propeller pitch, whether it is a fixed or folding or adjustable blades propeller, without having previously consulted the builder's technicians; a wrong pitch could force or damage the engine.

Maintenance

- As far as the possible folding or adjustable blades propellers are concerned, we recommend you to keep them clean, according to the manufacturer's directions.

We recommend you to consult the folding or adjustable blades propellers use and maintenance manual provided by the manufacturer and delivered separately.

Bow thruster

- The bow thruster, if provided, is installed at the bow, in the sail locker.

- The thruster usually installed consists of a compact unit and is a retractable propeller type, complete with all necessary equipment for its functioning.

- To control the bow thruster, immediately abaft the engine control panel there is another control panel with two push buttons to extract and fold back the bow thruster and a joystick, or two more push buttons, to turn to the starboard or the port side.

- Any foot control can be positioned on the cockpit bottom, near the above-mentioned control panel.

- For the bow thruster power supply there are:

  - a 2 positions heavy duty battery switch, installed on the starboard aft cabin headboard bulkhead (see page 60);

  - a protective fuse, in the container of the above-mentioned heavy duty battery switch;

  - a BOW THRUSTER magneto-thermal switch in the 12 Vdc electrical panel (see page 53);

  - a control panel, located in the deck cockpit starboard side, near the engine control panel (see page 60);

  - a box containing electrical equipment and protective remote control switches, on the bow thruster motor.

Instructions

To operate the bow thruster you need to:

- Turn on the heavy duty battery switch mounted on the starboard aft cabin headboard bulkhead or make sure it is already turned on.

- Turn on the BOW THRUSTER switch in the 12 Vdc electrical panel.

- Activate the button controls located in the relevant control panel with the following functions:

  - upper RED button to make the thruster go UP or come back;
  - lower GREEN button to make the thruster go DOWN into the sea;
  - Joystick towards the bow to move the bow to the PORT side;
  - Joystick towards the stern to move the bow to the STARBOARD side.

- A lever switch with the same functions of the above-mentioned joystick can be used instead of it. Pushing the lever towards the bow the yacht bow will move to the port side; pushing the lever towards the stern the yacht bow will move to the starboard side.
  The above-mentioned joystick can be also replaced by two WHITE buttons having the same functions (in this case there would be four buttons in the control panel, rhomboidally arranged):

  - forward button to move the bow to the PORT side;
  - abaft button to move the bow to the STARBOARD side.

- In case of using four aligned foot controls, their functions, normally shown on each control, are:

  - External buttons:
    - The forward button to make the thruster go UP or come back;
    - The abaft button to make the thruster go DOWN into the sea;

  - Internal buttons:
    - The forward button to move the bow to the PORT side;
    - The abaft button to move the bow to the STARBOARD side.

Warning

- Activate the controls one by one to avoid problems.

- Make sure that the bow thrust has come completely out of its housing before activating its controls.

- Once finished manoeuvring, do not forget to turn off the power supply switch on the 12 Vdc electrical panel, to prevent buttons from being unconsciously activated.

- Should a protective anode be provided, please check its deterioration and replace it following the instructions at page 23.

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Fridges

The following directions do not replace the instructions provided in the manufacturer's manual, delivered separately.

For knowing the location of the fridges components, consult the diagram at page 40.

Top-loading fridge

The top-loading fridge system includes:

- In the area between the galley hob and the sinks there is the fridge, with a capacity of about 145 litres. It can be opened from the top, by lifting its lid, and it is equipped with racks for a more functional arrangement of its contents.

- A 12 Vdc electrical compressor with its ventilated condenser, located in an appropriate room in the lower part of the sink cabinet, and accessible opening the rubbish bin door.

- The above-mentioned room is also equipped with two suitable ventilation openings: one is linked to a row of holes located in the upper part of he sofa, through a short flexible pipe, and the other one is linked to some holes in the lower part of the sink cabinet doors.

- A thermostat to adjust the temperature, easily accessible by lifting the fridge lid.

- An evaporator, following the three vertical sides inside the fridge.

- The fridge unit is activated by the FRIDGE switch in the 12 Vdc electrical panel (see page 53).

- The fridge unit is then started by the thermostat located inside the fridge.

- In the bottom of the fridge there is a drain hole that allows the condensation water to be periodically collected in a bottle or another container and then thrown away. For carrying out this operation, under the galley floorboard, near the sink drain valve, there is a short pipe with a tap on its end, which can be opened to drain the water.

Front-opening fridge

- It is a normal domestic-type fridge, with a capacity of about 16 litres, supplied by 12 Vdc power, with a front-opening door and located in the galley, in the cabinet abaft the galley hob.

- Its compressor-condenser unit is located beside the top-loading fridge one and therefore makes use of the same ventilation grilles.

- Inside the fridge there are the evaporator and the thermostat to adjust the temperature.

- To operate it, turn on the FRIDGE OPT." switch in the 12 Vdc electrical panel (see page 53).

Warning

- Do not place any object in the compressor/condenser units' room, as they could damage the compressor in case of a sudden movement and would reduce the necessary ventilation for a normal cooling.

- When stowing bottles and food in the fridge, be careful not to damage the metal pipes connected to the cooling plate (evaporator);

- Once adjusted the wished temperature, do not use the thermostat as fridge switch; for this function, please use the suitable switch in the electrical panel.

The refrigerating system has been installed so as to optimize the efficiency of the system itself. Obviously, there will be a larger consumption when it begins functioning, until it reaches the wished temperature.

Fridge maintenance

- Do not clog the condensation water drain hole of the top-loading fridge.

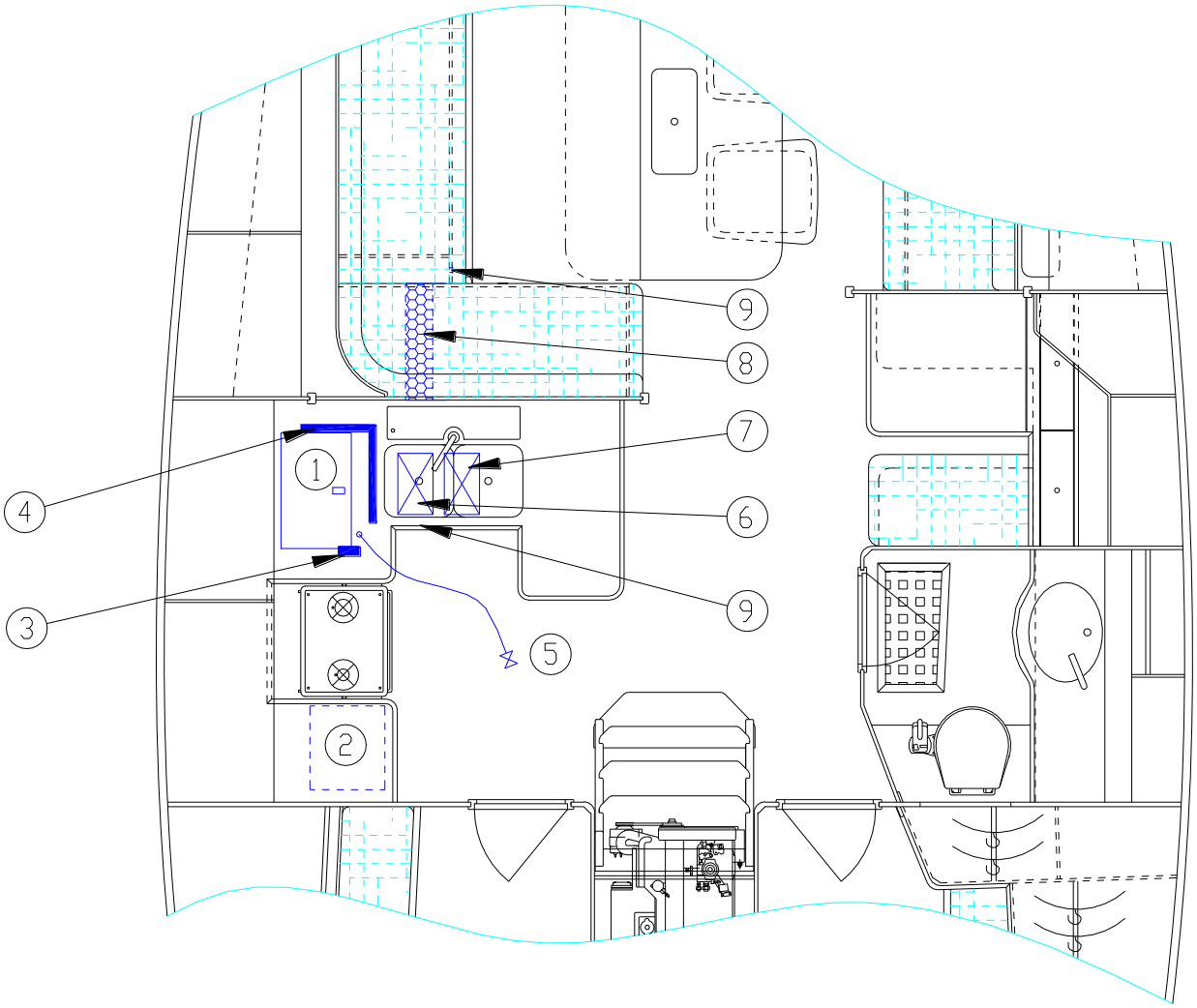
- Keep the inside of the fridge perfectly clean, in order to avoid foul smells.

- When living the boat for a long time, we recommend you to leave the top-loading fridge lid and the optional fridge front-opening door half-open.

- As time goes by, you could notice small gas leaks in the refrigerating system with a consequent partial or total reduction of its working order. In this case, you have to check and, if necessary, refill the cooling gas, calling a specialized technician.

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Fridges: components location



1. Top-loading fridge
2. Front-opening fridge
3. Top-loading fridge thermostat
4. Top-loading fridge evaporator
5. Condensation drain with tap
6. Top-loading fridge compressor/condenser unit
7. Front-opening fridge compressor/condenser unit
8. Ventilation intake pipe
9. Ventilation holes

Electric generator

The generator produces 220 Vac electric power and consists of a case, divided into several parts to access its inside, containing all necessary equipment to its functioning. It is usually installed in the starboard aft peak. Should the heating system be installed too, the electric generator is then located, for reasons of space, symmetrically, in the port aft peak. The whole system includes (with reference to the diagram at page 44):

- A generator unit containing a DIESEL engine, complete with a 12 Vdc alternator, a fuel filter and a cooling water circulation pump, which directly operates a 220 Vac electric power generator with a power of about 3,5 – 4 Kw.
- Flexible rubber hoses with "EC" certification for supplying fuel to the generator from the tank valve and to return it.
- A seacock with its through-hull valve (it can be installed at position n. 6 in case the air conditioning system is not provided).
- A filter for the engine cooling sea water, near the generator.
- A plastic silencer, located under the generator support shelf, and a duct to pipe the exhaust emission to an appropriate connection on the hull port side, towards the stern (in the first models produced, the above-mentioned exhaust pipe is installed in the transom, beside the propulsion engine exhaust).
- A 12 Vdc battery, supplying the generator Diesel engine starter.
- An electrical panel to start and stop the electric generator.
- A remote control for the fuel stop valve, located on the deck, beside the one for the propulsion engine supply valve.

Generator electrical panel

The generator electrical panel is installed near the general electrical panel and includes, from bow to stern:

- Function indicator with five aligned green LEDs. The successive lighting of these LEDs depends on the power absorbed.

- Red LED with a danger sign beside it, after the above-mentioned green LEDs row, which indicates an OVERLOAD when it lights up.

- LED to indicate the lack of lubrication or engine cooling.

- Generator meter.

- **START** and **STOP** buttons.

- Red LED to indicate that the alternator does not charge the generator battery.

Instructions

- **The following directions do not replace the instructions provided in the manufacturer's use and maintenance manual, delivered separately, which constitutes in any case the main reference document to consult.**

To operate the generator you need to:

- set the handle of the 220 VAC Selector Generator/S.Supply in the 220 Vac electrical panel (see page 57) to the OFF position or check that it is already in that position;
- open the engine cooling water seacock or check that it is already open;
- open the generator fuel supply valve or check that it is already open;
- press at the same time the START and the STOP buttons to preheat the Diesel engine spark plugs and therefore facilitate the starting of the engine.
- After about 5" - 10" release the above-mentioned two buttons and operate only the START one to start the generator.

To connect the yacht 220 Vac system to the generator, you need to:

- set the handle of the 220 V AC Selector in the 220 Vac electrical panel (see page 54) to the "GENERAT" position;
- turn on the 220 Vac Main Breaker switch in the 220 Vac electrical panel;
- check the Voltmeter to make sure that the compressor unit works properly;
- turn on the relevant switches in the 220 Vac electrical panel to supply the wished equipment.

To stop the generator you have to:

- turn off all 220 Vac electrical panel switches;
- press the STOP button in the generator electrical panel;
- set the handle of the 220 VAC Selector in the 220 Vac electrical panel to the OFF position and turn off the 220 Vac Main Breaker switch.

General warning and caution on generator use

- **Read carefully the generator use and maintenance manual delivered separately and, if you have any doubt, contact the builder's assistance.**

- **Do not start or stop the generator when any switch is connected.**

- Check the oil level of the generator engine before starting it, especially after long periods of inactivity.
- Make sure that there are no leaks in the various systems: cooling water, fuel, engine oil and engine exhaust pipes.
- Do not keep the generator working when the side inclination angle of the yacht is more than 18 - 20° degrees.
- Check periodically the cooling water pump: if it leaks even slightly, immediately intervene.
- Check periodically the fuel filter condition (read the instructions in the relevant booklet delivered separately).
- Check frequently the generator engine cooling water filter condition and clean it when necessary.
- Do not disconnect the battery terminals while the generator is working.
- The generator engine sucks up air from the peak where it is installed, for its functioning.

- Never open the generator case while it is working.

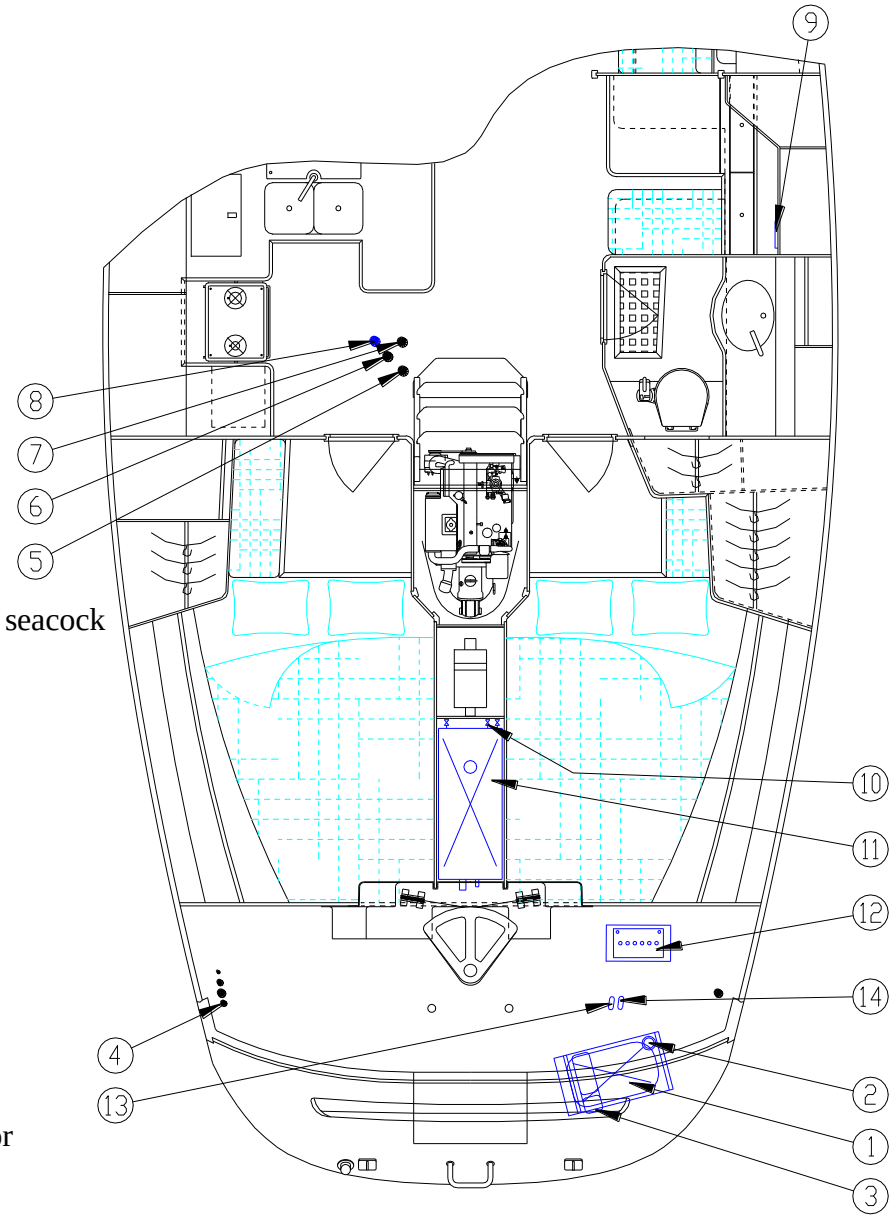
Warning: Should both the electric generator and the Eberspacher heating system be installed, the first one and its battery are located in the port aft peak instead of the starboard one, whereas all other components location does not change (see diagram at page 60).

Maintenance

- Check frequently the level of the engine oil and change it as indicated in the manufacturer's instructions manual.
- Change the fuel filter cartridge as indicated in the manufacturer's instructions manual.
- Check frequently the cleanliness of the cooling water filter, after previously closing the through-hull valve of the relevant seacock.

We recommend you to consult and observe the directions in the use and maintenance manual provided by the manufacturer and delivered separately.

Components location



1. Electric generator
2. Sea water filter
3. Generator exhaust silencer
4. Generator exhaust
5. Galley sink outlet seacock (as a reference)
6. Air conditioning system intake seacock (as a reference)
7. Galley sink sea water intake (as a reference)
8. Generator intake seacock
9. Generator electrical panel
10. Generator fuel supply valve
11. Fuel tank
12. 12 Vdc battery for the generator starting
13. Remote control for the generator fuel supply valve
14. Remote control for the engine fuel supply valve (as a reference)

Air conditioning system

It has been conceived in order to install independent units in one or more rooms. This feature makes it particularly flexible and able to meet different customer requirements. Among the different system types and the possible solutions available in the market, please find below the description of the CLIMMA units for the air conditioning of all cabins and the wardroom.

This system includes (see page 47 for the components location):

- Condenser cooling water seacock with its through-hull valve, located under the galley floorboard near the sink drain.

- Sea water filter, installed near the pump described below, in order to protect it.

- Circulation pump, sucking the sea water from the above-described seacock and piping it to the two air conditioning units. This pump is installed under the floorboard, between the sofa and the dinette table, together with draining pipes, one for each unit, which merge into the same drain to the left of the life raft peak.

- Air conditioning unit, installed under the seat abaft the wardroom sofa, that is to say against the galley sink cabinet, cooling the fore cabin and the dinette. The relevant outlet and intake grilles are located as follows:

  - an outlet grille in the fore cabin, above, towards the port hull side, near the bathroom bulkhead;
  - two outlet grilles in the surface behind the dinette sofa back;
  - an intake grille, in the vertical side of the sofa containing the air conditioning unit.

- Air conditioning unit cooling the two aft cabins, similar to the above-described one, but with only one battery/fan unit, installed between the engine room and the fuel tank container, that is to say above the engine exhaust silencer. The relevant outlet and intake grilles are located as follows:

  - an outlet grille in each aft cabin, on the bent side of the engine room bulkhead;
  - an intake grille, in the door accessing the starboard aft cabin air conditioning unit.

- Each unit has an electrical pump for the condensation drain with its protective filter.
  - The fore unit pump is located under the dinette floorboard, near the sea water filter, and it directly drains on the port hull side, in line with the pump.
  - The aft unit pump is located under the unit support surface and it drains through a scupper on the port hull side, towards the stern.

- Black electrical box with protective fuse, near every air conditioning unit.

- Temperature adjusting and control panel for the dinette and the fore cabin, located in the surface behind the port sofa back, near the grille towards the stern.

- Temperature adjusting and control panel for the aft cabins, located in the starboard aft cabin, just above the air conditioning unit door accessing.

- All air conditioning system equipment is electrically enabled by turning on the first available switch in the 220 Vac electrical panel (which you can find at position n° 4 of the diagram at page 57) and started by operating the electrical control panel described below.

- Ducts delivering air to the various grilles, properly coated with a thermal-sound insulating cover.

Electrical control panel

Each air-conditioning unit is started by an independent control panel which, besides starting the sea water circulation pump, also has the following functions:

- On the one side, the three-position switch to start the system, allowing you to chose among:
  - COOL for the summer cooling
  - HEAT for the winter heating
  - OFF in the centre position
- On the opposite side, the room thermostat for adjusting the temperature.
- In the middle, the three-position switch (max – min. – medium) for adjusting the fan speed with consequent variation of the room air change.

Instructions

- **The following directions do not replace the instructions provided in the manufacturer's use and maintenance manual, delivered separately, which constitutes in any case the main reference document to consult.**

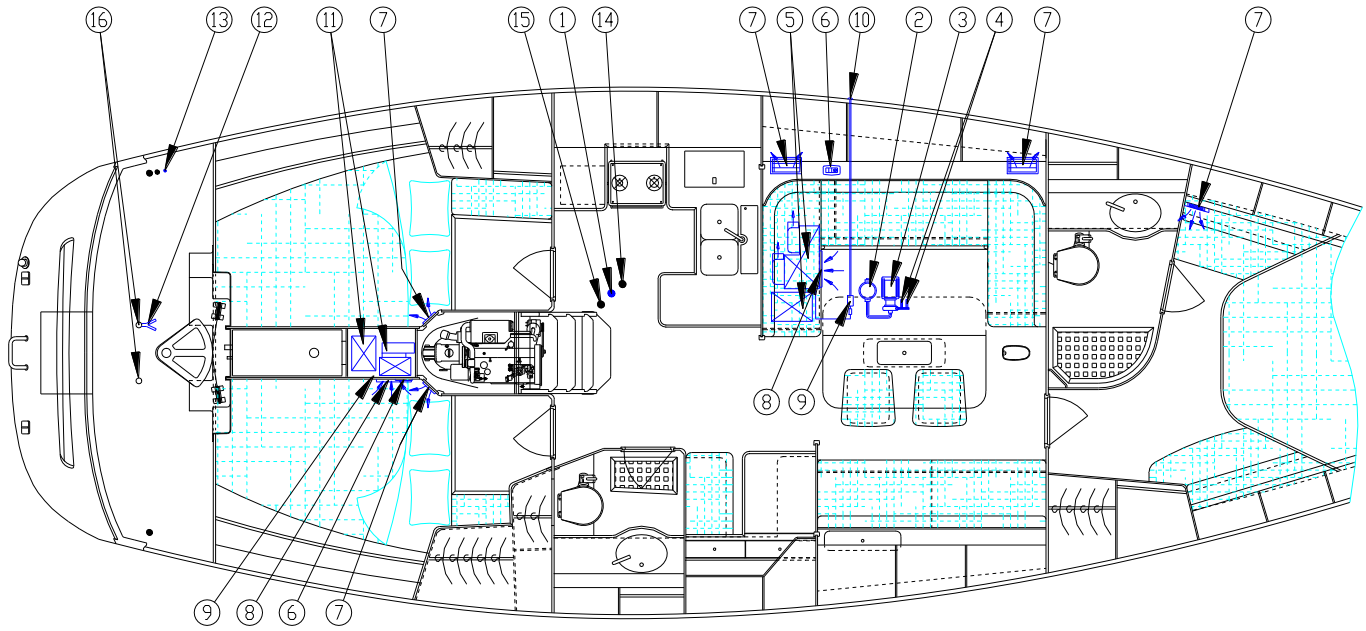
To operate the air conditioning system you need to:

- open the compressor/condenser unit cooling water seacock or check that it is already open;
- turn on the magneto-thermal switch in the 220 Vac electrical panel (position n° 4);
- operate the COOL – HEAT switch in the control panel, choosing between the two possibilities;
- rotate the thermostat to the minimum (to cool) or to the maximum (to heat) in order to start the air conditioning unit;
- once reached the wished temperature, slowly rotate the thermostat until the compressor is completely off and position it to the temperature you wish to keep. From now on the functioning will be automatic;
- to stop the air conditioning units you have to turn the COOL – HEAT switch to the off position and disconnect the relevant magneto-thermal switch in the 220 Vac electrical panel.

Warning and caution

- During the air conditioning system functioning period, please check every day the cleanliness of the sea water filter installed on top of the relevant aspiration pump.
- Clean periodically the air intake filter.
- Do not place any object in front of the air conditioning unit outlet and intake grilles, in order not to clog the free air circulation.
- Close the intake seacock when the air conditioning system is off.
- **Read carefully the manufacturer's use and maintenance manual delivered separately and, if you have any doubt, contact the builder's assistance.**

Components location



1) Intake seacock
2) Sea water filter
3) Sea water circulation pump
4) Pipes for the air conditioning condenser cooling water
5) Fore air conditioning unit
6) Control and adjusting panel
7) Air conditioning outlet grille
8) Air conditioning intake grille
9) Condensation drain pump
10) Condensation drain for the fore air conditioning unit
11) Aft air conditioning unit
12) Water pump drain
13) Condensation drain for the aft air conditioning unit
14) Generator intake seacock (as a reference)
15) Galley sink outlet seacock (as a reference)
16) Life raft peak outlet seacock (as a reference)

Electrical system

The electrical system of the Grand Soleil 50' consists of two distinct networks supplied by:

- **12 Vdc** electrical current (direct current)
- **220 Vac** electrical current (alternate current)
- All control devices, the main and individual controls switches are gathered in only one electrical panel, located in the chart area towards the starboard side, divided into two parts:

  - the part towards the bow includes all magneto-thermal switches for 12 Vdc services and the relevant control devices (see page 52);

  - the part towards the stern includes all magneto-thermal switches for 220 Vac services and the relevant control devices (see page 57).

- Please refer to the diagram at page 60 for the location of the main system components.

12 Vdc network

- The 12 Vdc electrical network is the main one and it supplies all services, except those supplied by the 220 Vac.
- The 12 Vdc power is supplied by 4-6 batteries located in appropriate containers beside the engine room, under the aft cabin bed floorboard. All batteries are marine-type: the 70 Ah battery with 680 A of charging current is intended for starting the engine, while all the other ones, of 100 Ah and 720 A of charging current, are intended for the different services.
- By a 4 positions heavy duty battery switch (**1 – BOTH – 2 - OFF**) located under the chart table, in the bulkhead towards the outside hull, you can choose to: activate the service battery selecting position **1**; activate the service battery in parallel with the engine battery selecting **BOTH**; activate the only engine battery selecting position **2**; disconnect all batteries selecting **OFF.**
- Should the yacht be equipped with electrical winches or with a bow thruster, another heavy duty battery switch is installed, a lever-type, with two positions (ON – OFF), to be turned on in case you use the above-mentioned winches and/or the bow thruster. That heavy duty battery switch is installed on the starboard aft cabin headboard bulkhead.

Warning on 12 Vdc network

- Some on-board services are directly activated by the electrical panel switches, while the others must be activated by their respective switches usually located near the services themselves.

- For each 12 Vdc electrical panel switch there is a green LED that lights up when the switch is on.

- The electrical panel Voltmeter ("Dc voltage"), located after the row of 12 Vdc services magneto-thermal switches, that is to say above the water and fuel gauges (see page 54), indicates the existing tension in the network and therefore that of the batteries connected in that moment by the heavy duty battery switch.

- The 12 Vdc electrical panel Ammeter ("Services Consumption"), located under the above mentioned Voltmeter (see page 54), shows the Ah absorbed by the services in that moment.

- All batteries can be recharged by the alternator installed in the engine, or by the battery charger which, in its turn, can be supplied by the 220 Vac shore network or, if installed, by the electric generator.

- Check frequently on the 12 Vdc electrical panel the data provided by the Voltmeter ("Dc Voltage") and the Ammeter ("Services Consumption"), in order to promptly intervene in case of malfunction.

- Check periodically the level of the battery liquid, also according to the type of batteries installed.

- **Please bear in mind that the battery liquid or electrolyte is CORROSIVE. Avoid the contact with skin, eyes and clothes.**

- In case of contact, rinse immediately with water.

- Check that the batteries terminals are always greased and well tightened.

- Always keep the batteries clean and dry; absolutely avoid placing any kind of object, especially metal objects, upon it.

- Should a battery go out of order, immediately disconnect it from the system to avoid damaging the other batteries.

- Do not disconnect the battery terminals while the engine is working.

220 Vac network

The 220 Vac power can be supplied by:

- the shore network, through the suitable watertight outlet located on the vertical side abaft the port cockpit seat (see page 60);
- the electric generator installed in the yacht (see chapter on generator at page 41).

The shore network is usually used when the yacht is moored at a duly equipped marina.

Caution: once put the plug into the yacht watertight outlet, remember to properly tighten the sleeve in order to normally activate the 220 Vac current on board.

- Please bear in mind that the usual maximum power you can use on board cannot exceed 2000 Watts (2 Kw) since, usually, the mooring wharf power panels supplying the current are equipped with an automatic cut-out switch that insulate the system when it exceeds that value.
- The electric power coming from the shore outlet supplies the 220 V electrical panel selector (see page 57) which, being normally in **OFF** position, must be set to **S. SUPPLY** position in order to supply the 220 Vac Main Breaker switch.
- From the selector, the electric power then reaches the 220 Vac Main Breaker switch (see page 57) with a highly sensitive safety switch and an earth disconnecting switch, installed in the 220 Vac electrical panel.
- Turning on the 220 Vac Main Breaker switch, the power passes to the side magneto-thermal switches controlling the 220 Vac services (see page 57).

Warning on 220 Vac network

Please bear in mind that, in spite of all Builder's careful measures (highly sensitive safety switch with earth disconnecting switch), the 220 Vac network remains dangerous.

- Therefore, it is advisable that the user takes any necessary precaution for a correct and cautious use of the 220 Vac network.
- These precautions must be more and greater than in any other domestic situation, where everything relies on the common prudence.

- **In particular, we remind you that it is extremely dangerous to use any 220 Vac service when your body is wet or the yacht interior is wet.**

- There is a red LED for each 220 V electrical panel switch which lights up when the relevant switch is on.

- The 220 Vac Voltmeter in the electrical panel, located just ahead of the switches and upon the 220 V outlet (see page 57), starts functioning every time the yacht is connected to the shore supply or when the generator is working, but only after having previously turned on the 220 Vac Main Breaker switch; it indicates the existing tension in the 220 Vac yacht network.

- When living the boat, even for a short while, turn off at least the 220 Vac Main Breaker switch or pull out the shore network plug.

- Check that the shore outlet supplying the 220 Vac current keeps watertight and does not oxidize.

- The 220 Vac network is protected by the safety switch, connected to the 220 Vac Main Breaker, and by a magneto-thermal switch for each service.

- Between the safety switch and the watertight outlet, the circuit is protected only by the safety switch in the mooring wharf power panels. However, please bear in mind that the above-mentioned safety system is not always available.

Warning: the 220 Vac system cannot tolerate changes in tension of over 5%; therefore, if this should happen, you have to cut off immediately the 220 Vac supply by the above-mentioned 220 Vac Main Breaker switch.

Magneto-thermal switches

1. The magneto-thermal switches located on the electrical panel have a dual function:

- activate or enable the various services;

- protect the services and their system from excessive overload.

Warning on magneto-thermal switches

The cable sections have been calculated according to the power used by each service provided. Do not overload any magneto-thermal switch by-passing it or replacing it with one of bigger amperage.

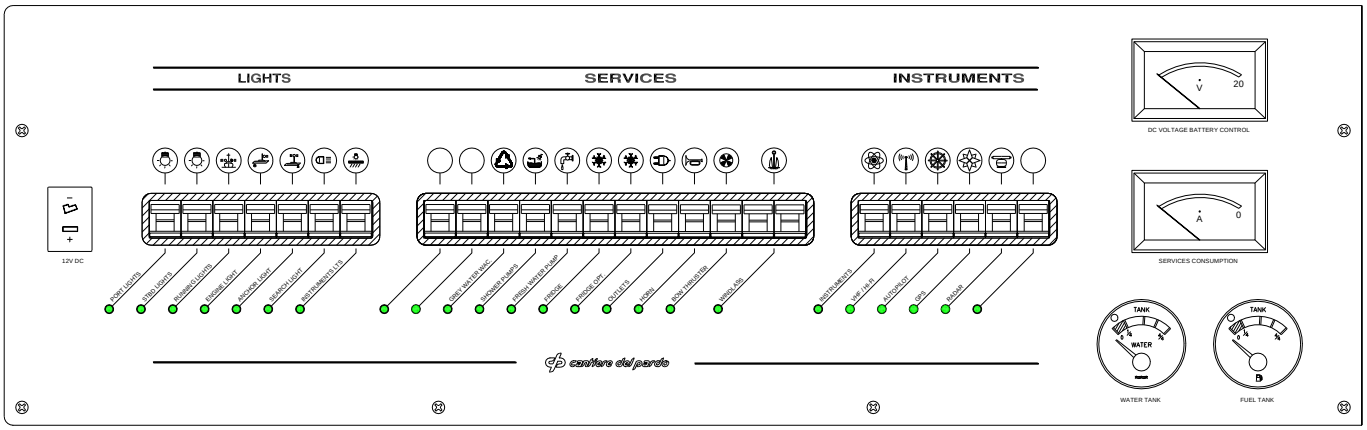
- If a magneto-thermal switch goes off, do not turn it on again before finding the possible anomaly or short circuit.

Instructions

- We remind you that all magneto-thermal switches here described can directly activate the various services or simply enable them:
  - in the first case, turning on the switch it will activate the service too;
  - in the second case, turning on the switch it will just supply current to some further switches, usually located near the corresponding service.
- A red LED will light up when the corresponding service is live and is using or is able to use current.

12 Vdc electrical panel

It is located in the chart area towards the hull side and contains all magneto-thermal switches, each of them having a particular function marked in English. It controls all 12 Vdc services and the relevant Voltmeter and Ammeter, with water and fuel gauges too.



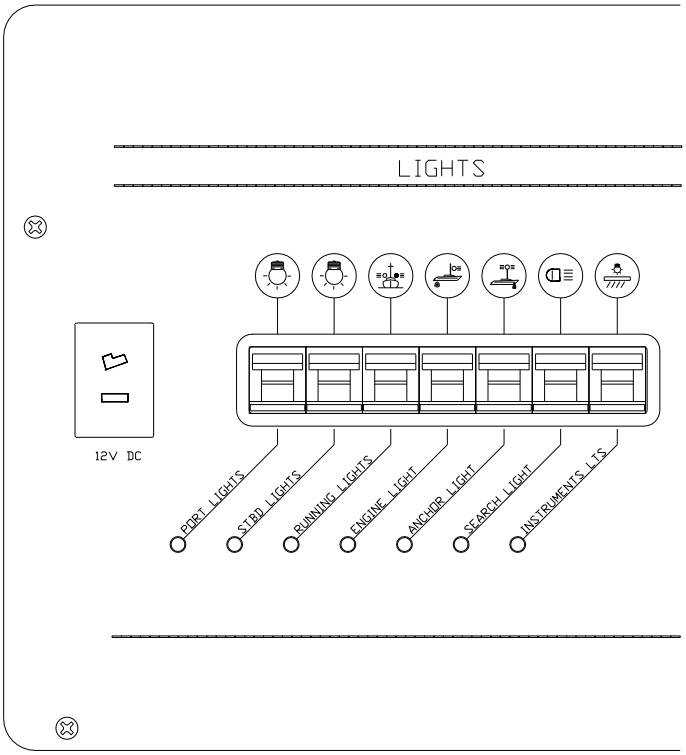
12 V DC ELECTRICAL PANEL – GENERAL

In order to better understand this electrical panel, it has been divided into three sections starting from the left, which are shown below separately.

12 Vdc electrical panel - Lights section

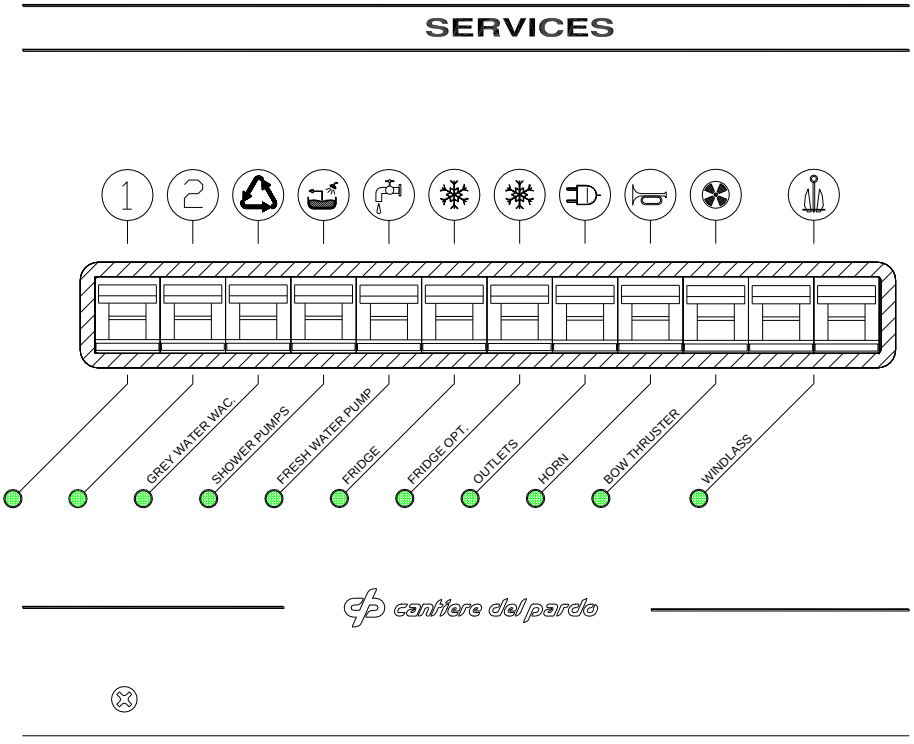
1) Port Lights
2) Stbd Lights
3) Running Lights
4) Engine Light
5) Anchor Light
6) Search light
7) Instrument Lts

A 12 V DC outlet is located ahead of the switches

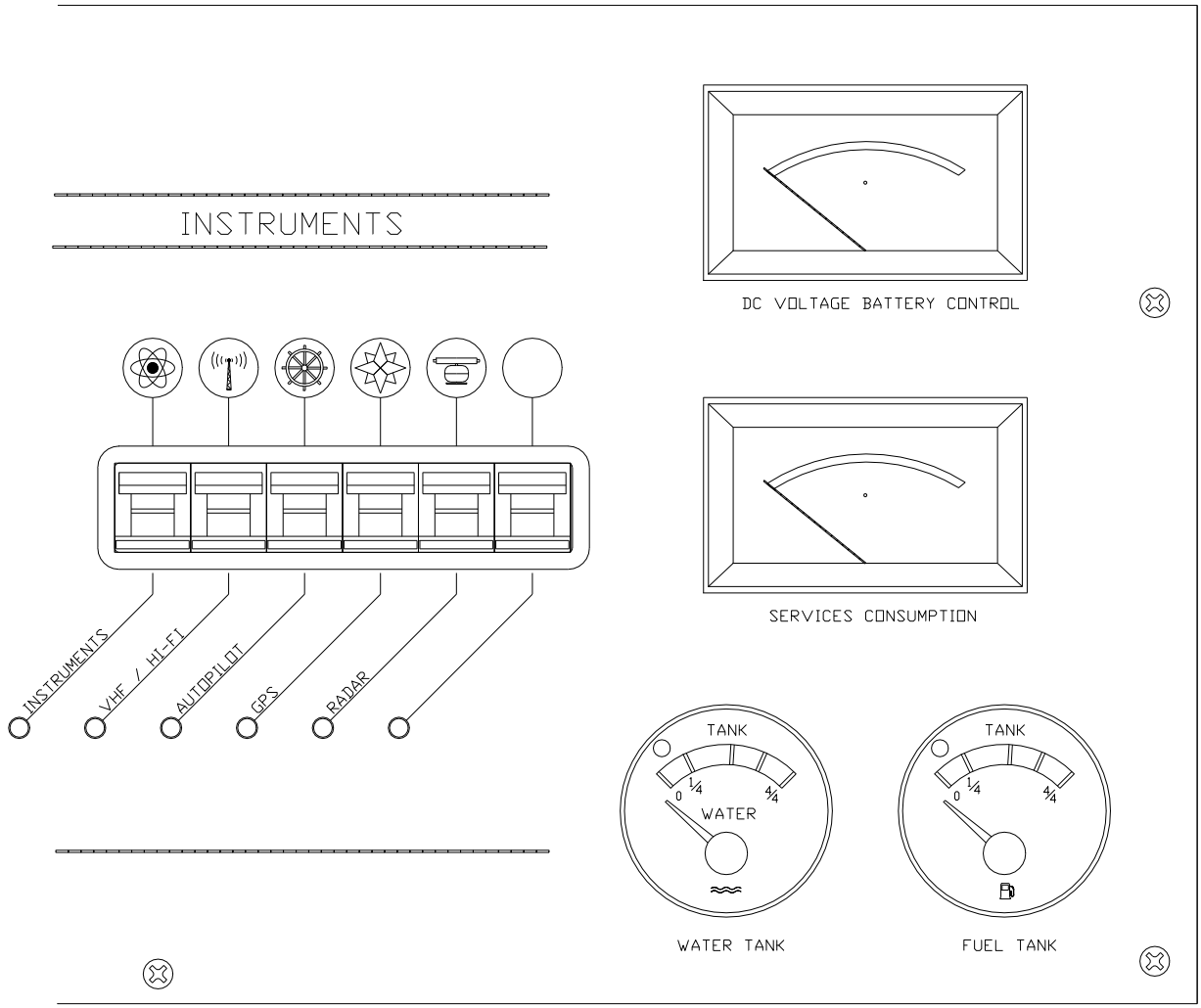


12 Vdc electrical panel - Services section

1) Available
2) Available
3) Grey Water Mac.
4) Shower pumps
5) Fresh Water Pump
6) Fridge
7) Fridge Opt.
8) Outlets
9) Horn
10) Bow thruster
11) Windlass



12 Vdc electrical panel - Instruments section



MAGNETO-THERMAL SWITCHES

1) Instruments
2) VHF / HI-FI
3) Autopilot
4) GPS
5) Radar
6) Available

CONTROL DEVICES

1) DC Voltage Battery Control
2) Services Consumption - Ammeter
3) Water Tank Gauge
4) Fuel Tank Gauge

12 Vdc switches

LIGHTS SECTION

1. **PORT LIGHTS** switch
   It enables the lighting of all port side internal lights.

2. **STBD** or **STARBOARD LIGHTS** switch
   It enables the lighting of all starboard side internal lights.

3. **RUNNING LIGHTS** switch
   It turns on all navigation lights, i.e. the red and the green one in the fore pulpit and the white stern light in the aft pulpit.
   As a further safety measure, suitable fuses have been placed in the terminal board behind the electrical panel; you will find one fuse for each light, as to avoid the risk of running out of lights in case of trouble

4. **ENGINE LIGHT** switch
   It turns on the mid-mast white light, which is compulsory when navigating by engine.

5. **ANCHOR LIGHT** switch
   It turns on the only 360° mast-head light.

6. **SEARCH LIGHT** switch
   It turns on the mid-mast light illuminating the fore deck.

7. **INSTRUMENT LTS** or **LIGHTS** switch
   It turns on the night light of the compass.

SERVICES SECTION

1. Available switch (for heating system, etc.)

2. Available switch (for electrical toilets, etc.)

3. **GREY WATER MAC**. switch
   It enables the black water tank macerator. You will need then to turn on the relevant switch near the through-hull seacock, to operate the macerator.

4. **SHOWER PUMPS** switch
   It enables all electric pumps which drain the aft and fore bathroom showers bilges and the pump for the deck and/or chain washing. Please remember that each shower bilge is equipped with its own switch located inside the respective bathroom.

5. **FRESH WATER PUMP** switch
   It enables the starting of the fresh water pump which then pressurizes the fresh water circuit.

6. **FRIDGE** switch
   It directly enables the top-loading fridge electric compressor.

7. **FRIDGE OPT.** switch (optional front-opening fridge)
   It directly enables the front-opening fridge electric compressor.

8. **OUTLETS** switch
   It enables all 12 V outlet of the yacht.

9. **HORN** switch
   It enables the sounding of the horn.

10. **BOW THRUSTER** switch
    It enables the starting of the bow thruster.

11. **WINDLASS** switch
    It enables the starting of the windlass.

INSTRUMENTS SECTION

1. **INSTRUMENTS** switch
   It enables the navigation equipment installed on board.

2. **VHF HI-FI** switch
   It enables the VHF and Hi-Fi set.

3. **AUTO PILOT** switch
   It enables the autopilot.

4. **GPS** switch
   It enables the GPS plotter.

5. **RADAR** switch
   It enables the radar.

1. Available switch.

CONTROL DEVICES

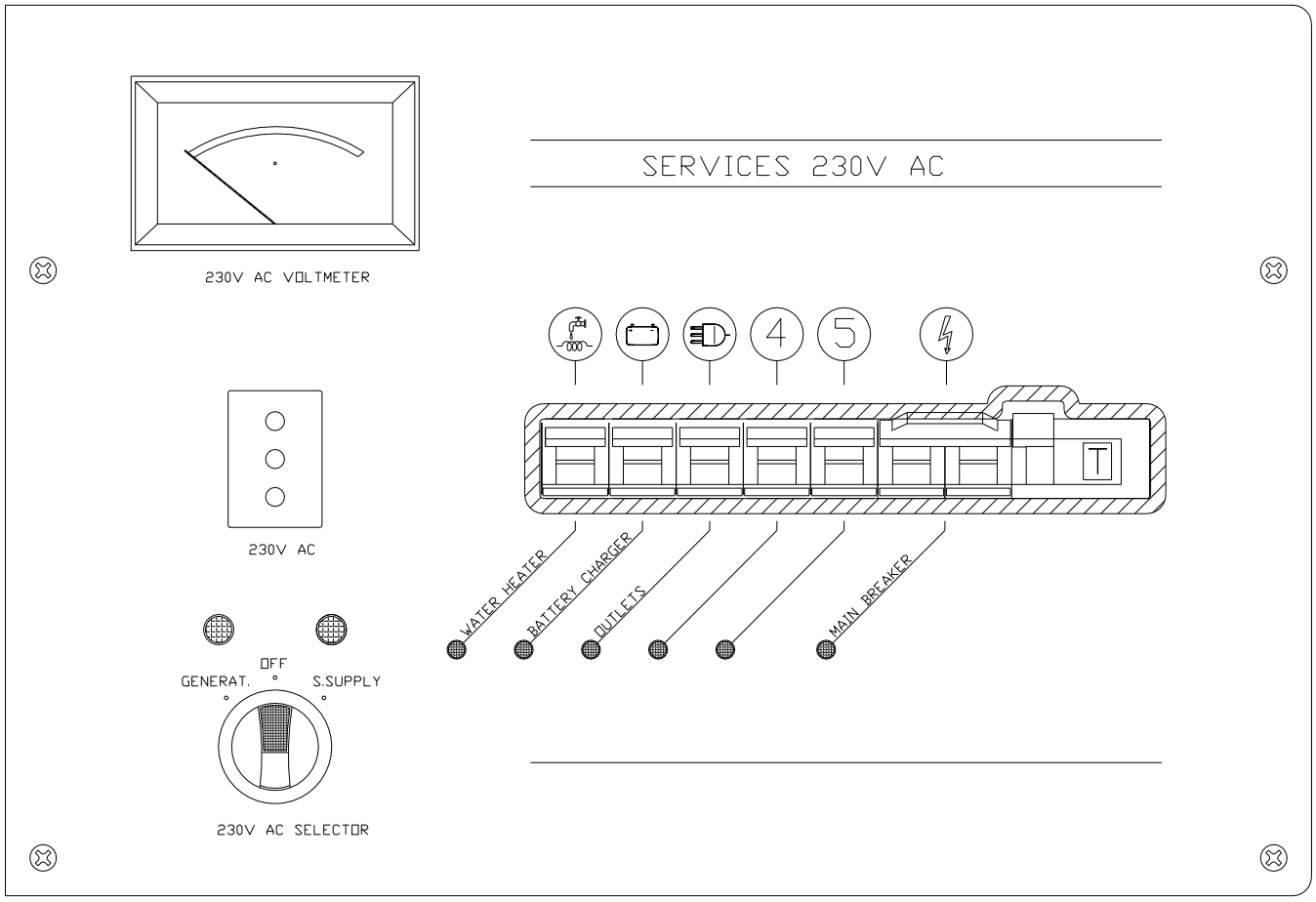
1. **DC VOLTAGE** (Voltmeter)
   It shows the voltage of the 12 Vdc network and of the batteries connected in that moment to the network by the heavy duty battery switch.

2. **SERVICES CONSUMPTION** (Ammeter)
   It shows the Amperes being used by the 12 Vdc services activated.
   If none of the services is using current, with the engine and the battery charger off, it must show "0". Otherwise it shows the current being used.

3. **WATER TANK**
   It indicates the water level in the tanks, only when the fresh water pump is connected.

4. **FUEL TANK**
   It indicates the fuel level in the tanks by inserting the starting key in the engine control panel.

220 Vac electrical panel



MAGNETO-THERMAL SWITCHES SECTION

1) Water Heater
2) Battery Charger
3) Outlets
4) Available switch (for air conditioning system, etc.)
5) Available switch
6) Main Breaker

OTHER COMPONENTS

7) 220 V AC Voltmeter
8) 220 V AC
9) 220 V AC Selector Generat/S.Supply

220 Vac switches

1. **WATER HEATER** switch
   It directly activates the 220 Vac electrical resistor of the water heater. For instructions and warnings please consult the paragraph "Water heater" at page 31.

2. **BATTERY CHARGER** switch
   It directly supplies the battery charger. For instructions and warnings please consult the paragraph "Battery Charger" at page 33.

3. **OUTLETS** switch
   It activates all 220 Vac outlets.

4. Available switch (for air conditioning system, etc.).

5. Available switch.

6. **Main Breaker** switch
   It enables the supplying of the entire 220 Vac network of the yacht.

7. **230 V AC VOLTMETER**
   It shows the voltage in the 220 Vac network when it is connected to the shore supply or when the generator is working. If the selector described below is not positioned properly and if the **Main Breaker** switch is turned off, the Voltmeter will show "0".

8. **230 V AC** outlet

9. **230 V AC SELECTOR GENERAT./S.SUPPLY**
   It allows you to choose to connect the shore supply or the generator to the 220 Vac network of the yacht. When in OFF position, the 220 V network is not supplied; in this case be careful, as, if the shore outlet is connected, the 220 V current reaches anyway the selector.

Electrical panels dismantling

The directions concerning the electrical panel dismantling are intended for the technicians who will carry out the operations described below.

- **Caution:** before you begin dismantling the 220 Vac electrical panel, make sure that the 220 Vac shore supply is disconnected; the shore network plug must not be inserted into the boat external watertight outlet.

- Any manipulation implying dismantling the 220 Vac or 12 Vdc electrical panels must be carried out by a skilled electrician.

12 Vdc and 220 Vac outlets

◊ The 12 Vdc and 220 Vac outlets are located in their respective electrical panels and in the positions indicated in the diagram at the next page.

- The 12 Vdc outlets are enabled by turning on the "OUTLETS" switch in the 12 Vdc electrical panel, after previously turning on the heavy duty battery switch.

- The 220 Vac outlets are enabled by turning on the "OUTLETS" switch in the 220 Vac electrical panel, but only when connected to the shore supply or when the generator is working.

Converter

- This device, supplied by the 12 Vdc service battery, allows to supply every 220Vac outlet aboard with 220 Vac electrical current. If provided, it is installed under the chart seat, beside the battery charger.
- It is a completely automatic device, with appropriate protections against overloads, short circuits and overheating.
- It is usually equipped with a two-position switch, which has the following functions:

  - OFF = to stop and disconnect the network converter. Green LED off.
  - ON = to start the converter. Green LED on.

- You need to turn on the heavy duty battery switch to supply the converter, which is protected by a relay installed in the terminal board behind the electric panel.
- According to the type installed, you can have some other LEDs indicating the coming into operation of possible automatic protective devices, because of malfunction anomalies, with the following meaning:

  - Overload = it is advisable to disconnect some switch.
  - Low battery = low battery voltage.
  - High temperature = too high ambient temperature.

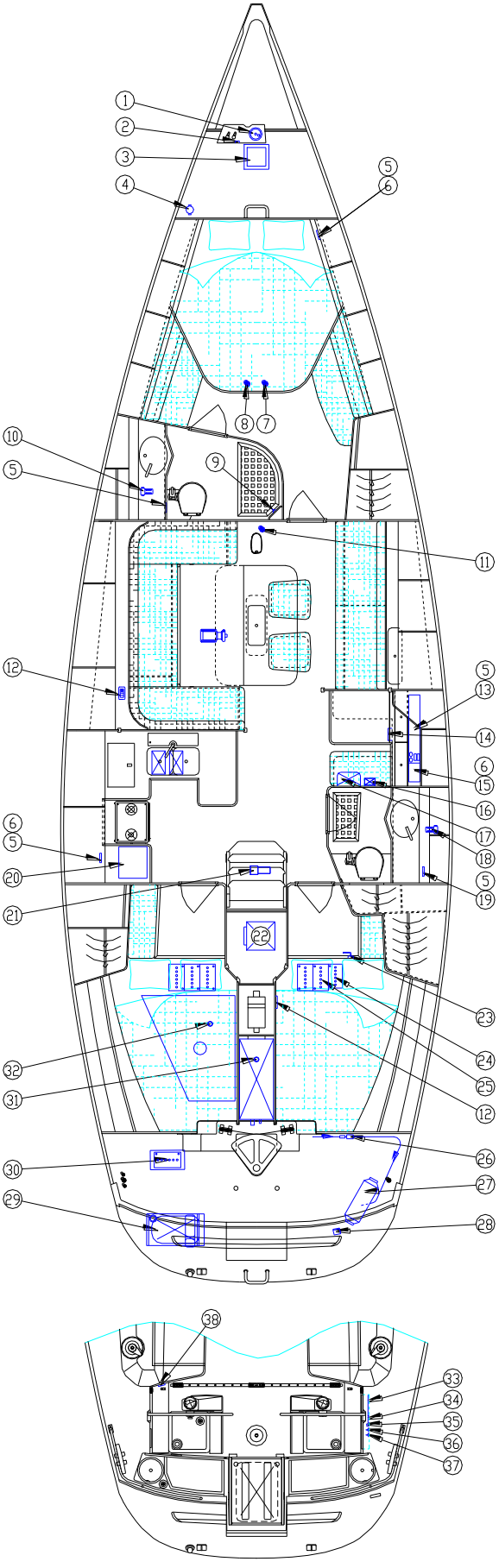
Warning! If the converter stops because of the above-described causes, once the problem is solved you can restore the normal functioning conditions to supply electrical current. Please be very careful to make sure that no electrical appliance has been left connected to any 220 Vac outlet, as it could then start working again under nobody's control, with the consequent dangers.

Warning! Even if the converter is off, it is always electrically supplied by the batteries when the heavy duty battery switch is turned on.

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Electrical equipment location

1) Windlass
2) Outlet for the windlass control panel
3) Bow thruster unit
4) Fresh water pump for the chain/deck washing
5) 12 Vdc outlet
6) 220 Vac outlet
7) Log
8) Echo sounder transducer
9) Fore bathroom shower pump switch
10) Fore bathroom shower bilge drain pump
11) Mast services supply
12) Air conditioner control panel
13) 12 Vdc electrical panel
14) Heavy duty battery switch
15) 220 Vac electrical panel
16) Converter
17) Battery charger
18) Main bilge or aft bathroom shower drain pump
19) Main bilge or aft bathroom shower drain pump switch
20) Front-opening fridge
21) Fresh water pump
22) Water heater
23) Heavy duty battery switch for electrical winches and/or bow thruster
24) Engine battery
25) Service battery
26) Eberspacher heater fuel metering pump
27) Eberspacher heater
28) Eberspacher heater control panel
29) Electric generator
30) Electric generator battery
31) Fuel gauge sensor
32) Fresh water gauge sensor
33) Engine control panel
34) Bow thruster control panel
35) 12 Vdc watertight outlet
36) Windlass switch
37) Bathing platform (opening transom) control switch
38) 220 Vac shore watertight outlet (on the deck)



Gas system

1. Suitable containers for the two 3 kg gas cylinders have been arranged in the aft deck angles, one on the starboard and the other on the port side (see page 63), which can be accessed by lifting the respective peak lid. Each container has, on the bottom, a hole, connected through a plastic pipe to a scupper in the hull side, allowing the adequate ventilation and exhaust.

2. Inside the above-mentioned containers there is the pressure regulator that must be mounted on the gas cylinder. That regulator, suitable for gas cylinders with a ball retention valve and a left ¼ gas cylinder connection, is completed with a 90° opening stopcock and a regulating handle to be adjusted at the wished position.

3. Each gas cylinder is linked, by an approved flexible pipe, to the copper pipes supplying the stove unit. Those copper pipes, through a T-fitting located in the aft peak, near the port gas cylinder, are linked to the other copper pipes which, running along the port side of the boat, reach the stop cock under the oven, in the aft side.

4. Another approved flexible pipe supplying the burners and oven unit is mounted on the above mentioned stop cock, to allow the oven to swing.

Instructions

To light a burner (please consult also the manufacturer's manual):

- Open the pressure regulator cock on the wished gas cylinder. We advise you to always use the same gas cylinder until it is completely finished and to keep the other one in reserve.

- Open the stopcock located under the oven (see diagram at page 63).

- Press the button of the wished burner: being equipped with a safety thermocouple, after lighting, keep the button pressed for a few seconds until the thermocouple is hot.

Warning: as the years go by, the safety thermocouple tends to lose its working order. Therefore, we advise you to check periodically its functioning and, in case of anomaly, have a new one installed by a skilled technician.

Warning

- We remind you that the gas system is under pressure and therefore possible leaks may occur.

- The gas flame, as any other flame, must be used on board with extreme caution.

- Any flame on board may be a risk as it is a potential trigger for combustion.

- Before leaving the boat you always have to:

  - turn off the stopcock under the stove unit;
  - turn off the pressure regulator cock on the gas cylinder.

Maintenance and periodic checks

- We also recommend you to stop the swinging movement of the stove unit, locking it with the provided bolt located in the low bow side of the oven, when you use it in a harbour or in still water.

- Check periodically the conditions of the flexible pipes linking the gas cylinder to the copper pipes, and the stove unit to the stopcock: if you notice any deterioration sign, have the pipes replaced with new approved ones of the same type.

- **When the above-described pipes expire, as indicated on the pipes themselves, they must be replaced in any case, even though they are still in good conditions.**

- Check periodically that the double clips holding the above-mentioned flexible pipes to the copper pipes are well fixed and tightened.

- It is advisable to have the copper pipes and the other gas system components periodically inspected by skilled technicians.

Gas leaks

- If you smell gas without knowing where it comes from, immediately check that the stop cocks on the gas cylinders are well turned off and do not activate any electrical switch. Air the inside of the boat and avoid any source of combustion such as sparks, flames, lit cigarettes, etc.

- Then, in case it is impossible to call a skilled technician to detect and fix the gas leak, you can spread some soap lather over all system connections, beginning from stern, and in particular over the:

  - regulator - gas cylinder connector;
  - regulator – flexible pipe connector;
  - flexible pipe – copper pipe connector;
  - T-fitting connecting the gas cylinders to the pipe supplying the stove unit;
  - copper pipe –stop cock connector;
  - stopcock – flexible pipe connector;
  - flexible pipe – stove unit connector.

Warning: the presence of soap bubbles indicates possible leaks.

Avoid using flames (lighters, matches, etc.) to detect possible leaks.

- Always bear in mind that, as gas is heavier than air, in case of gas leaks it will probably flow down to the lowest parts of the boat (bilge).

- If you detect an actual leak, air very well the bilge. In this case you have to avoid any source of combustion such as sparks, flames, lit cigarettes, etc.

Replacing a gas cylinder

Warning! Replacing a gas cylinder is an operation to be carried out with extreme caution; make sure that no flames, lit cigarettes or any other source of combustion is around.

- Turn off the pressure regulator cock on the gas cylinder.

- Lift and unscrew the gas cylinder, holding the gas reducer.

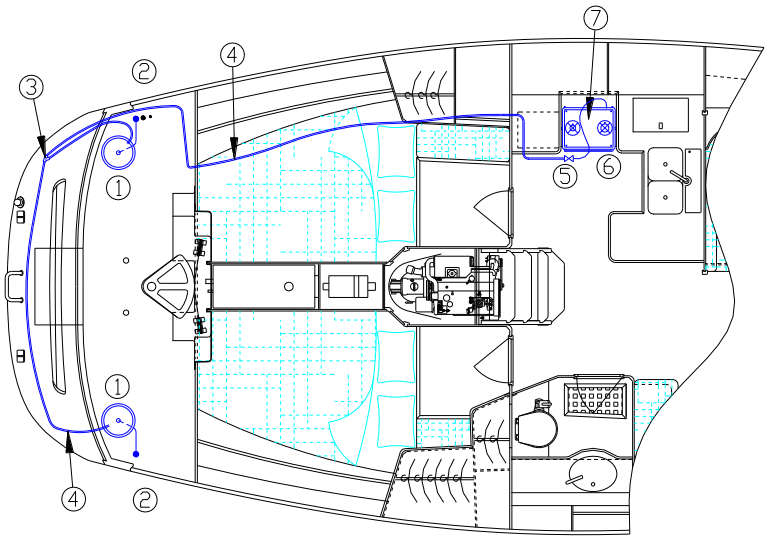
- Screw the new gas cylinder, making sure that the threads are properly fitted into the junction.

- Turn on the pressure regulator cock on the gas cylinder in case of use.

We recommend you to consult the use and maintenance manual of the stove unit (oven and burners) provided by the manufacturer and delivered separately.

Components location

1. Gas cylinder containers on the deck
2. Gas cylinder vent on the hull side
3. T-fitting connecting copper pipes
4. Copper pipes
5. Stop cock under the oven
6. Oven bolt, lower angle, ahead
7. Tilting oven.



Water system

Please see page 69 for the location of the water system components described in this section.

The water supply system consists of the following networks:

- ◊ **Fresh water tank.**
- ◊ **Pressurized cold and hot fresh water circuit.**
- ◊ **Sea water system in the galley, if installed.**
- ◊ **Emergency sea water system in the galley, if installed.**
- ◊ **Sea and/or fresh water system for the deck and anchor chain washing, if installed.**

Fresh water tanks

◊ Two fresh water tanks are installed, one under each aft cabin bed (see page 69). Both of them are made of food polyethylene and have inspection and cleaning caps.

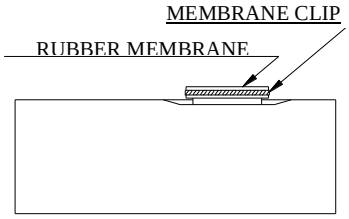
◊ The fresh water fill cap is located under the helmsman's platform, towards the port side.

◊ The vent connectors of the two fresh water tanks are piped into the corresponding gas cylinders containers.

◊ Each tank has a capacity of about 250 litres in order to have a total of 500 litres available.

◊ The level of fresh water contained in the tanks is gauged in the port tank and showed by the electrical gauge located in the 12 Vdc electrical panel. This gauge is enabled by turning on the heavy duty battery switch and the fresh water pump. A fuse protecting this gauge is installed behind the electrical panel.

Tank inspection



◊ Each tank has a cap; it can be accessed through its upper side, by lifting the lid located under the bed.

◊ Each inspection cap consists of a rubber membrane fixed around the opening by a pipe clip.

◊ The tanks have been built following the most modern hygiene standards. In any case, we recommend you to wash and disinfect them at least once a year, using diluted Amuchina according to the instructions for use, or any other specific product.

Warning on tank filling

- Avoid excessive pressure of the water flow when filling the tank.
- Once you have filled the tanks, it is advisable to open a tap and discharge a little quantity of water, to reduce the pressure in the tanks.

Pressurized hot and cold fresh water

- From the tanks, through separate pipes, the water is piped to the most aft "Tank control panel" of the three installed, (see diagrams at pages 68 and 69), complete with shut-off valves, and from there to the fresh water pump. An additional connection can be added in case the emergency fresh water system is provided.

- Pressurized by the fresh water pump, the water reaches the "Cold fresh water control panel", located in the middle of the three control panels, (see diagrams at pages 68 and 69), also complete with shut-off valves, to supply separately:

  - the fore bathroom washbasin and shower mixer
  - the galley sink mixer
  - the aft bathroom washbasin/shower mixer
  - the cockpit shower tap
  - to the deck washing hose connection

- From the water heater, the pressurized hot fresh water reaches the "Hot fresh water control panel", the most ahead of the three water control panels installed (see diagrams at pages 68 and 69), also complete with shut-off valves, to supply:

  - the fore bathroom washbasin and shower mixer
  - the galley sink mixer
  - the aft bathroom washbasin/shower mixer
  - the cockpit shower tap

- All cold and hot fresh water distribution pipes are made of food polyethylene. The hot water pipes are covered with a special thermal insulation jacket to reduce the heat loss.

Fresh water pump

The fresh water pressure system includes an electrical pump with an on/off pressure switch and a filter mounted on the suction fitting.

This pump is usually installed immediately ahead of the engine, beside the cooling sea water filter.

Its electrical supply is activated by the FRESH WATER PUMP magneto-thermal switch in the 12 Vdc electrical panel (see page 53).

Instructions

- Before starting the fresh water pump, always make sure that there is water in the tanks, checking the provided gauge. If there is no water, the fresh water pump will suck up air and will work in vain, being consequently damaged. Therefore, if the fresh water pump noise continues after turning off the taps, we recommend you to turn off the relevant 12 Vdc electrical panel switch.

- Open at least one of the two water tank valves, in addition to the valve supplying the fresh water pump, or check that they are already open. If installed, the valve connected to the pump on the bottom of the emergency water system must always be closed.

- Once you are sure there is water in the tanks, turn on the FRESH WATER PUMP switch on the 12 Vdc electrical panel (see page 53).

- If you want to use hot fresh water you have two possibilities:

  - start the engine (the water heater begins functioning automatically and supplies hot water after 15 minutes more or less) (with the engine-water heater connecting valves open);
  - if the 220 Vac electrical power is available, start the water heater by turning on the WATER HEATER switch in the 220 Vac electrical panel (see page 57). In order to be able to use 220 Vac electrical power, you need to connect the yacht to the shore outlet or to start the electrical generator. In these cases, please read carefully the paragraph "Water heater" at page 31 and the paragraph "220 Vac network" and the respective warning at page 50.

- Open normally the wished tap as for domestic use.

Sea water system in the galley

- This system, if installed, includes a foot pump mounted on the floorboard near the sink cabinet, which sucks up water from a seacock located under the galley floorboard and supplies an additional nozzle on the right sink (see page 69).
- To be able to use sea water, then, you just need to open the seacock valve and operate the foot pump.

Emergency fresh water system in the galley

- This system, if installed, includes a foot pump mounted on the floorboard near the sink cabinet, which sucks up water directly from the tank control panel and supplies an additional nozzle on the right sink.
- To be able to use fresh water you need to open the relevant valve (pos. 4) in the tank control panel (see diagram at page 68), close the valve connected to the fresh water pump (pos. 1), check that at least one of the two tank valves is open and operate the foot pump. In this way, you will be able to use fresh water also when the fresh water pump is off or out of order.
- To restore the normal service, remember to close the emergency fresh water valve in the tank control panel and open the valve connected to the fresh water pump.

Deck and/or chain washing water system

- To wash the deck or the chain with sea water, a water pump is installed on the port hull side, abaft the sail locker. Just under this pump there is a suitable protective filter.

- The relevant intake seacock is installed on the hull, towards the middle of the boat and against the sail locker aft bulkhead (see position 16 of the drawing at page 69).

- To start the above-mentioned water pump, turn on the **SHOWER PUMP switch** in the 12 Vdc electrical panel (see page 53).

- The hose connection for the deck washing pipe is located on the same surface of the windlass, towards the port side.

- An identical hose connection can be mounted to the left of the above-mentioned one and for the same services, in case a fresh water supply is provided, linked to the boat pressurized network.

General warning and caution

- We remind you that, if all on-board systems work properly, there should be no water in the bilge. If there is water, first of all check if it is fresh or sea water: in the first case, inspect the fresh water distribution system; in the second case, inspect the sea water distribution system, if provided, as well as the other possible sea water leaks (engine, rudder shaft, seacocks, etc.)

- We remind you that part of the sea water system is located under the waterline; in case of leaks or bursting, turn off immediately the relevant seacock.

- Before starting the fresh water pump, we recommend you to make sure that there is water in the tanks. If there is no water, the fresh water pump will suck up air and will work in vain, being consequently damaged. Therefore, if the fresh water pump noise continues after turning off the taps, we recommend you to turn off the 12 Vdc electrical panel switch. If the noise is intermittent, check that all taps are well closed and that there are no leaks in the system.

- As said above, before starting the water heater both mechanically and electrically, please read the paragraph "Water heater" at page 31 and the paragraph "220 Vac network" at page 50.

- The water system allows to suck up water from one or both tanks by opening the relevant valves located in the "Tank control panel". As the water level sensor is installed in the port tank, should you chose to suck up water from one tank at a time, it is better to empty the starboard one first, so as to be able to know the water level when emptying the port one.

- In case of maintenance or repair for a water leak in the distribution system, turn off the affected supply tap to stop the water flow (see diagram at pages 68 and 69).
- Before winter time empty as possible the fresh water tanks the entire water system, the water heater and the fresh water pump.
- Before using the sea water system, if provided, make sure that the water is clean where the boat is moored.

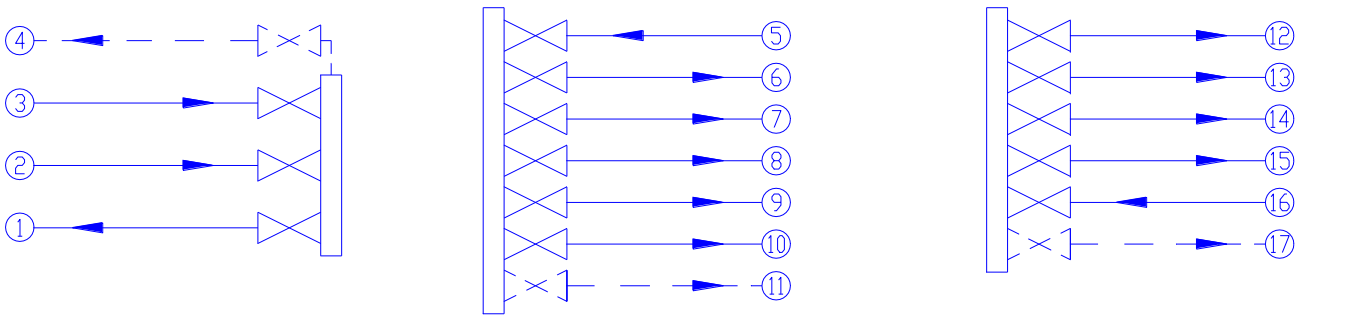
Maintenance

- Check periodically that there are no leaks along the system, paying particular attention to the joints, gaskets and pipe clips.
- Clean periodically the filter located above the fresh water pump.

We recommend you to consult the fresh water pump use and maintenance manual provided by the manufacturer and delivered separately.

Tank, cold and hot water control panels diagram

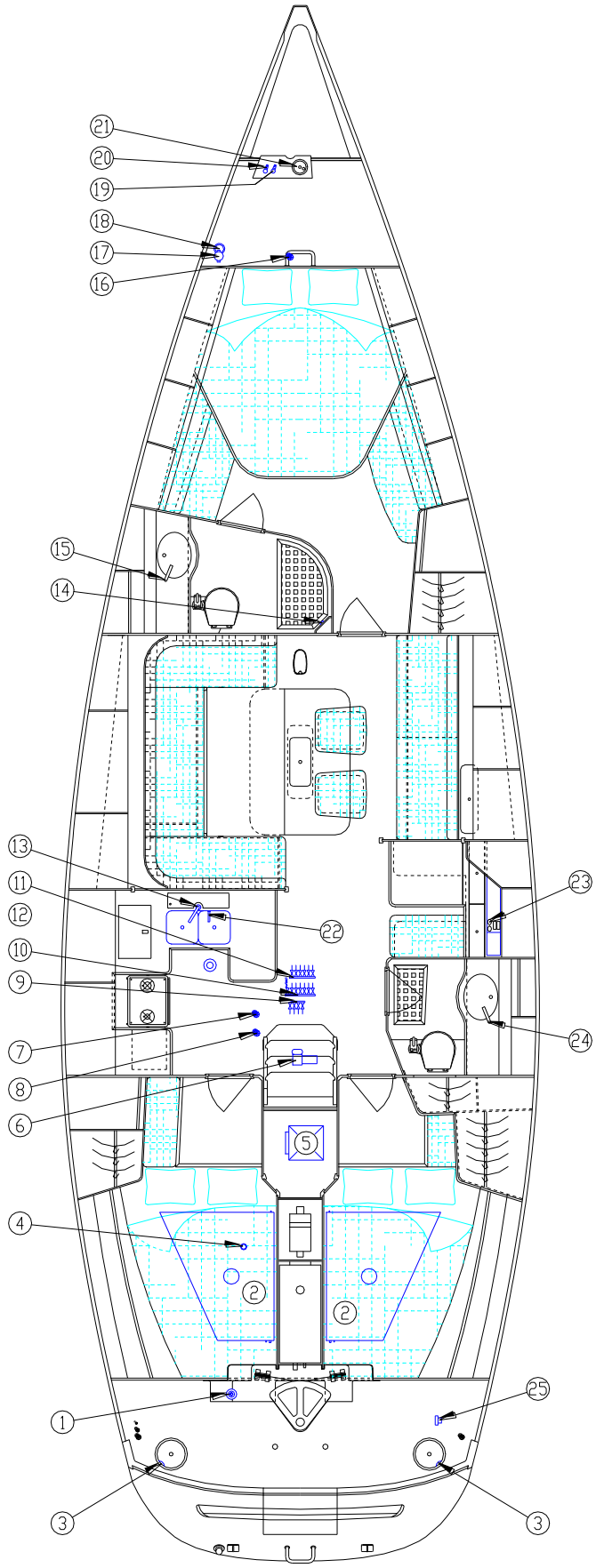
TANK CONTROL PANEL COLD WATER CONTROL PANEL HOT WATER CONTROL PANEL



1. Fresh water pump supply
2. From the starboard water tank
3. From the port water tank
4. Emergency water foot pump suction
5. Coming from the fresh water pump
6. To the fore bathroom services
7. To the galley sink mixer
8. To the aft bathroom services
9. Water heater supply
10. To the cockpit shower
11. To the deck washing
12. To the fore bathroom services
13. To the galley sink mixer
14. To the aft bathroom services
15. Coming from the water heater
16. To the cockpit shower
17. Available

Water system – Components location

1) Fresh water intake
   (see deck at page 26)
2) Fresh water tanks
3) Water tanks deck vent
   (inside the gas cylinder container)
4) Water gauge electrical sensor
5) Water heater
6) Fresh water pump
7) Seacock valve
8) Galley sink outlet seacock (as a reference)
9) Tank control panel
10) Cold water distribution control panels
11) Hot water distribution control panels
12) Sea/fresh water foot pump
13) Galley sink mixer
14) Fore bathroom shower mixer
15) Fore bathroom washbasin mixer
16) Seacock valve for the deck washing
17) Sea water pump for the deck washing
18) Protective filter for the deck washing
    sea water pump
19) Sea water hose connection
20) Fresh water hose connection
21) Windlass (as a reference)
22) Sea/fresh water nozzle
23) Water gauge in the 12 Vdc electrical panel
24) Aft bathroom washbasin/shower mixer
25) Cockpit shower mixer (on the deck)



Hot air heating system

Among the different heating systems available and the possible installation solutions, please find below the description of the Eberspacher diesel fuelled hot air system, with a maximum power of 4800 Watts.

- **The following directions do not replace the instructions provided in the heater's use and maintenance manual, delivered separately, which constitutes in any case the main reference document to consult.**

The heating system includes (see page 72):

- A metal case containing the burner, the heat exchanger, the heating air blower, the combustion air blower, the starting glow plug, the different devices necessary to its functioning and the safety devices. The heating unit is usually installed in the starboard aft peak and is then accessible through its opening on the deck.

- A suction duct, equipped with a suitable silencer, which draws the air to heat from the port aft cabin.

- An air delivery duct, which pipes the hot air to the outlets in the starboard aft cabin, in the dinette and in the fore cabin.

- A suction duct which draws the combustion air directly from the aft peak.

- A metal exhaust pipe for the combustion gas, which ends into a suitable scupper in the higher part of the aft starboard hull side.

- A burner fuel supply system, including:

  - a fuel supply valve in the fuel tank, complete with its remote control located beside the engine control and the generator one (if installed);

  - a coarse filter near the above-described valve;

  - a fuel metering pump with its built-in filter, piping the amount of fuel needed to the burner.

- An electrical supply switch located in the SERVICES section of the 12 Vdc electrical panel, which you can find at position n° 1 of the diagram at page 53.

- A temperature adjusting and control panel, installed just above the electrical panel in the chart area.

Instructions

Such a system, by continuously recycling the same air inside the boat, allows a quick heating with the minimum fuel consumption.

To start it and make it work properly you need to:

- open the heater fuel supply valve or check that it is already open;
- turn on the relevant switch in the SERVICES section of the 12 Vdc electrical panel (pos. 1).
- The temperature adjusting and control panel, located just above the electrical panel, contains all controls to start the heating system, namely:
  - higher push button, to start the system (with the electrical resistor sign), with a red LED indicating that it has come into operation;
  - middle push button, to turn off the system (no sign);
  - lower push button, to start the air circulation fan (with the fan sign), with a white LED indicating that it has come into operation;
  - knob to adjust the wished temperature.
- Obviously, in order to have a more even heating, it is advisable to always keep all doors, in particular cabins ones, open or slightly open.

- In order to allow a fair amount of air to circulate, as it is necessary for the normal functioning of the burner, the intake grille in the port aft cabin and the outlet one, in the sofa located in the wardroom starboard side, are fixed (cannot be adjusted) and must always be open and never be clogged.

- On the other hand, the grilles in the fore and starboard aft cabins can be adjusted in order to reduce or increase the air flow in circulation.
- The grille on the yacht access door allows a little air change. However, it could not be enough should the heating system be working for a long time; it is then advisable to slightly open a porthole so as to allow a higher air change.

- As the burner exhaust emission is very hot, both the pipe and the exhaust scupper reach dangerous temperature.

- **Therefore, while the burner is working, even if it is protected by a wood bulkhead, be careful not to touch with your hands or any other part of your body the above-mentioned exhaust pipe nor its hull scupper and do not place any inflammable material, rag, small tank or plastic container on them, so as to avoid the risk of fire.**

- **Do not place any object in the heater container, in particular any easily inflammable product as, besides REPRESENTING A CERTAIN CAUSE OF FIRE, they could prevent the suction of the air needed for the heater functioning.**

- **Do not touch the heating unit while the burner is working. In case of danger or fire immediately stop the burner, closing the fuel supply valve, if necessary, through the handle in the starboard aft peak.**

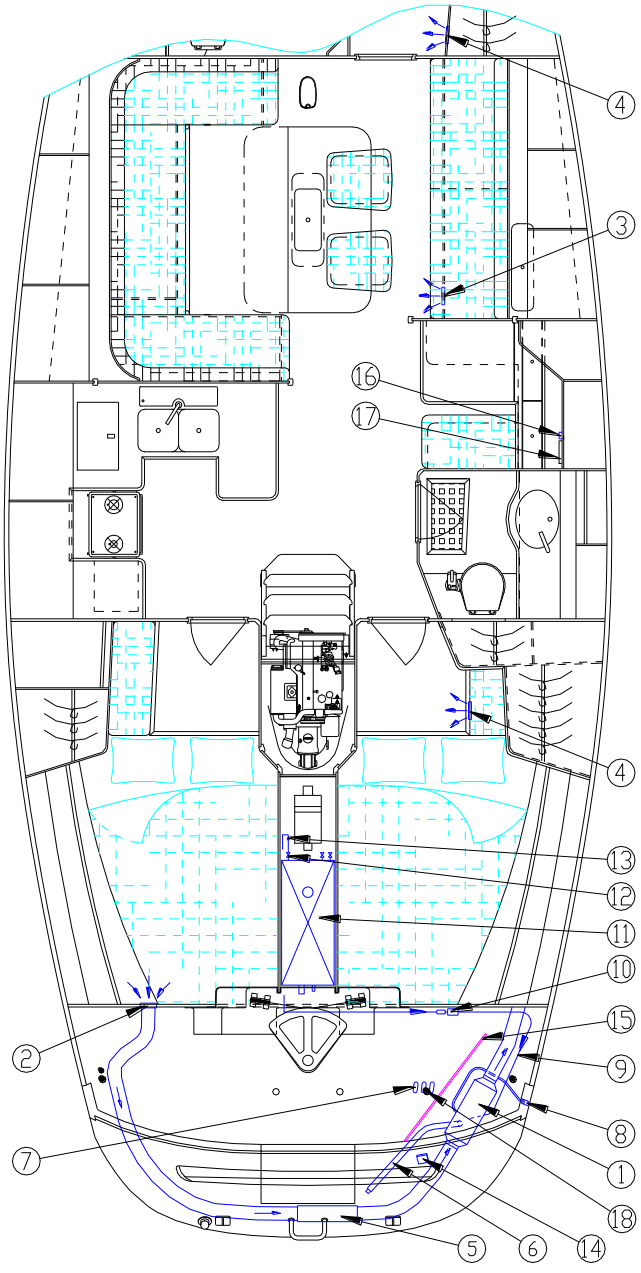
- **Read carefully the engine use and maintenance manual delivered separately and, if you have any doubt, contact the builder's assistance.**

Maintenance

We recommend you to consult and observe the directions contained in the use and maintenance manual provided by the manufacturer and delivered separately.

Components location

1. Eberspacher hot air heater
2. Air intake grille in the port aft cabin (non-adjustable)
3. Hot air outlet grille in the dinette (non-adjustable)
4. Hot air outlet adjustable grille
5. Suction duct silencer
6. Combustion air suction duct
7. Remote control for the fuel supply valve on the tank (operated from the deck)
8. Burner combustion exhaust scupper (hull side)
9. Fuel supply pipe
10. Burner fuel metering pump with its filter
11. Fuel tank
12. Fuel supply valve on the tank
13. Heater coarse fuel filter
14. Eberspacher heater control panel
15. Heater room separating bulkhead
16. Temperature adjusting and control panel
17. Generator control panel (as a reference)
18. Remote control for the engine and electric generator fuel supply valves (as a reference)



Shower, sink and washbasin drain system

Fore bathroom shower drain system

- The bilge collecting the fore bathroom shower water is drained by an electrical pump located in the washbasin cabinet, together with the protective filter.

- The switch that enables the above-mentioned electrical bilge pump is located in the 12 Vdc electrical panel (see page 53) and it is called SHOWER PUMPS, while the starting lever switch is located under the shower mixer (see page 76).

- While having a shower, or when you finish, you always have to drain its bilge, starting the relevant electrical pump.

- The pump discharges at sea through a scupper mounted on the bathroom hull side.

To drain do as follows:

- Turn on the SHOWER PUMPS switch in the 12 Vdc electrical panel, enabling the electrical drain pump.

- When you finish showering, turn on the switch located under the shower mixer.

- Leave the switch on until the water in the bilge is completely drained; then, turn the switch off.

- Once finished the operation, remember to turn off the switch in the 12 Vdc electrical panel too.

Aft bathroom shower drain system

- The bilge collecting the aft bathroom shower water is drained by the same electrical pump of the main bilge.

- The switch that enables the above-mentioned bilge pump is located in the middle of the 12Vdc electrical panel (see page 53) and it is called SHOWER PUMP, while the starting switch is located under the mirror, towards the stern (see page 76).

- The electrical pump draining the shower or the main bilge is located in the aft bathroom washbasin cabinet, together with the protective filter.

- While having a shower or when you finish, you always have to drain its bilge, by starting the relevant electrical pump.

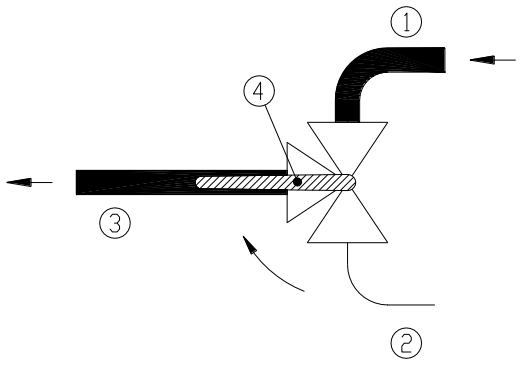
- The electrical pump drain water flows into the drainage collector pipe located abaft the port hull side, together with the manual bilge pump drains and the engine exhaust antisiphon.

To drain do as follows:

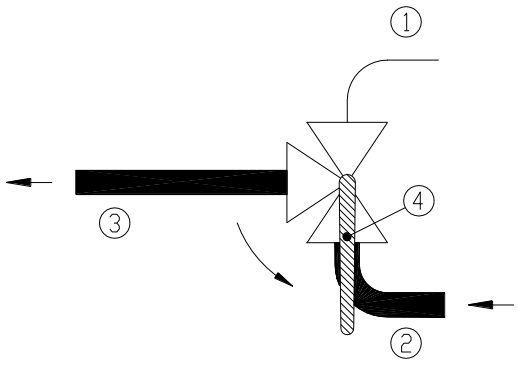
- Turn on the SHOWER PUMPS switch in the 12 Vdc electrical panel, enabling the electrical drain pump.
- As there is only one pump to drain both the shower bilge and the main bilge, you need to set the three-way valve above the pump to the wished position, before starting the pump. This valve will be referred to from now on as "Bilge selector", whose functioning is showed in the diagram below.
- We recommend you to always keep the above-mentioned "Bilge selector" in main bilge draining position and to set it to the shower bilge draining only when necessary. The "Bilge selector" is located near the pump (see general components location at page 76 and illustration at page 122).
- While having a shower or when you finish, turn on the switch under the mirror.
- Leave the switch on until the water in the bilge is completely drained; then, turn the switch off.
- Once finished the operation, remember to turn off the switch in the 12 Vdc electrical panel too and to set the "Bilge selector" again to the main bilge draining position.

"BILGE SELCTOR" CONTROL LEVER POSITION

MAIN BILGE DRAINING



SHOWER BILGE DRAINING



1) Suction from the main bilge
2) Suction from the shower bilge
3) To the filter and to the electrical pump
4) Three-way valve control lever

Maintenance

- Check annually the pipes condition.
- Check periodically that the filter on the intake of the shower drain pump is clean.
- Check annually the electrical pumps impellers.

Washbasins, sinks and plate rack drainage

- **Fore bathroom washbasin**
  - The fore bathroom washbasin drain valve can be accessed by lifting the trap door in the floorboard between the bathroom and the fore cabin bed. It is the valve in the middle of the three installed.

- **Aft bathroom washbasin**
  - The drain valve of the starboard aft bathroom washbasin can be accessed by lifting the trap door in the floorboard between the bathroom and the access ladder. It is the valve in the middle of the three installed.

- **Galley sinks**

  - The galley sinks drain valve can be accessed by lifting the trap door in the galley floorboard. It is the closest valve to the access ladder.

- **Plate rack**

  - The plate rack drainage flows into the galley sink drainage, near the sinks.

Warning

Always turn off the sinks and washbasins drain valves before sailing.

Components location

1) Fore bathroom washbasin drain valve

2) Starting lever switch for the electrical drain pump of the fore bathroom shower bilge

3) Protective filter of the bilge electrical pump

4) Fore bathroom shower bilge electrical drain pump

5) Drain scupper for the fore bathroom shower electrical pump (hull side)

6) Electrical drain pump for the aft bathroom shower bilge or for the main bilge

7) Three-way selecting valve to drain the shower or the main bilge

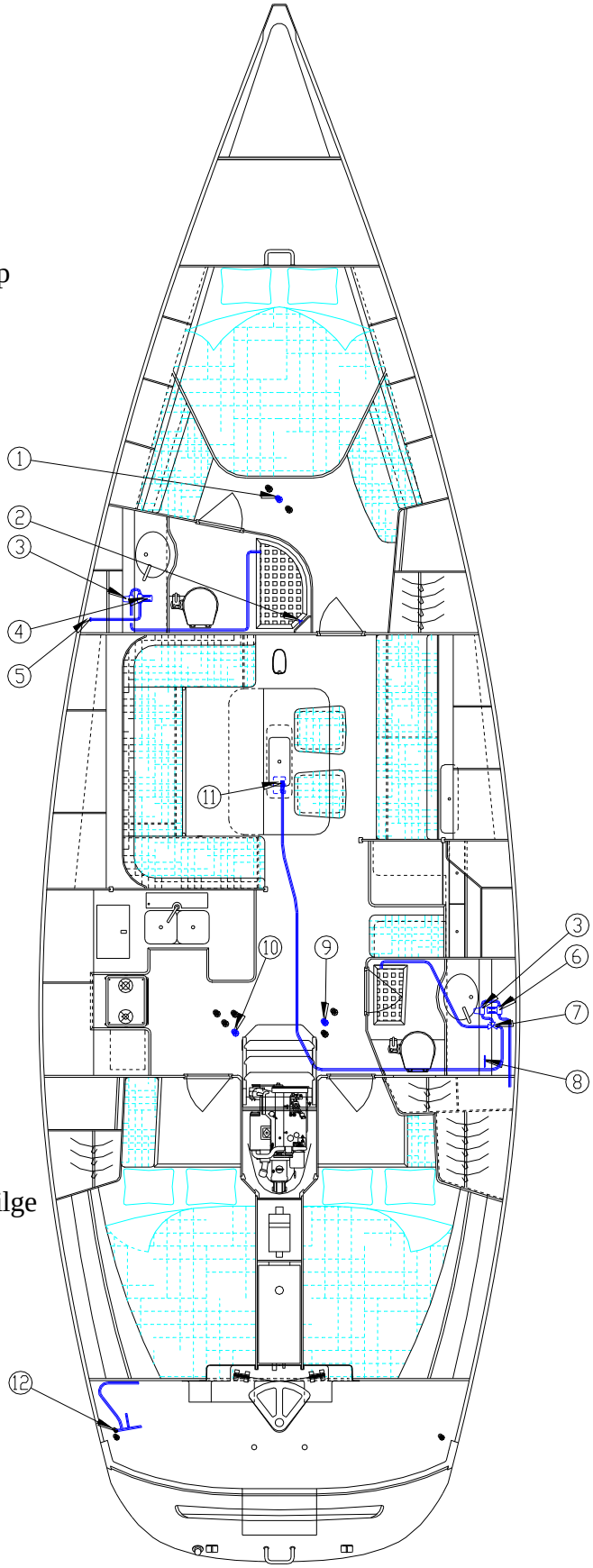
8) Starting switch for the electrical drain pump of the aft bathroom shower bilge or of the main bilge

9) Aft bathroom washbasin drain valve

10) Galley sink and plate rack drain valve

11) Main bilge electrical pump suction strainer

12) Drain scupper, on the hull side, for the manual bilge pump, the electrical bilge pump and the engine antisiphon



External cockpit drain system

The deck cockpits equipped with drain systems are:

- ◊ **Anchor peak, self-draining.**
- ◊ **Boat cockpit, self-draining.**
- ◊ **Life raft peak, self-draining.**
- ◊ **Sail locker hatch channels and deck drainage halyard lead, self-draining.**

Anchor peak

- The possible water collected in this peak freely flows through the two holes in the hull sides of the peak bottom.

Boat cockpit

- The water collected in this cockpit freely flows through two scuppers on the hull sides. The two deck gas cylinder containers are also drained through these scuppers.

Life raft peak

- The water collected in this cockpit freely flows through two holes made on the bottom and linked to the above-mentioned cockpit drain by short plastic pipes.

Deck drainage grooves

- The water collected in the sail locker hatch channel freely flows towards the anchor peak through suitable drainage grooves.

- The water collected in the halyard lead hole freely flows towards the deck lower floors.

Warning and caution

- It is fundamental to keep the cockpit drains always free and clean. Make sure in particular that they are not clogged by sheets, ropes in general, rags, pieces of paper or plastic, leaves, etc.

Winter season

Steel and brass equipment

For a better preservation, the steel and brass equipment can be coated with a protective film, using a spray suitable for the marine environment or simply Vaseline oil.

- There is a form of steel corrosion caused by the polluted air, called "pitting corrosion". A film of the above-mentioned products keeps the surfaces unaltered. To remove that film, just use petrol or alcohol.

Ventilation

- It is important to regularly ventilate the inside of the boat to prevent mould and/or corrosion.
- For this reason two dorades can be installed on the deck and a grille in the yacht access door (see page 95).
- For further ventilation, in case you cannot take care of it or make other people do it, try to leave some hatches half-closed, covering them with a tarpaulin in order to prevent rain from getting into the boat.

Batteries

The life of a battery basically depends on the way you use it; the best thing is that it "works", being discharged and then regularly recharged.

- If the boat is hauled, the best thing to do is to take the batteries to an electrical workshop, where the technician will do the periodical maintenance described above.
- We advise you to do the same thing in case the boat stays afloat, with nobody taking care of it and periodically turning on the services and starting the battery charger (or the engine).
- In any case the battery terminals must be greased with Vaseline.

Halyards, sheets and ropes in general

It is advisable to take down the halyards from the mast and replace them with messengers.

- Then, it is advisable to wash them with fresh water, without soap in order not to risk reducing their resistance.

Do the same thing for sheets and other ropes, remembering to store them only when completely dry.

Fire extinguishers

If they are still full, it is better to leave them on board; they may be used in case of fire.

If they are empty or need to be checked, have them recharged or checked.

Gas

Do not leave gas cylinders on board.

- Remove the pressure reducer too, to prevent it from oxidizing and jamming.

Water system

This system is the most affected by cold temperatures. We advise you to drain the entire water system, not only the tanks but also:

- the pipes
- the fresh water pump
- the water heater

If the water is not completely drained, some components could crack in case of temperature below zero or, in any case, rot.

Clean properly the water tanks, opening the provided inspection caps.

Electrical system

It is advisable to open the electrical panel and spray CRC on the connections.

The same treatment should be done on the bulb sockets, electric outlets, switches, welds and terminals.

Interior

The first thing to do is to clean with the vacuum cleaner, then with a detergent, to remove also the salt crystals (they are the worst enemies, as they create dump and then mould and oxide).
It is also advisable to take away all foodstuffs, including cans.
There are very efficient hygroscopic salts dehumidifiers, cheaply available in all hardware stores, to be placed in each room, including the peaks and the engine room.
It is advisable to take away the mattresses too, as the foam rubber absorbs humidity. Linen, curtains, clothes and other fabrics should be taken away and washed.
Leave all doors, cabinets and cabins open; leave the fridge open too, after washing it with water and vinegar.
We recommend you to allow a good airing in all rooms; for this reason it is fundamental to ventilate the inside of the boat, thinking of any method to let the air in but not the water. In this connection, see paragraph Ventilation at page 78.

Engine

The more the marine engine works the less it deteriorates; it should run periodically, at least once a week. In this case, no special wintering maintenance is needed but checking carefully the cooling liquid density adding, if necessary, some antifreeze.
Then, just take care of the oil and filters maintenance and changing, etc. Anyway, the above-described maintenance is enough assuming that the engine is in perfect working order and does not need periodical revisions.
In this connection, carefully observe the expiry dates in the use and maintenance booklet.
If, on the contrary, a real wintering maintenance is needed, do as follows:

- First of all, change the oil (always when the engine is hot), its filter and the fuel one.
- Then, after cleaning the sea water filter, run the engine in fresh water at least for an hour, until the heat produced melts the salt residues. In order to carry out this operation properly, use a bucket into which you will put the fresh water hose and the engine intake.
- Add some antifreeze into the bucket and stop the engine before this liquid is completely ejected.
- Once finished washing the cooling system, remove the water pump impeller, grease with Vaseline and then mount it again.
- Loosen the alternator belt and any other belt connected to the engine (frigoboat, water-maker, etc).
- You can also remove the injectors and take them every year to a skilled technician to have them adjusted.
- Finally, check the density of the fresh water used for the engine cooling and add the special antifreeze, if necessary.

Hatches and portholes

Before locking them, it is advisable to grease their gaskets with Vaseline. It will be easier to open them again.

It is also advisable to darken the inside of the boat, as the light could deteriorate the tone of the wooden furniture, upholstery and other furniture in general.

Bottom

If the boat is hauled, it is fundamental to remove the seaweeds and barnacles with a water pressure cleaner.
We advise you to immediately remove the zinc parts, before the screws become oxidized blocks.

- The grounding plates, the propeller, the propeller shaft support, the seacocks and the scuppers have to be brushed with an iron brush.

Bilge pumps

- If the boat stays afloat, not using them could be risky:

  - grease the outside of them to prevent oxidation;
  - make them work with slightly warm fresh water, to melt the salt crystals;
  - check and grease the impellers or the rubber membranes.

- If the boat is hauled:

  - protect the external parts;
  - make them work with fresh water;
  - remove the impeller, grease it and leave it outside the pump.

- In case of a membrane pump, make it suck an emulsion of water and Vaseline oil.

Hull

Whether it is hauled or afloat, it is advisable to protect the hull applying a special polish. There are many products available: you should prefer those making the surfaces more watertight and less porous, rather than simple cleaners. Use silicone based products, as they protect better the hull against the dirt and the acid substances typical of harbours.

- If the hull is coloured, bear in mind that both the gel coat and the dark paint tend to lose their brightness and pigment as the years go by. In this case, it is advisable to protect the sides from the ultraviolet rays with robust tarpaulins.

Bilges

It is the area that needs more cares.

- First of all drain completely the sea water;
- then, wash the bilge with a special product to melt and remove the emulsified grease;
- it is advisable to air it as much as possible, leaving some floorboards open.

Fuel tank

It is advisable to fill completely the fuel tank, to avoid both condensation and the oxidation risk of the engine supplying system (injection pump, injectors, etc.).
If the boat is mooring in a very cold area, it is advisable to add some special antifreeze (available in any filling station) or a drop of petrol in the fuel.

Electronic equipment

If the boat is not guarded, thefts are the main problem.
It is advisable to remove and take away as many instruments as you can, noting down the connections so that it will be easier to install them again in spring.

- In any case, it is advisable to remove the internal batteries and protect them with the dehumidifiers described above.

Hood

It is an excellent protection against the sun and the dust, allowing to leave some hatches slightly open.

- The best solution is to slightly tighten a rope from the forestay to the mast and from this to the backstay, to create a sort of ridge tent that should be fixed laterally to the eyebolts and to the pulpits, passing the ropes on the stays. In this way, there will be a very effective ventilation channel.

Valves, seacocks, pipe clips

If the boat stays afloat, it is advisable to check them one by one.
Just a leak is sufficient to let the boat dipping too much.
The seacocks, that is those valves under the waterline, have to be left closed, spraying some CRC or silicone grease on their body (internal and external), if made of metal, and on the other metal components (clips, stop valves and connectors in general).
If the boat is hauled, it is also advisable to close, besides the seacocks, the other external holes with corks, as they could become wasps' and other insects' nests.
For the other components, the same treatment of when the boat stays afloat is applicable.

Sails

- Take away all sails.
- Wash them with fresh water and let them dry in a day of little wind, to prevent them from flapping.
- Then, fold them up according to the sailcloth seams and place them in a dry place.

Toilet

Flush with fresh water and neutral detergent.
For a better preservation it is also advisable to do as follows:

- close the aspiration valve, release the pipe clip and put the pipe into a bucket full of water and soap (10 litres more or less);
- then, start the pump to suck the mixture in the bucket and discharge it;
- rinse just with fresh water;
- than, pour ½ litre of Vaseline oil into the bucket and start the pump;
- close the drain and intake seacocks, so that the oil remains inside the toilet pump.

In this way, the membranes remain soft and in good working order for some years.

- It is advisable to occasionally replace all black water pipes, in order to avoid foul smells.

Should the black water system be installed too, is advisable to do as follows:

- Wash the whole system with plenty of fresh water and drain it completely.
- Check the macerator impeller and grease it.

Advices for a safe winter mooring

- Add at least two extra aft dock-lines, besides the two ones already provided, equipped with mooring springs to stand the possible backwash; fasten them to two firm points, but do not use either the bitts or the winches (as in the long run they could get damaged).

- Cover the ropes with a rubber pipe or with leather, in the point where they touch the deck, the fairleads or the wharf.

- Make sure that the two moorings ropes are not criss-crossed.

- Leave some slack on the aft ropes, in order to allow them to stand the possible backwash and tide movements (inquire about that).

- Place at least 4-6 fenders on each boat side, if possible hanging in horizontal position, in order to have a larger protecting surface and a double binding.
  Do not fasten them to the stays, but to the stanchion base or to the deck house handrails.

- Remove or raise the bathing platform (opening transom) to prevent it from knocking against the quay or the electrical power panels, when moving laterally.

- Always unplug the "220 Vac" current cable from the shore supply.

- Leave the boat keys and your telephone number to the staff, remembering that a good tip is always welcome! If a guard is not available, try to reach an agreement with your boat neighbour to help each other and open your boats periodically for ventilation.

- It is a good rule to prepare and leave on board, better if on the chart table, a list of the main instructions for using your boat (location of the fire extinguishers, the bilge pumps, the seacocks, etc.).

Engine: system and mechanics

The following directions do not replace the instructions provided in the manufacturer's manual, delivered separately.

◊ For any details on the engine warranty, repair and maintenance, refer to the warranty booklet and the instructions manual provided by the engine manufacturer.

◊ We remind you to always quote the engine serial when ordering spare parts or requesting information from the manufacturer.

◊ You can find the engine components location at page 93.

Fuel system, fuel tank

The fuel system consists of the following components:

- Fuel fill cap, accessible by lifting the port aft peak lid, located between the peak opening and the gas cylinder container.

- From the fill cap the fuel flows, through an approved rubber pipe, into the fuel tank. This tank, with a capacity of about 300 litres, is made of stainless and has the "EC" approval; it is located abaft the engine, in the container between the two aft cabins.

- The fuel electrical gauge is located in the 12 Vdc electrical panel, abaft the water gauge. The level sensor, on the contrary, is located in the fuel tank (higher side).

- In addition to the fill pipe, the followings are also connected to the fuel tank:

  - valve and two-way pipe for the engine supply;
  - vent pipe, whose outlet, complete with a flame breaker grid, is located in the starboard gas cylinder container;
  - valve and two-way pipe for the generator (if provided) supply;
  - valve and pipe for the Eberspacher heater (if provided) supply;
  - ground lead.

- Two filters are provided for the engine fuel:

  - an additional filter, a coarser one, installed on the engine room right bulkhead;
  - a fine filter, installed on the engine.

- Remote control handles for the fuel valves, which suck fuel from the tank and are accessible through the starboard aft peak opening (see illustration below). The above-mentioned valves can also be directly operated by hand, opening the relevant doors near the headboard in the aft cabins separating bulkhead. These doors allow you to access the above-mentioned valves and the fuel tank builder's plate. Two more remote control handles can be installed, for the generator and Eberspacher heater valves.

Warning and caution on fuel system

- In case of emergency, such as engine fire or fuel leak, immediately cut the fuel supply. To do this you can either:
  - directly close all stop valves on the fuel tank (there are at most three valves installed supplying the engine, the electrical generator and the hot air generator);
  - or pull the above-mentioned remote control handle.
- Should the engine and/or electrical generator work while their valves are closed, it could be necessary to clean out the system before restarting them.
  Refer to the engine use and maintenance booklet to carry out this operation.
- **If not really necessary, never stop the engine or the electric generator by the above-mentioned valves.**

Fuel system maintenance

- Replace the filter of the engine fuel system following the directions in the use and maintenance booklet, delivered separately. The same instructions are valid for the additional filter too.

- When filling the fuel tank, it is advisable to use a funnel equipped with a mesh filter.

Engine water cooling system

- The engine cooling system is of fresh water indirect type, sealed, with an expansion tank and a sea water cooled heat exchanger. The expansion tank is located in the container above the engine (the same container of the water heater).

◊ The sea water is sucked through appropriate holes in the S-Drive step and the stop cock is located on the left side of the reverse gear. This tap is accessible by opening the hatch located down in the port aft cabin (see page 93).

- Then, the sea water flows through the filter located immediately ahead of the engine and accessible by lifting the access ladder.

- Passing through the filter the sea water reaches the engine pump, then flows through the engine heat exchanger and it is finally discharged together with the exhaust emission.

- The antisiphon located at the engine cooling water exit, is fixed on the bulkhead in the container above the engine (the same container of the water heater), immediately abaft the access opening, in the port aft cabin. This antisiphon, consisting of a stainless steel goose-neck pipe-fitting at 180°, is connected by a small pipe to a drain scupper located on the port aft side of the hull (the same scupper of the manual bilge pump): in this way, it "opens" the system and prevents water from returning to the engine.

- Before starting the engine, we recommend you to always make sure that the engine cooling water seacock is open.

Engine water cooling system maintenance

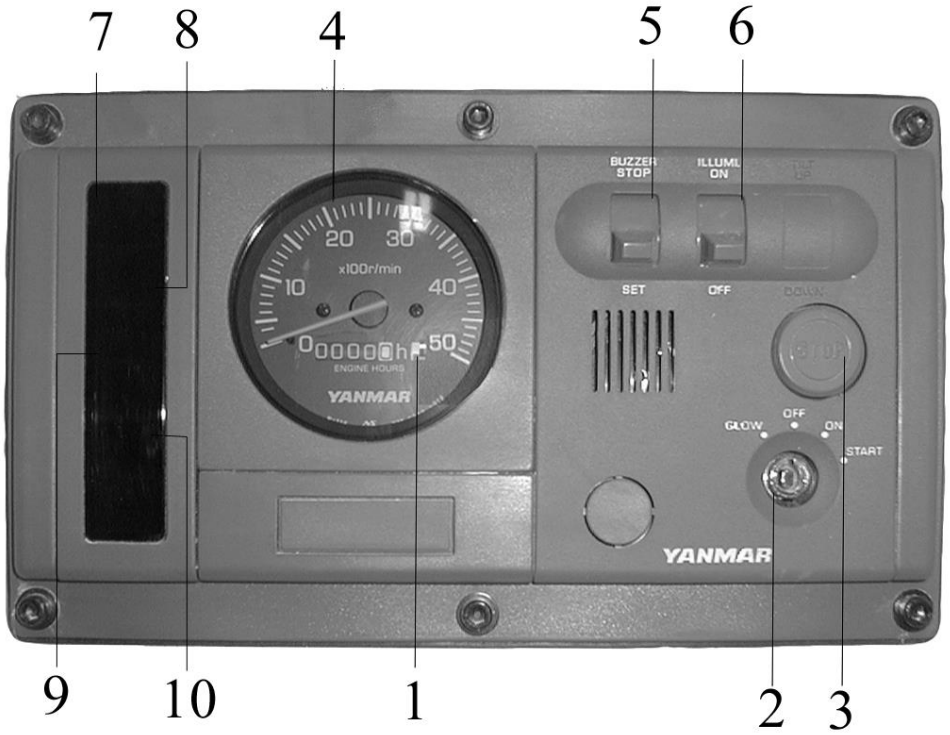
- Clean frequently the sea water filter according to the engine use and the navigation water cleanliness.

- Check frequently the proper functioning of the antisiphon located in the engine sea water cooling system. If clogged or malfunctioning, replace it.

- As far as the engine is concerned, refer to the manufacturer's instructions manual delivered separately.

Engine control panel

- The engine control panel is located in a recess on the starboard cockpit side, just behind the steering wheel, and contains the instruments, controls and engine warning lights as showed in the illustration below:



1) Hour indicator
2) Starting key
3) Engine **STOP** red switch
4) Rev counter
5) Buzzer
6) Panel light switch
7) Battery warning light
8) Water warning light
9) Oil warning light
10) S-Drive step warning light

- Abaft the engine control panel there is the accelerator/reverse gear single-lever control described in the next paragraph.

For the engine control panel description and instructions, please consult the engine instructions manual delivered separately.

Accelerator/reverse gear single-lever control

- This lever functions both as accelerator and at the same time as reverse gear, depending on whether you push it ahead (ahead motion) or abaft (backwards motion).

The remote control installed is a three-position type, with the following functions:

- SAFETY POSITION: with the control lever blocked in vertical position, it is neither possible to accelerate, nor to put the engine in reverse.

- ENGINE IN NEUTRAL: to put the engine in neutral pull out, horizontally, the control lever central hub. In this position, you can accelerate both rotating the lever forward and backwards, having the possibility to start and warm up the engine. Taking back the lever from the accelerating to the vertical position, the engine will be back in neutral, idling.

- ENGINE IN GEAR: to put the engine in gear, while it is running, lift the black upper part of the handle and rotate the lever forward, for the forward gear, or backwards, for the reverse.

- The two cables allowing to accelerate the engine and to put it in reverse come out of the remote control. They must be straight, with no excessive bends, in order to work properly. It is then advisable not to stow any object or material in the starboard aft peak, in order not to bend the cables.

We recommend you to consult the remote control use and maintenance manual provided by the manufacturer and delivered separately.

Engine starting

The following directions do not replace the instructions provided in the manufacturer's use and maintenance manual, delivered separately.

- The engine is started by the starter, which is supplied by the engine battery or, when the heavy duty battery switch is in BOTH position, by all batteries.

- The battery for the engine starting, of 12 Vdc, 70 Ah and 680 A of charging current, is located beside the other batteries, under the starboard aft cabin bed surface, and is the farthest from the engine room.

Engine starting instructions

Before starting the engine and especially after a long period of inactivity, check the cooling liquid and both engine and reverse gear oil levels. Then, do as follows:

- Open the sea water tap for the engine cooling system, located on the port side of the reverse gear (see diagram at page 93).
- With the accelerator/reverse gear single lever in vertical position, pull out horizontally the control lever central hub and rotate the lever 1/3 turn forward to slightly accelerate (see page 89).
- Insert the key in the engine control panel and rotate it clockwise; when in **ON** position, the warning lights will light up; if you go on turning the key, up to **START** position, you will start the starter which, consequently, will start the engine.
- To put the engine in gear you must first take the lever back to the vertical position, and then lift the black upper part of the handle. In this position, rotating the remote control lever forward or backwards you will put the engine respectively in gear or in reverse and you will accelerate at the same time.
- Before putting the engine in gear, it is a good rule to warm it up in neutral for some minutes at 1200 – 1400 revs a minute.
- Once started, make sure that the engine cooling water flows out through the exhaust pipe located in the transom, on the port side.

Running-in

- Please read the instructions provided in the builder's use and maintenance booklet delivered separately.

- Do not push the engine to its limits for long periods, especially for the first 25 hours of functioning.
- Do not subject the engine to stress when it is cold.
- After the first hours of engine functioning, as indicated in the use and maintenance manual, contact the builder's assistance for the first overhaul.

Engine stop

- Throttle back pushing the lever to its vertical position.
- Let the engine idle for some minutes to make the temperature fall.
- Stop the engine by pressing the **STOP** red switch in the engine control panel.
- When the engine is stopped, pull out the key.

- If you leave the boat, close the engine cooling water seacock.

General warning and caution on engine use

- **Read carefully the engine use and maintenance manual delivered separately and, if you have any doubt, contact the builder's assistance.**
- Do not keep the engine running with the boat leaning at one side at an angle of more than 20°.
- Never operate the heavy duty battery switch while the engine is running.
- Never turn the starting key into **OFF** position while the engine is running.
- Check all levels before starting the engine, especially after long periods of inactivity.
- Make sure that there are no leaks in the various systems: cooling water, fuel and oil.
- Check periodically the cooling water pump: if it leaks even slightly, immediately intervene.
- Check frequently the engine cooling water filter. If necessary, clean it after previously closing the seacock valve.
- Check periodically the condition of the fine fuel filter (read the instructions in the relevant booklet delivered separately) and of the additional coarse one (same instructions of fine fuel filter).
- Check periodically the oil filter condition (read the instructions in the relevant booklet delivered separately).

Reverse gear

For the reverse gear maintenance and checks, please refer to the manufacturer's manual delivered separately.

Engine silencer and exhaust

◊ Abaft the engine there is a plastic silencer. From the silencer, the engine exhaust pipe, made of reinforced and approved rubber, continues, passing under the fuel tank support structure, up to the aft peak.

◊ In the aft peak, the engine exhaust pipe connects to a stainless steel exhaust outlet located in the transom port side. Near the exhaust, this pipe has a wide bend facing upwards, functioning as a siphon to prevent sea water from getting in.

Access to the engine system and accessories

- For any check or maintenance, the Grand Soleil 50' engine can be accessed by simply lifting the access ladder. From that opening you can also have access to the: alternator, two-way taps sending engine water to the water heater and back, additional coarse and fine fuel filters, engine cooling sea water filter and the relevant pump on the engine, fresh water pump and all equipment in general on the front of the engine.

- There are also some other side openings in the aft cabins allowing to access to the:
  - Starboard cabin: oil and air filters, oil level and accelerator/reverse gear control lever.
  - Port cabin: starter, sea water pump, seacock tap and engine exhaust.

- Never reach the engine room while the engine is running.

Engine room ventilation

On the Grand Soleil 50' there is a natural ventilation system for the engine room.

- The two air vents for the engine ventilation, protected by two plastic grilles, are located on the bathing platform (opening transom) sides. Should the bathing platform (opening transom) be electrically controlled, the above-mentioned vents are both located on the starboard side.

- Two pipes of the right diameter connect the above-mentioned air vents to the engine room, allowing the necessary air for the engine functioning to get in and proper ventilation. The ventilation is forced when the engine is running, because of the engine aspiration, while it is natural when the engine is stopped.

Warning on engine room ventilation

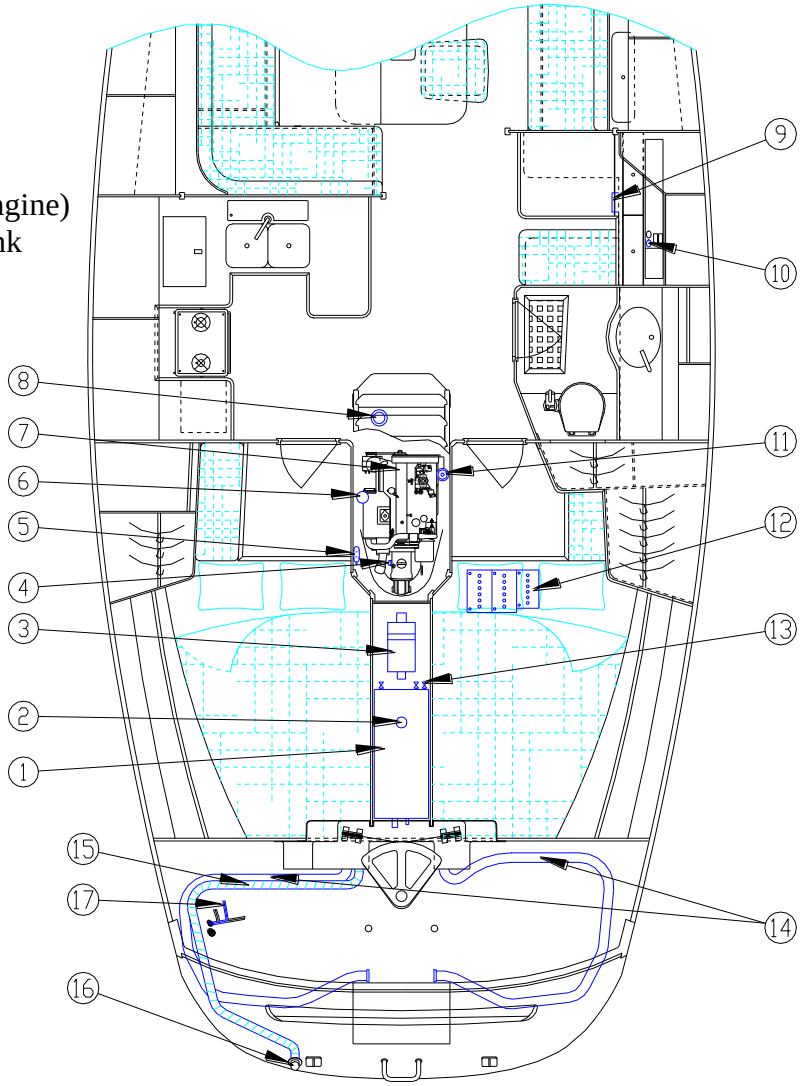
Warning:

- Do not prevent air from circulating, clogging the air vents in the transom with towels or other objects. Only in case of fire inside the engine room, it could be useful to cut the ventilation, clogging the vents by any means.

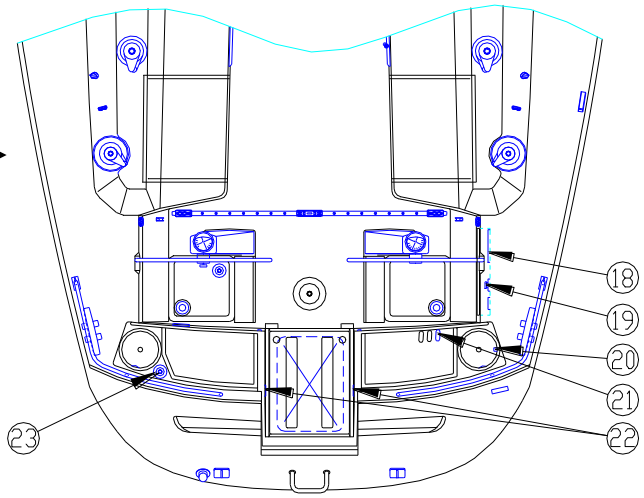
- Do not crush or cut the air circulating pipes in the aft peaks with heavy or sharp objects.

Yanmar 29,4 Kw engine and accessories location

1. Fuel tank
2. Fuel level sensor
3. Plastic silencer
4. Engine cooling water seacock valve
5. Antisiphon (in the container above the engine)
6. Engine cooling fresh water expansion tank in the container above the engine)
7. Yanmar 29,4 Kw diesel engine
8. Engine cooling sea water filter
9. Heavy duty battery switch
10. Fuel level
11. Engine additional fuel filter
12. Engine starting battery
13. Engine fuel supply valve
14. Engine room ventilation pipe
15. Engine exhaust pipe
16. Engine exhaust
17. Antisiphon exhaust
18. Engine control panel
19. Accelerator/reverse gear remote control
20. Fuel tank vent
21. Remote control for the engine fuel supply valve
22. Engine room ventilation grilles
23. Fuel fill cap



DECK →



Hatches, portholes and interior ventilation

From bow to stern, the hatches and portholes are located as follows:

- hatch for accessing the sail locker
- fore cabin hatch
- fore ante-cabin opening porthole
- fore bathroom opening porthole
- wardroom hatch
- 2 fixed portholes on the wardroom (one on each deck house side)
- opening porthole on the deck house starboard side, over the chart area
- opening porthole on the deck house starboard side, for the aft bathroom
- 2 opening portholes on the deck house port side, over the galley
- opening porthole on the deck house side, on each aft ante-cabin
- opening porthole on the ceiling, on each aft ante-cabin
- opening porthole in each aft cabin, on the cockpit seat side
- Plexiglas sliding grating for descending below deck

Warning and caution

- Both portholes and hatches can cause troubles during sailing. If left open they may let water in, so:

  - **IT IS ABSOLUTELY OBLIGATORY TO HAVE ALL PORTHOLES AND HATCHES CLOSED DURING SAILING, paying particularly attention to those located forward, because they may let a lot of water in, in a very short time.**

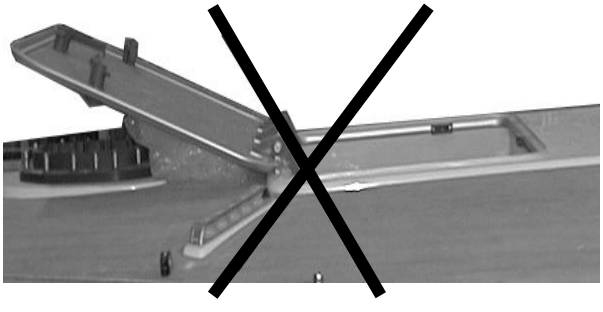
  - It is also advisible to check all levers and hand-grips to be perfectly closed.

We recommend you to observe the following safety rules when using the opening hatches and portholes:

- If you leave the boat, we recommend you to lock all hatches by the red lever located inside the black locking handle.

- Never leave a hatch top open at an angle of more than 45° to deck plane; this will allow very good ventilation and avoid the risk of tripping and falling.

YES



NO

- If the boat is unattented in order to avoid damaging the hinges when opening and closing the hatches, we recommend you to gradually open and close them without an excessive strength, respecting the clutch clicks.

- When a hatch is open, never place your fingers, hands or feet on its closing edges.

- Avoid walking on the Plexiglas surface of the hatches tops, as, if it is wet or just damp, it could be slippery. We recommend you to apply some nonslip tape on that surface.

- **Caution:** the portholes open inwards, so they have to be opened with great caution as they are located at the head level.

Maintenance

- Before opening the portholes, dry with a sponge from the outside the possible stagnant water in its edges, so that it does not fall inside the boat.

- Wash frequently the hatches tops with fresh water and occasionally grease their gaskets with Vaseline.

- If you are not able to make the portholes remain in the wished position, check the opening clutch and adjust its Allen screw located on the hinge.

Interior ventilation

In order to allow good ventilation inside the yacht, besides the above-listed hatches and portholes, which are usually opened only by the crew or by trusted staff, there are also:

- two dorades with their vents in the middle of the ceiling, between the chart area and the galley;

- a ventilation grille on the teak access door.

Warning and instructions for the interior ventilation

- When the boat is moored, you can leave the dorades installed, positioning them, if possible, in a way so as to prevent rain from getting into the boat.

- When sailing, in order to avoid the water from getting into the boat, you must turn the dorades towards the stern; in case of choppy sea, remove them, closing their openings by the provided threaded caps.

- The ventilation grille in the access door below deck has fixed blades already positioned in order to prevent water from getting into the yacht.

- When washing the deck, avoid in any case directing the jet of water at the ventilation grille in the access door below deck, in order to prevent water from getting into the yacht.

- When opening and especially closing the access door below deck, we recommend you to always follow it, keeping the knob in your hand, so as not to slam it and consequently damaging the wood.

Autopilot

The following directions do not replace the instructions provided in the manufacturer's use and maintenance manual, delivered separately.

- It is a device that, once fixed the course, enables the automatic boat steering.
- The Grand Soleil 50' is equipped with an electro-mechanical autopilot, located in the port aft peak, which directly controls the steering wheel.
- The switch enabling the autopilot electrical supply is located in the 12 Vdc electrical panel and is called **AUTOPILOT** (see page 54).
- The autopilot controls are located in the autopilot control panel and are positioned according to the shipowner directions.

Warning and caution

- We remind you that when the autopilot is working, it makes the steering wheel move too. Therefore, be very careful not to get any part of your body, especially your hands, arms or clothes accidentally caught in the steering wheel spokes. Also pay attention to any object that could hamper the steering wheel rotation, as ropes, sheets, etc.
- Do not force the steering wheel when the autopilot is working.
- The connection between the autopilot and the steering wheel, if necessary, can be easily removed.

- The autopilot helps the crew but does not replace them; therefore it is advisable that at least one member of the crew stays alert on the deck to promptly step in if necessary, especially to avoid hitting other boats.

Instructions and maintenance

Consult the relevant booklet delivered separately.

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Bilge pumps

On the Grand Soleil 50' there are two systems for the bilge draining (see page 100):

- ◊ Manual
- ◊ Electrical

Manual bilge pump

- The manual bilge pump, the lever model, is installed in the vertical side, in the bottom of the cockpit towards the port side, and sucks, through a strainer and a check valve, from a drip pan in the bulb located in the middle of the bilge.
- It is advisable to fix the operating lever to the pump, through two thole pins.
- The pump is drained by a scupper applied on the port aft side of the hull.

Electrical bilge pump (see also the chapter on the aft bathroom shower drain system at page 73)

- The electrical bilge pump is located in the aft bathroom washbasin cabinet.
- This pump can suck both from the main bilge and from the aft bathroom shower bilge, according to the orientation of the three-way valves mounted above the pump (see page 100 and illustration at page 122).
- We advise you to position the valve so that the pump is always ready to drain the main bilge, and drain the shower bilge only when necessary.
- A protective filter is mounted between the pump and the three-way valve.
- This pump is activated by turning on the **SHOWER PUMP** switch in the 12 Vdc electrical panel (see page 53).
- To start the pump you have to turn on the switch under the mirror, towards the stern (see diagram at page 100). As said above, this pump can suck either from the main bilge, through the strainer with check valve in the drip pan located in the bulb in the middle of the bilge, or from the aft bathroom shower bilge.
- The pump drainage flows into the same drain scupper of the manual bilge pump, on the port aft side of the hull.

Electrical shower drain pumps

See shower drain system at page 73

Warning

- Check periodically that the filter above the electrical pump and the strainers of both pumps are not clogged. In this connection and to avoid foul smells, we recommend you to frequently clean the main bilge.

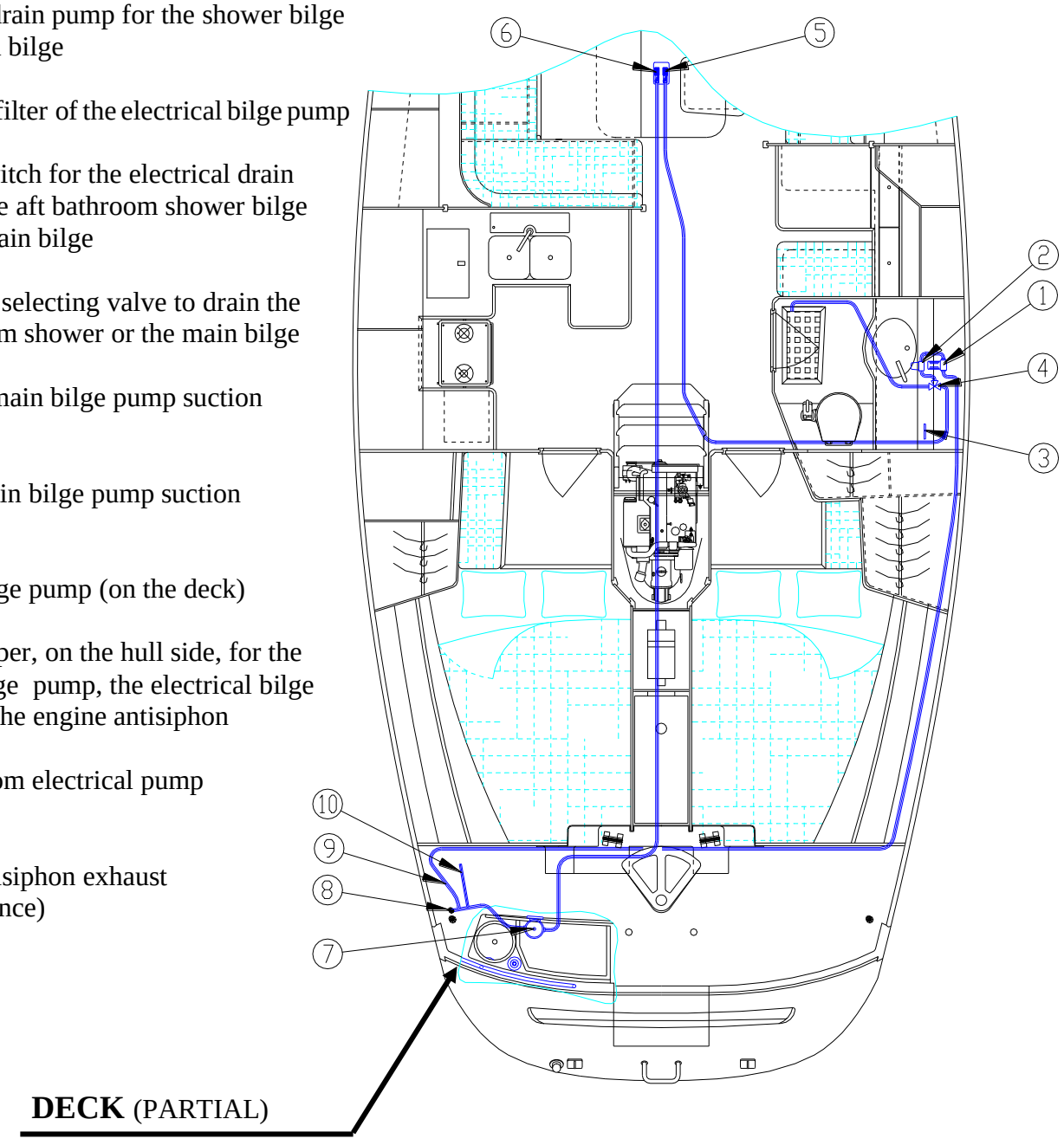
Maintenance

- It is advisable to check the bilge pumps at least once a year, paying particular attention to:

- the cleanliness of the filter installed on the electrical bilge pump aspirator;
- the pump gaskets condition: if you notice any water leak, replace the gaskets;
- the electrical pumps impellers;
- the manual pump membrane.

Components location

1. Electrical drain pump for the shower bilge or the main bilge
2. Protective filter of the electrical bilge pump
3. Starting switch for the electrical drain pump of the aft bathroom shower bilge or of the main bilge
4. Three-way selecting valve to drain the aft bathroom shower or the main bilge
5. Electrical main bilge pump suction strainer
6. Manual main bilge pump suction strainer
7. Manual bilge pump (on the deck)
8. Drain scupper, on the hull side, for the manual bilge pump, the electrical bilge pump and the engine antisiphon
9. Aft bathroom electrical pump drain
10. Engine antisiphon exhaust (as a reference)



Windlass

The following directions do not replace the instructions provided in the manufacturer's use and maintenance manual, delivered separately.

- Inside wide fore peak of the Grand Soleil 50' there is, in addition to the anchor with its manual extractor, an electrical windlass without drum, with a 1000 watts 12 Vdc motor and a gypsy for a 8 mm chain.

- The windlass is installed on a suitable surface in the fore peak, while the underlying motor is accessible through the sail locker. This arrangement protects the motor from sea water and salinity, allowing it to last more and to need minimum maintenance. In the same motor room there is also a box with the windlass remote control switches.

- The yacht is also equipped with a lever which, inserted in the gypsy cover bush, allows you to manually drop the anchor by the gypsy clutch mechanism.

- To start the windlass, turn on the WINDLASS switch in the 12 Vdc electrical panel (see page 53).

Warning: the upward and downward movement of the windlass is controlled by the push-button panel, which must be plugged into the watertight outlet provided.

- The push-button control panel usually hangs from a hook in the anchor peak, whereas the watertight outlet is located on the same surface of the windlass, but to the left of it.

- The windlass can also be operated from the cockpit, by a lever switch located in the engine control panel.

- In the wide peak below there is the 8 mm chain, of at least 50 metres, with its stainless steel chain guide. The last link of this chain is then fastened, through a shackle, to the fore chain plate fastening point.

Instructions for extracting the anchor

The anchor, complete with folding roller, is usually contained in the suitable fore peak. To extract it you need to operate manually:

- Open the fore peak lid to allow the roller-anchor unit to come out.

- Extract by hand the roller-anchor unit until it is in its normal working position. The extraction is made easier by a counterweight, which allows to rotate with a minimum effort. This anchor roller has a suitable reference and fastening base on the deck, in order to prevent it from moving.

- Check then that the chain is well positioned on the roller guide and in line with the windlass.

Instructions for using the windlass

With the anchor well positioned on the roller and the chain in the right position in its guide, you can drop the anchor either manually or by the windlass.

To drop the anchor manually you need to:

- check that the WINDLASS magneto-thermal switch in the 12 Vdc electrical panel is turned off;
- insert the suitable lever in the gypsy cover bush. Then, slightly rotating the lever counterclockwise, you will release the gypsy clutch allowing it to freely turn and the anchor to drop. By rotating the lever clockwise you will re-engage the gypsy clutch, slowing down or stopping the anchor drop.

- We recommend you to well engage the gypsy clutch, once finished the operation.

To drop the anchor by the windlass you need to:

- turn on the WINDLASS switch in the 12 Vdc electrical panel, which supplies all windlass equipment;
- start the windlass by the push-button panel, after connecting it to the outlet in the anchor peak, or by the control in the cockpit.

To weigh anchor you need to:

- turn on the WINDLASS switch in the 12 Vdc electrical panel;
- start the windlass by the push-button panel, after connecting it to the outlet in the anchor peak, or by the control in the cockpit.

Warning and caution

- We remind you that, in case the windlass does not work, first of all you have to check that the relevant magneto-thermal switch in the 12 Vdc electrical panel has not gone automatically off. If you turn it on again and it goes off once more, check the cause and find a solution before turning it on once again.

- If the batteries are not completely efficient and you consequently have difficulties in weighing the anchor, it is advisable to carry out this operation with the engine slightly working. This will attenuate the violent current absorption caused by the windlass functioning.

- While using the windlass, always keep your body and especially you feet on the deck and never lean on the windlass support surface or inside the peak.

- Never approach the windlass with your hands, so as not to be hit in case the chain slips off the pulley.

- If you want to operate the windlass by the control in the cockpit, please pay maximum attention that there are no obstacles to carry out this operation and that the crew or other people are free from any danger that could be caused by that.

- Every time you need to carry out manual operations inside the anchor peak or to simply put your feet into it, please make sure that the WINDLASS magneto-thermal switch in the 12 Vdc electrical panel is turned off.

- The windlass cannot function as a mooring cleat, therefore never strain the chain, but wind it round the mooring cleats as explained below:

- Once moored, we recommend you to fix to a link of the chain a block connected to the mooring cleats through two pieces of cable purposely provided.

- Then, slightly release the tension on the windlass letting it slacken. In this way the mooring on the cleats will get automatically strained.

- If, on the contrary, the chain has been entirely uncoiled in the water and the windlass winch is working on the anchor rope, you will have to remove the rope from the winch and fix it to the mooring cleat.

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Maintenance

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

- We recommend you to frequently check and clean, when necessary, the two anchor peak drains.

Anchor and chain

To complete the anchorage equipment you also have:

- Kg. 16 Delta Anchor
- 8 mm. galvanized anchor chain, 50 metres long
- N° 4 mooring ropes, diameter = 16 mm, 15 metres long.

People's safety. Yacht's integrity. Rescue equipment

People's safety

Experience and statistics teach that simply observing the building rules is not enough to guarantee the highest level of security; all necessary precautions and cares for using the boat and its systems and for the boat maintenance must be taken too.

- **Therefore, it is the owner's duty, before starting to sail, to take all precautions and check everything so that the navigation is safe and comfortable for all people aboard.**

In particular, we recommend you to:

- make sure that the boat is equipped with the complete rescue equipment, both single and collective, and all safety equipment prescribed by the laws in force in the country in which you are sailing or stopping;
- make sure that the rescue equipment is efficient and not expired;
- check that the first aid kit is approved and that the medicines are not expired;
- check the VHF and other navigation equipment working order;
- use the helmsman's safety belt, fastening it to the suitable eyebolt fixed to the helmsman seat base, especially with a quite rough sea and/or quite strong breeze and when tacking;
- be informed on the weather forecast concerning the area you want to sail;
- consult the nautical charts, the pilot and the notices to mariners concerning the wished sailing area, planning the most suitable course;
- check the general conditions of the boat, in particular its trim and the way materials, stocks and equipment loaded on board are stowed;
- check the solidity and the fastening of the stanchions, their possible openings and the handrails;
- carry out all checks and inspections recommended in this manual.

- **The real and only way to avoid accidents to people, fire and damages to things, is the ability to prevent them, taking all most appropriate precautions.**

Horn

- The horn installed on the mast is electrically enabled by the HORN switch in the services section of the 12 Vdc electrical panel (see page 53).

- The horn control switch can be mounted in the engine control panel or near it, at the shipowner's discretion.

- The box containing the electrical equipment and the safety fuse is located inside the wall cupboard immediately ahead of the 12 Vdc electrical panel.

Bathing platform (opening transom) with boarding ladder

- To facilitate the access to the sea, the Grand Soleil 50' is equipped with a bathing platform, obtained by turning the central part of the transom upside down. This platform is 70 cm wide.
- The bathing platform is manually raised and folded through a rope which is tied to its end and wound round the aft starboard winch, making it pass into a fairlead fastened to the middle of an aft pulpit stanchion. So you just need to turn the winch to fold back the bathing platform.
  You can also install a gear motor operated by a remote control or by a control switch near the engine control panel, to raise the bathing platform.
- Together with the bathing platform there is the boarding ladder to go on board after the bathe.
- In the middle of the transom there is also a step to which you can easily cling in case you are bathing and the boarding ladder (bathing ladder) has not been arranged.

- **WE RECOMMEND YOU TO ARRANGE THE BOARDING LADDER BEFORE PLUNGING.**

Yacht's integrity

- Each detail of the Grand Soleil 50' has been studied and calculated to guarantee the highest level of safety even in the worst sailing conditions. However, wrong manoeuvres or lack of timing, in case of adverse meteorological conditions, could endanger the yacht's integrity and the people's safety.

- In case of very arduous navigation, because of adverse weather, sea or wind conditions, or for the presence of anomalous waves or blasts of wind, or because you hit half-immersed objects, or simply for an unsuccessful manoeuvre, we recommend you to immediately check the concerned part or equipment; if you do not notice any damage at that moment, check everything once again and more carefully once back in the harbour and, if necessary, contact a skilled technician.

- In particular, we recommend you to carefully and frequently:

  - Check the integrity of all structural bulkheads and their connection point to the hull, paying particular attention to the fore bulkheads. If you notice any slight sign of detaching of the wood from the fibreglass soldered to the hull, check its evolution as time goes by and then intervene if the problem becomes more serious.

  - Inspect the bilges checking their integrity, the side shrouds hull attachment and the backstay and forestay attachment. In case of anomaly, like the fibreglass deterioration, it is advisable to have it checked by skilled staff to understand the origin of the problem and its possible consequences.

  - Check frequently the mast, in particular the points where the spreaders and the shrouds are attached. If you notice any crack, contact the expert staff.

  - Finally, remember that, though the boat is designed to bear the worst sea conditions, the prolonged and intense stresses to which the various parts and structures are subjected, as time goes by, cause a progressive decay of the materials. Therefore, the inspections and cares must be more frequent and careful.

- As most of the Grand Soleil 50' hull structures are made of hot galvanized steel sheet, it is advisable to always keep the bilges dry, in order to reduce the risk of oxidation and corrosion.

- We also strongly advise you against making any hole, soldering or mechanical repair, as they could remove the protective zinc coating of the metal structures, with the consequent risk of corrosion, which is even higher in a marine environment.

Single and collective rescue equipment

Pay particular attention to the security and safety of people on board or at sea, not taking anything for granted and always checking the suitability and efficiency of the single and collective rescue equipment.

All knowledge, seamanship and personal experiences are required to obtain the highest level of people's safety. Cantiere del Pardo advises you to inform and, if necessary, train all people on board to know:

- where to find and how to wear life jackets and life belts;
- where to find the life raft and how to pull it out and use it;
- where to find and how to throw a life buoy with its rope;
- where to find and how to use the various distress signals, like smoke signals, flares and signal rockets;
- where to find the fire extinguishers and how to use them if necessary.

- **Make sure that all rescue equipment is approved.**

Life raft

Cantiere del Pardo has designed a special room in the aft cockpit part for the life raft, which is compulsory for navigating over 12 miles and which must be capable of containing at least the people on board. To pull it out, you need first to lift the bathing platform (opening transom). Otherwise, it can be placed in any other place and in any way that allows to easily reach it and pull it out.

To avoid the theft of the life raft, it is advisable to place it inside the boat every time you leave it.

- **Have the life raft overhauled before it expires.**

Navigation on-board equipment

All navigation equipment in general, except the compass, is optional. Therefore, in this chapter you will find some general information on the most usually installed equipment.

For each instrument installed on board, we recommend you to read carefully its instructions manual provided by the manufacturer and delivered separately.

Compass

- A standard compass with binnacle, of 5° degrees, is installed on each of the two steering wheel pedestals.
- To switch on the compass night light, turn on the INSTRUMENT LTS switch in the 12 Vdc electrical panel (see page 53).

- **When delivered, the compass is not compensated.**
- We recommend you to have them compensated by a skilled technician after all provided equipment has been fixed into its final housing.
- Keep away from the compass all instruments and devices which may interfere with its magnetic field, such as radios, torches, portable tape recorders, cameras with built-in exposure meter, etc., and all metal objects like cooking pots etc.

Electrical equipment supply

- The electrical supply of the various devices is activated by the magneto-thermal switches in the INSTRUMENTS section of the 12 Vdc electrical panel; for further information consult page 53.

Log transducer

- It is installed on the hull, just abaft the fore cabin bed, slightly to the starboard of the hull longitudinal axis (see page 60) and therefore easily accessible by lifting the relevant floorboard.
- When not using the log transducer and especially when leaving the boat for a long time, we advise you to withdraw the label and place it in the rest position in order to prevent it from being damaged by half-floating objects.

- **Remember to withdraw the log transducer before hauling the boat.**

Echo sounder transducer

- It is installed on the hull, just abaft the fore cabin bed, slightly to the port of the hull longitudinal axis (see page 60) and therefore easily accessible by lifting the relevant floorboard.

VHF

- It is usually installed near the 12 Vdc electrical panel, with a possible second one in the cockpit, at the shipowner's request.
- For its electrical supply turn on the VHF and HI-FI switch in the INSTRUMENTS section of the 12 Vdc electrical panel (see page 53).
- The aerial is on the mast.

Mast head unit - aerial

- The mast head connections of the VHF aerial and of the wind instrumentation must be checked once or twice a season, or in case of any must head repair.
- If the electrical contacts are corroded, oxidized or loose, the various instruments will not be fully efficient.
- The corroded or oxidized contact surfaces must be well cleaned and sprinkled with a suitable spray (such as CRC) to preserve the electrical contacts efficiency.

Rudder, bushings and bearings, helm

The rudder, elliptical in shape, is suspended; the shaft is made of 17-4-PH highly resistant stainless steel; the blade, made of high-density polyurethane (structural PUR), is reinforced inside by a stainless steel structure.

The rudder shaft is supported and steered in two points as follows:

◊ **In the lower part:** by a self-aligning bearing fixed to the hull with fibreglass, waterproofed by covering it with neoprene.

◊ **In the upper part:** by a thrust bearing fixed in a suitable housing in the cockpit plane. In the upper side of the rudder shaft there is a cylindrical housing to receive the spare shaft.

Steering gear

To steer the rudder the following equipment is installed (see page 110):

- two steering wheel pedestals in the cockpit, each one complete with a stainless steel steering wheel with a diameter of 1700 mm, a compass with binnacle, a stainless steel pipe protection and a pinion with its chain;
- a handle with a knurled knob to block the steering wheel, mounted only on the port steering wheel;
- four pulleys, located in the aft peak, properly positioned for the right steering pedestal-rudder quadrant connection;
- 400 mm radius quadrant, fixed to the rudder shaft, where the two flexible stainless steel cables of the steering system end and are fixed through an adjustable turnbuckle. The quadrant is located in the aft peak.
- The limit devices to limit the wheel rotation are located in the quadrant, in the aft peak.

Warning on steering cables

- After using the boat for the first few days, it is necessary to adjust for the first time the steering cables, as, at the beginning, they tend to stretch.

- To carry out this operation two turnbuckles are provided in the quadrant, one for each cable, that need to be adjusted so that the stretching is not excessive, in order not to lose sensitivity when steering the rudder; however they should not slack, as in this case they would cause a slower steering and a higher wasting of the equipment.

- If you notice any sign of wear or any broken wire, immediately replace the cables.

Steering gear maintenance

We recommend you to:

- check periodically the bushing and the rudder shaft thrust bearing, if necessary lubricate them with silicone grease of the same type used for the winches;
- check frequently and, if necessary, adjust the stretching of the steering cables;
- lubricate the cables and the chain with SAE 30/40 oil;
- lubricate the steering wheel shaft with Teflon grease.

We advise you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Emergency tiller

- The boat is also equipped with an emergency tiller, to be always kept close at hand in the aft peak, so that you can immediately use it in case the steering wheel does not work.

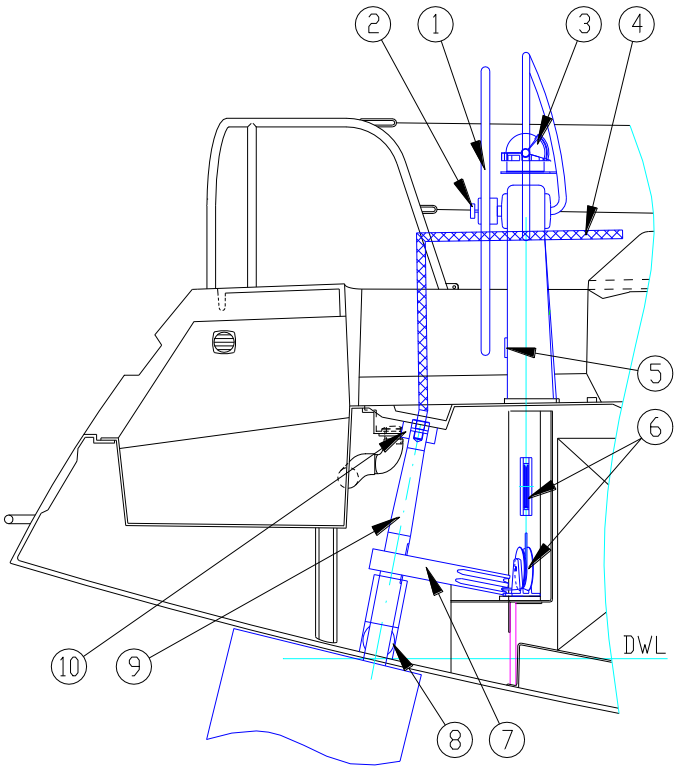
- This tiller must be inserted into its housing on top of the rudder shaft, after removing the closing surface plug. In this way, you can directly steer the rudder by hand.

- We strongly recommend you to train to correctly use this tiller also when in the dock, so as not to be in trouble in case of emergency.

If the boat is equipped with the autopilot, this could be a possible alternative steering system.

Steering system diagram

1) Steering wheel
2) Steering wheel blocking hub
3) Compass
4) Emergency tiller
5) Cables-chain connection inspection
6) Cables pulley
7) Rudder quadrant
8) Self-aligning bushing on the hull
9) Rudder shaft
10) Bushing with thrust bearing



Sails

Unless otherwise agreed, only the mainsail and the genoa for furler are provided.

As regards the measures useful for ordering other sails, please consult the technical data at page 14 or ask Cantiere del Pardo for the sail plan.

Warning

- Ultraviolet rays and prolonged flapping are the main sail deterioration causes; therefore, we recommend you to:

- protect the mainsail with the appropriate cover every time it is hauled down and left on the boom;

- always haul down the fore sails once finished sailing;

- avoid the prolonged flapping of the sails and in particular avoid sailing for a long time by engine upwind and with the sails hoisted;

- the genoa base is particularly subject to wearing and ripping; therefore, we recommend you to check that the split pins and the shrouds and handrails connection pivots are facing the opposite side of the genoa rubbing, and are protected with adhesive tape or with some leather.

- Genoa rubbing against the spreaders is the main cause of sail tearing and ripping.

Therefore, we recommend you to:

- protect the spreaders ends with adhesive tape or with some leather and check them periodically;

- apply on the genoa some self-adhesive fabrics backings in the points in which it rubs against the spreaders; we advise you to ask directly the sailmaker to carry out this operation.

Maintenance

Check frequently the conditions of the following parts:

- backings and panels seams;

- clews' rings, heads and tacks;

- leach-lines and foot cleats;

- bolt ropes and mainsail headboard;

- transparent windows for wool/wind-flow yarns (if present).

◊ Wash periodically the sails with fresh water, especially after rough navigations.

◊ Before the winter laying up or a long period of inactivity, fold the sails carefully and place them in a dry place.

Painting – Surfaces maintenance

The surfaces dealt with in this chapter are:

◊ **Topsides** (deck and sides)

◊ **Teak deck**

◊ **Bottom** (immersed hull)

◊ **Interior**

◊ **Stainless steel**

All products and treatments applied by Cantiere del Pardo on the internal and external surfaces of its boats are among the best ones available.
In any case, we recommend you to observe the following advices and instructions, to obtain the best efficiency.

Topsides

- The gel coat needs some cares and maintenance to be always clean and brilliant.
- For the everyday cleaning and to remove the most of dirty, we advise you to use warm water and neutral soap.
- Use petrol or kerosene to remove grease and oil stains.
- Avoid using acetone or other chemical or abrasive detergents.
- In case of very persistent stains, the last remedy is the 600 water abrasive paper, to be used with great caution, paying attention not to remove the gel coat. In any case, after using this paper, use the Polish to restore the brightness.
- We advise you to use the special wax for boats (there are many types available) at least once a year. This wax protects the gel coat from scratches and makes it more resistant to dirt.
- We recommend you to use only the appropriate wax for nautical use.

Topsides refits

- Please ask Cantiere del Pardo information on the gel coat, the catalyst and the catalysing time, percentage and temperature, taking into consideration that if the temperature is lower than 16° C, it is better not to operate.

- Before starting the operation, dry perfectly the intervention area and remove the grease or dirt with some acetone.

- Sand the intervention area, then remove the dust.

- Add the right percentage of catalyst according to the quantity of gel coat used; then, apply the gel coat on the intervention area, remembering to use an abundant quantity, as it shrinks.

- To obtain a level surface, cover the repaired area with cellophane and then press to flatten it.

- When the gel coat is completely catalysed (follow the product instructions to know the catalysing time) and hardened, it can be treated with the 600 water abrasive paper.

- Then use the Polish and the wax.

Teak deck

- We recommend you to rinse and clean the teak with fresh water and a brush with bristles of medium hardness (too hard bristles could scratch the wooden surface) and treat it periodically (once a year) with special oil for teak.

Caution: always use the brush following the direction of the wood grain.

Bottom

- Cantiere del Pardo normally applies the antifouling paint.

- To prevent the coming off of the antifouling paint, owing to the presence of silicone wax traces on the hull when it has been removed from its stamp, it is necessary to well clean the bottom of the hull before applying the antifouling paint.

- Do not sand the hull to clean it, but just use the jet of pressurized water.

- To obtain high performances, it is necessary to frequently clean the bottom, using just the pressurized water jet.

- We remind you that the antifouling paints contain toxic agents that are dangerous for your eyes, skin and mucous membranes. Therefore, when repairing the bottom, equip yourself properly to avoid any contact with the paint.

Interior

- If the painting gets damaged, contact Cantiere del Pardo for the repair.
- We advise you to frequently ventilate the boat interior and to keep it always dry.

Stainless steel

- The stainless steel used for the Grand Soleil 50' hardware is the AISI 316 type, a steel alloy containing between 2% and 3% of molybdenum, particularly resistant to corrosion and oxidation in the marine environment.
- This does not mean that this steel is not subject to chemical aggression caused, in a polluted environment, by chlorides, sulphides, sulphates and ferrous contamination (more frequent in harbour areas than in open sea).
- The marine environment and the water with high concentration of chlorine ions tend to form the so-called "pitting" in the stainless steel, that is the pitting corrosion which initially shows up as rust points on the surfaces and then penetrates the inner structure.

Maintenance

- To prevent or reduce the "pitting" remember to never use detergents containing chlorine (e.g. hydrochloric acid and its solutions) or abrasives (iron pads, abrasive paper, etc.) to clean the stainless steel surfaces, as these products deteriorate the stainless steel properties and reduce its protection.
- For a correct cleaning of the stainless steel surfaces, use rags, sponges or soft brushes with fresh water and neutral soap; in case of persistent dirt, use a specific product.
- After sailing, if possible, always rinse the stainless steel surfaces with fresh water.
- If the boat is not used for a long time, we advise you to clean the stainless steel surfaces and apply a coat of Vaseline oil.

Winches (manual and electrical)

- The diagram at page 26 shows the winches location and function.

- These winches, usually operated manually by a suitable handle, can also be motorized and therefore electrically controlled. In this case the following additional equipment is provided, also considering the power absorbed:

  - motor mounted under each electrical winch;
  - two-position heavy duty battery switch, mounted on the starboard aft cabin headboard bulkhead;
  - protective remote control switch, installed near the winch motors, and suitable fuses, one for each winch motor, installed in the container abaft the above-mentioned heavy duty battery switch;
  - two hand or foot control switches, usually red (faster) and white (slower), located near the winches.

- In any case, the electrical winches too can be manually operated without needing any additional manoeuvre.

Warning

- When leaving the boat, we recommend you to never leave the heavy duty battery switch of the electrical winches turned on, as they could be operated in any way even by children.

Maintenance

- Wash the winches periodically with fresh water, especially after rough navigations.

- Have the bearings and the cogs cleaned and greased by a skilled technician at least once a year.

We recommend you to consult the use and maintenance manual provided by the manufacturer and delivered separately.

Toilet and black water system

The following directions do not replace the instructions provided in the manufacturer's manual, delivered separately.

Toilet valves location

Each yacht bathroom is equipped with a marine W.C. which is manually operated. Each W.C. is then linked to the intake and outlet seacocks, through pipes made of white material specially designed for that use. Moreover, though not indispensable, both pipes have a wide bend facing upwards, functioning as a siphon to prevent sea water from getting in.

The above-mentioned W.C. valves are located as follows (see page 124):

◊ Fore bathroom. Located in the middle, between the fore cabin bed and the bathroom bulkhead:

- intake seacock ahead, a little bit to the port side;
- outlet seacock abaft, a little bit to the starboard side;
- the valve in between the two above-mentioned is the washbasin drain valve.

◊ Aft bathroom. Located between the bathroom and the access ladder, immediately ahead of the starboard aft cabin door:

- the closest valve to the bathroom bulkhead and the most ahead of the three installed is the intake seacock;
- the most abaft one is the outlet seacock;
- the valve in between the two above-mentioned is the washbasin drain valve.

Instructions for using the manual toilet

- After checking that the toilet intake and outlet seacocks are open, position the grey lever on top of the toilet pump on the "full basin" drawing.
- Operate the toilet pump at least 20 times.
- Position the lever on the "empty basin" drawing and keep on pumping until the basin is completely empty.

Instructions for using the electrical toilet

- The only difference compared to the above-described manual toilet is that the pump is operated electrically instead of manually. For this reason, in order to enable the electrical toilet, you need to turn on the second of the two available switches in the SERVICES section of the 12 Vdc electrical panel n° 2 of the diagram at page 53).

- Open the toilet intake and outlet seacocks or check that they are already open.

- Operate the toilet pump by turning the knob on its top: if you turn it clockwise, the basin will be filled with sea water; on the contrary, if you turn the knob counterclockwise when the basin is full, it will be drained.

We recommend you to consult the use and maintenance manual provided by the toilet manufacturer and delivered separately.

Warning and caution on toilet using

- We recommend you to turn off the intake and outlet seacocks, when starting sailing.

- It is also advisable to turn off the toilet intake and outlet seacocks when leaving the boat for a long time.

- Do not throw sanitary towels, cigarette butts, matches, paper (if not toilet paper) or other non water-soluble or non-biodegradable objects into the toilet.

- Do not use acid or corrosive products to clean the toilet.

- In case it is necessary to dismantle the toilet system or any other component connected to it, turn off the toilet through-hull intake and outlet seacocks, before beginning the operation.

We recommend you to consult the use and maintenance manual provided by the toilet manufacturer and delivered separately.

Black water system

Black waters are toilet waste waters

The Grand Soleil 50' can have both bathrooms or just one linked to a black water system. The diagram at page 124 shows the version with both bathrooms linked to the black water system. In addition the above-mentioned components for the normal toilet functioning, that version includes:

- three-way valves inside each bathroom cabinet, to direct the toilet waste to the sea or to the collecting tank;
- a stainless steel black water tank, with a capacity of about 45 litres, located under the fore cabin bed floorboard, to be more precise, in the port peak towards the bow;
- a black water tank vent piped into the second starboard stanchion on the deck (from the bow);
- a WASTE cap on the deck, to drain the black water tank by sucking from the shore system, located on the starboard walkway, near the above-mentioned stanchion;
- a self-priming electrical macerator to empty the collecting tank into the sea, installed just ahead of the tank itself;
- GREY WATER MAC. magneto-thermal switch in the 12 Vdc electrical panel, to enable the starting of the above-described macerator;

- macerator through-hull seacock on the port hull side, accessible through the opening under the sofa between the fore cabin bathroom and bed;
- black water tank macerator starting switch, located near the above-described valve;
- various pipes, all white, with the exception of the pipe going from the macerator to its through-hull seacock, which is the normally used type.

Black water system instructions

- The presence or not of the black water system does not affect the normal use of the toilet. The only difference concerns the three-way valve, which will be set to the relevant position according to whether you want to discharge directly into the sea or into the collecting tank.
  To better understand the functioning of the above-mentioned three-way valve, please refer to the diagram at the next page.

- Should the black water system work, you need to periodically empty its collecting tank, also considering the toilet use. In any case, it is advisable to empty it every time you put out to open sea.

- You can empty the collecting tank on the quay, if the suitable emptying systems are available; otherwise, you have to do it in open sea.

Discharge by the quay emptying systems

- Check that both the three-way valves and the macerator seacock are closed.

- Connect the quay sucking system to the WASTE cap on the deck.

- Start the emptying system following the directions of the attendant staff.

Discharge at sea

- Turn on the GREY WATER MAC. magneto-thermal switch in the 12 Vdc electrical panel (see page 53).

- Open the through-hull seacock to empty the black water tank into the sea.

- Start the black water tank macerator by turning on its switch, located just above the above-mentioned seacock.

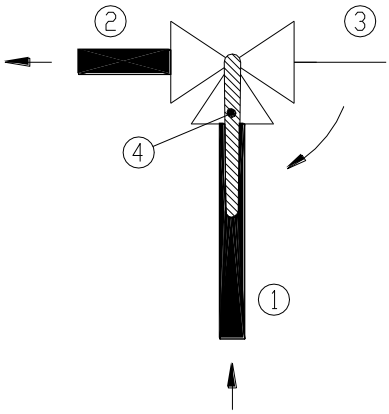
- Once emptied the tank, immediately stop the macerator, by the same switch you use to start it, and close its seacock.

Toilet three-way drain valves functioning diagram

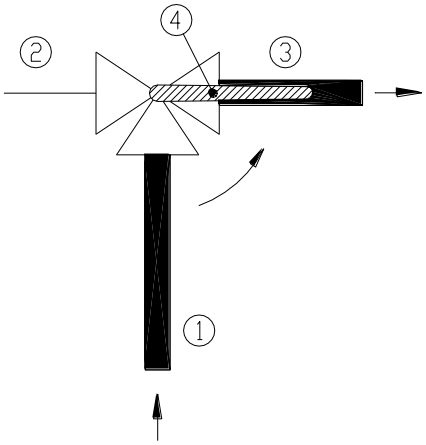
The three-way valves installed to select the toilet drainage directly into the sea or into the collecting tank have to be operated according to the following diagram (looking from the washbasin cabinet opening):

FORE BATHROOM CONTROL LEVER POSITION

TO DISCHARGE INTO THE SEA

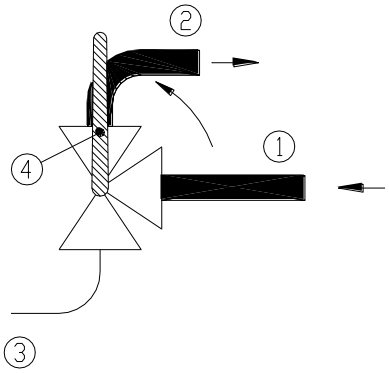


TO DISCHARGE INTO THE TANK

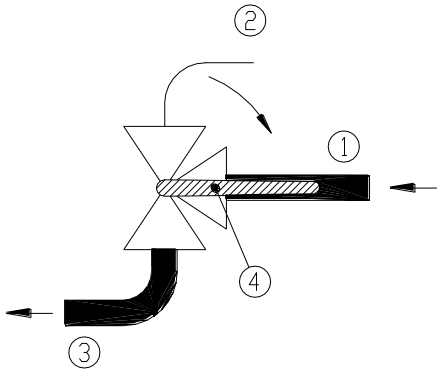


AFT BATHROOM CONTROL LEVER POSITION

TO DISCHARGE INTO THE SEA

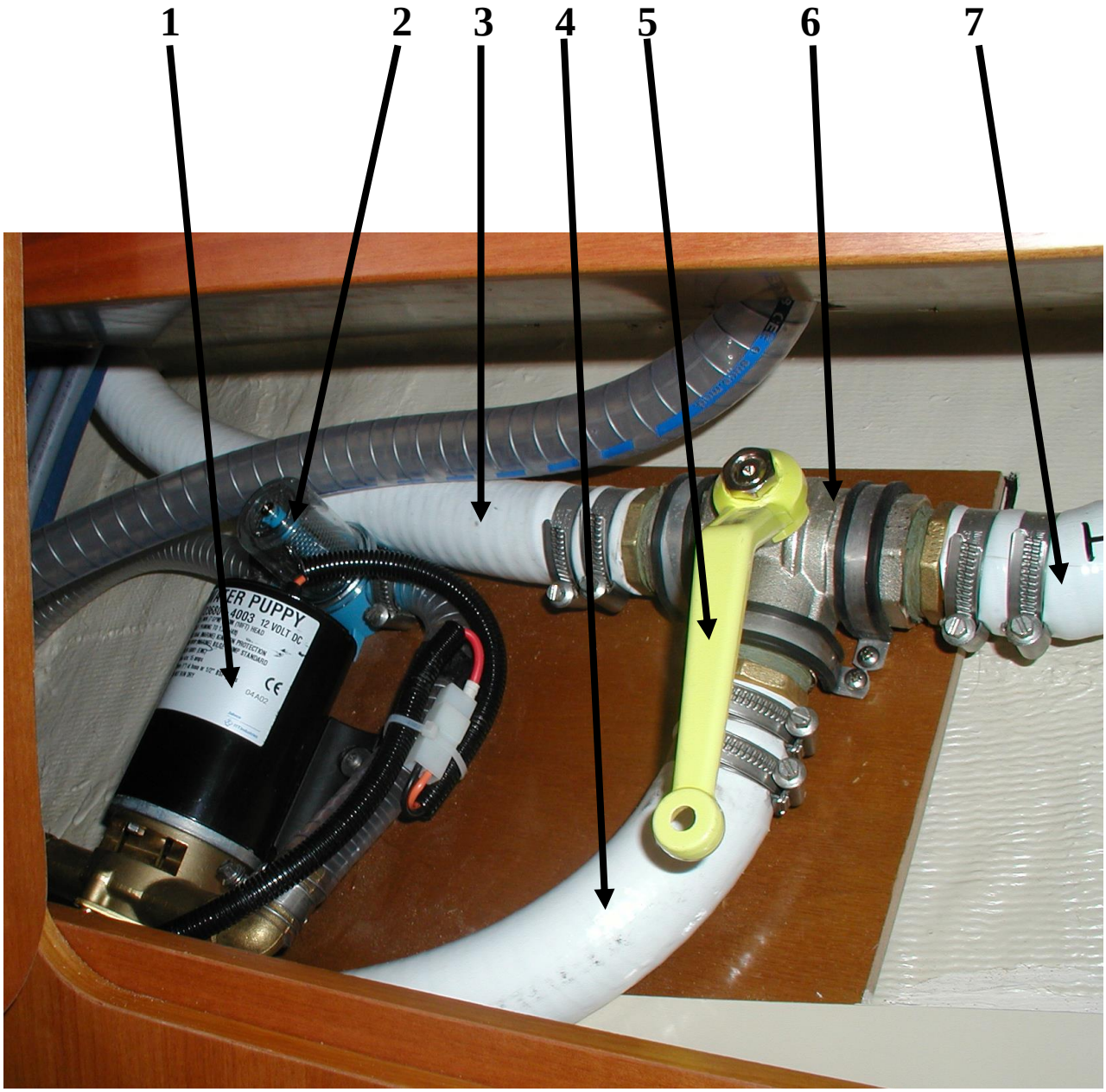


TO DISCHARGE INTO THE TANK



1) From the toilet drain
2) To the through-hull seacock
3) To the collecting tank
4) Three-way valve control lever

FORE BATHROOM – Toilet three-way valve and shower bilge pump location



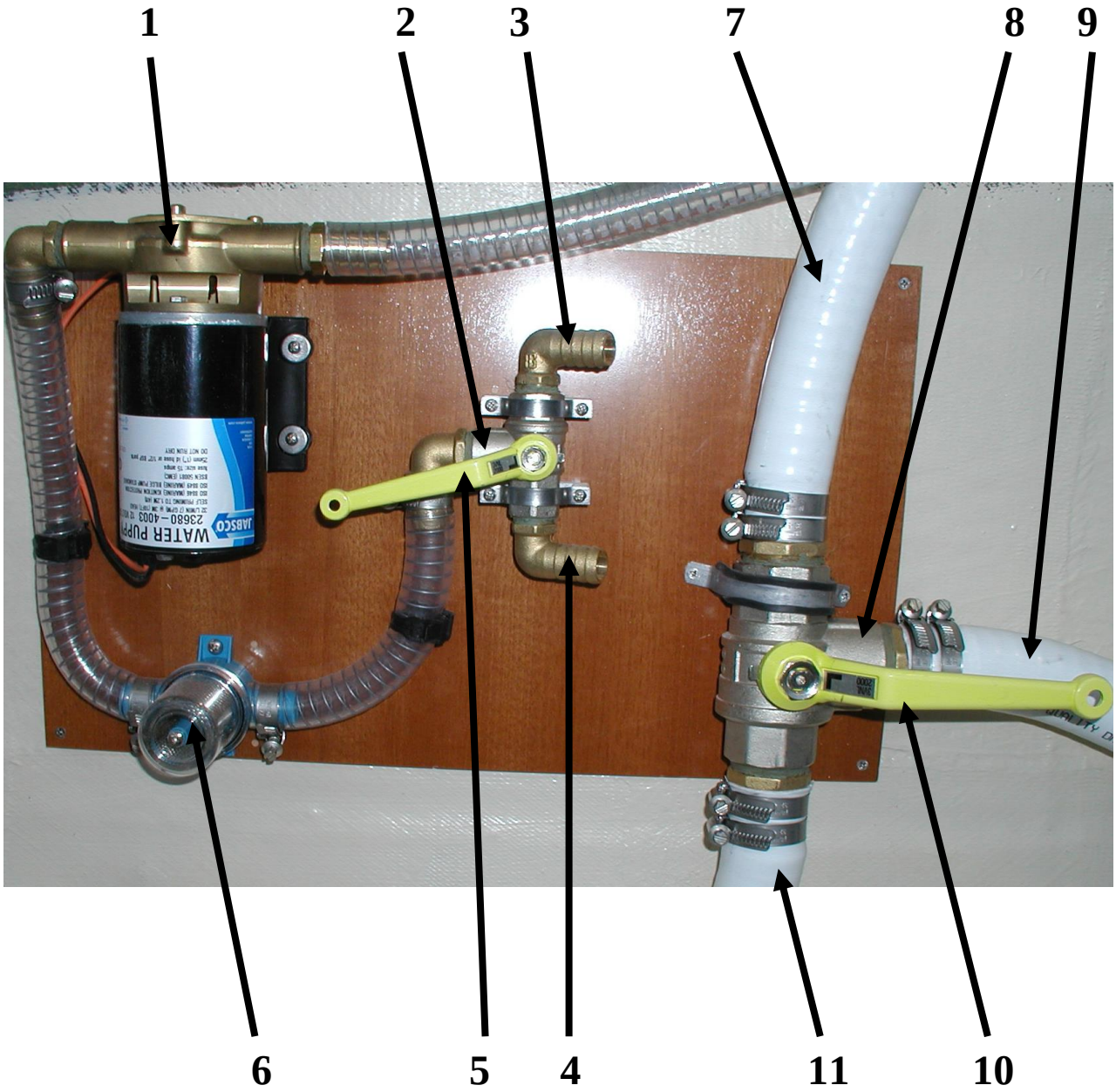
SHOWER BILGE DRAINING

1) Shower bilge drain pump
2) Pump protective filter

TOILET DRAINING

3) Toilet drain into the sea
4) From the toilet drain pump
5) Toilet three-way drain valve control lever
6) Toilet three-way drain valve
7) To the black water collecting tank

AFT BATHROOM – Toilet three-way valve and shower/bilge pump location



SHOWER OR MAIN BILGE DRAINING

1) Shower bilge drain pump
2) Main or shower bilge three-way drain valve
3) Suction from the main bilge
4) Suction from the shower bilge
5) Bilge three-way drain valve control lever
6) Pump protective filter

TOILET DRAINING

7) Toilet drain into the sea
8) Toilet three-way drain valve
9) From the toilet drain pump
10) Toilet three-way drain valve control lever
11) To the black water collecting tank

Warning and caution on black water system

The same warnings given for the toilet are valid for the black water system too, paying particular attention to the following:

- Keep the through-hull valve to drain the black water collecting tank always closed, as, being located under the waterline, it would let in water.

- It is advisable to empty the black water tank every time you put out to open sea.

- In order not to damage the impeller, do not throw any solid object or material, pieces of plastic or any other material which is difficult to macerate into the toilet, do not use the macerator when it is empty and disconnect it as soon as the tank is empty.

- No warning systems for the collecting tank level are provided, as they are not very reliable over time and could even be dangerous. Obviously, if you find it difficult to drain the toilet it means that the tank is full.

- In order to check and periodically clean the tank, it has on its upper side an inspection cap consisting of a rubber membrane fixed around the opening by a pipe clip (the same system used for the water tanks).

We recommend you to consult the use and maintenance manual provided by the macerator manufacturer and delivered separately.

Toilet valves and black water system location

1) Toilet washing and draining pump
2) Toilet three-way valve
3) Toilet outlet seacock
4) Toilet washing intake seacock
5) Black water tank through-hull seacock
6) Macerator switch
7) Black water tank
8) Black water tank macerator
9) Fore bathroom washbasin drain valve (as a reference)
10) Black water tank vent connected to the stanchion on the deck
11) Black water tank suction point (on the deck)
12) Aft bathroom washbasin drain valve (as a reference)