SUN ODYSSEY 519

OWNER'S MANUAL

JEANNEAU

189919 RCD-2
Index A

CE

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INTRODUCTION

Welcome

You have just taken delivery of your new JEANNEAU boat and we thank you for the confidence you have shown us in ordering a vessel of our brand. The whole JEANNEAU team welcomes you aboard.

A JEANNEAU is made to last, in order to bring you all the pleasure you expect from a vessel over a period of many years. Each boat is subject to the utmost attention to detail from the design stage right through to launching.

This manual is meant to help you to enjoy your boat comfortably and safely. It includes the boat specifications, the equipment provided or installed, the systems and tips on her operation and maintenance. Some of the equipment described in this manual may be optional.

Your JEANNEAU dealer will be able to help and advise you in the use and maintenance of your boat.
The initial commissioning of your boat will require a lot of skill and care. The proper working of all your boat's equipment is the result of the quality of the commissioning operations. This is why the initial launch must be overseen by your dealer.

Read this Owner's Manual carefully and take the time to get to know your boat before you use it.

The better you know your vessel the more pleasure you will get from being at the helm.

Keep this manual somewhere safe and should you sell your boat, hand it to the new owner.

You are advised to keep any user's guides supplied by the manufacturers of any equipment for your boat (accessories...),together with your manual.

For all the equipment on your boat,
please read the instruction manuals provided by the manufacturer.

- This manual has been produced to help you enjoy using your boat in all safety. It contains the details of the boat and of all the equipment provided and installed on your boat, as well as the instructions for their use. Read it carefully and really get to know your boat before using it.

- This owner's manual is not in any way a navigation or mariner's training manual. If this is your first boat or if you have changed to a type of boat with which you are not familiar, make sure that you learn how to use it and manoeuvre it safely and with ease, before taking the helm alone. Your dealer, or national sailing or motorboat association, or your yacht club will be very happy to tell you about the navigation schools or qualified instructors in your area.

- Make sure that the wind and sea conditions forecast are appropriate for the design category of your boat and that you and your crew are capable of manoeuvering the boat in these conditions.

- Even with a well-adapted boat, the wind and sea conditions which correspond to the design categories A,B and C range from storm force winds for category A to severe storm conditions at the upper end of category C and would put the boat at risk from massive waves and extreme gusts. These are dangerous conditions in which only an experienced, fit and well-trained crew, manoeuvering a well-maintained boat, could navigate sufficiently well.

- This owner's manual is not intended as a detailed maintenance or repairs manual. Should any problems arise please contact your dealer. If a maintenance manual is provided, please use it.

- Always use the services of an experienced professional for the maintenance of your boat, for fitting accessories and for any modifications. Any alterations which may affect the safety specifications of the boat must be assessed, carried out and recorded by persons qualified to do so. The boat manufacturer cannot be held responsible for any modifications not approved by them.

- Some countries require you to hold a Certificate of Competency or other qualifications, or other specific regulations may be in force.

- Always maintain your boat well and make note of any deterioration due to wear and tear or to heavy or inappropriate use.

- Any boat – no matter how well-built – could suffer serious damage if used recklessly. This is not compatible with safe navigation. Always adjust the speed and heading of your boat according to the sea conditions.

- If your boat is equipped with a life-raft, read the instruction manual carefully. The crew must have available onboard all the safety gear (lifejackets, harnesses etc) appropriate for the type of boat and for the weather conditions etc.. In some countries it is mandatory to have this safety equipment onboard. The crew must be fully familiarised with the use of the safety gear and with emergency manoeuvres (Man Overboard procedures, towing another vessel etc). Sailing schools and clubs regularly run training sessions for these.

- It is advised that, when on deck, everyone should wear the appropriate buoyancy aids (lifejackets, personal buoyancy aids) Be advised that in some countries, it is mandatory to wear a buoyancy aid which meets the national regulations at all times.

Notes on reading this manual

The various symbols used throughout the manual for crucial safety information are as follows:

DANGER

Indicates the existence of a serious inherent danger with a high risk of death or serious injury if the appropriate precautions are not taken.

WARNING

Indicates the existence of a danger which could lead to injury or death if the appropriate precautions are not taken.

WARNING

Indicates either a reminder of safety procedures or alerts you to dangerous manoeuvres or operations, which could result in injuries to those onboard or in damage to the boat or to components of it, or to the environment.

ADVICE-RECOMMENDATION

Indicates a recommendation or advice for carrying out manoeuvres appropriate for the planned manoeuvres.

- While some of the information and illustrations in this manual may show details which are slightly different from those found on your boat, the key information remains the same. Future versions of this manual will show any possible modifications as required.

- Due to the constant desire to improve the products, SPBI S.A. reserves the right to make any changes considered necessary to the design or to the equipment.
That is the reason why the specifications and information given are not contractual, they may be modified without prior notice or up dates.

CE

- This owner's manual is written in several languages. French is the authentic reference language.

- This owner's manual was written and made up into pages by SPBI S.A.. Any reproduction of this manual, direct or indirect, provisional or permanent, by whatever means this may be, whether in whole or in part, and any modification of this manual by a third party for commercial reasons, are forbidden.

1 TECHNICAL SPECIFICATIONS

1.1 CONSTRUCTION

Model ..... SUN ODYSSEY 519
Architect / Interior design ..... Philippe BRIAND / Jeanneau Design
Builder ..... SPBI S.A
Principal means of propulsion ..... Sail
Hull construction material ..... Single skin laminated fibreglass / Polyester
Deck construction material ..... Laminated sandwich glass / Polyester / Balsa wood
Hull implementation ..... Wet laid fibre
Deck implementation ..... injection

1.2 GENERAL DIMENSIONS

L.O.A (L_{max})* ..... 15,75 m
(Including removable parts that can be dismantled (bow roller, pulpit, bowsprit), without affecting the structure of the boat)
Hull length (L_h)* ..... 14,98 m
(Excluding: removable parts that can be dismantled, without affecting the structure of the boat)
Overall width (B_{max})* ..... 4,69 m
(Including: removable parts that can be dismantled, without affecting the structure of the boat)
Beam(B_h)* ..... 4,69 m
(Excluding: removable parts that can be dismantled, without affecting the structure of the boat)
Air draught – Empty vessel ..... 21,70 m
Draught - Boat fully laden
- Deep draught version (Deep draught keel) ..... 2,36 m
- Shallow draught version (Shallow draught keel) ..... 1,83 m

Wetted surface area ..... Approximately 52 m²

1.3 ENGINE

Nominal maximum propulsion power (at the propeller output) ..... 58,8 Kw
Maximum recommended engine size ..... 269 kg

1.4 ELECTRICITY

Circuit type:

- Direct current 12V
- AC 220V
- AC (US Version) 110V

1.5 CAPACITIES

Total mass of the liquid content of fixed tanks when they are full.....996 kg

Fuel capacity:

- Tank 1:.....237 L
- Auxiliary fuel tank:.....237 L

Fresh water capacity:

- Tank 1 (*): .....400 L
- Tank 2 (*): .....235 L

Black water capacity (WC):

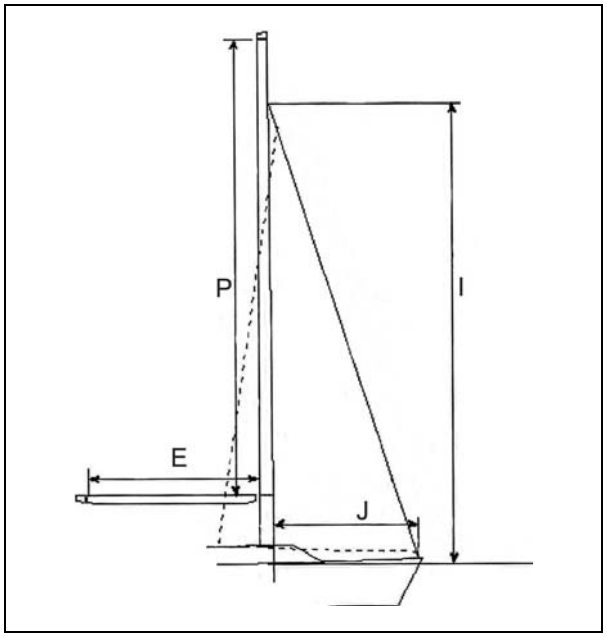
- Fore head:.....80 L
- Aft head:.....80 L

It may not be possible to use these capacities fully depending on the trim and load of the boat.
It is recommended to keep a reserve of 20% in the fuel tanks.
(*): Refer to the corresponding chapter to locate the position of the tank (relationship between the tank number and its position on board).

1.6 SAILS

I: Distance between deck and highest genoa halyard sheave ..... 19,06 m
J: Distance between the fore of the mast and the bow fitting on the deck
- standard & Furler ..... 5,93 m
- Performance ..... 5,49 m

P: Length of the mainsail luff ..... 17,50 m
E: Length of the mainsail foot ..... 6,00 m



Classical mainsail ..... 60,9 m²
Furling mainsail ..... 49,2 m²
Standard genoa (106 %) ..... 52,7 m²
Genoa - Performance (140 %) ..... 72,2 m²
Code 0 ..... 96,8 m²
Self-tacking jib ..... 44,0 m²

2 DESIGN CATEGORIES AND DISPLACEMENT

- Some of the data is shown on the manufacturer's plate fixed to the boat. The explanation of the data is given in the appropriate chapters of this manual.

- The recommended maximum load includes the weight of all the people onboard, of provisions, personal belongings, of all equipment not included in the weight of the boat in ballast, of the cargo (if relevant) and of all liquids contained in fixed tanks when full (fuel, water, grey water, black water).

- The maximum recommended weight shown on the manufacturer's plate does not include the weight contained in the fixed tanks of liquid when full (fuel, water, grey water, black water).

Design category	A	B	C	D
Maximum number of people to be allowed onboard	**13**	**14**	**16**	**16**
Light displacement	**14 527 kg**			
Recommended maximum load	**4 940 kg**			
Displacement with maximum load	**19 467 kg**			

If some of those onboard are children, the total number of people allowed onboard may be increased, provided that:

- The total weight of the children does not exceed 37,5 kg;

and that

- the total weight of all allowed onboard (based on about 75 kg per adult) is not exceeded.

- Do not exceed the recommended maximum number of people onboard. However many people are onboard, the total, combined load of people and any gear or equipment must never exceed the recommended maximum load.
- Always use the seats or seating areas provided.

- When loading the boat, never exceed the recommended maximum load. Always load the boat with care and distribute the loads in order to maintain the theoretical trim (more or less horizontal).
- Avoid placing heavy loads high up in the boat.

2.1 DESIGN CATEGORIES

Category A:

A yacht of design category A is considered to be designed for wind that may exceed force 8 (on the Beaufort scale) and waves that can exceed a significant height of 4 metres, but excluding exceptional conditions such as storms, severe storms, tornadoes and extreme sea conditions or huge waves.

Category B:

A yacht of design category B is considered to be designed for wind that may go up to force 8 inclusive and waves that can reach a significant height up to 4 metres inclusive.

Category C:

A yacht of design category C is considered to be designed for wind that may go up to force 6 inclusive and waves that can reach a significant height up to 2 metres inclusive.

Category D:

A yacht of design category D is considered to be designed for wind that may go up to force 4 inclusive and waves that can reach a significant height up to 0,3 metres inclusive, with occasional waves of a maximum height of 0,5 metres.

NOTE: Boats in each category must be designed and built to withstand these parameters in respect of stability, buoyancy, and other relevant essential requirements and to have good handling characteristics.

3 STABILITY AND BUOYANCY

3.1 STABILITY DATA

- Fully laden displacement was used to evaluate the stability and buoyancy of the boat. The value of this displacement can be found in paragraph "Technical specifications" at the beginning of this manual.

- Any changes in the distribution of loads onboard (for example by adding a raised structure for fishing, fitting a radar or in-mast furling, changing the engine etc.) can significantly affect the boat's stability, trim and its performance;

- It is important to keep water in the bilges to a minimum;

- The boat's stability is affected by adding to the weight of the superstructure;

- In heavy weather it is important to close all the hatches, lockers and doors to minimise the risk of water pouring in;

- The boat's stability can be reduced when towing a boat or when using a davit or boom to lift a heavy load;

- Breaking waves are a serious threat to stability.

- Reduce speed in waves.

- Always adjust the speed and heading of your boat according to the sea conditions.

- All of the watertight hatches must remain closed when at sea.

3.2 ACCESS TO THE BOAT

Access to the cockpit

NOTE: It is essential that the guardrail is closed when sailing.

Access to the engine compartment

Port aft cabin

Starboard aft cabin

Companionway

Access to companionway

Access to the crew cabin

- It is imperative that both the cockpit and the engine compartment are kept closed when at sea.
- When at sea close the guardrail side-opening or openings.
- Slamming an access hatch may cause injury : always close the hatch gently and carefully.
- Do not allow children to open or close the hatches unsupervised.

- It is imperative that companionway access is kept closed when at sea.
- Close the deck hatches and portholes before each trip.
- Close all access doors and hatches in heavy weather or when the sea is rough.

ADVICE-RECOMMENDATION

- When under way, keep hull valves and fillers in the closed position to minimise the risk of flooding.

4 MANOEUVRABILITY

- This boat was tested using the stability rating STIX, which is a worldwide safety measurement of stability and which takes account of the length of the vessel, its displacement, hull dimensions, stability characteristics and flooding proofness. This test produced the following results:

Shallow draught version (Shallow draught keel)

	Boat with minimal load Classical mast / Roller furling mast	**Boat laden** Classical mast / Roller furling mast
Angle of vanishing stability (in degrees)	**109.9° / 108.1°**	**105.5° / 103.9°**
STIX	**41.94 / 40.65**	**38.65 / 37.52**

Deep draught version (Deep draught keel)

	Boat with minimal load Classical mast / Roller furling mast	**Boat laden** Classical mast / Roller furling mast
Angle of vanishing stability (in degrees)	**111.9° / 110.1°**	**107.3° / 105.7°**
STIX	**43.54 / 42.26**	**40.08 / 38.94**

- This boat is liable to capsize or to become flooded if carrying too much sail. In these circumstances it could sink. It is important to reduce the sail area if the wind exceeds force 3 on the scale of Beaufort. It is important to be especially vigilant in strong gusts of wind or in a squall.

- Take extra precautions if sailing downwind when you come round onto a beam reach, as both the apparent wind and the angle of heel will increase. Such changes to the point of sail must not be made at speed and you should first consider reducing sail.

- If carrying too much sail, the boat could capsize.
- It is important to take additional precautions in very strong winds or in a confused sea or breaking waves.

4.1 VISIBILITY FROM THE STEERING STATION

The vision of the helmsman from the steering station can be obstructed when under sail caused by one or several variable conditions:

1) Load and load distribution;
2) Speed;
3) Sea conditions;
4) Rain and mist;
5) Darkness and fog;
6) Lights inside the boat;
7) Position of covers and curtains;
8) Persons or mobile equipment located in the helmsman's field of view.

List of sails able to obstruct a forward view:

- All except the staysail.

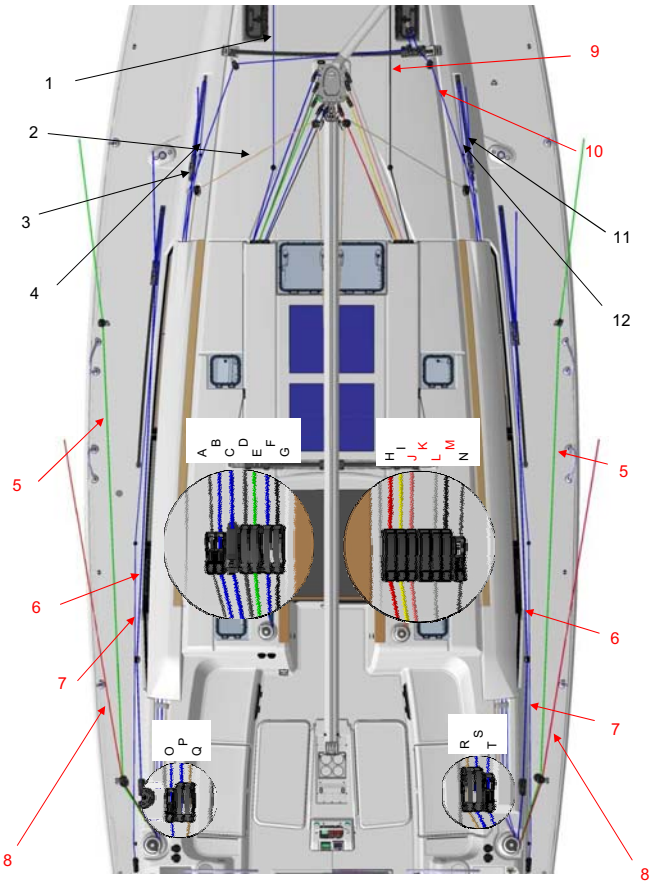
The international regulations to avoid collisions at sea (Col Reg / RIPAM) and rules require appropriate and continuous watching as well as the observance of the right-of-way rules. Observance of these rules is essential.

- Manoeuvrability is reduced at excessive speeds.
- There is a risk of loss of control during tight turns.
- Reduce speed before making a turn in any direction.

5 RIGGING AND SAILS

5.1 RIGGING DIAGRAM

5.1.1 Classical mast



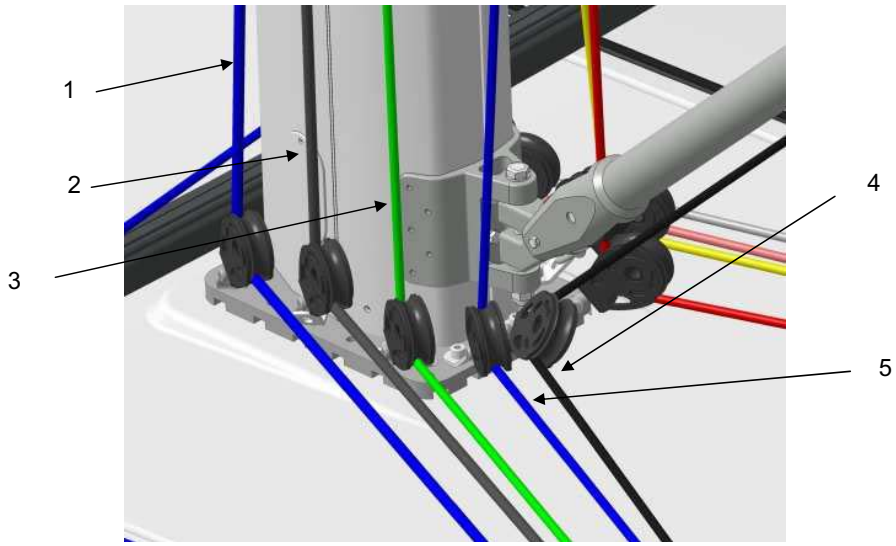
1. Genoa furler line
2. Mainsail sheet
3. Genoa sheet
4. genoa car adjustment
5. Spinnaker guy
6. Genoa sheet - Performance
7. genoa car adjustment - Performance
8. Spinnaker sheet
9. Kicker tackle - Symmetric spi
10. Self-tacking jib sheet
11. Genoa sheet
12. genoa car adjustment

A. Mainsail car adjustment
B. Genoa furler line
C. Genoa halyard
D. Main halyard
E. Reef 2
F. Reef 3
G. Kicking strap
H. Mainsail foot
I. Reef 1
J. Spinnaker halyard
K. Self-tacking jib

L. Boom lift / Fore stay sail halyard
M. Spinnaker boom downhaul / Asymmetric spinnaker tack
N. Mainsail car adjustment
O. genoa car adjustment
P. Genoa sheet
Q. Mainsail sheet
R. Mainsail sheet
S. Genoa sheet
T. genoa car adjustment

System at mast foot

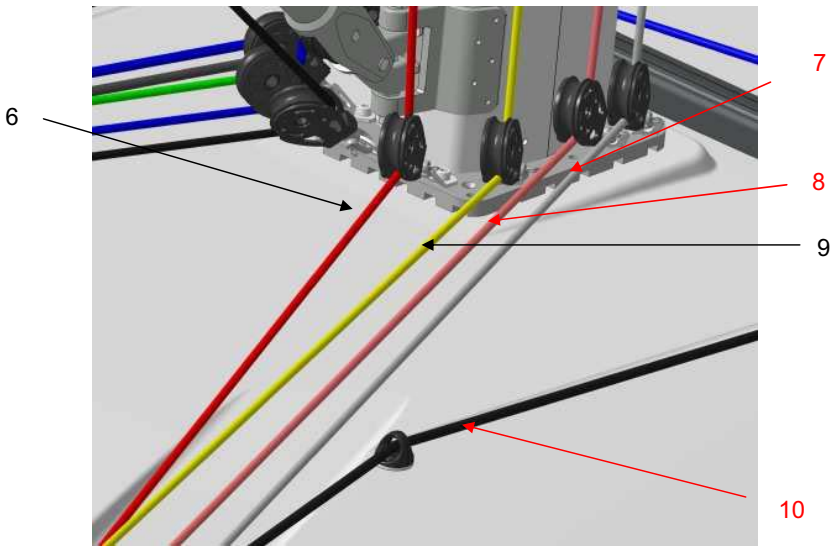
Port side



1. Genoa halyard
2. Main halyard
3. Reef 2
4. Kicking strap
5. Reef 3

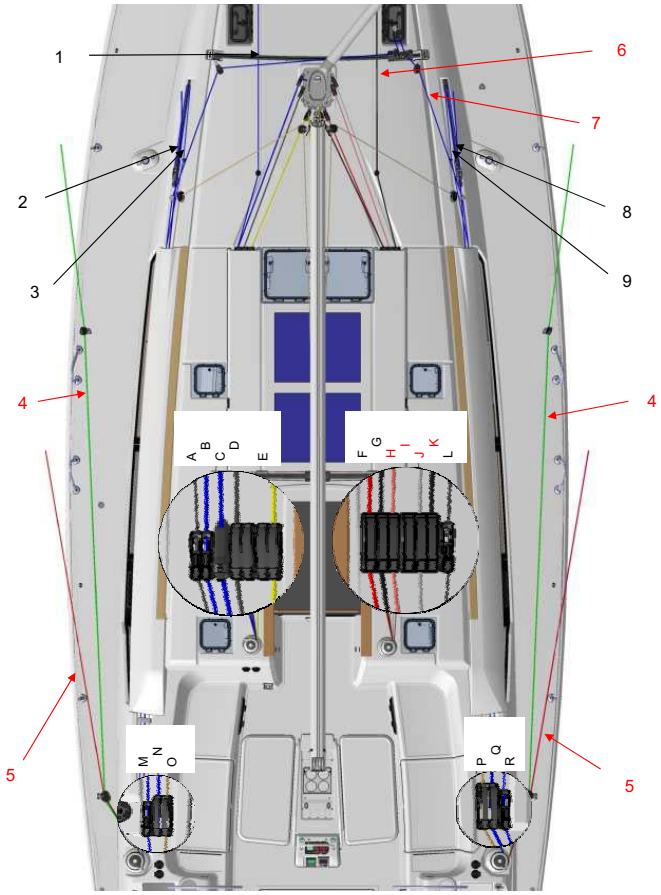
6.Mainsail foot

Starboard



7. Boom lift / Fore stay sail halyard / Self-tacking jib sheet
8. Spinnaker halyard
9. Reef 1
10. Spinnaker boom downhaul / Asymmetric spinnaker tack

5.1.2 Roller furling mast

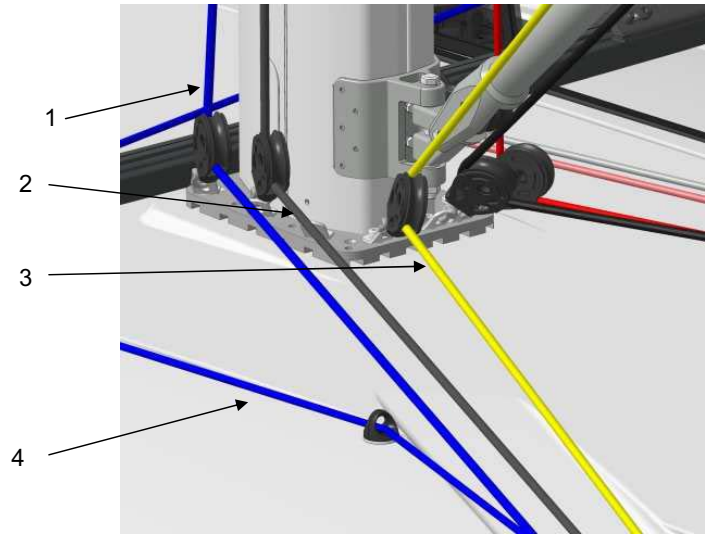


1. Genoa furler line
2. Mainsail sheet
3. genoa car adjustment
4. Spinnaker guy
5. Genoa sheet
6. Kicker tackle - Symmetric spi / Asymmetric spinnaker tack
7. Self-tacking jib sheet
8. Spinnaker sheet
9. genoa car adjustment

A. Mainsail car adjustment
B. Genoa furler line
C. Genoa halyard
D. Main halyard
E. Mainsail safety block stopper
F. Mainsail foot
G. Kicking strap
H. Spinnaker halyard
I. Self-tacking jib sheet
J. Boom lift / Fore stay sail halyard
K. Spinnaker boom downhaul / Asymmetric spinnaker tack
L. Mainsail car adjustment
M. genoa car adjustment
N. Genoa sheet
O. Mainsail sheet
P. Mainsail sheet
Q. Genoa sheet
R. genoa car adjustment

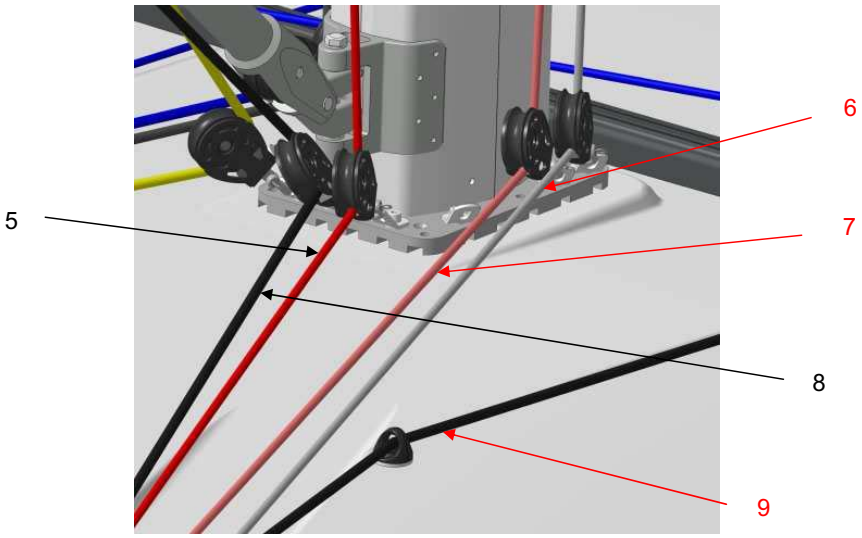
System at mast foot

Port side



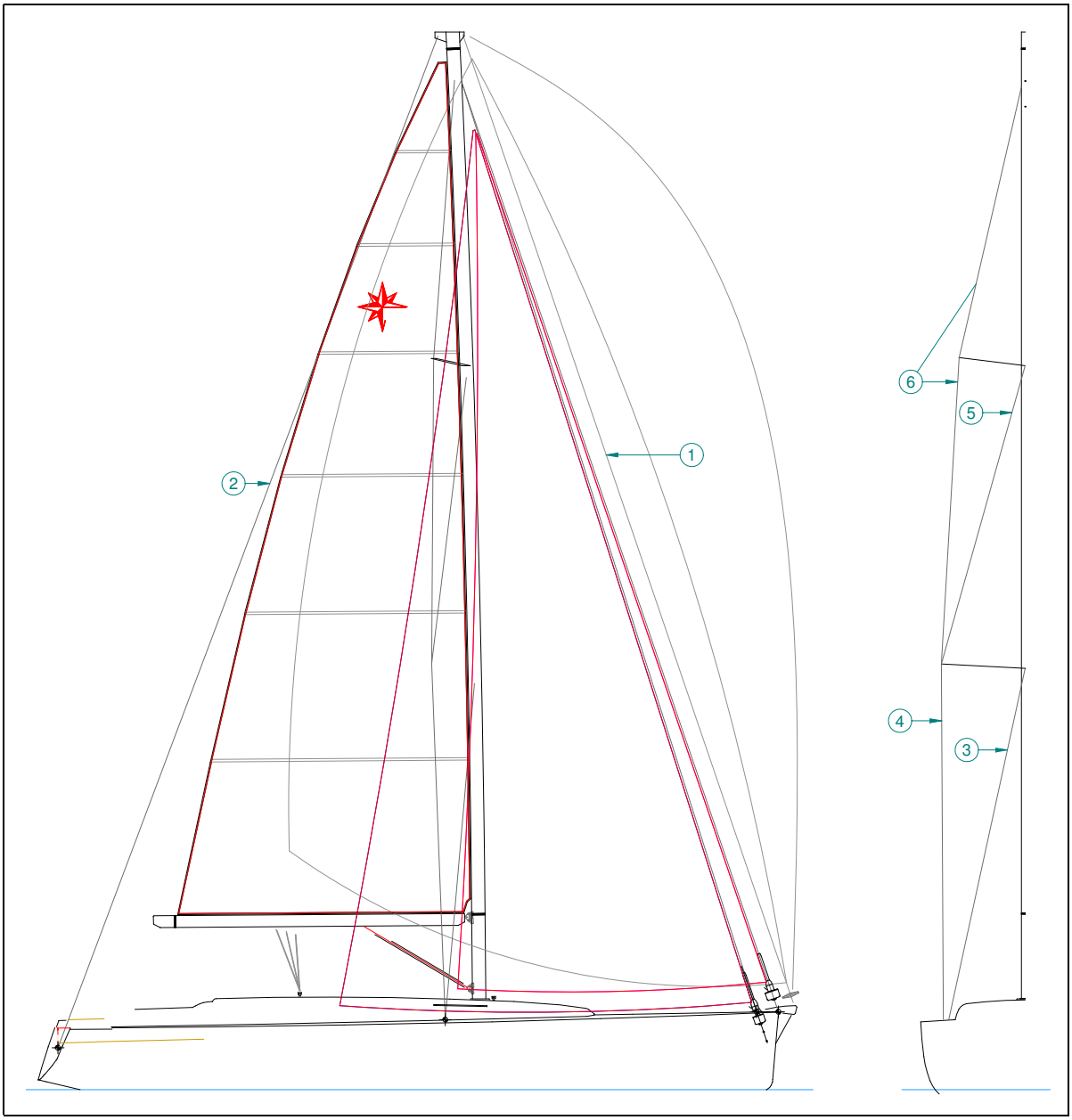
1. Genoa halyard
2. Main halyard
3. Mainsail safety block stopper
4. Genoa furler line

Starboard



5. Mainsail foot
6. Boom lift / Fore stay sail halyard / Self-tacking jib sheet
7. Spinnaker halyard
8. Kicking strap
9. Spinnaker boom downhaul / Asymmetric spinnaker tack

5.2 STANDING RIGGING



Reference	Designation
1	Forestay
2	Backstay
3	D1
4	V1
5	D2
6	V2D3

- To hoist a crew member up to the top of the mast, make a bowline with the halyard directly on the bosun's chair ring (never use the halyard snap shackle or shackle).
- Never hoist a crew member when sailing in heavy weather.

ADVICE-RECOMMENDATION

- The initial commissioning of your boat will require a lot of skill and care. The proper working of all your boat's equipment is the result of the quality of the commissioning operations.
For this reason the stepping of the mast must be carried out under the responsibility of your dealer the first time the mast is stepped.
- Before each trip, carefully inspect the mast from top to bottom.
- Periodically check the rig tension and the tightness of the locknuts and bottle screw clevis pins.

5.3 RUNNING RIGGING

- Inspect the halyards for wear and condition.
- Regularly check the condition of the jam cleat jaws.
- Regularly clean the backstay blocks with fresh water.
- Avoid aggressive gybing in order to reduce premature wear on the sheets, attachment points and the gooseneck.
- If halyard tension (mainsail/genoa) is too great, this can lead to problems when hoisting/ furling.

- When not sailing, slacken the genoa halyard and keep it away from the forestay (risk of halyard becoming furled around the forestay, which can lead to the stay breaking and dismasting of the boat).

5.4 SAILS

General points

- The working life of a sail mainly depends on its being regularly maintained.
- When sailing, trim the sails properly in accordance with the stresses in order to reduce the harmful strains on the fabric.
- Avoid wear and tear: Protect against chafing on gear with rough/sharp surfaces (spreaders, stanchions, etc).
- Keep a sailmaker's kit and explanatory booklet onboard to carry our emergency repairs whilst waiting for a professional sail-maker.
- Rinse the sails in fresh water regularly and dry them quickly to avoid mildew. Avoid drying the sails on the mast in the wind: Flogging wears the seams and risks tearing the sails on the rigging.
- UV rays severely attack sails: If sails remain rigged, even for 24 hours, cover them with a sailcover or protective fabric.
- The genoa can be fitted with an anti-UV strip: Make sure that the furling direction on the furling drum is correct (the UV strip must appear on the outside).
- Never use force if the sail sticks when furling or unfurling. If this happens, check that a halyard is not rolled around the forestay.

Sail storage/folding

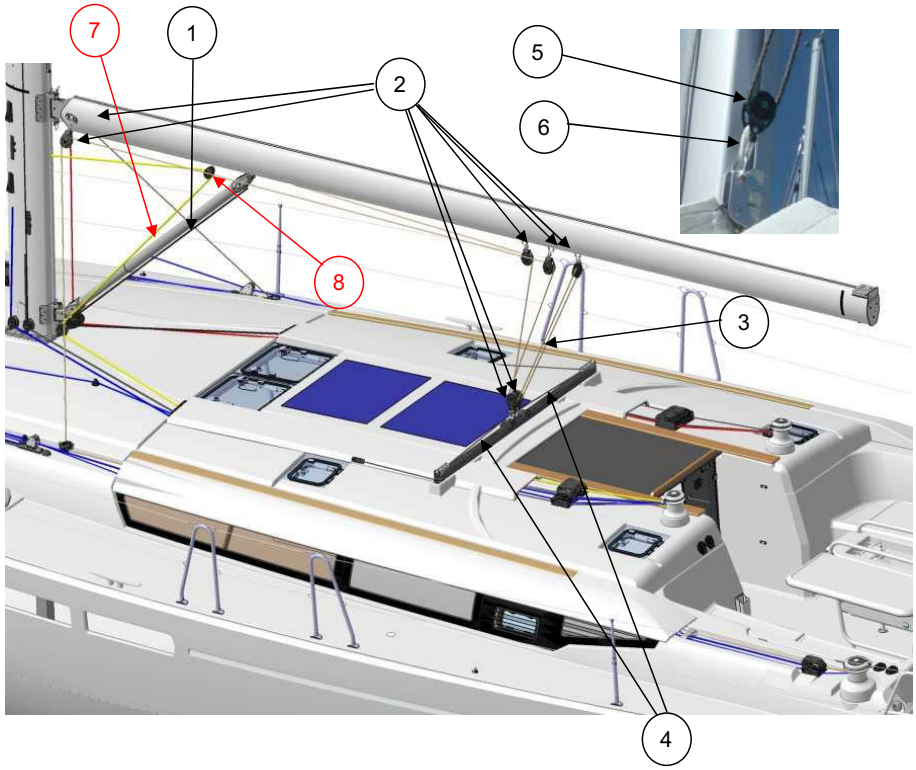
- Remove the sails if your boat is not to be used for a long time.
- Avoid storing a wet sail to prevent the appearance of mould and mildew.
- Flake the sail parallel to the foot, then roll it up to the bag dimensions.

ADVICE-RECOMMENDATION

When the sailing season is over and, if possible, before winter, take the suit of sails to a professional for an overhaul and effective repairs.

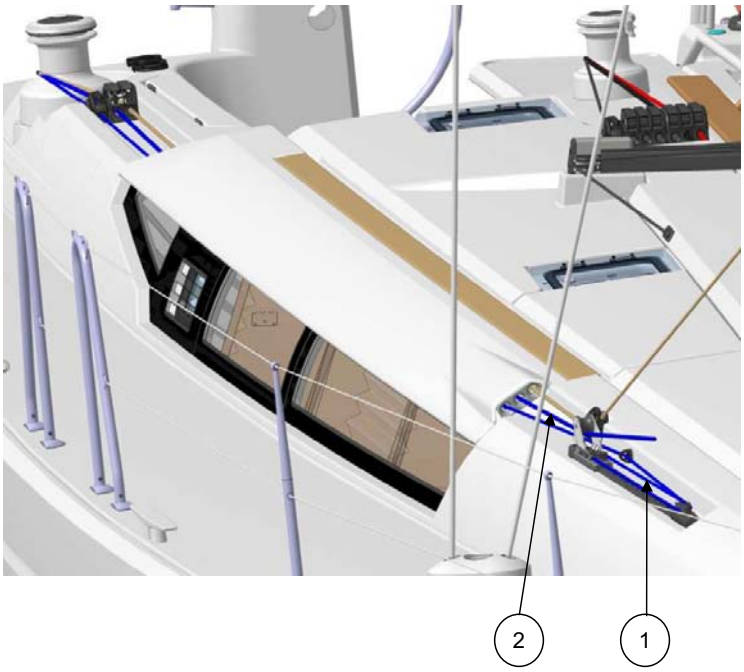
5.5 SETTING THE SAILS

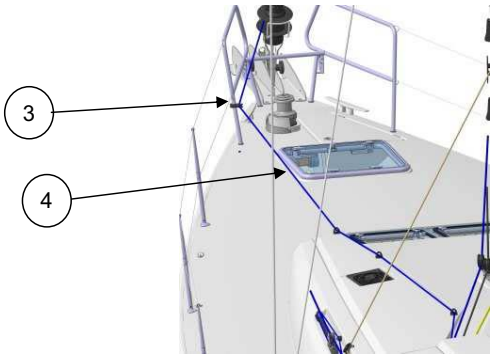
5.5.1 Mainsheet system



Reference	Designation
1	Kicking strap
2	Swivel single pulley
3	Mainsail sheet
4	Adjustment of the mainsheet traveller
5	Tackle block
6	Loop
7	Mainsail safety block stopper
8	Single frame pulley

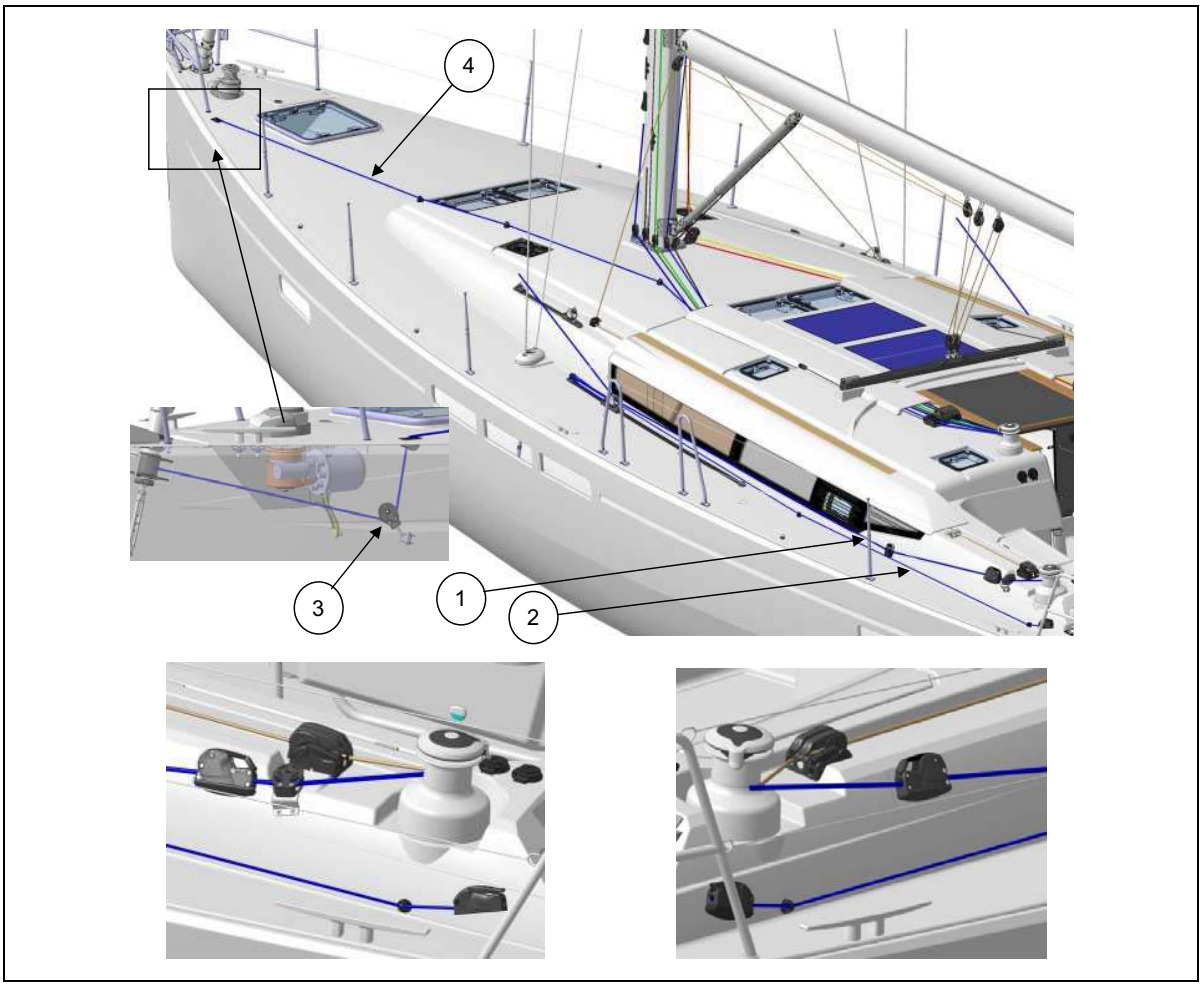
5.5.2 System - Standard genoa





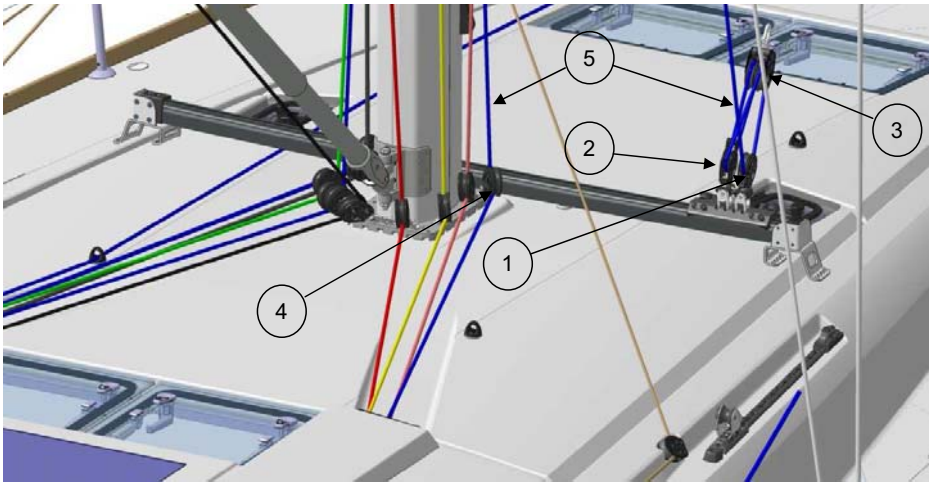
Reference	Designation
1	Genoa sheet
2	genoa car adjustment
3	Idler pulley
4	Genoa furler line

5.5.3 System - Performance version genoa



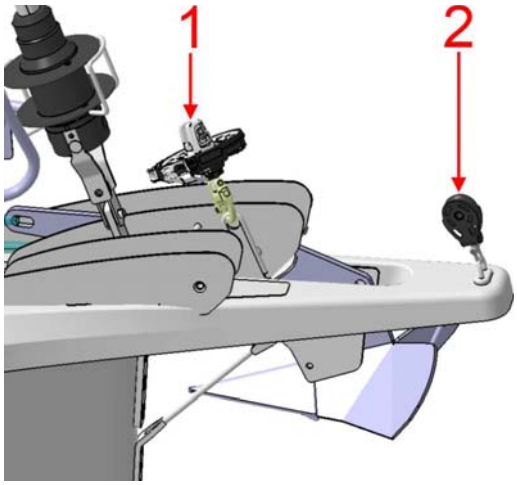
Reference	Designation
1	Genoa sheet
2	genoa car adjustment
3	Swivel single pulley
4	Genoa furler line

5.5.4 System - Self-tacking jib



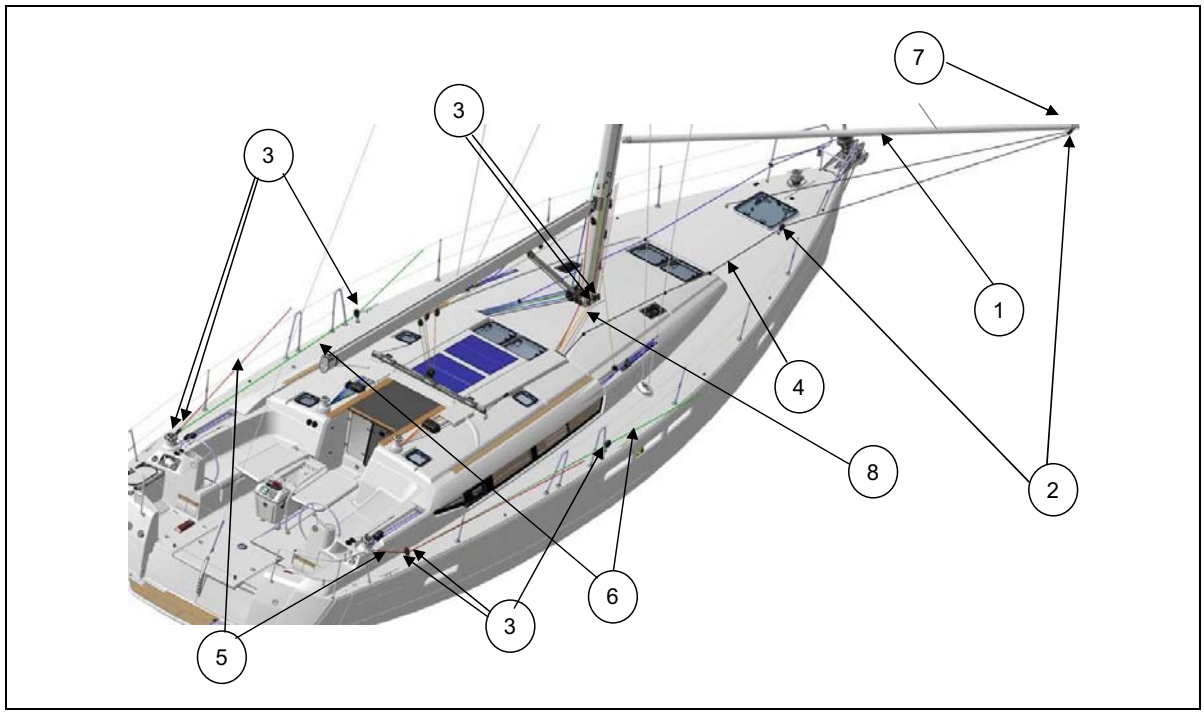
Reference	Designation
1	Swivel single pulley
2	Pulley
3	Pulley
4	Swivel single pulley
5	Self-tacking jib sheet

Detail: Operation - Code 0 / Asymmetrical spinnaker on bowsprit



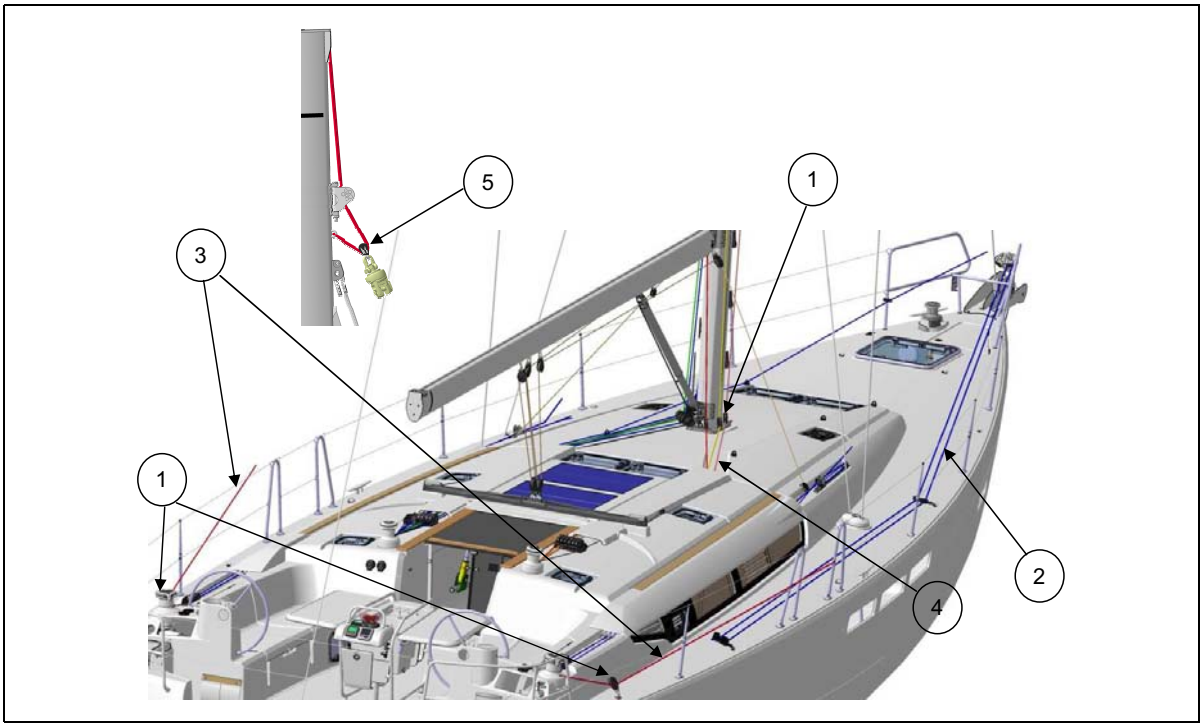
1. Code 0 or Asymmetric spinnaker tack
2. Asymmetric spinnaker tack only

5.5.5 System - Symmetric spi



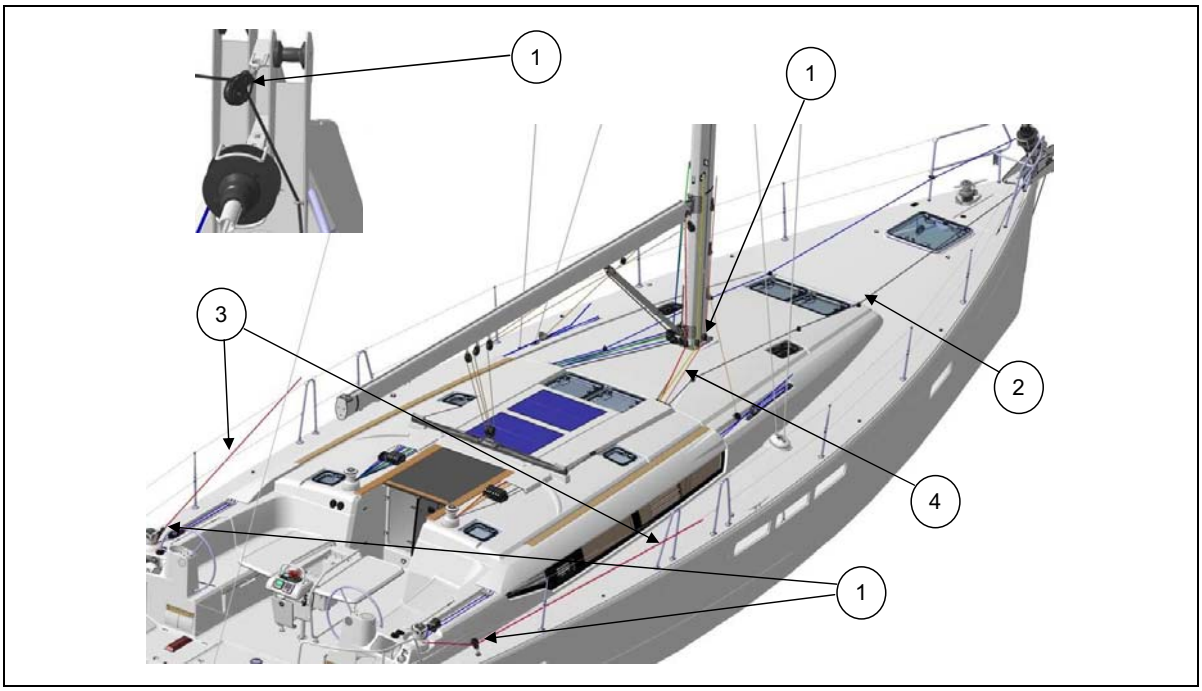
Reference	Designation
1	Boom
2	Swivel single pulley
3	Swivel single pulley
4	Spinnaker boom downhaul
5	Spinnaker sheet
6	Spinnaker guy
7	Boom lift
8	Spinnaker halyard

5.5.6 System - Code 0



Reference	Designation
1	Swivel single pulley
2	Furling line
3	Spinnaker sheet
4	Spinnaker halyard
5	Tackle block

5.5.7 System - Asymmetrical spinnaker



Reference	Designation
1	Swivel single pulley
2	Spinnaker tack
3	Spinnaker sheet
4	Spinnaker halyard

5.6 DECK FITTING

General points

- Inspect each piece of deck gear regularly (blocks, shackles, swivels, jam cleats, etc): Check that there are no cracks, corrosion or deformation.
- When replacing a piece of deck gear, make sure that you use a type with the same strength specifications.
- If careful, regular inspections are not carried out and damaged parts and/or worn ropes are not replaced, a block or tackle may suddenly break and cause an accident or serious injury and damage the boat.

Maintenance

- On return from sailing always rinse deck gear with fresh water.
- Wash deck gear regularly with non-abrasive soap by making the block sheaves turn. Rinse afterwards with fresh water.
- Never use grease on deck gear parts (apart from the winches).
- Never use caustic-based cleaning materials on deck gear parts (such as some teak cleaners).

5.7 WINCHES

Manual winches

- Do not leave loose ropes on the winches but make them fast on cleats.

Electric winches

- The electric winches are supplied by direct current.
- A breaker protects the electrical circuit.
- An operation relay is fitted to the electrical circuit.
- A load controller is fitted to the electrical circuit: This system protects the winches against overload by temporarily interrupting the electrical supply. The load controller is programmed in the factory.
- Inserting a winch handle into an unloaded winch automatically disconnects the motor transmission and allows it to be used manually.

NOTE:

- Heavy use is made of the batteries when operating the electrical winches: Make sure the battery bank is systematically recharged after a day's sailing.

Rinse winches regularly with fresh water

- Rinse winches regularly with fresh water.
- Dismantle, clean and lubricate each winch annually. Parts that have been damaged or worn may need replacing.

Layout of components

Control

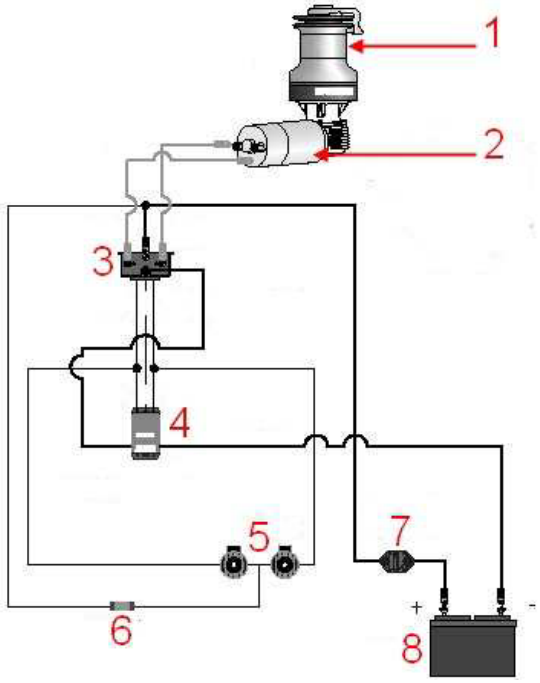
Operation relay

Load controller

Genoa winches

Mainsail winch

1. Motor
2. Operation relay



Layout diagram - Electric winch

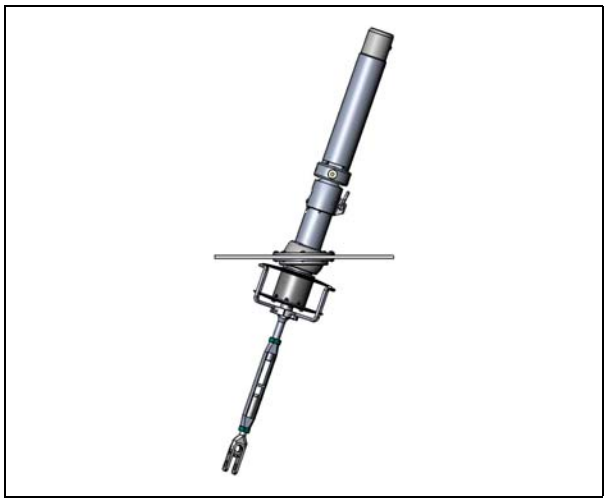
1. Winch
2. Motor
3. Operation relay
4. Load controller
5. Waterproof switches
6. Fuse
7. Breaker
8. Service battery

- Refer to the manufacturer's instructions for use and maintenance.
- Avoid bulky clothing, long hair and jewellery that might become caught in the winch when it is moving. Avoid riding turns when using the winches.

5.8 GENOA FURLER

Operation

- Leave several turns of the furling line around the drum.
- Furl/unfurl the genoa slowly so that the furling line is always under light tension thus avoiding any riding turns in the drum.
- Never slacken the genoa halyard when furling/unfurling the sail.
- When furling in light winds, it is recommended to keep the sheet under slight tension so that the genoa furls correctly.



Maintenance

- Rinse the furling drum regularly.
- It is recommended to rinse mechanical parts at least once a year in fresh water.

Refer to the manufacturer's instructions for use and maintenance.

5.9 SINGLE LINE FURLER

The jib furler differs from roller reefing gear by its use: The foresail is either completely furled or fully out. It is not possible to sail by reducing the sail plan as can be done with roller reefing gear.

Maintenance

- Rinse the drum regularly.
- It is recommended to rinse mechanical parts at least once a year in fresh water.

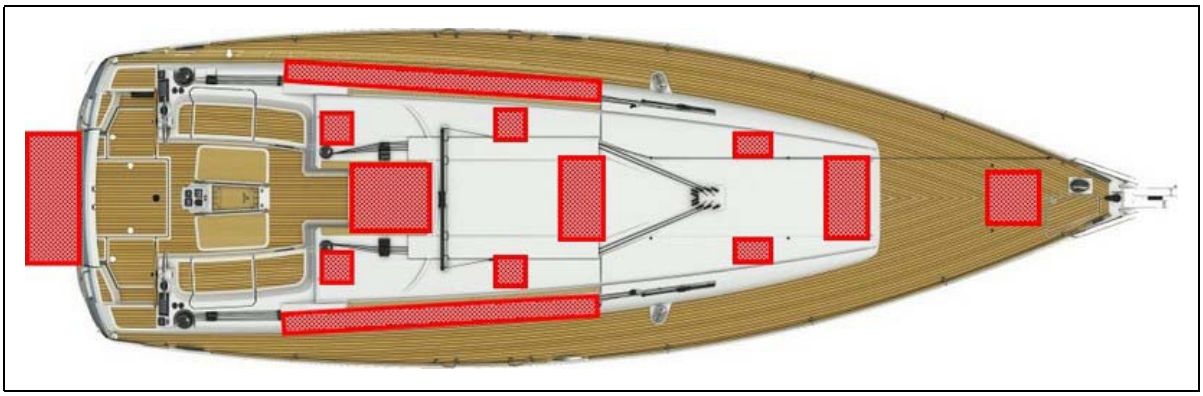
6 SAFETY

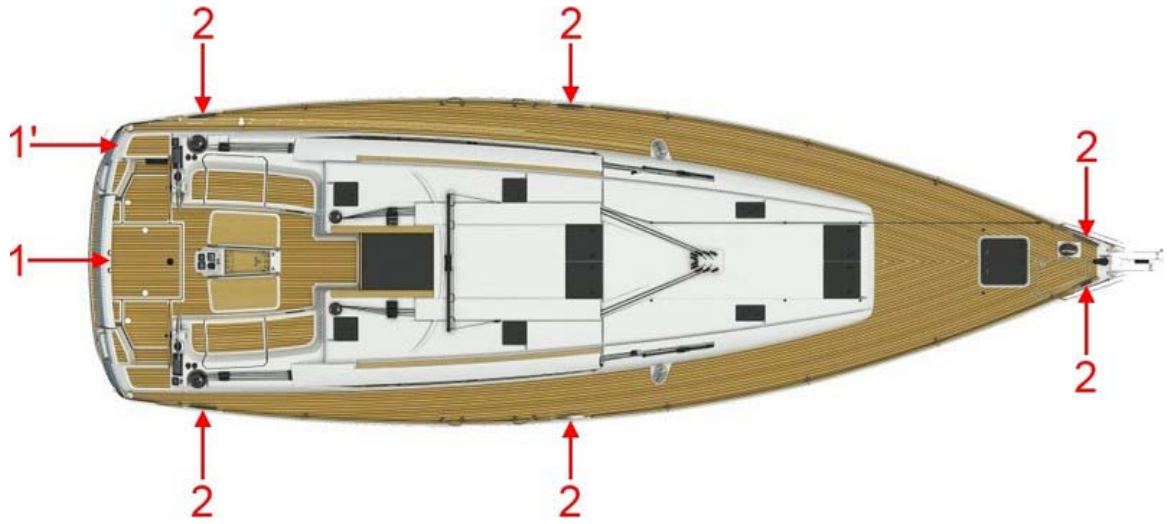
6.1 PREVENTING MAN OVERBOARD SITUATIONS AND THE MEANS OF GETTING SOMEONE BACK ONBOARD

6.1.1 Prevention of man overboard

- The off-limits areas of the working deck when the boat is under way are cross-hatched below:

- The "working deck" means those areas outside where people stand or walk during normal use of the boat.





Ref 1 & 1': Fitting a means of climbing back onboard.

Ref 2: Mooring cleats (which correspond to the anchor points for the lifelines).

- Use the seats provided.

Regularly check the guard-rails:

- With metal guard-rails, watch for corrosion particularly at connecting points.
- With synthetic guard-rails, change them as soon as they show signs of wear due to chafing or UV.

6.1.2 Getting back onboard

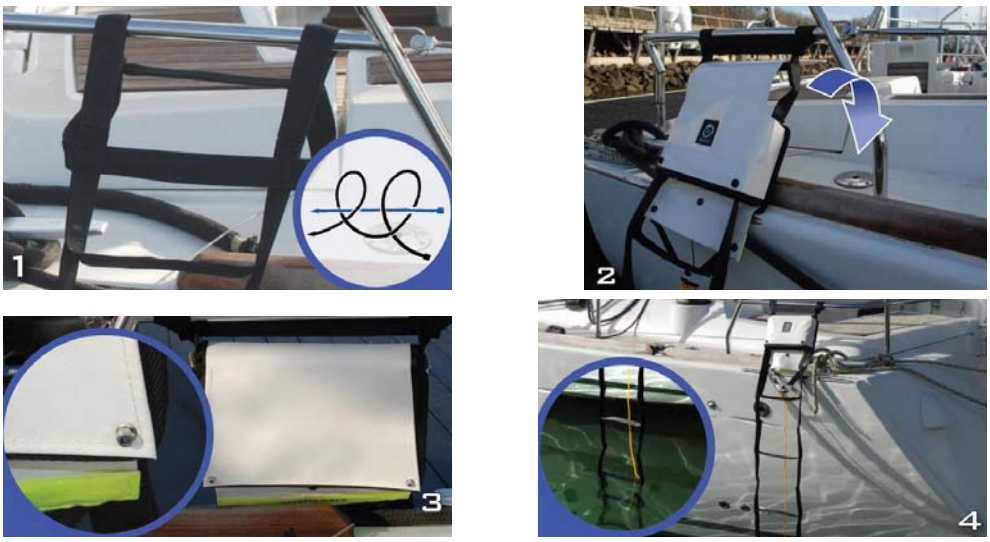
The means for getting back onboard must be able to be deployed by one person alone in the water, with no other help.

Installation of means to get back on board in the event of an accidental fall:
(Ref 1'):

Description of the installation stages::

Assembling the ladder L3500 mm:

- Take the ladder out of its case and fit the ladder by tying a lark's head type knot. The knot must face outside.
- Place the flap of the case between the loop of the ladder and the first step.
- Screw on the flap with the two bolts and nuts on the back. The nuts should be on the back of the case to ensure they do not prevent the ladder from being taken out for use.
- Adjust the length of the cord to reach the water level and check that the ladder is properly released. It is important to ensure that the ladder extends smoothly into the water. Attach the end of the cord to the swivel plate provided for this purpose. Finally stow away the ladder and close the internal flap with press studs.



Installation of means to get back on board when swimming:
Swimming ladder (Ref 1):

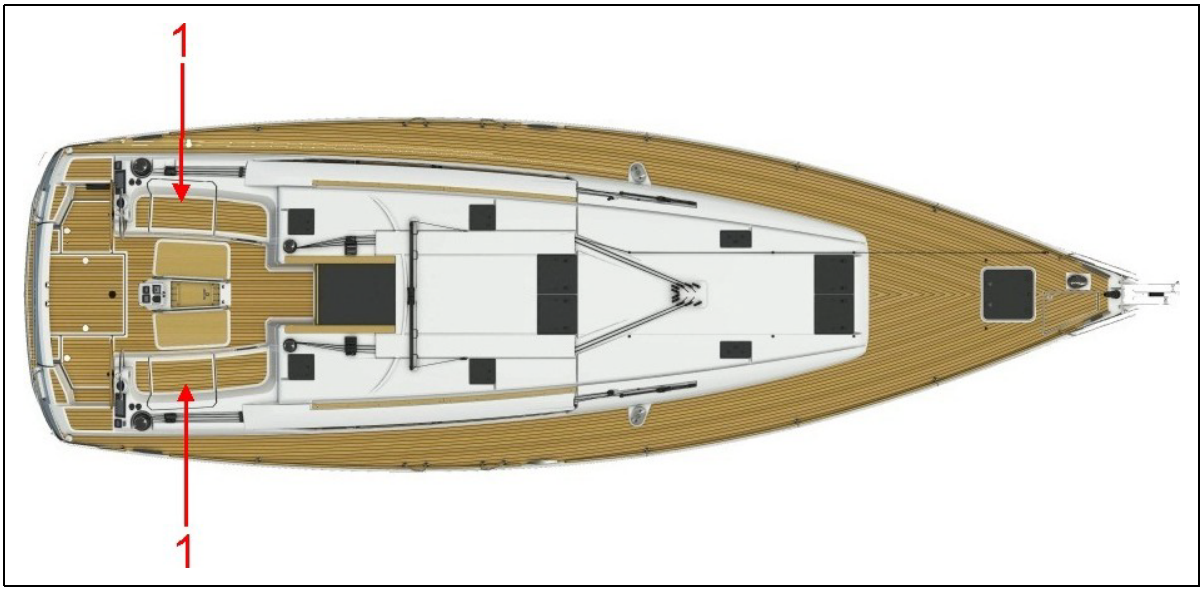
- Some types of equipment for getting back onboard have a locking device when folded up: It is important to keep the means for getting back onboard deployed and ready to use once the boat is in use (at anchor, moored or at sea).
- Make sure that the means for getting back onboard are readily accessible and easy to use by someone alone in the water.
- Before using your boat, make sure the safety ladder is in its place.

- Make sure your safety ladder is installed in accordance with the installation diagram.
- Make sure the triggering line is installed in accordance with the installation diagram.

AVERTISSEMENT
Veillez à ce que l'échelle souple soit installée conformément aux instructions du Manuel Propriétaire. Veillez également à ce que le bout déclencheur soit mis à poste conformément aux instructions.

WARNING
Make sure that the flexible ladder is installed as specified in the Owner's Manual. Also make sure that the rope trigger is installed in accordance with the instructions.

6.2 STORING THE LIFE-RAFT



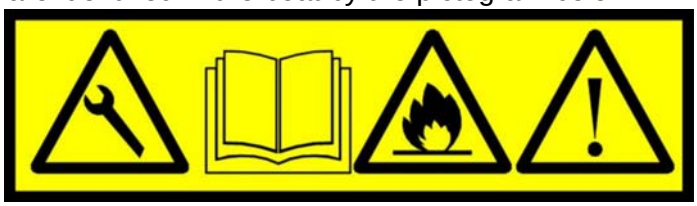
The life-raft(not supplied) must be stored in the space provided for it (Ref 1). A pictogram helps to locate it easily.

Before putting to sea, carefully read the launching instructions shown on the liferaft.

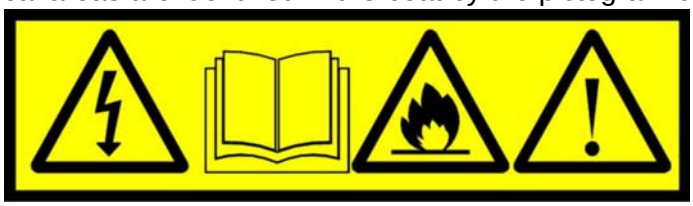
When at sea, never padlock or lock the stowage locker for the life-raft.

6.3 SECURING MOVEABLE ITEMS

The technical areas are identified in the boat by the pictogram below:



The electrical technical areas are identified in the boat by the pictogram below:



Technical areas may not be used as storage compartments.

- Ensure that movable items are firmly secured when the boat is under way.
- Don't store anything below the floorboards.

6.4 DECK LAYOUT

1. Lifebuoys support bracket (the ring lifebuoy is not supplied).
2. Outboard engine (the outboard engine is not supplied).

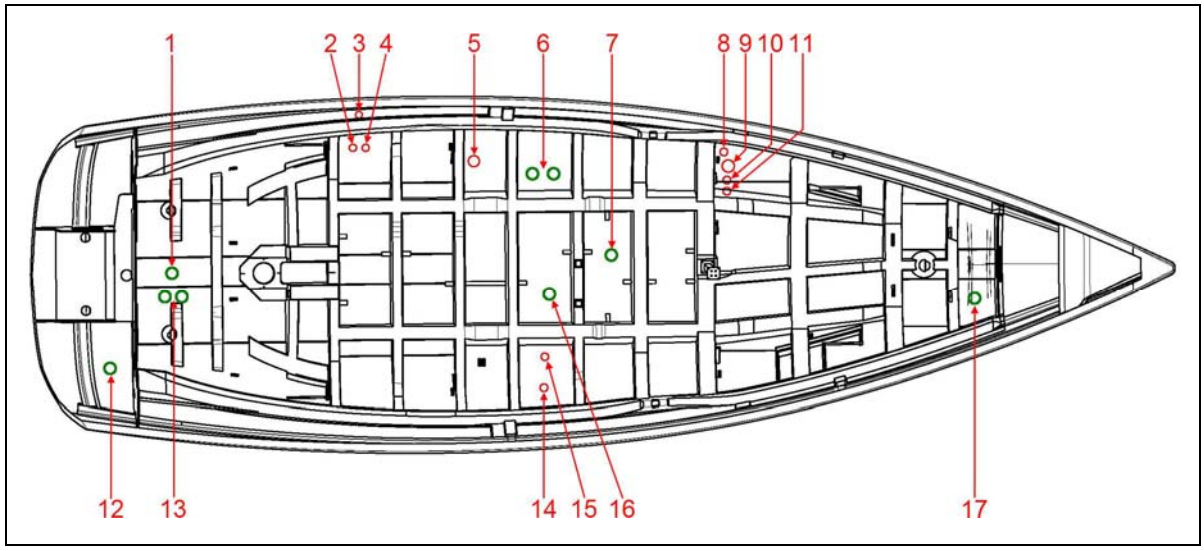
The maximum weight of the outboard engine on the pushpits must not exceed 20 kg.

6.5 INFORMATION ABOUT THE RISKS OF FLOODING AND ABOUT THE BOAT'S STABILITY

6.5.1 Openings in hull

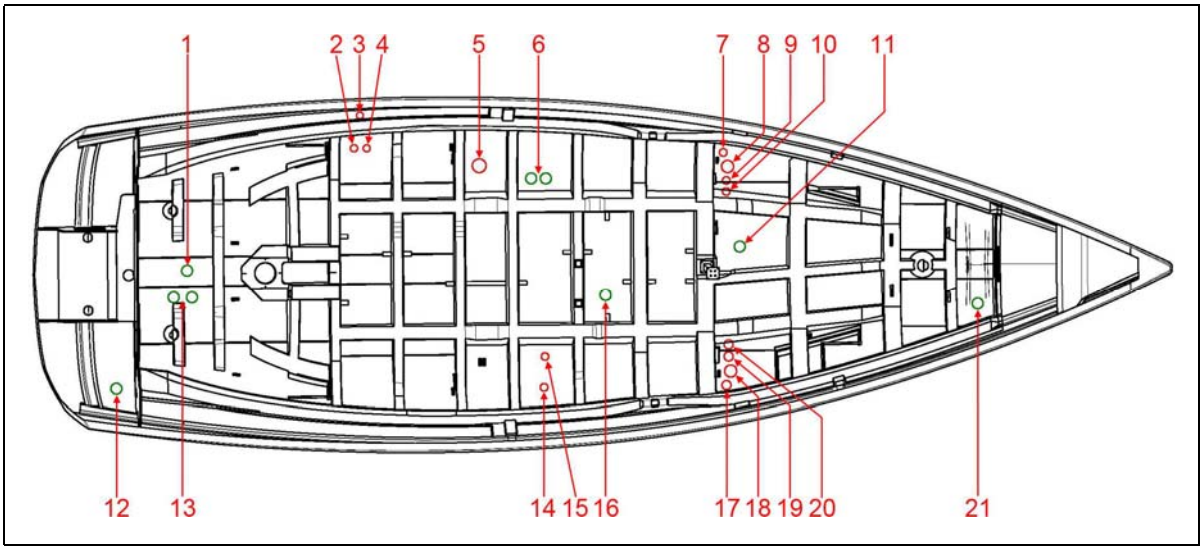
The valves, through-hull and other brass accessories last for about 5 years. Have all valves, hull orifices and other brass accessories of the vessel professionally checked every 5 years and replace them as necessary.

2 head layout



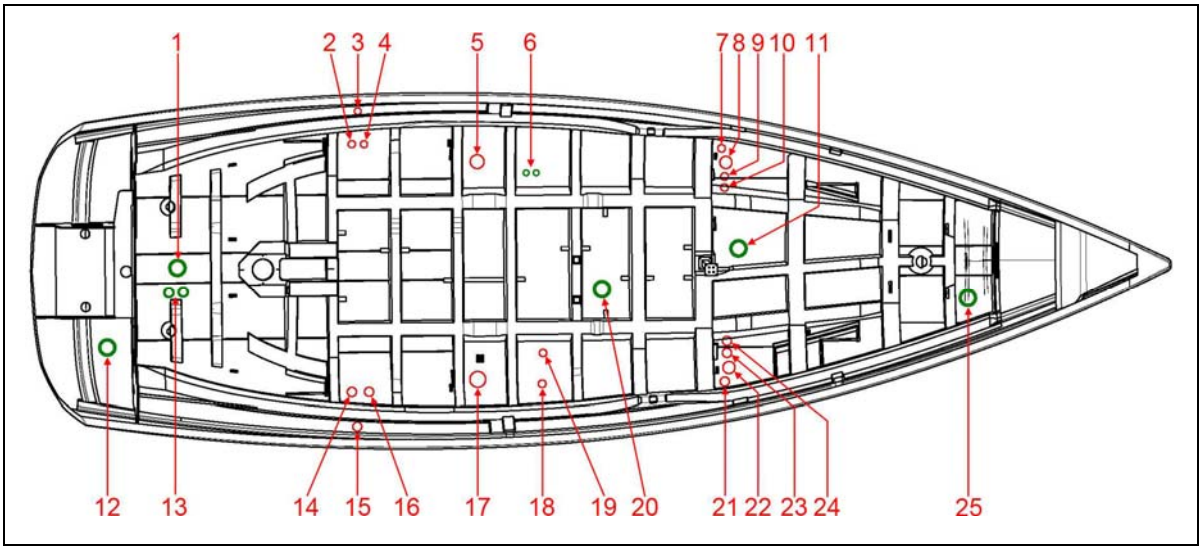
Reference	Designation	Valve
1	Sea water intake - Generator	Yes
2	Sea water intake - WC	Yes
3	Bathroom washbasin evacuation	Yes
4	Shower draining	Yes
5	Thru-hull seacock - Black water tank	Yes
6	Earthing plate - DC/AC converter	Not
7	Electronic sensor	Not
8	Bathroom washbasin evacuation	Yes
9	Thru-hull seacock - Black water tank	Yes
10	Sea water intake - WC	Yes
11	Shower draining	Yes
12	Seawater discharge - Generator	Yes
13	Earthing plate - Generator	Not
14	Galley sink drain	Yes
15	Sensor (Fridge)	Not
16	Sea water intake - Air conditioning	Yes
17	Sea water intake - Deck wash pump	Yes

3 head layout



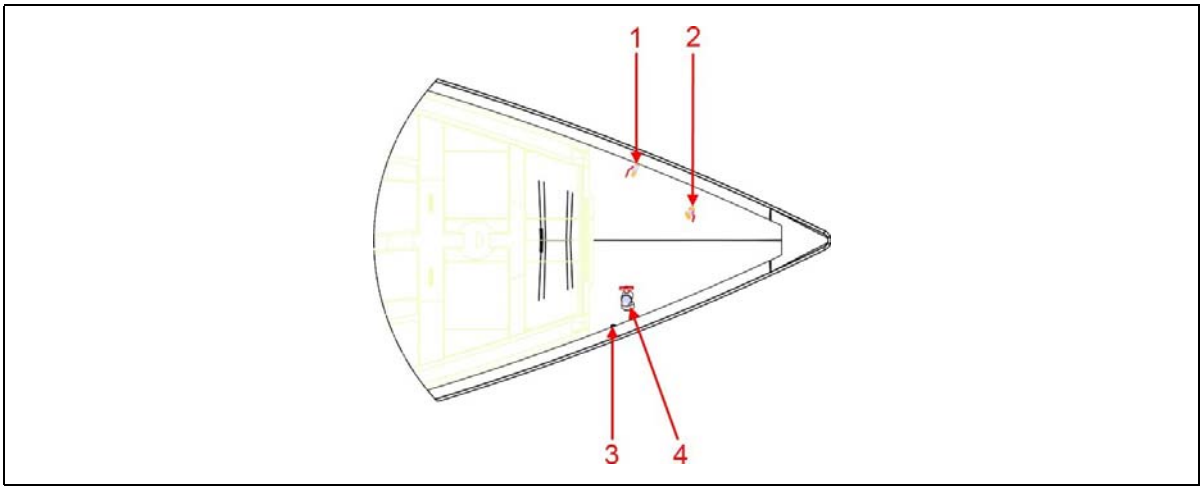
Reference	Designation	Valve
1	Sea water intake - Generator	Yes
2	Sea water intake - WC	Yes
3	Bathroom washbasin evacuation	Yes
4	Shower draining	Yes
5	Thru-hull seacock - Black water tank	Yes
6	Earthing plate - DC/AC converter	Not
7	Bathroom washbasin evacuation	Yes
8	Thru-hull seacock - Black water tank	Yes
9	Sea water intake - WC	Yes
10	Shower draining	Yes
11	Electronic sensor	Not
12	Seawater discharge - Generator	Yes
13	Earthing plate - Generator	Not
14	Sensor (Fridge)	Not
15	Galley sink drain	Yes
16	Sea water intake - Air conditioning	Yes
17	Bathroom washbasin evacuation	Yes
18	Thru-hull seacock - Black water tank	Yes
19	Shower draining	Yes
20	Sea water intake - WC	Yes
21	Sea water intake - Deck wash pump	Yes

4 head layout



Reference	Designation	Valve
1	Sea water intake - Generator	Yes
2	Sea water intake - WC	Yes
3	Bathroom washbasin evacuation	Yes
4	Shower draining	Yes
5	Thru-hull seacock - Black water tank	Yes
6	Earthing plate - DC/AC converter	Not
7	Bathroom washbasin evacuation	Yes
8	Thru-hull seacock - Black water tank	Yes
9	Sea water intake - WC	Yes
10	Shower draining	Yes
11	Electronic sensor	Not
12	Seawater discharge - Generator	Yes
13	Earthing plate - Generator	Not
14	Sea water intake - WC	Yes
15	Bathroom washbasin evacuation	Yes
16	Shower draining	Yes
17	Thru-hull seacock - Black water tank	Yes
18	Sensor (Fridge)	Not
19	Galley sink drain	Yes
20	Sea water intake - Air conditioning	Yes
21	Bathroom washbasin evacuation	Yes
22	Thru-hull seacock - Black water tank	Yes
23	Shower draining	Yes
24	Sea water intake - WC	Yes
25	Sea water intake - Deck wash pump	Yes

Version: Crew cabin



Reference	Designation	Valve
1	Washbasin draining	Yes
2	Sea water intake (WC)	Yes
3	Black water tank	Not
4	Thru-hull seacock - Black water tank	Yes

6.5.2 Drainage system

General points

- The inner moulding of the hull has channelling: the drainage channels. The drainage channels allow the water to drain down to the lowest point in the boat, where it can be discharged. So it is important to allow the water to flow freely down to this lowest point of the boat, which includes.
- Regularly cleaning the lowest point of the boat and the drainage channels.

Diagram of the layout - Drainage channels

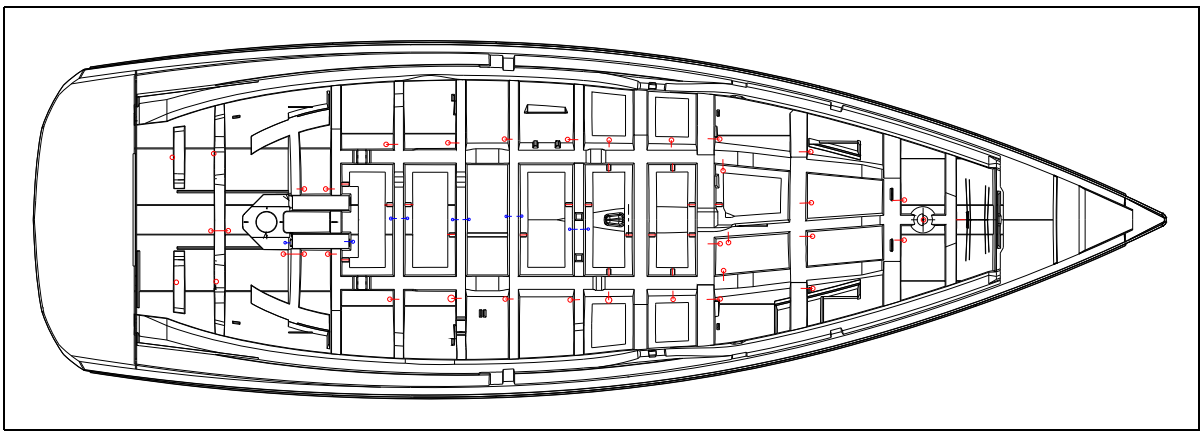
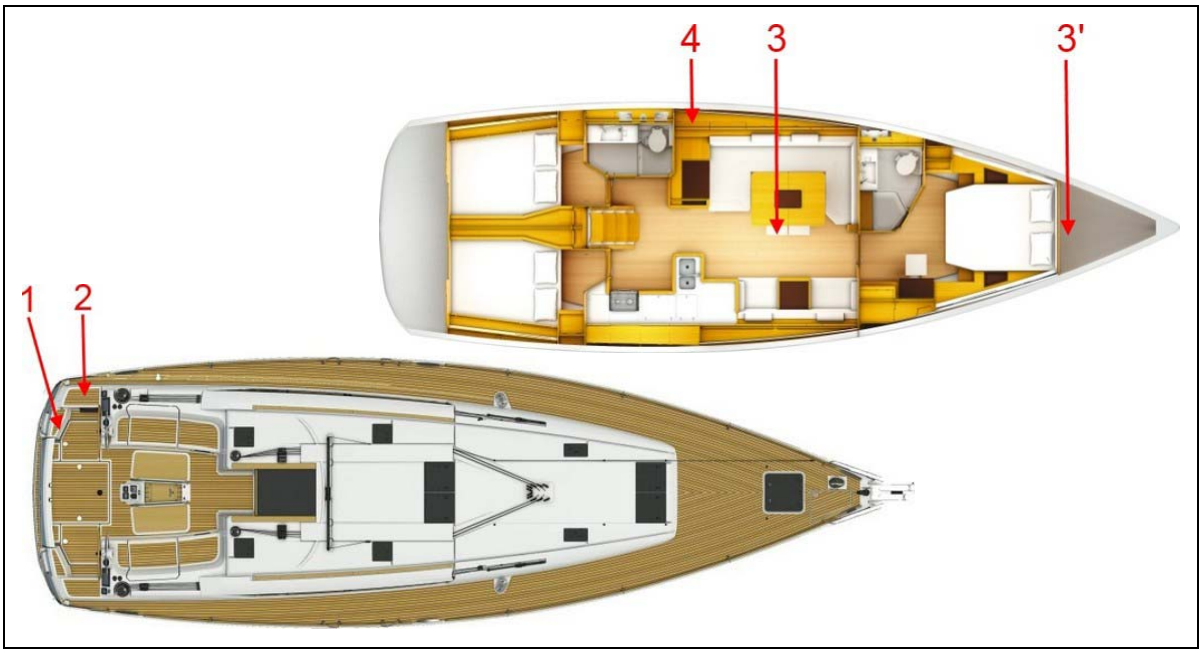


Diagram of the layout - Bilge pumps



Reference	Designation	Rate
1	Manual bilge pump	32 L/minute *(*)*
2	Manual bilge pump lever	
3	Electric bilge pump	129 L/minute
3'	Electric bilge pump	30 L/minute
4	Electric bilge pump switch	

(*) 45 strokes/minute

Secondary drainage system

Manual bilge pump

The manual bilge pump is in the cockpit (Ref 1).

The bilge pump lever is located close to it (Ref 2).

Ref 1

Ref 2

Operation:

I- Put the lever on the manual bilge pump.

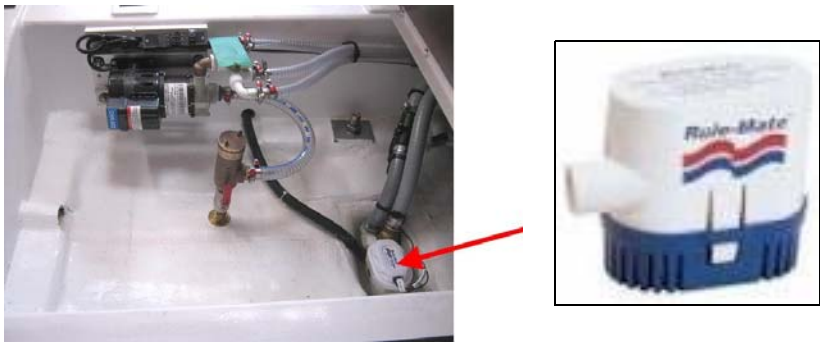
II- Repeatedly work the lever up and down to its fullest extent.

The manual bilge pump lever must remain accessible at all times.

Main drainage system
Electric bilge pumps

- The bilge pumps are powered by DC.
- Location of the electric bilge pumps:

Ref 3



Ref 3'

- The switch for the electric bilge pump is located on the switch panel.
- The electric bilge pump must only be used to discharge stagnant water at the bottom of the bilge. It must not be used to pump out any oil-based products (petrol, oil) or inflammable liquids.

Operation:

I- Turn on the battery switches.

II- Switch on the bilge pump (Ref 4).

If the boat is equipped with an automatic bilge pump, the switch has an always-on position.

Bilge pump maintenance

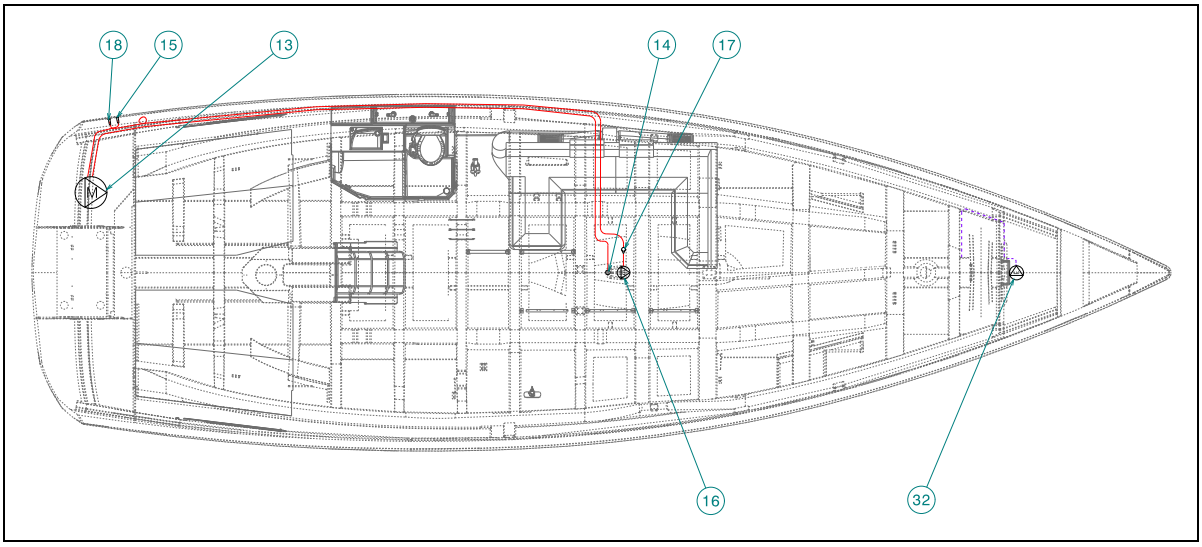
Please refer to the manufacturer's notes on the instructions for checking and maintaining the bilge pumps.

- The drainage system is not designed to control water coming from breaches in the hull.
- Keep the water level in the bilges to the minimum.
- Never store anything right at the bottom of the boat: Allow bilge water to flow freely down to the lowest point of the boat.

SAFETY PRECAUTIONS

- Check that each bilge pump is working at regular intervals.
- Clear the bilge pump points or strainers of any debris that could clog them.
- If the watertight partitions which seal off the fore and aft points are fitted with valves they must be closed at all times and only opened to drain water into the main bilge.

Diagram of the layout - Drying out the bilge



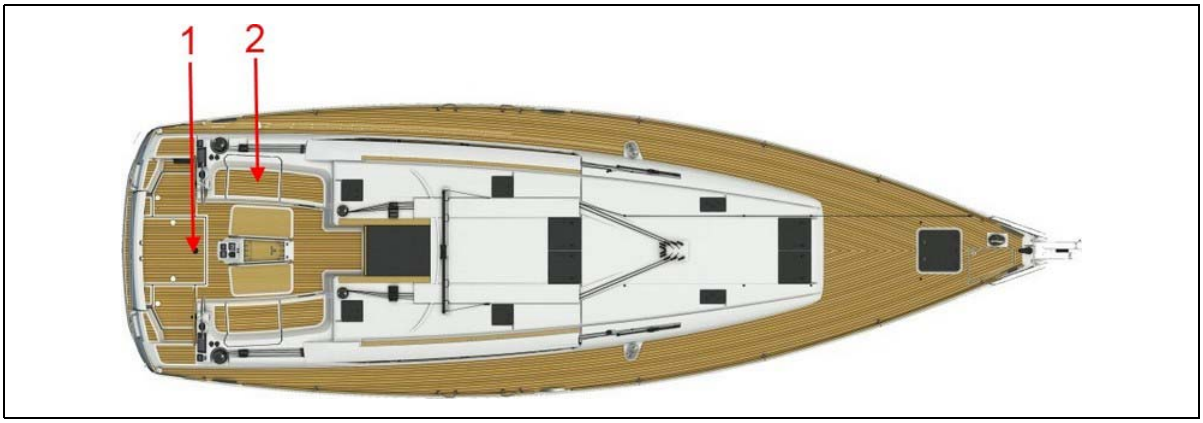
	drainage hose - 25 mm diameter
	drainage hose - 20 mm diameter

Reference	Designation
13	Manual bilge pump
14	Stuffing box (Manual bilge pump suction)
15	Draining of manual bilge pump
16	Aft electric bilge pump
17	Non-return valve
18	Electric bilge pump draining
32	Forward electrical bilge pump

6.6 EMERGENCY SYSTEMS IN CASE OF STEERING GEAR FAILURE

The emergency tiller is designed only to be able to continue underway at a reduced speed in case of steering gear failure.

location of components



Reference	Designation
1	Emergency tiller hole
2	Emergency tiller

Instructions in the event of steering gear failure

I. Unscrew the securing fitting using a winch handle (Ref 1).

II. Fit the emergency tiller (Ref 2)in the square on the rudder post.

Ref 1

Ref 2

7 INFORMATION RELATING TO FIRE RISKS AND RISKS OF EXPLOSION

7.1 PROPULSION ENGINES AND OTHER FUEL-BURNING EQUIPMENT

The risks associated with motorisation are described in the ENGINE chapter.

The risks associated with other fuel-burning equipment are described in the EQUIPMENT OTHER THAN FOR PROPULSION, WHITH BURNS FUEL chapter.

7.2 ELECTRICAL SYSTEM

The risks associated with the electrical systems are described in the ELECTRICITY chapter.

7.3 GAS SYSTEM

The risks associated with the gas system are described in the GAS chapter.

7.4 FIRE-PREVENTION AND FIRE-FIGHTING EQUIPMENT

7.4.1 Fire-fighting equipment

Portable fire-extinguishers and fire blanket (not supplied)

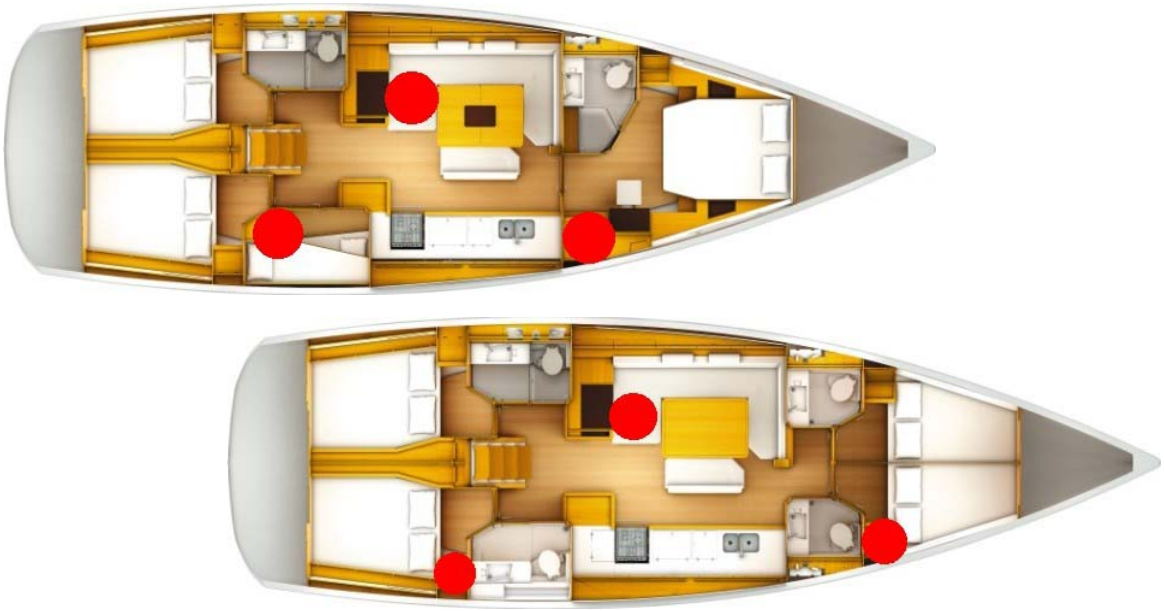
- When in use, this boat must be equipped with portable fire extinguishers of the following extinguishing capacity and located in the following places:

Location	Minimum extinguishing capacity
Cockpit locker	5A / 34B

3 cabins layout

5 cabins layout

4 cabins layout



Location	Minimum extinguishing capacity
Saloon seating	5A / 34B
Forward cabin closet	5A / 34B
Aft cabin closet	5A / 34B

- The location of the portable fire extinguishers is shown by the pictogram below:

- When in use, this boat must be equipped wih a fire blanket to protect the cooking equipment and/or the galley, installed in the following place: near the cooking equipment.

Maintenance of the fire-fighting equipment

The owner/person operating the boat must:

- Get the fire-fighting equipment checked at the frequency shown on the equipment;
- Replace portable fire extinguishers, if outdated or discharged, by extinguishing apparatus of equal capacity;
- Provide at least one fire bucket with a lanyard, in a readily accessible place, for protection on deck;
- Get the fixed fire extinguishing systems filled or replaced if they are discharged or have expired.

Responsibility of the owner/boat operator

It is the responsibility of the owner/boat operator to:

- Ensure that the fire-fighting equipment (portable extinguishers, bucket and fire blanket) is readily accessible when there are people onboard;
- Ensure that any drainage points in the engine compartment (or in the petrol tank compartment)are readily accessible;
- Show the members of the crew:
    - The location and use of the fire-fighting equipment;
    - Location of discharge ports in engine compartment;
    - The location of evacuation routes and fire exits.
- Equip the vessel with one or more portable extinguishers whose heads are compatible with the diameter of the discharge orifice in vertical use..
- Unlock all deck hatches and fire escape openings when the vessel is occupied..

Notes for the attention of the boat user

General points

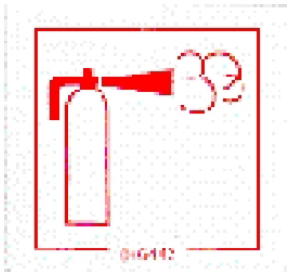
- Check that the bilges are clean and frequently check that there are no fuel/gas vapours or fuel leaks.
- In the case of replacement of components of the fire-fighting equipment, use only the appropriate components of the same code designation or having the equivalent technical capacity and fire resistance.
- Do not install free-hanging curtains or other fabrics near or above the cooking appliances or other equipment with a naked flame.
- Do not store combustible materials in the engine compartment. If non-combustible materials are stored in the engine compartment they must be secured so there is no danger of them falling on machinery and they do not obstruct access to and from the compartment.
- The fire exits other than the door or main companionway are identified by the following symbol:

7.4.2 Extinguisher access hole

The engine compartment has a port that makes it possible to inject the extinguishing product inside without opening the usual access hatches.

Location of the fire extinguisher port

A pictogram helps to locate it easily:



7.5 EMERGENCY EXITS IN CASE OF FIRE

Location:

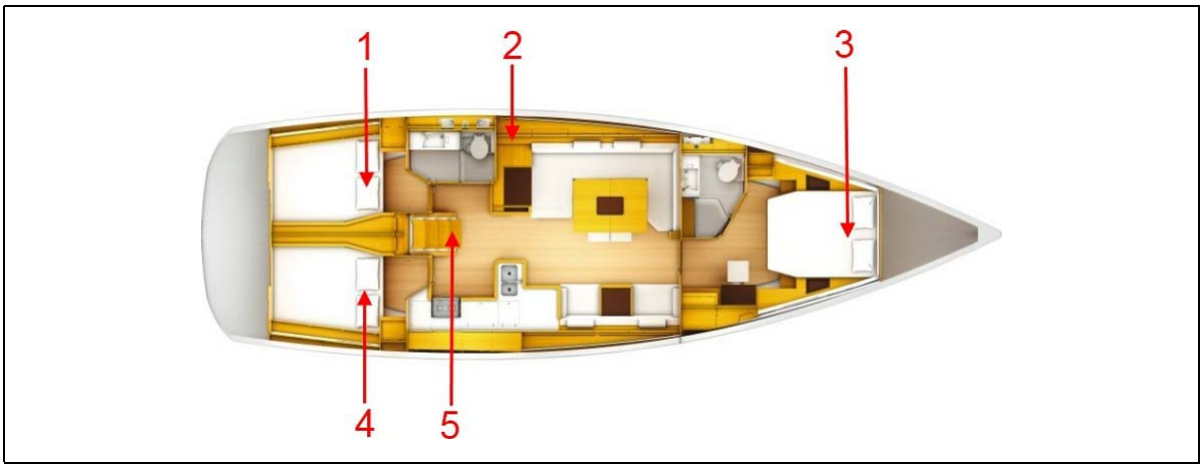
- Companionway,
- The forward cabin deck hatch.

NEVER:

- Obstruct the passages leading to the emergency exits and the hatches;
- Obstruct or block safety controls, for instance fuel shut off valves, gas taps, electrical system circuit-breakers;
- Obstruct the access to the portable extinguishers stored in lockers;
- Leave the boat unsupervised when cooking equipment and/or heating equipment is in use;
- Modify any of the boat's installations (especially the electrical, fuel or gas installations) or allow unqualified personnel to proceed with modifying these installations;
- Fill the fuel tanks or replace gas bottles while the engine is running or while cooking or heating equipment is in use;
- Use gas lamps in the boat;
- Smoke when handling fuel or gas.

8 ELECTRICAL SYSTEM

8.1 GENERAL INFORMATION ABOUT THE ELECTRICAL SYSTEM



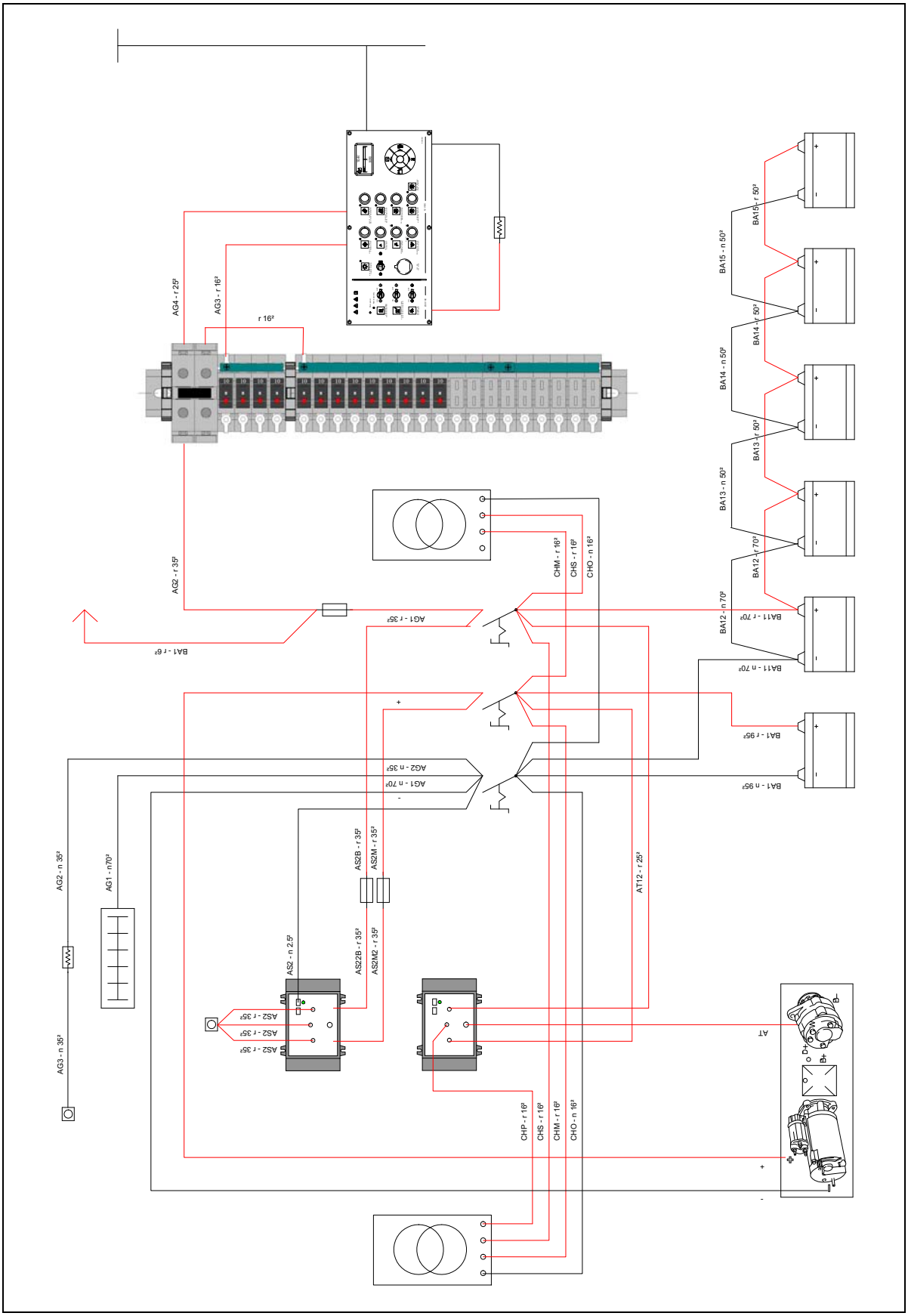
Reference	Designation
1	Battery switch, Circuit breakers, Spare service batteries, Power distributor, Relay box, Fuses
2	Electrical panel, Circuit breakers
3	Bow thruster batteries
4	Battery charger, Service batteries, Generator battery
5	Engine battery

- The risks of fire or explosion may result from careless use of the DC and AC systems.
- The risks of electrocution may result from careless use of the AC system.

NEVER:

- work on a live electrical system;
- modify the elecrical system of the vessel or the relevant diagrams: It is important that the installation, maintenance and any modifications be carried out by a technician qualified in marine electricity;
- change or modify the strength of the safety devices protecting against power surges;
- install or replace electrical equipment or materials with components which exceed the system's nominal electrical power capacity;
- leave the boat unsupervised when the electrical system is live, apart from when the automatic bilge pump and the boat's fire protection and security systems are in use (if the boat has one).

Layout diagram - DC circuit



8.2 DC INSTALLATION (12 V OR 24 V)

8.2.1 Battery use and distribution

General points

The boat is equipped with a direct current electrical system.

The boat's electrical system comprises service batteries and the engine battery or batteries. The service batteries serve as the power supply for all the boat's electrical components. The "engine" battery is used only for powering the electric starter of the propulsion engine.

The boat may also be equipped with:

- a generator powered by its own battery;
- a bow thruster, powered by its own battery bank.

the batteries are charged either by a load distributor or:

- by the alternator linked to the engine when the engine is running,
- by the battery charger (if the boat has one).

It is imperative that when the boat is first launched, a professional engineer connects the batteries.

Always check the condition of the batteries and charge system before putting to sea.

The battery banks are isolated from one another by a charge divider (see below).

Battery set

Engine battery: 110A
Location: Companionway

Generator battery: 80A
Location: Starboard aft cabin

Service batteries: 3 x 115A
Location: Starboard aft cabin

Spare service batteries: 2 x 115A
Location: Port aft cabin

Propeller battery: 4 x 50A
(24 V circuit)

Location: Forward cabin

Maintenance

- Avoid charging batteries to a voltage greater than 14,6 V.
- Keep the batteries clean and dry.
- Regularly check that the terminals and connection cables are clean. If necessary, apply a thin coating of paraffin on the terminals, to prevent corrosion.
- Regularly recharge all of the batteries onboard.
- Continuously maintain the charged batteries: this determines their length of life.
- Avoid long periods of electrical inactivity (for example when wintering the boat).

- All work carried out on a battery must only be carried out by someone qualified to do so. Whenever working on a battery, wear safety goggles and protective clothing.
- Never smoke or produce a spark near a battery: risk of an explosion.
- If any acid accidentally splashes on your skin or in your eyes thoroughly rinse it off immediately with fresh water. See a doctor immediately.
- Never touch the battery terminals: danger of electric shock.
- Refer to the manufacturer's instructions for use and maintenance.

- IT IS IMPERATIVE TO DISCONNECT THE BATTERY CHARGER BEFORE DISCONNECTING THE BATTERY TERMINALS FOR MAINTENANCE.

Maintenance of lead batteries

- Every year check the water levels in the batteries, and if they are low top them up with distilled water.
- Keep all metallic objects away from the batteries.
- Lead batteries contain sulphuric acid: Be careful not to knock them over whenever handling them.

Maintenance of watertight batteries

- This type of battery needs no maintenance and does not produce any gas during normal use. No ventilation is needed.
- The optimum temperature for use is between 10 degree C and 30 degrees C. Lower temperatures will reduce the available capacity. Higher temperatures will increase the batteries' self-discharge rate.
- Never open watertight batteries.
- Never add acid or distilled water.
- The pressure valves are used to seal the batteries and cannot be opened without being destroyed.
- If the batteries overheat, a build-up of gas may develop: Keep away from the batteries.

8.2.2 Battery switch

- Manual battery switches: to make the system live, manually turn the positive and negative battery isolator switches.

Positive battery isolator switch

Battery switch of negative terminal

Location: Port aft cabin

1. Engine battery's positive isolation switch
2. Common battery negative isolator switch
3. Service batteries positive isolation switch
4. Generator's positive isolator switch
5. Generator's negative isolator switch

- Turn off all battery breakers before leaving the vessel: **risk of complete discharging of whole battery bank**.
- Avoid touching the battery breakers when they are live.
- Never switch off the battery breakers when the boat's engine is running (risk of serious damage to the charging circuit).

8.2.3 Power distributor

- The electronic charge dividers isolate the battery banks from each other and allow the charge to be directed automatically to the battery with the lowest charge. They give the advantage of preventing a drop in voltage.

- The charge divider is electronic. It is designed to distribute the charging current with a low voltage drop between the battery banks (engine and service batteries). It prevents the current from circulating from one battery to another. When the voltage of the charger or alternator is available, the charge divider's green indicator comes on.

Location: Port aft cabin

8.2.4 Battery charger

General points

- The battery charger runs on AC power.
- A breaker protects the electrical circuit.
- The battery charger charges all of the batteries onboard, while keeping the service battery bank isolated from the engine's battery bank.
- Within its power limits, the DC equipment can be supplied directly.

Capacity: 2 x 40A

Location: Port aft cabin

Location: Starboard aft cabin

Operation

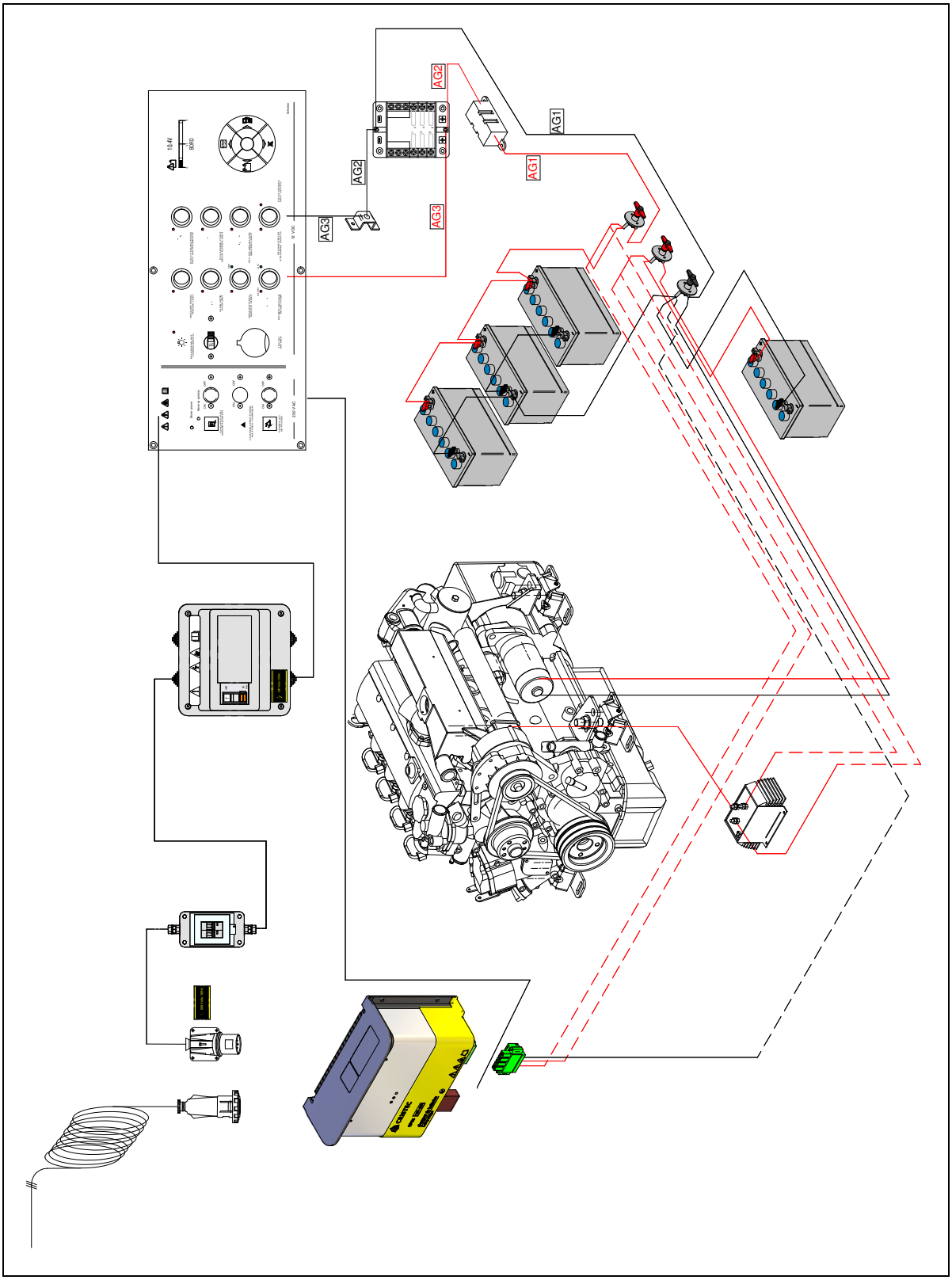
- The charger runs fully automatically. It can remain permanently connected to the batteries and does not need to be disconnected when starting the engine.
- In some electrical circuits, there may be battery chargers coupled in parallel.

Maintenance

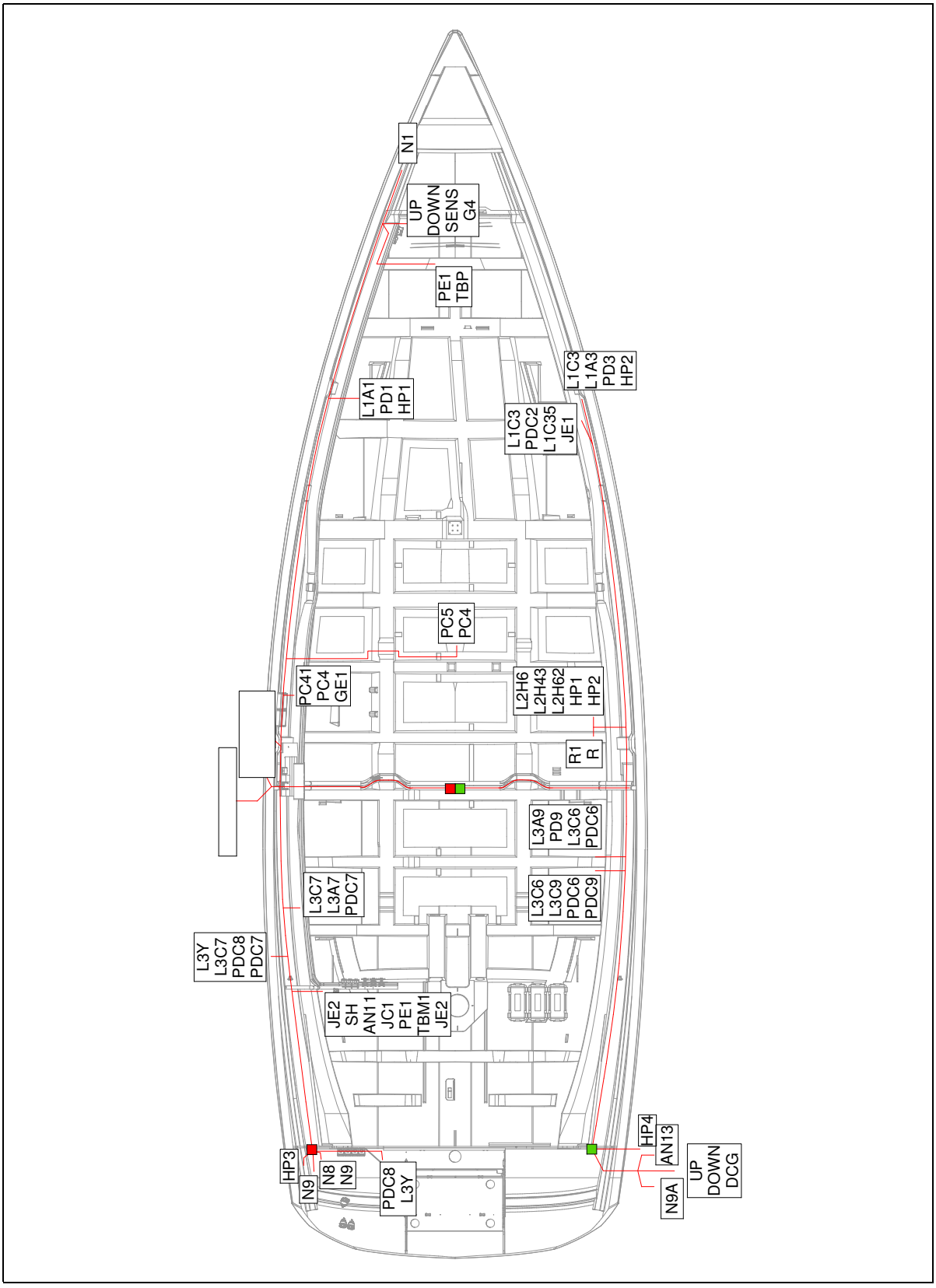
- Before doing any maintenance, cut the AC supply.
- Regularly vacuum out any dust particles which may accumulate in the charger. An annual check of the tightness of the nuts and bolts is necessary to ensure the correct operation of the charger.

IT IS IMPERATIVE TO DISCONNECT THE BATTERY CHARGER BEFORE DISCONNECTING THE BATTERY TERMINALS FOR MAINTENANCE.

Layout diagram - Battery cables

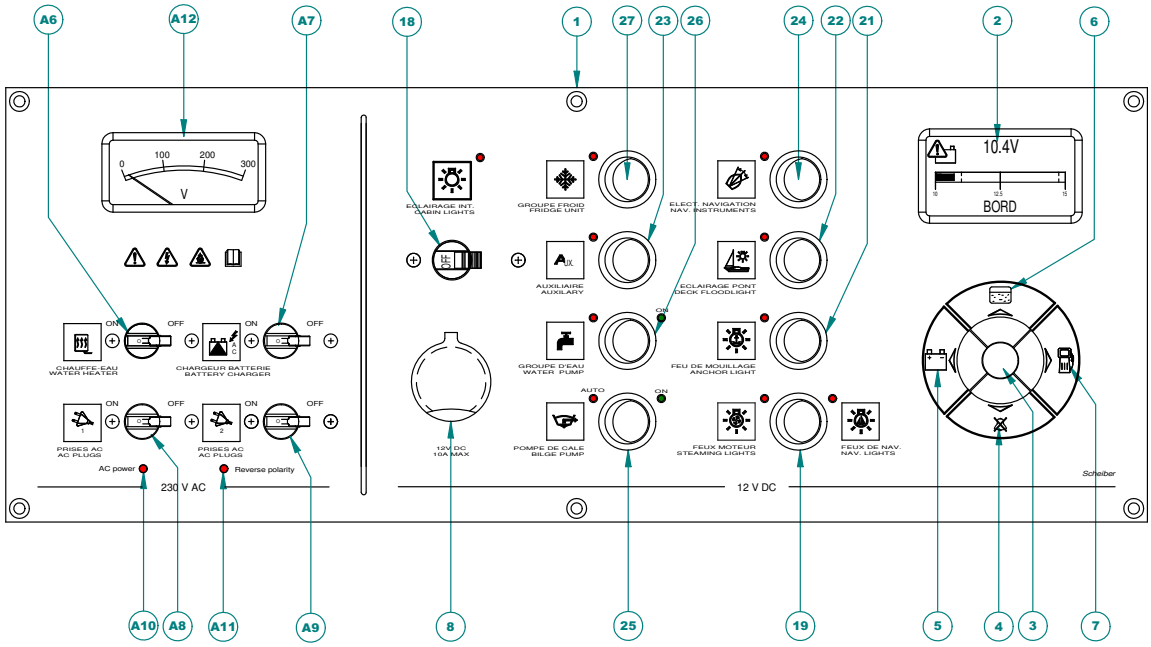


8.2.5 Layout of the wiring looms in the hull - DC circuit



8.2.6 Electrical panel

Location: Chart table

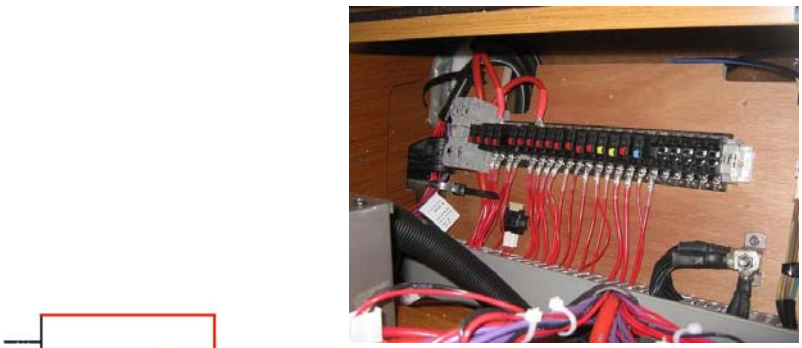


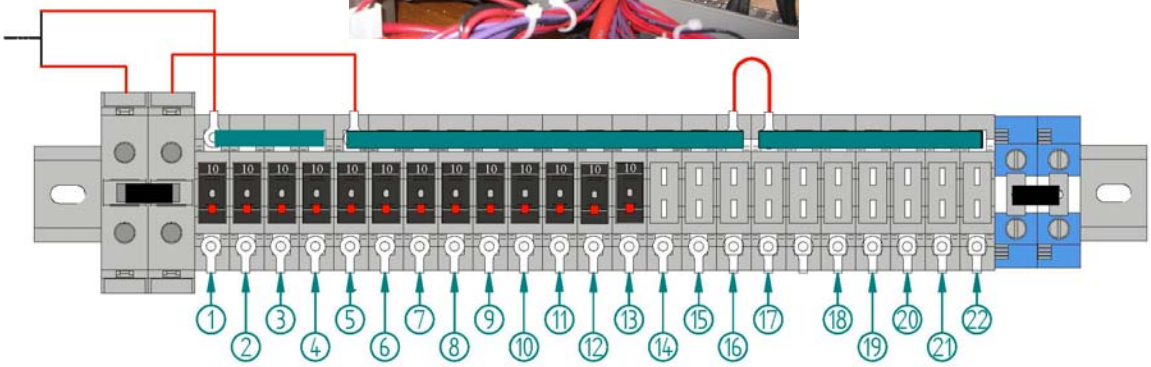
Reference	Designation
1	Electrical panel "DC AMPS / 12 VOLTS DC"
2	Multi-function display
3	Change over switch - voltmeter inlet / Water gauge / Fuel oil gauge
4	Contrast selector
5	Voltmeter selector
6	Water meter selector
7	Fuel meter selector
8	12V DC socket electrical panel
18	"Interior lighting" general circuit-breaker
19	Switch - navigation lights / Engine navigation light
21	"Anchor light" switch
22	"Deck lighting" switch
23	"Auxiliary" switch (option)
24	"Navigation electronics" switch
25	Switch - bilge pump
26	Switch - water unit

8.2.7 Circuit breakers

A circuit-breaker can be re-set (manually press the black button to restart it).

Location: Back of electrical panel



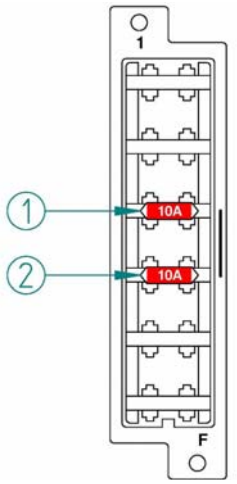


Reference	Designation
1	Lighting
2	Lighting
3	Lighting
4	Lighting
5	12V socket
6	12V socket
7	Shower pump
8	Shower pump
9	Bilge pump
10	Television
11	Electronic
12	Hifi
13	VHF
14	Electric toilet
15	Electric toilet
16	Solenoid - Gas
17	Pump for deck washing
18	Options - WC - Starboard forward
19	Options - WC - Starboard aft
20	Options - Ventilator
21	Inverter TV
22	Inverter TV

8.2.8 Fuses

- A fuse protects an electrical circuit from a power surge. If it blows, you must replace it with another fuse of the same rating.

Location: Port aft cabin



1. Thruster + Windlass
2. Engine battery

When replacing fuses/circuit-breakers, always ensure replacements are of the right capacity (see the colour-codes)

8.3 AC SYSTEM (110 V OR 220 V)

8.3.1 General points

- The boat is equipped with an alternating current electrical system.
- The electrical system of the boat consists of an AC shore socket and if appropriate:
    - 1 Generator,
    - 1 DC/AC converter.
- The AC electrical system is used to power the following components (if the boat has one):
    - Air conditioning,
    - Household appliances,
    - Water heater,
    - Interior AC sockets,
    - Battery charger(s).

Recommendations for using the AC electrical system correctly

- Do not modify the vessel's electrical installation nor its relating diagrams. The installation, maintenance and any modifications must be carried out by an electrician qualified in marine electricity. Have all electrical installations checked (tightening and connections) every year.
- Disconnect the boat's shore power when the system is not in use.
- Connect the relay cans or metal casing of the electrical equipment installed to the boat's protective conductor (green or green with yellow stripe conductor).
- Use double insulated or earthed appliances.
- If the reverse polarity indicator is activated, do not use the electrical installation. Rectify the polarity fault before using the vessel's electrical installation (this applies only to polarised circuits with a polarity indicator).

- If a DC/AC converter is fitted on board: it is essential to switch of the DC and AC circuits before working on the cabin AC sockets.

- Never let the end of the boat/shore supply cable hang in the water: The result may be an electric field liable to hurt or kill the swimmers nearby.
- There may be danger of electrocution if alternating current systems are incorrectly used.
- Do not work on a live AC system.

To reduce the risks of electric shock and of fire:

- Turn off the shore supply with the onboard cut-off switch before connecting or disconnecting the vessel/shore supply line.
- Connect the ship/shore power cable on the boat before plugging it into the socket onshore.

- Disconnect the ship/shore power cable at the shore socket first.
- If the reverse polarity indicator is activated immediately disconnect the cable.
- After using the socket onshore, close its protective cover tightly.
- Do not modify the connections of the ship/shore power cable: only use compatible connections.

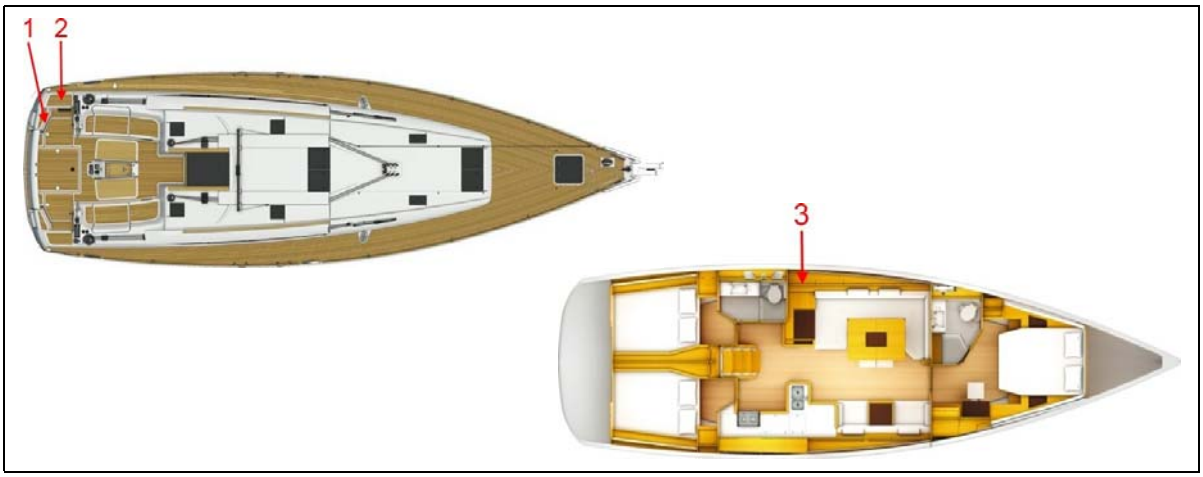
DO NOT MODIFY THE CONNECTIONS ON THE SHIP/SHORE POWER CABLE.

ADVICE-RECOMMENDATION

Every month, you are advised to test the circuit breaker or residual current differential switch that can be recognised by its "test" button.

8.3.2 AC shore socket

location of components



Ref 1:
Shore power socket - AC elements
Shore power socket - Air conditioning

Ref 2:
Breaker - Shore / Generator
Breaker - Shore / Air conditioning

Ref 3:
Differential switch - AC elements
Differential switch - Air conditioning

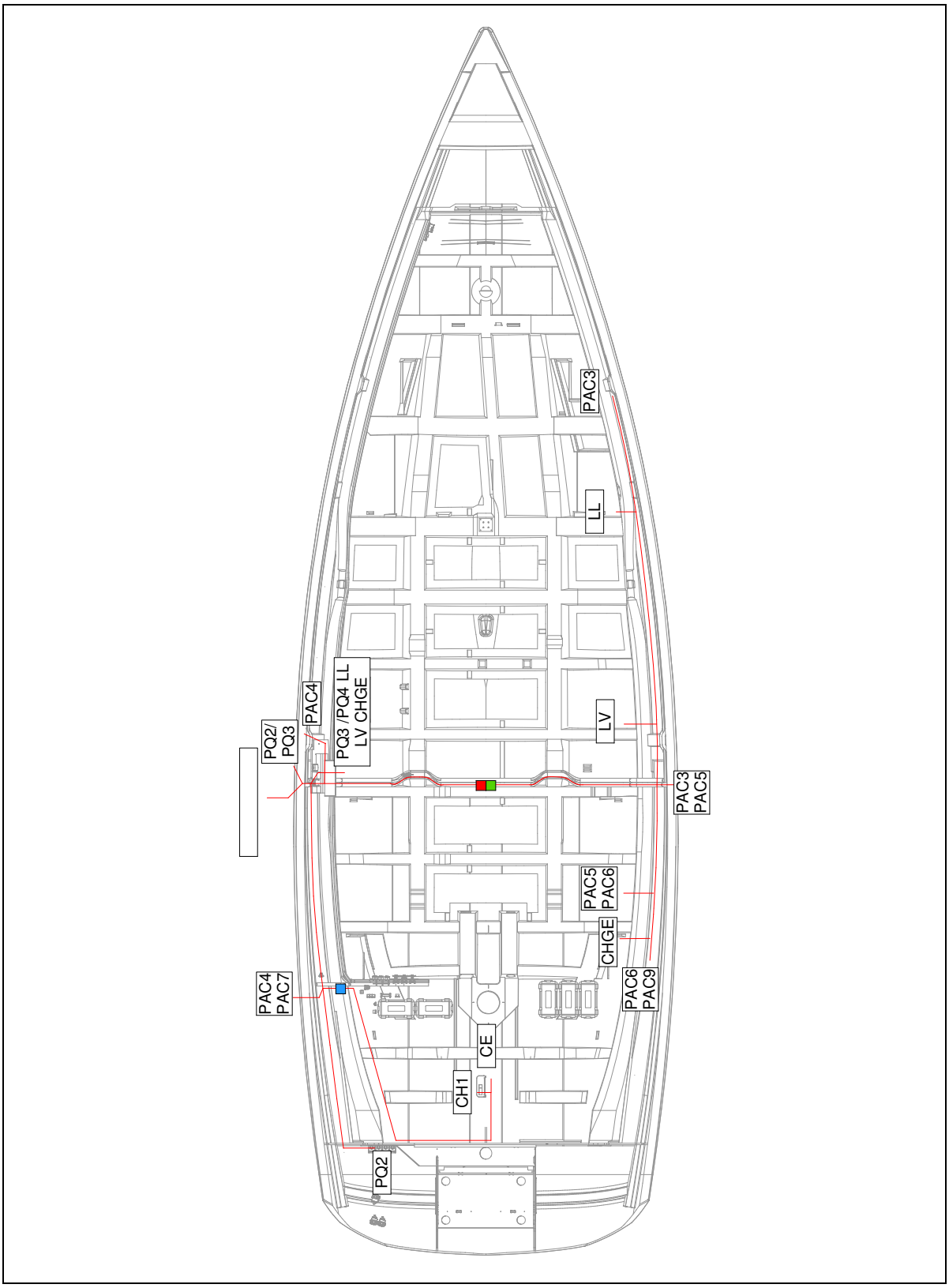
Operation

First plug the extension cable into the AC socket on the boat, then into the socket onshore.

First unplug the extension cable from the socket onshore, then from the AC socket on the boat.

8.3.3 Diagram of the layout

AC electrical system



8.3.4 DC/AC converter

Description

- The inverter converts the DC voltage of the service battery bank to AC voltage. The circuit between the inverter and the batteries is protected by a fuse or a circuit-breaker.

- The inverter is earthed by an earthing plate located under the hull (see earthing plate chapter).

Operation

Power supply for the AC electric sockets 220 V in the cabins:

Once there is sufficient nominal voltage coming from the AC switch panel, AC power is supplied by the socket onshore or by the generator.

If there is insufficient nominal voltage coming from the AC switch panel, the AC power supply automatically switches over to the inverter. In this way, the power for the 220 V sockets in the cabins can be supplied by the inverter, itself being supplied by the service battery bank. Be careful to disconnect the inverter circuit, to prevent the AC power supply automatic switching over and to prevent the accidental discharge of the service battery bank:

- either by putting the inverter's circuit-breaker in the OFF position,
- or by putting the switch located on the inverter in the OFF position.

Simply cutting the AC power supply at the switch panel does not cut the AC power supply to the cabins: it is also necessary to disconnect the DC supply.

Operation

- The inverter is fully automatic.

- A remote control is located near the boat's switch panel. To start the converter put the switch on the invertor in the "REMOTE" position then put the switch located on the remote control in the "ON" position.

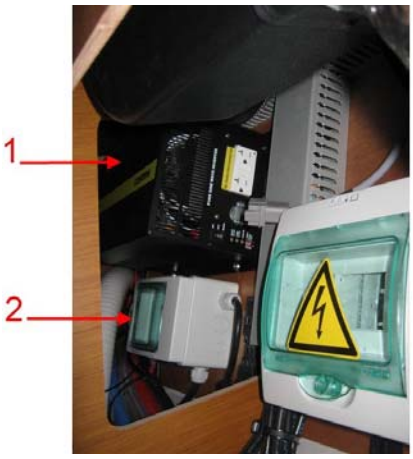
- If the switch on the inverter is in the "OFF" position, you cannot use the remote control to start it.

- The DC / AC converter operates by default when the shore power supply is not powered. It is controlled by a relay connected to the shore connection. This converter powers the indoor sockets and some on board appliances.

- When the shore connection is not connected, the relay automatically connects the inverter on a part of the on board AC circuit.

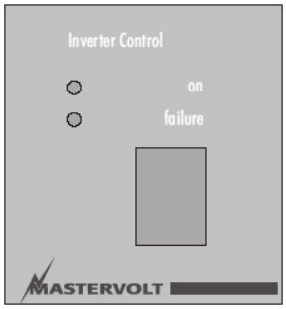
- When the shore power socket is plugged in and powered, the relay automatically disconnects the inverter.

Location: Chart table



1. DC/AC converter
2. Breaker

Control: Chart table



Fuse
Location: Aft cabin

Maintenance

- Check at least once a year that the inverter cables and connections are properly bundled.
- Clean the inverter by removing any accumulated dust to ensure good ventilation.

The power to the inverter must only be supplied by lead batteries.

Refer to the manufacturer's instructions for use and maintenance.

NEVER:

- connect the invertor AC lead to an AC terminal or to the generator onboard.
- disconnect the wiring from the inverter when in use.
- open the inverter.

8.4 PROTECTION AGAINST ELECTROLYSIS / EARTH PLATE

8.4.1 Anodes

General points

- The sacrificial anodes protect the boat's metal components from electrolysis.

- A sacrificial anode is a consumable part that protects submerged metal parts by its dissolution (oxidation). The anodes used are made of a metal that is more readily reductive than the metal they are protecting.

- On a new boat, all the underwater metallic components try to be at the same electric potential, which leads to the rapid deterioration of the anodes in the first few weeks in the water.

- You can put several anodes on the hull.

Maintenance

- At least 2 times a year, check the corrosion on all of the anodes. Change the anode if necessary (Before it lost 50% of its weight).

- Use the appropriate anodes for the cruising area: fresh water/magnesium anodes; Sea water/zinc anodes.

- If the motor mountings are raised, the anodes are out of the water: in this case the anodes can no longer protect the sterndrive: take note of the skipper's recommendations.

- When the boat is kept in a dry dock, a light deposit of dust will settle on the anodes: Before returning the boat into the water, clean the anodes.

Cleaning anodes

- Use sandpaper. Do not use metal brushes or steel tools to clean the boat, it may damage the galvanic protection.

Replacing the anodes

- The anodes are fastened with screws and nuts. First, remove the screws and nuts that hold the anode, then clean the contact surface. Press the new anode to obtain a good electrical contact.

- Never cover the anodes in antifoul.
- During the first few weeks that the boat is in the water, check the anodes and if necessary replace them: they erode very rapidly during this period.

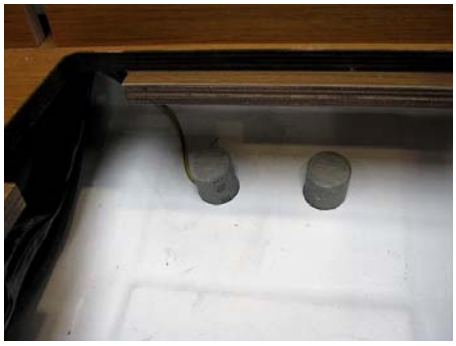
8.4.2 Earthing plates

- An earthing plate is a shot-peened plate mounted on the hull to recreate an earth neutral point on the electrical circuit of the equipment supplying AC power (generator and AC/DC convertor). The earthing plate earths this equipment.

The earthing plate is not an anode: it must not be allowed to deteriorate.

- If it deteriorates, consult a professional immediately to determine the cause. As the earthing plate is mounted across the hull below the waterline, if the earthing plate deteriorates the boat is at risk of sinking.

Inside view



Outside view

- Never antifoul over the earthing plates.

9 LIQUEFIED PETROLEUM GAS SYSTEM (LPG)

9.1 GENERAL POINTS

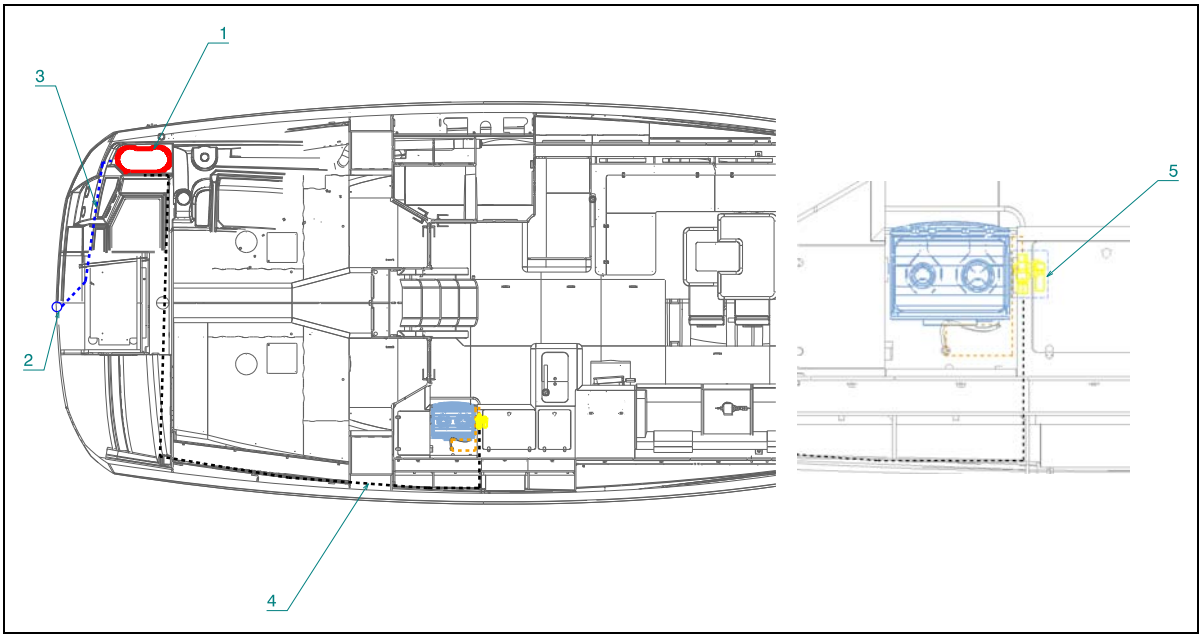
- The working pressure of the LPG unit is 28 millibars
- Recommended cylinder capacity:

  Europe Version: 2,75 kg of butane.

  US Version: 10 lb of propane.

- Have the hoses, the entire LPG system and the flue pipes in the LPG system inspected professionally and regularly (or at intervals determined by the national requirements of the country in which the boat sails), and have them replaced if damage is detected.
- Taps attached to empty cylinders must be closed and disconnected. Protective covers, lids or caps must be held in place. Spare bottles must be stored outside on the boat, protected from weather and mechanical damage. Any gas leaks must be only towards the outside of the boat.
- Do not impede access to the components of the LPG system.
- Do not use the housings or the LPG bottle lockers to store other equipment.
- Check the vent pipes at least once a year. Replace them if they have deteriorated or split.

location of components



Reference	Designation
1	Gas cylinder locker & bubble gas leak detector
2	Kitchen sink evacuation through-hull
3	Gas locker drain
4	Gas system
5	Gas supply valve

Cooker / Oven

Gas cylinder locker

Gas solenoid (US Version)

9.2 OPERATION OF THE LPG SYSTEM

- Valves for supply lines and cylinder valves must be closed when appliances are not in use, before changing a cylinder and immediately in case of emergency.

- Appliance valves must be closed before opening the cylinder valve.

- It is necessary to ventilate when appliances that consume oxygen from inside the boat are used.

- If the stove is not suspended by gimbals, it should not be used when wide roll angles or continuous listing are likely.

- Please refer to the manufacturer's notes for the use and maintenance of the LPG cooker.

9.3 VERIFICATION OF THE LPG SYSTEM

The LP system should be tested for leakage before each use in any of the following ways:

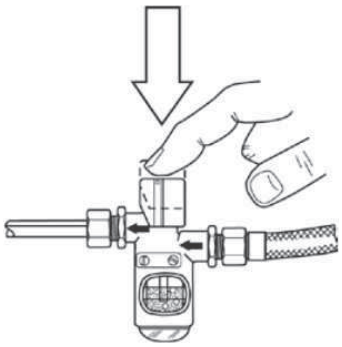
- If the LPG circuit is equipped with a pressure gauge:

  Before each use, close the appliance valve, open the LPG cylinder valve, allow the pressure gauge to stabilize, close the LPG cylinder valve, observe the pressure indicated by the pressure gauge near the LPG cylinder for 3 minutes. The pressure indicated by the manometer should be constant if there is no leak in the system.

  The pressure indicated by the manometer should be constant if there is no leak in the system. If bubbles are observed in the detector liquid, there is a leak.

  NOTE: the pressure gauge gives no indication of the amount of LPG remaining in the cylinder, but only its vapour pressure, which is a constant at a given temperature.

- If the LPG circuit is equipped with a bubble leak detector, use it as follows:



  Regularly observe the bubble leak detector.

  OR

  Once the installation is under pressure and stabilised, press the detector push button. The installation is not leaking if bubbles do not appear in the detector liquid. If bubbles are observed in the detector liquid, there is a leak.

- Carry out a manual search by applying a foaming solution, or soapy water or a detergent (with the taps of the burners closed and those of the installation and of the gas bottle staying open). The foaming solutions for detecting leaks in the gas installations conforming to the EN 14291 meet these requirements.

- If an LPG leak is detected or suspected, immediately take the following measures:
  - Do not use LPG appliances;
  - Disconnect the LPG supply from the supply valve(s);
  - Extinguish all naked flames and other sources of ignition (heaters, cooking appliances, pilot lights, etc...);
  - Do not operate electrical switches;
  - Evacuate the area if possible.

NOTE: The leak tests carried out by the boat user do not replace a regular and complete checking of the LPG circuit by a competent professional.

- When the cooker is on, ventilate well to prevent any risk of asphyxiation.
- Do not use the cooker as a means of heating.

- If a leak is detected, close the main LPG supply valve and do not use LPG appliances.
- Do not use an installation with a leak before it has been inspected and repaired by a competent person.
- Do not modify the boat's LPG system. The installation, modification and maintenance should be carried out by a competent person. Have the system checked at regular intervals or as fixed by national requirements.
- Never use a naked flame to check for leaks.
- Do not use a hotplate or an oven to heat the living areas.
- Equipment with a naked flame burning fuel consumes the oxygen in the cabin and gives out combustion residue in the boat. Ventilation is necessary when this equipment is used.Open the vents provided for this when using this equipment. Do not use a hotplate or an oven to heat the living areas. Never obstruct the vents provided for ventilation.
- Ventilation requirements have been calculated for LPG appliances as installed. Additional ventilation openings may be required if other appliances are installed simultaneously (please consult a professional).
- Never leave the boat unsupervised when equipment using LPG with a naked flame is on.
- Do not smoke or use a naked flame when replacing LPG bottles. Close the tap on the empty bottle before detaching it to replace it.
- To ensure sufficient ventilation, make sure that you open the hatches or ports near the hotplate when using it

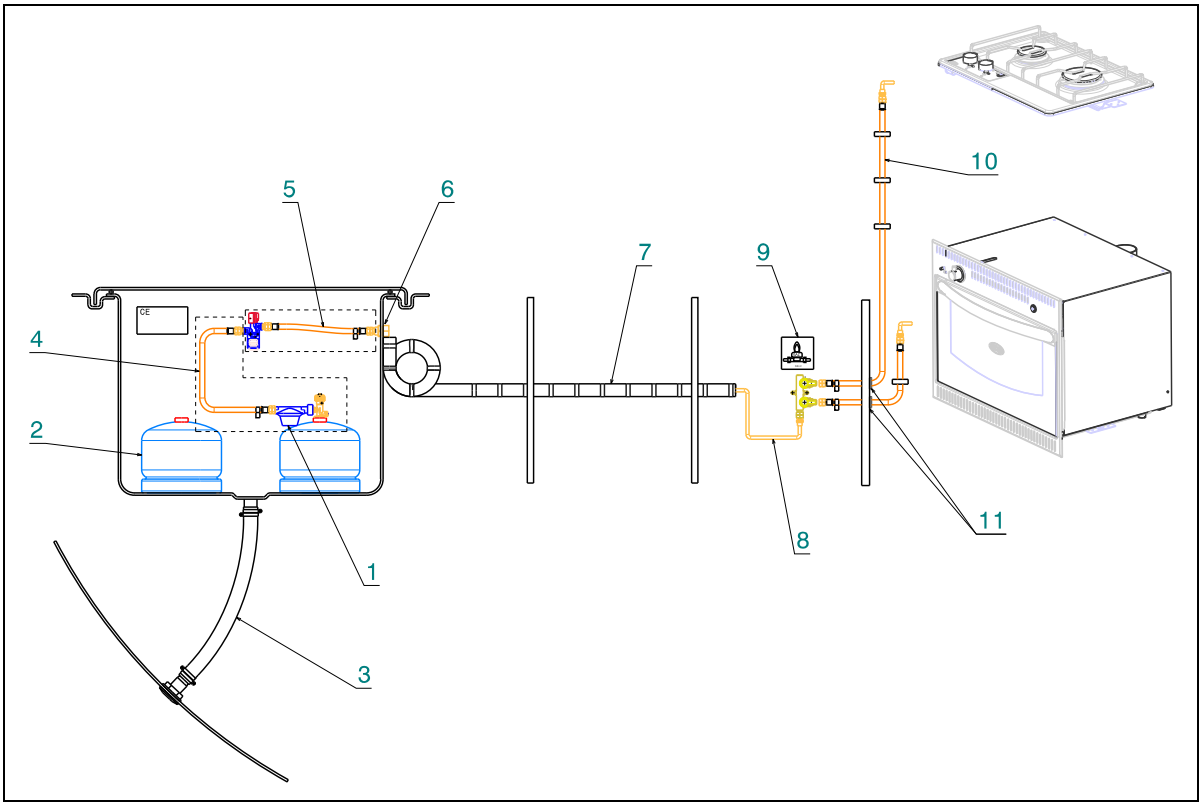
- Do not use solutions containing ammonium when testing for leaks manually (ammonia, which is present in certain soaps and detergents, attacks brass connections. Although the damage may at first be impossible to detect, the cracks and leaks may appear several months after the contact with the ammonia)).

To change an LPG bottle

1. Close the tap on the LPG bottle
2. Detach the LPG bottle
3. Replace the LPG bottle
4. Attach the new LPG bottle
5. Open the tap on the LPG bottle

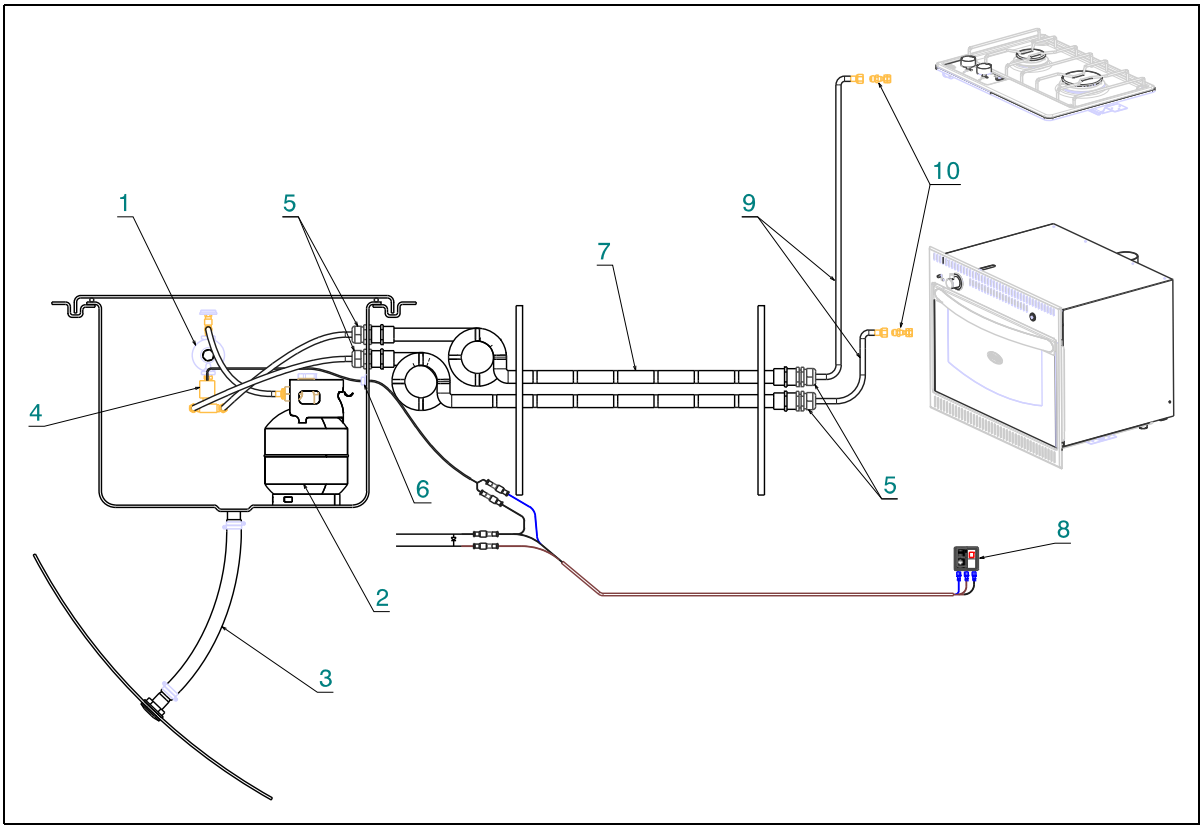
9.4 LAYOUT DIAGRAM

Europe Version



Reference	Designation
1	Regulator valve
2	Gas cylinder
3	Drain
4	Gas bottle connection kit
5	Bubble tester kit
6	Rubber washers
7	PVC girdled sleeve
8	Copper gas connection kit
9	Label
10	Gas appliance connection kit
11	Thru-wall fitting

US Version



Reference	Designation
1	Regulator valve
2	Gas cylinder
3	Drain
4	Electromagnetic valve (12V)
5	Thru-wall fitting
6	Wire passage
7	PVC girdled sleeve
8	Solenoid switch
9	Plastic propane pipe
10	Gas appliance connection kit

10 DOMESTIC APPLIANCES

10.1 FRIDGE / COOLER

General points

- The fridge is composed of 3 components: the compressor, the evaporator and the condenser. These components are connected by a closed circuit refrigerant gas circuit. The fridge is air-cooled.
- The fridge is DC powered. It is designed to chill food and drink. Any other use is dangerous and forbidden.
- A breaker protects the electrical circuit.
- The icebox without an evaporator keeps the food and drink chilled.
- The ON/OFF start button is located on the fridge.
- The thermostat is in the inside compartment of the fridge. It enables the selection of the desired temperature setting for the inside of the fridge.
- The refrigration power can be affected by:
    - The ambient temperature,
    - The quantity of food to chill,
    - The frequency of opening the door.

Maintenance

- Clean the evaporator with a damp cloth at least once a year. Never use cleaners which are abrasive, acid or which contain solvents for cleaning the evaporator.
- Regularly clean the fridge/icebox door seal with a damp cloth.
- Regularly defrost the fridge.
- When winterising the boat, leave the fridge door/icebox cover open to prevent mould and smells from developing.

ADVICE-RECOMMENDATION

- Refer to the manufacturer's instructions for use and maintenance.
- Never heat or use tools to defrost the inside of the fridge more quickly (risk of damaging the interior surface).
- Never obstruct the heat exchanger of the fridge.

Fridge
Location: Saloon

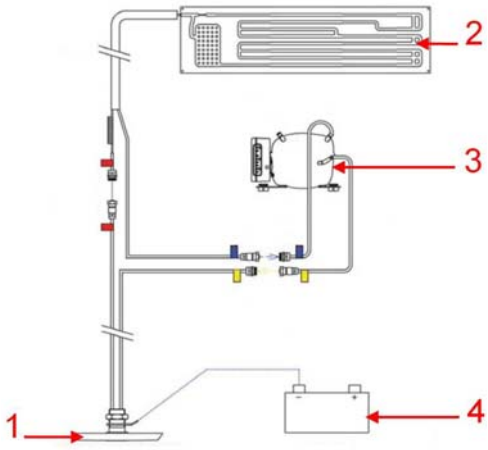
Cooler (Cockpit)

10.2 WATER-COOLED REFRIGERATION UNIT

General points

The fridge is composed of 3 components: the compressor, the evaporator and the condenser. These components are connected by a closed circuit refrigerant gas circuit. The refrigerator is water-cooled.

- The refrigeration unit is supplied by direct current.
- A breaker protects the electrical circuit.
- The condenser located beneath the hull is a microbead plate. This allows optimal temperature exchange between the sea water and the coolant liquid.



1. Condenser (submerged)
2. Evaporator
3. Compressor
4. Battery

Condenser (Microbead plate)
Outside view

Refrigeration unit
Location: Under cooker

Maintenance

Clean the refrigeration unit annually using a vacuum cleaner or a dry brush.

ADVICE-RECOMMENDATION

- Refer to the manufacturer's instructions for use and maintenance.
- Never cover the condenser with antifouling paint.

Cooler
(Positive temperature)

(front opening)

Freezer
(Negative temperature)

10.3 MICROWAVE

General points

- The microwave is AC powered.
- A breaker protects the electrical circuit.
- The microwave is designed to reheat food and drink or to cook food. Any other use is dangerous and forbidden.
- The microwave must never be started when empty.
- Remove all foil or metallic elements of the packaging before putting food in the microwave.
- Remove hermetic coverings from the packaging before putting food in the microwave.

Starting up

- Use the switch on the chart table to select the power source (shore power or generator).
- Put the microwave circuit-breaker in the ON position.

Maintenance

- Regularly check the door seals.
- Regularly clean the inside of the fridge with a damp sponge.

Never allow children to use the domestic electrical equipment unsupervised.

ADVICE-RECOMMENDATION

Refer to the manufacturer's instructions for use and maintenance.

10.4 WASHER

General points

- The washing machine runs on an AC power supply.
- A breaker protects the electrical circuit.
- The washing machine is supplied with water from the onboard tanks via a supply valve.

Starting up

- Check the level in the water tanks and switch on the water system.
- Open the water supply valve/washing machine.
- Turn on the AC circuit (shore or generator) and actuate the washing machine circuit breaker.
- Start the washing machine.

- Refer to the manufacturer's instructions for use and maintenance.
- Do not operate the washing machine/dishwasher when at sea.

Location: Saloon

Supply valve
House water / Washer

Washing machine outlet

10.5 DISHWASHER

General points

- The dishwasher is AC powered.
- A breaker protects the electrical circuit.
- The dishwasher takes the water from the tanks onboard via a water feed valve.

Starting up

- Check the level in the water tanks and switch on the water system.
- Open the valve of the water supply onboard / dishwasher.
- Turn on the AC power (shore or generator) and actuate the dishwasher's circuit-breaker.
- Turn on the dishwasher.

Location: Galley

Supply valve
House water / Dishwasher

Dishwasher drainage

11 AUDIO-VISUAL EQUIPMENT

11.1 TELEVISION

General points

- The television is powered by AC provided by the DC/AC invertor which is powered by the service batteries. The inverter has an ON / OFF button.
- A circuit-breaker protects the circuit.
- Pre-cabling for the aerial is already installed on the boat.

Starting up

- First turn on the circuit breaker, then switch on the TV.
- The transformer is switched on and off automatically when you turn on or off the breaker.

Location: Chart table

11.2 HIFI

- The sound system is DC powered.
- The sound from the TV or from the DVD player is amplified by the boom box and the speakers.
- The sound from the TV comes out of the integral speakers.
- The sound from the TV can come from the speakers if AUX is selected on the DVD player.
- The sound from the DVD player comes from the speakers.
- The sound from the radio comes from the inside and outside speakers. It is possible to select either outside or inside speakers by adjusting the balance control.

ADVICE-RECOMMENDATION

Refer to the manufacturer's instructions for use and maintenance.

Bass speaker
Location: Port saloon

Hifi
Location: Chart table

12 ONBOARD COMFORT

12.1 AIR CONDITIONING

General points

- The air-conditioning is powered by alternating current.
- The air-conditioning cools the air temperature inside the boat (only when the boat is floating in water).
- The cooling circuit consists of one or more compressors that operate independently. A compressor is called "reversible" because it can heat the boat if the sea water temperature exceeds 13°C.
- In winter, you can programme the dehumidifier function on the airconditioning controls.
- The refrigeration compressors are made by one or two seawater pumps. These pumps are run on AC voltage and are master controlled by one or two can relays.
- Sea water is evacuated through a through-hull fitting equipped with a valve, located above the waterline. Each compressor has its own through-hull evacuation fitting. It is advisable to check the flow of water visually once the air conditioning starts running.

Operation

Before starting the engine:

- Open the raw water intake valves and evacuation valves;
- Make sure that the control panel is in the STOP position;
- Use the switch on the chart table to select the power source (shore power or generator).
    - If using shore power: plug into the shore power socket;
    - If using the generator: before turning on the air conditioning, leave the generator running for about 3 minutes.

The air conditioning is running:

- Switch the air-conditioning circuit-breakers ON.
- Select the temperature of each compressor using the control units.

- Refer to the manufacturer's instructions for use and maintenance.
- When the air-conditioning is running, check visually that the sea water has been fully drained.
- Never start the generator when the climate function is already on.
- Always turn off the air conditioning before turning off the generator.
- Regularly check and clean the sea water filter placed on the sea water intake through-hull fitting.

  - Close the sea water intake valve;
  - Unscrew the top of the filter;
  - Clean the strainer;
  - Put everything back in place.

- Clean the air filter (located in the compressor) regularly for maximum performance of the installation.
- Clean the cooling coil at least once a year.
- To prevent the air-conditioning circuit from freezing: never run the system when the seawater temperature drops below 5 degrees C.
- Winter Storage: drain the whole sea water system.
- The cooling gas circuit needs no maintenance.

Layout of components

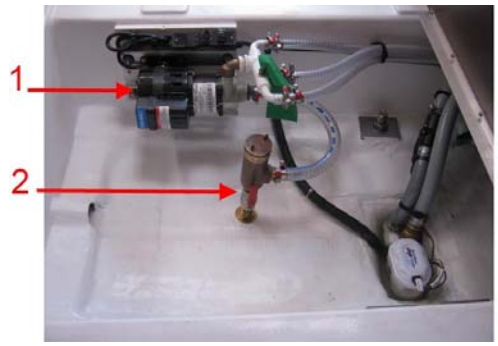
Compressors: Location

Drainage - Compressors
(Saloon & Forward cabin)
Location: Port saloon

Drainage - Compressor
(Aft cabin)
Location: Port cockpit locker

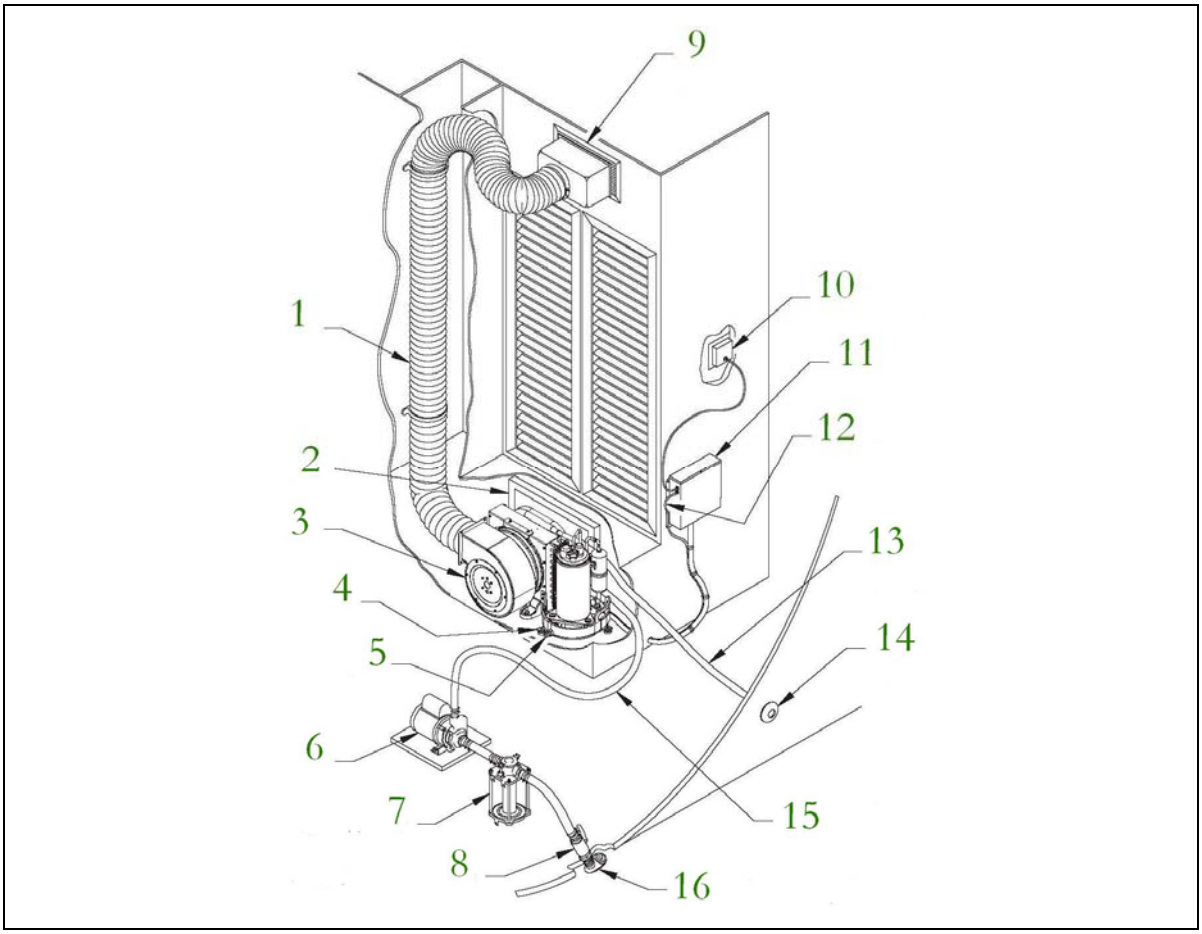
Relay box
Location: Chart table

Location: Saloon



1. Pump sea water
2. Sea water intake + Filter

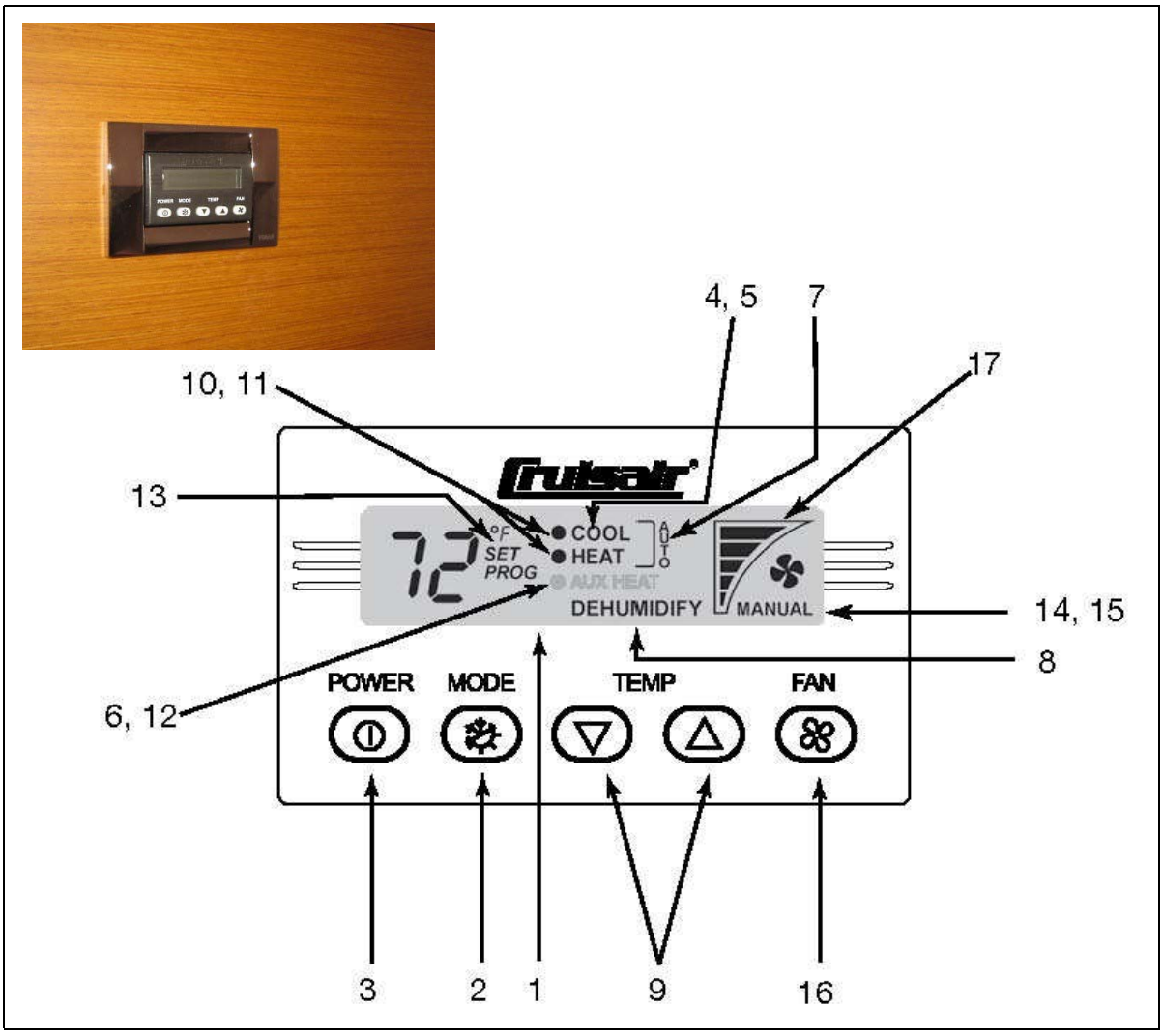
Diagrammatic view - Air conditioning



Reference	Designation
1	Insulated pipe
2	Ambiant air intake
3	Refrigeration unit
4	Mounting support
5	Condensation water pipe
6	Seawater pump
7	Filter
8	Seawater supply valve
9	Conditioned air outlet
10	Manual control
11	Relay box
12	Temperature sensor
13	Sea water drain pipe
14	Thru-hull fitting
15	Sea water supply
16	Sea water strainer

Air-conditioning controls

Please refer to the key on the following page



Manual control of the air-conditioning

1. Data display:
Screen which displays the desired temperature, the programmed values and the error messages.

2. MODE:
Enables you to navigate between the different operating modes.

3. POWER/OFF:
Comes on when the system is switched off. The manual ventilator may continue to run.

4. COOL:
Indicates that the compressor is activated when cooling.

5. HEAT:
Indicates that the compressor is activated when heating.

6. Optional equipment (Auxiliary heating).

7. AUTOMATIC:
Comes on when the system is in AUTO mode.

8. DEHUMIDIFY:
Comes on when the system is in dehumidifying mode.

9. Keys + and -:
Allow you to raise or lower the desired temperature.

10. Cooling indicator:
This indicates that the compressor is in COOLING mode.

11. Heating indicator:
This indicates that the compressor is in HEATING mode.

12. Optional equipment (Auxiliary heating).

13. temperature control indicator:
This indicates the temperature control adjustment (the desired ambient temperature).

14. Indicator for the manual ventilator:
This comes on when the manual ventilator is running.

15. Indicator for the automatic ventilator:
This comes on when the ventilator is running in automatic mode.

16. Ventilator key:
Allows you to select manual or automatic mode for the ventilator.

17. Ventilator speed indicator:
Shows the ventilator speed.

NOTES

- When the system is programmed in dehumidifying mode, the system's safety devices remain active: if there is an interruption in the flow of sea water or a drop in AC voltage, the system automatically stops.
- In cooling mode, the system works efficiently when the sea water temperature is below 30 degree C.
- In heating mode, the system works efficiently when the sea water temperature is above 13 degree C.
- It is important to switch the system to HEATING mode at least once a month, to prevent the crossover cock becoming stuck in COOLING mode.

LOCKING METHOD

It is possible to lock the control buttons to avoid any accidental handling: Press the three buttons at once: MODE, UP (arrow pointing up), FAN.
LC appears on the screen, which signifies "LOCK".

To unlock and resume use of the buttons, press the three buttons at the same time: MODE, UP (arrow pointing up), FAN.
UL appears on the screen, which signifies "UNLOCK".

SCREEN LIGHTING

If the control box is switched off by a fault (in the cabins for example), just touching a button automatically lights up the screen in a blue colour instantly.

To alter the light intensity of the screen, press the two buttons simultaneously: MODE, UP (arrow pointing up) until the required intensity is reached.

It is possible to programme whether or not a box is illuminated by default: In this case mode ON must be selected for a permanently illuminated box or mode SLEEP for a permanently unilluminated box.

Procedure:

- Simultaneously press the 2 buttons: MODE and DOWN (arrow pointing down).
- With the arrows select n°18 on the menu, then confirm by pressing MODE.
- With the arrows select either ON for illumination by default or SL (SLEEP) to turn the box off.
- The press 2 times on FAN to confirm the selection.

12.2 ELECTRONIC EQUIPMENT

The onboard electronics are powered by direct current.

Control: on the electrical panel.

Lead lines

Transducer location:

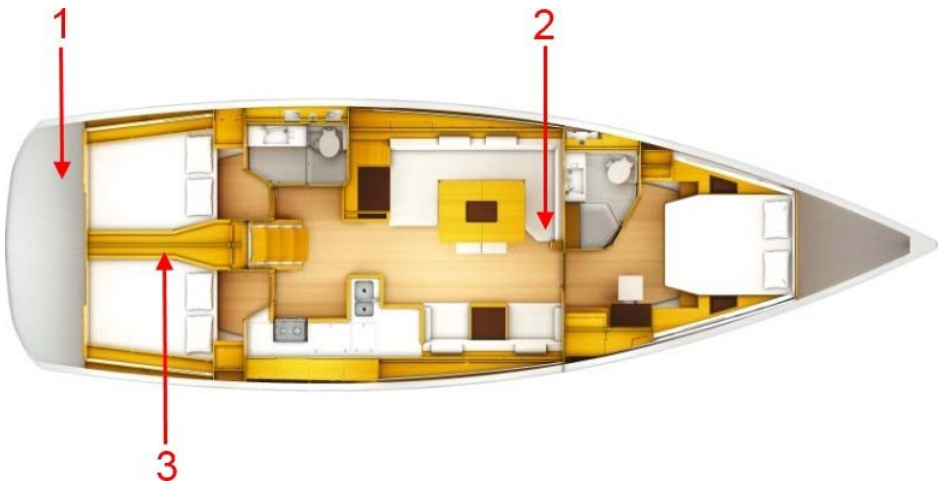
- Do not store material on top of the sensors.
- Do not cover the sensors in antifoul when antifouling the hull.
- Regularly clean the sensors.

Auto pilot

- To ensure optimum perfomance, keep all metallic objects away from the gyrocompass.
- Do not store material close to the calculator and electrical connections.

Control: Cockpit

Layout of components:



Ref 1

1. Hydraulic piston
2. Hydraulic pump
   (Access: Port cockpit locker)

Ref 2: Gyrocompass

Ref 3: Vessel Management Unit

VHF

Layout of components:
Chart table

ADVICE-RECOMMENDATION

- Place the protective covers on the repeaters when unused for long periods.
- When sailing store the protective covers inside the boat to avoid losing them.
- The various repeater displays are back-lit.
- Regularly clean the fascias of the repeaters with fresh water.
- Refer to the manufacturer's instructions for use and maintenance.

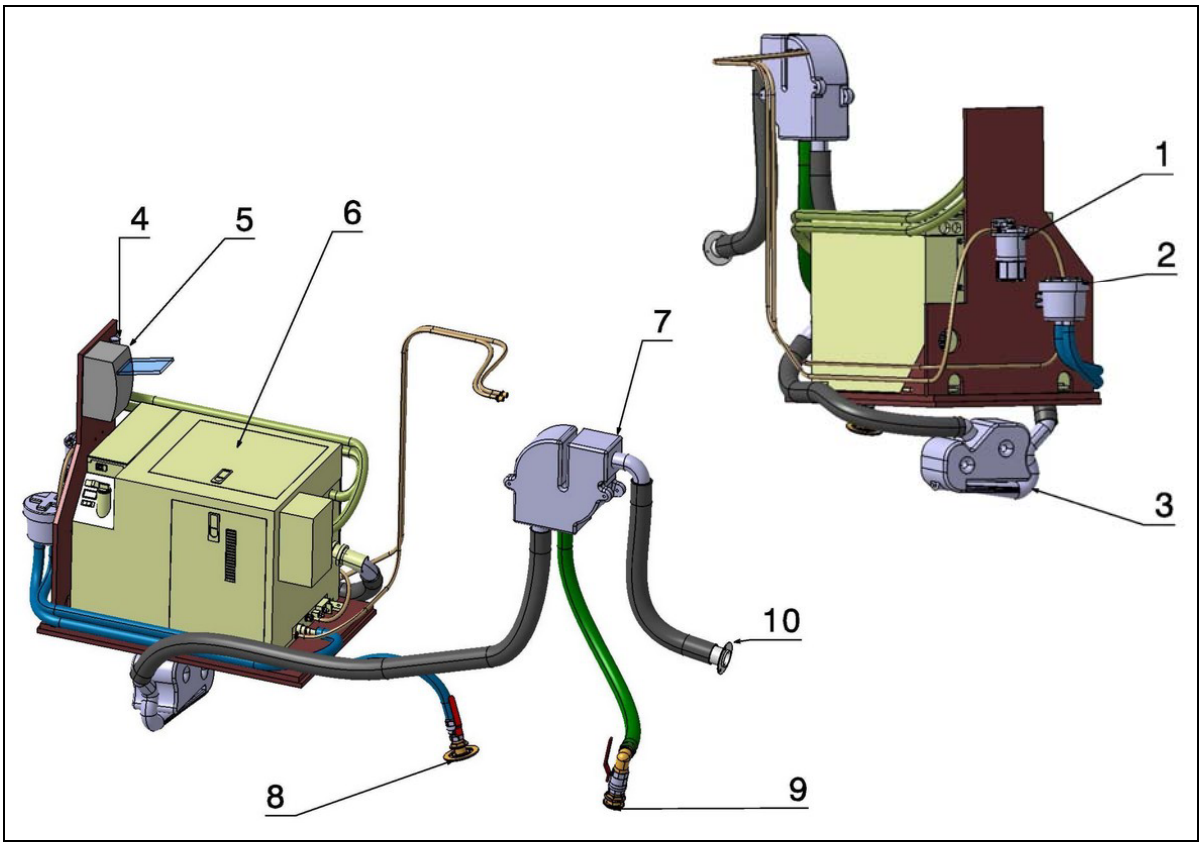
12.3 EQUIPMENT OTHER THAN FOR PROPULSION, WHICH BURNS FUEL (GENERATOR, HEATING)

12.3.1 General points

- Make sure that the ventilation openings in the engine (and generator, if installed) compartment are well cleared.
- Stop the engine and refrain from smoking during fuel tank filling.
- Get your fuel circuit checked regularly by a professional engineer.
- Avoid any contact between inflammable materials and the hot sections of the engine.
- Take all necessary precautions to avoid contact with naked flames and other hot areas.
- Do not obstruct or modify the ventilation system.
- Fuel stored outside the tanks (jerrycans, portable fuel tanks, etc.) must be stowed on deck, protected from bad weather and mechanical damage.

12.3.2 Generator

Layout diagram



Reference	Designation
1	Fuel filter
2	Sea water filter
3	Water trap
4	Anti-siphon valve
5	Differential circuit breaker
6	Generator
7	Water - Gas separator
8	Seawater inlet
9	Seawater discharge
10	Outlet

General points

- The generator is a machine which can produce AC electrical power using mechanical power (fuel). The generator will fed the onboard equipment operating at 220V or 110V, moored or sailing.

- The generator starts with its own battery (12 V circuit).

- Make sure that there is enough fuel in the fuel tank before using the generator. The generator is fed by fuel through the fuel tank.

- The cooling water and exhaust gases are separated in the separator to avoid noise pollution. The seawater is discharged below the waterline. The exhaust- pipe is located above the waterline. Check visually that the exhaust gases are being expelled properly.
Make sure that the ventilator in the generator compartment is working.

- Check to see if any leaks appear (sea water, coolant, fuel, exhaust gases). If there is a leak, stop the generator at once and get the leak repaired.

- The generator is earthed by an earthing plate which is located under the hull (see earthing plate chapter).

- Maintenance of the generator must only be done by qualified and proficient personnel. Before working on the generator, it is imperative to isolate the generator's battery power, to prevent it from starting accidentally.

- The generator can be started by the switch on the generator or by the switch on the control panel.

Starting up

- Open the raw water intake valves and evacuation valves.
- Open the fuel supply valve.
- Turn the generator's battery switch to the ON position.
- Switch the generator's circuit-breaker to the ON position.
- Turn on the generator using the remote control (located near the main switch panel).

or on the generator itself.

- Make sure that no AC equipment is running. Then set the shore power/ generator switch (located on the chart table).

Shore power /generator switch
Location: Chart table

1. Remote control

Circuit breakers: Shore / Generator
Access: Cockpit locker

In the event of the generator catching fire

- Don't open it.
- Cut the supply (electrical and fuel) to the boat's engines, to the generator and to the ventilators.
- Use the extinguisher access port on the generator to discharge the contents of the portable extinguisher.

- Please refer to the manufacturer's instructions for using the generator.
- Never start the generator when the climate function is already on. Always turn off the air conditioning before turning off the generator.
- Never connect the shore power to the generator: danger of electric shock.
- An extinguisher access port is provided on the generator to put out a fire starting in the generator.

Extinguisher access hole
Access: Port cockpit locker

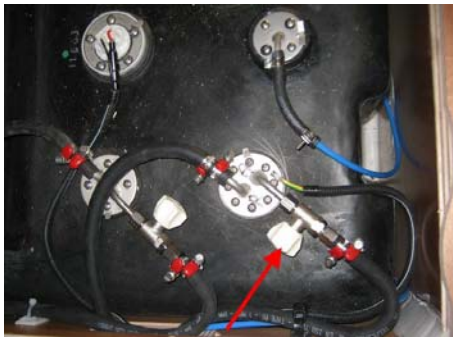
Layout of components

Ref 1: Generator

1. Fuel filter
2. Sea water filter
3. Expansion tank

Ref 2: Sea water intake

Ref 3: Fuel supply valve



Ref 4: Generator battery switch (Positive & Negative terminal)

Ref 5:

1. Water trap
2. Generator drain

Water - Gas separator

Ref 6:

1. Battery charger - Generator
2. Generator battery

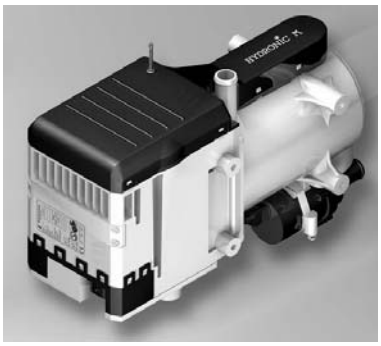
12.3.3 Water heating

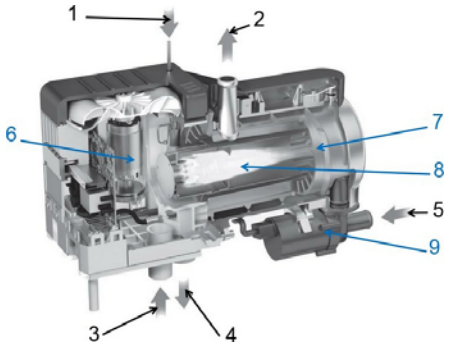
Thermostat

The water pump and the diesel pump are built into the heater. The cabins and saloon are fitted with heating units to which the water piping is connected.

The fluid used for the heating is a mixture of water and coolant.

Heater M12

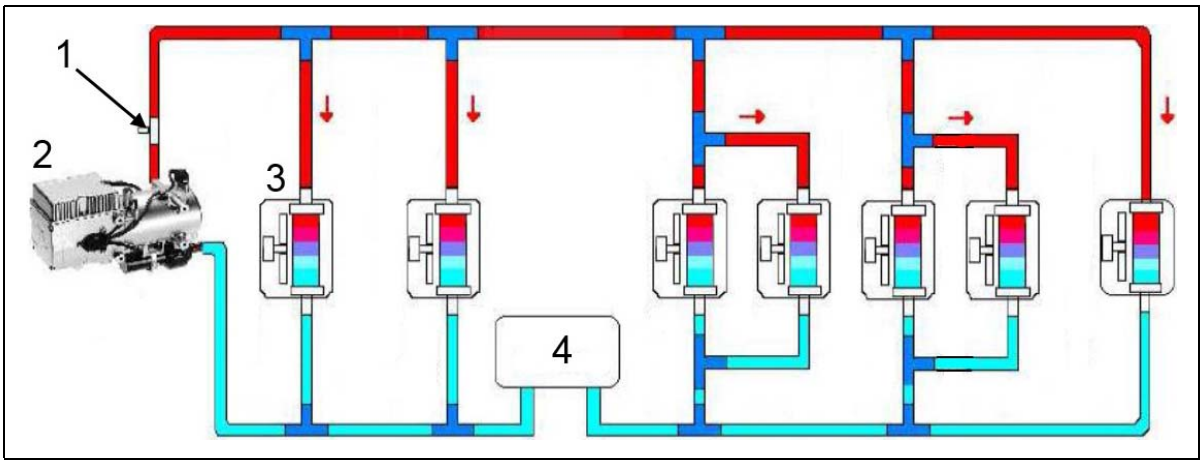




1. Fuel supply
2. Hot water out
3. Combustion air input
4. Exhaust
5. Water supply
6. Ventilator
7. Heat exchanger
8. Combustion chamber
9. Water pump

- Please refer to the manufacturer's instructions for the use and maintenance of the heating system.
- A sudden cut in the electrical supply risks damaging the heater: REMEMBER TO SWITCH OFF THE HEATER BEFORE ISOLATING THE BATTERIES.
- It is imperative to disconnect the electrical supply and to allow the hot components to cool before doing any maintenance or work on the heater.

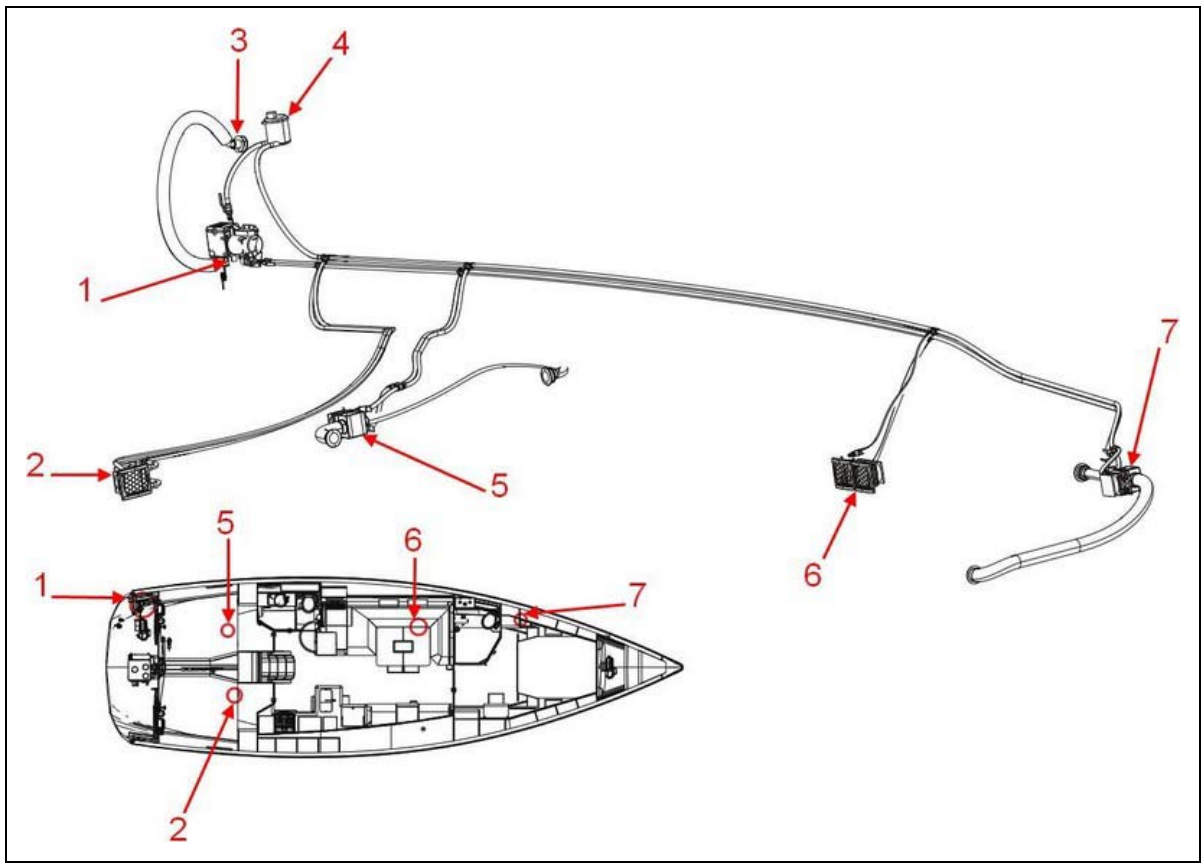
Water circuit schematic diagram



Reference	Designation
1	Drain tap
2	Heater
3	Unit heaters
4	Expansion tank

- The heater must be switched off when refilling the fuel tank.
- The heater's exhaust gases are very hot: they risk burning the shock mounts or the cables running too close to the exhaust outlet skin fitting.

Diagram of the layout

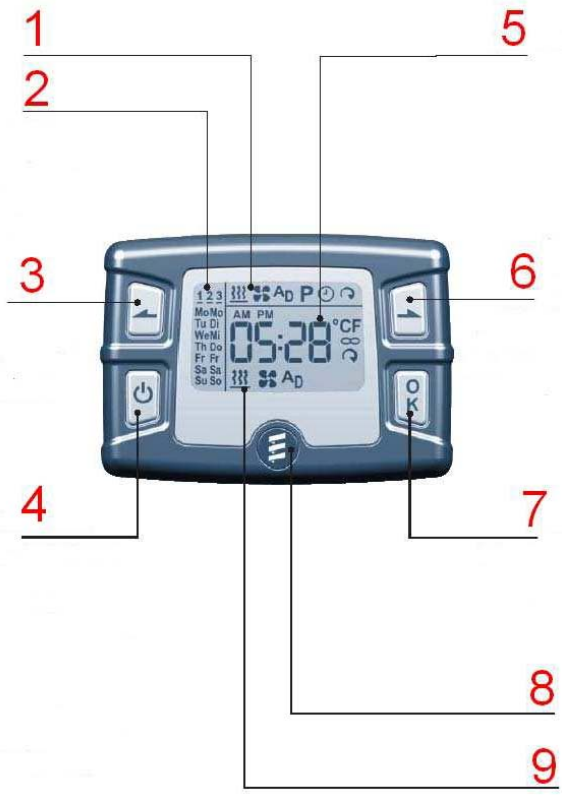


Reference	Designation
1	Heater - 1 200 W
2	Heating unit - Starboard aft cabin (2 000 W)
3	Outlet
4	Expansion tank
5	Heating unit - Port aft cabin + Head (2 000 W)
6	Heating unit - Saloon (4 000 W)
7	Heating unit - Forward cabin + Head (2 000 W)

- The heater must be switched off when refilling the fuel tank.
- The heater's exhaust gases are very hot: they risk burning the shock mounts or the cables running too close to the exhaust outlet skin fitting.

Control Easystart (Timer)

- The water heating operates on direct current.
- The Easystart timer serves to turn the heater on and off, as well as to choose its operating time, the length of time and how the heater should operate.
- The Easystart timer allows the setting of the temperature unit(°C or °F), the operating language (English or German) and the time.



1. Menu bar
2. Programme bar (display of day of the week and programme display)
3. 'Previous' button
4. Initiation button (timer ON/OFF; setting temperature values, times, length of operation and desired temperature)
5. Setting bar
6. 'Next' button
7. 'Confirm' button
8. Cover and fixing screws
9. Status bar

ADVICE-RECOMMENDATION

- Please refer to the manufacturer's instructions for the use and maintenance of the heating system.

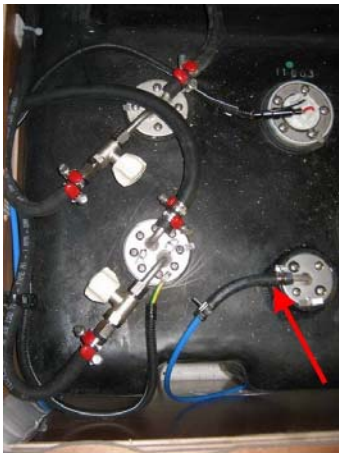
Layout of components

Ref 1: Heater
Access: Port cockpit locker

Ref 1: Expansion tank

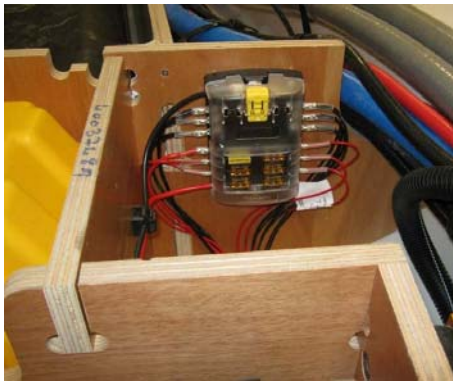
Ref 2: Pump - Fuel

Ref 3: Fuel spur



Ref 4: Fuse

20A: Heater
5A: Heating unit



Ref 5: Control - Heating

Heating unit

Control - Heating unit

13 WATER SYSTEMS

13.1 GENERAL POINTS

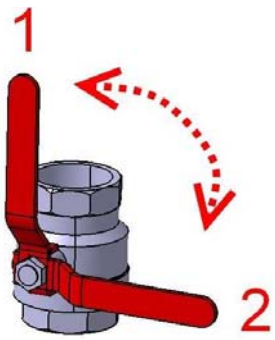
- It is essential to rinse the entire on-board water system the first time the boat is used (The water system is protected in the factory by a dietary anti-freeze).
- The water tanks may have had an anti-algae treatment using a copper sulphate based product. It is advisable to renew the treatment according to the area in which the boat is sailing.
- Drain all the water systems during winterisation (in particular the cockpit shower and water heater) to avoid damage from freezing.
- Clean/change the filters regularly.

- Regularly check water-tightness of joints in the water system installations. Check that screws and bolts are well tightened and replace them if they are worn or corroded.
- Disconnect shore water supply before leaving the boat (if fitted).
- If the boat is sailing in temperatures below freezing, it is possible to use anti-freeze in the water systems: use a non-toxic anti-freeze marked for dietary use.

NEVER USE AUTOMOBILE ANTI-FREEZE: RISK OF POISONING.

13.2 USING A VALVE

The valve is shut when the valve handle is at right angles to the pipe, the valve is open when the valve handle is in line with the pipe.



1. Open valve
2. Closed valve

- The valves, through-hull and other brass accossories last for about 5 years. Have all valves, hull orifices and other brass accessories of the vessel professionally checked every 5 years and replace them as necessary.

Using the drainage valve

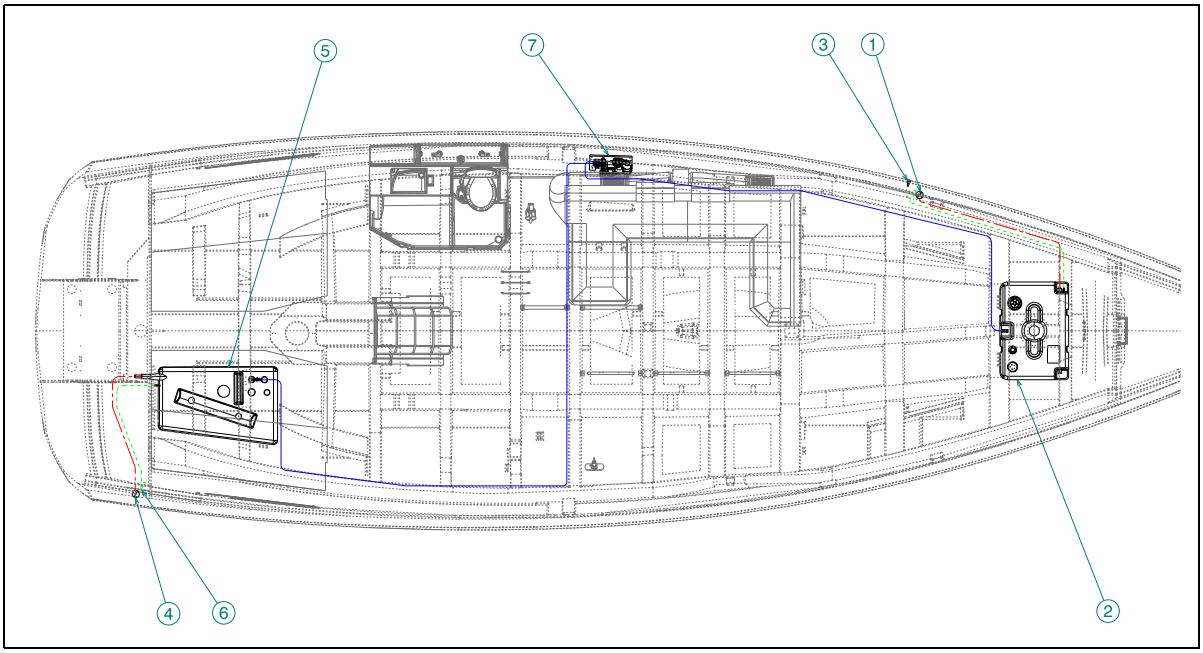
- The direct drainage to the sea valve can be plumbed by means of the drilled hole on the handle.
- Blockage of the drainage valve in closed position: Pass the tightening collar around the drainage valve and in the hole in the handle.

Plastic valve

Bronze valve

Beware of any draining by inadvertence.

13.3 FRESH WATER FILLING SYSTEM



	Supply pipe
	Vent pipe
	Pipe filling

Reference	Designation
1	"WATER" deck filler
2	Forward water tank
3	Vent hole
4	"WATER" deck filler
5	Aft water tank
6	Vent hole
7	Plumbing board

Water tank

Forward tank
Location: Forward cabin
Capacity: 400 L

Aft tank
Location: Starboard aft cabin
Capacity: 238 L

Relationship between the tank number, its position and the gauge
(on the electrical panel)

Tank no.1: Forward tank

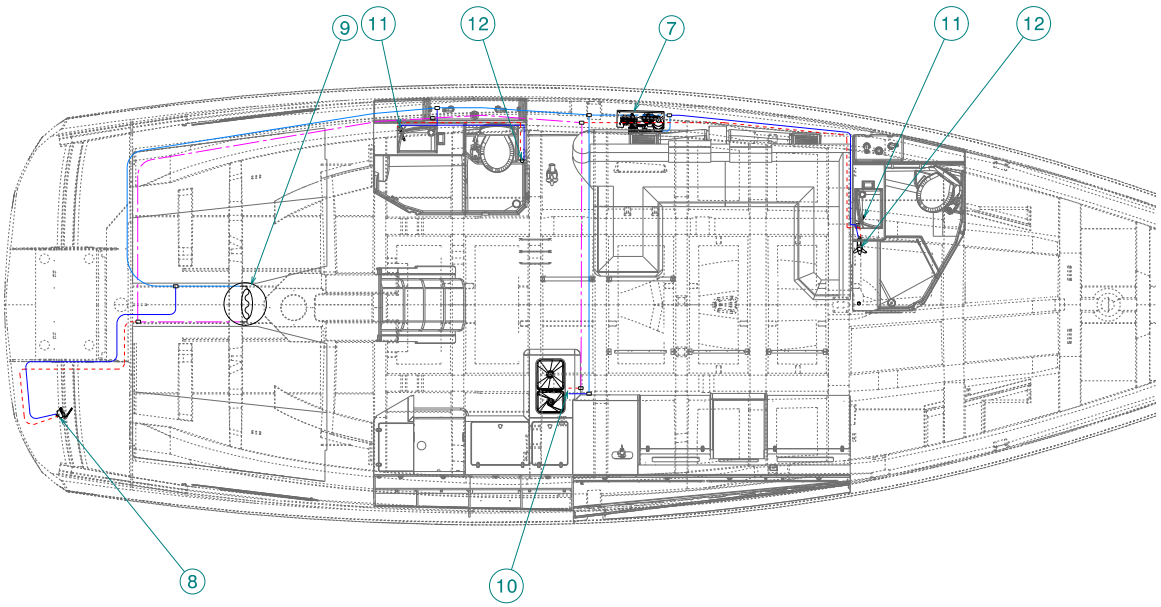
Tank no.2: Aft tank (additional)

Water tank direction valves
Location: Port saloon

1. Supply - Forward water tank
2. Supply - Aft water tank

13.4 FRESH WATER DISTRIBUTION SYSTEM

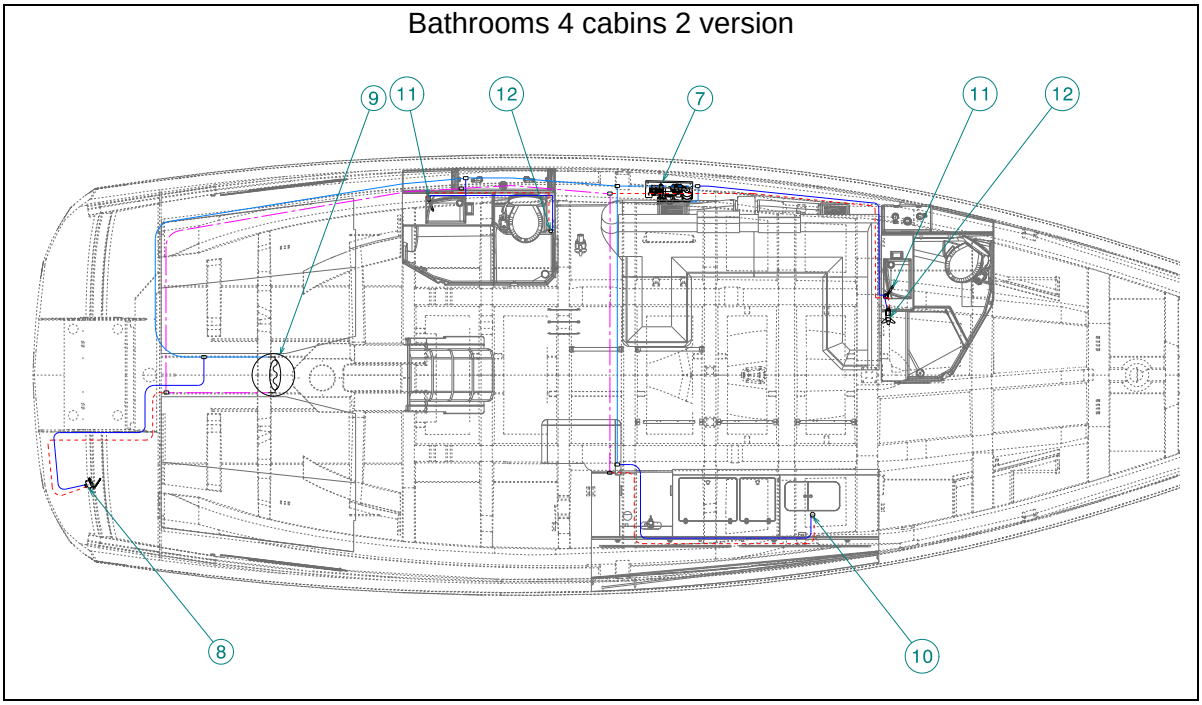
Bathrooms 3 cabins 2 version



	Coldwater system - 19 mm diameter
	Hot water system - 19 mm diameter
	Coldwater system - 12 mm diameter
	Hot water system - 12 mm diameter

Reference	Designation
7	Plumbing board
8	Cockpit shower
9	Water heater
10	Galley sink
11	Washbasin
12	Shower

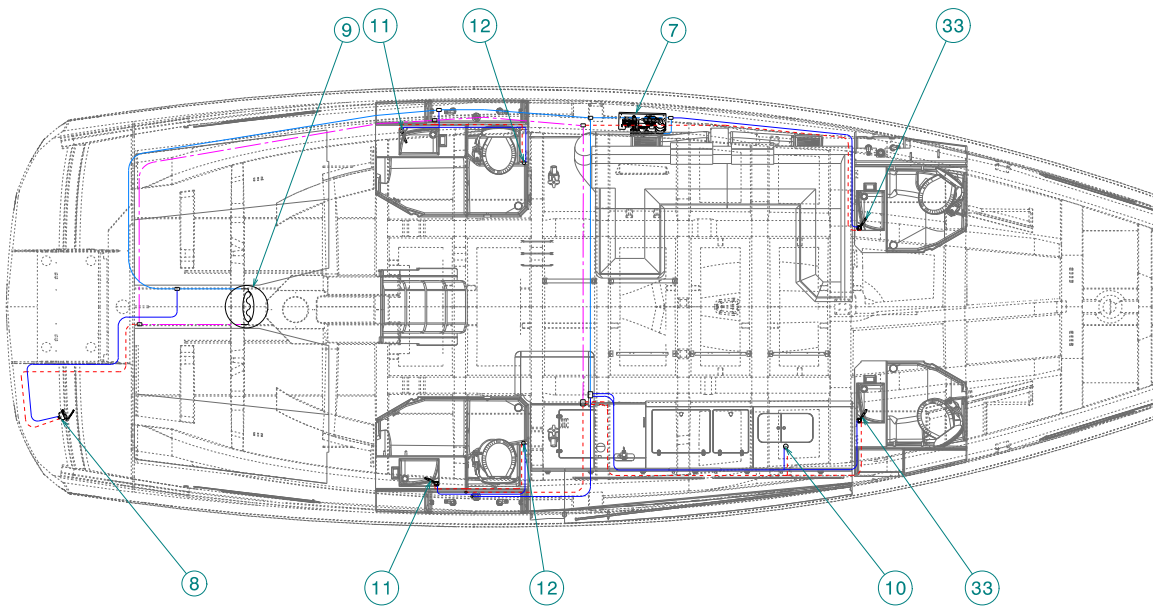
Bathrooms 4 cabins 2 version



	Coldwater system - 19 mm diameter
	Hot water system - 19 mm diameter
	Coldwater system - 12 mm diameter
	Hot water system - 12 mm diameter

Reference	Designation
7	Plumbing board
8	Cockpit shower
9	Water heater
10	Galley sink
11	Washbasin
12	Shower

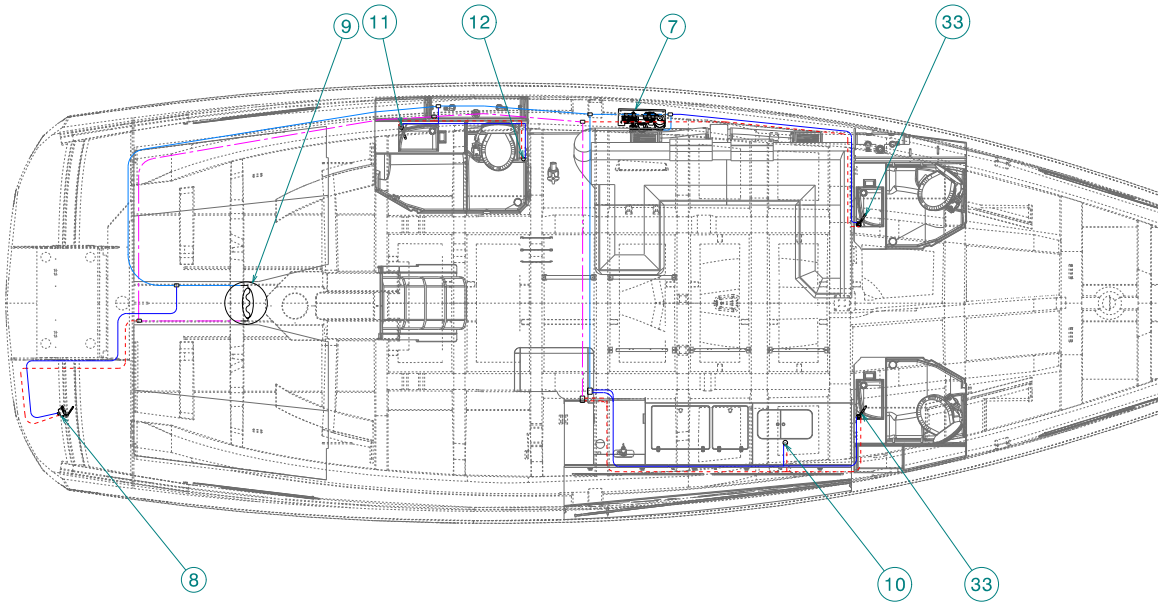
Bathrooms 4 cabins 4 version



	Coldwater system - 19 mm diameter
	Hot water system - 19 mm diameter
	Coldwater system - 12 mm diameter
	Hot water system - 12 mm diameter

Reference	Designation
7	Plumbing board
8	Cockpit shower
9	Water heater
10	Galley sink
11	Washbasin
12	Shower
33	Washbasin/shower mixer tap

Bathrooms 5 cabins 3 version



	Coldwater system - 19 mm diameter
	Hot water system - 19 mm diameter
	Coldwater system - 12 mm diameter
	Hot water system - 12 mm diameter

Reference	Designation
7	Plumbing board
8	Cockpit shower
9	Water heater
10	Galley sink
11	Washbasin
12	Shower
33	Washbasin/shower mixer tap

13.5 MAIN PLUMBING EQUIPMENT

13.5.1 Water unit

- The water unit is supplied by direct current.
- It serves to feed all the boat's plumbing equipment with fresh water. It is fitted with a pressure switch that activates the flow when the pressure in the water system falls.
- The water unit must only be used with the fresh water supply. All other use (with sea water or bilge water, with oil products) is prohibited.
- The water unit is switched on at the electrical panel.
- Make sure that the water unit is never run dry.
- The pressure and capacity of the water unit depend on the temperature of the stored fresh water supply.

Location: Port saloon

1. Water unit
2. Expansion tank

13.5.2 Cockpit shower

- The cockpit shower allows the use of fresh water for rinsing off.
- The shower is fitted with a mixer tap.
- The tap has a dual function:
    - It allows the water to be turned on/off,
    - It allows a choice of water temperature.

Operation

- To use the shower, turn on the water by tipping the tap on its axis.
- Then press the button on the top of the shower to allow the flow of water.
- Choose the required temperature by turning the tap clockwise or anti-clockwise.
- After using the shower, it is important to turn off the water by tipping the tap on its axix.

13.5.3 Deck wash pump (Sea water)

- The deck wash pump is supplied by direct current.
- The deck wash pump allows the deck or the boat's tender to be washed.
- The deck wash pump is switched on at the electric panel.

Operation

- Open the sea water intake valve.
- Select sea water/fresh water supply.
- Attach a hose to the connector provided in the cockpit.
- Start the pump.

Connection: Chain locker

Layout of components: Sail locker

Deck wash pump & Filter

Seawater intake valve

13.5.4 Shore freshwater supply

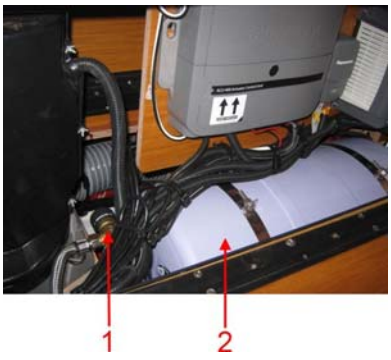
- The shore fresh water supply arrives directly into the fresh water plumbing system via the water unit, without passing through the tanks.
- A non-return valve in the distribution circuit allows the shore supply water to be used without opening the valve.
- The connection of the water intake is located in the cockpit.
- Disconnect shore water supply before leaving the boat.

13.5.5 Sea water/fresh water foot pump

- The foot pump allows the use of sea water/fresh water without needing electricity.
- Water from the foot pump comes out at the spout located at the sink.

13.5.6 Water heater

- The water heater allows the use of hot water on board the boat.
- The water heater operates by heat recovery from the engine cooling circuit or the on board AC electrical supply.
- The water heater thermostat regulates the water temperature only when it is operating with electrical resistance. The thermostat is pre-set in the factory.
- The mixer tap allows the temperature leaving the water heater to be adjusted.
- Never switch on the water heater if it is not filled with water.



1. Mixer tap
2. Water heater - 40 L

13.5.7 Ice maker (Icemaker)

General points

- The ice maker provides a supply of ice from the onboard water system.
- The ice maker runs on the AC power supply.
- A circuit-breaker protects the circuit.

Operation

- The ice maker is supplied with water from the tanks via a supply valve.
- Turn on the water unit to supply the ice maker.
- Open the supply valve onboard water / ice maker.
- Turn on the AC power (shore or generator) and actuate the ice maker circuit-breaker.
- Start the ice maker using the control on the applicance.

Maintenance

- A carbon filter is installed in the ice maker water system. Change the filter regularly.
- Clean the evaporator with a damp cloth at least once a year. Never use cleaners which are abrasive, acid or which contain solvents for cleaning the evaporator.
- Clean the hinge of the ice maker door regularly with a damp cloth.
- Clean and defrost the ice maker regularly.
- During overwintering, leave the ice maker door open to avoid mould and odour formation.
- During prolonged absences, drain the ice maker system to avoid damage caused by freezing.

- Refer to the manufacturer's instructions for use and maintenance.
- Never heat or use tools to defrost the inside of the fridge more quickly.
- Never obstruct the heat exchanger of the fridge.

13.5.8 Water maker

General points

- The watermaker allows fresh water to be produced from the sea water.
- The watermaker can be supplied either:
    - by DC direct current,
    - by AC alternating current.
- A circuit-breaker protects the circuit.
- Several elements make up the watermaker circuit:
    - sea water intake,
    - sea water filter(s),
    - circulation pump,
    - electric valve for automated rinsing,
    - manual rinsing valve,
    - motor block and high-pressure pump,
    - membrane block,
    - control panel,
    - sea water discharge valve.

Operation

- Sea water enters the membrane block under pressure, which allows only pure water to pass out.
- A sensor at the membrane block exit allows the measurement of the salt content of the water filtered in this manner. A three-way valve allows drinking water to be directed automatically to the tanks or water that is too salty to be discharged to the sea.
- The drinking water filtered by the membranes is sterile; it is advisable to treat it with a weak dose of chlorine from time to time and to mineralise it if consumption is prolonged.
- Fresh water production depends on the temperature of the sea water used and the cleanliness of the filter.

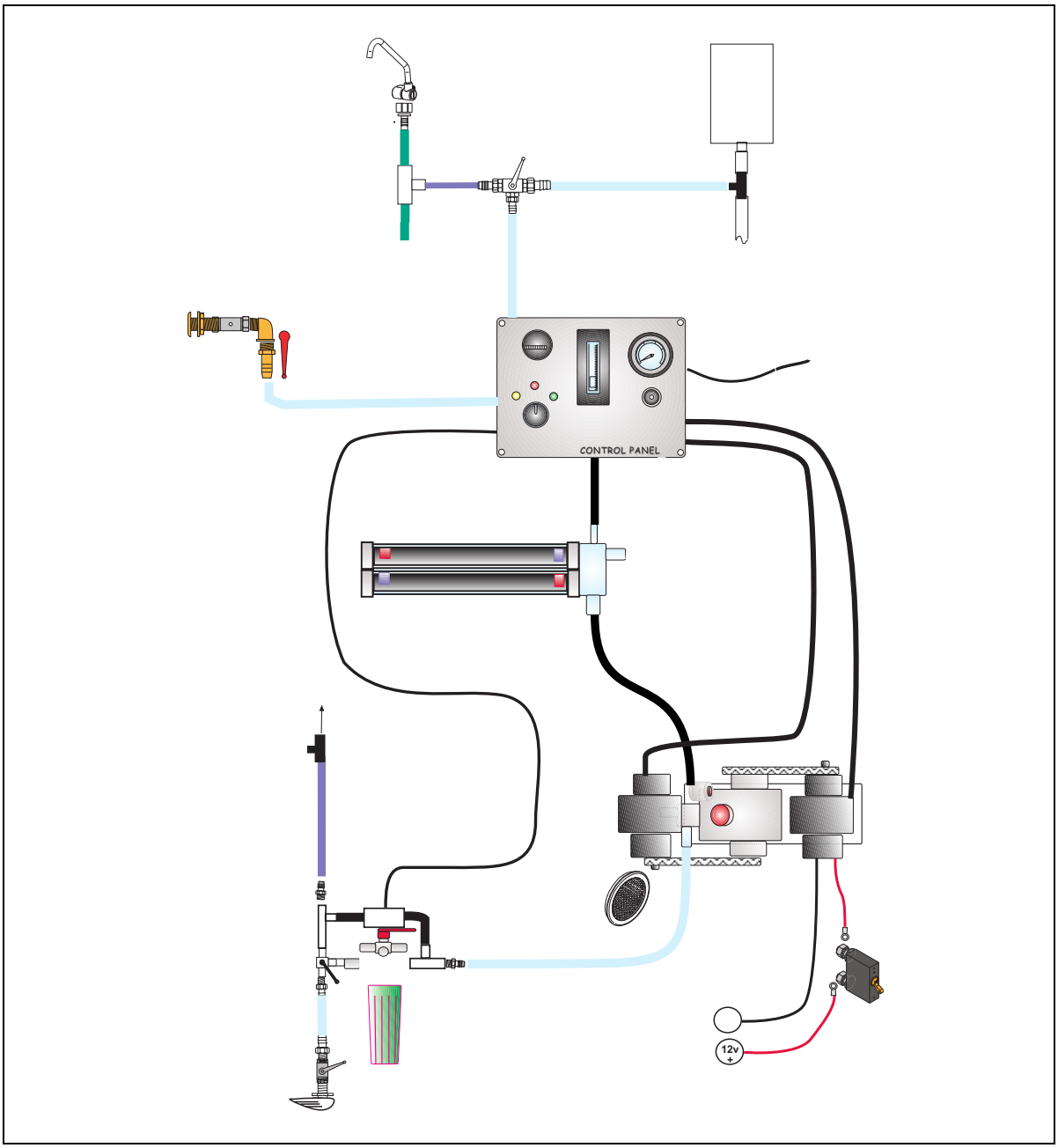
Operation

- Before starting the watermaker circuit, check that the supply and discharge valves are open.
- Using the watermaker with DC supply needs a lot from the battery bank: make sure to recharge them regularly by running the boat's engine.
- The different quality and salinity of the sea water used affect the production of fresh water; it is advised not to use the watermaker in navigation areas or where the water is muddy, polluted or brackish.
- The membranes are temperature-sensitive; in the event of negative (0°C and less) or too hot (60°C and over) temperatures, the membranes are likely to tear.

Maintenance

- Every week, rinse the system with fresh water. Two methods can be used according to choice: one manual, the other automatic. The fresh water used for rinsing the circuit must not be under pressure to avoid damaging the membranes.
- Every 6 months, the sea water filter must be changed.
- When the watermaker is not being used for a long period, rinse the system every month or sterilise the membranes.

Layout diagram



Layout of components: Saloon

Motor unit

Control panel

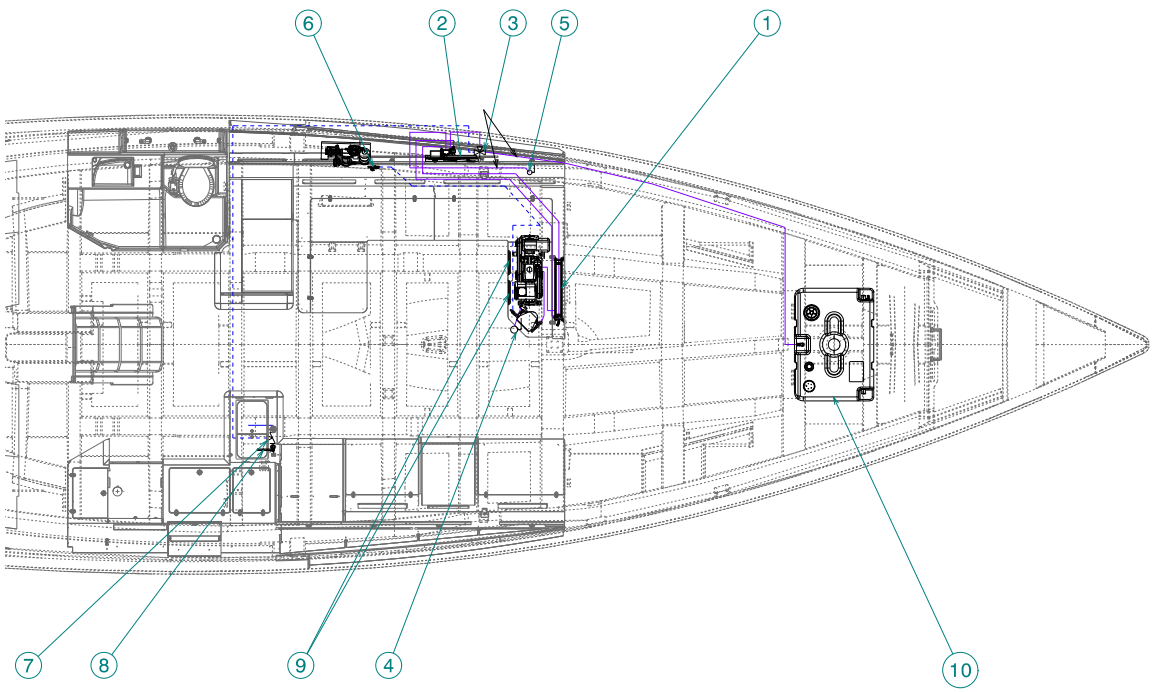
Sea water filter

Electromagnetic valve

Membrane block

Diagram of the layout

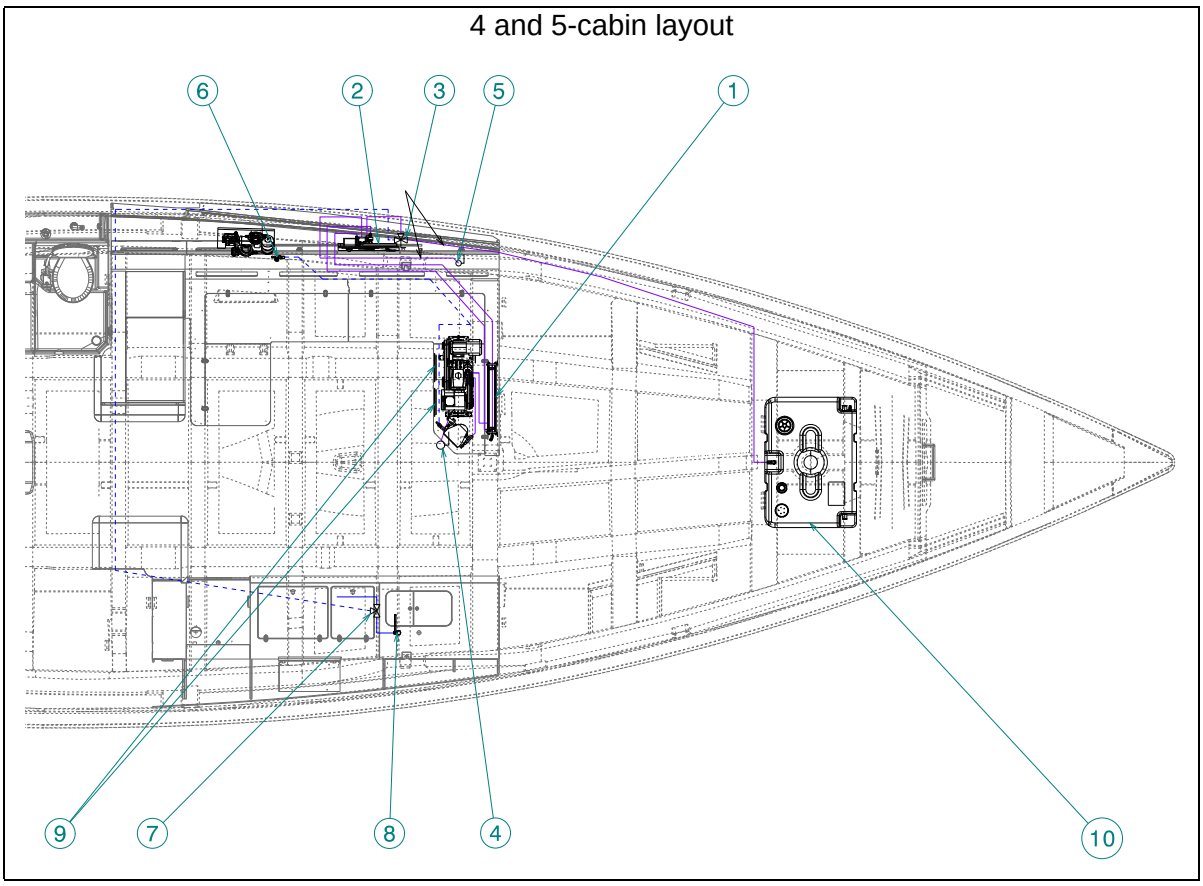
Bathrooms 3 cabins 2 version



	Distribution hose - 12 mm diameter
	Distribution hose - 19 mm diameter

Reference	Designation
1	Water maker
2	Control panel
3	Selection valve
4	Sea water intake
5	Seawater discharge
6	T
7	Connector - Foot pump / Water maker
8	Spout
9	Ventilation
10	Fresh water tank

4 and 5-cabin layout



	Distribution hose - 12 mm diameter
	Distribution hose - 19 mm diameter

Reference	Designation
1	Water maker
2	Control panel
3	Selection valve
4	Sea water intake
5	Seawater discharge
6	T
7	Connector - Foot pump / Water maker
8	Spout
9	Ventilation
10	Fresh water tank

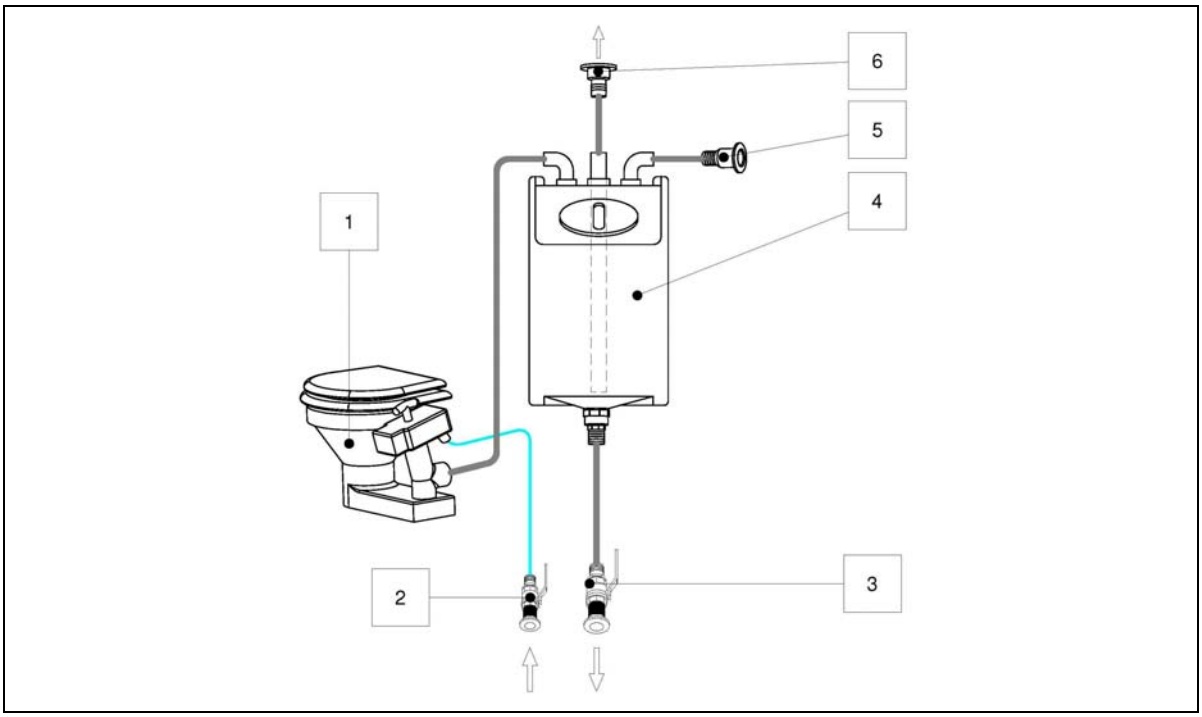
13.6 BLACK WATER SYSTEM (WC)

General points

- Black water is human waste including the flushing water from the toilets.
- Close the valves after each use and above all when the boat is unattended.
- Regularly check the valves and thru-hull seacocks for proper operation and watertightness.
- Regularly check the tightness of the flexible pipe clamps and connections.

13.6.1 Location diagram of black water system

Emptying by gravity



Reference	Designation
1	WC
2	Seawater intake valve
3	Thru-hull seacock
4	Black water tank
5	Vent hole
6	"WASTE" deck connection

Refer to the manufacturer's instructions for use and maintenance.

Using a marine toilet fitted with a tank emptied by gravity

I. Open the sea water intake valve (Ref 2).

II. Fill the bowl by using the manual toilet pump.

III. Using the toilet (Ref 1).

IV.a. To empty the organic waste in the tank:

- Make sure the thru-hull seacock (Ref 3) is closed.
- Empty the bowl using the manual toilet pump.

IV.b. In the case of a direct discharge into the sea:

- Open the thru-hull seacock (Ref 3).
- Empty the bowl using the manual toilet pump.

IV.c. To discharge through the deck:

- Open the deck connection marked "WASTE" (Ref 6).
- Use the pump-out system where fitted at a port.

Using an DC electric WC fitted with a tank emptied by gravity

I. Open the sea water intake valve (Ref 2).

II. Fill the bowl by pressing the fill button.

III. Using the toilet (Ref 1).

IV.a. To empty the organic waste in the tank:

- Make sure the thru-hull seacock (Ref 3) is closed.
- Empty the bowl by pressing the empty button.

IV.b. In the case of a direct discharge into the sea:

- Open the thru-hull seacock (Ref 3).
- Empty the bowl by pressing the empty button.

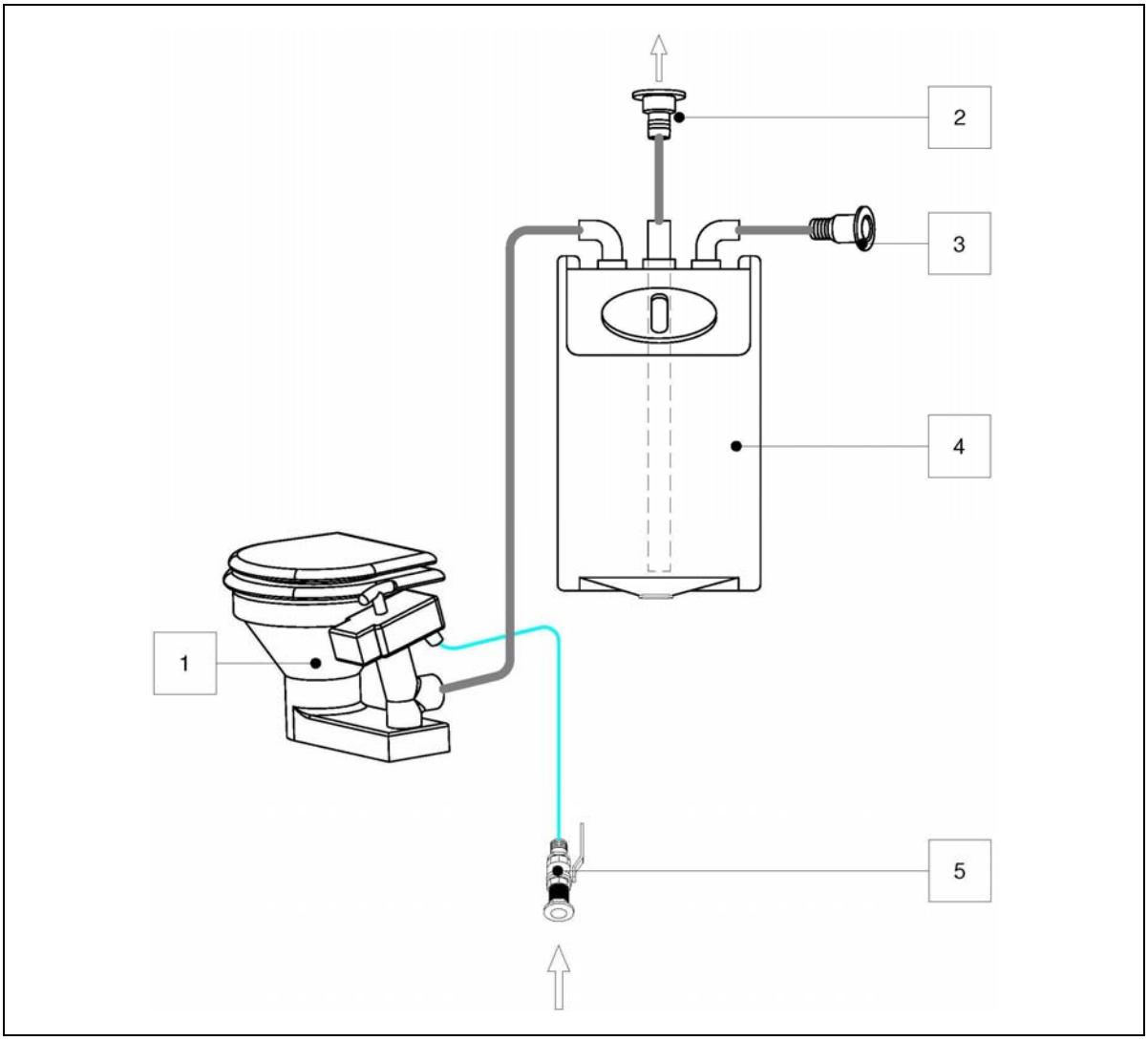
IV.c. To discharge through the deck:

- Open the deck connection marked "WASTE" (Ref 6).
- Use the pump-out system where fitted at a port.

Control - Electric toilet

Electric pump (WC) + Filter

Emptying by deck connection only



Reference	Designation
1	WC
2	"WASTE" deck connection
3	Vent hole
4	Black water tank
5	Seawater intake valve

Using a marine WC fitted with a tank emptied by deck connection

I. Open the sea water intake valve (Ref 5).

II. Fill the bowl by using the manual toilet pump.

III. Using the toilet (Ref 1).

IV.a. To empty the organic waste in the tank:

- Empty the bowl using the manual toilet pump.

IV.b. To discharge through the deck:

- Open the deck connection marked "WASTE" (Ref 2).
- Use the pump-out system where fitted at a port.

Using a DC electric toilet fitted with a tank emptied by deck connection

I. Open the sea water intake valve (Ref 5).

II. Fill the bowl by pressing the fill button.

III. Using the toilet (Ref 1).

IV.a. To empty the organic waste in the tank:

- Empty the bowl by pressing the empty button.

IV.b. To discharge through the deck:

- Open the deck connection marked "WASTE" (Ref 2).
- Use the pump-out system where fitted at a port.

Refer to the manufacturer's instructions for use and maintenance.

YOUR BOAT IS FITTED WITH A BLACK WATER TANK

To minimise the smells coming from this tank, we advise the following use and maintenance:

1) Holding tank

- A black water tank is used solely for the temporary collection of water coming from the toilets.
- The tank can be emptied in 2 ways:
    - By connection to a pumping system that empties the tank by suction. This system uses the "WASTE" deck connection.
    - Via the thru-hull fitting emptying directly into the sea (under the conditions permitted by the laws of the country in which the vessel sails, if they permit dumping into the sea).
- Only use water soluble toilet paper to avoid any blockage.

Note: Sanitary towels and other items (paper handkerchiefs, dressings etc) in the toilets and black water tank will inevitably lead to blockages.

- Faecal matter causes formation of unpleasant odours in the black water tanks, to which the use of salt water for flushing the toilets also contributes. Algae present in salt water also give off unpleasant odours.
- Completely empty the black water system before leaving the vessel unattended in temperatures below freezing.
- Ask for information about the laws in force in your country or your marina about discharging your waste waters into the sea.

2) Use of toilets

- Every time the toilets are used, flush afterwards with copious amounts of water in the bowl using the toilet pump (manual or electric).
- When you are leaving the boat for several days, flush with fresh water, using for example the head's shower. Sea water that stagnates in the bowl gives off bad smells.

Black water tank
Capacity: 80 L (in each bathroom)

WC evacuation to sea

WC deck drain filler
4 head layout

3) Maintenance of black water tank

- The risk of unpleasant odours forming increases when the waste water remains in the tank for a long time.
- Whenever possible empty the tank regularly even before it is full.
- Every time the tank is emptied put in about 5 litres of fresh water and add an appropriate detergent additive (available from chandleries). A very simple method is soda salts, which clean and disinfect at the same time.
- Before winterising, flush the tank with copious amounts of fresh water filling it through the 'WASTE' deck connection. Leave at least 5 litres of fresh water mixed with a detergent additive.
- Disinfecting: Disinfect the tank once a year by filling it with a solution of Javel water (1 to 1000).

- Never use automobile anti-freeze in the black water system: risk of poisoning.

ADVICE-RECOMMENDATION

- Respect local regulations regarding the emptying of black water tanks.

4) Using the drainage valve

- The direct drainage to the sea valve can be plumbed by means of the drilled hole on the handle.

- Blockage of the drainage valve in closed position: Pass the tightening collar around the drainage valve and in the hole in the handle.

Plastic valve	Bronze valve
	

Beware of any draining by inadvertence.

13.7 WASTE WATER SYSTEM

General points

- The waste water system is the water coming from the sink, showers, air conditioning drains and washbasins.
- Close the valves after each use and above all when the boat is unattended.
- Regularly check the valves and thru-hull seacocks for proper operation and watertightness.
- Regularly check the tightness of the flexible pipe clamps and connections.

ADVICE-RECOMMENDATION

- Observe local regulations regarding the emptying of grey water tanks.

Shower plug hole

Draining pump for shower + Delay relay

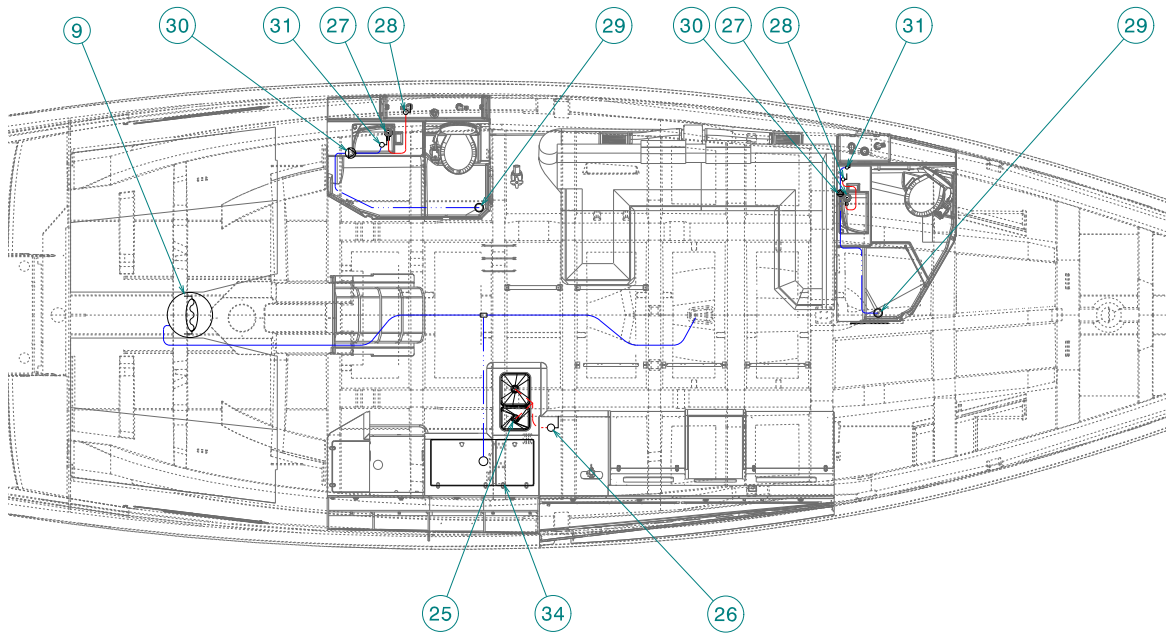
Shower screen

NOTE: Must be secured while sailing.

Control - Draining pump for shower

Diagram of the layout

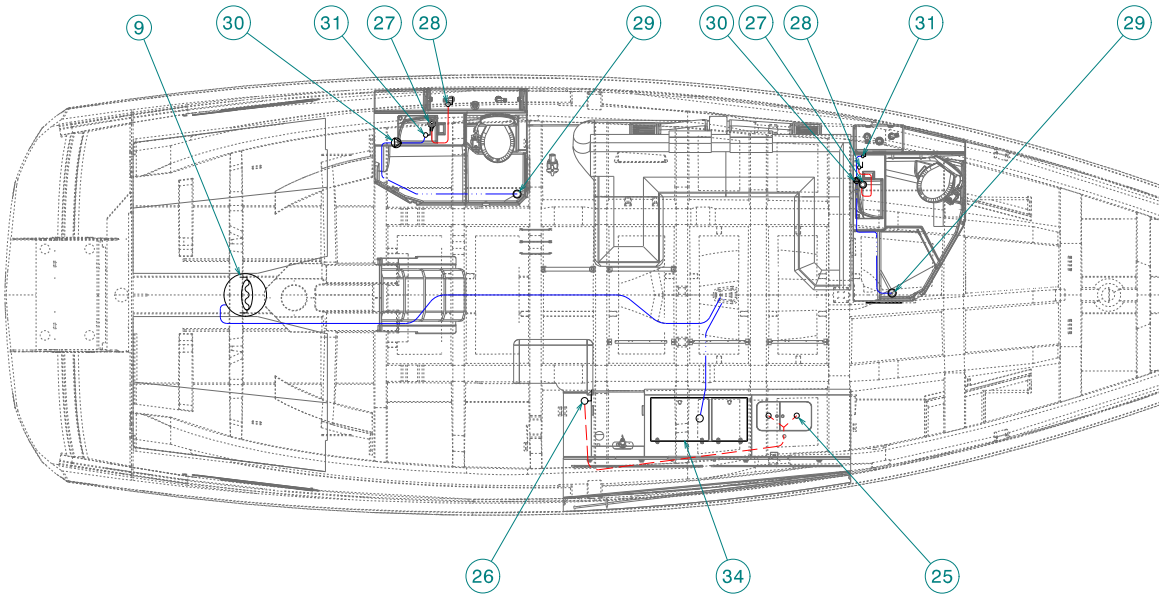
Bathrooms 3 cabins 2 version



	Waste water pipe - 16 mm diameter
	Waste water pipe - 20 mm diameter
	Waste water pipe - 25 mm diameter
	Waste water pipe - 40 mm diameter

Reference	Designation
9	Water heater
25	Sink plug hole
26	Sink draining (Thru-hull fitting)
27	Washbasin drain plug
28	Washbasin draining (Thru-hull fitting)
29	Shower plug hole
30	Draining pump for shower
31	Shower draining (Thru-hull fitting)
34	Cooler plug hole

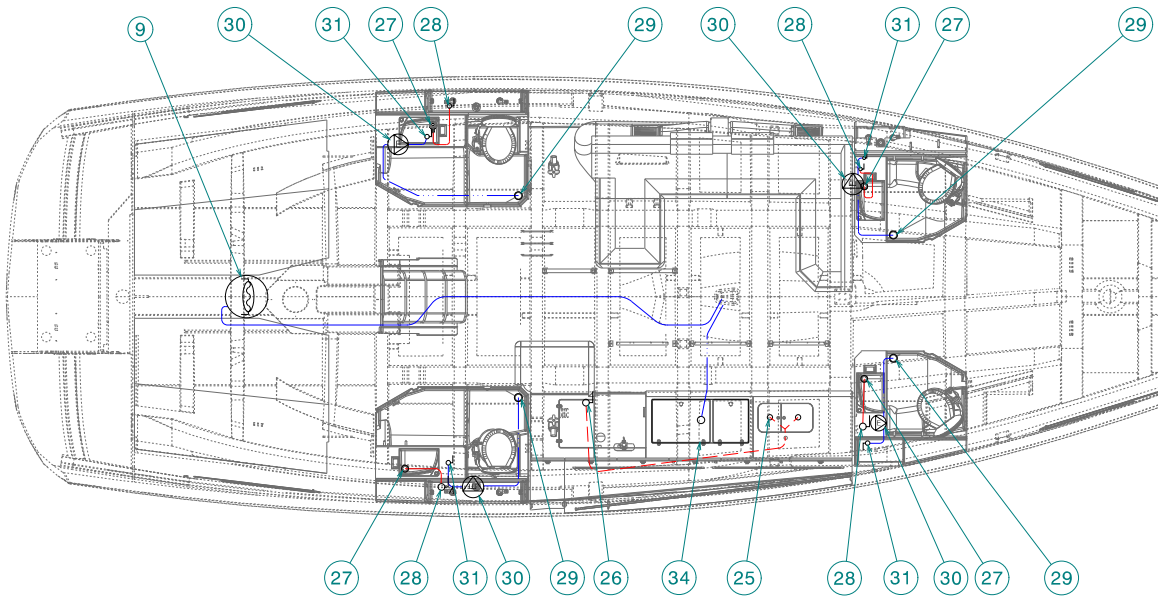
Bathrooms 4 cabins 2 version



	Waste water pipe - 16 mm diameter
	Waste water pipe - 20 mm diameter
	Waste water pipe - 25 mm diameter
	Waste water pipe - 40 mm diameter

Reference	Designation
9	Water heater
25	Sink plug hole
26	Sink draining (Thru-hull fitting)
27	Washbasin drain plug
28	Washbasin draining (Thru-hull fitting)
29	Shower plug hole
30	Draining pump for shower
31	Shower draining (Thru-hull fitting)
34	Cooler plug hole

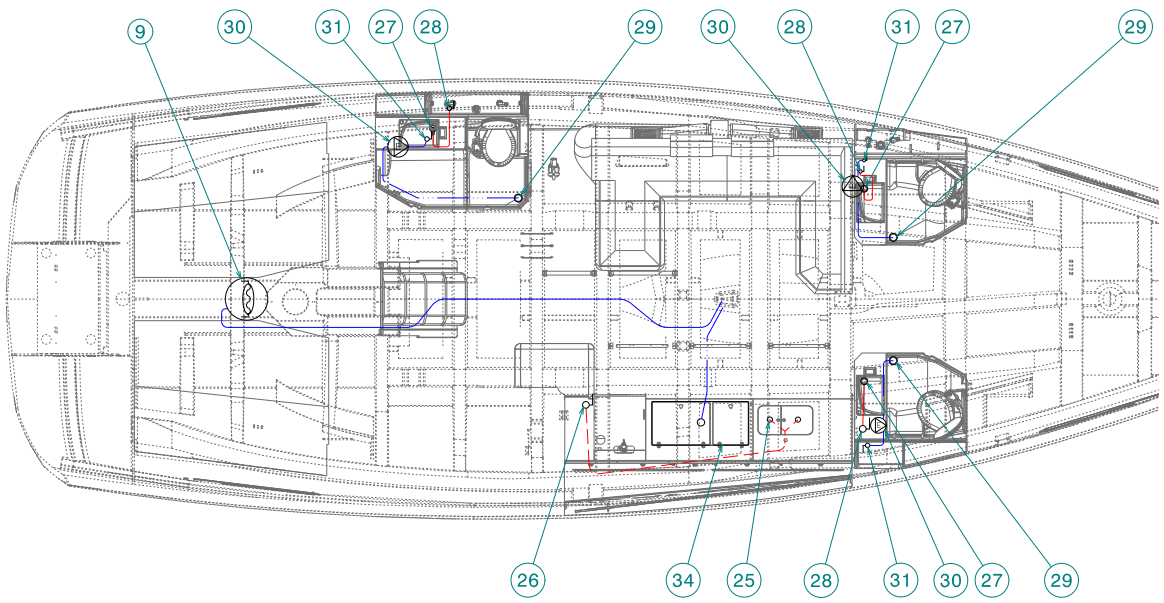
Bathrooms 4 cabins 4 version



	Waste water pipe - 16 mm diameter
	Waste water pipe - 20 mm diameter
	Waste water pipe - 25 mm diameter
	Waste water pipe - 40 mm diameter

Reference	Designation
9	Water heater
25	Sink plug hole
26	Sink draining (Thru-hull fitting)
27	Washbasin drain plug
28	Washbasin draining (Thru-hull fitting)
29	Shower plug hole
30	Draining pump for shower
31	Shower draining (Thru-hull fitting)
34	Cooler plug hole

Bathrooms 5 cabins 3 version



	Waste water pipe - 16 mm diameter
	Waste water pipe - 20 mm diameter
	Waste water pipe - 25 mm diameter
	Waste water pipe - 40 mm diameter

Reference	Designation
9	Water heater
25	Sink plug hole
26	Sink draining (Thru-hull fitting)
27	Washbasin drain plug
28	Washbasin draining (Thru-hull fitting)
29	Shower plug hole
30	Draining pump for shower
31	Shower draining (Thru-hull fitting)
34	Cooler plug hole

14 ENGINE

14.1 INFORMATION ABOUT THE RISKS OF FIRE AND OF EXPLOSION OF ENGINES

- Make sure that the coolant is circulating properly.
- Stop the engine and refrain from smoking during fuel tank filling.
- Get your fuel circuit checked regularly by a professional engineer.
- Avoid any contact between inflammable materials and the hot sections of the engine.
- Never switch off or de-energise the electric system when the engine is running.
- Never block the access of the fuel supply valve.
- Do not obstruct or modify the ventilation system.
- Never turn the engine over when the boat is on land.
- Fuel stored outside the tanks (jerrycans, portable fuel tanks, etc.) must be stowed on deck, protected from bad weather and mechanical damage.
- Regularly check that the engine compartment is clean and dry.

Engine water intake valve:
Located directly on the saildrive

Fuel supply valve

14.2 DANGER FROM MOVING MECHANICAL PARTS

- Keep away from the moving parts of the engine (belts and moving parts or hot components) and the drive shafts etc..
- Be careful if you have long hair, bulky clothing, rings etc (at risk of being caught).

14.3 GENERAL POINTS

- Don't install an engine more powerful or heavier than recommended on this boat, this risks compromising the boat's stability.
- Make sure you have enough fuel before sailing.
- Stop the engine before opening the engine compartment.
- Don't close the fuel supply valve between each use of the engine (unless for a lengthy absence).
- Get the whole propulsion system checked at least once a year by a professional engineer.

See the chapter on "Manoeuvrability".

Always start the engine with the control lever in neutral.

Type of motorisation

Your vessel is fitted with an in-board diesel engine.

Sail-Drive version: The transmission is Sail-Drive type.

360 Docking version: The transmission is 360 Docking type.

Filling up with fuel

- Fill the fuel tank by opening the cap marked "DIESEL", provided for this.
- Fuel capacity: 237 L.
- Reservoir location: Aft cabin.
- Regularly check that the O ring on the filler cap is in good condition, to prevent any water ingress.
- The generator has its own fuel supply valve.

Gauge

- The fuel level is transmitted from the dipstick to the indicator located on the electrical panel.
- Some of the gauges must be calibrated when you first fill the tanks: please consult your dealer.

Gauge

Fuel tank

- The tanks' nominal capacity cannot be fully used due to the load and the need to maintain the correct trim. A 20% reserve should be kept.

ADVICE-RECOMMENDATION

- Regularly check that the O ring on the filler cap is in good condition, to prevent any water ingress.
- Keep the fuel tank as full as possible to prevent condensation.
- Be careful with any possible risk of oil and fuel spillage.
- Follow the engine manufacturer's instructions exactly.

- Never switch off the battery breakers when the boat's engine is running (risk of serious damage to the charging circuit).

14.4 STARTING THE ENGINE

Before starting the engine, it is imperative:

- to open the fuel supply valve;
- to open the sea water intake valve of the engine;
- to switch on the battery supply by using the battery isolator switches;
- to put the control lever in neutral.

Make a habit of looking to see if sea water is pumped out with the exhaust gases as soon as you start the engine. If no water runs out, stop the engine immediately. Check the coolant flow.

As soon as the engine starts, the engine compartment bilge fan operates.

- Before using the engine, make sure you carefully read the handbook provided by the engine manufacturer.

- Always start the engine with the control lever in neutral.
- Learn how to judge the necessary distance of deceleration for the vessel to come to a complete stop (The reverse gear is not a brake).

14.5 ENGINE WATER INTAKE VALVE

The sea water intake valve plays a crucial role in ensuring that the engine runs well.

- Keep the strainer under the hull as clean as possible;
- brush the strainer whenever the boat is lifted out;
- don't cover the strainer in antifoul.

This valve must absolutely always be opened before starting the engine.

A sea water filter filters the water before it goes through the heat exchanger.

Regularly inspect the sea water filter and clean it if necessary. Screw/unscrew the cover of the filter by hand (never use tools for this).

For lengthy absences, close the engine's sea water intake valve.

Sea water intake

Sea water strainer

Sea water filter
Location: Engine compartment

14.6 ANTI-SIPHON VALVE

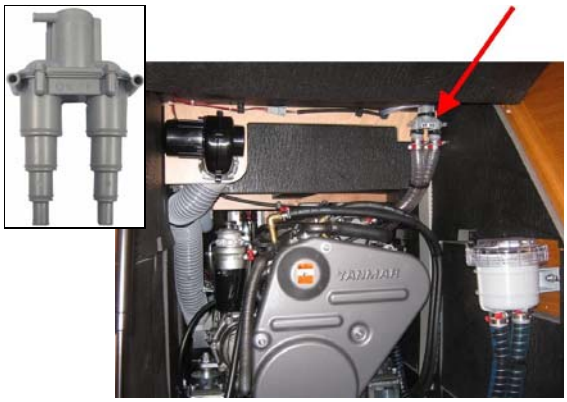
- The function of the anti-siphon valve is to inhibit the siphoning action when the engine stops thus preventing a return of water.

- It is possible that on starting the engine or at certain engine speeds some drops of water may be seen escaping from the anti-siphon valve.
If so you need to clean the anti-siphon valve: dismantle the water collector at the top of the anti-siphon valve, then clean the valve with fresh water to remove any impurities.

- Then do the reverse procedure to refit the cleaned component, taking care not to refit the valve the wrong way round.

- This simple preventative maintenance procedure of the anti-siphon valve is recommended to be carried out once a year.

Anti-siphon valve
Location: Engine compartment



14.7 FUEL FILTER

Engine running problems may have different origins, including dirty fuel. The injection pump may wear out if there is water in the system. The water results either from the condensation resulting from an insufficiently filled tank, or from a filler cap either not closed properly or with a damaged seal.

In order to prevent any water infiltration, the fuel runs through two filters:

- One filter is an integral part of the engine, its role is to filter fuel very finely. Please refer to the engine manufacturer's notes for any maintenance and for the frequency of filter changes.

- The second filter is on the pipe that links the tank to the engine, it plays the role of a water decanter and prefilter.

Maintenance

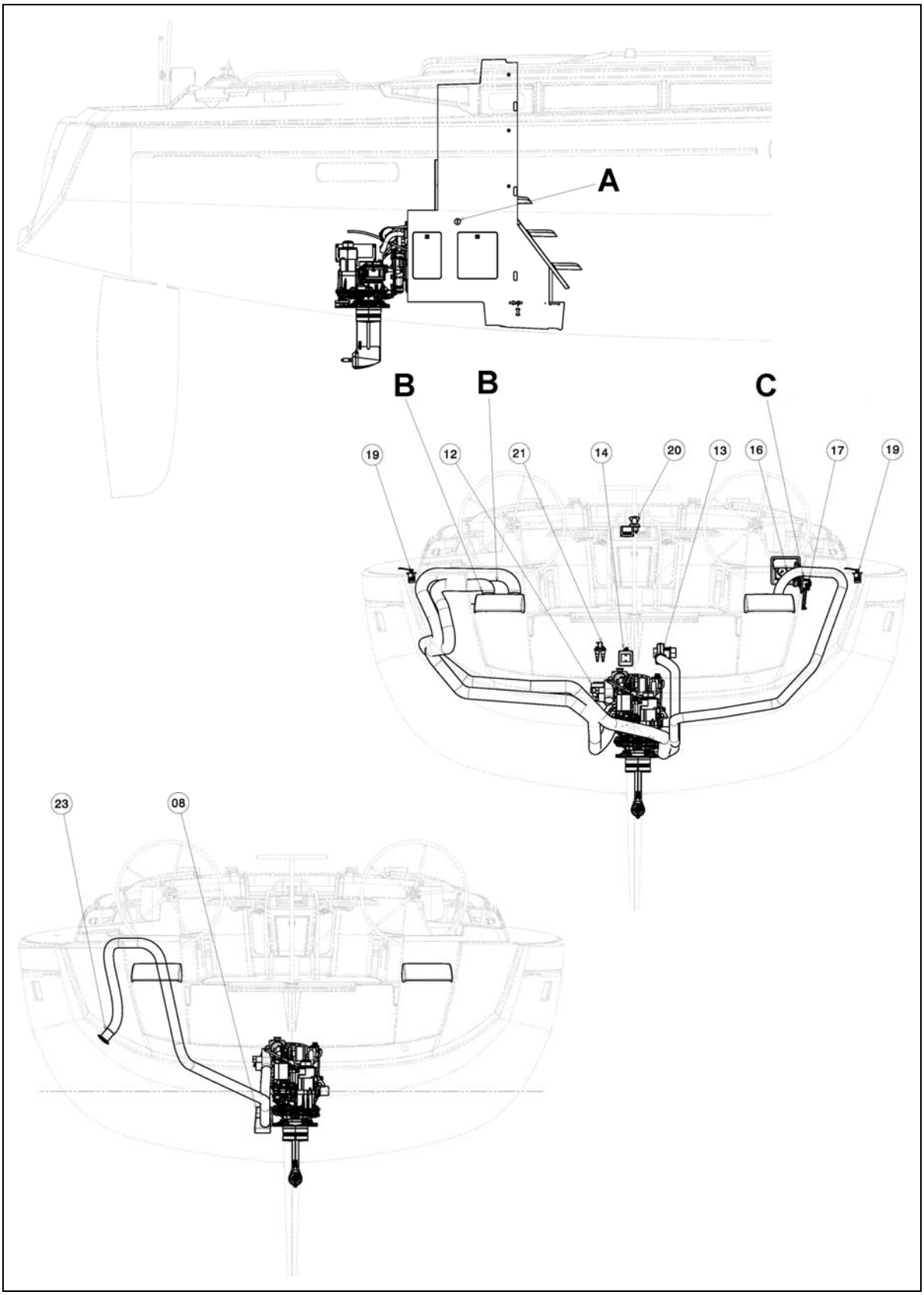
- Purge the impurities by unscrewing the screw located at the base of the decanting bowl(without removing it). Let the liquid run into a receptacle until the fuel runs clear. Do this several times a year.

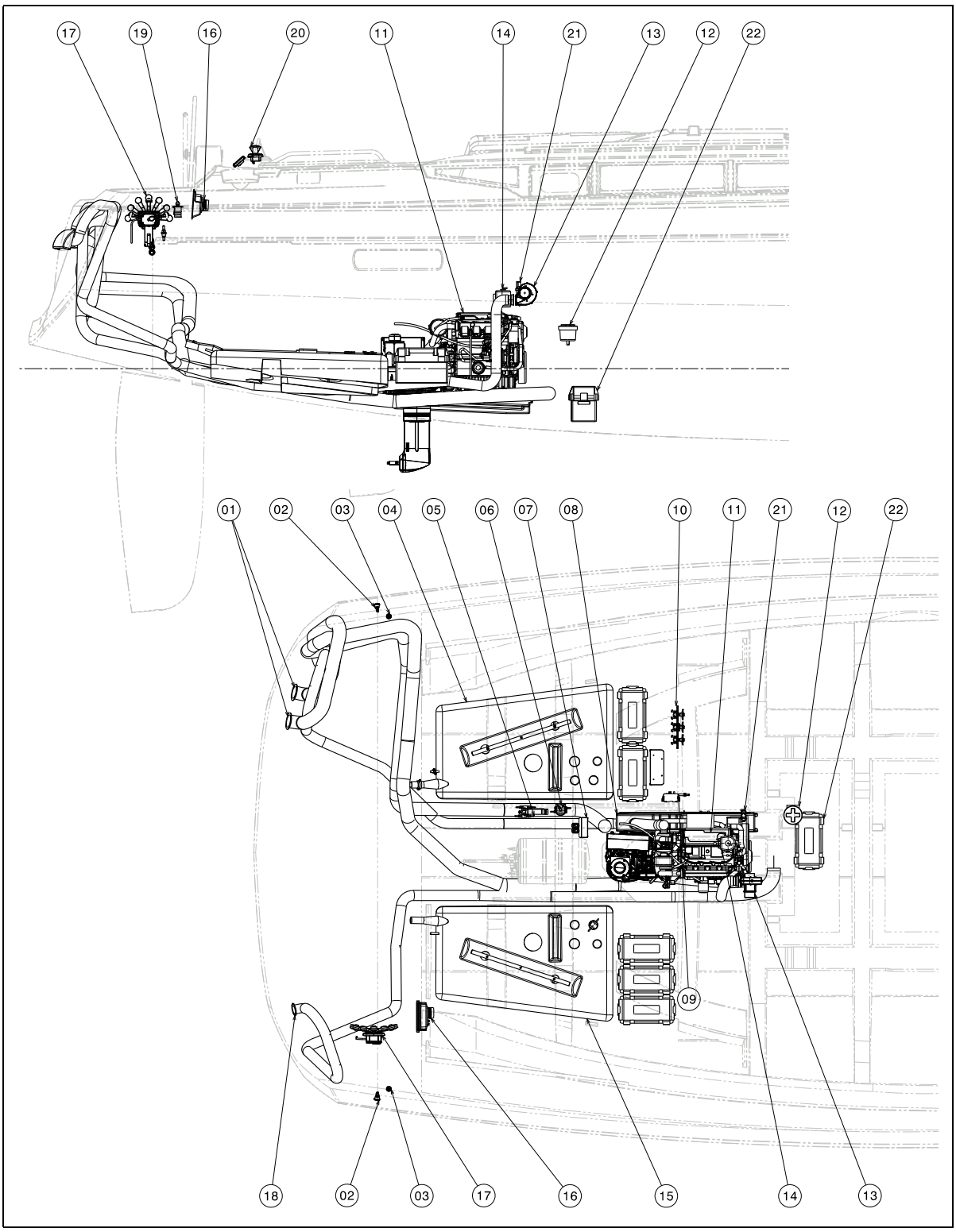
- Change the pre-filter at least once a year.

14.8 ENGINE INSTALLATION

Sail Drive engine installation

Diagram of the in-board engine layout

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Reference	Designation
A	Extinguisher access hole
B	Fresh air inlet
C	Hot air extraction

1	Fresh air inlet
2	Vent hole - Diesel tank
3	Non-return valve
4	Diesel tank 200 litres
5	Selection valve - Diesel (option)
6	Diesel filter
7	Box VMU
8	Water trap
9	Selector pull handle - Diesel
10	Battery switch panel
11	Motor
12	Sea water filter
13	Engine compartment ventilator
14	Expansion tank
15	Additional diesel tank - 200 litre
16	Engine instrument panel
17	Engine control
18	Hot air extraction
19	Filler cap
20	Joystick
21	Anti-siphon valve
22	Engine battery
23	Outlet

14.9 ENGINE CONTROL

- The engine manufacturer's notes provide detailed explanations on how to operate the engine and keep it running well.
- Read the manufacturer's notes on use and maintenance of the engine.

Sail Drive version

360 Docking version

14.10 ACCESS TO THE ENGINE

The access to the engine is via:

- Side hatches,
- the companionway.

All access hatches to the engine absolutely must be kept shut when at sea.

14.11 PROPELLER

- The propeller delivered with the boat represents the end result of trials carried out in collaboration with the engine manufacturer. Never change the propeller without first consulting a professional engineer.

- Propeller efficiency will drop if the propeller blades are damaged in any way or dirty: regularly clean the blades carefully.

- During a lift-out, check the propellor: it should turn freely on its axis and there should be no play.

- Single-engined boats are equipped with a right-hand pitched propeller.

- Respect speed limits.

- If this boat is equipped with a fixed blade propeller, when sailing at speeds over 8 knots it is essential to leave the reverse gear control in neutral.

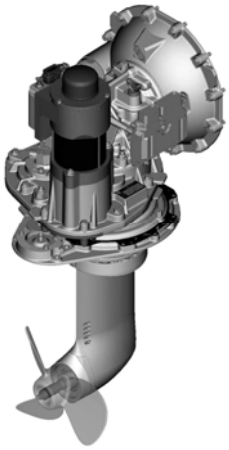
feathering blades propeller

Fixed propeller

14.12 360 DOCKING VERSION

General points

- The "360 Docking" transmission is an electronically controlled mechanical transmission.
- This type of transmission operates without a reverse gear, reversing is achieved by rotating the POD 180 degrees.
- The "360 Docking" system is supplied by the boat's services circuit: the battery bank must be sufficiently charged to enable the system to run well. An insufficiently charged battery bank (at the start of a new season, for example) risks damaging the onboard electrical system.
- The forward and reverse travel of the boat are controlled by the engine control lever. In passing from forward into reverse POD rotates 180°.
- The POD's orientation in all directions is carried out by the joystick.
- The joystick controls the propeller and the bow-thruster. By moving the joystick on the X and Y axes, the boat moves on these axes.
- Rotating the joystick makes the boat rotate around its centre.



ADVICE-RECOMMENDATION

It is imperative to change the transmission oil after the 25 first hours of use (please consult your dealer).

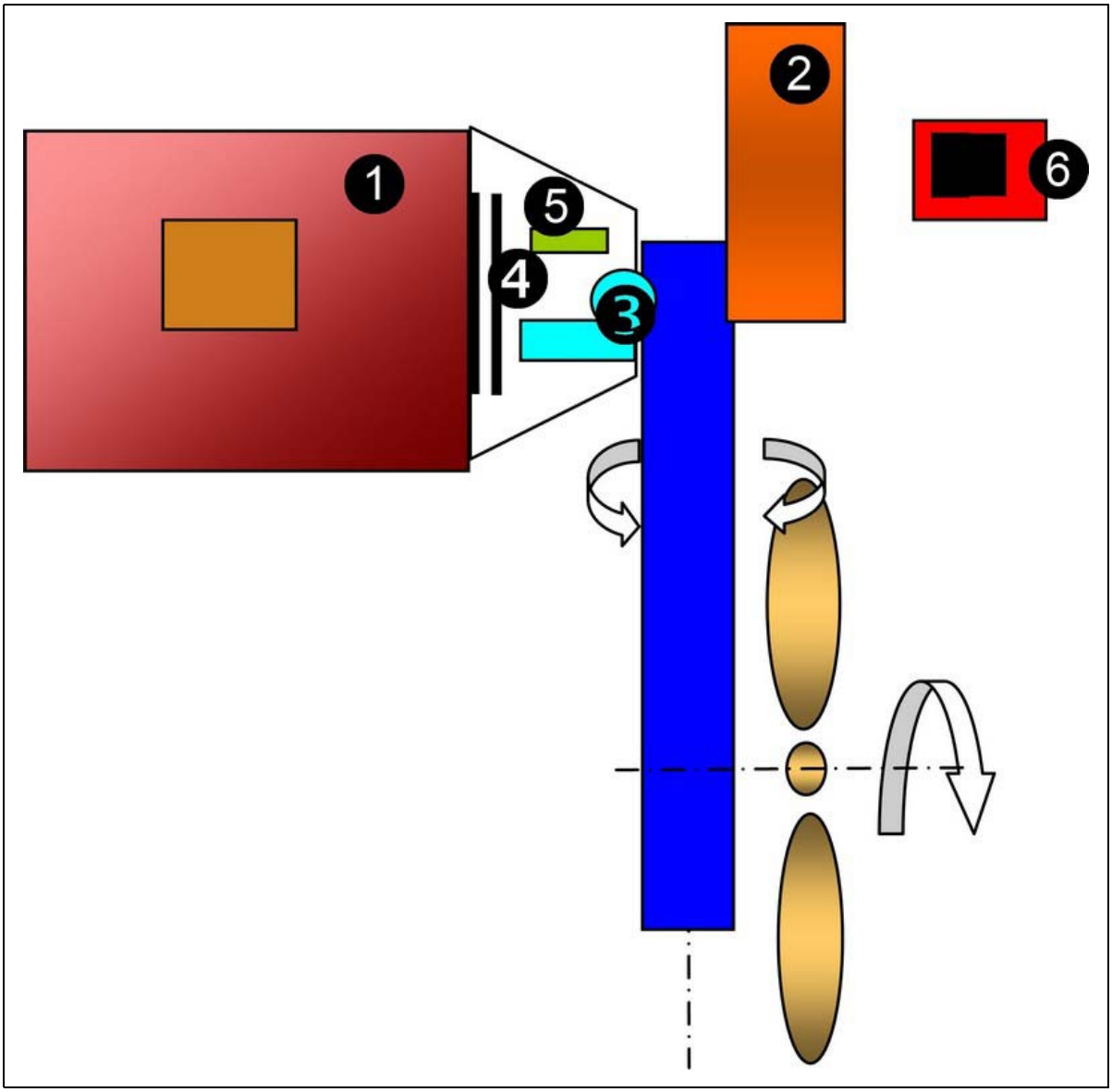
14.12.1 Start Quick Guide

Start the engine using the control lever (forward and reverse)		
1	Turn on all battery switches.	
2	Start the engine.	
3	(if necessary) Activate the bow thruster manually: Steady green light on the control panel.	
4	The lever is operational.	

Start the engine, using the joystick to move sideways (360 Docking)		
1	Turn on all battery switches.	
2	Turn on power to the navigation electronics at the electrical panel.	
3	If necessary according to auto pilot model, put into STAND-BY mode at the exterior helm station.	
4	Start the engine.	
5	Activate the bow thruster manually: Steady green light on the control panel.	
6	Activate the joystick of the 360 Docking by pressing the joystick button (Hold the button down for a long time and the 2 indicator lights will changed to steady green).	
7	The joystick is operational.	

Deactivate the joystick to take control of the engine with the lever		
1	Hold the joystick button down for a long time (1 red indicator light).	
2	The engine control lever is operational.	

14.12.2 Diagrammatic view



Reference	Designation
1	Heat engine
2	**POD rotary motor**: Make the POD under the waterline turn 270 to starboard
3	**Clutch actuator**: enables gear engagement and disengagement
4	**Clutch**: Mechanical linkage between the engine and the propeller shaft
5	**TCU**: (Transmission and Clutch Management) interface between the clutch activator and the VMU
6	**VMU** (Vessel Management Unit): the brains of the system, it gathers all the info from the system(joystick, control lever, TCU, POD..) and tells it what to do

Layout of components

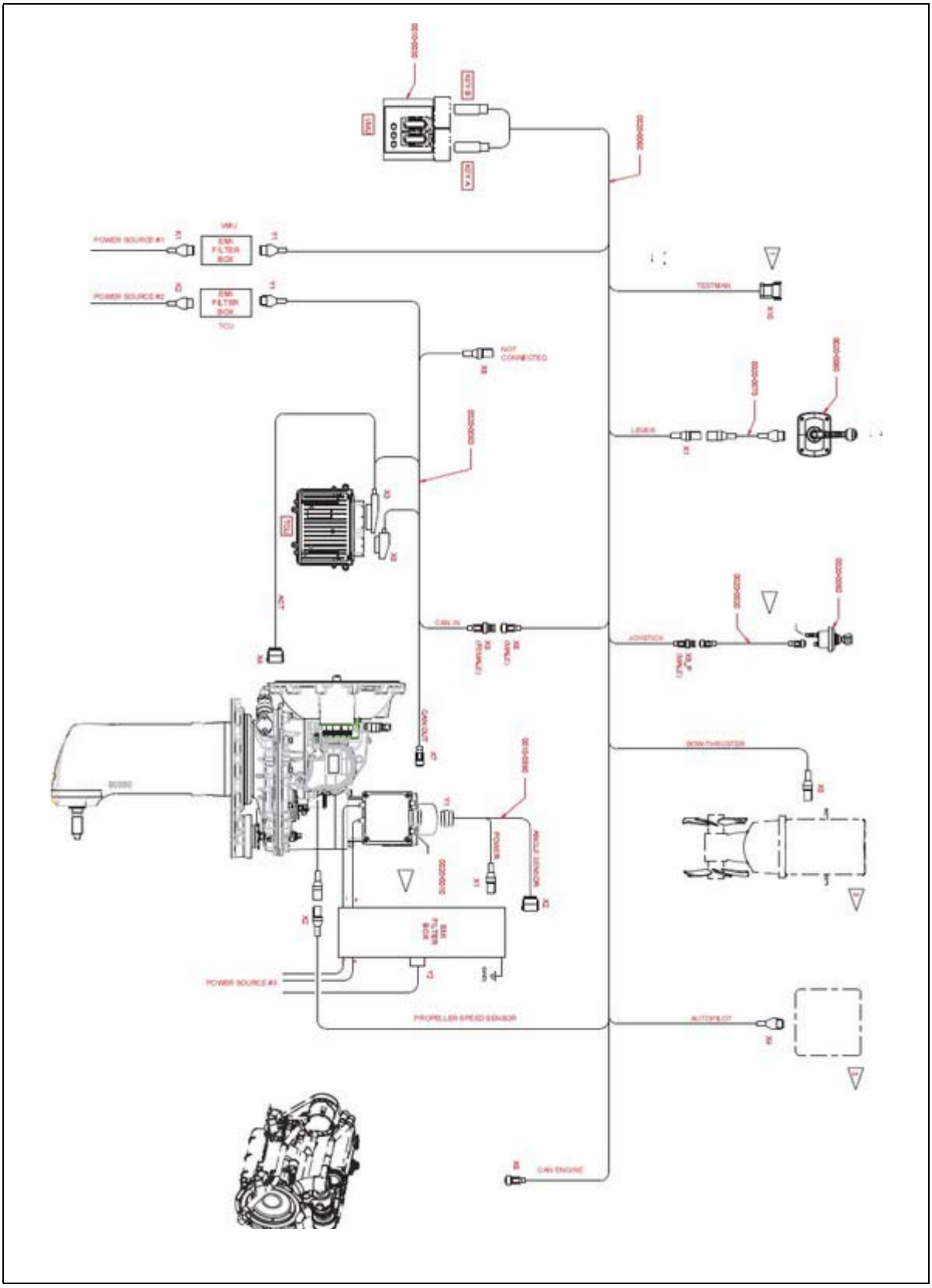
Rotating motor
(Ref 2)

Clutch actuator
(Ref 3)

TCU housing
(Transmission and Clutch Management)
(Ref 5)

VMU housing (Vessel Management Unit)
(Ref 6)

Layout



14.12.3 Operation

1. General points

- The "360 Docking" system is a manoeuvring aid to facilitate coming alongside and leaving the dock. This system must not in any circumstances be used as a means of navigation, even during approach manoeuvres in port.

- In some use modes of the system, especially sideways movement, the bow thruster has to work very hard. This leads to a significant power draw on the bow thruster battery bank and raises the temperature of the bow thruster motor.

- For its protection, the bow thruster is equipped with a temperature alarm which gives 5 short beeps 10 seconds before cutting off the power to the bow thruster. When the bow thruster cuts out, keep your hand on the joystick with the bow thruster out of operation. You need to wait until it has cooled sufficiently before restarting it manually by pressing both buttons on the bow thruster control simultaneously.

- To avoid this inconvenience and to protect the bow thruster we advise you not to use the bow thruster for more than 30 seconds at a time and to allow it to cool between each use.

Note: Once the bow thruster has cut out due to overheating you should allow around 4 hours for it to return to ambient temperature. If it does overheat you can start using it again without waiting 4 hours but the possible usage time will be reduced.

- After each manoeuvre using the bow thruster, be sure to maintain the charge of the bow thruster battery bank: either by connecting your boat to the mains socket on the dock, or by keeping the engine at a cruising speed of at least 1700 rpm (engaged or disengaged) for at least 30 minutes after the last manoeuvre.

2. Propeller

WARNING

- The propeller supplied with the boat is the only propeller validated by the engine manufacturer that allows optimal operation of the 360 Docking assembly. No other propeller should be fitted otherwise there will be serious malfunction of the base or of the engine itself.

3. Operation

- Turn on all battery switches. The bow thruster battery master switches will turn on automatically when the bow thruster control is picked up.
- Open the fuel supply valve(s) from the fuel tank(s).
- Open the engine water inlet valve.
- Switch on the navigation electronics (Electrical panel).
- According to the auto pilot model and screen model, it may be necessary to touch the "POWER" button on the screen at the helm station to activate the auto pilot in "MOTORISED HELM" mode or "POWER"
- Check that the engine control lever is in neutral.
- Switch on the engine.
- Start the engine.
- Activate the bow thruster manually using the control push button. A steady light illuminates on the bow thruster control panel: The system is operating.
- Press the joystick button and hold down for 2 seconds before activating the joystick (When the button is released, the 2 LEDs on the joystick will change to steady green).

4. Joystick operation

REMINDER: Before using the system, ensure that the bow thruster light is illuminated (see above) once the boat's engine is startedCheck that the bow thruster indicator light is showing steady green when the joystick is in operation.

DANGER

If you activate the joystick while the rudder blade is not in the same position as the boat's axis, it will automatically move itself to the correct position.

WARNING

The wheel will spin quickly and may catch your arm, clothes, hands as it does so: keep away from the wheel when the system is running.

- The joystick is on "STAND-BY":
This means that it is ready for use.
- The "Ready" LED is a steady red:
The engine is controlled by the engine control lever.
- Place a hand on the joystick and press the button for 1 second:
The green LEDs illuminate when the button is released.

- The 2 LEDs are illuminated as steady green lights (not flashing).
- The joystick is operational, the control lever is out of action.
- The wheel turns to lock the helm and rudder along the longitudinal axis of the boat.

Be careful to keep arms clear of wheel as it turns.

The pilot display shows:
- "MOTORISED HELM" version RAYMARINE.
- "POWER" version SIMRAD.

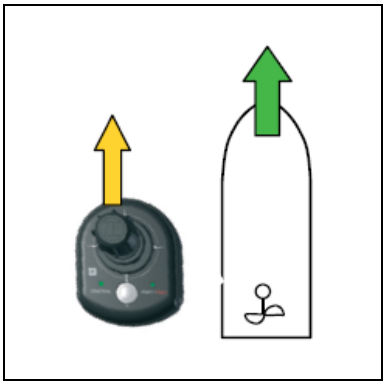
The indicator light on the bow thruster control panel is showing steady green.

- Whenever an instruction is given to the joystick (here in forward) the LED "Control" illuminates red.

ADVICE-RECOMMENDATION

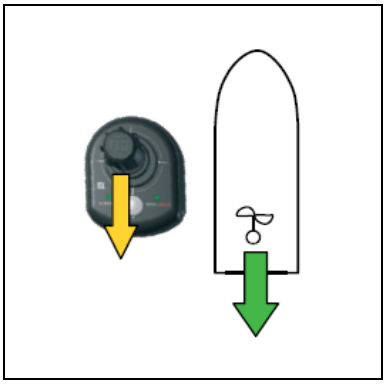
The joystick button must be released to operate the joystick.

Using the joystick



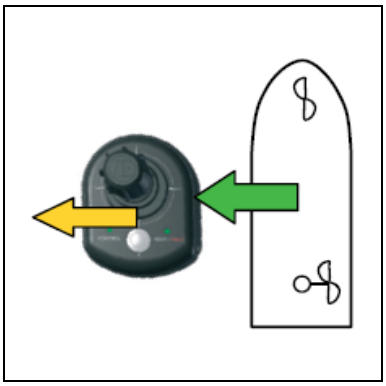
Push the joystick forwards:

- The boat moves forwards.
- The acceleration is proportional to the position of the joystick.



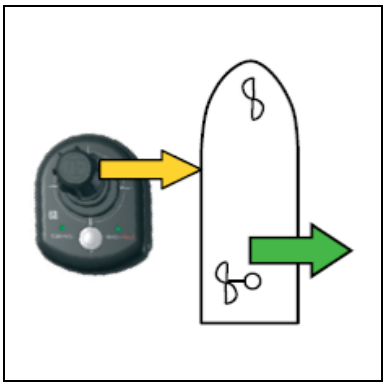
Push the joystick back:

- The boat moves backwards.
- The acceleration is proportional to the position of the joystick.



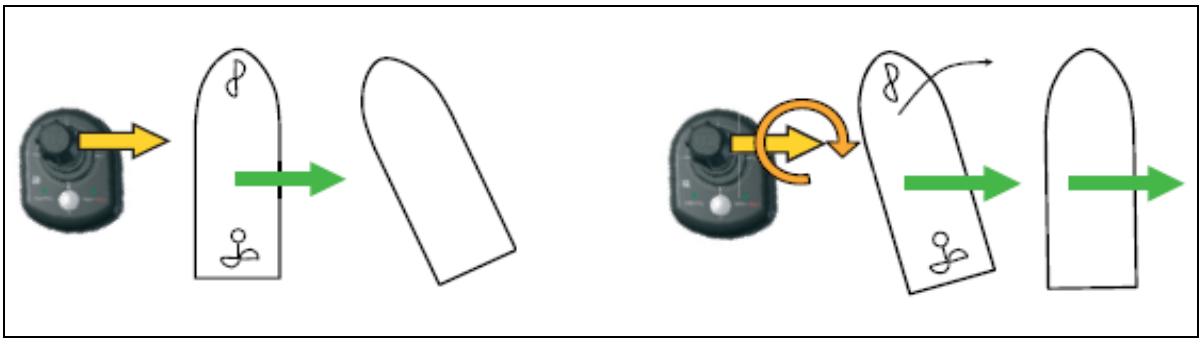
Push the joystick to port:

- The boat moves to port.
- Acceleration can be altered by turning the joystick (clockwise: boat accelerates, anti-clockwise: boat decelerates) and the bow thruster operates.



Push the joystick to starboard:

- The boat moves to starboard.
- Acceleration can be altered by turning the joystick (clockwise: boat accelerates, anti-clockwise: boat decelerates) and the bow thruster operates.



Several movements can be combined

Push the joystick to starboard + Turn the joystick clockwise:
- The boat moves to starboard but the bow swings more quickly than the stern.

Push the joystick to starboard + Turn the joystick anti-clockwise:
- The boat moves to starboard but the stern swings more quickly than the bow.

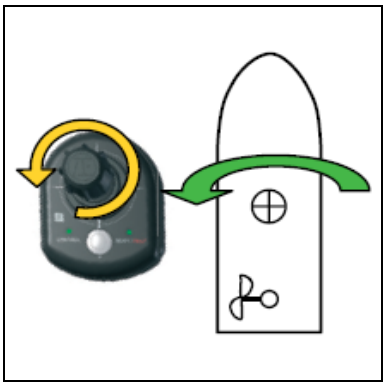
You can do the same to port:

Push the joystick to port + Turn the joystick anti-clockwise:
- The boat moves to port but the bow swings more quickly than the stern.

Push the joystick to port + Turn the joystick clockwise:
- The boat moves to port but the stern swings more quickly than the bow.

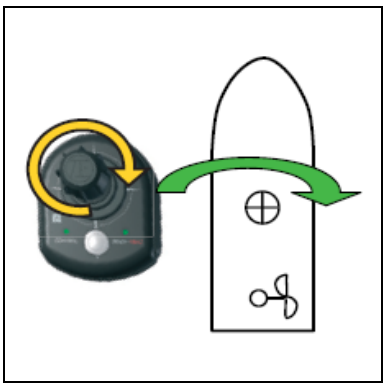
WARNING

- The effects of the "360 Docking" system's rotation will be noticeable to a greater or lesser extent depending on the boat's way.



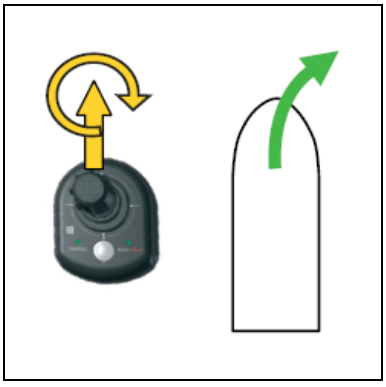
Turn the joystick anti-clockwise:

- The boat turns to port (virtually pivoting around its keel). Forward or reverse acceleration is proportional to the position of the joystick.



Turn the joystick clockwise:

- The boat turns to starboard (virtually pivoting around its keel). Forward or reverse acceleration is proportional to the position of the joystick.

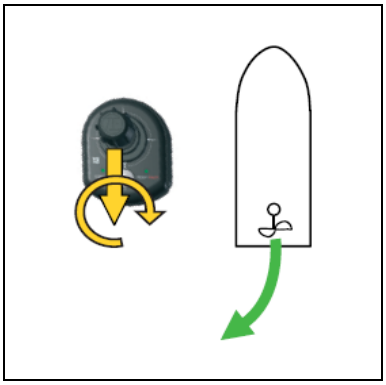


Push the joystick forwards + turn clockwise:

- The boat moves forward and turns to starboard.
- The acceleration is proportional to the position of the joystick.

Do the same manoeuvre turning anti-clockwise:

- The boat moves forwards and turns to port.
- The acceleration is proportional to the position of the joystick.



Push the joystick back + turn clockwise:

- The boat moves backwards and turns to port.
- The acceleration is proportional to the position of the joystick.

Do the same manoeuvre turning anti-clockwise:

- The boat moves backwards and turns to starboard.
- The acceleration is proportional to the position of the joystick.

Quit joystick mode

Press the button for 1 second.

- RAYMARINE version: The auto pilot comes out of "MOTORISED HELM" mode and goes into "STAND-BY" mode.
- SIMRAD version: The auto pilot comes out of "POWER" mode and goes into "STAND-BY" mode.

- The joystick goes into "STAND-BY".
- The "Ready" LED is a steady red.
- The system switches automatically to control lever function.

If the lever is not in the neutral position it must be put into neutral before using.

Explanatory note regarding the joystick in flashing red "Ready" LED mode:

When the red "Ready" LED is flashing, this indicates that a malfunction has been detected in the system. This malfunction may occur when the engine is started or the joystick is used.

In some cases, this fault may be resolved by completely restarting the system (Recommence starting procedure set out above).

If after restarting the joystick is still not working, use the engine control lever and bow thruster manually.

If control lever is not working, apply emergency procedure "SAFETY" set out in owner's manual ZF.

WARNING

To retake control with the engine control lever, it is essential to disengage the joystick by pressing the button behind the joystick.

5. MODE "WARM UP" (warming up the engine)

"WARM UP" mode is a mode in which the engine is disengaged and accelerated.

To engage the "WARM UP" position, press the button and keep it pressed whilst moving the throttle to the first forward notch, then release the button. "WARM UP" is only possible in forward gear.

To come out of "WARM UP" mode, return the lever to neutral.

6. Procedure for shutting down the engine:

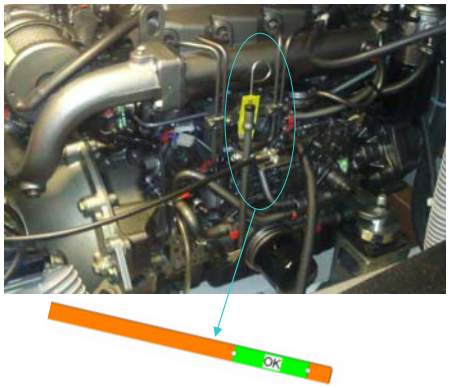
Put the control lever in neutral AFTER ENGAGING FORWARD GEAR FOR A FEW SECONDS, so the POD is properly located in the ahead position.

Wait 10 seconds before switching off the engine.

7. Maintenance

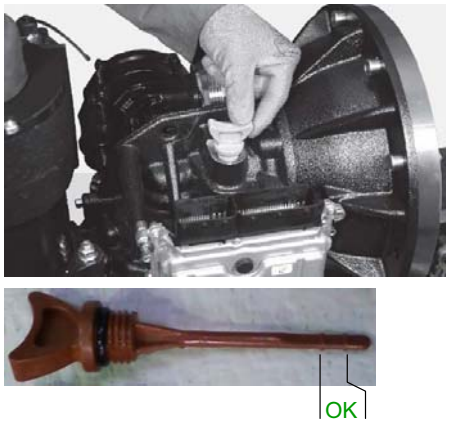
Check engine oil level:

- The level must be between the 2 marks on the gauge (see engine manual).



Check POD base oil level:

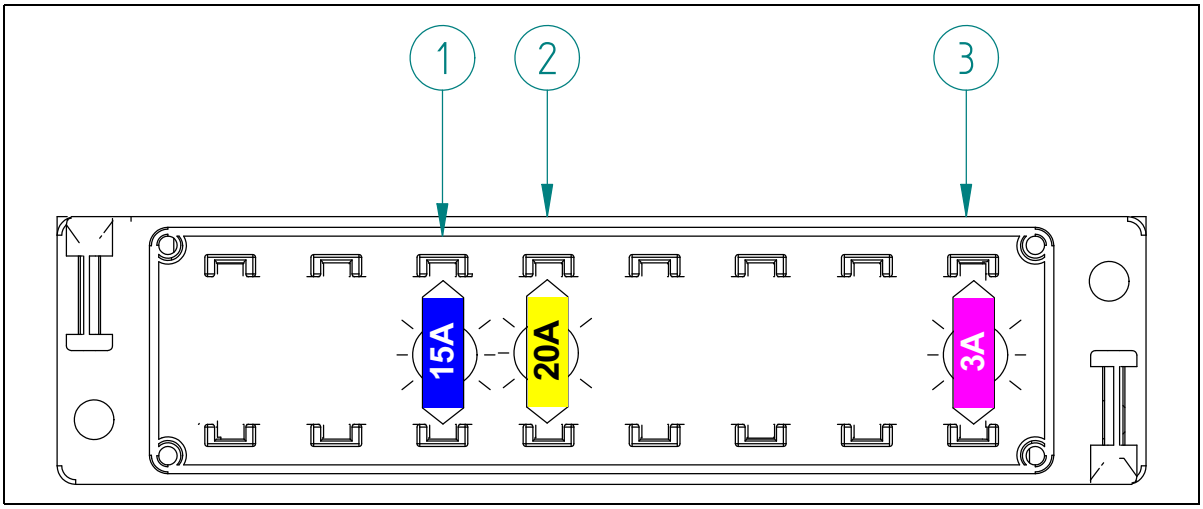
- The level must be taken by inserting the dipstick in the hole (without screwing it down).
- The level must be between the 2 marks on the gauge (see ZF manual).



- After every 250-hours of use, or once a year depending on the level of use, the boat must be lifted out to change the POD oil.
- During cranage: it is imperative to engage forward gear for several seconds to position the engine base of the boat correctly under the crane before stopping the boat's engine (see the chapter Handling).
- Every 7 years, replace the POD's packing.

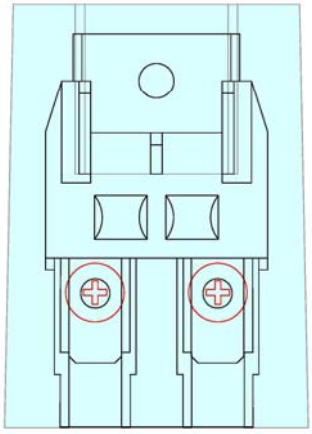
8. 360 Docking circuit protection

Lighted safety fuses



Reference	Designation
1	VMU power supply VMU
2	VMU power supply TCU
3	VMU power supply POD

Motor supply 40A



NOTE: If a safety fuse illuminates, this means that it is faulty. In this case the safety fuse must be replaced with a safety fuse of the same rating (see colour codes below).

15 STEERING SYSTEM

15.1 GENERAL POINTS

- The steering operates by steering cables.

- The steering system is an important safety feature. For this reason, the annual inspection of the whole system must be carried out by a professional engineer.

Cable steering

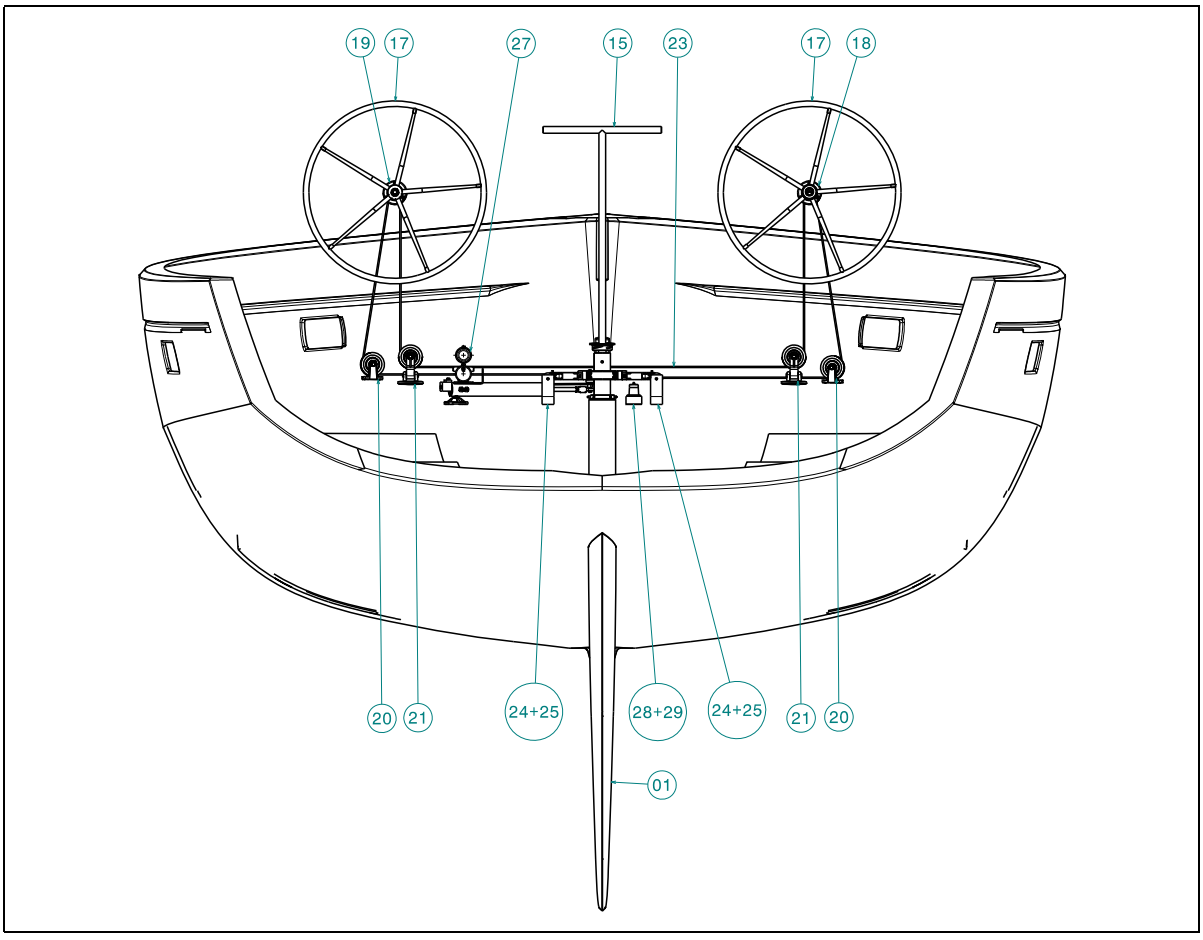
- Regularly check the tension of the steering cables and the tightness of the steering components. If need be, adjust the tension of the steering cables. Don't tighten the steering cables excessively. When properly adjusted the steering should work smoothly, with no play at all and no stiffness in the tiller or wheel (consult your dealer).

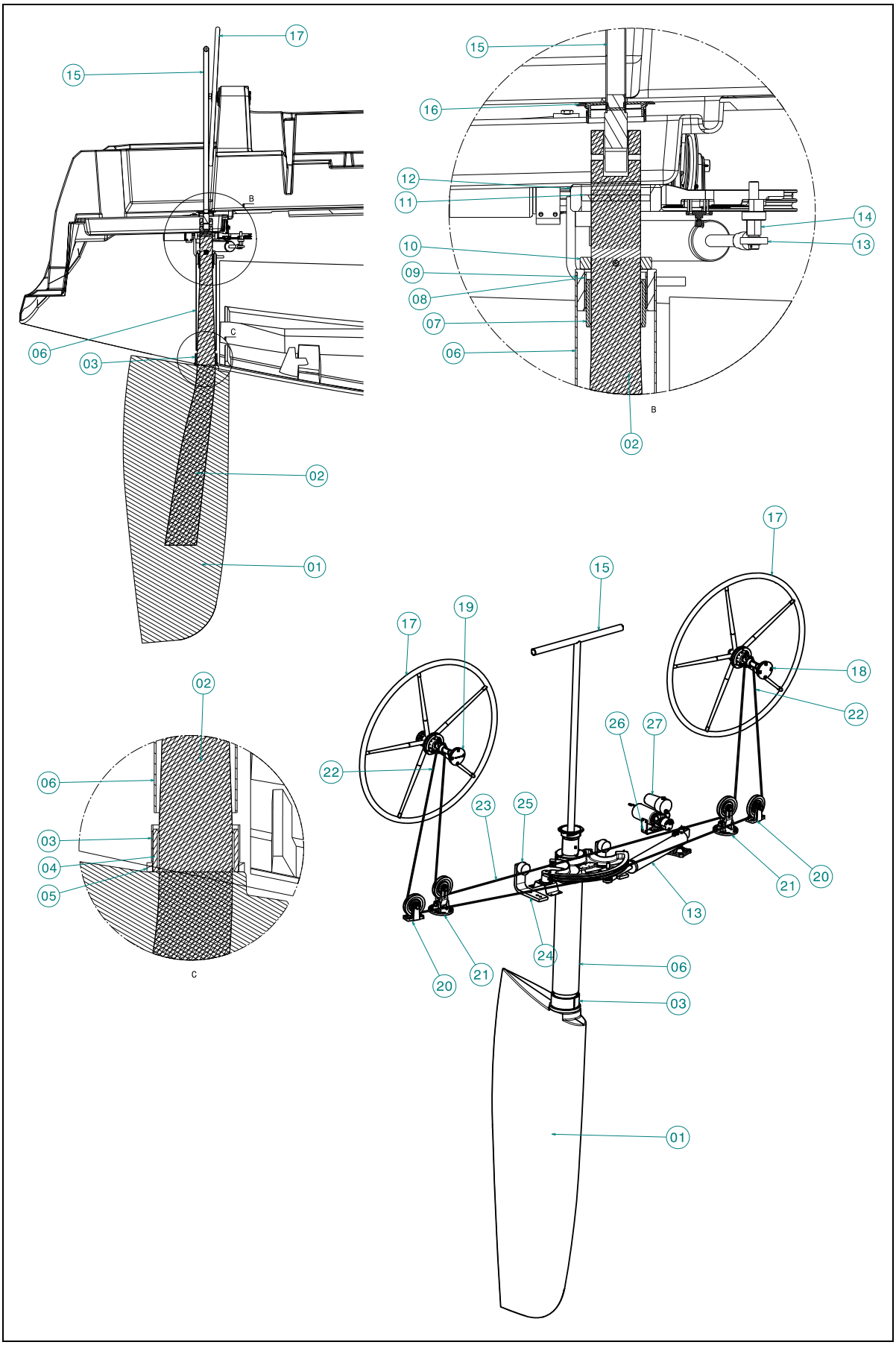
- Regularly grease the chains and pinions.

- Do not grease the steering cables or the pulleys.

- Maintain the nylon, ertalon or teflon bushes with only a suitable lubricant.

15.2 LAYOUT DIAGRAM

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Reference	Designation
1	Rudder
2	Rudder stock
3	Bronze bush
4	Flange
5	Balance bush
6	Rudder port tube
7	Flange
8	Bronze bush
9	Bearing rudder trunk
10	Flange
11	Pin - Sector
12	Steering sector
13	Autopilot ram
14	Axis cylinder
15	Emergency tiller
16	Emergency tiller hole
17	Steering wheel
18	Hub - Starboard
19	Hub - Port side
20	Sheave - fixed
21	Movable Sheaves
22	Chain
23	Line
24	Mount - Sector stopper
25	Sector stopper
26	Mount - Hydraulic pump
27	Hydraulic pump
28	Mount - Indicator - Pilot
29	Indicator - Pilot

15.3 BOW THRUSTER

General points

- The bow-thruster's motor is DC powered.
- The bow-thruster assists with steering the boat when manoeuvering at low speed (picking up a mooring buoy or berthing on a pontoon for instance).
- An operating relay is installed in the circuit.
- A fuse protects the electrical circuit.
- The bow-thruster motor has its own battery bank.

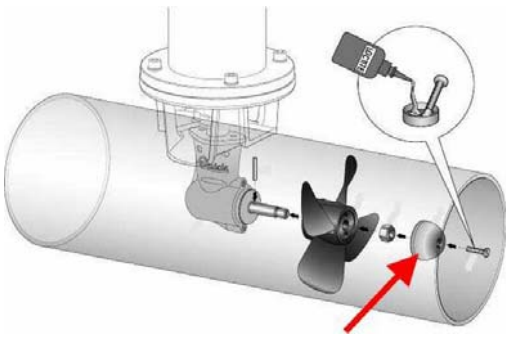
Operation

- Turn on the bow thruster battery switches.
- The engine's positive battery isolator automatically comes on and goes off when the engine is started/stopped. The thruster circuit negative is connected to the boat's general negative.
- The bow-thruster motor must operate with the boat's engine running.
- A control panel is located in the cockpit.
- To switch the bow-thruster motor on or off, press and hold in the red and green button simultaneously for several seconds.
- When the bow-thruster motor is not in use, switch off the electrical supply both:
    - to the control panel,
    - and to the switches of the motor's batteries.

Maintenance

- The bow-thruster's motor:
    - is lubricated for life and the oil does not require draining;
    - must not be dismantled, even partially.
- Regularly check the charge state of the motor's batteries: a loss of voltage will cause premature wearing of the motor's relay contacts and brushes.

Anode



During lift-out

- Check that the propellers turn properly, with neither play nor stiffness.
- Clean the blades carefully.
- Remove the propeller, clean the shaft support, smear the shaft with silicone-based grease before refitting the propeller.
- After cleaning and applying a primer, antifoul the housing and the propellers.

ADVICE-RECOMMENDATION

- Refer to the manufacturer's instructions for use and maintenance.
- Never run the motor when the propeller is out of the water.
- In the case of dual control, be careful to use just one control at a time.
- The motor must not run for longer than 3 minutes (risk of overheating).

Bow thruster

Control
Location: Cockpit

Layout of components: Forward cabin

1. Battery charger
2. Battery set (24 V circuit)
3. **Bow thruster**
4. 200A fuse

16 DECK FITTINGS

16.1 GENERAL POINTS

16.1.1 Polyester

- Regularly brush the deck using a gentle de-greasing agent then rinse the deck with fresh water.
- Use as few cleaning agents as possible.
- Don't use solvents or aggressive detergent agents.
- Don't discharge cleaning agents into the water: Consult the harbourmaster's office to find out the conditions of water use and the maintenance area for cleaning your vessel.
- Don't use a pressure washer.

16.1.2 Plexiglas (PMMA)

- Rinse plexiglas with fresh water.
- Use a polish paste for thin scratches.
- Consult your dealer concerning deep scratches.

ADVICE-RECOMMENDATION

Never use solvents, alcohol, acetone or detergents on the plexiglass.

16.1.3 stainless steel

Stainless steel is an alloy of iron and carbon (steel) with the addition of chromium. This chromium provokes the formation of a protective film which separates the steel from the atmosphere outside. This coating is usually invisible as it's so thin. So in spite of its name this steel is not stainless and requires a minimum of maintenance:

- The use of chrome tools is preferable whenever handling stainless steel;
- Re-nourish the protective film regularly with passivation paste.

16.1.4 Solid wood on exterior wooden panelling

- Wood exposed to harsh conditions, such as salty air and UV rays tends to become whiter and to lose its natural colour. This phenomenon has no effect on the intrinsic qualities of the wood, but can spoil its aesthetic appeal.

- To maintain the colour of the wood, regularly wash the woodwork in fresh water using a sponge (if necessary, use a mild soap).

- It is recommended to oil the external woodwork regularly using teak oil to protect them from the harsh conditions.

ADVICE-RECOMMENDATION

Never use detergents, acetone or other harsh products on the wood.

16.1.5 Exterior upholstery

- Bring the removable cushions inside (washed with soapy water then dried) when the vessel is unoccupied.

- Put canvas sheets/protective covering over the fixed upholstery.

Maintenance

To maintain the quality of the fabric, you are advised to spray it regularly with clarified water and to brush it with a soft brush (brush for clothes). It is advisable to clean thoroughly every 2 years.

Stain removal

Follow these steps for routine cleaning:

- Remove as much debris as possible using a soft brush;
- Spray the fabric with water;
- Prepare a cleaning solution using mild soap and water (Do not use detergent);
- Wash with a soft brush;
- Wait for soapy solution to act;
- Rinse thoroughly in fresh water;
- Dry in the open air.

ADVICE-RECOMMENDATION

Never:

- Use a heat source (hairdryer/clothes dryer);
- Use detergent, silicone, acetone, chlorine-based products or hot water;
- Use a high pressure cleaner.

16.2 EQUIPMENT

16.2.1 Gangway

Description

- The gangway allows you to embark/disembark easily when the boat is moored stern on to the pontoon.
- The gangway is hydraulic and telescopic (adjustable length)/pivoting.
- The gangway control is situated in the cockpit.
- The gangway is comprised of the external part and a hydraulic unit situated in the engine compartment.
- A control box situated on the hydraulic unit prevents accidental operation of the control panel. As a precaution it is advised to leave it on the "AUTO" setting.
- The hydraulic pump controlled by the electric motor is situated under the hydraulic unit reservoir. The motor has a speed regulator: it controls the speed at which the gangway moves.
- The gangway can also serve as a davit for lifting out the tender.

Operation

- The gangway runs on DC power.
- A breaker protects the electrical circuit.
- The gangway motor is designed to run continuously for a maximum of 4 minutes. After this the motor will cut out automatically (risk of overheating).

Location: Aft quarterdeck

Maintenance

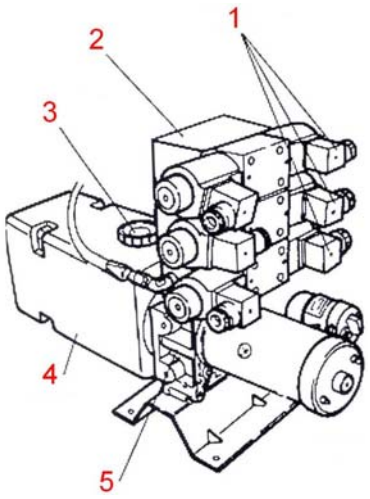
- Wash the gangway off regularly with clean water.
- Its location at the stern of the boat makes the gangway particularly prone to fouling due to the exhaust gases: clean the fouled areas regularly with a non-abrasive detergent.
- Check the oil level in the hydraulic unit once a year.
- Regualrly check the connections which could loosen with vibration.

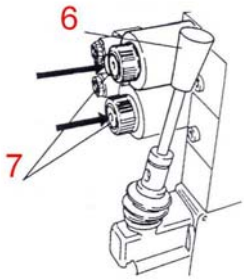
- Do not use the gangway when at sea.
- Never manoeuvre the gangway with anyone on it, below it or within its arc of movement.
- Do not use the gangway as a diving board.

ADVICE-RECOMMENDATION

- Refer to the manufacturer's instructions for use and maintenance.
- Maximum load permitted on gangway: 110 kg.
- Telescopic gangway: Ensure that the stanchions are correctly seated in their sockets before recovering the gangway.
- Manual operation prevents the position sensors from working: the electronics are no longer able to correct the alignment of the gangway if it is not retracting correctly into its housing. Use this procedure with caution.

Hydraulic unit





1. Electric valves
2. Electric valve support block
3. Oil filler cap
4. Oil reservoir
5. Engine support block
6. Manual emergency lever
7. Electric valve opening cap

Emergency procedure

In the event of power failure the system can be operated manually. The hydraulic unit is equipped with a manual emergency pump. The electric valve can also be opened or closed manually.

In this case, manoeuvring of the gangway will be slower but still possible:

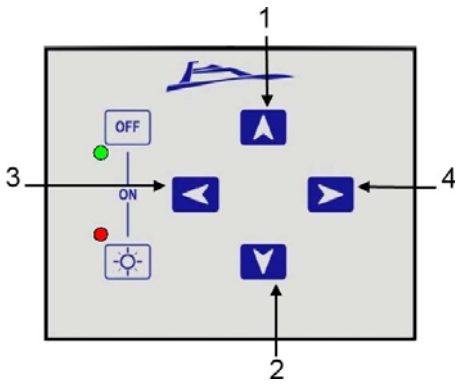
1. Activate the lever of the manual pump with one hand. To control one of the available hydraulic manoeuvres, open the electric valve of the desired function.

2. With the other hand, press on the electric valve opening cap using a pointed tool (e.g. screwdriver). When the lever is operated, oil will be directed towards the piston. The lever must be activated several times to expel air and pressurise the system.

Location: Starboard cockpit locker

Control

Location: Cockpit



1. Control for raising gangway
2. Control for lowering gangway
3. Control for retracting gangway
4. Control for extending telescopic gangway

The ON/OFF button turns the control on and off.

The green light is illuminated when the gangway is being operated.

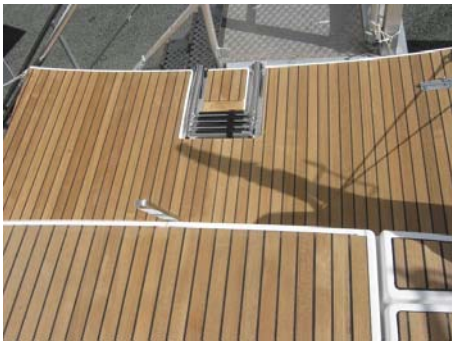
The red light is illuminated when the system is turned off.

16.2.2 Electric platform (Rear skirt)

General points

The platform runs on the DC power supply.

A circuit-breaker protects the circuit.



Control: Cockpit

- Do not climb onto the platform while in motion.

- Do not use the rear platform while sailing.
- Maximum platform load = 300 Kg. (Load must be uniformly distributed).
- During platform opening or closure:
  - Beware of the system movements to avoid injuries.
  - Never leave children unattended when they are using the system.

16.3 BERTHING, ANCHORING, TOWING

16.3.1 Anchor points

Responsibility

It is the responsibility of the owner/user of the boat to ensure that the berthing lines, towing cables, chains and mooring lines and the anchors are adequate for the intended use of the boat, i.e. that the lines or chains do not exceed 80 % of the breaking strength of the corresponding anchor point.

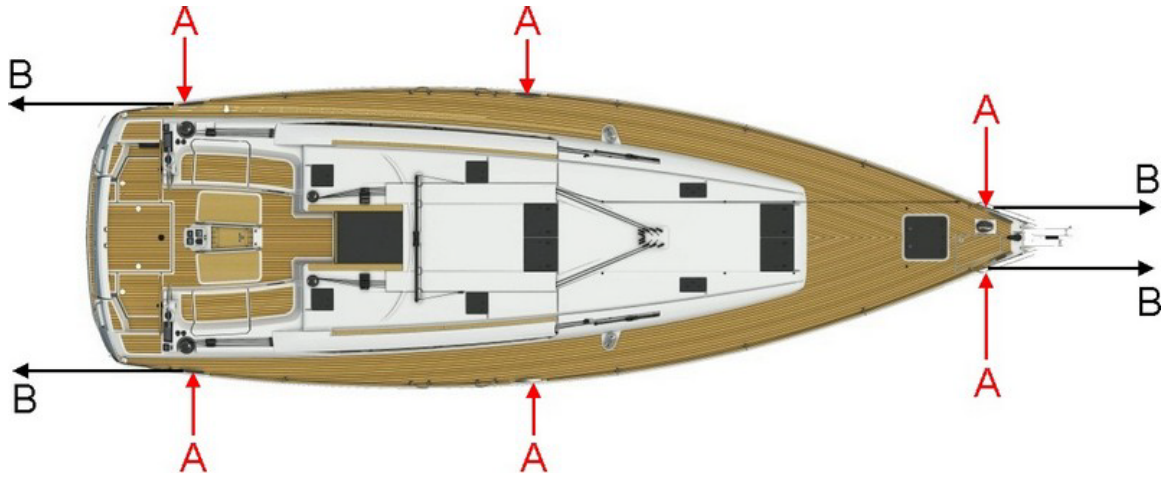
	MOORING LINES	MOORING	TOWING
Reference *(Diagram on next page)*	**A&B**	**B**	**B**
Anchor Point Breaking Strength	**39,6 kN**	**56,7 kN**	**56,7 kN**
Mooring Line/Chain Breaking Strength	**31,6 kN**	**45,4 kN**	**45,4 kN**

The anchoring points or those showing visible signs of deterioration must be replaced.

16.3.2 Towing

Responsibility: It is important that the owner thinks through the actions required when securing a towing cable onboard.

Location of attachment points



A. Mooring cleats (which correspond to the anchor points for the lifelines).

B. Towing:

- at the bow, to be towed
- at the stern, to tow

- Generally the breaking strength of lines/chains must not exceed 80% of the breaking strength of the anchor points.

- Always tow or be towed at low speed. Never exceed the maximum speed of a displacement hull during a tow.

- Be particularly vigilant when the end of a towing cable is being thrown or received (risk of the end becoming caught in the propeller).

- A towing cable must always be secured in such a way that it can be released under load.

- Do not try to stop the boat by using a boathook or your foot, hand or any other part of your body.

16.4 MAIN ELEMENTS OF THE CHAIN LOCKER

1. Bow fitting
2. 1 500 W Electric windlass
3. Chain locker
4. Smooth gypsy head
5. Chain rim - 12 mm diameter
6. Clinch
7. Handle
8. Remote control

Refer to the manufacturer's instructions for use and maintenance.

Windlass operations are dangerous:

- Always keep the anchor chain or rode free and unfouled;
- Carry out manoeuvres carefully and always wear shoes;
- Avoid wearing baggy clothing, long hair that's loose and jewellery that could get caught in the engine when it is running.

16.5 ELECTRIC WINDLASS

General points

- The windlass is DC powered.
- The windlass is designed for anchoring purposes: Any other use is dangerous and forbidden.
- An operation relay is fitted to the electrical circuit.
- A circuit-breaker protects the power supply to the windlass.
- The windlass operation is activated by an operational interlock relay which is powered by the engine's alternator: the windlass only works when the boat's engine is running.
- The controls to raise/lower the windlass are protected by a circuit-breaker positioned between the batteries and the windlass relay.
- Your boat may be equipped with a chain meter: this shows the length of chain let out.

Operation

- Before lowering the anchor, make sure that the chain or anchor rode is securely attached to the clinch.
- Activate the circuit-breaker then use the control to start the windlass.

- When at sea, secure the chain or anchor rode to secure points such as the chain stopper or the anchor rode to the belaying cleat (the windlass must not be used as the only method of securing the chain or rode).

- In the case of dual control, be careful to use just one control at a time.
- When raising the anchor, use the boat's engine to move towards the position of the anchor, until the boat is just over it: never use the windlass as a winch to move the boat forward.
- When out at sea, cut the electrical supply to the windlass.
- Cut the electrical supply when using the windlass manually.

Maintenance

- once a year, dismantle, carefully wash and grease all the moving parts of the windlass.
- Regularly grease the supply terminals of the electric motor of the windlass and of the relay control box.

Emergency anchoring procedure

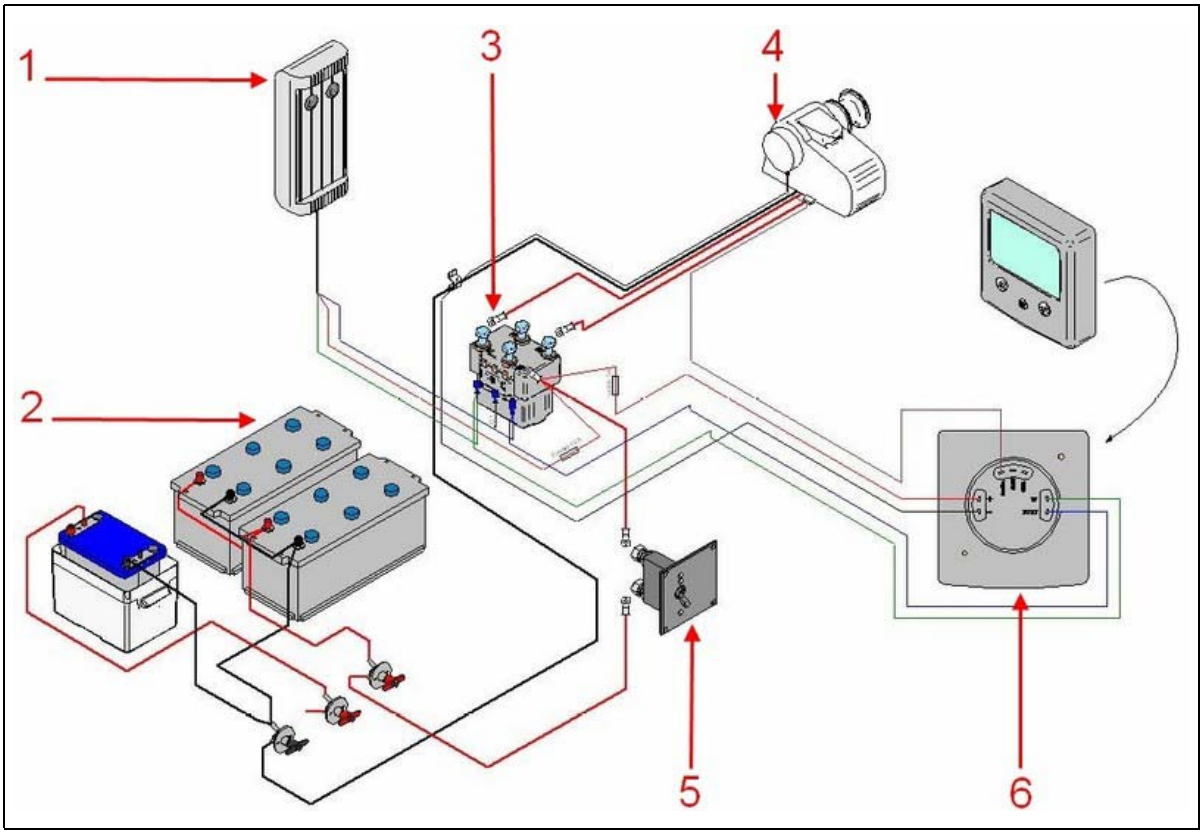
In the event of an electrical fault, it is possible to lower the anchor manually: Put the handle in the space provided for this to release the chain grab. Then let the chain run out using the handle to control its speed as it runs.

The handle serves only to release the chain grab in order to lower the anchor manually should the electric windlass break down. The handle cannot be used to raise the anchor manually.

ADVICE-RECOMMENDATION

- Before anchoring check the depth of water, the power of the current and the nature of the sea bed.
- Check the swinging area once the boat is at anchor.
- After each trip rinse the windlass and anchor chain or rode with fresh water.

Layout diagram - Chain meter



Reference	Designation
1	Remote control for the windlass
2	Service batteries
3	Operation relay
4	Windlass
5	Breaker
6	Chain meter

Location: Cockpit

17 HULL FITTINGS

17.1 UPHOLSTERY

LEATHER

Maintenance

Leather must be regularly cleaned and waxed.

To do so, clean the leather surface with a damp rag. This operation will remove dust.

Every 6 months to a year depending on use, apply a leather shampoo on the leather then use a hydrating cream which will also protect it.

Stain removal

If the leather surface gets stained, clean immediatley using an absorbent piece of paper. Do not scour. Clean inwards to prevent the stain from spreading.

- Buffer applying denatured alcohol with a piece of cotton (ink and food stains).
- Apply absorbent powder (talcum) on grease stains.

Wait a couple of hours, then brush the excess of powder.

- Other: Apply white vinegar or acetic acid diluted in water.

ADVICE-RECOMMENDATION

- Test the product on a small hidden area of the surface before cleaning.
- Avoid excessive moisture.
- Do not scrub on leather surfaces.
- If you notice leather colour on the rag, immediately stop cleaning.

ALCANTARA (microfibre)

Stain removal

The fabric must be free from dust before removing. To do so, use a vacuum cleaner to achieve optimal cleanness.

Rub with a duster soaked in a solution containing ammonia diluted by 10%. Dilute to the strength appropriate for this fabric. Try it out first on a hidden corner, the hem for instance, if the appearance of the fabric changes, dilute accordingly.

Scrub the Alcantara fabric in all directions, particularly on the stains.

Rinse off the cleaning solution using a damp cloth.

Dry in the open air.

After taking the Alcantara fabric off, it's a good idea to use a soft brush on it to bring back its supersoft quality.

For difficult stains, dry-cleaning is recommended.

SYNTHETIC FABRIC

Stain removal

If you can remove the fabric:

- Clean in the washing machine (use the program for delicate fabric) at 30°.
- Do not iron.
- Never use Javel water.
- Do not dry-clean.
- Do not use a clothes drier.

If you cannot remove the fabric:

- Clean with the vacuum cleaner,
- Clean with a foam for synthetic fabrics (see foam use instructions).

COATED FABRIC (PVC)

Maintenance

- The PVC must be regularly cleaned with soapy water to maintain its appearance and avoid accumulation of debris. Try to avoid using the following products: lacqeurs, aggressive cleaning products, detergents, xylene or acetone-based products which can cause permanent damage or make the fabric deteriorate. The use of such products is at the owner's risk.

Stain removal

- All stains must be quickly removed to avoid formation of permanent stains.
- Use mild water to remove the stains found on the fabric surface. Use only clean, white, damp pieces of cloth.
- Difficult stains can be removed using a mixture of water (25%) and white spirit.
- Rinse with clean water.
- Dry with a soft piece of cloth.

ACRYLIC (bimini fabric type)

Maintenance

To maintain the quality of the fabric, you are advised to spray it regularly with clarified water and to brush it with a soft brush (brush for clothes). It is advisable to clean thoroughly every 2 years.

Stain removal

Follow these steps for routine cleaning:

- Remove as much debris as possible using a soft brush;
- Spray the fabric with water;
- Prepare a cleaning solution using mild soap and water (Do not use detergent);
- Wash with a soft brush;
- Wait for soapy solution to act;
- Rinse thoroughly in fresh water;
- Dry in the open air.

17.2 INTERIOR WOODWORK

- Clean the interior varnish using a de-greasing shampoo on a damp cloth.
- Polish the interior varnishing with a chamois leather.
- If there are any stains or light scratches, it is possible to polish the varnish. Doing this can give the polished area more of a shine than the rest of the varnishing onboard.
- If there are deeper scratches, it is possible to sand the scratched area lightly and then re-varnish it (consult your dealer).

17.3 INTERIOR MAINTENANCE

- Take advantage of fine weather to air the interior upholstery.
- Remove the cushions during lengthy periods of absence.
- Make sure the bilges are clean and dry.
- For lengthy periods of absence, leave the icebox and fridge doors open to prevent mould from developing.
- Use a dehumidifier in the saloon and ensure cabin and storage doors are left open (cupboards,iceboxes...).

ADVICE-RECOMMENDATION

If the stains persist or if in doubt, consult a cleaning specialist.

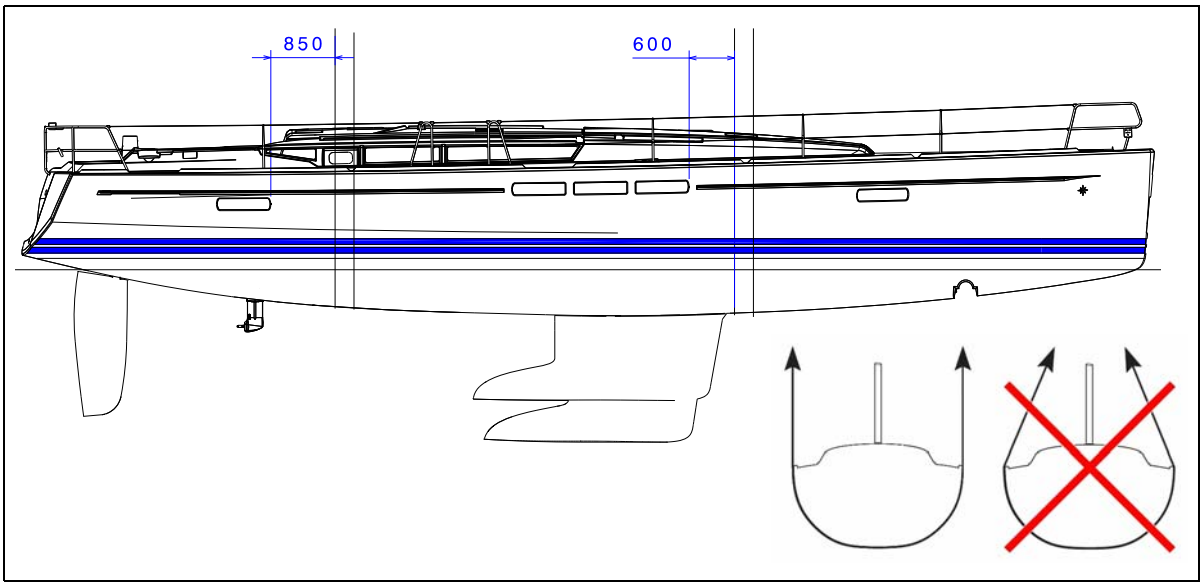
When winterising the boat, make sure the curtains are pulled to prevent the fabrics from being exposed to the sun's rays for a lengthy period (risk of fading).

NEVER:

- Use a heat source (hairdryer/clothes dryer);
- Use detergent, silicone, acetone, chlorine-based products or hot water;
- Use a high pressure cleaner.

18 HANDLING, TRANSPORT

18.1 LIFTING PLAN



Note: Measurements are expressed in mm.

The position of the lifting slings is shown in the pictogram below:

ADVICE-RECOMMENDATION

360 Docking version: it is imperative to engage forward gear for several seconds to position the engine base of the boat correctly under the crane before stopping the boat's engine.

18.2 LIFTING

- Before the first application of antifouling to the hull, you can lightly the hull using 400 µm or more wet and dry sandpaper.

- The lower hull of your boat should be covered with an anti-fouling paint which will prevent the adhesion of marine growth.

- The nature of the water where you keep your boat and the frequency of lifting it out determines the choice of antifouling.

- All bronze or steel surfaces, including the propellers, should be protected by a suitable antifoul paint.

- During the lift-out, check the anodes and the propeller (see corresponding chapters).

Before applying the antifoul NEVER:

- Do any sandblasting;
- Use any other solvents than ethylic alcohol;
- Use detergents under pressure;
- Use scrapers;
- Use grinding tools.

If cleaning off existing antifouling requires high pressure washing:

- Ensure the water temperature does not exceed 15 degrees;
- The water pressure must not exceed 150 bars;
- The distance between the hose nozzle and the hull must not be less than 10 centimetres.

The wet surface area of the boat is about: 52 m².

- Follow the manufacturer's recommendations scrupulously when applying antifouling.
- Never cover with antifouling:
  - the anodes;
  - the earthing plates (Generator / DC/AC converter);
  - the refrigeration unit condenser;
  - the sea water strainers;
  - the sensors of the electronic instruments.
- Avoid using copper or tin-based antifouling: these are banned in some countries.
- 360 Docking version: use an antifoul appropriate for aluminium components to paint the POD.

18.3 KEEL

General points

The ballast is the appendix located under a sailing yacht. It is an essential component of stability, essential for the operation of the boat.

The ballast is fixed to the bottom of the hull by bolts or pins and nuts with the corresponding tightening torque.

Maintenance and inspection

The ballast is a part of the hull under the waterline. It needs to be protected with anti-fouling paint.

Each time the hull is cleaned and each year at least, inspect the condition of the ballast visually together with its joint with the hull. Any fault, crack or burst must be reported to your dealer or a professional who will give you the right advice.

Yearly inspection

Make a visual inspection of all the ballast fixings under the floors. Make sure there are no cracks around the washers, bolts or nuts and that there is no significant corrosion. Any work carried out on these components must be done professionally.

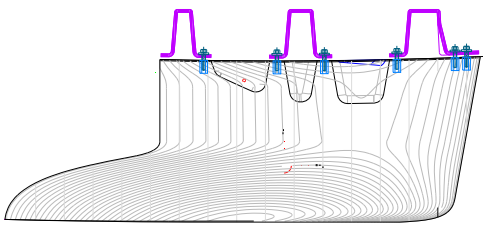
In the event of an incident

In the event of grounding or impact with an unidentified floating object, lift the floors and check that there is no leakage of seawater in the ballast area. Do the same in the area of the rudder mountings.

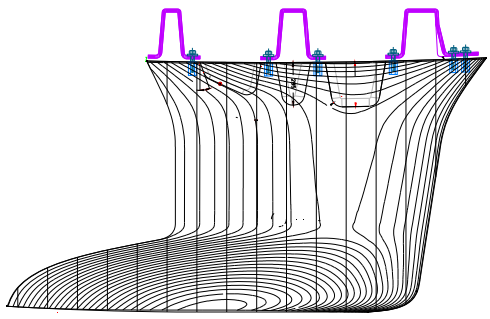
If there is a leak of seawater, even small, reduce speed and contact the emergency services to follow their advice.

Then take the boat out of the water immediately and have it professionally inspected.

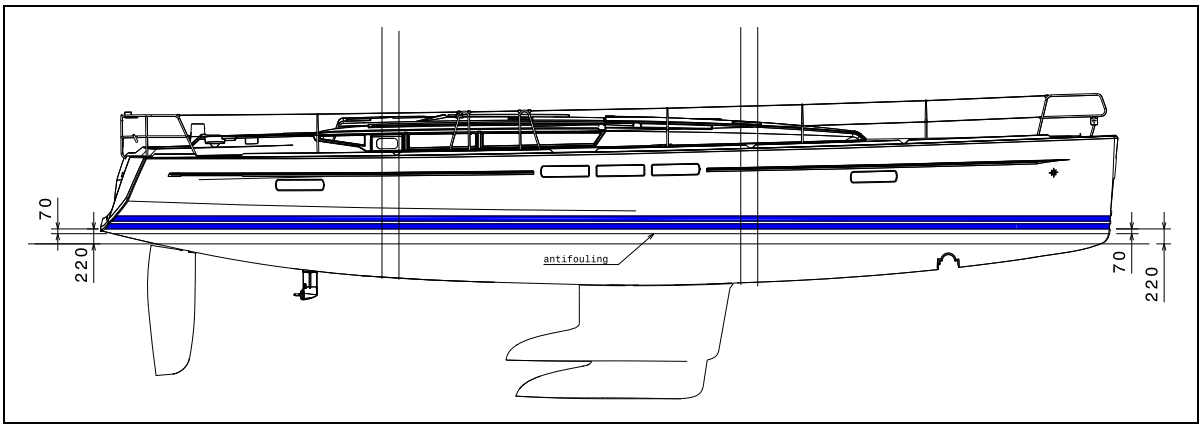
Shallow draught version
Ballast weight: 4 750 kg



Deep draught version
Ballast weight: 4 300 kg



18.4 UPPER LIMIT OF ANTIFOUL



Note: Measurements are expressed in mm.

18.5 LAUNCH/LIFT OUT

The initial commissioning of your boat will require a lot of skill and care. The proper working of all your boat's equipment is the result of the quality of the commissioning operations. This is why the initial launch must be overseen by your dealer.

Before launching

- Replace the log in its housing.
- Check the cleanliness of the sea water strainers.
- Check the anodes (see the chapter on Electricity).
- Check the propeller (see the chapter on Steering).
- Prepare enough fenders and lines.
- Check the engine's sea water intake valve and the fuel feed valve (see the chapter on Engine).

18.6 STEPPING/UNSTEPPING THE MAST

The stepping /unstepping operations require the skills of a professional rigger: please consult your dealer.

Do not remain onboard or beneath the boat during the handling operations.

- Before any handling, make sure that the gear lever is in the forward position (360 Docking version).
- When placing the slings make sure that the positioning marks are still visible.
- Submerge the sling fully under the engine mounting.

18.7 WINTER STORAGE

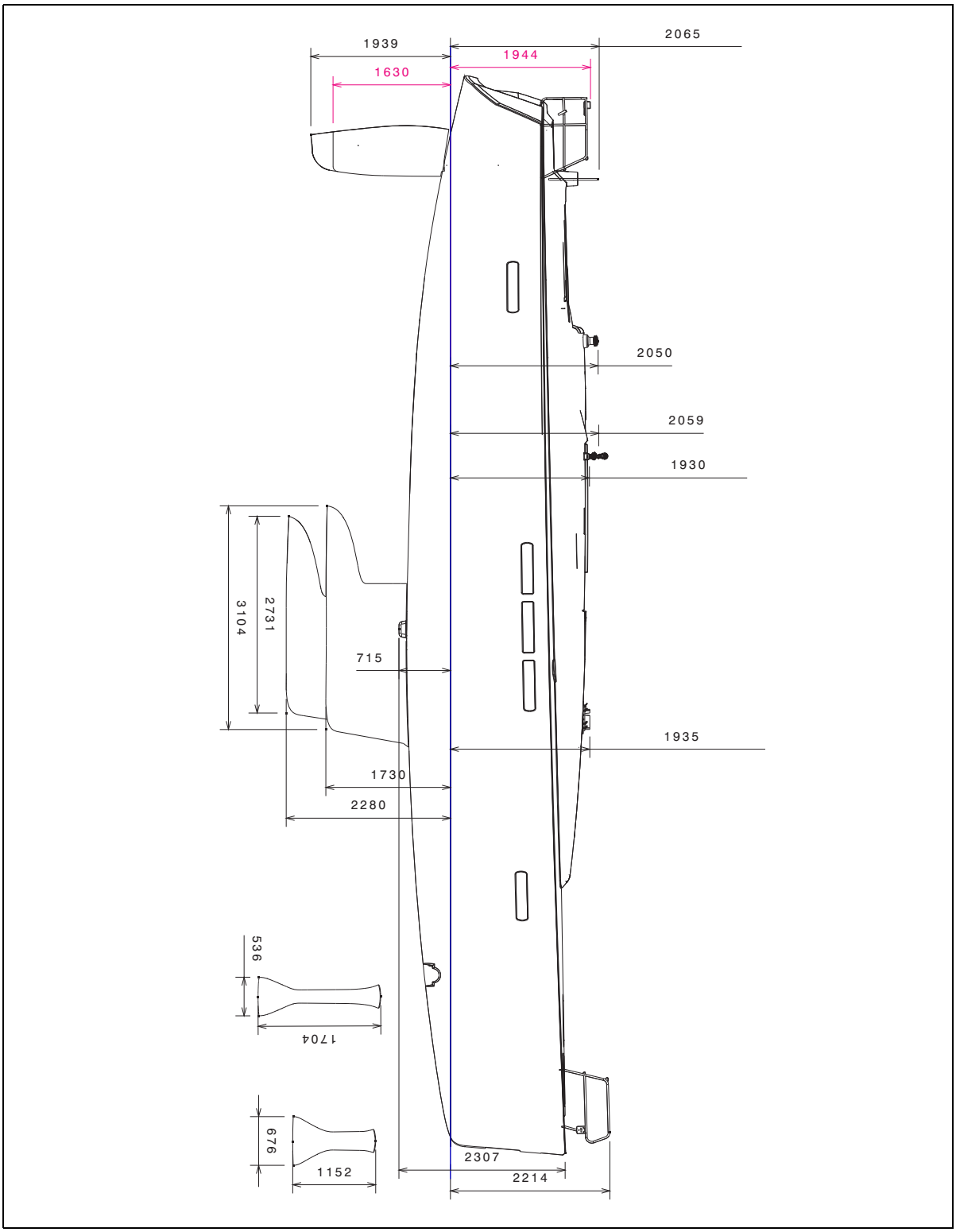
- Take advantage of laying up the boat to carry out a full inventory of the equipment.
- Check the expiry dates of the safety equipment.
- Have the liferaft overhauled.
- Empty the complete water system inside and outside and rinse it through with a mix of water and vinegar (do not use a chlorinated product).
- Empty and rinse the complete black water system.
- Dry out and clean the boat's bilges.
- Grease and close all the valves and through-hull fittings.
- Close all the boat's seacocks.
- Remove the depth sounder and log sensors.
- Put the covers back on the electronic screens.
- Use a dehumidifier in the saloon and ensure cabin and storage doors are left open.
- Air all of the cushions and upholstery for a good while before putting them back onboard and arranging them so as to limit the surface areas touching.
- Close the blackout curtains.
- Leave open the fridge/icebox doors to prevent mould and smells from developing.
- Protect the boat as well as possible with fenders.
- Make sure the boat is properly moored.
- Grease all mechanical and moving parts (bolts, hinges, locks...).
- Remove the sails and store them somewhere dry and well-ventilated.
- Remove the movable upholstery.
- Disconnect the batteries. Make sure you recharge them during the winter period if the boat is left inactive for too long.

ADVICE-RECOMMENDATION

- The winterisation of the engine requires the skills of a professional engineer: please consult your dealer.
- This is not an exhaustive list of recommendations: Your dealer will give you the advice you need and will carry out the technical maintenance of your boat.

18.8 TRANSPORT

Packing plan



Note: Measurements are expressed in mm.

19 ENVIRONMENT

Waste management:

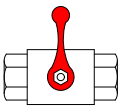
- Throw all packaging in the recycling containers provided for this.
- Once a piece of equipment has completely stopped working, find out about the relevant recycling regulations from your nearest recycling centre or from your dealer.
- Make sure you follow the relevant local laws when you scrap it.
- Some onboard equipment can have a toxic effect on the environment and on human health, caused by the specific substances they contain: Do not throw any equipment in household waste containers and absolutely not in the sea.
- Dead batteries are toxic to health and to the environment. So, batteries must not be put in with household waste, but must be recycled separately. Contact the harbour master or a specialist company about recycling them.

- Make sure you know the local enviromental regulations and follow the codes of best practice.
- Do not pump out the toilets or the contents of the black water tank near the coast or in areas where it's forbidden. Use the pump-out facilities available in ports or marinas to empty the contents of the black water tank before leaving port.
- Make sure you know the international regulations to prevent pollution in the marine environment (Convention MARPOL) and follow these as much as possible.

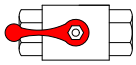
APPENDIXE: MEANING OF THE LABELS

Engine group	Plumbing group	Colour - WC group	General electrical equipment	Comfort group	Drainage group

Valve location label



Closed valve



Open valve

Meaning of the symbols

Motor	Shower	Electric pump
Port engine	Washbasin	Manual pump
Starboard engine	Icemaker	Toilet
Propeller shaft	Deck wash	Washer
Filter	Sea water tap	Dryer
Hull drainage	Waste water tank	Dishwasher
Sea water intake	Fresh water tank	Water maker
Shore power socket	Fuel tank	Fuel filter
Service	Holding tank	Inverter
Generator	Battery stock	Heating
Breaker	Thruster	Air conditioning

Each label is defined by:

a functional group (specific colour);

example: