Sun Odyssey 410

Owner's Manual

JEANNEAU

Contents

Introduction

You have just taken delivery of your new yacht and we would like to take the opportunity to thank you for the trust you have shown in us by buying one of our yachts.
The whole JEANNEAU team welcomes you on board.

A JEANNEAU is made to last and to bring you all the pleasure you should expect from a boat 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 designed to help you to enjoy your boat comfortably and safely. It includes the boat's specifications, the equipment provided or installed, information on the boat's systems and some tips on operation and maintenance. Some of the equipment described in this manual may be optional.

Your dealer will be able to advise you and assist you with how to operate and maintain your yacht.
The first time you use your boat a high level of skill and attention will be required. The proper functioning of all equipment will depend on the initial set-up being carried out correctly. For this reason the first launch must be carried out under your dealer's supervision.

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

The better you know your vessel, the better your experience will be when sailing it.

Notes

- Keep this manual somewhere safe and pass it on to the new owner should you sell your boat..
- You are advised to keep any user's guides supplied by the manufacturers of any equipment for your boat (accessories, etc.), together with your manual.

For each piece of equipment on your boat,please read the instruction manuals provided by the manufacturer.

- This manual is written to help you enjoy your boat in safety. It contains details of the boat and of all the equipment provided and installed on your boat, as well as instructions for its use. Please read it carefully and familiarise yourself with the 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 safely and with ease before taking the helm alone. Your dealer, national sailing or motorboat association, or yacht club will be very happy to tell you about 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 when your boat is classified for the conditions, sea and wind conditions corresponding to design categories A, B and C vary from strong gales for category A to severe conditions at the top of category C, subject to the risks of freak waves or gusts of wind. These are therefore dangerous conditions in which only an experienced, fit, and trained crew can satisfactorily sail the boat.

- This owner's manual is not intended as a detailed maintenance or repairs manual. In the event of a problem, please contact your dealer or their representative. In the event of a problem, please contact your dealer for maintenance of the boat.

- 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 such qualifications, or there may be other specific regulations in force. Local requirements regarding road transport may also apply.

- Always properly maintain your boat and bear in mind how it deteriorates over time or, where applicable, through heavy or inappropriate usage.

- Any boat, regardless of how robust it is, may be severely damaged if it is not used correctly. Inspect the boat regularly, particularly after any suspected incidents of damage. 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 should have all necessary safety equipment on board (lifejackets, harnesses, etc.) for the type of boats, the weather conditions, etc.. In some countries it is mandatory to have this safety equipment onboard. The crew should be familiar with the use of all safety equipment and emergency safety manoeuvres (man overboard, towing, etc.). Sailing schools and clubs regularly organise training sessions.

- All persons should wear appropriate personal flotation devices (life jackets/buoyancy aids) when they are on deck. Note that, in certain countries, it is mandatory to wear a personal flotation device at all times, in accordance with national legislation.

Notes on reading this manual

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

Danger

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

Warning

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

Caution

Either indicates a reminder of safety procedures or alerts you to dangerous manoeuvres or operations, which could result in injuries to those onboard, damage to the boat and its components or damage to the environment.

Advice / Recommendation

Indicates recommendations or advice for carrying out the correct manoeuvres for the planned course of action.

- 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.
  The specifications and information given are not contractual and may be modified without prior notice or updates.

CE

- This owner's manual is written in several languages. French is the authentic reference language.
- This owner's manual was written and formatted by SPBI S.A.. Any reproduction of this manual, direct or indirect, provisional or permanent, by whatever means, whether in whole or in part, as well as any modification by third parties for commercial reasons, is forbidden.

1

Technical specifications

1.1 Construction

- Model..... Sun Odyssey 410
- Architect ..... Marc LOMBARD / J-M PIATON
- Builder ..... SPBI S.A
- Principal means of propulsion ..... Sail
- Build material:
  - Deck ..... Laminated sandwich glass / GRP / Foam
  - Hull ..... Laminated sandwich glass / GRP / Sinter
- Application:
  - Deck ..... Injection
  - Hull ..... Wet laid fiber

1.2 General dimensions

- L.O.A (L_{max})*: 12,95m

(Including removable parts that can be dismantled (bow roller, pulpit, bowsprit), without affecting the structure of the boat)

- Hull length (L_h)* 11,99m

(Excluding: removable parts that can be dismantled without affecting the structure of the boat)

- Overall width (B_{max})* 3,99m

(Including: removable parts that can be dismantled without affecting the structure of the boat)

- Beam(B_h)* 3,99m

(Excluding: removable parts that can be dismantled without affecting the structure of the boat)

- Air draft – Empty vessel:
  - Classical mast 18,33m
  - Mast Performance 18,93m
- Draught – Boat fully laden:
  - Deep draught keel version..... 2,25m
  - Shallow draught keel version..... 1,70m
  - Centreboard version ..... 3,10 / 1,45m

1.3 Engine

- Nominal maximum propulsion power (at the propeller shaft line) .....1 x 35Kw
- Maximum recommended engine size.....1 x 264kg

1.4 Electricity

Circuit type:

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

1.5 Capacities

- Fuel capacity 195L
- Fresh water capacity:
  - Tank 1 (*) 330L
  - Tank 2 (*) 200L
- Blackwater capacity (Toilet):
  - Aft head 80L
  - Forward head 50L

It may not be possible to use these capacities fully depending on the trim and load of the boat. It is recommended that you keep a reserve of 20% in the fuel tanks.

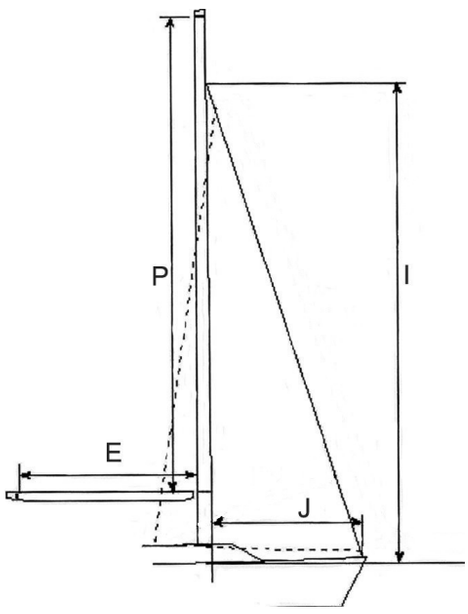
(*): Refer to the corresponding chapter to locate the position of the tank (each tank number corresponds to its position on board).

Total mass of liquid contents of fixed tanks when full 778kg

Notes

- The density of a liquid can vary according to its temperature and quality.
- The volume masses chosen are:
  - 0,86kg/L for diesel fuel,
  - 1kg/L for water.

1.6 Sails



I. Distance between deck and highest genoa halyard sheave:
- Classical mast 15,11m
- Roller furling mast 15,04m
- Mast Performance 15,53m

J. Distance between the fore of the mast and the bow fitting on the deck:
- Classical mast 4,65m
- Roller furling mast 4,65m
- Mast Performance 4,65m

P. Length of the mainsail luff:
- Classical mast 14,83m
- Roller furling mast 14,51m
- Mast Performance 15,40m

E. Length of the mainsail foot:
- Classical mast 5,00m
- Roller furling mast 5,10m
- Mast Performance 5,00m

- Mainsail:
  - Classical mast 42,8m²
  - Roller furling mast..... 35,1m²
  - Mast Performance (Full-batten)..... 43,3m²
- Genoa:
  - Classical mast 34,3m²
  - Mast Performance 34,2m²
- Self-tacking jib 25,3m²
- Code 0:
  - Classical mast 59,8m²
  - Mast Performance 69,4m²

- Planned sail area (*)..... 74,60m²

(*): designated by (AS) and calculated as the sum of the projected surfaces in profile of all sails that can be established when the vessel is close hauling, on the booms, horns, bowsprits or other spars, and the surface of fore triangle(s) to the foremost forestay, fixed permanently during operation of the vessel with the mast bearing the established sails, without overlap, assuming that the jackstays and leeches are straight lines.
The surface of the spars is not included in the projected calculation sail plan area, with the exception of the wing-masts.

2

Design categories and displacement

2.1 2-cabin layout

Design category	A	B	C	D
Maximum number of people onboard *(CL*)*	6	7	9	9
Maximum load on the manufacture's plate *(Mmbp *)*	940kg		970kg	

*** Definition**

CL: *Crew Limit*
Recommended maximum number of people on board when the boat is underway.

Mlc: *Mass of the boat in light craft condition*
includes the weight of the boat in the standard ready-to-navigate configuration, keel, standard equipment, engine(s) and sails (if the boat is a sailing boat).

Ml: *Maximum load*
Load that the boat is expected to support in addition to the light ship condition, including:

- the maximum number of crew weighing 75 kg each;
- the personal effects of the crew;
- provisions and cargo (where applicable), dry goods, consumable liquids;
- the content of all permanently installed tanks filled to 95% of the maximum capacity, including fuel, drinking water, black and grey water, lubrication and hydraulic oil, bait and/or fish tanks, plus ballast water at 100% of the tanks' capacity;
- the consumable liquids in the removable tanks (drinking water, fuel) filled to 95% of their maximum capacity;
- the tender or other craft expected to be transported onboard, and any outboard motor for said craft;
- life raft(s) in addition to the minimum number required for the essential safety equipment;
- non-edible foodstuffs and equipment normally transported onboard and not included in the list of standard manufacturer's equipment, for example interior movable equipment, tools, spare parts and the anchors.

Mldc: *Mass of the boat in Maximum load londition*
Includes light ship mass (Mlc) + maximum load (Ml).

Mmbp: *Maximum mass on builder's plate*
Maximum load on the manufacture's plate: the maximum load recommended by the manufacturer and shown on the manufacturer's plate EXCLUDES the fixed tanks when they are full (fuel, freshwater, greywater, black water).

Fixed keel version

	Deep draught version / Shallow draught version			
Design category	A	B	C	D
Maximum number of people onboard *(CL*)*	6	7	9	9
Light displacement *(Mlc *)*	7 834 / 8 247kg			
Recommended maximum load *(Ml *)*	2 940kg		3 010kg	
Displacement with maximum load *(Mldc *)*	10 774 / 11 187kg		10 844 / 11 257kg	

Centreboard version

Design category	A	B	C	D
Maximum number of people onboard *(CL*)*	6	7	9	9
Light displacement *(Mlc *)*	8 635kg			
Recommended maximum load *(Ml *)*	2 940kg		3 010kg	
Displacement with maximum load *(Mldc *)*	11 575kg		11 645kg	

2.2 3-cabin layout

Design category	A	B	C	D
Maximum number of people onboard *(CL*)*	8	10	10	10
Maximum load on the manufacture's plate *(Mmbp *)*	1 200kg	1 260kg		

Fixed keel version

	Deep draught version / Shallow draught version			
Design category	A	B	C	D
Light displacement *(Mlc *)*	7 894 / 8 320kg			
Recommended maximum load *(Ml *)*	3 130kg			
Displacement with maximum load *(Mldc *)*	11 024 / 11 450kg			

Centreboard version

Design category	A	B	C	D
Light displacement *(Mlc *)*	8 695kg			
Recommended maximum load *(Ml *)*	3 130kg			
Displacement with maximum load *(Mldc *)*	11 825kg			

- 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 weight evenly in order to maintain the optimum trim (more or less horizontal).
- Avoid placing heavy loads high up in the boat.

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

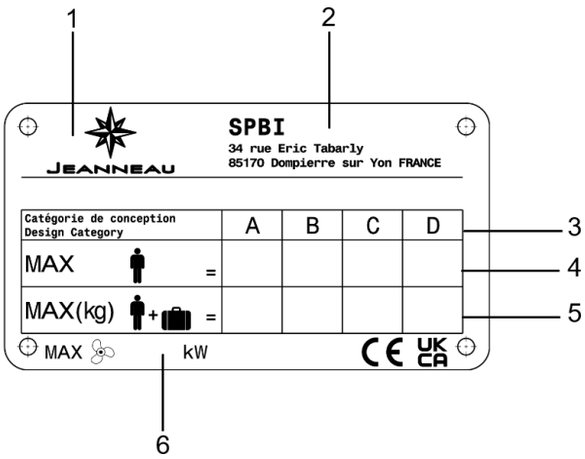
- The total weight of the children does not exceed 37,5kg;

and that

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

Some information is shown on the manufacturer's plate fixed to the boat. Explanations of the information given can be found in the relevant chapters of this manual.

Name plate



1. Brand name
2. Shipyard of construction
3. Design category
4. Maximum number of people onboard
5. Maximum load on the manufacture's plate, in kg *(Mmbp* *)
6. Maximum power of engine(s)

2.3 Design categories

Remark

The life rafts are not included as essential safety equipment for categories C and D.

The boat has been designed for personal, private use. It can also be used commercially, for charters with or without crew. However, the boat has not been designed as a "workboat" as defined by standard ISO 12215.

Category A

A boat which has been assigned design category A is deemed to have been designed for sailing with wind speeds below Beaufort force 10 and the associated significant wave heights.

Remark

These conditions may typically be encountered during long voyages, for example across oceans, but they can also occur close to the shore when the area is not protected from the wind and waves for several hundred nautical miles. Depending on atmospheric conditions, wind speeds may reach gusts of up to 32 m/s.

Category B

A boat which has been assigned design category B is deemed to have been designed for sailing with wind speeds of less than or equal to Beaufort force 8 and the associated significant wave heights of up to 4 m.

Remark

These conditions may typically be encountered when sailing a sufficient distance off shore but may also occur close to shore when shelter may not be immediately available. These conditions may also be encountered on lakes of sufficient size to generate the aforementioned wave heights. Depending on atmospheric conditions, wind speeds may reach gusts of up to 27 m/s.

Category C

A boat which has been assigned the design category C is considered to have been designed for sailing in strong winds typically less than or equal to Beaufort 6 and the associated waives of a significant height of up to 2 m..

Remark

These conditions may typically be encountered in exposed inland waters, estuaries and coastal zones in moderate weather. Depending on atmospheric conditions, wind speeds may reach gusts of up to 27 m/s.

Category D

A boat which has been assigned the design category D is considered to have been designed for sailing in strong winds typically less than or equal to Beaufort force 4 and the associated significant wave heights of up to 0,3 m and occasional waves of up to 0,5 m.

Remark

These conditions may be encountered in sheltered inland waters and coastal areas in fine weather. Depending on atmospheric conditions, wind speeds may reach gusts of up to 12 m/s.

3

Stability and buoyancy

3.1 Stability information

- Reduce speed in wavy conditions.
- 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.
- If the wind exceeds 20 knots, it is recommended that you stow all removable protection sheets (lazy bag, Bimini, awnings...).

The skipper is responsible for ensuring that the normal operating mode is maintained. This means that the boat's speed is appropriate for the sea state and it is used with a sense of "good seamanship".

- Fully laden displacement was used to evaluate the stability and buoyancy of the boat. The value of this displacement can be found in the "Technical specifications" paragraph 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 performance;
- It is important to keep water in the bilges to a minimum;
- Adding weight high up on the boat will affect stability;
- 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.

The following openings are marked "MUST BE CLOSED WHEN UNDER WAY"; ensure that this warning is observed. "Under way" means the boat is not anchored or moored to the ground, nor is it aground.

Aft cabins

Forward cabin

Saloon

Forward head

Aft head

- The boat may capsize if carrying too much sail.
- It is important to take additional precautions in the event of strong winds, rough seas or breaking waves.

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:

3.1.1 Fixed keel version

2-cabin layout

	Minimum operating condition	Loaded arrival condition
Angle of vanishing stability (in degrees)	123°	116°
STIX	40	36

3-cabin layout

	Minimum operating condition	Loaded arrival condition
Angle of vanishing stability (in degrees)	122°	114°
STIX	39	36

3.1.2 Centreboard version

	Minimum operating condition	Loaded arrival condition
Angle of vanishing stability (in degrees)	119°	112°
STIX	39	36

This boat is likely to capsize or be overrun if it is over-canvassed. In these circumstances, it may then sink. The sail plan should be adjusted according to wind and sea conditions and it is important to be particularly vigilant in case of gusty winds or squalls.

3.2 Access to the boat

- It is essential 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 essential that the companionway 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.

Access to the cockpit

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

Gangway access

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

Access to the engine compartment

Access to companionway

4

Manoeuvrability

4.1 Visibility from the steering station

- 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.
- When the helm area has multiple steering device, precautions must be taken when moving from one steering device to another.

- The helmsman's view from the steering station may be obstructed by one or more of the following variable conditions:
  1. Load and load distribution;
  2. Speed;
  3. Sea conditions;
  4. Reduced visibility caused by rain, darkness or fog;
  5. Reduced visibility caused by changing or hauling up sails;
  6. Interior lighting;
  7. Position of the covers or curtains;
  8. Persons or mobile equipment located in the helmsman's field of view.
- The international rules and regulations for avoiding collisions at sea (Col Reg / RIPAM) require a full and constant lookout as well as observance of the rules of right-of-way. Observance of these rules is essential.

4.1.1 Navigation lights

The navigation lights run on DC power.

Control

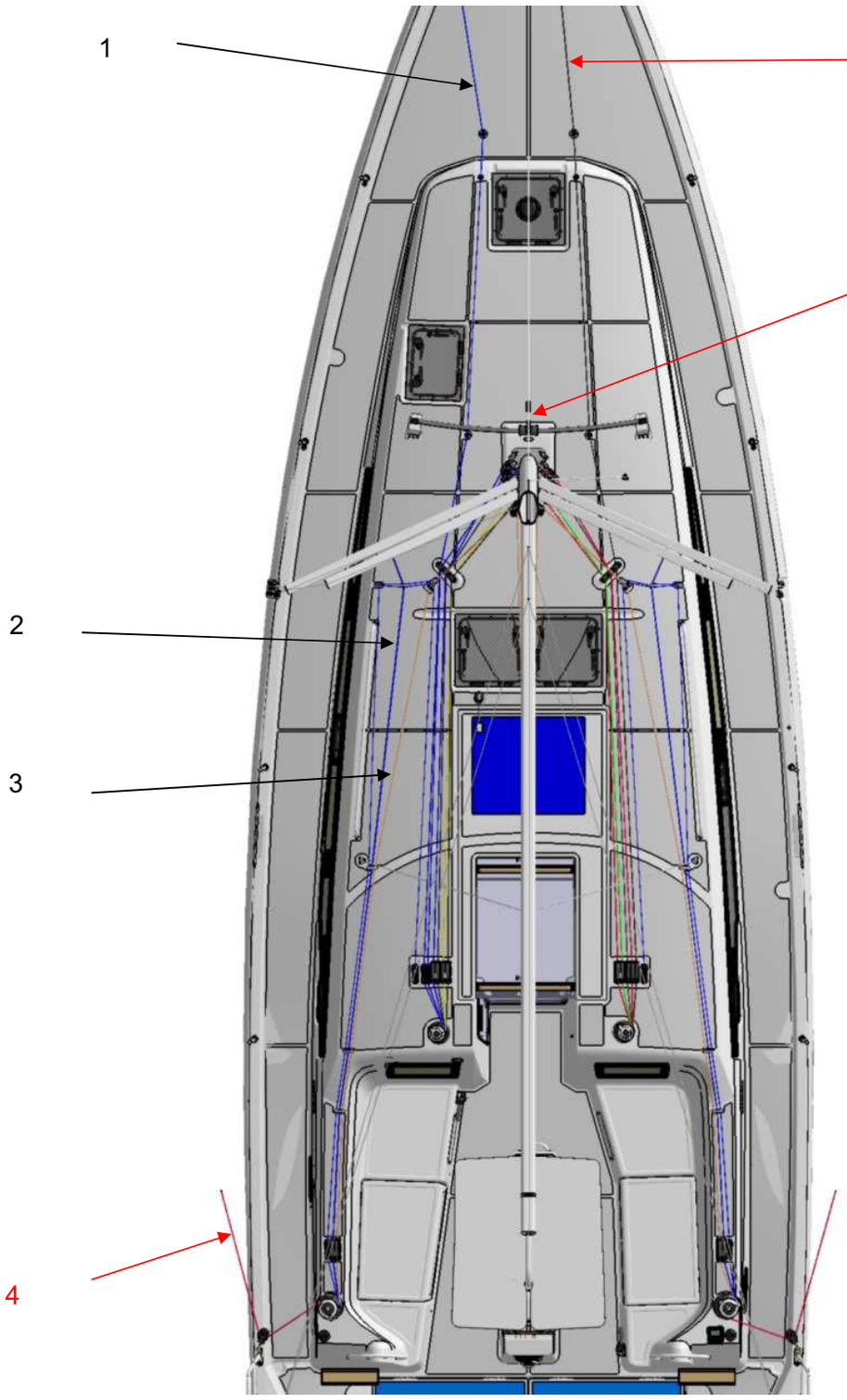
Location: Electrical panel

Navigation lights

5

Rigging and sails

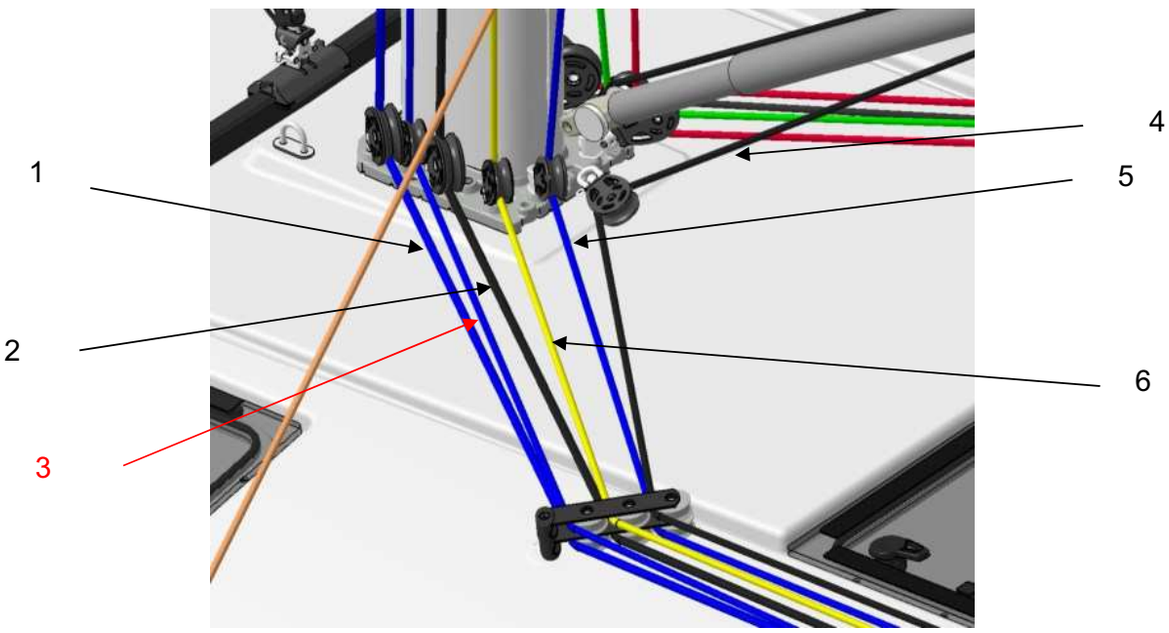
5.1 Rigging diagram

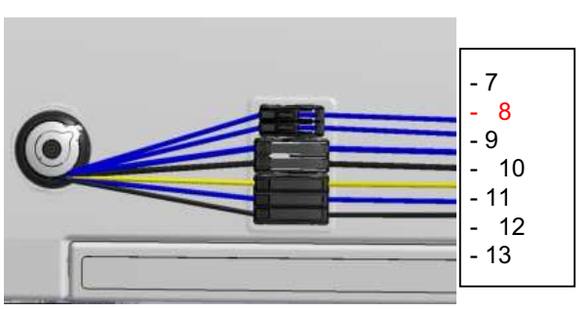


1. Genoa furler line
2. Genoa sheet
3. Mainsail sheet
4. Spinnaker sheet
5. Asymmetric spinnaker tack
6. Self-tacking jib sheet

5.1.1 Classical mast

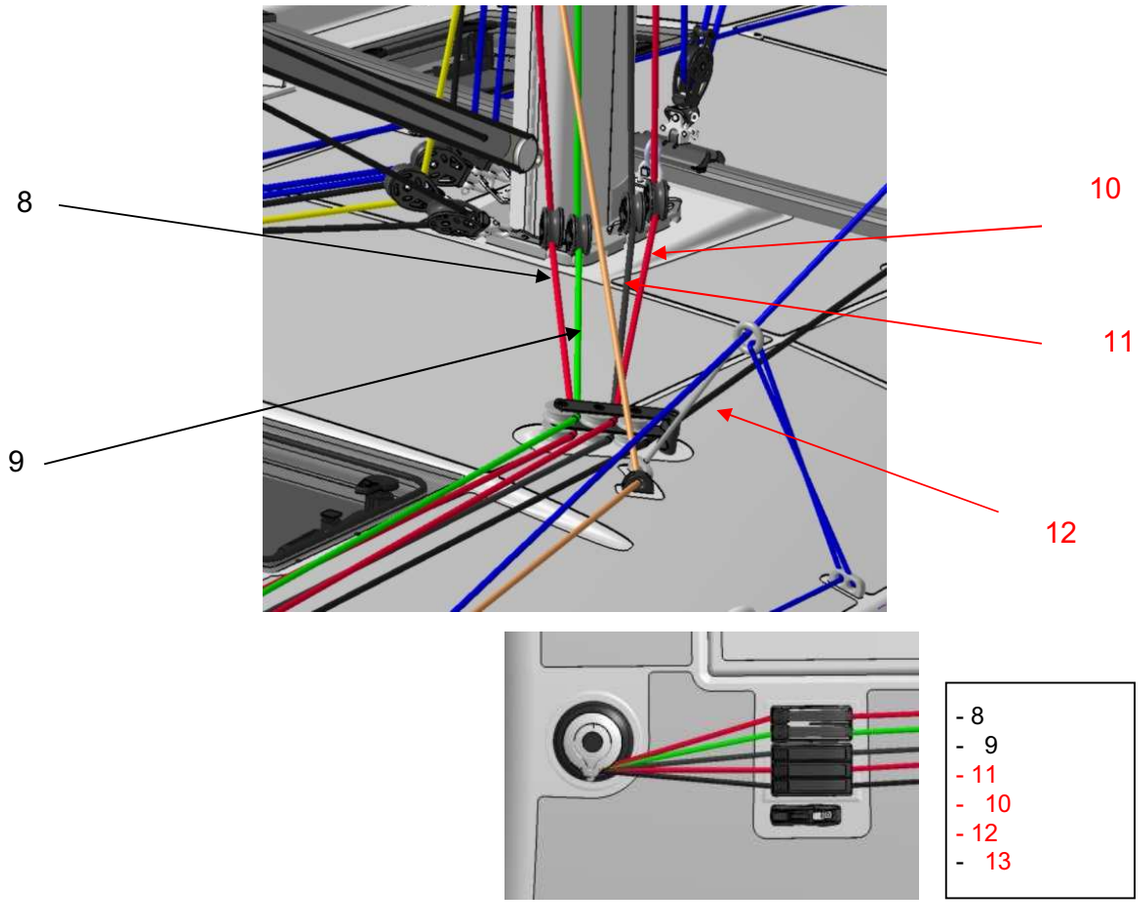
Port side mast step circuit





1. Genoa halyard
2. Mainsail halyard
3. Mainsail outhaul
4. Kicking strap
5. Reef 1
6. Jib sheet inhaulers
7. Genoa furler line

Starboard mast step circuit



8. Mainsail outhaul

9. Reef 2

10. Spinnaker halyard

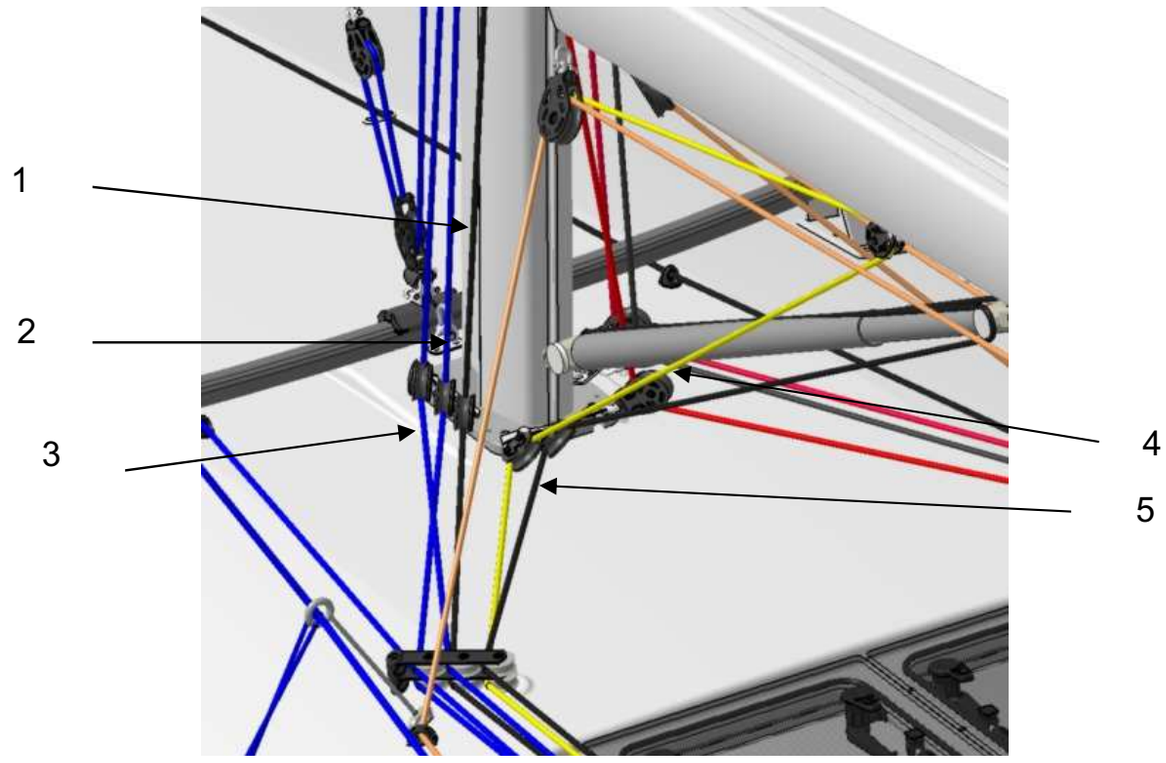
11. Staysail halyard / Spinnaker lift

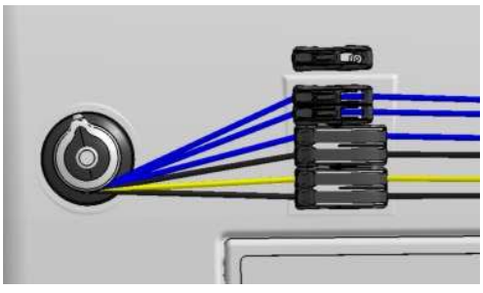
12. Asymmetric spinnaker tack

13. Jib sheet inhaulers

5.1.2 Roller furling mast

Port side mast step circuit

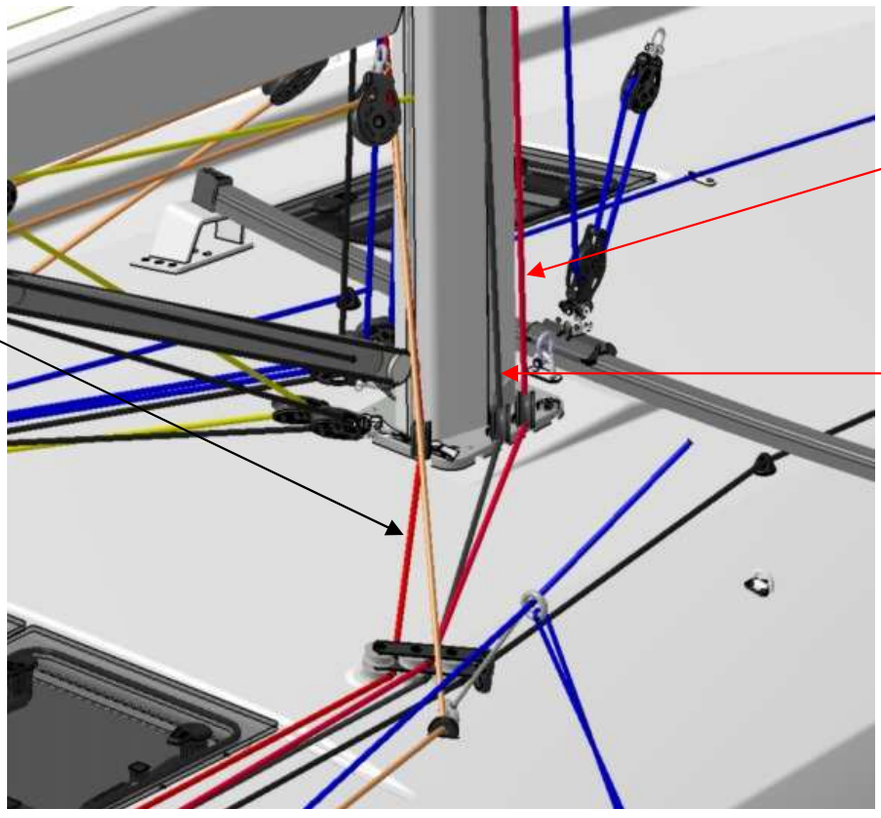


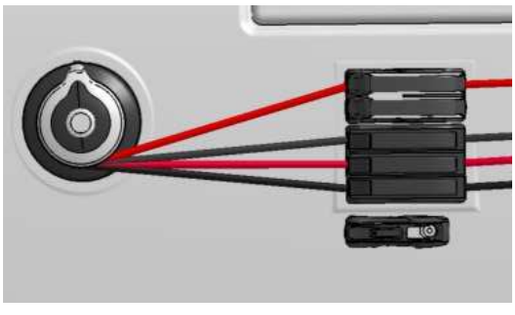


- 6
- 3
- 7
- 2
- 1
- 4
- 5

1. Mainsail halyard
2. Genoa halyard
3. Self-tacking jib sheet
4. Mainsail furler line
5. Kicking strap
6. Jib sheet inhaulers
7. Genoa furler line

Starboard mast step circuit





- 8

- 10
- 9
- 11
- 12

8. Mainsail outhaul

9. Spinnaker halyard

10. Staysail halyard / Spinnaker lift

11. Asymmetric spinnaker tack

12. Jib sheet inhaulers

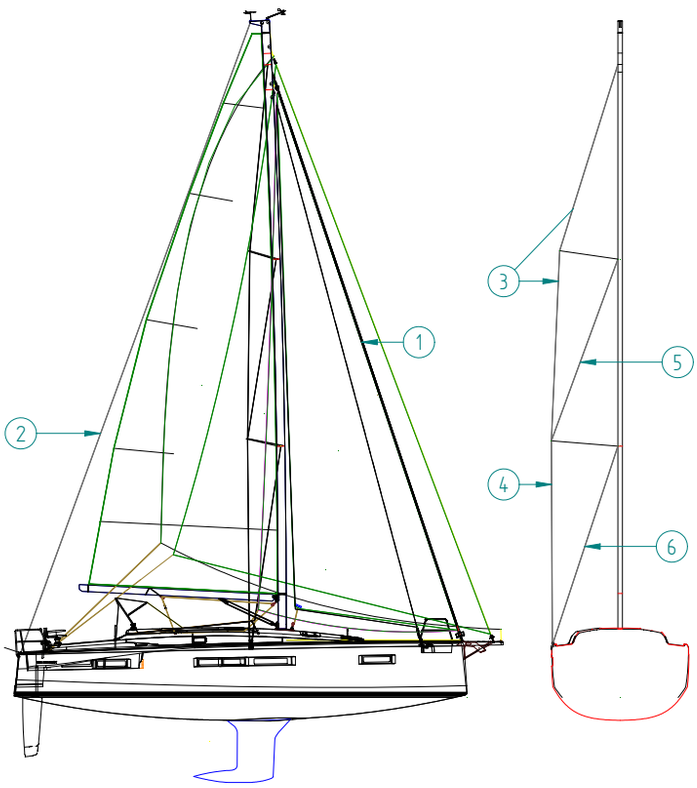
5.2 Standing rigging

- To hoist a crew member up to the top of the mast, tie a bowline with the halyard directly onto ring of the bosun's chair (never use the halyard snap shackle or a carabiner).
- Hoisting a crew member to the masthead will reduce the boat's stability. The skipper is the sole person responsible for the decision to hoist a crew member up the mast. This decision will depend on sea and wind conditions..

Advice / Recommendation

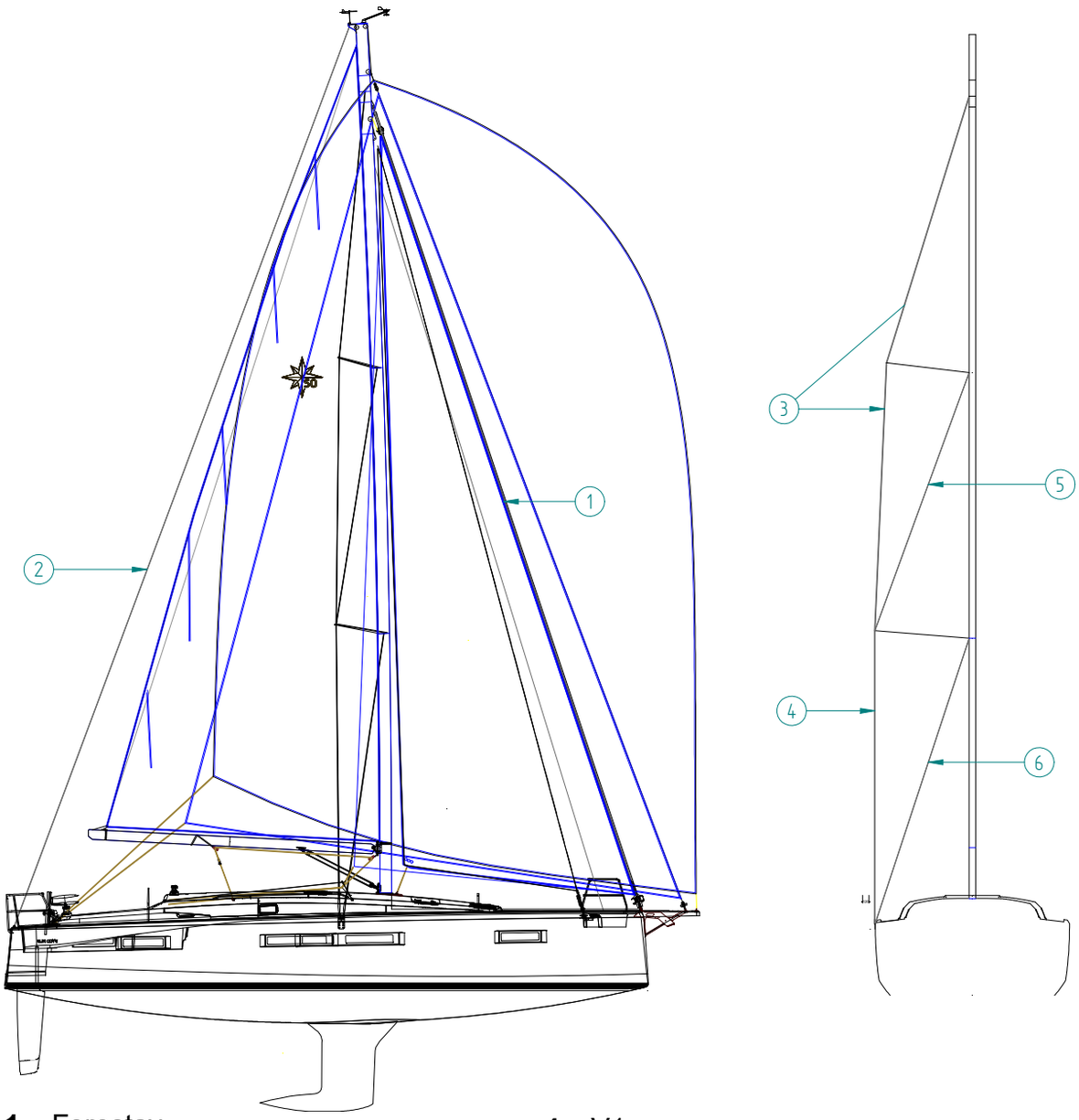
- The first time you use your boat a high level of skill and attention will be required. The proper functioning of all equipment will depend on the initial set-up being carried out correctly.
  The first mast stepping must be carried out under the supervision of the dealer for this reason.
- Before each trip, carefully inspect the mast from top to bottom.
- Periodically check the rigging tension and the tightness of the locknuts and turnbuckle clevis pins.

Classical mast



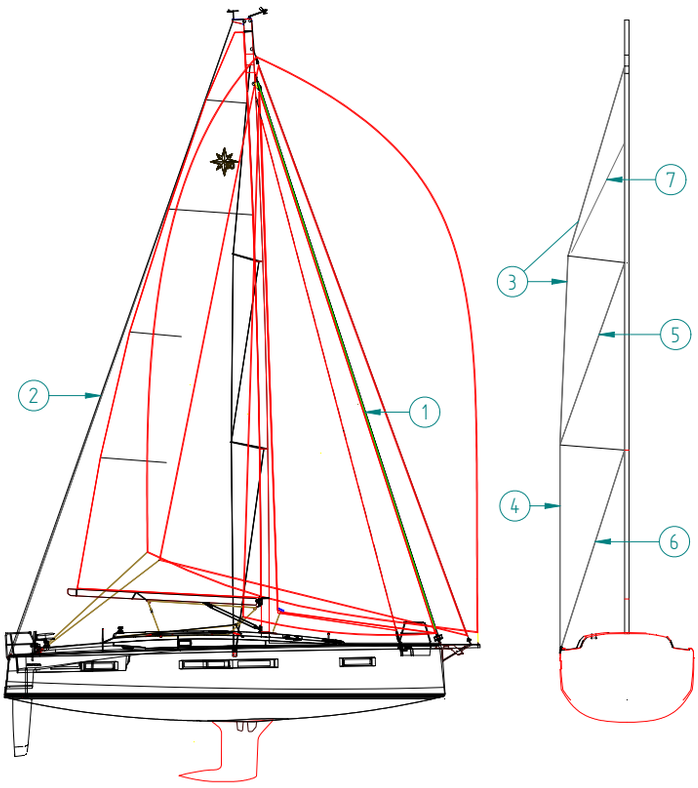
1. Forestay
2. Backstay
3. V2D3
4. V1
5. D2
6. D1

Roller furling mast



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

Mast Performance



1. Forestay
2. Backstay
3. V2D3
4. V1
5. D2
6. D1
7. D3’

Hydraulic backstay

5.3 Running rigging

- When the Genoa with furler is in position, the Genoa halyard must always be fully tightened. Regularly check the tension of the Genoa halyard when underway.
- When the Genoa sail with furler is removed (during winter lay-up or for maintenance, for example), it is important to keep the Genoa halyard away from the forestay which could cause the halyard to break and the boat to be demasted.

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

Asymmetric spinnaker

Designation	Code	Supply	Quantity	Diameter (in mm)	Length (in m)
Asymmetrical spinnaker halyard	200576		1	12	40
Spinnaker sheet	080545	Kit 134131	2	12	24
Spinnaker tack	130113	Kit 134131	1	12	20

Jib

Designation	Code	Supply	Quantity	Diameter (in mm)	Length (in m)
Genoa halyard	184776	Kit 184762	1	12	41
Performance genoa halyard	130108	Kit 126106	1	10	39
Genoa ring (standard) *	199015		2	8	0,32
Genoa ring (Option)	199055		2	8	5,5
Back and forth Genoa traveller	126196	Kit 199009 199030	2	8	14
Classical genoa sheet	080555	Kit 199009	2	12	13
Performance genoa sheet	206833	Kit 199030	2	12	13
Self-tacking jib sheet	126109		1	10	34

** Pulleys:*

Mainsail

Designation	Code	Supply	Quantity	Diameter (in mm)	Length (in m)
Muffled main halyard	184775	Kit 184762	1	12	41
Performance main halyard	130107	Kit 126106	1	10	41
Mainsail safety block stopper		Mast 199032	1	10	13,5
Uphaul	130109	Kit 184762 126106	1	8	41
Classical mainsheet	120623	Kit 199009	1	10	36
Performance mainsheet	206832	Kit 199030	1	10	36
Mainsheet strop	206831	Kit 199009 199030	2	10	1,3
Mainsail foot furler		Boom 199033	1	12	Starboard
Classical mainsail foot	151751	Kit 151473	1	10	11
Reef 1 (Automatic)	151552	Kit 151473	1	10	21
Reef 2 (Automatic)	151553	Kit 151473	1	10	31
Rigid boom vang			1	12	Starboard

Code 0

Designation	Code	Supply	Quantity	Diameter (in mm)	Length (in m)
Halyard	133534		1	10	56

5.4 Sails

When travelling at over 20 knots, you are advised to stow the lazy bag.

Advice / Recommendation

When the sailing season is over and, if possible, before Winter, take all the sails to a professional for servicing and for any necessary repairs.

General points

- The working life of a sail depends above all on regular maintenance.
- When sailing, trim the sails to account for the stress placed on the fabric in order to reduce the chance of damage from strain.
- Secure your boat against wear and tear: Cover or protect gear with rough or sharp surfaces (spreaders, stanchions, etc.).
- Keep a sailmaker's kit and explanatory booklet onboard so that you can carry out 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: Allowing them to flap freely wears the seams and increases the risk of tearing the sails on the rigging.
- UV rays are harmful for sails: If you are keeping your sails rigged, even for as short a period as 24 hours, cover them with a sail cover 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.
- The leech line must be released at the end of every sailing trip. If kept under constant tension, the leech line will cease to be adjustable after several trips..

Sail storage/folding

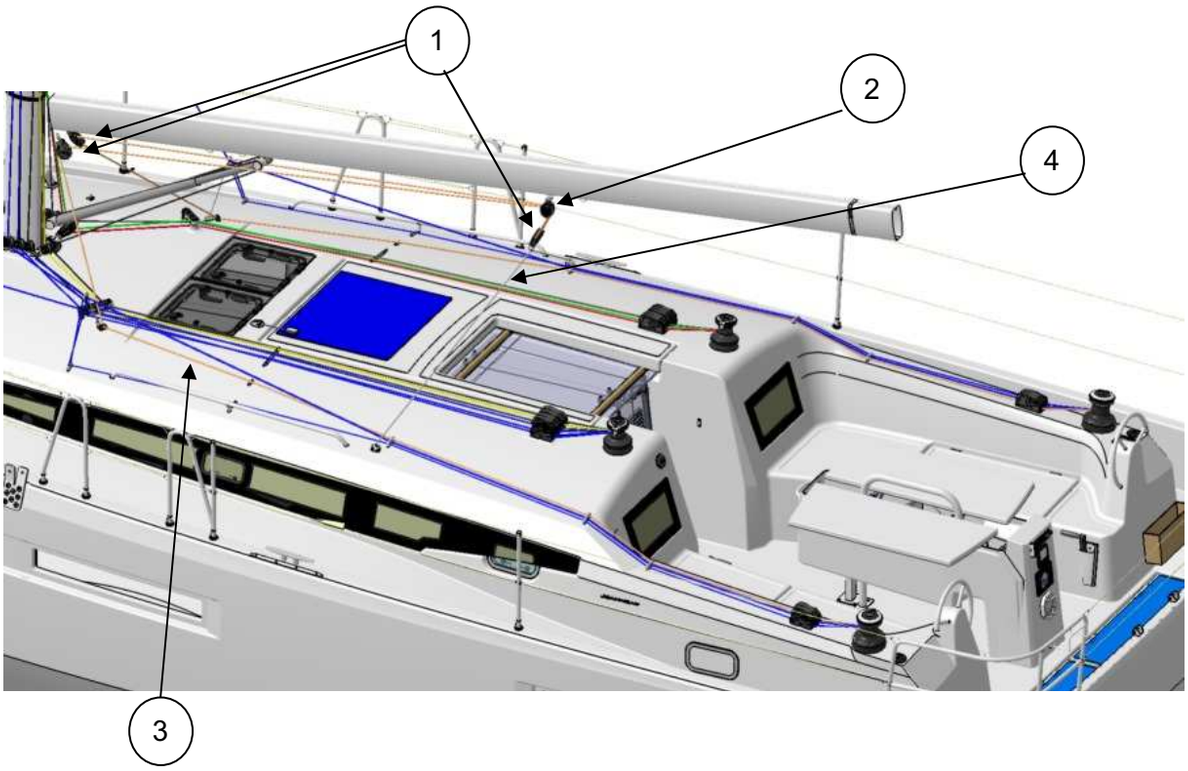
- Remove the sails if your boat is not to be used for a long time.
- Avoid storing sails wet to prevent mould and mildew.
- Fold the sail parallel to the foot into a concertina, then roll it up to fit into the bag.

Maintenance / Maintenance

If an anti-UV strip is attached to the sail, it must be changed every 5 years or so..

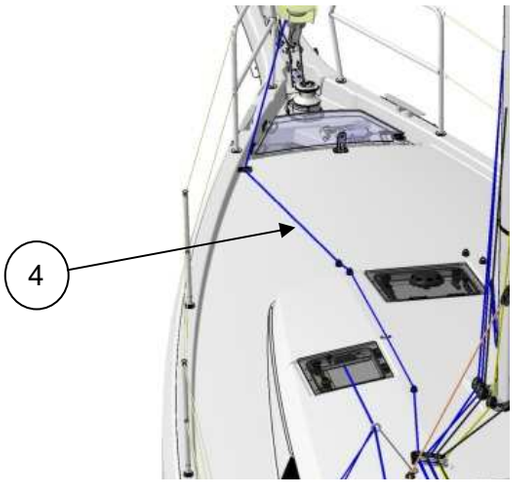
5.5 Setting the sails

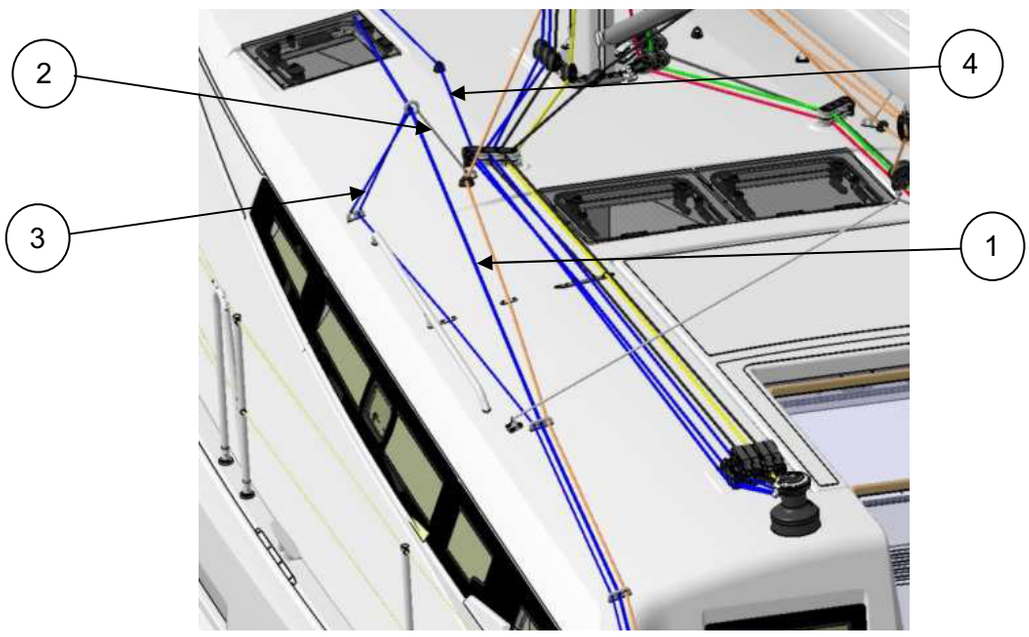
5.5.1 Classic / performance mainsail



Reference	Designation	Reference	Quantity
1	Single swivel pulley	Harken 6290	3
2	Double swivel pulley	Harken 6269	1
3	Mainsail sheet		
	- Classical mast	187491 (Grey/Black)	1
	- Mast Performance	206832 (Grey/Black)	
4	Mainsail strop	206831 (Grey)	2

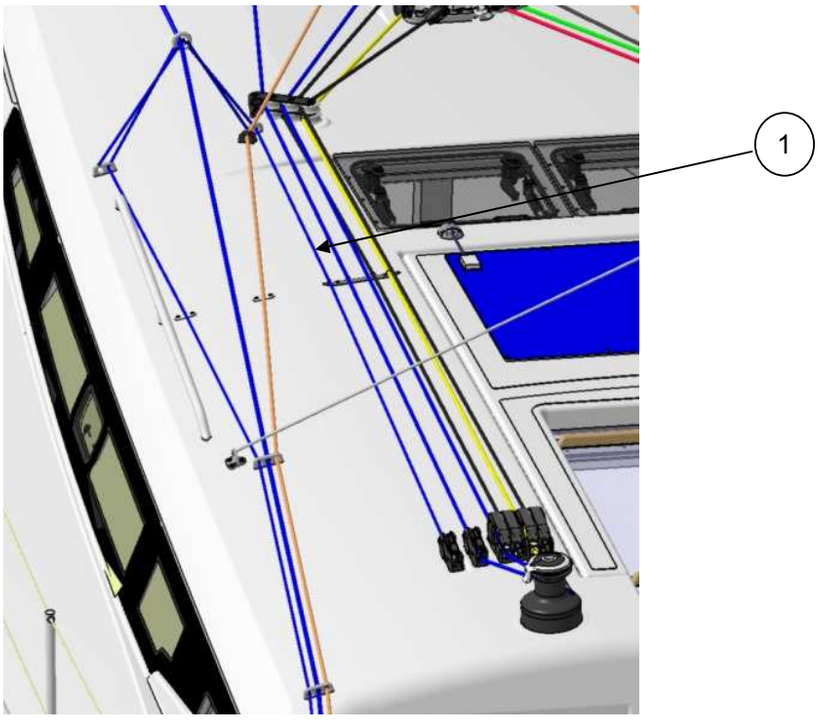
5.5.2 Furling genoa





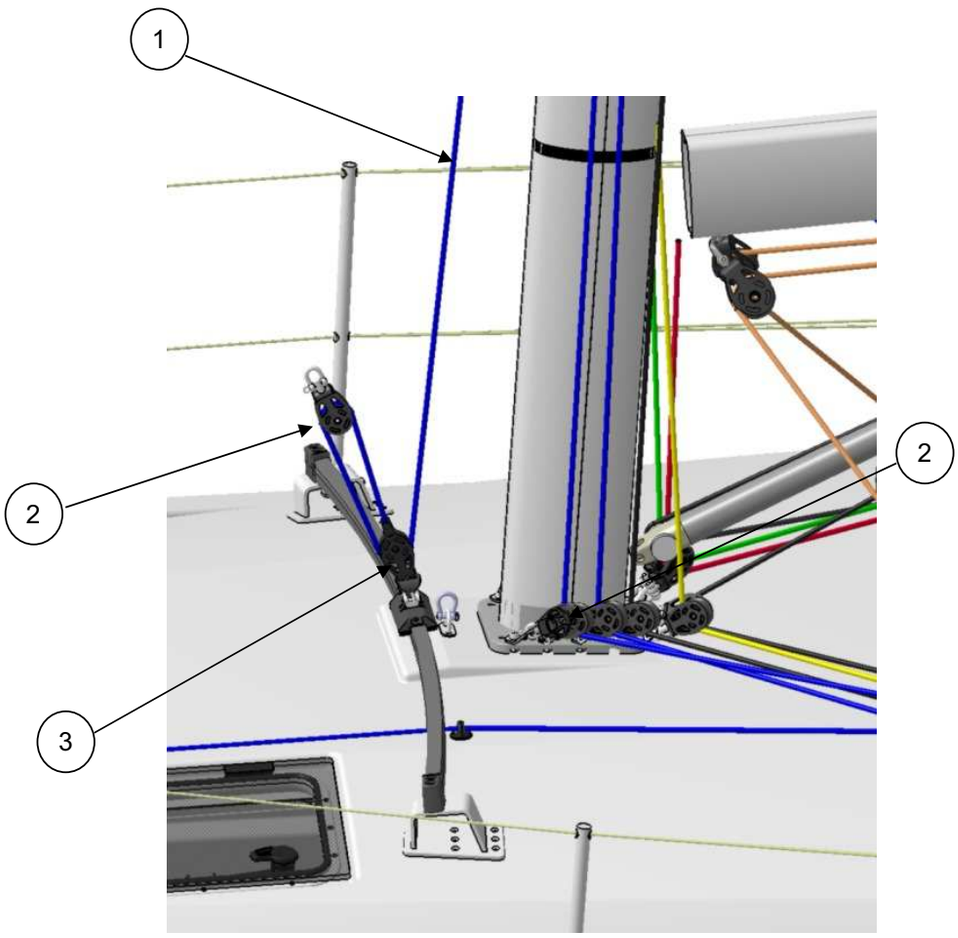
Reference	Designation	Reference	Quantity
1	Genoa sheet		
	- Classical mast	080555 (Navy Blue)	2
	- Mast Performance	206833 (Beige Mottled blue)	
2	Friction ring	199015	2
3	Genoa car adjustment	126196	2
4	Genoa furler line	Facnor 181806 (Grey / Blue)	1

Genoa ring option



Reference	Designation	Reference	Quantity
1	Genoa ring	199055	1

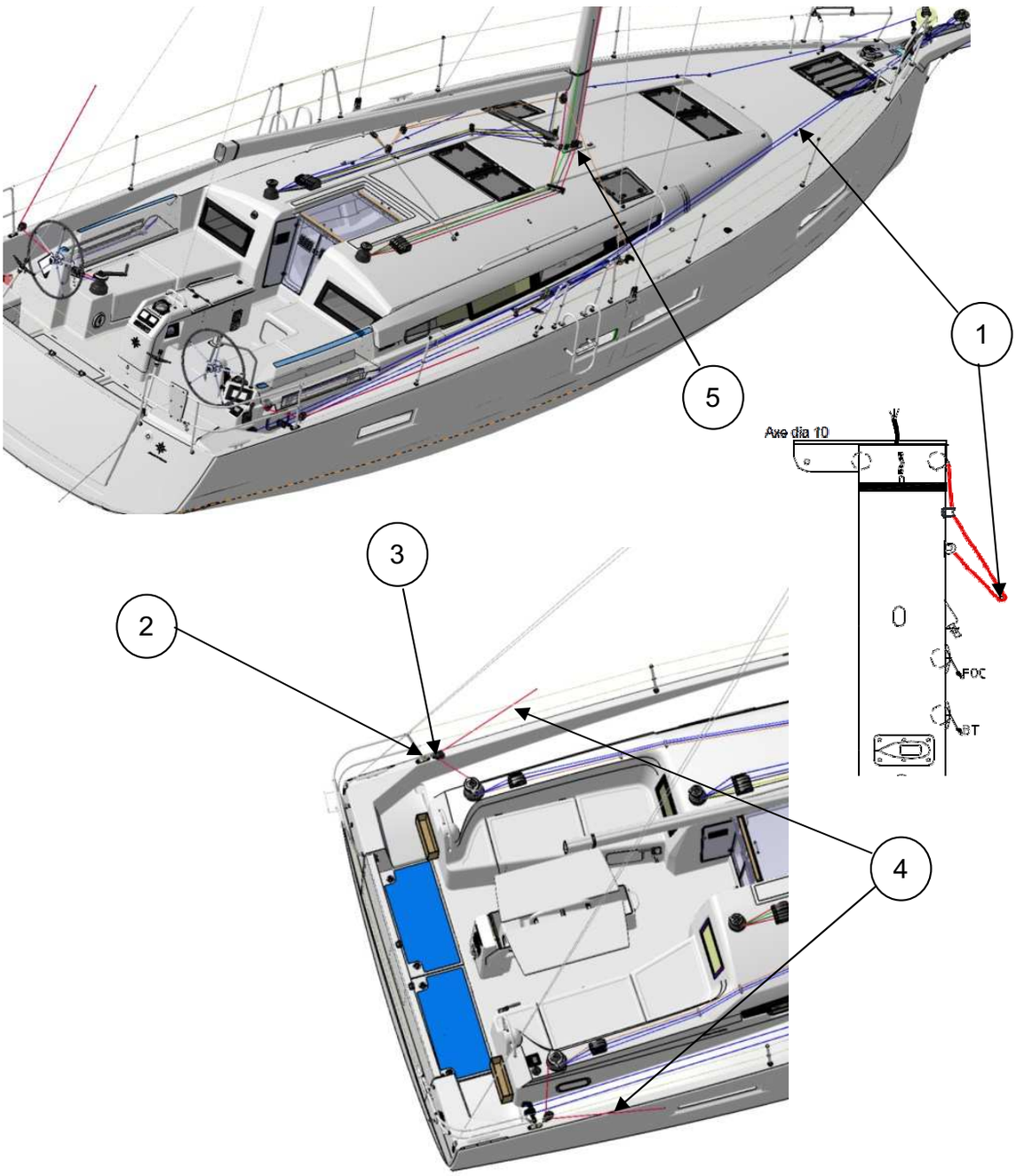
5.5.3 Self-tacking jib



Reference	Designation	Reference	Quantity
1	Self-tacking jib sheet	126109	1
2	Single swivel pulley	Harken 6260	2
3	Becket block	Harken 6261	1

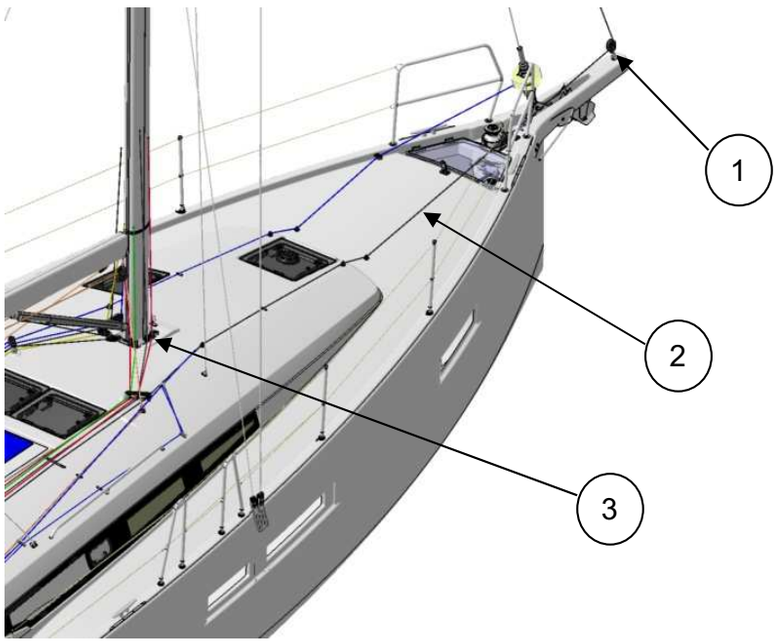
Self-tacking jib rail

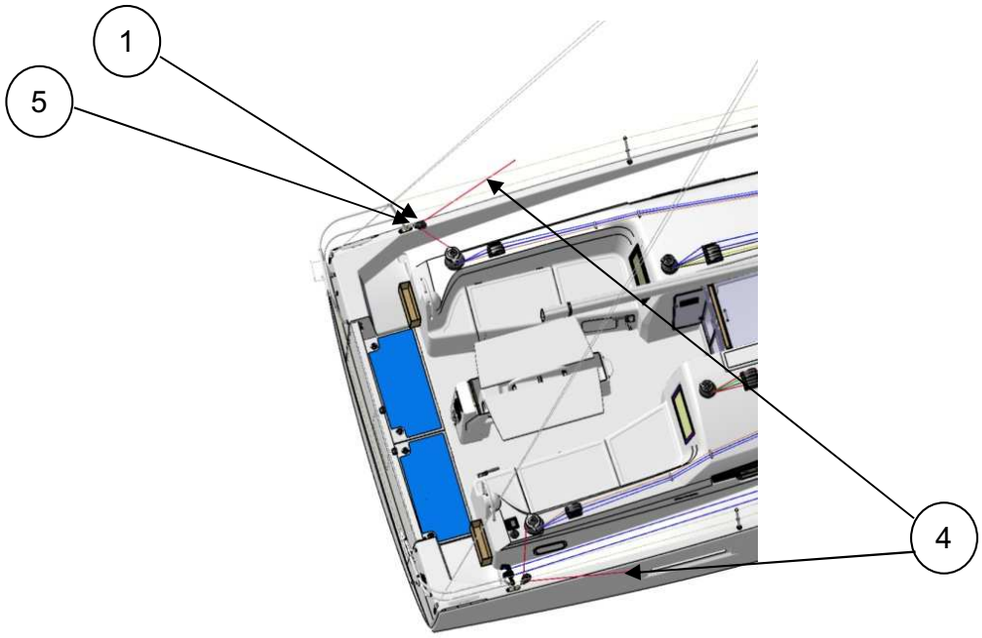
5.5.4 Code 0



Reference	Designation	Reference	Quantity
1	Muffling kit	132922 (Selden X 5027 02)	1
2	Asymmetrical spinnaker strop ***NOTE: The pulley is mounted on the aft balcony loop.***	138014	2
3	Single swivel pulley	Harken 6290	2
4	Spinnaker sheet	080545	2
5	Single swivel pulley	Harken 6260	1

5.5.5 Asymmetric spinnaker





Reference	Designation	Reference	Quantity
1	Single swivel pulley	Harken 6290	3
2	Asymmetric spinnaker tack	130113	1
3	Single swivel pulley	Harken 6260	1
4	Spinnaker sheet	080545	2
5	Asymmetrical spinnaker strop ***NOTE: The pulley is mounted on the aft balcony loop.***	138014	2

5.6 Deck fittings

General points

- Inspect each piece of deck gear regularly (blocks, shackles, swivels, cams, etc): Check that there is no cracking, corrosion or deformation.
- When replacing a piece of deck gear, make sure that you use a model with the same strength specifications.
- Failing to check deck fittings regularly and to replace worn ropes means that a block or hoist may suddenly break, causing an accident involving serious injury and damage to the boat.

Maintenance

- Upon return from sailing always rinse the deck fittings with fresh water.
- Wash deck gear regularly with a gentle soap, turning the sheaves of each block. Rinse afterwards with fresh water.
- Never use grease on deck fittings (except winches).
- Never use caustic-based cleaning materials on deck fittings (such as some teak cleaners).

5.7 Winches

Manual winches

Do not leave loose ropes on the winches - secure them to cleats.

Electric winches

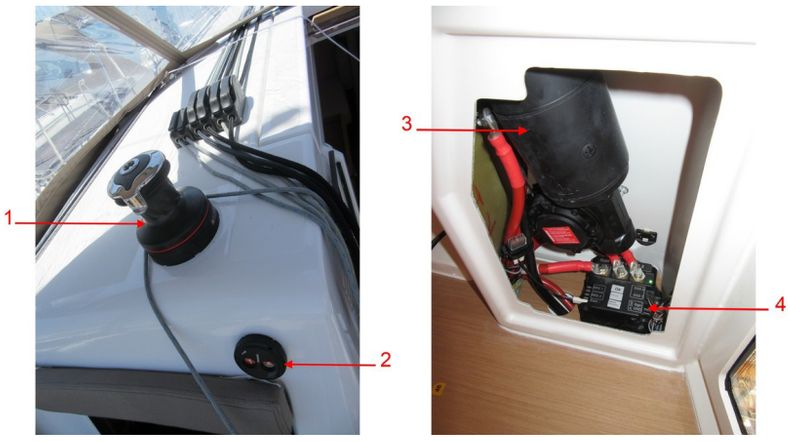
The use of an electric winch for furling/unfurling the genoa or any other foreward sail must be strictly avoided (risk of the forestay breaking which may lead to dismasting).

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

Remark

Operating the electrical winches requires heavy battery usage: Make sure the battery bank is systematically recharged after a day's sailing.

- The electric winches are powered 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.



Access: Aft cabin ceiling

1. Electric winch
2. Control
3. Motor
4. Operation relay

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.

5.8 Genoa furler

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

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 that you keep the sheet under slight tension so that the genoa furls correctly.
- Furling and unfurling of the sail are carried out upwind.

Maintenance

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

5.9 Single line furler

- The jib furler differs in use from roller reefing gear: The foresail is either completely furled or completely unfurled. It is not possible to reduce the sail plan using the jib furler as can be done with roller reefing gear.
- Furling and unfurling is carried out downwind.

Maintenance

- Rinse the drum regularly.
- It is recommended that you rinse mechanical parts at least once a year with fresh water.

6

Safety

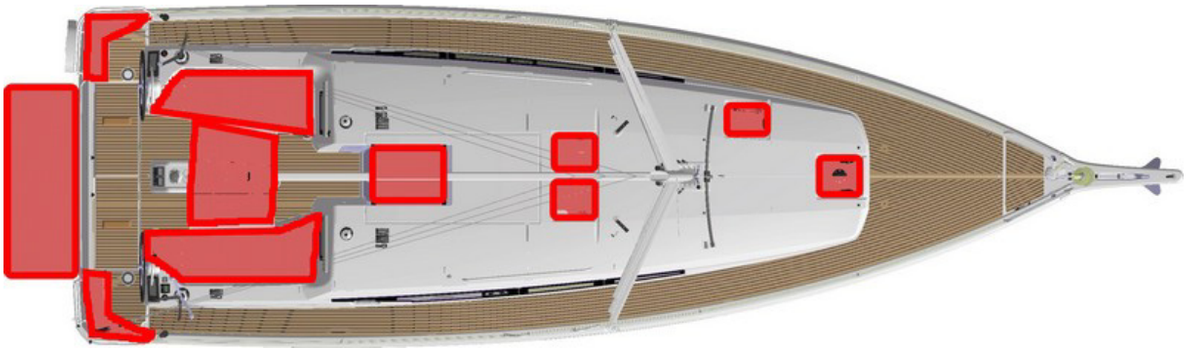
6.1 Preventing man overboard situations and means of reboarding

6.1.1 Prevention of man overboard

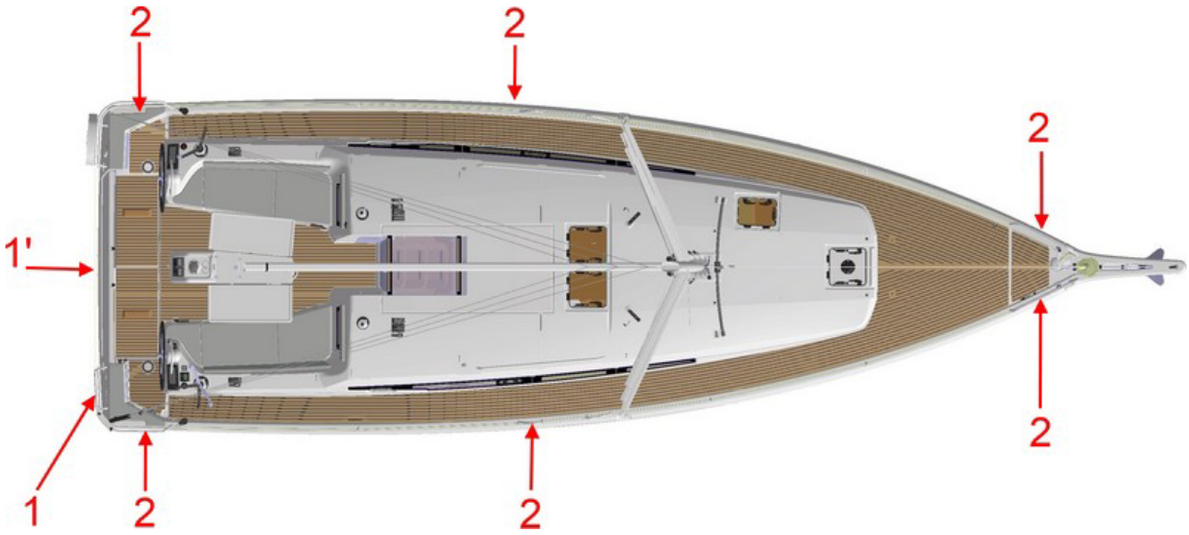
Use the seats provided.

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

- "Working deck" refers to the exterior parts of the boat where people stand or walk during normal use.



NOTE: Standing on the sunbed must be strictly avoided.



1. Configuration of reboarding device in the event of an accidental fall

1'. Configuration of reboarding device

2. Mooring cleats
(corresponding to the anchor points for the lifelines)

- Regularly check the tension of the lifelines and the attachment points.
- Regularly check the guardrails:
  - With metal guardrails look out for signs of corrosion (particularly at connecting points).
  - With synthetic guardrails, change them as soon as they show signs of wear due to chafing or UV.

Synthetic guardrails

- The lifelines are an important safety feature, incorrect installation risks causing a passenger to fall overboard. If in doubt about installation, please consult your dealer.
- The lifelines should be replaced by a professional to prevent any risk of a fall overboard.

According to the equipment level of your boat, textile lifelines may be fitted:

- The lashing at the ends of the lifelines is used to adjust the tension of the lifelins.
- The service life of a textile service life is between 5 and 7 years, depending on the area and the sailing schedule for the boat.
- It is recommended that the lifelines are checked annually to detect any traces of wear or fraying.
- After 7 years or in the event of fraying, it is vital to change the lifelines.

Example of chafing

(the red core is visible)

Maintenance

- Rinse the lifelines regularly with clean water.
- It is possible to remove the textile lifelines during the boat's winter lay-up to protect them from UV. Ensure that each lifeline is correctly labelled to ensure they can be correctly repositioned during refitting.

Fitting of a textile lifeline

Link to installation video: https://youtu.be/LoEEox73svI

6.1.2 Reboarding

- Some types of reboarding equipment 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 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.

A reboarding device must be usable from the water by a single person with no external help.

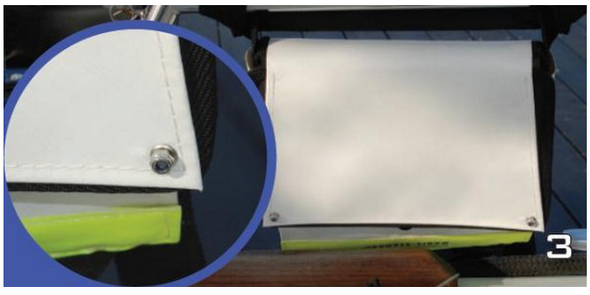
Configuration of reboarding device

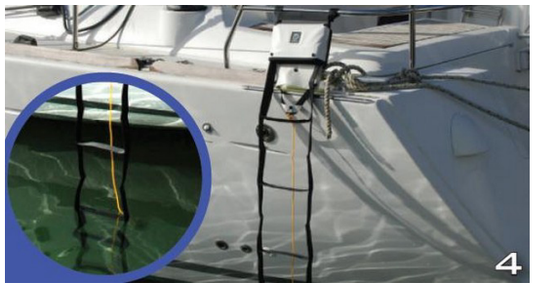
Swimming ladder

Configuration of reboarding device in the event of an accidental fall

Steps for set-up

Assembling the ladder





- Take the ladder out of its case and attach the ladder by tying a lark's head 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 the press studs.

6.2 Storing the liferaft

- Before putting to sea, carefully read the launching instructions shown on the liferaft.
- It is the responsibility of the skipper to ensure regularly that the liferaft is properly secured in place.

The liferaft (not supplied) must be stored in the space provided for it (Ref 1).

B I B

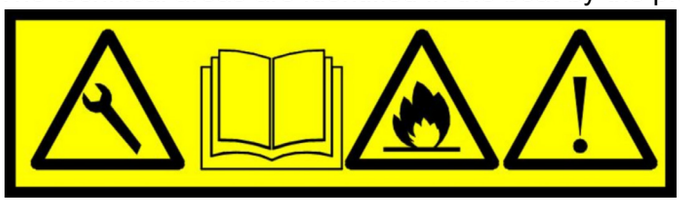
A pictogram allows for easy location.

6.3 Securing moveable items

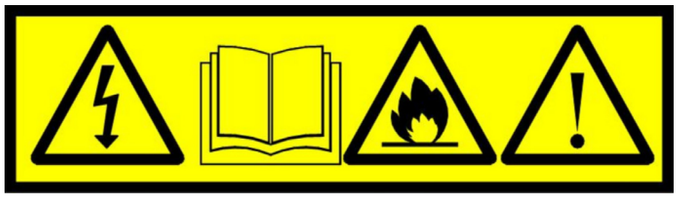
Technical areas may not be used as storage compartments.

- Ensure that movable items are firmly secured when sailing.
- Do not store anything below the floorboards.

- 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:



6.4 Deck Layout

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

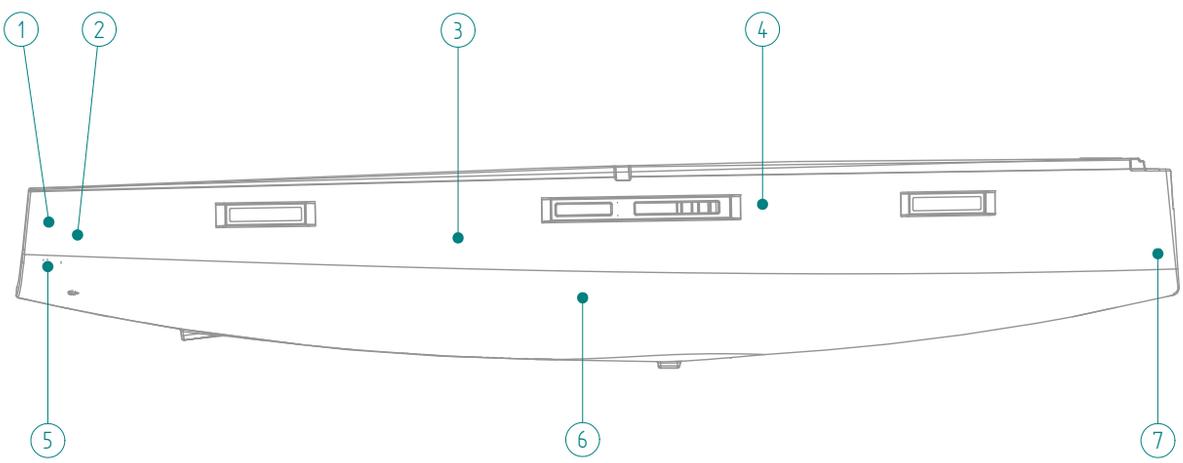
1. Outboard engine bracket (outboard engine not supplied)
2. Lifebuoy support bracket (ring lifebuoy not supplied)

6.5 Information on flooding risks and boat stability

6.5.1 Hull openings

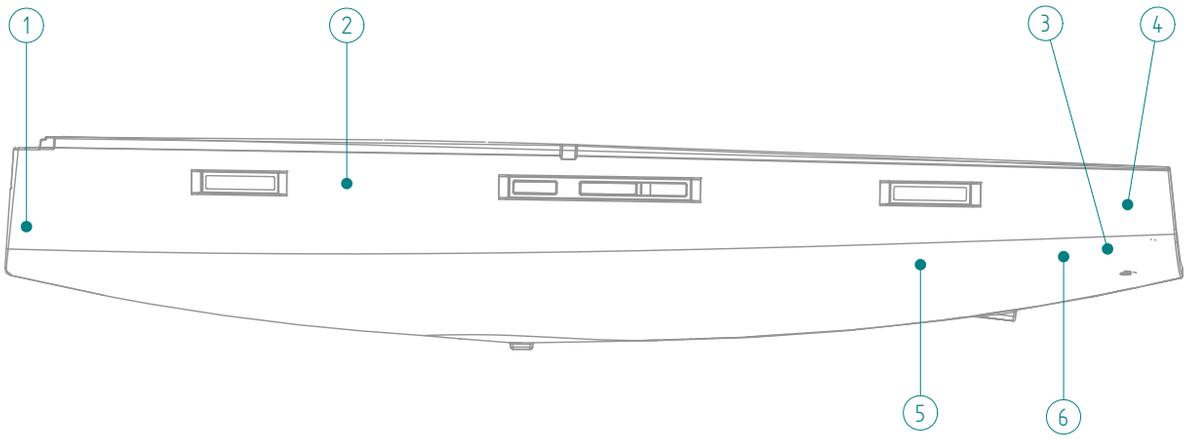
Valves, thru-hull inlets and other brass or bronze fittings have a lifespan of around 5 years. All valves, thru-hull inlets and other brass or bronze accessories must be checked by a professional every year and replaced as necessary.

View of hull, starboard side



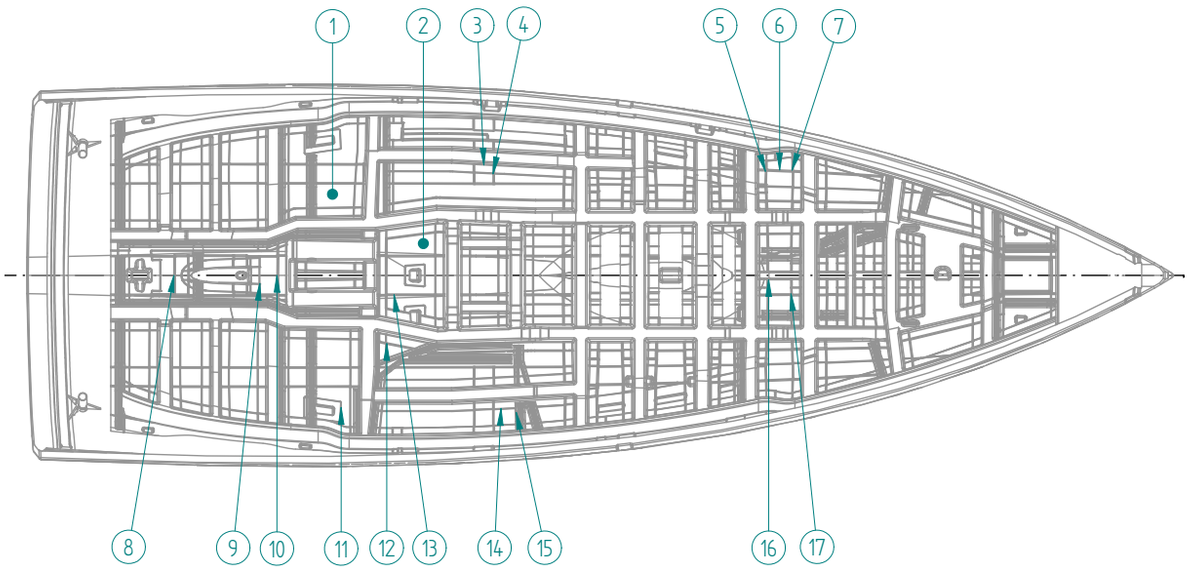
Reference	Designation	Valve
1	Aft water tank vent	No
2	Heating exhaust	No
3	Blackwater tank vent	No
4	Fresh water tank vent	No
5	Starboard side deck drain	No
6	Air conditioning water drain (Seawater & Condensation) x 3	Yes
7	Chain locker scupper	No

View of hull, port side



Reference	Designation	Valve
1	Chain locker scupper	No
2	Blackwater tank vent	No
3	Generator exhaust	No
4	Manual bilge pump drainage	No
	Electric bilge pump drainage	No
	Fuel tank vent	No
5	Washing machine outlet	Yes
6	Engine exhaust	No
	Generator sea water drainage	Yes
	Port bow drain	No

View of hull bilges



Reference	Designation	Valve
1	Earthing plate – DC/AC converter	No
2	Seawater intake – Air conditioning	Yes
3	Galley sink drainage	Yes
4	Seawater intake – Foot pump	Yes
5	Shower drainage	Yes
6	Head washbasin drainage	Yes
7	Drainage of blackwater tank into the sea (Toilet)	Yes
8	Earthing plate – Generator	No
9	Seawater intake – Sternpost	Yes
10	Seawater intake – Motor	Yes
11	Drainage of blackwater tank into the sea (Toilet)	Yes
12	Seawater intake – Toilet	Yes
13	Seawater intake – Generator	Yes
14	Head washbasin drainage	Yes
15	Shower drainage	Yes
16	Seawater intake – Toilet	Yes
17	Electronic sensor	No

6.5.2 Drainage system

General points

- It is the responsability of the skipper to have at least one bailer or bailing bucket on board, lashed down to prevent it being accidentally lost.
- The inner moulding of the hull is equipped with channels: these are the draingage channels. The drainage channels allow the water to drain down to the lowest point in the boat, where it can be discharged. It is important to allow the water to flow freely down to this lowest point of the boat, which means.
- regularly cleaning the lowest point of the boat and the drainage channels.

Diagram of Layout – Drainage channels

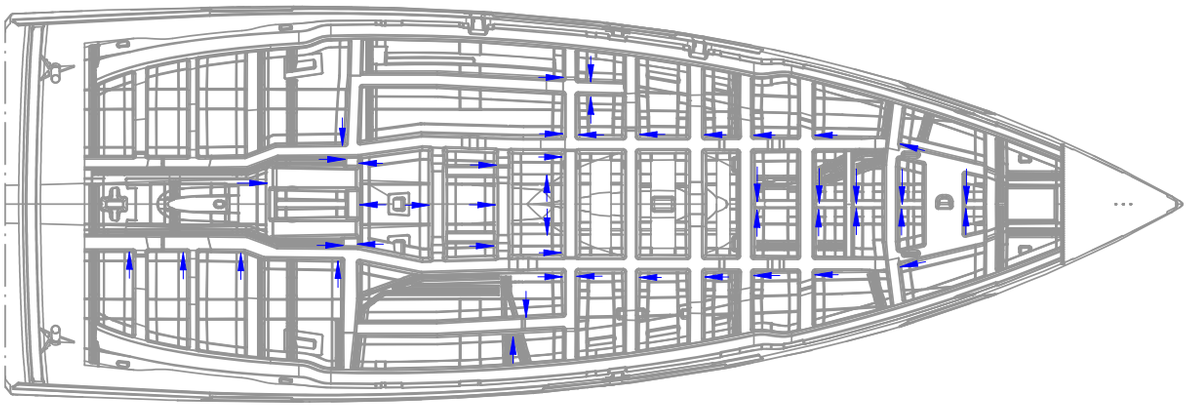
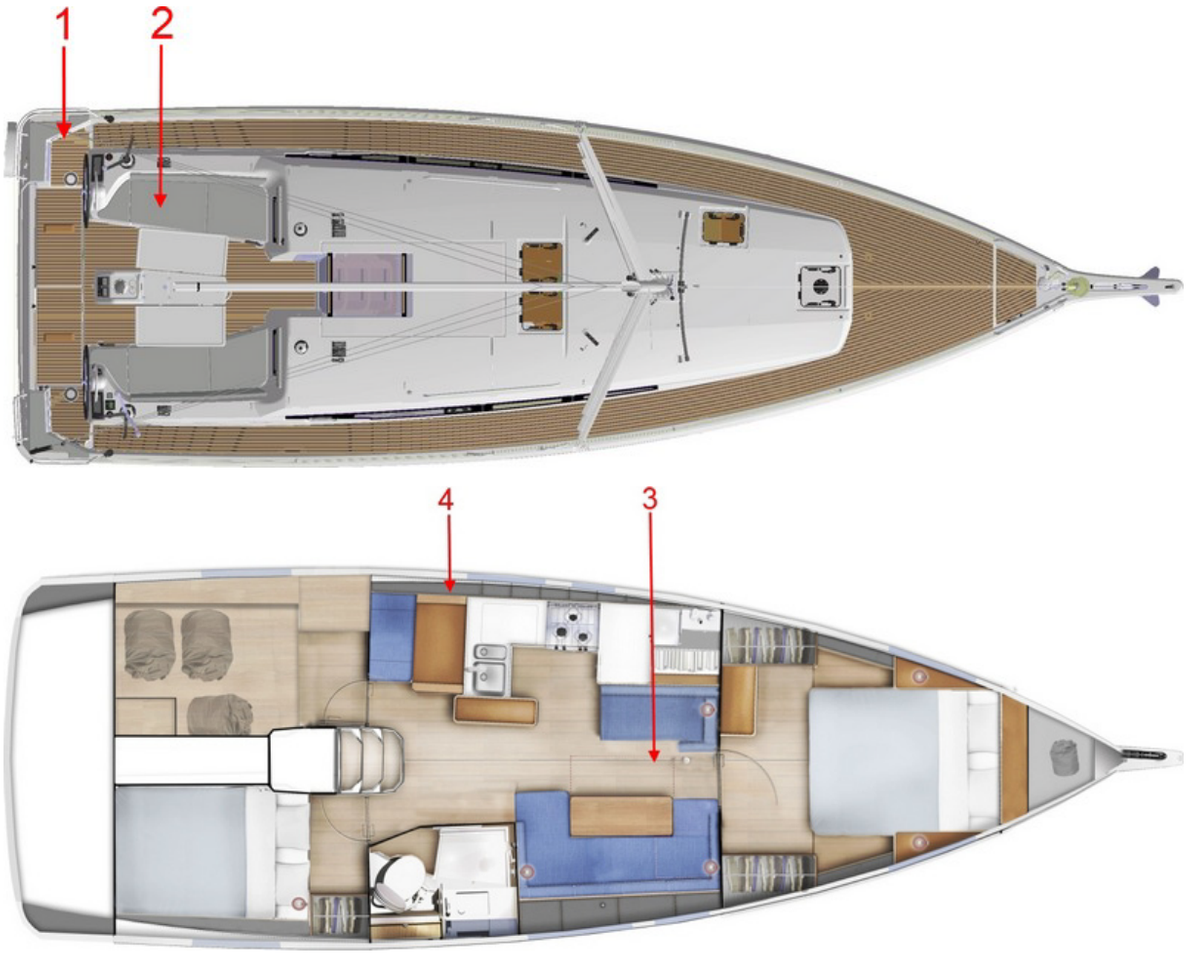


Diagram of Layout – Bilge pumps



Reference	Designation	Rate
1	Manual bilge pump	32L/minute *(*)*
2	Manual bilge pump lever	—
3	Electric bilge pump	54L/minute
4	Electric bilge pump switch	—

(*) 45 strokes/minute

Secondary drainage system
Manual bilge pump

- The manual bilge pump is in the cockpit.
- The bilge pump lever is located nearby.

Manual bilge pump

Manual bilge pump lever

Operation

I. Attach the lever to the manual bilge pump.
II. Repeatedly work the lever up and down to its fullest extent.

Remark

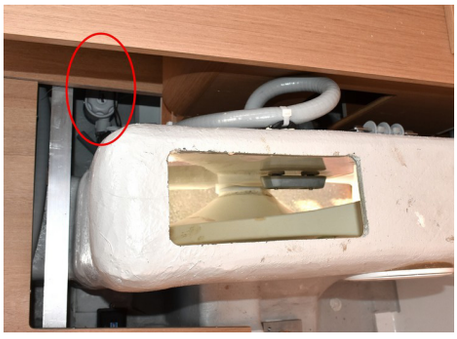
The manual bilge pump lever must remain accessible at all times.

Main drainage system

Electric bilge pumps

- The bilge pumps are powered by DC.
- 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.

Location of the electric bilge pump



Centreboard version

Fixed keel version

Control

Location: Electrical panel

- Pressing the switch once activates the "automatic" mode of the bilge pump: The pictogram lights up red.
- Pressing the switch twice activates the "forced run" mode of the bilge pump: The indicator light ON turns on (bottom right).
- When the indicator light on the bottom left lights up, the bilge pump is in operation.

Operation

I. Turn on the battery switches.
II. Switch on the bilge pump.

Remark

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

Bilge pump maintenance

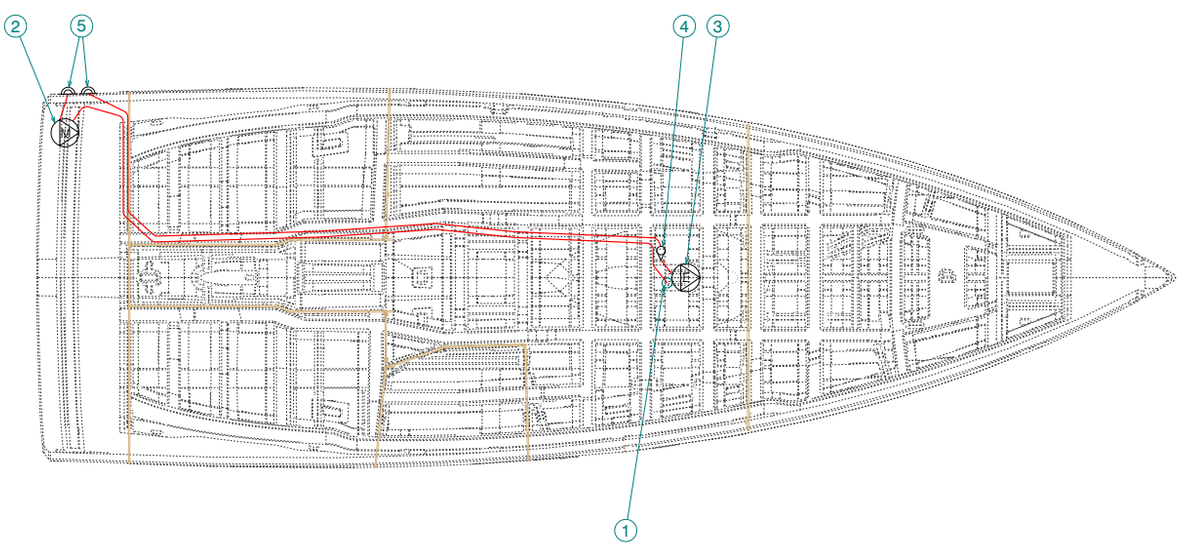
- The total capacity of the bilge pump system is not designed to drain the boat in case of damage.
- Keep the water level in the bilges to a minimum.
- Never store anything at the very bottom of the boat: Allow bilge water to flow freely down to the lowest point of the boat.

Advice / Safety precautions

- Check that each bilge pump is working at regular intervals.
- Clear the points and suction filters of the bilge pump of any debris that could clog them.

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

Diagram of Layout – Drying out the bilge



1. Intake filter
2. Manual bilge pump
3. Electric bilge pump
4. Non-return valve
5. Kitchen sink thru-hull drainage

6.6 Emergency systems in case of steering gear failure

Emergency tiller

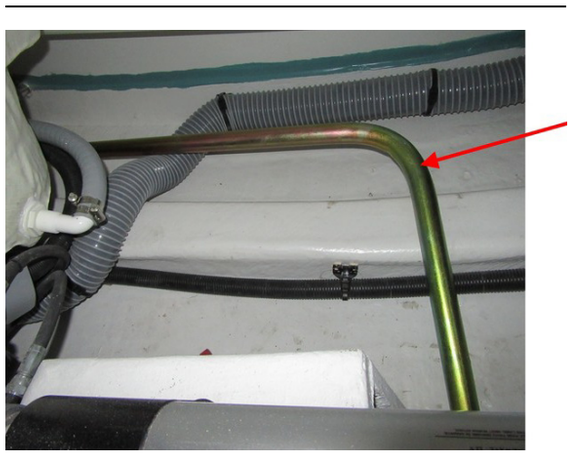
The emergency tiller is designed only to enable navigation at a reduced speed in case of steering gear failure.

Location of components

1. Port emergency tiller access point
2. Starboard emergency tiller access point
3. Emergency tiller

Access hatch to emergency tiller

Emergency tiller



Instructions in the event of steering gear failure

I. Unscrew the filler using a winch handle.

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

6.7 Information on lightning-related risks

- The skipper must check the weather conditions before deciding to put to sea. If there is a risk of thunderstorms, the skipper must avoid putting to sea.
- A lightning safety device is installed on the boat:
  - Centreboard version: A current spark gap is fitted in the keel box.

  - Fixed keel version: An earth braid connects the mast foot to the keel
- An earth braid connects the mast foot to the keel.

Precautions to be taken by the occupants of the boat during a storm

- Ensuring the safety of everyone on board is the fundamental goal of lightning protection.
- Turn off the engine, turn off the battery switches and disconnect all electronic and electrical equipment, including equipment mounted on the mast.
- Occupants should stay as much as possible inside the closed vessel.
- Occupants should not be in the water or let their arms or legs hang in the water.
- Occupants should avoid touching any part connected to a lightning protection device, especially in such a way that the parts become connected.
- Occupants must avoid contact with the metal parts of the rigging, spars, deck fittings and boat wiring. Even inside the boat, occupants should stay as far as possible away from the mast.

Maintenance

- Flexible radio antennas should not be tied down during a thunderstorm.
- If the boat has been struck by lightning, the compass and electronic and electrical equipment must be examined to determine whether any damage or calibration change has occurred.
- If the vessel has been struck by lightning, the lightning protection device must be inspected for damage and to verify the integrity of the device and continuity of the earthing.

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.

Note concerning the boat's tender

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

- If the tender is fitted with a more powerful outboard motor than 25kW, it must have on board a portable extinguisher with a rating equal to or greater than 8A / 68B.
- Place for storage of tender petrol tank: on deck.

7.2 Electrical system

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

7.3 Gas system

The risks associated with the gas system are described in the LIQUEFIED PETROLEUM GAS (LPG) SYSTEM chapter.

7.4 Fire fighting and prevention 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 capacities, located in the following places:

Location	Minimum extinguishing capacity
Chart table	5A / 34B
Starboard aft cabin hanging locker	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.

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;
- Obstruct the ventilation of the compartments or spaces, in particular those containing the engines, tanks or batteries.

Maintenance of the fire-fighting equipment

The owner/person operating the boat must:

- Have fire-fighting equipment checked as frequently as recommended by the manufacturer;
- Replace portable fire extinguishers, if outdated or discharged, with extinguishing apparatus of equal capacity;
- Provide at least one fire bucket with a lanyard, in a readily accessible place, for protection of the deck;
- Have fixed fire extinguishing systems filled or replaced if they have been 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 the engine compartment fire extinguisher discharge port is 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 opening in vertical use.
- Unlock all deck hatches and fire escape openings when the vessel is occupied.

Notes for the attention of the boat user

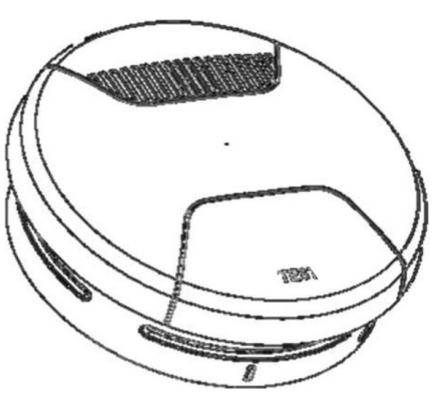
General points

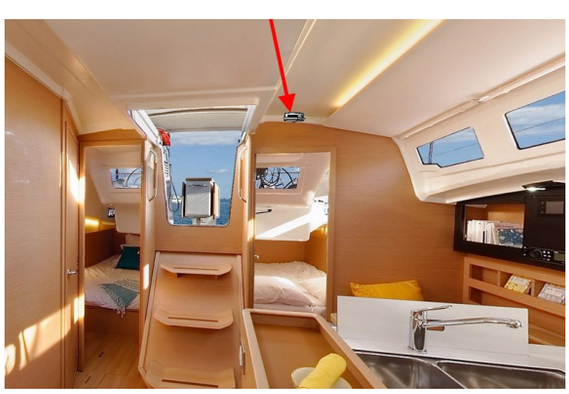
- Check that the bilges are clean and frequently check that there are no fuel/gas vapours or fuel leaks.
- When replacing components of the fire-fighting equipment, use only appropriate components of the same code designation or with the equivalent technical capacity and fire resistance.
- Do not install 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 the engine shaft 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 Smoke alarm

- The smoke detector is not a gas detector.
- The smoke detector is sensitive to dust and steam: avoid exposing the detector to these environments to prevent the triggering of unwanted alarms.
- Never use a rechargeable battery.
- Never trigger the alarm deliberately to check the operation of the detector.
- A dirty detector may activate incorrectly or late. It is important to clean each detector for the safety of people onboard.
- Never cover the smoke detector (with paint or ceiling panels, for example) and in general do not alter the appearance of the detector.
- Do not fit the smoke detector in a different location from the one specified for the purpose.

Location





7 Information relating to fire risks and risks of explosion

General points

- The smoke detector is a photoelectric detector which operates with a 9 V alkaline battery (battery included).
- The detector emits a flashing red light every minute in normal operation.
- The smoke detector is designed to operate between 0° and + 50°C.
- Whenever any smoke is detected, the 85 dB alarm is triggered.
- The smoke detector is not designed to stop a fire from breaking out. It serves to warn the people onboard of the danger.
- The detector is a device which warns people onboard in the event of smoke.
  Actions to take if the alarm is triggered: The skipper should check the source of the smokeand attempt to extinguish the fire with the resources at his/her disposal. If the fire spreads, the skipper must immediately evacuate the entire crew.
- The service life of the smoke detector is approximately 10 years. Beyond 10 years, replace the smoke detector with an identical device.

Commissioning of the boat

When the boat is first delivered, ensure that the battery protector is removed.

Maintenance

The smoke detector must be routinely tested when boarding or weekly if staying onboard for a prolonged period of time. If the device is faulty, change the battery. If the device is still faulty after changing the battery, replace the detector with the same model (consult your dealer).

TEST button

Regularly check that each detector is working correctly by pressing and holding the device's TEST button for around ten seconds:

- The detector's light flashes, then the alarm starts up.

  Remark

  The alarm emits are very loud noise (approximately 94 dB at one metre), remember to use hearing protection during the test.

- When the TEST button is released, the alarm stops immediately.

Changing the battery

- The smoke detecter will emit an audible beep every minute for a month when the battery level is too low to operate.
- In that case, change the battery as described below:
  - Remove the detector from its mounting (turn anti-clockwise), remove the empty battery and replace it with the same model of alkaline 9 V battery, ensuring a battery life of 5 years.
  - Connect the battery as shown in its housing (ensure the battery polarity +/- is correct).
  - Return the detector to its mounting (turn clockwise) until it fits perfectly.

Annual routine maintenance

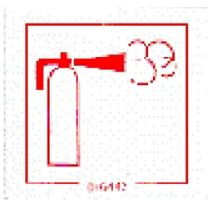
- Remove the detector from its housing (turn anti-clockwise) and clean the vents on the side of the device with a vacuum cleaner or a soft brush.
- Use a damp cloth to clean the exterior of the detector cover.

Winterisation

- To ensure optimal operation, it is recommended that the smoke detector is stored for winter in a fresh and well-ventilated place, having removed the battery.
- Once one person is onboard, it is important to replace the smoke detector in the position specified for the purpose, having first reinstalled the battery.

7.4.3 Extinguisher access port (Engine compartment)

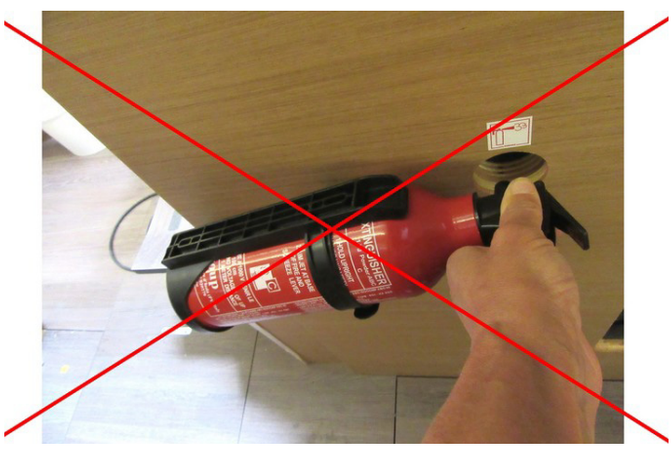
The engine compartment has a port that makes it possible to discharge the extinguishing product inside without opening the usual access hatches.



A pictogram allows for easy location.

Location of the fire extinguisher port

Operation



7.5 Emergency exits in case of fire

Location

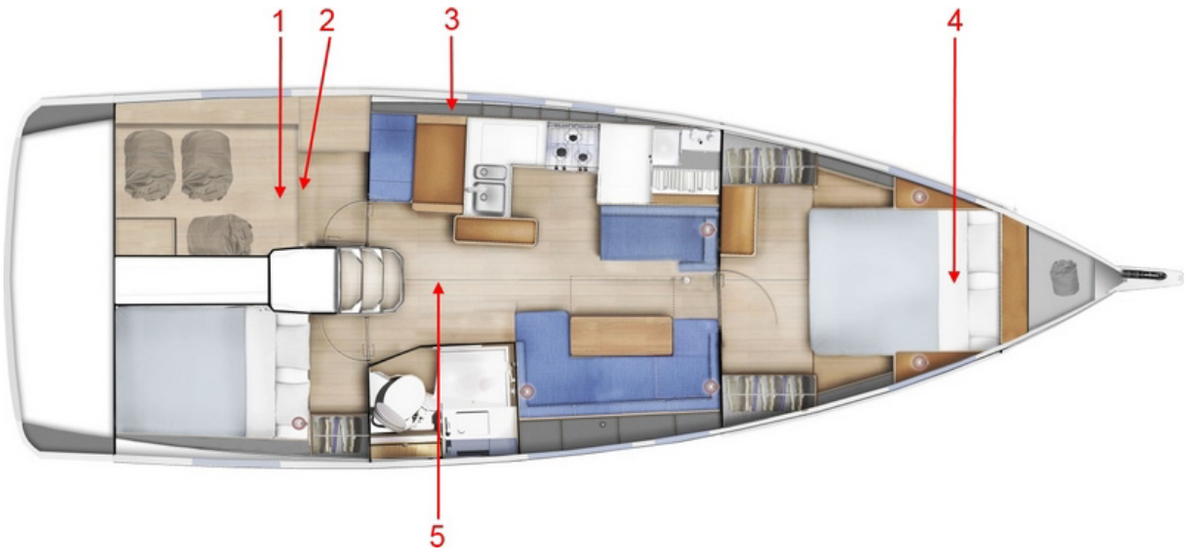
- Companionway
- Forward cabin deck hatch

Electrical system

8.1 General information about the electrical system

- A risk of fire or explosion may result from careless use of the DC and AC systems.
- A risk 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 installation, maintenance and any modifications be carried out by a qualified marine electrician;
  - change or modify the strength of the safety devices protecting against power surges;
  - Install or replace the electrical devices or equipments with components that exceed the rated current of the circuit;
  - 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 system are in use (where installed).
- Electrical connections change over time. It is necessary to have the boat's electrics checked regularly and at least once every two years by a professional. Special attention should be paid to the tightness of the electrical connections.



1. Engine battery, Battery charger, Power distributor, Fuses
2. Battery switches, Circuit breakers
3. Electrical panel, Circuit breakers (Terminal panel), Touch screen
4. Bow thruster batteries
5. Service batteries

8.2 DC installation (12V or 24V)

8.2.1 Battery use and distribution

- 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: this may cause an explosion.
- If any acid accidentally splashes on your skin or in your eyes, rinse it off immediately and thoroughly with fresh water. See a doctor immediately.
- Never touch the battery terminals: you may suffer an electric shock.
- It is essential that you disconnect the battery charger before disconnecting the battery terminals for maintenance (either by disconnecting the AC shore power socket or by cutting the AC circuit breaker of the battery charger).
- Refer to the manufacturer's instructions for use and maintenance.

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:
  - the alternator linked to the engine when the engine is running,
  - or the battery charger (where installed).
- It is essential that a professional engineer connects the batteries when the boat is first launched.
- 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 bank

Engine battery (1 x 120A)

Service batteries (2 x 115A)
Spare service batteries (2 x 115A)

Propeller battery (1 x 50A)

Maintenance

- 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.
- Keep the batteries charged at all times: this will improve their lifespan.
- Avoid long periods of electrical inactivity (for example when wintering the boat).

Maintenance of lead batteries

- Check the water levels in the batteries annually and top them up with distilled water if they are low.
- 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°C and 30°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 permanently broken.
- If the batteries overheat, a build-up of gas may develop: stay away from the batteries.

Lithium iron-phosphate batteries (LiFePO4)

- Do not disassemble, drill into or open the lithium batteries.
- Do not use a charger other than the one supplied with the batteries.
- Do not leave a battery on prolonged charge when not in use.
- Never touch the battery contacts or let conductive objects touch the contacts.
- Keep batteries away from water, dust or fire.
- Do not reverse the power cable connection (polarity).
- Do not short-circuit the battery.

- The lithium batteries are only supplied if the boat is fitted with the air conditioning option.
- The air conditioning option has an AC power supply supplied by the DC/AC inverter, which is itself supplied by the lithium batteries.

Voltmeter (on the touchscreen)

Lithium battery

Capacity: 2 x 90A
Spare batteries: 2 x 115A

Operation

- Charge the batteries before use.
- Never overcharge the battery or allow it to discharge completely as this will irreversibly damage the battery.
- Charge the battery in the event of a voltage drop or if charge falls below 20%.
- Lithium batteries are systematically charged before the engine battery: they take all the charge.

Remark

If the engine is started several times in a row to recharge the lithium batteries, the engine battery may discharge completely. The charger will charge the lithium batteries first, before charging the engine battery.

- The voltmeter displays the lithium battery voltage and percentage of charge. If the battery is not fully charged, an alarm will be activated.

Maintenance

- The lithium battery requires no maintenance.
- If necessary, clean the lithium battery with a soft, dry cloth. Never use liquids, solvents or abrasives to clean the battery.
- Charge the battery to about 80% of its capacity at least 3 times a year to preserve battery life.

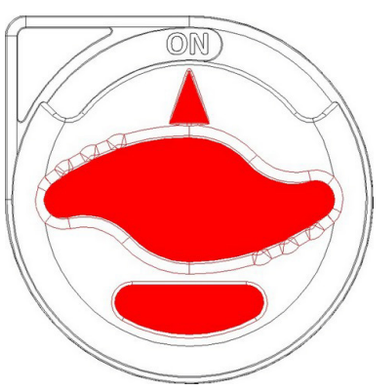
8.2.2 Battery switches

- Turn off all battery isolators before leaving the vessel: **failure to do so may result in critical damage to the entire battery bank**.
- Avoid touching the battery isolators when they are live.
- Never switch off the battery isolators when the boat's engine is running (risk of serious damage to the charging circuit).

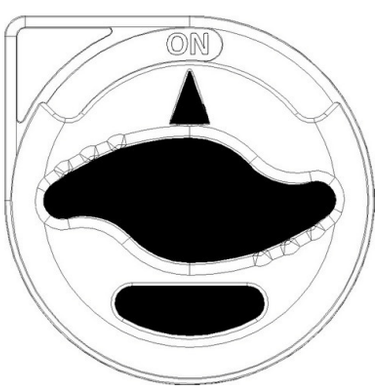
Manual battery switches

To make the system live, manually turn the positive and negative battery isolator switches.

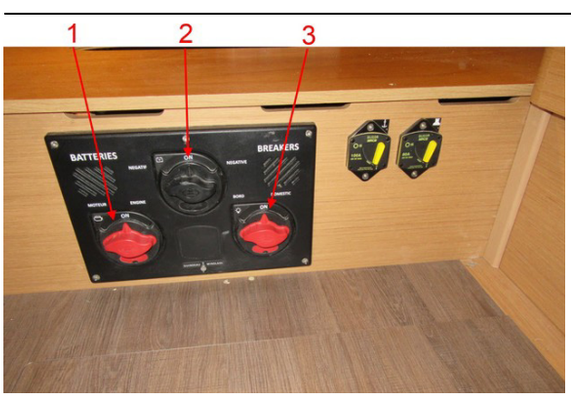
Positive isolator switch



Negative isolator switch



Location



1. Engine battery positive isolator switch
2. Common battery negative isolator switch
3. Service batteries positive isolator switch

Electrically controlled battery isolators (Bow thruster???)

Press the switches on the breaker control panel. In the event of electrical failure, it is possible to press the button on top of the battery breaker down manually to activate it.

- The electrically-controlled battery breakers use very little electricity when they are on: **it is essential to turn off all the battery breakers during lengthy absences to prevent the batteries from slowly and irreversibly discharging**.
- The engine's positive battery isolator automatically switches on and off when the engine is started/stopped.
- The negative of the circuit is connected to the general negative.

Location : Forward cabin

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 provide 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 indicator lights up green.

Power

Standard batteries: 150A
Lithium battery: 180A

8.2.4 Battery charger

It is essential that you disconnect the battery charger before disconnecting the battery terminals for maintenance (either by disconnecting the AC shore power socket or by cutting the AC circuit breaker of the 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.

Capacity: 60A

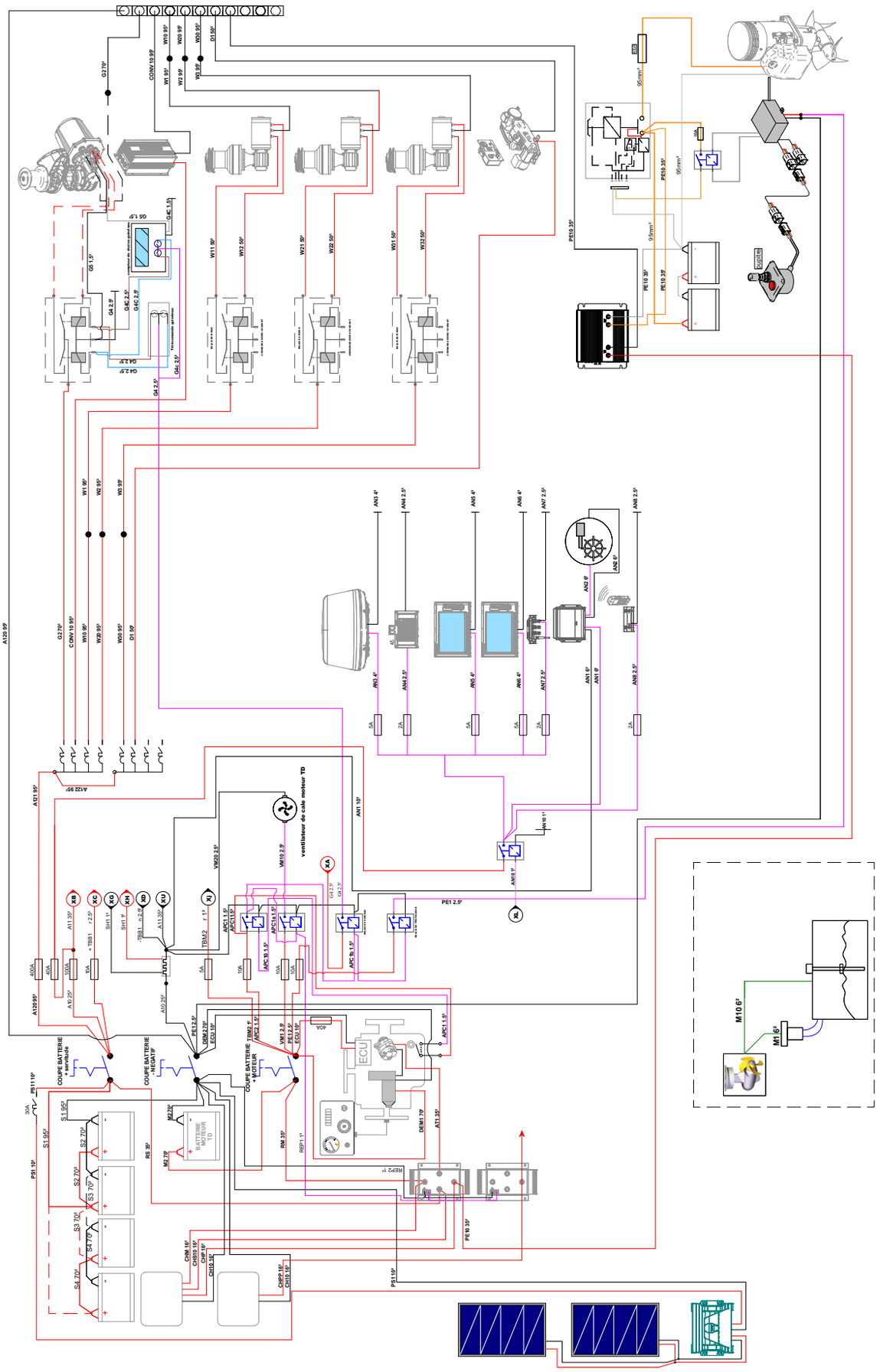
Operation

- The charger runs fully automatically. It can stay 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

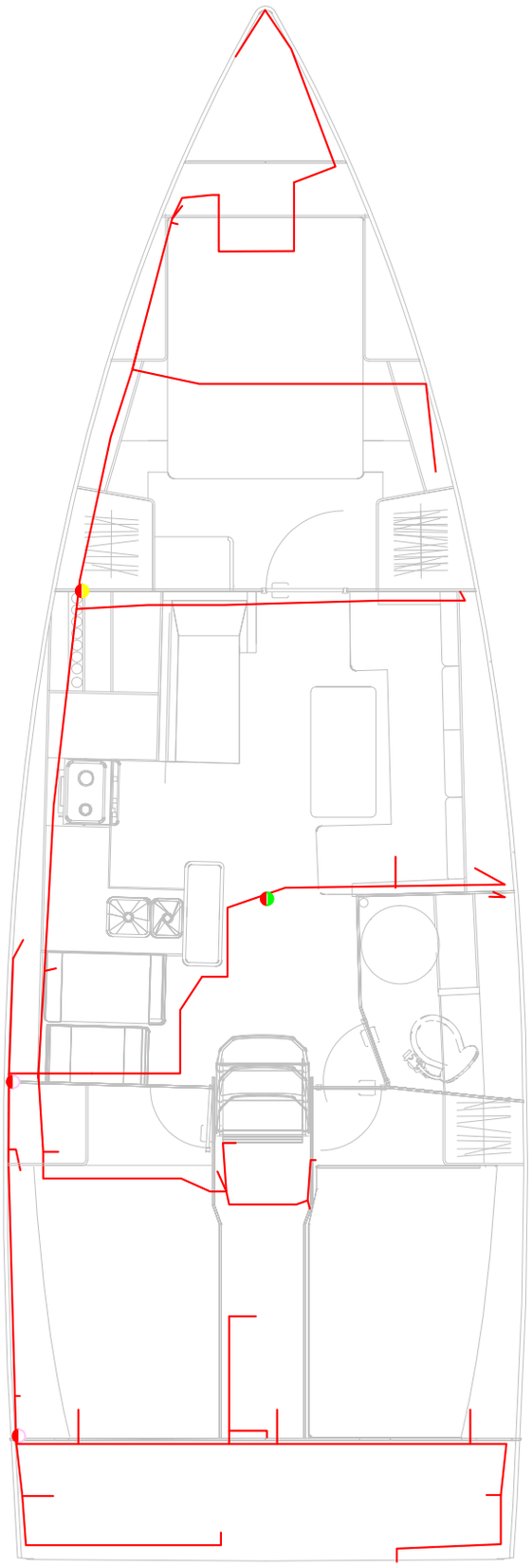
- Before doing any maintenance, cut the AC supply.
- Regularly vacuum out any dust particles which may accumulate in the charger. An annual check of the tightness of the nuts and bolts is necessary to ensure the correct operation of the charger.

Diagram of layout – Battery cables

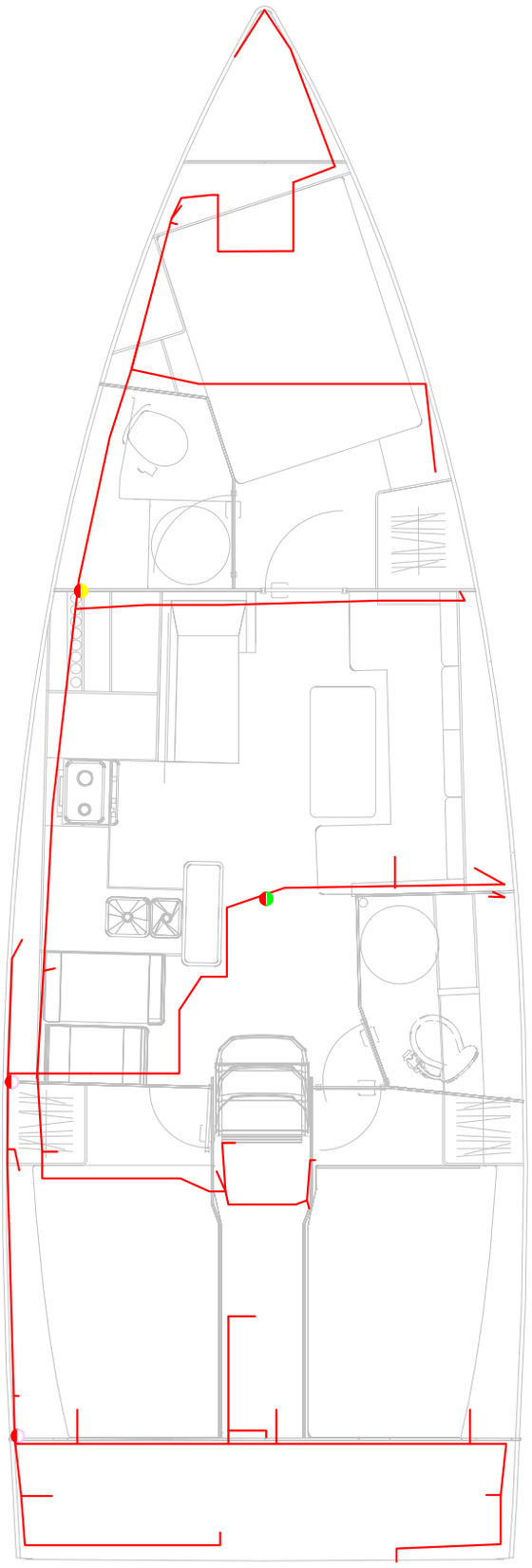


8.2.5 Layout of hull wiring looms – DC circuit

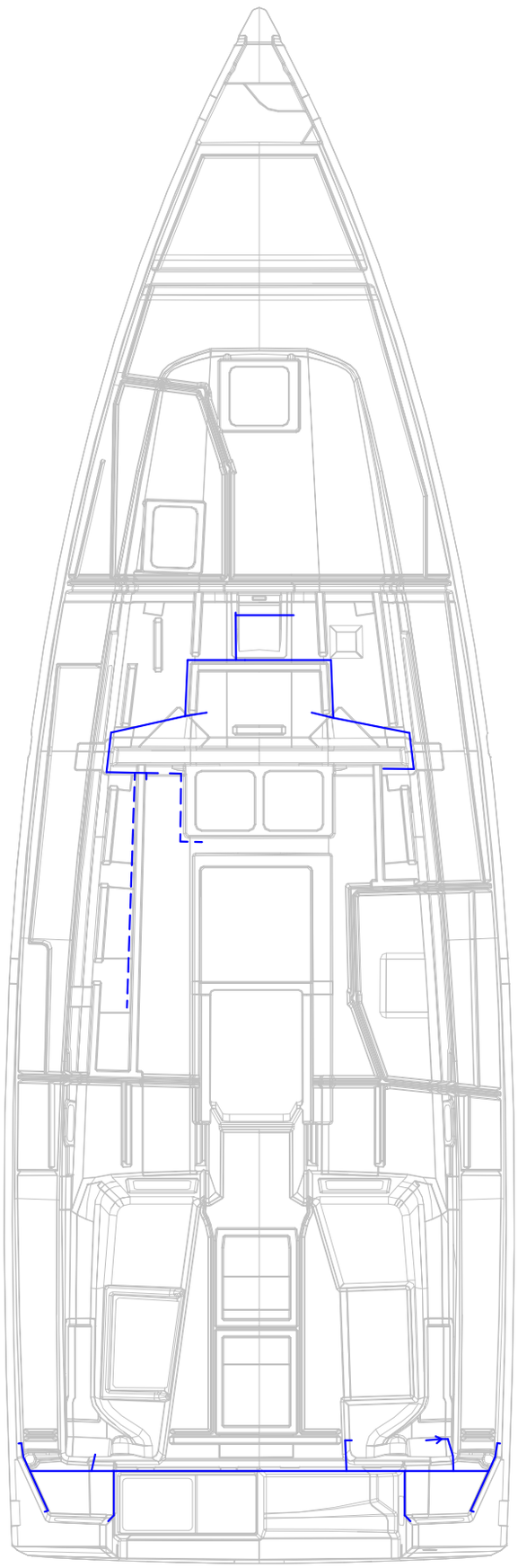
1 aft cabin layout



2 aft cabin layout

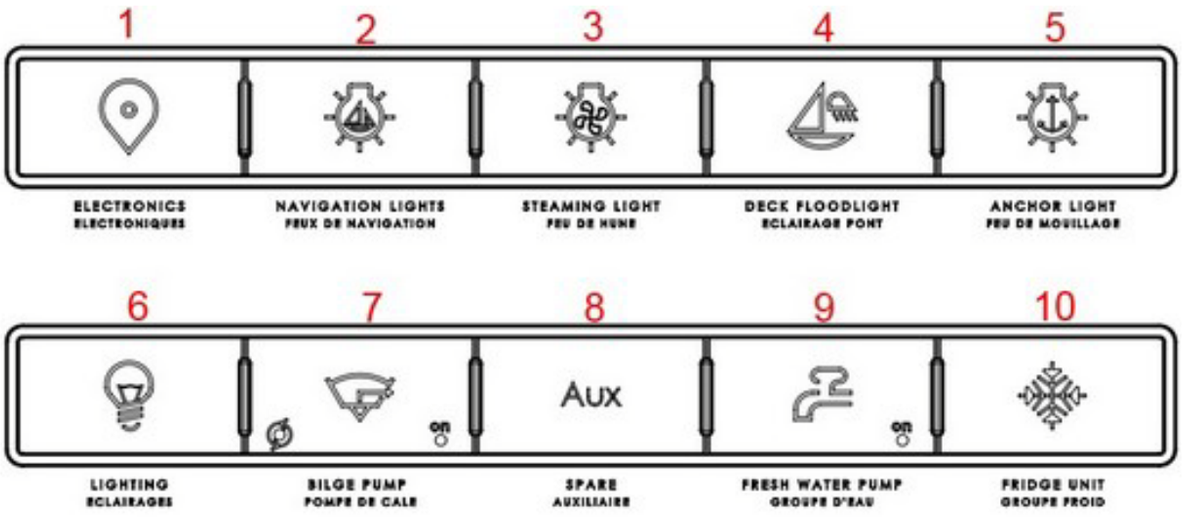


8.2.6 Layout of deck wiring looms – DC circuit



8.2.7 Electrical panel

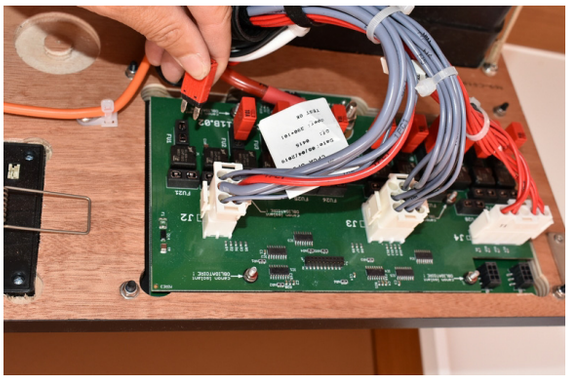
Location: Chart table

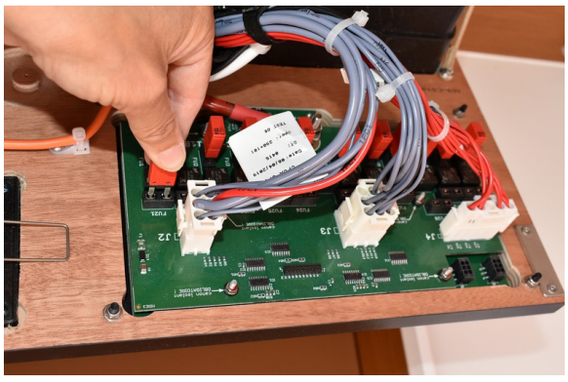


1. Electronic instruments
2. Navigation lights
3. Steaming light
4. Deck light
5. 360° light
6. Lighting
7. Bilge pump
8. Available
9. Water unit
10. Fridge

- The 10 silicone keys switch on the desired DC elements via relays.
- When one of the switches on the panel is flashing, it means that the circuit breaker behind the electrical panel of the faulty switch must be reset.

A circuit breaker protects the circuit of each DC component. An additional fuse holder allows the desired element to be supplied directly by shunting the relay.





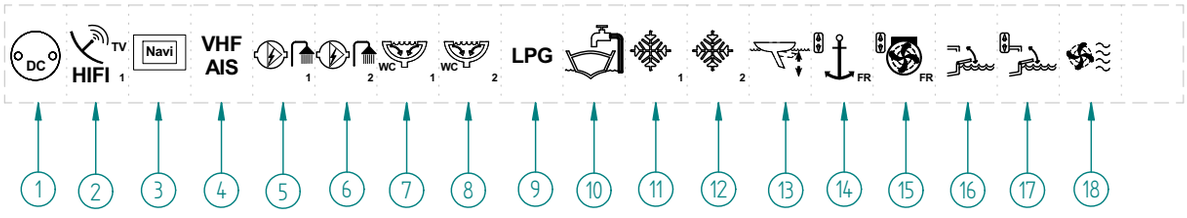
1. Additional fuse holder (for inserting a fuse to power a DC component in defect mode)
2. Relay box
3. Fuse

Designation	Safety fuse	Fuse in defect mode (by-pass)
Water unit	FU 3	FU 23
Electric bilge pump	FU 2	FU 22
Auxiliary	FU 4	FU 24
Refrigeration unit	FU 1	FU 21
Navigation lights	FU 8	FU 21
Steaming light	FU 9	FU 29
360° light	FU 7	FU 27
Electronic instruments	FU 5	FU 25
Deck light	FU 6	FU 26
Lighting 1	FU11	FU 31
Lighting 2	FU 10	FU 30

8.2.8 DC breakers

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

Location: Chart table
(Back of electrical panel)

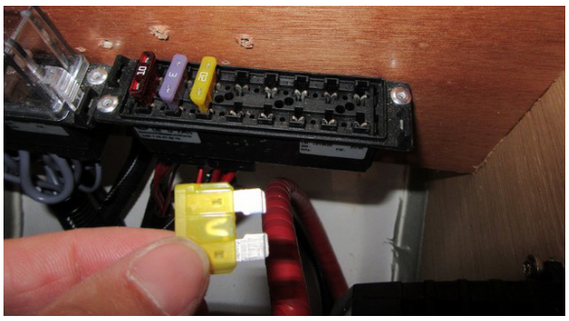


1. 12 V socket
2. HiFi & TV Antenna
3. Touch screen (Supply)
4. VHF / AIS
5. Forward shower drain pump
6. Aft shower drain pump
7. Forward electric toilet pump
8. Aft electric toilet pump
9. Gas solenoid (US Version)
10. Deck wash pump
11. Fridge (Cockpit)
12. Fridge (Workshop)
13. Retractable keel
14. Electric windlass (Control)
15. Bow thruster (Control
16. Electric platform
17. Pickups – Electric platform
18. Cabin ventilators

Location: Port aft cabin

100A	Electric windlass
80A	Electric winch
200A	DC/AC converter

8.2.9 Fuses

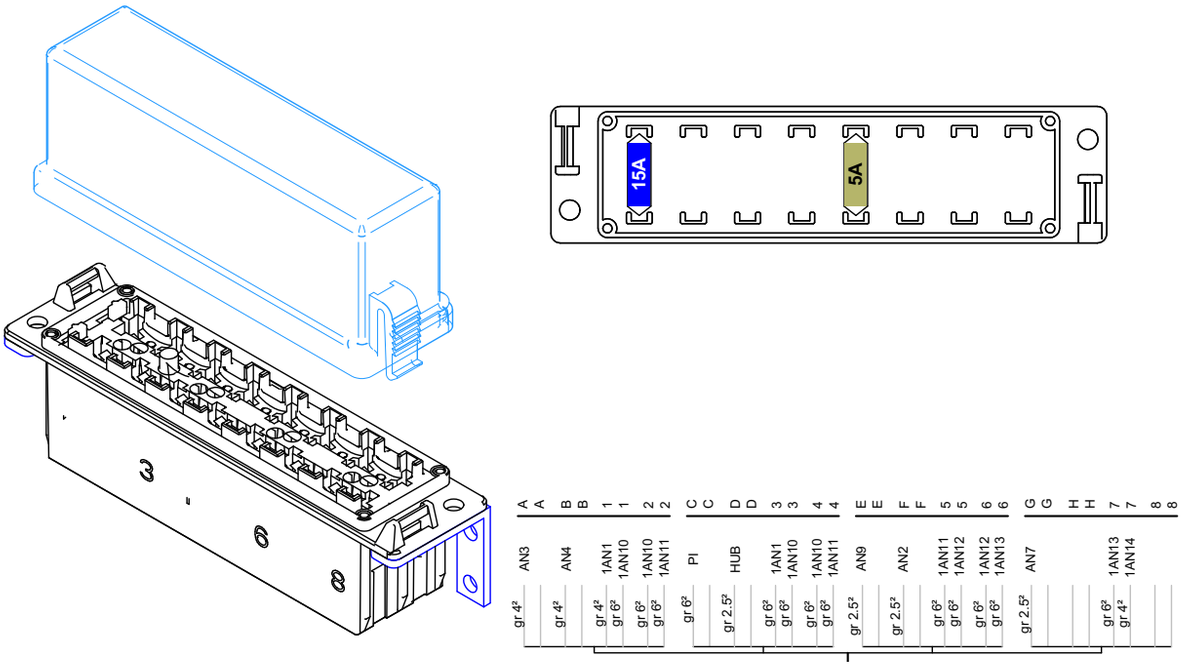


A fuse protects an electrical circuit from excess current. If it blows, you must replace it with another fuse of the same rating.

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

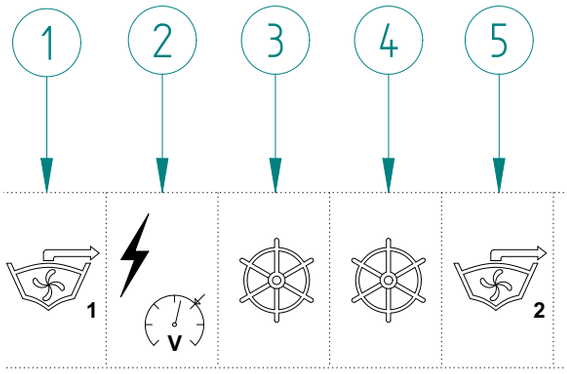
20A 15A 10A 5A 3A

Location: Port aft cabin



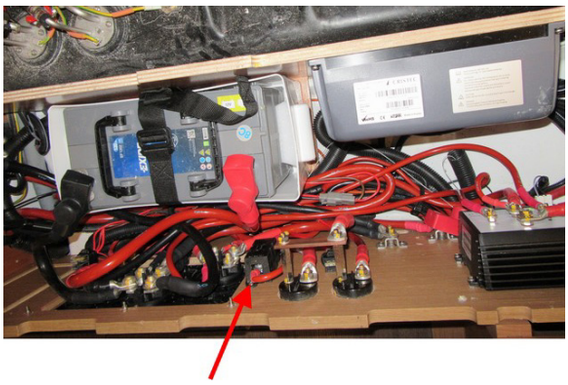
Electronic parts:

- Starboard navigation screen
- Port navigation screen
- Auto-pilot calculator
- HUB
- System
- Radar
- Autopilot remote control



1. Engine compartment fan
2. Positive engine ignition
3. Electronic instruments
4. Electronic instruments
5. Engine compartment ventilator (Generator)

Fuse DC circuit protection
(100A)

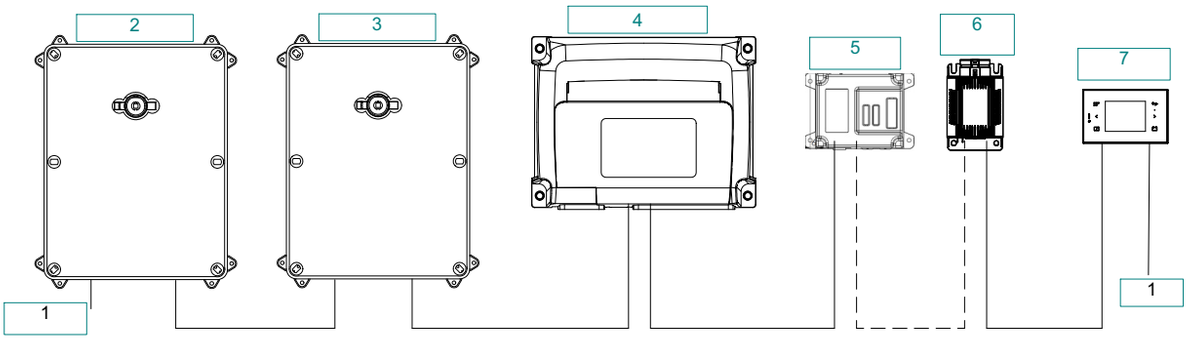


8.3 Touch screen

- The screen NAVICOLOR is a touch interface for viewing and controlling the auxiliary functions of the boat:
  - Battery voltage,
  - Fuel gauge,
  - Fresh water gauge,
  - Management of boat's AC supply sources.

Location: Chart table

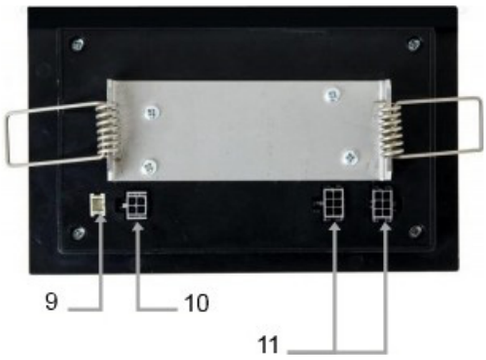
Diagram of layout



1. Terminal
2. Onboard switch
3. Switch for air-conditioning
4. Battery charger
5. Measuring block
6. Input block
7. Touch screen

Touch screen operation

Front view



Rear view

1. Direct access to home page
2. Previous page
3. ON/OFF button
4. Tank menu
5. Back
6. Light sensor
7. Next page
8. Direct access to battery page
9. Connector for temperature sensor
10. Bus
11. CAN connector

Notes

The menus may vary depending on the specific equipment of each boat.

Battery measurement menu access

Fresh water tank level menu access

AC supply distribution menu access

Adjustment menu access (Access to it is restricted by a code supplied on request to the yard)

- CAN network display (Controller Area Network)
- Parameterization of lighting
- Configuration of the 'gauge' pack
- Configuration of source selectors

Return to preceding page

8.4 AC system (110V or 220V)

8.4.1 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 (where installed):
  - Air conditioning,
  - Household appliances,
  - Water heater,
  - Interior AC sockets,
  - Battery charger(s).

Guidelines for using the AC electrical system correctly

- If a DC/AC converter is fitted on board: it is essential to switch off 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: This may result in an electric field that could injure or kill nearby swimmers.
- Incorrect use of alternating current systems will result in a danger of electrouction.
- Do not work on a live AC system.

- To reduce the risk of electric shock and fire:
  - Switch off the switch on the boat's shore cable before connecting or disconnecting the power cable from the shore cable.
  - Connect the shore cable to the boat's power supply input connector before connecting it to the shore socket.
  - If the reverse polarity indicator is activated, immediately disconnected the switch of the shore to boat cable (if fitted).
  - If the reverse polarity indicator is activated immediately disconnect the cable.
  - First disconnect the shore line on the quay.
  - Ensure the protective cover of the power supply input of the shore to boat cable is properly closed.
  - Do not alter the connections of the shore power supply cable: only use compatible plugs and sockets.
- Electrical connections change over time. It is necessary to have the boat's electrics checked regularly and at least once every two years by a professional. Special attention should be paid to the tightness of the electrical connections.

Advice / Recommendation

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

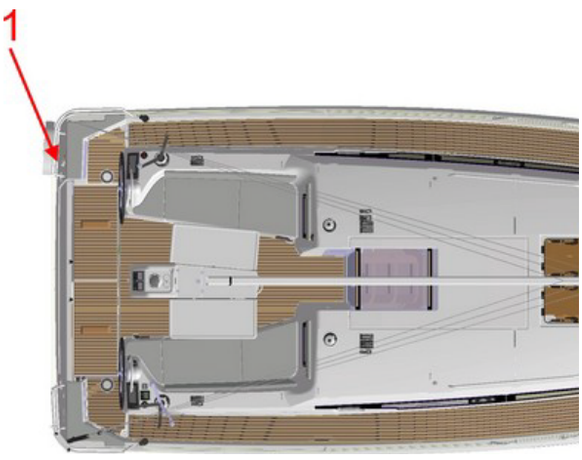
- Do not modify the vessel's electrical installations or the relevant diagrams. Installation, maintenance and modifications must be carried out by an electrician qualified in marine electricity. Have all electrical installations checked (tightening and connections) every year.
- Disconnect the boat's shore power when the system is not in use.
- Connect the relay boxes or metal casings of the installed electrical equipment to the boat's protective conductor (green or green with yellow stripe).
- 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).

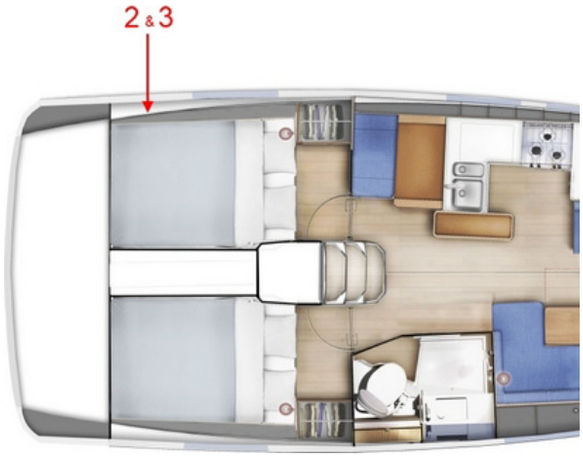
8.4.2 AC shore socket

Operation

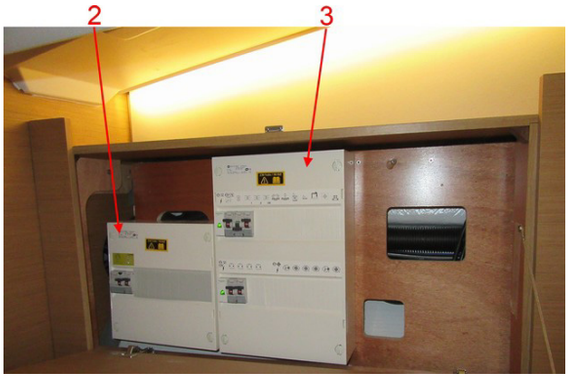
- First plug the extension cable into the AC socket on the boat, then into the socket onshore.
- First unplug the extension cable from the socket onshore, then from the AC socket on the boat.

Location of components





AC shore socket
Ref 1



Bipolar circuit breaker (Protection)
Ref 2

Differential switch (Operation)
Ref 3

8.4.3 AC source selectors

- The shore-generator switch is the actuator for:
  - switching between the different AC sources available on the boat. These include the dock socket(s) and the generator.
  - measuring the voltage, frequency and current of the power sources connected to it.
  - generator start (selector no°1 "onboard") or air conditioning (selector no°2 "air conditioning").
  - an isolated measurement (galvanic) of the generator battery.
- In the event of system failure, the switch can be operated manually using the handle on the device. Engage the handle, then switch to the right or left of the device to select the desired AC source.
- Maintaining switching positions does not require power consumption.

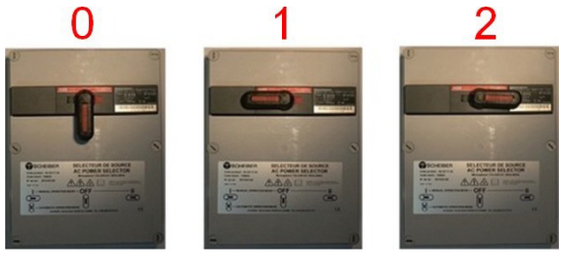
Source selectors

Location: Engine compartment

- Source selector "onboard": fitted if the boat features a generator.
- Source selector "Air conditioning": is fitted if the boat is features air conditioning.

Handle

Manual use

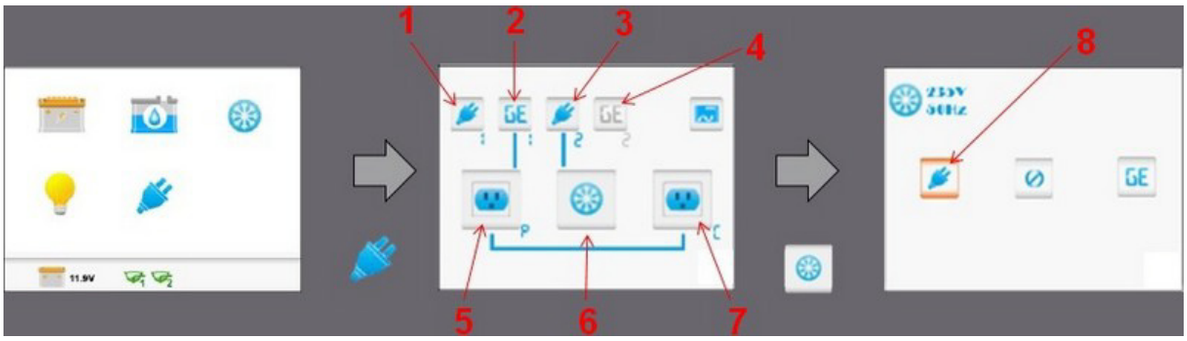


0. No selection

1. AC supply via generator

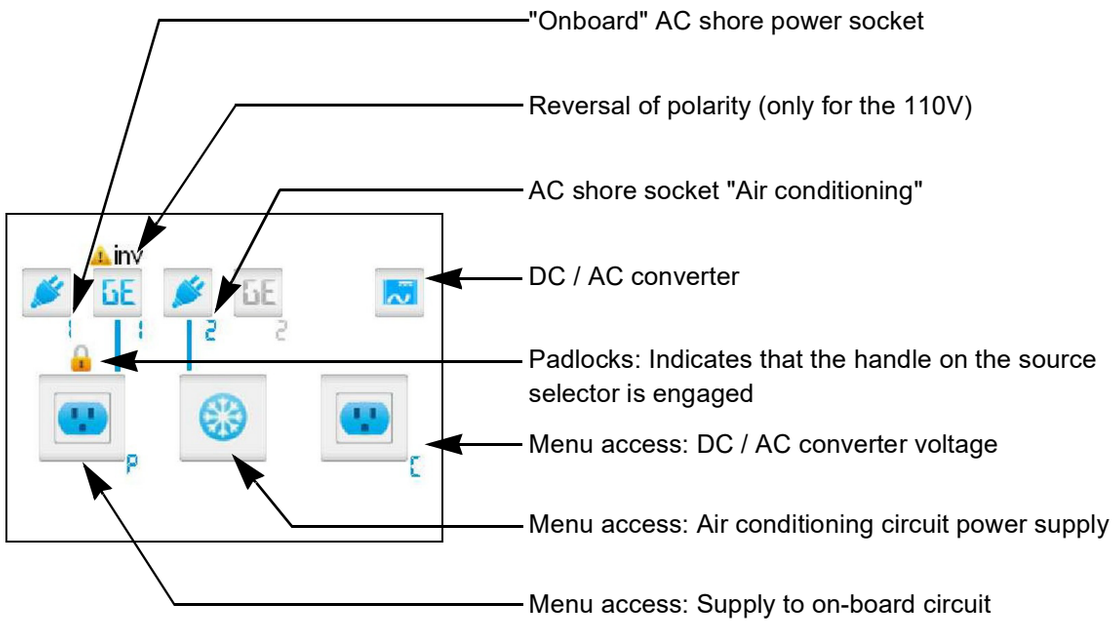
2. AC supply via shore power

Operation



1. Shore voltage present but not selected
2. Generator on and selected
3. Current and selected platform voltage
4. Generator off
5. Selector n°1
6. Selector n°2
7. AC unit (DC/AC converter)
8. Source selected for the onboard selector

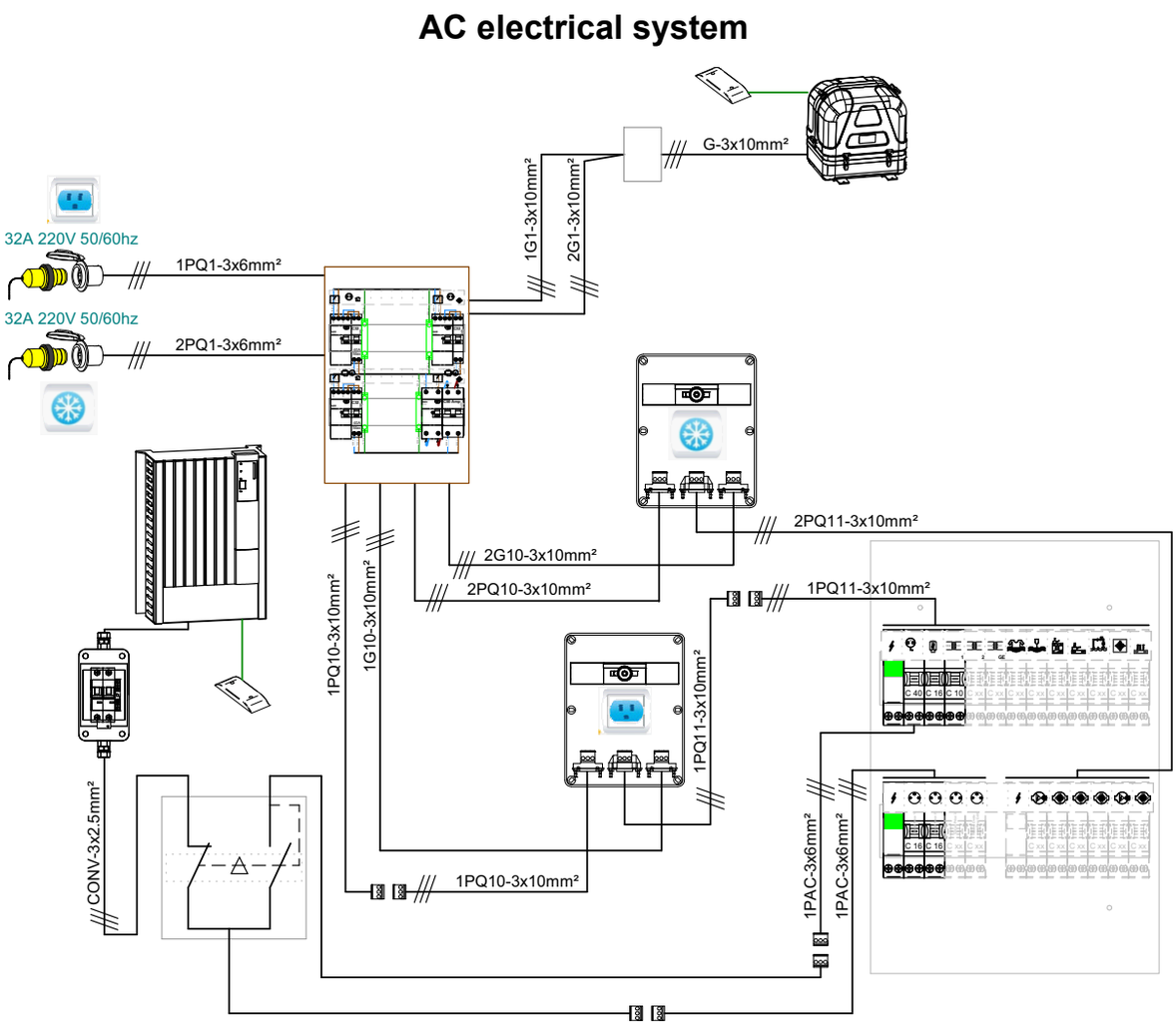
Access sub-menus by pressing the required menu icon.



NOTE: Here, on selector n°1, the padlock indicates the presence of the manual control handle on the selector. Switching cannot be carried out through the screen.

8.4.4 Diagram of layout

Europe Version (220V / 50Hz)

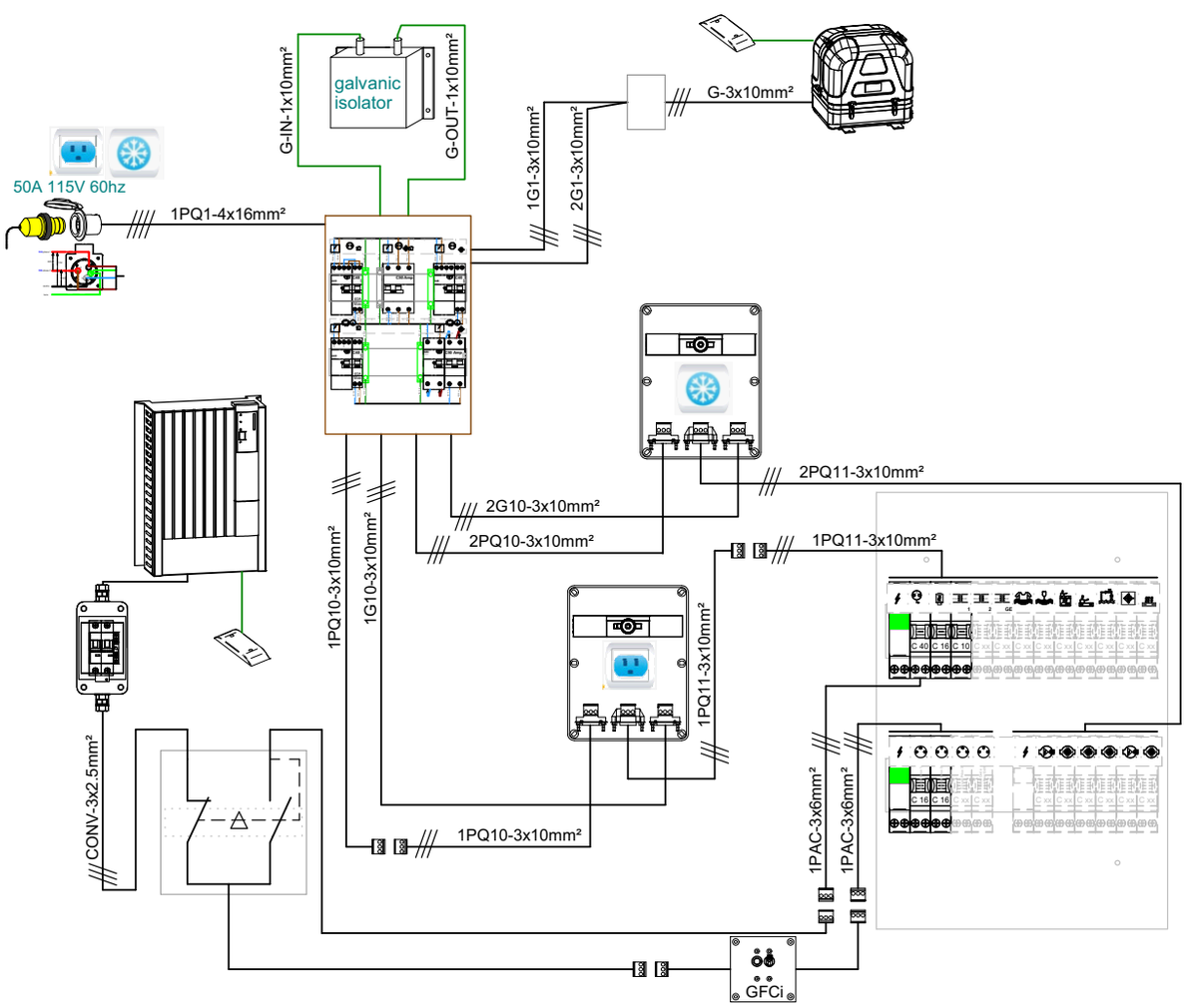


US Version (110V / 60Hz)

Installation of galvanic isolators

This functions on the principle of isolating the earth of the boat from that of the shore using a galvanic isolator. This assembly protects the motors from electrolysis in the event of faulty insulation between the negative side of the battery and the boat's earth.

AC electrical system



8.4.5 DC/AC converter

- Never:
  - connect the inverter AC lead to an AC terminal or to the onboard generator.
  - disconnect the wiring from the inverter when in use.
  - open the inverter.
- Refer to the manufacturer's instructions for use and maintenance.

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 Chapter: EARTHING PLATES).
- The voltage measurement delivered at the converter output is visible on the touch screen.

Operation

- Power supply for the 220V AC electric sockets in the cabins:
  - Once there is sufficient nominal voltage coming from the AC switch panel, AC power is supplied by the onshore socket 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 220V sockets in the cabins can be supplied by the inverter, itself supplied by the service battery bank. Be careful to disconnect the inverter circuit to prevent the AC power supply automatically switching over and to prevent accidental discharge of the service battery bank. This can be done by:
    - setting the inverter's circuit-breaker to the OFF position; or,
    - setting the switch located on the inverter to 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 shore power is not supplied. It is controlled by a relay connected to the shore power supply. This converter powers the indoor sockets and some onboard appliances.
- When shore power is not connected, the relay automatically connects the inverter to a part of the onboard AC circuit.
- When the shore power socket is plugged in and powered, the relay automatically disconnects the inverter.

Maintenance

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

DC/AC converter

Location: Port aft cabin

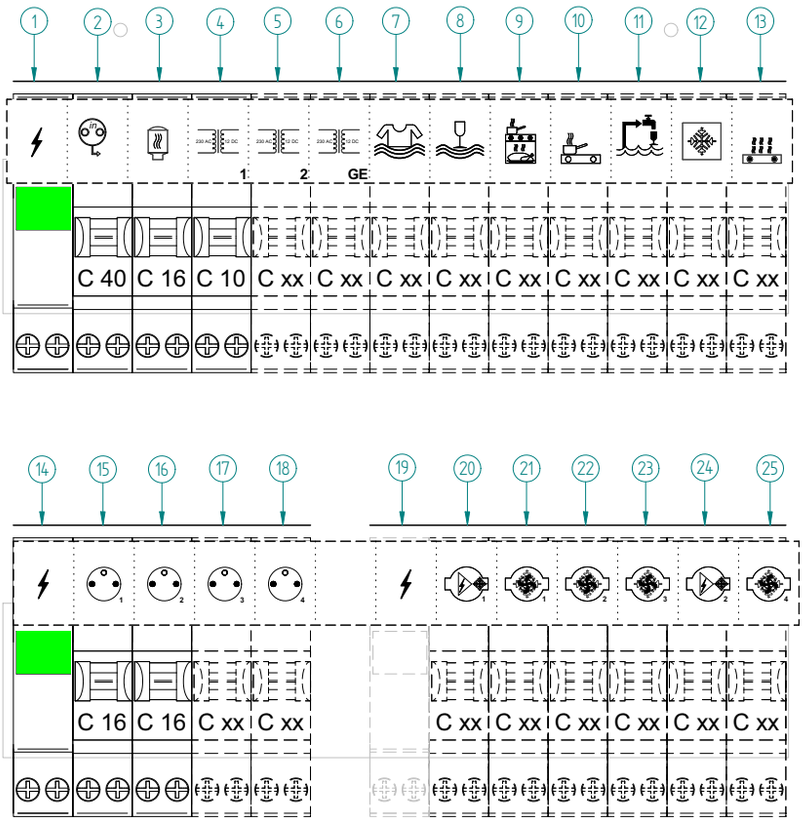
Control located on the equipment

200A circuit breaker

Remote control

8.4.6 AC breakers

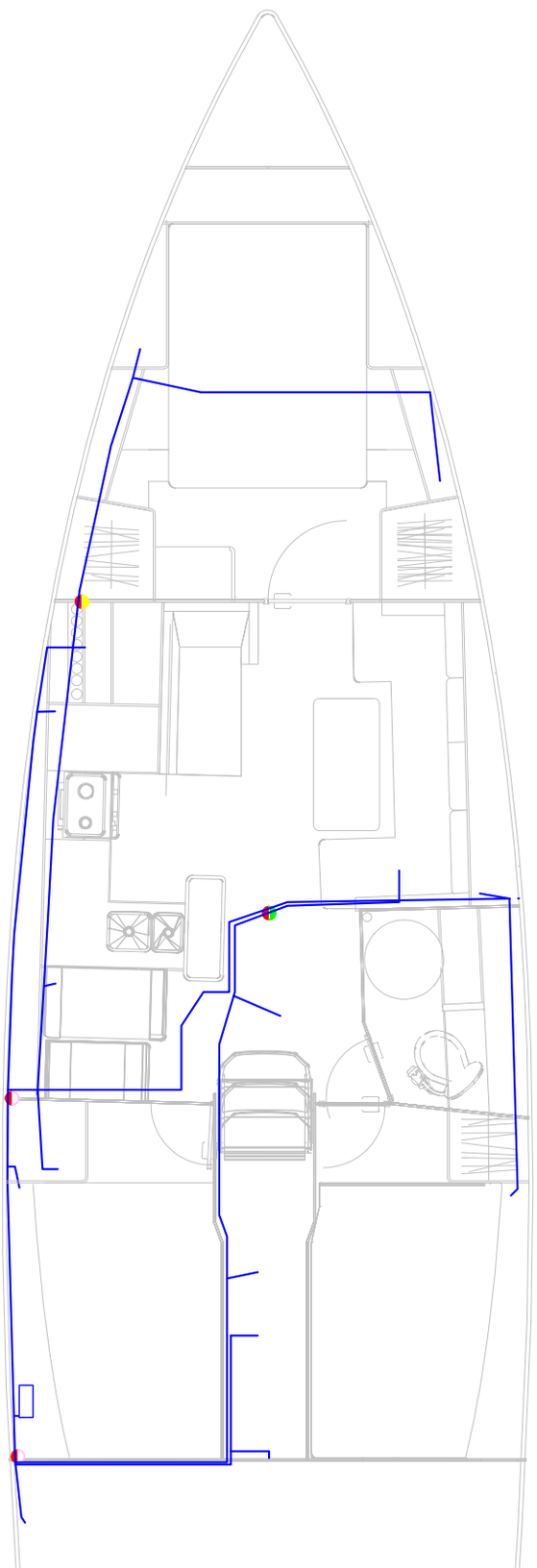
Location: Port aft cabin



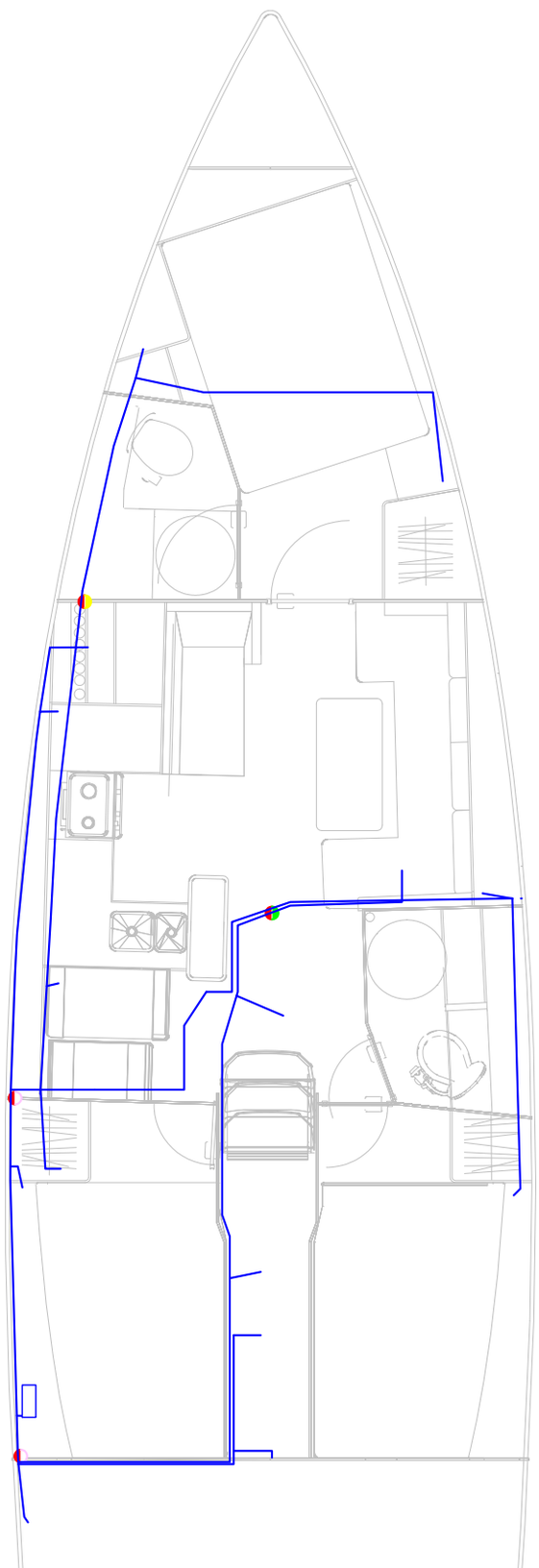
1. General circuit supplied light (Onboard AC)
2. AC socket circuit protection
3. Water heater
4. Battery charger
5. Battery charger
6. Generator battery charger
7. Washer
8. Dishwasher
9. Oven
10. Hot plate
11. Watermaker
12. Refrigeration unit
13. External grill
14. Circuit supply light - AC sockets
15. AC socket
16. AC socket
17. AC socket
18. AC socket
19. Generator breaker – Air conditioning
20. Seawater pump
21. Compressor
22. Compressor
23. Compressor
24. Seawater pump
25. Compressor

8.4.7 Layout of hull wiring looms – AC circuit

1 aft cabin layout



2 aft cabin layout



8.5 Protection against electrolysis / Earthing plate

8.5.1 Anodes

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

General points

- The sacrificial anode protects the submerged elements of the boat against 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 seek to reach the same electric potential, which leads to the rapid deterioration of the anodes during 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 has lost 50% of its weight).
- Use the appropriate anodes for the cruising area: magnesium anodes for fresh water; zinc anodes for seawater.
- When the boat is kept in a dry dock, a light deposit of dust will settle on the anodes: clean the anodes before relaunching.

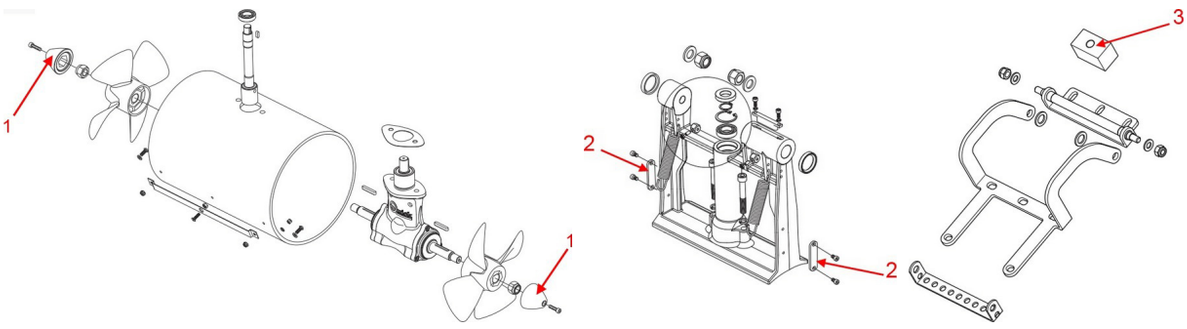
Cleaning anodes

Use emery paper. Do not use metal brushes or steel tools to clean the boat as this 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.
- Change all the anodes every year.

Retractable thruster



1. Propeller anode
2. Lever arm anode
3. Hinge anode

Propeller anode

Bow propeller anode

Keel anode

(Centreboard version)

8.5.2 Earthing plates

Only included with the generator and inverter options and their pre-wiring.

Never antifoul over the 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 (AC/DC convertor). The earthing plate earths this equipment.
- The earthing plate is not an anode: it must not be allowed to deteriorate.
- If the earthing plate deteriorates, consult a professional immediately to determine the cause. Because it is mounted across the hull below the waterline, deterioration of the earthing plate puts the boat at risk of sinking.

Inside view

Outside view

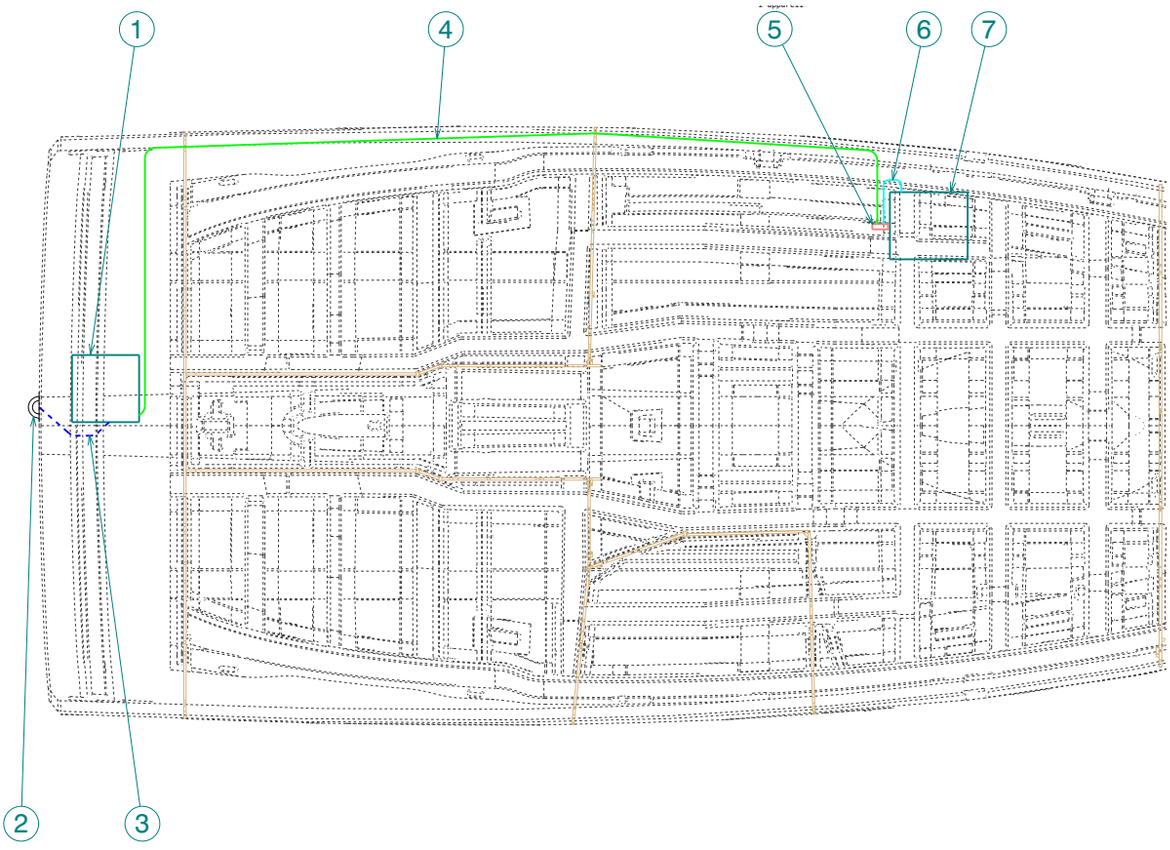
9

Liquefied Petroleum Gas (LPG) System

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 and protected from weather and mechanical damage. If a gas leak occurs, it is essential that the gas escapes outside.
- 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



1. Gas cylinder locker
2. Kitchen sink thru-hull drainage
3. Gas locker drain
4. Gas system
5. Gas supply valve
6. Hose
7. Hob / Oven

Layout of components

Gas cylinder locker

Hob / Oven

Gas supply valve

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.
- Ventilation is necessary 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

- 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 or fire from an LPG tank 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. Installation, modification and maintenance should be carried out by a qualified individual. Have the system checked at regular intervals or as prescribed 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.

- Fuel-burning equipment with a naked flame consumes the oxygen in the cabin and leaves combustion residue in the boat. Ventilation is necessary when this equipment is used.Open the vents provided for this purpose when using this equipment. Do not use a hotplate or an oven to heat the living areas. Never obstruct the openings provided for ventilation.
- Ventilation requirements have been calculated for LPG appliances as installed. Additional ventilation openings may be required if other appliances are installed in addition to these (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 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 ammonia 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 contact with the ammonia).

Remark

Leak tests carried out by the boat user are not a substitute for regular and complete checks of the LPG circuit by a competent professional.

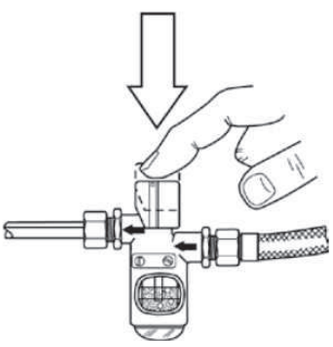
The LP system should be tested for leakage before each use in any of the following ways:

- 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 and 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.

  Remark

  The pressure gauge only indicates vapour pressure, which is a constant at a given temperature. It gives no indication of the amount of LPG remaining in the cylinder..

- 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 pressurised 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, soapy water or a detergent (with the burner taps closed and the installation and gas bottle taps left open). Foaming solutions for detecting leaks in gas installations conforming to EN 14291 are adequate for these requirements.

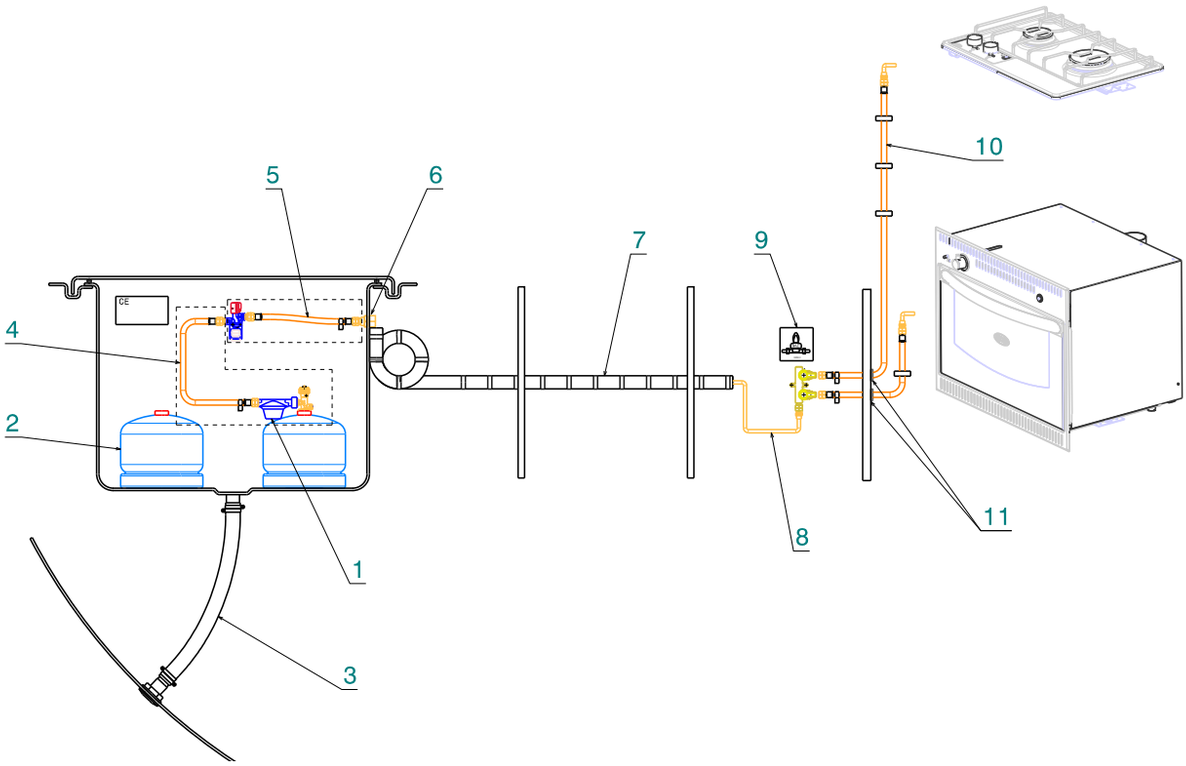
- If an LPG leak is detected or suspected, immediately take the following measures:
  - Cease use of all LPG appliances;
  - Disconnect the LPG supply from the supply valve(s);
  - Extinguish all naked flames and other sources of ignition (heaters, cooking appliances, pilot lights, etc.);
  - Do not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

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

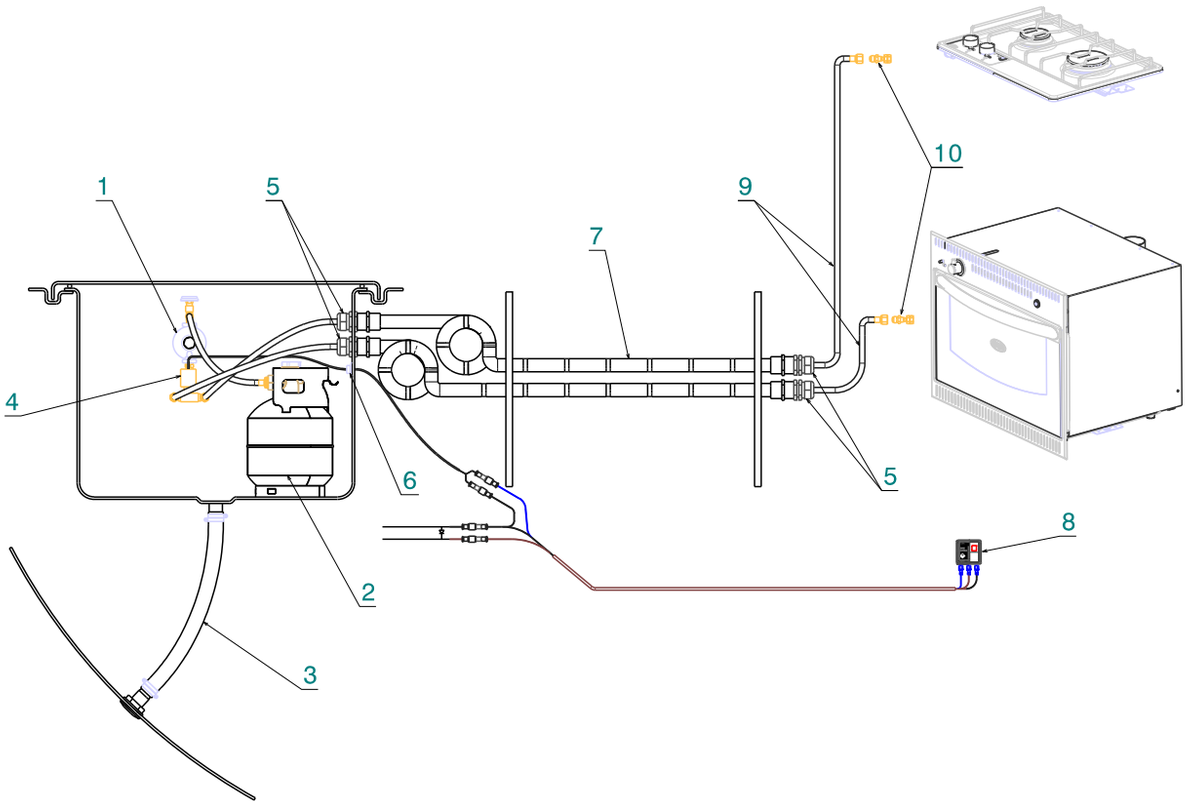
9.4 Diagram of layout

Europe Version



1. Regulator valve
2. Gas cylinder
3. Drain
4. Gas bottle connection kit
5. Bubble tester kit
6. Rubber washers
7. Ringed PVC sheath
8. Copper gas connection kit
9. Label
10. Gas appliance connection kit
11. Bulkhead fitting

US Version



1. Regulator valve
2. Gas cylinder
3. Drain
4. Electromagnetic valve (12V)
5. Bulkhead fitting
6. Wire passage
7. Ringed PVC sheath
8. Solenoid switch
9. Plastic propane pipe
10. Gas appliance connection kit

Domestic appliances

10.1 Fridge

Advice / Recommendation

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

General points

- The fridge comprises 3 components: the compressor, the evaporator and the condenser. These components are connected by a closed 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 must be strictly avoided.
- A breaker protects the electrical circuit.
- The thermostat is in the inside compartment of the fridge. It enables 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 with which the door is opened.

Fridge

Location: Galley

Maintenance

- Clean the evaporator with a damp cloth at least once a year. Never use cleaners which are abrasive or acidic, 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 odours from developing.

10.2 Microwave

- Never allow children to use the domestic electrical equipment unsupervised.
- Refer to the manufacturer's instructions for use and maintenance.

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 must be strictly avoided.
- The microwave must never be started when empty.
- Remove all foil or metallic packaging elements before putting food in the microwave.
- Remove airtight coverings from packaging before putting food in the microwave.

Starting up

- Use the switch to select the desired 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.

10.3 Washer

- Do not operate the washing machine when sailing.
- Refer to the manufacturer's instructions for use and maintenance.

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.
- Dirty water is drained to the greywater tank/by draining the sink.

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.

Audio-visual equipment

11.1 Television

General points

- Power for the television is supplied by alternating current. Depending on the equipment of the boat, alternating current may be provided by:
  - the AC shore power socket,
  - the generator,
  - the DC/AC converter powered by service batteries.
- A circuit-breaker protects the circuit.
- Pre-cabling for the aerial is already installed on the boat.

Starting up

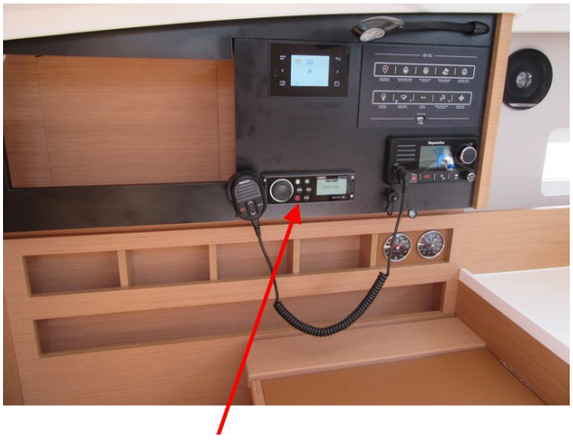
First turn on the circuit breaker, then switch on the TV.

11.2 HiFi

Advice / Recommendation

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

- The sound system is DC powered.
- The sound from the radio comes from the inside and outside speakers. It is possible to select either inside or outside speakers by adjusting the balance control.



Onboard comfort

12.1 Air conditioning

- When the air conditioning is running, check visually that the seawater has been fully drained.
- Regularly check and clean the seawater filter placed on the thru-hull seawater intake.
  - Close the seawater intake valve;
  - Unscrew the top of the filter;
  - Clean the filtering screen;
  - Put everything back in place.
- Clean the air filter (located in the compressor) regularly for maximum performance.
- 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°C.
- Winterisation: drain the whole seawater system.
- The cooling gas circuit requires no maintenance.
- Refer to the manufacturer's instructions for use and maintenance.

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 seawater temperature exceeds 13°C.
- In winter, you can programme the dehumidifier function on the air conditioning controls.
- The cooling circuit consists of one or more compressors that operate independently.
- 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 relay boxes.
- Seawater is drained via a through-hull fitting equipped with a valve, located above the waterline. Each compressor has its own through-hull drainage 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 or DC/AC inverter).
  - 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 approximately 3 minutes;
  - If using DC/AC inverter power supply: start up the inverter using the battery switches (see Chapter: BATTERY BANK).
- If the seawater pump is deprimed (eg. in case of running aground), carry out the following procedure:
  - Disconnect the discharge hose from the seawater pump by loosening the 2 stainless steel collars;
  - Blow air through the pipe using a compressor;
  - Re-connect the discharge hose with 2 stainless steel collars.

When the air conditioning is running:

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

Layout of components

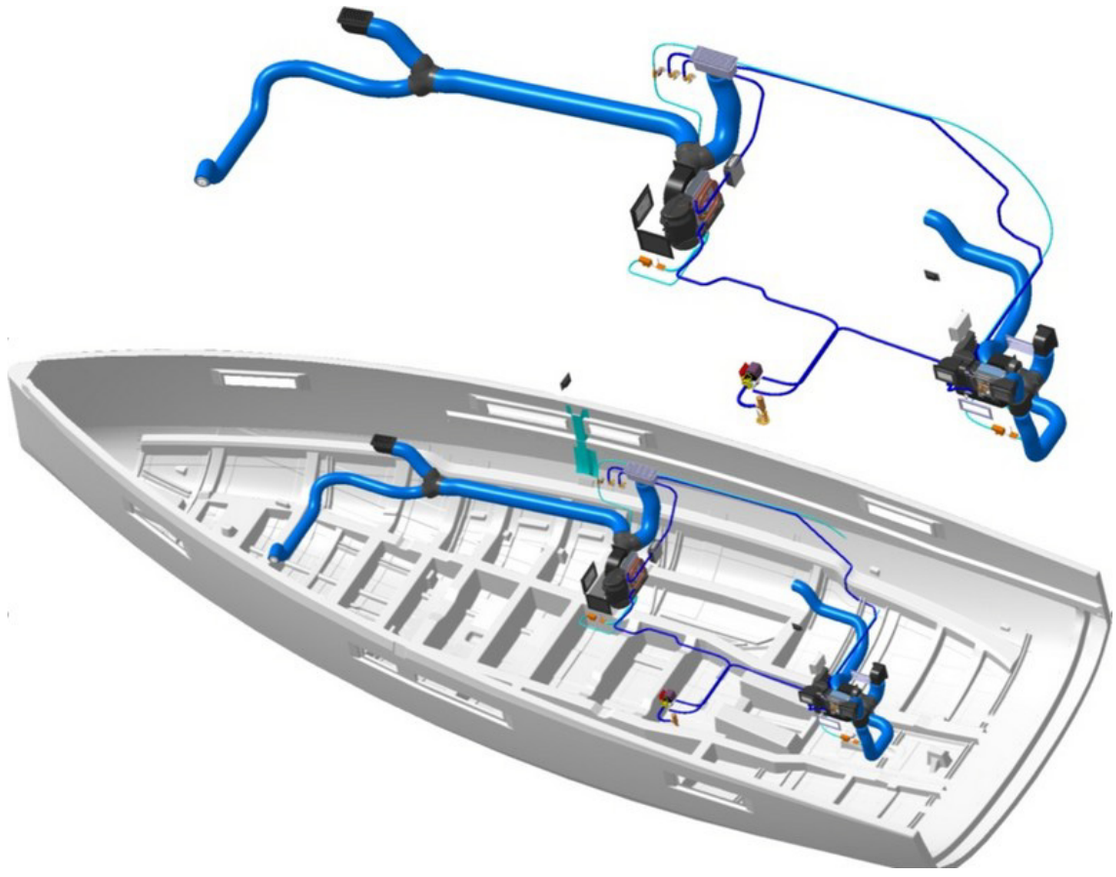
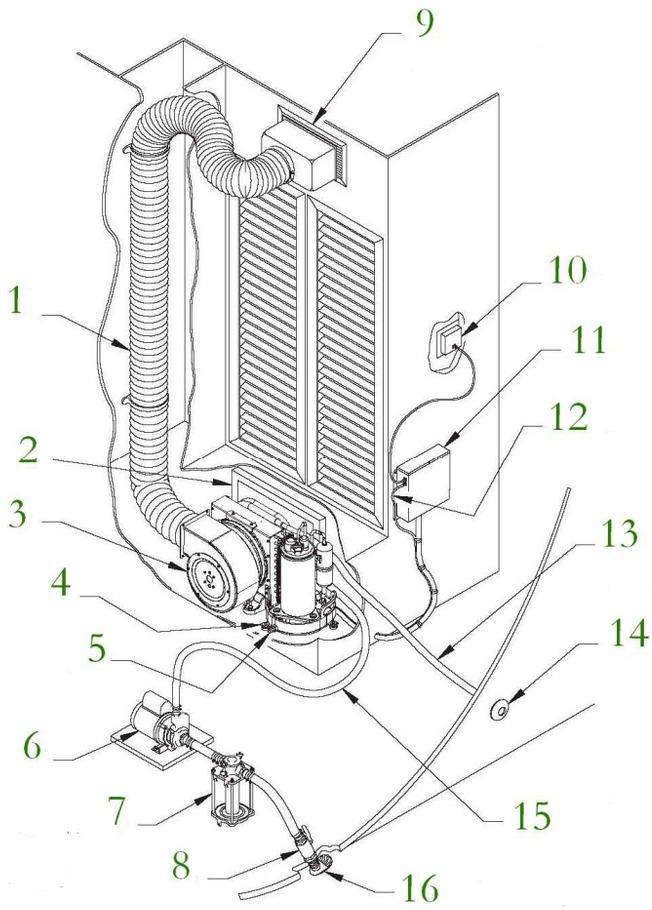


Diagram – Air conditioning



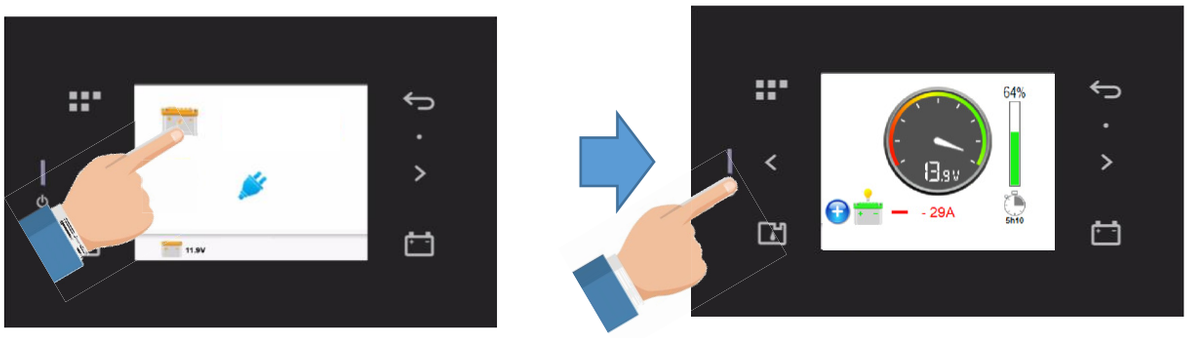
1. Insulated pipe
2. Ambient air intake
3. Refrigeration unit
4. Mounting support
5. Condensation water pipe
6. Seawater pump
7. Filter
8. Seawater supply valve
9. Conditioned air outlet
10. Manual control
11. Relay box
12. Temperature sensor
13. Seawater drainage pipe
14. Thru-hull fitting
15. Seawater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

Touch screen (Navicolor) ??? Batteries Lithium

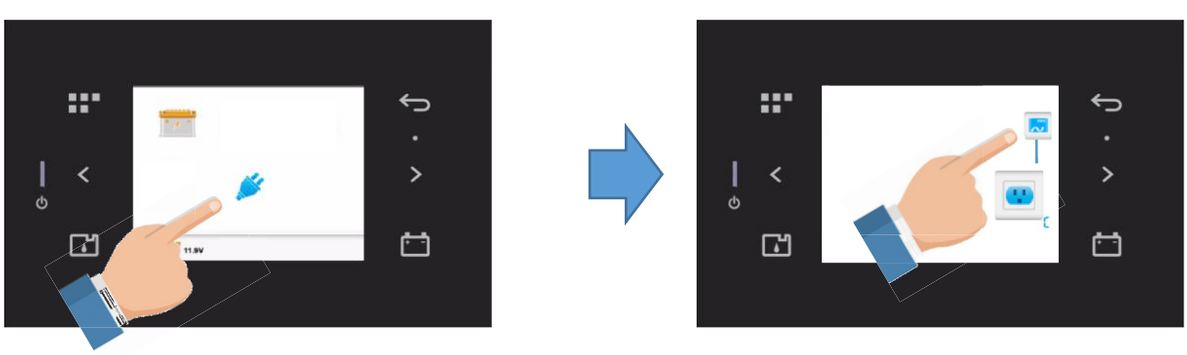
Location: Chart table

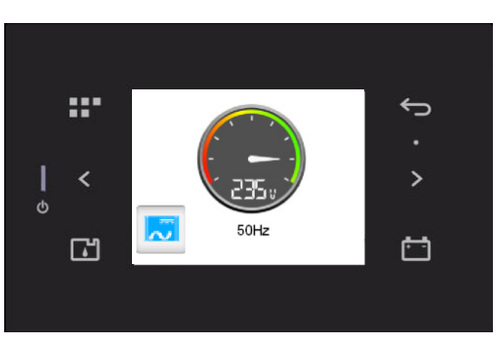
The NAVICOLOR screen is a touchscreen interface which is used to displayer information about the charge, voltage and duration of the batteries and the DC/AC inverter.

Access the BATTERIES menu

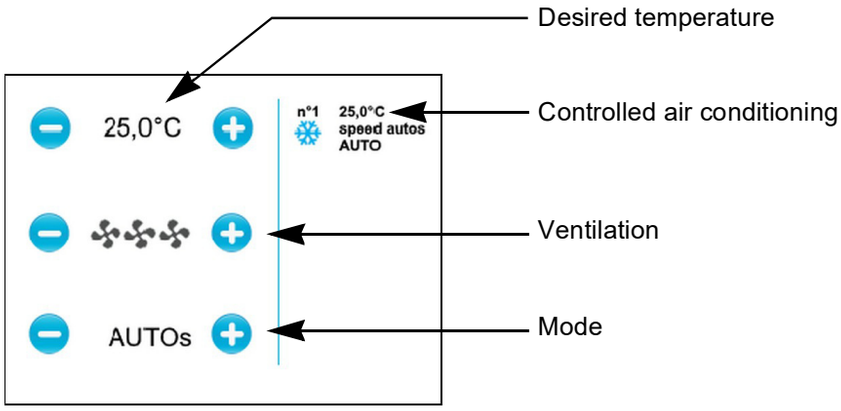


Access the DC/AC INVERTER menu





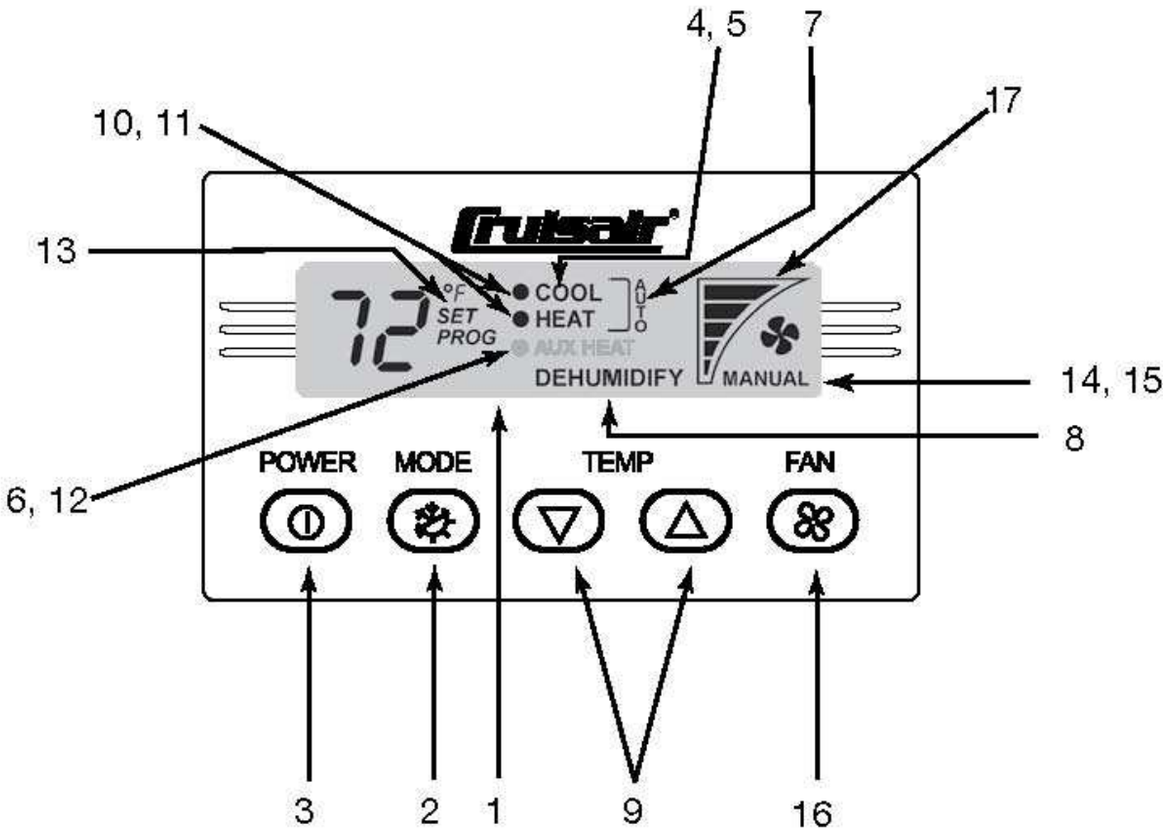
The Navicolor controls the air conditioning in the saloon.



Operation

- The air conditioning is powered using the onboard AC circuit.
- When the shore power socket is connected, the air conditioning is powered by the shore AC power socket.
- When the shore power socket is not connected, for example when the boat is under way or at anchor, the air conditioning operates using the AC power supply from the DC/AC inverter, supplied by the lithium batteries (3 x 90 A used only for this purpose).
- The lithium batteries are recharged by the dedicated battery charger (see Chapter: BATTERY BANK).
- The average duration of operation of the air conditioning supplied by the batteries is approximately 5 hours.

Manual control of the air-conditioning



Please refer to the key on the following page

Locking method

- It is possible to lock the control buttons to prevent settings from being changed accidentally: Press these three buttons simultaneously: MODE, UP (arrow pointing up), FAN.
  LC appears on the screen, which signifies "LOCK".
- To unlock and resume use of the buttons, press the same three buttons simultaneously: 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), touching any button automatically and instantly lights the screen up blue.
- To alter the light intensity of the screen, press these two buttons simultaneously: MODE, UP (arrow pointing up) until the required intensity is reached.
- It is possible to programme whether or not the controls are illuminated by default: In this case the ON mode must be selected for permanently illuminated controls or the SLEEP mode for permanently unilluminated controls.
- Procedure:
  - Simultaneously press these two buttons: MODE and DOWN (arrow pointing down).
  - Select n°18 on the menu using the arrows, then confirm by pressing MODE.
  - With the arrows select either ON for illumination by default or SL (SLEEP) to turn the box off.
  - Press FAN 2 times to confirm the selection.

1. Data display:
   Screen displaying desired temperature, programmed values and error messages.
2. MODE:
   Enables navigation between the different operating modes.
3. POWER/OFF:
   Lights up 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. Option (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. + and – keys:
   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. Option (Auxiliary heating).
13. Temperature control indicator:
    This indicates the temperature control setting (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. Fan key:
    Allows you to select manual or automatic mode for the ventilator.
17. Ventilator speed indicator:
    Shows current ventilator speed.

Notes

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

12.2 Electronic equipment

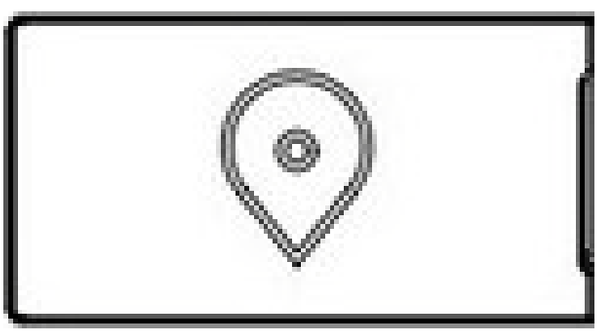
Advice / Recommendation

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

The onboard electronics are powered by direct current.

Control

Location: Electrical panel



Sensors

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

Location of sensors

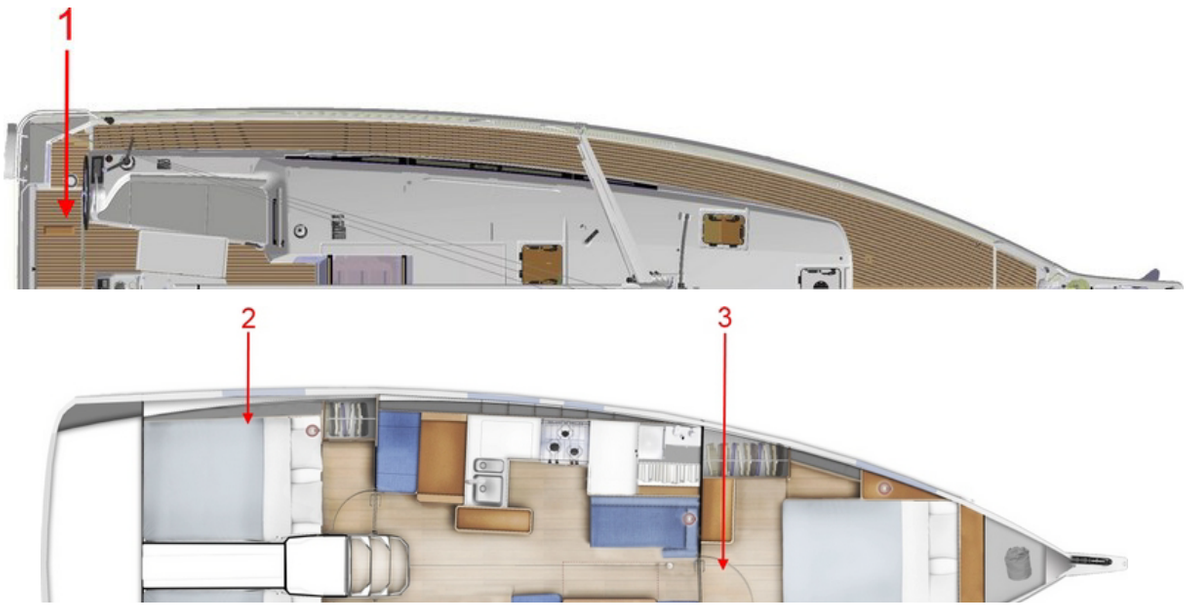
Inside view

Outside view

Autopilot

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

Layout of components

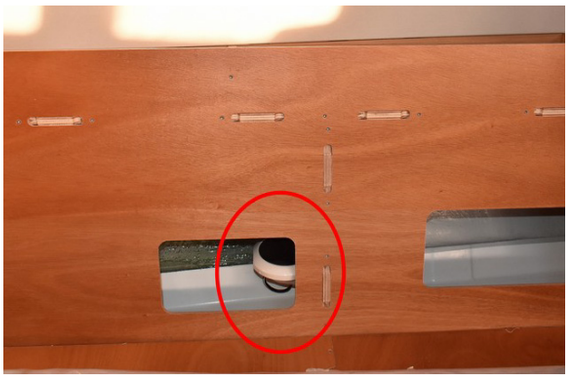


Hydraulic piston + Tank
Ref 1

Vessel Management Unit
Ref 2

Gyrocompass (Fixed keel version)
Ref 3

Gyrocompass (Centreboard version)
Location: Port saloon

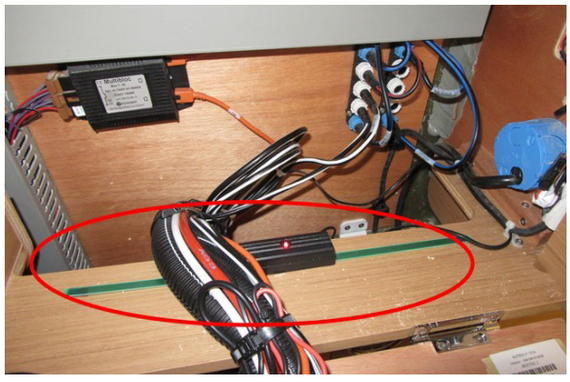


Control
Location: Steering station

VHF

Layout of components:
Chart table

Aerial amplifier
Location: Back of electrical panel



12.3 Fuel-burning equipment for purposes other than propulsion (Generator, Heating)

- Make sure that the ventilation openings in the engine (and, if installed, generator) compartment are well-cleared.
- Stop the engine and refrain from smoking while the fuel tank is being filled.
- Have 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 and protected from bad weather and mechanical damage.

12.3.1 Generator

- Refer to the manufacturer's instructions for use of the generator.
- Never start the generator when the air conditioning is already on. Always turn off the air conditioning before turning off the generator.
- Never connect the shore power to the generator: you may suffer an electric shock.
- An extinguisher access port is provided on the generator in the event of a fire starting in the generator.
- Equip the vessel with one or more portable extinguishers whose heads are compatible with the diameter of the opening in vertical use.

General points

- The generator is a machine which can produce AC electrical power using mechanical power (fuel). The generator powers onboard equipment operating at 220V or 110V, moored or sailing.
- The generator starts with its own battery (12V circuit).
- Make sure that there is enough fuel in the fuel tank before using the generator. The generator is fed by fuel from the port 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 (seawater, coolant, fuel, exhaust gases). If there is a leak, stop the generator at once and have the leak repaired.
- The generator is earthed by an earthing plate which is located under the hull (see Chapter: EARTHING PLATES).
- 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 itself or by the switch on the control panel.

Starting up

- Fill the generator with water to prevent the seawater pump from running dry (refer to the supplier's recommendations).
- 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. Toggle the shore power/ generator switch.

In the event of the generator catching fire

To enable functioning of the fixed fire extinguishers, the safety pins on each extinguisher must all be removed completely.

- Do not open the generator.
- Cut the power supply (electrical and fuel) to the boat's engines, to the generator and to the ventilators.
- Use the remote control lever of the fixed extinguisher.

Anti-siphon valve

see Chapter: ENGINE

General layout

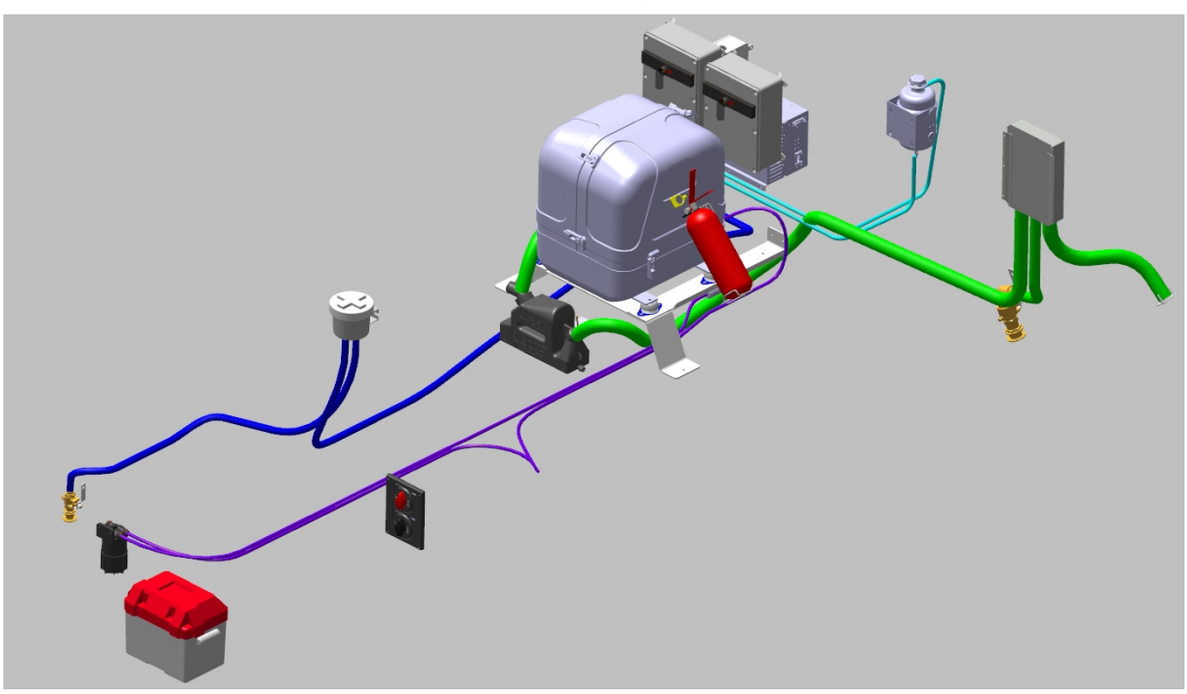
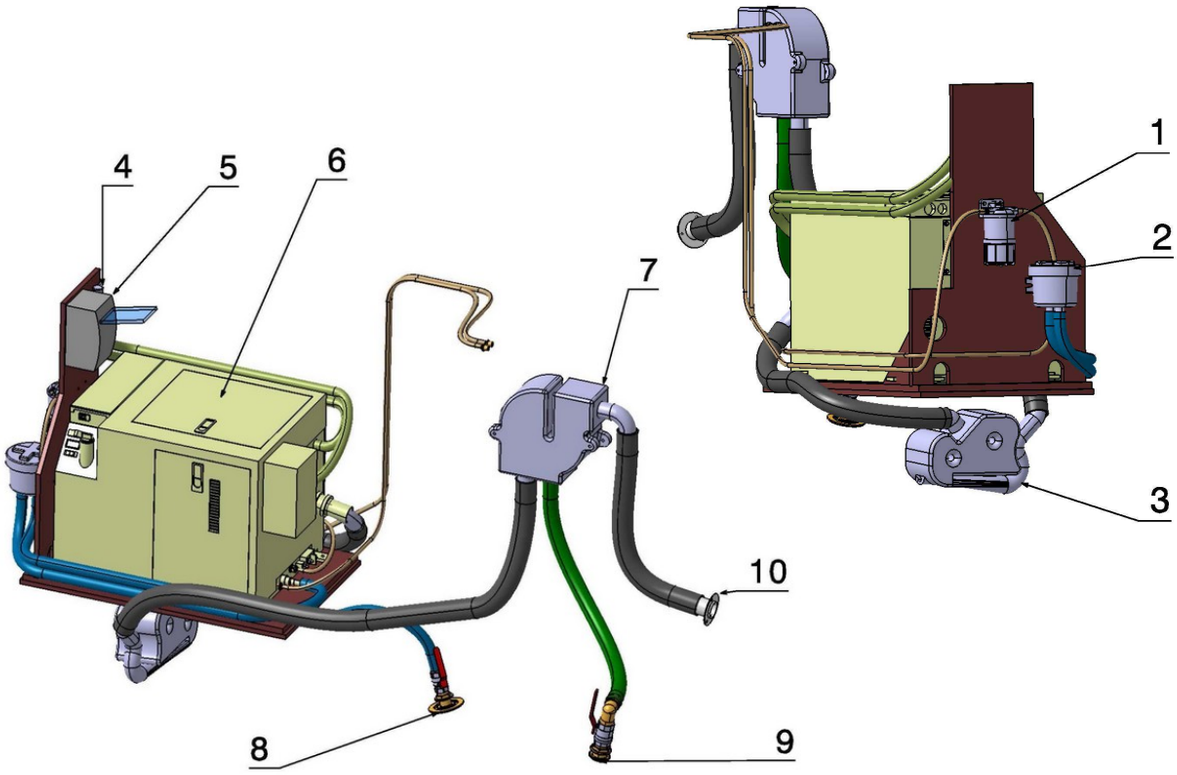


Diagram of layout ???



1. Fuel filter
2. Seawater filter
3. Water trap
4. Anti-siphon valve
5. Differential circuit breaker
6. Generator
7. Water/gas separator
8. Seawater inlet
9. Seawater drainage
10. Outlet

12.3.2 Warm air heating system

- The heater must be switched off when refilling the fuel tank.
- The heater's exhaust gases are very hot: they may burn fenders or cables located too close to the through-hull exhaust.

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

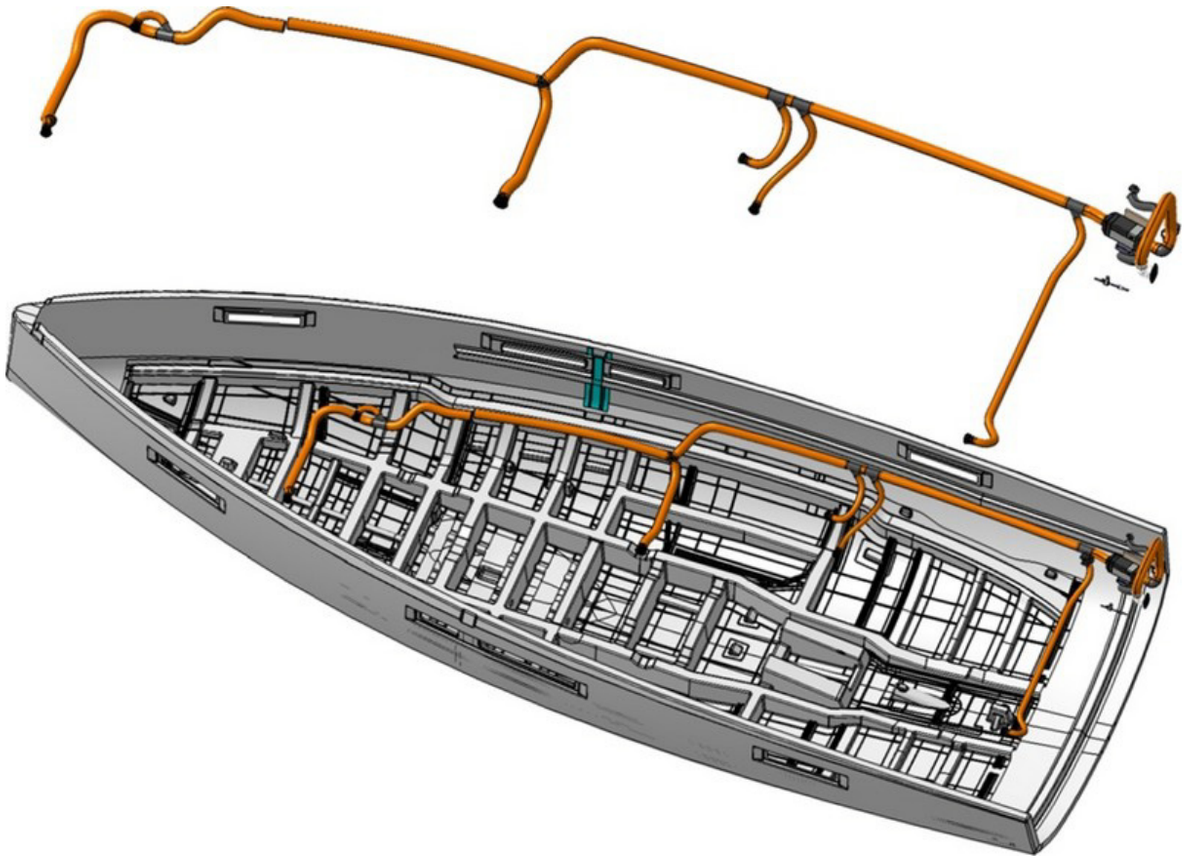
General points

- The heating is powered by DC supply. The electrical supply is provided by the onboard battery bank.
- A fuse potects the circuit.
- You are advised to run the heating system for about 15 minutes every month (to prevent the operating components from becoming blocked and to refresh the fuel in the pipeline).
- The warm air heating system, installed at the back of the boat, draws in outside air via an integrated ventilator.
- The air warmed in the heating system is blown through the warm air ducts to the living area of the boat.
- Fuel is supplied from the fuel tank via a feed pump.
- The combustion system is separate from the heating system: The air intake for combustion is separate from the warm air heating system.
- The exhaust gases are expelled to the outside by an exhaust pipe with a silencer.
- The heating system compares the actual temperature with the desired temperature and automatically adjusts the heating power required.

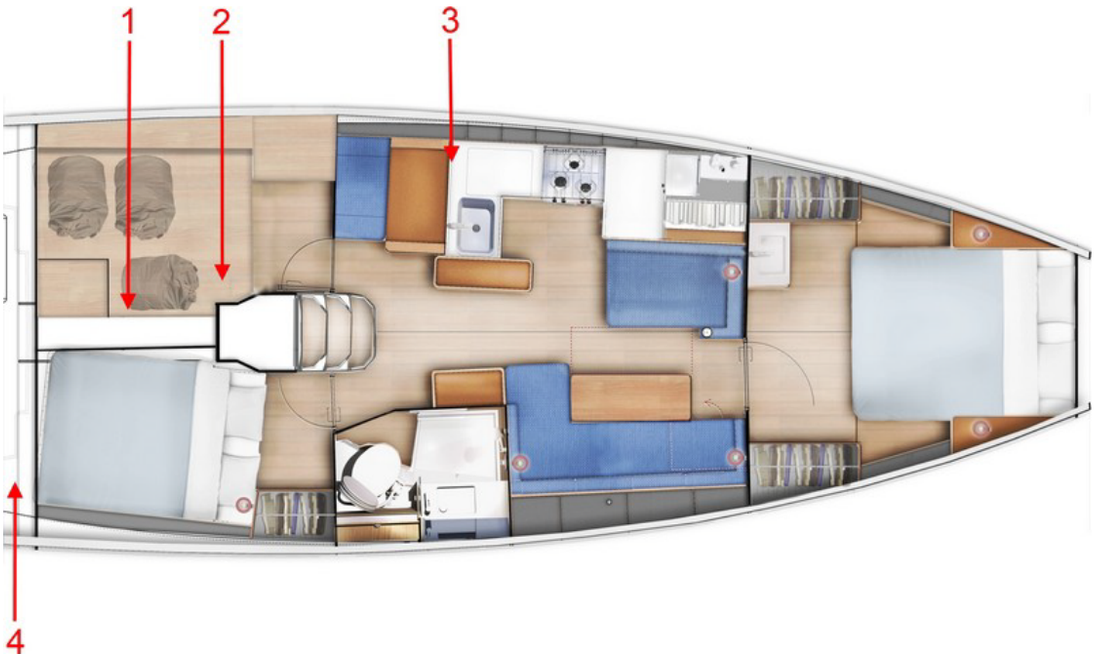
Annual maintenance

- Clean or replace the fuel filter.
- Check that the heating ducts are in good condition.

General layout



Layout of components



Fuel pump
Ref 1

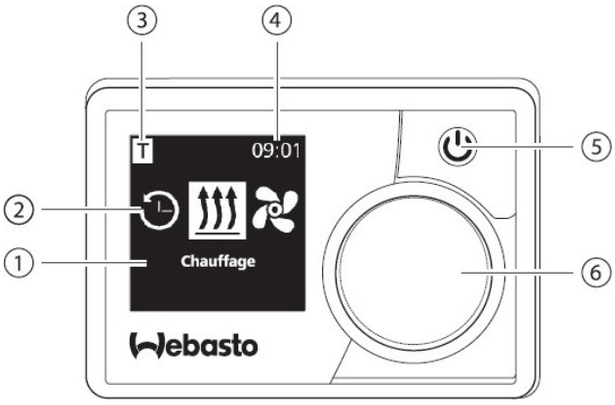
Fuel supply valve
Ref 2

Sensor
Ref 3

Heater
Ref 4

Manual control

Location: Chart table



1. Name of menu element
2. Menu symbol
3. Preset duration activated
4. Clock
5. ON / OFF control button
6. Control button (rotating and push button) to choose and confirm the desired function

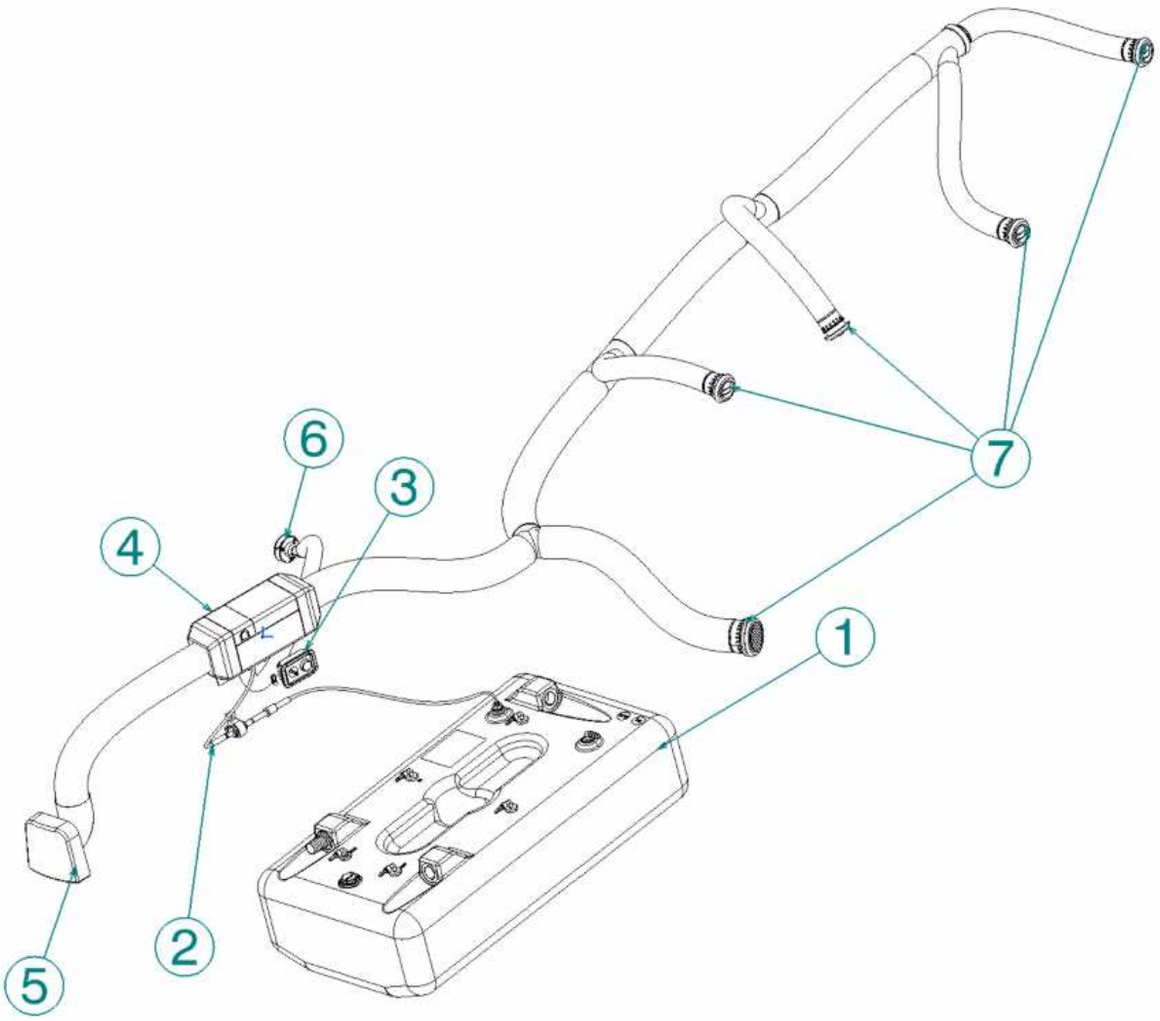
The colour of the ON / OFF start button indicated the heating appliance status:

- continuous green: Heating
- continuous blue: Ventilation
- continuous white: Boiler off
- flashing red: Fault / no heating
- flashing green: Pre-programmed heating
- flashing blue: Pre-programmed ventilation

Description of pictograms

- Timer menu
- Heating menu
- Normal heating mode
- Boost heating mode
- Add the time programmer
- Deactivate the time programmer
- Delete all time programmers
- Instant starting
- Hour
- °C °F Unit of temperature
- System information
- Reset (reset / return)
- Left
- Back
- AM PM 12-hour display
- Switched on
- Ventilation menu
- Settings menu
- Eco heating mode
- Ventilation speed (speeds 1 to 4)
- Activate the time programmer
- Delete the time programmer
- T Time programmer activated
- Day of the week
- Language
- Day / Night
- Error information
- Repair – Please contact the repair and maintenance centre
- Caution
- Right
- OK OK
- ADR ADR

Diagram of layout



1. Diesel tank
2. Metering pump
3. Control box
4. Heater
5. Fresh air intake
6. Heating exhaust
7. Hot air openings

13

Water systems

13.1 General points

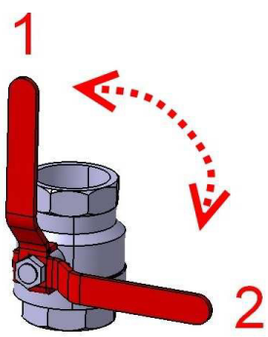
- Regularly check water-tightness of joints in the water system installations. Check that screws and bolts are well tightened and replace them if they are worn or corroded.
- Disconnect the onshore shore water supply before leaving the boat (if fitted).
- If the boat is sailing in temperatures below freezing, antifreeze can be used in the water systems: use a non-toxic antifreeze for potable water.
- Never use automobile antifreeze: risk of poisoning.

- 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 non-toxic antifreeze).
- 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.
- The onboard water from the boat's tank(s).
- Particular care must be taken when filling the tank(s) to prevent contamination of the entire plumning circuit with water which is not fit for drinking or food use.

13.2 Using a valve

Valves, thru-hull inlets and other brass or bronze fittings have a lifespan of around 5 years. All valves, thru-hull inlets and other brass or bronze accessories must be checked by a professional every year and replaced as necessary.

The valve is closed 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

Using the drainage valve

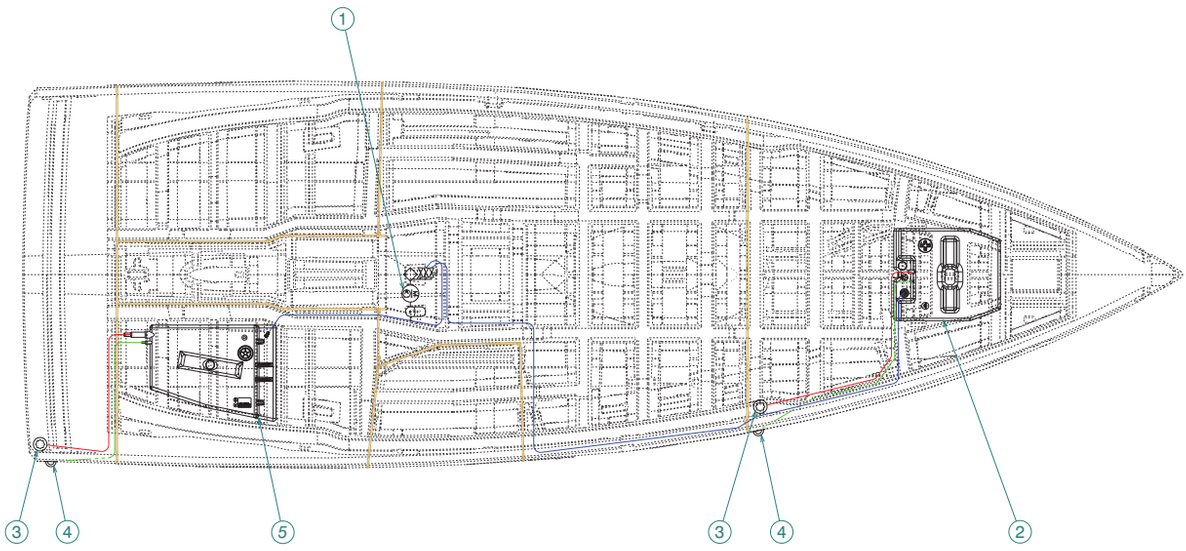
Beware of any unintentional draining.

- The direct-to-sea drainage valve can be sealed by means of the drilled hole on the handle.
- To lock the drainage valve in the closed position: Pass the tightening collar around the drainage valve and feed through the hole in the handle as shown.

Plastic valve

Bronze valve

13.3 Fresh water filling system



Supply pipe – 19mm diameter
Vent pipe – 16mm diameter
Pipe filling – 38mm diameter

1. Water unit
2. Forward water tank
3. "WATER" deck filler
4. Vent
5. Aft water tank

Fresh water tanks

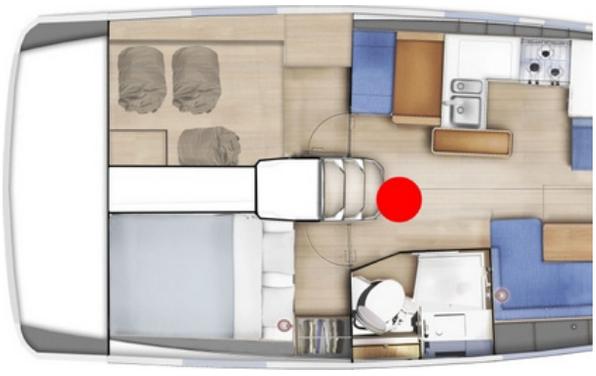
Location: Forward cabin

Location: Starboard aft cabin

Gauge: Touch screen

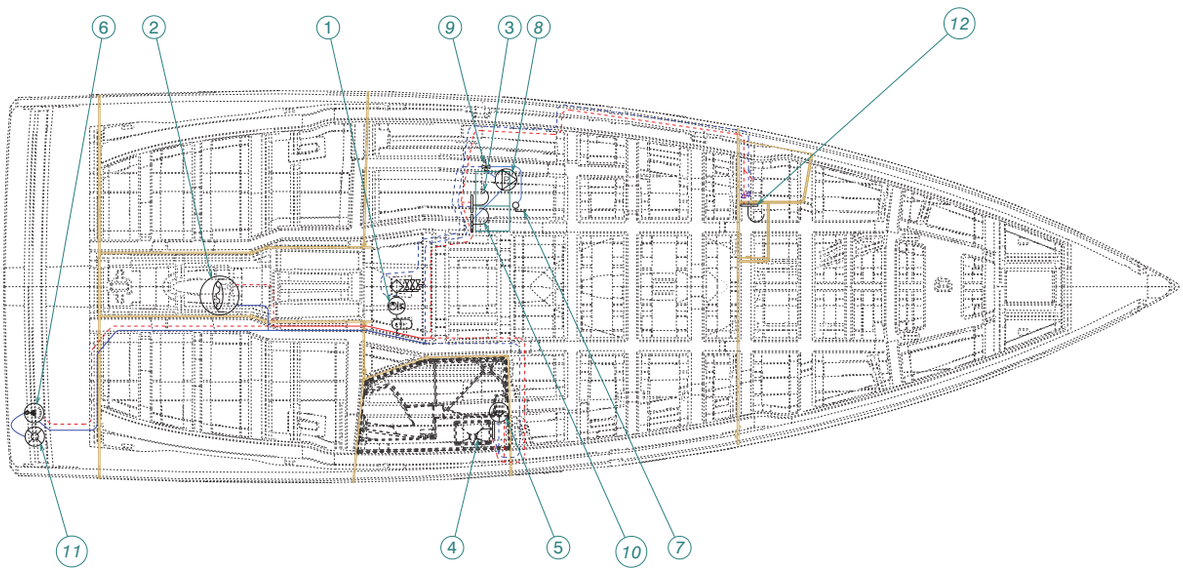
Water tank selection valves

Location: Saloon

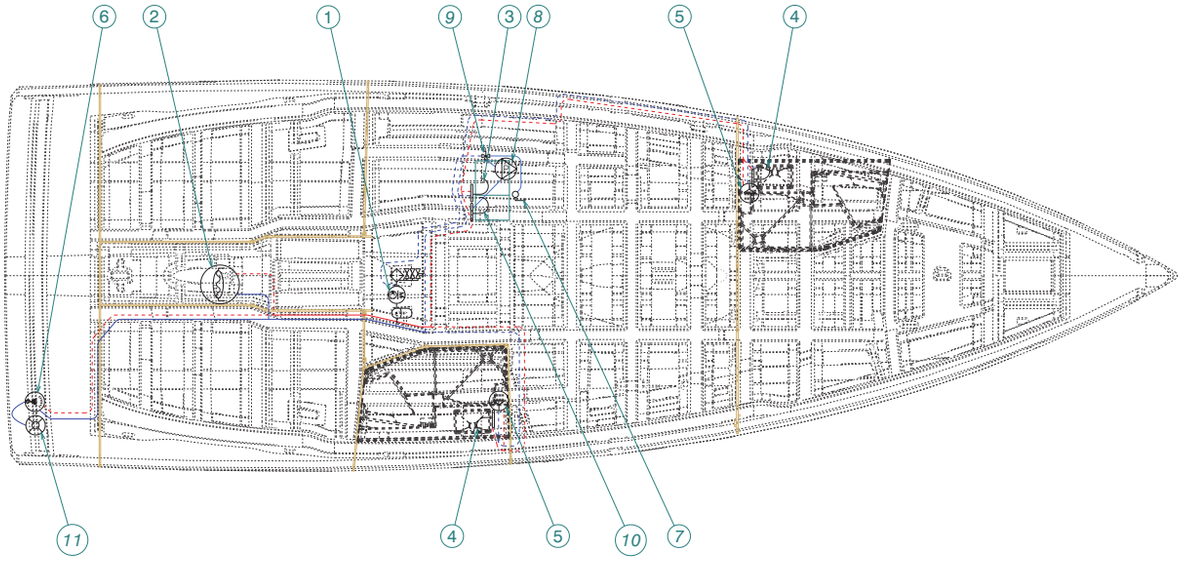


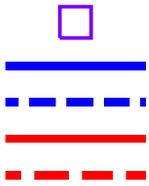
13.4 Fresh water distribution system

1 head layout



2 heads layout





Connectors
Cold water hoses – 19mm diameter
Cold water hoses – 12mm diameter
Hot water pipe – 19mm diameter
Hot water pipe – 12mm diameter

1. Water unit
2. Water heater
3. Mixer tap in galley
4. Washroom mixing tap
5. Mixer shower
6. Cockpit shower
7. Seawater intake (Foot pump)
8. Foot pump
9. Seawater/fresh water selection valve
10. Spout
11. Fresh water shore supply
12. Mixer tap (Cabin)

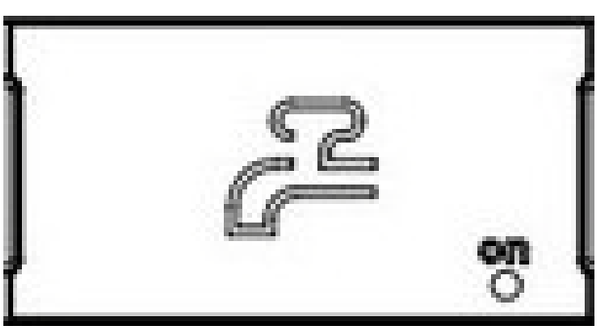
13.5 Main plumbing equipment

13.5.1 Water unit

- The water unit is powered by direct current.
- It supplies all the boat's plumbed-in 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 (e.g. seawater, bilge water, oil products) must be strictly avoided.
- The water unit is switched on at the electrical panel.
- Make sure that the water unit never runs dry.
- The pressure and capacity of the water unit depend on the temperature of the stored fresh water supply.

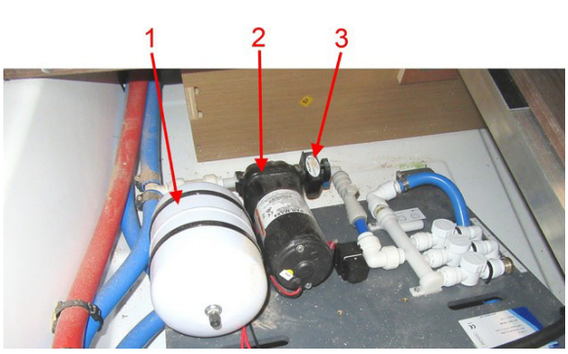
Control

Location: Electrical panel

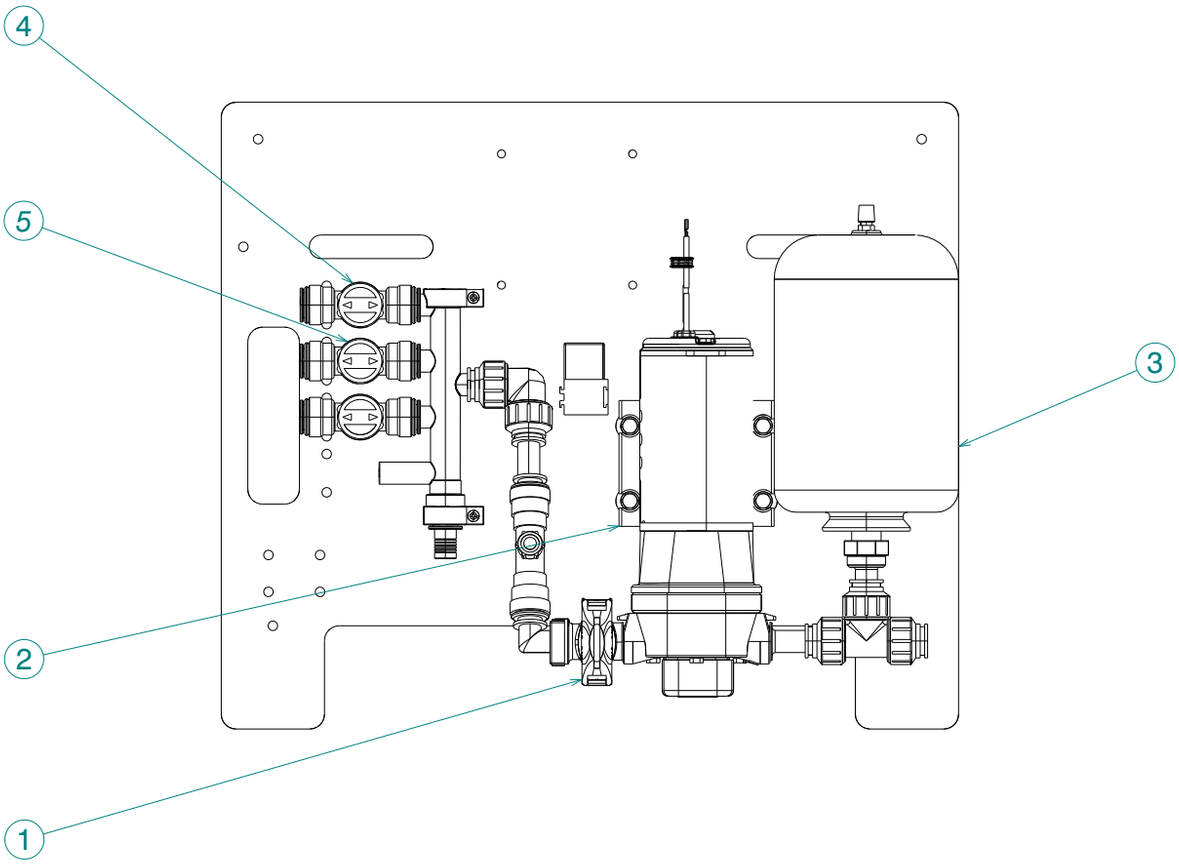


- When the water unit is powered by the DC circuit, the switch lights up in red.
- When the ON indicator turns green, the water unit is operating.

Location: Saloon



1. Expansion tank
2. Water unit
3. Fresh water filter



1. Fresh water filter
2. Water unit
3. Expansion tank
4. Fore water tank supply
5. Aft water tank supply

13.5.2 Cockpit shower

- The cockpit shower provides 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 or off,
  - It allows a choice of water temperature.

Operation

- To use the shower, turn on the water by tipping the tap on its axis.
- 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 back into its original position.

13.5.3 Shore fresh water supply

Disconnect the onshore shore water supply before leaving the boat.

Notes

- The water from the onshore supply is delivered under pressure directly into the onboard water circuit. It is not necessary to switch on the water unit.
- It is not possible to fill up the water tanks using the onshore water supply.

General points

- There are two options for supplying the fresh water circuit of the boat:
  1. via the water unit supplied by one or more water tanks,
  2. by fresh water taken from the dock.
- These two possibilities of supplying fresh water circuit of the boat are independent from each other.

1. Supply of the fresh water circuit by the water unit and the water tanks

- Open the valve of the desired water tank located near the water unit (if the boat has several water tanks, it is advisable to open only one valve at a time).
- Switch on the water unit.

2. Supply of the fresh water circuit by taking fresh water from the dock

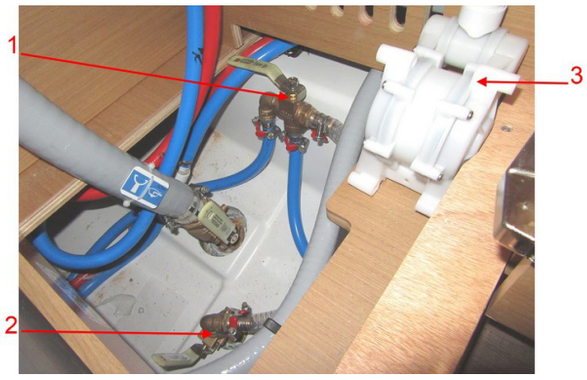
- Connect a water pipe to the onshore water supply.
- Open the water supply tap located on the pontoon.
- The shore fresh water supply arrives directly into the fresh water plumbing system via the water unit, without passing through the tanks.
- A non-return valve in the distribution circuit allows the shore supply water to be used without opening the valve.
- The connection of the water intake is located in the cockpit.

Connection

13.5.4 Sea water/fresh water foot pump

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

Location: Saloon



1. Seawater/fresh water selection valve
2. Seawater intake
3. Foot pump

Foot pump control

Spout

13.5.5 Water heater

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

- The water heater enables the use of hot water on board the boat.
- The water heater operates by recovering heat from the starboard engine cooling circuit or by means of the boat's AC electrical circuit.
- 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.

Location

1. Water heater (40L)
2. Mixer tap

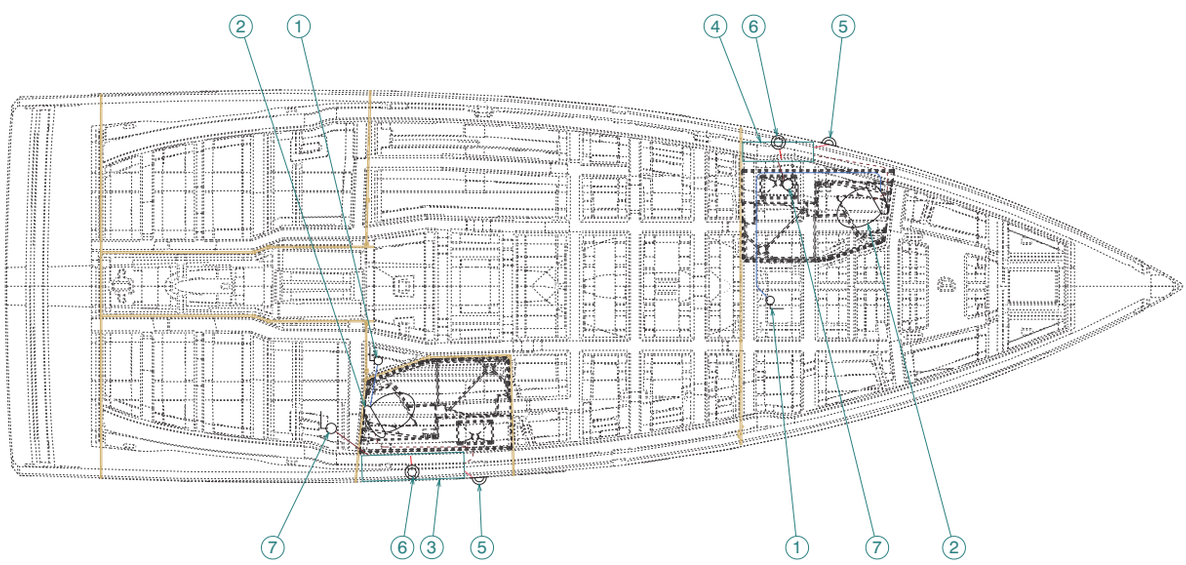
13.6 Blackwater system (Toilet)

General points

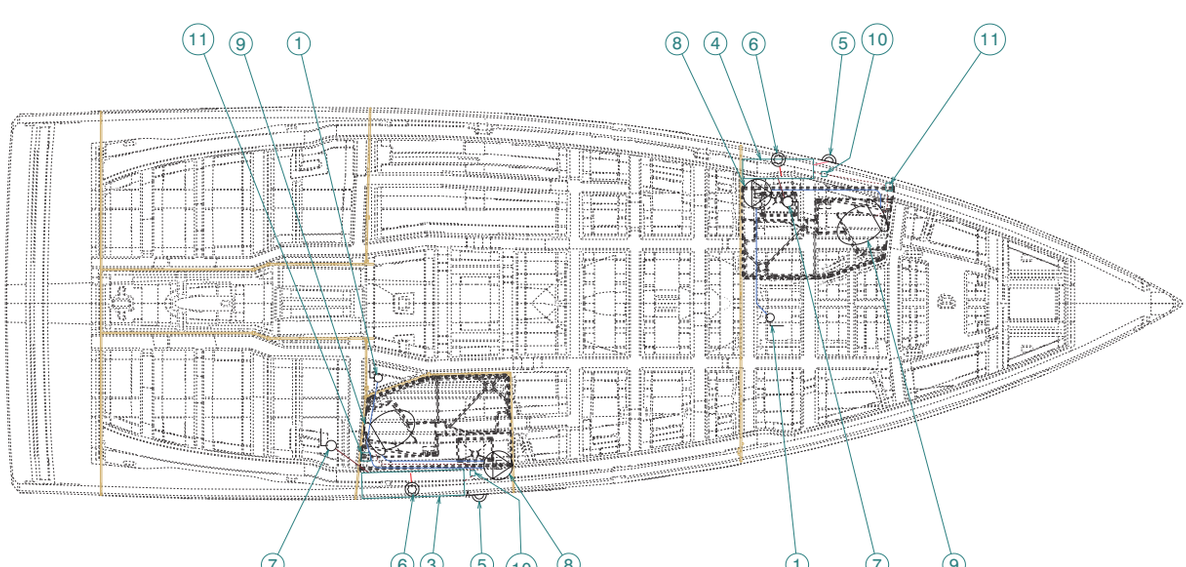
- Blackwater is human waste including water flushed from the toilets.
- Close the valves after each use and especially when the boat is unattended.
- Regularly check the valves and thru-hull seacocks for proper operation and watertightness.
- Regularly check the tightness of the flexible pipe clamps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

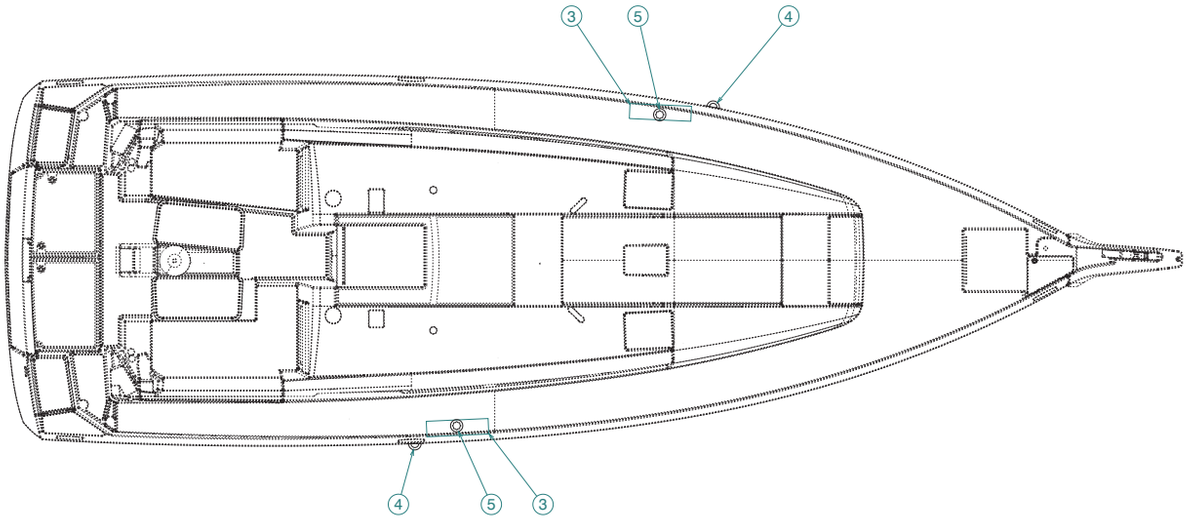
Diagram of blackwater system

Manual toilet



Electric toilet





Vent pipe – 38mm diameter
Seawater pipe – 20mm diameter
Suction hose – 50mm diameter
Black water pipe – 50mm diameter
Black water pipe – 38mm diameter
Black water pipe – 25mm diameter

1. Seawater intake valve (Toilet)
2. Toilet
3. Blackwater tank (80L)
4. Blackwater tank (50L)
5. Blackwater tank vent
6. WASTE drain nozzle
7. Blackwater tank drainage valve (to sea)
8. Electric toilet pump
9. Electric toilet
10. Connection
11. Toilet control

Your boat is fitted with a blackwater tank

To minimise odours from this tank, we suggest following the use and maintenance guidelines below:

Holding tank

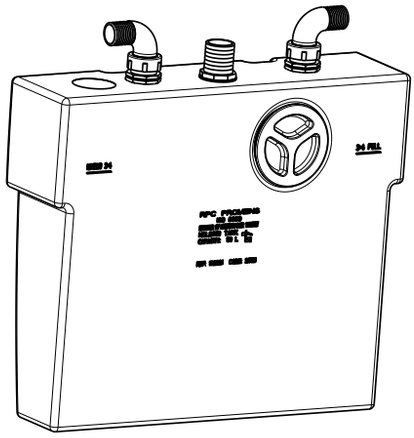
- A blackwater tank is used solely for the temporary collection of water from the toilets.
- The tank can be emptied in 2 ways:
  - By connection to a pumping system that empties the tank by suction. This system uses the "WASTE" deck connection.
  - Via the thru-hull fitting, which empties directly into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

Remark

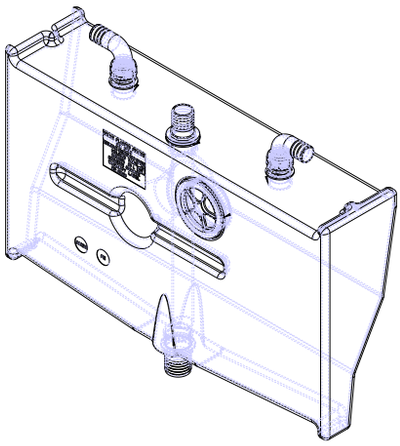
Sanitary towels and other items (paper handkerchiefs, dressings etc.) in the toilets and blackwater tank will result in blockages.

- Faecal matter causes the formation of unpleasant odours in the blackwater 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 blackwater 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.

50L black water tank



80L black water tank



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. You may wish to use the shower in the head for this purpose. Seawater allowed to stagnate in the bowl gives off bad odours.

Maintenance of blackwater tank

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

Advice / Recommendation

Respect local regulations regarding the emptying of blackwater tanks.

- 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 to add 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).

Using the drainage valve

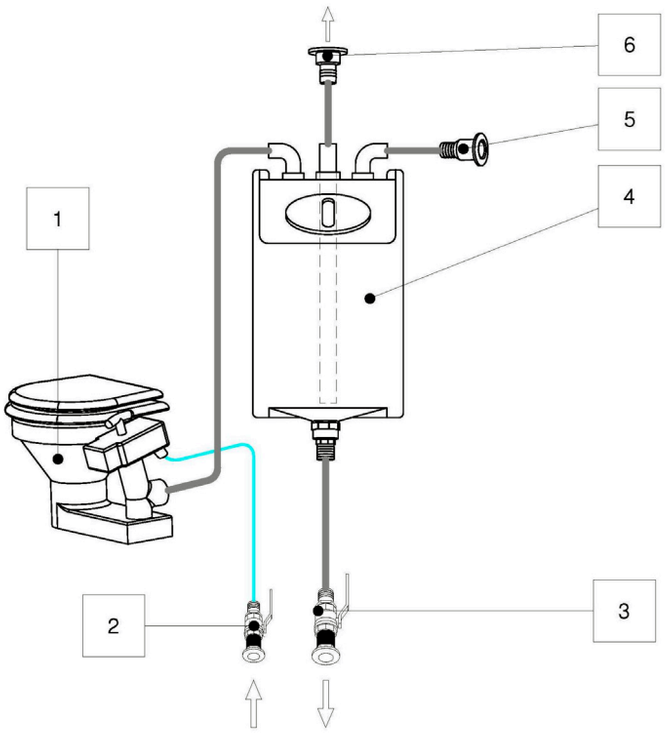
Beware of any unintentional draining.

- The direct-to-sea drainage valve can be sealed by means of the drilled hole on the handle.
- To lock the drainage valve in the closed position: Pass the tightening collar around the drainage valve and feed through the hole in the handle as shown.

Plastic valve

Layout diagram of blackwater system

Emptying by gravity



1. Toilet
2. Seawater intake valve
3. Thru-hull seacock
4. Blackwater tank
5. Vent
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 seawater 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.** For 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.

WC seawater intake (Manual toilet)

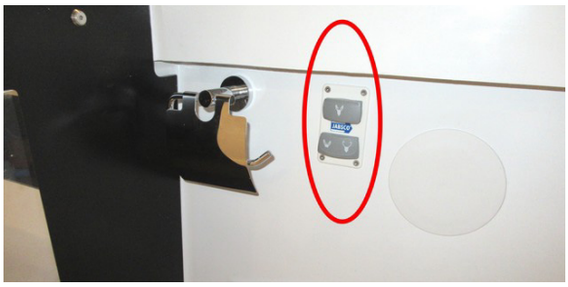
Using an DC electric WC fitted with a tank emptied by gravity

I. Open the seawater 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.** For 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.

Toilet control



Electric toilet pump

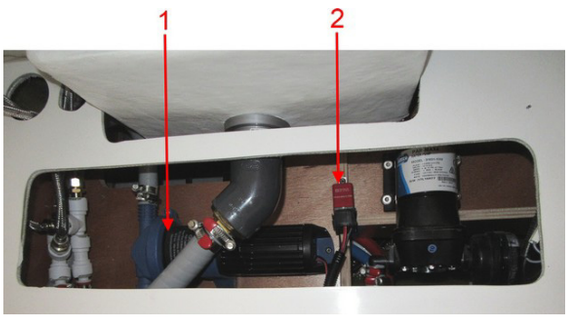
13.7 Waste water system

Advice / Recommendation

Observe local regulations regarding the emptying of greywater tanks.

- Waste water comprises the water coming from the sink, showers, air conditioning drains and washbasins.
- Close the valves after each use and especially 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.

Shower



1. Shower pump drainage
2. Delay relay

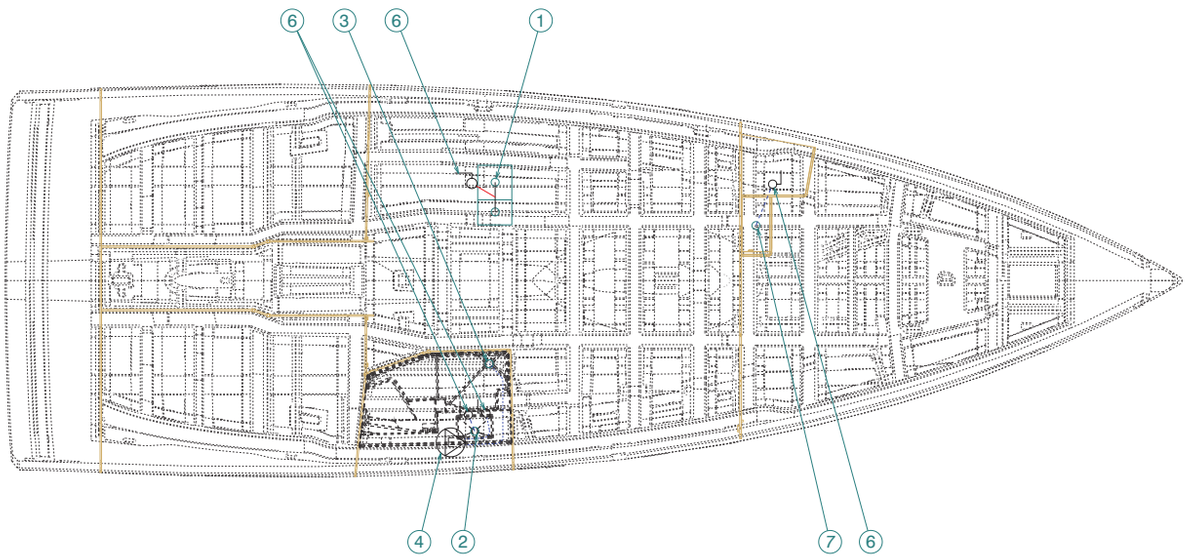
Shower plug hole

Shower screen

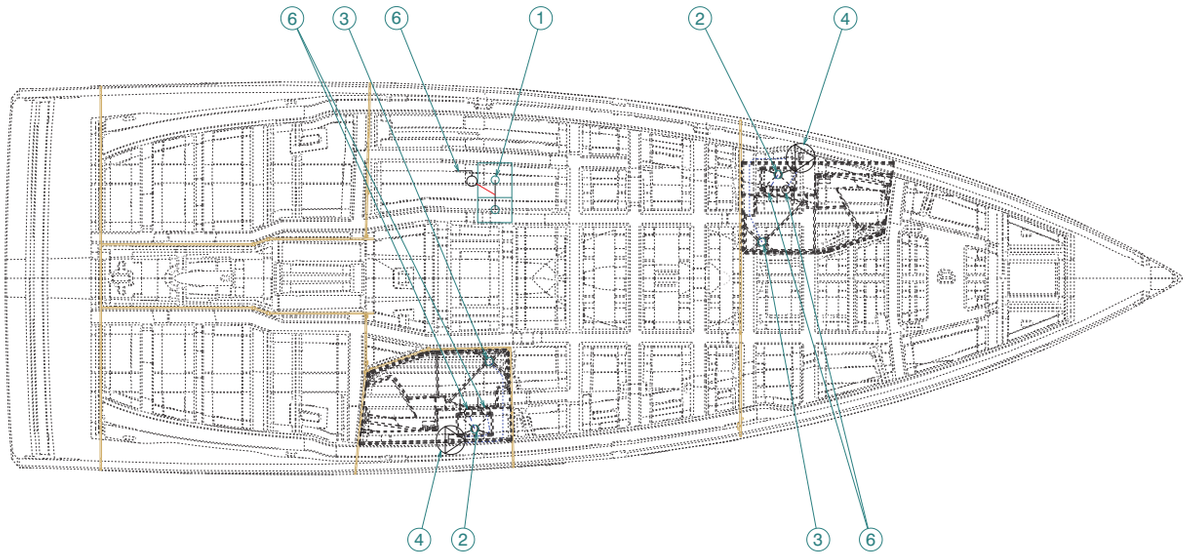
NOTE: It is essential that the shower screen remains locked in place when under way.

Diagram of waste water circuit installation

1 head layout



2 heads layout



Waste water pipe – 20mm diameter

Waste water pipe – 25mm diameter

Waste water pipe – 40mm diameter

1. Sink plug hole (Galley)
2. Washbasin drain plug (Head)
3. Shower plug hole
4. Shower pump drainage
5. The shower pump control
6. Shower drainage
7. Washbasin drain plug (Head)

Engine

14.1 Information relating to fire risks and risks of explosion

- Make sure that the coolant is circulating properly.
- Ensure that the engine compartment ventilation air inlets are kept clear.
- Stop the engine and refrain from smoking while the fuel tank is being filled.
- Have 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 cut off energy to the electric system when the engine is running.
- Never block access to 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 and protected from bad weather and mechanical damage.
- Regularly check that the engine compartment is clean and dry.

Fuel supply valve

located directly on the tank

14.2 Danger from moving mechanical parts

- Keep away from the drive shafts and the mechanical parts of the engine when they are in motion (including belts, moving parts and hot components).
- Be careful if you have long hair, bulky clothing, rings etc. (these may become caught).

14.3 General points

Do not install engine(s) on this boat which are more powerful than the recommended power output, this may cause a loss of control of the boat and lead to serious injuries or death.

- Do not install an engine more powerful or heavier than recommended for this boat, since doing so may compromise the boat's stability.
- Any alteration or modification to the exhaust system of the propulsion engine(s) is prohibited.
- Make sure you have enough fuel before sailing.
- Stop the engine before opening the engine compartment.
- Do not close the fuel supply valve between each use of the engine (except in the event of prolonged disuse).
- Get the whole propulsion system checked at least once a year by a professional engineer. (see Chapter: MANOEUVRABILITY).
- Always start the engine with the control lever in neutral.

Advice / Recommendation

- Regularly check that the O ring on the filler cap is in good condition to prevent 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 isolators when the boat's engine is running (risk of serious damage to the charging circuit).

Type of motorisation

- Your vessel is fitted with an in-board diesel engine.
- The transmission is of a shaftline type.

Filling up with fuel

- Fill the fuel tank by opening the cap marked "DIESEL", provided for this.

Remark

Ensure the seal is tightly closed to prevent ingress of water.

- Regularly check that the O ring on the filler cap is in good condition to prevent water ingress.
- The generator has its own fuel supply valve.

Fuel tank

Location:Port aft cabin

Gauge

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.

- 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

14.4 Starting the engine

- 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).

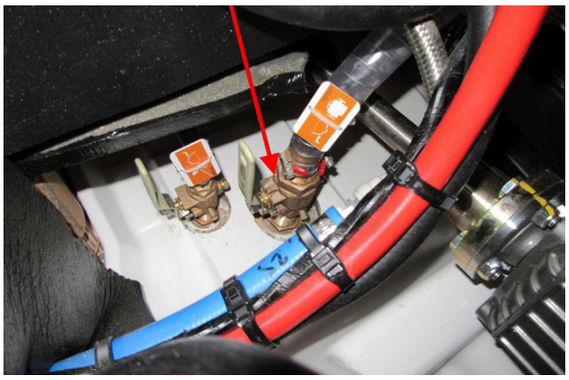
- Before starting the engine, it is essential to:
  - to open the fuel supply valve;
  - to open the seawater intake valve of the engine;
  - to open the sea water intake seacock for the stern gland;
  - to switch on the battery supply by using the battery isolator switches;
  - put the control lever in neutral.
- Make a habit of looking to see if seawater 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.
- The engine compartment bilge fan is activated automatically when the engine is started.

14.5 Engine water intake

- The seawater intake valve plays a crucial role in ensuring that the engine runs well.
  - Keep the filter under the hull as clean as possible;
  - Brush the filter whenever the boat is lifted out.
- This valve must absolutely always be opened before starting the engine.
- A seawater filter filters the water before it goes through the heat exchanger.
- Regularly inspect the seawater filter and clean it if necessary. Screw/unscrew the cover of the filter by hand (never use tools).
- For lengthy absences, close the engine's seawater intake valve.

Engine water intake

Access: Engine compartment



Seawater filter

Location: Engine compartment

Stuffing box

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 backflow 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 this occurs, you must 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.
- It is advisable to carry out this simple preventative maintenance procedure on the anti-siphon valve once a year.

Anti-siphon valve

Location: Engine compartment

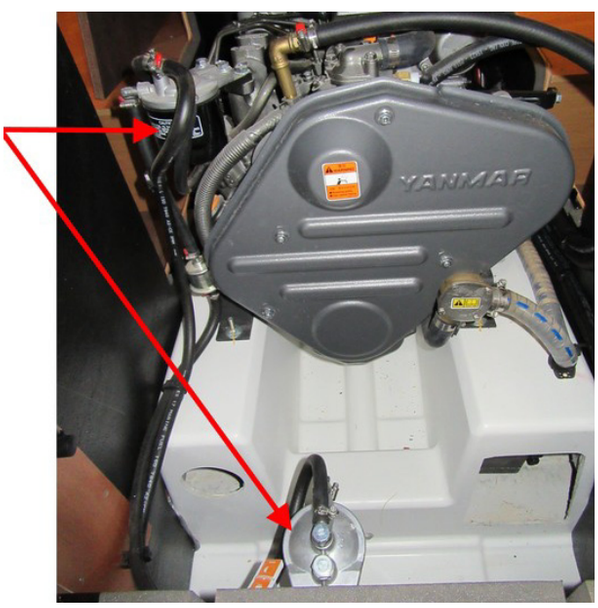
14.7 Fuel filter

- Engine running problems may stem from various causes, including dirty fuel. The injection pump may wear out if there is water in the system. The water results either from condensation resulting from an insufficiently filled tank, or from a filler cap which has either not been closed properly or which has 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 works as a water decanter and prefilter.

Maintenance

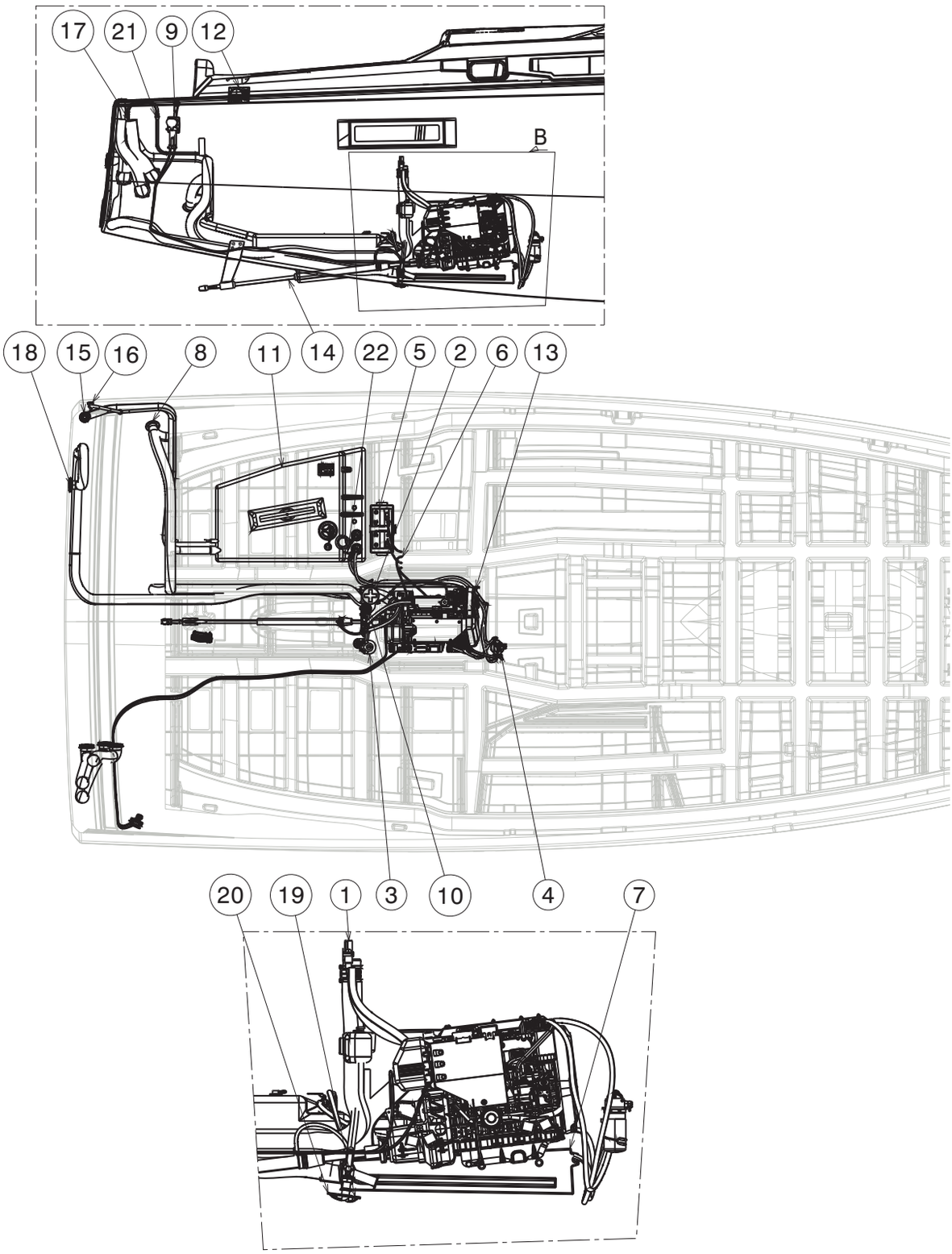
- Purge the impurities by unscrewing the screw located at the base of the decanting bowl (without removing it). Let the liquid run into a receptacle until the fuel runs clear. Do this several times a year.
- Change the pre-filter at least once a year.

Location: Engine compartment



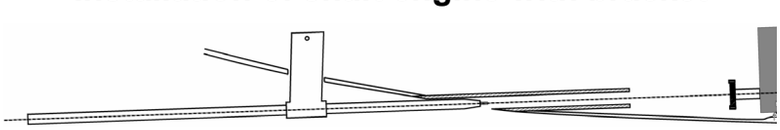
14.8 Engine installation

Diagram of Layout



1. Anti-siphon valve
2. Seawater filter
3. Expansion tank
4. Fuel filter
5. Engine battery
6. Engine battery switch
7. Water trap
8. Outlet
9. Engine control lever
10. Engine compartment ventilator
11. Fuel tank
12. Engine instrument panel
13. Propulsion engine
14. Propeller shaft
15. Fuel filler (DIESEL)
16. Fuel tank vent
17. Fresh air inlet
18. Hot air outlet
19. Seawater intake – Sternpost
20. Seawater intake – Motor
21. Non-return valve
22. Fuel supply valve

Installation of shaft engine with bracket



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.

Control lever

The control lever is fitted with a safety system which prevents the engine from starting when in gear.

Control lever

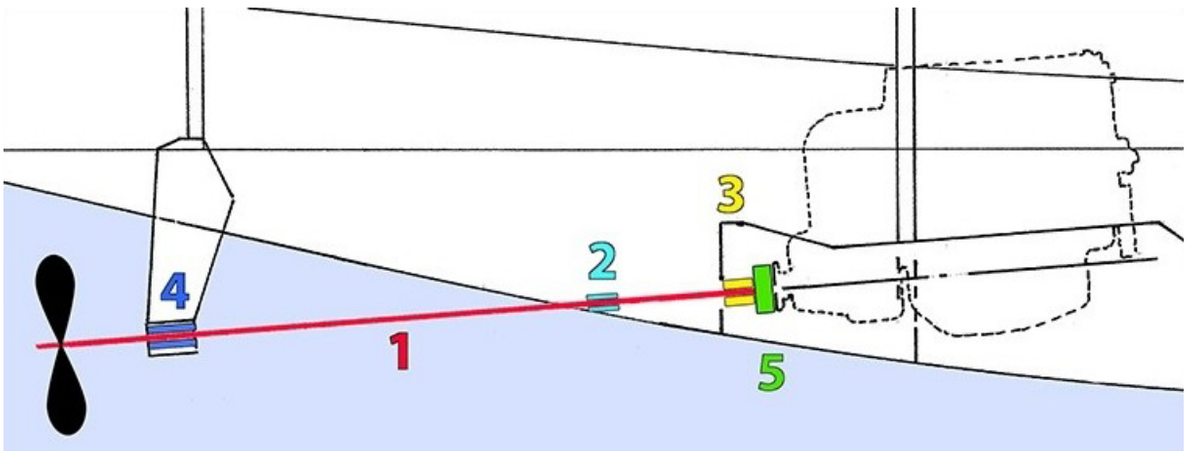
Control panel

14.10 Access to the engine

- Access to the engine can be gained via:
  - Side hatches,
  - The companionway.
- All access hatches to the must strictly be kept shut when at sea.

14.11 Propeller shaft

- The shaft is stainless steel.
- The shaft is aligned in the factory. When the boat is launched, a check is to be made by a professional.
- A hydrolube ring keeps the shaft line at the hull outlet / in line with the cradle.
  This is a wearing ring. Check the hydrolube bush every time the boat is slipped. Change the hydrolube bush if necessary.



1. Propeller shaft
2. Stern gland
3. Flange
4. Hydrolube bush
5. Connecting plate

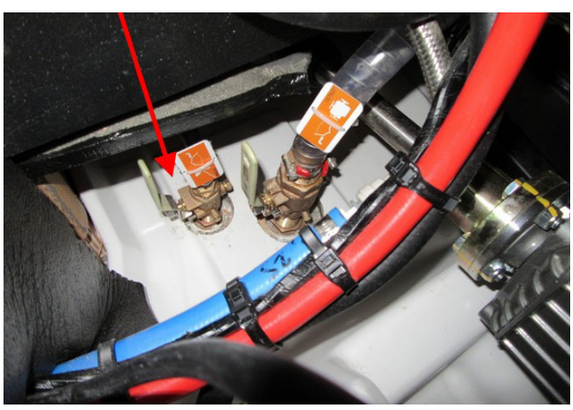
Maintenance

- When the boat is afloat for long periods of time, the shaft is at risk of corrosion: it is recommended that you regularly turn over the shaft (start the engine and rotate the shaft a few times every month).
- Regularly rotating the shaft also prevents damage to the cutlass bearing and the shaft gland due to the build-up of marine organisms.

14.12 Stern gland

- The stern gland keeps the propeller shaft watertight.
- The stern gland is accessible via the engine compartment.
- Grease the watertight joint every 200 engine hours (or at least once a year). Apply grease as recommended by the mechanic.
- The stern gland is lubricated directly by a sea water supply valve.
- After launching the boat, drive the air out from the sleeve by pinching it with your fingers.

Location: Engine compartment



14.13 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.

- The propeller delivered with the boat is specifically selected after 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 or dirty: clean the blades regularly and attentively.
- During lift-out, check the propeller: it should turn freely on its axis and there should be no play.

Pitch of the propeller

- The propeller pitch is right-handed.

15

Steering system

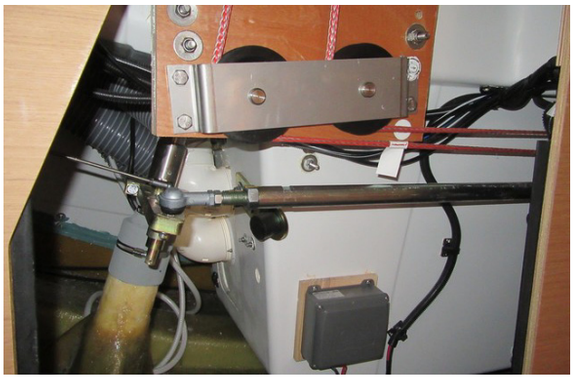
15.1 General points

- The steering operates by steering cables.
- The steering system is an important safety feature. For this reason, an annual inspection of the whole system must be carried out by a professional engineer.
- Owners are expected to operate the boat in a reasonable manner, with the direction of the helm (in degrees/seconds) set according to the actual speed of the boat.

- Regularly check the tension of the steering cables and the tightness of the steering components. If needed, 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.
- Each ring is a wearing part: make sure you change them regularly (Please contact your dealer).
- The steering bearings do not require any special maintenance.
- It is only recommended that you regularly rinse the bearings of the steering system with fresh water when taking the boat out of the water.

Remark

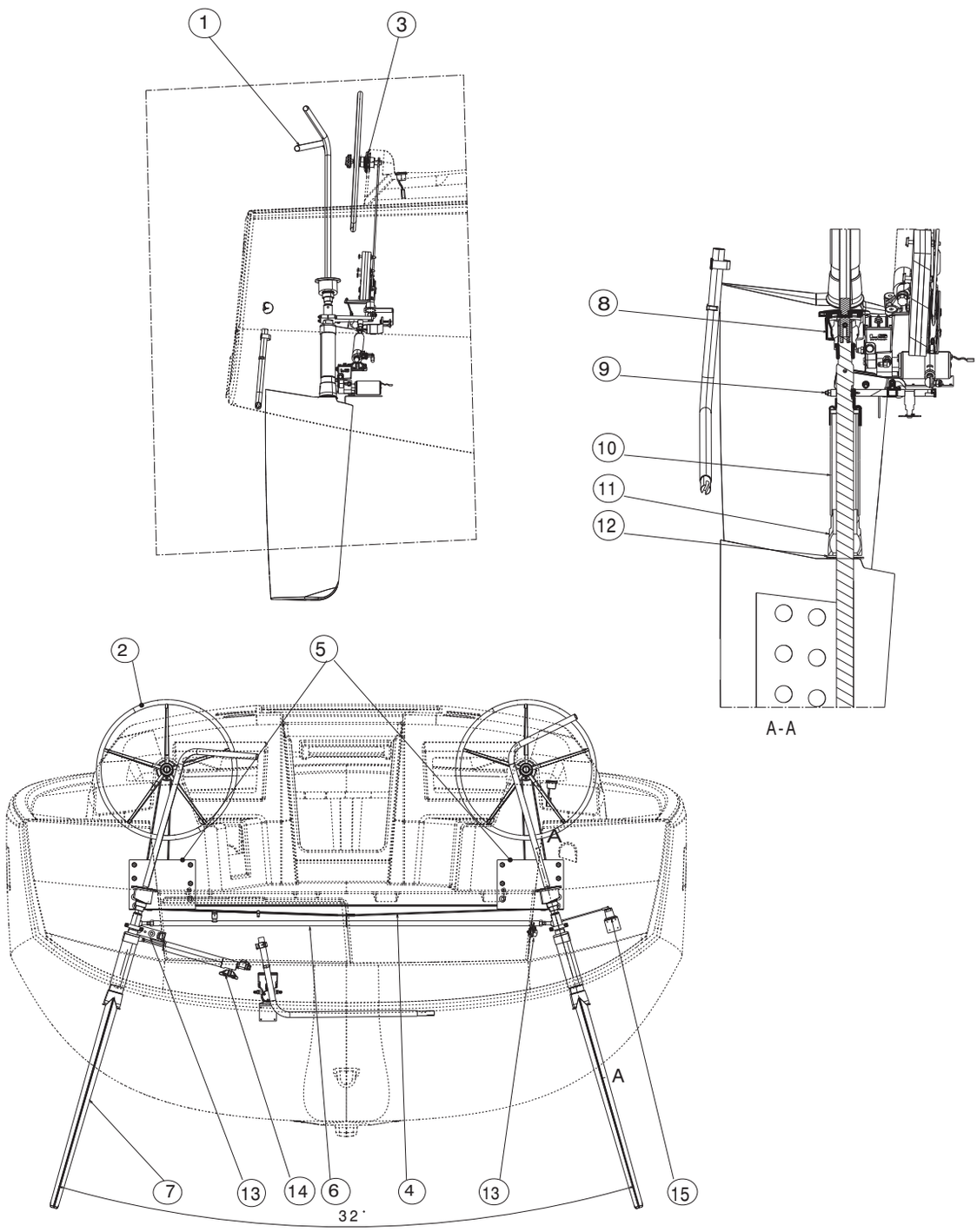
Greasing the steering bearings creates a risk of them seizing with dust and no longer working properly.

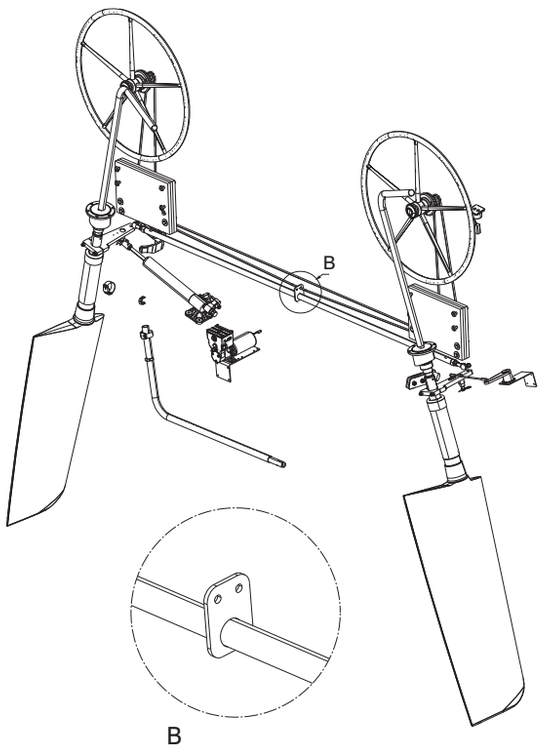


NOTE: The textile lines on the boat have a lifetime of 5 years.

Beyond 5 years (the expiry date is sewn on the textile lines) the textile lines must be changed.

15.2 Diagram of layout





1. Emergency tiller
2. Steering wheel
3. Steering Gear
4. Ropes
5. Sheave
6. Connecting rod
7. Rudder
8. Upper bearing
9. Stock arm
10. Friction ring
11. Rudder tube
12. Lower bearing
13. Balance bush
14. Stock arm stop
15. Autopilot ram
16. Tiller angle indicator (Autopilot)

15.3 Bow thruster (retractable)

- If the thruster hatch remains stuck in the lowered position, sail at reduced speed to the nearest port or harbour.
- Never attempt to close the hatch manually. Doing so may result in serious injury.
- Once in a safe place, consult a professional to reclose the thruster hatch.

Never use the propeller when the boat is not in the water, at the risk of damaging the electric motor and its components.

Advice / Recommendation

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

General points

- The thruster motor is DC powered.
- The thruster is a steering aid for manoeuvres at low speed (e.g. picking up a mooring buoy or berthing on a pontoon). The bow thruster must only be used at speeds of less than 2 knots.
- An operating relay is installed in the circuit.
- A fuse protects the electrical circuit.
- The thruster motor has its own battery bank.

General view

Operation

- Before starting the thruster, make sure no swimmers, floating objects or ropes are near the boat.
- Make sure the boat is stationary (with no drift) before deploying and retracting the propeller.
- Turn on the bow thruster battery switches.
- The engine's positive battery isolator automatically switches on and 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 / at the helm station / on the flying bridge.
- Press both ON buttons simultaneously to start the thruster.
- Press the OFF button to switch off the thruster.

Remark

It is important to switch off the thruster BEFORE switching off the boat's propulsion engine so that the thruster hatch can close.

Control ???

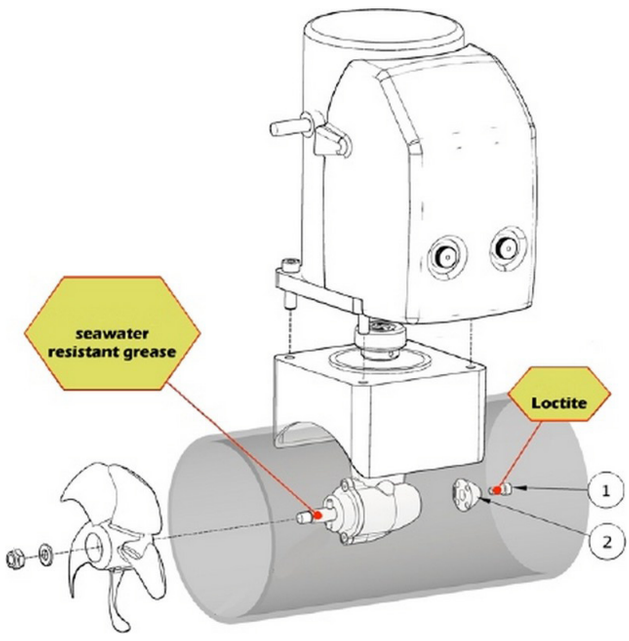
Maintenance

- The bow thruster's motor:
  - is lubricated for life and the oil does not require draining;
  - must not be dismantled, even partially;
  - must be coated in antifoul to protect it from marine vegetation.
- 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.

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 and coat the shaft with silicone-based grease before refitting the propeller.
- After cleaning and applying a primer, antifoul the housing and the propellers.
- Change the thruster anode at least once a year (see Chapter: ANODES).

Attaching the anode



1. Mounting screw
2. Anode

16

Deck fittings

16.1 General points

Alcohol, solvent or acetone-based solutions must not be used to clean/maintain the outer surfaces of the boat. A warm, soapy, water-based solution is best for this purpose.

16.1.1 GRP

Advice / Recommendation

The boat's polyester outer skin is strong enough to withstand the design pressure but it is not designed to withstand localised damage caused by impacts against hard/sharp objects. If the outer skin is damaged, it must be repaired immediately.

- 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 detergents.
- Don't dump 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.
- Do not use a pressure washer.

16.1.2 Plexiglas (PMMA)

Advice / Recommendation

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

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

16.1.3 Stainless steel

- Passivating paste is an acid-based product whose purchase and/or use may be subject to regulation.
- Please contact your dealer.

Stainless steel is an alloy of iron and carbon (steel) with the addition of chromium. The chromium creates a protective film which insulates the steel from the surrounding environment. This coating is usually invisible due to its thinness. Thus, despite its name, this steel is not stainless and requires a minimal level of maintenance:

- Chromed tools are preferable whenever handling stainless steel;
- Re-nourish the protective film regularly with passivating paste.

16.1.4 Solid wood on exterior wooden panelling

Advice / Recommendation

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

- 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 that you oil the external woodwork regularly using teak oil in order to protect it from harsh conditions.

16.1.5 Exterior upholstery

If the wind exceeds 20 knots, it is recommended that you stow all removable protection sheets (Bimini, awnings...).

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.

- 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, spray regularly with clarified water and brush with a soft brush (such as a clothes brush). A thorough clean every 2 years is recommended.

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 the soap solution to act;
- Rinse thoroughly in fresh water;
- Dry in the open air.

16.2 Equipment

16.2.1 Electric platform (Rear skirt)

Do not climb onto the platform while in motion.

- Do not use the rear platform while sailing.
- Maximum platform load = 300kg. (Load must be uniformly distributed).
- During platform opening or closure:
  - Beware of the system's movements to avoid injuries.
  - Never leave children unattended when they are using the system.
- When you are using the platform remote control, check beforehand that the space in which it operates is completely clear of obstructions and remains so throughout the operation.

Do not let a child operate the platform remote control on his/her own.

Advice / Recommendation

When not operating:

- Make sure the breaker is turned off.
- In upper position: Make sure the helmsman bench is locked.

General points

- The platform runs on the DC power supply.
- A circuit-breaker protects the circuit.

Electric platform

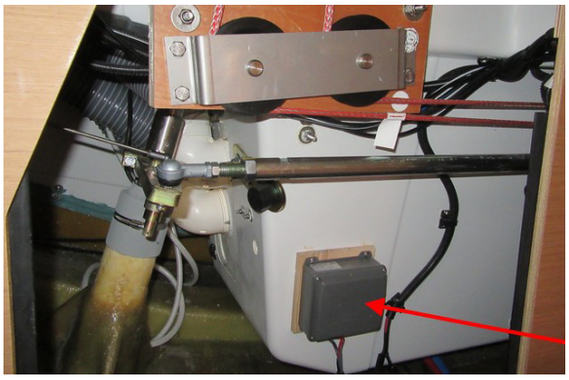
Piston

Locking

Control

Operating box

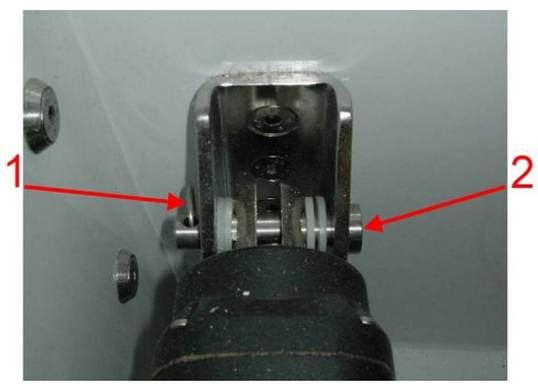
Access: Starboard aft cabin



Using the remote control

Handling and precautions to take are identical to the fixed control. If you control the platform opening from the quay, make sure that the seat is resting properly in the unlocked position.

Emergency Procedure



If the cylinder fails, you can close the platform manually by following the steps below:

- Shut off the DC supply of the cylinder by the circuit breaker (Starboard aft cabin);
- Remove the split ring (item 1) and the shaft (item 2) at the two cylinder fixings;
- Remove the platform cylinder and store it in the boat;
- Strike an end on the platform to raise it manually. It is possible to use a winch for this operation.

16.2.2 Davits

No one must be onboard the tender while launching or retrieving it.

The davits are designed to support a maximum load of 110kg and a tender which is at most 3,20m long.

Advice / Recommendation

- Before heading out to sea, remove the outboard engine from the tender and store it on the boat.
- Secure the tender taking account of sea conditions.
- Secure the outboard engine to the tender once this is in the water.

- The davits enable the launch and retrieval of the tender from the transom. Any other use is dangerous and must be strictly avoided.
- The davits are equipped with a pulley block for manoeuvering the tender. This pulley block is manoeuvered by hand.

Launching the tender

- Insert the bung.
- Secure the pulley's hooks to the front and back of the tender.
- Lower the front then the back of the tender alternately until it touches the water.

Retrieving the tender from the water

- Pull out the bung.
- Secure the pulley's hooks to the front and back of the tender.
- Raise the front and then the back of the tender alternately as high as the pulley block allows.

16.3 Anchoring, mooring, towing

16.3.1 Anchor points

Anchoring points showing visible signs of deterioration must be replaced.

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	A / B	A / B
Anchor Point Breaking Strength	31,8kN	45,6kN	45,6kN
Mooring Line/Chain Breaking Strength	25,4kN	36,4kN	36,4kN

Fenders

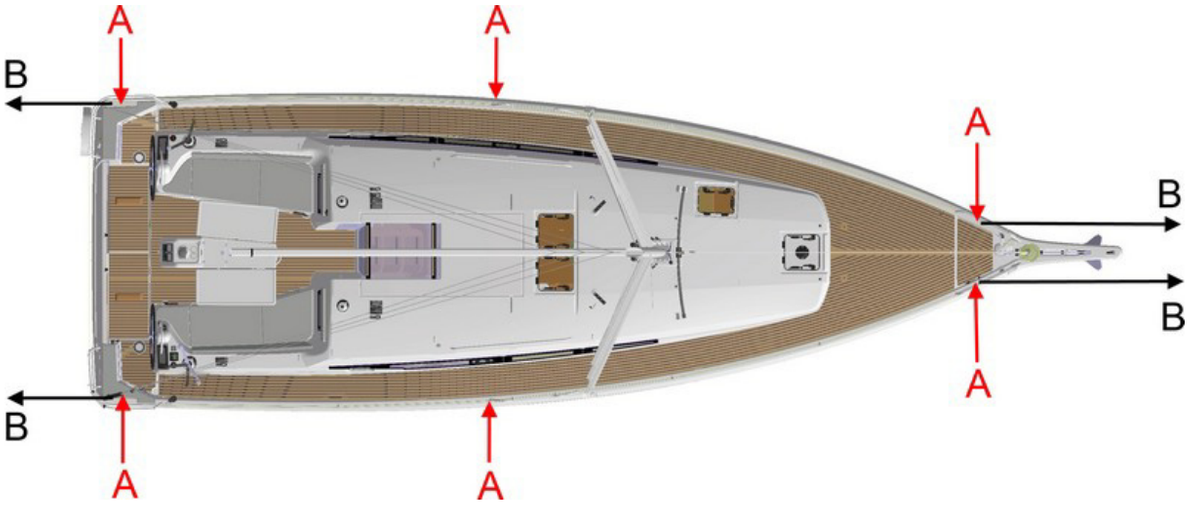
- Be sure to protect the transom platform with a fender to avoid friction with the pontoon.
- Use a sufficient number of fenders (boat fenders) to protect the boat from any risk of rubbing against the pontoon/quay.

16.3.2 Towing

- 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 (the end may become 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.

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

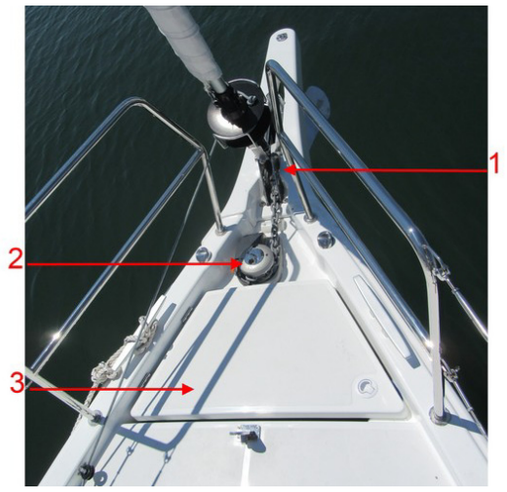
Location of attachment points



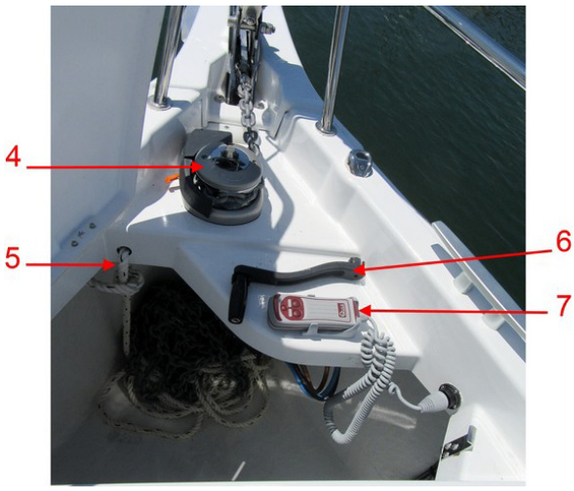
A. Mooring cleats
(corresponding to the anchor points for the lifelines)

B. Towing:
- at the bow, to be towed
- at the stern, to tow

16.4 Main elements of the anchor locker



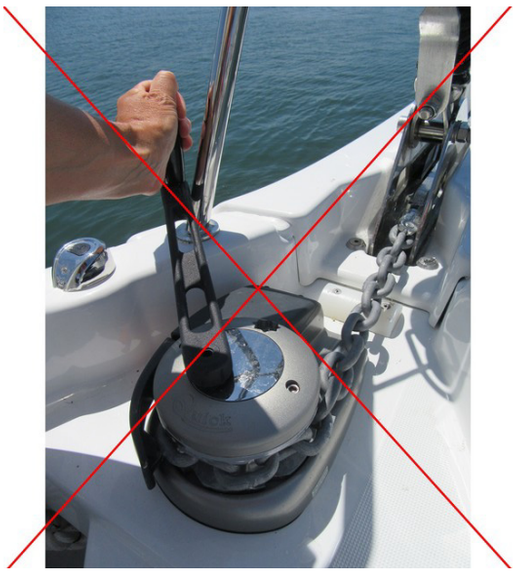
1. Bow forestay chain plate
2. Electric windlass
3. Chain locker



4. Electric windlass (sprocket diameter * 1 mm)
5. Handle
6. Remote control

Chain locking system

NOTE: Ensure the crank is pointing towards the inside of the boat.



- Windlass operations are dangerous:
  - Always keep the anchor chain or rope free and unfouled;
  - Carry out manoeuvres carefully and always wear shoes;
  - Avoid wearing baggy clothing and jewellery that could get caught in the engine when it is running. Tie up long hair..
- Refer to the manufacturer's instructions for use and maintenance.

16.5 Electric windlass

Advice / Recommendation

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

General points

- The windlass is DC powered.
- The windlass is designed for anchoring purposes: Any other use is dangerous and must be strictly avoided.
- 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.

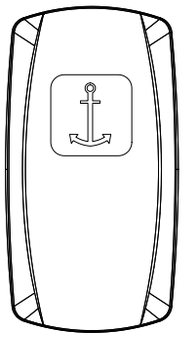
Operation

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

- Before using the windlass control, it is essential to open the hatch cover of the chain locker.
- Before lowering the anchor, make sure that the chain or anchor rope is securely attached to the bitter end ring.
- Activate the circuit-breaker then use the control to start the windlass.

Remark

When the last metres of chain are being lifted, particular care is required to avoid locking the anchor in the sheath.



Control ???

Location: Steering station

- **When Under way, fix the chain or rope in the blocker using the crank.**
- With dual control, be careful to use only 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.

Chain counter control

- The chain / anchor junction recommended by the boat builder is reference 207883 (photo below).

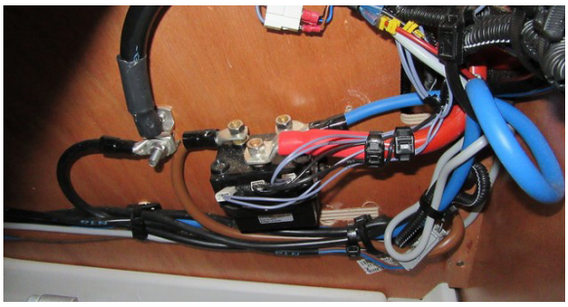
Junction without protrusion

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.

Operation relay

Location: Forward cabin (Under the bed)



Emergency anchoring procedure

Advice / Recommendation

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

In the event of an electrical fault, it is possible to lower the anchor manually: Put the handle in the space provided to release the chain sprocket. Let the chain run out using the handle to control the speed as it runs.

Hull fittings

17.1 Interior upholstery

General points

- The interior upholstery is designed for use inside the boat only.
- The fabric used inside the boat has not had any special treatment to protect it from a saline atmosphere or from UV.
- Make sure the curtains are drawn to protect the interior upholstery from exposure to sunlight.

Leather

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 colouring on the rag, immediately stop cleaning.

Maintenance

- Leather must be regularly cleaned and waxed.
- To do so, clean the leather surface with a damp rag. This 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 with inward motions to prevent the stain from spreading.
  - Dab with denatured alcohol, using a piece of cotton to apply (ink and food stains).
  - Apply absorbent powder (talcum) on grease stains.
  - Wait a couple of hours, then brush away the excess powder.
- Other: Apply white vinegar or acetic acid diluted in water.

Alcantara (microfibre)

Stain removal

- The fabric must be free from dust before stain removal. To do so, use a vacuum cleaner.
- 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 area such as the hem. 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 gentle brush to bring back its softness.
- For difficult stains, dry-cleaning is recommended.

Synthetic fabric

Stain removal

- If you can remove the fabric:
  - Clean in the washing machine (use the programme for delicate fabrics) at 30°.
  - Do not iron.
  - Never use Javel water.
  - Do not dry-clean.
  - Do not tumble-dry.
- If you cannot remove the fabric:
  - Clean with the vacuum cleaner,
  - Clean with a foam for synthetic fabrics (see manufacturer's instructions for these products).

Coated fabric (PVC)

Maintenance

The PVC must be regularly cleaned with soapy water to maintain its appearance and to avoid accumulation of debris. We strongly advise against 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 carried out at the owner's risk.

Stain removal

- All stains must be quickly removed to avoid formation of permanent stains.
- Use mild water to remove stains on the surface of the fabric. 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)

Maintenance

To maintain the quality of the fabric, spray regularly with clarified water and brush with a soft brush (such as a clothes brush). A thorough clean every 2 years is recommended.

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 the soap solution to act;
- Rinse thoroughly in fresh water;
- Dry in the open air.

17.2 Interior woodwork

Varnished wooden panels

- The acrylic varnish has medium resistance to external chemical damage as well as minor scratches.
- Clean regularly with lukewarm soapy water.
- Do not use polish (this may result in unwanted brightening of appearance).
- For scratches, remove the panel and have it re-varnished by your dealer.

Floors

- The floors fitted onboard are laminated.
- Clean regularly with lukewarm soapy water.
- In the event of a scratch, remove the plank and replace it with a new one (consult your dealer).

17.3 Interior maintenance

Advice / Recommendation

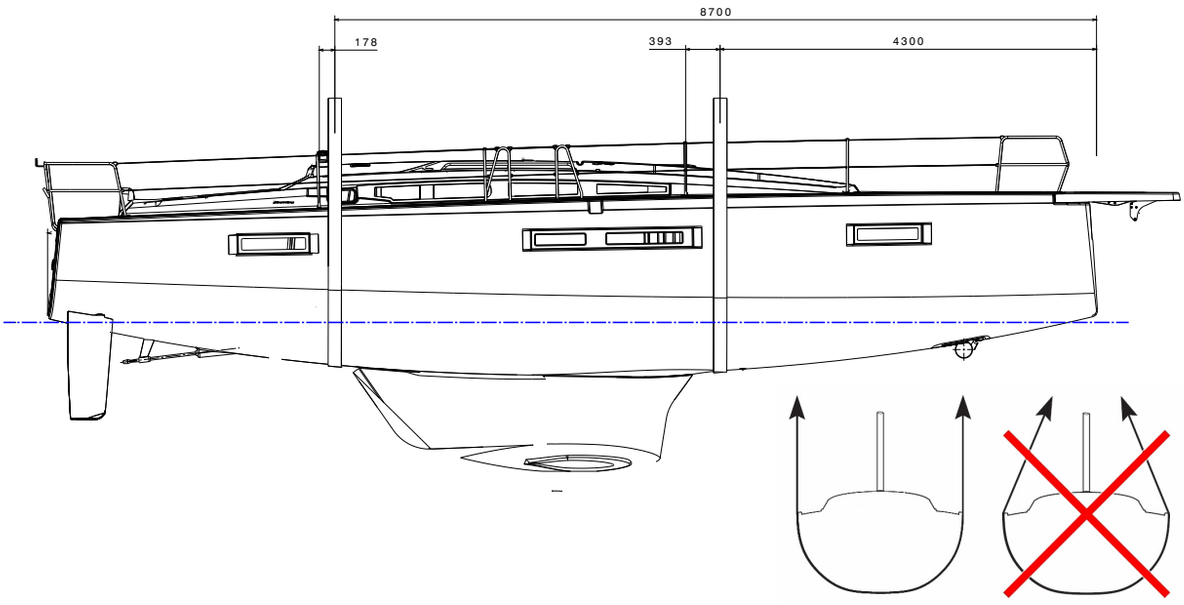
- If in doubt or if stains persist, consult a cleaning specialist.
- For winterisation, ensure the curtains are drawn to prevent prolonged exposure of the varnish and fabric to sunlight. This will prevent the risk of discolouration.
- Never:
  - use solvents or abrasive products;
  - use a heat source (hairdryer/clothes dryer);
  - use detergent, silicone, acetone, chlorine-based products or hot water;
  - use a high-pressure cleaner.

- 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...).

18

Handling and transport

18.1 Lifting diagram



NOTE: Measurements are expressed in mm.

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

18.2 Lifting

- Follow the manufacturer's recommendations closely when applying antifouling.
- Never let antifouling cover:
  - the anodes;
  - the earthing plates (Generator / DC/AC converter);
  - the sensors of the electronic instruments.
- Avoid using copper or tin-based antifouling: these are banned in some countries.

- **Before applying antifouling NEVER:**
  - **Do any sandblasting;**
  - **Use any other solvents than ethylic alcohol;**
  - **Use pressure washer detergents;**
  - **Use scrapers;**
  - **Use grinding tools.**

- Before the first application of antifouling to the hull, you should lightly sand the hull using wet and dry sandpaper of 400 µm or more.
- The lower hull of your boat should be covered with an anti-fouling paint to prevent the adhesion of marine growth.
- The water quality where your boat is kept, along with the frequency of lifting, will determine the choice of antifouling.
- All bronze or steel surfaces, including the propellers, should be protected by a suitable antifoul paint.
- During lift-out, check the anodes, cutlass bearing and the propeller (see corresponding chapters).
- Antifouling can deteriorate when the boat is ashore or dried out: Please observe the out-of-water time limit set by the supplier.
- 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 bar (2175 PSI);
  - The distance between the hose nozzle and the hull must not be less than 10 centimetres.
- The wet surface area of the boat is approximately: 45m².

18.3 Keel (Fixed keel version)

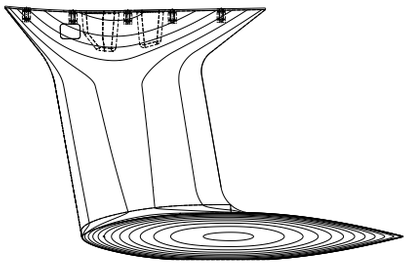
- The boat is only designed to sail with the retractable keel secured in the lowered position.
- The stability of the boat is significantly reduced when the keel is lifted: the skipper must keep this in mind.
- With the keel raised, the boat may only sail at very low speeds, approaching a mooring in shallow waters, for example, when the sea state and wind speed allow.
- When the boat runs aground, the keel must be fully raised. In all other configurations, when the boat is sailing, the keel must fully lowered.

General points

- The keel is the appendage located under a sailing yacht. It is fundamental component for stability and is essential to the boat's operation.
- The keel is fixed to the bottom of the hull by bolts or pins and nuts with the corresponding tightening torque.
- It is generally necessary to regularly tighten the keel bolts due to the creep of the lead/cast iron (a physical phenomenon which causes future irreversible deformation of a material subjected to constant stress).

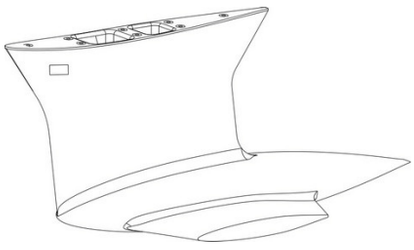
Deep draught version

Ballast weight: 2 003kg



Shallow draught version

Ballast weight: 2 326kg



Maintenance

- The keel constitutes a part of the hull below the waterline. It must be protected with anti-fouling paint.
- Each time the hull is cleaned and at least once a year, inspect the condition of the keel and the join between the keel and the hull visually. Any fault, crack or splintering must be reported to your dealer or a professional who will give you the correct 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.
- Perform regular visual inspections of areas subject to significant stress to detect any signs of cracks in the paintwork or gel-coat.

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 a small one), reduce speed, contact the emergency services and follow their advice.
- Take the boat out of the water immediately and have it professionally inspected.
- In the event of grounding, it is recommended to get a professional to carry out an ultrasound test to inspect the keel and its connection with the hull.

18.4 Keel (Centreboard version)

- It is only possible to proceed using the sails with the keel in the lowered position.
- The boat is only designed to sail with the retractable keel secured in the lowered position.
- The stability of the boat is significantly reduced when the keel is lifted: the skipper must keep this in mind.
- With the keel raised, the boat may only sail at very low speeds, approaching a mooring in shallow waters, for example, when the sea state and wind speed allow.
- When the boat runs aground, the keel must be fully raised. In all other configurations, when the boat is sailing, the keel must fully lowered.

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DANGER – RISQUE D'ENVAHISSEMENT

Pour éviter tout risque de détérioration du système de relevage ou du puit de dérive pouvant entrainer un risque d'envahissement. Ne jamais actionner la descente de la quille avec un tirant d'eau non suffisant ou en cas de talonnage

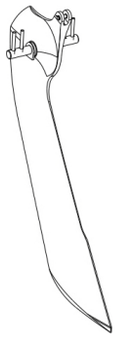
DANGER- RISK OF FLOODING

To avoid any risk of damage to the lifting system or the drift well that could lead to a risk of flooding. Never operate keel descent with insufficient draught or in case of bottom contact

Outside view

Control

Location: Cockpit



Ballast weight: 1 872kg

Operation

The boat is not designed to be grounded, even with props. The raised keel is only for sailing in shallow water, at low speed. In all other configurations, when the boat is sailing or is at anchor, the keel must be fully lowered.

Maintenance

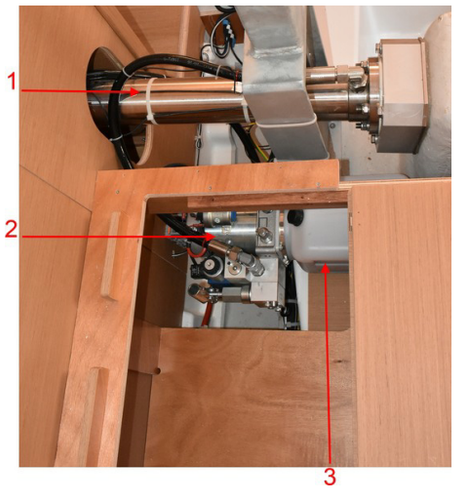
The anode located on the mechanism is a wear part: an annual check is required to determine whether a replacement is necessary. (see Chapter: ANODES).

Emergency Procedure

It is possible to raise the centreboard manually, using the crank handle provided for the purpose.

Layout of components

Saloon

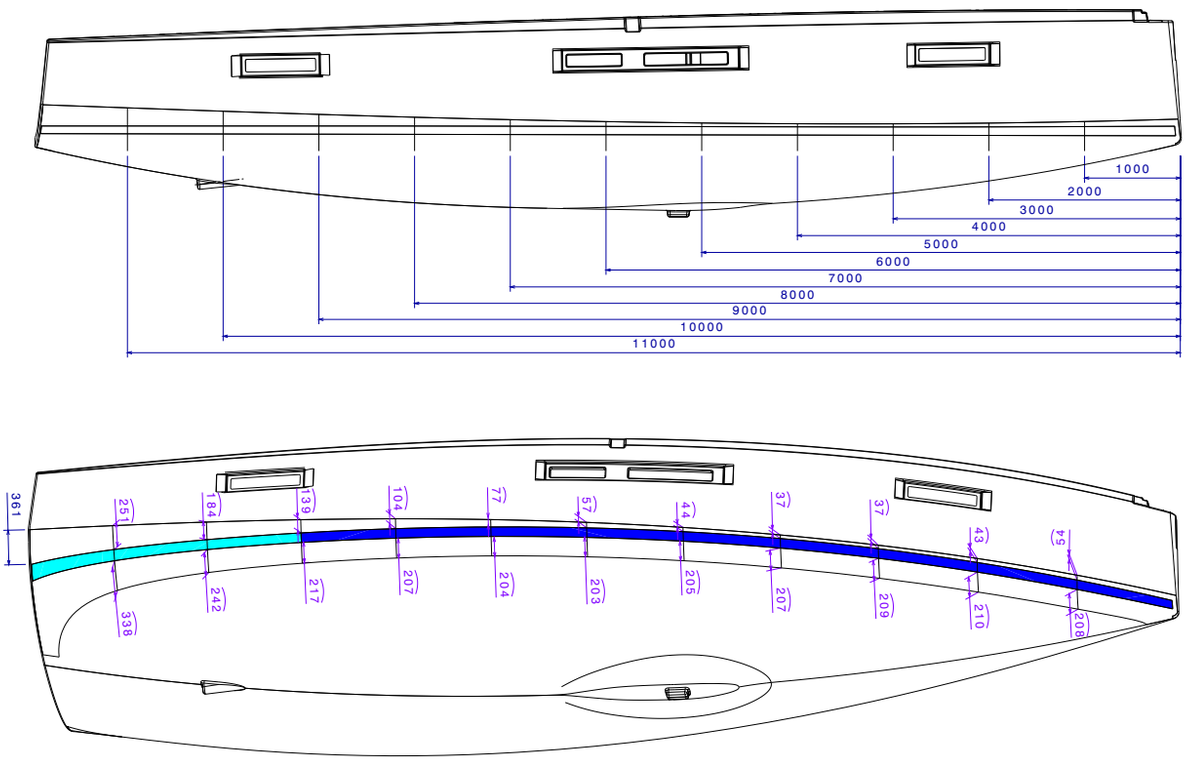


1. Hydraulic piston
2. Hydraulic unit
3. Hydraulic reservoir

Layout of components

Forward cabin

18.5 Upper limit of antifoul



NOTE: Measurements are expressed in mm.

18.6 Launching and retrieving

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

- When placing the slings make sure that the positioning marks are still visible.
- Immerse the sling fully under the engine mounting.

The first time you use your boat a high level of skill and attention will be required. The proper functioning of all equipment will depend on the initial set-up being carried out correctly. For this reason the first launch must be carried out under your dealer's supervision.

Before launching

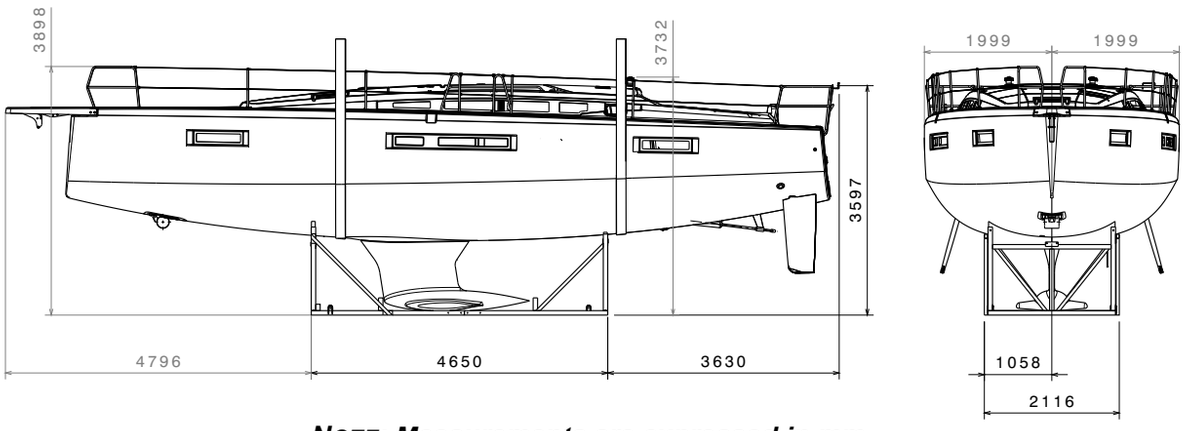
- Replace the speedometer in its housing.
- Check the cleanliness of the seawater filters.
- Check the anodes (see Chapter: ELECTRICAL SYSTEM).
- Check the propeller/hydrolube bush (see Chapter: STEERING SYSTEM).
- Prepare enough fenders and lines.
- Check the engine's seawater intake valve and the fuel feed valve (see Chapter: ENGINE).

18.7 Stepping and unstepping the mast

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

18.8 Transport

Packing plan



NOTE: Measurements are expressed in mm.

18.9 Winterisation

Advice / Recommendation

- Engine winterisation requires 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 technical maintenance of your boat.

- Take advantage of laying-up 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 chlorine-based products).
- Empty and rinse the entire blackwater system.
- Dry out and clean the boat's bilges.
- Grease and close all the valves and thru-hull fittings.
- Close all the boat's seacocks.
- Remove the depth sounder and speedometer heads.
- 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 while before putting them back onboard and arranging them so as to limit contact between surfaces.
- Close the blackout curtains.
- Leave the fridge/icebox doors open 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 a long time.

Environment

Waste management

- 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 this is 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 (MARPOL Convention) and follow these as much as possible.

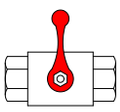
- Throw all packaging in the recycling containers provided.
- Once a piece of equipment has stopped working completely, find out about the relevant recycling regulations from your nearest recycling centre or from your dealer.
- Make sure you follow the relevant local laws when scrapping.
- Some onboard equipment can have a toxic effect on the environment and on human health due to the specific substances they contain: Do not throw any equipment in household waste containers and absolutely never dispose of equipment in the sea.
- Dead batteries are toxic to health and to the environment. Batteries must not be put in with household waste and must be recycled separately. Contact the harbour master or a specialist company about recycling them.

Appendix

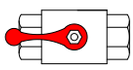
Label key

Engine group | Plumbing group | Colour – WC group | General electrical equipment | Comfort group | Drainage group

Valve location label

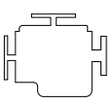


Closed valve



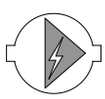
Open valve

Meaning of the symbols

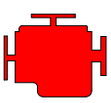


Motor

Shower

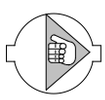


Electronic pump

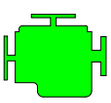


Port engine

Washbasin



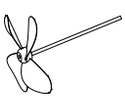
Manual pump



Starboard engine

Ice maker

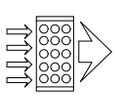
Toilet



Propeller shaft

Deck wash

Washer



Filter

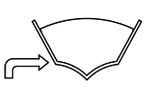
Sea water tap

Dryer

Hull drainage

Waste water tank

Dishwasher



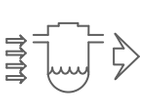
Sea water intake

Fresh water tank

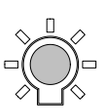
Watermaker

Shore power socket

Fuel tank



Fuel filter

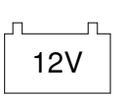


Service

Holding tank

Inverter

Generator



Battery stock

Heating

Breaker

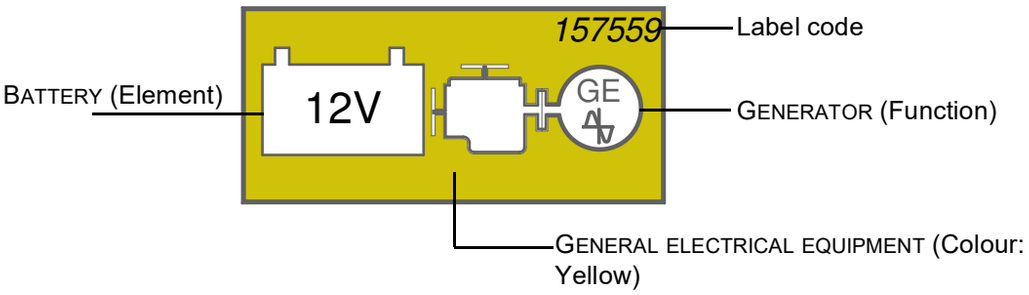
Thruster

Air conditioning

Each label is defined by:

- a functional group (specific colour)

example:



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