

PROSAIL

~ YACHT EXPERTS ~



DUFOUR | 470

OWNER'S MANUAL



DUFOUR

OWNER'S MANUAL

DUFOUR | 470



DESIGN CATEGORY A

EUROPEAN DIRECTIVE, 2013/53/EU

This page is intentionally blank.

14 This page is intentionally blank.

This page is intentionally blank.

Your Dealer:

Name:

represents **DUFOUR** and will provide you with all the assistance required to solve any problems you may have during launch and caulking, as well as technical checks for commissioning and maintenance of your boat. They will assist you as required with administrative procedures to register your boat.

As soon as you take possession of the boat, familiarise yourself with the owner's manual delivered with your boat, date and sign the receipt below and give (or send) it to your Dealer.

Receipt of the owner's manual to be retained in your manual

I, the undersigned:

Name:

Address:

owner of the **DUFOUR 470** no.

declare that I received the owner's manual, of the **DUFOUR 470** and accept it as it is in French.

Date:

Signature:

Cut along the dotted line

✂.....

Receipt for the owner's manual to return to DUFOUR

11, Rue Blaise Pascal- 17187 PERIGNY CEDEX- FRANCE

I, the undersigned:

Name:

Address:

owner of the **DUFOUR 470** no.

declare that I received the owner's manual, of the **DUFOUR 470** and accept it as it is in French.

Date:

Signature:

This page is intentionally blank.

This page is intentionally blank.

CONTENTS



INTRODUCTION	7
I. GENERAL INFORMATION	8
DESIGN CATEGORY	8
CERTIFICATION.....	8
IDENTIFICATION	9
BUILDER'S PLAQUE.....	9
DANGER LEVELS.....	10
II. MAIN CHARACTERISTICS.....	10
MASS AND DISPLACEMENTS	12
SPECIAL INFORMATION.....	12
SAFETY INSTRUCTIONS AND USE OF THE ELECTRICAL SYSTEM	13
INSTALLING NEW EQUIPMENT	13
BATTERIES	14
ELECTRIC WINDLASS	14
INSTALLATION 220 VOLTS / 110 VOLTS (ISO 13297:2000).....	14
.....	15
IV. GAS INSTALLATION.....	16
GENERAL POINTS	16
LPG SYSTEM OPERATION	16
SYSTEM CHECK	16
SAFETY WARNINGS.....	17
DETECTION SYSTEM.....	17
V. WASTE WATER AND SANITARY CIRCUIT	18
FEATURES OF THE WASTE WATER SYSTEM (ISO 15083:2003).....	18
PRESSURISED FRESHWATER PUMP.....	18
VALVES	18
OPERATION OF THE MARINE TOILET	19
OPERATION OF THE HOLDING TANK (ISO 8099:2000)	19
VI. FLOODING	20
VII. FIRE PROTECTION	20
INSTALLATION.....	20
SAFETY INSTRUCTIONS.....	21
VIII. PROPULSION ENGINE	22
GENERAL PRECAUTIONS	22
EXHAUST GAS EMISSIONS	22
SAFETY.....	22
IX. FUEL INSTALLATION	23
X. STEERING SYSTEM	24
HELM	24
EMERGENCY TILLER	24
XI. SAILING	25
FIELD OF VISION.....	25
XII. PREVENTION OF FALLS AND MEANS OF GETTING BACK ABOARD.....	26
XIII. PROTECTION AGAINST LIGHTNING	27
MAINTENANCE	27
PROTECTION OF PEOPLE DURING A STORM.....	27
XIV. PROTECTION OF THE ENVIRONMENT AND SAFETY.....	27
XV. SAFETY PACK.....	28
XVI. HANDLING, TRANSPORT, DRY DOCKING	28

XVII. MOORING, BERTHING AND TOWING	29
RESPONSIBILITY	29
1. PRESENTATION DIAGRAM	35
2. LAYOUT DIAGRAM	36
3. CHANDLERY DIAGRAM	39
4. SAIL DIAGRAM	41
5. HALYARDS AND SHEETS HANDLING DIAGRAM	43
6. ELECTRICAL 220 V CONSUMER UNIT DIAGRAM.....	52
7. 220 V CIRCUIT DIAGRAM	54
8. 220 V CIRCUIT DIAGRAM WITH OPTIONS.....	56
9. 220 V ELECTRICAL LAYOUT DIAGRAM	59
10. FUSE LOCATOR DIAGRAM	62
11. CHARGING AND POWER DIAGRAM	65
12. 12 V CONSUMER UNIT.....	67
13. CABLING ON REAR OF UNIT.....	69
.....	71
14. 12 V ELECTRICAL LAYOUT DIAGRAM	72
15. LIGHTING CIRCUIT	75
16. RUDDER SYSTEM DIAGRAM	78
17. GAS CIRCUIT DIAGRAM	80
18. SHIP'S ESCAPE DIAGRAM	82
19. FRESHWATER CIRCUIT DIAGRAM	85
20. DRAINAGE CIRCUIT DIAGRAM.....	87
21. THROUGH-HULL FITTINGS LOCATOR DIAGRAM.....	89
22. MECHANICAL INSTALLATION DIAGRAM	91
23. DIESEL CIRCUIT DIAGRAM	93
24. ENGINE VENTILATION CIRCUIT	95
25. HOLDING TANK INSTALLATION DIAGRAM.....	97
26. LIFTING DIAGRAM.....	99
27. NAVIGATION LIGHTS	101

INTRODUCTION

DUFOUR is pleased to present you with this manual which will enable you to get to know your boat better.

This manual has been developed to help you use your boat safely and with pleasure. It contains details about the boat, the equipment provided or installed and its systems, as well as information about their use. Read it carefully and familiarise yourself with the boat before using it.

This owner's manual is not a course on safe sailing or yachting skills. If this is your first boat or if you have changed to a type of boat with which you are not familiar, for your comfort and safety, make sure you gain some experience in its operation and use before taking the controls. Your Dealer, your national sailing or powered sailing federation or your yacht club will be pleased to inform you about sailing schools or competent instructors in the area.

Make sure that the wind and sea conditions forecast correspond to your boat's design category, and that yourself and your crew are able to manoeuvre the boat under these conditions. Even when your boat is suitable for them, the sea and wind conditions corresponding to design categories A, B and C vary from severe storm for category A to severe conditions for the top of category C, subject to the dangers of abnormal waves or squalls, and are therefore dangerous conditions in which only an experienced crew, in good shape, and trained, manoeuvring a well-maintained boat can sail satisfactorily.

This owner's manual is not a detailed guide to maintenance or repair. In the event of difficulties, contact the boat builder or their representative. If a maintenance manual has been provided, use it. Always use the services of an experienced professional for maintenance, installation of accessories or modifications. Changes which may affect the boat's safety characteristics must be assessed, carried out and documented by competent people. The boat builder cannot be held responsible for changes which they have not approved.

In some countries, a sailing licence or permit are required or specific regulations apply. Always maintain your boat correctly and take account of wear and tear over time or, in some cases, significant or inappropriate use. Any boat, as solid as it may be, can be severely damaged if it is poorly used. This is not compatible with safe sailing. Always adapt the speed and bearing of the boat to sea conditions.

If your boat is equipped with a life raft, read its user's manual carefully. It is necessary that the crew have all safety equipment on board (life jackets, harnesses, etc.) suited to the type of boat, weather conditions, etc. ... This equipment is compulsory in some countries. It is important to familiarise the crew with the use of all safety equipment and emergency safety manoeuvres (recovery of a man overboard, towing, etc.), sailing schools and clubs regularly organise training sessions.

It is recommended that everyone wears flotation aids (life jackets, individual flotation equipment) when on deck. Please note that in some countries it is mandatory to wear a flotation aid which complies with national regulations.

KEEP THIS MANUAL IN A SAFE PLACE AND PASS IT ON TO THE NEW OWNER IF YOU SELL THIS SHIP.

NOTICE: Our boats are regularly improved according to our customers' experiences and research carried out by the yard, so the specifications given in this owner's manual are not contractual and may be modified without notice and without any obligation to update. This manual is intended to cover maximum information and it therefore may be that some equipment or paragraphs do not apply to your boat. If you are in any doubt, refer to the inventory which was supplied by your Dealer when you placed your order.

I. GENERAL INFORMATION

Design Category

Your **DUFOUR 470** falls into the HIGH SEAS design category (Category A).

Under normal conditions of use, your boat is designed to sail in waves of a significant height of more than 4 m and winds of force 8 or more, and withstand the most severe conditions.

Its ability to sail also depends on the crew's skills, physical capacities, the maintenance of the boat and its safety equipment.

Therefore be very vigilant before taking to sea.

DUFOUR cannot guarantee the perfect operation of the ship under exceptional sea conditions (violent storm, hurricane, cyclone, waterspout).

REMINDER OF DESIGN CATEGORIES

Design Categories	Type of Sailing	Wind Strength (Beaufort Scale)	Wind Speed	Significant Wave Height to Consider
A	On the high seas	Above 8	Up to 28 m/s	Above 4 m
B	At sea	Up to and including 8	Up to 21m/s	Up to and including 4 m
C	Near the coast	Up to and including 6	Up to 17 m/s	Up to and including 2 m
D	In sheltered waters	Up to and including 4	Up to 13 m/s	Up to and including 0.5 m

NB: The significant wave height is the average height of the upper third of the waves, which corresponds approximately to the wave height estimated by an experienced observer. Some waves will have double that height.

Check the weather before taking to sea: **take to sea, not risks!**

In harbour: the harbour office displays weather bulletins every day and forecasts for the coming days.

Météo France on 08.36.68.08.08

Navifax - direct at 08.36.70.18.52.

VHF: CROSS sends several bulletins a day, after the announcement on channel 16.

Certification

DUFOUR has chosen the Institut pour la Certification et la Normalisation dans le Nautisme [Institute for Certification and Standards in Sailing] to check the conformity of your boat with European Directive 2013/53/EU of 20 November 2013, according to certification module B.

Identification

The hull identification number is on the starboard side of the transom. It is made up of a series of letters and numbers beginning with FR-DUF

Builder's Plaque



A part of the information is given on the manufacturer's plaque fitted on the boat. A complete explanation of this information is given below.

Design Category = A: High Seas (see 1.1)

Maximum number of people:



Category A = 11
Category B = 11
Category C = 14
Category D = 16

: recommended by the builder when the boat is sailing under sea conditions which correspond to its design category.

NOTICE

Do not exceed the recommended maximum number of people. Whatever the number of people on board, the total mass of people and equipment must never exceed the maximum recommended load.

Recommended Maximum Load:



Category A = **3020 kg**
Category B = **3020 kg**
Category C = **3020 kg**
Category D = **3020 kg**

: recommended by the builder including the mass of all people on board, provisions and personal effects, all equipment not included in the boat's lightweight not including the contents of tanks. This mass takes into account the options offered by the yard which have to be deducted if they are mounted.

NOTICE

When loading the boat, never exceed the maximum recommended load. Always load the boat carefully and distribute loads appropriately to maintain the theoretical base attitude (approximately horizontal). Avoid placing heavy loads at high levels.

EC : EC marking showing that the boat conforms to the essential requirements of Directive 2013/53/EU. (See the Written Declaration of Compliance)

Danger Levels

DANGER	Indicates the existence of an extreme intrinsic risk which may have a high probability of death or severe injury if appropriate precautions are not taken.
NOTICE	Indicates the existence of a risk of injury or death if appropriate precautions are not taken.
CAUTION	Indicates a reminder of safety practices or draws attention to dangerous practices which may cause injury to people, damage to the boat or its components or the environment.

II. MAIN CHARACTERISTICS

	Model:	DUFOUR 470
	Builder	Dufour 11, Rue Blaise Pascal 17187 Périgny Cedex FRANCE
	Architecture:	Umberto Felci
	Interior Design	DUFOUR Design
	Design Category	A
	No. of the notified body	EC/0607
	CIN No.	
	Main means of propulsion	Sails
L _{max}	Overall Length *	14.85 m
HL	Hull Length *	13.99 m
B _{max}	Beam maximum *	4.74 m
HB	Hull Beam *	4.74 m
AH	Max Air Draught *	20.80 m
Max D	Draught (Short/ Long / Very Long Ballast) *	1.75 / 2.25 / 2.60 m
	Ballast Weight (short / long / very long)	3850 / 3700 / 3480 kg
	Standard Mainsail Area (about)	57 m ²
	Self-rotating Jib Area (about)	40 m ²
	Maximum permissible engine power on board	75 CV / 55 kW
	Water capacity, not including the 60 L water heater (about)	530 L
	Diesel Capacity (about)	250 L
	Holding Tank - depending on version	Up to 235 L
	Engine Battery	105 Ah
	Service Battery (depending on options)	Minimum 560 Ah

* The above dimensions comply with ISO 8866 i.e.:

L_{max}: maximum length of the boat including normally fixed parts such as davits, pushpins, etc..

L_H: maximum length of the boat including structural and integral parts of the boat and excluding removable parts.

B_{max} : width of the boat measured between the furthest outside parts and which may include removable parts such as strakes, railings etc.

HB: width of the boat measured between the most external fixed parts and excluding any removable parts

AH: vertical distance between the waterline in light condition and the highest point of the mast structure (this measure does not include equipment such as lights and antennae which may be fixed to the mast head)

D_{max}: the maximum draught is measured at the lowest point of the boat's keel when it is loaded with its maximum load

NB: the capacity of the various tanks of fresh water and diesel oil is generally not totally usable depending on the attitude or loading of the ship. It is recommended that a 20% reserve of diesel be retained.

Mass and Displacements

	A	B	C	D	E	F	G
M _{LC}	12890 kg	13080 kg	12670 kg	12919 kg	13109 kg	12670 kg	12725 kg
M _{MO}	13178 kg	13368 kg	12958 kg	13207 kg	13397 kg	12958 kg	13013 kg
m _L	3702 kg						
M _{LDC}	16592 kg	16782 kg	16372 kg	16621 kg	16811 kg	16372 kg	16427 kg
m _{LA}	15251 kg	15441 kg	15031 kg	15281 kg	15471 kg	15031 kg	15086 kg

A = classic mast version + long ballast

B = classic mast version + short ballast

C = classic mast version + very large ballast

D = reel mast version + long ballast

E = reel mast version + short ballast

F = performance mast version + long ballast

G = performance mast version + very large ballast

The results shown correspond to a 3 cabin - 3 bathroom - front kitchen version

M_{LC}: Mass of the boat in lightship condition

M_{MO}: mass of the boat in minimum use condition

m_L: maximum load used in the stability study, including the maximum recommended load (see builder's plaque) and 95% of the total mass of liquids (consumable or not) contained in the various tanks.

M_{LDC}: Mass of the boat in maximum load condition

m_{LA}: Mass of the boat in maximum load condition less 85% of the maximum capacity of fixed or portable tanks of fuel, oils and drinking water and less than 90% of edible supplies, but including the combination of equipment or optional chandlery which is least favorable for stability.

The total mass of liquids when all permanent tanks are full amounts to 963 kg (including waste water tanks: the case used as an example is the most restrictive).

Special Information

This boat was assessed using the stability index (STIX), a measure of overall safety regarding stability, which considers the effects of the boat's length, its movement, the proportions of the hull, the characteristics of stability and resistance to flooding.

The second index (AVS) represents the angle of vanishing stability in degrees.

	Minimum Sailing Condition (M _{MO})	Arrival Condition (MLA)
STIX	44.67	37.12
AVS	119.32°	114°

These values are for the 3 cabins - 3 bathrooms - front kitchen version with long ballast and classic mast.

III. ELECTRICAL SYSTEMS

Safety Instructions and Use of the Electrical System

NOTICE

Risk of fire or explosion may result from poor use of the direct and/or alternating current systems

. Risk of electrocution may result from poor use of alternating current systems.

Always: Check

the condition of batteries (charge and electrolyte level) and the charging system before taking to sea. Unplug and remove the batteries for wintering.

- Maintain the voltage of batteries at more than 12 V during wintering.
- Take replacement bulbs for all navigation lights and interior lighting. Use bulbs with the same output, particularly for navigation lights.
- Check that navigation equipment is operational.
- Check that navigation lights are operational before sailing at night.

Never:

- Work on live electrical equipment.
- Modify an installation and the relevant diagrams, unless it is carried out by an electrician who is qualified in marine electrics.
- Change or modify the breaking capacity of the equipment protecting against overload.
- Replace the electrical equipment or materials with components which exceed the prescribed capacity without re-calibrating the conductors and their protections.
- Leave the ship without supervision when the electrical installation is live, with the possible exception of an automatic bilge pump and protective circuits against the fire or theft.

If a fuse or circuit breaker constantly pops, you should consult a specialist to determine the cause of the short-circuit.

Installing New Equipment

Since 1 January 1996, electrical equipment has been subject to European Directive on "electromagnetic compatibility" (Ref 89/336/EEC). It is therefore necessary to install new equipment which meets this standard and which bears the EC marking. The equipment must also be delivered with a certificate of conformity and user instructions.

Only use double-insulated or earthed electrical equipment in the case of a 220 V or 110 V installation. When fitting such equipment, follow the installation instructions (wire section, protection).

To avoid maintenance problems, add references to the manual about any future modifications to the electrical diagram.

Batteries

Battery equipment is made up of four 140 Ah House Batteries as standard (plus additional batteries depending on options) and a 105 Ah battery for starting the engine.

Their capacity was designed to meet the energy needs of the on-board equipment. To avoid any problem, correct charging and maintenance has to be ensured.

PLEASE NOTE!

- When you install new electrical equipment, ensure that the overall consumption of the equipment remains within your battery capacity.

When disconnecting or replacing batteries:

- Always disconnect the negative battery terminal before the positive terminal.
- Never put the two terminals of a battery in contact via anything which may conduct (Tools, etc.)
- When handling batteries, avoid any leakage of electrolytic fluid by keeping them horizontal. Wear gloves and suitable clothing to avoid any risk of contact with electrolytic fluid in the event of leakage.
- In the event of electrolyte splashing, rinse the part of the body which came into contact thoroughly and consult a doctor
- Never add distilled water to a sealed battery
- It is advisable to replace battery equipment as a whole
- Do not combine batteries using different technologies
- Do not combine batteries with more than 10% difference in life and capacity

Electric Windlass

PLEASE NOTE!

When using the electric windlass, it is essential to accelerate your engine slightly.

Installation 220 Volts / 110 Volts (ISO 13297:2000)

DANGER!

The on-board 220 V installation is protected by a circuit breaker and equipped with a differential unit. Wiring for additional on-board equipment at 220 V must be carried out professionally with recalibration of the general circuit breaker if necessary.

- Do not change the ship's electrical installation nor the relevant diagrams. It is necessary that installation, modifications and maintenance be carried out by an electrician qualified in marine electrics. Check the system at least every two years
- Disconnect the ship supply connections when the system is not in use.
- Connect the boxes or metal covers of electrical equipment installed to the ship's protective conductor (green or green with a yellow stripe conductor).
- Use double-insulated or earthed electrical equipment.

PLEASE NOTE!

When the ship is berthed, switch the circuit-breaker to open position.

DANGER

Your boat is supplied without a boat / dock supply cable and without a male plug on dock terminal side. The cable must be provided for external use. Its section must be suitable for its length and power and the main circuit breaker (See electrical diagram). The plug must be suitable for the female plug of the dock (Consult a professional if necessary). It should be as close as possible to type IP 67 / IEC529

NOTICE: To reduce the risk of electric shock and fire.

- Cut the dock supply at the disconnecting device installed on board before connecting or disconnecting the boat/ dock supply cable.
- Connect the boat / dock supply cable on the boat before connecting it to the dock terminal
- Disconnect the boat / dock supply cable to the dock terminal before disconnecting it on the boat
- Close the cover of the dock supply input properly.

Never:

- Modify the connections of the boat / dock supply cable; use only compatible connections.
- Swim near a boat connected to a dock socket: risk of electrocution!

Location of the 220 V general circuit breaker: reef cover in the rear port-side cabin.
Check the system at least every two years.
During dry servicing, put in closed position to have an earth protection via the dock socket.

NOTICE

Do not allow the end of the boat / dock supply cable to hang in the water. This may result in an electrical field which may hurt or kill nearby swimmers.

NOTICE - ELECTRIC SHOCK RISK - TRANSFORMER

If the boat is equipped with a transformer which converts direct current (DC) to alternating current (AC), to avoid the risk of injury or death by electric shock, disconnect the dock supply cable (AC) and the DC supply to the transformer before opening any electrical consumer unit or working on circuits.

IV. GAS INSTALLATION

General Points

- Operating Pressure: 30 mbar (see indication on a sticker on the gas locker and on the expansion valve)
- Ventilation openings to be used to discharge exhaust gases: panel opening above the gas cooker and companionway door.
- Do not block quick access to the gas installation components (bottle locker, shut-off valve).
- Inspect the flexible pipes regularly, at least annually and change them if there is any deterioration, if the expiry date has been reached or five years after the date of manufacture written on the pipes.
- The valves fixed to the empty bottles must be closed and disconnected. The protective caps, covers or plugs must be kept in place. Gas cylinders (including reserve ones) must be in housings or lockers for LPG cylinders with ventilation to the outside or stored outside the boat, protected from bad weather and mechanical damage and from where gases which escape cannot enter the boat.
- The LPG cylinder locker must not be used to store any other equipment.
- Ensure that the gas bottle and valve are compliant with the recommendations for the stove (flow, pressure, type of gas) and the regulations in force in the country of use.
- Ensure that all valves are closed when the gas bottle is replaced

LPG System Operation

- The valves of the supply pipes and the bottles' valves must be closed when the equipment is not in use, before filling and immediately in the event of emergency.
- Equipment valves must be closed before opening the bottle valve.

NOTICE

Open flame devices which burn any fuel consume oxygen from the cabin and emit combustion products in the boat. Good ventilation is required: open the nearest deck panel or porthole as well as the companionway panel when the devices are in operation.

- The stove is suspended and can therefore be used while sailing. However, limit its use when high angles of rolling or listing are likely.

System Check

- The LPG system must be subjected to a leak test before each use as follows:
- Close the equipment's valve, open the valve of the LPG bottle, let the pressure gauge stabilise, close the LPG bottle valve, observe the pressure indicated by the pressure gauge located near the bottle for three minutes. The pressure indicated by the pressure gauge should be constant if there is no leak in the system.
- For information: the pressure gauge does not give an indication of the quantity of liquid LPG remaining in the bottle, only its vapour pressure, which is constant at a given temperature.
- If an LPG leak is detected or suspected, take the following steps immediately:
- Cut the supply at the main supply valves or valves.
- Extinguish naked flames and other ignition sources (heating equipment, cooking equipment, pilot lights, etc.).
- Do not use an electrical switch.
- Evacuate the area, if possible

NOTICE

- Do not use an installation with a leak before it has been inspected and repaired by a competent person.

DANGER

Never use a naked flame to search for leaks.

- NB: the above tests do not replace the check which it is recommended to have a professional carry out periodically.

Safety Warnings

NOTICE

Never leave the boat unsupervised when naked flame equipment are operating

Do not smoke, nor use a naked flame when replacing LPG bottles

. Close the valve of the empty bottle before disconnecting it to replace it. Ventilate the compartment housing the bottle when replacing it.

Do not use the stove/oven as a heater.

If a leak is detected, close the main LPG supply valve and do not use the LPG equipment.

Never smoke when going down inside the boat when it has been closed, make sure that there is no smell of gas.

Do not modify the boat's LPG system. Installation, modifications and maintenance must be carried out by a competent person. Have the system checked at regular intervals or those set by national requirements.

PLEASE NOTE!

Precautions must be taken to avoid any contact with naked flames and other hot spots.

Do not use solutions containing ammonia for manual leak tests.

Detection System

The boat must be equipped with a fire alarm system (smoke detector, heat detector, etc.).

The recommended location is indicated on the escape plan.

This detector emits a sound signal in the event of an alert.

It has an independent battery, which must be replaced as soon as it signals its low charge, according to the manufacturer's instructions or as indicated on the device.

It is essential that a routine test be carried out on each boarding or every week in the event of an extended stay on board.

In the event that the test indicates that the device is faulty, replace it with an equivalent type of device.

V. WASTE WATER AND SANITARY CIRCUIT

Features of the Waste Water System (ISO 15083:2003)

Pump Type	Theoretical Flow Rate
Manual	38 L / 45 beats per minute
12V Electric	3900 L / h

Read the operating and maintenance instructions for your boat's bilge pump carefully.

NOTICE

The bilge pump system is not designed to check water from leaks in the hull. It is intended for emptying water from spray, valve leaks or any other moderate leak.

PLEASE NOTE!

- The level of bilge water must be kept to a minimum.
 - Make sure that the bilge pumps are in operating condition before taking to sea.
 - Clean the drain and the pumps' suction points or strainers of debris which may block them.
- If leakproof partitions separating the front and rear spikes are equipped with valves, these must be kept closed normally and only opened to empty water from the main bilge.
- Locate each hand pump and its lever.
 - Locate the electric bilge pump switch on the electrical consumer unit.

Pressurised freshwater pump

The sink and wash hand basin are supplied with fresh water by an electric pump. A filter is installed ahead of the pump, it must be cleaned regularly.

Never operate the pump if the tank is empty. Fill the tank before using the circuit again.

The tanks can be sterilised using clonazone tablets (on sale in pharmacies). Every year, remove the inspection hatches to clean them by filling them with water with a bactericidal detergent, let the product work for a few hours and then rinse 2 or 3 times. When wintering, fill the tanks completely to prevent the proliferation of algae or bacteria, or empty the tanks if there is a risk of frost, never use antifreeze.

Hot water production is provided by a water heater connected to the engine cooling system and the dock electrical socket.

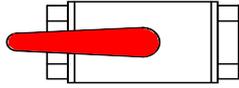
After emptying the water heater, ensure that the element is submerged before switching it on.

Valves

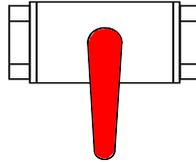
The valves are of the ¼ turn type:

- OPEN position: lever in line with the body of the valve,
- CLOSED position: lever perpendicular to the valve body.

Vanne ouverte



Vanne fermée



PLEASE NOTE!

- Never touch the valve clamps on the hull. If there is a leak, consult a professional.
- In bad weather or when leaving your boat, close all sanitary circuit valves.
- Keep the valves closed when not in use, and remember to operate them regularly to keep them flexible. A valve which has not been used for too long can eventually jam.
- During wintering, clean and rinse the seacocks and through-hull fittings. Inspect the brass accessories; slight surface corrosion is normal.
- In the event of more serious corrosion, consult your Dealer.

Operation of the Marine Toilet

- Open the sea water intake valve.
- Open the drain valve of the toilet.
- Put the lever into the "FLUSH" position.
- Operate the pump.
- To empty the toilet and avoid any water movement when heeling, position the lever to "DRY BOWL."
- Operate the pump until the toilet is empty.
- Repeat these flushing/emptying operations as often as necessary to ensure complete draining of the pipes.
- When the toilet is not in use, put the lever into the "DRY BOWL" position, or for some models into the "CLEF" position.
- Close the valves after use, as the toilet is located below the waterline.
- Change the toilet seals regularly.

Operation of the Holding Tank (ISO 8099:2000)

PLEASE NOTE!

When installing a holding tank, ensure that the discharge valve is locked to avoid any inadvertent discharge during wintering.

- The waste water tanks (50 L) operate with the manual toilet pump.
- The contents of the toilet are directly discharged into the holding tank;
- Check the proper operation of the vent periodically.
- A deck fill is provided for emptying the tank.
- The discharge valve can be locked in a closed position with a padlock.
- Plan to clean the tank with a biodegradable disinfectant once a season.

Leave the system empty when the ship is berthed at negative temperatures. When wintering, use a non-toxic food antifreeze, in accordance with local regulations.

VI. FLOODING

To avoid the risk of flooding the boat:

- Check that portholes and deck panels and any other opening which may allow flooding are closed before each departure.
- When sailing, close all valves when they are not in use, except for the engine water intakes.
- Do not exceed the maximum recommended load.
- Bilge water must be kept to a minimum.
- Avoid placing heavy objects at higher levels to avoid affecting stability

Periodically check:

- Seal of through-hull fittings, seacocks, valves and pipes.
- The proper flow of cockpit drains.
- Cable glands seals and sail drive seals.

NOTICE

The cockpit locker caps must be closed before any sailing departure. This is particularly important for lockers which have a high risk of flooding.

VII. FIRE PROTECTION

Installation

Since extinguishers are subject to national regulations, they are not supplied with the boat. However, when in service, this boat must be equipped with portable fire extinguishers with the following extinction capacities and installed at the following locations (see sketches in Appendix 17):

- No. 1 - cockpit locker, within reach of the helm - extinguishing capacity 1 kg - 5A34B
- No. 2 - square near the companionway - extinguishing capacity 1 kg - 5A34B
- No. 3 - forward cabin - extinguishing capacity 1 kg - 5A34B
- No. 4 - skipper cabin if that option has been selected

If you choose to install a carbon dioxide extinguisher, be aware that it can only be located in living areas with live electrical equipment (e.g. electric motors, battery compartment, electrical panels) or flammable liquids (e.g. kitchen).

Only compatible replacement parts must be used for the fire prevention system. They must bear the same indications and be technically equivalent.

Furthermore, a fire-resistant cover must be stowed near the kitchen, which may be very useful, particularly in the event of a stove fire caused by oil (e.g. square bench seat).

Similarly, to protect the deck, a fire bucket equipped with a sideguard must be stored in an immediately accessible locker.

If non-combustible materials are stored in the engine compartment, they must stay in order not to fall on the machinery and must not block access to the engine compartment nor exit.

NOTICE

If a CO2 extinguisher is installed, the following information must be displayed near its location:

"This extinguisher contains CO2 - Use only to fight electrical fires or kitchen fires. To avoid suffocation after discharge, leave the area immediately. Ventilate before entering. "

After extinguishing a fire, do not immediately open the engine compartment to avoid any release of toxic fumes and splashes of smouldering materials (oil, water).

Safety Instructions

PLEASE NOTE!

It is the responsibility of the owner/skipper:

- to have fire-fighting equipment checked in accordance with the requirements of the manufacturer and the regulations of your country.
- to replace fire-fighting equipment if it is outdated or unloaded, with extinguishing equipment of the same or higher capacity.
- to show crew members:
 - the location and operation of fire-fighting equipment
 - the location of the discharge port of the engine compartment
- to ensure that fire-fighting equipment is easily accessible when the boat is occupied
- to keep the holds clean and check that there is no fuel or gas vapour or fuel leak
- to show escape paths

Never:

- Obstruct the passages to emergency exits (deck panels)
 - Obstruct safety controls (gas valve(s), fuel valve(s), electric switches)
 - Obstruct the storage containing extinguishers
 - Leave the boat unoccupied with a stove or heater on
 - Use a gas lamp on the boat
 - Fill a fuel tank or change a gas bottle when the engine, the stove or a heater is operating
 - Smoke while handling fuel or gas
 - Hang free-hanging curtains near the stove or other open flame device
 - Store combustible products in the engine compartment
- personnel to make such modifications.

VIII. PROPULSION ENGINE

Regular maintenance must be carried out following the engine manufacturer's recommendations. Read the engine's operating instructions which come with the boat carefully. Do not hesitate to consult your dealer or a qualified professional. Follow the instructions for wintering with particular care.

General Precautions

PLEASE NOTE!

Do not sail using sails and engine if the head angle is greater than 10°.

Any change of engine must respect the boat's capacities and be carried out by a marine engine specialist.

After the first launch and tensioning of the rigging, check the alignment of the driveshaft and the sail drive flange.

- Ensure that ventilation openings (vent, engine ventilation grill) are completely clear.
- Ensure that the water-taking valve of the cooling system is open, and that water is coming out of the engine exhaust.
- Boats equipped with rotating cable glands: vent the air of the cable-gland after each launch.

Turn the gas control to off before starting the engine to prevent the boat moving and/or the propeller rotating.

A quick check of the propeller's attachment on subsequent launches may be carried out. Poor operation of the propeller generates vibrations

Regularly check the condition of the anodes and ensure that they are suitable for the environment (fresh water, salt water). Change the anodes every year. The average life of the three anodes is one to two years.

The anodes are made of zinc. It is essential that magnesium anodes are not used. Cathodic protection systems by impressed current are prohibited.

If the anodes are not weathered, you must check:

- that they have not been painted,
- that they are properly attached,
- that they are made of zinc.

Exhaust Gas Emissions

DANGER!

Combustion engines produce carbon monoxide. Prolonged exposure to exhaust gases can cause serious consequences, or even death.

Safety

DANGER!

The engine must not be operational when swimmers are near the boat to avoid any risk of serious injury from the propeller.

If possible, the engine must be stopped for any maintenance or check operation on the engine. Otherwise, special care must be taken of the moving parts (propeller shafts, belts, etc.) to avoid any risk of injury.

Wintering

Read the engine's operating instructions, which accompany the boat, and the instructions for wintering carefully.

If you are in any doubt, proceed as follows:

- Close the engine water-intake valve,
- Disconnect the pipe of the engine water-intake valve,
- Empty the seawater circuit,
- Put the pipe into a drum of permanent liquid -25°,
- Turn the engine over until the liquid comes out of the exhaust,
- Reconnect the pipe to the valve at the end of the operation,
- Put a notice on the electrical consumer unit and the battery disconnectors that the engine water-intake valve is closed.

IX. FUEL INSTALLATION

The flexible fuel pipes must be replaced with pipes bearing the same marking in the event of deterioration. Do the same for all fuel pipes.

PLEASE NOTE!

- The nominal fuel capacity will not be not totally usable, depending on the trim of your boat. For safety, keep a 20% reserve.
- Avoid contact between flammable materials and the hot parts of the engine.
- Repeat any fuel spillage in the boat during the filling of the tanks.

Never:

- Store flammable material (particularly gasoline) in unventilated spaces.
- Smoke during filling of the tanks.
- Obstruct ventilation openings (vent, engine ventilation grill): ensure that they are clear.
- Modify the installation unless this is carried out by a technician qualified in this field.

X. STEERING SYSTEM

The steering system is an essential feature for the safety and comfort of your boat.

Helm

The **DUFOUR 470** is equipped with a double wheel with a wires and chains system as well as an emergency tiller.

Periodic checks to carry out: check the play of the various elements (rudder bit/bearings, tension and wear of the mechanical parts) and grease the sprocket and chain if necessary.

Your system is designed with 6 mm stainless steel cable, 7x19 stranded. These cables may be replaced according to wear and fatigue.

The frequency of changing depends on the type of use and the conditions of tension and maintenance which may affect their life.

A careful examination detects damaged cables. An engine-oil-soaked cloth can be used to wipe all along the cables.

If you detect a broken strand, this means that your cable has reached the end of its life and that it has to be changed.

Use exactly the same type of cable (material and diameter) to avoid any risk of breaking or premature fatigue.

If you have any doubts or problems, consult your Dealer.

Emergency Tiller

PLEASE NOTE!

- The *Dufour 470* is equipped with an emergency tiller which must be easily accessible, we recommend that it be stored in a cockpit locker.
- It is only designed to sail at a reduced speed in the event of damage to the helm.

To use it:

- Loosen the cap to show the head stock
- Put the tiller onto the head of the rudder stock.

XI. SAILING

NOTICE

In all circumstances, adapt the speed of your boat to the prevailing conditions and keep a safety margin. Pay particular attention:

- to sea conditions, currents, wind strength
 - to traffic
 - to port manoeuvres
 - to passages in mooring areas
 - Observe priority rules as defined by sailing rules and applied by COLREG
 - Always allow yourself sufficient distance to stop or manoeuvre if necessary to avoid a collision
 - Respect speed limitation areas
 - As a courtesy and for the safety of other ships, ensure that you do not produce a significant wake near other boats
 - Carefully attach moving elements when the boat is under way
- You should equip your boat with life lines. Anchor points are provided on deck. Refer to the boat's chandlery plan.
 - The stability of your boat has been studied taking account of the mass of the boat in lightship condition, the standard equipment on board and the catalogue options. Any change in the arrangement of weights on board (e.g. the addition of a radar, change of the engine, etc.) may affect the stability, trim and performance of your boat.

Breaking waves are major dangers to stability.

Towing a boat or a heavy load on the davit arms may cause considerable overload, with an adverse impact on the stability of your boat.

In the event of grounding, even slight, consult a specialist to determine whether the visible or invisible damage have reduced the integrity of the boat.

Never:

- Lift major loads using the boom.

Field of Vision

The skipper's view from the cockpit can be obstructed by one or more of the following variable conditions:

- Load and distribution of the load;
- Speed
- Sea Conditions
- Reduced visibility (through rain, darkness and fog);
- Reduced visibility (through changes and hoisting of sails);
- Internal lights of the boat;
- Position of covers
- People or moving equipment located in the helm's field of vision.

Be careful when moving from one steering position to another.

PLEASE NOTE!

Some of the large-dimension fore sails (genoa, code 0, spinnakers, etc.) may block vision for a prolonged period. Maintain an active watch when using them.

XII. PREVENTION OF FALLS AND MEANS OF GETTING BACK ABOARD

When sailing, it is recommended that you move only on areas of the deck designed for this. These areas (catwalks, cockpit, side seats, etc.) are provided with anti-skid covering or teak, depending on the option, allowing safe movement.

On the **DUFOUR 470**, the entire working deck including inside the channels and bulwarks can be safely walked on. Walkways on the glazed surfaces are provided, where necessary, and are delineated by anti-skid areas.

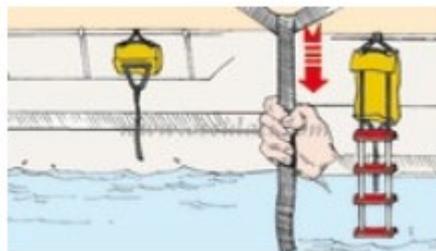
Note that the stern platform, when open, is not considered to be a safe area. When sailing, it should, in fact, be closed.

It is also recommended that harnesses be used, attaching yourself to the various grip points mentioned on the chandlery plan, depending on sea or wind conditions or the boat's trim.

When moving around when sailing, if possible use the various handholds, the handrails, helm, cockpit table, lateral deckhouse runners, stays, etc.

The **DUFOUR 470** is equipped with a telescopic climbing ladder to come back aboard, attached to the stern door. To use it, the stern door should be lowered by releasing the lifting end, then unfolding the ladder and swinging it into position.

A safety ladder is also provided in case of emergency. It should be positioned, during use of the boat, on the stern balcony on the port or starboard side, and must be extendable from the water. Ensure that you become familiar with this system, so it can be operated in all circumstances, particularly while sailing.



XIII. PROTECTION AGAINST LIGHTNING

Your boat has protection against lightning. The rigging is electrically grounded. However, for your safety you must respect certain precautions.

Maintenance

If the boat has been struck by lightning:

- the protective installation must be inspected to detect material damage and check the integrity of the device as well as the continued effectiveness of the grounding.
- compasses, electrical and electronic devices must be examined to determine whether damage or changes in calibration have occurred.

Protection of People during a Storm

NOTICE

During a storm it is better to follow these instructions:

- As far as possible, people must stay inside the boat.
- People must not be in the water nor dangle their arms and legs in the water.
- While ensuring satisfactory control of the boat and navigation, people must not touch any part connected to the system to protect against lightning, above all, not connecting these parts with their bodies.
- It is desirable that people avoid any contact with the metal parts of the rigging, the spars, chandlery fittings and lines.

XIV. PROTECTION OF THE ENVIRONMENT AND SAFETY

We invite you to keep yourself informed of local regulations about respect for the environment, and respect international regulations against marine pollution (MARPOL) as well as codes of good practice.

Do not empty the toilets or the contents of the coding tanks near the coast or in prohibited areas and use the pump systems of ports or marinas to empty the holding tanks before leaving port.

PLEASE NOTE!

- Most maintenance products, engine oils and hydrocarbons are not environmentally neutral, they must therefore be discharged in regulated places (information available at the harbour office).
- Do not start the bilge pump when there is oil or hydrocarbon in the engine compartment, since these products are to be discharged in regulated places.
- Some products may also present risks to your safety and that of others, which is why it is important to read and follow the instructions for use.
- Substances used must be labelled and stored in an appropriate place on the boat.

XV. SAFETY PACK

Mandatory safety packs are not standard in the European Community. You should find out about national requirements in force for EC marked vessels.

In France, pleasure vessels with the EC marking must possess the equipment for safety laid down for the sailing category under the sailor's own responsibility.

Your boat is equipped with a storage space for a life raft, read the raft's user manual carefully. The crew must be familiar with the use of all safety equipment (harness, flare, life raft, etc.), sailing schools and clubs regularly organise training sessions.

XVI. HANDLING, TRANSPORT, DRY DOCKING

When being lifted by crane, ensure that the slings are properly positioned and that they do not foul the propeller, sail drive or a fragile sensor.

Gantry cranes should be wide enough or equipped with spacers so that they do not exercise excessive transverse forces on the gibs.

Avoid the slings fouling the shrouds. During transport or dry docking, the keel must be fully supported on its base and support the main weight of the boat.

Cradle skids must be positioned on structural elements and only exert the pressure necessary to balance the boat.

Use sailing outings to inspect the propeller, the rudder, through-hull fittings and sounds.

PLEASE NOTE!

The rear lifting point is near the propeller shaft.

XVII. MOORING, BERTHING AND TOWING

PLEASE NOTE! (ISO 15084:2003)

- The anchor points for berthing and/or towing are the forward cleats which have a break strength of about 6,000 kg. The stern and central cleats can also be used for mooring. They have equivalent strength.
- The breaking strength of the cables and chains must generally not exceed 80% of the breaking strength of the anchor points, i.e. in the case of a 10 mm galvanised chain and the 18 mm maximum polypropylene cable.
- Always tow or be towed at low speed. Never exceed the speed limit of a moving hull when towing.
- A tow cable must always be attached in such a way that it can be released when loaded.

Responsibility

It is the responsibility of the owner/operator to ensure that mooring ropes, towing cables, chains and mooring lines as well as anchors are adequate for the planned use of the boat, that is to say that the lines or chains do not exceed 80% of the breaking strength of the corresponding anchor point.

The owner must also take account of the actions required when fixing a tow cable on board.

XVI. WARRANTY CONDITIONS, TRANSFER OF OWNERSHIP

A) CONTRACTUAL WARRANTIES

Note: this warranty does not apply to boats operated on a professional basis (any rental operation is in this category) nor to boats participating in competitions which can have special warranties.

8 – Warranties

a) Boats and New Equipment

8.1.1 - The Seller owes the Professional Buyer as well as consumers domiciled outside the European Union the legal guarantees as defined in the context of the sale of ships by Articles 1641 and 1648 of Civil Law and under the Shipbuilding Contract by Articles 7 and 8 of Law No. 67.5 of 3 January 1967 on the status of ships.

8.1.2 - The Seller owes the Buyer domiciled in the European Union, and contracting as a consumer, the guarantees as defined in the context of a contract for the sale of ships by Articles 7 and 8 of the Law of 07.01.1967 on the status of ships, and under the Order (2005-136) of 17.02.2005, as adopted in Consumer Law. Regardless of the warranty thus granted, the Seller remains responsible for compliance of the item under contract and latent defects under the conditions laid down in Articles 1641 to 1649 of Civil Law (see 8.1.1).

8.2 - Visible defects: receipt releases the Seller from the warranty obligation of compliance and apparent defects.

8.3 - Contractual Warranty:

Except for warranty or penalty clauses expressly agreed when the order is accepted, the Seller's warranty is granted under the following conditions:

- the Buyer has a contractual warranty of two years from the date of receipt of the boat, valid from the minutes of the handover.
- It is limited, at the choice of the builder, to the free replacement or repair of any parts which are acknowledged to be defective by the builder's technical department, without any compensation.
- For those organs and accessories which clearly bear the brand of another supplier, the warranty is limited to the warranty offered by this supplier.
- It is specified that any handling, transport, parking or conveyance costs incurred in carrying out these operations remain solely at the expense of the purchaser-user, except where the **DUFOUR** yard offers to waive this in part or whole.
- Excluded from the builder's contractual warranty:
 - the costs of transporting the boat and part as well as their consequences, as well as the costs and/or

any subsequent damage resulting from the impossibility of using the boat and/or the equipment;

- normal wear and tear
- cracks, cracking, or discolouration of the gelcoat;
- damage resulting from:
 - o unforeseeable circumstances or force majeure;
 - o changes and modifications, or repairs, even partial, carried out outside of workshops authorised by the manufacturer;
 - o failure to observe the maintenance recommendations specified in the owner's manual issued with the boat;
 - o poor use, particularly negligent, reckless, abusive or abnormal use;
 - o participation in competitions;
 - o negligence as regards taking precautionary measures which are required;
 - o inadequate storage or transport conditions.

To take advantage of the builder's contractual warranty, the purchaser-user must submit the boat's duly filled-in delivery certificate and the warranty document whenever they request to use it and, under penalty of foreclosure, notify the dealer-seller in writing about the defect in a precise and reasonable manner within fifteen days of discovery.

8.4 - The warranty covers marine use under wind and sea conditions acceptable for safety and in line with the boat's approval category. Under these conditions, it cannot under any circumstances cover damage which occurred as a result or consequence of collision, grounding, breakers, storm tides, cyclones, strong storms, and any other exceptional event and/or the result of an error in navigation.

8.5 - The loss or deterioration of the products which occurred after transfer of risks to the Buyer does not release the Buyer from their obligation to pay the price.

b) Boats and Second-Hand Equipment:

The order voucher specifies whether the boat or the equipment is second-hand. The Buyer enjoys a contractual warranty of a year, only on the hull and the engine, from the date of receipt of the boat or the goods, dated from the minute of the handover.

c) In addition to the above specified contractual warranty, the Seller remains responsible for lack of conformity of the product and latent defects hidden in the conditions laid down in Articles 1641 to 1649 of Civil Law and, where they apply, provisions of the order of 17.02.2005.

B) COMMON WARRANTY CONDITIONS

Any request for cover under these warranty conditions must be formally notified in writing to **DUFOUR** within eight (8) days of finding the fault initiating implementation of the contractual warranty. Any request must also specify the serial number of the boat concerned and, if necessary, the references of the part which is the subject of the warranty claim. Furthermore, the claim must indicate the precise circumstances in which the damage occurred.

DUFOUR may, to respond to the request, request any details and appoint an expert or technician of their choice at their expense to establish the circumstances of the occurrence of damage and have any necessary parts sent to them.

No immobilisation subsequent to the deficiencies observed and/or replacement and/or repair work, whatever its duration, will entail any right to compensation.

Docking costs, customs duties and other incidental costs will, in any event, be the owner's responsibility. Any repairs and/or replacements will be carried out by an authorised **DUFOUR** agent or by any professional duly mandated by the Yard. If the nature of the repairs requires that under- warranty work be carried out in the **DUFOUR** workshops or in any other place than where the Product is located, the costs of return transport to the Yard will be borne by the owner.

In the event the boat needs to be dry docked, the costs of lifting and returning to the water will be the owner's responsibility.

C) TRANSFER OF WARRANTIES

Warranties are granted to the first purchaser of the boat involved. They may only be transferred after prior written agreement of **DUFOUR**.

A transfer note of the Product's ownership is provided with the boat's documents. This must be sent to **DUFOUR** within thirty (30) days of transfer.

This note will bear the names, addresses and telephone numbers of the former owner and the Buyer, the date of purchase, the Product's hull number.

On receipt, **DUFOUR** will send the expiry dates of the warranties and specify whether the unit has had an annual service visit which allows contractual warranties to remain valid.

D. LEGAL NOTICES

Article L.211-4 of Consumer Law:

"The seller is required to deliver goods in accordance with the contract and respond to failures in conformity which exist on delivery.

They are also responsible for conformity defects resulting from packaging, installation instructions or installation when it is liable under the contract or has been carried out under their responsibility."

Article L. 211-5 of Consumer Law:

"To comply with the contract, the goods must:

1 Be suitable for the usually expected use of such a property and, if necessary,:

- *correspond to the description given by the seller and possess the qualities which the seller has presented to the buyer in the form of a sample or model;*
- *display the qualities which a buyer can legitimately expect in view of public declarations made by the seller, the producer or their representative, particularly in advertising or labelling;*

2 Or display the characteristics defined by common agreement between the parties or be suitable for any special use sought by the buyer, brought to the seller's attention and which the seller accepted."

Article L.211-2 of Consumer Law:

"Action resulting from faults in compliances shall lapse after two years from delivery of the goods. "

Article 1641 of Civil Law:

"The seller is bound by the warranty due to latent defects of the object sold which may render it unfit for the use for which it is intended, or which so limit this use that the buyer would not have purchased it, or would have paid a lower price, had they been known. "

Article 1648, paragraph 1 of Civil Law:

"Action resulting from latent defects must be notified by the purchaser within two years of discovering the fault."



DUFOUR

CERTIFICATE OF TRANSFER OF OWNERSHIP

TRANSFER OF OWNERSHIP

Boat Model:.....

Hull No. :

De / From M. / Mr: *Adresse / Address:*.....

.....

C-P / ZIP CODE :..... *Ville / City :*..... *Tél :*.....

Date d'achat / Date of Purchase :.....

A ETE VENDU A / BEING SOLD TO :

M / Mr : *Adresse / Address :*

.....

.....

C-P / ZIP CODE :..... *Ville / City :*..... *Tél :*.....

Date d'achat / Date of Purchase :

Done *at On*

Le vendeur / Seller

L'acheteur / Buyer

Exemplaire à retourner dans les 15 jours suivant la transaction à :
Return the copy within 15 days after the transaction to :

SAV DUFOUR
11 rue Blaise Pascal
17187 PERIGNY CEDEX FRANCE

This page is intentionally blank.

This page is intentionally blank..

This page is intentionally blank..

PLANS

1. PRESENTATION DIAGRAM	35
2. LAYOUT DIAGRAM	36
3. CHANDLERY DIAGRAM.....	39
4. SAIL DIAGRAM.....	41
5. HALYARDS AND SHEETS HANDLING DIAGRAM	43
6. ELECTRICAL 220 V CONSUMER UNIT DIAGRAM	52
7. 220 V CIRCUIT DIAGRAM	54
8. 220 V CIRCUIT DIAGRAM WITH OPTIONS	56
9. 220 V ELECTRICAL LAYOUT DIAGRAM.....	59
10. FUSE LOCATOR DIAGRAM.....	62
11. CHARGING AND POWER DIAGRAM.....	65
12. 12 V CONSUMER UNIT	67
13. CABLING ON REAR OF UNIT.....	69
14. 12 V ELECTRICAL LAYOUT DIAGRAM	72
15. LIGHTING CIRCUIT.....	75
16. RUDDER SYSTEM DIAGRAM.....	78
17. GAS CIRCUIT DIAGRAM	80
18. SHIP'S ESCAPE DIAGRAM	82
19. FRESHWATER CIRCUIT DIAGRAM	85
20. DRAINAGE CIRCUIT DIAGRAM	87
21. THROUGH-HULL FITTINGS LOCATOR DIAGRAM.....	89
22. MECHANICAL INSTALLATION DIAGRAM	91
23. DIESEL CIRCUIT DIAGRAM.....	93
24. ENGINE VENTILATION CIRCUIT.....	95
25. HOLDING TANK INSTALLATION DIAGRAM.....	97
26. LIFTING DIAGRAM.....	99
27. NAVIGATION LIGHTS	101

1. Presentation Diagram



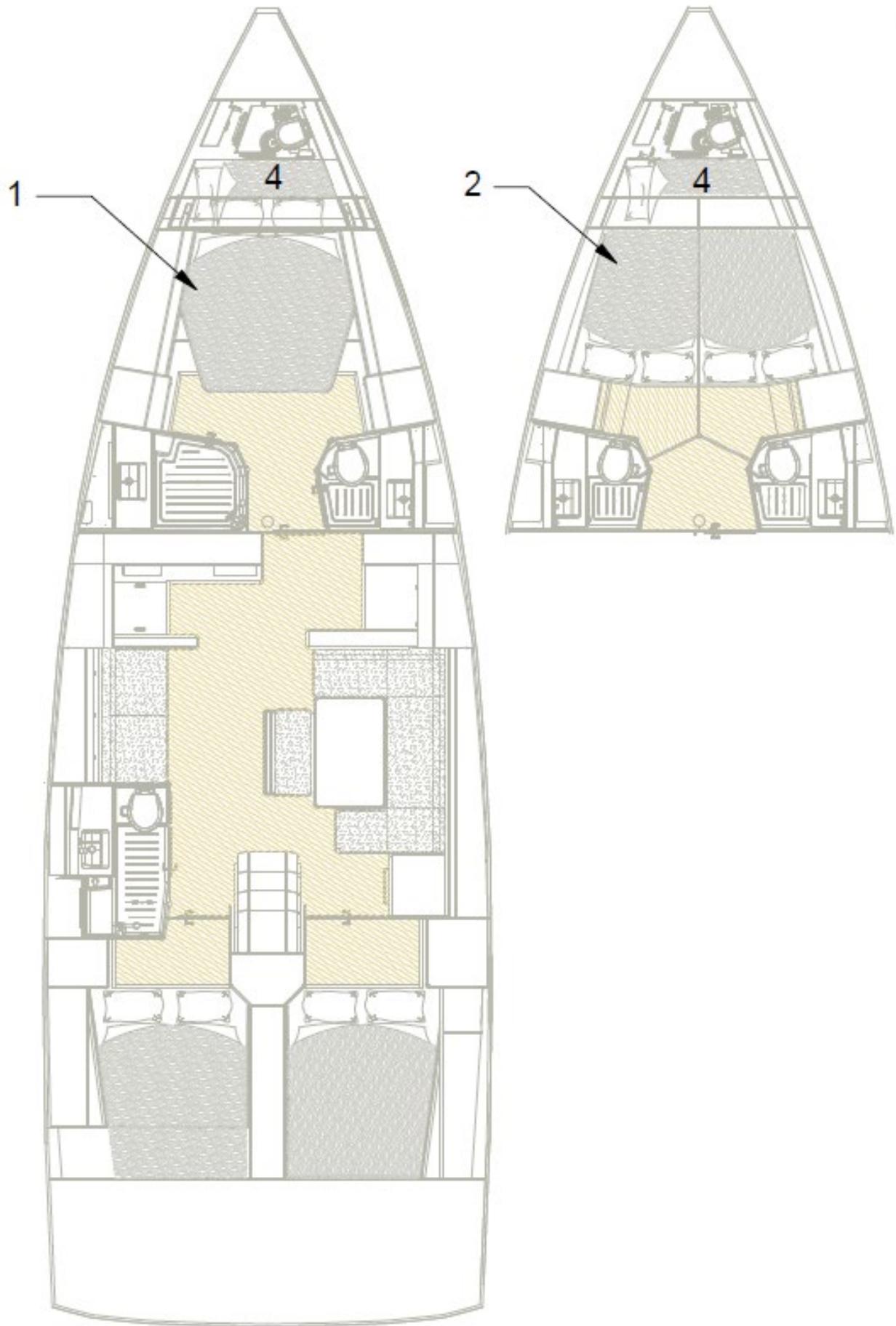
01

35/103

2. *Layout Diagram*

Ref	Description
A	Front Galley Version
B	Lengthwise Galley Version
1	Single Forward Cabin
2	Double Forward Cabin
3	Pullman Cabin *
4	Skipper Cabin *
*	Option

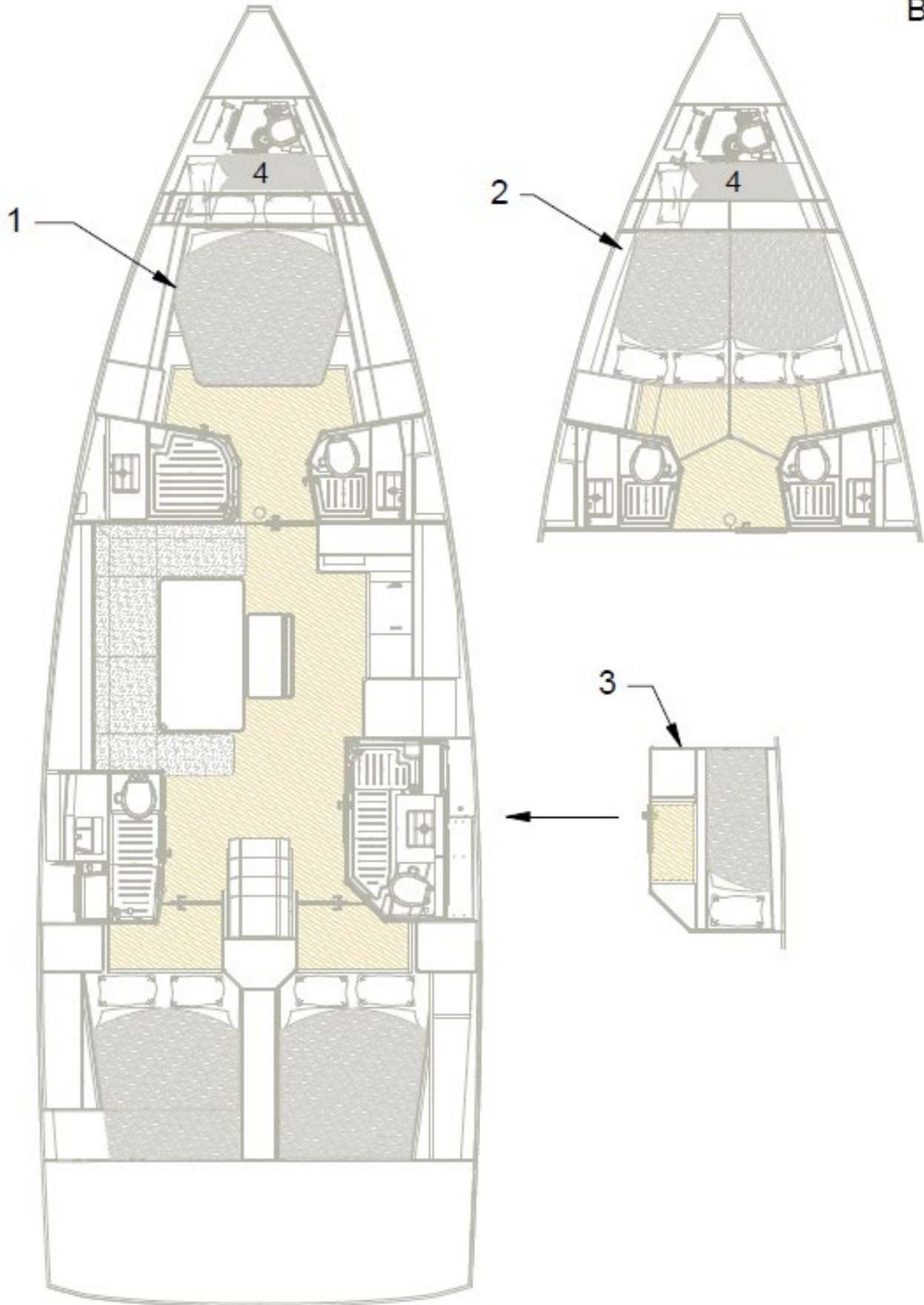
A



37/103

02

B

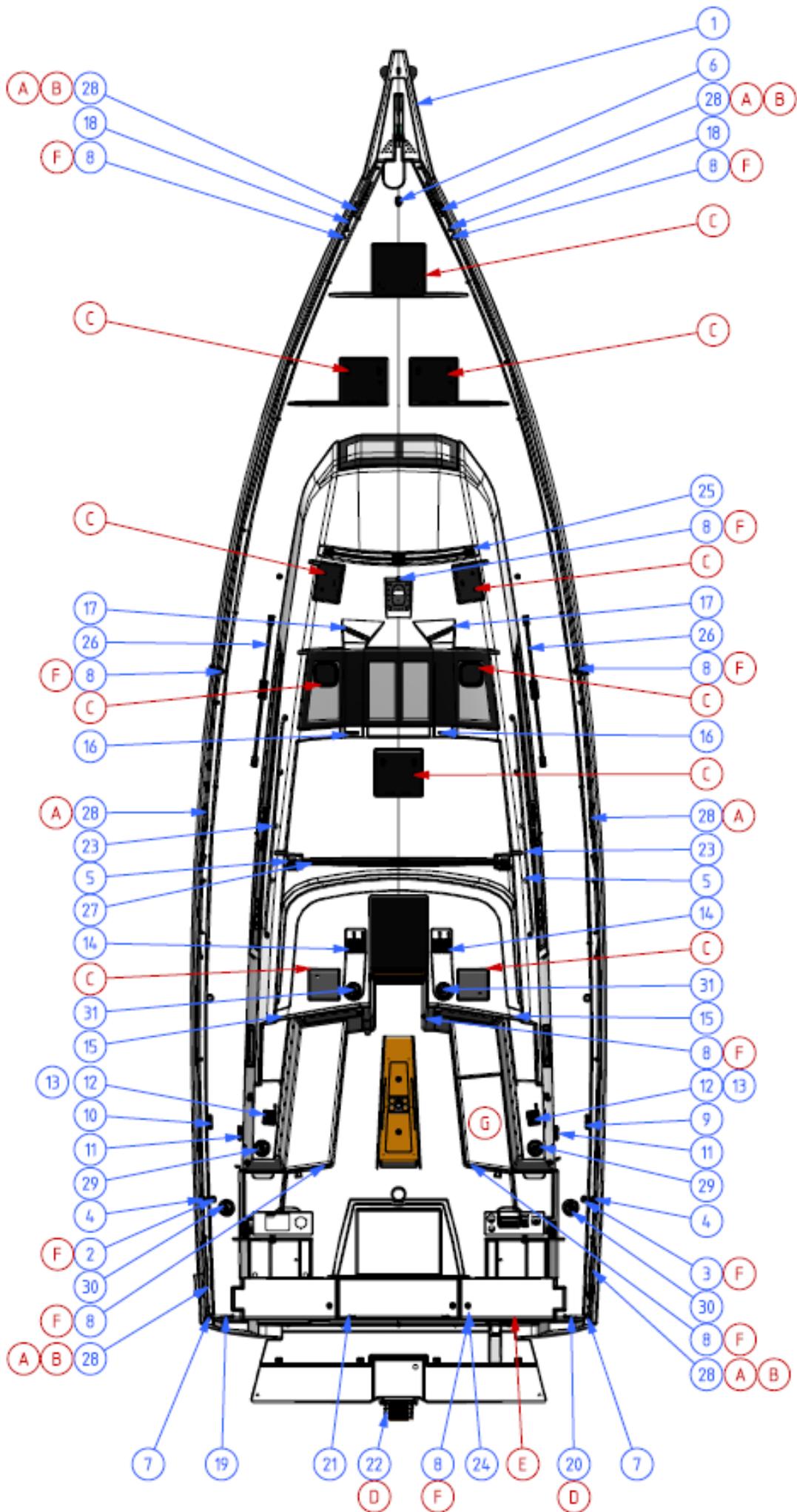


02

38/103

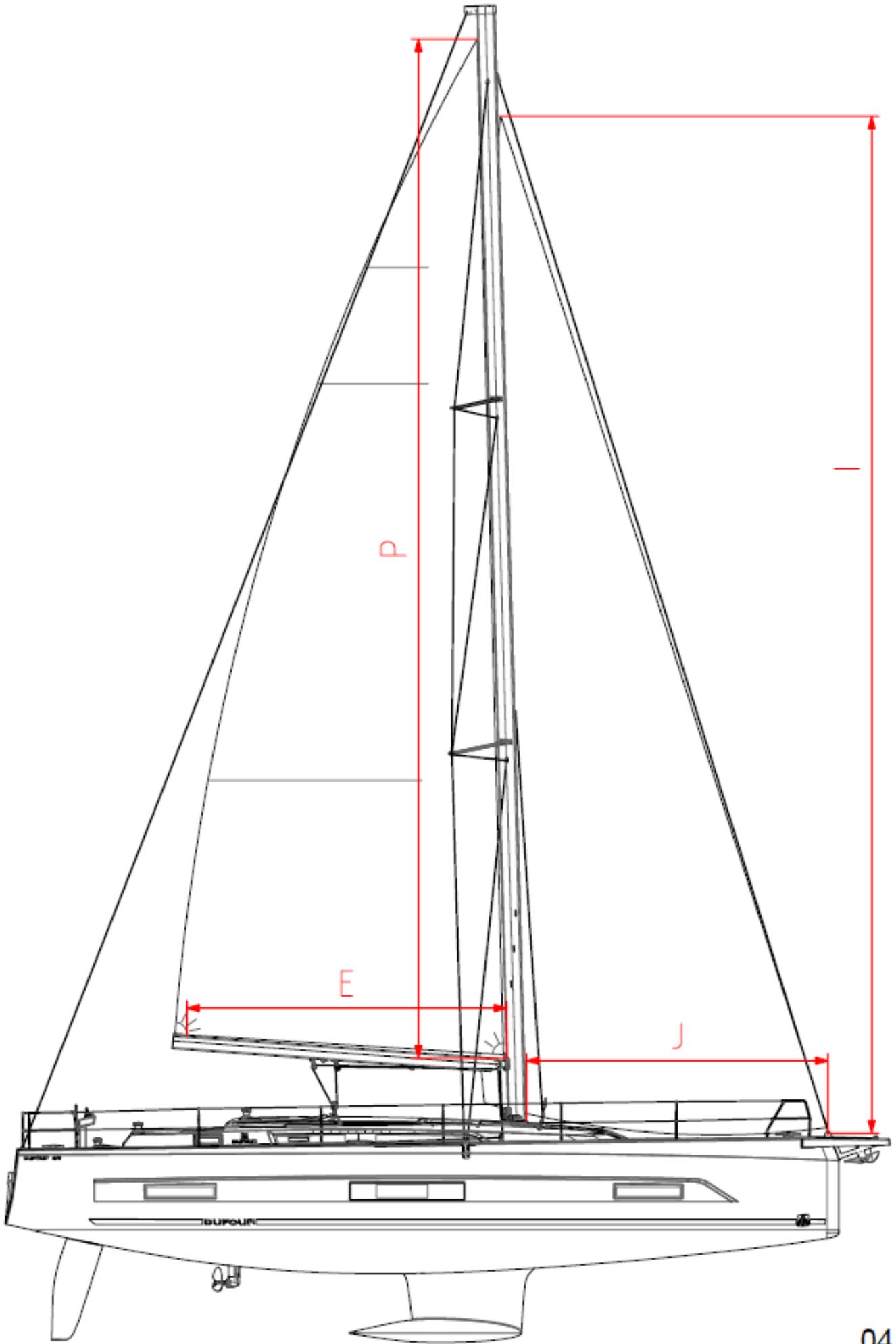
3. Chandlery Diagram

REF	DESCRIPTION	REMARKS
A	ANCHOR POINTS FOR LIFE LINES	Cleats P and S
B	TOW POINTS	P and S
C	PANELS MUST BE CLOSED WHEN SAILING	
D	"MAN OVERBOARD" CLIMBING LADDER	
E	LIFERAFT LOCATION	
F	HARNESS ANCHOR POINTS	
G	LOCKER MUST BE CLOSED WHEN SAILING	
1	DAVIT	
2	ARTICULATED U-BOLT D8	
3	ARTICULATED U-BOLT D8	Furling Line
4	ARTICULATED U-BOLT D8	Option spi
5	ARTICULATED U-BOLT D8	GV Pack EASY
6	DOUBLE ARTICULATED U-BOLT D8	Removable Inner Forestay Option
7	WATERTIGHT U-BOLT D10	
8	ARTICULATED U-BOLT D6	
9	SPINLOCK	Furling Line
10	SPINLOCK	Option spi
11	SPINLOCK	German Option
12	SPINLOCK	EASY Pack
13	TRIPLE SPINLOCK	EASY Pack
14	TRIPLE SPINLOCK	OCEAN Pack
15	ORGANISER 4	EASY Pack
16	ORGANISER 5	
17	EASR 5 BOX	
18	SINGLE FORWARD BALCONY	
19	PORT STERN BALCONY	
20	STARBOARD STERN BALCONY	
21	CENTRAL BALCONY	
22	SWIMMING LADDER	
23	DECKHOUSE HANDRAIL	
24	DIESEL DECK FILLER	
25	SELF-TILTING JIB RAIL	
26	GENOA RAIL	Option
27	MAINSAIL RAIL	OCEAN Pack
28	ALUMINUM MOORING CLEAT	
29	COAMING WINCH	
30	HELM WINCH	
31	ROOF WINCH	



4. Sail Diagram

	STANDARD MAST	PERFORMANCE MAST
I	18.05 m	18.30 m
J	5.10 m	5.10 m
P	17.40 m	18.30 m
E	5.42 m	6.30 m
LP Self-Rotating Jib	4.42 m	4.42 m
LP Genoa*	5.44 m	5.44
Mainsail Area	57 m ²	71 m ²
Self-rotating Jib Area	40 m ²	
Genoa Area*	50 m ²	51.5 m ²
* Option		



5. Halyards and Sheets Handling Diagram

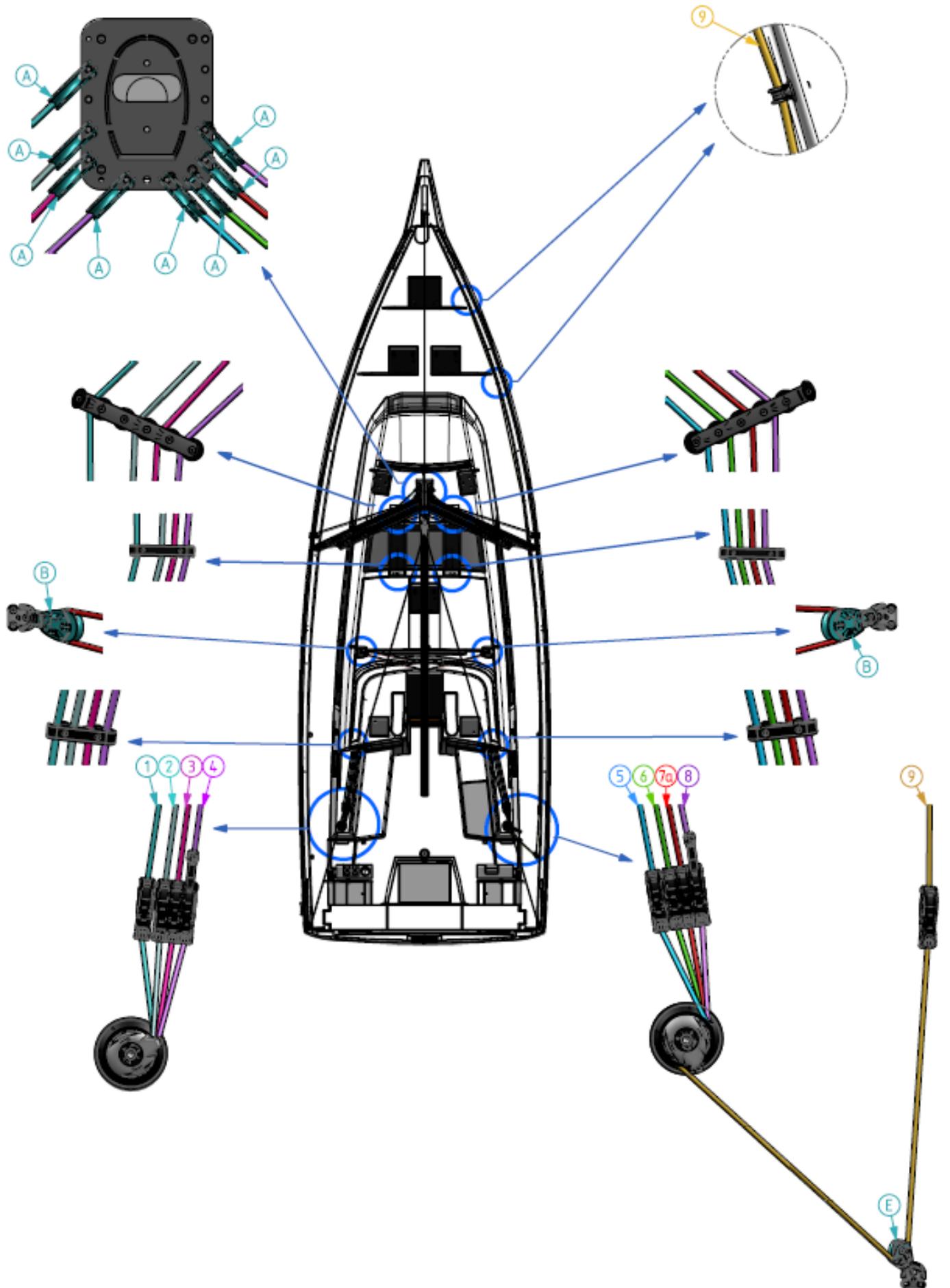
5.A - EASY PACK

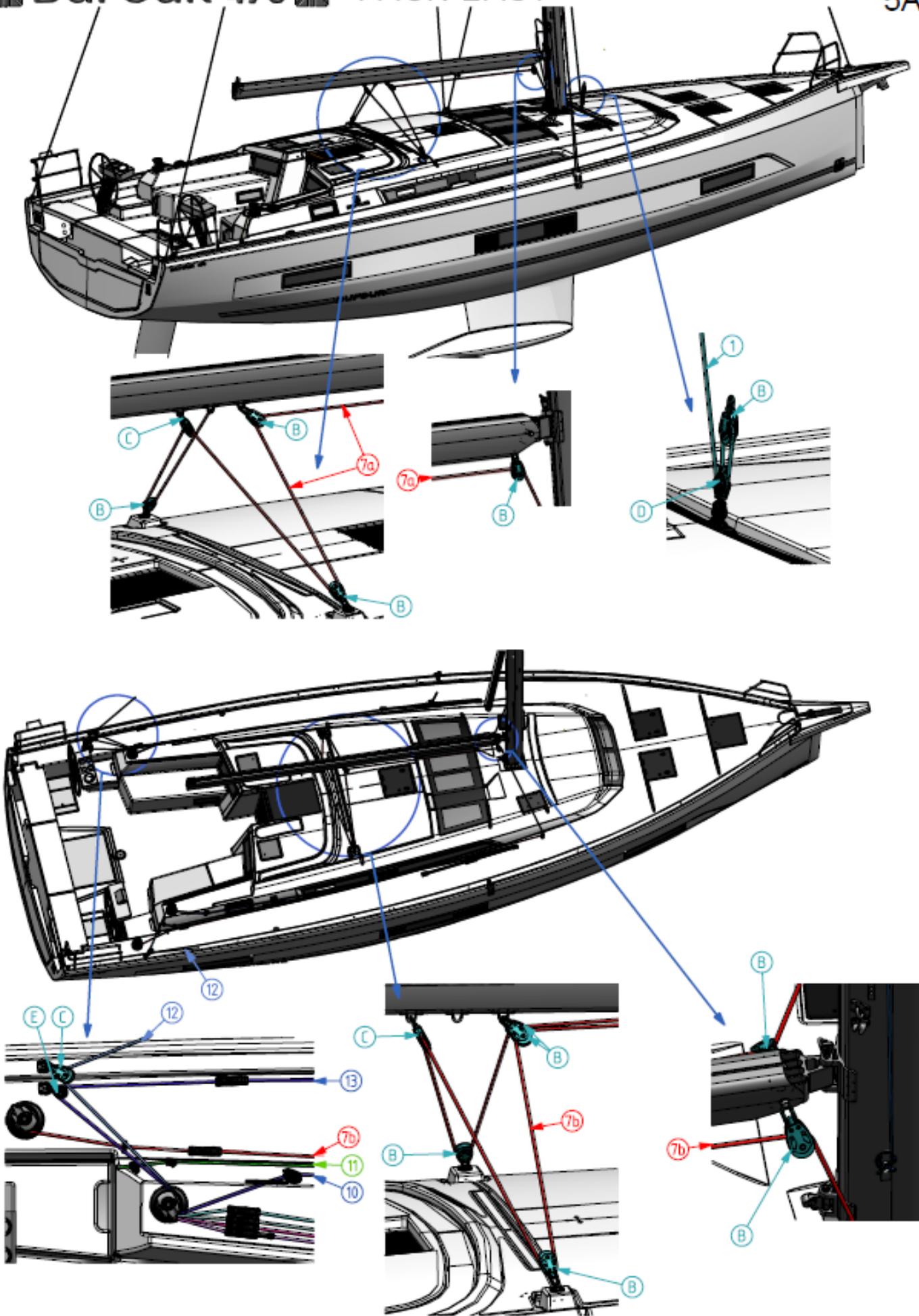
A	PULLEY D80
B	PULLEY D72
C	PULLEY D90
D	PULLEY D72 BECKET
E	PULLEY D60

EASY PACK	
1	SELF-ROTATING JIB SHEET
2	SELF-ROTATING JIB SHEET HALYARD
3	MAINSAIL HALYARD
4	REEF 1
5	RIGID BOOM VANG
6	MAINSAIL EDGE
7a	MAINSAIL SHEET
8	REEF 2
9	RETRACTOR BUMP
14	BOOM TOPPING LIFT

EASY PACK + GERMAN SYSTEM + GENOA	
2	GENOA HALYARD*
3	MAINSAIL HALYARD
4	REEF 1
5	RIGID BOOM VANG
6	MAINSAIL EDGE
7a	REEF 2
7b	MAINSAIL SHEET GERMAN SYSTEM*
8	BOOM TOPPING LIFT
9	RETRACTOR BUMP
10	GENOA SHEET*
11	GENOA TROLLEY ADJUSTERS*
	*OPTION

EASY PACK + GERMAN SYSTEM + GENOA + CODE 0	
2	GENOA HALYARD*
3	MAINSAIL HALYARD
4	REEF 1
5	RIGID BOOM VANG
6	MAINSAIL EDGE
7a	REEF 2
7b	MAINSAIL SHEET GERMAN SYSTEM*
8	CODE 0 HALYARD*
9	RETRACTOR BUMP
10	GENOA SHEET*
11	GENOA TROLLEY ADJUSTERS*
12	CODE 0 SHEET*
13	CODE 0 TACK*
14	BOOM TOPPING LIFT
	*OPTION



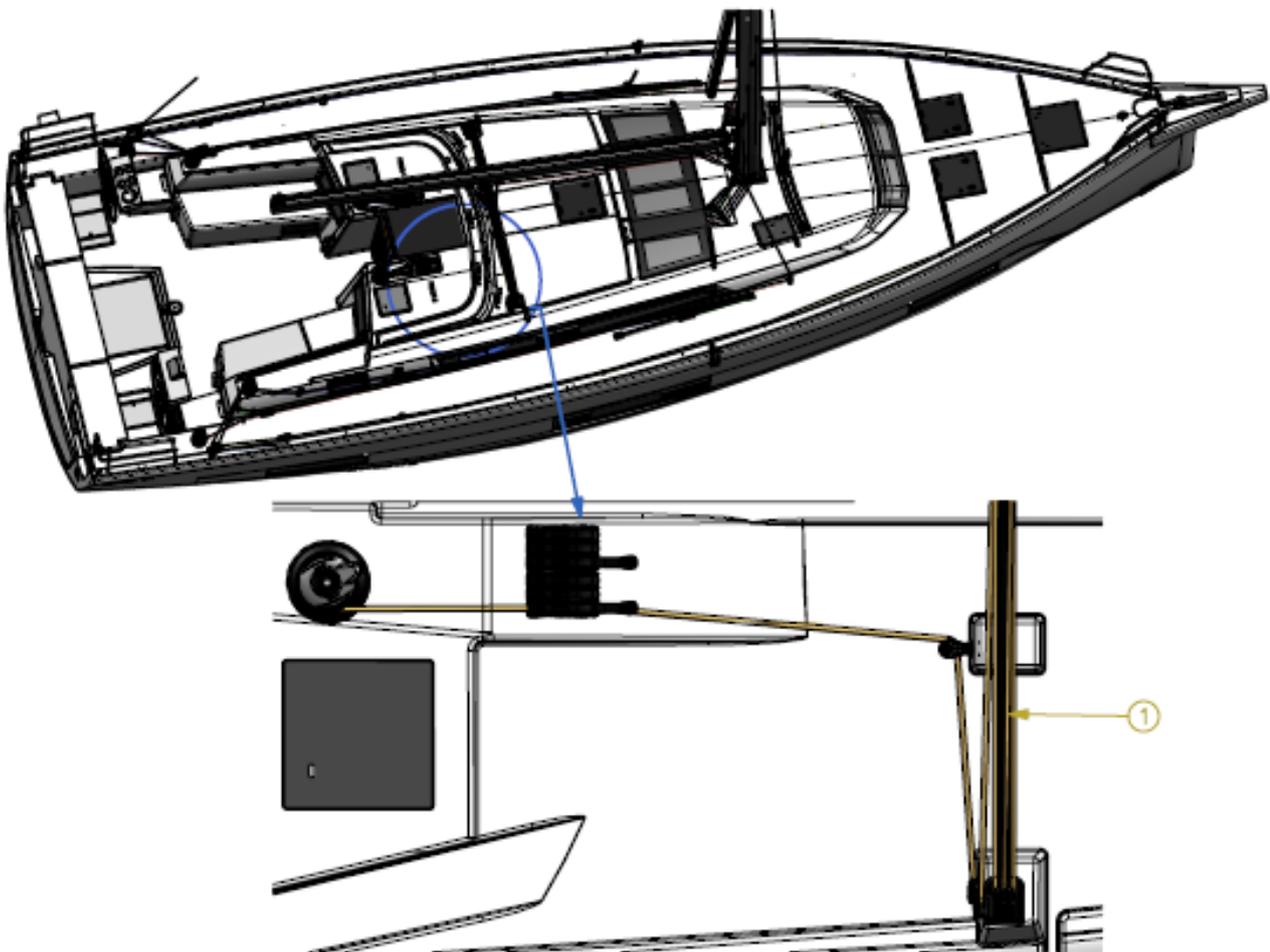
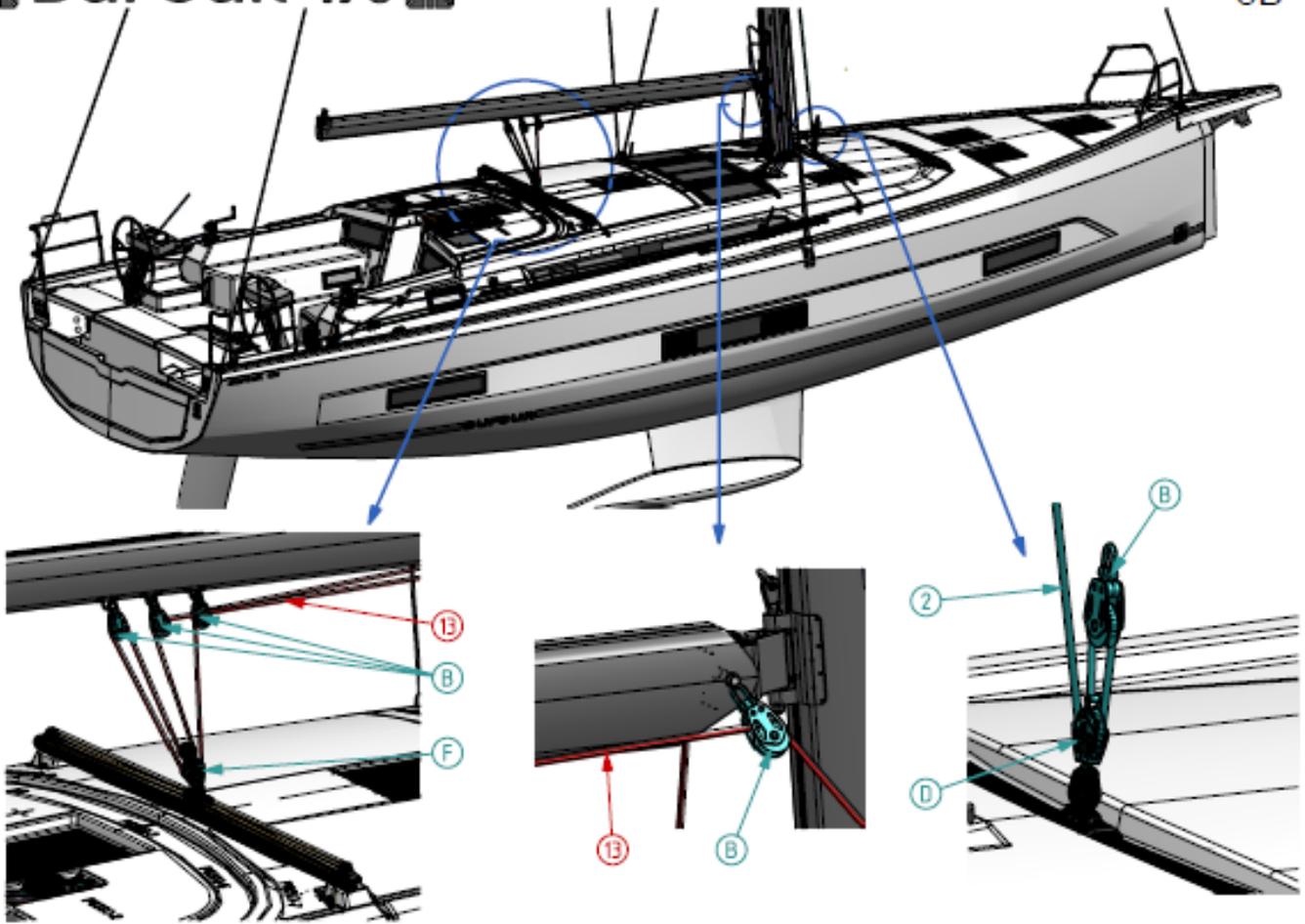


5.B - OCEAN PACK

A	PULLEY D80
B	PULLEY D72
C	PULLEY D90
D	PULLEY D72 BECKET
E	PULLEY D60
F	PULLEY D90 VIOLIN

OCEAN PACK	
1	MAINSAIL TROLLEY ADJUSTERS
2	SELF-ROTATING JIB SHEET
4	SELF-ROTATING JIB SHEET HALYARD
5	MAINSAIL HALYARD
6	REEF 1
7	RIGID BOOM VANG
8	MAINSAIL EDGE
9	REEF 2
10	BOOM TOPPING LIFT
11	ASYMETRIC SPINNAKER HALYARD
12	RETRACTOR BUMP
13	MAINSAIL SHEET
16	ASYMETRIC SPINNAKER TACK
17	SPINNAKER SHEET

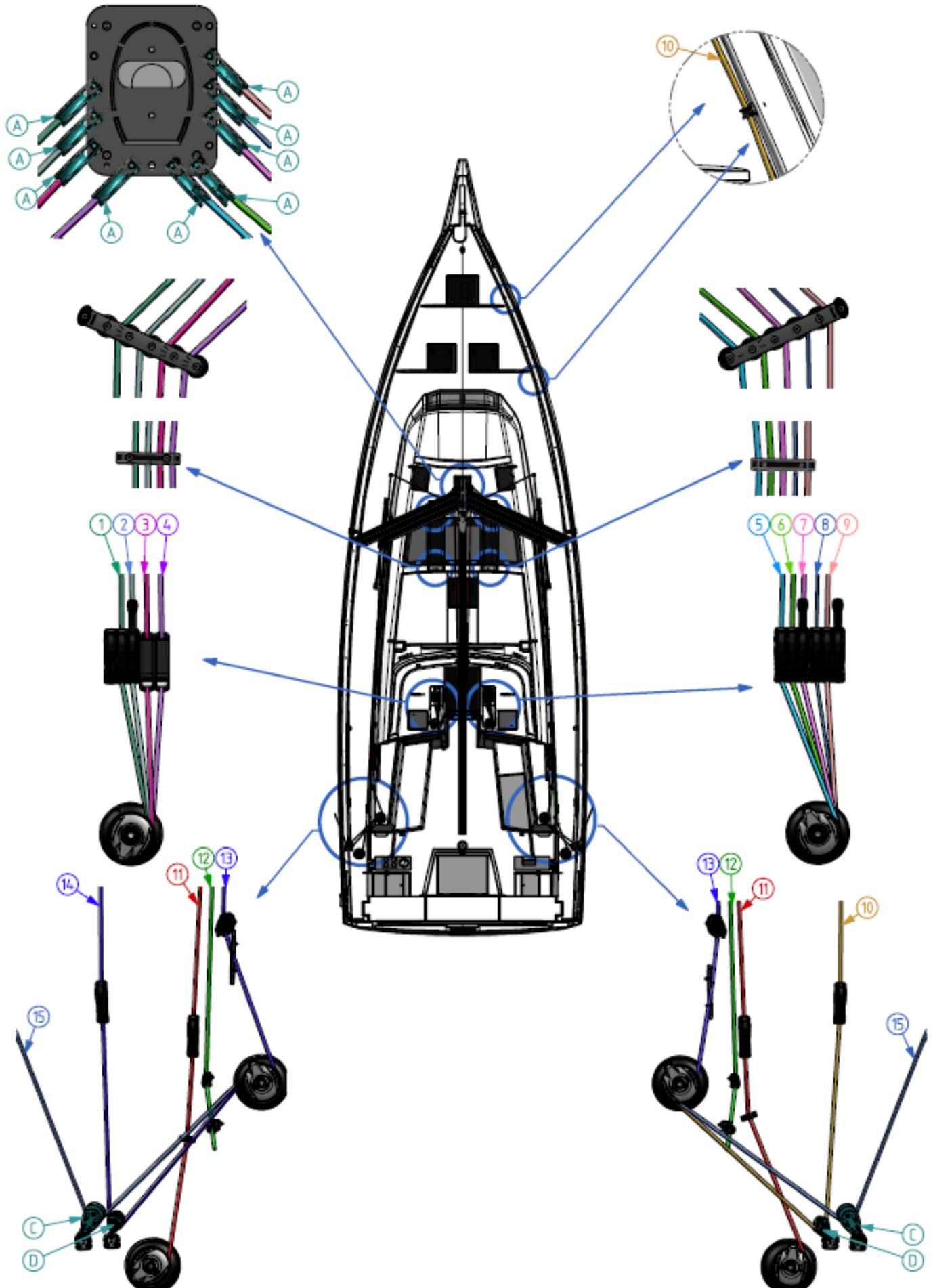
OCEAN + GENOA + REMOVABLE FORESTAY PACK	
1	MAINSAIL TROLLEY ADJUSTERS
3	REMOVABLE FORESTAY HALYARD*
4	GENOA HALYARD*
5	MAINSAIL HALYARD
6	REEF 1
7	RIGID BOOM VANG
8	MAINSAIL EDGE
9	REEF 2
10	BOOM TOPPING LIFT
11	ASYMETRIC SPINNAKER HALYARD
12	RETRACTOR BUMP
13	MAINSAIL SHEET
14	GENOA TROLLEY ADJUSTERS *
15	GENOA SHEET *
16	ASYMETRIC SPINNAKER TACK
17	SPINNAKER SHEET
	*OPTION

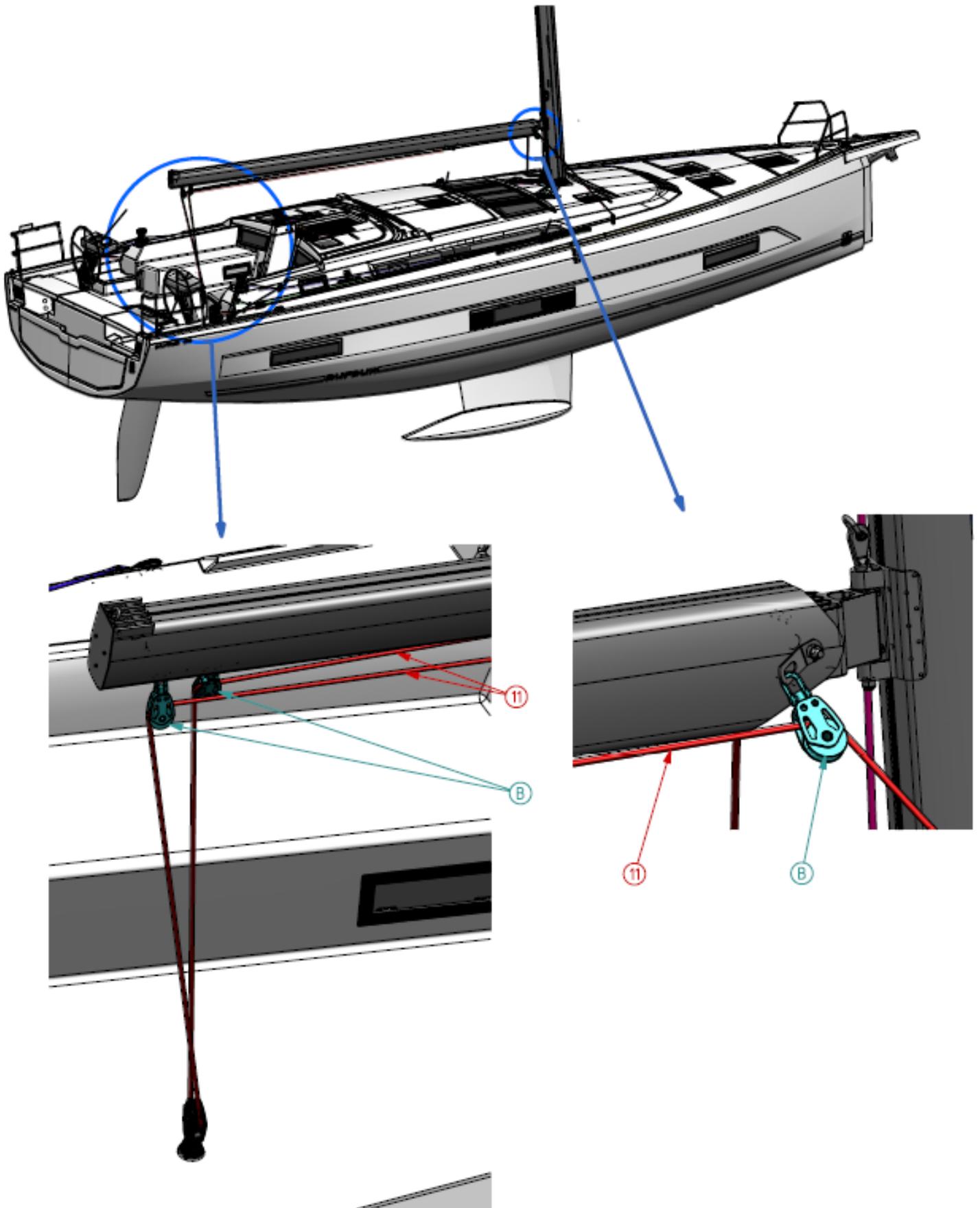


5.C - PERFORMANCE PACK

A	PULLEY D80
B	PULLEY D72
C	PULLEY D90
D	PULLEY D60

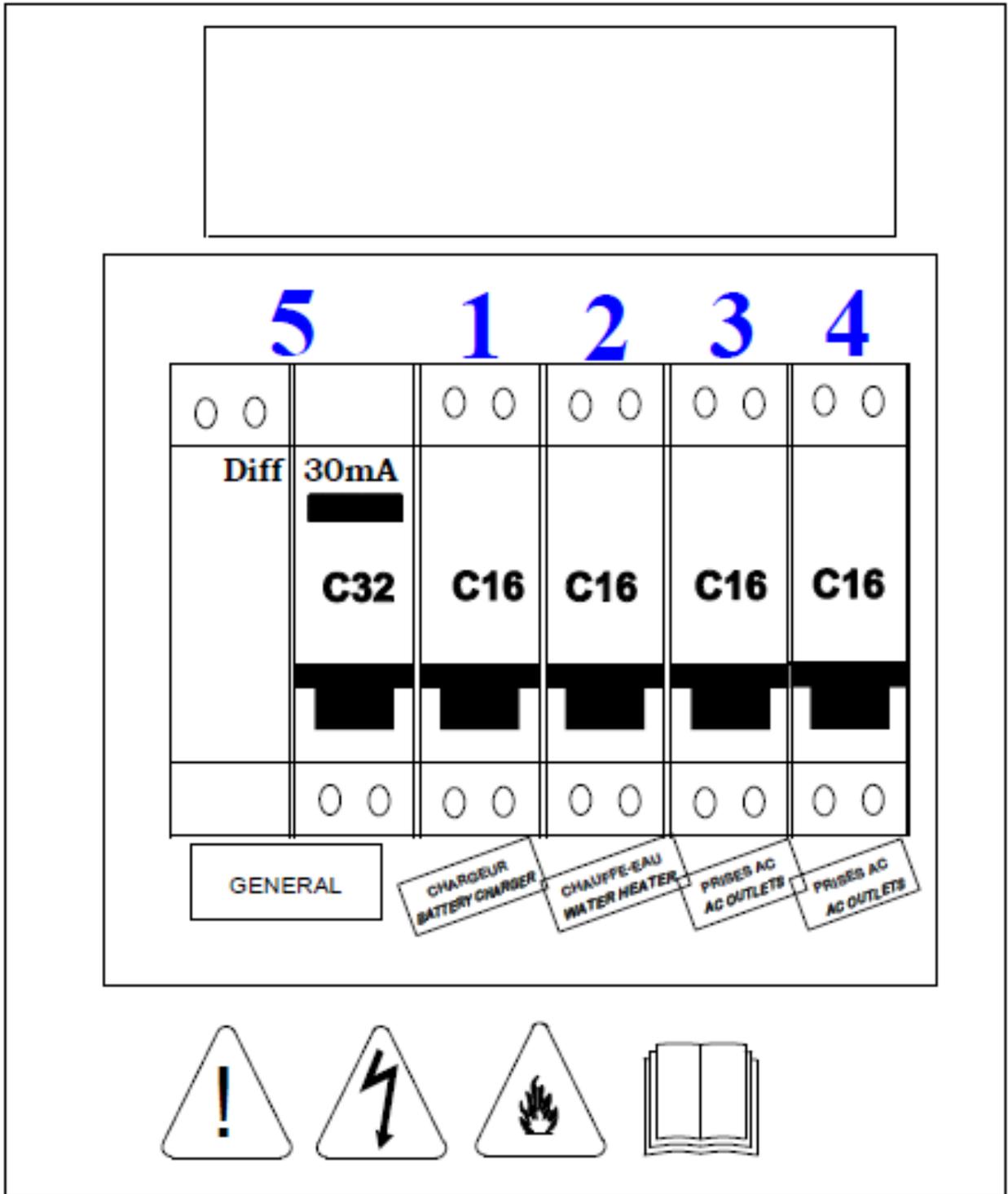
PERFORMANCE PACK	
1	REMOVABLE FORESTAY HALYARD*
2	GENOA HALYARD
3	MAINSAIL HALYARD
4	REEF 1
5	RIGID BOOM VANG
6	MAINSAIL EDGE
7	REEF 2
8	BOOM TOPPING LIFT
9	ASYMETRIC SPINNAKER / CODE 0 HALYARD
10	RETRACTOR BUMP
11	MAINSAIL SHEET
12	GENOA TROLLEY ADJUSTER
13	GENOA SHEET
14	ASYMETRIC SPINNAKER / CODE 0 TACK
15	SPINNAKER / CODE 0 SHEET
	*OPTION





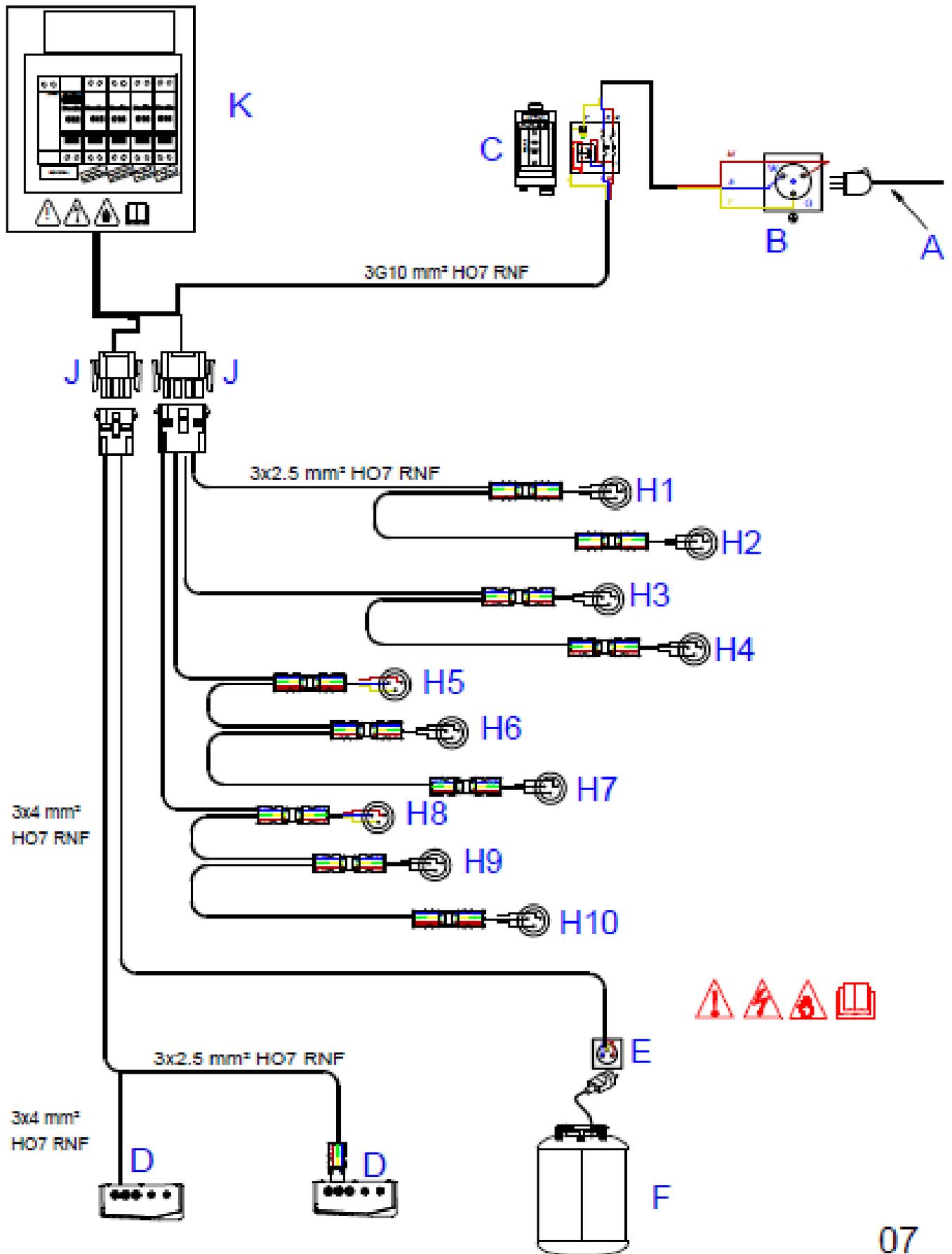
6. Electrical 220 V Consumer Unit Diagram

Ref	Description	
1	Battery Charger	16A
2	Water Heater	16A
3	Current Socket	16A
4	Current Socket	16A
5	Differential	32A



7.220 V Circuit Diagram

Ref	Description
	Equipment
A	220V Dock Line
B	Dock Socket
C	Electric Panel Main Circuit Breaker 32A
D	Charger
E	Waterproof Water Heater Connection
F	Water Heater
H	220V - 10A Socket Convertible*
J	Connector G
K	220V Electric Panel
	Electric Wire Colours
b	Light Blue
g	Green
br	Brown
bl	Black
r	Red
g	Green-Yellow
w	White
*	Option
**	Not Supplied



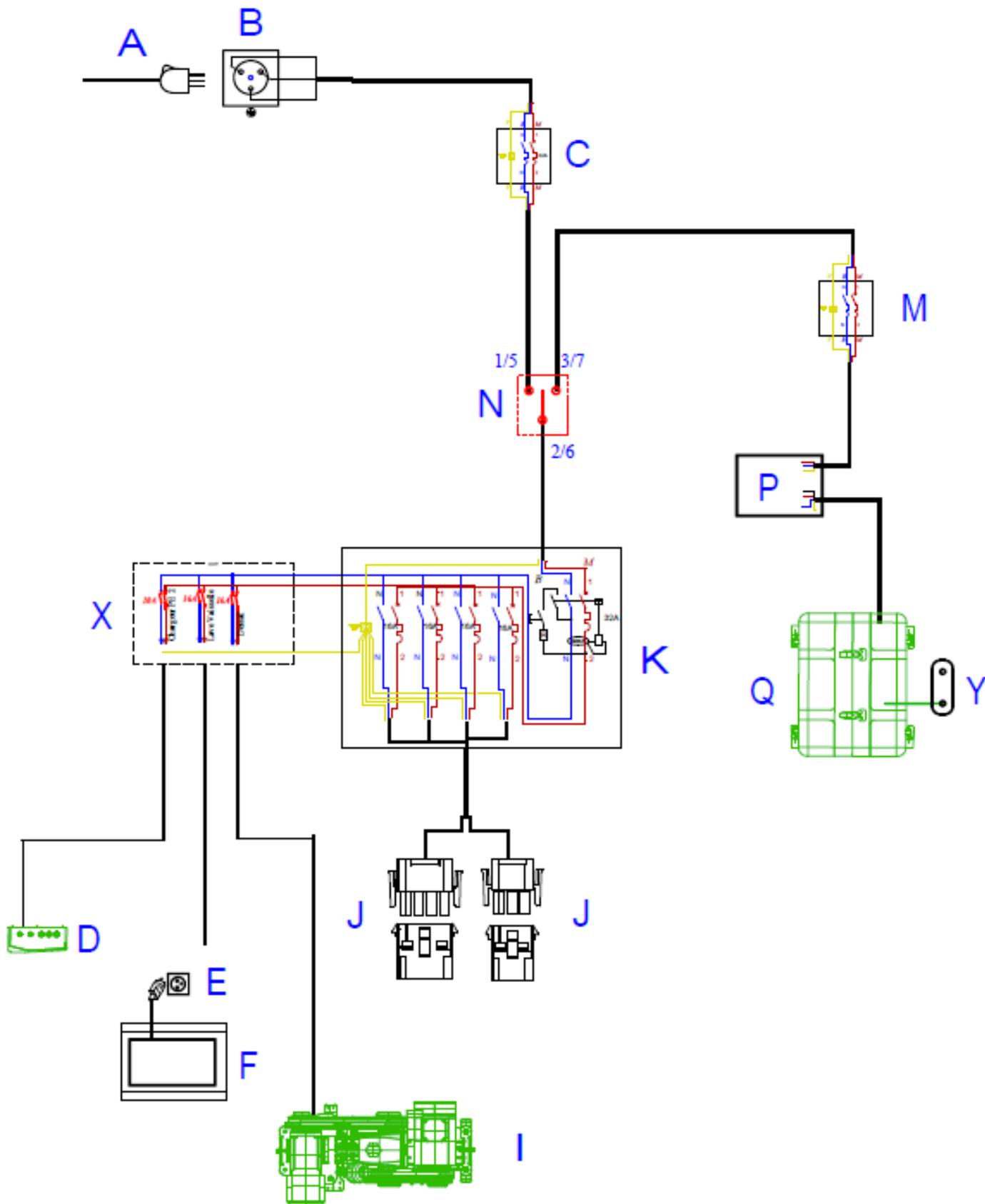
07

8. 220 V Circuit Diagram with Options

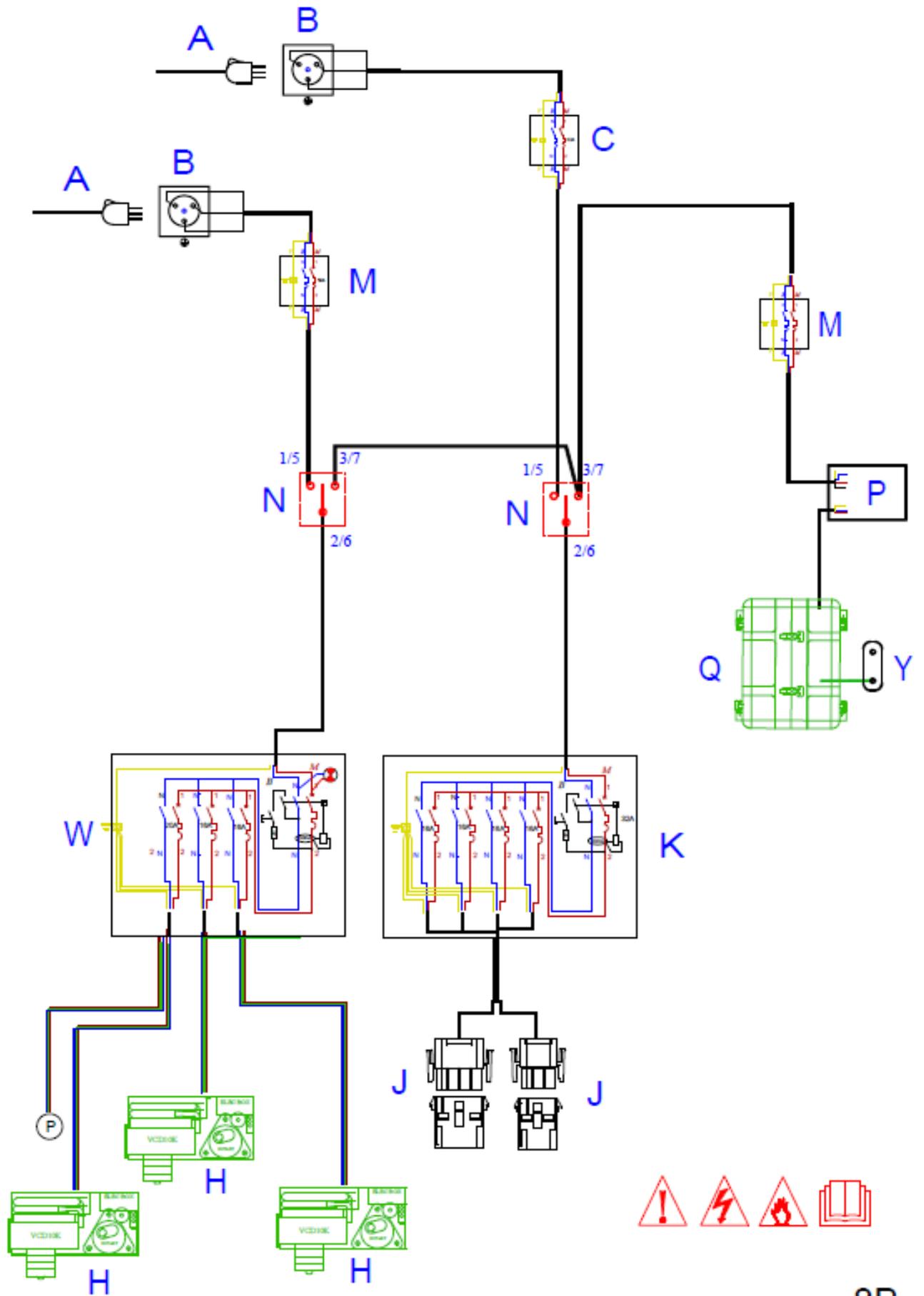
A - 220V CIRCUIT + GENERATOR

B - 220V CIRCUIT + GENERATOR + AIR CONDITIONING

Ref	Description
	Equipment
A	220V Dock Line**
B	Dock Socket
C	Electric Panel Main Circuit Breaker 32A
D	Booster Charger (fore and aft)*
E	Waterproof Socket washing machine or dishwasher*
F	Dishwasher *
H	Air Conditioning*
I	Desalinator*
J	220V Panel Connector
K	220V Panel
M	Electric Panel Main Circuit Breaker 50A
N	Source Selector*
P	Inverter*
Q	Generator *
W	Panel of Air Conditioning Circuit Breakers*
X	Panel of Circuit Breakers Options*
Y	Generator Earth Plate*
	Electric Wire Colours
b	Light Blue
g	Green
br	Brown
bl	Black
r	Red
g	Green-Yellow
w	White
*	Option



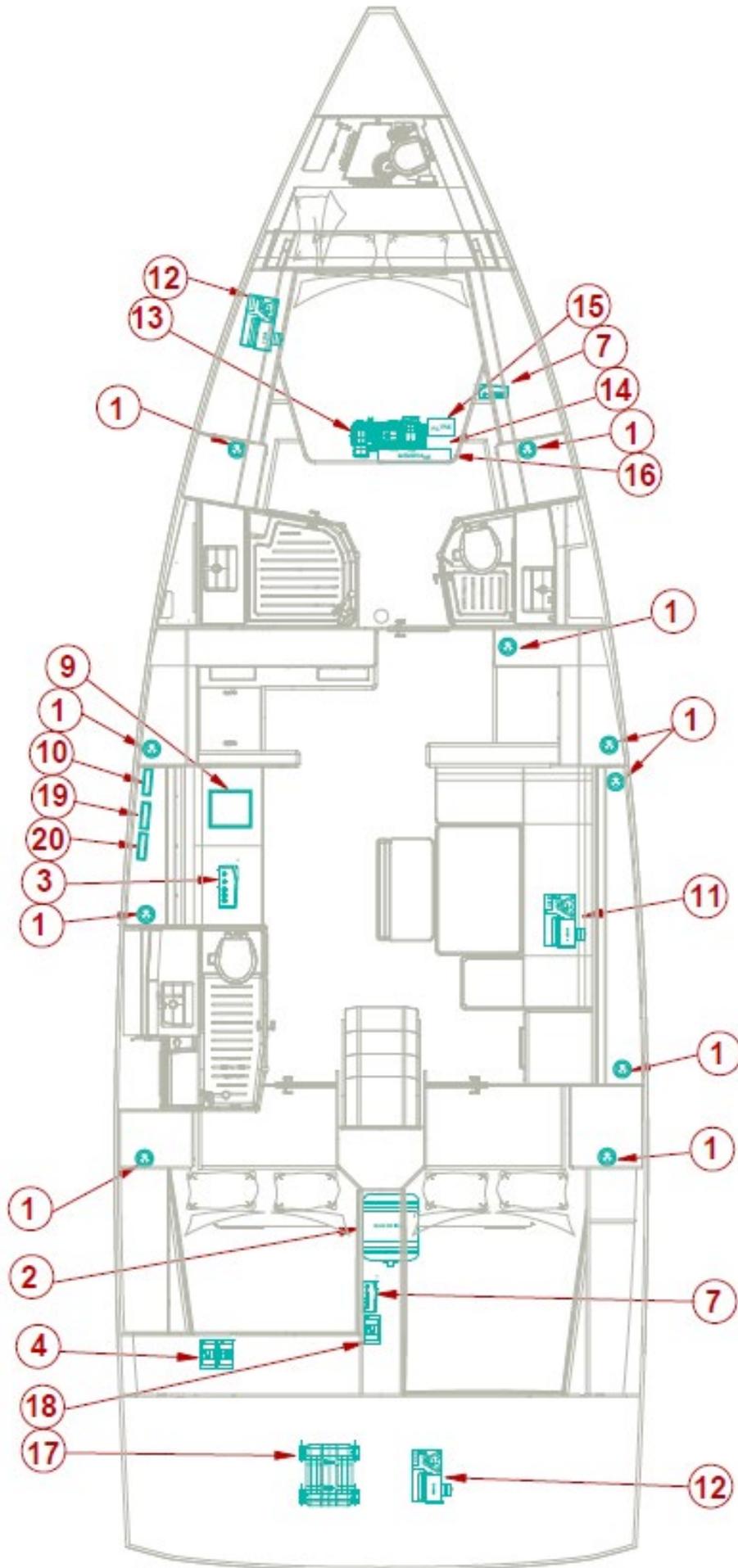
8A



8B

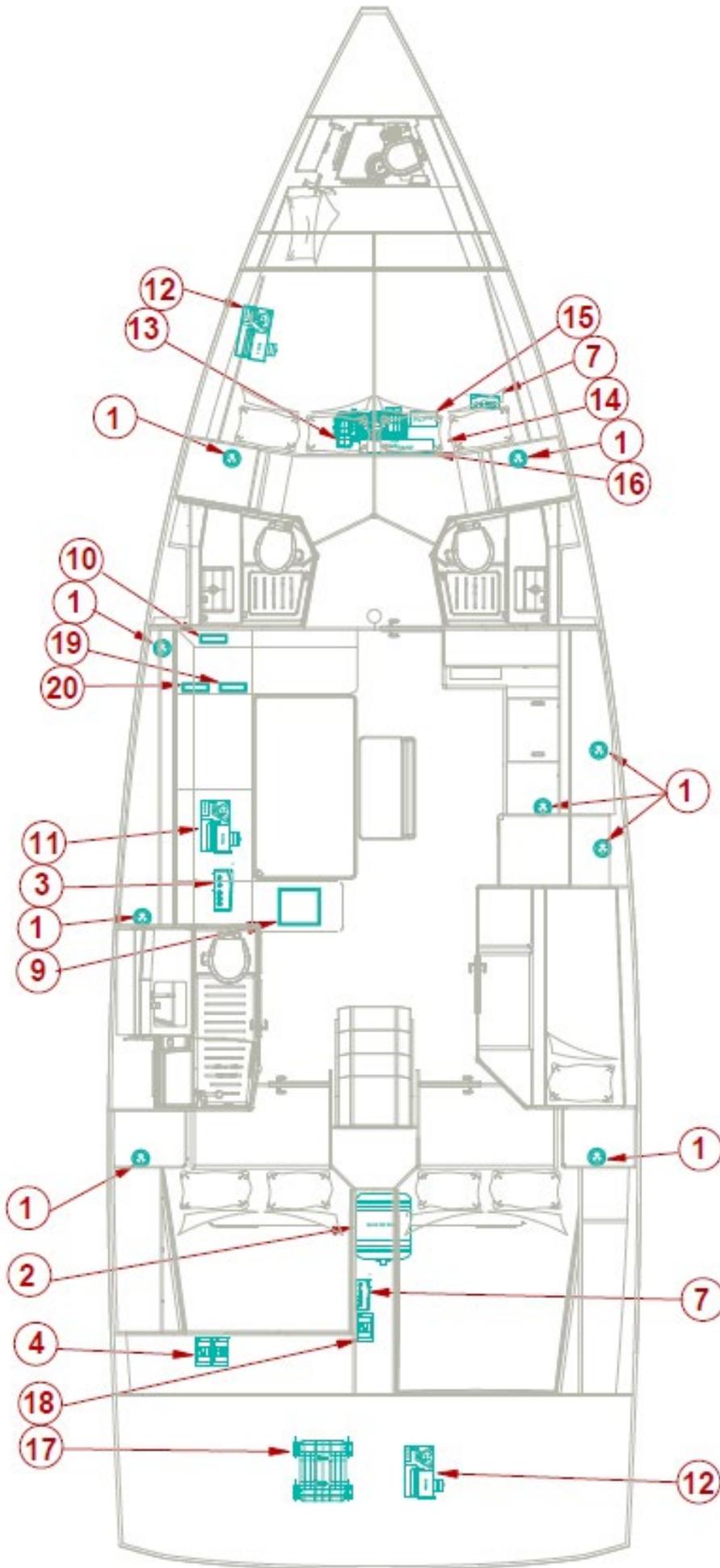
9.220 V Electrical Layout Diagram

Ref.	Description
A	FORWARD GALLEY VERSION
B	LENGTHWISE GALLEY VERSION
1	220V Current Socket
2	Water Heater
3	Battery Charger
4	General Circuit Breaker
7	Optional Battery Charger *
9	Transformer 12V/220V/2kW*
10	220V Electric Panel
11	Air Conditioning Unit 16000BTU*
12	Air Conditioning Unit 12000BTU*
13	Watermaker*
14	Watermaker Unit*
15	Watermaker Filter*
16	Watermaker Membrane*
17	Generator *
18	Generator Electric Panel*
19	Air Conditioning Electric Panel*
20	Electric Panel Other 220V Options*
*	Option



9A

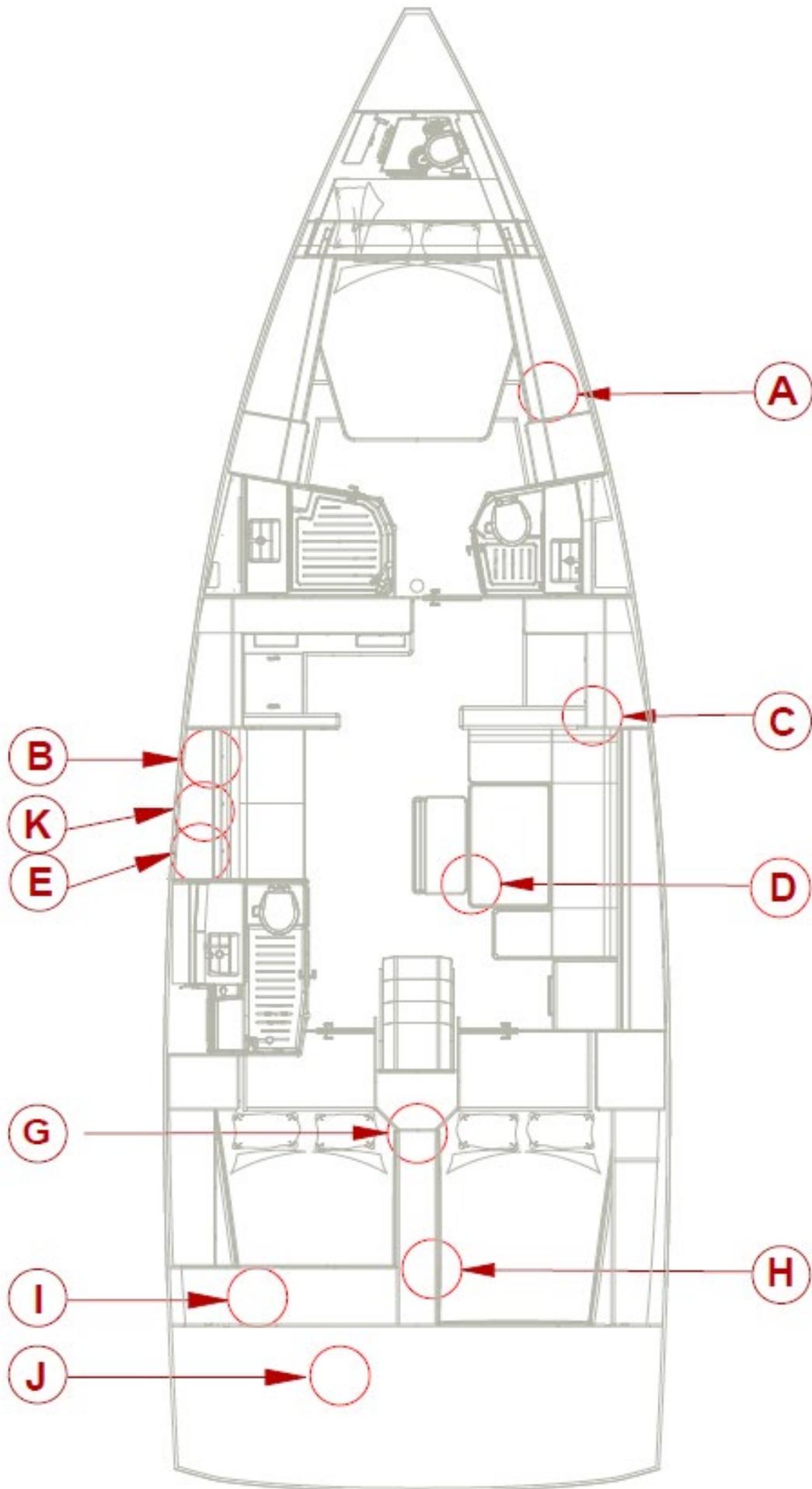
00/100



9B

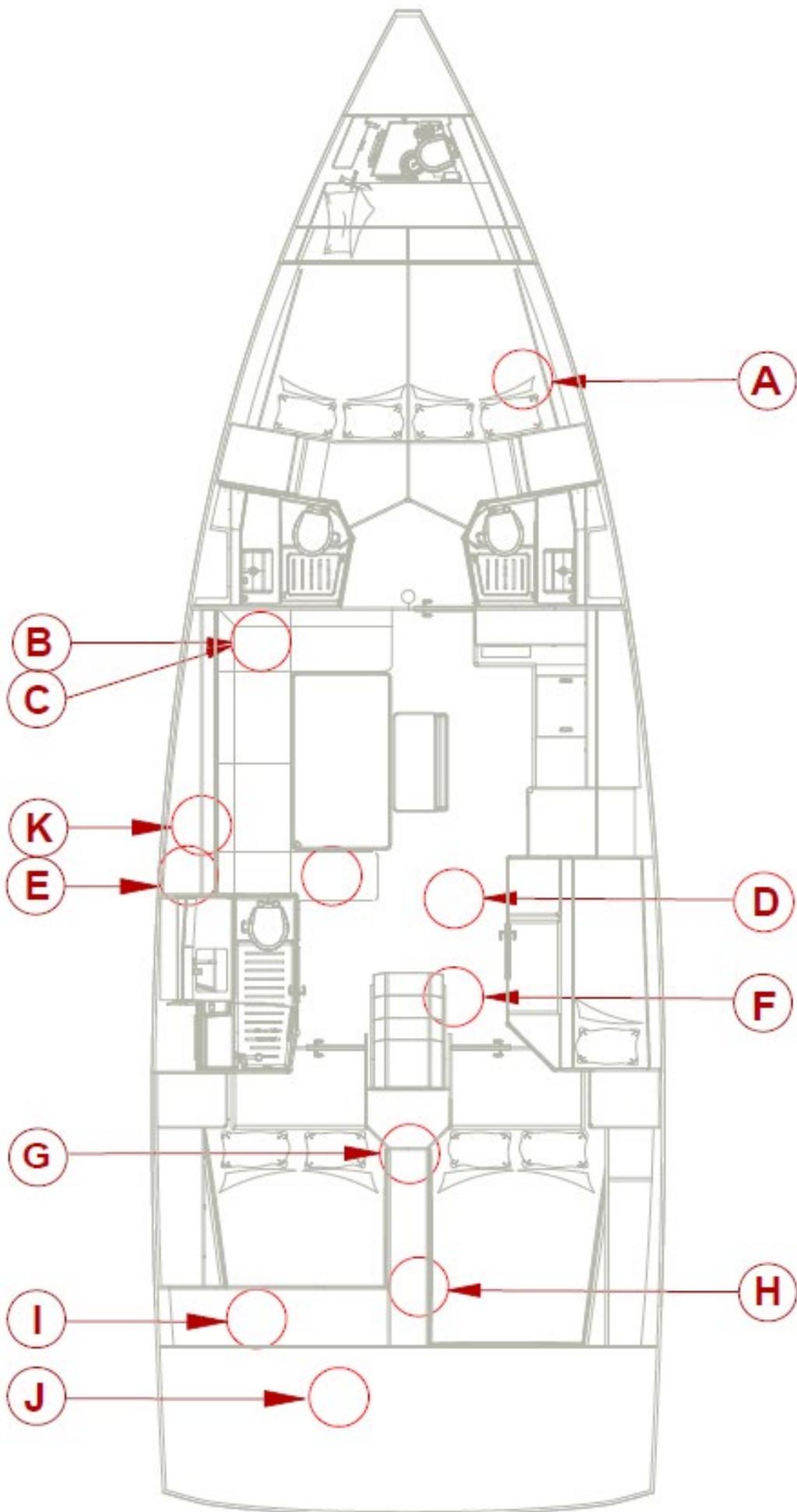
10. Fuse Locator Diagram

Ref	Description
	A - FORWARD GALLEY VERSION
	B - LENGTHWISE GALLEY VERSION
A	Zone A - 24 V
	325A Blade Fuse: Stern Propeller Option*
	110A Thermal Circuit Breaker: windlass
B	Zone B - 220 V
	Ph/N 10A Circuit Breaker: dishwasher option*
	Ph/N 10A Circuit Breaker: AR Booster Charger option*
	Differential 16A/30mA Circuit Breaker: Transformer (32A/30mA to 110V) option*
	Uni+Neutral 16A Circuit Breaker: Watermaker Protection*
	Differential 32A/30mA Circuit Breaker: Air Conditioning option*
	2-Pole Curved Circuit Breaker D 16A: AV Air Conditioning option (20A to 110 V) *
	2-Pole Curved Circuit Breaker D 16A: AV Air Conditioning option (20A to 110 V) *
	2-Pole Curved Circuit Breaker D 20A: Air Conditioning Unit option if no pullman (40A to 110V) *
	Zone B - 12 V
	Type C 63A Circuit Breaker: Watermaker option*
C	Zone C - 220 V
	Differential 16A/30mA Circuit Breaker: TV option*.
D	Zone D - 12 V
	200A Blade Fuse: On-board Protection
	160A Blade Fuse: Transformer Protection*
E	Zone E - 6 12V Modules Panel
	40A Tab Fuse: auto-pilot option*
	1A Tab Fuse: heating option (x4)*
	3A Tab Fuse: heating option
	5A Tab Fuse: windlass
F	Zone F- 12 V
	5A Fuse Engine Battery info
G	Zone G- 12 V
	110A Circuit Breakers Unit: Port and Starboard Coaming Winches option*
	110A Circuit Breakers Unit: Port and Starboard Helm Winches option*
	110A Circuit Breakers Unit: Port and Starboard Deckhouse Winches option*
	10A Tab Fuse: Bilge Blower
H	Zone H- 24 V
	325A Blade Fuse: Stern Propeller Option*
	Zone H- 220 V
	Differential 32A Circuit Breaker: General Generator Protection*
I	Zone I- 220 V
	2-pole 32A Circuit Breaker: General Dock Protection
	2 Pole 50A Circuit Breaker: General Air Conditioning Protection option*
J	Zone J - 12 V
	80A Blade Fuse: GE Option*
K	Zone K - 12V
	Type C 16A Circuit Breaker: Electric Toilet Option*



10A

63/103

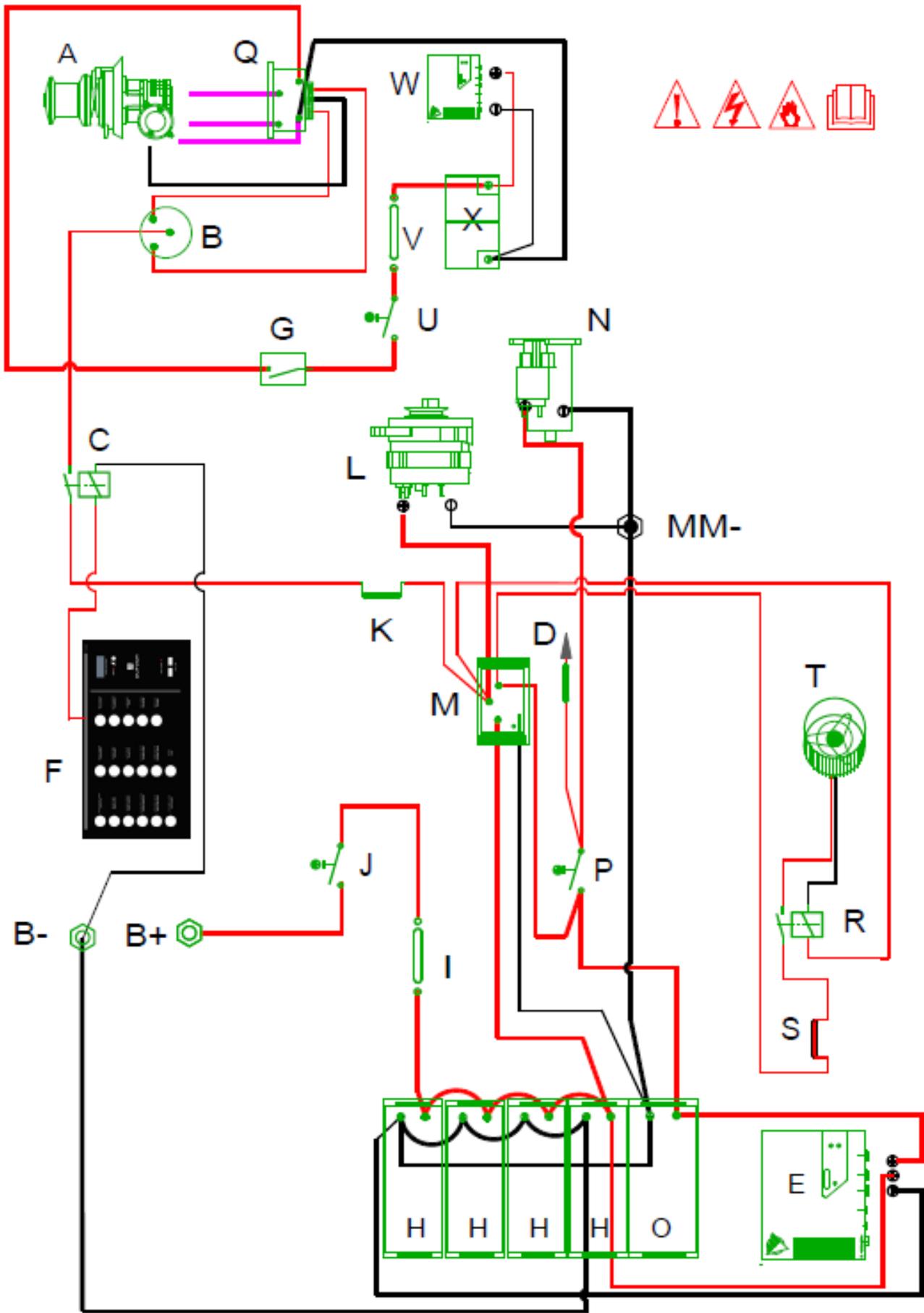


10B

64/103

11. Charging and Power Diagram

Rep	Description
A	Windlass
B	Windlass Control (remote control unit)
C	Windlass Remote Control Relay
D	8 A Fuse: Engine Test
E	Charger
F	12 V Consumer Unit
G	110 A Single Pole Circuit Breaker Windlass
H	Service Batteries
I	200 A Fuse (Service)
J	Service Battery Switch
K	5 A Fuse
L	Alternator
M	Distributor
N	Starter
O	Engine Battery
P	Engine Battery Switch
Q	Windlass Relay
R	Bilge Blower Relay
S	5 A Fuse
T	Bilge Blower
U	Windlass Battery Switch
V	160A Windlass Fuse
W	Windlass Charger
X	Windlass Battery
B-	Terminal - (Electrical Panel)
B+	Terminal + (Electrical Panel)
MM-	Engine Earth



12. 12 V Consumer Unit

Ref.	Functions	Cut-Off Value
1	Water Group	10A
2	Bilge Pump	15A
3	Shower Pumps	10A
4	Navigation Lights	5A
5	Anchor Light	5A
6	Steaming Light	5A
7	Internal Refrigerator	10A
8	Navigation	15A
9	Automatic Pilot	15A
10	Cockpit Lighting	15A
11	Cabin Lighting	15A
12	Audio	10A
13	Deck Light	10A
14	Instruments	10A
15	Auxiliary	10A
16	USB Cabins	10A
17	Windlass Control	10A
18	Display Screen	
19	Alarm Display	
20	Dock Socket Indicator	
21	Facade USB Socket	

Note: Depending on the type of boat or options, some functions may not be activated.

18



SYSTEM MONITORING



ALARM

19



DUFOUR

20

SHORE POWER



5V 1.5A

21

DECK LIGHTS
FEUX DE PONT

13

INSTRUMENTS
INSTRUMENTS

14

AUXILIAIRE
DIVERS

15

USB CABINS
USB CABINES

16

WINDLASS
QUINCAILLAGE

17

GALLEY FRIDGE
RÉFRIGÉRATEUR

7

NAVIGATION
NAVIGATION

8

AUTO PILOT
PILOTE AUTO

9

SALOON LIGHTS
ÉCLAIRAGE CARRÉ

10

CABINS LIGHTS
ÉCLAIRAGE CABINES

11

AUDIO
AUDIO

12

FRESH WATER PUMP
GROUPE EAU

1

BILGE PUMP
POMPE DE CALE

2

SHOWER PUMPS
POMPE DE BOUCHE

3

NAVIGATION LIGHTS
FEUX DE NAVIGATION

4

MOORING LIGHTS
FEUX DE MOILLAGE

5

STEAMING LIGHT
FEUX DE HEUNE

6

13. Cabling on Rear of Unit

Connectors and Switches

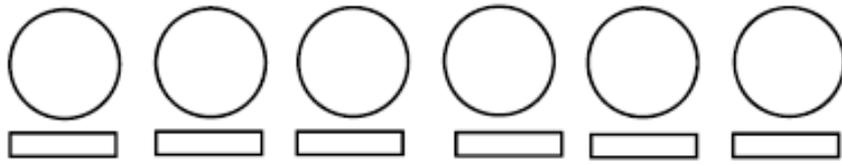
Benchmark	Function
K1	AC Source Indicator - Dock Line
S1	ON-OFF Audible Alarm

Power Connections - A - B - D

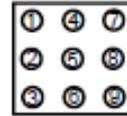
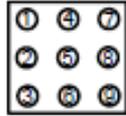
Benchmark	Type	Definition
A1	Exit	Water Group
A2	Entrance	HOUSE BATTERIES
A3	Exit	Internal Refrigerator
A4	Exit	Bilge Pump
A5	Entrance	HOUSE BATTERIES
A6	Exit	Navigation Instruments 2
A7	Exit	Shower Pump
A8	Entrance	GND
A9	Exit	Automatic Pilot
B1	Exit	Navigation Light
B2	Entrance	HOUSE BATTERIES
B3	Exit	Cockpit Lighting
B4	Exit	Anchor Light
B5	Entrance	HOUSE BATTERIES
B6	Exit	Cabin Lighting
B7	Exit	Steaming Light
B8	Entrance	GND
B9	Exit	Audio System
D1	Exit	Deck Light
D2	Entrance	HOUSE BATTERIES
D3	Exit	Navigation Instruments 1
D4	Exit	Cockpit Refrigerator
D5	Entrance	HOUSE BATTERIES
D6	Exit	USB Sockets
D7	Exit	Windlass Control
D8	Entrance	GND
D9		FREE

Signal Connector - C

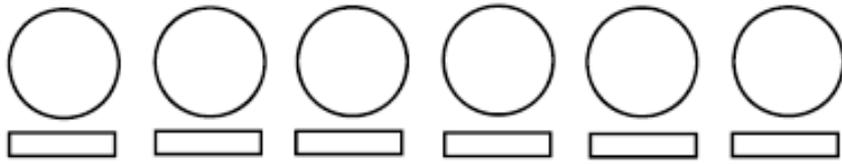
Benchmark	Type	Value	Definition
C1	Entrance		FREE
C2	Entrance		FREE
C3	Entrance		FREE
C4	Entrance	0-180Ω	WATER Tank Level no. 1
C5	Entrance	0-18□□0Ω	FUEL Tank Level no. 1
C6	Entrance	0-14V	Engine Battery Voltage Level
C7	Entrance	0V	GND
C8	Entrance		FREE
C9	Entrance	0-180Ω	WATER Tank Level no. 2
C10	Entrance		FREE
C11	Entrance		FREE
C12	Entrance		FREE



A



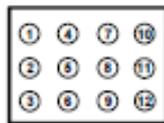
B



D



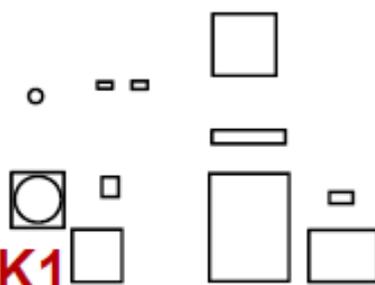
S1



C



K1



13A

A

7	8	9
4	5	6
1	2	3

B

7	8	9
4	5	6
1	2	3



D

7	8	9
4	5	6
1	2	3

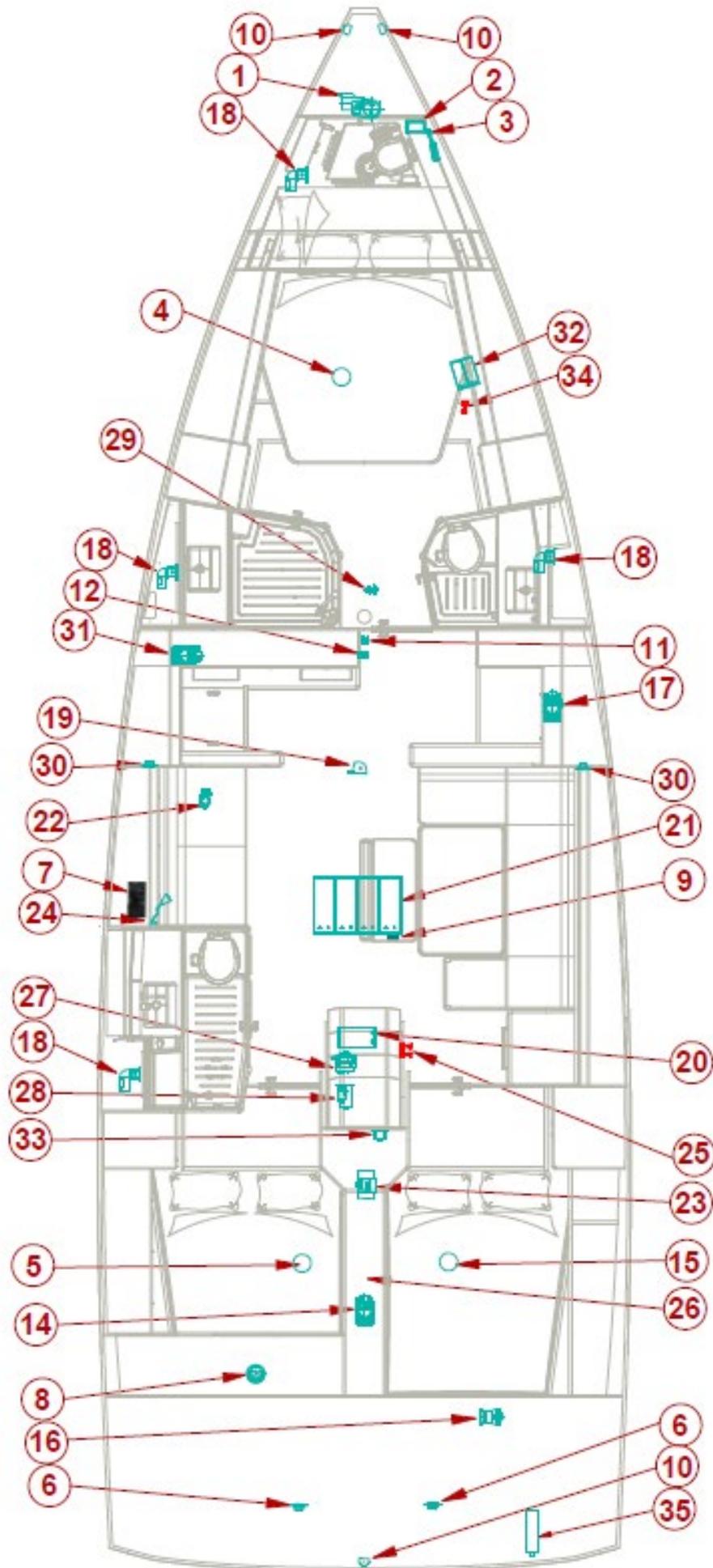
C

10	11	12
7	8	9
4	5	6
1	2	3

13B

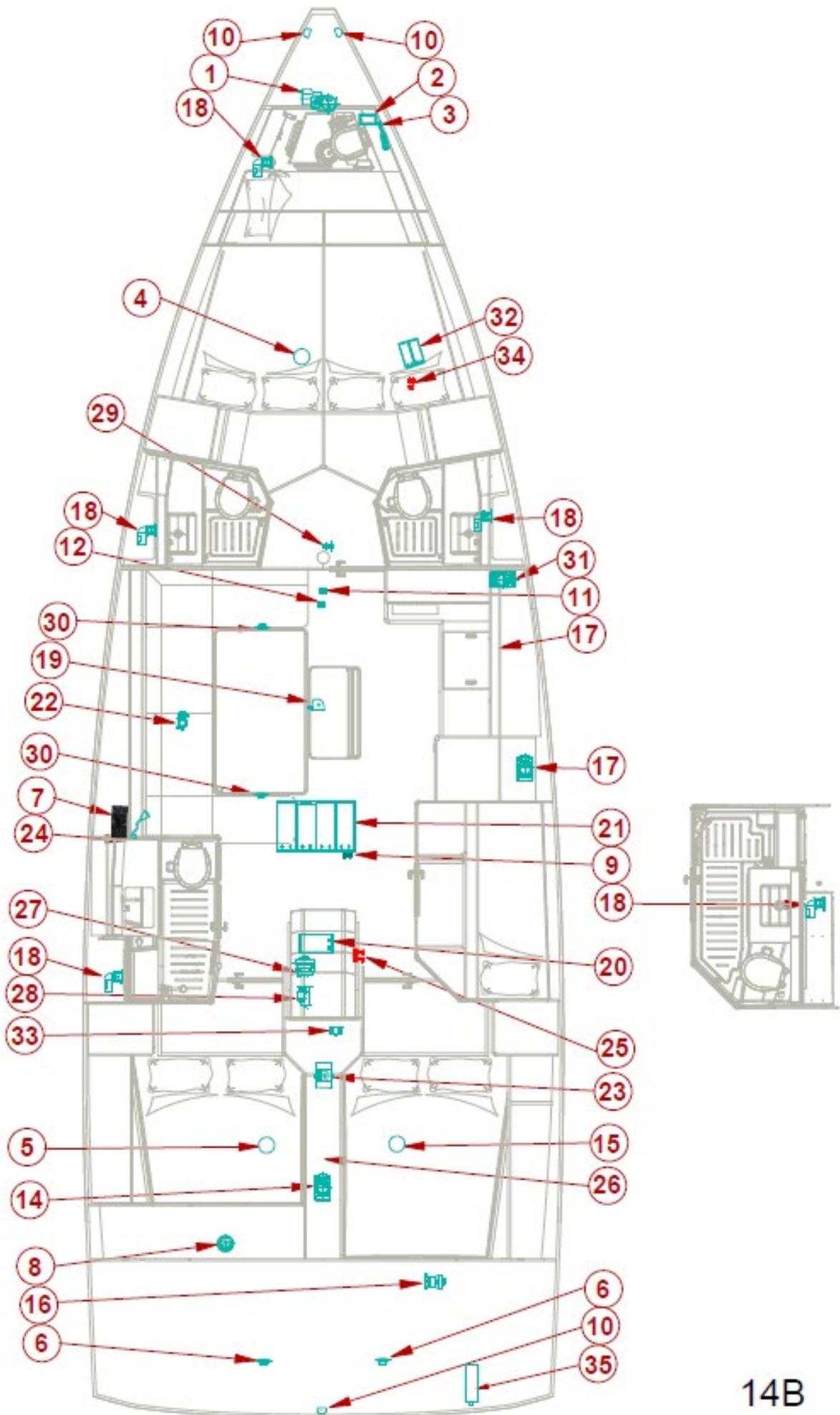
14. 12 V Electrical Layout Diagram

Ref.	Description
A	FORWARD GALLEY VERSION
B	LENGTHWISE GALLEY VERSION
1	Windlass
2	Windlass Relay
3	Windlass Remote Control
4	Forward Fresh Water Gauge
5	Stern Fresh Water Gauge
6	Cockpit Loudspeaker
7	12V Electrical Consumer Unit
8	Nautical Compass
9	Service Fuse
10	Navigation Lights
11	Steaming Light
12	Anchor Light
14	Cockpit Table Cooling Unit*
15	Diesel Gauge
16	Automatic Pilot Hydraulic Unit *
17	Cooling Unit
18	Shower Drain Pump
19	Electric Bilge Pump
20	Engine Battery
21	Service Batteries
22	Water Unit
23	Blower Motor
24	Card Table Lighting
25	Engine and Service Batteries Switch
26	Waterproof 12V Current Socket
27	Alternator
28	Starter
29	Speed / Depth Sensor*
30	Cockpit Loudspeaker
31	Preserver Cooling Unit*
32	Windlass Batteries
33	Load Distributor
34	Windlass Battery Switch
35	Stern Door Cylinder
*	Option



73/103

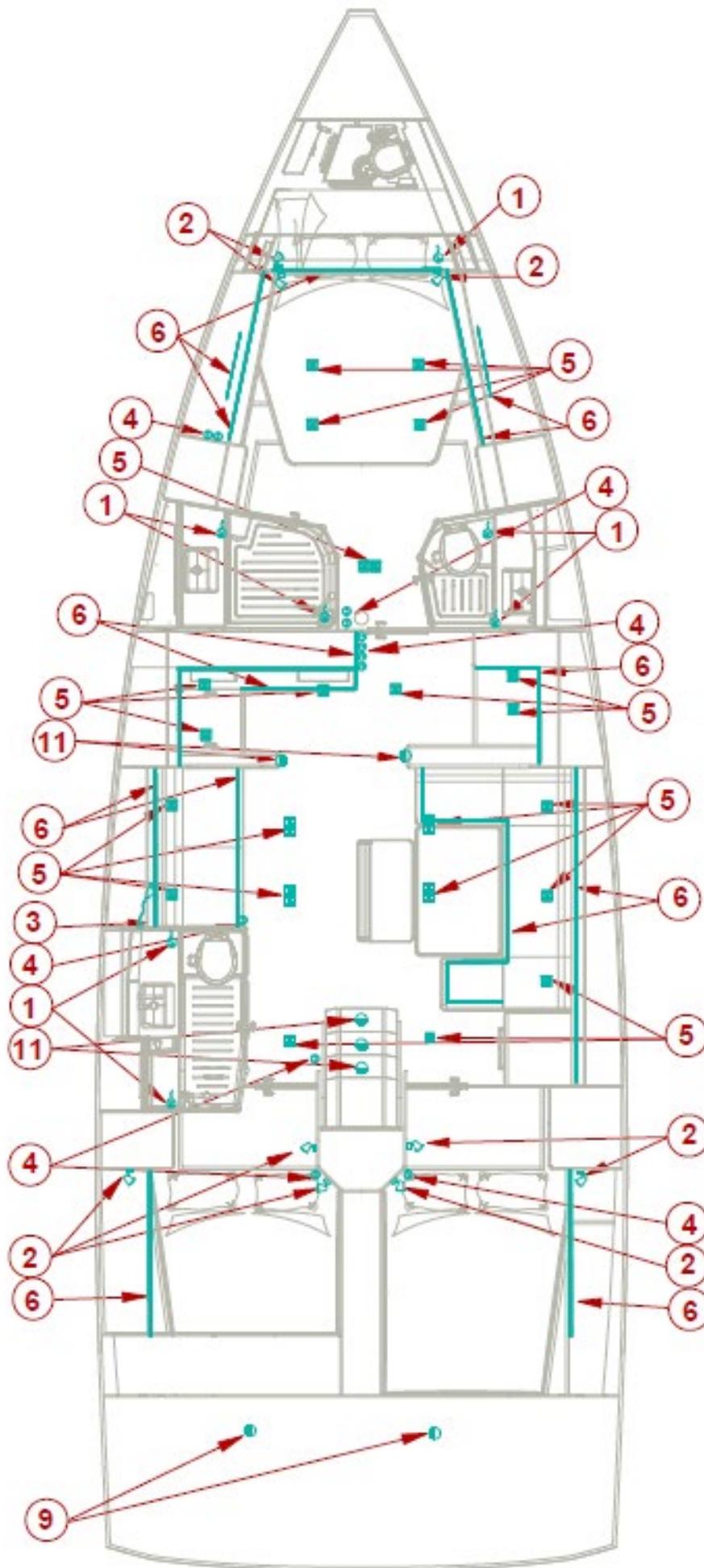
14A



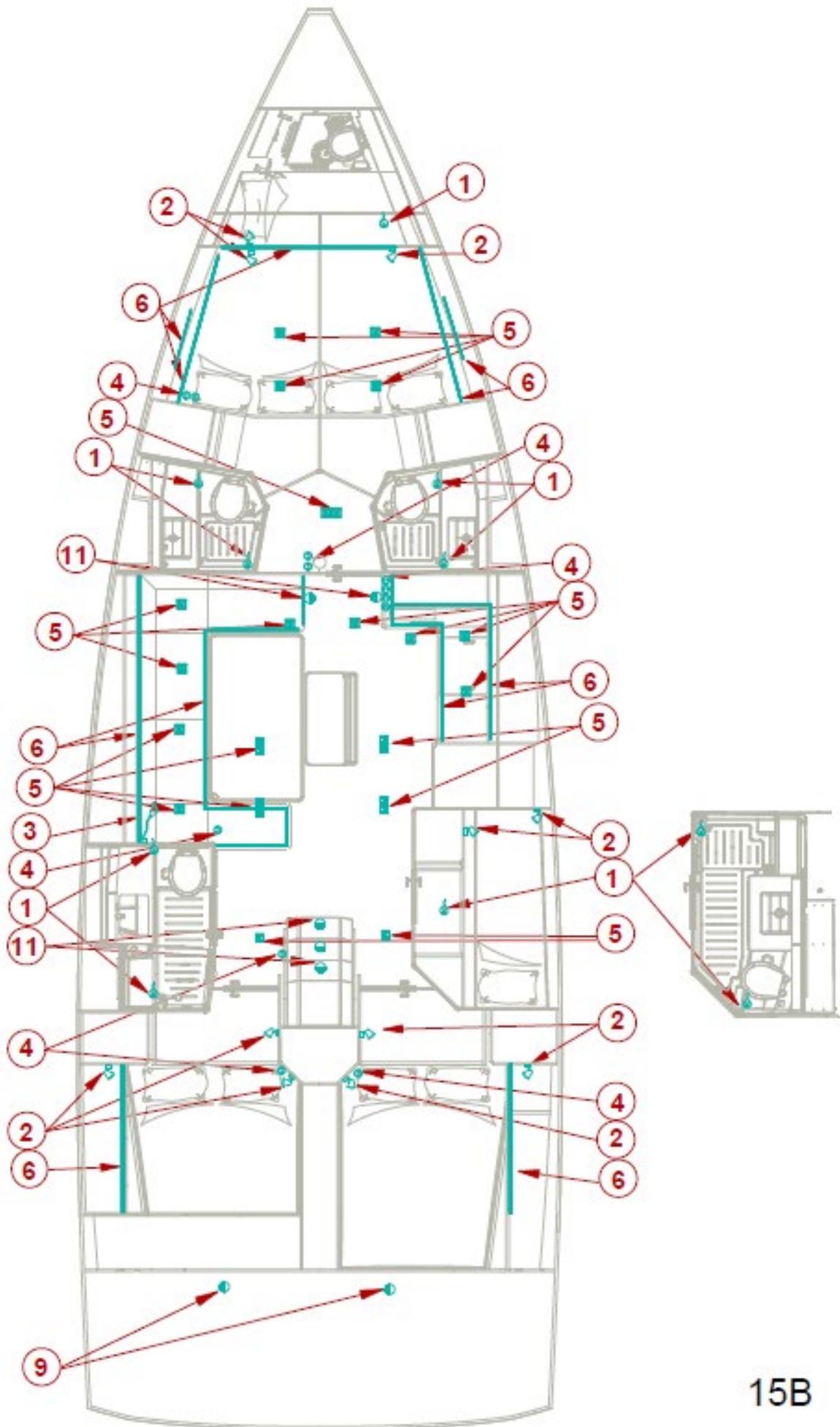
14B

15. Lighting Circuit

Ref.	Description
A	FORWARD GALLEY VERSION
B	LENGTHWISE GALLEY VERSION
1	Round Ceiling Light + Switch
2	LED Reading Lamp + Switch
3	Black Neoprene Reading Lamp
4	Switch
5	Overhead Cockpit Lamp
6	Recessed Flexible LED
7	Bathroom Overhead Lamp
8	Remote-Controlled Switch Relay
9	Waterproof Overhead LED Lamp
10	Flexible LED
11	Courtesy Light



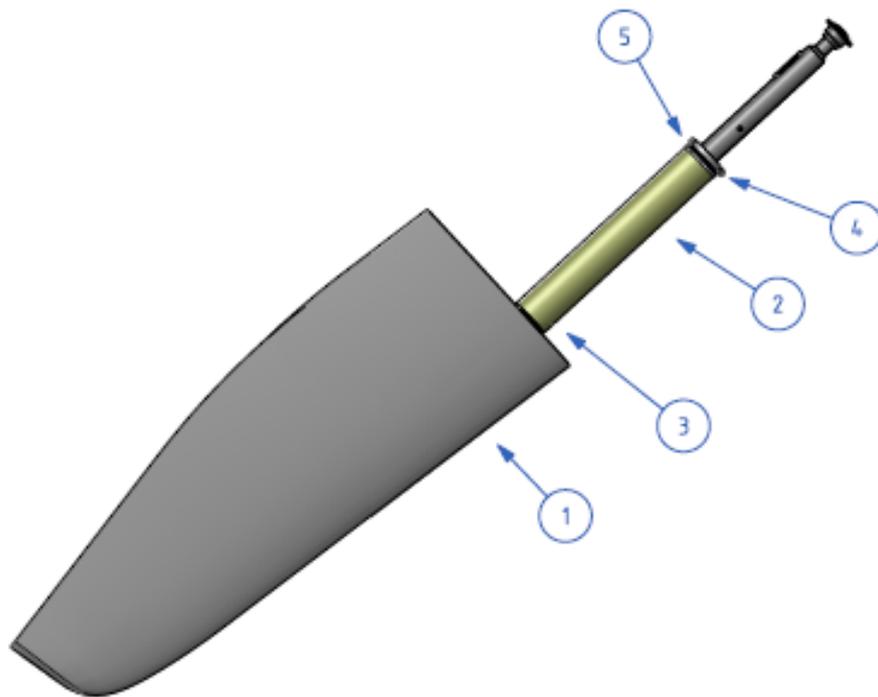
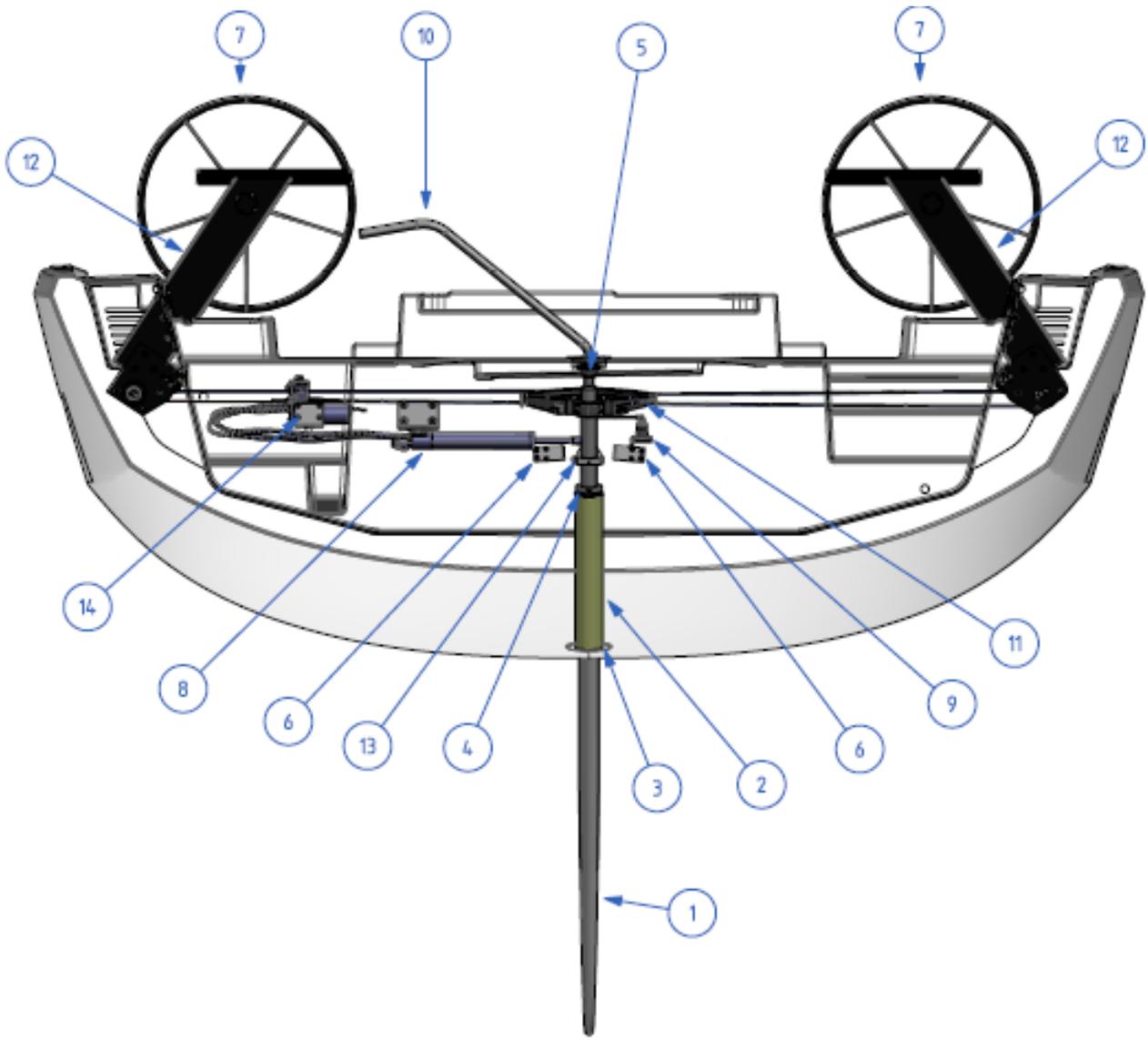
15A



77/103

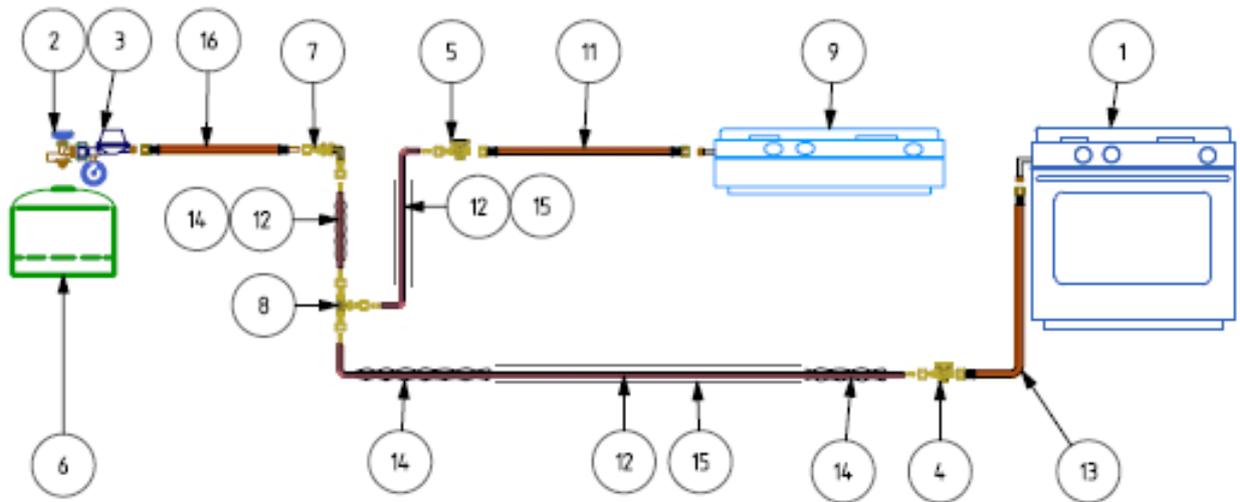
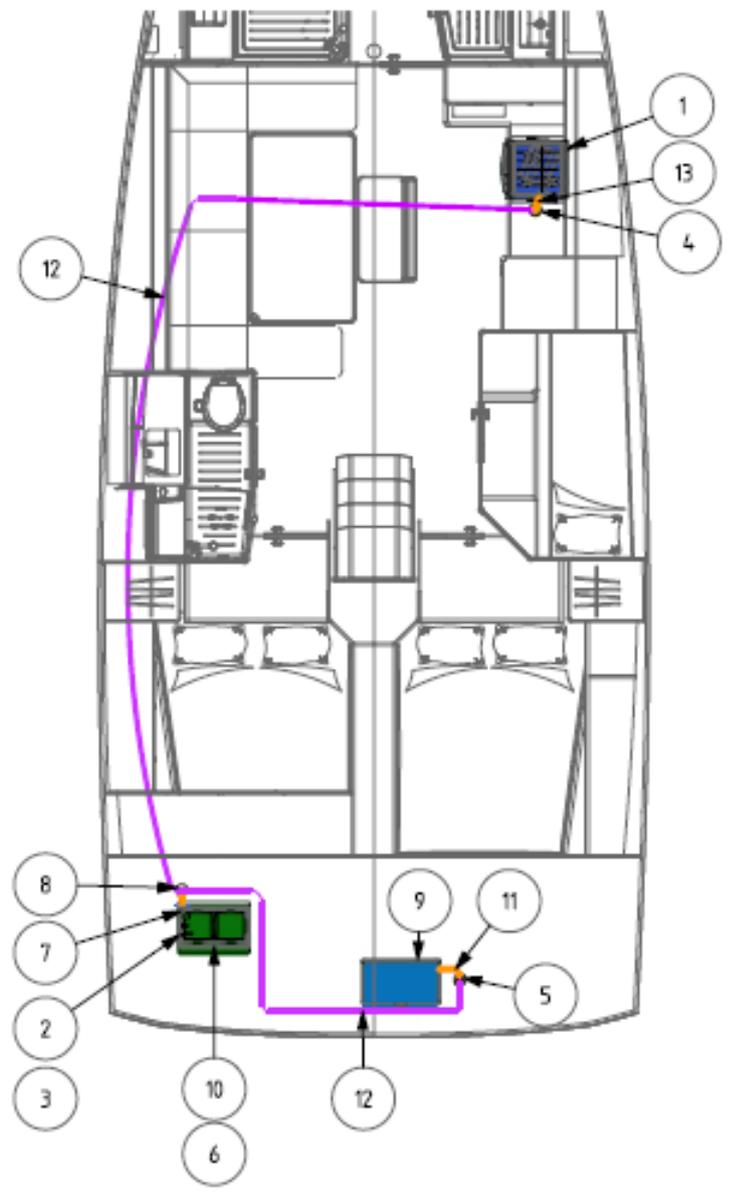
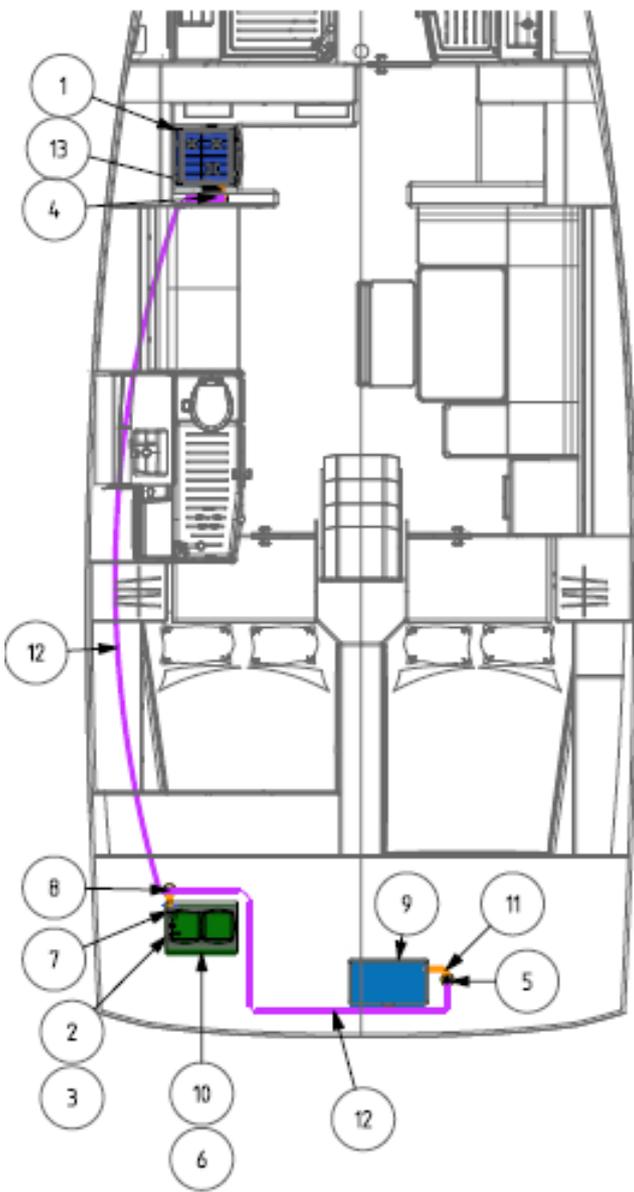
16. Rudder System Diagram

No.	Description	Remarks
1	Rudder + Stock	
2	Rudder Trunk Pipe	
3	Lower Tier	
4	Rudder Ring Assembly	
5	Upper Tier	
6	Quadrant Stops	
7	Steering Wheels	
8	Hydraulic Pilot Cylinder	Option
9	Rudder Angle Indicator	Option
10	Emergency Tiller	
11	Quadrant	
12	Wheel Mountings	
13	Helm / Pilot Rudder Stock Arms	
14	Hydraulic Pilot Unit	Option



17. Gas Circuit Diagram

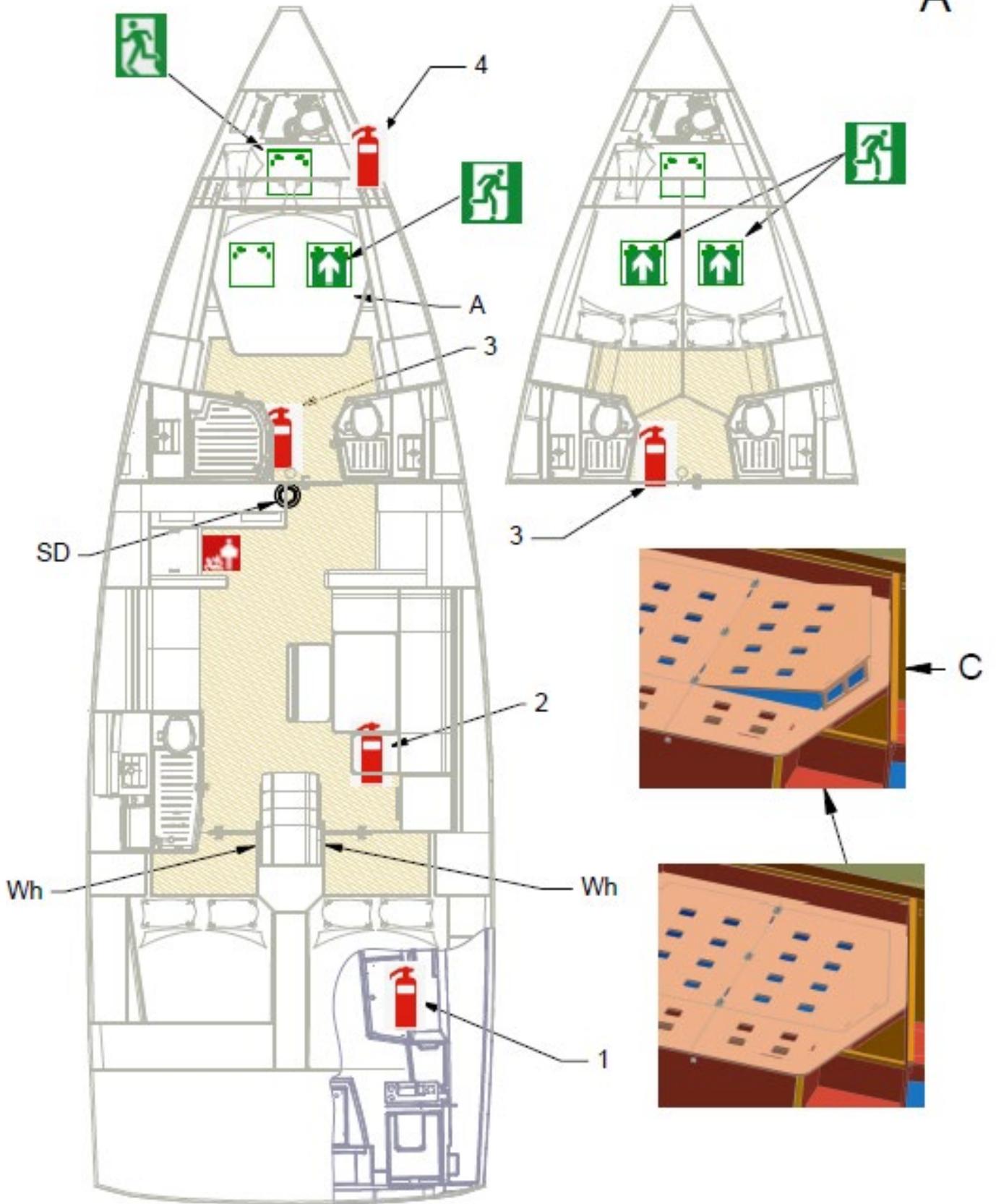
No.	Description
1	Stove Oven
2	Bottle Valve
3	Low-Pressure Regulator + Pressure Gauge
4	Quick-Release Valve G1/4 - Tube D8 - Stove
5	Quick-Release Valve G1/4 - Tube D8 - Griddle*
6	Gas Bottle**
7	Brass Bulkhead-Entry for D8 Tube
8	T Olive Coupling
9	Recessed Griddle*
10	Gas Locker
11	Flexible 1m G1/4 - G1/4*
12	6x8 Copper Pipe
13	Flexible 1m G1/4 - G1/4*
14	Black PVC Sleeve (protection)
15	PVC Pipe (protection)
16	Flexible 0.6m G1/4 - Pipe D8
X	Insert / Pipe 6x8
*	Option
**	Not Supplied



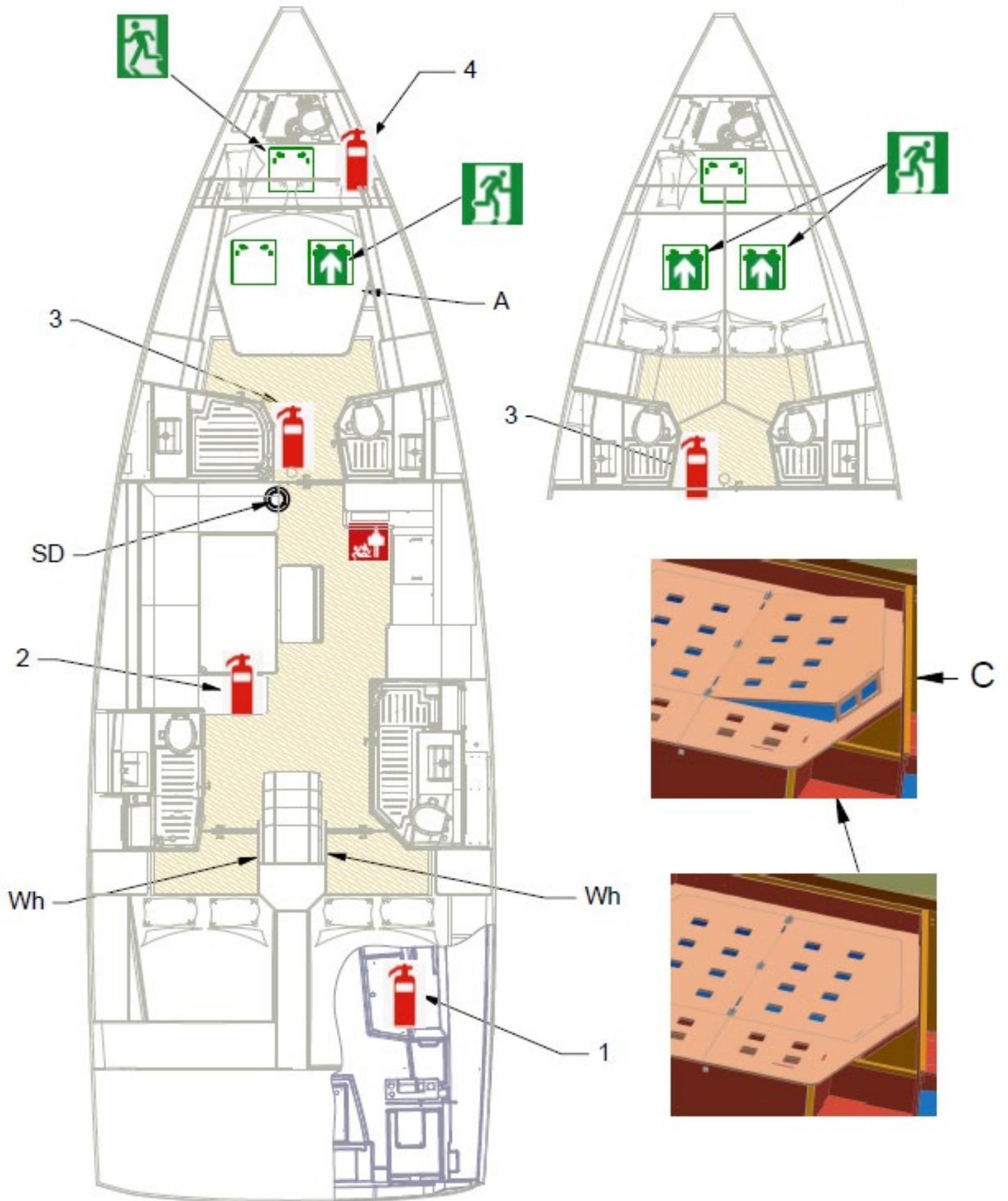
18. Ship's Escape Diagram

Rep.	Description
A	FORWARD GALLEY VERSION
B	LENGTHWISE GALLEY VERSION
	Recommended Location for Extinguishers
1	Cockpit Locker: Extinguisher 1 kg Powder 5A/34B **
2	Cockpit Bench: Extinguisher 1 kg powder 5A/34B **
3	Forward Cabin: Extinguisher 1 kg powder 5A/34B **
4	Skipper Cabin (option)**
Wh	Machine Extinguisher Opening
	Escape Panel
	Emergency Exit
	Fire Blanket (Recommended Location)
SD	Smoke Detector
C	Device to facilitate removal by the forward panel
**	Not Supplied

A



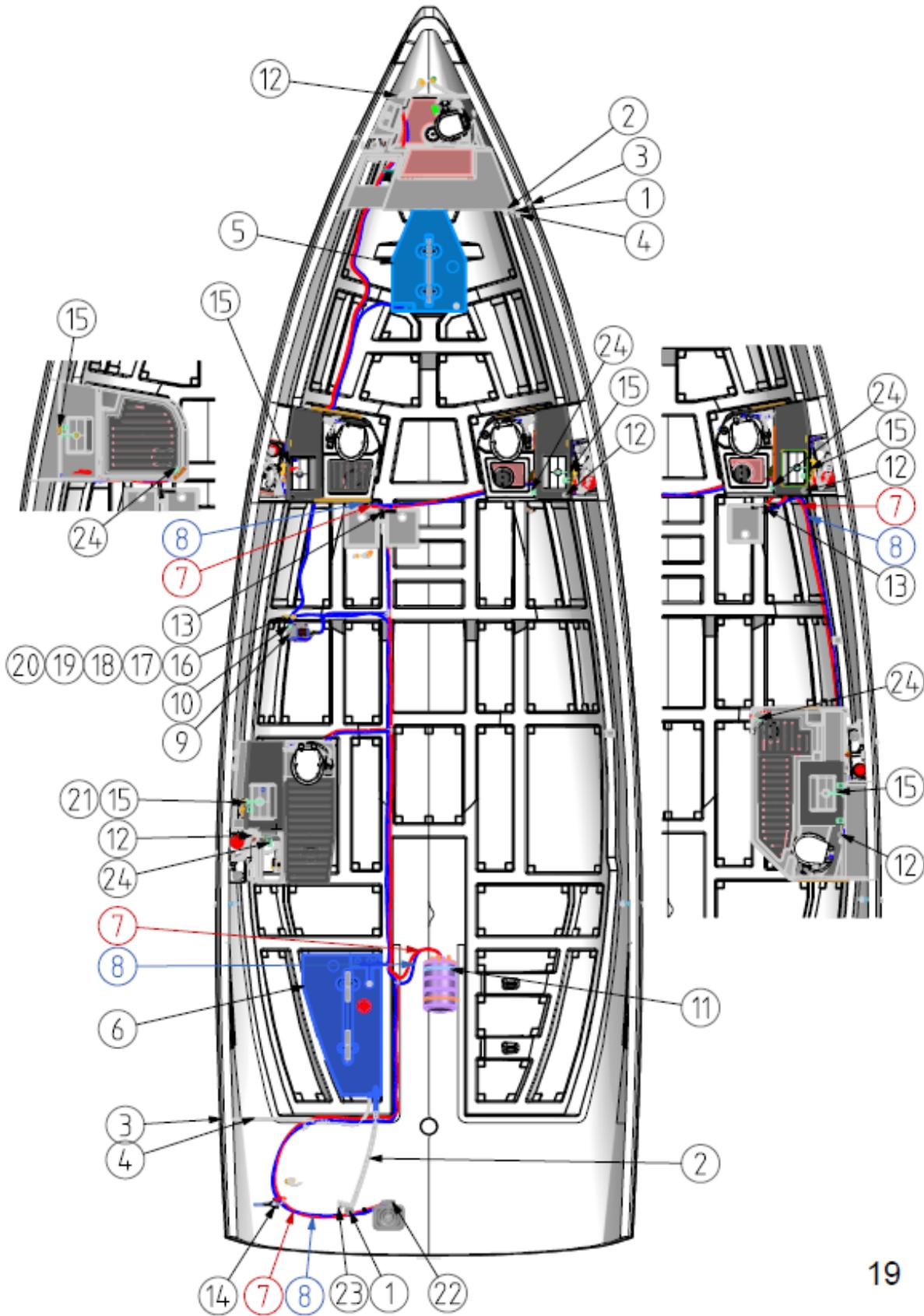
B



18

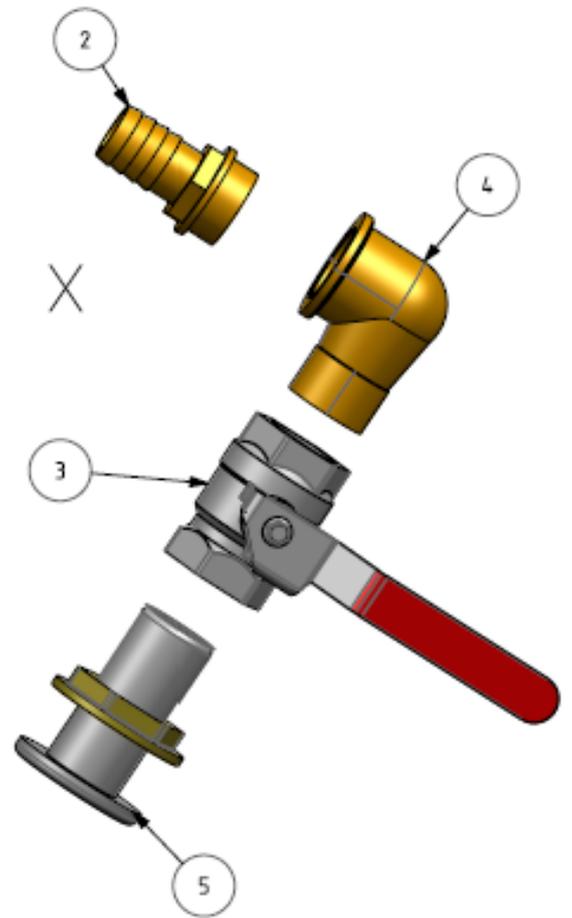
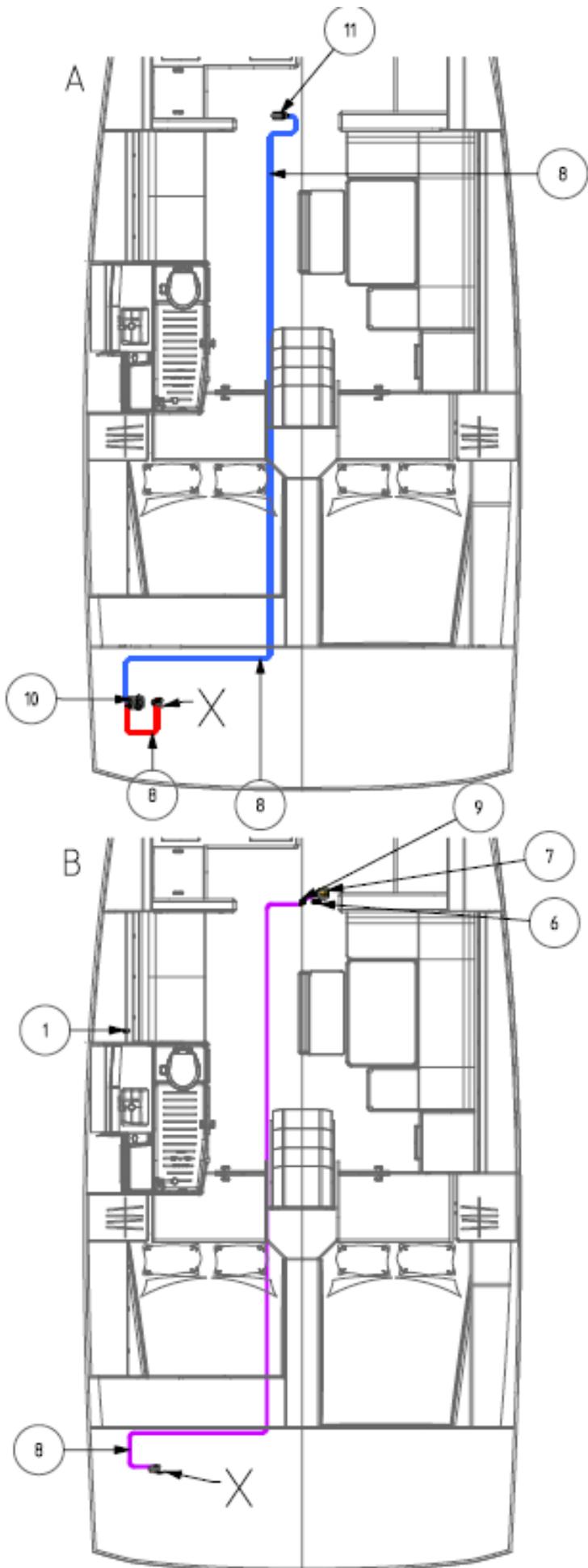
19. Freshwater Circuit Diagram

Ref.	Description
1	Filling Port
2	Filling Pipe
3	Vent
4	Vent Pipe
5	Forward Water Tank 280 L
6	Cockpit Water Tank 200 L (x2)
7	Hot Water Pipe
8	Cold Water Pipe
9	Pressure Water Unit
10	Fresh Water Filter
11	Water Heater
12	Mixer Tap - Bathroom Shower
13	Galley Mixer Tap
14	Deck Shower
15	Single Bathroom Mixer Tap
16	3-channel 1/2" Sump
17	Connector MF 3/4"-1/2"
18	1/4 turn FF 1/2" Valve
19	Coupling WX F 3/4"
20	Coupling WX M 1/2"
21	Washing Machine Connection*
22	Outside Sink Mixer Tap*
23	Deck Tap*
24	Shower Mixer Tap
	*OPTION



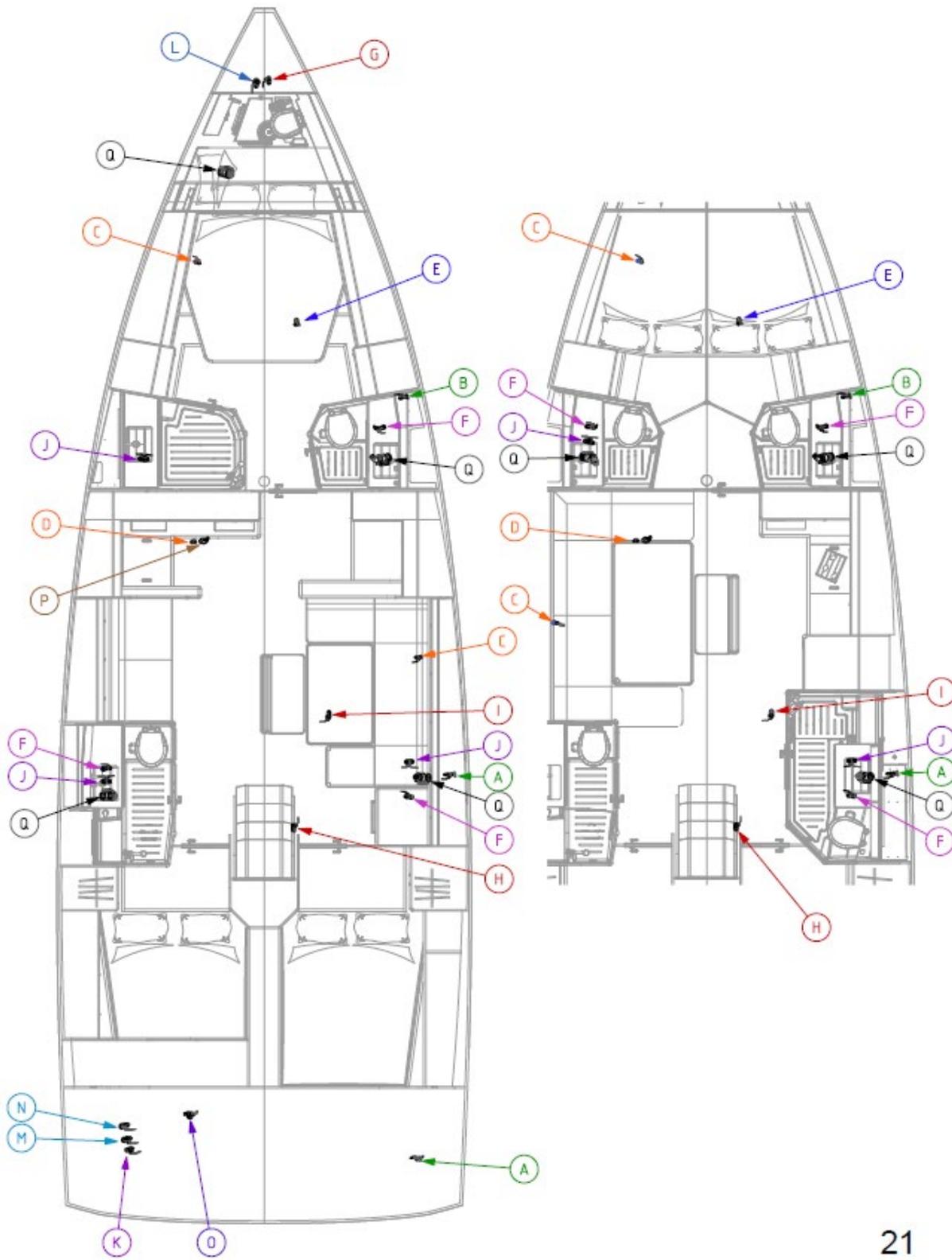
20. *Drainage Circuit Diagram*

Ref.	Description
A	Manual Bilge Pump Circuit
B	Electric Bilge Pump Circuit
X	Drainage System Outlets
1	Electric Pump Control Panel
2	Ring-Fitting Coupling 1"x25
3	1/4T 1" Valve
4	U-Bend MF 1"
5	Chromed Brass Through-Hull fitting 1"
6	Connection Box
7	Submerged Pump 12V
8	Bilge Pipe D25
9	One-Way Valve
10	Manual Bilge Pump
11	Valved Strainer



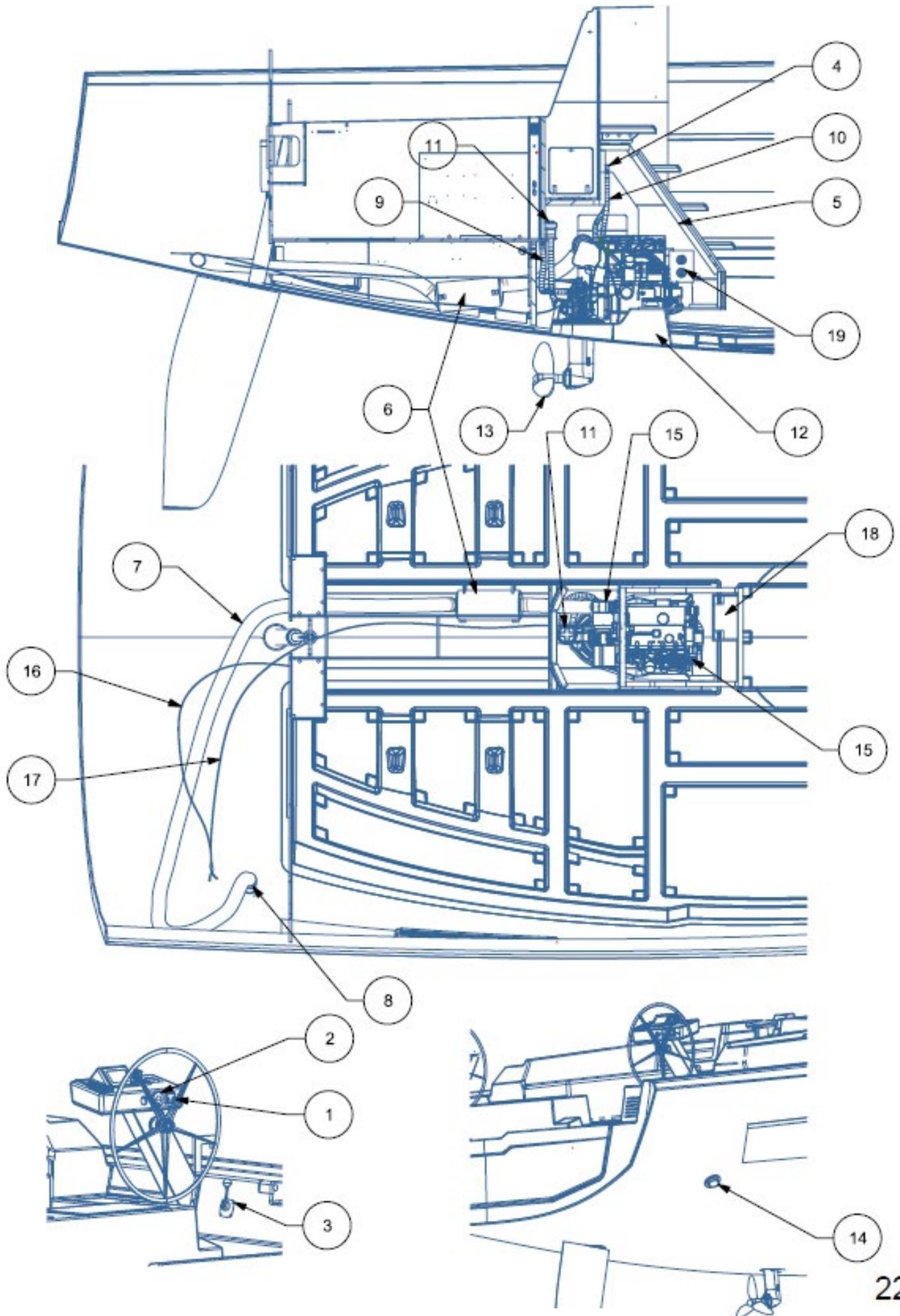
21. Through-Hull Fittings Locator Diagram

Ref	Function	Ø
A	AIR-CONDITIONING CONDENSATION OUTLET*	1/2 "
B	WATERMAKER OUTLET*	1/2 "
C	AIR-CONDITIONING WATER INLET	1/2 "
D	GALLEY SEAWATER PUMP INLET	1/2 "
E	WATERMAKER WATER INLET*	1/2 "
F	TOILET WATER INLET	3/4 "
G	SKIPPER CABIN TOILET WATER INLET*	3/4 "
H	GENERATOR WATER INLET*	3/4 "
I	AIR-CONDITIONING WATER OUTLET*	3/4 "
J	BATHROOM SINK / SHOWER OUTLET	1"
K	OUTSIDE SINK WATER OUTLET	1"
L	SKIPPER CABIN SINK / SHOWER OUTLET	1"
M	MANUAL BILGE PUMP OUTLET	1"
N	ELECTRIC BILGE PUMP OUTLET	1"
O	GENERATOR OUTLET*	1" 1/4
P	GALLEY OUTLET	1" 1/4
Q	TOILET OUTLET	1" 1/4
*	Option	



22. Mechanical Installation Diagram

Ref.	Description
1	Engine Control Panel
2	Rev Counter
3	Engine Control Box
4	Anti-Siphon U-Bend Type V
5	Engine Insulation Foam
6	Waterlock VOLVO D90
7	Exhaust Pipe D90
8	U-Bend Plastic Section D90
9	Sea Water Pipe D32
10	Sea Water Pipe D25
11	Sea Water Filter 1"1/4
12	Polyester Chassis D2-75
13	Propellor - depending on engine or option
14	Exhaust Outlet D90
15	VOLVO Engine D2-75 - 150S
16	Accelerator Control Cable - 6m
17	Inverter Cable - 5.5m
18	Starter Battery 105 Ah
19	Unipolar Circuit Breaker
20	Engine Water Intake Valve



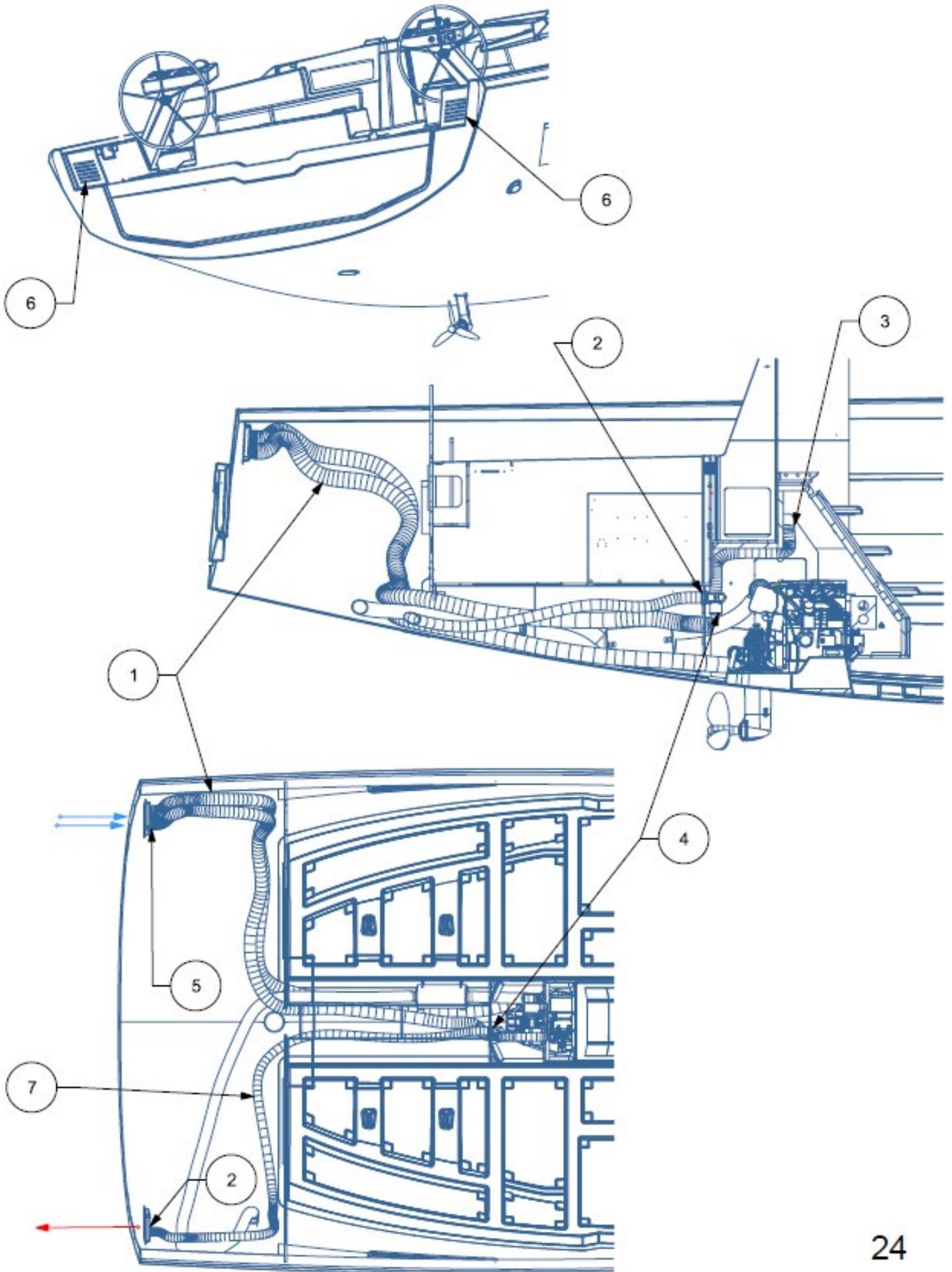
23. Diesel Circuit Diagram

Ref.	Description
1	VOLVO Diesel Prefilter
2	Feed Pipe and Engine Return
3	Diesel Intake
4	Vent d16
5	Anti-Overflow Vent
6	Vent Pipe
7	Tank Mounting Ledge
8	Tank Pricking Plate
9	Tank Member
10	Resistor Level Sensor
11	Test Cap
12	ISO 21487 Plate
13	Diesel Shut-Off Valve
14	Tank Member
15	Diesel Tank 250L
16	Filling Pipes



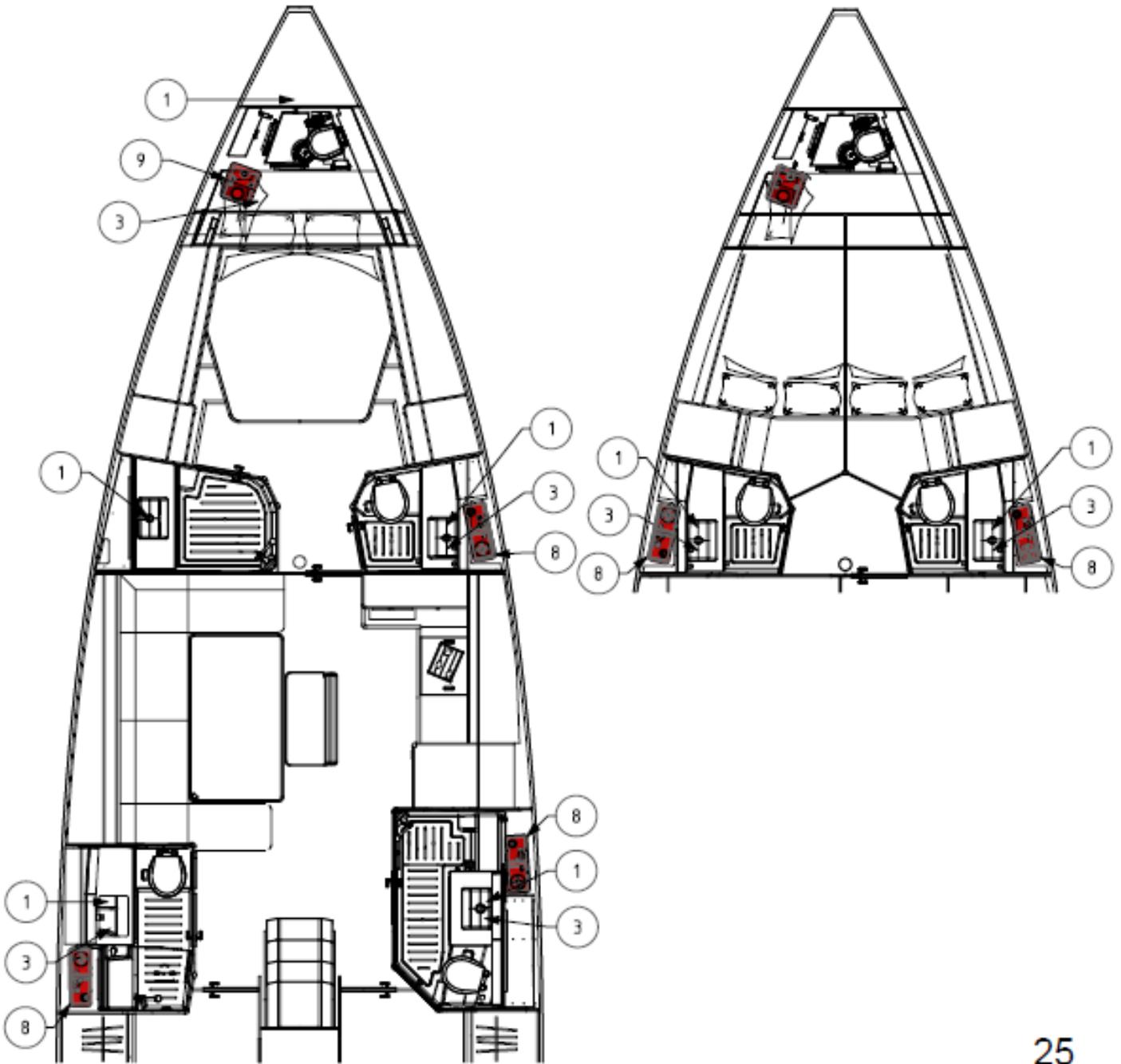
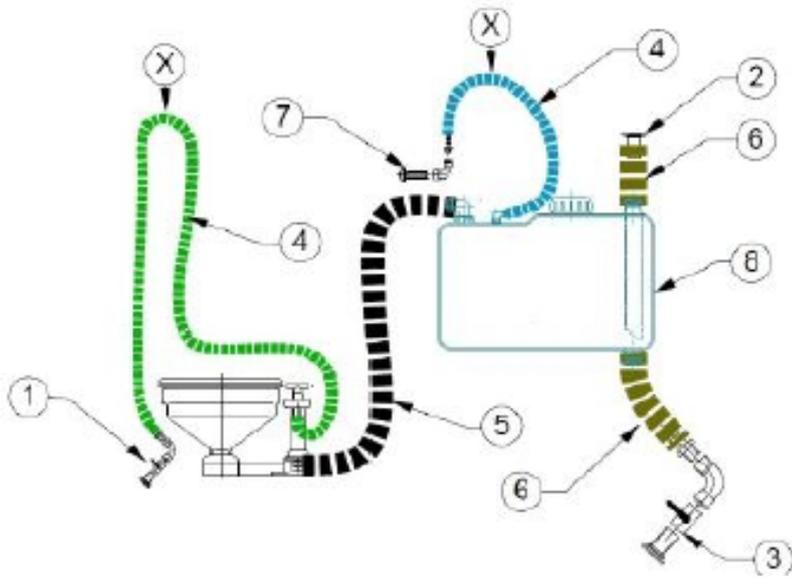
24. Engine Ventilation Circuit

Ref.	Description
1	Ventilation Conduits D100
2	Collar D75
3	Extraction Ducts D75
4	Bilge Blower D75
5	Air Inlet Collars D100
6	Aerator Box
7	Extraction Ducts D70



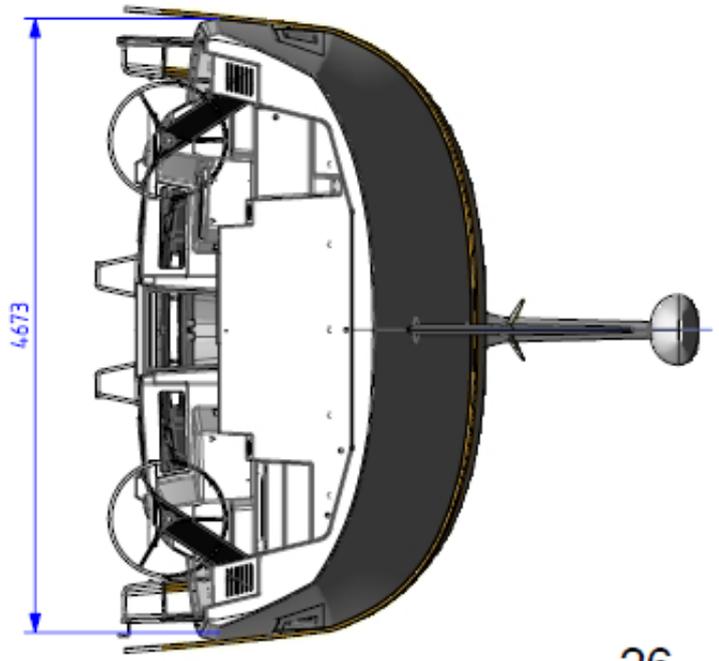
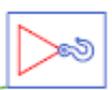
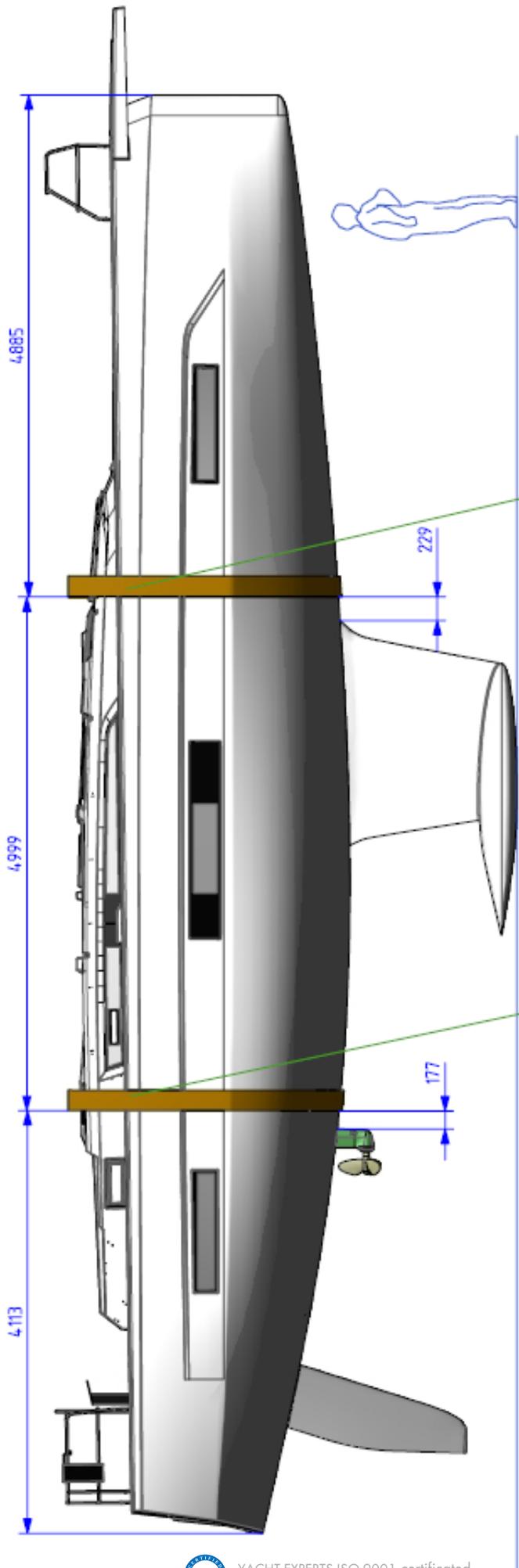
25. Holding Tank Installation Diagram

Ref.	Description
1	Through-Hull Fitting + Valve 3/4"
2	Pump Deck Filler Ø50
3	Through-Hull Fitting + Valve 1"1/2
4	Pipe Ø20
5	Anti-Odour Pipe Ø38
6	Anti-Odour Pipe Ø51
7	Chromed Brass Vent
8	Polyethylene Holding 50 L
9	Polyethylene Holding Tank 35 L*
X	Gooseneck
*	Option



26. Lifting Diagram

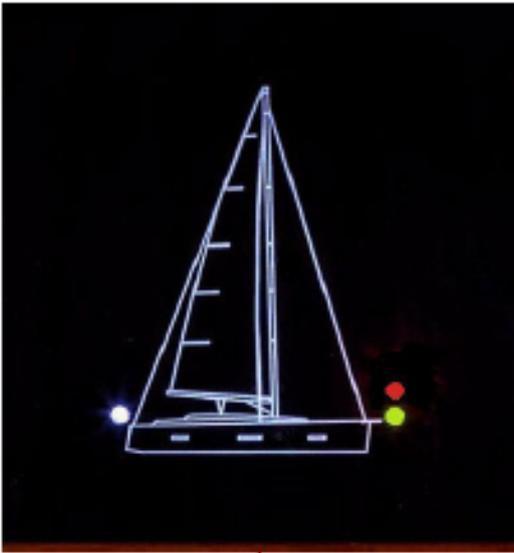
Ref.	Description
	<p>See the triangular red mark under the lowest point of the deck edge</p> <p>Lightship Displacement: (see Chapter II) Beam: 4.74 m Standard Draught: 2.25 m</p>



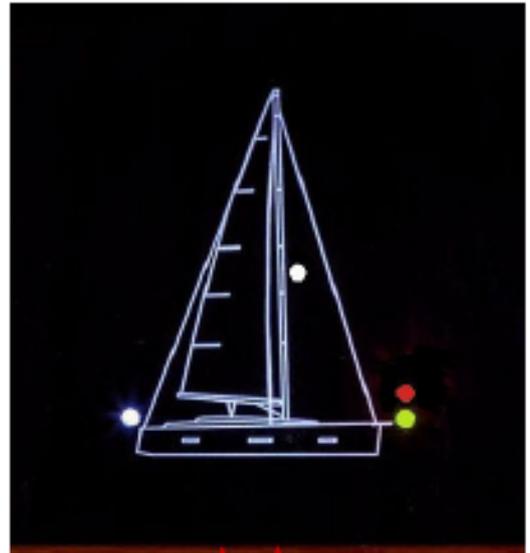
27. Navigation Lights

	Function	Switch
A	Sailing	4
B	Engine Sailing	4 + 6
C	Mooring	5
D	12 V Consumer Unit	
	Fore Lights red / green	Range 2Nm
	Stern Light	Range 2Nm
	Steaming Light	Range 3Nm
	Anchor Light	Range 2Nm

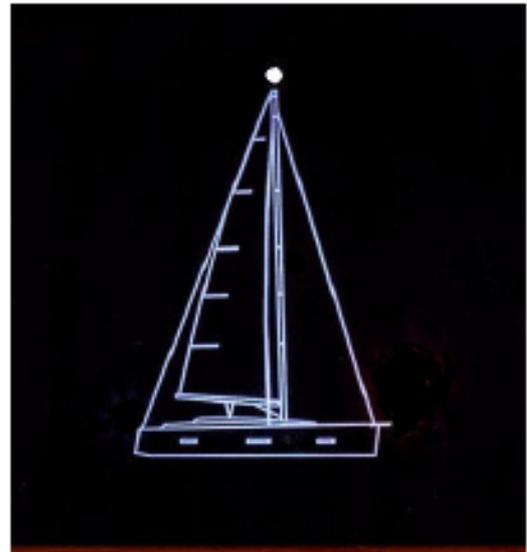
A



B



C



D

4	NAVIGATION LIGHTS FEU DE NAVIGATION
5	MOORING LIGHT FEU DE MOILLAGE
6	STEAMING LIGHT FEU DE HUME

