Riva

Owner's manual

96 ARGO super

This manual has been drafted in compliance with standard UNI EN ISO 10240: 2024.
Any reprinting, either in whole or in part, without prior written approval by **FERRETTI S.p.A.** is strictly prohibited.
This manual has been issued by **FERRETTI S.p.A.**

Riva

A FERRETTIGROUP BRAND

Registered office:
Via Irma Bandiera, 62
47841 Cattolica – Rimini – Italy
Tel. +39.0541.839611
Fax +39.0541.839625

Administrative headquarters:
Via Ansaldo, 7
47100 Forlì – Italy
Tel. +39.0543.474411
Fax +39.0543.782410
www.ferrettigroup.com

www.riva-yachts.com
customer.service@riva-yachts.com

1 - FOREWORD

1.1 GENERAL INFORMATION 2
1.1.1 Introduction to using the manual 2
1.2 MANUAL INTRODUCTION 3
1.2.1 Service request procedure - Warranty 6
1.3 KNOW YOUR RESPONSIBILITY AS OWNER 7
1.4 NOTICES 8
1.4.1 Specific safety warnings 9
1.5 CERTIFICATION, CLASSIFICATION AND IDENTIFICATION 10
1.5.1 Yacht identification specifications 11
1.6 LOAD-CARRYING CAPACITY 12

2 - SAFETY

2.1 SAFETY RULES AND WARNINGS 16
2.1.1 Use-related rules 18
2.1.2 Maintenance rules 22
2.1.3 Fire prevention rules 27
2.1.4 International rules for prevention of collisions at sea (COLREG 1972) 30
2.2 ENVIRONMENT REMARKS 31
2.2.1 Regulations for waste disposal 32
2.3 SAFETY EQUIPMENT 33
2.3.1 Location of safety equipment 34
2.3.2 Layout of fire-fighting equipment 37
2.3.3 Self-inflatable life raft 40
2.3.4 Individual life jacket 42
2.3.5 Life buoy 44
2.3.6 First aid kit 45
2.3.7 Signalling fires 46
2.3.8 Emergency boarding system 47
2.3.9 Portable fire extinguishers 48
2.3.10 EPIRB (optional) 52
2.4 MAN OVERBOARD RECOVERY 52
2.5 HOOKING POINTS AND SIDE RAIL 53
2.6 ESCAPE ROUTES 57
2.6.1 Escape route use 61
2.6.2 Abandonment of the yacht 61
2.7 FORBIDDEN AREAS 62
2.8 FIRE-FIGHTING SYSTEM 65
2.8.1 Fire-fighting system operation 71
2.8.2 Maintenance of the engine room fire-fighting system 72
2.8.3 Restoring the fire-fighting system in the engine room 73
2.9 GARAGE FIRE-FIGHTING SYSTEM 75
2.10 ALARM DEVICES 76
2.10.1 Smoke detection unit 77
2.11 ANTENNAS, NAVIGATION LIGHTS AND DAYLIGHT SIGNALS 81
2.11.1 Antennas 81
2.11.2 Navigation lights 82
2.11.3 Daylight signals 86
2.12 MANDATORY SAFETY EQUIPMENT 88
2.13 LOCATION OF SAFETY PLATES 89
2.14 SCHEDULE 90

3 - DESCRIPTION OF THE YACHT

3.1 MAIN DIMENSIONS AND CHARACTERISTIC DATA 92
3.2 GENERAL LAYOUT AND SECTORS OF THE YACHT 94
3.3 SUN DECK 95
3.4 WHEELHOUSE DECK 97
3.5 MAIN DECK 99
3.5.1 External area 99
3.5.2 Internal area 102
3.5.3 Galley 104
3.6 LOWER DECK 106
3.6.1 Porthole 108
3.7 ENGINE ROOM AND SYSTEM ROOM 109

4 - HELM STATIONS

4.1 YACHT HELM STATION 112
4.1.1 Sun deck helm station (main) 115

4.1.2 Wheelhouse deck helm station ... 117
4.1.3 Stern cockpit manoeuvring station (optional) ... 120
4.2 INSTRUMENTATION ... 121
4.2.1 Synoptic on the helm station ... 121
4.2.2 VHF-DSC Radiotelephone (standard) ... 123
4.2.3 Throttle ... 126
4.2.4 Magnetic compass ... 128
4.2.5 Thrusters control panel ... 129
4.2.6 Multifunction display ... 129
4.2.7 Steering wheel ... 129
4.2.8 Engine control panel ... 129
4.2.9 Steering joystick (optional) ... 130
4.2.10 Back-up control panel ... 132
4.2.11 WATCHIT system (optional) ... 134

5 - WATER SYSTEMS

5.1 FRESH WATER SYSTEM ... 138
5.1.1 Hot and cold fresh water system ... 143
5.1.2 Watermaker (optional) ... 144
5.1.3 Maintenance of fresh water system ... 145
5.2 GREY WATER SYSTEM ... 150
5.3 BLACK WATER SYSTEM ... 155
5.3.1 Operation of the toilet ... 161
5.3.2 Maintenance of black and grey waters draining system ... 162
5.4 SCUPPERS SYSTEM ... 165
5.5 BILGE EXHAUST SYSTEM ... 168
5.5.1 Main bilge exhaust system ... 168
5.5.2 Maintenance on the main bilge exhaust system ... 171
5.5.3 Centralised pump system ... 172
5.6 SEA WATER SYSTEMS ... 173
5.6.1 Maintenance of sea cocks and strainers ... 178

6 - ELECTRIC SYSTEM

6.1 ELECTRIC SYSTEM ... 184
6.1.1 Maintenance of the electric system ... 191
6.2 ELECTRICAL PANEL ... 192
6.3 GROUND PROTECTION ... 216
6.4 BATTERY SET ... 217
6.4.1 Batteries control and maintenance ... 218
6.5 BATTERY BREAKER PANEL ... 220
6.6 BATTERY CHARGER ... 222
6.6.1 Battery charger check and maintenance ... 225
6.7 ELECTRIC POWER SUPPLY FROM SHORE ... 227
6.8 FUSES ... 229
6.9 INVERTER ... 230
6.9.1 Services inverter maintenance ... 231
6.10 GENERATOR ... 232
6.10.1 Power generator control panel ... 235
6.10.2 Generator maintenance ... 236
6.11 SACRIFICIAL ANODES ... 239
6.11.1 Sacrificial anodes maintenance ... 242

7 - PROPULSION SYSTEMS

7.1 MAIN PROPULSION SYSTEM ... 246
7.1.1 Engine control panel ... 249
7.1.2 Start of propulsion engines ... 250
7.1.3 Checks after start of propulsion engines ... 253
7.1.4 Stopping the propulsion engines ... 254
7.1.5 Emergency stop of the propulsion engines ... 255
7.1.6 Propulsion engine maintenance ... 256
7.2 GEAR BOX ... 259
7.2.1 Gearbox maintenance ... 259
7.3 SHAFT LINE ... 261
7.3.1 Propeller shaft and through-hull seal ... 261
7.3.2 Mechanical seal ... 262
7.3.3 Shaft line maintenance ... 264
7.4 PROPELLERS ... 266
7.4.1 Maintenance of the propellers ... 267
7.5 EXHAUST SYSTEM ... 270

7.5.1 Engine exhausts 270
7.5.2 Engine exhausts maintenance and check 273
7.6 FUEL SYSTEM 274
7.6.1 Fuel inlet 278
7.6.2 Fuel quality 279
7.6.3 Fuel system maintenance 280

8 - YACHT STEERING SYSTEMS
8.1 STEERING SYSTEM 288
8.2 INTERCEPTORS SYSTEM 292
8.3 GYROSCOPIC STABILIZERS 295
8.4 STABILIZING FINS SYSTEM AND MANOEUVRING THRUSTERS 297
8.4.1 Stabilizing fins 297
8.4.2 Manoeuvring thrusters 298
8.4.3 Hydraulic system 300

9 - AIR CONDITIONING AND VENTILATION
9.1 AIR CONDITIONING SYSTEM 304
9.1.1 Refrigerating unit control panel 309
9.1.2 Fan-coil control panel 310
9.1.3 Air conditioning system maintenance 311
9.2 VENTILATION SYSTEM 313
9.2.1 Engine room ventilation system 313
9.2.2 Garage ventilation system 317
9.2.3 Indoor ventilation system 320

10 - AUXILIARY EQUIPMENT ON BOARD
10.1 PREPARATION FOR MOORING AND ANCHORING 324
10.1.1 Anchor winch 327
10.1.2 Anchor winch maintenance 331
10.1.3 Warping winches 332
10.1.4 Warping winches maintenance 333
10.2 GANGWAY SYSTEM 334
10.2.1 Gangway system maintenance 337
10.3 SWIM LADDER SYSTEM 339
10.4 GARAGE HATCH AND STERN PLATFORM 342
10.5 WINDSCREEN WIPER SYSTEM 348
10.5.1 Maintenance of the windscreen wiper system 349

11 - INFORMATION FOR USE
11.1 GENERAL INFORMATION 352
11.2 PRECAUTIONS FOR HARSH CLIMATES 353
11.2.1 Cooling system 353
11.2.2 Fuel system 354
11.3 PREPARING FOR NAVIGATION 354
11.3.1 Weather 357
11.4 FIRST PERIOD OF USE 358
11.4.1 Engine drive 359
11.5 REFUELLING 361
11.6 WATER SUPPLY 362
11.7 SHORE CONNECTIONS 363
11.7.1 Water connection 363
11.7.2 Electrical connection 363
11.8 MOORING AND UNMOORING 364
11.8.1 Leaving the mooring 365
11.8.2 Mooring manoeuvre 365
11.8.3 Unattended mooring 366
11.9 OPERATION AND PRECAUTIONS DURING NAVIGATION 367
11.10 NAVIGATION IN SPECIAL CONDITIONS 369
11.10.1 Navigation with bad weather conditions 369
11.10.2 Navigation with only one engine 371
11.10.3 Shallow water navigation 373
11.10.4 Navigation at night 373
11.11 ENGINE EMERGENCY SUCTION FROM THE BILGE 374
11.12 TOWING THE YACHT 378
11.13 HAULAGE AND LAUNCH 380
11.14 YACHT STEERING RULES 383

12 - HULL AND FURNITURE MAINTENANCE

12.1 GENERAL MAINTENANCE OUTLINES 386
12.2 LONG PERIODS OF YACHT INACTIVITY 388
12.3 RE-USE OF THE YACHT AFTER A LONG INACTIVITY 390
12.4 HULL MAINTENANCE 392
12.4.1 Bottom hull 393
12.5 GENERAL MAINTENANCE 394
12.6 MARBLE MAINTENANCE 408
12.7 SPEED MULTISENSOR MAINTENANCE (LOG SENSOR) 410

13 - TROUBLESHOOTING

13.1 GENERAL NOTES 412
13.2 PROPULSION ENGINES 413
13.3 GEAR BOX 418
13.4 GENERATORS 421
13.5 BATTERY CHARGER 423
13.6 INVERTER 424
13.7 USES 425
13.8 FUEL SYSTEM 426
13.9 BLACK OR GREY WATER DRAINING SYSTEM 427
13.10 FRESH WATER SYSTEM 428
13.10.1 Watermaker 429
13.11 BILGE PUMPS 430
13.12 HYDRO-ELECTRIC STEERING SYSTEM 432
13.13 AIR CONDITIONING SYSTEM 435
13.14 GANGWAY 437

FOREWORD

CHAPTER 1

1.1 GENERAL INFORMATION

NAME OF THE YACHT _____ 96 ARGO SUPER
TYPE OF THE YACHT _____ FLY BRIDGE
PROJECT CATEGORY _____ A

CAUTION
Category A: Yacht designed for navigation in Beaufort force winds lower than 10 and related significant wave heights.
These conditions can be found in long crossings, for example inter-ocean or near the coast, exposed to wind and waves for several hundred nautical miles.
Depending on weather conditions, winds can blow up to around 32 m/s.

1.1.1 Introduction to using the manual

Prior to operate the yacht and the equipment on board, read the manual carefully, in order to acquire an adequate familiarity with the systems and their operation, so as to avoid hazard to personnel and risks of costly damages.

A great passion for sea and the prestige of this yacht are elements that encourage constant and regular maintenance to ensure long periods of navigation, a long life span and an ensuing improvement in safety.

The maintenance operations described in the manual are simple, but should be performed by authorised and qualified technical staff only in compliance with national and international regulations.

For specific interventions it is advisable to request the service of specialized technicians or contact our Service Department.

For an easy and quick consulting, the manual is subdivided in the following sections:

FOREWORD
SAFETY
DESCRIPTION OF THE YACHT
HELM STATIONS
WATER SYSTEMS
ELECTRIC SYSTEM
PROPULSION SYSTEMS
YACHT STEERING SYSTEMS
AIR CONDITIONING AND VENTILATION
AUXILIARY EQUIPMENT ON BOARD
INFORMATION FOR USE
HULL AND FURNITURE MAINTENANCE
TROUBLESHOOTING

CAUTION
If the entire manual is printed, please remember to store it carefully in a safe, dry and easily accessible place for an easy consultation.
When you decide to change the yacht, deliver this manual to the new owner in its integrity.

1.2 MANUAL INTRODUCTION

The documentation provided by RIVA to the Owner consists of two types of documents:

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

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

The associated Technical Documentation Collection makes up the set of the Reference Documents that are required to complete the information provided in the Owner's Manual.

Since these documents are independent and aimed at giving information on specific single components, it is necessary to refer to them when indicated by the Main Document.

CAUTION

RIVA recommends carefully reading the whole documentation delivered by the Manufacturers of the various components.
For all problems concerning the use and the maintenance of components you can refer directly to the Service Departments listed in the documents delivered by the Manufacturers.
Anyway, in case of need, some little interventions can be carried out by the staff on board, after consulting the relevant manual.

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

This manual has been drawn up in accordance with Directive 2013/53/EU, the UNI EN ISO 10240: 2024 standard and RINA S.p.A. (REGISTRO ITALIANO NAVALE).

The manual contains detailed explanations on the yacht, the systems and equipment installed and information on the practical use of the yacht and its maintenance.

Read it carefully and familiarize yourself with its content before using the yacht for the first time.

If this is your first yacht or if you are switching to a type of craft that you are unfamiliar with, make sure you have gained enough experience in manoeuvring and operating it before taking command for your safety and to ensure maximum satisfaction.

CAUTION

Make sure that the conditions of wind and sea correspond to the design category of your yacht and that you and your crew are capable of manoeuvring the yacht in such conditions.

Even when your yacht is classified accordingly, the conditions of sea and wind corresponding to design categories A, B and C ranging from storm conditions for category A to the conditions of wind and sea strong for the upper limit of category C, exposed to the dangers of a tidal wave or a wind gust.

These are therefore dangerous conditions, where only a competent crew, coached and trained on well-maintained yacht can operate satisfactorily.

THIS MANUAL MUST BE STORED AND WILL ALWAYS BE ON THIS YACHT AT EVERY TRANSFER OF PROPERTY.
SANCTIONS ARE ENVISAGED IF THE YACHT IS NOT EQUIPPED WITH THE “OWNER’S MANUAL”.

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

CAUTION
RIVA declines all responsibility for any damage to third parties due to discrepancies between the manual and reality.

CAUTION
This manual contains pictures of details not representing completely our yacht or with colours not corresponding to your arrangements. This is mainly due to the fact that it is possible to encounter problems during the realization of details’ photos, like bed covers and sofas, which are defined only shortly before yacht delivery and therefore when the manual itself has already been issued.

CAUTION
There are specific regulations in force in some countries.
This yacht may only be operated by personnel authorised to control and operate in relation to the class of the yacht.

CAUTION
All yachts, regardless of their strength, may undergo serious damage if used improperly. This is not compatible with safe navigation.
Always adjust the speed and course of the yacht under the terms of sea.

CAUTION

If the yacht is equipped with a life raft, carefully read the operating manual.
The yacht should have on board the appropriate safety equipment (life jackets, safety line, etc..) depending on the type of yacht, to the weather conditions, etc.. This equipment is mandatory in some countries.
The crew should be familiar with the use of all safety equipment and emergency manoeuvres (recovery of man at sea, towing, etc.).

CAUTION

All persons should wear a suitable buoyancy aid (life jacket / personal flotation equipment) when they are on the deck.
Note that, in some countries, it is a legal requirement to always wear a buoyancy aid that complies with the applicable regulations.

1.2.1 Service request procedure - Warranty

The extensive RIVA service network is glad to provide you with any information regarding issues not addressed by the manual.
Customers may contact Dealers, Sale Offices, Service Centres or directly:

RIVA AFTER SALES & SERVICE DEPARTMENT
Via Ansaldo 7 - 47100
Forlì - Italy
Tel +39 0543 474445
Fax +39 02 70058589
customer.service@riva-yacht.com

RIVA has carefully selected all main components and accessories installed aboard your yacht, choosing among the most reliable manufacturers who, by offering a wide service network, also guarantee a speedy availability of spare parts.

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

CAUTION
The maintenance operations described in the manual are simple, but should be performed by authorised and qualified technical staff only, according to the standard procedures delivered by the devices Manufacturers and in compliance with national and international regulations.
We suggest contacting the RIVA After Sales & Service Department.

CAUTION
RIVA declines all responsibility for damage due to improper preservation and poor maintenance.

CAUTION
RIVA declines all responsibility for the installation and operation of electric, electronic or mechanical equipment improperly installed by third parties in any unauthorised way by the Shipyard.

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

WARNING
Equipment and devices: engine, winch, extractors and other devices are guaranteed by their manufacturers, who will service them directly through their service points. In case of need, the RIVA After Sales & Service Department will support your requests in order to provide you with a quick service and to guarantee the respect of the applicable rules. Upon yacht purchase, the Owner must send the Warranty Certificates of the relevant Manufacturers, in order to start the warranty period.
RIVA will not be liable for undelivered Warranty Certificates.

1.3 KNOW YOUR RESPONSIBILITY AS OWNER

As owners of a yacht, it is your responsibility to be aware of several laws and rules applicable to navigation, operation and equipment of your yacht.

Personal flotation devices and other safety equipment must be approved by the Coast Guard and / or other organizations dealing with rules relating to safety.

If approved, an adhesive will indicate on equipment itself.

Member States may impose additional requirements.

It is necessary that you know the rules that relate to your areas of action.

It is the responsibility of the owner and / or operator of the yacht to know the rules of navigation and safety and navigational practices.

Take up time to read the Nautical Rules of Navigation (COLREGS) that are found in the publication of the Coast Guard “Navigation Rules - International and Internal”.

Study the techniques of navigation and safety practices to run your yacht and its equipment.

You are the key person in ensuring the safety of your passengers, the crew and the yacht.

Take up time to read the chapter on Safety in this manual for important information regarding the safety procedures.

Each yacht owner or operator must be well informed about the yacht and its systems.

Since you are responsible for the operation of your yacht, we provide you with information about these topics.

For every system on board we have planned a detailed description, including diagrams where appropriate, as well as information about the Maintenance and troubleshooting.

A variety of instruction manuals, courses and videos to help you to improve your knowledge of navigation rules, navigation, operation of the yacht, naval electronics operation, Maintenance, etc..

1.4 NOTICES

To highlight particularly significant sections and/or to indicate some important requirements, some symbols have been defined as follows.

CAUTION

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



WARNING

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



DANGER

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



ENVIRONMENT

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

NOTE

Draws your attention on information and important memos.

MAINTENANCE

This symbol indicates the maintenance schedules on the various on board devices.

1.4.1 Specific safety warnings

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

Fire hazard:
To indicate a specific fire hazard.



DANGER
The cause of fire breaking is described here.

Electric shock hazard:
To indicate a specific electrocution risk.



DANGER
The cause of electrocution is described here.

Burn hazard:
To indicate a specific burn hazard.



DANGER
The cause of burn is described here.

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



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

1.5 CERTIFICATION, CLASSIFICATION AND IDENTIFICATION

RIVA yachts undergo rigid and accurate tests required by the International Authorities in charge, in order to obtain a CLASSIFICATION CERTIFICATE.

The RIVA 96 ARGO SUPER yacht, on which you are about to cruise, has obtained the RINA S.p.A. classification (REGISTRO ITALIANO NAVALE) after supervision of the hull lamination, of the reinforcement structures, of the power system and of the safety equipment on board.

CAUTION

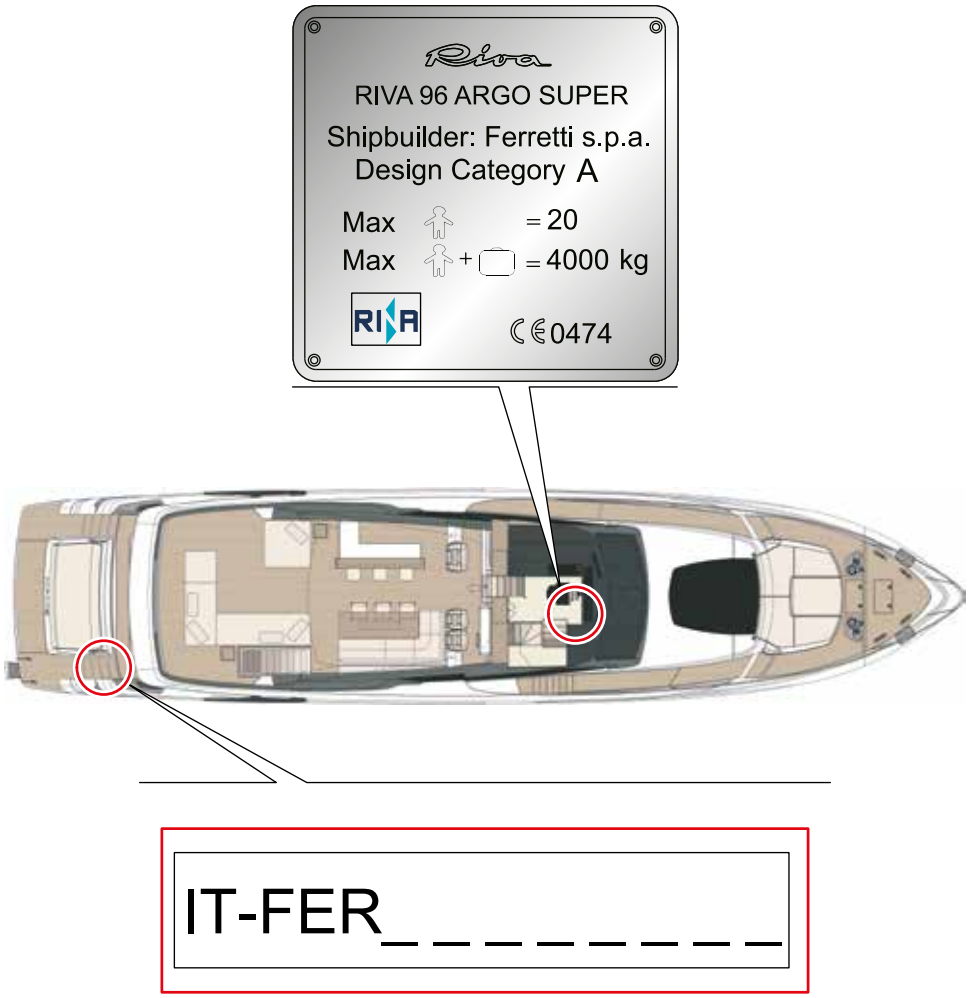
Always keep the plates readable and, if deteriorated or altered, address to RIVA After Sales & Service for replacement.

NOTE

Builder's plate: Part of the information is provided on the manufacturer's plate affixed to the yacht. A full explanation of this information is provided in the relevant sections of this manual.

The significant wave height is the average height of the waves that make up the highest third of the same, which is approximately wave height estimated by an experienced observer. Some waves know no twice this height.

In the figure aside you will find two plates shown in detail: Manufacturer plate and yacht identification code plate (CIN).



1.5.1 Yacht identification specifications

Manufacturer	FERRETTI S.p.A.
Model	96 ARGO SUPER
Type of yacht	FLY BRIDGE
Identification number CIN (Craft Identification Number)	IT-FER_ _ _ _ _ _ _ _ _
Navigation class	A (open sea navigation): the wind force can be higher than 8 and the wave height can exceed 4 metres
Certification forms	B+F+A1 (sound emission)
Classification	“EC” conformity according to the standards stated by the Directive 2013/53/EU

1.6 LOAD-CARRYING CAPACITY

Maximum number of passengers	no. 20
Maximum load-carry-ing capacity	4000 kg
Safety equipment (standard)	no. 20
Berths	STD: no. 12 OPT: no. 14
Located in:	• no. 2 in the owner's cabin at mid-yacht (double bed); • no. 2 in the mid-yacht VIP cabin (double bed - standard); • no. 2 in the starboard VIP cabin (double bed - optional); • no. 2 in the port guest cabin (single beds - optional); • no. 2 in the port guest cabin (double bed); • no. 2 in the starboard guest cabins (double bed); • no. 2 in the starboard crew cabin (single beds); • no. 2 in the port crew cabin (single beds).

WARNING
Do not exceed the maximum recommended number of persons.
Regardless of the number of person on board, the total weight of persons and equipment must never exceed the maximum recommended load.
Always use the seats/seating spaces provided.
Be careful to distribute materials and people on board properly.

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

CAUTION
The maximum load recommended by the manufacturer excludes the mass of the contents of the fixed fuel and water tanks when full.
It must exceed the total load that can be added to the displacement to discharge and dry yacht.

CAUTION
The maximum load carrying-capacity includes the weight of all persons on board, all their luggage and personal effects and any other equipment not included in the unladen displacement.

CAUTION
When loading the yacht, never exceed the maximum transportable load.
Always be careful when you load the yacht and try to distribute loads appropriately to maintain the expected structure.
Avoid placing heavy loads on top.

CAUTION

Changes in the arrangement of the on-board masses, such as the addition of weights at the top, a structure, or the replacement of components with different specifications, can significantly affect the stability, trim, and performance of the yacht.
In such cases, contact the RIVA After Sales & Service.

CAUTION

The safety equipments supplied by the manufacturer are designed for the maximum number of passengers.
Before sailing, check that the number of safety items is always greater than or equal to the number of passengers on board.

SAFETY

CHAPTER 2

2.1 SAFETY RULES AND WARNINGS

Your yacht has been designed paying the utmost attention to all aspects regarding your safety and the safety of your guests. However, all personnel on board must be instructed and aware about some precautions to be adopted at all times.
For this purpose, it is advisable that all people on board carefully read the guidelines contained in this manual, as well as the signs installed on the yacht and, in particular, all safety notices.
The time spent in reading such instructions will prevent unpleasant accidents.
Remember that you are responsible for your safety and the safety of your passengers, and that you may jeopardize the safety of other yachts.
Please make sure you are perfectly aware of the main safety rules:



DANGER

Only the personnel having a regular license or the necessary qualifications can steer this yacht.
Personnel operating the yacht must not be under the influence of alcohol, drugs or narcotics.

- During normal operation or any activities on the yacht, keep passageways and escape routes in proper conditions, in order to avoid hazards to people's safety;
- Always perform regular inspections of hull conditions, power system, safety equipment, and systems on a regular basis;
- Always check the fuel level before cruising and compare the tanks' capacity with the engines' consumption and the length and the expected type of cruise;
- Check the expected weather conditions in your cruising area;
- In any case, always act according to common sense.

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

- Move carefully around the yacht because its stability may be suddenly affected by the sea waves;
- Persons on board must know the location of life jackets and the location of fire extinguishers (see safety equipment) and of the life rafts;
- All passengers must be aware of the risks caused by the fires and the correct way to proceed in the event a fire should occur;
- The engine room must be properly ventilated when the engines are running;
- Everybody on board must be able to release and launch the life buoy and the life rafts at sea;
- Access to the engine room must be allowed only to authorized personnel, aware of possible dangers like:
  - Moving mechanical parts;
  - Hot parts and components;
  - Circuits with pressurized, hot or irritating fluids;
  - Circuits with flammable fluids;
  - High noise when engines are running;
  - Possibility of inadvertently manoeuvring valves that are important for safe navigation.

Do not tamper with, disconnect, eliminate or by-pass the safety devices installed on your yacht. Periodically check their real efficiency in time to ensure that they can be used in case of need. Failure to meet such requirements may lead to serious risks to the health and safety of passengers.

WARNING

Personnel performing any type of operation during the entire lifetime of the yacht must be technically qualified and have proven abilities and experience acquired and recognised in the specific field. The lack of such skills can endanger your safety as well as the safety of people on board and the integrity of the yacht.

Make sure any parts not stored or not secured correctly, cannot move during navigation, hinder the passage, prevent the opening of inner hatches, fall against the people on board, damage or hinder the quick finding of necessary pieces.

DANGER

Carbon monoxide poisoning

Adequate ventilation of the yacht is required when the engines are running when navigating at low speeds or in conditions where fumes may re-enter the hull.

DANGER

The personnel in charge of the yacht must not be under the influence of alcohol, drugs or narcotics.

DANGER

It is absolutely forbidden to remain on the external decks outside protected areas during navigation.

CAUTION

Always pay the utmost attention during navigation, especially in adverse weather conditions or with crashing waves.

DANGER

When the yacht is being loaded, never exceed the maximum load carrying capacity. Always load the yacht carefully and distribute the loads appropriately to maintain the design trim (approximately horizontal).
Avoid placing heavy loads high up.

2.1.1 Use-related rules

The Captain should always meet the requirements and have the specific qualification to steer this yacht as requested by the laws in force in the country of use.

WARNING
The Captain is the sole responsible for driving the yacht.
Prior to departure, the Captain must ensure that the safety equipment required by law is present on board and perfectly working.

After becoming duly informed as to the operation and controls of the yacht, at first use the Captain should simulate some test manoeuvres, to locate the controls and to be aware of the common reactions of this yacht.

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

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

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

All refuelling phases have to be carried out with the necessary precautions to avoid even the smallest spillage of products which could pollute the environment.

When navigating near harbours, beaches and shores, observe the directives issued by local port authorities, particularly as to the speed; high speed can originate wake waves which can jeopardize the safety of the environment and of people.

Before lowering the anchor in free waters, be aware of the kind of sea bottom underneath and near your yacht, to avoid damaging it.

Arrange the load evenly so as to keep the correct trim.

Do not overload the yacht especially at bow and aft.

Observe the rules to prevent a sea collision and the speed limits, moreover pay always the highest attention during navigation.

WARNING

This yacht has been designed and built in accordance with Classification Society rules and is in all respects seaworthy and capable of navigation without limitation. However, the manufacturer draws attention to the dangers and navigation challenges in adverse sea and weather conditions.
Such navigation must be undertaken with caution on the part of the yacht captain, who shall be solely and exclusively responsible for departure from any port or shelter notwithstanding forecasts of adverse sea and weather conditions, or ongoing adverse sea and weather conditions and shall adopt the appropriate speed, engine revolutions and course. The manufacturer declines any responsibility for improper use and navigation of the yacht in adverse sea and weather conditions.

DANGER

CARBON MONOXIDE POISONING

The combustion of fossil fuels produces a large quantity of carbon monoxide.
This is a colourless, odourless and highly toxic gas. Adequate ventilation of the yacht is therefore necessary when the engines or generators are switched on, especially when cruising at low speed or in conditions where fumes can re-enter the hull (such as when moored on the dock, anchored or lying at anchor).

CAUTION

Always pay the utmost attention during navigation, especially in adverse weather conditions or with crashing waves.

CAUTION

The garage hatch, the stern lift, swim ladder and gangway must always remain closed during navigation.

DANGER

It is forbidden to stand or sit on the bow dinette during high-speed navigation.

CAUTION

When using a jet-ski, each passenger must wear a lifejacket; the driver must also have a valid licence and comply with the rules of the country in which he/she is located.

CAUTION

Close the portlights, portholes and skylights during navigation, especially in adverse weather conditions.
Also ensure that doors are closed or locked to avoid impact with people or things.

DANGER

It is forbidden to carry out sudden manoeuvres at high speed.
This can cause accidents for the people on board.

WARNING

For comfort and safety, reduce speed in the presence of waves.

WARNING

Control and verification of compliance with safety requirements is a yacht's captain responsibility.

CAUTION

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

DANGER

On board the yacht, some areas are "dangerous", and need plenty of care, and possibly require wearing protective equipment, in order to safeguard the integrity of people on board.
During navigation, the risks relating to any hazardous area increase significantly; we recommend, therefore, to observe scrupulously the safety rules indicated in this manual.

DANGER

Unidentified external areas of the yacht: access to these areas is FORBIDDEN.
Only professional personnel, on their own responsibility, can gain access to them when the yacht is moored in a safe harbour or in a lay-up shipyard if they are wearing shoes with anti-slipping sole and belt/safety equipment tied to a safe point of the yacht to prevent falling.

The areas are following:

- **Engine room**: area with a high level of noise, presence of moving components, hazard of burns, hazard of stumbling and falling. The access to the engine room is exclusively allowed to trained and expert crew, prepared for the risks and equipped with proper safety devices.

- **Sun deck**: outer area with protections against falls with reduced height and extension. Therefore be extremely careful when leaning out during the manoeuvres of the yacht and during navigation, especially with rough sea.

- **Stern platform**: outer area not protected by rails against the fall at sea. During navigation the access to this area is forbidden. Accessing and staying in this area is allowed only when the yacht is idle and with the engines shut OFF.

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

- Life buoy;
- Individual life jackets;
- Pilot ladder.

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

CAUTION

The Captain is responsible for ensuring boarding with the swim ladder extracted every time the yacht is NOT IN OPERATION (meaning not navigating) ALTHOUGH ATTENDED.

2.1.2 Maintenance rules

Keep your yacht in conditions of the highest efficiency,, carrying out all scheduled maintenance of the devices on board.
A good maintenance will provide the best performance, a longer useful life and a constant respect of the safety requirements.
For the general cleaning of your yacht, only use bio-degradable or environmentally friendly products.

ENVIRONMENT
During navigation, do not dispose any on-board waste at sea, but keep it and dump it on waste containers ashore.
Remember that it is forbidden to dump oils and fuels into the sea; therefore, it is recommended to clean the engines' bilges by using absorbent materials to be disposed of later on into dedicated containers.

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

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

All maintenance operations requiring a precise technical knowledge or particular skills must be carried out exclusively by qualified personnel with a recognised experience, acquired in the specific field of intervention.

To carry out maintenance in an area that is not easily accessible, or dangerous, take all of the necessary safety measures, according to rules and standards applicable to safety at work.

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

Access to the engine room during navigation must be limited only to authorized personnel.

Inspect the sea water system inlets and outlets as well as the bilge systems. These checks are vital to ensure yacht buoyancy.

Do not perform any maintenance operations or adjustments other than those indicated and/or suggested by the Manufacturer. If necessary, contact the RIVA After Sales & Service for more precise instructions.

Keep all yacht's components clean by following the procedures and using the specific products suggested by the Manufacturer.

Only replace worn parts using original spares.

Use oils and greases recommended by Manufacturer. This will ensure yacht functionality and the expected safety level.

Do not start any work before ensuring that people on board are not in danger.

If something about the work to be carried out is doubtful, ask someone with knowledge. Do not draw any conclusion.

Always operate with caution, care and under safety conditions.

Apart from the norms herewith indicated, specific warnings are given in the whole manual.

This section is meant to give a safety code for the operation and maintenance procedures.

CAUTION

This section includes a certain number of information to maintain the components without dangers. Remember that each time you activate the controls you are in fact the captain.
You must therefore read and understand the information given before activating the controls.

CAUTION

The use of faulty lifting attachments can be the cause of accidents; check therefore their efficiency. Ensure the compliance of hoisting gears with local norms and their suitability for the job they have to carry out. Check besides their soundness according to the work to be carried out.
You must therefore read and understand the information given before activating the controls.

CAUTION

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

CAUTION

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

CAUTION

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

CAUTION

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



DANGER

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

CAUTION

Yacht entrance. Always turn to the yacht to enter or leave it and use the handles and the steps. Make sure that steps, handles and rubber soled shoes are clean and dry. It is advised to remove the shoes.
Do not jump down from the yacht, do not use the yacht controls as handholds; use the handles.

CAUTION

Activating the **throttles** from outside the helm station can cause serious accidents even fatal ones: controls must only be operated from the correct position in the helm station.

CAUTION

Metallic chips from working with metallic parts can cause injury: always wear safety goggles and use a soft mallet or punch.

CAUTION

Insufficient **information** may cause accidents. If two or more people are working simultaneously in the same area, make sure that each one of them is aware of the operation carried out by the others. Before starting the engine, move the other persons from the risky areas (rotary blades and engine belt, tools and movements, engine inner and rear parts).
Failure to comply with these precautions may cause serious injury, and even death.



DANGER

Do not approach unprotected flames to the yacht. Do not smoke during refuelling or while working on the engine. Carry out refuelling with the engine shut OFF. Failure to comply with these precautions can cause accidents and injuries.

CAUTION

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

DANGER

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

CAUTION

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

CAUTION

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

CAUTION

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

- Damaged fittings;
- Wear of outer coatings as consequence of rubbing;
- Swelling of outer coatings;
- Bent or squashed hoses;
- Fittings not properly located.

CAUTION

Oil is poisonous: do not swallow. The engine oil contains dangerous polluting agents which can generate skin tumours. Handle oil as little as possible and, protect your skin with creams and gloves.
Any skin that comes into contact with oil must be washed carefully with warm water and soap: do not use petrol, fuel or oil.

CAUTION

Hydraulic oil spraying at high pressure penetrates the skin: do not check for oil leaks with your fingers or allow your face to become too close to them. Use a cardboard strip to verify the possible presence of hydraulic oil. If oil penetrates the skin, ask immediately for a doctor for the relevant treatment.

CAUTION

Clean the **interceptors** periodically to remove possible dirt build up, which can jeopardize their efficiency.
To reduce the risk of corrosion, pull back the rods each time you leave or you harbour the yacht.

CAUTION

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

CAUTION

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



DANGER

Hot coolant. When the engine temperature is high, the cooling system is under pressure and the hot fluid can spill over when you remove the radiator plug.
Therefore, before removing it, wait until the system has cooled down, then turn the plug up to the first notch and release the system's pressure.

CAUTION

During the restoring operations of metallic or non metallic components, wear **safety glasses**.
Move away from the area or protect possible flammable materials, which could catch fire from spark.

2.1.3 Fire prevention rules

DANGER

On all yachts, fire is a major danger.
All fire prevention measures must be followed scrupulously.

Before steering a yacht, the Captain must be perfectly aware of the following fire prevention measures.

At all times the yacht must be equipped with portable extinguishers, located as shown on chapter “Layout of fire-fighting equipment”.

The yacht’s Owner and the Captain are directly responsible for:

- Having the fire extinguishers and fire-fighting equipment overhauled as scheduled on their label, and having them replaced, as required by the rules in force; with similar or equivalent or higher capacity ones;
- Informing the crew about the location and use of fire extinguishers and fire-fighting systems and escape routes;
- Ensuring that fire extinguishers are available also in the passengers’ cabins.

WARNING
EXPLOSION HAZARD

Any lithium battery powered device on board must be recharged only in open air areas, connected to a suitable charging system.
Also please refer to the device dedicated Use and Maintenance Manual.

WARNING

NEVER:

- Obstruct passageways and the escape routes;
- Hinder access to safety devices, such as fuel valves, electrical switches, etc..;
- Obstruct access to fire extinguishers stowed inside the lockers;
- Leave the yacht unattended, when heat generating equipment are ON;
- Use naked flames;
- Modify electric or fuel supply systems, without consulting RIVA beforehand;
- Smoke near or when handling flammable materials;
- Stow highly flammable materials (such as fuel, thinners, etc..) in proximity to heat sources, such as engines, galley, etc..;
- Stow flammable material in the engine room. Non-flammable materials may be stowed only if properly rigged, so they do not accidentally come into contact with rotating engine parts, or obstruct access to the engine room.

Keep the bilge clean and check it frequently for any oil or fuel leaks.

CAUTION

In case fire breaks out in proximity to electrical equipment, do not use water, but use the manual dry-powder fire extinguishers only. After using the extinguishers, leave and ventilate the area immediately before re-approaching it, in order to prevent asphyxia and physical harm.
Clean out any fire extinguishing powder out very carefully.

In addition to these requirements, RIVA recommends the following:

- Avoid smoking in the lower deck, especially in the engine room.
- Avoid dropping liquids in the bilge and keep it clean, especially the engine room. In case of fuel leaks from the engines or from the generator, operate as follows:
  - Stop all engines immediately;
  - Locate the leak cause and, if possible, repair it after closure of supply valves;
  - Dry and clean the bilge before restarting the engines, without draining at sea or in the harbour;
  - Do not stow flammable items in proximity to heat sources, like engines, burners, halogen light, etc..;
  - In case of yacht leak, try to remedy with plugs and/or rags, if possible, from outside;
  - In case a system of the yacht breaks, close all hull valves, locate and repair the leak if possible. Remember to reopen all hull valves not involved.

CAUTION

The Captain of a leisure yacht must be perfectly aware of the basic fire-fighting techniques and how to use the extinguishers.

In case of fire, follow the procedures described hereunder:

- Keep calm and do not spread panic among the passengers;
- Stop the yacht, close the sea cocks and the drains;
- Set the battery breaker to “OFF”;
- Close the air intakes in the engine room;
- Locate the fire and its origin;
- Avoid breathing smoke;
- Extinguish the fire, following standard fire-fighting techniques.



DANGER

In case of the of the yacht sinking risk, close the fuel and black waters valves.



DANGER

In the event of on-board fire, attempt to electrically isolate the affected area by disconnecting all the AC and DC input magneto-thermal breakers to prevent the spread of fire and short circuits.

To eliminate any residual possibility of directly or indirectly causing fire, the regular maintenance of the systems and the prudent and appropriate behaviour of those on board is of vital importance.
More than 90% of the probability of successfully fighting a fire depends on the ability to prevent and avoid the conditions that facilitate its spread.
The small percentage remaining depends on the reaction capacity of the crew and, above all, on speed of action.
Almost all fires are easily contained if detected early.
It is therefore necessary to adopt behaviours that preventively identify the latent causes of fire, namely:

- Check the functionality of the yacht’s primary equipment/systems;
- Monitor the on-board spaces, in particular the engine room;
- In case of anomalous system behaviour, identify the anomaly and take steps to remedy it effectively;
- Use on-board systems and equipment appropriately.

If fire is detected on board, remove the causes if possible (e.g. for short circuit, disconnect the electrical system), and intervene promptly to douse the fire, then monitor closely (for an extended period if necessary) to prevent reignition.

WARNING

Never use a water jet to extinguish fires involving electrical or electronic equipment.

CAUTION

The ability to operate the fire extinguishers properly can ensure the success of the operation.
It is vital that the fire fighting operations are performed by people competent in this type of emergencies. It is in any case necessary to be aware of the minimum fire-prevention and fire-fighting rules; the first defence is to prevent fires before they start spreading.

CAUTION

The engine room of this yacht is equipped with a dedicated fire-fighting system.

The following table contains the classification of the fire types:

Comparison between fire classes

American	Europe/Australia/Asia	Fuel/Heat source
Class A	Class A	Ordinary fuels
Class B	Class B	Flammable liquids
	Class C	Flammable gases
Class C	Class E	Electric appliances
Class D	Class D	Combustible metals
Class K	Class F	Cooking oil or grease

It is very important to use the correct extinguishing agent according to each fire class; normally, water can be used only for class A fires, together with chemical extinguishing agents (portable or fixed devices).

Each yacht owner/operator/master must be well informed and proficient regarding the measures to be adopted in the event of a fire and the applicable fire-extinguishing methods.

2.1.4 International rules for prevention of collisions at sea (COLREG 1972)

The pneumatic hoot (horn) installed on board of the yacht, satisfies adequately the requirements prescribed by the regulation against collisions at sea (Colreg 1972). Hereunder please find an off-print of the “International rules for prevention of collisions at sea”.

- **Application** (Rule no.1): the current Norms are applicable to all yachts at high sea and to all waters communicating with it, accessible for sea navigation.

- **Responsibility** (Rule no.2): none of the current rules can exempt a yacht, its Owner or the crew from the consequences of any negligence of application of the said rules.

- **Definitions** (Rule no.32):
  – “one short sound”, of the duration of approximately a second;
  — “prolonged sound”, of the duration of four to six seconds.

- **Signals of manoeuvre and warning** (Rule no.34):
  – one short sound “I am going starboard”;
  – – two short sounds “I am going to port”;
  – – – three short sounds “I am going backward”;
  — — – two prolonged sounds and a short one “I am going to overtake you starboard”;
  — — – – two prolonged sounds and two short ones “I am going to overtake you port”;
  — – — – one prolonged sound, a short one, a prolonged one and a short one “OK for the overtaking”;
  – – – – – five short sounds “I have doubts about this manoeuvre”;
  — a prolonged sound “yacht approaching a channel elbow”;
  — a prolonged sound “yacht answering to previous signal”.

- **Signals with poor visibility** (Rules no.35 and no.37):
  — a prolonged sound at two minutes interval “yacht at mechanical thrust in fresh way”;
  — — two prolonged sounds with an interval of two seconds and repeated every two minutes “yacht with mechanical thrust in navigation, with engines shut-OFF and without fresh way”;
  — – – a prolonged sound and two short ones at intervals of two minutes “yacht out of control or with manoeuvre troubles or towing”;
  — – – – a prolonged sound and three short ones at intervals of two minutes “last yacht towed answering to yacht towing”;
  – — – a short sound, a prolonged one and a short one “yacht riding the anchor giving its position to a yacht approaching with hazard of collision”;
  – – – – – five seconds of continuous sound at intervals of one minute “yacht riding the anchor giving its position”;
  – – – three short sounds one after the other “yacht stranded”;
  – – – – four short sounds “captain yacht in service”;
  ———— a continuous sound “danger and rescue need”.

2.2 ENVIRONMENT REMARKS

Environmental pollution is determined by three kinds of polluting agents:
- Water polluters;
- Air polluters;
- Soil polluters.

Non oily and black waters (containing only human organic waste) can be discharged into the open sea. In harbour areas they should be collected into suitable containers and afterwards discharged either during navigation into open sea or by means of special drainage systems fastened to the shore or wheel-conveyed (connection supplied with a black water tank).

Soil pollution is caused by discharging waste at shore.

International rules for pleasure yachts essentially prescribe the following:

- During navigation it is forbidden to discharge any non biodegradable product, either of food or commercial origin, into the open sea.

- In the harbour, normal waste is considered urban waste that must be hermetically sealed in plastic bags and thrown into waste containers.

- Special waste must be disposed of into suitable containers or, if these are not available, it must be delivered to local waste disposing areas, in compliance with the rules in force, issued by the local Port Authority.

- The following waste is considered special waste:
  - Water and oily mixtures (e.g. Bilge water);
  - Oils (fuel, additives and lubricants);
  - Poisonous chemical substances (like battery acids, paints, thinners and the relevant containers);
  - Spray cans containing C.F.C. gas;
  - Batteries;
  - Spent flares;
  - Expired pharmaceutical products;
  - Products containing lead or asbestos;
  - Etc..

- Fuel and oil leaks.

- Waste discharge and disposal.

- Excessive noise.

- Wake / wake from board.

- Exhaust fumes.

- Paints, detergents and other agents.

Please remember that, according to legislation, until such waste is delivered to suitable disposal areas, you will be considered as possessors and therefore indictable in case of unlawful discharge. Should specific cases be missing in the harbour area, the Authority in charge for the disposal is the Port Authority section “Waste Disposal”.

2.2.1 Regulations for waste disposal

MARPOL 73/78 is the international convention governing the prevention of pollutionfrom all yachts.
Those standards apply to all yachts with no limits on tonnage and service, therefore including all pleasure yachts.
The rules cover the entire Mediterranean.

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

WARNING
When cruising, it is always necessary to behave suitably and to respect the safety and the comfort of your guests and of persons on nearby yachts. Therefore:
- Avoid excessive noise;
- Do not leave the engines running for long periods without moving off;
- Do not cruise at high speed or beyond the permitted limits when leaving or entering harbours, marinas, etc.., To prevent causing excessive wash or wave motion.

CAUTION
It is absolutely prohibited to throw into the sea: plastic materials, synthetic cables, fishing nets, waste bags, floating packaging materials, cordage, paper, rags, glass, metals, bottles, galley utensils and similar.
Unshredded or unground and ground or shredded food waste are permitted exclusively beyond 12 miles.

CAUTION
It is forbidden to discharge the waste water tank into the sea within 12 nautical miles of the coast: the discharge pump must be kept deactivated. Block the automatic activation system, if present.

CAUTION
It is forbidden to use toilets or holding tanks near the shore or in any prohibited area. Use the facilities of the suction port or marina to empty the holding tank before leaving port.

ENVIRONMENT
Always consider and comply with local environmental laws and international marine pollution (MARPOL).
Also, you must always respect the rules of good conduct yacht.

Although discharge at sea, except in special areas, of a wide range of yacht-generated garbage is permitted at specified distances from the nearest land, preference should be given to disposal at shore reception facilities.

2.3 SAFETY EQUIPMENT

Everybody on board must know the location and the use of safety equipment.

These equipment must remain in their original position so that they are easily available in case of an emergency.

CAUTION

The diagram shows the position indicated by the manufacturer for safety equipment; therefore represents a useful guide the placement and number.
It is the owner's responsibility to adapt and place the safety equipment in accordance with local, national, and international laws.

CAUTION

The safety systems must comply with existing local and international navigation regulations, and which must be periodically inspected and maintained by qualified technical personnel, prior to the expiry date indicated on the systems.

CAUTION

The Captain is required to inform the crew on the yacht about the safety equipment, whether in case of fire or in case of sinking and listing.

CAUTION

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

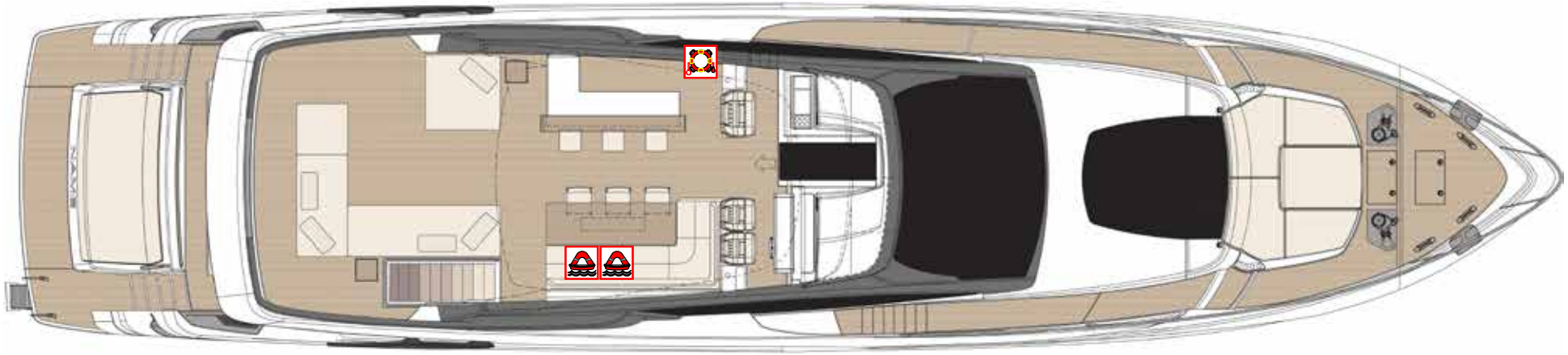
CAUTION

To cruise at a distance of over six miles from the coast, pleasure yachts both with and without EC mark must have a deviation chart officially authorized by Maritime Authorities. To this purpose, the compass installed on board must be compensated by personnel authorized by the Harbour Master who, after completing the operation (compass turns), will issue the chart with residual deviations. These charts do not have an expiry date, and are therefore not renewed when periodic inspections are made for the renewal of the Safety Certificate. It is one of the responsibilities of the captain of the yacht to verify correct compass operation and to update deviation values.

DANGER

Periodically inspect the wear conditions of safety equipment and check servicing or replacement dates, so that the equipment is always in perfect working order.

2.3.1 Location of safety equipment





Versione standard
Standard version

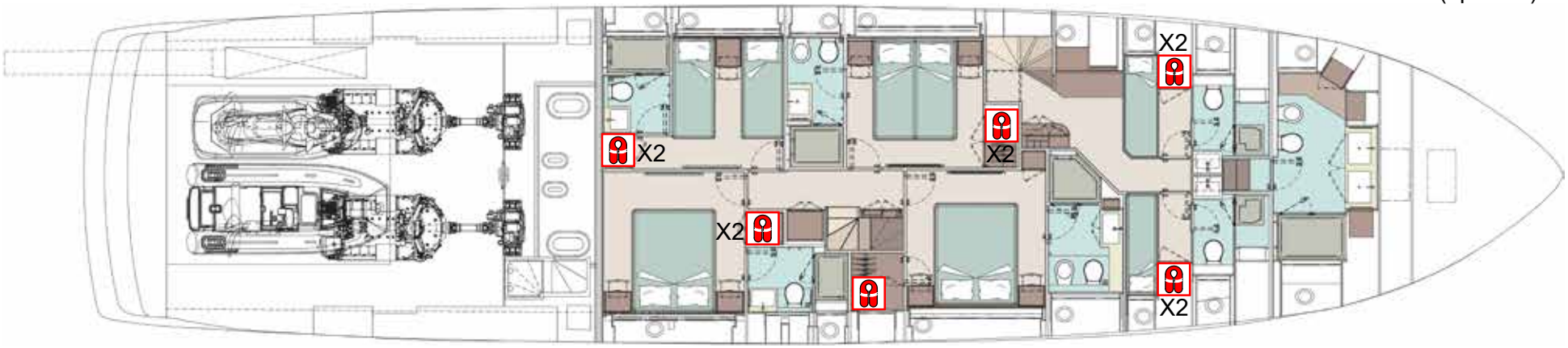
Versione optional
Optional version



Versione 4 cabine (standard)
4 Cabins version (standard)



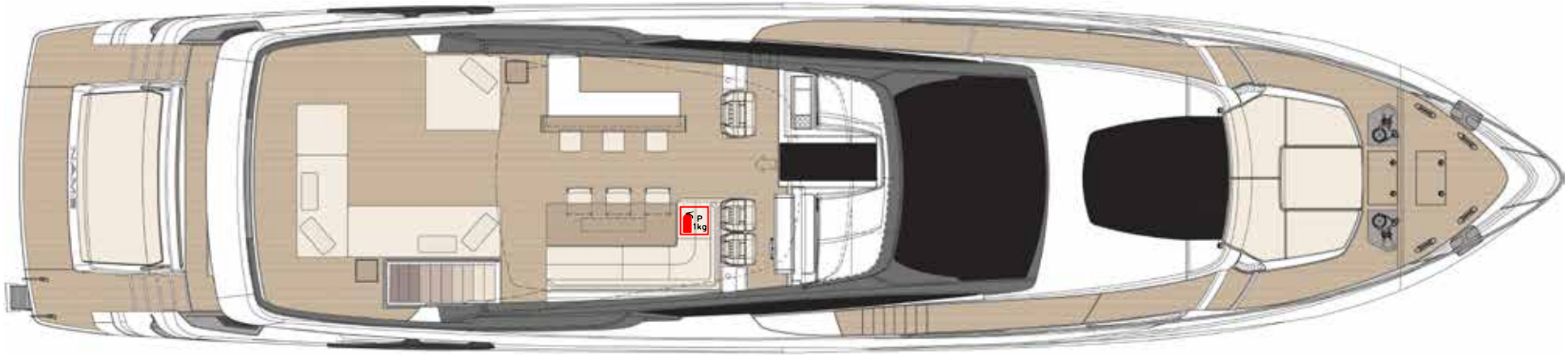
Versione 5 cabine (optional)
5 cabins version (optional)



SYMB.	DESCRIPTION
	Life Rafts: 1. STD: 2 x 10 p.
	Life jackets light and whistle for adult 1. STD: 20 p.
	Lifebuoys with lifeline and light pz. 1

2.3.2 Layout of fire-fighting equipment

Refer to chapter 2.3.9 for more information on the use of portable fire extinguishers.



Versione standard
Standard version



Versione optional
Optional version



Versione 4 cabine (standard)
4 cabins version (standard)



Versione 5 cabine (optional)
5 cabins version (optional)



OPT version	
11 x	Portable powder fire exstinguisher 1Kg A-B-C COD 82624
2 x	Portable CO2 fire exstinguisher 2Kg A-B-C COD 398835
1 x	Partable powder fire exstinguisher 6Kg A-B-C COD.50927
	FIRE PORT COD. 274264 Ø45mm

STD version	
10 x	Portable powder fire exstinguisher 1Kg A-B-C COD 82624
2 x	Portable CO2 fire exstinguisher 2Kg A-B-C COD 398835
1 x	Partable powder fire exstinguisher 6Kg A-B-C COD.50927
	FIRE PORT COD. 274264 Ø45mm

TARGHETTA DA INSERIRE IN
PROSSIMITA' DI ESTINTORI IN CO2.

WARNING

THIS EXTINGUISHER USES CO_2

AS AN EXTINGUISHING MEDIUM
IT SHALL BE USED ONLY TO FIGHT
ELECTRIC OR GALLEY FIRE

TO AVOID ASPHYXIATION
AFTER DISCHARGE
LEAVE THE AREA IMMEDIATELY AND
VENTILATE BEFORE ENTERING

P/N: 471272

2.3.3 Self-inflatable life raft

WARNING
Before any trip, check that there are no impediments to its immediate use.

In case the use of self-inflatable life rafts becomes necessary, perform the following operations:

- Shut the engines down and wear the life jackets;
- Perform the distress call using the VHF device;
- Uncoil the life line of each raft by 3 to 4 m; secure it tightly to a fixed point of the yacht and launch the self-inflatable life raft into the sea on the lee side;

WARNING
Check that the anchoring line is always well fastened to the yacht.

- Unwind the lifeline completely, then give a strong and decisive pull; the raft will open in a couple of minutes;
- Board by jumping directly from the yacht into the life raft;
- If the distress call has already been made and you have received an answer, prepare for a relatively short wait; then evaluate whether to cut or not the line. If you did not have the time to make the distress call or you did not receive an answer, prepare for a long wait; in this case, plan for survival, taking the following items, as well as the equipment included in the kit: floating smoke signals and rockets, a knife, drinking water and energy foods that do not cause thirst. Before boarding the life raft wear all possible clothing, except for shoes that could injure other shipwrecked persons or damage the life raft;
- Embark possible clothes and supplies;
- If somebody falls overboard, help him/her up into the life raft; throw the life buoy with line, if necessary;
- Make sure that everybody is on board, take the knife out of its sheath, and cut the line that ties the life raft to the yacht;
- Move quickly away from the sinking yacht, using the oars;
- When the overpressure valves have stopped hissing, close them by tightening the safety plugs.

CAUTION
The validity of the self-inflatable life raft is limited; check its expiry on the certificate.
The raft can be overhauled by a reliable entity extending its validity.
Penalties are provided for non-compliance with this rule.

DANGER
If the life raft opens upside down, jump into the water and roll it over, by pulling the special rope.
If the life raft does not open after the first pull, repeat the operation two or three times.
If the life raft still does not open, jump into the water and, keeping a hand on the container, pull the emergency line strongly.
If the life raft still does not open, cut the container open with a knife and operate the opening device directly (by pulling the life line).

Differently from a life yacht, the life raft cannot self-propel to the shore, unless blown there by favourable winds.

Oars are only useful for small manoeuvres.

- The life raft is fitted with stabilisers and a floating anchor, for improving its stability and drift. The stabilisers give stability to the raft. Keep the floating anchor into the water. The anchor prevents excessively rapid drifts.
- When the life raft is towed, weigh the floating anchor on board.
- With very high waves and strong wind there is the risk that the raft may overturn: shift the weight of persons on board towards the side tending to lift.
- If the life raft does capsize, roll it over and return on board. If the sea is rough, it is advisable to wear the life jackets all the time. If the raft deflates, inflate it again from time to time using the relevant inflating device provided with the raft.
- If air blows out of a hole, use one of the plugs stowed inside the repair kit.
- You can perform minor repairs, by using the glue provided with the kit. Clean the torn area and the repair pad, spread both with the glue. Hold the pad for thirty seconds, pressing from the centre outwards, in order to eliminate any air bubbles.
- Hold down for a little time and inflate again, after one hour.



DANGER

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



DANGER

With very high waves and strong wind there is the risk that the raft may overturn: shift the weight of persons on board towards the side tending to lift.
If the life raft in spite of all does capsize, roll it over and return on board.

2.3.4 Individual life jacket

This kind of life jacket assures, by means of a suitable distribution of the floating material, the support of a body with the face out of water, apart from the position taken by the body when diving in the water. These life jackets must be worn correctly and be firmly tied by means of strong laces.
It is important to learn, particularly for children, how to float in water with the life jacket.

To avoid energy waste it is necessary to float by keeping legs and arms folded as far as possible and tight to the body to maintain the heat. The individual life jacket is equipped with an orange whistle, fastened to the jacket by means of a safety cord.
The whistle is particularly useful to indicate the wearer's position when the weather conditions do not allow sufficient visibility (bad weather, fog, etc..).

The individual life jacket has to be worn under following circumstances:
- When you navigate through sandbanks or tide reefs;
- At first sign of bad weather;
- When visibility is limited;
- When you navigate with rough sea;
- When you navigate alone;
- At any time with children below 10 years of age.

CAUTION
The yacht must be equipped with a number of individual life jackets equal to the number of persons present on board. All persons boarded must know the location of the life jackets, how to wear them, how to tie them properly to the body, and where the whistle is located.



DANGER

If you are to choose a life jacket for a child, take care about for the correct size and that smaller children do not slip out of them once in water.
We recommend that all children wear an individual life jacket when they move on the yacht.

CAUTION

CARING FOR AND INSPECTING THE LIFE JACKETS

The life jackets must be handled with care so that they are able to save your lives whenever necessary.
Check that all the belts, braces and buckles are in good condition and firmly secured on a regular basis.
Make sure that all the seams are steadfast and that any welded or glued part adheres perfectly.
Check that the reflecting strip, whistle and light are firmly secured and that the light battery has not yet expired.

MAINTENANCE

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

CAUTION

Do not use the life jackets as pillows.
Practice of their use before you start navigating.
For people with problems may not be suitable.
With waterproof clothing or similar you can not reach the optimal use.
The use of lifejackets does not guarantee total safety and the final rescue of the wearer, but it does support in water for a long period.

2.3.5 Life buoy

The life buoy is equipped with a lifeline of 30 m and with an automatic light buoy.

The life line is not twistable and it is orange in order to be easily seen in water.

CAUTION
All passengers must know the stowing place of life buoy.

CAUTION
The Captain must make sure that all passengers know how to use the life buoy:
- How and where to throw it;
- How to behave in case of “man overboard”.

2.3.6 First aid kit

The first aid box must be kept on board of class A yachts qualified for navigation “with no limits from the coast”.
The container must be rigid, floating and with watertight closure.



ENVIRONMENT

It is forbidden to discard medicines at sea, even if expired. Treat medicines as special waste and therefore in accordance with the disposal procedures envisaged by the Country in which you are staying/ transiting.

A standard kit is generally divided into four main categories:

- Dressings: Plasters in various sizes, sterile bandages, gauze, medical adhesive tape.
- Disinfectants: Disinfectant wipes, hydrogen peroxide, saline solution.
- Equipment: Round-tipped scissors, tweezers, latex (or nitrile) gloves, thermometer.
- Basic medicines: Anti-inflammatories (paracetamol / ibuprofen), ointments for burns or animal bites.

The main steps to follow if you need to use a first aid kit are:

1. Protect yourself: wear disposable gloves;
2. Assess the damage;
3. Use the right tools;
4. Ask for help.

CAUTION

All passengers must know the first AID kit stowing place.



DANGER

Remember to check the expiry date and availability of the products contained in the first aid box at regular intervals.
Remember to store those medicines, which need to be kept in cool places in the fridge.
Inform all passengers of this.
Keep the first aid box in a place free from moisture and away from heat sources, easily accessible, quickly reachable in case of need and far from the reach of children.

2.3.7 Signalling fires

Pleasure yacht can be obligated to carry 4 manual rockets with red light and 4 manual orange smoke signals as required.

Always verify the legislation of the Country in whose waters the yacht is going to navigate.

- The signalling rockets have a limited lifetime; it is also necessary to check their expiry date and eventually to replace them.
- The floating smoke signals, visible up to 4 km (2,5 mi), have to be used with the daylight, to indicate the correct position.
- The red light rockets, visible up to 10 km (6,2 mi), are designed for night use, but they can also be seen during the day.
- Before using the signalling rockets, always wait for the arrival of an air plane or to see persons on the shore or on other yachts.
- Store the signalling rockets far from flammable liquids and from other fuels.
- As the content of the signalling rockets absorbs the moisture, make sure to have them located in a dry and accessible place.
- All persons boarded must know the place of the signalling rockets and the method of use.
- Carefully follow the activation instruction for all signalling rockets.
- Each month, and anyway before each navigation, check that they can be used immediately without obstacles.

DANGER

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

DANGER

Once the signalling rocket has been lit, never direct it towards persons, there is a risk of burns and scalds.

WARNING

The signalling rockets have a limited lifetime, indicated on their containers. Once expired, contact the rockets suppliers which offer a disposal service. Do not light them unless necessary, because they can activate the Emergency Services.

2.3.8 Emergency boarding system

If you are in the water and in the event of an emergency or fall, you can use the boarding aid, consisting of a “ladder” positioned under the stern platform on the starboard side, to get back on board the yacht safely and easily.

To do so, unlock the ladder and pull it up until you can place it into vertical position.

WARNING

After the use of the ladder for climbing on board, place it back to its correct position and lock it.
The boarding aid is a safety device and must be used only in case of emergency.

DANGER

It is the responsibility of the captain, when the yacht is manned but not under way, to ensure the possibility of returning on board by extracting the safety ladder.

2.3.9 Portable fire extinguishers

In case a fire breaks out, immediately reach a fire-fighting station where a portable fire extinguisher is located.
The use of a fire extinguisher requires a certain familiarity with it, but some theoretical-practical rules can facilitate its handling:

- Make sure that the safety pin (**1**) against accidental discharge, has been removed;
- Always direct the extinguisher towards the bottom of the flame;
- Do not stand but try to bow as far as possible;
- Do not hit the fire from above;
- Shift the fan-shaped jet slowly from one side to the other of the flame;
- Act immediately before the temperature becomes too high;
- Always stay windward;
- If the material burnt is wood, paper or tissue, after the fire has been extinguished, pour on water to prevent any further spread of flames;
- Always act dressed, avoiding loose clothing or similar;
- Head the yacht so that the fire is leeward;
- Persons not engaged with the fire fighting must gather windward from the fire area and if necessary, disembark on a rescue device (tender, rubber dinghy, self-inflatable life raft), that must be linked to the yacht with a line, in order also to embark the persons engaged with the fire fighting;
- If the fire is big the operators must abundantly wet their clothing;
- The engines must be shut-off immediately and the fuel must be cut-off;
- Isolated objects in flames must immediately be thrown overboard;
- All openings that can allow air to penetrate through the flames must be closed;
- After using the extinguisher to fight fire in closed spaces, ventilate the space carefully, prior to entry, and remove powder deposits.



DANGER

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

WARNING

We advise regularly checking the charge status (visual check of pressure gauge and weight) and also its overhauling, according to the rules in force in the country whose flag the yacht flies.

DANGER

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

The arrangement of the fire extinguishers is indicated in the previous diagram in the chapter “2.3.2 Layout of fire-fighting equipment”.

CAUTION

All fire extinguishers should be checked at least every 6 months by qualified staff and in any case, after each navigation.
Even after a partial use, the extinguishers should be recharged by authorized personnel.

The extinguisher should be kept in a good condition and the charge indicator, located on the pressure gauge, must always be positioned in the green field.

Keep the extinguishers in a vertical position.

After the use of a dry-chemical fire extinguisher, carefully clean the parts that came in contact with the powder because it is highly corrosive.

DANGER

Near the CO2 fire extinguishers ONBOARD, there is a label with the following text:
“THIS EXTINGUISHER USES CO2; AS AN EXTINGUISHING MEDIUM IT SHALL BE USED ONLY TO FIGHT ELECTRIC OR GALLEY FIRES.
TO AVOID ASPHYXIATION AFTER DISCHARGE LEAVE THE AREA IMMEDIATELY AND VENTILATE BEFORE ENTERING.”
Strict adherence to what is specified.

NOTE

For more information on use and maintenance, please refer to the manufacturer’s manual.

The following table contains the classification of the fire types:

Symbol	Fire Class	Description	Extinguishing
	**A**	Solid fuels (Wood, paper, coal, etc.)	Water, foam, chemical powders.
	**B**	Flammable liquids (bezel, diesel, alcohol, etc.)	Foam, carbon dioxide, chemical powders.
	**C**	Flammable gases (propane gas, methane, hydrogen, etc.)	Carbon dioxide, chemical powders, halogenated hydrocarbons.

It is very important to use the correct extinguishing agent according to each fire class; normally, water can be used only for class A fires, together with chemical extinguishing agents (portable or fixed devices).

Portable fire-extinguishers maintenance

Component	Maintenance	Notes and precautions
Portable fire extinguishers	Checks and tests	Check at least once every 6 months, and in any case before each navigation, the charge condition of each extinguisher through the relevant pressure gauge installed on it. The extinguisher is correctly charged if the weight corresponds to that indicated on the extinguisher's plate and the charge indicator located on the pressure gauge is positioned in the green field. If they are found to be discharged or insufficiently charged, or at least every 10 years, have qualified technicians: • Check the condition of the container (cylinder); • Refill the extinguishing medium; • Carry out a hydrostatic. Have fire extinguishers recharged even after partial use. **MAINTENANCE** At least once a month, and in any case before each navigation, check the charge status of the fire extinguisher. At least once a month, and in any case before each navigation, check the external condition of the fire extinguisher. At least every 6 months check the fastening of the fire extinguisher.

2.3.10 EPIRB (optional)

It is a distress transmitter whose purpose is to signal the position of yachts and ships in serious emergency situations.

It essentially consists of a radio transmitter that interfaces with the satellite system for search and rescue operations.

When in use, the EPIRB emits signals on emergency frequencies that are picked up by the network of satellites in orbit and transmitted back to the ground at the rescue coordination centres.

The correct procedure for activating the EPIRB is as follows:
- When abandoning the yacht, take the EPIRB and place it on the life raft;
- Untie the line attached to the device and secure it to the life raft;
- Activate it according to the model;
- The EPIRB will start flashing;
- Make sure that there are no obstacles in the sky so that the signal reaches the satellites.

2.4 MAN OVERBOARD RECOVERY

Recover a man overboard before possible hypothermia or drowning.
Rescue is a combination of actions: reach the man overboard, establish a contact and bring him/her on board.

- Keep a visual contact with the man overboard.
- Slow down and go towards the man overboard. At night, direct the best light source available towards the man overboard.
- Launch the life buoy into the sea, towards the man overboard, and fasten it to the yacht by means of a line. It shall be used as a further reference to the rescuers.
- When approaching the man overboard, stop the yacht or slow down.
- When you are near the man overboard, stop the engines with the gear engaged, in order to avoid that the propellers continue rotating.

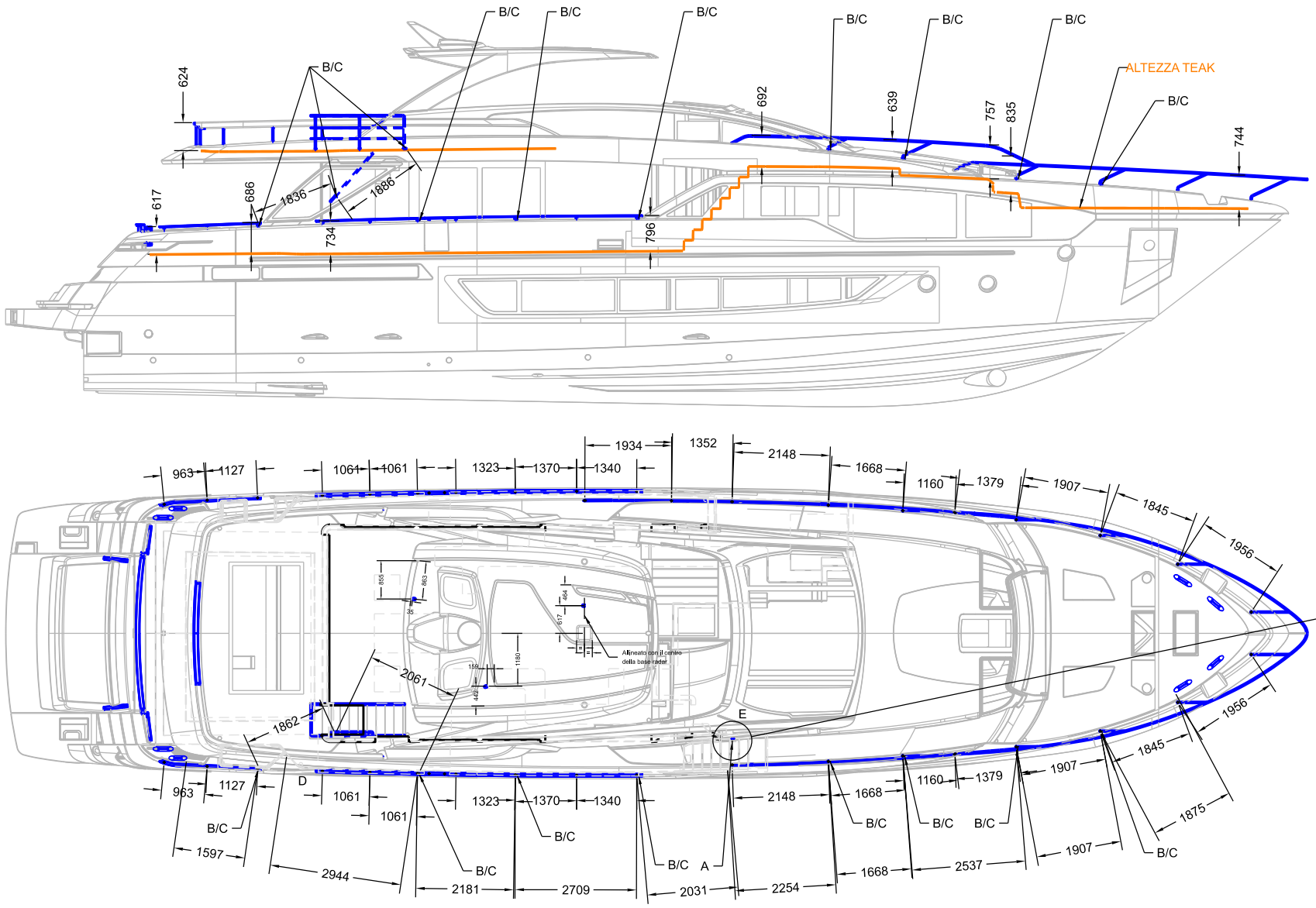
Help the man overboard board the yacht.

NOTE
If the victim presents drowning symptoms, give specific assistance.
In case of serious danger, immediately make a distress call.

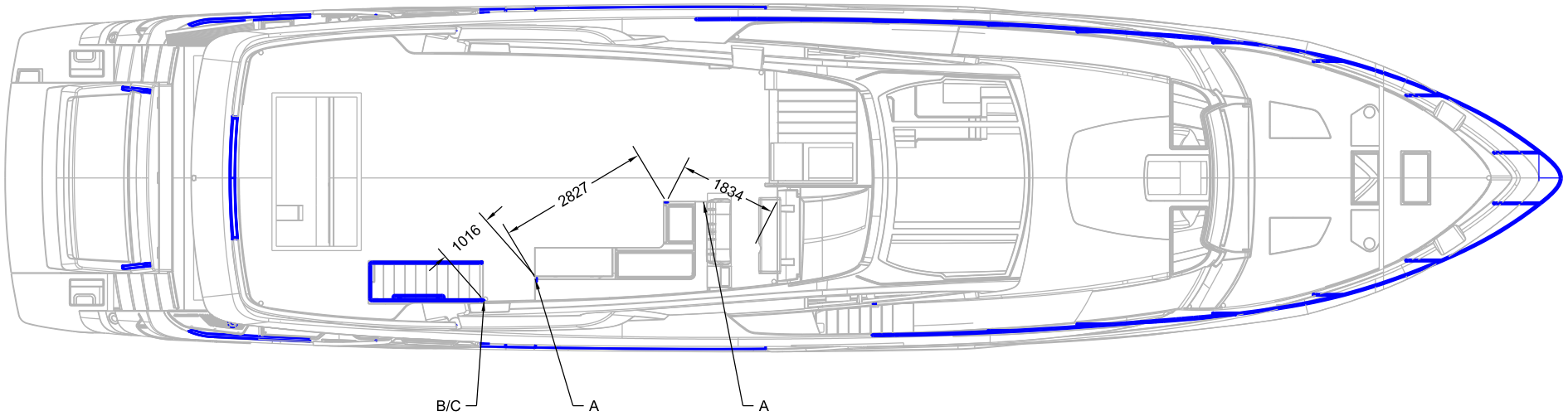
2.5 HOOKING POINTS AND SIDE RAIL

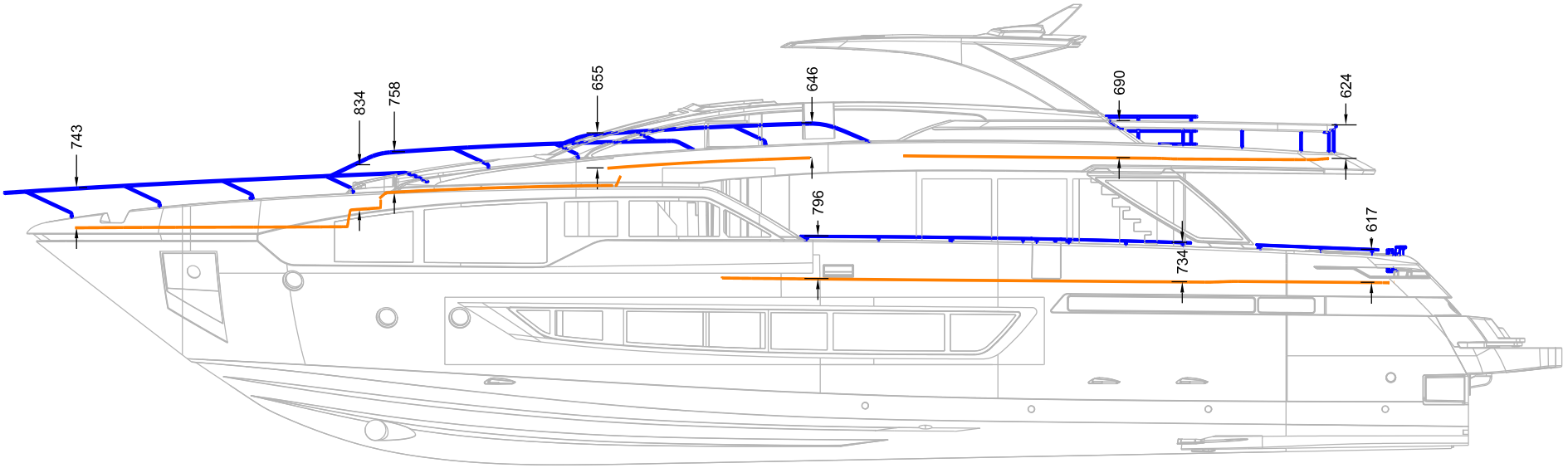
CAUTION

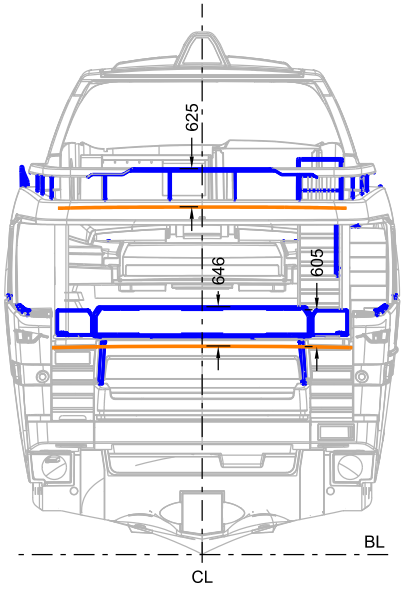
In the event of adverse weather and sea conditions, use only the hooking points on the starboard walkway to reach the strong points of the bow and stern.

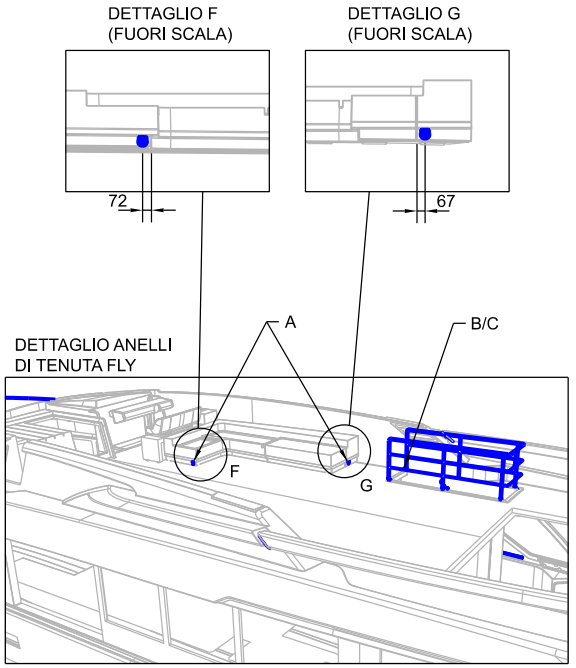

B/C
624
617
686
1836
1886
734
796
692
639
757
835
744
ALTEZZA TEAK
963
1127
1061
1323
1370
1340
1934
1352
2148
1668
1160
1379
1907
1845
1956
DETTAGLIO E
ANELLO DI TENUTA TIPO A
(FUORI SCALA)
2061
1862
D
E
A
1597
2944
2181
2709
2031
2254
2537
1875

VISTA SENZA HT

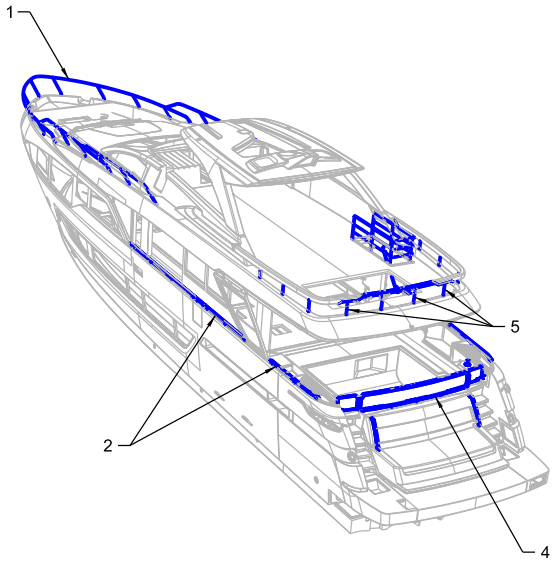


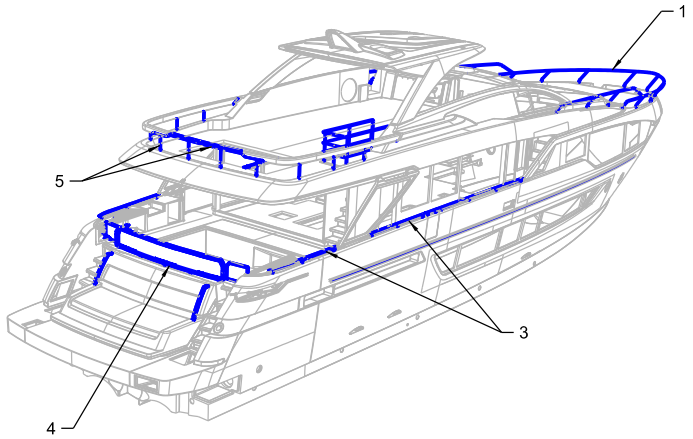






POSIZIONE	DESCRIZIONE
1	TIENTIBENE INOX MD PR R96
2	TIENTIBENE INOX MD POPPA SX R96
3	TIENTIBENE INOX MD POPPA DX R96
4	TIENTIBENE INOX VERT PORTELL PP R96
5	Tientibene inox poppa Fly R90
6	TIENTIBENE PP INOX R90
7	CANCELLETTO SX R96
8	CANCELLETTO DX R96
9	Tientibene inox scala Fly R96
10	GOLFARE W ABBATT.INOX D.MM10 BASE 3 FORI





2.6 ESCAPE ROUTES

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

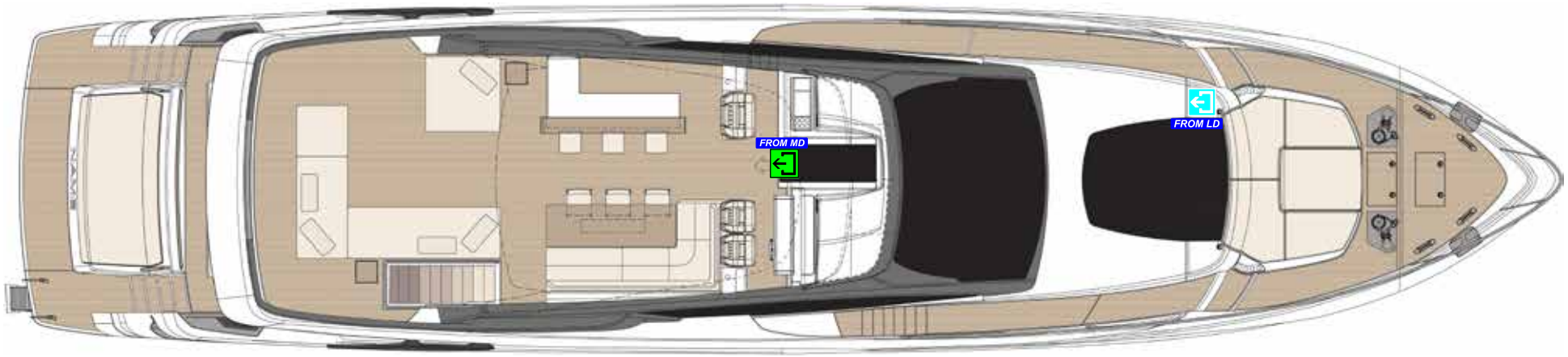
WARNING
During navigation it is necessary to unlock the safety retainer of the bow skylight.

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

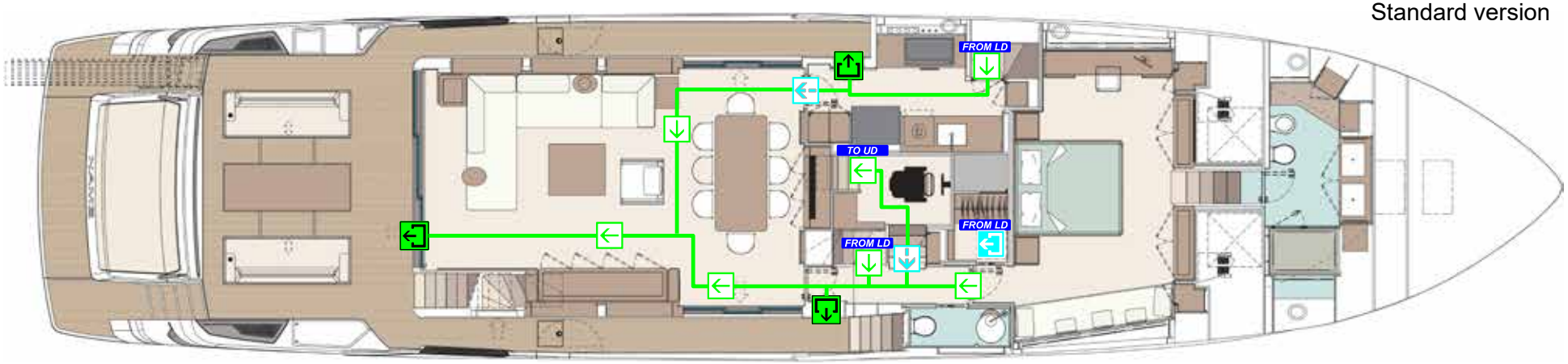
DANGER
The various yacht’s areas have more than one escape route.
It is therefore necessary, according to the nature and position of the danger or fire source, to choose very carefully the safest and most suitable escape route.

DANGER
For safety reasons the access door to the engine room must be kept closed at all times and in all situations.
Must only be open when crossing.

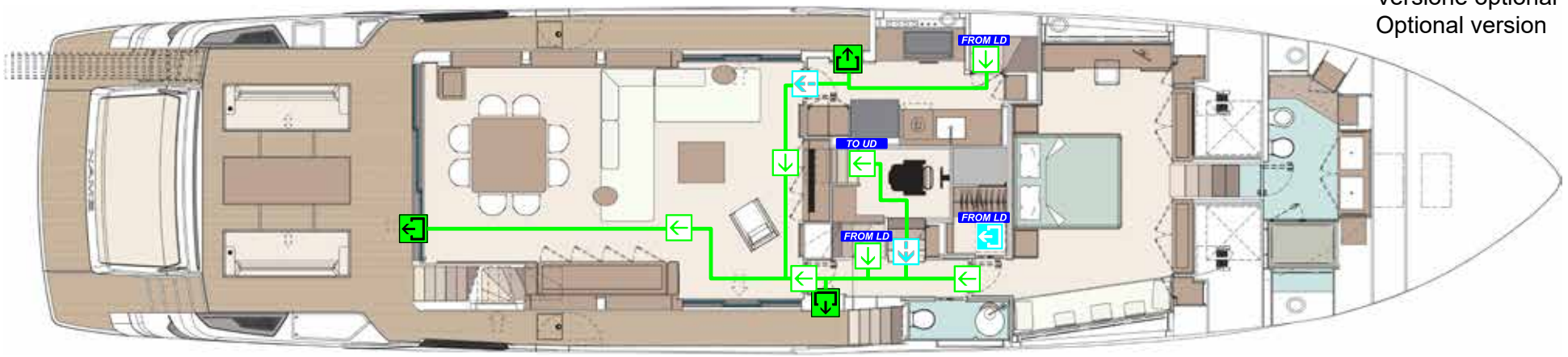
WARNING
Ladders shall be used with care when navigating.



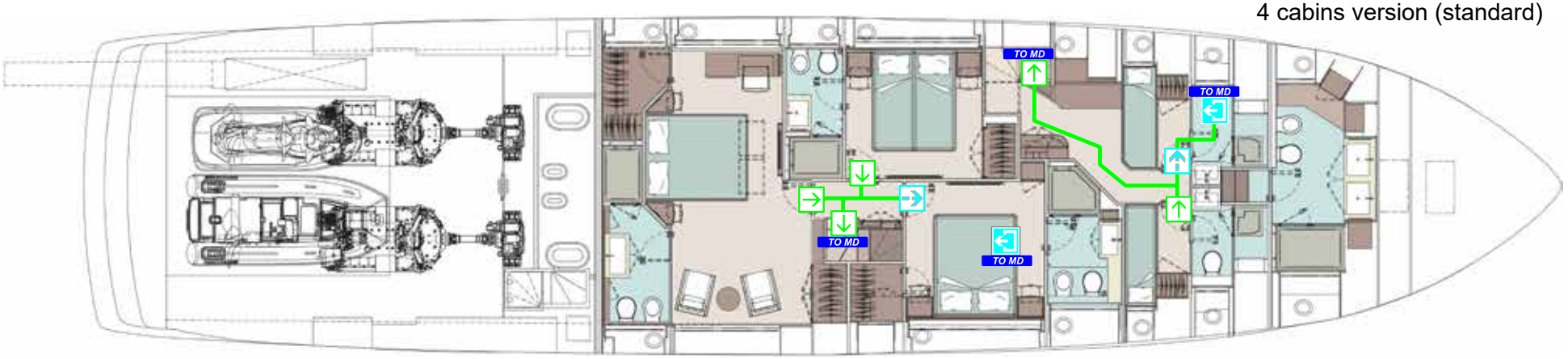
Versione standard
Standard version



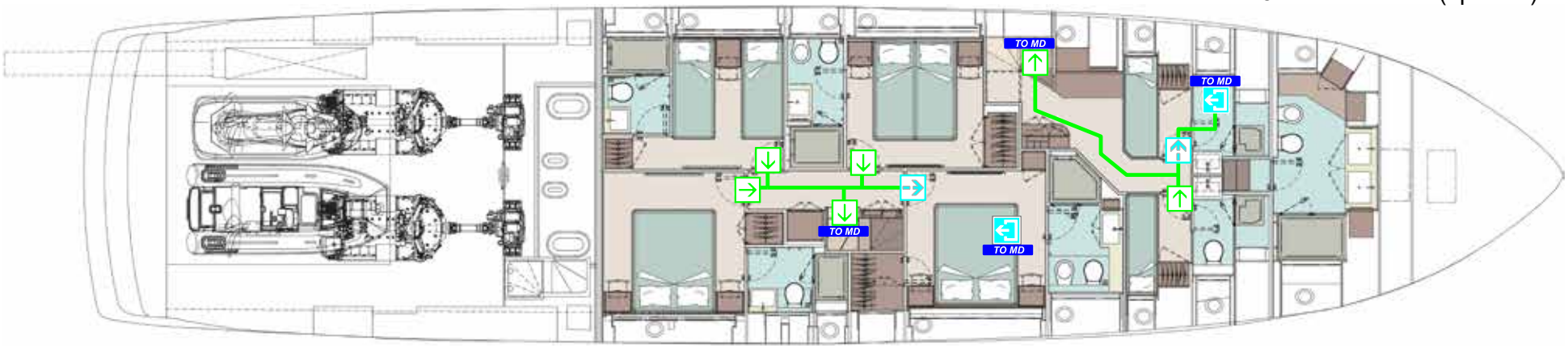
Versione optional
Optional version



Versione 4 cabine (standard)
4 cabins version (standard)



Versione 5 cabine (optional)
5 cabins version (optional)



SYMB.	DESCRIPTION
	Primary escape route
	Secondary escape route
	Primary mean of escape
	Secondary mean of escape

2.6.1 Escape route use

From the owner's cabin or lower deck rooms, it is necessary to use secondary escapes:

1. Pull the belt to remove the ceiling panel to cover the escape.
2. Disengage and extend the escape staircase for escape from the room.
3. Open the escape route by using the release handles.

2.6.2 Abandonment of the yacht

When you must abandon the yacht, swim against the current or windward.

The fuel leaks float in the direction of the current and can catch fire.

When you have taken shelter, count the person present on the yacht and help people in need.

Take advantage of the distress call.

Keep all people gathered in order to facilitate the rescue operation.

2.7 FORBIDDEN AREAS

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



DANGER

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

The areas are following:

- **Engine room**: area with a high level of noise, presence of moving components, hazard of burns, hazard of stumbling and falling. The access to the engine compartment is only allowed to trained and expert crew, prepared for the risks and equipped with proper safety devices, if necessary;
- **Stern platform**: outdoor area with no protection against falling into the sea. During navigation, this area becomes a no-go zone. It is only allowed to enter and remain in this area when the yacht is not in navigation and the engines are not running.
- **Sun deck**: outer area with protections against falls with reduced height and extension. Therefore be extremely careful when leaning out during the manoeuvres of the yacht and during navigation, especially with rough sea.



DANGER

Unidentified external areas of the yacht: access to these areas is FORBIDDEN.
Only professional personnel, under their own responsibility, can gain access to them when the yacht is moored in a safe harbour or in a lay-up shipyard if they are wearing shoes with non-slip sole and belt/safety equipment tied to a safe point of the yacht to prevent falling.

When underway, passengers can stay in the cockpit, preferably remaining seated. When moving, passengers shall use the special handrails installed in the cockpit.
In case of fall overboard, following rescue devices can be used:

- Life buoy;
- Individual life jacket;
- Emergency boarding system.

The following diagram marks out the dangerous areas, with different colours according to the risk level (orange = dangerous area, red = extremely dangerous area), where utmost care must be paid.



DANGER

Be careful when the deck is slippery.

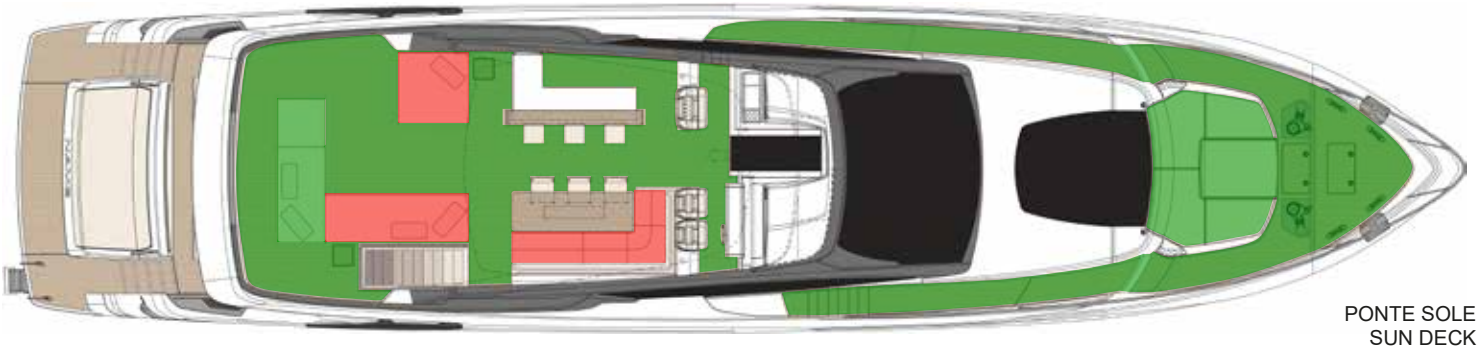
NOTE

It is responsibility of the Captain to inform all persons on board about dangerous areas when they exist, possible areas temporarily forbidden when maintenance operations are being carried out, as well as about the correct behaviour to be adopted in the above-mentioned areas, also according to weather and sea conditions.

CAUTION

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

Forbidden areas:



PONTE SOLE
SUN DECK



COPERTA
MAIN DECK



ICONA ICON	DESCRIZIONE DESCRIPTION
	Zona rossa (interdetta) Red rea (forbidden)
	Zona verde (Libera - ponte di lavoro) Green area (Free - working deck)

2.8 FIRE-FIGHTING SYSTEM

The engine room and the system room are protected by its own fire-fighting system with automatic or manual activation, which uses FIRE RETARDANT AGENT as extinguishing agent.
The discharge is automatically activated by means of a glass flask filled with liquid; when the temperature rises, the liquid expands until the flask breaks, and the extinguisher discharge activates.

The flask is fitted on the same cylinder. The extinguisher can also be activated manually; release is controlled by the tie rod located on the system room access ladder.
The system is equipped with a control unit which in case of discharge, automatically stops the engines, the generators and the extractors in the engine room.

A control panel for the fire-fighting system is located on the main helm station. On the front there is:

- **Green light**
  Indicates that the extinguisher is full.
- **Red light**
  Indicates that the extinguisher is empty.
- **SILENCE button**
  It turns off the acoustic signal which indicates that the system is operating and that the extinguisher is releasing gas.
- **DIMMER**
  It varies the brightness of the control lights of the CHARGE/OVERRIDE panel.
- **OVERRIDE button**
  - When this button is pressed, the control unit which, in case of extinguisher discharge, stops the engines, generators and electric extractors, is cut off.
  - In OVERRIDE position the control unit is disabled.

WARNING
The OVERRIDE button must be pressed only when navigating in confined waters or with a collision hazard and to restart the engines after the system's discharge.

CAUTION
The OVERRIDE button must only be used in case of real emergency.

CAUTION
The engine room and the system room are equipped with fixed fighting system. To avoid asphyxia, leave the area before the system's discharge. After discharge, ventilate the area before entering.

CAUTION
Do not delay fire fighting because of a rescue call.

CAUTION
To shut the engines down, push the stop buttons.

CAUTION

Keep the fire fighting tie rods efficient; service them and check for their operation at regular intervals (as per rules in force).

DANGER

The fire-fighting system, which covers the engine room and the system room, may not be activated in particular fire conditions and for this reason IT IS ALWAYS MANDATORY TO OPERATE THE SAFETY RODS.

WARNING

When operating the fire extinguishing system, disconnect the engine room extractors and close the air intakes. Once the fire is extinguished, ventilate the room for a long time before going inside without activating the extractors.

CAUTION

The automatic system is calibrated to detect the fire when they reach 79°C, therefore, if a beginning of a fire is found, it is absolutely necessary to actuate manually the system in order to limit damage to a minimum.

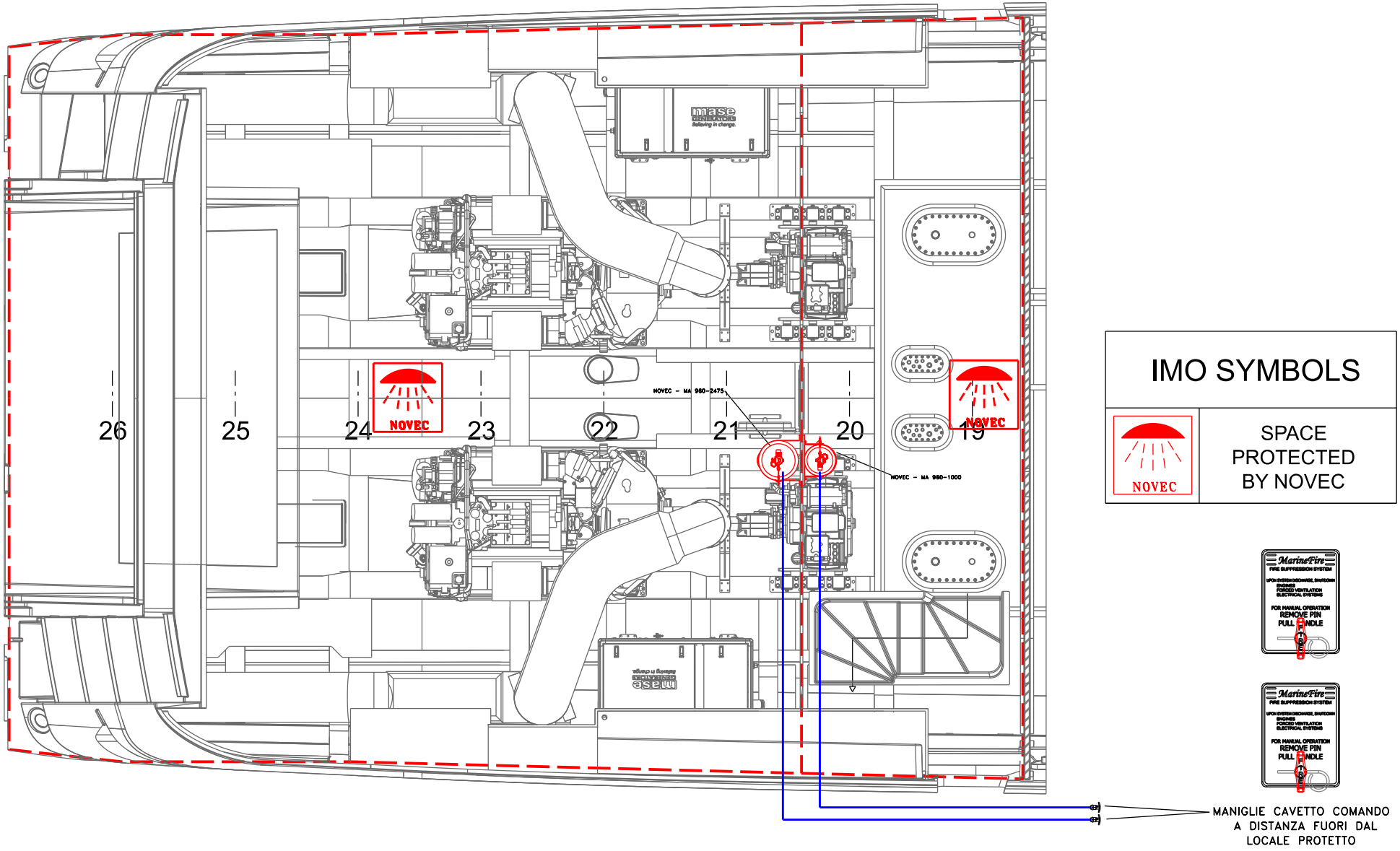
Fire-fighting system control tie rods:

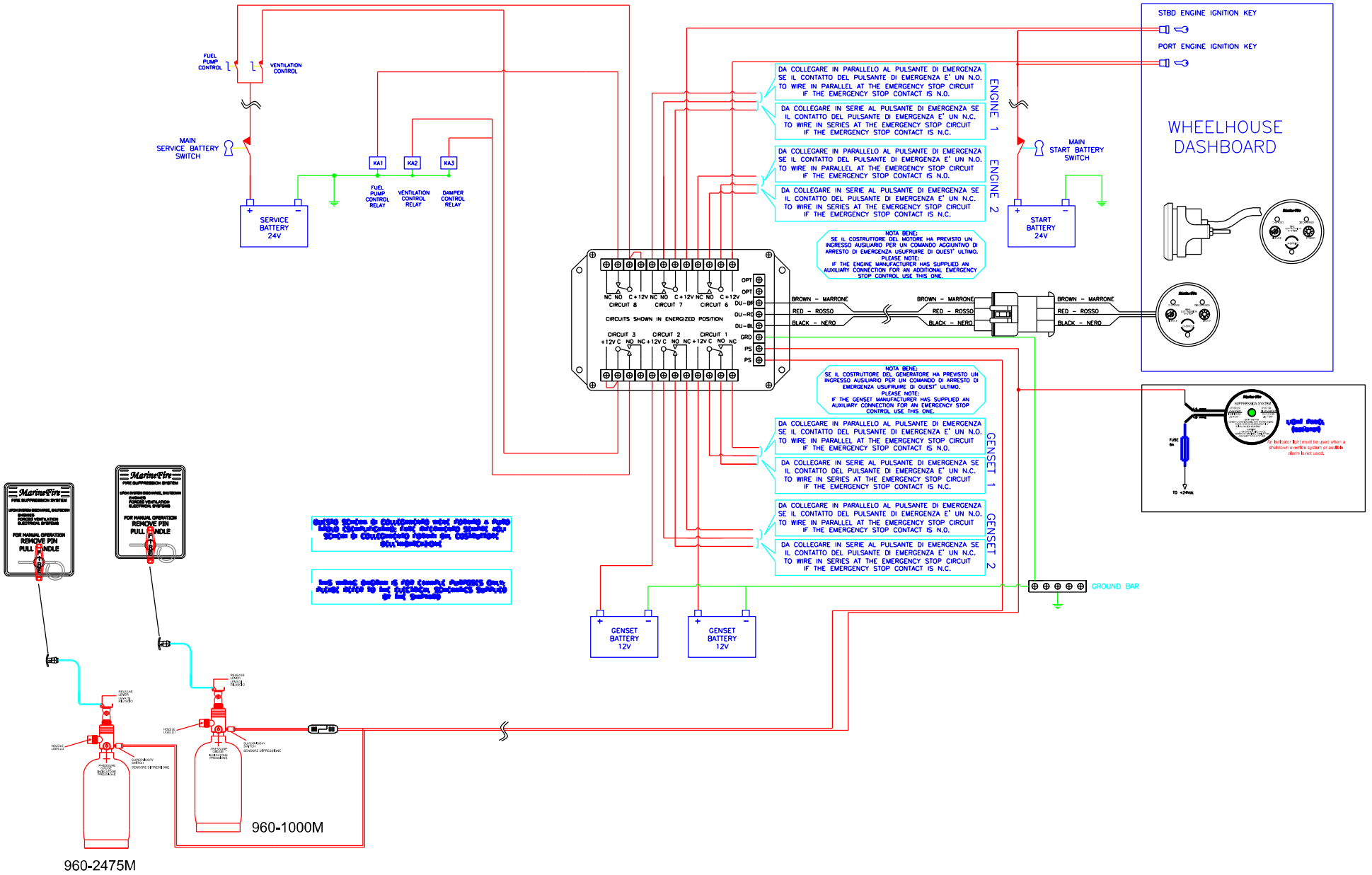
This controls the discharge of the extinguishers in the engine room and in the system room and disables the electrical system of engines, generator and extractors.

WARNING

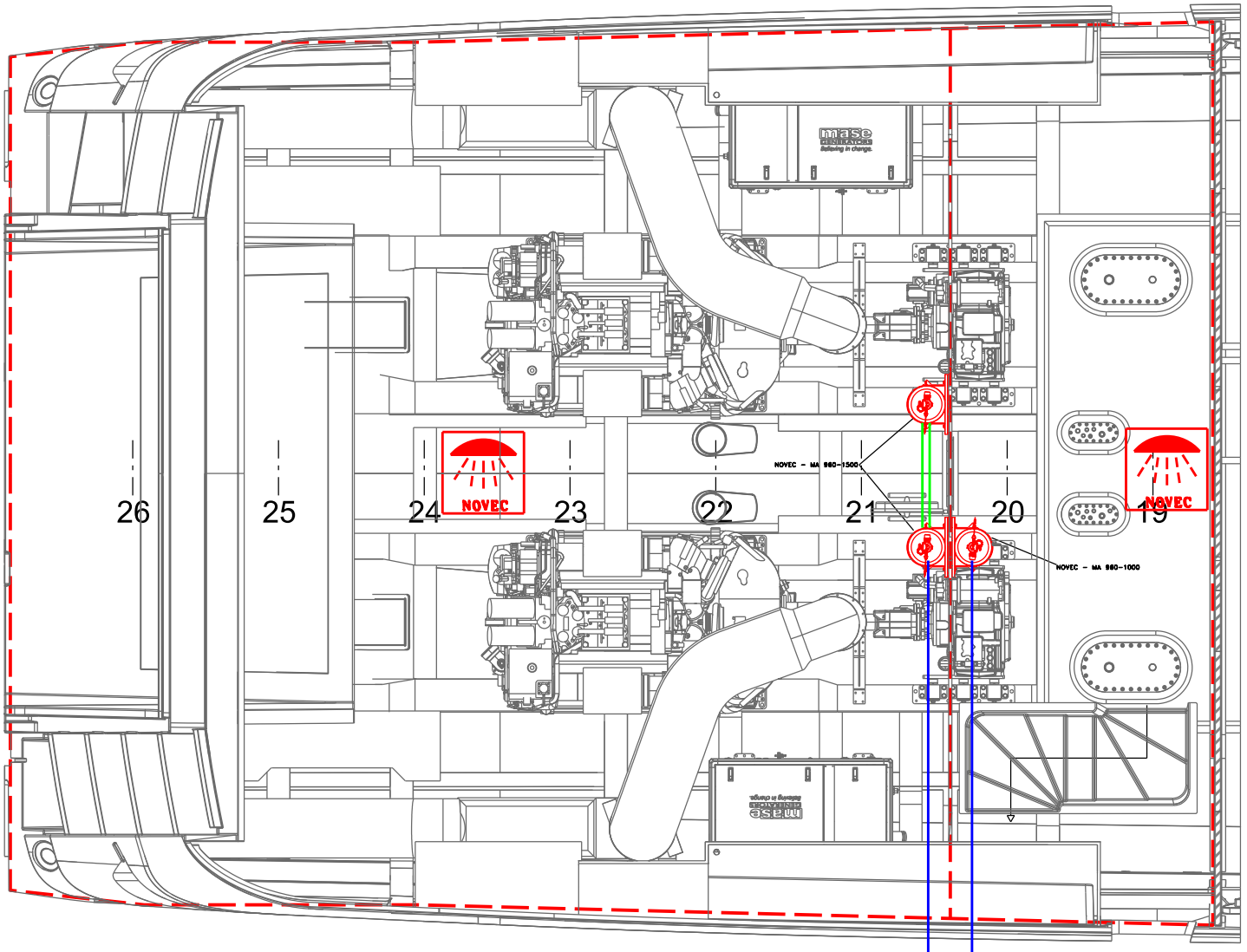
Do not open the system room access door, until the fire is completely extinguished.

Fire-fighting system (standard)

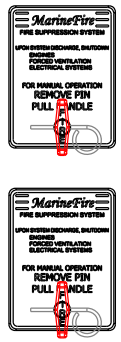



FUEL PUMP CONTROL
VENTILATION CONTROL
MAIN SERVICE BATTERY SWITCH
KA1
KA2
KA3
FUEL PUMP CONTROL RELAY
VENTILATION CONTROL RELAY
DAMPER CONTROL RELAY
SERVICE BATTERY 24V
STBD ENGINE IGNITION KEY
PORT ENGINE IGNITION KEY
WHEELHOUSE DASHBOARD
MAIN START BATTERY SWITCH
START BATTERY 24V
ENGINE 1
ENGINE 2
DA COLLEGARE IN PARALLELO AL PULSANTE DI EMERGENZA SE IL CONTATTO DEL PULSANTE DI EMERGENZA E' UN N.O. TO WIRE IN PARALLEL AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
DA COLLEGARE IN SERIE AL PULSANTE DI EMERGENZA SE IL CONTATTO DEL PULSANTE DI EMERGENZA E' UN N.C. TO WIRE IN SERIES AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.C.
NOTA BENE: SE IL COSTRUTTORE DEL MOTORE HA PREVISTO UN INGRESSO AUSILIARIO PER UN COMANDO AGGIUNTIVO DI ARRESTO DI EMERGENZA USUFRUIRE DI QUEST' ULTIMO. PLEASE NOTE: IF THE ENGINE MANUFACTURER HAS SUPPLIED AN AUXILIARY CONNECTION FOR AN ADDITIONAL EMERGENCY STOP CONTROL USE THIS ONE.
CIRCUIT 8
CIRCUIT 7
CIRCUIT 6
CIRCUITS SHOWN IN ENERGIZED POSITION
CIRCUIT 3
CIRCUIT 2
CIRCUIT 1
OPT
DU-BR
DU-RD
DU-BL
GRD
PS
BROWN - MARRONE
RED - ROSSO
BLACK - NERO
NOTA BENE: SE IL COSTRUTTORE DEL GENERATORE HA PREVISTO UN INGRESSO AUSILIARIO PER UN COMANDO DI ARRESTO DI EMERGENZA USUFRUIRE DI QUEST' ULTIMO. PLEASE NOTE: IF THE GENSET MANUFACTURER HAS SUPPLIED AN AUXILIARY CONNECTION FOR AN EMERGENCY STOP CONTROL USE THIS ONE.
GENSET 1
GENSET 2
GROUND BAR
GENSET BATTERY 12V
GENSET BATTERY 12V
MarineFire
FIRE SUPPRESSION SYSTEM
FOR MANUAL OPERATION
REMOVE PIN
PULL HANDLE
960-1000M
960-2475M

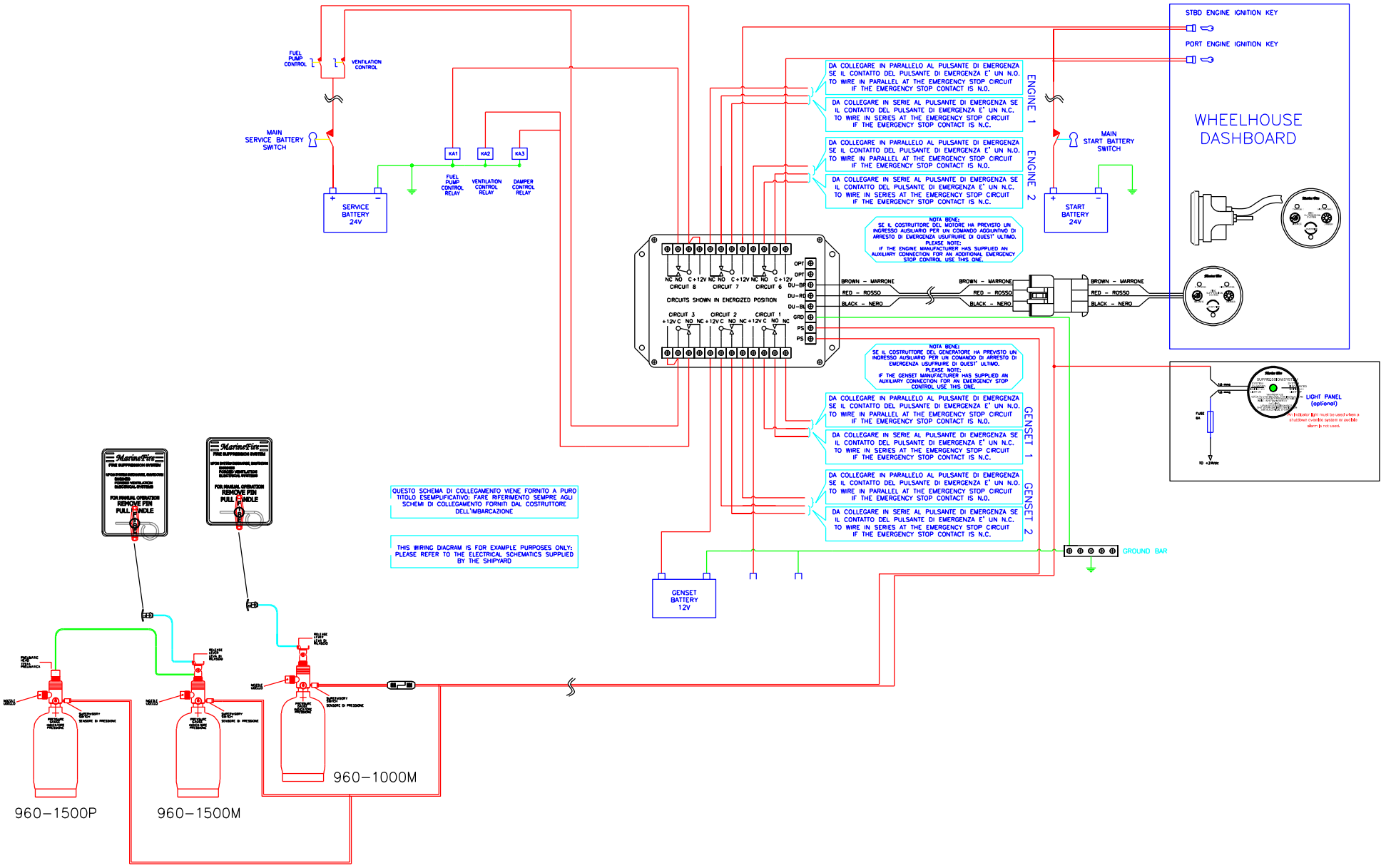
Fire-fighting system (optional)



IMO SYMBOLS	
NOVEC	SPACE PROTECTED BY NOVEC



MANIGLIE CAVETTO COMANDO A DISTANZA FUORI DAL LOCALE PROTETTO


FUEL PUMP CONTROL
VENTILATION CONTROL
MAIN SERVICE BATTERY SWITCH
KA1
KA2
KA3
FUEL PUMP CONTROL RELAY
VENTILATION CONTROL RELAY
DAMPER CONTROL RELAY
SERVICE BATTERY 24V
DA COLLEGARE IN PARALLELO AL PULSANTE DI EMERGENZA SE IL CONTATTO DEL PULSANTE DI EMERGENZA E' UN N.O. TO WIRE IN PARALLEL AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.O.
DA COLLEGARE IN SERIE AL PULSANTE DI EMERGENZA SE IL CONTATTO DEL PULSANTE DI EMERGENZA E' UN N.C. TO WIRE IN SERIES AT THE EMERGENCY STOP CIRCUIT IF THE EMERGENCY STOP CONTACT IS N.C.
ENGINE 1
ENGINE 2
NOTA BENE: SE IL COSTRUTTORE DEL MOTORE HA PREVISTO UN INGRESSO AUSILIARIO PER UN COMANDO AGGIUNTIVO DI ARRESTO DI EMERGENZA USUFRUIRE DI QUEST' ULTIMO. PLEASE NOTE: IF THE ENGINE MANUFACTURER HAS SUPPLIED AN AUXILIARY CONNECTION FOR AN ADDITIONAL EMERGENCY STOP CONTROL USE THIS ONE.
CIRCUIT 8
CIRCUIT 7
CIRCUIT 6
CIRCUITS SHOWN IN ENERGIZED POSITION
CIRCUIT 3
CIRCUIT 2
CIRCUIT 1
OPT
DU-BR
DU-RO
DU-BL
GRD
PS
BROWN - MARRONE
RED - ROSSO
BLACK - NERO
NOTA BENE: SE IL COSTRUTTORE DEL GENERATORE HA PREVISTO UN INGRESSO AUSILIARIO PER UN COMANDO DI ARRESTO DI EMERGENZA USUFRUIRE DI QUEST' ULTIMO. PLEASE NOTE: IF THE GENSET MANUFACTURER HAS SUPPLIED AN AUXILIARY CONNECTION FOR AN EMERGENCY STOP CONTROL USE THIS ONE.
GENSET 1
GENSET 2
GENSET BATTERY 12V
GROUND BAR
MAIN START BATTERY SWITCH
START BATTERY 24V
STBD ENGINE IGNITION KEY
PORT ENGINE IGNITION KEY
WHEELHOUSE DASHBOARD
LIGHT PANEL (optional)
QUESTO SCHEMA DI COLLEGAMENTO VIENE FORNITO A PURO TITOLO ESEMPLIFICATIVO: FARE RIFERIMENTO SEMPRE AGLI SCHEMI DI COLLEGAMENTO FORNITI DAL COSTRUTTORE DELL'IMBARCAZIONE
THIS WIRING DIAGRAM IS FOR EXAMPLE PURPOSES ONLY. PLEASE REFER TO THE ELECTRICAL SCHEMATICS SUPPLIED BY THE SHIPYARD
MarineFire
REMOVE PIN
PULL HANDLE
960-1500P
960-1500M
960-1000M

2.8.1 Fire-fighting system operation

The fixed fire-fighting system operates automatically when the temperature in the engine room exceeds 79°C.

The discharge is driven by an automatic system consisting of a thermal bulb installed on the extinguisher cylinder.

When the temperature around the bulb reaches the preset level, causes the extinguisher activates.

The system can also be activated manually.

By pulling the tie rod, the system stops the engines, the generators and the electric extractors automatically

A panel located in the main helm station allows you to monitor the extinguisher discharge.
In case of fire in the engine room, operate as follows:

- Shut down both engines and generator, if running, by means of push buttons in the helm position;
- Turn OFF the battery breakers and all magneto-thermal of the AC;
- From the fire-fighting panel, remove pin by slipping it off;
- Pull tie rod safety for extinguisher discharge. The extinguisher can be automatically discharged, but pull the tie rod anyway.

CAUTION

If the fire breaks out underway, perform the distress call “**MAY DAY**”; if the yacht is in the harbour, advise the Port Authority and evacuate all unnecessary personnel.

DANGER

Before activating the fire-fighting system, make sure nobody is inside the engine room. After making sure that the fire is completely extinguished, activate the ventilation system before entering the engine room, and then clean up the deposits of the burning.

DANGER

The automatic fire extinguishing system does not block the possible escape of oil, only suitable tie-rods are able to block this.
Always apply the tie rods “FUEL” in the event of a discharge.

WARNING

Make sure that nobody stays in the engine room during the system discharge.

WARNING

It is possible for a fire to reappear following the discharge of a fire-fighting system. If fire spreads again, the passengers on board are in danger.
Even the opening of the engine room access hatch can cause through oxygen a new fire spread. If fire spreads out again, to avoid heavy injuries or even death, do not open the hatch or engine room access door until the fire has been completely extinguished.

WARNING

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

DANGER

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

2.8.2 Maintenance of the engine room fire-fighting system

Have the system overhauled by a qualified service centre according to the manufacturer's instructions. The technician who performs maintenance should attach a tag indicating the date of the check to the system.
Check the discharge indicator before use, to make sure that the fixed fire-fighting system has not been discharged.
Check the state of the fire extinguishing system from the control panel located on the helm station.
To do this, check the status indicator (full / empty).
The fixed fire-fighting systems must be checked at least once a month and in any case, before each navigation.

- For corrosion.
- To make sure that the access to the controls is not hindered.
- To make sure that the cylinders are firmly sitting.
- To make sure that the pulling cables are not broken, loose, damaged or twisted.
- To make sure that the cable connections are fastened properly.
- To make sure that the system has not discharged.

CAUTION

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

CAUTION

Avoid inhaling fumes or long exposure to them.
THE ACCIDENTAL DRAIN DURING USE OR INSTALLATION CAN CAUSE SERIOUS INJURIES. Never let it drop down. Keep it far from extreme heat.

CAUTION

Read the instruction manual carefully before attempting to install, remove, activate or perform maintenance on this device.

CAUTION

During maintenance operations, pay attention not to break the thermal bulb unintentionally, in order to prevent accidental cylinder releases.

CAUTION

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

2.8.3 Restoring the fire-fighting system in the engine room

If the fire-fighting system of the engine room has been activated and a fire has been extinguished, it is necessary to restore the essential conditions for navigation, in order to quickly reach the nearest harbour in which to carry out the due checks.

To resume navigation, the ventilation system of the engine room and the fuel system of the propulsion engines must be brought back to normal working condition.

Reactivate through the override panel the extractors, engines and generators.

DANGER

Before entering the engine room, ventilate the room properly, to avoid risks due to high temperatures and noxious gases suspended in the air

DANGER

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

DANGER

Resetting the fire-fighting system, with the aim of resuming navigation is a recommended operation only in case the fire source has not caused damage to the yacht's structure or to important devices of the same.
In such a case, or should you have any doubt, it is essential, to wait for rescue without resuming navigation.

WARNING

Note that after the fire-fighting system has been reset, the extinguisher will be empty and will no longer be effective in the event of a new fire.
Therefore, once back in port, the fire extinguisher must be refilled immediately by authorised personnel.

To allow the starting of the propulsion engines, it is necessary to manually activate the engine supply valves, located on the fuel tank in the engine room.

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

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

CAUTION

Reinsert the factory-fitted safety pin on the detector/cylinder sensor valve until installation is complete or the inspection has been carried out. Protect your eyes during installation or maintenance.

WARNING

During maintenance operations, pay attention not to break the flask located on the cylinder, because, even if the safety pin is inserted, if the flask breaks, the fire-fighting system activates.

MAINTENANCE

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

2.9 GARAGE FIRE-FIGHTING SYSTEM

The garage is protected by its own fire protection system.

The system allows to extinguish a fire in the garage without having to enter.

The system is composed of:
1. A 6 kg dry powder fire extinguisher;
2. An opening (fire-port).

To activate the discharge you need to break the glass present in the “FIRE-PORT protection”, insert inside the nozzle of the extinguisher and activate.



DANGER

Chemical elements to put out fires and debris of a discharge system are toxic.
To prevent illness, injury or death caused by the inhalation of fumes, make sure that nobody is on the premises during discharge system.



WARNING

Before entering the hatch after a fire, make sure it is completely extinguished.
Before entering, ventilate the room by opening the garage.

MAINTENANCE

At least monthly, and before each sea trip, check the state of charge of the extinguisher.
At least monthly, and before each sea trip, check the external condition of the extinguisher.
At least every 6 months to check mounting extinguisher.

2.10 ALARM DEVICES

Smoke detection control unit
The alarm devices include a smoke detection unit, a flashing signal unit with alarm siren. These devices are activated in the event of smoke detected by sensors positioned in the engine room, and other areas of the yacht.
You can monitor the presence of smoke in the yacht also from the panel touch screen present on the dashboard.

MAINTENANCE
At least every month carry out an operation test.

Bilge water alarm system
An alarm siren is provided to warn against a high water level in the bilge, operated by floating switches located in the various compartments of the bilge on board.
The alarm is present on the control panel in the monitoring system by means of a warning light/acoustic signal.

MAINTENANCE
At least once a week check the operation of the floating switches and of the siren.
At least once a month clean the floating switches.

CAUTION
To prevent false alarms, make sure that the system is isolated and disabled before performing maintenance and cleaning of the smoke detectors. Once the periodic maintenance of all detectors in food and rehabilitate the system.

NOTE
For more information about the various devices installed on the yacht, refer to the use and maintenance manuals delivered separately by the Manufacturer.

2.10.1 Smoke detection unit

On board your yacht there is a fire detection unit that can identify anomalous situations and diagnose them. It has a wide range of signals: alarm, prealarm, fault, warning, exclusion, tests, monitor. All reports are visible both and on display on both LEDs.

Both the smoke control unit and the signal light/acoustic alarm unit are supplied with a buffer battery, in this way danger can be detected even without power supply.

If the main 24V power supply of the control unit should fail, the malfunction is indicated visually (alarm warning light) on its control panel.

If both power supplies (main and buffer battery) should fail, the control unit activates the smoke alarm siren.

CAUTION

The control unit has been set and tested by RIVA.
Do not alter the programming controls, read the user manual for a correct operation reset, or better, address RIVA After Sales & Service.

CAUTION

In case the accumulator of the smoke detection unit is discharged, the siren starts automatically.

Use of the smoke control unit and of the signal light / acoustic alarm unit

The batteries mounted on this unit do not need to be topped up with distilled water.

Keep the terminals on the battery top clean at all times to prevent the battery discharge. Check the battery terminals, they should not be loose and must not have any sign of rust or oxidation.

Apply some Vaseline on the terminals to prevent their corrosion.

ENVIRONMENT

Handle and dispose of batteries according to the rules in force. Use only authorised disposal procedures. In case of doubts, contact the Port Authority.

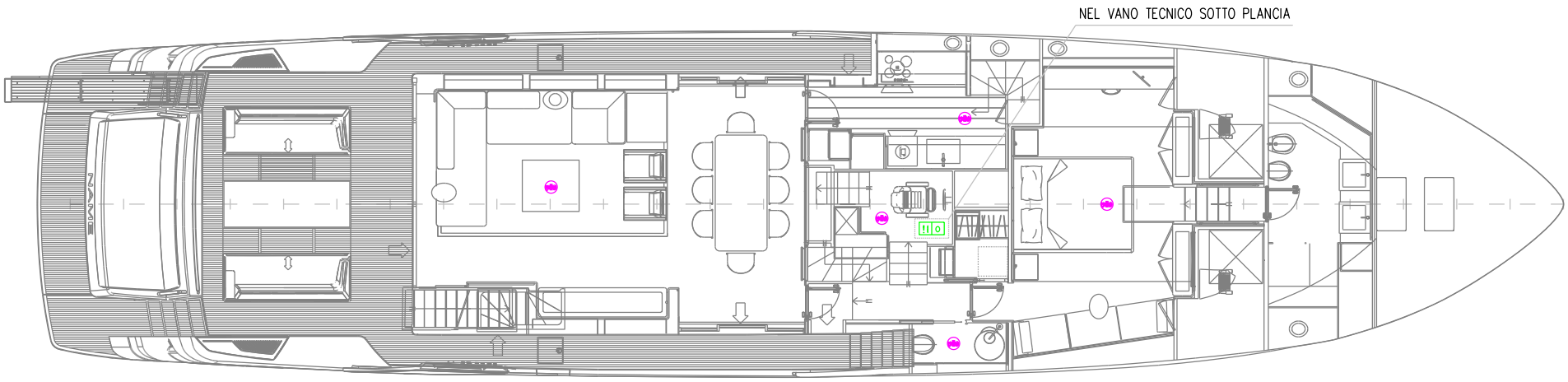
WARNING

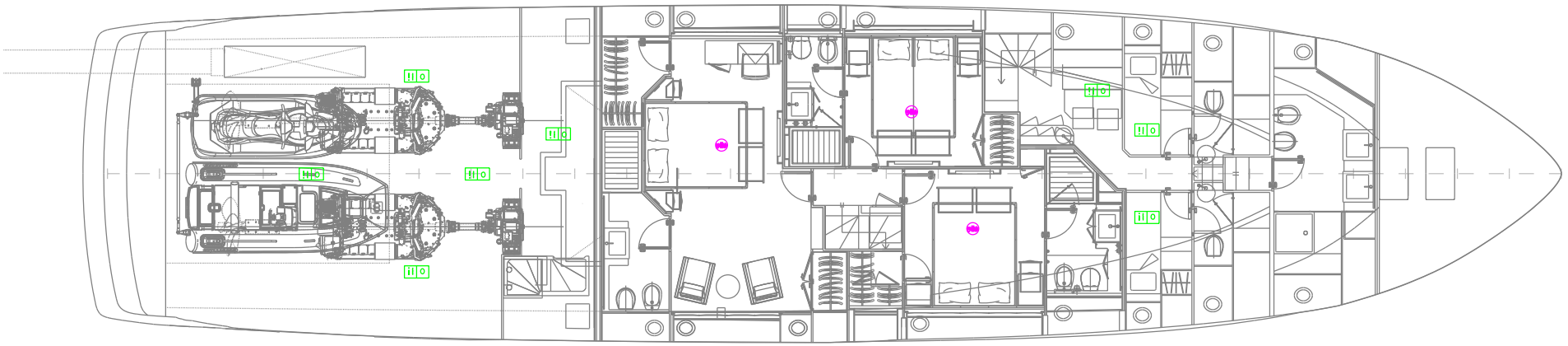
If possible, keep a spare battery on board.

Fire detection system diagram

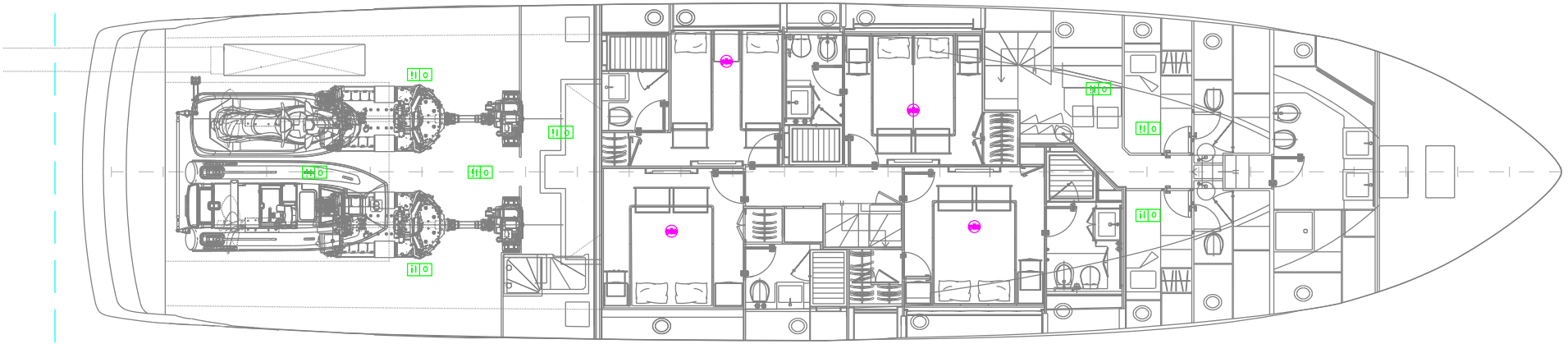
VERSIONE MAIN DECK OPT







VERSIONE 5 CABINE OPT

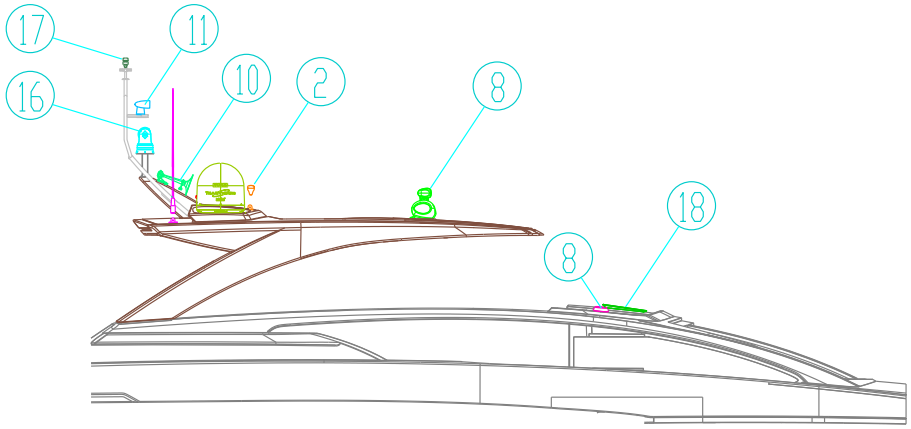


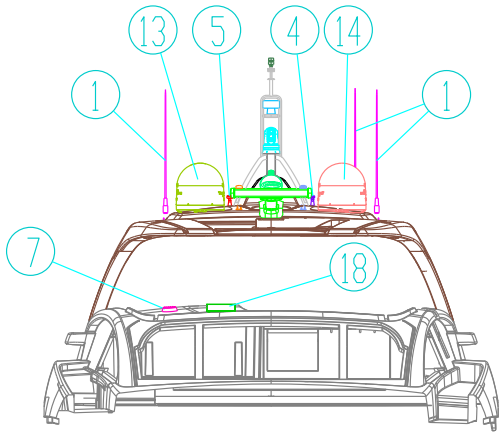
LEGENDA

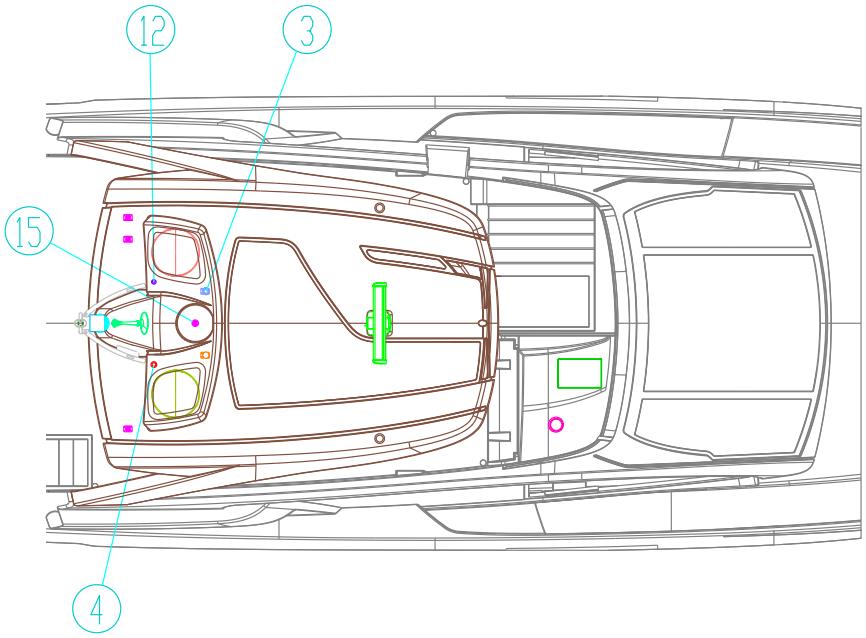
SIMBOLO	DESCRIZIONE
	CENTRALINA RIVELAZIONE INCENDIO
	SIRENA IMPIANTO RIVELAZIONE INCENDIO
	SENSORE OTTICO DI FUMO AURORA S1000
	SENSORE OTTICO DI FUMO IN VETRO CON GHIERA

2.11 ANTENNAS, NAVIGATION LIGHTS AND DAYLIGHT SIGNALS

2.11.1 Antennas







REF	DESCRIPTION	C
1	ANTENNA VHF AC MARINE CELMAR 3-1	
2	ANTENNA GPS SIMRAD GS25	
3	ANTENNA GPS (CARMIN) SIDE-POWER	
4	ANTENNA GPS MTU	
5	BASE A SNODO OTT. CROM. BANTEN 00018-2	
6	BASE "ISSA BANTEN 10504	
7	ANTENNA 5G PEPWAVE MOBILITY 42G	
8	ANTENNA RADAR SIMRAD HALO 2003	
9	ANTENNA DTV GLOMEX NASHIRA	
10	TROMBA "MARCO" PW3 24V	
11	FARO SANSHIN HR-1012	
12	ANTENNA GPS SIMRAD 500 (opt)	
13	ANTENNA TV SAT KVH TV6 (opt)	
14	DOME VUOTO KVH TV6 (opt)	
15	ANTENNA GPS XENTA (opt)	
16	CAMERA FLIR SERIE M (opt)	
17	STAZIONE METEO (opt)	
18	ANTENNA STARLINK (opt)	

CAUTION
During transmission, keep off more than 2 metres from the TV-SAT aerial.

CAUTION
The radome of the antenna must absolutely not be washed with pressure water; we recommend directly cleaning with a sponge or doeskin.
For a correct maintenance avoid the penetration of water inside, the radome is not waterproof, in order to allow possible condensation to evaporate.

CAUTION
Access the Hard Top only with safety belt by qualified / trained technical personnel for work at height.

2.11.2 Navigation lights

The rules relevant to the navigation lights must be observed from sunset to dawn and during this period no other lights must be visible except the lights that cannot be exchanged for those specified in this manual. Although the lighting system is preset by the Manufacturers, the Owner/Captain has the responsibility for the observance of the local rules.

Please note that the local and international rules relevant to lighting can slightly vary, we suggest therefore to gather information about the local rules of your area.

Night navigation requires more precaution. All rules are applicable but apart from the right of course, it is advisable to slow down and to keep the proper distance from other yachts.
It is a good rule to remember that bright lights reduce visibility at night.

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

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

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

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

MAINTENANCE

At least once a week check the operation of the navigation lights.
At least once a week carry out accurate cleaning of glasses and headlights.
At least once every six months check the presence of corrosion in the connections of the navigation light cables.
At least once every six months, tighten the cable connections of the navigation lights.

CAUTION

The positioning of the navigation lights is optimised by adapting the regulatory requirements to the geometry of the yacht, providing lights where they are most easily visible.
The fitting of lights and sound signals is subject to the approval of the Flag Administration where the yacht is registered.

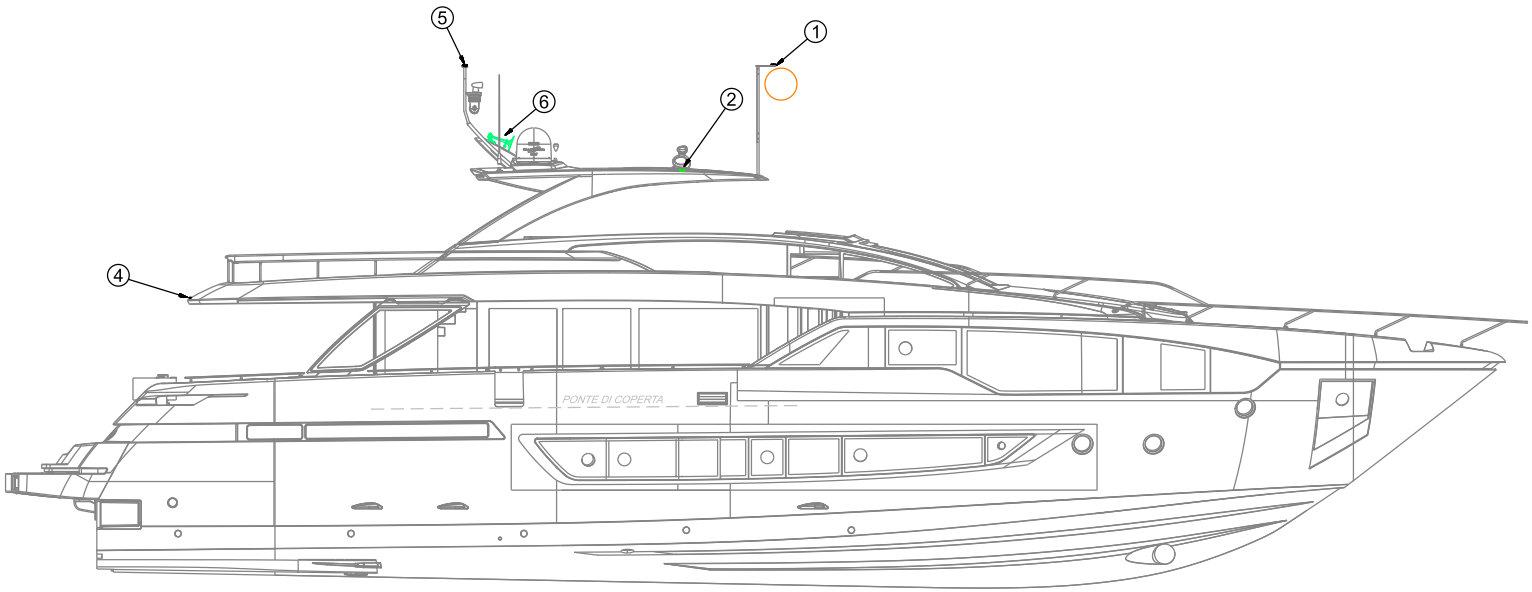
WARNING

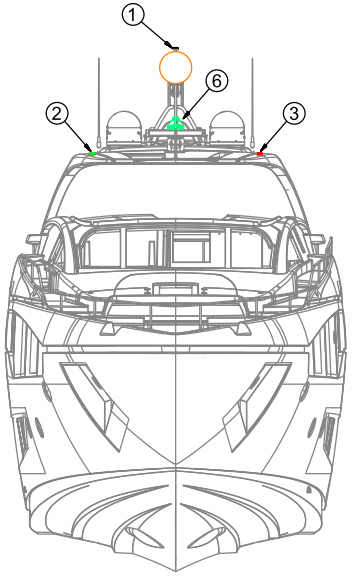
Navigation lights, shapes and sound signals.
Where navigation lights, shapes and sound signals are installed, they must be in conformity with COLREG 1972 (II International Regulations for Preventing Collisions at Sea) or CEVNI (European Code for Inland Waterways).
Regulations depending on the case.

The use of headlights during the various situations of use of the yacht during night navigation are illustrated below:

- **Navigation**: Masthead lights, side lights and stern lights ON.
- **At anchor**: Anchor lights ON.
- **Drifting**: Two red lights ON (no steering mast installed).
- **Stranded**: Anchor light and two red lights ON (no steering mast installed).

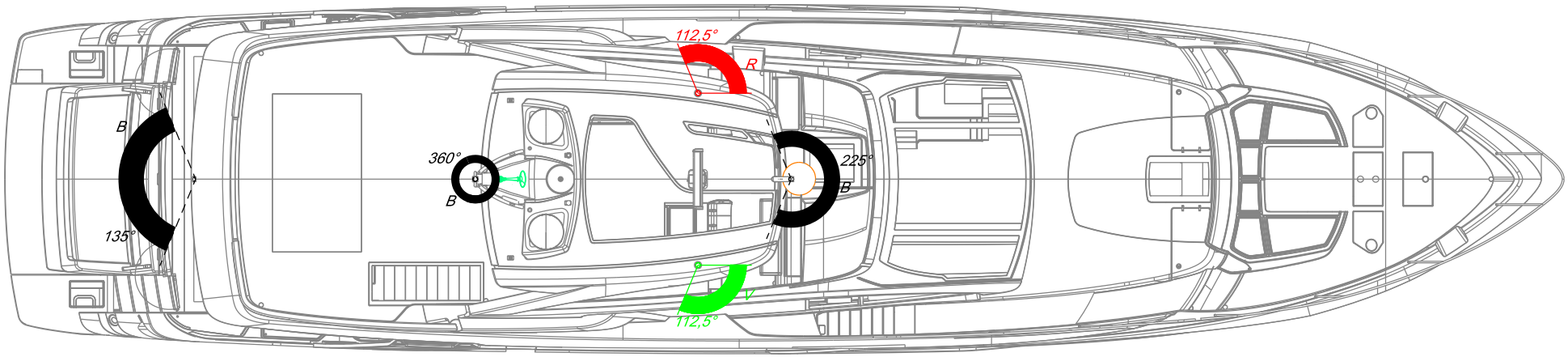
Navigation lights diagram:





N°	*COMPONENTE*	*DESCRIZIONE - CODICE FORNITORE*	*COLORE / ANGOLO*	*VISIBILITA'*
1	FANALE DI TESTA D'ALBERO 225°	FANALE TESTA ALBERO LOPOLIGHT - p/n 301-011-B	BIANCO / 225°	5 nm
2	FANALE DI VIA DESTRO VERDE 112,5°	FANALE DI VIA DX LOPOLIGHT - p/n 301-008-FB-B	VERDE / 112,5°	2 nm
3	FANALE DI VIA SINISTRO ROSSO 112,5°	FANALE DI VIA SX LOPOLIGHT - p/n 301-009-FB-B	ROSSO / 112,5°	2 nm
4	FANALE DI CORONAMENTO 135°	FANALE CORONAMENTO POPPA LOPOLIGHT - p/n 301-006	BIANCO / 135°	2 nm
5	FANALE DI FONDA 360°	FANALE FONDA LOPOLIGHT - p/n 201-012-FB-B	BIANCO / 360°	2 nm

N°	*COMPONENTE*	*DESCRIZIONE - CODICE FORNITORE*
6	FISCHIO PNEUMATICO MARCO PW3	FISCHIO PNEMUMATICO PW3 24V 20< L <75 mt. - p/n 152 000 13



R = rosso
B = bianco
V = verde

2.11.3 Daylight signals

In order to increase the safety of persons on board, the Manufacturer has provided the installation of a daylight mast signals, in accordance with the Directive 2013/53/EU.

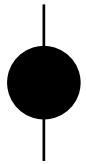
NOTE
The combined use of daylight signals and navigation lights increases the yacht's visibility, reducing the risk of collisions.

Daylight signals have the same function as navigation lights but are more visible during the day than navigation lights.

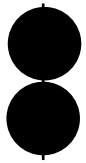
Depending on the situation, appropriate signalling templates shall be used.

Hereunder is a list of the most common ones to adopt after installing the relevant mast:

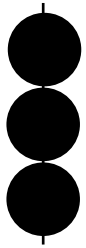
- Yacht at anchor:



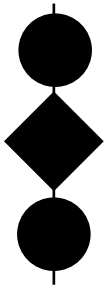
- Non under command yacht:



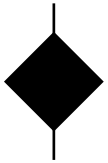
- Stranded yacht:



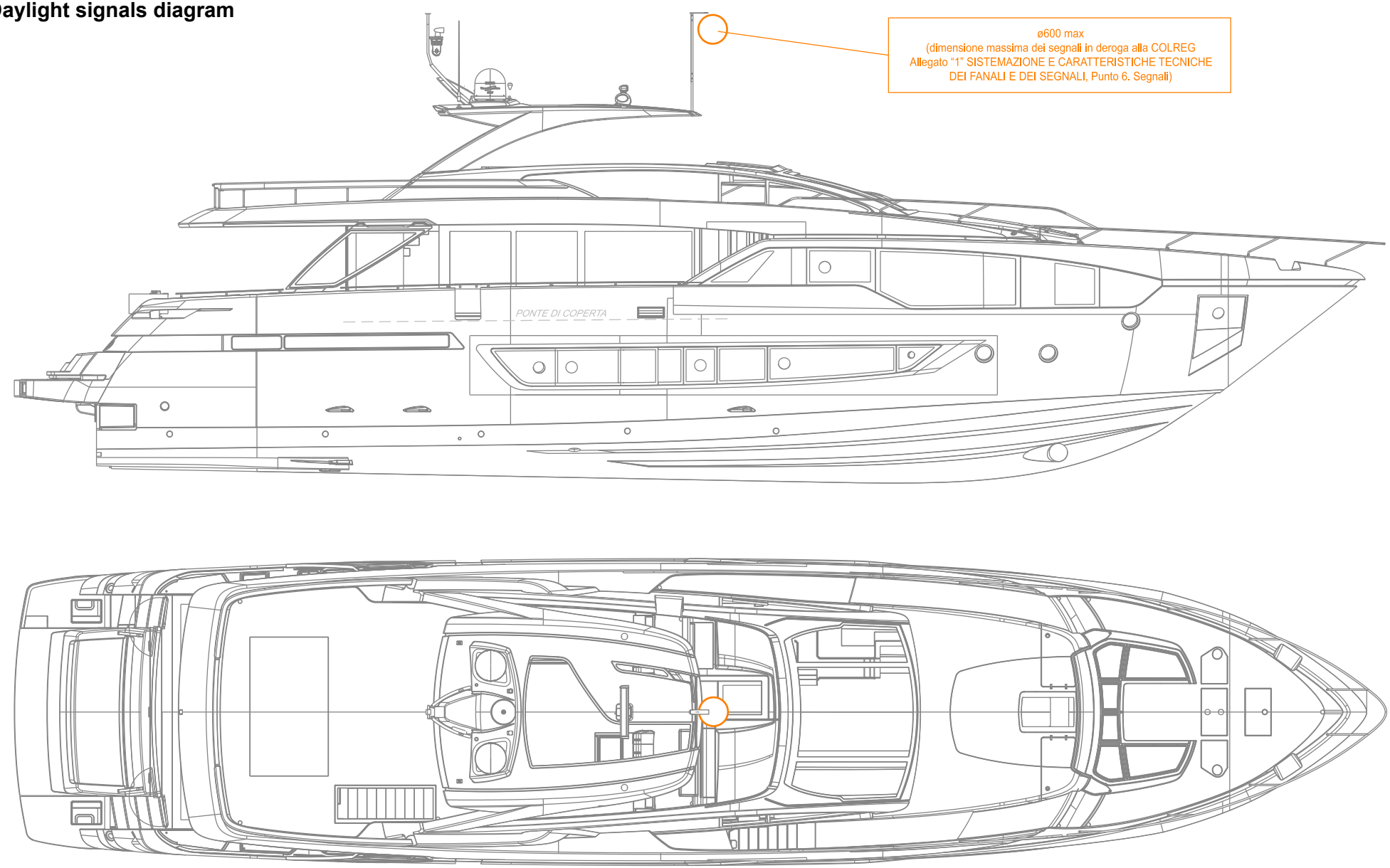
- Yacht with limited manoeuvrability:



- Yacht to trailer or towed:



Daylight signals diagram



2.12 MANDATORY SAFETY EQUIPMENT

In order to ensure the maintenance of the intrinsic safety conditions of the yacht, the Owner must keep the yacht in good operational conditions (as regards to the hull, and the propulsion, electrical and fire-fighting systems), and also to provide for the replacement of any system, rescue and safety equipment showing signs of wear or deficiencies capable of impairing their efficiency.

In addition to the equipment provided by RIVA, the Owner is responsible for providing the yacht with any further system and safety/marine equipment required by the rules in force in the nation where the yacht is used, according to weather and sea conditions and to the distance from safe harbours along the intended course.

DANGER

Rescue equipment must be arranged so as that when it is launched there are no obstacles to free floating and must be equipped with proper fitting allowing for quick release from the yacht when at sea.
The Owner is responsible for equipping the yacht with some of the equipment listed.

WARNING

The above-mentioned safety systems must comply with existing local and international navigation regulations, and must be periodically inspected and maintained by specialized companies and qualified technical personnel, prior to the expiry date indicated on the systems.

CAUTION

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

2.13 LOCATION OF SAFETY PLATES

The plates applied on the yacht are used to point out special risks: each plate is located on the part of the yacht which can be a source of risk.

Before working with or on this part of the yacht, read the safety warning carefully.

Keep all the plates clean and readable, replace them if missing or damaged.

The fire extinguisher plates are located adjacent to each fire extinguisher.

CAUTION
It is forbidden to remove the plates attached to the yacht.

2.14 SCHEDULE

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

	2028	2029	2030	2031	2032	2033	2034	2035	2036
Self-inflatable life raft (for all persons on board)									
Individual life buoy (for each person on board)									
Life jacket with rope (floating type)									
Light buoy									
Smoke buoy									
Red light hand fires									
Red signal rockets with parachute									
Compass and deviation schedules									
Nautical charts									
First aid kit									
RTF inspection									
Property tax									
Insurance									
License (pilot)									
Portable fire extinguishers									
Fixed fire extinguisher in the engine room									
E.p.i.r.b.									

DESCRIPTION OF THE YACHT

CHAPTER 3

3.1 MAIN DIMENSIONS AND CHARACTERISTIC DATA



(Loa) Overall length	28,79 m	94 ft 5 in
(Lh) Hull length	23,98 m	78 ft 8 in
(Lg) Waterline length (yacht fully laden)	23,10 m	75 ft 9 in
Maximum beam (included rubbing strakes)	6,50 m	21 ft 4 in
Hmax = Overall height from keel to rollbar	8,61 m	28 ft 3 in
Pulpit + transom	4,81 m	15 ft 9 in
Depth under propellers (yacht fully laden)	2,10 m	6 ft 9 in
Displacement unladen (unladen and dry)	86000 kg	189598 lbs
Displacement laden (fully laden)	99000 kg	218258 lbs

Features				
Hull type		Variable geometry with 12° deadrise and supporting skids		
Construction material		VTR		
Propulsion	Model	STD: MTU 2000 M96X	OPT: MTU M96Z	
	Configuration	V12 cylinders		
	Power	STD: 1472 kW (2000 HP)	OPT: 1634 kW (2222 HP)	
	Rpm	2450		
Weight (dry)	kg (lb)	2810 (6195)		
Displacement	lt (cu in)	26,8 (1635)		
Inverter	Model	STD: 2 x ZF 3050 V	OPT: 2 x ZF 3060 V	
Fuel tank capacity	lt (Gal) approximately	8700 (2298)		
Fresh water tank capacity	lt (Gal) approximately	1320 (349)		
Black water tank capacity	lt (Gal) approximately	535 (141)		
Grey water tank capacity	lt (Gal) approximately	535 (141)		
Total weight of liquids (full tanks)	kg (lb) approximately	9567 (21093)		
On-board power supply	(V)	230 V single-phase from generator sets		
	(V)	24 V from batteries		
Power generator (No. 2)	Model	STD: Mase I.S. 29 + Mase I.S. 22K	OPT_1: 2x Mase I.S. 29	OPT_2: 2x Mase I.S. 34.06K
	Voltage (V)	400 V Three-phase		
	Frequency (Hz)	STD: 50 Hz	OPT: 60 Hz	
	Power (kW)	STD: 27 + 20 kW	OPT_1: 27 + 27 kW	OPT_2: 29 + 29 kW
Batteries	Engines (No.)	4		
	Services (No.)	12		
	Generator (No.)	2		
	Radio (No.)	2		
	Emergency (No.)	6		

CAUTION

RIVA yachts are designed to obtain a correct transversal trim with full optional equipment, as well as spare propellers and shafts.
If the yacht is not provided with full optional and with spare propellers and shafts, some weights are inserted to correct the transversal trim.
The above-mentioned weights can be removed or displaced as soon as the yacht is provided with a new equipment.

NOTE

The technical specifications and the performances indicated are merely indicative, do not constitute an offer with the value of a contract in any way, and are referred to standard models of the yachts built by the Shipyard in the European version.
The only technical indications or descriptions with contract value for the purchaser are those relevant to the specific yacht purchased and contained in the sale documents.

WARNING

When loading the yacht, never exceed the maximum recommended load.
Always load the yacht carefully and distribute loads appropriately to maintain design trim (approximately level).

3.2 GENERAL LAYOUT AND SECTORS OF THE YACHT

This chapter contains a general description of the yacht and is supported by a set of illustrations thanks to which it is possible to easily locate the main areas and the different devices.

Advice and information on the correct use of the various instruments are also given.

The structure of the yacht has been divided as follows:

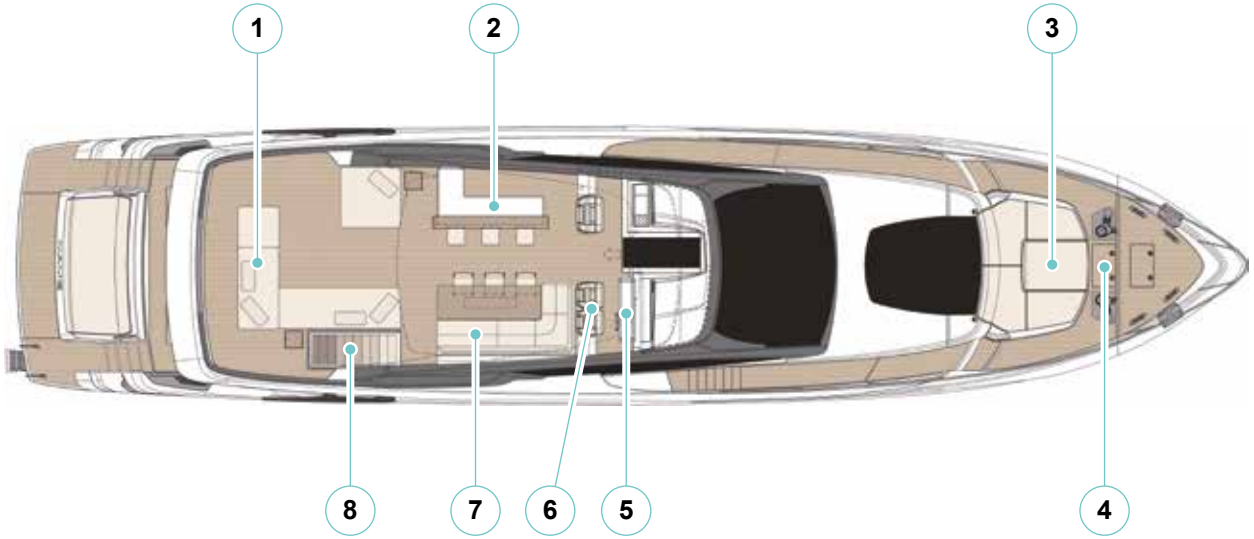
- Sun deck
- Wheelhouse deck
- Main Deck
- Lower Deck
- Engine room

The yacht is provided with both electronic and mechanical devices and instruments; some of these are provided with their own user's manuals.

The information contained therein are an integral part of this Owner's Manual.

3.3 SUN DECK

1. Sun-deck area
2. Services furniture
3. Stern cockpit
4. Anchorage area and bow mooring
5. Sun deck helm station
6. Captain seat
7. Sofa
8. Access from the cockpit



WARNING

When the sun deck helm station is not used, it is advisable to protect its instruments with relevant covers and a protection cloth.

MAINTENANCE
SUN DECK LIGHTING SYSTEM

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

WARNING

The use of lateral closing systems, such as Cristal or similar, is not allowed during navigation.

CAUTION

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

CAUTION

Is not recommended to move during navigation, because a lateral skid of the yacht could have a negative effect on a moving passenger, causing an accidental fall or the impact against a piece of furniture.

CAUTION

Keep all on board steps clean and dry.

CAUTION

Access the Hard Top only with safety belt by qualified / trained technical personnel for work at height.

DANGER

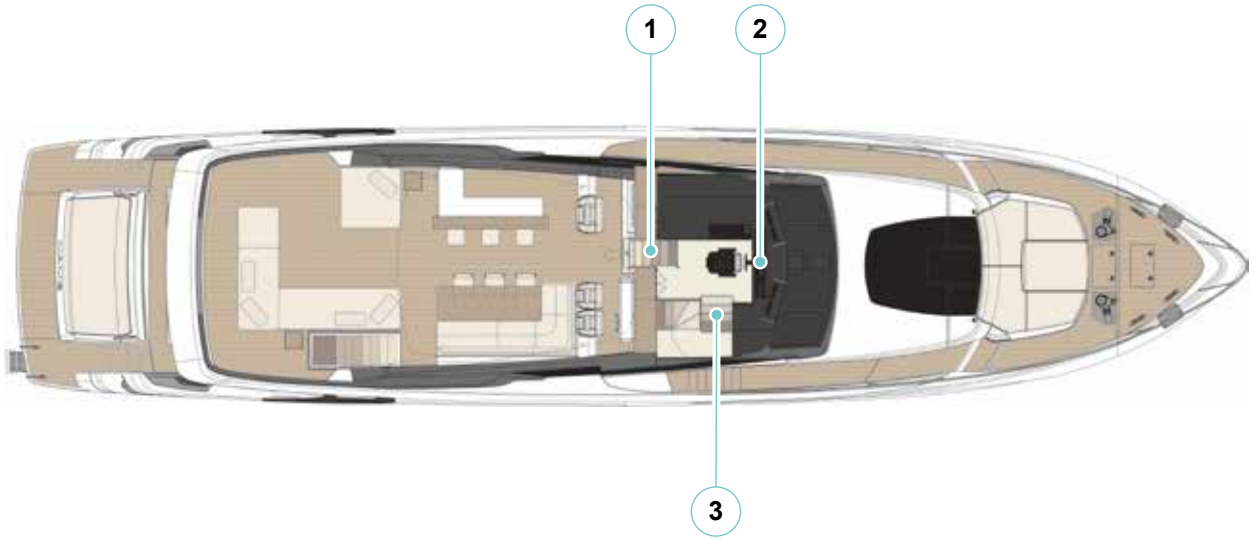
Do not use the forward compartment to store fuel.

3.4 WHEELHOUSE DECK

1. Sun deck access ladder
2. Helm station
3. Main deck access ladder

CAUTION

The main steering position is on the Sun deck, as visibility is reduced from the steering position on the Wheelhouse deck.
A special plate affixed by the Manufacturer will recall the caution.



The access to the helm from the inside is possible through the starboard ladders, while, from the outside, it is possible from the bow ladders on the Sun deck.

The helm station allows the use and oversight of the whole yacht steering instrumentation.

DANGER

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

CAUTION

For the correct use of the various devices installed in the helm station, see the relevant instruction manuals.

CAUTION

It is not recommended to move during navigation, because a lateral skid of the yacht could have a negative effect on a moving passenger, causing an accidental fall or the impact against a piece of furniture.

WARNING

To prevent circumstances that could lead to property damage, injury or death due to the improper use of the helm and its controls, the yacht's Owner/Captain must ensure that inexperienced or unauthorized persons are never permitted to be at the helm station.

CAUTION

Turn on the spot lights of the passage ways so as to ensure a proper lighting. Check the operation of the spot lights and, if necessary, replace their bulbs.

NOTE

Normal yacht motion in a seaway can cause accidental movement of staterooms doors and other access doors and hatches.
Personal injury can result if doors and hatches move suddenly. Before getting the yacht underway, close and secure all access and staterooms doors and hatches.

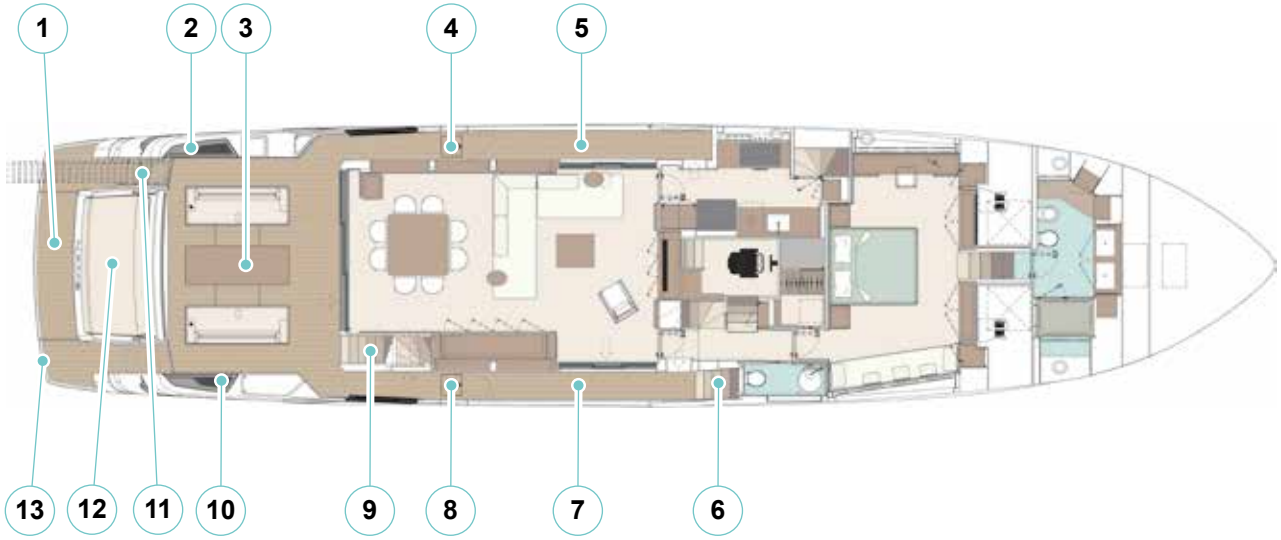
WARNING

When navigating, the yacht's normal movement in the water can cause the slipping or falling of persons with the potential hazard of serious injury or even death. Persons should remain seated in secure locations when the yacht is underway.

3.5 MAIN DECK

3.5.1 External area

1. Stern platform
2. Port mooring peak
3. Stern cockpit
4. Bocchetta imbarco combustibile
5. Port side walk-around
6. Bow access ladder
7. Starboard side walk-around
8. Fuel filling nozzle
9. Sun deck access ladder
10. Starboard mooring peak
11. Gangway
12. Garage hatch
13. Swim ladder exit



CAUTION

The removable awnings and their support poles must always be dismantled and stored in the appropriate places before starting navigation.
When the poles are not in use, they should be stored in the appropriate places.
The awnings should only be installed when the yacht is stationary and the weather conditions are favourable. Do not leave the blinds open in heavy rain. Do not leave the awnings installed when the yacht is unattended.
Do not allow water to stagnate on the fabric of the awnings.
When the awnings are not in use, keep the pole holes closed with the appropriate lids.

The access to the yacht from shore or water is possible by a gangway, located on the port side.

CAUTION

Always use the gangway to access the yacht; any other access system is potentially dangerous.

The transom houses the garage hatch, inside which it is possible to accommodate a tender. The garage hatch can be operated with a switch located in the stern well on the port side.

DANGER

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

DANGER

Never start navigation with gate, gangway, swim ladder, lift and garage hatch not correctly retracted or closed.

DANGER

The garage hatch must always be closed during navigation, it can stay open only with yacht stationary and with favourable sea weather conditions.
Loads stowed inside the garage, in particular a possible jet-ski, must be fastened with the utmost care.
During navigation nobody should stay inside the garage.

DANGER

As the opening/closing of the garage hatch is performed by an electronic mechanisms, always check that no obstacles or persons are standing nearby before its activation, this operation has to be performed exclusively by skilled crew.

CAUTION

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

CAUTION

In case a jet-ski is used, each passenger must wear a life jacket; the driver must also have a regular license and keep to the rules of the country where the jet-ski is driven.

DANGER

Do not use assisted movement if the weather conditions (wind, currents, atmospheric phenomena) are such as to affect yacht stability.

Stern cleats and mooring winches are located on both sides of the yacht and are located inside the mooring furniture.

CAUTION

Do not use the mooring winches as a permanent mooring point.

On the starboard side walk-around there is the ladder to access the engine room.

The port and starboard side walk-arounds are protected by a perimeter handrail.

WARNING

When resting on the perimeter handrail, lend caution to prevent falling into the sea.

The starboard side walk-around leads to the bow area.

The group dedicated to anchorage is located on the bow of the yacht. The winches still winch are centrally positioned.

The four side cleats are also positioned forward.

In the fore peak there is the remote control of the anchor winch, the connection for the deck washing hose.

DANGER

Pay particular attention to rotary pieces, keeping your feet, hands, clothing and hairs at due distance.
If you control the anchor winch from the helm station make sure that nobody is near it and that your visual field is free.

3.5.2 Internal area

1. Living room with sofa and coffee table / Dining area (optional)
2. Dining area / Living room with sofa and coffee table (optional)
3. Galley
4. Crew area access ladder
5. Owner's cabin
6. Owner's cabin bathroom
7. Day head
8. Wheelhouse deck access ladder
9. Lower deck access ladder
10. Sliding door

CAUTION

For the adjustment of the saloon door, of the side glass walls, please contact the RIVA After Sales & Service Department.

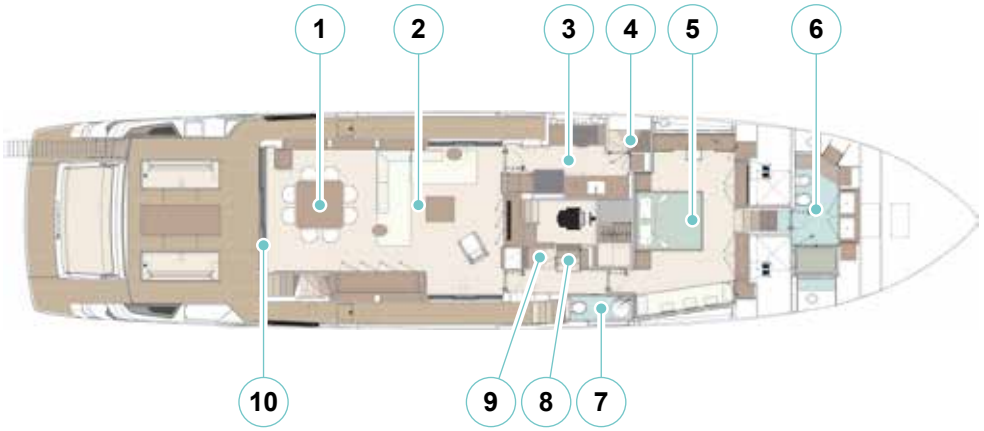
CAUTION

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

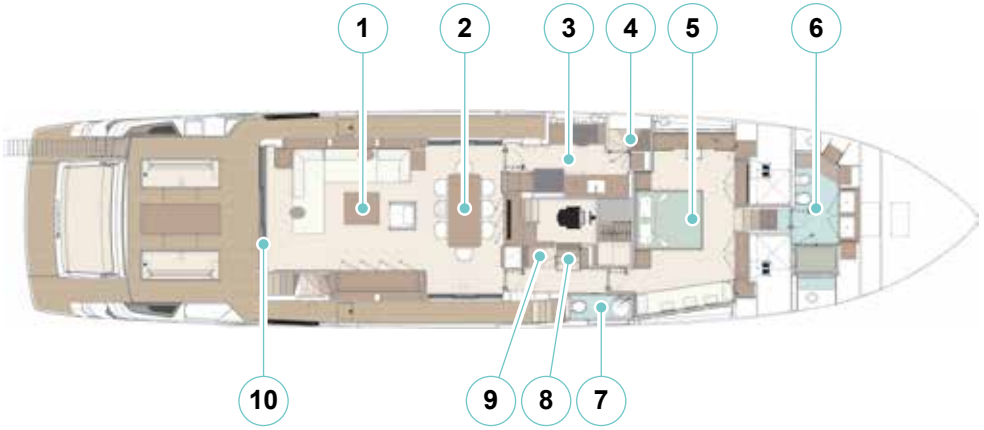
DANGER

Do not use assisted movement if the weather conditions (wind, currents, atmospheric phenomena) are such as to affect yacht stability.

VERSIONE STANDARD
STANDARD VERSION



VERSIONE OPTIONAL
OPTIONAL VERSION



CAUTION

Never navigate with the portholes open. Regularly check the correct operating sequence.

CAUTION

The saloon door which gives access to the salon is provided with a double automatic sensor for opening and closing (internally and externally); for a correct operation, they must not be obstructed.
The operation of the glass wall is enabled by a key in the stern cockpit near the opening of the glass wall.

CAUTION

For the safety on the people on board, the Captain should have an identifiable copy of the keys on board for any occasion.
Always keep a copy of the keys on your yacht, for deteriorated or altered locks, always contact RIVA.

CAUTION

The living area, like much of the yacht, is equipped with air conditioning. It is therefore advisable to open the porthole as little as possible when the system is in operation.

CAUTION

The extremely precious finishing of woods used is the result of an accurate work, it is water resistant but at the same time delicate and needing accurate maintenance. Such surfaces must therefore be dried after use, after being exposed to rain and or washed, and a regular maintenance must be carried out.

CAUTION

The excessive use of conditioned air may cause infirmities due to the great difference of temperature between the yacht inside and the outside. It is recommended to condition rooms with a temperature difference of maximum 5°C between inside and outside.

CAUTION

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

CAUTION

If you are to open or to close the weather-proof door, check first that the walk-arounds are clear from crew or passengers. Their opening or closing restricts the movement space on the walk-around.

CAUTION
During navigation, keep the side doors closed to avoid possible damage to the on-board instruments.

CAUTION
Turn on the spot lights of the passage ways so as to ensure a proper lighting. Check the operation of the spot lights and, if necessary, replace their bulbs.

3.5.3 Galley

When navigating, it is advisable to close all the doors well.
The dishwasher uses water from the cold fresh water system.
In the galley, above the electric plates, there is a suction nozzle, to eliminate galley odours.

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

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

CAUTION
When using the galley, increase the ventilation of the inner rooms as much as possible. Never use the cooking top to heat the room.

CAUTION
Do not leave pans unattended when they are on the burner.

CAUTION
Do not put liquid foods into the microwave oven.

CAUTION
Do not place metal containers or metal inserts inside the microwave oven.

CAUTION
In order to eliminate smells, vapour or fumes, it is necessary to turn on the suction hood at cooking start and to keep it on at cooking end for 10-15 minutes.

CAUTION

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

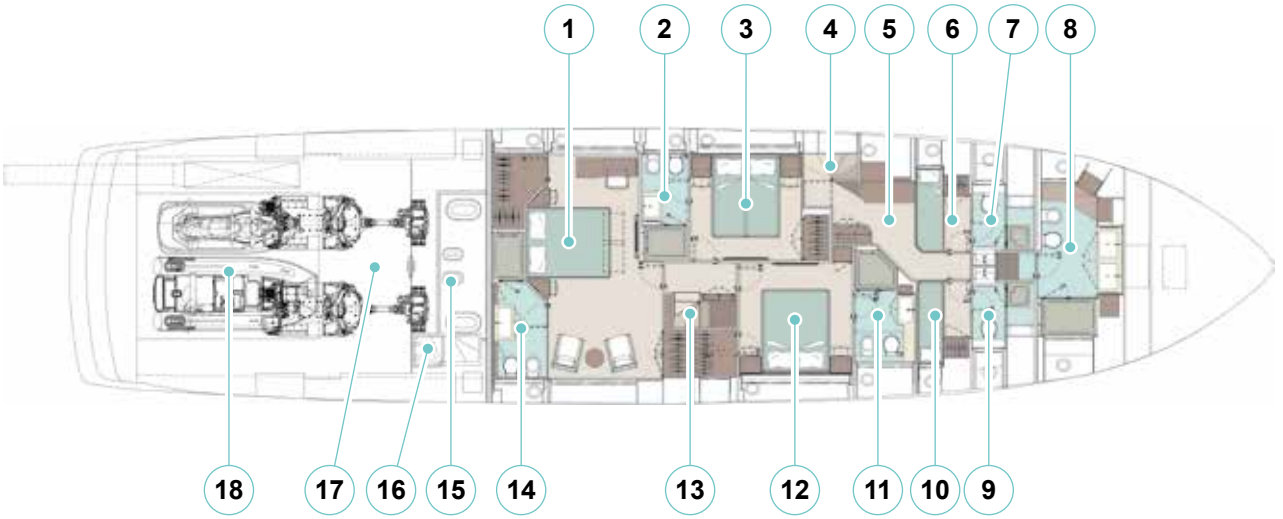
CAUTION

Children are allowed to use the galley only when they are able to use its items correctly and to understand the dangers specified in the special instruction manuals. The help of an adult is required.

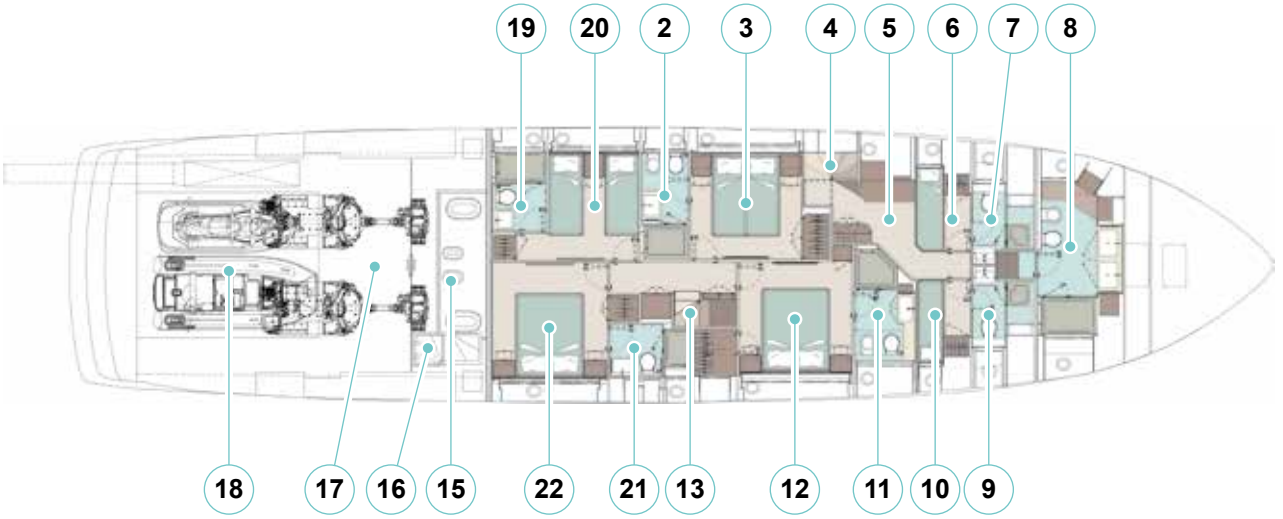
3.6 LOWER DECK

1. VIP cabin (standard)
2. Port guest cabin bathroom
3. Port guest cabin
4. Galley access ladder
5. Crew area
6. Port crew cabin
7. Port crew cabin bathroom
8. Owner's cabin bathroom
9. Starboard crew cabin bathroom
10. Starboard crew cabin
11. Starboard guest cabin bathroom
12. Starboard guest cabin
13. Main deck access ladder
14. VIP cabin bathroom (standard)
15. Technical room and system room
16. Port side walk-around access ladder
17. Engine room
18. Garage
19. Aft port guest bathroom (optional)
20. Aft port guest cabin (optional)
21. Aft starboard guest bathroom (optional)
22. Aft starboard guest cabin (optional)

VERSIONE STANDARD
STANDARD VERSION



VERSIONE OPTIONAL
OPTIONAL VERSION



The lower deck consists of two areas, which are accessible from different not-connecting places.

The areas are:

- Cabins with bathroom:
  - Guests.
  - VIP.

- Crew cabins with bathroom.

- Engine room.

- Garage.

CAUTION

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

DANGER

The garage hatch and stern platform must always be closed during navigation, they can stay open only with stationary yacht and with favourable sea weather conditions. Loads stowed inside the garage, in particular a possible jet-ski, must be fastened with the utmost care. During navigation nobody should stay inside the garage.

DANGER

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

DANGER

Do not use assisted movement if the weather conditions (wind, currents, atmospheric phenomena) are such as to affect yacht stability.

CAUTION

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

CAUTION

Close the portholes while underway or when the yacht is left unattended for a long period.

CAUTION

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

CAUTION
The mosquito net (optional) hinders the tightness of the portholes, take it off before closing the portholes.

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

DANGER
In case a fuel can is stowed in the garage, the can must not exceed a capacity of 25/30 litres.

CAUTION
In case a jet-ski is used, each passenger must wear a life jacket; the driver must also have a regular license and keep to the rules of the country where the jet-ski is driven.

In the crew mess area this is a multifunction display where it is possible to view the main information of the on-board monitoring system.

3.6.1 Porthole

The porthole consists in a fixed part (frame) and a moving part (window).

For opening, it is necessary to unlock the window by turning the handles 90° outwards. Closing is done by means of a thick seal on the porthole frame.

It is necessary to make sure that the two knobs are correctly closed, in order to make the window seal adhere well to the frame.

CAUTION
Close the skylights and skylights when the yacht is navigating or when it is left unattended for a long time.

3.7 ENGINE ROOM AND SYSTEM ROOM

The engine room can be reached by descending into the system room through the access located in the starboard side walk-around. The engine room can be accessed from the system room via a hatch.

Before entering, switch ON the engine room lighting.



DANGER

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

CAUTION

For the correct use of the various equipment in the engine room and system room, please refer to the relevant user manuals.



DANGER

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

CAUTION

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

CAUTION

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



DANGER

For safety reasons the hatch, giving access to the engine room, must be kept closed by any chance and situation.
It must stay open only during the passage.

HELM STATIONS

CHAPTER 4

4.1 YACHT HELM STATION

All yacht main controls and monitoring devices are located in the helm station. Besides on the yacht there are other helm stations which facilitate the most difficult manoeuvres, and the emergency ones.

- Sun deck helm station (main);
- Wheelhouse deck helm station;
- Stern cockpit manoeuvring station.

CAUTION

Herewith only general information for first start-up is given: in order to practice and for the specific use of the individual systems, see the RIVA suppliers manuals and ask the RIVA After Sales & Service Department.

WARNING

It is a good rule to keep the instruments clean by washing them with wet and clean rugs, avoid using chemical or abrasive products. After navigation, it is advisable to cover instrumentation and equipment.

CAUTION

The bridge shall be occupied only by the captain or crew members authorised thereby.
The accidental activation of the controls located on the helm station may pose a hazard to the yacht and those on board.

CAUTION

All electric appliances for navigation, whose parameters can be configured and set by software through the control panel, have been configured and tested upon delivery. These operations must be performed exclusively by authorized service personnel. Any modification of the preset configurations can alter the operation and reliability of the concerned system. Appliances must be used by the personnel in charge of driving the yacht and of using the systems.

CAUTION

HORIZONTAL FIELD OF VIEW - Aft view.
Unit equipped with autopilot. Manoeuvres requiring aft visibility should be carried out from the helm station on the sun deck, in accordance with the provisions of standard ISO11591.

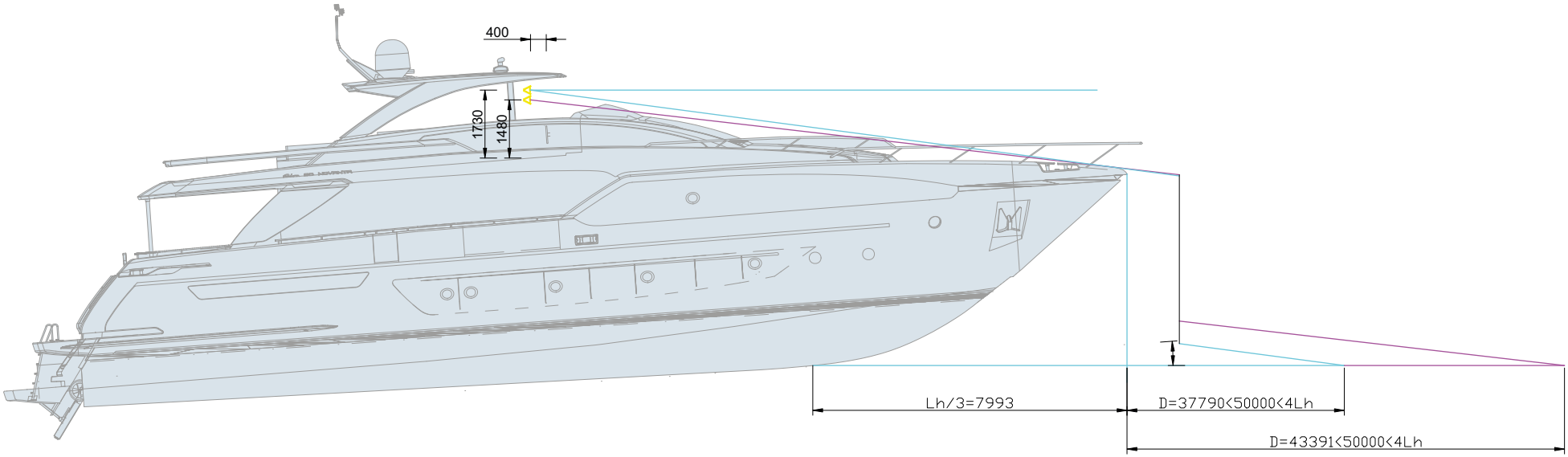
CAUTION

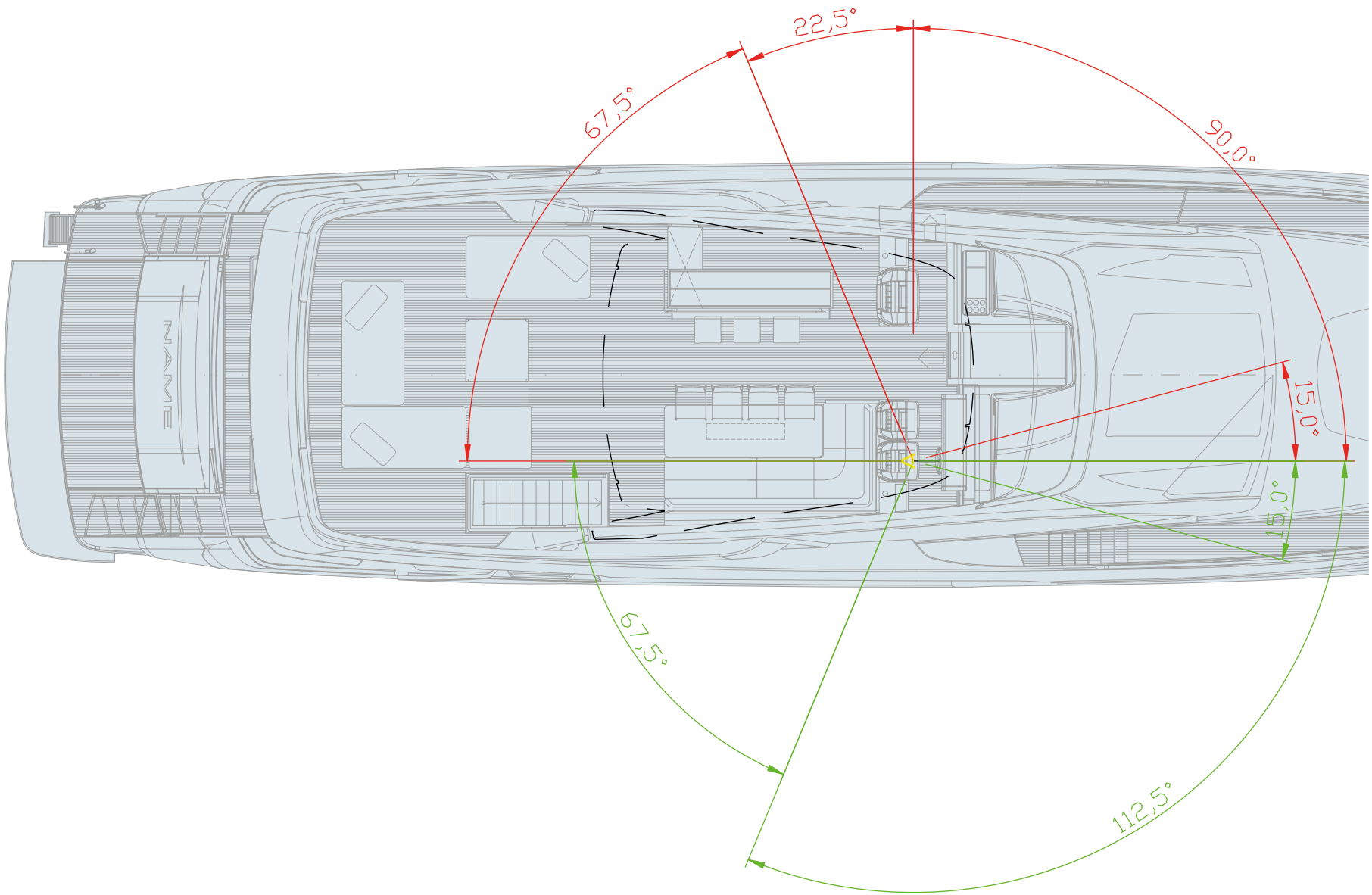
Refer to the specific manuals relating to helm station instrumentation.
Strictly adhere to the instructions contained in the manuals.

CAUTION

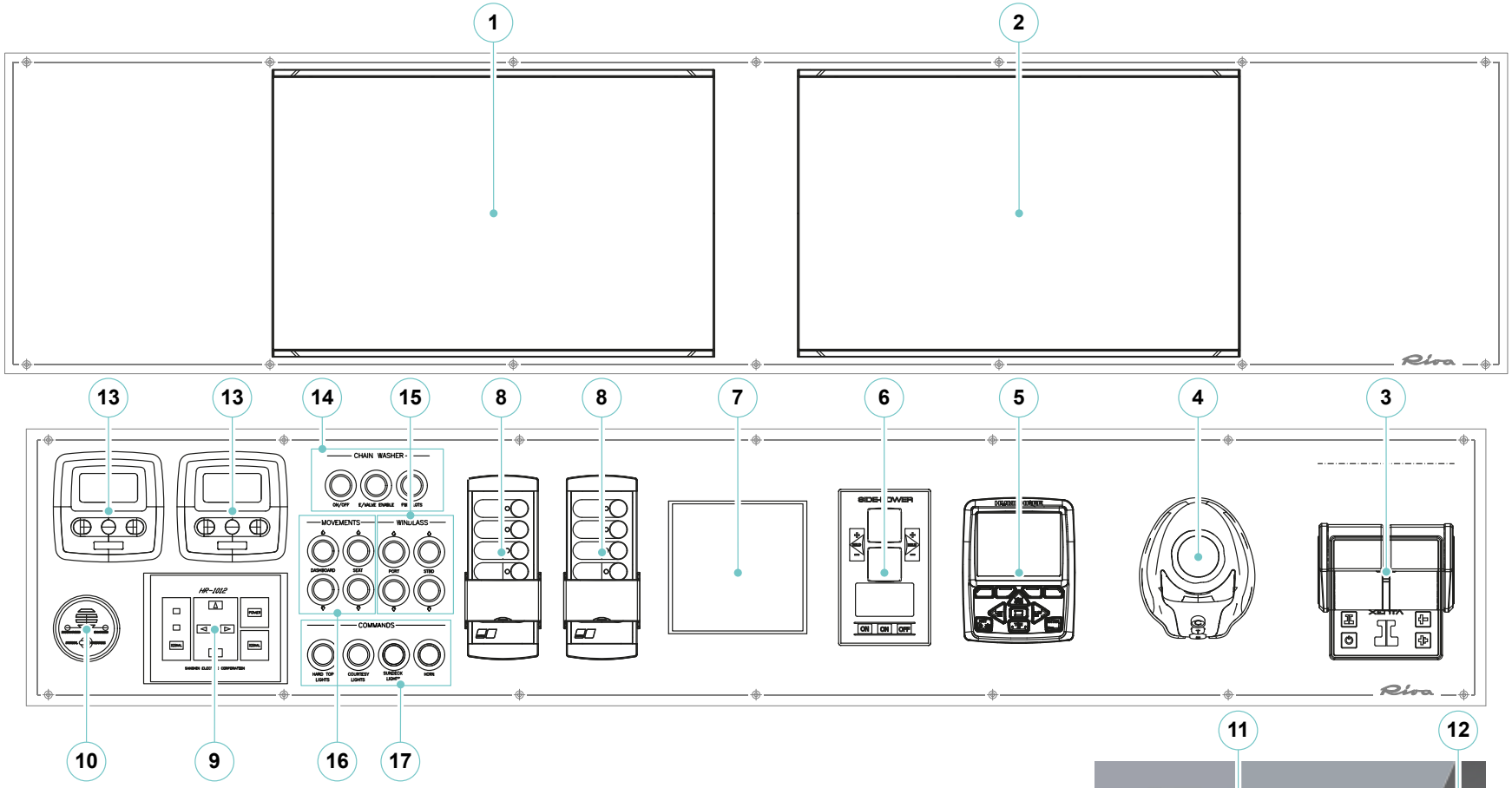
The main steering position is on the Sun deck, as visibility is reduced from the helm station on the Wheelhouse deck. A special plate affixed by the Manufacturer will recall the caution.

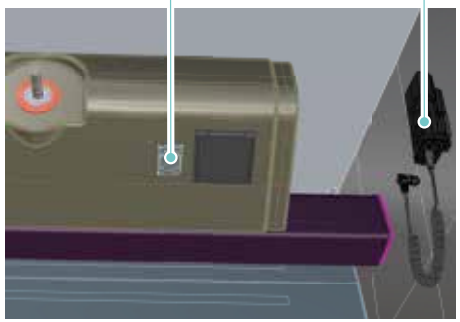
Field of view diagram




22,5°
67,5°
90,0°
15,0°
15,0°
67,5°
112,5°
NAME

4.1.1 Sun deck helm station (main)





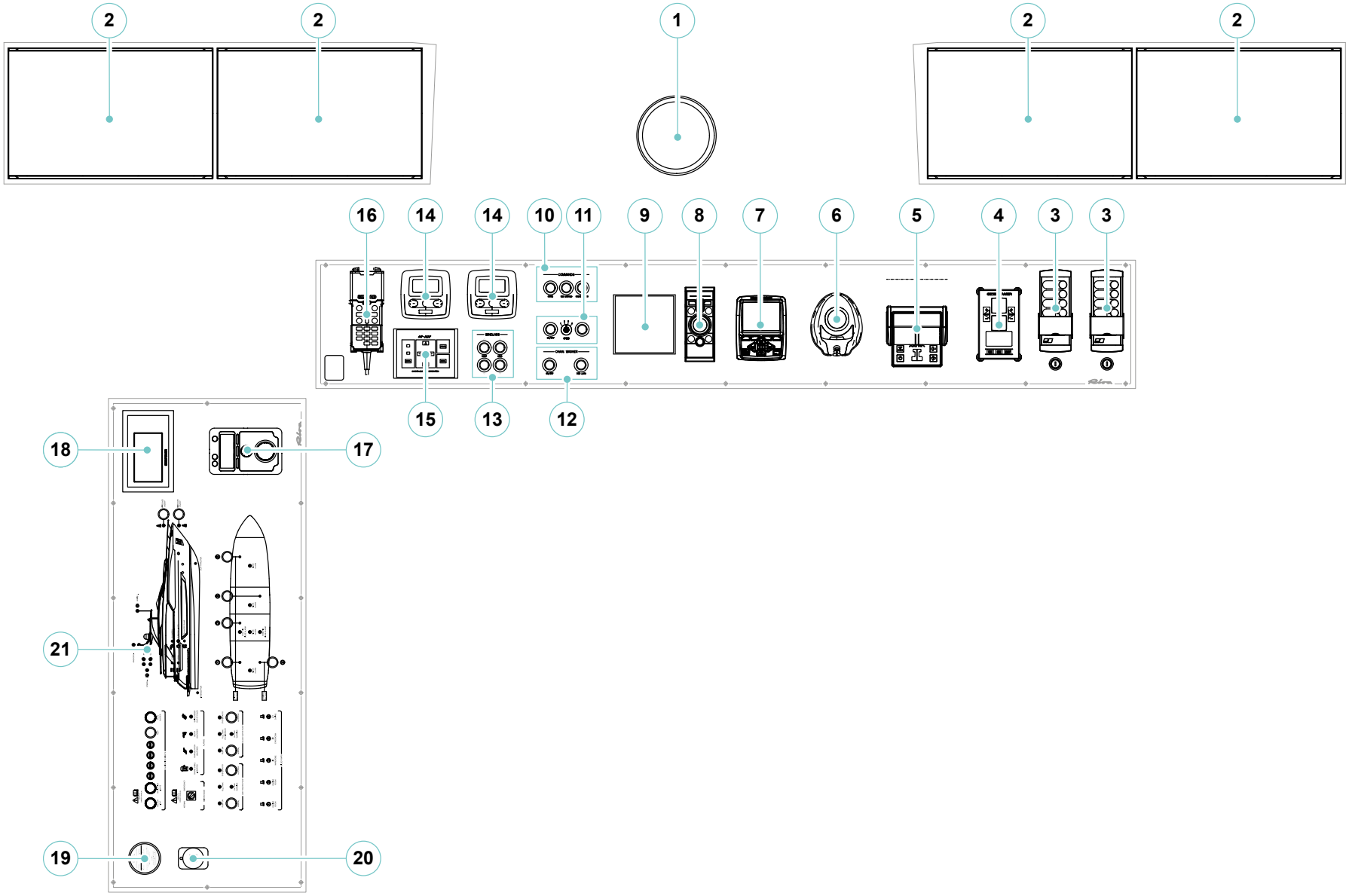
1. **Multifunction display (optional)**
   Multifunction navigation display of chartplotter, radar, fishfinder, navigation data monitor and video.
2. **Multifunction display**
   Multifunction navigation display of chartplotter, radar, fishfinder, navigation data monitor and video.
3. **Throttle**
   It manages, by means of electrical signals, the revolutions of the propulsion engines and the gears of the inverters.
4. **Control joystick (optional)**
   It allows for maneuvering in confined waters by coordinating all maneuvering systems including thrusters, maneuvering propellers, and inverters as well as positioning systems, and by controlling the yacht's movements and rotations.
5. **Interceptors command**
   They allow the handling and management of port and starboard interceptors.
6. **Thrusters commands**
   Push buttons and levers to control the operating propellers.
7. **Autopilot control**
   It allows setting the display of the autopilot instruments.

CAUTION

When navigating with the autopilot enabled and if there is an obstacle in front of the yacht's bow, the best thing to do is set the device to standby in order to definitively take control of the yacht. Once by-passed the obstacle the device can be switched ON by setting the track again.

8. **Engines management buttons**
   It allows the switch ON and OFF, also, even in emergency, of the engines.
9. **Searchlight controls**
   Power and direction buttons for the searchlight.
10. **Engine room fire fighting system control panel**
11. **Dual USB port**
12. **VHF-DSC radiotelephone**
    This is a Digital Selective Calling (DSC) radiotelephone. The emergency and call buttons are protected against accidental use. Individual or group calls can be adequately made from the keypad using either the internal list or by entering the number directly.
13. **Chain counter (optional)**
    It allows to control and monitor the operation of the windlass.
14. **Chain washer controls**
    It allows the management of the chain washer system, through the controls:
    - Valve opening;
    - Start/Stop;
    - Light activation.
15. **Anchor windlass controls**
    It allows the operation of the anchor windlass.
16. **Movement control buttons:**
    These buttons allow you to:
    - Raise the helm station;
    - Lower the helm station;
    - Raise the captain seat;
    - Lower the captain seat.
17. **Various commands:**
    These buttons allow you to:
    - Turn ON/OFF the hard top lights;
    - Turn ON/OFF the courtesy lights;
    - Turn ON/OFF the sun deck lights;
    - Activate/deactivate the horn.

4.1.2 Wheelhouse deck helm station



1. **Magnetic compass**

2. **Multifunction display**
   It allows you to navigate through the setting menus of the yacht's control system and thus to view or set certain parameters.

3. **Engines management buttons**
   It allows the switch ON and OFF, also, even in emergency, of the engines.

4. **Thrusters commands**
   Push buttons and levers to control the operating propellers.

5. **Throttle**
   It manages, by means of electrical signals, the revolutions of the propulsion engines and the gears of the inverters.

6. **Control joystick**
   It allows for maneuvering in confined waters by coordinating all maneuvering systems including thrusters, maneuvering propellers, and inverters as well as positioning systems, and by controlling the yacht's movements and rotations.

7. **Interceptors command**
   They allow the handling and management of port and starboard interceptors.

8. **Multi-function display control keypad**
   Allows you to set the display of the multifunction display.

9. **Autopilot control**
   It allows setting the display of the autopilot instruments.

CAUTION

When navigating with the autopilot enabled and if there is an obstacle in front of the yacht's bow, the best thing to do is set the device to standby in order to definitively take control of the yacht. Once by-passed the obstacle the device can be switched ON by setting the track again.

10. **Various commands**
    These buttons allow you to activate:
    - The horn;
    - Compass lights;
    - Wheelhouse red lights;

11. **Wiper controls**
    These controls allow you to:
    - Turn ON/OFF the windscreen wiper;
    - Select the windscreen wiper operating speed;
    - Dispense water to wash the windscreen.

12. **Chain washer controls**
    It allow to activate and manage the anchor chain wash system.

13. **Anchor windlass controls**
    It allows the operation of the anchor windlass.

14. **Chain counter**
    It allows to control and monitor the operation of the windlass.

15. **Searchlight controls**
    Power and direction buttons for the searchlight.

16. VHF-DSC radiotelephone

A Digital Selective Call (DSC) radiotelephone. The emergency and call buttons are protected from accidental use. Individual or group calls can be conveniently made from the keypad using either the internal directory or by inputting the number directly.

Your yacht is equipped with AIS (Automatic Identification System), which allows you to exchange information with other yachts equipped with AIS.

17. Thermal-camera control panel

It allows you to control the thermal-camera operation.

18. Stabiliser fins control display

It allows you to monitor the operation of the stabiliser fins.

19. Fire fighting system control panel

The panel allows you to:

- Turn OFF the horn that signals that the system is running and the extinguisher is discharging gas.
- Change the light intensity of the CHARGE/ OVERRIDE panel lights.
- Exclude the control unit that in case of discharge of the extinguishing agent stops engines, generators and electric extractors. In the OVERRIDE position this control unit is excluded.

20. Dual USB port

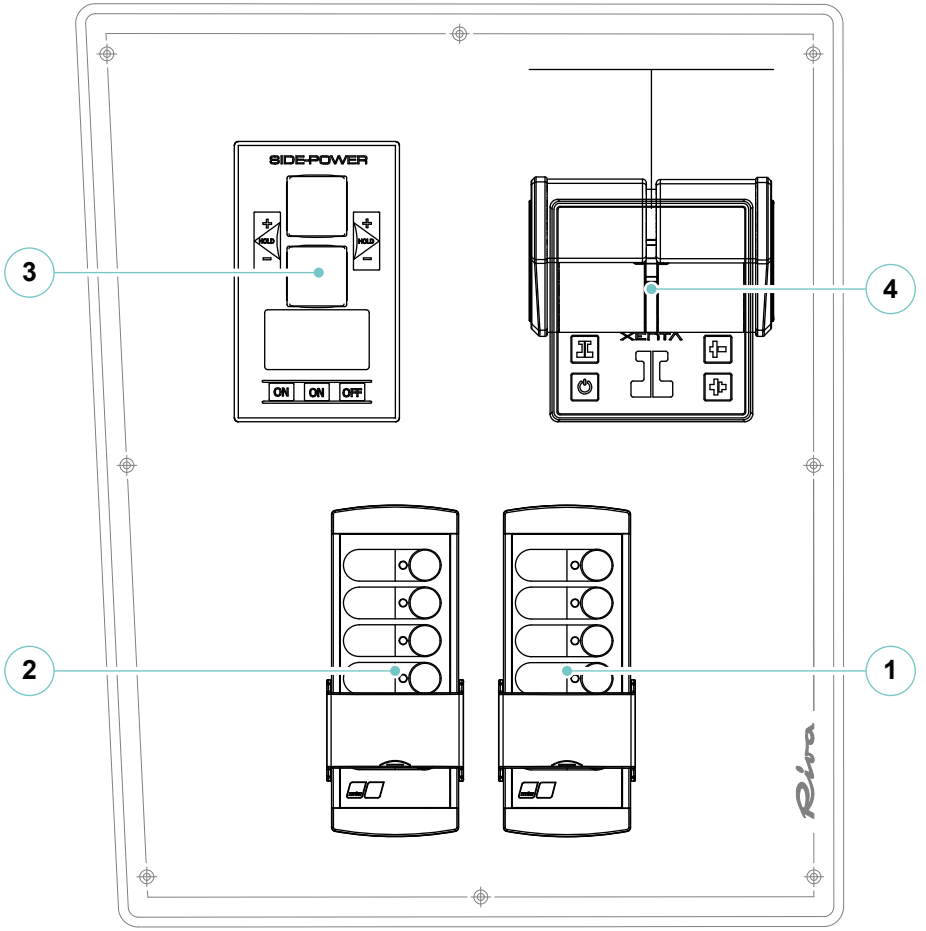
21. Synoptic panel

4.1.3 Stern cockpit manoeuvring station (optional)

1. **Starboard engine management buttons**
2. **Port engine management buttons**
   They allow the ignition, the stop, also in emergency of the engine.

3. **Thrusters commands**
   Push buttons and levers to control the operating thrusters.

4. **Throttle**
   It manages, by means of electrical signals, the revolutions of the propulsion engines and the gears of the inverters.



4.2 INSTRUMENTATION

4.2.1 Synoptic on the helm station

The synoptic panel is located on the starboard side of the helm station.

The functions on the panel are as follows:

1. **Navigation light activation and test commands**

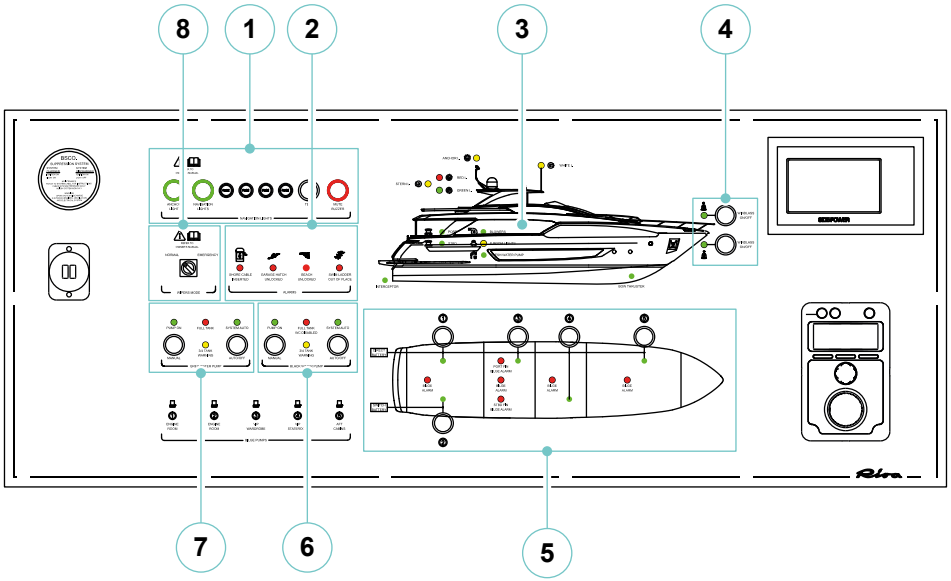
2. **Alarm warning lights**
   Allow you to monitor the status of:
   - Shore power cable connected
   - Garage hatch not closed
   - Gangway not closed

3. **Utilities activation warning lights**
   Allow to monitor the status of on-board utilities.

4. **Anchor winch activation buttons**
   They enable the operation of the anchor winch.

5. **Bilge pump activation buttons**
   Allow to activate and monitor the status of the bilge pumps located in the various compartments of the yacht.
   The warning lights make it possible to monitor any water in the bilge.

6. **Black water level operation and monitoring controls**
   Allow to select the black water pump operating mode and activate it manually.
   The dedicated lights make it possible to monitor how full the black water tank is.



7. **Grey water level operation and monitoring controls**
   Allow to select the grey water pump operating mode and activate it manually.
   The dedicated lights make it possible to monitor how full the grey water tank is.

8. **Windscreen wiper operating mode selector**
   Allow to select the windscreen wiper operating mode from:
   - Normal;
   - Emergency.

4.2.2 VHF-DSC Radiotelephone (standard)

Operate the radiotelephone according to following instructions:

- Power the device with the magneto-thermal switches located on the electrical panel on the helm station.
- Press ON/C key; as default setting the device switches on the priority channel (16) frequency. If the function “LAST CHANNEL USED” has been previously set, the radiotelephone will switch on the frequency of the last channel selected.

The display shows the channel number, the volume, and squelch levels.

The keyboard has digital keys for the selection of the channels and function keys for the adjustment of the volume, of the squelch and of the scanning function.
The SHIFT key allows the access to the secondary functions.
The PTT key (push to talk) located on the port side of the device, is activated when the receiver is unhooked from the holder.
Key 16 allows selecting the channel for vocal rescue request. It is however possible to carry out selective digital calls, quicker and simpler than the traditional calls. To obtain this, lift the protection flap placed on the front side of the radiotelephone.
Then press the DISTRESS key to get access to the various functions.

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

Radiotelephone keyboard



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

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

CAUTION
Perform the call "**MAYDAY RELAY**" only if there is a reasonable certainty that the message has not been collected by the rescue team so as not to engage the distress channel uselessly.

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

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

MANUAL DISTRESS CALL:

- Select the distress channel by pressing the 16/C button or by scrolling through the channels with the volume buttons.
- Press the transmission key "PTT" on the radiotelephone and carry out the communication.

MAYDAY - MAYDAY - MAYDAY THIS IS:
Repeat the yacht's name for 3 (three) times.

MAYDAY THIS IS:
Repeat the yacht's name.

AT POSITION:
Specify the position of the yacht.

SPECIFY THE DISTRESS CAUSE.

- Release the “PTT” transmission key.
- Wait for the reply for a few seconds.
- If you do not receive any reply, repeat the message at regular intervals, until receiving a reply.
- When you receive an answer, continue the conversation:
  - Hold down ”PTT” while talking.
  - Release “PTT” while listening.
- It may be required to switch to a working channel.

AUTOMATIC DISTRESS CALL:

- Lift the cover and press the DIST key; the display will show the wording “Distress call Undefined”.
- Press and hold the DIST button for about 3 seconds. Then the message “Distress Call Sending” is displayed and the radio beeps.
- The distress message will be automatically transmitted and repeated at irregular intervals on channel 70. Channel 16 will be available for communication after each transmission.
- If you do not receive a response after a short time, try to send the distress message manually.

WARNING

After the automatic SOS has been activated, it must be turned off by pressing the ON/C, otherwise the help message continues to be transmitted.
The SOS function is automatically locked until the number of DSC has been entered. Consult the manual provided by the manufacturer for the correct entry operations.

- You can press ▲ or ▼ to scroll through the transmitted Distress call information.
- You now have the following soft-key options:

RESEND

Displays “HOLD DISTRESS 3 SECONDS TO SEND”. You can then:

- Hold down the red “DISTRESS” key for 3 seconds to resend the call;
- Press the “EXIT” soft key to return to waiting for an acknowledgement.

PAUSE

Pauses the call repeat mode. You can then:

- Press the “EXIT” soft key to resume the same call.

CANCEL

Displays “DISTRESS CALL SEND CANCEL.” You can then:

- Press the “NO” soft key to send the DISTRESS CANCEL signal.
- Press the “YES” software button to send the “Distress Cancel” signal;
- Press “PTT” and report your situation using the handset.
- When finished talking, press “X” to return to standby mode.

NOTE

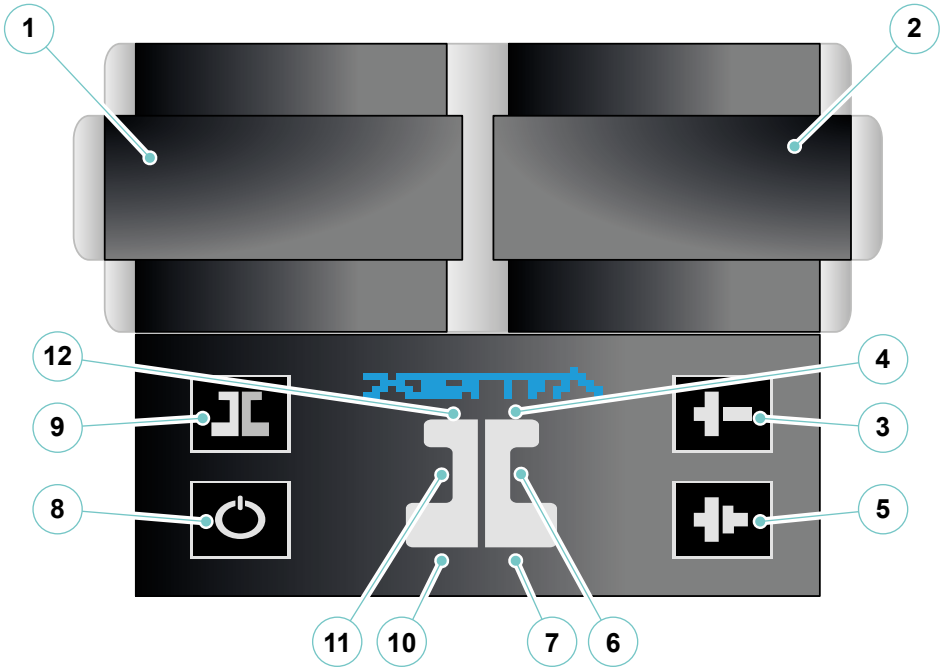
For further information on use and maintenance, please refer to the manufacturer’s manual.

4.2.3 Throttle

The throttle is a system intended for control engine revolutions and inverter gears.
It has the following features and performance functions.

- Sequential inverter and engine speed;
- Start interlock;
- High/low idle;
- Engine synchronization for several thrusters;
- Trolling solenoid valve control;
- Emergency protection against inversion;
- Inverter oil pressure interlock (optional).

These features and functions make lever group use easier.



1. Throttle of port engine/inverter
2. Throttle of starboard engine/inverter
3. WARM UP button
4. Control indicator – starboard
5. TROLLING button
6. Throttle indicators – starboard
7. Gear and mode indicators – starboard
8. COMMAND button
9. SINGLE LEVER button
10. Gear and mode indicators – port
11. Throttle indicators – port
12. Control indicator – port

- **SINGLE LEVER** button (**9**) : it allows the activation of the **SINGLE LEVER** mode (after authorisation by means of the **COMMAND** button).
- **COMMAND** button (**8**): it activates the throttle levers station and allows to confirm the activation of all the other operative modes.

- **WARM UP** button (**3**): it activates the **WARM UP** mode (prior authorization by **COMMAND** button).
- **TROLLING** button (**5**): it activates the **TROLLING** mode (prior authorization by **COMMAND** button). The **TROLLING** mode is an optional feature.
- Control indicator (**4** and **12**): it indicates the status of the port/starboard lever and reports the errors.
- Throttle indicators (**6** and **11**): they indicate the level of throttle requested by port/starboard lever.
- The more throttle is requested, the higher is the number of lights activated.
- Gear and mode indicators (**7** and **10**): In **THROTTLE** mode, they are both ON in solid blue if the port/starboard lever is in neutral. When the lever is in forward position, the top LED is ON in solid blue. When the lever is in backward position, only the bottom LED is in solid blue. In **SINGLE LEVER** mode, they are both on in fixed blue if the control lever is in neutral. When the lever is in forward position, the top LEDs are ON in solid blue. When the lever is in backward position, the bottom LEDs are ON in solid blue. In **WARM UP** or **TROLLING** modes they flash in blue giving an indication on the active operational mode.

The lights on the control panel of the control level provide information on the operational conditions of the system.

Control taking stages

- Make sure the throttle are in neutral. The station cannot take control when the levers are in other positions.
- Press twice the throttle switching on button, the LEDs go on indicating that the throttle is active.

WARNING

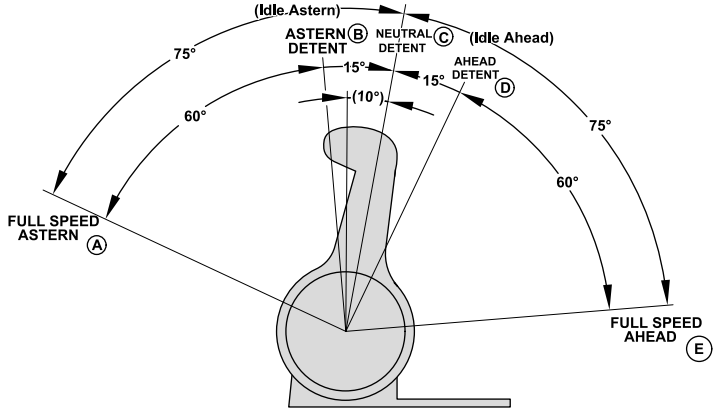
The following movement of the group lever of the throttle will engage the gear.

- Start engine and the neutral control at the same time. If the levers of the lever group are not in neutral, the interlock switch will not allow engine starting.
- Move the levers to the stop backward or forward. The drive system starts.

Basic operation

The throttle has three stops: backward, neutral, and forward.
With the throttle positioned on the “Neutral detent” stop, the system sends the neutral control and idle revolutions per minute.
By moving the lever of the throttle forward “Astern detent” or backward “Ahead detent” by 15° the backward/forward clutch engages.
The engine runs at the idle revolution number.
By moving the lever further, the engine revolution number increases proportionally compared to the lever of the throttle.

Indicator	Lever position
A	Full speed astern
B	Stop backward (idle astern)
C	Neutral stop
D	Stop forward (idle ahead)
E	Full speed ahead



CAUTION

The neutral stop (central position of the throttle movement) is 10° forward. The moving degrees are measured from this position, not from the vertical one.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

4.2.4 Magnetic compass

A magnetic compass fitted on the dashboard of a yacht is inevitably close to the magnetic fields produced by the electric and electronic systems on board. This condition is called "variation".
Only a skilled technician should set the compass to correct the variation and supply an accurate deviation schedule. This procedure is called "compass compensation" or "compass setting".
Compensate the compass after the yacht launch or when replacing it, in order to eliminate possible mistakes due to the compass position.
Do not approach the compass to steel or iron objects or objects made of other ferrous materials (e.g. tools, wrenches, batteries, etc..). The ferrous materials close to the compass alter the readings and make them unreliable.
Remove any unnecessary object near the compass.

NOTE

The compass delivered with the yacht is not compensated for change or deviation. Any electrical or metallic item located in its proximity may influence the compass. The yacht's owner is responsible for the compass compensation. Compensation should be carried out after installing additional electronic equipment or once a year after a prolonged period of mooring or ground lay-up. Compensation should be carried out only by authorized and qualified personnel. As a compass can rarely be set to zero variation on all courses, the technician in charge of its compensation should give you a card containing the corrections to be applied to navigation calculations. Always keep this card available on the main helm station.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

4.2.5 Thrusters control panel

They are supplied by a switch on the general electrical panel of the engine room. The control panel carries the activation buttons and the joystick for the bow/stern thruster control (with the silk-screened side arrows).

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

4.2.6 Multifunction display

It allows to visualise the information about speed, depth, distance, environmental data, etc.. in analogue/digital/graphical format.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

4.2.7 Steering wheel

This wheel is connected to the coupling bar of the surface drives by means of hydraulic systems (cylinders), able to develop a greater power and to facilitate the steering during navigation.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

4.2.8 Engine control panel

The panel allows to start, stop and stop in emergency the propulsion engines.

CAUTION
The engines should be started with inverters in neutral and throttle levers at idle.

DANGER
Before starting the engine, make sure no one stands in the danger area in the engine room.

DANGER
Make sure the engines cannot be started by non-authorized personnel.

CAUTION
The emergency stop causes a heavy strain to engines, with a subsequent risk of damaging its parts. Use only in case of real need.

4.2.9 Steering joystick (optional)

It allows to make manoeuvres in confined waters easier, coordinating the whole steering instrumentation, including bow thrusters, inverters and positioning instrumentation, and controlling the yacht movements and rotations.

1. Joystick;
2. Command button and indicator (**C**);
3. Thruster button and indicator (**T**);
4. Engine button and indicator (**E**).



- **Joystick (1)**: Controls all manoeuvres.
- **Command indicator (C) (2)**: A blue light indicates the correct operation of the system. It turns red in case of problems. This button is used to activate the combined control of engines and thrusters.
- **Thruster indicator (T) (3)**: A blue light indicates the correct operation of the thruster(s). It turns red in case of problems or malfunctions. This button is used to activate control of the thruster or the rudders.
- **Engine indicator (E) (4)**: A blue light indicates the correct operation of engines. It turns red in case of problems or malfunctions. This button may be used to activate optional features.

The three lights on the joystick control panel provide information on the operational conditions of the system. They show both the system status and any malfunction, providing information about the first troubleshooting level:

- **C**: indicates the overall system status.
- **T**: indicates the status of the thruster(s).
- **E**: it indicates the status of the engines.

Each indicator has five possible states, providing a greater level of detail:

Solid red:	operation is blocked.
Flashing red:	operation failure.
Flashing blue:	operation is available for use.
Solid blue:	system in operation.
OFF:	system either turned OFF or unavailable.

All of functions of the system are activated via the **C**, **T** and **E** buttons situated on the joystick control panel.
To activate the system, proceed as described below:

1. Make sure the Joystick is in neutral.
2. Switch both keys ON.
3. Wait until the system switching on procedure is complete.
4. At the end of the procedure, the system will start the **STANDBY** mode automatically.

DYNAMIC POSITIONING mode (optional)

The **DYNAMIC POSITIONING** mode, when active, maintains the position and the heading of the yacht. In calm wind conditions, with low currents, the **DYNAMIC POSITIONING** mode allows the captain to hold the yacht steady within 5 meters of a selected position.
When **DYNAMIC POSITIONING** is active, the yacht's heading will also remain steady. **DYNAMIC POSITIONING** is based on GPS and compass data. The system automatically controls engines, gearboxes and thrusters to maintain the selected position and heading.
This allows the captain to keep the yacht almost steady when, for example, waiting for refuelling, for a bridge to open or where anchoring is not allowed or feasible.
It is anyway always under captain's responsibility to keep under control the movements of the yachts and the surroundings, watching for obstacles or any other kind of danger. It is captain's solely responsibility to always stay close to the helm station and react to any kind of danger that may occur.

When **DYNAMIC POSITIONING** is active, the captain can still use the joystick to perform every action, as in **MANOEUVRE** mode.
When the joystick is put back in neutral, the system detects the yacht's new position and heading and automatically controls engines, gearboxes and bow thruster to keep the position and heading steady.

To activate the **DYNAMIC POSITIONING** mode, proceed as follows:

1. Make sure the Throttle levers are at neutral position;
2. Make sure the Joystick is in neutral;
3. Press the **C** button to open the selection mode;
4. Press the **T** button once to reach the **DP** mode;
5. Press the **C** to confirm the activation.

NOTE

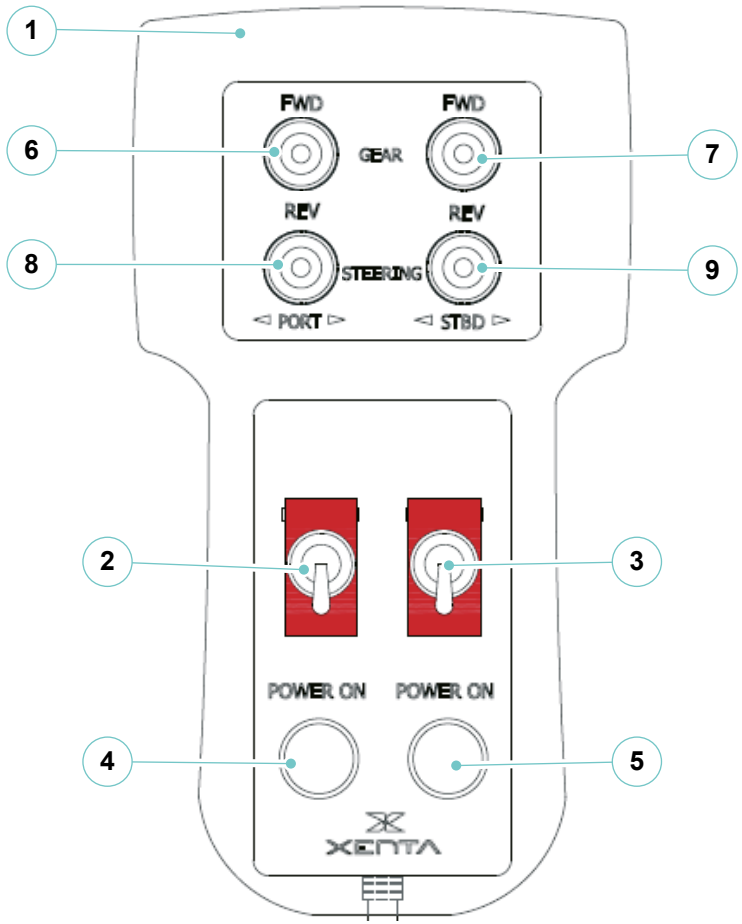
For further information on use and maintenance, please refer to the manufacturer's manual.

4.2.10 Back-up control panel

The XENTA system can be integrated with a **BACK-UP** control system, which guarantees the manoeuvrability of the yacht in the event of failure of the main electronic system.

CAUTION

It is always under captain's responsibility to keep the movements of the yacht and the surrounding area under control, paying attention to any obstacles or dangers. It is the captain's only responsibility to remain close to the helm station and to react promptly in case of danger.



- **BACK-UP panel (1):** ensures navigation with reduced functions in case of XENTA system malfunction.
- **Power switch (2):** activates the engines back-up commands.
- **Power switch (3):** activates the rudders back-up commands.
- **LED operative indicator (4):** a red light indicates the ignition and operation of the engines back-up commands.
- **LED operative indicator (5):** a red light indicates the ignition and operation of the rudders back-up commands.
- **Port gear switch (6):** activates the port engine control.
- **Starboard gear switch (7):** activates the starboard engine control.
- **Port steering switch (8):** activates the port rudder control.
- **Starboard steering switch (9):** activates the starboard rudder control.

FUNCTIONS:
Connect the **BACK-UP** panel to the relative connector installed on the helm station.
Activate the **BACK-UP** system, lifting the safety guard and bringing up the power switch of the back-up commands to be activated: the relative LED will light red to signal the activation of the required back-up commands.

Through the two upper switches (**6** and **7**) it is possible to gear the port and starboard engines forwards and backwards respectively, with a limited number of revolutions.

Through the two lower switches (**8** and **9**) it is possible to move both left and right rudders to port and starboard, allowing, therefore, the movement in emergency conditions of the steering system, ensuring the minimum manoeuvrability necessary to arrive in port and put the yacht in a safe condition.

CAUTION
In the event of a failure of the main steering system and, therefore, during the use of the back-up system, the relevant rudder position indicators may not function correctly. It is therefore the captain's responsibility to adapt the position of the rudders in accordance with the direction of travel of the yacht.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

4.2.11 WATCHIT system (optional)

WATCHIT is an advanced system intended to assist the captain in operating the yacht in a safer way by providing an alert about potential risks both over and under the water.

This system processes data from the on-board sensors (GPS position, heading, speed, rudder angle, LOG, wind indicator, etc..) and from the maps data which allows to constantly assess the risk of collision and issue warnings in real time to prevent accidents at sea.



CAUTION

Do not use the system as a navigational tool as it is not intended as such. This system is intended only as an aid to navigation and does not substitute safe and alert yacht navigation and operation by a qualified operator.

Once the system was installed on board your yacht and was calibrated, there is no need to actively operate the system. The only action needs to be taken before leaving your port or marine is making sure the power supply switch/fuse in ON and the system will automatically power up.

The system has 4 modes of operation:

- **Normal Mode** – In this mode the system will generate a vocal an obstacle alert in case it has detected a potential hazard on the yacht's path. The alert will be heard 30 seconds before impact in order to allow enough time for the skipper to react.
- **Crowd Mode** – Whenever the system detects multiple objects in the near surrounding and the yacht speed is less than 15 Knots - the system will automatically switch to Crowd Mode and the vocal alerts will be replaced with Beeps to inform the captain about any potential risks. The beeps frequency will increase as the risking object will get closer to the yacht.

- **Anchor Mode** – Whenever the system has detected that the yacht has stopped – it will automatically switch to Anchor Mode. In case the system has detected the yacht is drifting, it will popup a Drifting Notification. After 5 minutes in case no one acknowledge the notification, a drifting alert will be triggered.
- **Marina Mode** – Whenever the yacht has entered a marina, the system will switch to Marina Mode. In this mode no vocal alerts will be heard.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

WATER SYSTEMS

CHAPTER 5

5.1 FRESH WATER SYSTEM

The 1320 l capacity fresh water tank is located under the entrance to the guest quarters and is fitted with an inspection cover mounted with all the connections:

- **Water inlet**
  Located on the walk-around of the main deck.

- **Fresh water tank vent**
  It is located on the port side.

- **Tank level electric check**
  It checks the fresh water level in the tank. The tank level is indicated through the monitoring system.

- **Desalinated water inlet**
  In addition to boarding, it is possible to power the system through a watermaker located in the system room.

The watermakers (optional) draw sea water through a centralized sea cock; while the water flows in through the membranes under pressure, the salt is removed and fresh water is then sent to the tank.

For a detailed description and the instructions for use of the various devices, please refer to the Manufacturer's Manuals supplied separately.

The system can be supplied also through shore water inlet.
On the shore supply line there is a pressure relief valve.

The system consists of the following main equipment.
- Autoclave pumps: these are installed in the system room and draw water from the fresh water tank and then make it available to the various on-board utilities (sinks, showers, etc..);
- Watermaker (optional): draws sea water and, once desalinated, feeds the fresh water tank;
- Water heaters: these are positioned under the bilge of the owners bathroom and serve to heat water;
- Distribution manifolds: they ensure the on-board utilities are fed with fresh water.
- UV steriliser (optional): installed in the system room, it allows for the water present in the fresh water tank to be bacteriologically purified.
- Activated carbon filter (optional): installed in the system room, it allows the purification of fresh water.
- Softener (optional): installed in the system room, allows softening of fresh water.

CAUTION
Notwithstanding the presence of a pressure limiter, check the pressure on the pressure gauge installed on board.

When filling fresh water by means of the direct inlet from shore, the fresh water tank is not filled. The fresh water tank can only be filled using the side filling inlets.

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

The fresh water system is equipped with two pumps with electronic regulator.

When a user opens, the device automatically starts the pumps, which stop when the user closes, after having brought the system back under pressure.

CAUTION

On yacht provided with direct connection to shore fresh water, the maximum operation pressure should not exceed 2.8 bar and the pipes must be disconnected for safety reasons, if the yacht is left unattended.
Although the presence of a pressure limiter, check the pressure on the pressure gauge installed on the regulator.

CAUTION

The pressure regulator at pumps output is set in the factory; do not modify.

CAUTION

To avoid damage to the system and tanks, it is recommended to fill by dropping and not by pressure.

WARNING

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

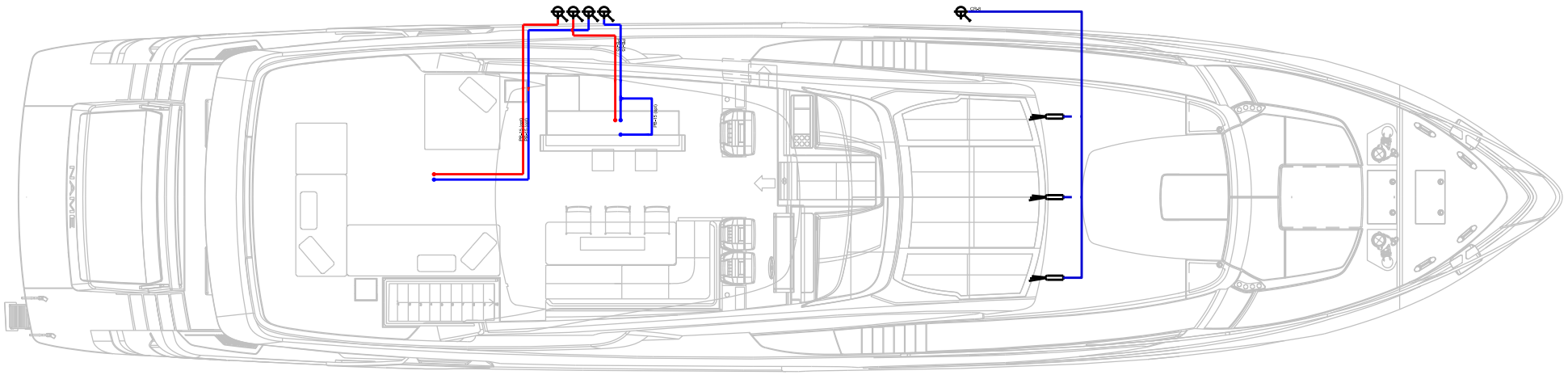
CAUTION

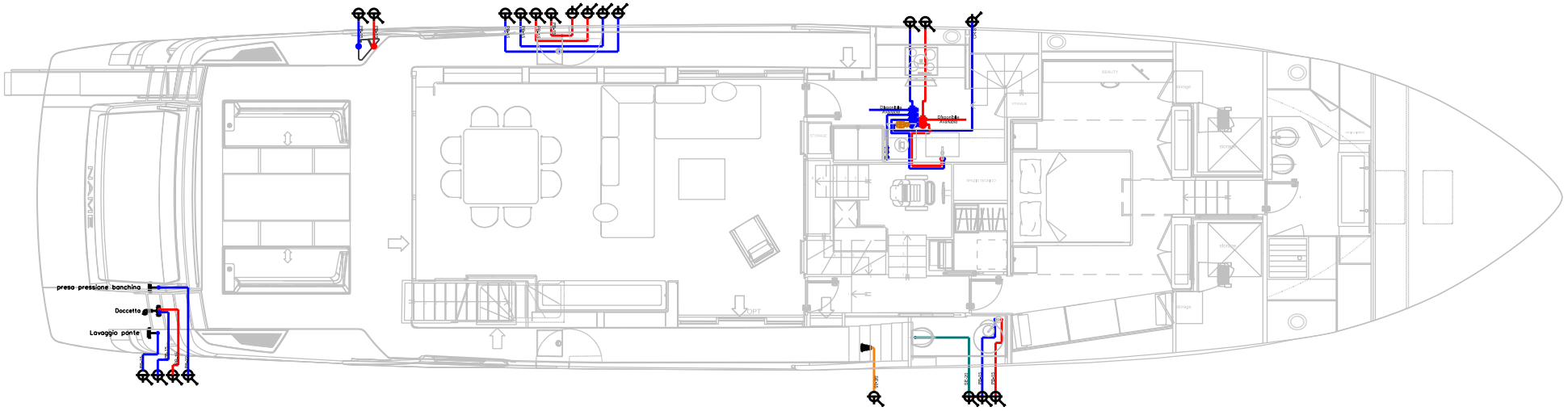
In case of need, break or pollution of the tanks, they can be replaced.
Contact RIVA After Sales & Service Department.

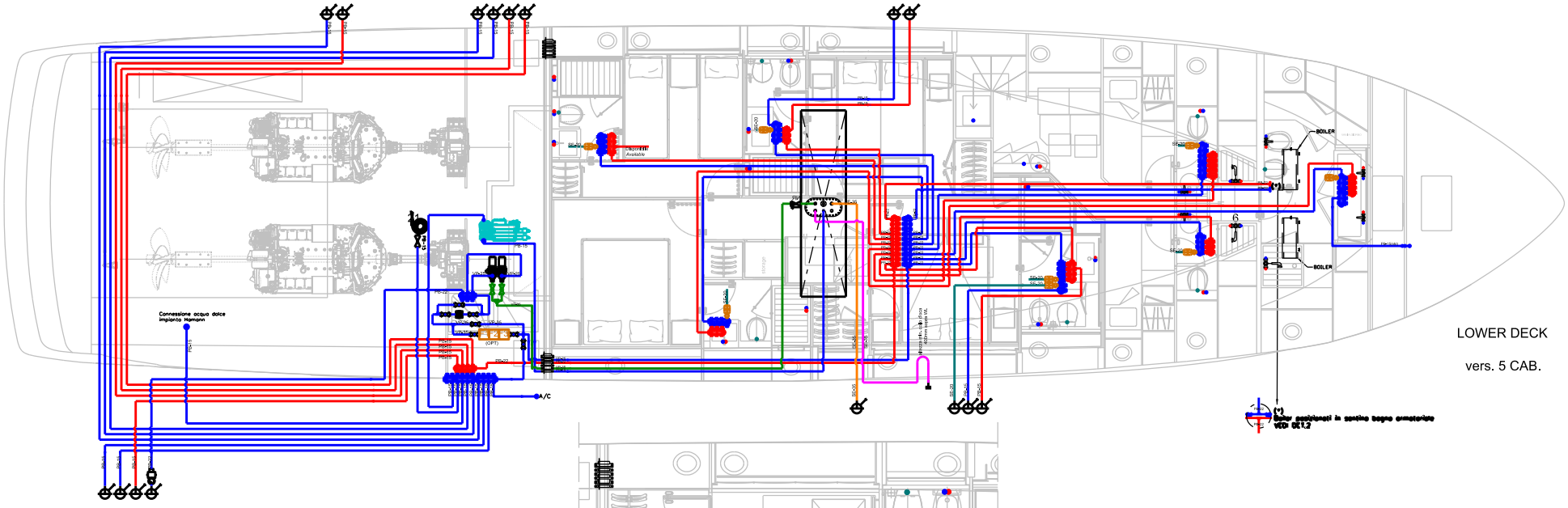
CAUTION

RIVA declines all liability for manipulation made by third parties to equipment installed by the Shipyard itself.
These unauthorized manipulations, as well as in immediate cancellation of the warranty, can cause damage to the yacht itself and the people who are on board.
RIVA declines all liability for periodic maintenance activities not executed but planned by the Shipyard or by the Manufacturer of the devices or components and for which reference should be made to the consultation of the manuals provided relative Technician Manuals.

Fresh water system diagram

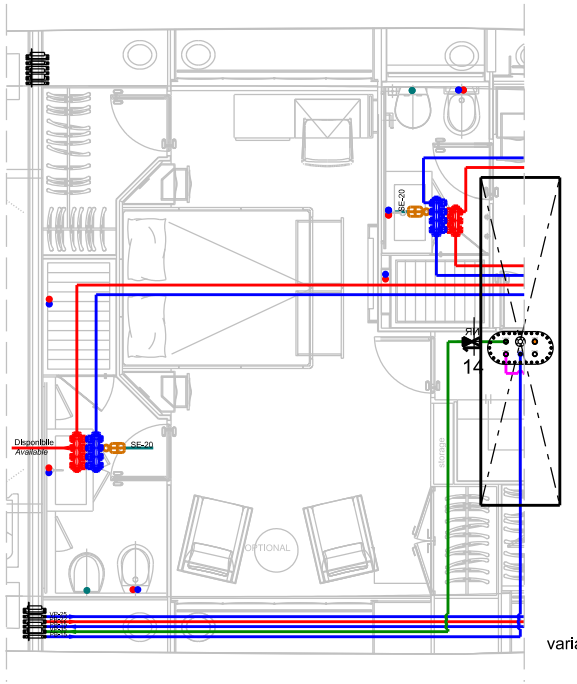






LOWER DECK

vers. 5 CAB.



LOWER DECK

variazione per versione 4 CAB.

LEGENDA

Al ponte superiore *To upper deck*	Manichetta *Hose*
Al ponte inferiore *To lower deck*	Gruppo a 2 pomper per autoclave *Double pump unit for autoclave*
Scarico centralizzato *Centralized overboard*	Filtro *Filter*
Passaparatia acciaio inox *Watertight bulkhead penetration*	Dissalatore *Watermaker*
Attacco da banchina *Fresh water shore connector*	Boiler *Water heater*
Riduttore di pressione *Pressure reducer*	F1 Addolcitore *Water softener*
Valvola a sfera *Ball valve*	F2 Filtro a carboni attivi *Carbon filter*
Valvola di non ritorno *Check valve*	F3 Sterilizzatore UV *UV sterilizer*
Lavaggio ponte *Deck washing*	Sistema trattamento acque nere *Black water treatment system*
Raccordo a T *Tee*	Pompa trasferimetno Hamann *Feeding Pump Hamann*
Collettore valvolato *Manifold with valves*	Serbatoio fanghi Hamann *Hamann sudge tank 150L*
Collattore Acorn valvolato *Acorn manifold with valves*	Valvola antinquinamento *Anti pollution valve*
Elettrovalvola con filtro e riduzione 24V *24V solenoid valve with filter and reduction*	Pompa ricircolo acqua calda *Hot water recirculation pump*
Ugello lavavetri *Washer nozzle*	
Doccetta *Hand shower*	
Tappo *Cover*	

GRUPPO A 2 POMPE PER AUTOCLAVE G&R 2ECOJET2
DOUBLE PUMP UNIT FOR AUTOCLAV G&R 2ECOJET2

Linea acqua dolce fredda *Fresh water*	
Linea acqua dolce calda *Hot water*	
Linea imbarco acqua dolce *Fresh water filling line*	
Da cassa acqua dolce *From fresh water tank*	
Sfiato cassa acqua dolce *Fresh water tank vent*	

al ponte inferiore

al ponte superiore

5.1.1 Hot and cold fresh water system

Cold fresh water system:
The system is kept under pressure by the autoclave pump.

The pump feeds the system by sucking water from the tank, which supplies the following uses through pipes and distribution manifolds:
- Owner's bathroom;
- VIP bathroom;
- Guest bathroom left and right;
- Service bathroom;
- Stern shower;
- Bow shower;
- Galley sink;
- Windscreen wipers;
- Air conditioning group;
- Washing machines;
- Dishwasher;
- Water heater;
- Engine room tap;
- Tanks washing tap;
- Icemaker;
- Washing watermaker membranes.

Cold water, both coming from the pump and from the shore water system, before being sent to the yacht's equipment, is filtered by an appropriate strainer which retains the retaining impurities with standard filtration grade of 60 micron.

When the strainer clogs, you need to clean the strainer cartridge.

Hot fresh water system:
Fresh water is delivered to the water heater to be heated.
The autoclave pump always keeps the circuit under pressure.
The thermostatic valves installed on the water heater allow the setting of the hot water temperature at the taps.
In order to use hot water, it is necessary that:
- The circuit breakers of the water heaters and autoclaves are in the ON position in the main electrical panel stowed in the technical room;
- Ensure that a power supply is connected (generator or shore);
- The uses battery breaker is set to ON.

The water heaters are powered at 230 V AC, taken from shore or from the on board power generators. By means of a distribution manifold, the hot water is conveyed to the following uses:
- Bathrooms;
- Galley;
- Shower.

WARNING
To activate the water heater, either activate the generator or get connected to shore mains, without forgetting to check the current amperage of the harbour you are moored into.

WARNING
Never switch on the electric resistance if the water heater is empty.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

5.1.2 Watermaker (optional)

To solve the problem of water supply and to ensure a constant availability also during long navigations, the yacht can be provided with an efficient watermaker system.

The watermaker is installed in the engine room and, by means of an electric pump, sucks sea water through the related sea cock and, after filtering and treating it, sends it to the on-board tank.
Before the sea water is treated, it is filtered in order to remove all “suspended” particles, such as small seaweed and impurities in the water, which could clog the inner membranes of the watermaker, even within a short amount of time.
The watermaker can produce bacteriologically pure water which can therefore be used for all on-board applications.
Excess water and salt concentrate are discharged overboard. In order to prevent the problem of the deposit of salts on the inner membranes and their crystallization over time, the system has been provided with an end-of-cycle flushing system which uses fresh water. Given the importance of this operation, clean the inner membranes of the watermaker according to the procedures and the schedules indicated by the manufacturer.
On the general electrical panel in the engine room (230V mains), there is a magneto-thermal breaker which supplies and protects the watermaker system.

CAUTION
The watermaker is to be kept in good condition by scrupulously following the indications in the specific manual.
Bad maintenance can lead to production of non-potable water unsuitable for food use.

CAUTION
The watermaker does not eliminate all dangerous agents present in polluted waters (see specific manual).
Use the watermaker only in clean waters, to avoid contamination of its membranes, tanks and of the whole circuit.

CAUTION
In order to prevent clogging the watermaker filters and membranes, do not use the system where sea water is dirty or contains a great deal of sand in suspension.

MAINTENANCE
At least once a month verify:
- The correct operation;
- The oil level in the pump.

Periodically perform a fresh water washing cycle. At least once a year, change the oil of the pump.
When necessary clean the filters.

NOTE
For further information on use and maintenance, please refer to the manufacturer’s manual.

5.1.3 Maintenance of fresh water system

To carry out maintenance, or if needed, it is possible to isolate parts of the system or individual services without affecting the operation of the general system by acting on the valves positioned on the distribution manifolds.

WARNING

The high temperature may cause the softening of the pipes and the consequent loosening of joints. Then verify the tightness, especially for those positioned in the vicinity of heat sources.

WARNING

To stop a failure in the hot water circuit can act on the valves in the inlet to the water heater.

WARNING

At least once a month, completely empty the fresh water tank and rinse it a couple of times with clean fresh water. This in order to completely renew the water present in the deposits and at the same time wash the tanks themselves.
Remove the caps, check, clean, disinfect and restore the closures taking care to check the O-ring state.
1 At least once a year to make an internal tank cleaning.
Periodically pour a specific disinfectant into the tank from the fill inlet according to the doses recommended by the Manufacturer in order to prevent colonies of bacteria from forming in the system.

WARNING

If you do not plan to use the yacht in winter, it is best to empty the water heaters to prevent failures due to freezing.

CAUTION

The boarding cap has the words “WATER” to prevent the accidental introduction of different liquids. To avoid damage to the system and the tank, it is advisable to use gravity refuelling rather than pressure refuelling.

CAUTION

The fresh water circuit, and in particular the tanks, must be periodically sanitized pouring in embarking a specific disinfectant solution. It is advisable not to drink the water coming from the board.

CAUTION

Cater periodically inspect the fresh water circuit of the bilges and to detect the possible presence of leaks.
Repairing leaks by removing the system under pressure in order to avoid furnishing and electrical equipment damage.

CAUTION

If hot water is not available due to emptying of the fresh water system, turn OFF the water heaters to avoid damaging the heating elements.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

Component	Maintenance	Notes and precautions
Fresh water tanks	Cleaning and checks	At least every month, drain the fresh water tanks completely and rinse them a couple of times with clean fresh water for change completely the water stowed in the storing tanks and at the same time to wash them too. Periodically pour a specific disinfectant, in the quantity recommended by the Builder, into the tanks, through the intake filler, in order to prevent the formation of bacteria in the system.
Electric water heater	Cleaning and checks	**MAINTENANCE** Check the operation of the water heaters at least once a month. At least once a month check the operation of the relief valve. At least once a year carry out the thermostat calibration, and if necessary, have it calibrated again. At least every two years descale the resistor. **CAUTION** If there is no hot water available, due to emptying of the fresh water system, switch OFF the water heaters to avoid damage to the heating elements.

Component	Maintenance	Notes and precautions
Fresh water system	Checks	In case of need or of maintenance, by acting on the valves installed on the distribution manifolds, it is possible to cut out parts of the system or single uses, without involving the operation of the general system. Check if along the hydraulic circuit, where possible, are present leaks due to the damage of piping. **WARNING** The high temperature can cause the softening of the pipes and the following slackening of the fittings. Always check the pipes tightening, especially those located near heat sources. **WARNING** During the winter, if you do not use the yacht, it is advisable to drain all the circuits where there is fresh water to avoid cracks due to frost.

Component	Maintenance	Notes and precautions
Autoclave pump	Cleaning and checks	The maintenance of the pump should be serviced by qualified personnel only, after having been disconnected from the power mains. No routine maintenance is required so long as the following precautions are taken: • In case of freezing risk, it is necessary to empty the pump body; then refill the pump before operating it but make sure the ambient temperature is higher than the water freezing temperature. • Make sure the pump never works dry. • If the pump remains unused for a long time, it is better to empty the body and clean it. • Periodically check the efficiency of valves and strainers. Protect electric components of the pump with proper products. **NOTE** For further information on use and maintenance, please refer to the manufacturer's manual. **WARNING** During the winter, if you do not use the yacht, it is advisable to drain all the circuits where there is fresh water to avoid cracks due to frost.

Component	Maintenance	Notes and precautions
Autoclave pump	Cleaning and checks	**WARNING** The surge tank pump is self-priming but it needs though, in order to operate, to have its body filled with liquid. For a correct use, we recommend at first priming or after a long period of idling, to fill the pump body with liquid, to check the pressure inside the tank (it must have the same pressure priming the electric pump) and to verify the clockwise rotation of the pump (seen from the engine side). **WARNING** If the control panel shows the operation of the pump is active but nobody is using the subservient uses, check for leaks. **DANGER** Before carrying out maintenance on the fresh water pump, avoid its accidental priming.

5.2 GREY WATER SYSTEM

The grey water system is organised in such a way as to collect the discharges of: washbasins, showers and bidets and fan-coils, in the secondary collection tanks from which these are sent to the main 535 litres tank located in the bilge below the left guest cabin.

From the tank, via a pipe that leads to the gray water pump located in the system room, the water is discharged into the sea through a centralized discharge located in the system room.

The grey water pump is controlled from the bridge control panel.
The grey water system also includes some Rule compartments, to collect fan-coil condensate.

These cisterns are internally equipped with an emptying pump that is automatically activated thanks to a level sensor, discharging directly outboard.
The grey water pump has two operating modes, “AUTOMATIC” and “MANUAL”, which can be selected by means of the control on the synoptic panel.

In “AUTOMATIC” mode, reaching the 3/4 level enables the pump, which remains active until the low level is reached.

In “MANUAL” mode, press the “MANUAL” button to start the pump.
The pump remains active until the low level is reached.
If the level is lower than the low level, the pump will not start, not even pressing the “MANUAL” button.

NOTE

The tank level should always be checked using the warning lights on the bridge or, in any case, the tank should be emptied under manual control before entering port, in order to avoid having to cruise out to sea again to empty it.

CAUTION

The alarm is triggered with the high contact of the main grey water tank, but the fresh water pump is not disabled.

ENVIRONMENT

Do not discharge soapy waters drained by washing machines and dishwashers in the harbour, inside marinas or near beaches, because of the large amount of foam produced.

To increase the reliability and safety of the system, it is possible in case of a fault in the grey water pump, to drain by means of the black water pump. Under such conditions, it is necessary to ensure the proper opening of the concerned manifold valves.
The system is equipped with anti-odour siphons to allow for regular flow and avoid the formation of unpleasant odours.

WARNING

Do not pour any corrosive product into the washbasins or showers or products at high temperatures, as they could cause damage to the grey water system.

CAUTION

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

MAINTENANCE

At least once every three months:

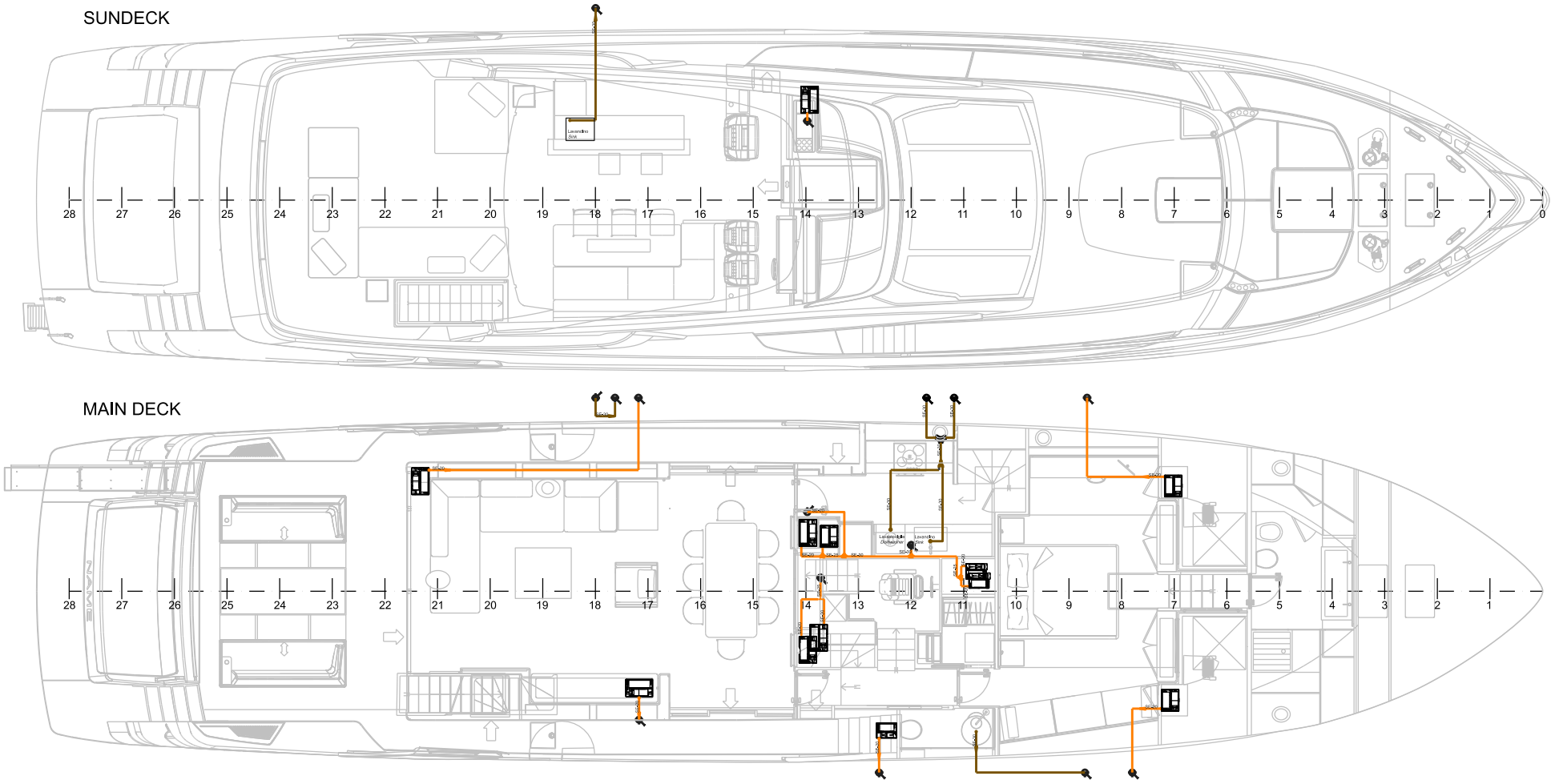
- Carry out the complete cleaning of the tank;
- Carry out the complete cleaning of the pump.

At least once every six months check the status of the pump.

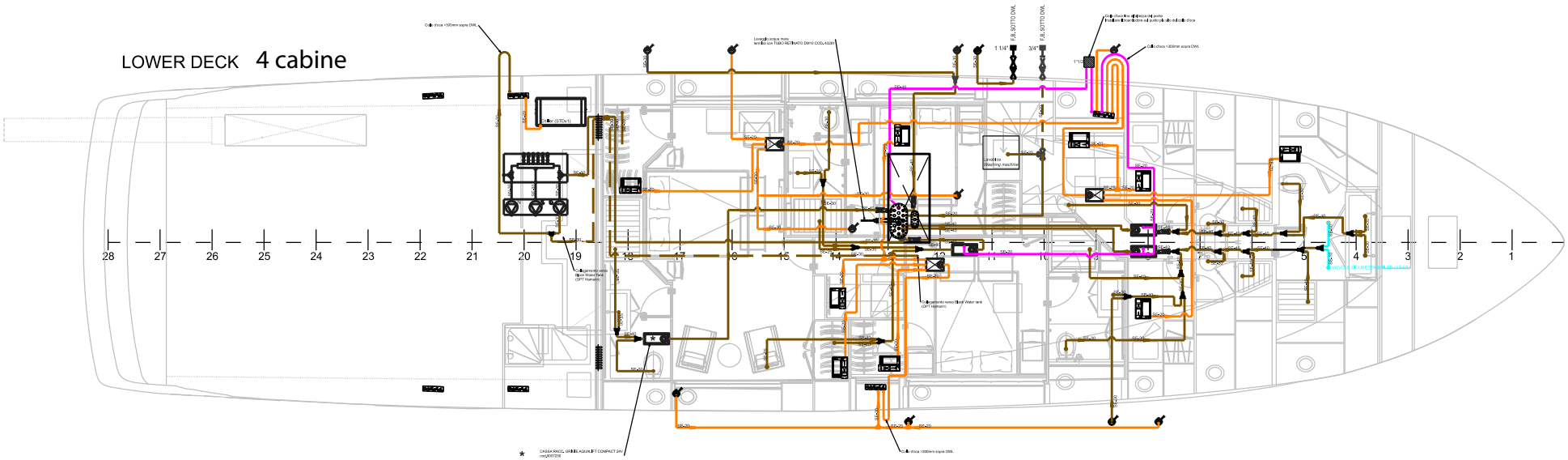
CAUTION

Do not activate the grey water pump manually if the level for the automatic stop is the lowest, to keep the pump primed.

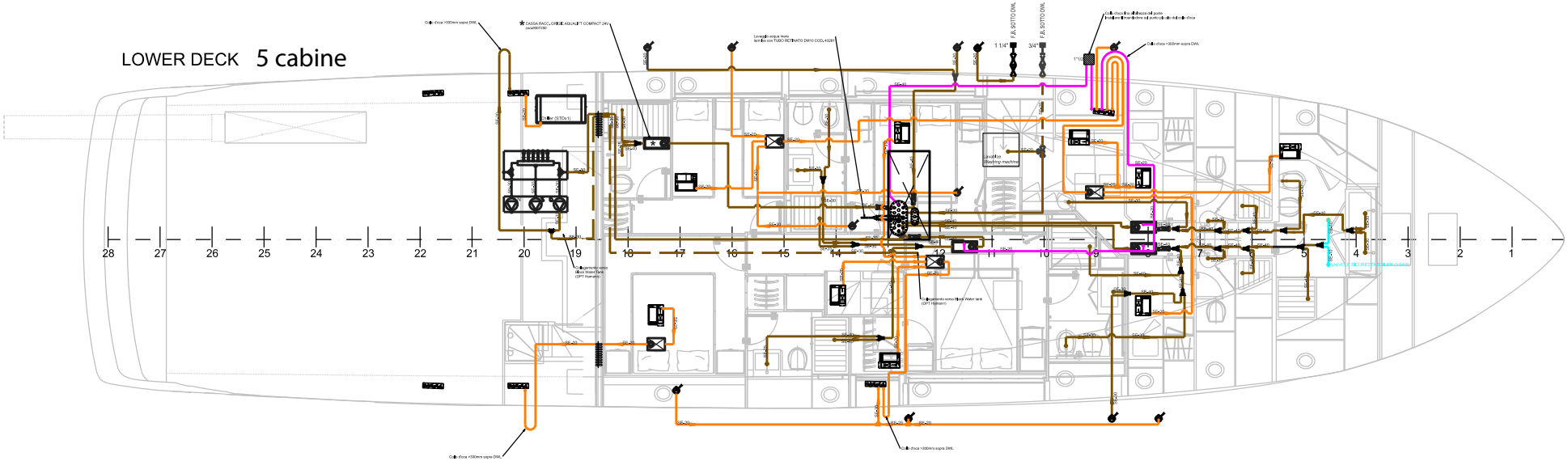
Grey water system diagram



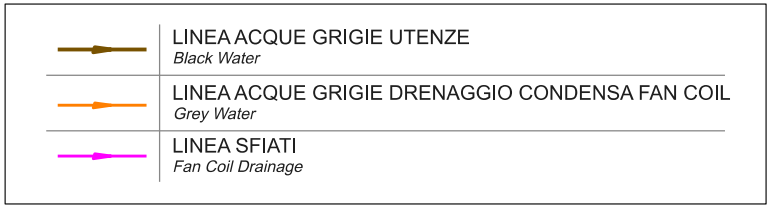
LOWER DECK 4 cabine



LOWER DECK 5 cabine




AL PONTE SUPERIORE
To upper deck
AL PONTE INFERIORE
To lower deck
SCARICO CENTRALIZZATO
Centralized overboard
PASSAPARATIA ACCIAIO INOX
Watertight bulkhead penetration
FLANGIA PUMP OUT
Pump out flange
VALVOLA A SFERA
Ball valve
VALVOLA DI NON RITORNO
Check valve
VALVOLA 3 VIE
3 Way Valve
TEE
Y
FUORIBORDO
Overboard
FAN COIL UNIT
POLIVALENTE GIANNESCHI
Multipurpose Gianneschi Pump
(Grey, Bilge, Black)
FILTRO ANTIODORE A CARBONI ATTIVI
Odor Removing Filter
CASSETTA RACCOLTA ACQUE GRIGIE
Grey Water Pumping Unit
PLANUS AQUALIFT 24DC
CASSETTA RACCOLTA ACQUE GRIGIE
Grey Water Pumping Unit
PLANUS AQUALIFT 24DC
CASSETTA RACCOLTA CONDENSA
Condensation Pumping Unit
800GPH/COVER-98 24V
SIFONE ANTIODORE
Odor Removing Siphon
HEPVO M3240 DN.40


LINEA ACQUE GRIGIE UTENZE
Black Water
LINEA ACQUE GRIGIE DRENAGGIO CONDENSA FAN COIL
Grey Water
LINEA SFIATI
Fan Coil Drainage

5.3 BLACK WATER SYSTEM

The system consists essentially of a tank and of a black water pump draining off board.

The water used for washing the toilets is taken from the fresh water circuit through the distribution manifolds.

On the manifolds are installed the solenoid valves for each toilet; they allow the flush of water each time the buttons “Before use” or “After use”, on the control panels of the toilets, are pressed.
Each toilet has a macerator pump conveying black waters into the holding tank.

The waste water tank has a capacity of 535 litres.
The lid of the black water tank can be inspected from the dunnages in the access corridor to the guest cabin.

A pump located in the system room empties the tank via a suction line which discharges directly into the sea through a drain below the waterline.

The pump has two operating modes, automatic and manual, which can be selected by means of the control on the synoptic panel.
In “automatic” mode, reaching the 3/4 threshold triggers the pump, which remains active until the low level threshold is reached.

To start the pump In “MANUAL” mode, press the “MANUAL” button on the bridge control panel.
The pump remains active until the low level is reached.
If the level is lower than the low level, the pump will not start, not even pressing the “MANUAL” button.

CAUTION
Within 12 nautical miles from the coast it is forbidden to discharge the black water tank into the sea; it is necessary to keep the discharge pump inactive and to exclude the automatic activation.

On the synoptic panel of the main helm station, there are the warning lights of full-tank WC-disabled, full-tank pre-alarm and manual or automatic activation control of tank drain

The possibility of discharging the black water tank from the outlet on the stern cockpit port access stairs for from the shore, transferring its contents to the land sewerage system has the least environmental impact, and should be adopted whenever the yacht is moored in an equipped place.

CAUTION
Before leaving port, check the level indicators of the sewage tank on the synoptic on the bridge in order to perform suction from the shore if necessary.

Procedure for emptying through the shoreside nozzle.
- Handle the hose by paying attention not to soil the deck teak, and dampen it ahead of time.
- Correctly fit the outlet for shore drain by means of the screw connection.
- Take advantage of harbour services for sewage intake with vacuum system.
- Once the operation is completed, disconnect the hose correctly by paying attention again so as not to soil the deck teak. If necessary, rinse.

Before entering shore, you should check the tank level and decide whether you should discharge at sea or use the port facilities by checking in advance if the your destination port is equipped for tank emptying through the discharge nozzle.
To increase the reliability and safety of the system, in case of a fault in the black water pump, it is possible to drain by means of the grey water pump.
Under such conditions, it is necessary to ensure the proper opening of the concerned manifold valves.

CAUTION

During the suction black water from the shore is strictly prohibited to:

- Use the toilet;
- Press the command button then operate the pump discharge overboard.

WARNING

Before use, make sure:

- Enable the utility by setting the WC system magneto-thermal switch on the electrical panel to ON if necessary;
- The absence of the retention tank high level warning light on the bridge.

CAUTION

We recommend regularly monitor the level black water from monitoring system panel (Levels) to achieve optimum use of the retention system in compliance with environmental regulations locally in force.

CAUTION

In case of sinking hazard, if escaping condition allow you this, close the ball valve of the black water drain.

CAUTION

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

CAUTION

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

CAUTION

Direct sea discharge can only be carried out in the event of an emergency.

The holding tank is equipped with a sea water washing system. In order to wash the tank, you have to open the valve concerned, located on the tank door, and that the fire pump is powered.

This operation has to be performed periodically at a variable time interval, according to the use of the tank.

In addition to this, we recommend constantly checking the filling of the tank, so as to disconnect the pump when necessary.

WARNING

The valve for washing the holding tank must always be closed, except for during washing operations. If the valve remains open, the tank can be flooded and sea water can be boarded.

WARNING

The holding tank washing must be performed only in compliance with legislation in force, in the harbour, only under provided it is connected to the disposal facilities on land.

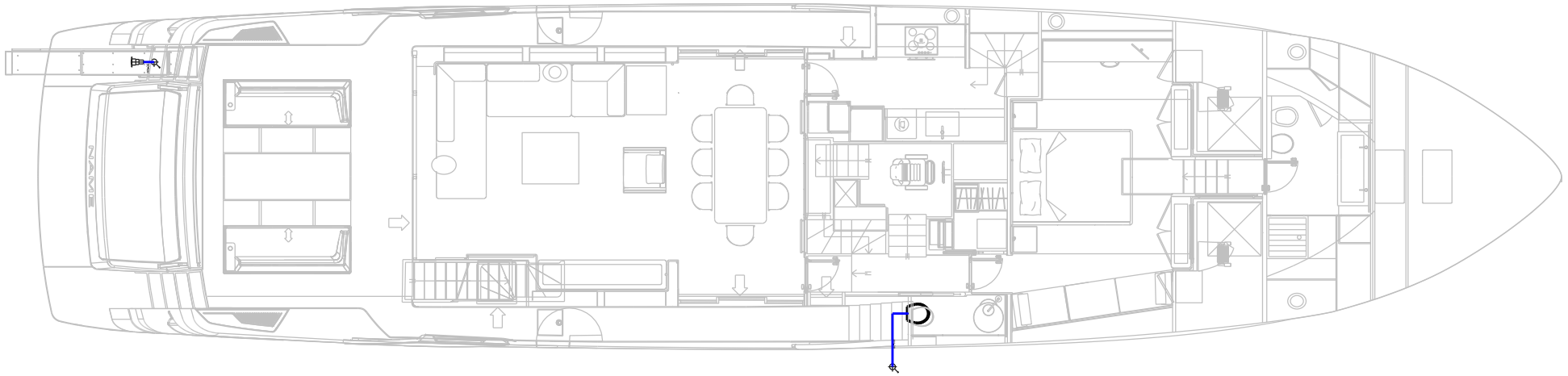
WARNING

When using chemical products, follow the manufacturer indications meticulously and use the suitable protection devices.

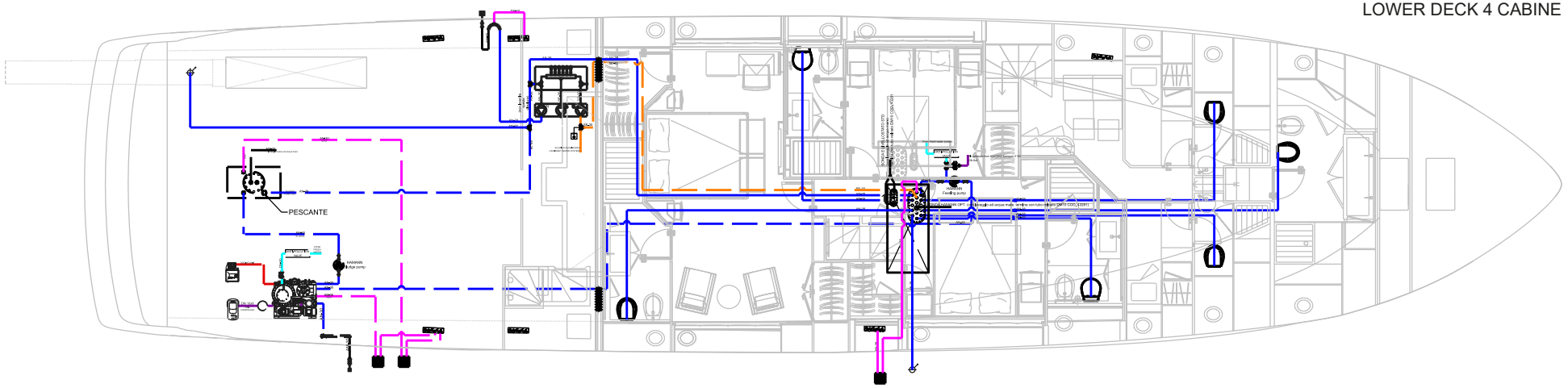
DANGER

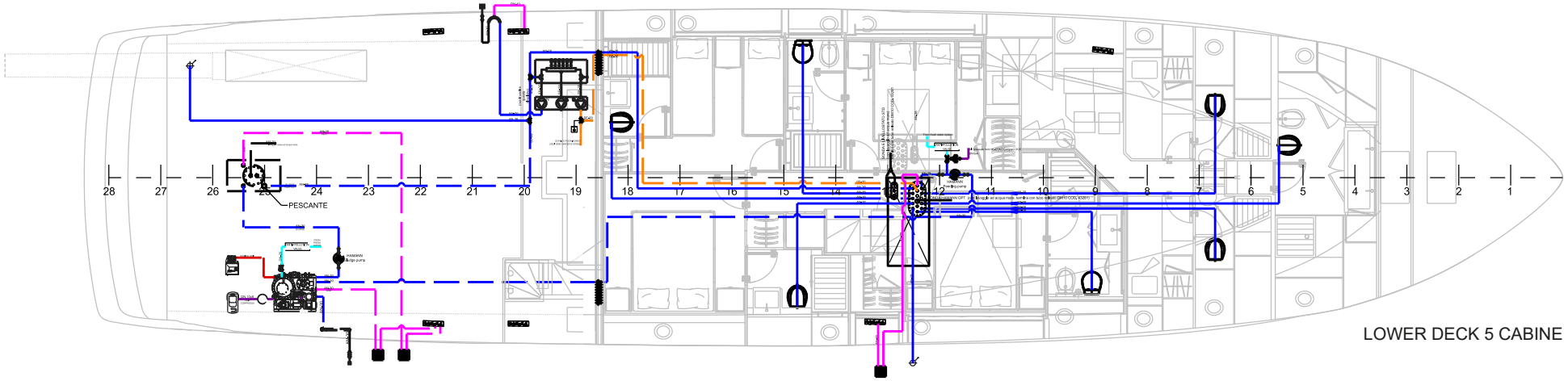
Holding tank washing must be performed by experienced personnel and followed carefully until the tank is empty.
An excessive pump operation can cause the intake of a large quantity of water with consequent overfilling and bilge flooding.

Black water system diagram



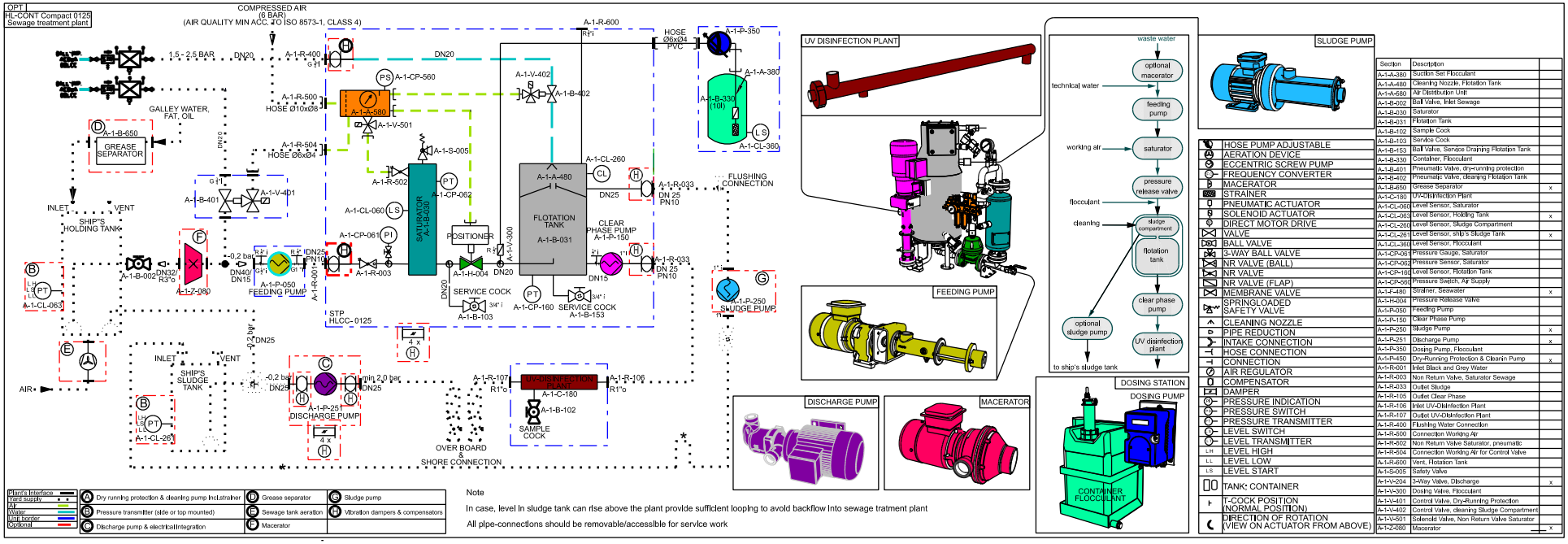
LOWER DECK 4 CABINE





LOWER DECK 5 CABINE

	LINEA ACQUE NERE *Black Water*
	LINEA ACQUE GRIGIE (OPT HAMANN) *Grey Water*
	LINEA DOSING UNIT (OPT HAMANN) *Dosing Unit*
	LINEA ARIA COMPRESSA (OPT HAMANN) *Compressed air*
	LINEA ACQUA DOLCE (OPT HAMANN) *Fresh Water*



	HOSE PUMP ADJUSTABLE
	AERATION DEVICE
	ECCENTRIC SCREW PUMP
	FREQUENCY CONVERTER
	MACERATOR
	STRAINER
	PNEUMATIC ACTUATOR
	SOLENOID ACTUATOR
	DIRECT MOTOR DRIVE
	VALVE
	BALL VALVE
	3-WAY BALL VALVE
	NR VALVE (BALL)
	NR VALVE
	NR VALVE (FLAP)
	MEMBRANE VALVE
	SPRINGLOADED SAFETY VALVE
	CLEANING NOZZLE
	PIPE REDUCTION
	INTAKE CONNECTION
	HOSE CONNECTION
	CONNECTION
	AIR REGULATOR
	COMPENSATOR
	DAMPER
	PRESSURE INDICATION
	PRESSURE SWITCH
	PRESSURE TRANSMITTER
	LEVEL SWITCH
	LEVEL TRANSMITTER
LH	LEVEL HIGH
LL	LEVEL LOW
LS	LEVEL START
	TANK: CONTAINER
	T-COCK POSITION (NORMAL POSITION)
	DIRECTION OF ROTATION (VIEW ON ACTUATOR FROM ABOVE)

Section	Description	
A-1-A-380	Suction Set Flocculant	
A-1-A-480	Cleaning Nozzle, Flotation Tank	
A-1-A-580	Air Distribution Unit	
A-1-B-002	Ball Valve, Inlet Sewage	
A-1-B-030	Saturator	
A-1-B-031	Flotation Tank	
A-1-B-102	Sample Cock	
A-1-B-103	Service Cock	
A-1-B-153	Ball Valve, Service Draining Flotation Tank	
A-1-B-330	Container, Flocculant	
A-1-B-401	Pneumatic Valve, dry-running protection	
A-1-B-402	Pneumatic Valve, cleaning Flotation Tank	
A-1-B-650	Grease Separator	x
A-1-C-180	UV-Disinfection Plant	
A-1-CL-060	Level Sensor, Saturator	
A-1-CL-063	Level Sensor, Holding Tank	x
A-1-CL-260	Level Sensor, Sludge Compartment	
A-1-CL-261	Level Sensor, ship's Sludge Tank	x
A-1-CL-360	Level Sensor, Flocculant	
A-1-CP-061	Pressure Gauge, Saturator	
A-1-CP-062	Pressure Sensor, Saturator	
A-1-CP-160	Level Sensor, Flotation Tank	
A-1-CP-560	Pressure Switch, Air Supply	
A-1-F-480	Strainer, Seawater	x
A-1-H-004	Pressure Release Valve	
A-1-P-050	Feeding Pump	
A-1-P-150	Clear Phase Pump	
A-1-P-250	Sludge Pump	x
A-1-P-251	Discharge Pump	x
A-1-P-350	Dosing Pump, Flocculant	
A-1-P-450	Dry-Running Protection & Clearin Pump	x
A-1-R-001	Inlet Black and Grey Water	
A-1-R-003	Non Return Valve, Saturator Sewage	
A-1-R-033	Outlet Sludge	
A-1-R-105	Outlet Clear Phase	
A-1-R-106	Inlet UV-Disinfection Plant	
A-1-R-107	Outlet UV-Disinfection Plant	
A-1-R-400	Flushing Water Connection	
A-1-R-500	Connection Working Air	
A-1-R-502	Non Return Valve Saturator, pneumatic	
A-1-R-504	Connection Working Air for Control Valve	
A-1-R-600	Vent, Flotation Tank	
A-1-S-005	Safety Valve	
A-1-V-204	3-Way Valve, Discharge	x
A-1-V-300	Dosing Valve, Flocculant	
A-1-V-401	Control Valve, Dry-Running Protection	
A-1-V-402	Control Valve, cleaning Sludge Compartment	
A-1-V-501	Solenoid Valve, Non Return Valve Saturator	
A-1-Z-080	Macerator	x

5.3.1 Operation of the toilet

The bathroom toilets are made of ceramic and their control panels contain two backlit buttons:

- Button “BEFORE USE”
- Button “AFTER USE”

After 2 minutes of service the backlit buttons switch off and the device sets to energy saving mode.
Approaching the hand to the panel, the backlight and the panel operation will be restored.

In case of alarm for a full tank, the two button icons are illuminated permanently.

To clean the surface of the panel, you can turn it off by pressing briefly one of the two buttons.
This prevents the accidental activation of the toilet control.

CAUTION

We suggest not to use the **residential function** of the toilet, as the water inside the toilet could splash out and wet the floor due to the yacht’s rolling.

CAUTION

Except for organic waste, only very thin toilet paper can be discharged into the sea toilets. Paper tissues or handkerchiefs and sanitary napkins may clog and damage the sanitary system.

CAUTION

Make sure that toilets are electrically powered and that the black water system is operating before using them.

CAUTION

The full tank condition is indicated by the red light on the synoptic on the dashboard.

CAUTION

The disabling of toilet drain protection can cause the tank to overfill.

NOTE

For further information on use and maintenance, please refer to the manufacturer’s manual.

5.3.2 Maintenance of black and grey waters draining system

Component	Maintenance	Notes and precautions
Black and grey water tanks	Rinse the tanks (at least every month)	Fill the tanks with sea water and empty them two or three times. To prevent the formation of bacteria and of bad smell, pour periodically a disinfectant into the toilet, sink and bidet drains. **CAUTION** Should deodorants or disinfectants be used, avoid abrasive substances or acids, because they could damage tubes and seals. **CAUTION** In case of need, break or pollution of the tanks, they can be replaced. Contact the RIVA After Sales & Service. **MAINTENANCE** At least once a week check the correct operation: • Of Toilets; • Of the black water pump. At least once every three months check the status of the tubes and connections. At least once every six months protect with proper products: • Of Toilets solenoid valves; • The black waters pump. When necessary, at least once a year, carry out the accurate cleaning of the holding tank.

Component	Maintenance	Notes and precautions
Pumps	Replacement of impeller and mechanical seal	This is a complex operation and should only be undertaken by skilled personnel. **CAUTION** The electric motor may become hot when running (see manual of the electric pumps). Pay attention. The electric pump must only be repaired by competent or qualified personnel, using manufacturer's spares; if this procedure is not followed, the manufacturer is relieved of any responsibility and warranty is void and null.

Component	Maintenance	Notes and precautions
Pumps	Operation check and cleaning (at least every month)	Electric pumps usually do not need ordinary maintenance, as long as some precautions are taken, which extend their lives (address to the pumps' Manufacturer). **DANGER** Before each intervention make sure that voltage is disconnected and that there is no possibility of accidental connection. • If there is a risk of freezing, it is necessary to empty the pump casing from the liquid and to fill it, before restarting the pump. • Make sure that the pump never runs dry. • The DC motor brushes must be periodically checked for consumption and spring pressure. • If the pump does not work for a long time, it is better to empty the pump casing and clean it. • If a strainer and a foot valve are installed, check periodically for their efficiency and cleaning. • Check that the impeller is jammed, this could cause heavy damages to the electric motor; if this happens, descale the impeller and pump body. • At least once a month, have the operation of the grey/black water pumps checked, having their tanks filled with clean water until the pump activates and having the correct overboard draining checked.

5.4 SCUPPERS SYSTEM

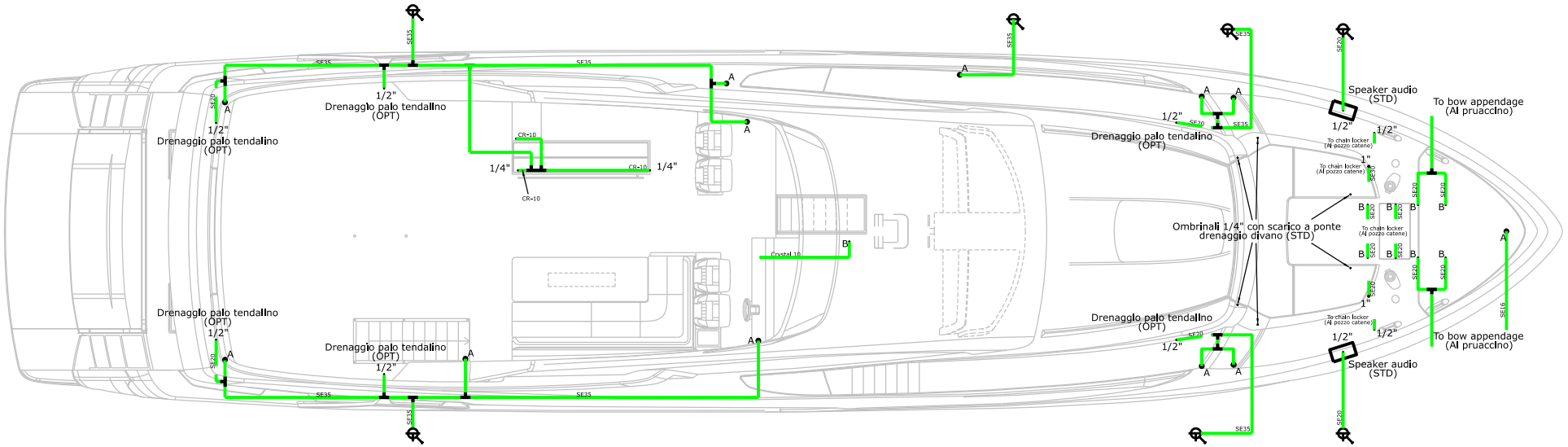
Via suitable holes and drainage channels, the scupper system allows rain-water, sea water or other water that may fall onto the yacht to flow quickly off it.
All the water collected by the scuppers is conveyed through collector pipes located along the walls and discharged outboard.

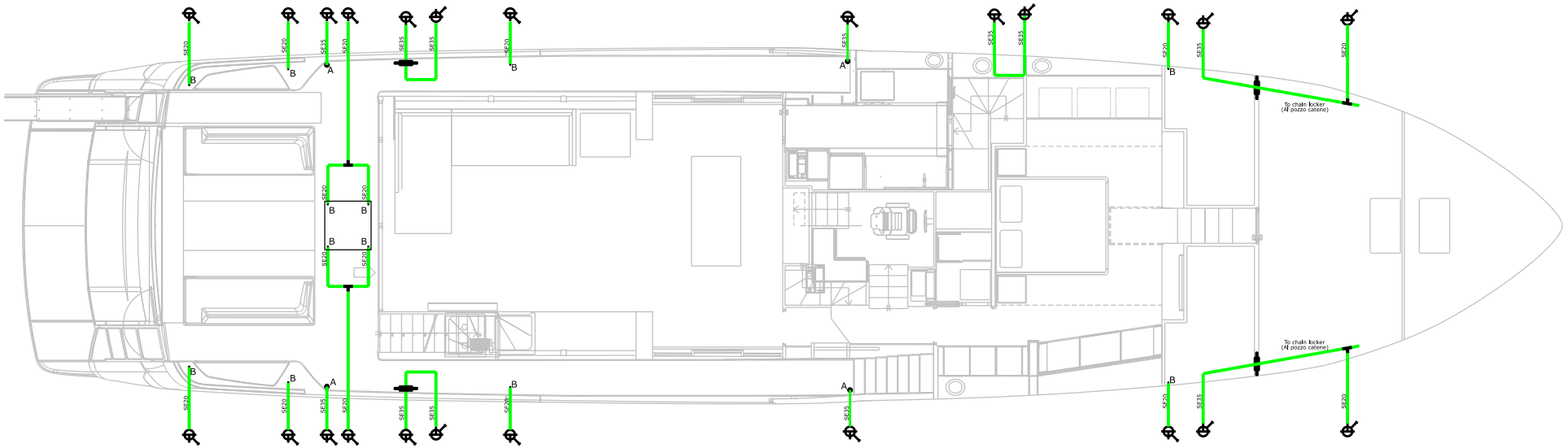
The total or partial clogging of one or of more scuppers must absolutely be prevented, because it is a cause of flooding and consequent loss of stability by the yacht and its structures.

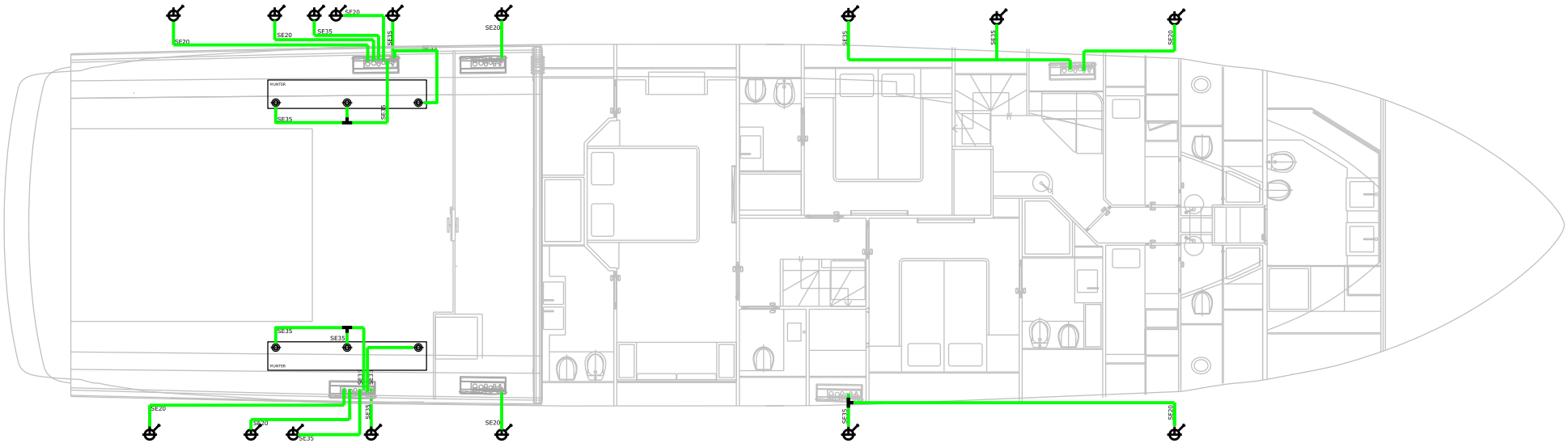
CAUTION
Always check the correct water flow towards the scuppers.
The partial or total clogging of one or more scuppers is a possible cause of damage for the yacht structure and of loss of stability.

CAUTION
Avoid that incorrectly stowed objects clog the scuppers.

Scuppers system diagram







LEGENDA

	AL PONTE SUPERIORE *To upper deck*
	AL PONTE INFERIORE *To lower deck*
	SCARICO CENTRALIZZATO *Centralized overboard*
	FUORIBORDO *Overboard*
	VALVOLA A SFERA *Ball valve*
	VALVOLA DI NON RITORNO A CLAPET *Check valve*
	VALVOLA 3 VIE *3 Way Valve*
	CONNESSIONE DI RACCORDO *Junction connection*

5.5 BILGE EXHAUST SYSTEM

5.5.1 Main bilge exhaust system

The centrifugal diving pumps for bilge suction, driven by suitable float switches, suck water from the bilge and deliver it to the overboard drain.
Another alarm activation float, placed higher than the first, activates the alarm siren placed on the system room access stairs.

The pumps are connected directly to the batteries and can therefore start even if the battery master switch is positioned to OFF, thus ensuring water drain at any time (keep the magneto-thermal breakers on the electrical panel to ON).

The suctions of the pumps are equipped with strainers; their purpose is to prevent the penetration inside the circuit of foreign bodies, which may damage the pump or cause pipe clogging.

- Engine room bilge pumps (126 l/min);
- Crew cabin bilge pump (126 l/min);
- Guest cabin atrium bilge pumps (126 l/min).

The bilge pumps can operate both in automatic mode, thanks to float switches and in manual mode.
To activate the pumps manually, push the respective buttons on the synoptic panel on the bridge. For the bilge pumps to work, activate the relative magneto-thermal switches on the electrical panel

WARNING
In case of emergency it is possible to extract the bilge water in the engine room through the sea pumps placed on each engine.

WARNING
Keep the bilge dry to allow the detection of water and to reduce the risk of slipping, as well as creating a less aggressive environment for the fixtures.

Should the automatic bilge pumps of the engine room, as well as the auxiliary bilge pump not be able to drain the bilge water, the engine room is equipped with the bilge emergency draining system, operating by means of flywheel valves with manual activation, as a draining pump.

In case of emergency, use the handwheels of both valves, taking the valves to the emergency position; the suction of the pumps, driven by the engines, is diverted towards the bilge.

Should it be necessary to use this draining system, the bilge level must be checked continuously, because in case of complete drainage, the engines will not be cooled down.

CAUTION
Be careful to replace the valves to sea water suction position, when the water level in the engine room bilge is under control, so as not to impair the engine components.

CAUTION
A suction basket to collect accidental oil leakage is located under the engines and does not communicate with the bilge.

ENVIRONMENT

Sea discharge of oils and fuels is prohibited.

CAUTION

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

WARNING

The bilges must be kept dry and clean.
Remove any rags or other residues from the bilge, to prevent any clogging of the pump intakes, causing serious damage to the pumps and impairing the safety of the yacht.

WARNING

The system total capacity is not designed for yacht draining in case of a hull leaks.

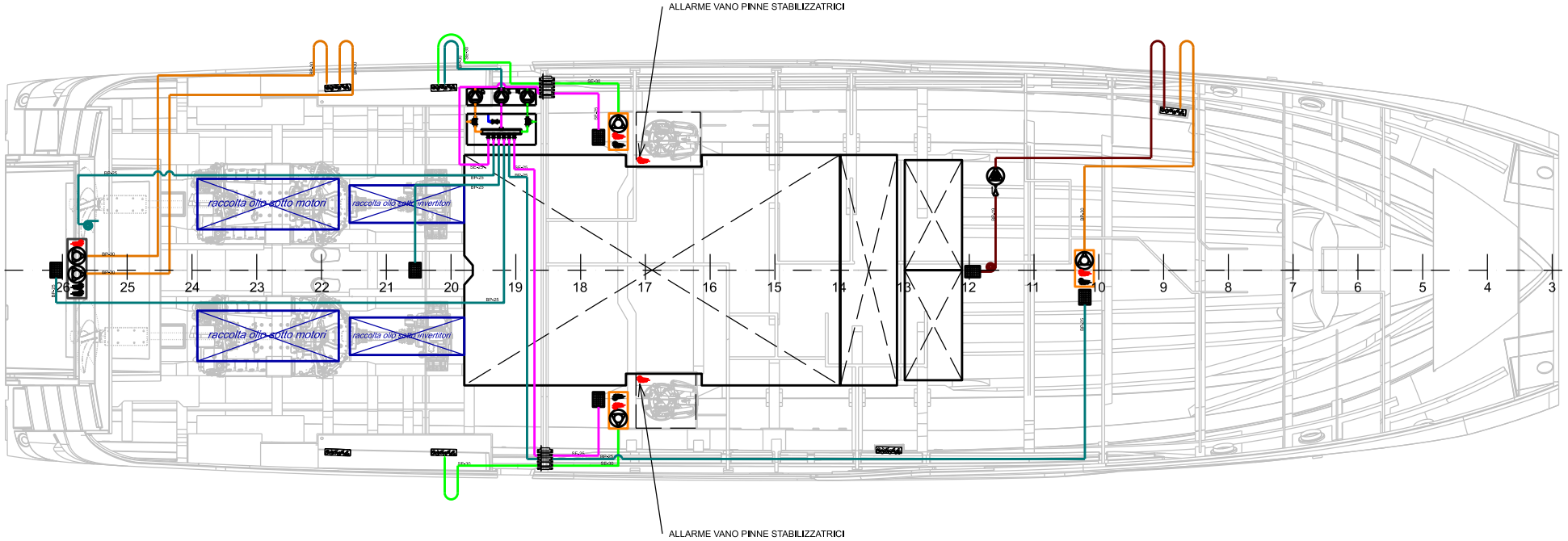
ENVIRONMENT

Possible oil or fuel spilled in the bilge must be collected and stowed.
It is forbidden to discharge bilge water mixed with oil or diesel fuel into the sea, because this can cause pollution.
During the maintenance operation in the engine room, it is compulsory to disconnect the magneto-thermal breakers of the bilge pump automatic suction system, avoiding in this way accidental spillages of liquids and consequently sea water pollution.

ENVIRONMENT

The bilges in the engine room and system room can only be emptied after visually checking for the absence of oil or fuel in the water.

Bilge draining system diagram



LEGENDA			
SIMBOLO SYMBOLS	DESCRIZIONE DESCRIPTION	SIMBOLO SYMBOLS	DESCRIZIONE DESCRIPTION
	SUCCHIERUOLA		POMPA MARCO A GIRANTE UP-1N 24V 35l/min
	INTERRUTTORE LIVELLO A GALLEGGIANTE Azionamento pompa		POMPA MARCO 2000 24V
	INTERRUTTORE LIVELLO A GALLEGGIANTE Allarme		SCARICO CENTRALIZZATO
	PASSAPARATIA ACCIAIO INOX		
	VALVOLA A SFERA		GRUPPO PREASSEMBLATO cod. 280683 composto da: POMPA SENTINA G&R CP 32 24V cod. 280682 POMPA GRIGIE G&R CP32 24V cod. 280682 POMPA ACQUE NERE MV44G 24V cod. 8560
	VALVOLA A 3 VIE		

LINEA	DESCRIZIONE
	IMPIANTO SENTINA PRINCIPALE ZONA ALLOGGI(AUTOMATICO/MANUALE) PRIMARY BILGE SYSTEM ACCOMODATION SPACES(AUTOMATIC/MANUAL)
	IMPIANTO SENTINA SECONDARIO ZONA ALLOGGI (MANUALE) SECONDARY BILGE SYSTEM ACCOMODATION SPACES(MANUAL)
	IMPIANTO SENTINA PRINCIPALE ZONA SALA MACCHINE (AUTOMATICO/MANUALE) PRIMARY BILGE SYSTEM ENGINE ROOM(AUTOMATIC/MANUAL)
	IMPIANTO SENTINA SECONDARIO ZONA SALA MACCHINE (MANUALE) SECONDARY BILGE SYSTEM ENGINE ROOM (MANUAL)
	SENTINA AUSILIARIA ZONA ALLOGGI (MANUALE) AUXILIARY BILGE SYSTEM ACCOMODATION SPACES (MANUAL)

5.5.2 Maintenance on the main bilge exhaust system

Component	Maintenance	Notes and precautions
Bilge pumps	Operation check Bilge pump operation check	As shown in the following sequence.

Bilge pumps functionality check:



DANGER

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

Check that the pump shaft turns freely (this is possible by inserting the screwdriver in the back end of the engine shaft).
Fill the pump body with liquid so as to allow the pump to prime. This operation is very important and must be carried out at the first pump start and each time the pump body is empty, to avoid pump damaging.

Check the rotation direction, that the pump motor works within its output range and that the absorbed current is not higher than the one indicated in the tag.
These pumps, normally, do not need ordinary maintenance, provided that some measures are taken which extend their operation.

- Make sure that the pump never runs dry.
- The brushes, on DC motors, must be checked at regular intervals.
- If the yacht must remain inoperative for a long period, it is advisable to drain the pump body and to clean it.
- If a strainer and a foot valve are installed, check their efficiency and cleaning periodically.
- Check that the impeller is not jammed, this could cause serious damages to the electric motor; if this happens, descale the impeller and pump body.
- Have the operation of each bilge pump checked, having the bilge filled with clean water up to the activation of each pump and having the correct draining overboard checked.
- Have the operation of each bilge pump checked also manually.

CAUTION

Never run the electric pumps dry.

CAUTION

Check the operation of all bilge pumps at regular intervals. Clean debris from pump inlets.

5.5.3 Centralised pump system

The yacht is equipped with a multipurpose pump (90 l/min) located in the system room, which helps or replace the various automatic bilge pumps, in order to drain water from the bilge.

The multi-purpose pump, activated manually, by correctly shunting the valves on the relevant manifold, can replace the following pumps:

- The black water pump;
- The grey water pump;
- The automatic bilge pumps.

In case of failure of black or grey water pumps, the multi-purpose pump replaces the suction of one of the two pumps, by means of two deflecting valves installed on the multi-purpose pump manifold.

CAUTION

After the use of the multi-purpose pump, it is advisable to carry out a check of the impeller. For the procedure ask the RIVA After Sales & Service.

CAUTION

To use the multi-purpose pump, activate the magneto-thermal switch located on the general electrical panel.

ENVIRONMENT

The bilge drains can be discharged at sea only if they do not contain polluting substances.
If polluting agents are present in the bilge waters, dispose of them using the suitable containers for polluting agents located in harbours.

CAUTION

Never run the electric pumps dry.

5.6 SEA WATER SYSTEMS

The sea water systems on board are:

- **Engine cooling system**
  This system consists of two circuits, one for the starboard engine and the other for the port engine. Sea water is sucked directly by the inner pumps of the same engines, by means of two sea cocks equipped with two cut-off valves and strainers. The water sucked in by the engines flows through the strainers and is then delivered to the heat exchangers of the gear boxes and to the heat exchangers of the same engines, and then discharged overboard. Moreover, suitable circuit branches cool the exhaust manifolds.
- **Generators cooling system**
  Sea water is drawn in by the pump of the generators themselves through the sea cock equipped with an interception valve and strainer. The water drawn in by the generators, after passing through the strainer, is sent to the heat exchangers of the generators themselves and then discharged overboard. To discharge the water and exhaust fumes coming out of the generators, they are conveyed through a muffler and then to a separator.
- **Seawater fire extinguishing/washing system**
  It consists of an electric pump that sucks in sea water through the services sea water intake equipped with a shut-off valve and strainer and sends it to the fire hose, as well as to services supplied by sea water such as black waters tanks washing and anchor chain washing.
- **Air conditioning unit cooling system**
  This circuit consists of a seawater intake with shut-off valve, inspectable seawater strainers and connections for distribution to the air conditioning unit.
- **Gyroscopic stabilizers cooling system**
  Seawater is drawn in by the pumps used to cool the stabilisers via two sea cock fitted with shut-off valves and filters.
  The suctioned water passes through the strainer before being sent to the heat exchanger of the gyroscopic stabilizer and then discharged outboard.
- **Watermaker system (optional)**
  The sea water system for the watermaker consists of a sea cock equipped with cut-OFF valve and strainer, the electric pump of the watermaker sucks sea water.
  The brine left over after the process is drained overboard.

WARNING

In case of engine room flooding, it is possible to use the engine cooling system to pump water from the bilge in large quantities as follows:

- Start the engines;
- Close the engine seacocks and by open the bilge suction valves.

The valves activation must absolutely be wanted and not accidental. Should it be necessary to use this draining system, the bilge level must be checked continuously, because in case of complete drainage, the engines will not be cooled down.

CAUTION

Be very careful when resetting the valves to sea suction if the bilge is dry, so as not to damage the engine parts.

This yacht is equipped with a Trailing Pump on the gearbox module; this system allows navigation with a single engine while safeguarding the mechanical components of the engine switched OFF.
For long distances a “sea water” cooling circuit has been provided with the following modes of use.

For prolonged navigation with one of the two engines switched OFF, operate as follows:

- With both engines working, the 3-way valves, positioned between the engine and the inverter, must be kept in configuration "**A**" (no partialization of the water flow towards the other inverter);
- If one of the two engines shuts down or fails (Engine OFF in the figure), the corresponding valve must be set to position "**B**" (the inverter now receives part of the cooling water coming from the delivery of the gear in operation).

CAUTION

Before cleaning the strainer of the sea cocks, check that the utilities supplied with sea water are switched off and not used.

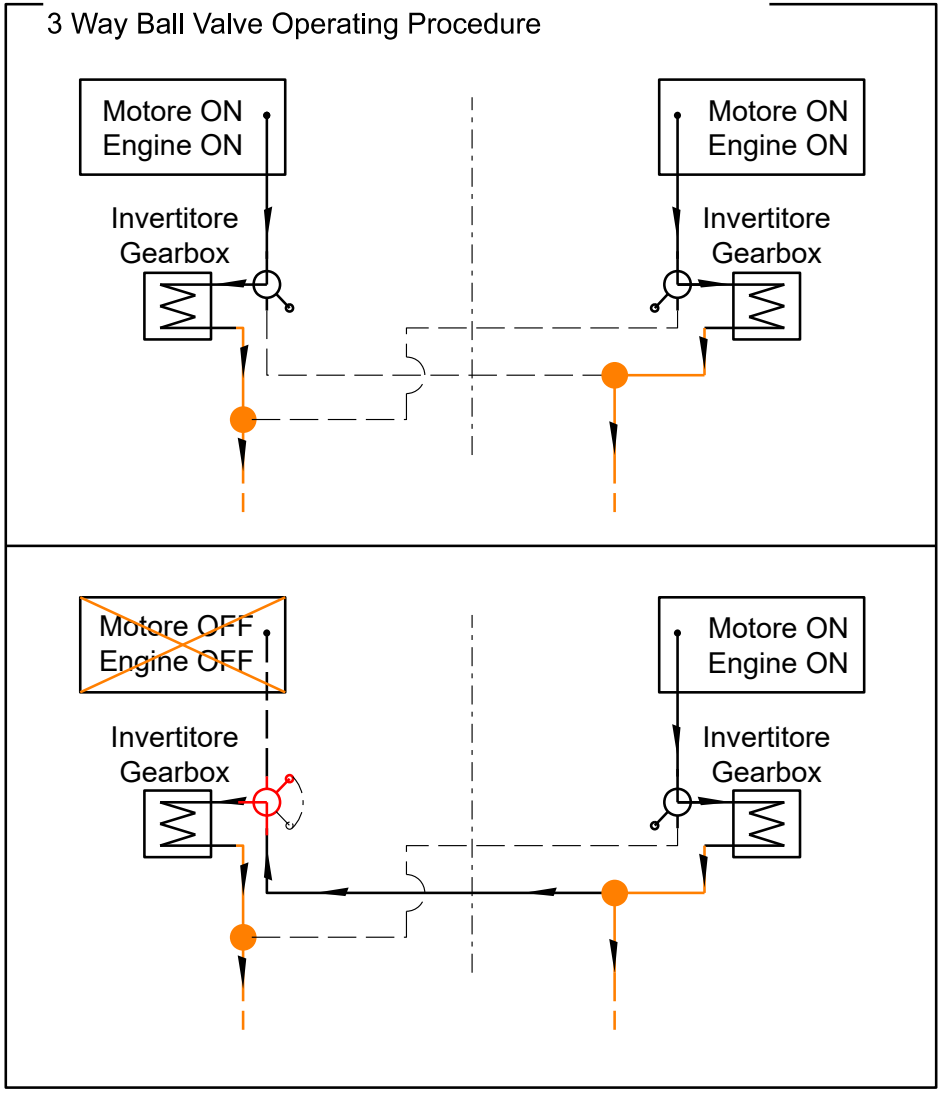
WARNING

It is good practice to close all sea cocks when leaving the yacht in the water for a long time.

Clean the sea cock strainers according to the schedule and to the pollution condition of the water taken on (seaweed, mucilages, etc..).

- Close the valve of the relevant sea cock (by means of the handwheel or lever).
- Cut-off valves upstream of the relevant strainer.
- Remove the strainer cover by loosening the screws.
- Remove the strainer basket and wash away all impurities with fresh water.
- Replace if necessary.
- Reinstall the basket and the strainer cover.
- Open the valves upstream of the relevant strainer.

Procedura di funzionamento della valvola a sfera a 3 vie
3 Way Ball Valve Operating Procedure



- Before restarting the system circuit, ensure that the screws and relevant washers are correctly fastened with the ring and disc on the strainer body.
- Completely reopen the overboard intake valve and check that there are no leaks from the strainer cover.

WARNING

Before working on the system's seawater line, inhibit the operation of the powered utilities and close the seacock valve.
Before restarting the system circuit, make sure that the cut-off valve is completely open.

WARNING

During navigation, regularly check the cleanliness of the sea water strainer baskets.
If the yacht is crossing a dirty sea area, check the condition of the strainers and proceed with their cleaning.
Taking suitable precautions is very important to prevent damage to mechanical parts (engines, generators, etc..), discharge systems and to not jeopardize the safety of the yacht.

CAUTION

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

DANGER

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

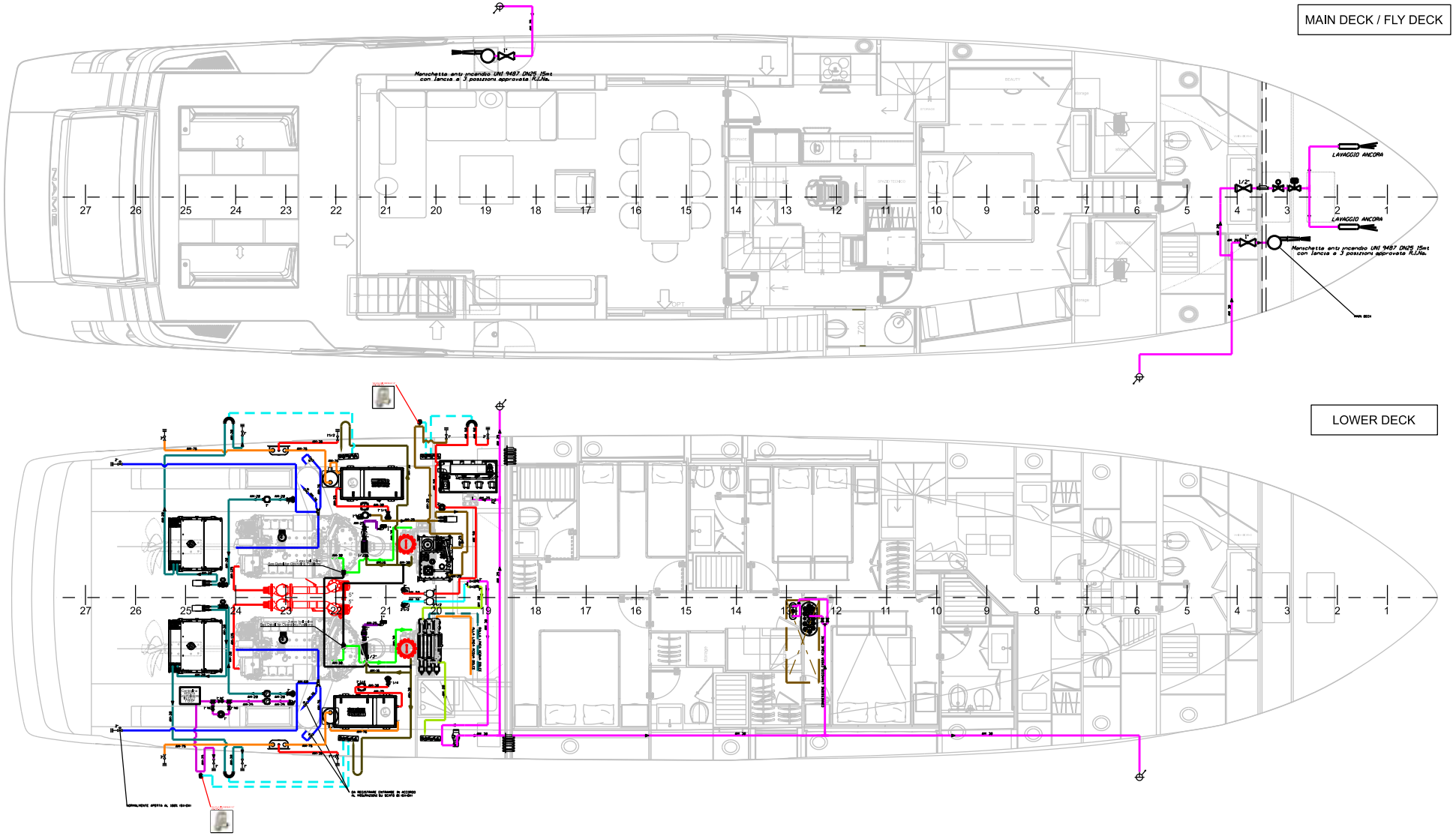
WARNING

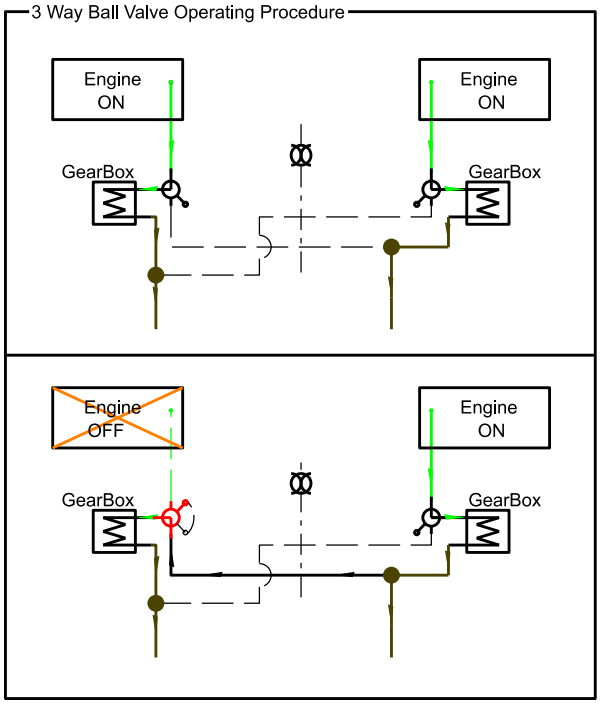
When there is a risk of the yacht sinking, if evacuation conditions allow it, close all seacock ball valves.

CAUTION

The by-pass valve on the riser's water separator needs to be normally closed.

Sea water distribution system





LEGENDA	
	Motore Diesel MTU 16V serie 2000
	SEPERATORE DI FUMI
G	GENERATORE
	SILENZIATORE
I	INVERTITORE
	VALVOLA A SFERA
	VALVOLA DI NON RITORNO
	SCARICO A MARE
	SCARICO CENTRALIZZATO
	ELETTROVALVOLA LAVAGGIO CATENA
	VALVOLA A SARACINESCA
	VALVOLA SOVRAPRESSIONE
	FILTRO
	VALVOLA AUTOMATICA

LEGENDA	
	LINEA MARE MOTORI ENGINE SEA WATER LINE
	LINEA MARE GENERATORI GEN SET SEA WATER LINE
	LINEA MARE SEAKEEPER SEAKEEPER LINE
	LINEA MARE SERVIZI / A/C SERVICES SEA WATER LINE / A/C
	LINEA MARE ANTINCENDIO FIRE FIGHTING SEA WATER LINE
	LINEA MARE RAFFREDDAMENTO IDRAULICA HYDRAULIC SYSTEM COOLING LINE
	LINEA MARE RAFFREDDAMENTO C. TIMONERIA STEERING GEAR SYSTEM COOLING LINE

5.6.1 Maintenance of sea cocks and strainers

Component	Maintenance	Notes and precautions
Seacocks and strainers	Cleaning (as required depending on the shoring area, but at least every month)	Seacock cleaning: This operation has to be carried out outside, therefore the yacht must be in a dry shore or you can ask the intervention of a diver. • Have the sea cocks cleaned (removal of seaweed or barnacles. If necessary have them removed with a brush). **DANGER** Before carrying out maintenance on the fresh water pump, avoid its accidental priming. Inspection and cleaning valves and strainers: • Cleaning is to be carried out more frequently if the water drawn in is particularly dirty (seaweed, mucilage, etc.). **WARNING** Before removing the strainer, it is necessary to close the valve fitted to the sea cock, to prevent flooding the bilge with water.

Component	Maintenance	Notes and precautions
Seacocks and strainers	Cleaning (as required depending on the shoring area, but at least every month)	Inspection and cleaning valves and strainers: • Check for barnacles or corrosion on the control levers of the cut-off valves of the strainer to be checked. • Clean the control levers of the valves with a brush. • Move the levers repeatedly. • Close the cut-off valve upstream the strainer. • Remove the strainer cover by loosening the screws. • Remove the filter element, clean it with a brush and rinse it in water (replace as necessary). • Clean the strainer housing. • Check and, if necessary, replace the gasket of the strainer cover. • Fill the strainer with water to avoid the pumps running dry or that the system does not prime. • Reposition the strainer, the cover and tighten the nuts. • Reopen the cut-off valve and check whether the strainer cover is leaking. **WARNING** Before servicing the sea water lines, disable the operation of the connected utilities. Before restarting the utilities, make sure that the cut-off valve is completely open. **WARNING** During navigation, regularly check the cleanliness of the sea water strainer baskets. If the yacht is crossing a dirty sea area, check the condition of the strainers and proceed with their cleaning. Taking suitable precautions is very important to prevent damage to mechanical parts (engines, generators, etc..), discharge systems and to not jeopardize the safety of the yacht.

Component	Maintenance	Notes and precautions
Electric pump	Cleaning and checks	At least each week, check the operation of the sea water pump. **WARNING** The pump is self-priming but, in order to operate, it needs to have its body filled with liquid. For a correct use, we recommend at first priming or after a long idling period, to fill the pump body with liquid and to verify the rotation direction of the pump (it should be clockwise, seen from the engine side). Besides, if on the control panel the pump operating led remains always lit, but the connected utilities are not in use, check for leaks. **DANGER** Before servicing the pump, disable its operation. • Have the inner cleanliness of the pump checked; possibly, have it cleaned with well diluted detergent and dried. • Have the fittings for well tightening and corrosion checked. • Frequently check and keep the suction filter clean. • Check that the electric power supply cables are in good conditions. **NOTA** For further information on use and maintenance, please refer to the manufacturer's manual.

Seacocks, filters and valves checking and cleaning:
The sea cock cleaning operation must be carried out from the outside, therefore with the yacht dry or with the intervention of a diver.

- Have the sea cocks checked for cleanliness (absence of algae or encrustations. If necessary, have them cleaned with a brush).



DANGER
If the yacht is in water, before working on the shaft lines, inhibit the starting of the engines, generators and sea water pumps.

- Check that there are no deposits or corrosion on the shut-off valve control levers of the strainer to be checked.
- Clean the valve control levers with a brush.
- Operate the levers repeatedly.
- Close the shut-off valve upstream of the strainer.
- Remove the strainer cover by loosening the screws.
- Remove the filter element, clean it with a brush and rinse it with water.
- Clean the strainer container.
- Check and, if necessary, replace the strainer cover gasket.
- Fill the strainer with water to prevent the pumps from running dry or the system from starting up.
- Replace the strainer, cover and tighten the bolts.
- Reopen the shut-off valve and check for leaks from the strainer cover.

CAUTION
Before reactivating the system, ensure that the shut-off valve is open.



DANGER
Before working on the sea water lines, inhibit the operation of the fed systems.

ELECTRIC SYSTEM

CHAPTER 6

6.1 ELECTRIC SYSTEM

The electric system of the yacht has been designed paying the utmost attention to all aspects regarding your SAFETY and the SAFETY of your Guests and it has been manufactured using high-quality materials, fully in compliance with the rules in force.

The electric system of your yacht consists of three defined and separated sections.

- The services electrical system is powered by a nominal 24Vdc supply provided by twelve series-connected 2Vdc - 640Ah battery cells. The aforementioned battery bank is recharged by an alternator driven by one of the engines. There are 2 service chargers.
- Engine electrical system powered by a nominal 24Vdc supply provided by four parallel-connected 12Vdc - 220Ah batteries per engine. This battery bank is recharged by the engine battery charger and the alternator driven by one of the engines.
- 230V system powered by the shore grid or, alternatively, by an onboard generator sets. Each generator units is powered by a 12Vdc - 180Ah battery located near the generator itself and recharged by an alternator driven by the unit itself or the specific battery charger.

The yachts are equipped with electronic injection machines and electronic remote control systems. For this reason it is very important for the user to carry out some simple operation to prevent faults to the electric systems, which on their turn may cause problems to the propulsion system.

CAUTION

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

CAUTION

During navigation both the button switch of the service batteries and the button switch of the engine batteries must always be connected, that is positioned to ON. The parallel button switch on the two sets must be normally disconnected and therefore set to OFF.

CAUTION

If during navigation an operation fault on the re-charging alternators occurs, set to “ON” the button switch of the parallel connection between the batteries sets and leave it connected until the fault has been removed.

CAUTION

Never start navigation without having set to ON both the engines batteries switch and the services batteries switch and do not disconnect them during navigation.

CAUTION

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

CAUTION

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

CAUTION

Do not modify the electric systems or relevant drawings. The installation, the modifications or the maintenance must be carried out only by a skilled naval electrician. Inspect the system at least once a year.

CAUTION

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

CAUTION

Use electric devices with double isolation or grounding.

CAUTION

Switch OFF the service and engine battery chargers before starting the engines. Keep the service and engine battery chargers off while at sea.

CAUTION

If generator battery chargers are on board, they must be switched off before starting the generators themselves. Keep the battery chargers turned off during the entire time the generators are running.

WARNING

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

CAUTION

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

WARNING

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

DANGER

Do not modify the electric systems or relevant drawings. The installation, the modifications or the maintenance must be carried out only by a skilled naval electrician.
Inspect the system at least once a year.

The onboard electrical system has been designed and installed in compliance with UNI EN ISO and RINA standards, applying the following criteria:

- All wiring, joints and line-feed protection devices such as magneto thermal breakers, RCCBs and fuses have been collected and grouped both within and on the front plates of the various onboard electrical panels.
- All electrical lines are oversized, ducted and/or inspectable and implemented with flame-retardant cables laid inside special self-extinguishing conduit; all the aforesaid lines are connected with special spring-type terminal blocks, the latter positioned inside the engine room main electrical panel and in the various electrical sub-panels.
- The system is highly fragmented into sub-circuits and protected with magneto thermal breakers and fuses for each single load or homogeneous load groups in order to simplify the tracing of possible faults which, for any line, can only occur at the load and the electrical panel.

The protection of the single electric system sections is performed by automatic magneto-thermal breakers of different amperage and size, according to the absorption of the various services to be protected and by the size of cables used for their supply.

All metallic wet pieces are interlocked with equipotential connections and linked on sacrificial anodes installed on the underwater quick-work.

WARNING

Refrain from performing any modification or intervention on the system and on the panel and take advantage of experienced Companies and skilled staff. Avoid particularly derivations on electric lines and splices of services not provided for on the same panel. Finally, if you need to assign services to the switches available, make sure that their characteristics are suitable with the device installed.

WARNING

NEVER:

- Work on the electric system while under voltage.
- Modify the electric systems of the system or relevant drawings: the installation, the modifications and the maintenance must be carried out only by a skilled marine electrician.
- Alter or modify the intensity of rated current of protections against overcurrent.
- Install or replace electric equipment or devices with components exceeding the rated current intensity of the circuit.
- Leave the yacht unattended with the electrical system powered, except for the circuits of the bilge automatic suction pumps, of the fire-fighting protection and of the alarms (directed to battery).

DANGER

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

DANGER

All electrical systems (included those at low voltage) if wrongly handled or subjected to overloads, can originate short-circuits and dangerous overheating with potential fire hazards!

CAUTION

If your are compelled to use the “battery parallel connection”, turn off all electronic devices, so as not to jeopardize their correct operation.
In emergency conditions, use the battery parallel set for the shortest reasonable time.

DANGER

We recommend, in order to operate in complete safety, to carefully read the safety rules relevant to the maintenance and contained in this manual.

DANGER

When disconnecting the inverter by means of the switch located on the front panel, the connection with the mains is not broken off.

DANGER

Do not work on the inverter or on its system if still connected to a current source. Only qualified staff can carry out interventions on the electric system.

WARNING

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

DANGER

Before operating on the battery charger, disable the generators start and cut-off the shore power supply.

WARNING

Before carrying out the switching over of the AC sources (generator/shore), it is advisable to disconnect all AC services currently operating, to prevent damaging the electronic boards of the relevant devices.

CAUTION

RIVA suggest to examine very carefully the whole documentation delivered by the manufacturers of the various components; and for any problem relevant to maintenance, to contact the RIVA After Sales & Service directly.

DANGER

Before starting to work on electrical panels or devices, prevent the generators' operation by disconnecting the electric power supply from shore and the inverter.

DANGER

The system is similar to a domestic system in terms of features and risks and, if "wrongly" used, mishandled or serviced, it statistically represents one of the most frequent reasons for fire on board.

DANGER

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

WARNING

Do not disconnect the battery master buttons with engines running or you may damage the engine alternators.

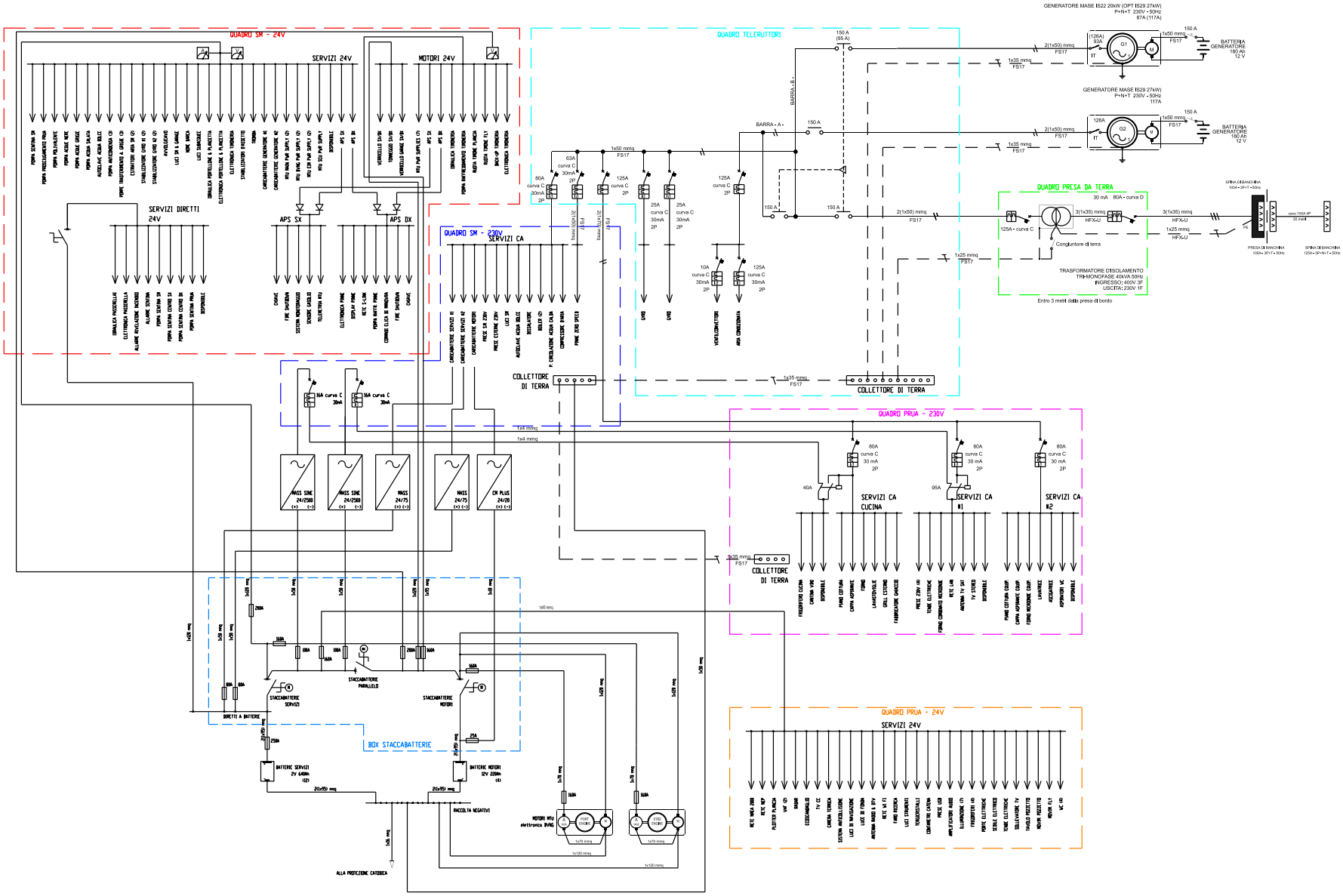
CAUTION

For the correct procedures of fuses replacement refer to the on-board electric manual delivered separately.

The on-board services are supplied by separate electric systems with different features:

- 24V DC;
- 230V AC (50Hz).

AC-DC distribution electrical system:



6.1.1 Maintenance of the electric system

Component	Maintenance	Notes and precautions
Equipment and circuits	Cleaning and checks	At least once every six months, have the various connections of electric boards, panels and boxes checked by experienced personnel. Make sure that ground connections of electric equipment and electrical panels are tight and not oxidized. Have the absorption of the different electric motors periodically checked by skilled personnel. When cleaning the bottom hull, carefully clean the electronic instrument ground static discharger and the porous plate connected the power generator grounding. Moreover, check the condition of the protection anodes and if necessary, replace them. During the lay-up period, do not apply any antifouling on the ground static dischargers.

MAINTENANCE

At least once a week check the operation of all electrical panels.
At least once every six months:

- Check the possible presence of damaged cables;
- Protect the various contacts.

DANGER

Do not modify the electric systems or relevant drawings. The installation, the modifications or the maintenance must be carried out only by a skilled naval electrician. Inspect the system at least once a year.

DANGER

Before carrying out any intervention on the electric system, disconnect all circuits (shore, generators and inverter):

- Disconnect the shore sockets;
- Set to OFF the magneto-thermal switch of generators;
- Set to OFF the magneto-thermal switches at inverter output and turn OFF the inverter (OFF button on the front).

CAUTION

It is forbidden to use pressurized water on light appliances installed outside.

6.2 ELECTRICAL PANEL

CAUTION

Before removing the front panel for maintenance, stop the power generators, disconnect the shore sockets and the inverter.

NOTE

For a detailed description refer to the electric installation manual.

MAIN ELECTRICAL PANEL:

The control of the electrical system is carried out from the panel located in the system room.

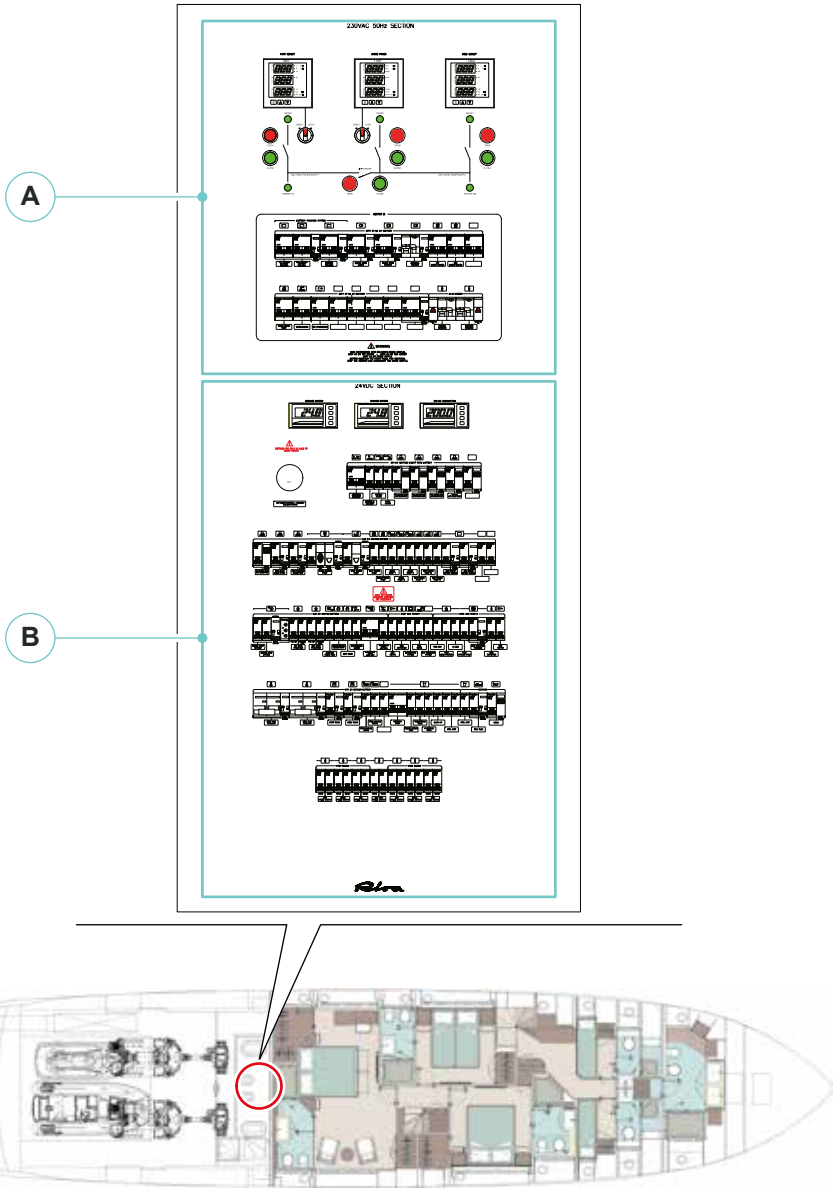
The following main sections have been identified, in order to make the descriptions easier:

A. 230V load switch buttons and electrical voltage measuring instruments, magneto-thermal breakers to protect 230V loads

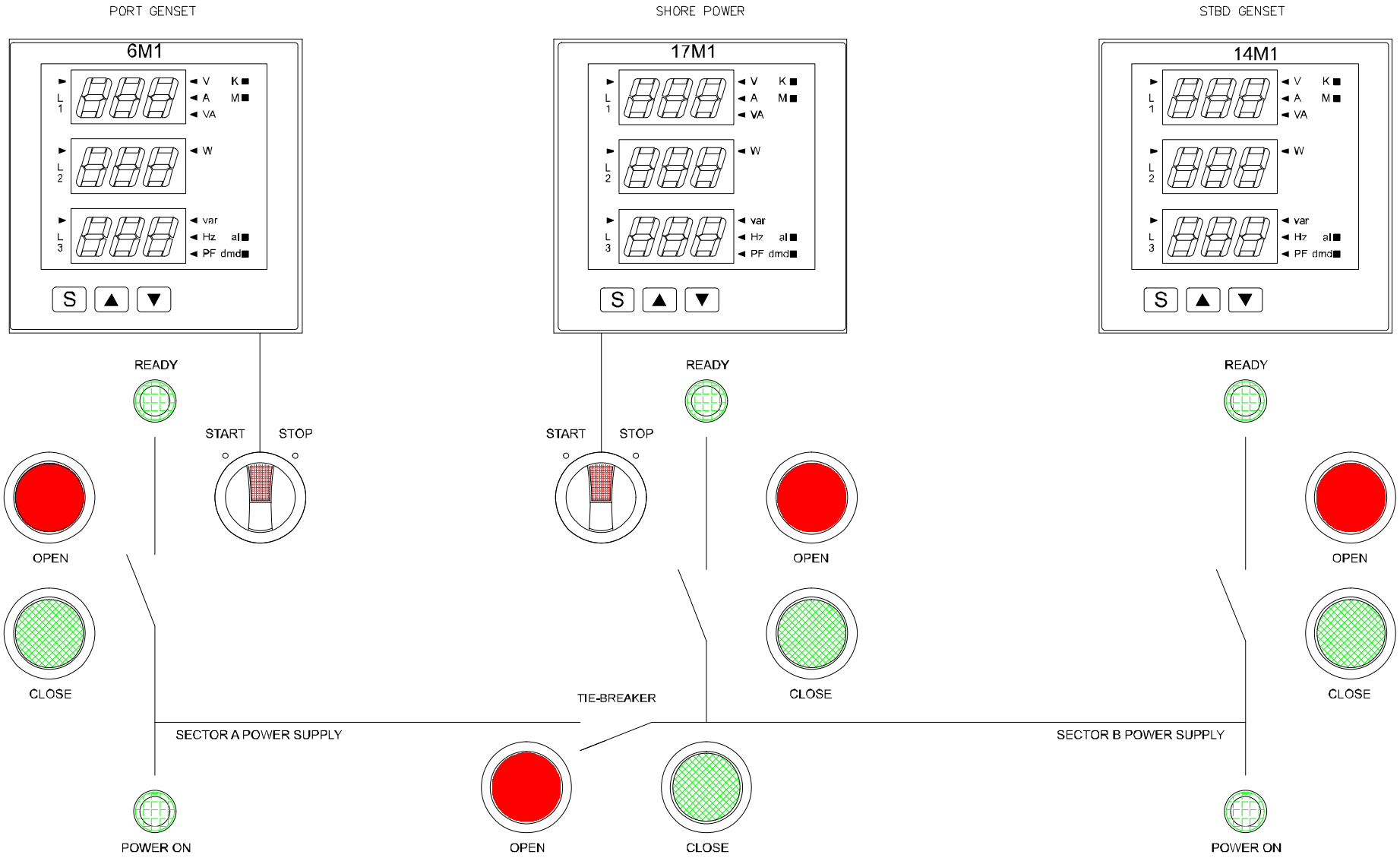
B. 24V load switch buttons and electrical voltage measuring instruments, magneto-thermal breakers to protect 24V loads and gangway control and relative battery disconnect switch.

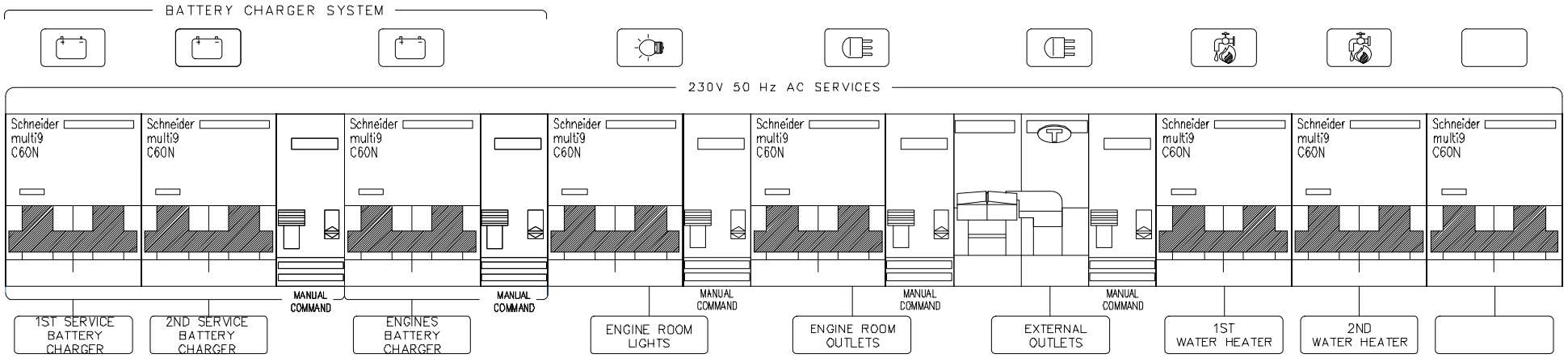
CAUTION

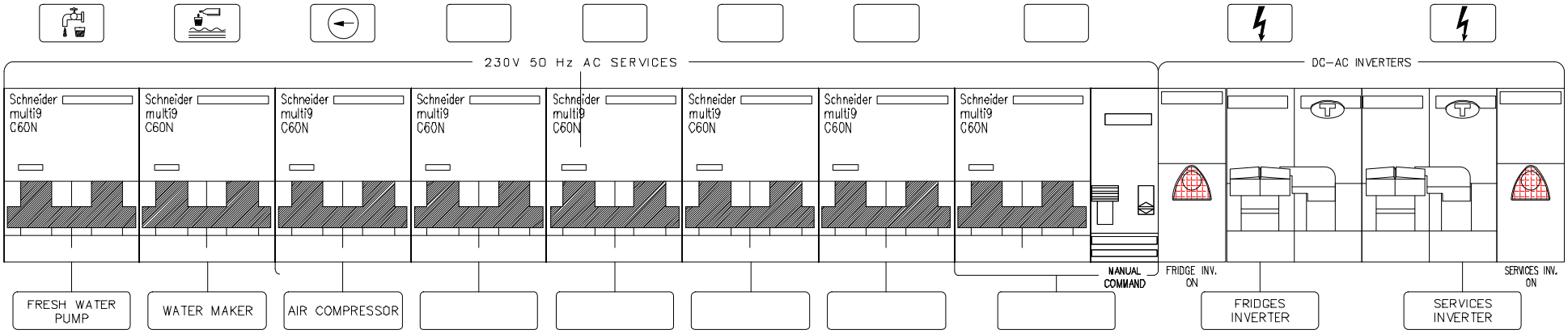
Always keep the safety systems and gangway powered. Operate the battery disconnect switch for safety systems and gangways, available in the 24V section of the main electrical panel, only in the event of a short circuit or an emergency.



A. 230V load switch buttons and electrical voltage measuring instruments, magneto-thermal breakers to protect 230V loads

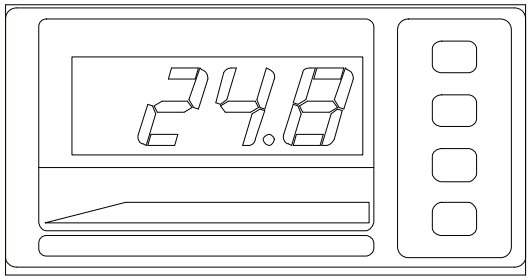



BATTERY CHARGER SYSTEM
230V 50 Hz AC SERVICES
Schneider multi9 C60N
MANUAL COMMAND
1ST SERVICE BATTERY CHARGER
2ND SERVICE BATTERY CHARGER
ENGINES BATTERY CHARGER
ENGINE ROOM LIGHTS
ENGINE ROOM OUTLETS
EXTERNAL OUTLETS
1ST WATER HEATER
2ND WATER HEATER

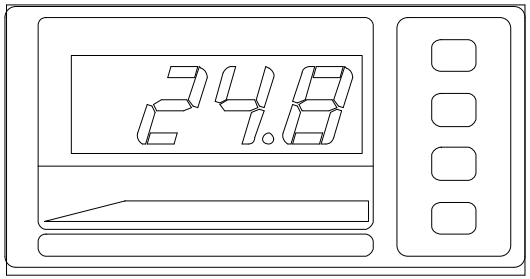

230V 50 Hz AC SERVICES
DC-AC INVERTERS
Schneider multi9 C60N
MANUAL COMMAND
FRIDGE INV. ON
SERVICES INV. ON
FRESH WATER PUMP
WATER MAKER
AIR COMPRESSOR
FRIDGES INVERTER
SERVICES INVERTER

B. 24V load switch buttons and electrical voltage measuring instruments, magneto-thermal breakers to protect 24V loads and gangway control and relative battery disconnect switch

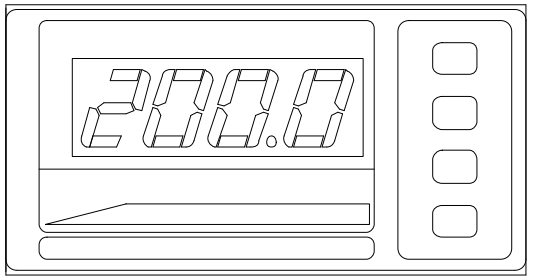
SERVICES BATTERY



ENGINES BATTERY



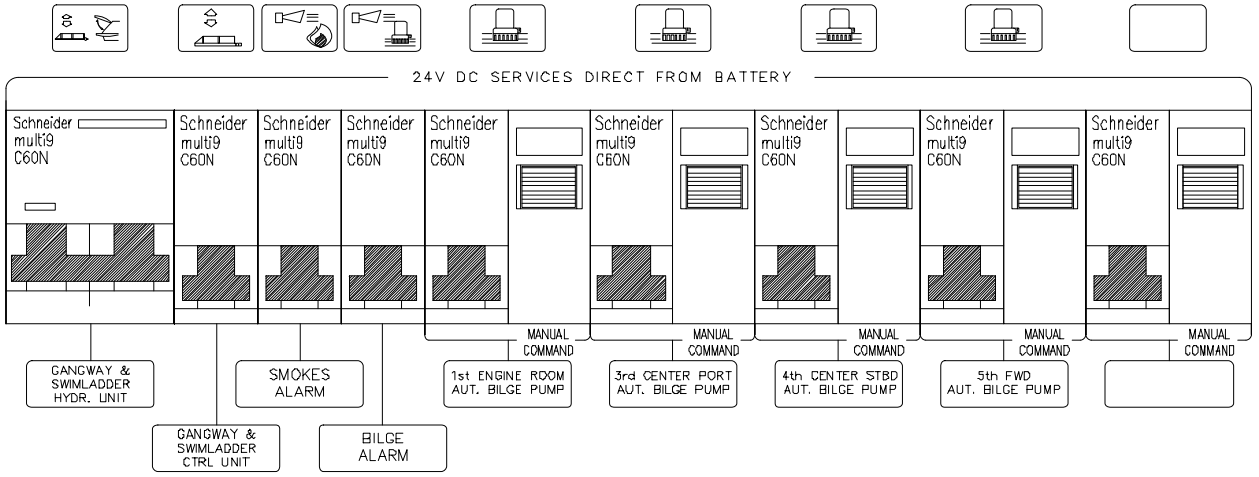
24V DC CONSUMPTION

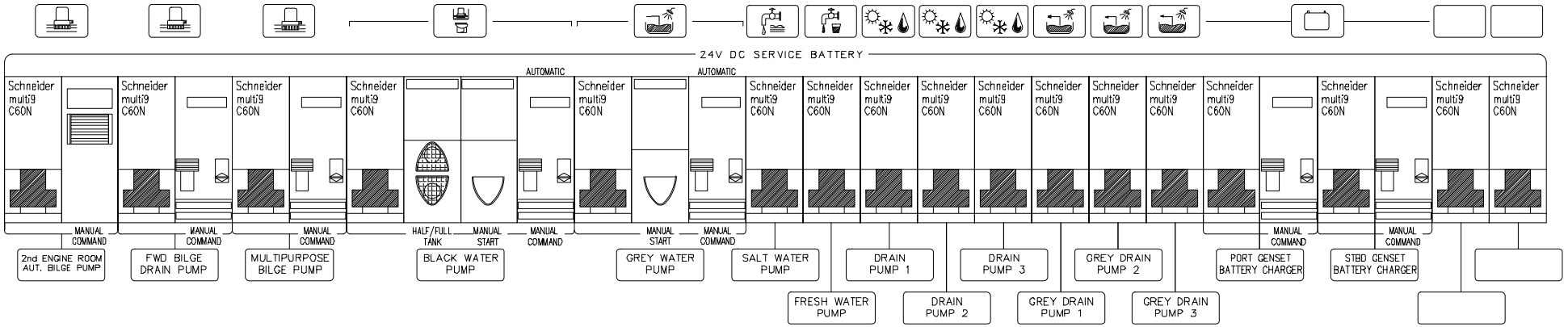


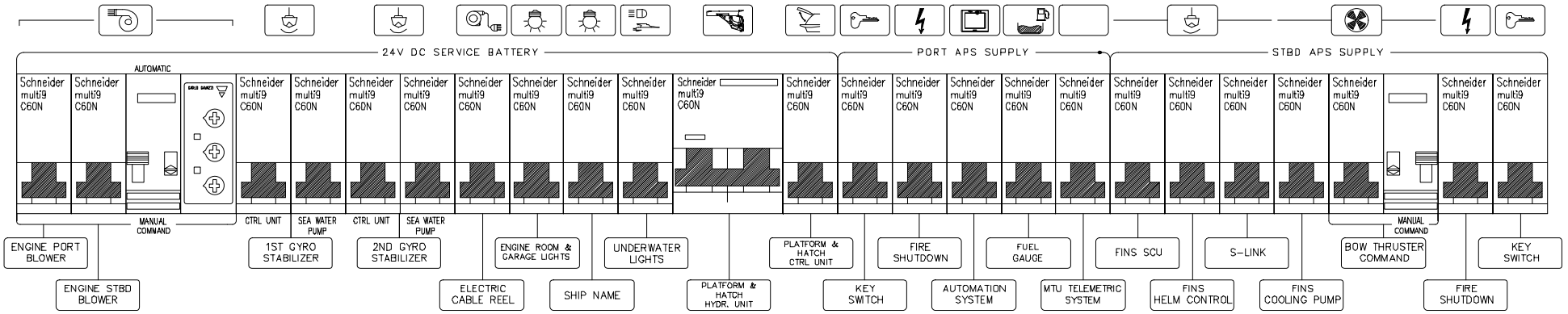
SWITCHED OFF ONLY IN CASE OF SHORT CIRCUIT

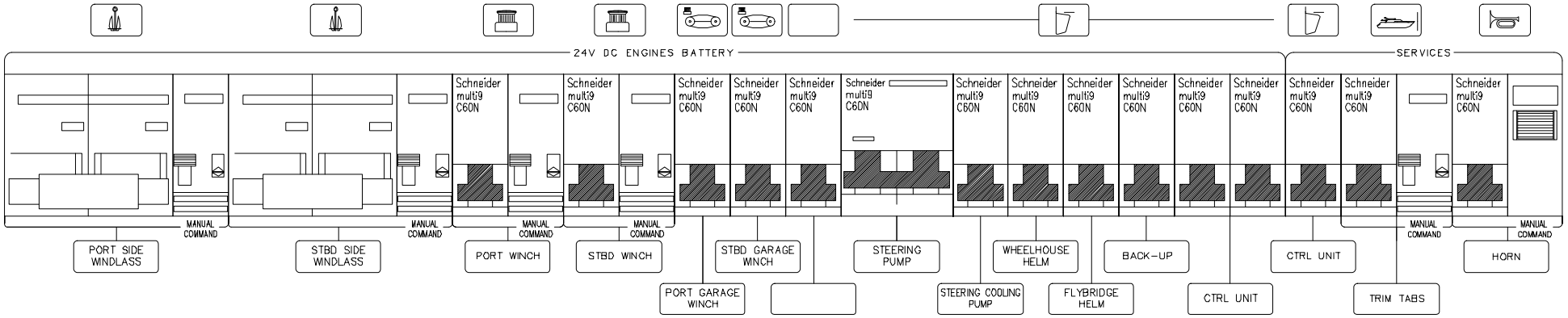
300A

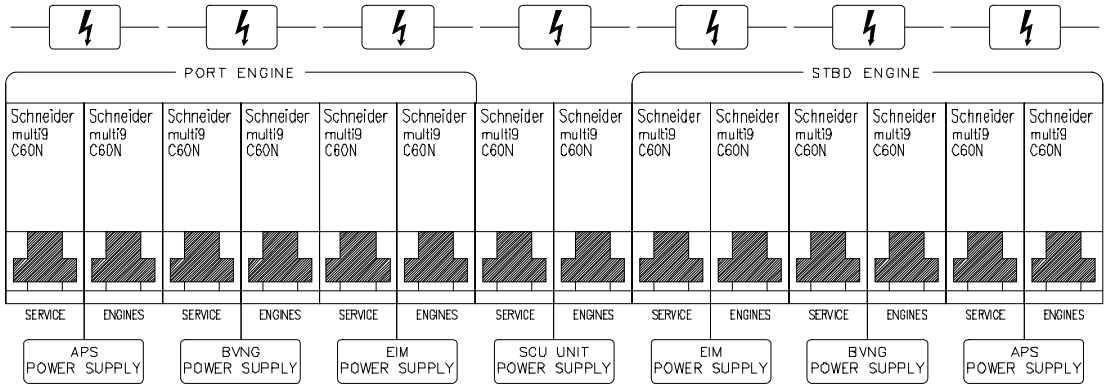
24V SAFETY SYSTEM – GANGWAY BATTERY SWITCH




24V DC SERVICE BATTERY
Schneider multi9 C60N
AUTOMATIC
MANUAL COMMAND
HALF/FULL TANK
MANUAL START
2nd ENGINE ROOM AUT. BILGE PUMP
FWD BILGE DRAIN PUMP
MULTIPURPOSE BILGE PUMP
BLACK WATER PUMP
GREY WATER PUMP
SALT WATER PUMP
FRESH WATER PUMP
DRAIN PUMP 1
DRAIN PUMP 2
DRAIN PUMP 3
GREY DRAIN PUMP 1
GREY DRAIN PUMP 2
GREY DRAIN PUMP 3
PORT GENSET BATTERY CHARGER
STBD GENSET BATTERY CHARGER


24V DC SERVICE BATTERY
PORT APS SUPPLY
STBD APS SUPPLY
AUTOMATIC
MANUAL COMMAND
CTRL UNIT
SEA WATER PUMP
CTRL UNIT
SEA WATER PUMP
MANUAL COMMAND
ENGINE PORT BLOWER
ENGINE STBD BLOWER
1ST GYRO STABILIZER
2ND GYRO STABILIZER
ELECTRIC CABLE REEL
ENGINE ROOM & GARAGE LIGHTS
SHIP NAME
UNDERWATER LIGHTS
PLATFORM & HATCH HYDR. UNIT
PLATFORM & HATCH CTRL UNIT
KEY SWITCH
FIRE SHUTDOWN
AUTOMATION SYSTEM
FUEL GAUGE
MTU TELEMETRIC SYSTEM
FINS SCU
FINS HELM CONTROL
S-LINK
FINS COOLING PUMP
BOW THRUSTER COMMAND
FIRE SHUTDOWN
KEY SWITCH


24V DC ENGINES BATTERY
SERVICES
Schneider multi9 C60N
MANUAL COMMAND
PORT SIDE WINDLASS
STBD SIDE WINDLASS
PORT WINCH
STBD WINCH
PORT GARAGE WINCH
STBD GARAGE WINCH
STEERING PUMP
STEERING COOLING PUMP
WHEELHOUSE HELM
FLYBRIDGE HELM
BACK-UP
CTRL UNIT
CTRL UNIT
TRIM TABS
HORN

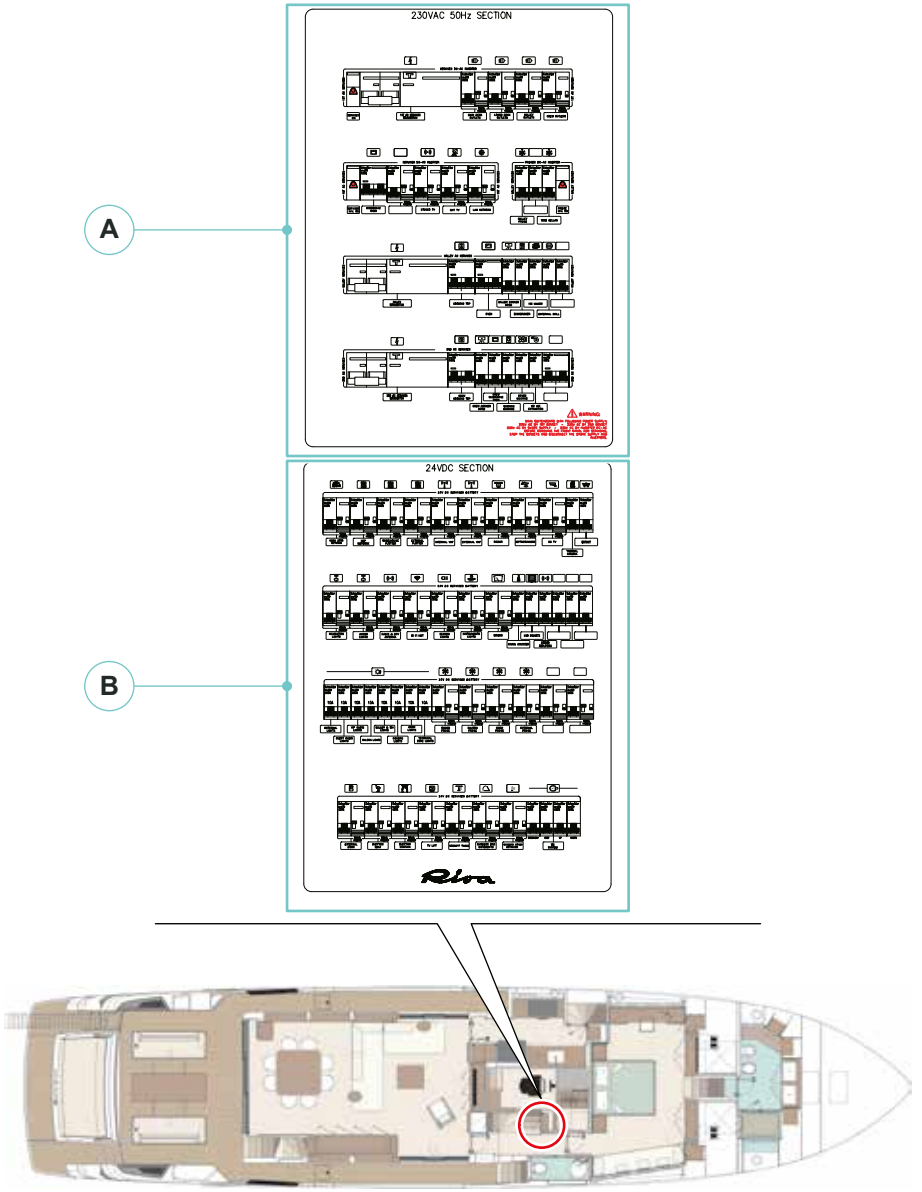

PORT ENGINE
STBD ENGINE
Schneider multi9 C60N
SERVICE
ENGINES
APS POWER SUPPLY
BVNG POWER SUPPLY
EIM POWER SUPPLY
SCU UNIT POWER SUPPLY
EIM POWER SUPPLY
BVNG POWER SUPPLY
APS POWER SUPPLY

FORWARD ELECTRICAL PANEL:
The forward electrical panel is located on the ladder leading to the guest and master cabins.

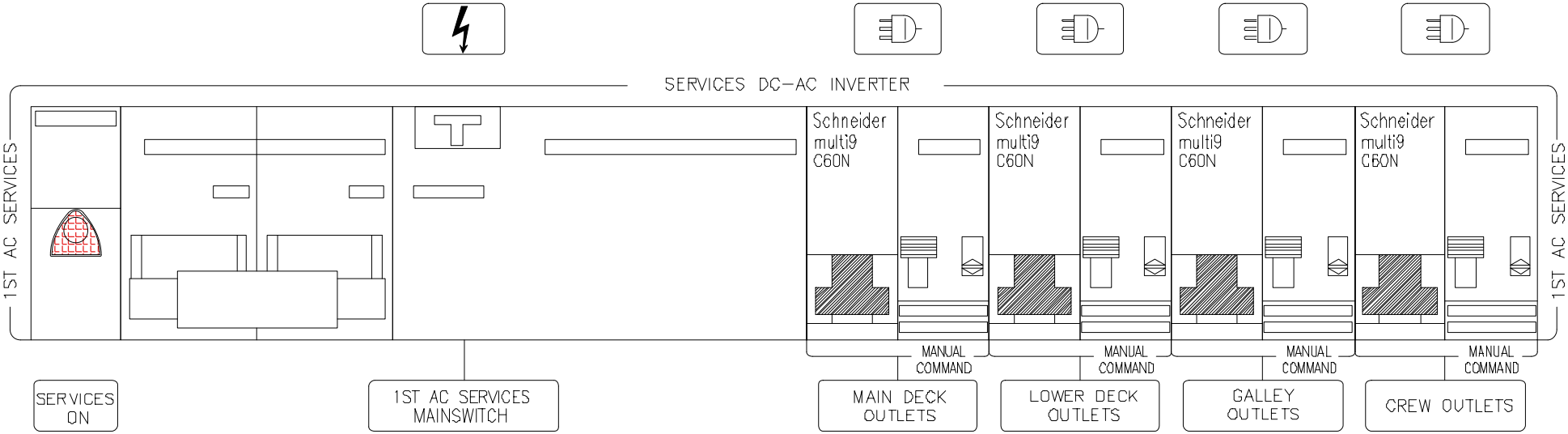
To simplify the panel descriptions, the following main sections have been identified:

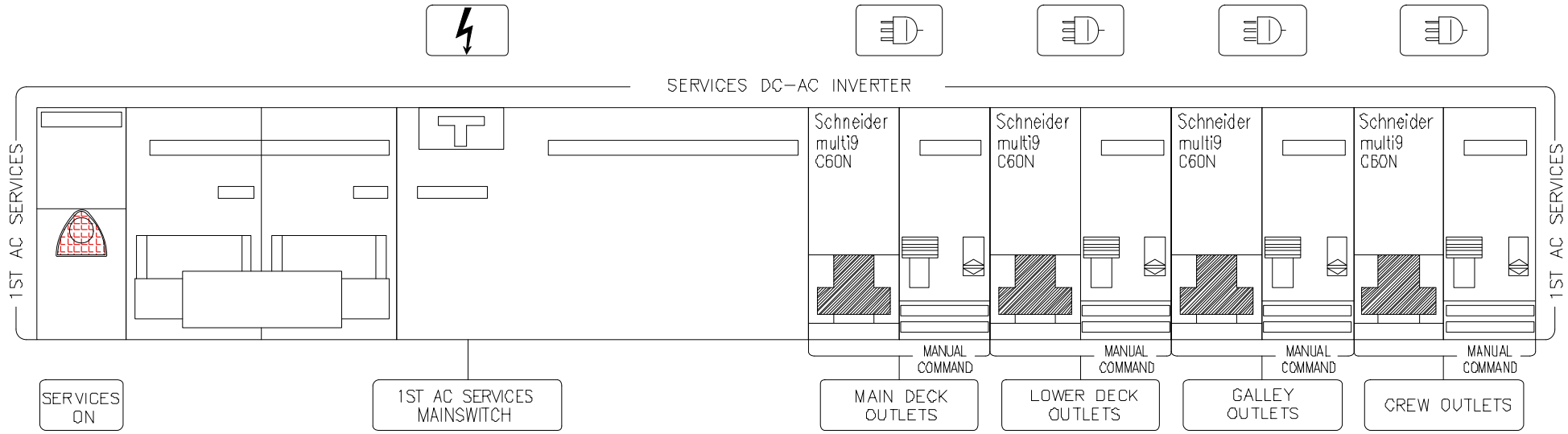
A. Magneto-thermal breakers protecting 230V loads.

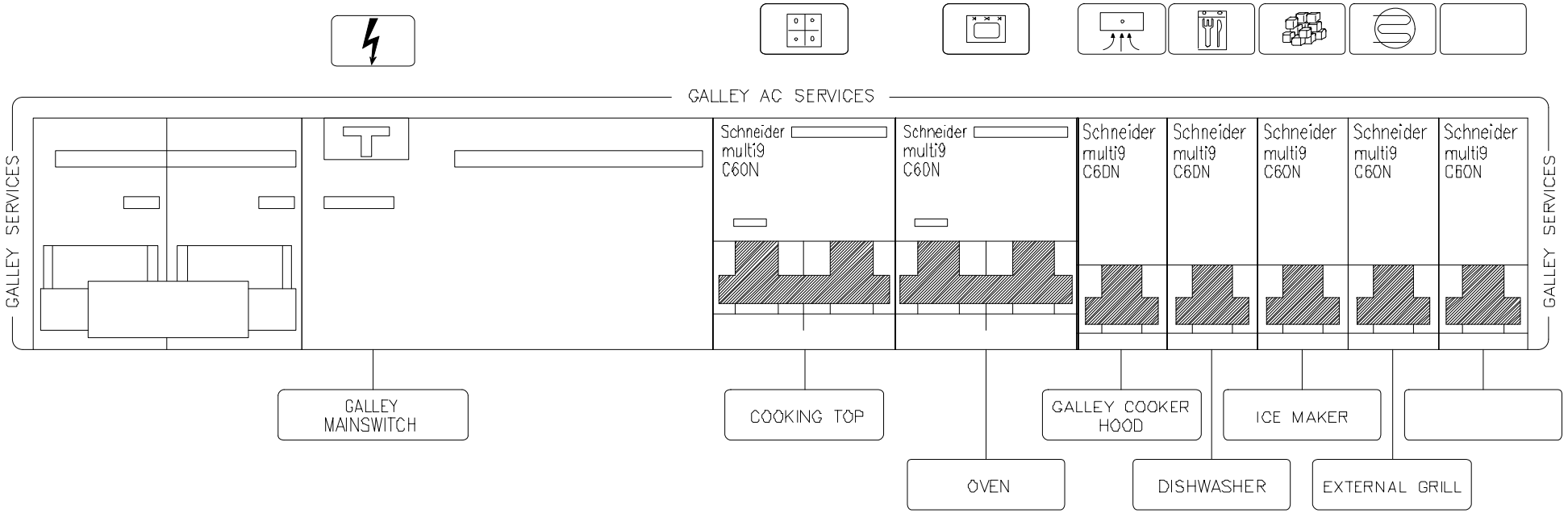
B. Magneto-thermal breakers protecting 24 V loads.

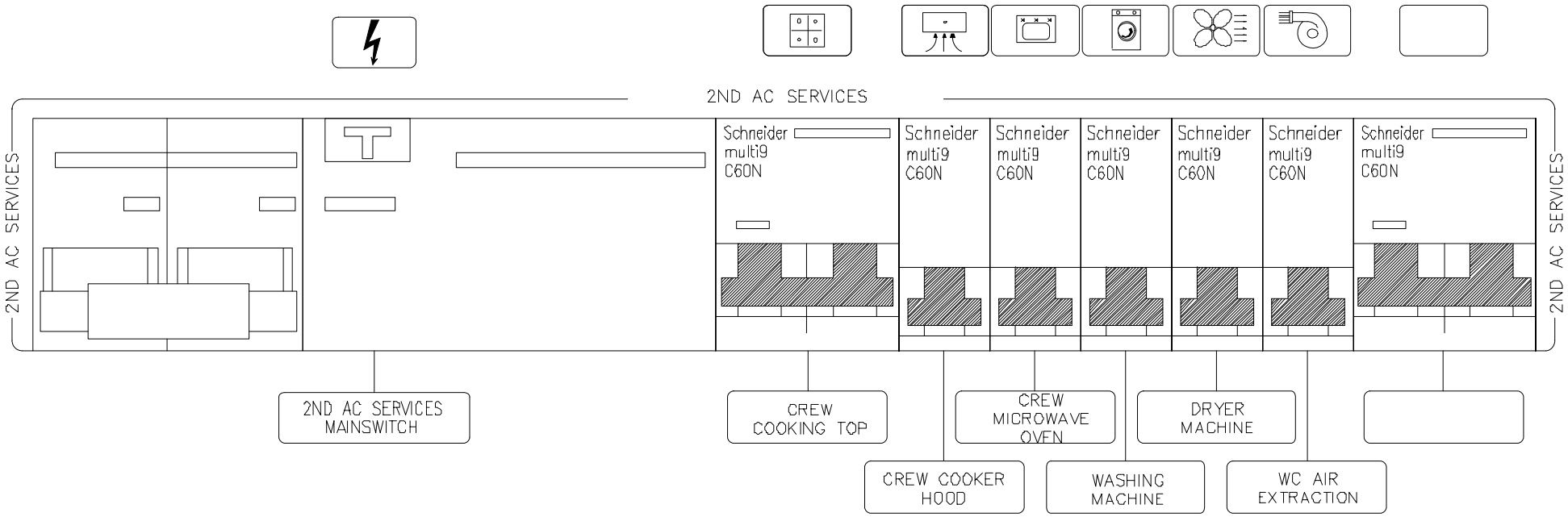


A. Magneto-thermal breakers protecting 230V loads

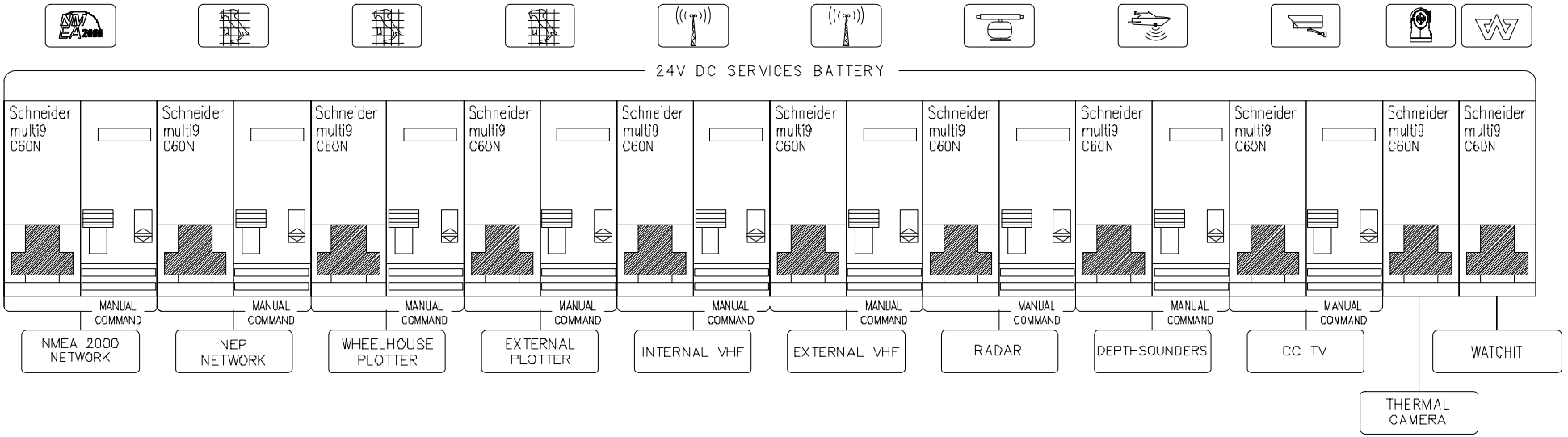


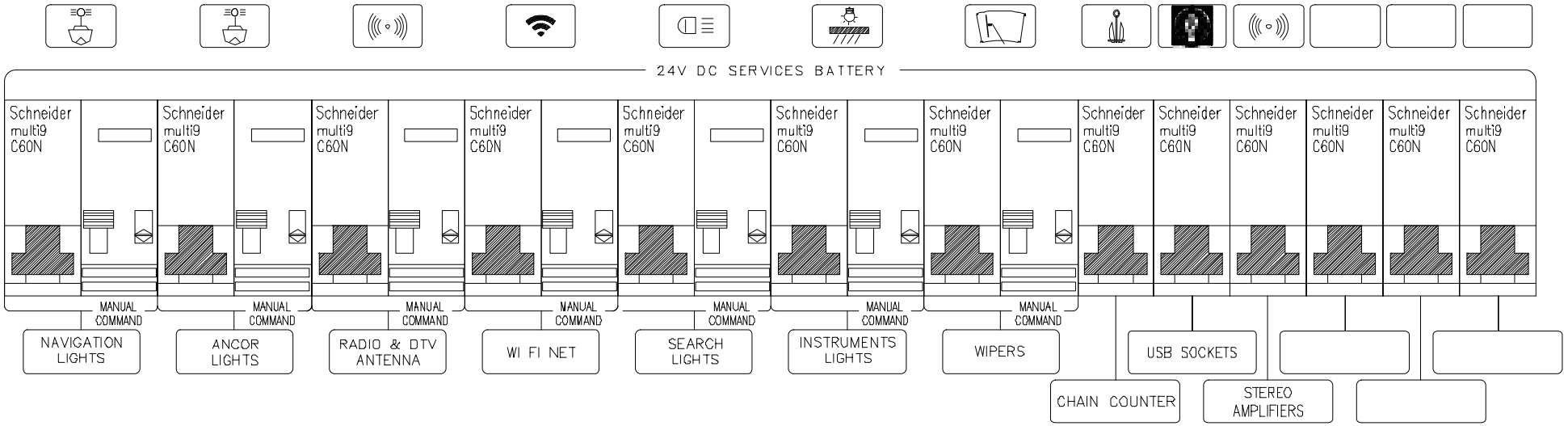

SERVICES DC-AC INVERTER
1ST AC SERVICES
1ST AC SERVICES
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
MANUAL COMMAND
MANUAL COMMAND
MANUAL COMMAND
MANUAL COMMAND
SERVICES ON
1ST AC SERVICES MAINSWITCH
MAIN DECK OUTLETS
LOWER DECK OUTLETS
GALLEY OUTLETS
CREW OUTLETS

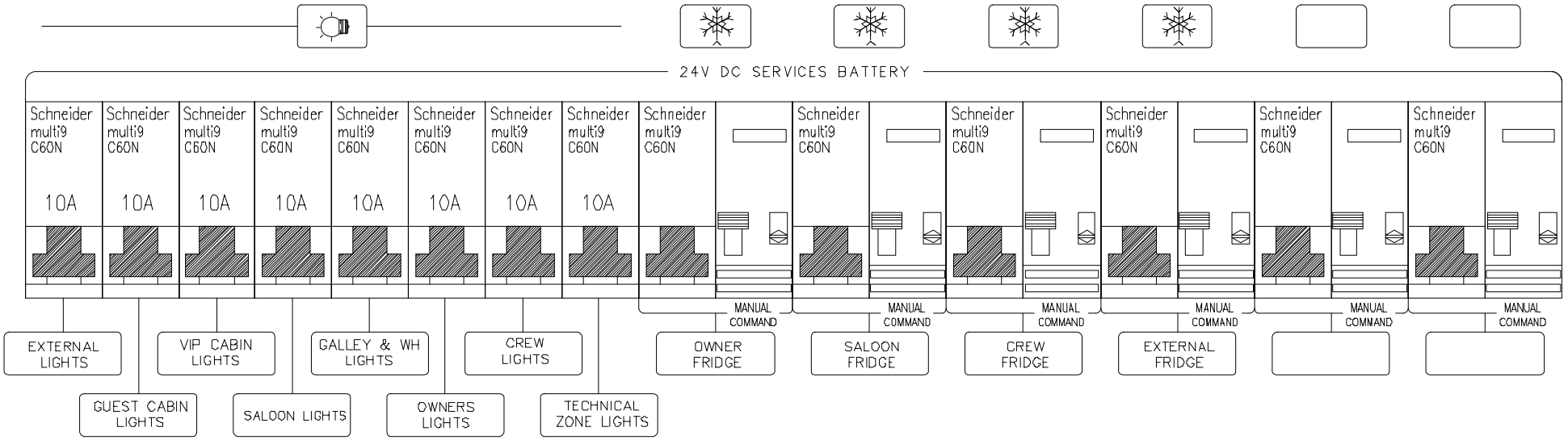

GALLEY AC SERVICES
GALLEY SERVICES
GALLEY SERVICES
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
GALLEY MAINSWITCH
COOKING TOP
OVEN
GALLEY COOKER HOOD
DISHWASHER
ICE MAKER
EXTERNAL GRILL

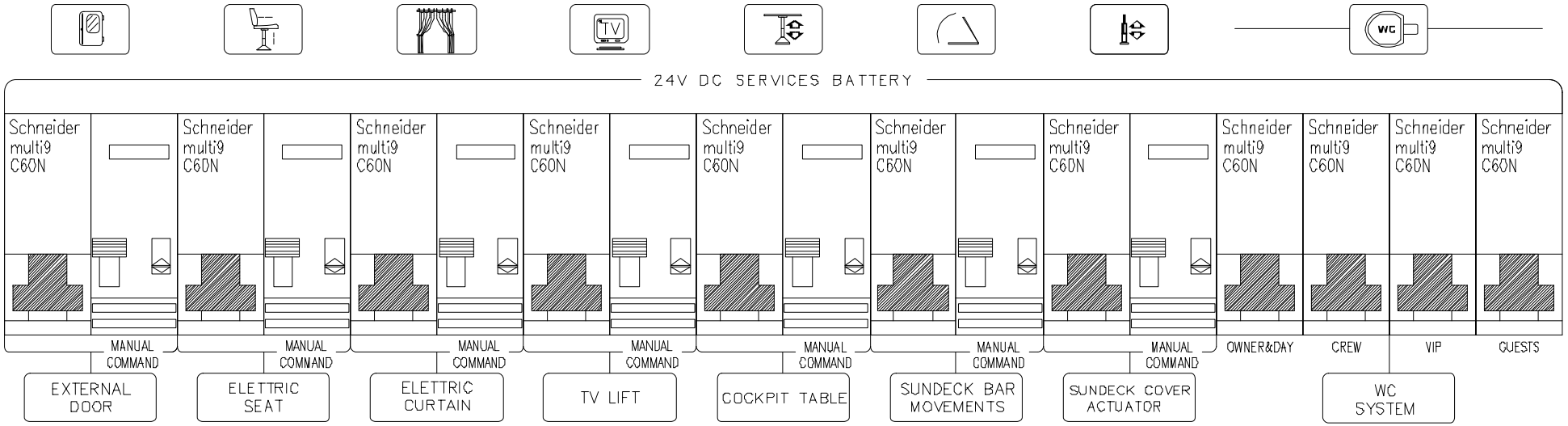

2ND AC SERVICES
2ND AC SERVICES
2ND AC SERVICES
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
Schneider multi9 C60N
2ND AC SERVICES MAINSWITCH
CREW COOKING TOP
CREW COOKER HOOD
CREW MICROWAVE OVEN
WASHING MACHINE
DRYER MACHINE
WC AIR EXTRACTION

B. Magneto-thermal breakers protecting 24 V loads




24V DC SERVICES BATTERY
Schneider multi9 C60N
MANUAL COMMAND
NAVIGATION LIGHTS
ANCOR LIGHTS
RADIO & DTV ANTENNA
WI FI NET
SEARCH LIGHTS
INSTRUMENTS LIGHTS
WIPERS
USB SOCKETS
CHAIN COUNTER
STEREO AMPLIFIERS


24V DC SERVICES BATTERY
Schneider multi9 C60N
10A
MANUAL COMMAND
EXTERNAL LIGHTS
GUEST CABIN LIGHTS
VIP CABIN LIGHTS
SALOON LIGHTS
GALLEY & WH LIGHTS
OWNERS LIGHTS
CREW LIGHTS
TECHNICAL ZONE LIGHTS
OWNER FRIDGE
SALOON FRIDGE
CREW FRIDGE
EXTERNAL FRIDGE

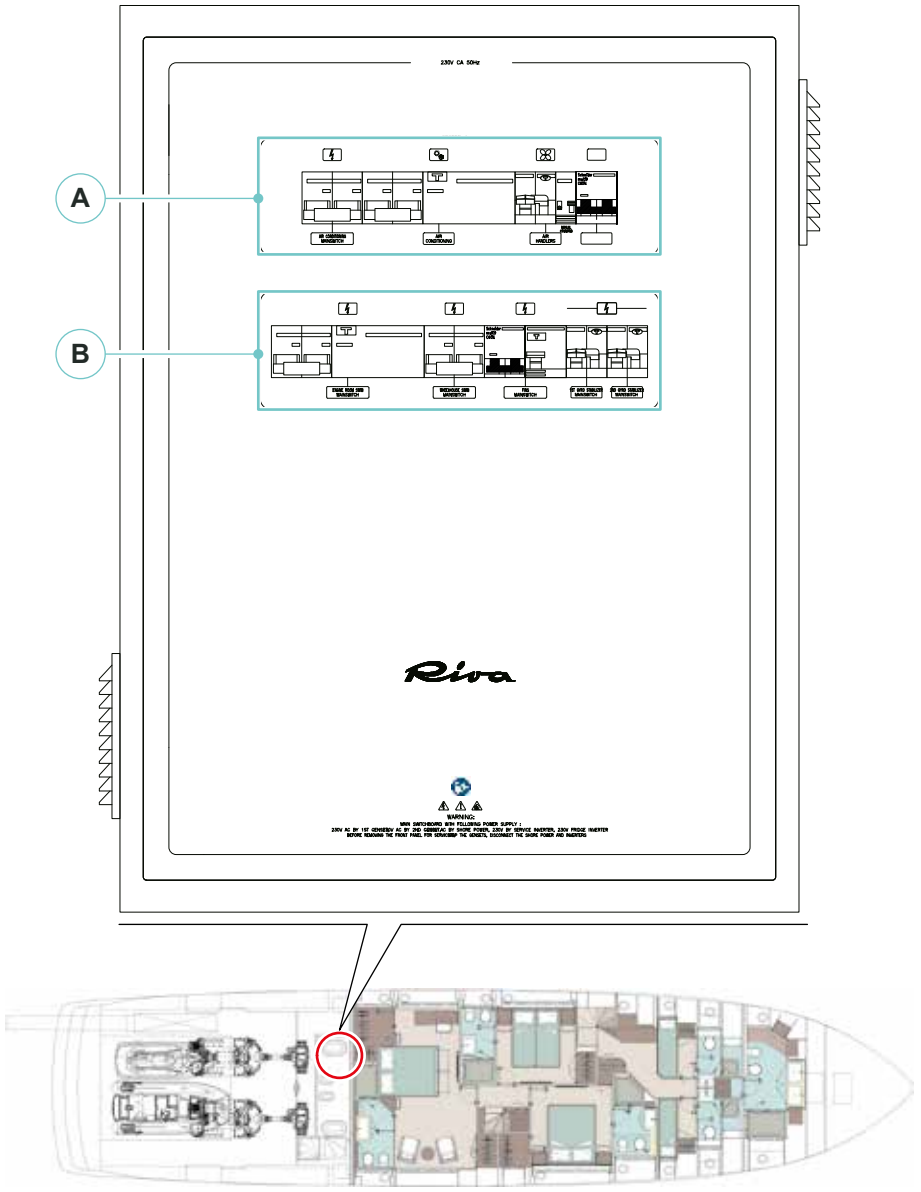

TV
WC
24V DC SERVICES BATTERY
Schneider multi9 C60N
MANUAL COMMAND
OWNER&DAY
CREW
VIP
GUESTS
EXTERNAL DOOR
ELETTRIC SEAT
ELETTRIC CURTAIN
TV LIFT
COCKPIT TABLE
SUNDECK BAR MOVEMENTS
SUNDECK COVER ACTUATOR
WC SYSTEM

SYSTEMS ROOM ELECTRICAL PANEL:
The electrical panel is located in systems room.

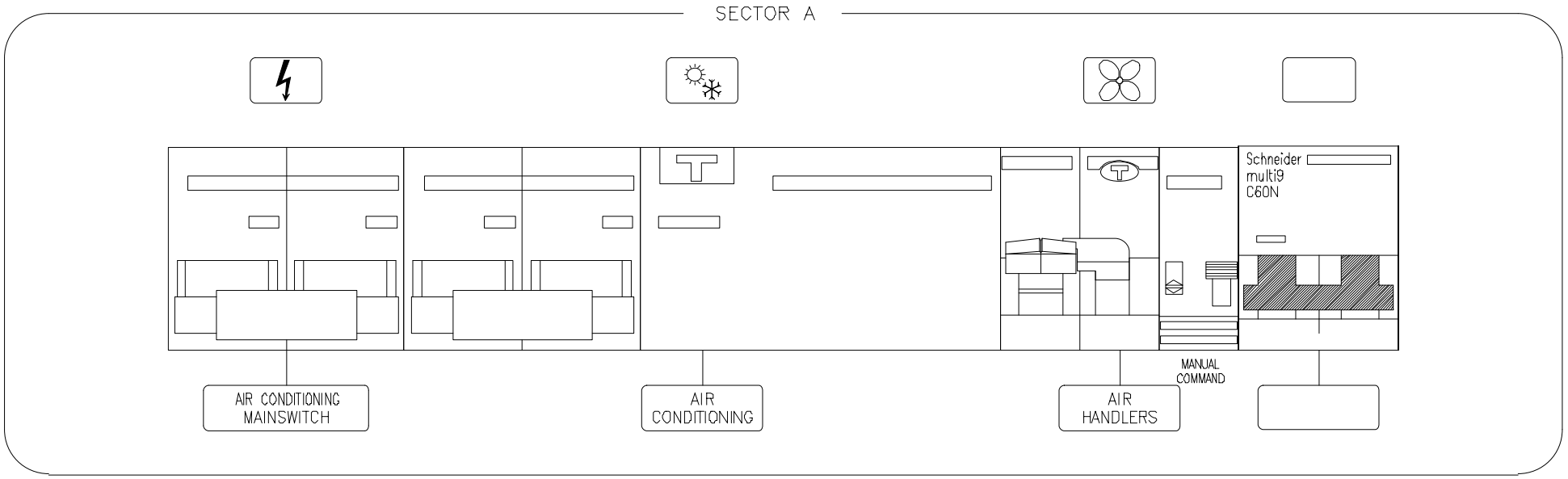
To simplify the panel descriptions, the following main sections have been identified:

A. Magneto-thermal breakers protecting 230V loads of the sector A.

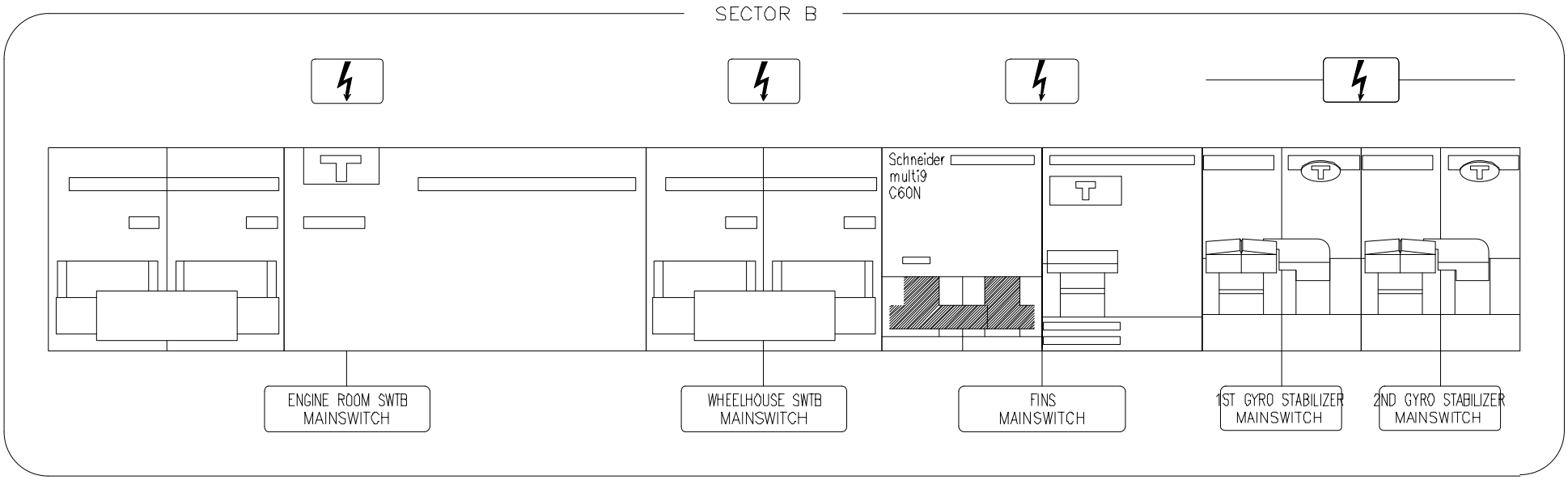
B. Magneto-thermal breakers protecting 24V loads of the sector B.



A. Magneto-thermal breakers protecting 230V loads of the sector A



B. Magneto-thermal breakers protecting 24V loads of the sector B



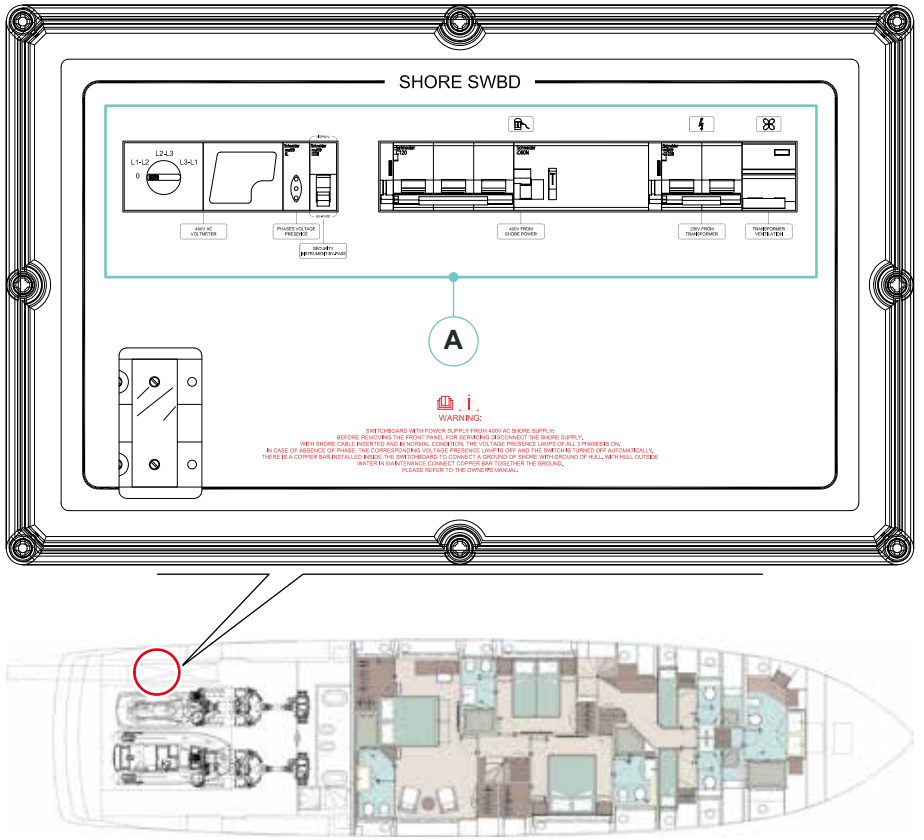
SHORE SOCKET ELECTRICAL PANEL:

The electrical panel for the shore power connection is located in the engine room.

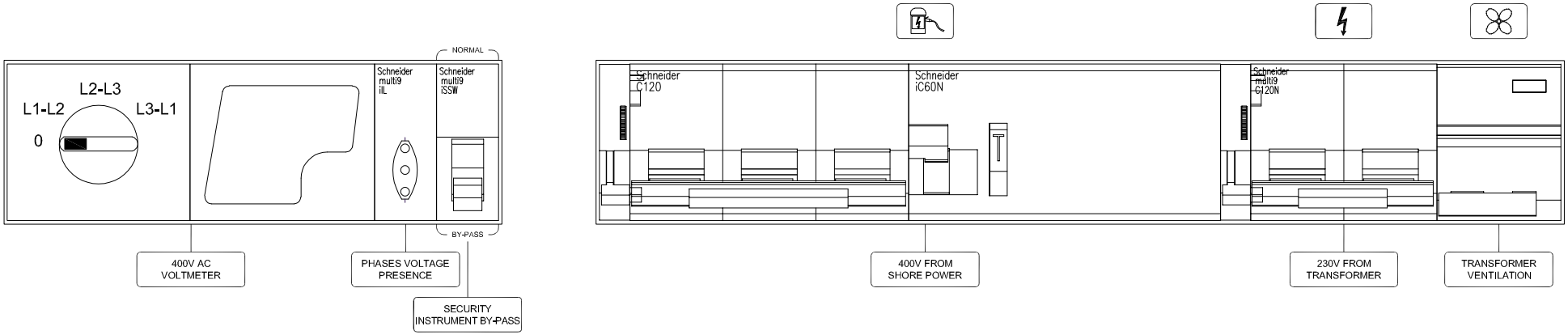
A. Shore power connector electrical panel (125A - 3P+T+N - 50Hz)

DANGER

Close the grounding switch when the yacht is dry, in dry shore and after having disconnected or interrupted all sources of electrical power.



A. Shore power connector electrical panel (125A - 3P+T+N - 50Hz)



6.3 GROUND PROTECTION

On board there is an adequate grounding dispersion system fitted with a porous plate which constitutes the “means” of grounding the generator PE conductor, to which all the grounds of the alternating current systems are connected as well as all the negatives of the direct current systems.

DANGER

In case of yacht out of water, use protection for shore dispersion immediately restoring the contact of DOCK GROUND CONNECTION in engine room.

DANGER

If the yacht is out of the water and connected to the quayside power supply, check the presence of the shore-side system in the power supply system.

WARNING

Periodically check the status of sacrificial anodes and porous plate: replace if the reduction for corrosion is more than 50% of their original mass. If their wearing is particularly quick, the on board electric system could be leaking.
Have the electric system checked by experienced personnel.

DANGER

Close the grounding switch when the yacht is dry, in dry shore and after having disconnected or interrupted all sources of electrical power.

6.4 BATTERY SET

The batteries are normally charged by the alternators during the operation of the engines. As an alternative, you can recharge them with the battery charger from shore or with the generator.

Description	Element number	Features element
Engine start	2 + 2	12 V 220 Ah
Generator start	1 + 1	12 V 180 Ah
Services batteries	12	2 V 640 Ah
Radio batteries	– –	– – – V – – – Ah
Emergency batteries	– –	– – – V – – – Ah

WARNING

The batteries left unloaded over long periods of not operation, loose progressively their charge, until they become completely flat and get irreparably damaged.

DANGER

NEVER obstruct the air intakes of the battery boxes as natural ventilation must always be allowed so that the batteries do not overheat.

WARNING

Do not lay objects on the cases containing the batteries.

CAUTION

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

DANGER

If the battery is used or charged in a closed area, ensure good ventilation. Do not check the battery charge by short-circuiting the terminals with metal tools: use a densimeter or a voltmeter.

WARNING

EXPLOSION HAZARD

Any lithium battery powered device on board must be recharged only in open air areas, connected to a suitable charging system.
Also please refer to the device dedicated Use and Maintenance Manual.

6.4.1 Batteries control and maintenance

Component	Maintenance	Notes and precautions
Batteries	Battery check (accumulators)	During the periods when the yacht is not in use, have the battery terminals disconnected, or leave them all connected and have periodically all batteries charged (generator included).

CAUTION
In case of contact with the batteries electrolyte wash contaminated part with fresh water for at least 15 minutes and ask for a doctor.

CAUTION
Remove the bracelets, rings and any other jewellery before working on the batteries.

CAUTION
It is necessary to keep the batteries charged at all times and to recharge them periodically even when the yacht is left unattended. If the charge level drops to a minimum, it may be irreparably damaged.

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

CAUTION
Check the state of the batteries checking that there are no traces of electrolytic corrosion on the poles and terminals of the connections; in this case, contact SERVICE and replace the elements that present the problem.

Carry out following checks:

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

DANGER

Batteries may be subject to explosion hazard, with subsequent risks of serious personal injuries. Do not use open flames, smoke, cause sparks or use arc-welders in the area where batteries are located. Do not disconnect battery cables when the generator is running.
Battery acid may cause serious injuries. Wear safety goggles, gloves and protective clothing. Do not wear any bracelet, ring or any other jewel when operating on batteries.
In case of contact with battery acid, wash the contaminated part with fresh water for at least 15 minutes and address to a doctor.

DANGER

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

DANGER

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

6.5 BATTERY BREAKER PANEL

The panel is located on the system room access stairs, accessible from the starboard side walk-around.

The panel contains the control buttons for the electric battery disconnect switches (each with a green LED) which activate:

- Service batteries;
- Parallel connection between engine and service batteries;
- Engine batteries.

When the led are lit the batteries are operating, in order to disconnect them press again the buttons (Led OFF).

If the electrical battery-disconnect switches should fail, it is possible to use the services battery direct manual breaker installed on the stern system room bulkhead electrical panel.

The generator battery manual breakers are located in the engine room near the generators themselves.

CAUTION

Do not disconnect the battery breaker switches with the engines running because the engine alternators might get damaged.

CAUTION

Use the “Services-engine parallel connection” breaker only if strictly necessary and disconnect it as soon as possible.

CAUTION

Before starting navigation, it is mandatory to open the lock on the door giving access to the system room located to protect the battery breakers, in order to make them easily accessible in the event of a fire.
When leaving the yacht, hand the key to the harbour staff.

1. Service batteries breaker
   This switch allows cutting in or out the service battery set.
2. Service/engine battery parallel connection breaker
   If the engine batteries are flat or not sufficiently charged, the battery main switch allows the parallel connection between service battery bank and the engine battery bank, to enable the start of the propulsion engines.

CAUTION

This connection must be activated only if the engine batteries are not sufficiently charged. The battery parallel connection switch, must be activated only with buttons connecting the service battery banks and the engine banks set to ON.

3. Engine batteries breaker
   This switch allows cutting in or out the engine battery set.
4. Generator batteries breaker
   These allow cutting in or out the generator batteries.
5. Direct battery-disconnect main switch
   It allows the safety systems and the gangway to be powered.



DANGER

Keep the breaker of the battery-powered utilities, available in the 24V section of the main electrical panel, set to ON.
Cut out only in case of maintenance.

6.6 BATTERY CHARGER

SERVICES CHARGER

On board your yacht, there are two high-performance service chargers, each of which is fully automatic. Each charger implements an optimised charging technique that charges the batteries quickly and safely while also powering the connected loads.

In addition, each charger is protected against short circuits, overloads and high temperatures (typical of engine room environments).

A front panel meter on each charger displays a reading of remaining battery capacity value, in a manner analogous to a car's fuel gauge.
The more LEDs are lit, the more the battery is charged.

Energisation
The battery charger is energized when the switch is in the ON position. One of the LEDs on the front side turns ON and the charge starts immediately.

De-energisation
The battery charger is de-energised when the switch is set to OFF.
The connection between the electric mains and the battery charger is not interrupted with the switch.

Bulk (LED 1 on)
The battery is discharged only when the first LED Bulk/ON (Quick charge/ ON) is lit. Now the battery charger provides full power and the battery voltage increases slowly. After having reached the 27.6 V level, the battery is about 25% charged and the second LED turns ON.

(LEDs 1 and 2 on)
The battery has been charged to 25%. The battery charger still provides the maximum output current and voltage increases up to the level of absorption voltage. Phase A can last up to 6 hours max.

Absorption (LEDs 1, 2 and 3 on)
The battery has been charged to 50%. The battery charger limits the charging voltage to a safe level and the charging current decreases slowly.

(LEDs 1 to 4 on)
The battery has been charged to 75%. The charging voltage is limited to the absorption level, because the battery is nearly full. Current consumption will continue decreasing.

Maintenance (LEDs 1 to 5 on)
When all the LEDs are lit, the battery is fully charged. The slow maintenance/charging programme provides a output voltage, high enough to keep the batteries with a 100% charge, but low enough to prevent that the batteries suffer unnecessary constraints. The battery charger can now deliver full power to the connected utilities/loads.

LEDs ON	Meaning
Normal operation: the green light of LED no. 6 turns ON	
1	Battery charger ON
1+2	U output > 27,6 V
1+2+3	U output = absorption (28,5 V)
1+2+3+4	3 hours after the max. bulk time has started or I < return amp
1+2+3+4+5	6 hours after the max. bulk time has started or I < return amp. for 15 min or more
9	Recharging current equal to 0-5% of total current
9+10	Recharging current equal to 5-25% of total current
9+10+11	Recharging current equal to 25-50% of total current
9+10+11+12	Recharging current equal to 50-75% of total current
9+10+11+12+13	Recharging current equal to 75-100% of total current
6	Green: normal operation, red: faulty, OFF: stand-by or OFF
7	Green: communication of MasterBus in progress, OFF: no communication of MasterBus
Failure condition: the red light of LED no. 6 turns ON	
6 red +1	Battery detection error
6 red +2	Too high temperature of the battery charger
6 red +3	Short-circuit warning: the battery charger will reduce charging current to 25%
6 red +4	CC error: CC voltage is too low or too high
6 red +5	Temperature detection error

CAUTION

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

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

ENGINE BATTERY CHARGER

Your yacht is equipped with an on board engine battery charger.

The charger is fitted with a green LED indicator, which flashes when the AC power plug is inserted into the mains socket. The indicator remains lit to indicate that the charging cycle (float) has been completed and that the batteries are fully charged.

If the indicator is OFF, even though the AC power cable plug is inserted into the socket, please contact technical support.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

GENERATOR BATTERY CHARGER

Your yacht can be equipped with two on board generator battery charger.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

6.6.1 Battery charger check and maintenance

Component	Maintenance	Notes and precautions
Battery charger	Check Charge output	At least two or three times a year, have a specialist check the connection of each cable checked for looseness or oxidation. Keep the battery charger dry, clean and away from dust in order to ensure a good dissipation of heat. Periodically check the good condition of the cooling fan.

DANGER

Do not work on the battery charger or on the electric system if they are still connected to a current supply. Disconnect the mains supply before connecting or disconnecting the battery.
Modification to the electric system must be carried out exclusively by skilled personnel and only after the approval of RIVA.

MAINTENANCE

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

DANGER

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

WARNING

If the engines are on, the alternators are charging the batteries; it is therefore advisable to keep the thermal switch of the battery charger to OFF, in order to avoid alternator damage.

DANGER

Before operating on the battery charger, disable the generators start and cut-off the shore power supply.

This device can operate in a reliable and optimal way, only if following operations are performed:

- Check that all breakers and indicator lights are working, the wiring does not present any signs of cuts and all parts are clean and free from oxidation;
- Remove the chassis and check the electronic boards for oxidation. Clean with deoxidiser if necessary;
- Protect the electric contacts by using an appropriate product (DC4);
- Reinstall the casing after cleaning;
- Check at least once a year the connection of each cable (for loose connections, etc.);
- Keep the battery charger dry, clean and in a dedusted area to ensure a good dissipation of heat.

WARNING

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

DANGER

NEVER obstruct the air intakes of the battery boxes, as natural ventilation must always be allowed so that the batteries do not overheat.

Charge output

For a good operation, batteries must not be discharged below 30-40% of their capacity, therefore, always start recharging them, when this charge level is reached.

The battery charger is equipped with a temperature sensor located close to the batteries. According to the temperature value detected, together with the value of residual capacity of the batteries, the charger automatically adjusts the charging voltage according to temperature, thus remarkably increasing battery life. Moreover, besides the thermal compensation, the battery charger can also compensate the voltage drop due to the dispersion of the connection cables. The battery charger is provided with an integrated warning light which activates in case certain adjustment values are exceeded.

CAUTION

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

6.7 ELECTRIC POWER SUPPLY FROM SHORE

DANGER

Before connecting the shore socket, ensure the type of voltage and the sockets available, their integrity and the absolute absence of moisture on the wire, on the socket and on the plug.
With plug connected check that wire:

- Cannot get in traction as a result of tide variations, yacht movements, etc..;
- Cannot get crushed, etc..;
- Does not come into contact with water.

CAUTION

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

The shore columns can supply different types of voltage, according to the harbour where you are moored; contact the Port Authority for the correct power supply of the column you are going to be connected.

In order to power the yacht's electrical system, which in turn ensures operation of the various onboard systems, a 125A - 3P+T+N - 50Hz shoreside connector has been fitted astern.

By means of the main electrical panel, it is possible to check and monitor the electric parameters of the shore socket, allowing a clear and readable display of the values measured, this facilitates the prevention of possible faults and malfunctioning and increases the safety of navigation.

It occurs very often to find shore plugs with dimensions not compatible with those on the yacht; in this case it is necessary to contact the Port Authority and to get a new plug or an adapter.

Electric shore power supply connection procedure:

- On the main engine room switchboard, open (OFF) the general magneto-thermal breakers of the on-board services;
- Open the switch protecting the shore power connector.
- On the shore power column, open the power switch;
- Connect the power cable to the yacht (if not present the electric cable reel) and then to the shore power column;
- Turn ON the switch on the shore column;
- Close the power switch to protect the power supply to the yacht's shore socket;
- From the electrical panel in the engine room, select the shore power supply and monitor the voltage using the relevant instrument;
- Only if the voltage level is correct, close the magneto thermal breakers that feed the loads.

A supply voltage level controller is installed on the shoreside connector panel (upstream and/or downstream of the isolation transformer).

If the shoreside supply voltage is outside the correct operating range, the controller prevents selection of the shoreside supply and sends a signal to the monitoring station.

The controller is powered at 24 V by the service batteries. If the batteries are flat or the controller is damaged, a by-pass control on the shoreside connector panel overrides the controller disable and enables manual selection of the shoreside connector.

With three-phase power supply there is a phase failure control system, which can be checked on the helm station on the yacht's monitoring system.

CAUTION

Do not modify connectors of shore power supply cable, use only plug compatible connectors. If the yacht power supply cable cannot be plugged into the shore socket, ask the Port Authority for an adapter. In any case, never use adapters cutting the mass conductor connection between the shore electrical system and the yacht electric system.
The use of these adapters can irreparably damage the electric devices.

DANGER

Do not leave shore power supply connected without people on board.

DANGER

Before carrying out any intervention on the electric system, disconnect all circuits and the shore connection.

WARNING

If the warning light on the main electrical panel in the engine room is on this means that the electric socket for shore power supply is plugged.

CAUTION

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

WARNING

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

CAUTION

To cut the electric power supply from shore:

- Disable the shore power supply on the main switchboard in the engine room.
- Turn the shore connection switch on the engine room electrical panel to the OFF position.
- Turn OFF the protections on the shore column.
- First disconnect the power supply cable from the shore power supply source (shore column), then from the yacht.

MAINTENANCE

At least once every two weeks, have the various connections of electric boards, panels and boxes checked by experienced and equipped personnel.
Make sure that ground connections of electric equipment and electrical panels are tight and not oxidized. At least once a month check the status of the shore socket and eventually clean it.



DANGER

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

6.8 FUSES

In addition to these protections, there are common fuses with types and characteristics appropriate to the specific installation.
Please refer to the electric system user's manual for their location on board.
The main fuses on board have the following characteristics:

- 25 A
- 80 A
- 100 A
- 160 A
- 200 A
- 250 A



DANGER

For reasons of safety and reliability of any electrical system, any fuse must be replaced with one which has the same electrical characteristics: in case of doubt, consult an expert technician.



DANGER

At the end of eventual replacement of a fuse, ensure the proper keeping: DO NOT not leave any foreign objects inside the panel.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

6.9 INVERTER

On your yacht's forward system room bulkhead, there are 2 inverters, one dedicated to the on board refrigerators and the other to services (such as 230V sockets, TV/stereo, satellite TV and LAN network).

The inverter is a completely automatic high-efficiency device. The inverter transforms the 24V DC voltage into 230V AC.

- **ON, Switch ON**
  Position the ON/OFF switch, located on the front panel of the inverter to "ON". The green light "inverter ON" lights up and the inverter starts.

- **OFF, Switch OFF**
  Position the ON/OFF switch, located on the front panel of the inverter to "OFF". The inverter stops and all lit lights switch OFF.

Warning lights
The functions of the warning lights located on the inverter front panel are:

- **Inverter ON**
  The green light indicates when the inverter is ON.
- **Overload**
  Light lights up when the inverter is overloaded. When the inverter is overloaded, the power limiter reduces the voltage output. According to the load, the inverter will switch OFF after a short period.
- **Overload + ON slow**
  When the inverter remains overloaded for a long period of time, it will switch OFF and the "Overload + ON" indicators will blink slowly. This takes approx. 20 seconds, after which the inverter will restart automatically. This is called "wait state" and gives the inverter time to recover from any heavy surge load and gives the battery time to recover in case it is flat.
- **Overload + ON fast**
  The inverter is switched OFF. When the inverter switches OFF 10 times with intervals no longer that 30 seconds, the inverter will switch OFF permanently and the "Overload" and "ON" indicators will blink fast. To switch the inverter ON again, you have to switch the inverter OFF and ON again. When the output terminal is short-circuited, the inverter will overload. The "Overload" and "ON" indicators will blink slowly. The inverter will try to start up ten times. If the short-circuit is not removed, the inverter will switch OFF permanently. Remove the short circuit and reset the inverter by switching it ON and OFF.
- **Low battery (nearly flat)**
  The inverter is OFF when the battery voltage is too low. If the voltage increases above certain values, the inverter restart automatically.
- **Temperature**
  The inverter switches OFF in environments at high temperature and/ or remarkable overload. After the cooling, the inverter starts automatically.

DANGER
When disconnecting the inverter by means of the switch located on the front panel the connection with the mains is not broken off.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

6.9.1 Services inverter maintenance

Component	Maintenance	Notes and precautions
Inverter	Maintenance and check	At least once a year, have the cable and wire connections checked by skilled personnel; they should still be tight and not oxidized. Keep the inverter/battery charger dry, clean and away from dust to ensure a good heat dissipation. Periodically check the good condition of the cooling fan. If the device is off during the maintenance and/or repair works, it should be set to prevent an unexpected or unintentional activation: • Switch off the connection with the batteries or remove the inverter fuse; • Make sure that nobody can tamper with the precautions taken.



DANGER

Do not work on the inverter or on its system if still connected to a current source. Only qualified staff can carry out interventions on the electric system and only after the approval of RIVA.



DANGER

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



WARNING

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

MAINTENANCE

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

6.10 GENERATOR

Your yacht is equipped with two generators installed at the engine room entrance.

On the fuel distribution manifold, you can easily see the power generators, which can be cut-off by means of the two suction valves, on which you can handle quickly to cut-off the fuel lines in case of emergency in order to disconnect the generators. The connections from the generators to the daily tank are the fuel return connections.

The fuel, before reaching the generators, is led through the separator filters (optional) that hold the dirt particles and separate possible water.

The exhaust gases, instead of being discharged directly outside, are conveyed through mufflers, one per generator.
These mufflers, by injecting water in the exhaust pipes, allow cooling down the fumes and, at the same time, reducing the noise produced by the water outflow.

This latter is separated and discharged directly under the water line. The exhaust gases without water are then conveyed and discharged overboard.

The sea cocks of the cooling circuit are installed on the hull with the sea water strainers, fastened to a surface close to the sea cocks valves.
Clean the sea cock strainers according to the use frequency and to the condition of the sucked waters (seaweeds, mucilages, etc..).

Before cleaning the strainers, remember to close the sea cock valves, to stop the generators and then to proceed with maintenance. Once this cleaning operation is completed, reopen the valves supplying the cooling circuit.

As to the unit supply, on each power generator set is located the control panel for the check and start/stop operations.
The generators are also equipped with battery breaker switches.

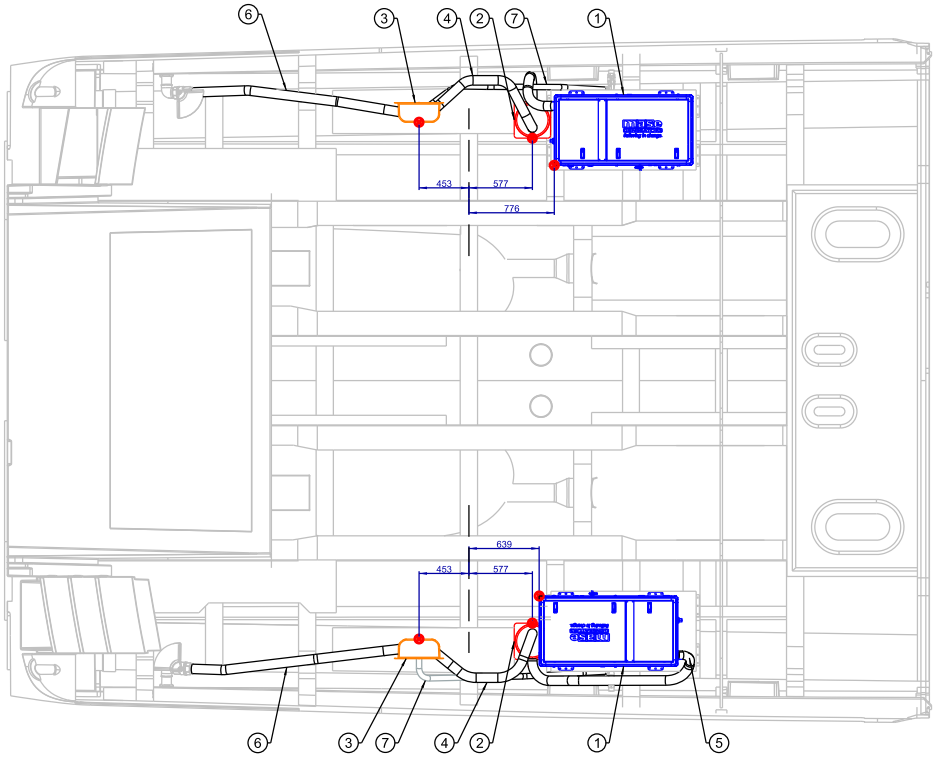
The dashboard control panel monitoring and controlling the main operating parameters (oil pressure, coolant temperature, rpm, etc..) of the generators, in order to detect any alarm situation or potential risk.

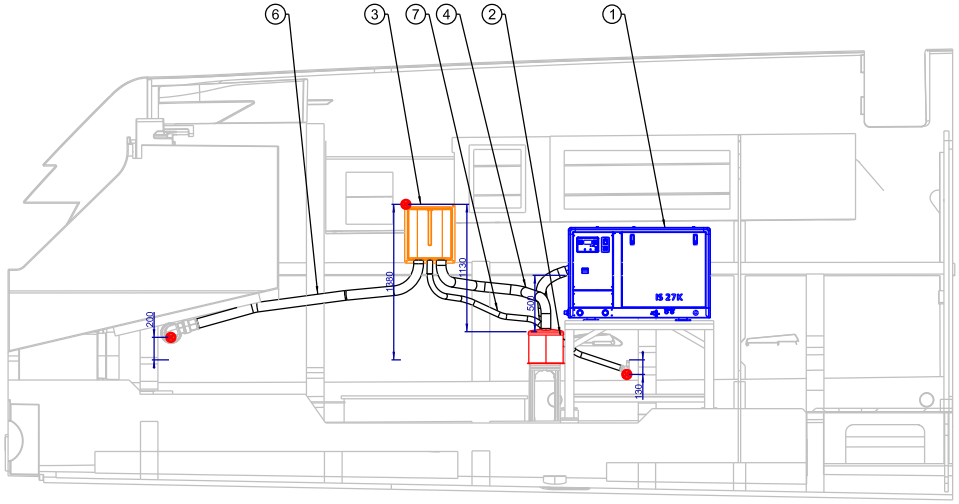
The generator start-up batteries are charged by a battery charger (optional) for each generator.

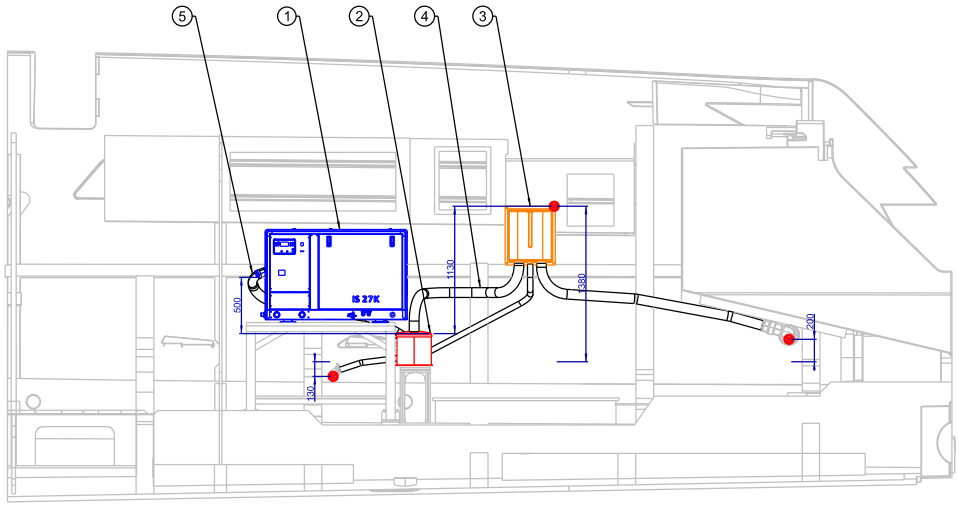
NOTE

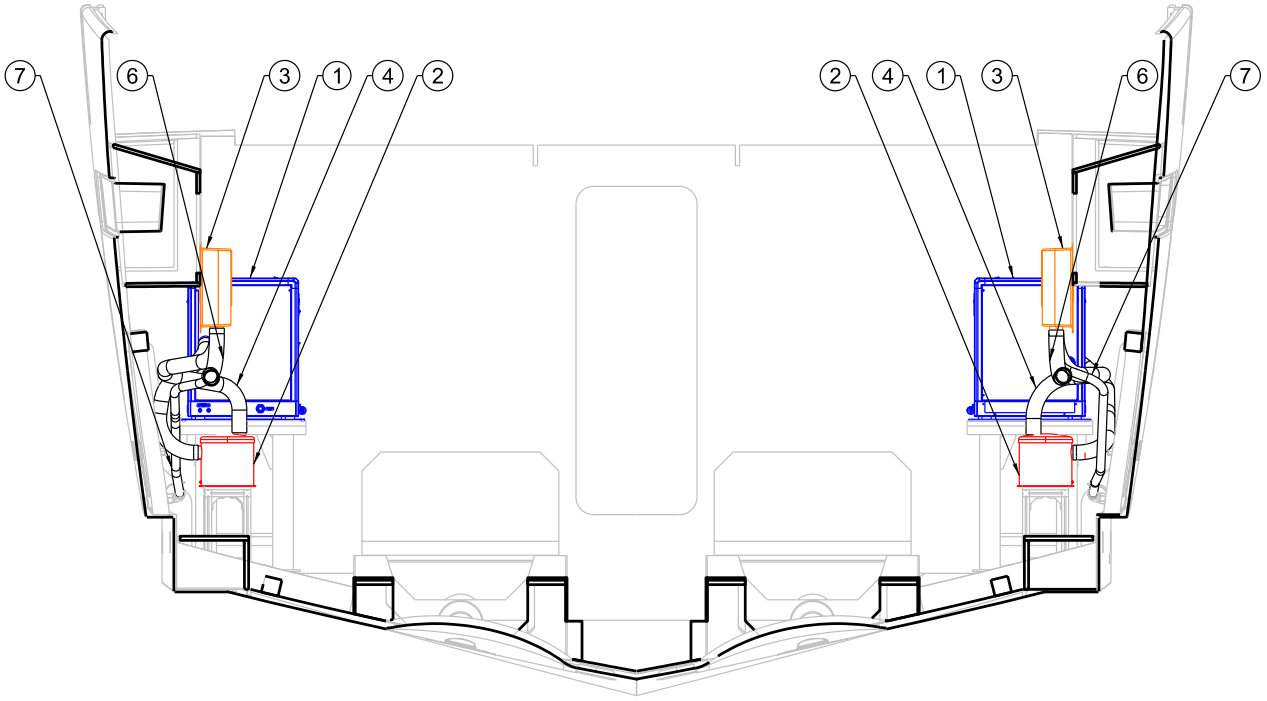
For further information on use and maintenance, please refer to the manufacturer's manual.

Generator system diagram









STD				
COMP.	DESCRIZIONE	Q.TÀ	COD.	
1	GRUPPO EL MASE 22 KW IS 20K 50HZ COMAP	1	537048	SX
1	GRUPPO EL MASE IS29 27kW 50Hz	1	9008350	DX
2	MARMITTA CENTEK 2.38"X2.38"	1	9008773	SX
2	MARMITTA CENTEK 2"1/2	1	430650	DX
3	SEPAR.SCAR.ACQ/FUMI GE MASE-CENTEK 2.38"	1	9008774	SX
3	SEPAR.SCAR.ACQ/FUMI GE MASE-CENTEK 2"1/2	1	430649	DX
4	TUBO SPIRALATO ISO 13363 D. 60		288952	SX
4	TUBO SPIRALATO ISO 13363 D. 63,5		338136	DX
5	CURVA INOX MM. 63,5 SCARICO GENERATORE	1	9008748	DX
LINEA SCARICO FUMI				
6	SCARICO A MARE BRONZO 2"1/2	2	276057	SX-DX
6	VALVOLA SFERA IN BRONZO 2"1/2 FF ART 2300	2	524795	SX-DX
6	GOMITO 90° M/F DA 2"1/2 IN BRONZO	2	400797	SX-DX
6	PORTAGOMMA 2" 1/2 BRONZO M DN60	1	524558	SX
6	PORTAGOMMA BRONZO M 2.5" DN63	1	468781	DX
6	TUBO SPIRALATO ISO 13363 D. 60		288952	SX
6	TUBO SPIRALATO ISO 13363 D. 63,5		9008748	DX
LINEA SCARICO ACQUA				
7	SCARICO A MARE BRONZO 1"1/2	2	267163	SX-DX
7	VALVOLA SFERA IN BRONZO 1"1/2 FF ART 2300	2	509328	SX-DX
7	GOMITO 90° M/F DA 1"1/2 IN BRONZO	2	403121	SX-DX
7	PORTAGOMMA M 1"1/2 DN38 BRONZO	2	524262	SX-DX
7	TUBO GOMMA PER SCARICO GAS MM38 ONDUL.		370360	SX-DX

OPT13881 - GENER MASE 27KW DIFF.STD				
COMP.	DESCRIZIONE	Q.TÀ	COD.	
1	GRUPPO EL MASE IS29 27kW 50Hz	2	9008350	SX-DX
2	MARMITTA CENTEK 2"1/2	2	430650	SX-DX
3	SEPAR.SCAR.ACQ/FUMI GE MASE-CENTEK 2"1/2	2	430649	SX-DX
4	TUBO SPIRALATO ISO 13363 D. 63,5		338136	SX-DX
5	CURVA INOX MM. 63,5 SCARICO GENERATORE	1	9008748	DX
LINEA SCARICO FUMI				
6	SCARICO A MARE BRONZO 2"1/2	2	276057	SX-DX
6	VALVOLA SFERA IN BRONZO 2"1/2 FF ART 2300	2	524795	SX-DX
6	GOMITO 90° M/F DA 2"1/2 IN BRONZO	2	400797	SX-DX
6	PORTAGOMMA BRONZO M 2.5" DN63	2	468781	SX-DX
6	TUBO SPIRALATO ISO 13363 D. 63,5		9008748	SX-DX
LINEA SCARICO ACQUA				
7	SCARICO A MARE BRONZO 1"1/2	2	267163	SX-DX
7	VALVOLA SFERA IN BRONZO 1"1/2 FF ART 2300	2	509328	SX-DX
7	GOMITO 90° M/F DA 1"1/2 IN BRONZO	2	403121	SX-DX
7	PORTAGOMMA M 1"1/2 DN38 BRONZO	2	524262	SX-DX
7	TUBO GOMMA PER SCARICO GAS MM38 ONDUL.		370360	SX-DX

OPT24290 - GENERATORI MASE 29kW 60Hz DIFF				
COMP.	DESCRIZIONE	Q.TÀ	COD.	
1	GE MASE IS34.06K 29kW 60Hz 120/240V EPA	2	9008029	SX-DX
2	MARMITTA CENTEK 3" X 3"	2	473421	SX-DX
3	SEPAR.SCAR.ACQ/FUMI MASE-CENTEK 3X3X1.5	2	473422	SX-DX
4	TUBO SPIRALATO ISO 13363 D. 76		289008	SX-DX
5	CURVA INOX USCITA GENER 3" - 90 GRADI	1	473859	DX
LINEA SCARICO FUMI				
6	SCARICO A MARE BRONZO 3"	2	63530	SX-DX
6	VALVOLA SFERA IN BRONZO 3" FF ART 2300	2	439579	SX-DX
6	GOMITO 90 BRONZO MF 3" ART.0092B	2	9003603	SX-DX
6	PORTAGOMMA BRONZO FILETT. MASCHIO 3"x76	2	403176	SX-DX
6	TUBO SPIRALATO ISO 13363 D. 76		289008	SX-DX
LINEA SCARICO ACQUA				
7	SCARICO A MARE BRONZO 1"1/2	2	267163	SX-DX
7	VALVOLA SFERA IN BRONZO 1"1/2 FF ART 2300	2	509328	SX-DX
7	GOMITO 90° M/F DA 1"1/2 IN BRONZO	2	403121	SX-DX
7	PORTAGOMMA M 1"1/2 DN38 BRONZO	2	524262	SX-DX
7	TUBO GOMMA PER SCARICO GAS MM38 ONDUL.		370360	SX-DX

6.10.1 Power generator control panel

Description
On the power generator there is a control panel allowing to carry out the controls and the start/stop operations.

A display indicates the generator's operating hours.

WARNING
Before stopping the power generators, disconnect the various on-board uses supplied by them; stopping the power generators under load can irreparably damage the electronic control units of the various utilities, beyond having a negative influence on the generators' operation.
However, please refer to the manuals of the power generators to obtain more detailed information about the starting and stopping procedures.

CAUTION
Carbon monoxide poisoning
Start the generator only in a well ventilated area. The carbon monoxide, generated by the inner combustion of engines, is extremely toxic.

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

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

6.10.2 Generator maintenance

Component	Maintenance	Notes and precautions
Lubrication system	Oil specifications	Use specified oils according to Manufacturer's indication.
	Oil check	Check the oil level in the crankcase daily or before each start-up to ensure that the level is in the safe range. Remove the dipstick and wipe the end clean, reinsert as far as possible, and remove. Maintain the oil level between the marks (Min and Max).
	Oil change	For the oil change remove the draining hose from its holder. Position the hose in the oil collecting container. Remove the oil filling plug. Open the oil draining valve located on the engine and drain the oil completely in the container. Change oil according to intervals suggested by the Manufacturer. **CAUTION** Do not mix different oils.
	Oil filter change	Remove the oil filter by turning it counter clockwise by means of a suitable wrench. Apply a thin layer of oil to the rubber seal of the new filter. Replace the oil filter according at time intervals recommended by the Manufacturer.
Fuel system	Cleaning and replacement of fuel pre-filter	Replace fuel pre-filter at time intervals recommended by the Manufacturer.
	Cleaning and replacement of fuel filter	Close the fuel supply valve. Loosen the fuel filter by turning it counter clockwise. Remove the filter and clean the contact surface. Tighten the filter on the adapter until the seal comes in contact. Replace fuel filter within the intervals indicated by the Manufacturer.

Component	Maintenance	Notes and precautions
Cooling system	Cleaning / replacement of the air cleaner	Release the two spring clamps and remove the cover of the air intake. Clean the cover and the base with a clean cloth so as to remove the dirt. Refit the filter and the cover at the base of the filter air intake. Replace the filter at time intervals recommended by the Manufacturer.
	Cooling liquid top up	Before filling the cooling system stop the generator and let it cool down. Close the draining taps. In order to discharge the pressure turn slowly the plug clockwise up to the first stop. Remove the plug after the pressure has been completely released.
	Sea water strainer	At least once a week check for the correct water flow through the strainers. At least once a month check the integrity of the strainers. At least once a month clean the suction strainer. At least once every six months check the condition of the cover seal.



ENVIRONMENT

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



DANGER

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

CAUTION

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

CAUTION

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

CAUTION

Pay special attention to the coolant level.
After the coolant drains, allow coolant to completely refill the engine water jacket.
Check the coolant level as prescribed in the Pre-start Checklist.

CAUTION

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

CAUTION

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

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

6.11 SACRIFICIAL ANODES

The submerged metallic parts of the yacht are protected against galvanic corrosions by means of anodes.

Check for their wear very frequently, as it depends also (and highly) on environmental factors like sea chains nearby, metal posts or shores, metal hulls moored nearby, electric devices, etc..

The replacement is necessary when the wear exceeds 50%.

The cathodic protection test can be performed on the monitoring system to check the state of the sacrificial anodes.

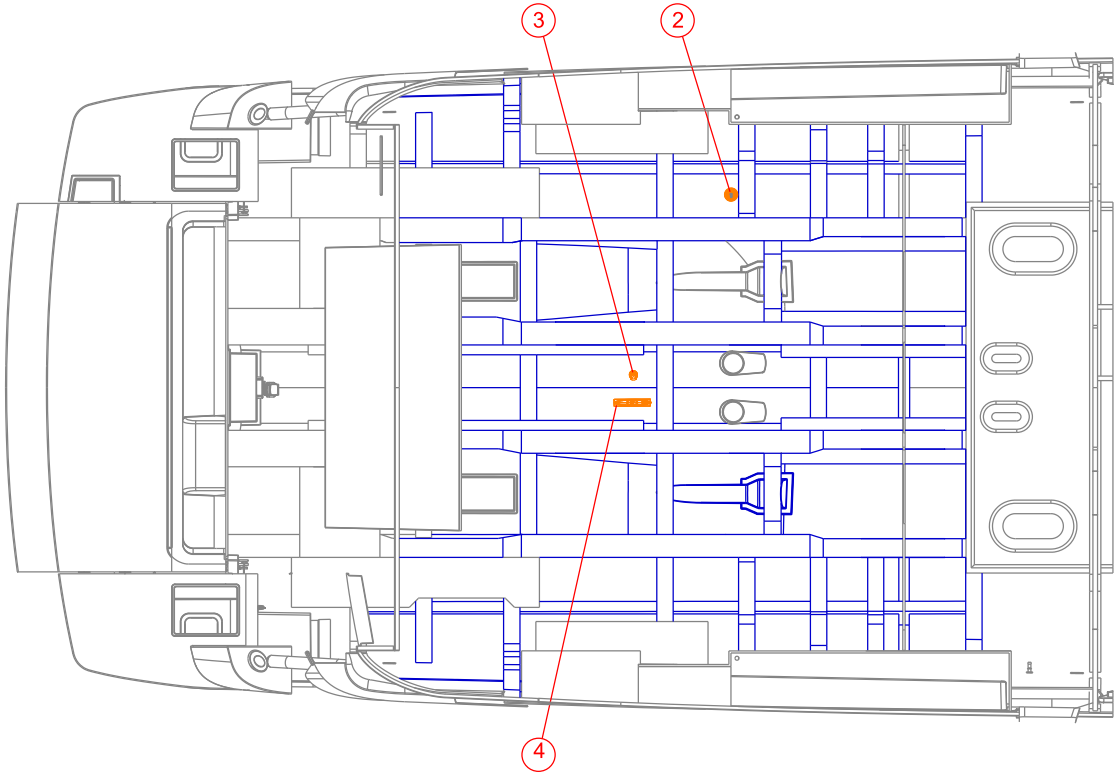
A reference anode (to be checked periodically) is installed on board, against which the system measures the electrical potential difference and checks if it falls within the correct protection range.

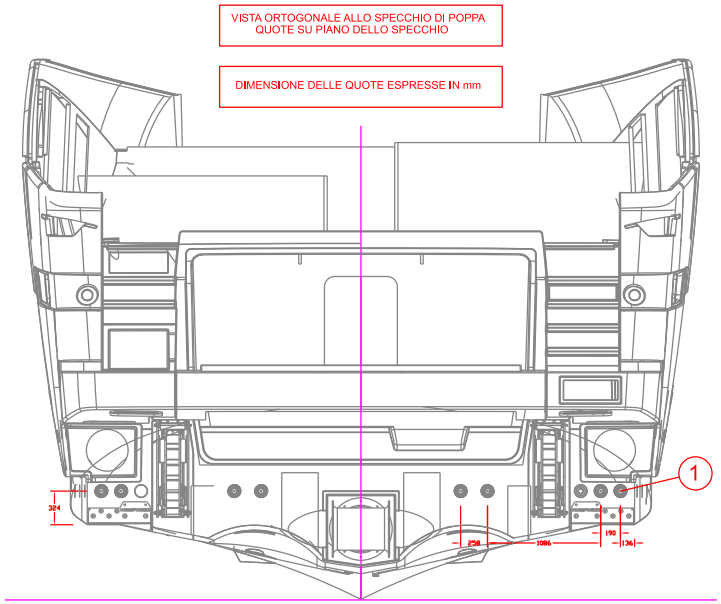
An an alarm signal is triggered in case of readings outside the safe range.

CAUTION

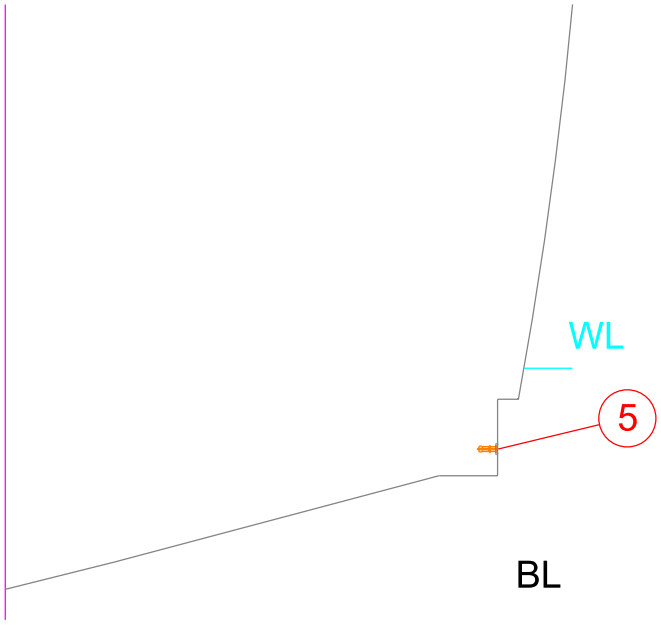
Each time the yacht is lifted, check for the condition of the propeller, of the protection anodes and of the fastening system.
Replace the anode frequently.

Sacrificial anodes diagram





VISTA DA POPPA, SEZIONE X=19186



	Componente
1	FISSAGGIO PER ZINCO COD00141 - KIT
2	PIASTRA MASSA CIRCOLARE C/PERNO 95MM
3	TRASDUT DST810 235KHZ N2K SIMRAD BR
4	TRASDUTTORE SIMRAD X-SONIC AIRMAR B45
5	SONDA MONITORAGGIO GALVANICO NAVIOP

6.11.1 Sacrificial anodes maintenance

Component	Maintenance	Notes and precautions
Sacrificial anodes	Periodical check (as necessary, according to the floating area) Assembly/disassembly	Metallic parts are protected against galvanic corrosion (caused by electrolytic currents due to the approach of different metallic bodies as steel or aluminium) by means of sacrificial anodes fitted on bottom hull, on stabilizer, on propeller shaft, etc.. The anodes' wear may depend on environmental factors as nearby chains, hulls or metallic docks, bad insulation of ground electric systems.

Periodical check

This operation must be carried out with yacht on dry shore or with the help of a diver.

Have the outer condition of the sacrificial anodes checked and have them replaced if they show evident signs of corrosion or if their volume is reduced to about 50%.

With the yacht out of the water, it is good practice to use a wire brush, to remove the surface layer of oxide and dirt on the external surface of the anodes.

CAUTION
Do not use pressurised water to clean the sacrificial anodes.

WARNING
To clean and check the yacht in water: disable the engines and generators start.

CAUTION
Check the anodes' wear conditions very frequently (when the yacht is on a dry shore or with the help of a diver) and replace them as soon as wear exceeds 50%.

CAUTION
Failure to replace the anodes causes corrosion on other metal parts.

Assembly/Disassembly

The sacrificial anodes are fastened to the yacht in several positions of the hull.

We advise you to clean the seat of the sacrificial anode and cover with silicon the screws ends which fasten the anodes.

This will easy the replacement of the anodes when worn out.

We advise not to tighten the nuts fastening the anodes with glues or other materials which will hinder their removal.

CAUTION
Do not cover the contact surface between anode and hull with silicone.

PROPULSION SYSTEM

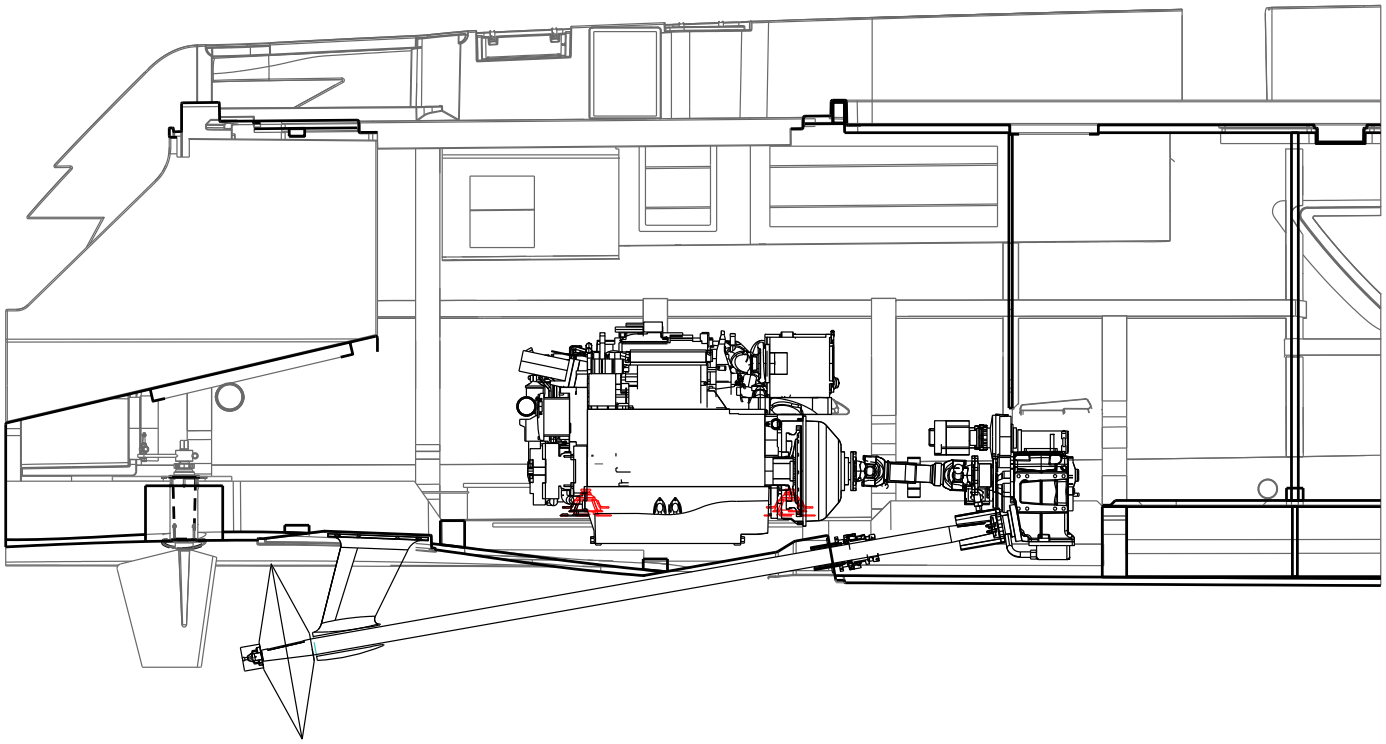
CHAPTER 7

7.1 MAIN PROPULSION SYSTEM

Inside the engine room, in the icebreaker and in the system room all the components for the propulsion of the yacht are assembled.
The propulsion apparatus is based on two equal groups.
Each of them is composed of:

1. MTU engine mod. 12V 2000 M96X (Optional: 12V 2000 M96Z)
2. ZF 3050 V Transmission with PTO (Optional: ZF 3060 V Transmission with PTO)
3. Cardan joint
4. Couplings flange
5. Propeller shaft
6. Mechanical seal
7. Through-hull
8. Idrostop
9. PTO
10. Starboard side propeller shaft bracket
11. Port side propeller shaft bracket
12. Anode for a nose cone
13. Starboard side propeller
14. Port side propeller
15. Cardan shaft guard

Main propulsion system diagram



Comp.	Descrizione	Q.tà	Std/Opt	Codice
A0	Motore MTU 12V 2000 M96X power 1472 kW @ 2450 rpm	2	Std	536513
A1	Invertitore ZF 3050 V 10° (r.r. 3:1) con pto	2	Std	Kit Mot.
A2	Giunto Cardanico lunghezza di lavoro 785 mm	2	Std	Kit Mot.
A3	Mancione Dn105	2	Std	216311
A4	Albero portaelica DN105 L=4830	2	Std	450391
A5	Tenuta Fluiten MU105	2	Std	362259
A6	Passascafo Fluiten DN105	2	Std	261565
A7	IDROStop Fluiten MU105	2	Std	
A8	Top PTO per ZF3060-Pompa Rexroth TH130CC	2	Std	
A9	Supporto Asse Elica Ø105mm DX	1	Std	391644
A10	Supporto Asse Elica Ø105mm SX	1	Std	391645
A11	DADO M48X3 PER ANODO (assi Ø80-110)	2	Std	83447
	ANODO ALLUM X OGIVA D 80-110	2	Std	411810
A12	Elica DX	1	Std	-
A13	Elica SX	1	Std	-
A14	Protezione Cardano	2	Std	418535

Engines:
The engines installed on your yacht have the following specifications:

- Model MTU 12V 2000 M96X (Opt: 12V 2000 M96Z)
- Manufacturer MTU
- No. of cylinders 12
- Effective output 1472/2000 kW/mhp (Opt: 1634 kW / 2222 mhp)
- Rated speed 2450 rpm
- Dry weight 2910 kg - 6195 lb (Opt: 2942 kg - 6485 lb)

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

CAUTION
Do not operate the yacht with an engine of rated power greater than the maximum recommended power (actual power engine series).

Among all the possible interventions to carry out on the engines in case of need (see the operating instruction manual) these are the most useful, according to our experience:
- Replacement of the fuel filters.
- Replacement of the oil filters.

CAUTION
The engine data boards are very important in case of repairs. Therefore keep them with care together with the warranty.

Remember that you can obtain a flawless operation and a high power only by respecting the prescribed maintenance intervals and by using the specified fuels and lubricants.

The engines have been installed on suitable elastic supports, which absorb vibrations and allow the minimal motion of the engines; in this way structures and devices connected with them are not damaged.

Besides, the elastic supports easy engine position adjustment, both for a new installation or after the required run in.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

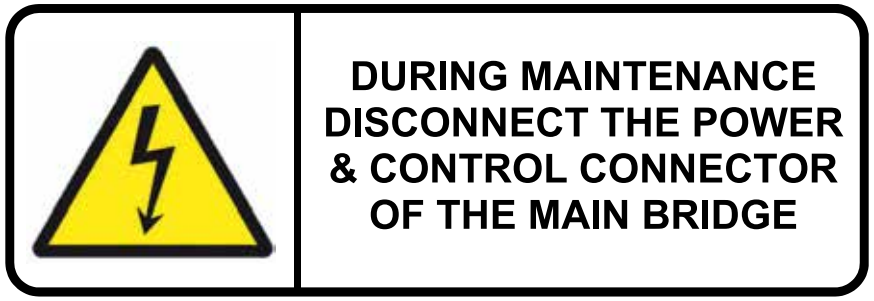
7.1.1 Engine control panel

This station must be used only in case of emergency. The controls on the panel allow all procedures for yacht navigation to be executed in “Local” mode.

The engine can be started or stopped using the designated push-button panel.
The operating status of the engine and any error information is shown on the helm station display.

CAUTION

Any remote-control start/stop of the engine control devices must allow for deactivation when the engine starting panel in the engine room is in operation.



CAUTION

When driving with the local station, it is essential to employ three people: the first person is at the helm station, the second is at the entrance to the engine room, relaying instructions to the third person who operates the local control panel.

NOTE

For further information on use and maintenance, please refer to the manufacturer’s manual.

7.1.2 Start of propulsion engines

First start-up

Read the manufacturer's specific documentation carefully before starting up a new or overhauled engine. During the first hours of operation, it is recommended that new engines be operated at a maximum of three quarters of their maximum load and at varying speeds. After this initial run-in, the engine should be brought up to full output gradually.

CAUTION
Use only approved technical fluids; otherwise the Manufacturer's warranty will become null and void and the engines can get seriously damaged.

Starting up

Before daily starting of the engine, check fuel level, coolant level and engine oil level and replenish, if necessary. Before starting the engine each day, check the engine's fuel level, coolant level and oil level. If the oil and coolant levels are depleted, refill the expansion tanks, taking care not to exceed the maximum level.

CAUTION
Engines must always be started with gear boxes at idle run and throttle levers must be set at minimum speed.

DANGER
Before starting an engine, ensure that nobody is standing in the dangerous area of the engine room.

Cooling liquid

The engine cooling system must be filled with a mixture of distilled water and antifreeze or an anti-corrosion agent.

- Slowly insert the coolant into the compensation yacht through the coolant filler cap.
- For the amount of coolant, refer to the manual provided by the manufacturer.

Engine oil

CAUTION
Do not top up oil so to exceed the MAX notch of the dipstick. If the oil level is too high, damage to the engines may occur!

Insert the lubricating oil for the engine through the lubrication oil filler hole. Refer to the manufacturer's specific documentation for refuelling quantities.

Oil level check

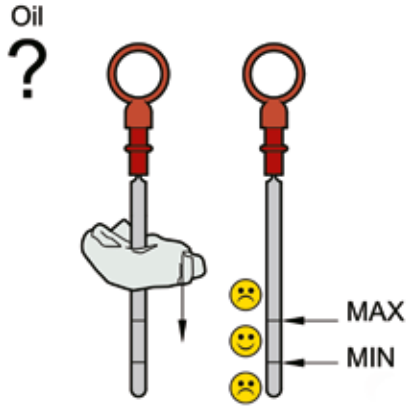
Check engine oil level only approx. 20 minutes after the yacht has been switched OFF.

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

The oil level should be between the two notches in the dipstick and must never fall below the MIN notch. Top up oil as necessary.

CAUTION

Do not top up oil exceeding the MAX notch of the dipstick. If the oil level is too high, damage to the engines may occur!



Ensure outmost cleanliness when handling fuels, lubricants and coolants.

Exhaust oil discharge

It is possible to drain the exhausted oil from the propulsion engines with the help of a manual pump, located in the engine room, which can be operated by means of a lever.

Sea water suction pumps

CAUTION

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

Procedures for start-up

Check that the following yacht functions are included on the main electrical panel and on the engine electrical power supply panels in the engine room:

- Place the throttles to central idle position.
- Turn starboard engine start key to “ON”.
- Start the throttle by pressing the power button twice.
- Then proceed by pressing the engine “START” button.
- Check if oil pressure reaches the normal value within 10 seconds.
- Check if cooling water circulation is correct.
- Once the first engine is running and only when its operation has proved to be regular, start the second engine too.
- Start the port engine in the same way as described for the starboard one.
- Turn the left engine ignition key to the “ON” position.
- Then proceed by pressing key “START”.
- Warm up the engine up for about 2-3 minutes at 1000 rpm max.
- Check the alternator charge.

Throttle operation

- Bring both throttles to “NEUTRAL” position (vertical single levers).
- Press the station power button twice.
- Press the buttons on the throttle to select their operating mode.

CAUTION

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

CAUTION

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

CAUTION

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

Engine drive

Despite the efficiency and the high performances of the yacht, the use of this yacht requires a careful and responsible behaviour.
In the passage between displacement and gliding navigation there is a critical phase to be carried out as quickly as possible, as it is characterized by high consumption and more vibrations; it also causes a very deep wake.
Minimum glide speed is influenced by displacement, weight distribution on board, position of interceptors, stabilizing fins and sea conditions.
The excellent choice and quality of the engines allows keeping high speeds for a long time with no consequences.
Yet an excellent compromise between transfer speed, comfort and consumption is obtainable with about 1500/2000 rpm less than the maximum allowable revolutions.
Do not keep the propulsion engines at idle run for a long period of time; this to prevent them from getting “dirty” or overheated.
Avoid harsh accelerations or decelerations to avoid excessive stresses for the engine turbines.
When the yacht reaches the cruising speed, the engine check instruments should set to constant values.
If the instruments show contrasting or abnormal indications during continuous run, check for failures of the systems or of the equipment and contact RIVA After Sales & Service Department.

CAUTION

Even if the automatic pilot controls the route, navigation must be supervised in any case.

CAUTION

During navigation, the rear and side doors shall be kept closed at all times to prevent, in particular conditions of wind direction and force, exhaust gases and any splashes of water from entering the deck spaces.
This will improve comfort for the passengers and silence inside the compartments.

CAUTION

Set the speed of the yacht and the interceptors position according to the conditions of the sea and the prevalent direction of the waves; in this way the structure of the yacht does not undergo to useless stresses and the passengers can enjoy more comfort during navigation.

DANGER

It is absolutely forbidden to perform reverse run with one of the two engines stopped. This operation is allowed only in case of life danger for the persons on board and for the safety of the yacht itself, however when the engine is running it should not run higher than 1000 rpm.

WARNING

Avoid prolonged use of engines at low speeds to avoid overheating of exhaust pipes due to reduced cooling water circulation.

7.1.3 Checks after start of propulsion engines

Once the propulsion engines have started correctly, a number of checks must be carried out:

- Check that water comes out of the exhaust pipe and, in case it does not, slightly accelerate with engine idling for a few seconds. Otherwise stop engines, troubleshoot the problem or call RIVA After Sales & Service Department.
- Run the engines slightly higher than idle run until they have reached the operation temperature.
- Check for abnormal noises or excessive smoke. Otherwise stop engines and call RIVA After Sales & Service Department.
- Check that alternators load the batteries.
- Verify the efficiency of the instrument system from the plotter to the radar, VHF, compass, etc..
- Disconnect shore connections if plugged in.
- Remove moorings and check for loose mooring ropes or floating objects hindering the propellers' movement.

DANGER

Make sure that no crew stands in front of gas exhausts and near the mooring ropes.

7.1.4 Stopping the propulsion engines

Do not immediately stop the engines after a full-load operation, but let them run low (about 5 minutes) to balance the temperature differences.

From the internal helm station

- Set levers to central idle position of gear box.
- Press the “STOP” buttons.
- Turn the keys to OFF.
- Disconnect magneto-thermales relevant to the start keys of both engines.

From sun deck station and/or third station

- Set levers to central idle position of gear box.
- Press the “STOP” buttons.
- Go to the inner helm station and turn the keys to OFF.
- Disconnect magneto-thermales relevant to the start keys of both engines.

DANGER

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

CAUTION

With engines stopped carry out following:

- Disconnect all unnecessary electric uses and check the general status of the switchboard as well as the voltmeters and ammeters indications;
- Check the proper operation of the bilge pumps;
- Check for possible leaks from the shaft lines seals;
- Rinse the yacht with fresh water;
- Connect the shore electric power supply;
- Keep air extractors in the engine room running for about 30 minutes for ventilation and air cooling.

7.1.5 Emergency stop of the propulsion engines

Due to a mechanical or electrical fault, the normal procedures for engine stop might not be sufficient; it is therefore necessary to stop the engines with the EMERGENCY procedures.

- **EMERGENCY STOP buttons**
  The EMERGENCY STOP buttons are located on all the helm stations and on the control panels of the system room: keep them pressed until the engines are actually stopped.



WARNING

The engines emergency stop controls must be used only in case of real emergency. Never use these controls during the normal engine stop procedure.

CAUTION

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



DANGER

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

- **Fuel tie rods**
  Use the fuel shut-OFF tie rods located at the entrance to the stairs leading to the system room.

7.1.6 Propulsion engine maintenance

Component	Maintenance	Notes and precautions
Lubrication system	Replacement of the oil separator filter	Replace the separator filter, according to the time intervals suggested by the Manufacturer.
	Diaphragm check and replacement	Check if the diaphragm is damaged; in this case replace it.
	Oil level check	Check the oil level by means of the special dipstick; make sure the level is included in the allowable range (MIN - MAX). Do no start the engines if the oil level is not included between the two reference marks, as indicated in the Manufacturer's Manual.
	Oil and oil filter replacement	Replace engine oil according to time intervals and oil type suggested by the Manufacturer.
Fuel system	Fuel filter replacement	Replace fuel filter within the intervals indicated by the Manufacturer.
	Air cleaner replacement	Replace air filter within the intervals indicated by the Manufacturer.
Cooling system	Coolant check	Make sure the coolant is in the tank (lever sensor, reference plate, built-in eyelet).
	Cooling system filling	For coolant features refer to the User's Manual of the Manufacturer.
	Cooling system drainage	Drain the coolant only when the engine is stopped; follow the procedure indicated by the Manufacturer.

CAUTION

Use only approved fuels (see the Manufacturer's specific documentation), otherwise the Manufacturer's warranty will become null and void.

DANGER

Hot oil can contains combustion residues which are harmful to health.
Risk of injury and scalding! Wear protective clothing, gloves and goggles/ safety mask. Avoid contact with skin.
Do not inhale oil vapour.

DANGER

Because of the high temperature in the engine room, oil or fuel leaks can evaporate and create a serious risk of fire. Regularly check the integrity of the system.

CAUTION

It is absolutely necessary to view with RIVA the documentation of the different components provided by the Manufacturer; for any problem relevant to the use or maintenance, please directly refer to the Service Centres, listed in the documentation provided by the Manufacturer.
In any case there are some small procedures that can be carried out by the crew on board, after consulting the operation manual.

CAUTION

Do not top up oil in addition to the MAX mark the control rod. With a high oil level faults occur to the engine!

CAUTION

Do not use naked flames, do not produce electric sparks.
Do not smoke.
Avoid ignition sources. Risk of fires and explosions!

DANGER

A wrong use, a wrong maintenance, tampering and replacement of pieces, can cause serious damages or lethal events, beyond damaging the equipment.
The interventions on the electrical and mechanical equipment must be carried out by qualified staff after having examined the Manual delivered by the Manufacturer.

ENVIRONMENT

Dispose of waste materials (engine oil, fuel, filters, etc.) with respect for the environment and according to the laws in force.
Use only authorized disposal procedures, in case of doubts, contact the Port Authority.



DANGER

Any maintenance procedure on the engines is to be carried out with engines shut off, after they have sufficiently cooled down and after seeing to the prevention of their being switched on by disconnection of the magneto-thermals.



ENVIRONMENT

Handle used fuel filters as special waste.



ENVIRONMENT

Collect the liquid and dispose of according to current regulations.

CAUTION

Fill the cooling system only in a cold engine.



DANGER

Coolant is hot and under pressure. Risk of injury and scalding!
Let the engine cool down and wear protective clothing, gloves and goggles safety mask.

CAUTION

Cold coolant in a hot engine causes thermal stress with the risk of formation of cracks in the components.
Fill/top up only a cold engine.

CAUTION

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

7.2 GEAR BOX

The main functions of a marine gearbox are the following:

- Couple the engine with the propeller shaft and reduce the number of revolutions of the propeller;
- Reverse the motion direction;
- Interrupt the propeller shaft motion (idle).

The gear boxes are provided with several documents.
We suggest you to read the operating instruction manual carefully and in detail.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

7.2.1 Gearbox maintenance

Component	Maintenance	Notes and precautions
Gearbox	Oil level check	For the correct maintenance and check procedures, refer to use manual delivered by the Manufacturer.
	Oil change	For the kind of oil and grade of viscosity recommended by the Manufacturer, refer to the gearbox plate.
	Oil filter change	Have the scheduled maintenance operations performed at the correct time schedule by authorized and skilled personnel, in order to keep the gearboxes perfectly efficient.

WARNING
The gearboxes are provided with emergency controls in case of fault.
Refer to the Manual delivered by the Manufacturer.

CAUTION
The use of the gearbox with a low quantity of oil may damage the gears.
An excessive quantity of oil may cause seals and vents to leak and can remarkably increase the operation temperature.

WARNING
Under normal operation conditions, the gear change can be carried out with the engine at low speed.
However, in case of emergency, gear shifting can be carried out with the engine at high speed, thus remarkably reducing clutch life though.

Oil level check

Check the oil level only when the engine is at a standstill. The proper oil level is between the upper and the lower notch of the dipstick.
After the first oil filling, a repair or the cleaning of the oil filter, the gearbox must be run for about two minutes.
Next the oil level check has to be carried out again two minutes after the engine has stopped.

CAUTION

Before starting checking the oil level, check that the gearbox oil temperature complies with the normal operating specifications.



ENVIRONMENT

Recover waste oil following the norms in force, relevant to special waste disposal.

It is possible to drain the used oil from the propulsion engines by using a manual pump activated by means of the relevant lever.



DANGER

Service the gear box only if engine and propellers are stopped and the magneto-thermal is OFF.
Before starting the transmission, carry out the filling and the consequent check of the oil level.
The use of the gearbox with a low quantity of oil may damage the gears.
An excess of oil might cause leaks to the seals and to the vent and increase remarkably the operating temperature.

7.3 SHAFT LINE

7.3.1 Propeller shaft and through-hull seal

The propeller shaft is fixed to the transmission with the couplings flange for propeller shaft and is aligned on the three points represented by the transmission, by a mechanical sealing through-hull lubricated with water and by the shaft seal.

The stuffing box case includes a piece fixed to the hull and an adjustable piece. The adjustable piece is closed to the fixed one, in order to compress the seal, located inside the stuffing box case.

It's very important that the seal disposal is compressed, in order to avoid irregular pressures on the seal seat that might compromise life and efficiency of seal disposal.
The outer shaft support includes a bushing which uses the sea water as a lubricant.

Check it every season, as it might get worn quickly during cruising, especially in sandy waters.
The bushing wear causes a vibrations increase.
When the yacht is on a sandbank, a good technician can easily consider, by moving the shaft, if the wear demands the replacement of the bushing.



DANGER

Never approach the shafts while they are rotating.

7.3.2 Mechanical seal

The mechanical seal has the function of preventing sea water from entering the yacht through the space between the propeller shaft and the hull.
It is made up of two sliding rings kept in contact by combined forces. One ring is defined as rotating and rotates with the shaft; the other stationary is bound to the hull.

The seal between the parts is made by means of O-rings.

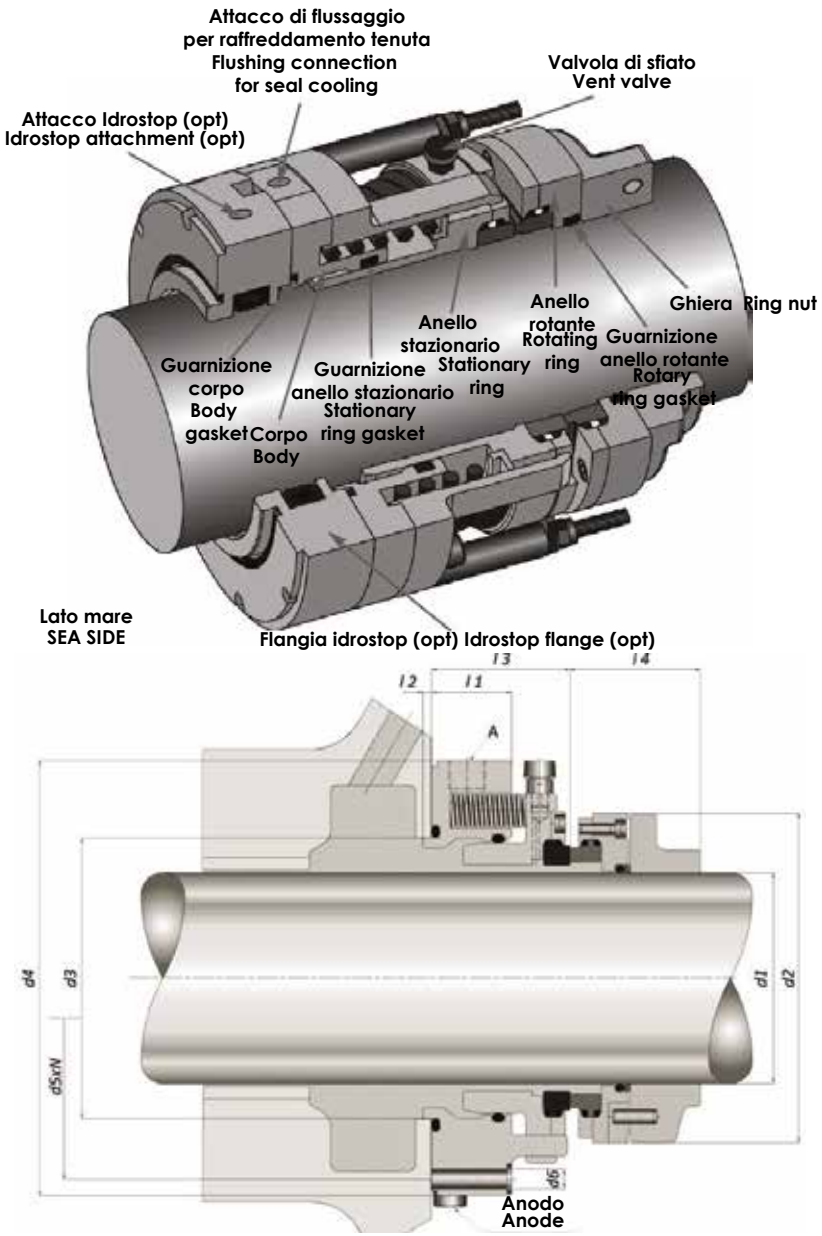
Cooling of the seal is ensured by the access of water through the flushing duct.

On your yacht, between the bulkhead and the stationary element, the Idrostop system can be installed.
In emergency situations and in case of water infiltration from the bulkheads, the Idrostop (if present) allows, once pressure has been applied, through the special pneumatic connection (max 3 bar), the return to port in complete safety, keeping the shaft stationary and at reduced speed.

Make sure before starting the engine:

- That the seal is also clean on the outside. If foreign bodies are present, it is advisable to wash thoroughly.
- That the flush water valve is open and there are no leaks from the sealing surfaces.
- Of the sacrificial anode's state of consumption.
- For medium-long periods of yacht downtime, follow the instructions in the supplier's use and maintenance manual.

CAUTION
Install the seal only when the yacht is outside the water.



CAUTION

Never leave sealing surfaces in contact with substances like oil, lubricants or antifreeze.

MAINTENANCE

At least once a week check for water penetration.
At least once a month carry out the cleaning. Periodically:

- Check the status of the seals;
- Check the compression of the seal and when necessary carry out the compression;
- Check and service the cooling circuit of the seals in order to prevent dirt, seaweeds and foreign bodies from blocking the cooling water flow, thus causing the seals to overheat and, consequently, their irreparable damage.

CAUTION

The ongoing navigation and low speed, both forward and in reverse (as in the case of fisheries), it can cause overheating of the seals and their irreparable damage.

CAUTION

After using the Idrostop system (optional) you must contact the RIVA After Sales & Service Department.

NOTE

For more information on use and maintenance, please refer to the manufacturer's manual.

7.3.3 Shaft line maintenance

Component	Maintenance	Notes and precautions
Shaft support bushings	Periodical checks (at least once a month) Assembly/disassembly	The bushing of the shaft support, when cruising in waters with sandy suspensions, may wear rapidly. The bushing wear causes a vibrations increase. With the yacht in a dry shore, a good technician can easily evaluate, by moving the shaft, if the wear is so bad as to need the bushing to be replaced.
Stuffing box seal	Maintenance and check	With yacht moored at the marina, daily and before set up navigation.
Shaft lines	Periodical checks (at least once a month)	It is essential to keep always the propellers and shafts clean; the formation of parasites or the presence of foreign bodies like cables, cloths or plastic bags lead to propulsion power reduction, to propellers cavitation with consequent surface damage, and to vibrations causing damages to the stuffing box seals and to the bushings of the shaft supports. Checking and eventual cleaning may be carried out with the yacht in a dry dock or with the help of a diver. To clean scrape the barnacles, without engraving the metal, polish them with sand paper at thin grain.

MAINTENANCE

At least once a week check for water penetration.
At least once a month carry out the cleaning.
Periodically:

- Check the status of the seals;
- Check the compression of the seal and when necessary carry out the compression;
- Check and service the cooling circuit of the seals in order to prevent dirt, seaweeds and foreign bodies from blocking the cooling water flow, thus causing the seals to overheat and, consequently, their irreparable damage.

Periodical checks

Check the shaft backlash (**1**) trying to move the shaft on a side back and forth to verify the backlash of the shaft supporting bushing (**2**).

Assembly/disassembly

- If the propeller shaft (**1**) shows backlash, the water lubricated neoprene bushing (**2**) could be worn out; in this case replace it.
- Remove completely the antifouling to reveal the screwdriver screws (**3**) which lock the bushing positioned.
- After the propeller (**4**) and the shaft (**1**) have been disassembled, by means of a plastic tube with a slightly smaller diameter, pull out the bushing (**2**).

For reassembly, repeat the above-mentioned operations in reverse sequence.

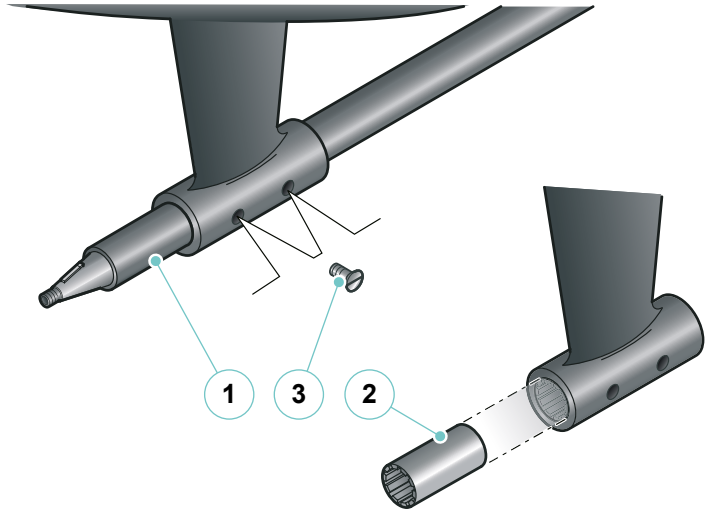
- Do not use grease between propeller shaft and bushing. Remember to fasten the screws (**3**).

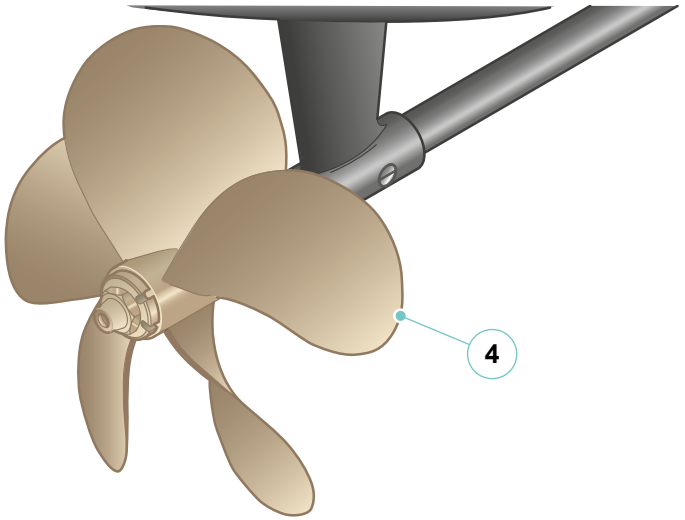
CAUTION

For spare part request contact the RIVA After Sales & Service.

CAUTION

Remember to retighten the fixing screws (**3**) of the bushing on the shaft support. Never use grease or other lubricant between propeller shaft and bushing.





7.4 PROPELLERS

The propellers have been designed in order to result lightly “unloaded” with a new yacht, hull clean and without displacement overloads: in this way the engines will develop all their power in average normal operating conditions, with hulls and propellers not perfectly clean and some overloads on board.

Periodically check if the propellers are not too “dirty”, as this leads to a fast performance decrease and to a vibration increase.

In case of impact with the depth or submerged/semi-submerged bodies, check propellers and shafts immediately; in case of considerable vibrations, reduce the revolutions to the minimum and steer toward the harbour for repair, as a vibration increase might damage the propelling devices and the yacht structure.

CAUTION

RIVA yachts are designed to obtain a correct transversal trim with full optional equipment, and with spare propellers and shafts.
If the yacht is not provided with full optional and with spare propellers and shafts, some weights are inserted to correct the transversal trim.
The above-mentioned weights can be removed or displaced as soon as the yacht is provided with a new equipment.

7.4.1 Maintenance of the propellers

Component	Maintenance	Notes and precautions
Propellers	Periodical checks	The propeller check should be performed according to the floating waters. Inspection and possible cleaning may be carried out with the yacht in a dry shore or with the help of a diver. Check if the propeller blades have notches, fractures, fouling or barnacles which may have a negative influence on the yacht performances during navigation. If you notice corrosion, check the anodes conditions and replace the propellers for major failures.
	Assembly/disassembly	The starboard and port propeller are not interchangeable between them neither with others as designed according to specific features of your yacht. Replace only with genuine spare parts supplied by the RIVA After Sales & Service.

Periodical checks of propellers

DANGER

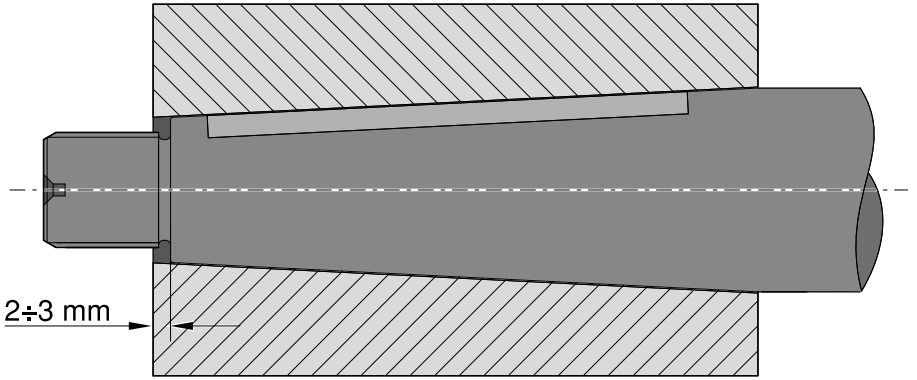
To clean and check the yacht in water: disable the engines and generators start.

It is advisable to carry out this operation by yacht in dry shore because maintenance is in this way eased. Check if the propeller paddles show notches or breaks, scales or barnacles, which may have a negative influence on the yacht output during navigation. If you notice corrosion, check the anodes conditions and replace the propellers for major failures.

Propellers assembly/disassembly

The propellers (starboard and port) are not interchangeable between them; they are bronze meltings according to specific features of your yacht.

The extreme end of the shaft is conical and a little key allows the coupling with the propeller which must be inserted up to the shaft catch and leaving the propeller stretching out from the shaft plane of 2÷3 mm.



CAUTION

Do not replace the propellers of your yacht with other of doubtful origin.
Contact the RIVA After Sales & Service.
Each yacht model has its own propeller

Pieces should not show burrs or dents to make the coupling effective. It is essential to lubricate them with plenty of silicon grease.

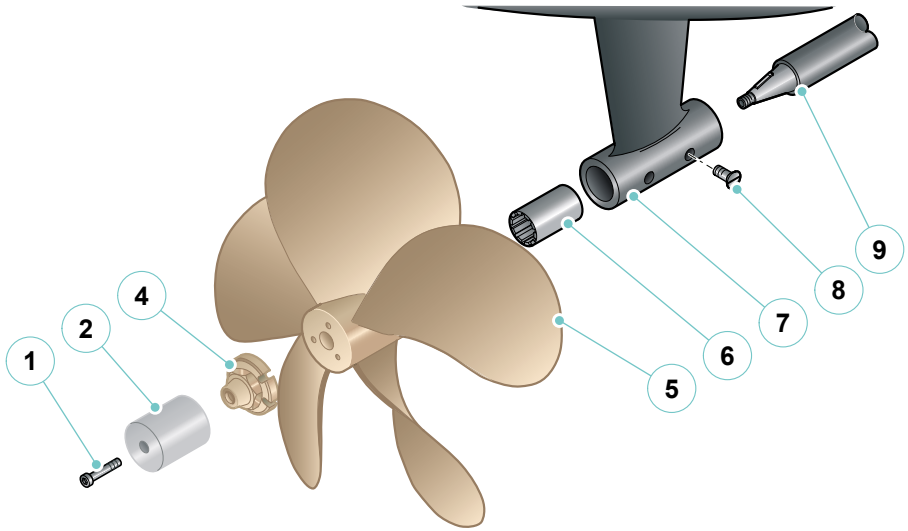
Tighten the nut (**4**) locking the propeller on the shaft (**9**); on the propeller hub there are three holes to 120°. Tighten as necessary to insert the dowel (**3**), to avoid natural loosening.

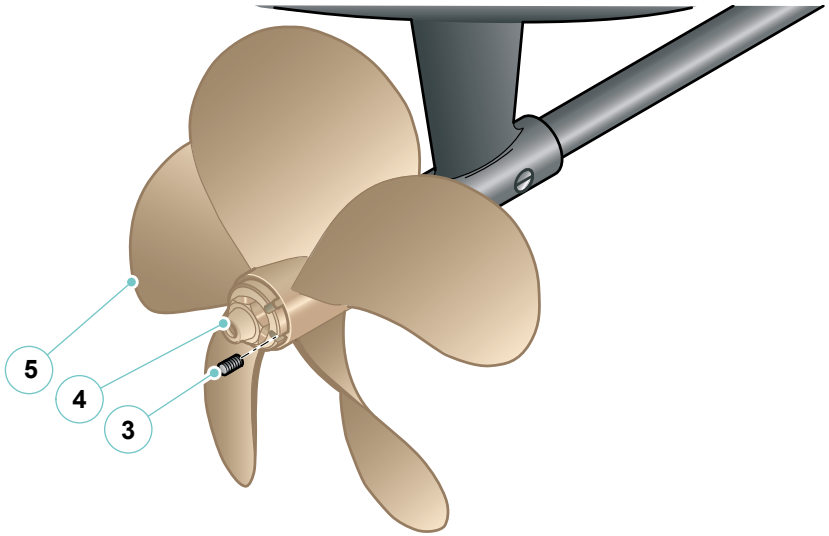
For disassembly keep an extractor at disposal so as not to deform the propeller.
In case of obstacles or excessive sticking, heat the propeller to expand the coupling and ease the removal.

CAUTION
Avoid the use of hammers or mallets to pull out the propeller. The pull out force must be uniformly exerted on the entire hub of the propellers.

Hereunder a list of the components of shafts and propellers line:

1. Screw
2. Propeller anode
3. Dowel
4. Nut
5. Propeller
6. Shaft support bushing
7. Shaft support
8. Countersunk screws with notch
9. Propeller shaft





7.5 EXHAUST SYSTEM

7.5.1 Engine exhausts

The engine exhausts are semi-submerged silenced exhausts.
The exhaust gases leaving the engine are conveyed, through insulated stainless steel manifolds, to the mixer where they are cooled with the sea water on leaving the engine. Subsequently, they are conveyed to the muffler and, through the cooled fiberglass end-pipe, they exit through the transom at a semi-submerged level.
The exhausts have to be checked at regular intervals to avoid the formation of build-ups that could prevent the correct gas ejection.

WARNING
When starting the engines, check that water comes out of the exhausts; this means that the engines cooling system works correctly and that the exhaust is cooled. Accelerate if no water comes out.
If the problem continues, contact the RIVA After Sales & Service.

CAUTION
A strong smell and a light smoke from exhaust insulation are normal during the first period of use.

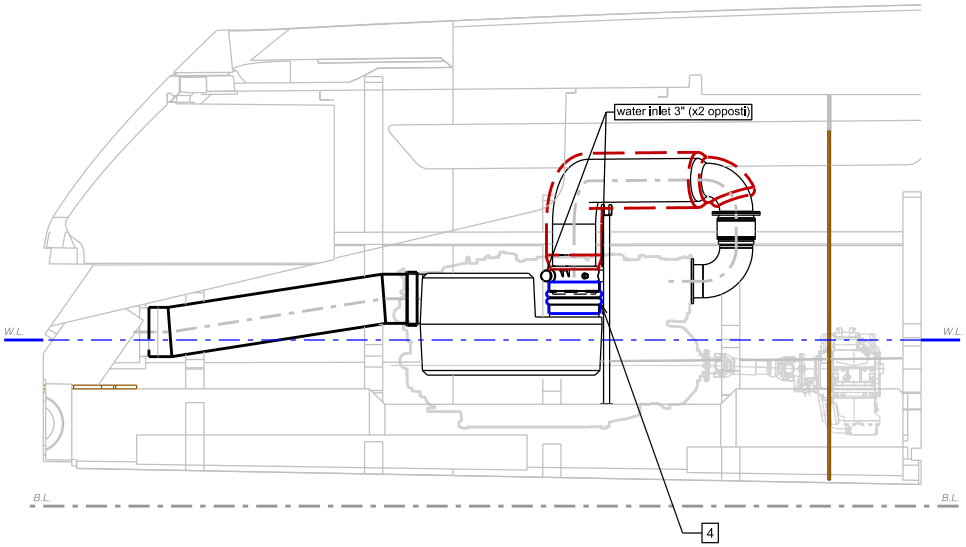
MAINTENANCE
At least once every three months carry out the tightening of the discharge raiser bolts.

CAUTION
Temperature sensors are installed on both engine exhausts.

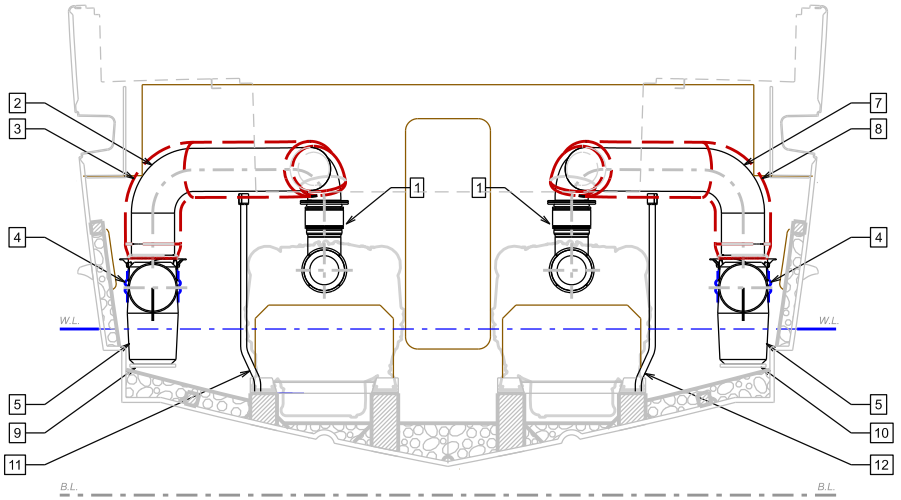
CAUTION
Avoid prolonged use of engines at low speeds to avoid overheating of the exhaust pipes due to reduced cooling water circulation.

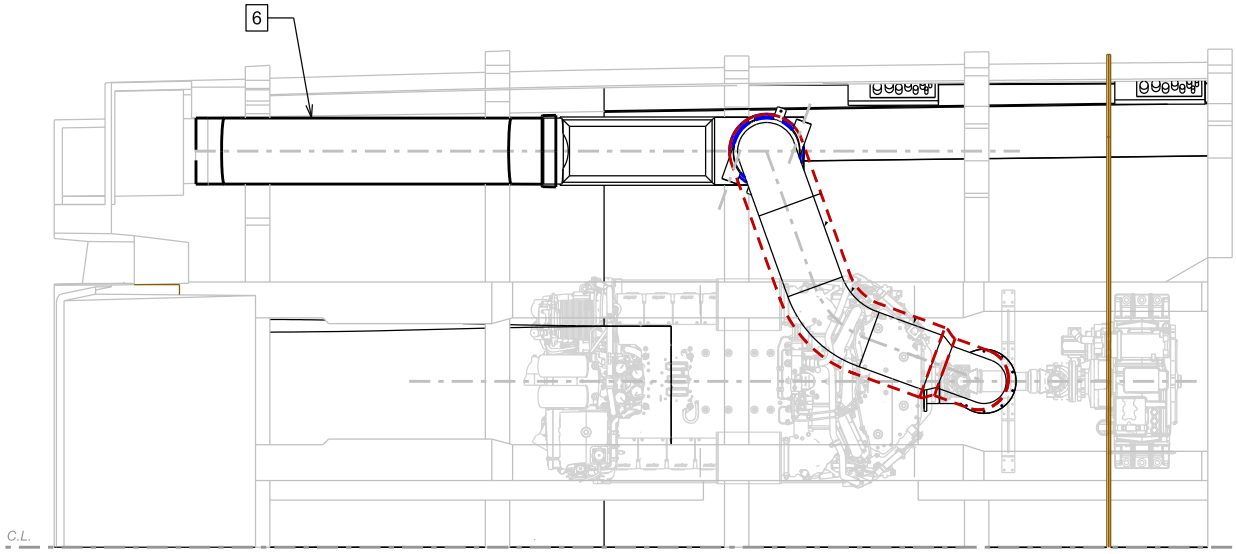
Main engines exhaust

SEZ. LONGITUDINALE Y=0
guardando verso SN



SEZ. TRASVERSALE X=22685
vista da poppa





Comp.	Descrizione	Q.tà
1	Curva gas esausti MTU 12V	2
2	Collettore scarico motore SX	1
3	Coibentazione Collettore scarico motore SX	1
4	Manicotto silicone Trident 2 Onde Dint.406 L260	2
5	Silenziatore Mlve Eco	2
6	Tubo VTR D.est 406 sp.10	2
7	Collettore scarico motore DX	1
8	Coibentazione Collettore scarico motore DX	1
9	Sostegno silenziatore SX	1
10	Sostegno silenziatore DX	1
11	Sistema staffaggio collettore SX	1
12	Sistema staffaggio collettore DX	1

7.5.2 Engine exhausts maintenance and check

Component	Maintenance	Notes and precautions
Exhausts	Periodical check (as necessary, according to the floating area)	Check the exhaust terminal cleanliness conditions periodically. Clean, if necessary. **CAUTION** Carbon deposits, marine growths and fouling may affect the engine regular operation, causing performance degradation and serious damages.

For each engine:

- Check whether the parts of the exhaust system (exhaust manifold, mixing elbow, exhaust pipe, hose stop, muffler, etc.). Show signs of cracks, leakage and corrosion.
- Check the hoses for signs of softness, cracks, leaks or dents. Replace them if necessary.
- Check for corroded metal parts or broken. Replace them if necessary.
- Check if there are any loose clamps, corroded or missing.
- Tighten or replace the fasteners and / or the brackets if necessary.
- Check that the exhaust outlet is not blocked.
- Visually check for leaks in the exhaust.
- Check for excess carbon or soot in the exhaust.

These residues indicate the presence of exhaust losses that must be eliminated.

CAUTION

Temperature sensors are installed on both engine exhausts. Illuminated warning lights on the helm station indicate that the temperature inside the exhausts is too high.

7.6 FUEL SYSTEM

The fuel tank is made of fibreglass in accordance with ISO 10088 and is located amidships, below the stern guest cabins.

The tank is filled through two filler necks, located inside two suitable peaks placed along the side walk-arounds of the yacht.

The fuel level is detected by a sensor and is visible by means of the control panel, located in the main station.
It is possible to monitor the level in the tank also by means of a visual gauge, attached directly on the fuel tank flange. This gauge can be actuated by means of a ball valve and a push-button valve, and it must be activated to check whether the transmitted value corresponds to the real level of fuel inside the tank.

CAUTION
It is a good rule, before each navigation, to check again the fuel level also by means of the visual check installed on the tank flange.

NOTE
The level indicated without operating the valve refers to the last check.

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

Fuel is drawn directly from the tank and delivered to the distribution manifold of the engines and generators.

The fuel sucked, before reaching the uses, flows through the water/fuel separator filters holding impurities and separating possible water in the fuel.

During boarding, the fuel flow produces a lot of foam; if this comes out, you might think the tank is full. Therefore, it is good to wait for a few minutes and then top up, in order to be sure that the tank has been filled correctly.
The particular geometric shape of the tank allows the decantation of impurities in the fuel tank.
It is appropriate to fill the tank some hours before setting up for navigation, in this way the impurities in the fuel will settle down and water will decant as they are both heavier than fuel.

WARNING
The sensor reading can be distorted by the temperature, because the specific weight of fuel varies according to this last parameter and to the yacht trim. Therefore before setting-up for navigation, always refer to the visual level in the engine room.

The tank is drained through a manually operated valve located on the sight level flange.

CAUTION
The draining should never be conveyed to the bilge. If accidentally the draining is conveyed to the bilge, disconnect the bilge pumps and clean accurately.

To avoid fuel fumes, the tank has been equipped with two vent manifolds and a flame trap.

The fuel aspirations of the engines and generators, as well as on site, can be remotely intercepted by a quick-closing valves, located on the distributor and remotely controlled by a rod to be operated only in case of emergency placed on the descent to the system room.

The operation of the fire-fighting system must be preceded by the manual closing of the fuel shut-off valves by means of the relative tie rod.

CAUTION

Fuel leaks create a fire and explosion hazard.
It is not allowed to stow fuel inside the stern garage into cans or containers different from the fixed ones of tender.

ENVIRONMENT

Every marina has dedicated toxic waste disposal areas. It is recommended not to scatter waste that can contaminate the environment (such as used oil, fuel, oily liquids, batteries, etc.).
Prior to perform any job in the engine room, disconnect the bilge pumps switches, to prevent accidental fuel, lubricant or other liquid leaks and therefore the pollution of the yacht surrounding waters.

DANGER

Because of the high temperature in the engine room, oil or fuel leaks can evaporate and create a serious risk of fire.

DANGER

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

WARNING

The bilges of the engine room must always be kept clean, so that fuel or oil leaks or penetrations from the engines or the generators can be easily noticed. If leaks are noticed, it is necessary to stop the engines and to let them cool and only afterward, if possible, repair the leak.
Finally clean the bilges.

ENVIRONMENT

It is forbidden to discharge bilge water mixed with oil or diesel fuel into the sea, because this can cause of serious pollution. Check periodically the level of possible oily waters contained into the collecting tanks under the engines, should their level be close to bilge over flooding, disconnect the circuit breakers switches of the bilge automatic pump system, to avoid accidental spills, until the tanks have been completely drained in accordance with the environmental legislation. During the maintenance operation in the engine room, it is compulsory to disconnect the circuit breakers of the bilge pumps automatic suction system, avoiding in this way accidental spills.

CAUTION

The bleeding procedure should be carried out every two or three refuelling operations.



ENVIRONMENT

Handle water mixed with fuel and dispose of it according to the rules in force. Use only authorized disposal procedures; in case of doubt, refer to the Port Authorities.



DANGER

A fuel leak can generate fire and explosion hazard.
Fuel cannot be stowed inside the garage.



DANGER

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



EXPLOSION/FIRE DANGER

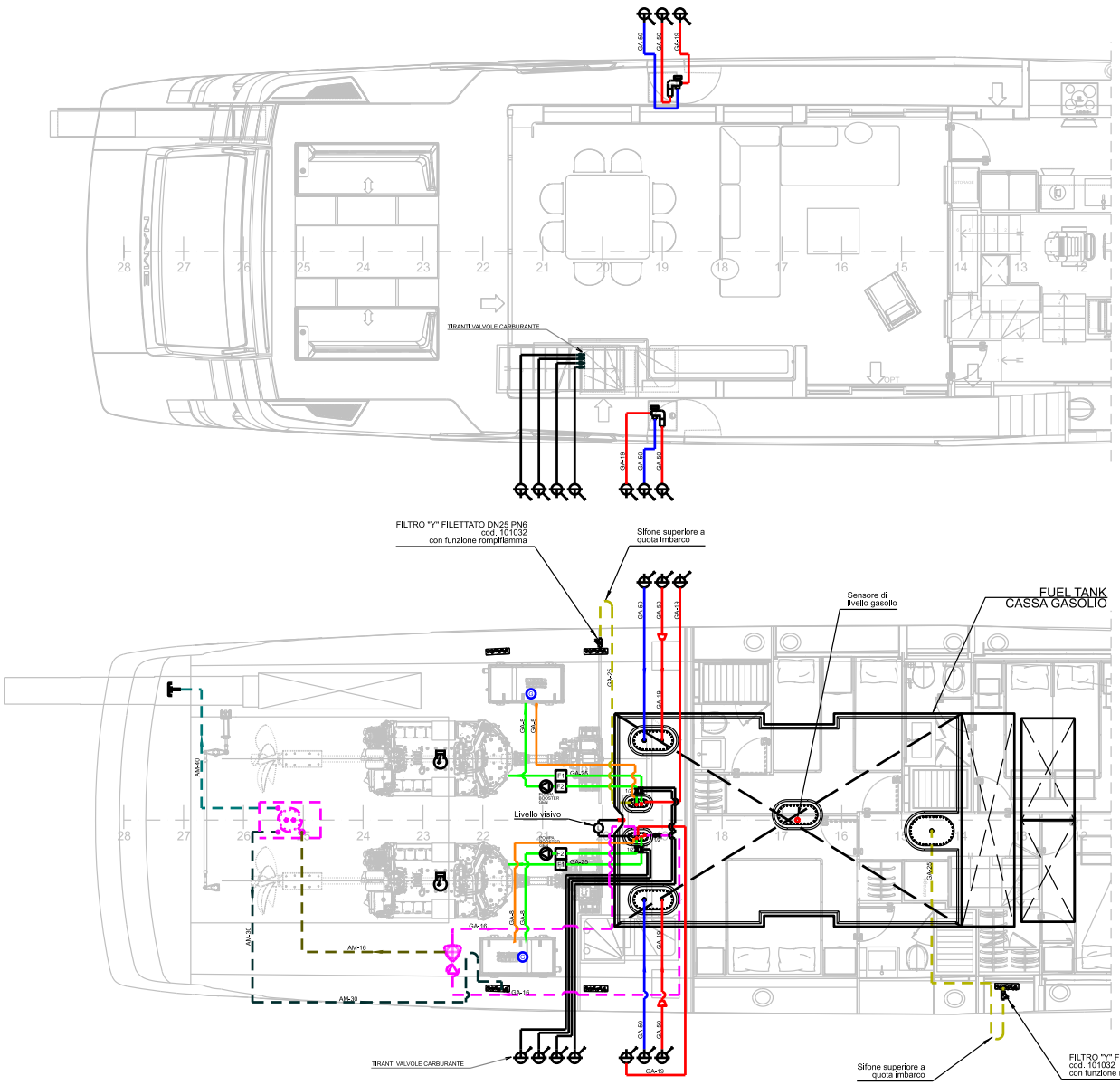
- Stow flammable material in a safety-approved container. Never stow flammable material in non-vented areas.
- Check bilge and engine room for fumes.
- Keep the ventilation system free of obstructions. Never modify the ventilation system.
- Inspect the fuel system for leaks.



EXPLOSION/FIRE/POLLUTION DANGER

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

Fuel system diagram



LEGENDA	
F1	Prefiltro gasolio con sensore acqua modello RACOR 75/1000 MAX (fornitura MTU)
F2	Prefiltro gasolio supplementare con sensore acqua RACOR 500 MAM
	Bocchettone di imbarco combustibile Vetus FSA5119 Cod.376744
G	Gruppo elettrogeno
	Valvola a sfera
	Scarico Centralizzato
	Motore Diesel MTU 16V2000M93
	Alfa Laval MIB 503 (opt)
POMPA BOOSTER	Pompa gasolio Mase ART. 31004 cod. mat. 484781

	Mandata gasolio motore/generatore
	Ritorno gasolio generatore
	Imbarco gasolio
	Sfiato Imbarco Gasolio Vetus Fuel Splash-Stop
	Sfiato Cassa
	Alfa Laval (OPT)

7.6.1 Fuel inlet

The fuel intake of the yacht is equipped with a flow switch having the function to prevent undesired leaks of fuel from the plug and from the vent which may stain the bridge and pollute the water. The leak of fuel may occur during refuelling, if the tank is almost completely full.
The fuel coming out of the intake duct is collected in a tank with suitable capacity, which, on its turn, will drain automatically into the on-board fuel tank, through the return duct.
Also the flow switch is equipped with own air vent, bleeding from the wall near the filler plug of the tank.

CAUTION
The inlet plug carries the indication “DIESEL” to avoid accidental input of different fuels.
Filling lines pressure must be kept constantly under 0.3 bar during bunkering operations.

CAUTION
Before refuelling, wash the teak with fresh water to avoid its contamination with fuel.

DANGER
During refuelling operations, do not approach open flames to the yacht; do not smoke. Carry out refuelling with engine shut off. The lack of consideration of these precautions can cause accidents and injuries.

7.6.2 Fuel quality

For the good performance of the engines installed on your yacht, fuel quality is of primary importance.

Fuel should be purchased from reliable high-sale filling stations, for both the quality and a probable short stay of fuel inside the shore tank.

The fuels:
- European Standard EN590
- DIN EN 590 (Germany)
- ÖNORM EN 590
- ASTM D975 No. 1D (USA)
- BS 2869 Part 1 Class A 1 (United Kingdom)
- BS MA 100 DMX (Marine Diesel Fuel)

are suitable to supply the engines.

If the above type of fuel is not available in some countries, follow the rules indicated in the manual relevant to the engines.

CAUTION
Stop all engines when refuelling.

WARNING
For the type of fuel to be used, follow the manufacturer's recommendations. Diesel engines require very clean fuel. Keep filters clean.

WARNING
If fuel containing water reaches the engines it can seriously damage the injection system. To avoid this, drain water from the fuel tank and service regularly the fuel/water separator filter.
During winter service do not use fluidity correctors.

CAUTION
We advise to drain and clean the tank periodically, at least once a year.
Please remember that re-used fuel must be filtered.

7.6.3 Fuel system maintenance

Component	Maintenance	Notes and precautions
Fuel tank	Bleeding (at least every two or three refuelling and at least once a month)	As shown in the following sequence
Flow stopper	Check and clean	As shown in the following sequence
Water/fuel separator filters for engines	Maintenance and check Water drain from collection tank Replacement of filter element Troubleshooting procedure	As shown in the following sequence
Water/fuel separator filters for generators	Maintenance and water drain Replacement of filter element Troubleshooting procedure	As shown in the following sequence

Fuel tank:

Bleed

The tank is equipped with a flametrap vent and with a visual check of the fuel level. The gauge includes a lower valve to be operated in order to display the real level in the engine room. The geometric shape of the tank allows the decantation of possible impurities or water in the fuel. For the drainage of water and possible impurities embarked with fuel, it is necessary to wait for some hours after refuelling, so that the suspended particles have enough time to settle down.
Drain through the opening of drainage valve located on the flange.

To this aim take off the blanking plug from the valve, open the valve slowly and let the water and the deposits drain into a container, until only clean fuel comes out.
After the operation close the valve, disconnect the hose and reinsert the plug.
During the long periods of inactivity of the yacht, when the tank is empty, we suggest to open the flange and to remove the fuel deposits embarked during refuelling.

WARNING

The tank bleeding is a special operation, that has therefore to be carried out by specialized personnel. Contact the RIVA After Sales & Service to receive suitable help.

NOTE

The crew should always be present during this operation, as fuel leaks may occur in the engine room.

WARNING

During the tank inner cleaning, it is a good norm, to ventilate the room for a long time with the help of fans and to wear all necessary protections, to avoid injuries caused by gas fumes.
During the flange assembly, make sure that the screws are correctly and uniformly tight, in order to prevent leaks of fumes and fuel.
Furthermore, check the condition of the O-ring.
These are extraordinary maintenance operations. Contact After Sales & Service RIVA.

CAUTION

The draining should never be conveyed to the bilge. If the drained substances fall into the bilge, stop the bilge pumps immediately.

ENVIRONMENT

Handle water mixed with fuel and dispose of it according to the rules in force. Use only authorized disposal procedures; in case of doubt, refer to the Port Authorities.

CAUTION

We advise to drain and clean the tank periodically, at least once a year.
Please remember that re-used fuel must be filtered.

WARNING

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

ENVIRONMENT

It is forbidden to discharge bilge water mixed with oil or fuel into the sea, as it can cause serious pollution. Periodically check the level of possible oily waters inside the collection tanks under the engines; should the level be next to overflowing into the bilge, disconnect the magneto-thermal switches of pumps of the bilge suction system, to prevent accidental spilling, until the bilge is empty, in compliance with current legislation for environmental protection. During the maintenance operation in the engine room, it is compulsory to disconnect the circuit breakers of the bilge pumps suction system, avoiding in this way accidental spills.

MAINTENANCE

Check periodically the correct operation of the valves.
At least every three months check for the presence of leaks.
At least once every three months drain the tank.
At least once every two years carry out complete cleaning of the tank; check anyway the draining according to the quality of fuel filled.

Fuel flow stopper:

Fuel checks and cleaning

Regularly check for the air outlet valve and clean the screen if necessary.
At least each season begin and end carry out the following checks:

- Check for the anti-splash sleeve and replace if necessary;
- Check that pipes and connections are not leaking and install new pipes and/or clamps if necessary.

CAUTION

First place the filling nozzle as deep as possible into the filling pipe (through the rubber of the anti-splash sleeve), then use the nozzle to fill the tank.

ENVIRONMENT

Fuel is harmful to the environment. Prevent any spilling.
Keep oil absorbent rags within reach as a precaution!

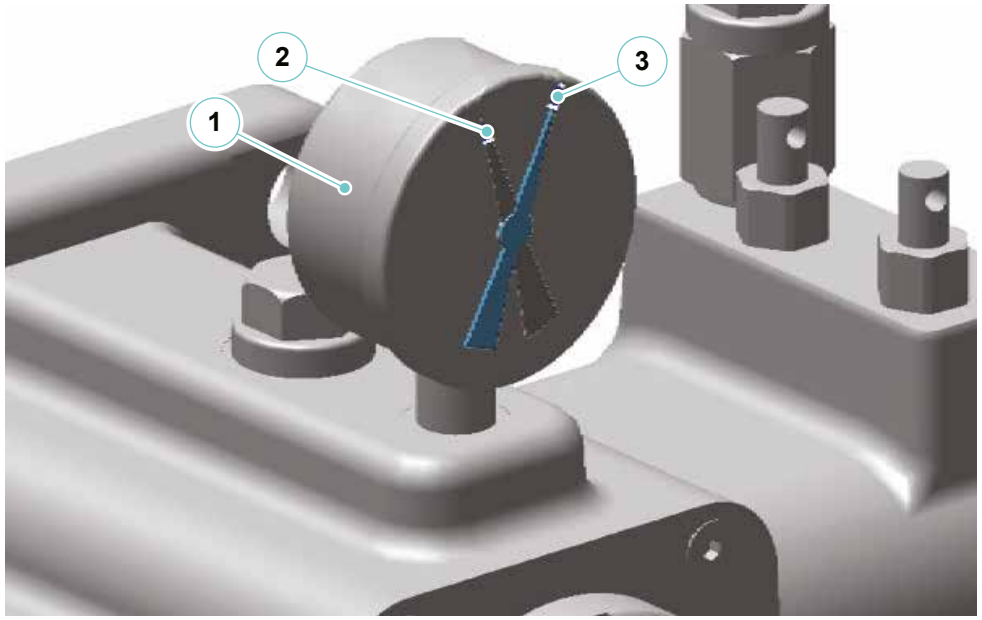
Water / fuel separator filters for engines

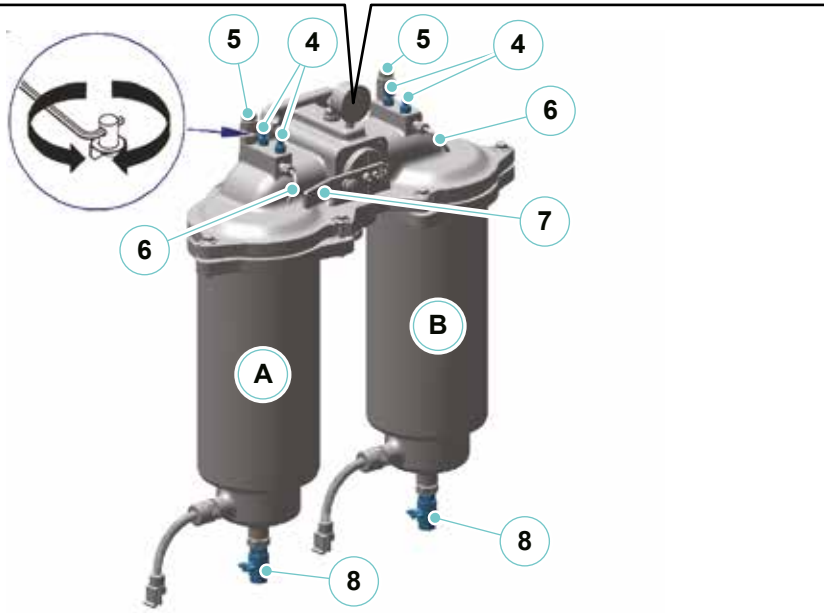
Differential pressure – recording of indicator instrument with double switchable filter:

1. When the new cartridge is put into service, make the recording index (**2**) coincide with the pressure indicator (**3**) on the pressure indicator device (**1**);
2. Check the differential pressure as follows:
   - At full load or at rated engine power, read the pressure on the indicator instrument (**1**);
   - If the differential pressure between the indicator pointer (**2**) and the pressure indicator (**3**) is greater than or equal to 0.3 bar, wash the filter cartridge in service.

Drainage of the fuel pre-filter with double switchable filter:

1. Disable the filter to be drained (**A**) or (**B**) by turning the handle (**7**) towards the desired filter;
2. Loosen the vent valve (**4**) of the filter from which you wish to drain the condensate;
3. Open the drain valve (**8**) of the filter from which you wish to drain the condensate;
4. Drain the water and impurities from the filter until clean fuel comes out;
5. Close the drain valve (**8**) opened previously;
6. Connect the feed pump to the filling fitting (**5**) on the suction side of the filter;
7. Open the vent valve (**4**) and top up the fuel until fuel leaks from the vent pipe (**6**);
8. Close the vent valve (**4**);
9. Slightly turn the handle (**7**) (about 30°) and open the vent valve(s) (**4**), until fuel comes out of the vent pipe (**6**);
10. Close the vent valve (s) (**4**);
11. Turn the handle (**7**) to the deactivated drained filter position.



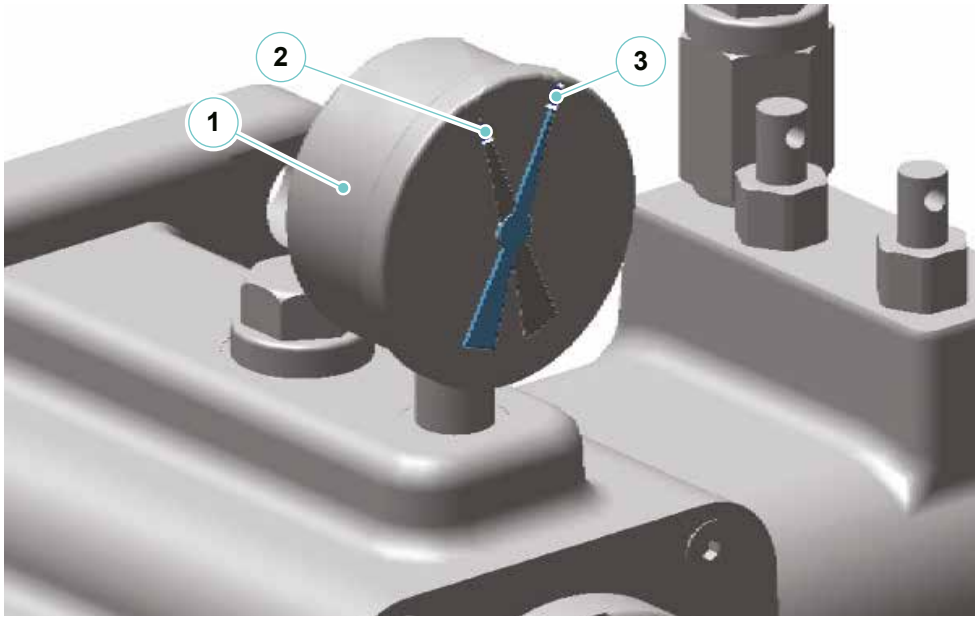


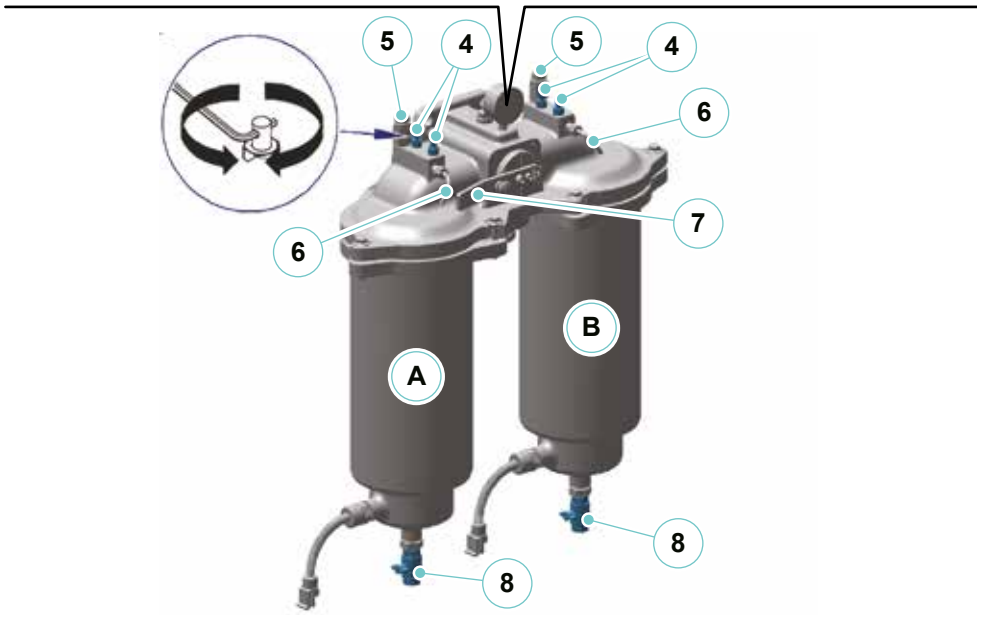
Rinsing of the fuel pre-filter with double switchable filter:

1. Disable the filter to be drained (**A**) or (**B**) by turning the handle (**7**) towards the desired filter;
2. Loosen the vent valve (**4**) of the filter to be rinsed;
3. Open the drain valve (**8**) and drain the fuel completely;
4. Close the drain valve (**8**) opened previously;
5. Close the vent valve (**4**).

Refilling of the fuel pre-filter with double switchable filter:

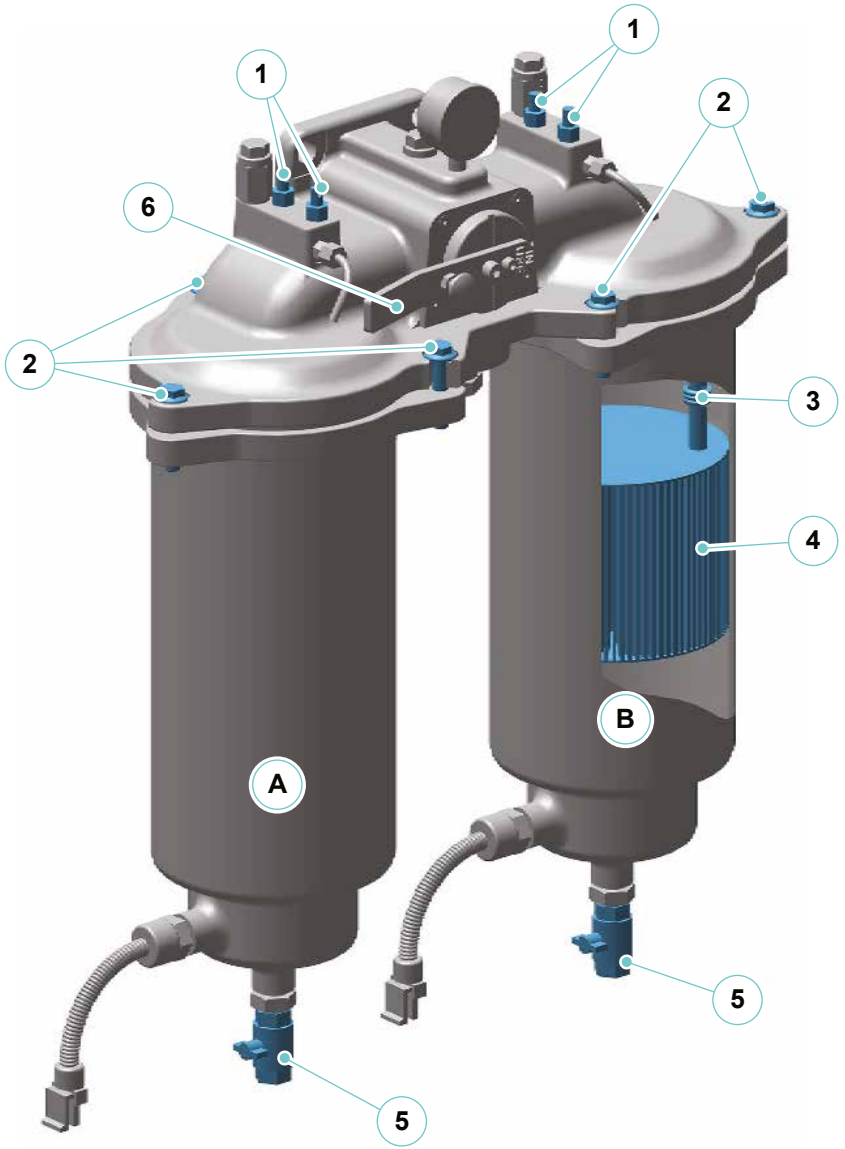
1. Turn OFF the engine making sure to prevent any unintentional ignition;
2. Connect the feed pump to the filling fitting (**5**) on the suction side of the filter;
3. Open the vent valve (**4**) and top up the fuel until fuel leaks from the vent pipe (**6**);
4. Close the vent valve (**4**);
5. Slightly turn the handle (7) (about 30°) and open the vent valve(s) (**4**), until fuel comes out of the vent pipe (**6**);
6. Close the vent valve (s) (**4**);
7. Turn the handle (**7**) to the deactivated drained filter position;
8. Check the differential pressure as follows:
   - At full load or at rated engine power, read the pressure on the indicator instrument (**1**);
   - If the differential pressure between the indicator pointer (**2**) and the pressure indicator (**3**) is greater than or equal to 0.3 bar, wash the filter cartridge in service.
9. If rinsing has not resulted in an improvement in differential pressure, replace the filter cartridge.





Replacing the fuel pre-filter cartridge with a switchable double filter:

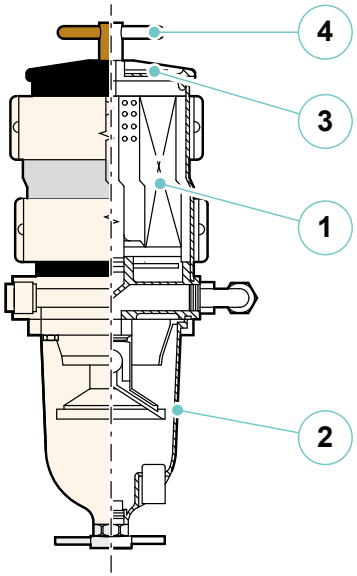
1. Disable the filter to be drained (**A**) or (**B**) by turning the handle (**6**) towards the desired filter;
2. Loosen the vent valve (**1**) of the filter to be replaced;
3. Open the drain valve (**5**) and completely drain the fuel, water and impurities contained therein;
4. Close the drain valve (**5**);
5. Unscrew and remove the filter retaining screws (**2**);
6. Remove the elastic seal (**3**) and the filter cartridge (**4**);
7. Insert the new filter cartridge (4) and the elastic seal (**3**);
8. Refill the filter with clean fuel;
9. Replace the seal of the filter cover;
10. Place the filter under the cover and tighten the sealing screws (**2**);
11. Connect the disconnected filter;
12. Tighten the vent valve (**1**) after the fuel leaks;
13. Record the differential pressure indicator instrument as indicated above.



Water / fuel separator filters for generators:

Maintenance and water drain from collection tank

Bleed frequency or the replacement of the filter element **(1)** are determined by the contamination level of the fuel.



Check or drain the water collection tank **(2)** daily.

The collection tank must be drained before containments reach the engine.

- After having placed a capacious collection container underneath it, open the drain to discharge containments.
- Remove the cover **(3)** and fill with clean fuel.
- Close the cover and tighten the T-handle **(4)** firmly by hand.

Replacement of filter element

Replace the element according to the schedule recommended by the manufacturer or if a lack of power is noticed.
Power loss indicates that the element is indeed clogged.
Other elements like a too full tank or excessively contaminated fuel can also clog the filter:

- Close the seacock.
- Remove the cover.
- Remove the element by holding the handle and by pulling lightly forward with a twisting movement.
- Insert a new filter having the same filtering features of the one replaced.
- Check and, if necessary, replace the filter cover gasket. Apply a layer of clean fuel or engine oil on the seal before reinstalling it, insert the new element with a slow twisting movement downwards.
- Fill with clean fuel, then replace the cover. Tighten the T-handle manually and reopen the valve.
- Start the engine and ensure there are no leaks. Repair any leaks with engine shut off.

Troubleshooting procedure

The main reason for a poor start-up or lack of power is the result of a clogged filter or of an air leak in the fuel system.

If the device does not prime or does not hold the idle run, or air bubbles are visible through the check glass, first of all check the cover by means of the T-handle and vent it, if it had not been closed properly.

Then check all connections and lines and make sure that no fuel line is clogged with contaminants.

If the problem persists and the filter element is new, contact RIVA After Sales & Service Department.

STEERING SYSTEMS

CHAPTER 8

8.1 STEERING SYSTEM

The power assisted steering system has been designed to make steering easier during navigation and to improve the safety conditions of the system.

The yacht's wheels are connected to a mechatronic system that constantly acquires their real position. In the engine room, an electronically connected electro-hydraulic control unit drives the rudders by means of hydraulic cylinders.

The control unit is equipped with an automatic filling system which enables the oil to be poured directly into the tank of the control unit itself.

To activate a helm station's wheel, make sure no one is using one of the other wheels and steer with the desired one. The system will automatically activate it, deactivating the other station.

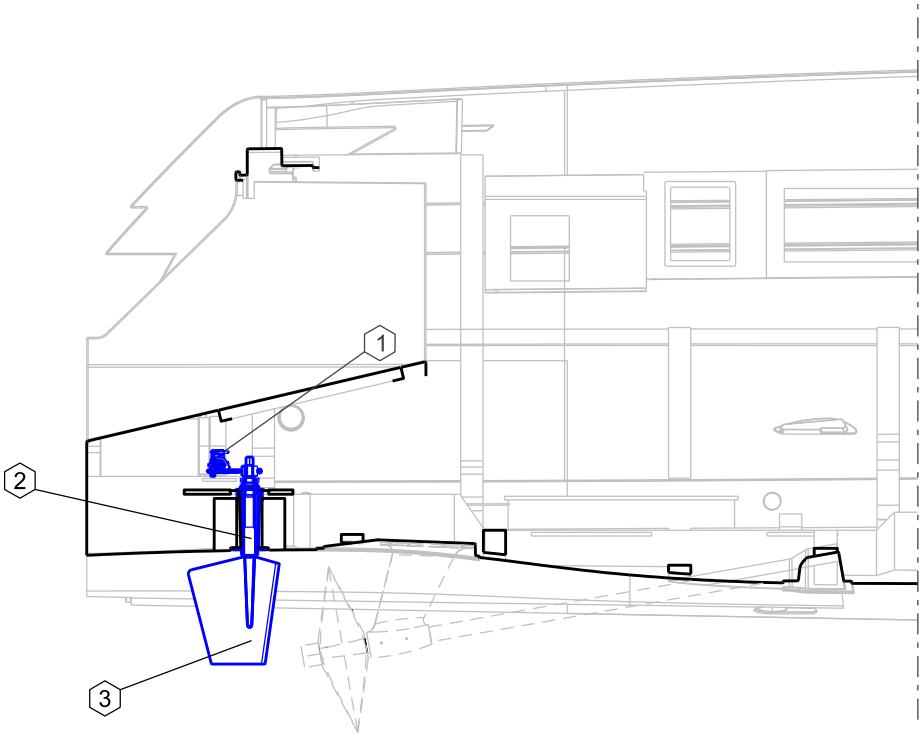
When the autopilot is activated, the system automatically sets itself to the by-pass state, deactivating all its signals and enabling the autopilot to control the rudders.

NOTE

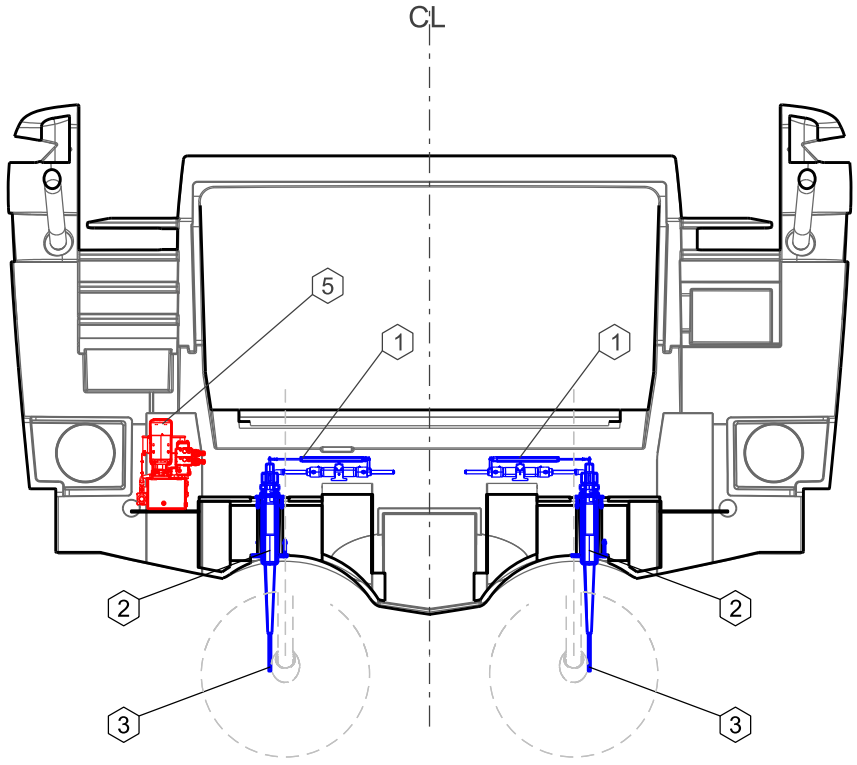
For further information on use and maintenance, please refer to the manufacturer's manual.

Steering system diagram

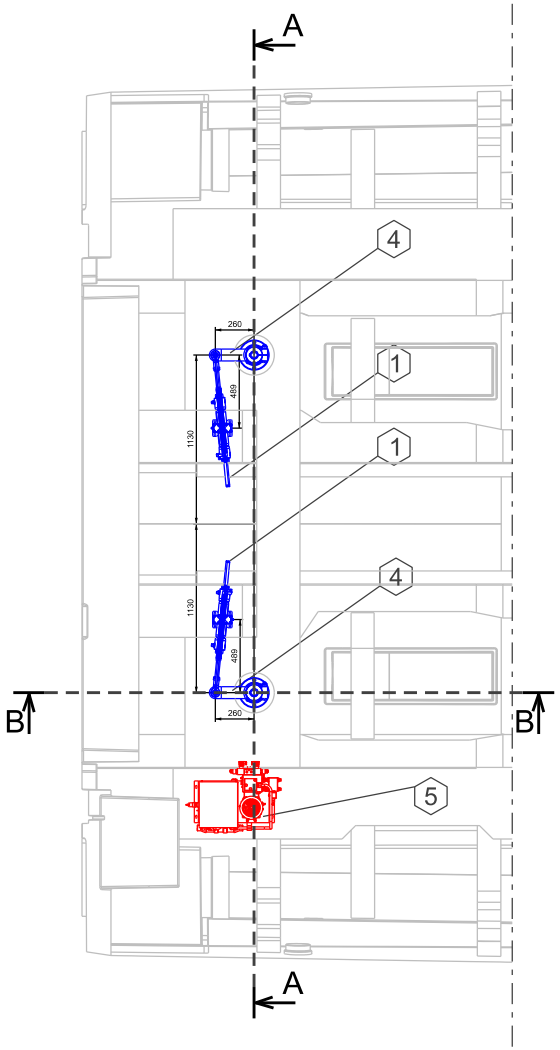
SEZIONE LONGITUDINALE @ BUTTOCK 1130 SN
guardando verso SN



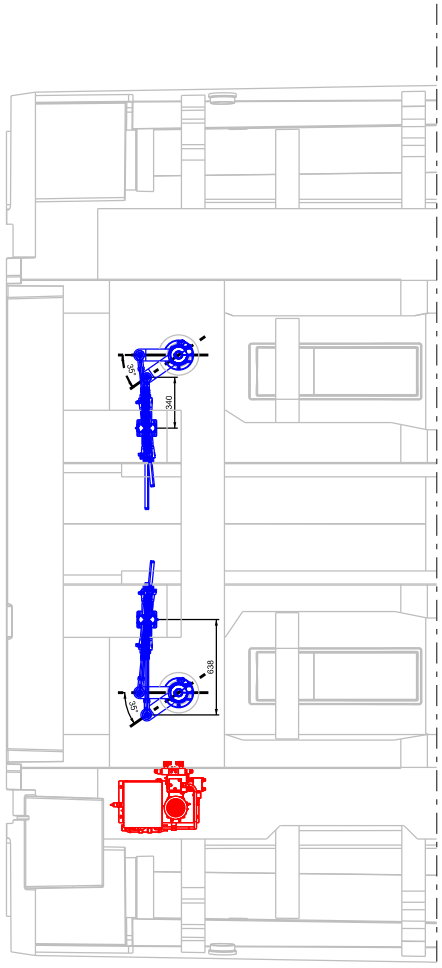
SEZIONE TRASVERSALE @ 25728
guardando verso poppa



VISTA IN PIANTA



VIRATA DX



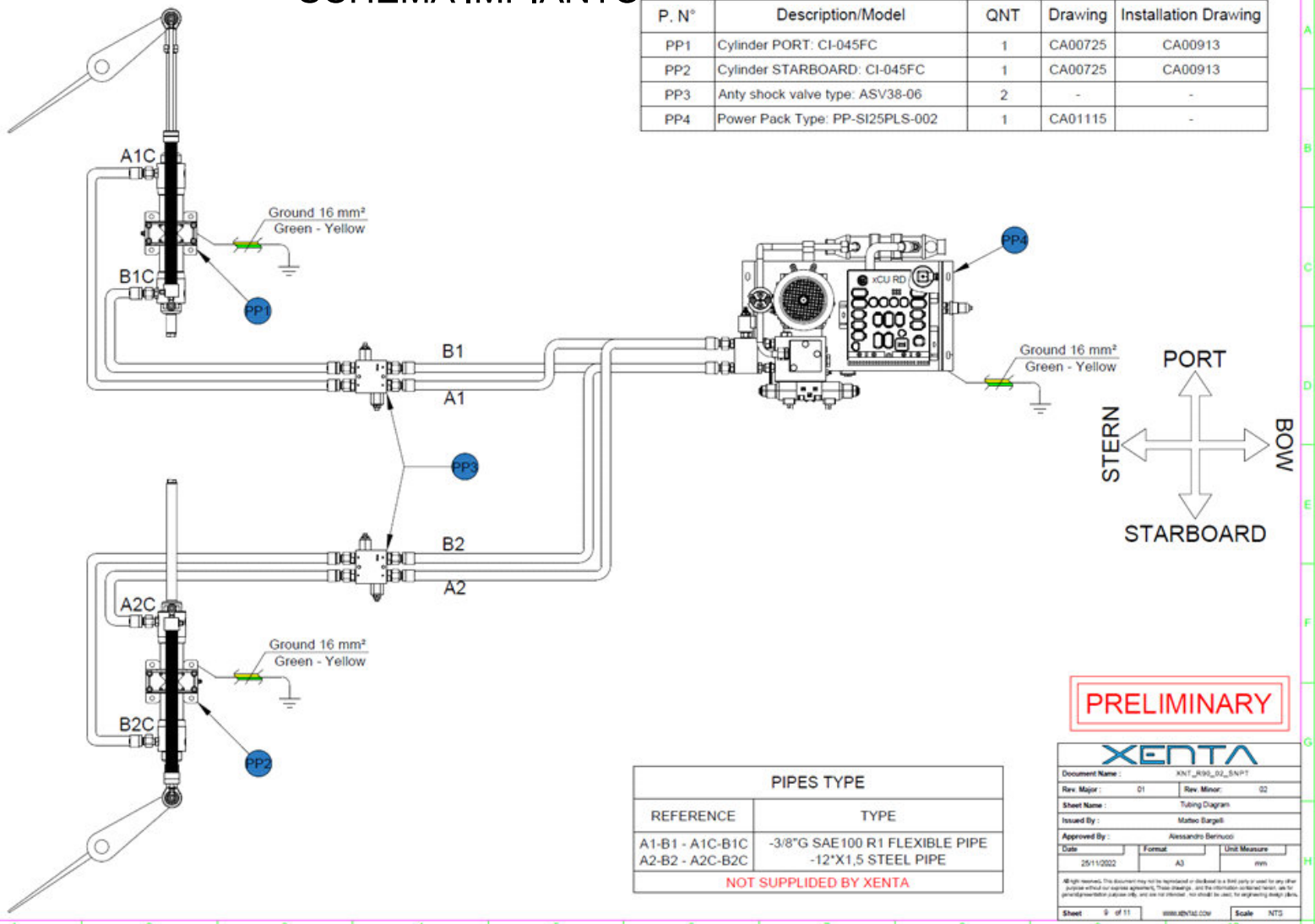
VIRATA SX



POS.	CODICE	DESCRIZIONE	QTA'
1	489264	STEERING HYDR ACTUATOR XENTA CI-045F R90	1
2	463303	LOSCA TIMONE D 85 H 505 R90F mod	2
3	396051	TIMONE D 85 AISI316L A=38 DMQ R90F	2
4	463036	BARRA TIMONE ASSIEME SINGOLA D. 54 F860	2
5	515378	TIMON XENTA POWER PACK PP-SI25PLS002 R82	1

SCHEMA IMPIANTO

P. N°	Description/Model	QNT	Drawing	Installation Drawing
PP1	Cylinder PORT: CI-045FC	1	CA00725	CA00913
PP2	Cylinder STARBOARD: CI-045FC	1	CA00725	CA00913
PP3	Anty shock valve type: ASV38-06	2	-	-
PP4	Power Pack Type: PP-SI25PLS-002	1	CA01115	-



PIPES TYPE	
REFERENCE	TYPE
A1-B1 - A1C-B1C A2-B2 - A2C-B2C	-3/8"G SAE100 R1 FLEXIBLE PIPE -12*X1,5 STEEL PIPE
NOT SUPPLIDED BY XENTA	

PRELIMINARY

XENTA

Document Name :	XNT_R90_02_SNPT		
Rev. Major : 01	Rev. Minor: 02		
Sheet Name :	Tubing Diagram		
Issued By :	Matteo Bargelli		
Approved By :	Alessandro Bernucci		
Date	Format	Unit Measure	
25/11/2022	A3	mm	
Sheet 9 of 11	www.XENTA3.com	Scale NTS	

All rights reserved. This document may not be reproduced or disclosed to a third party or used for any other purpose without our express agreement. These drawings, and the information contained herein, are for general presentation purposes only, and are not intended, nor should be used, for engineering design.

8.2 INTERCEPTORS SYSTEM

The yacht is equipped with two interceptors, which can be controlled from the helm station. Each interceptor is driven by an electric motor.

They allow you to vary both the yacht's longitudinal and transverse trim during navigation.

Familiarisation with the use of interceptors is important, as their correct use will improve performance and comfort.
In principle, lowering and raising the interceptors will lower and raise the bow of the yacht respectively.

Correct positioning of the interceptors results in a stable and ideal setup which can increase speed while reducing consumption.

In particular navigation conditions, when, due to lateral forces of the sea, sea currents and wind, the yacht assumes an inclined attitude, to restore normal conditions while maintaining the course, it is necessary to act on the wheel of the rudder or with the offset use of the interceptors.

WARNING
Interceptor are normally used during cruising, both to make it more comfortable and to achieve better performance of the yacht, according to the sea and navigation condition, and the yacht loading.

CAUTION
When using reverse, set the interceptors fully up otherwise they may be damaged.

A signal sent from the bridge to the electronic control unit located in the engine room activates the interceptor drive motor. The motor rotates in the chosen direction and determines the interceptor inclination.
Pressing the button on the other position determines the opposite movement of the motor. Each button controls the movement of a stabilizer.
The monitoring system provides a reading of the trim adjust inclination, measured by means of a position transducer fitted to each interceptor.
Some suggestions will be useful in familiarizing yourself with the interceptors:

- After the hull has moved to the glide position, adjust the position of the interceptors to find the angle most favourable to navigation;
- At high speed, it is advisable not to operate the interceptors simultaneously, one up and the other down, but to perform the operations separately to avoid sudden skids; instead, it is possible to manoeuvre them simultaneously in the same direction;
- In calm seas, the best position for interceptors is to allow maximum speed with less yacht drag;
- In rough "bow" sea, the "down" interceptors will allow you to "beat less" and cruise with more comfort even if your speed will be reduced;
- In rough seas "on the stern", the interceptors "up" will tend to raise the bow thus avoiding unpleasant longitudinal trim changes;
- With lateral wave motion or asymmetrical lateral load, the best stability is achieved with staggered interceptors;
- If the yacht is not in motion, place the interceptors all on.

CAUTION
The manual use of Interceptor ("trim assist" function disabled or override), running at high speed, requires special attention and it is normally not recommended.

CAUTION

The interceptors, as well as transmission systems, can suddenly change the yacht direction if operated too rapidly or with high angles of incidence, especially with increasing yacht speed and during maneuvers (as they are usually sized and optimized for intermediate speed). It is therefore necessary to get well familiar with their use and related devices reactions in any condition and especially at high speeds.

CAUTION

As is good practice on a yacht, always make sure that passengers are seated before performing large adjustment manoeuvres on the interceptors, especially if you are navigating at high speed.

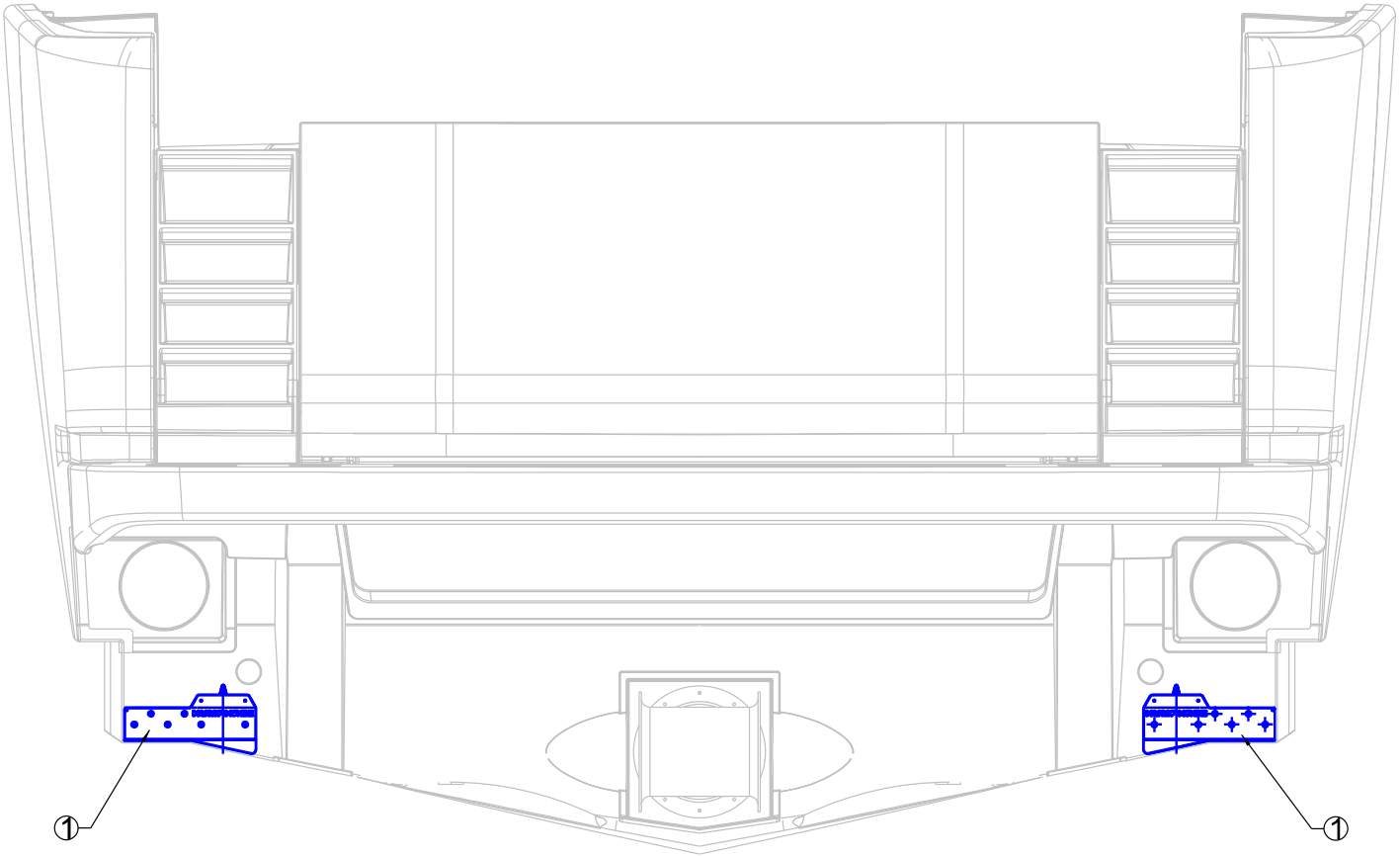
CAUTION

Periodically clean interceptor to remove any corrosion that may affect their efficiency. To reduce the risk of corrosion, raise the interceptors when leaving port, anchoring, or when the yacht is docked.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

Interceptors system diagram



Rif.	Descrizione	Codice
1	INTERCEPTOR HUMPHREE HA600 KIT R90 V.01	416709

8.3 GYROSCOPIC STABILIZERS

To reduce the annoying effect of the oscillatory motion of the roll, determined by the wave motion, a system has been installed consisting of two gyroscopic stabilizers able to generate a rotation equal and opposite to that of the waves. In fact, the system combines a significant reduction in roll both when the yacht is stationary and during navigation with low energy consumption that does not compromise the quality of life on board and leave the performance unchanged.

Thanks to these very important features, the device can be kept active even during the night to maintain greater comfort damping almost completely the annoying motion of roll.

Gyroscopic stabilizers are based on a known physical principle: a gyroscope tends to keep its axis of rotation vertical, parallel to the acceleration of gravity.

When an external cause intervenes to vary its position, such as the roll determined by the wave motion, it opposes with a rotation on an axis perpendicular to its own rotation axis and to that of the cause of the heeling. In the case of gyroscopic stabilizers, this operation generated (roll) is attenuated by the presence of two dampers specially calibrated according to the characteristics of each yacht.

The system consists of two gyroscopic stabilizers positioned centrally in the engine room under the garage, controlled by the yacht's monitoring system display.

CAUTION

Have the planned PERIODIC INSPECTION carried out by specialised personnel every two years.
Contact the RIVA After Sales & Service Department for further information.

WARNING

During operation, the gyroscopic stabilizers, the vibration dampers and its housing overheat. Touching the gyroscopic stabilizers may cause burns during operation.

DANGER

The gyroscopic stabilizers housing is not a solid component. If you lay objects or sit on the gyroscopic stabilizers, the gyroscopic stabilizers may be damaged.

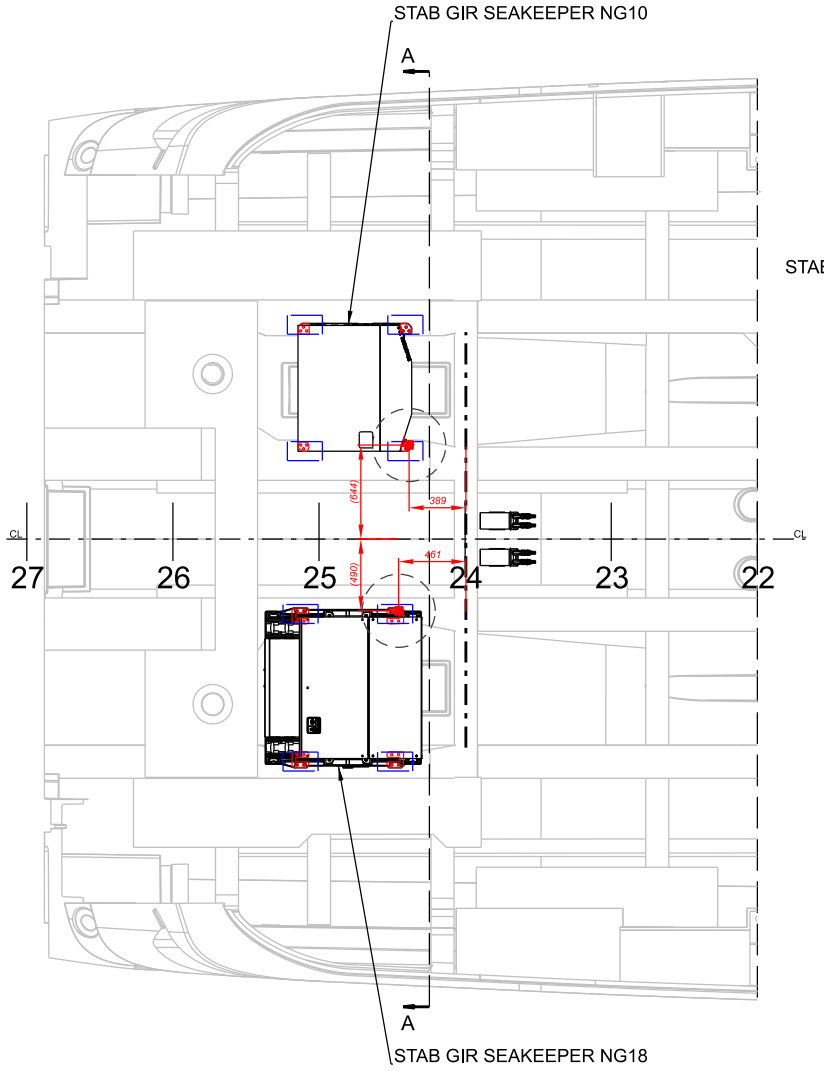
CAUTION

The gyroscopic stabilizers is not watertight. If it is submerged in sea water it could be damaged.

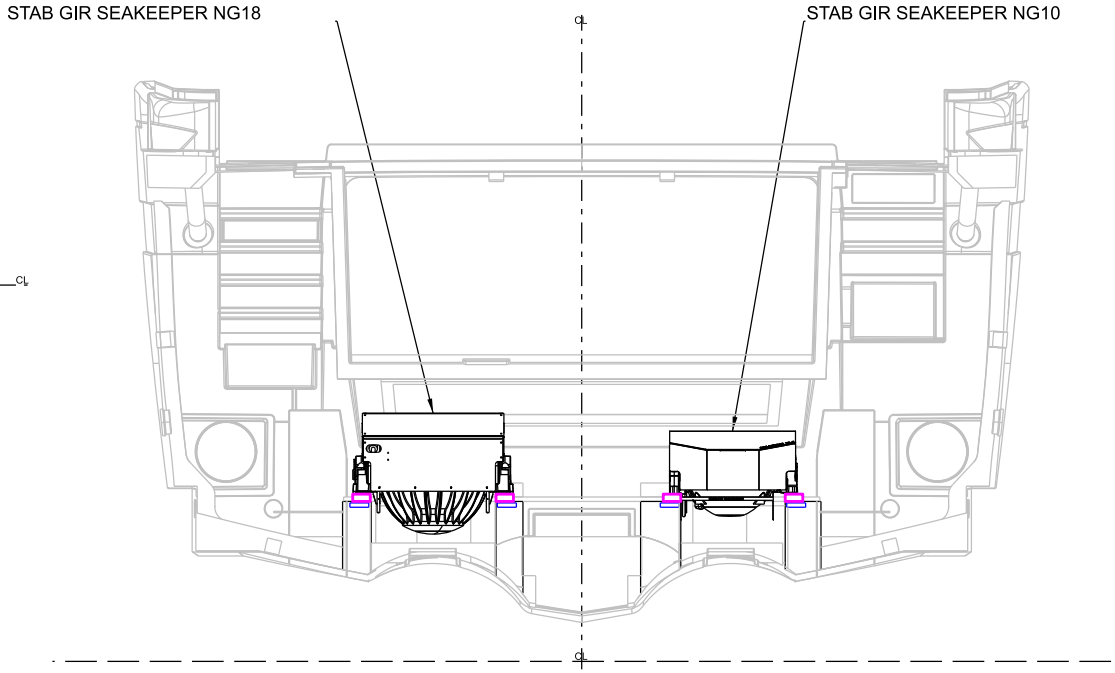
NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

Gyroscopic stabilizers system diagram



SEZIONE TRASVERSALE A-A
x= 24250
guardando verso poppa



8.4 STABILIZING FINS SYSTEM AND MANOEUVRING THRUSTERS

8.4.1 Stabilizing fins

The fins are wing profiles in all respects and they exploit the speed of the water they meet to create lift on the upper or lower surface, according to the position of the fins with respect to their shaft.

According to their check logic, by means of hydraulic actuators, they move in a way which gives an immediate response to the rolling action.
The higher the hull speed, the higher will be the lift created by the fins which will have almost no influence with the yacht stationary.

When leaving the harbour, simply activate the system and this one in a very independent way, monitors the yacht's trim permanently and efficiently, thanks to the stabilizing fins fitted to the hull.

The system adjusts its operation according to speed, sea conditions and wave direction, and of course to the skidding data received from the sensors.

The stabilizing fins of the system are equipped with very sturdy electromechanical mechanisms, able to ensure an effective duration in the time.

In the helm station there is a control panel equipped with a liquid crystal screen on which you can read all the data detected by the sensors, the status of the fins and the system, as well as any alarms in the event of the need for intervention.

This yacht is also provided with a Zero Speed system, which enables the operation of the stabilizing fins even with the engines turned off.

Your yacht can be equipped with a stabiliser fin rope cutter system.

CAUTION

The supply of the stabilizers must always be kept on the main electrical panel, besides if the stabilizing fins are not in use, they must always be kept in central position (see display in the main helm station).



DANGER

Stabilizing fins in Zero Speed mode must not be activated when people are swimming around the yacht.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

8.4.2 Manoeuvring thrusters

The thruster is a very simple and robust accessory, but requires some attention:

- The thruster should be used at very low speed, or without rudder; at higher speed, more correct reactions are obtained with the staggered use of the inverters;
- Whenever there is a chance to lift the yacht, check the condition of each thruster, the protective anode and the fastening system.

MAINTENANCE

At least once a week check that it is working properly.
At least once every 3 months check the condition of the protective sacrificial anode plates and replace if necessary.
Add oil when necessary.

Using the thruster

After checking that the engine battery breaker is in the ON position, that the battery breaker is extracted (ON) and activating the magneto-thermal switch on the general electrical panel, enable the relative controls through the monitoring system and press the “ON” button on the joystick control panel, from which you intend to manoeuvre (helm station, fly or third station).

Hydraulic thruster motors are controlled via control joysticks.

WARNING

When you are finished using the thruster, press the OFF button on the control panel.

WARNING

On the synoptic panel on the helm station there is an indicator light which, if lit, indicates that the bow thruster is active.

CAUTION

For the duration of continuous use of the operating thruster, refer to the operating manual supplied by the Manufacturer.

CAUTION

Always switch OFF the control when the thruster is not in use.

DANGER

During the bow thruster operation, pay attention to possible swimmers or small yachts which may be close to the thruster openings.
Do not test the thruster when the yacht is outside water, unless you are sure the workers are at safety distance from the thruster tunnel.

DANGER

Always stop the thruster before undertaking inspection or maintenance, ensuring that it cannot be activated.

CAUTION

Never operate the thruster for more than one second when the yacht is being pulled dry, as this may seriously damage the system.

CAUTION

If a fuse needs to be replaced on the system, have a competent naval electrician work on the system.
Be sure to read the manufacturer's technical operating documentation beforehand or contact the RIVA After Sales & Service Department.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

8.4.3 Hydraulic system

It is an independent system that works by means of a hydraulic pump, which sucks oil from a special tank and then conveys it to a distributor.

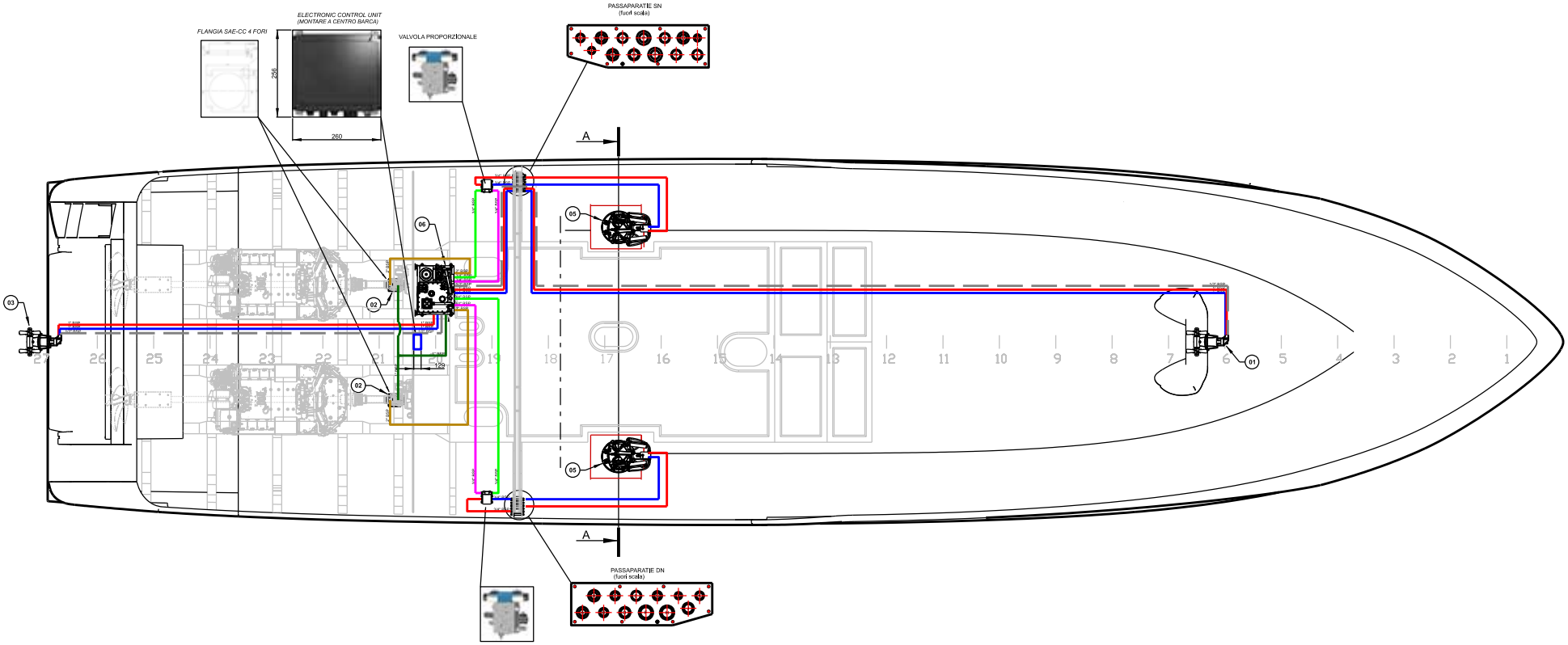
Two lines branch out from the distributor: one that feeds the bow thruster and another aft thruster. In both lines the oil supplies a further block of solenoid valves, which drives the hydraulic motor on which the thruster is mounted.

The hydraulic tank is connected to a heat exchanger that uses sea water to cool the oil so as to keep its temperature constant, a pressure gauge to keep the pressure under control and a visual level indicator.

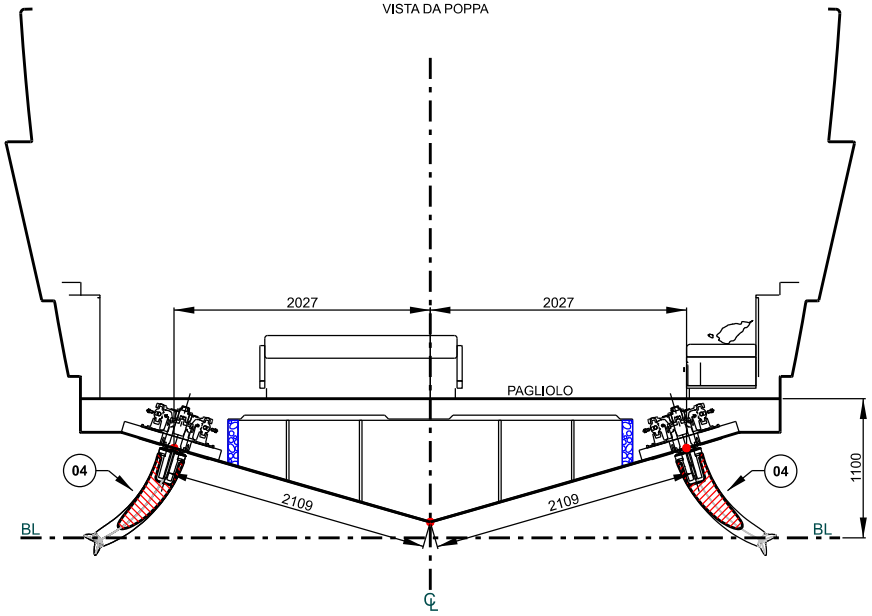
NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

Hydraulic system diagram



SEZ. A-A X=16755
VISTA DA POPPA



Comp.	Descrizione	Q.tà	Std/Opt	Codice
01	ELICA IDRAULICA SH550 BA40	1	Std	...
02	POMPA 130CCM/R -LS SAE CC4	2	Std	...
03	ELICA IDRAULICA SH420 BA32	1	Opt	...
04	PINNE STABILIZZATRICI KIT VECTOR VF1300 1,35SQM R100C	1	Std	...
05	ATTUATORE PER PINNE SPS92 KIT R100C	1	Std	...
06	UNITA' RACK SLEIPNER	1	Std	...

LEGENDA	
	PTO SUCTION LINE
	PTO TURN LINE
	STABILIZER PRESSURE LINE
	STABILIZER TURN LINE
	A LINE
	B LINE
	DRAINAGE LINE

AIR CONDITIONING AND VENTILATION

CHAPTER 9

9.1 AIR CONDITIONING SYSTEM

The air conditioning system consists of two conditioning unit with heat pump equipped with inner heat exchanger that cools (or heats in winter) the fresh water of a closed circuit. This unit is used to cool water used as a thermal exchange with the air of the rooms to be cooled down.
In winter the inversion of the cooling circuit (by heat pump) allows the water heating instead of the cooling, in this way the rooms get warmed up.
The fresh water, by means of a circulation pump, delivers cooled (or heated) water to the fan-coils until it reaches the set temperature.

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

The whole system is supplied with 230V AC, and driven by a magnetothermal switch located on the main electrical panel of the crew area. The compressors set are located in the engine systems on the port side.

Each conditioned room is equipped with self-adjusting control panel.

CAUTION
Two magneto-thermal switches for AIR CONDITIONING and FAN COIL BLOWERS are installed on the 230V electrical panel, in the “Sector A” section, both switches must be set to ON, in order to operate the air conditioning system correctly.

Before starting the system, check the sea-water and circulation pumps for free rotation, by rotating the cooling fan of the electric motor with a screwdriver.
Rotation should be free, in case the pump is locked, do not start, but eliminate troubles first (dirt, rust, scraps, etc..).
Check that sea-water intake and outlet valves are both open.
Check the correct rotation of sea water and treated water pumps, by looking at the arrow that is marked on the pump body.
It is advisable to check the power absorbed by the pumps and to compare it with the plate data.
The unit will work normally if the circulation of sea water and treated water is correct. After a few seconds the compressor will start.

Its operation will stop when reaching the temperature of chilled water 7 to 8°C. The temperature of the chilled water can be checked by suitable thermometers placed on the unit.
The cooled water temperature can be set by means of the thermostat on the unit’s control panel. The chilled water circulation pump will circulate water to the different fan-coils.
Fancoils will exchange heat with surrounding ambient, the return water will be heated and the thermostat will automatically start the compressor, in a differential range of 3 to 4°C, thus keeping the chilled water temperature in the range from 7 to 11°C.

CAUTION

Clean the strainer of the sea cock according to the time interval of the system use and to the pollution conditions of the sucked waters (seaweeds, mucilage's, etc..).

CAUTION

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

CAUTION

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

CAUTION

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

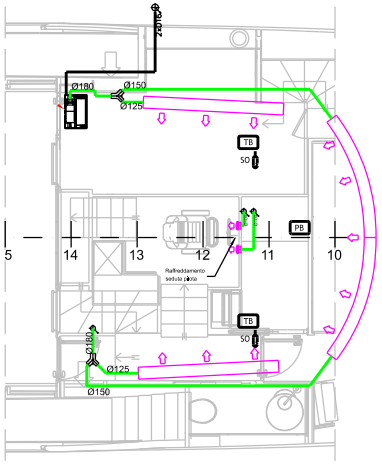
CAUTION

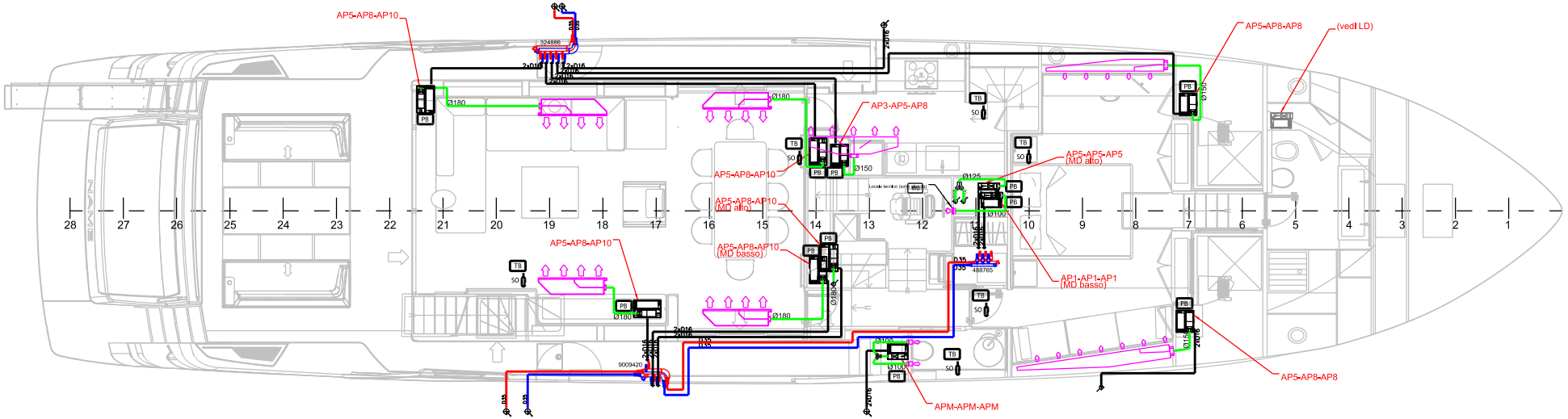
Never clog the temperature sensors located in each air conditioned room; as their clogging could impair the correct operation of the system.

NOTE

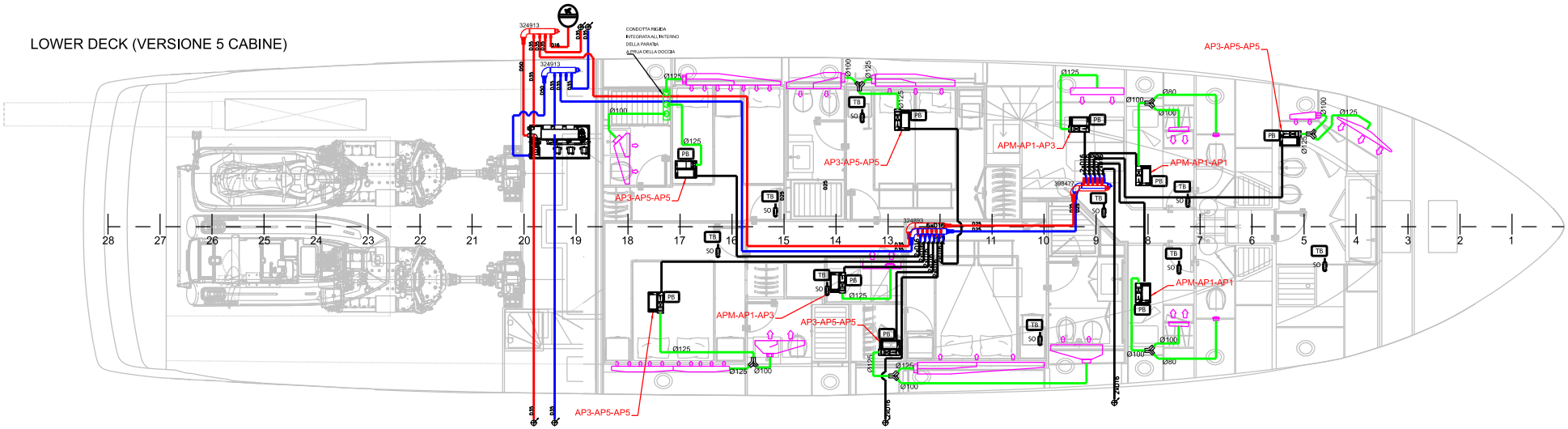
For further information on use and maintenance, please refer to the manufacturer's manual.

Air conditioning system diagram

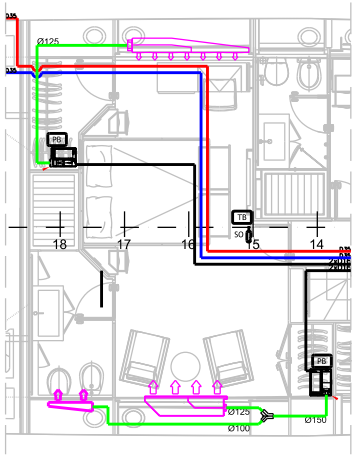




LOWER DECK (VERSIONE 5 CABINE)



LOWER DECK (VARIAZIONE PER VERSIONE 4 CABINE)



SO	Sonda temperatura *Temperature probe*
CB	Pannello Chiller PCWM *Chiller PCWM control panel*
TB	Pannello regolazione ambiente *Accomodation control panel*
PB	Scheda di potenza FCU IDEA *FCU IDEA power board*
	al ponte inferiore
	al ponte superiore
	Mandata fan coil
	Aspirazione fan coil

9.1.1 Refrigerating unit control panel

The control panels of the cooling system located in the system room have the following functions:

- **Alarm indicator**
  When pressed, the button shows active alarms on the display.
- **Programme mode**
  Press to access the menu.
- **Press to exit**
  Press to exit the menu.
- **Scroll up**
  Tap to scroll up.
- **Send**
  Press to select and confirm the highlighted option.
- **Scroll down**
  Tap to scroll down.
- **Display**

At first start the chiller unit will operate according to the parameters set.

CAUTION
It is strongly recommended NOT TO CHANGE the factory setting. This is possible only in exceptional cases and with the help of RIVA After Sales & Service department.

CAUTION
The signal of any alarm implies a failure in the operation of the system. INVESTIGATE and ELIMINATE THE REASON FOR THE FAULTY OPERATION before restarting the system. Refer to the specific manual or refer to the RIVA After Sales & Service department.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

9.1.2 Fan-coil control panel

The 2.4” colour LCD touch screen display facilitates user interaction.

The background colour (white or black), the unit of measurement (°C/°F) and the brightness of the display can be easily set through the user menu.

The main screen contains the following elements:

- Room temperature detected
- Active operating mode:
  - Heating
  - Electric heating
  - Cooling
  - Only fan
- Fan speed. You can enter the operation selection menu by pressing on the symbol:
  - Auto
  - Manual
- Fan-coil shutdown
- Temperature reached. You can enter the operation selection menu by pressing on the symbol:
  - Cooling
  - Heating
  - Electric Heating
  - Ventilation only
- Temperature setting buttons
- Configuration button

NOTE

For further information on use and maintenance, please refer to the manufacturer’s manual.

9.1.3 Air conditioning system maintenance

No delivery of cool or warm air from fan-coils

Lack of treated water in pipes. Check if the pressure gauge operates at the minimum pressure of 10 m with idle system. In case the gauge reads 0, most probably there are air pockets in the circuit or water leaks. Stop the system and fill water through a cock so as to reach a pressure of 10-15 m. Bleed air by means of the relevant valves installed on the heat exchanger, the fan-coils and the manifolds, keep the bleed valve open. If the treated water flows regularly, and the outlet does not release warm or cold air, check if the fan turns and if the room thermostat is set to correct summer-winter position.

Fan-coils air setting

Each fan-coil allows setting three speeds and an automatic speed.
Select the required mode.

Room temperature setting

To obtain the desired room temperature, set the thermostat to +21, +22°C / +70, +72°F in winter cycle and to +24, +25°C / +75, +77°F in summer cycle. Refer to the instruction manual.

Temperature check of treated water in the fan-coils circuit

The treated water temperature check is performed through two digital control panels. The water temperature inside the fan-coil circuit may vary from 0 °C/32°F +60°C/+140°F and by exactly the water temperature in the fan-coil circuit.

For a good BTU/h performance, the thermometer should indicate +7 + 8 °C/+45, +46°F in summer and +45°C/+113°F in winter after 15-20 minutes of operation.
When the set temperature is reached, the compressor stops, while the treated water pump keeps running.
The compressor starts automatically when water temperature decreases by 3°C/37°F in winter cycle or increases by 3°C/37°F in summer cycle. In winter, if the sea water temperature drops below +10°C/50°F, the heating output of the unit is seriously affected.

Sea water circuit check and cleaning

Check the strainer located on sea water suction periodically, specially when the yacht is shored.
Never leave water in the system when the yacht is out of water.
At least once a year, it is important to have the system rinsed with fresh water for half an hour, to remove all sea water residues.

Fan-coil cleaning

At least once every six months clean the fan-coils sucking the dust trapped in the back screen. Disassemble the filter, clean it, disinfect it and reassemble it; if broken, replace it.

Winter cycle

The units can produce hot water for heating purposes, by using the heat pump, reverse cycle principle. Simply reverse the cycle and the machine will produce hot water at around 45°C/113°F.
The selector acts on the solenoid valves for cycle inversion. In winter, the heating capacity of the unit depends on the sea water temperature; efficiency diminishes as sea water temperature grows colder.

WARNING

Pay attention not to damage the airtight cooling circuit.

CAUTION

The topping-up of the chilling liquid must be carried out by skilled and qualified personnel, according to the indications of the Manufacturer.

CAUTION

The air inlets of the air conditioning system must always be free; their obstruction beyond involving the system performance, can also generate serious problems.

9.2 VENTILATION SYSTEM

9.2.1 Engine room ventilation system

The ventilation system of the engine room allows the necessary air recirculation for the operation of the propulsion systems and of the machinery installed on your yacht, so as to keep a safe temperature inside the engine room.
The ventilation system consists of two lateral air intakes, which let air enter in the room and prevent the penetration of sprinkled water and of two extractors, withdrawing the inside air and conveying it outside.
In case of emergency, the extractors can be stopped directly by activating the fire-fighting system in the stern cockpit.
In order to activate the air extractors, the magneto-thermal breakers located on the electrical panel of the system room powered at 24V must be activated.

The extractors may be activated in 3 ways:

1. Turning the bridge control panel keys to the ON position (delay in switching off after they have been returned to OFF).
2. With manual activation from the main electrical panel or from the monitoring station.
3. From the engine room thermostat which activates the extractors when the local temperature exceeds the pre-set threshold.

CAUTION

While the engines are running, the extractors must always be activated. It is suggested to keep them on for at least 30 minutes, after anchoring, to eliminate the residual heat.

CAUTION

Do not lay tools or clothing on the extractors or on the air inlets, because the emergency closing mechanism might get blocked.

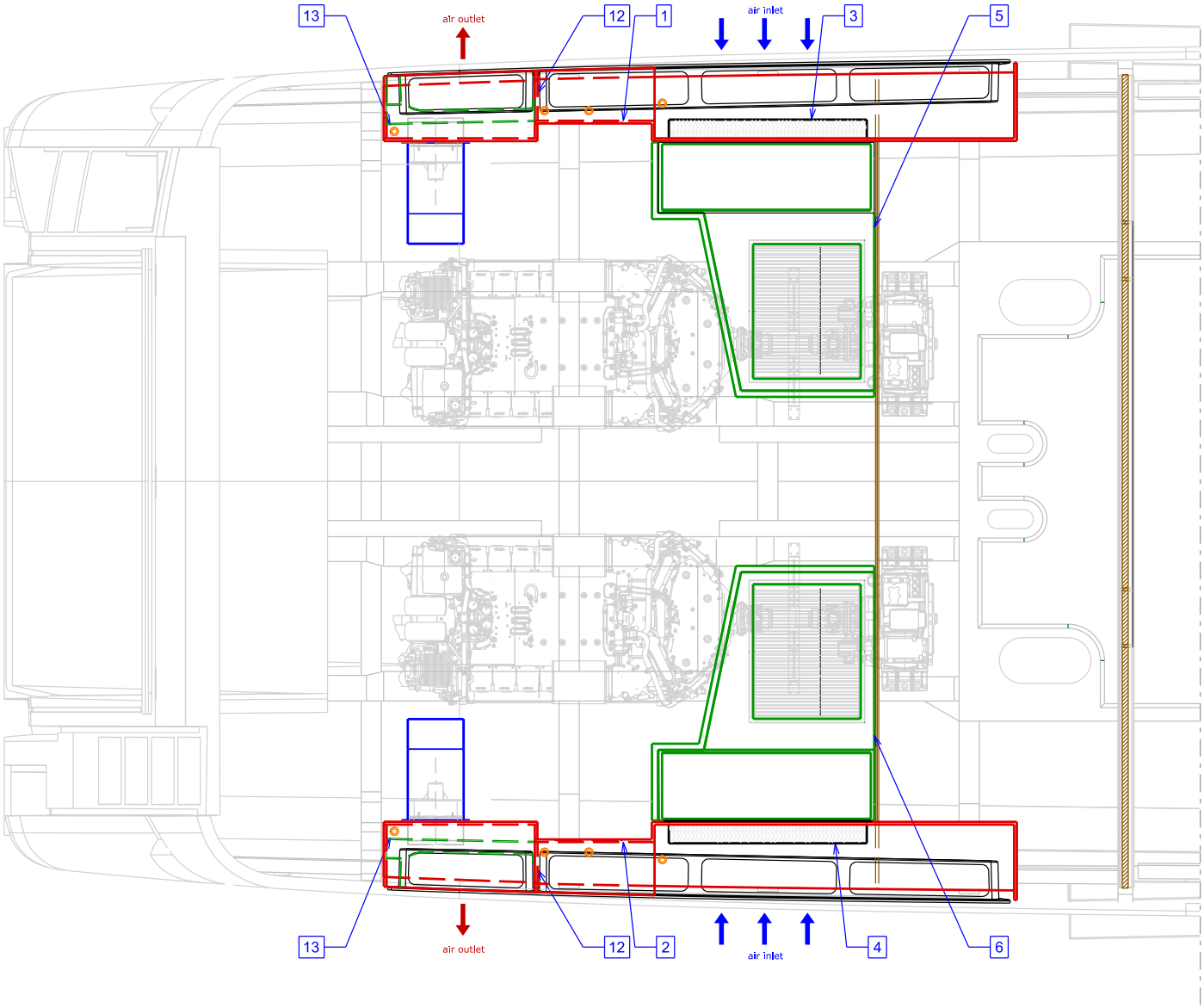
DANGER

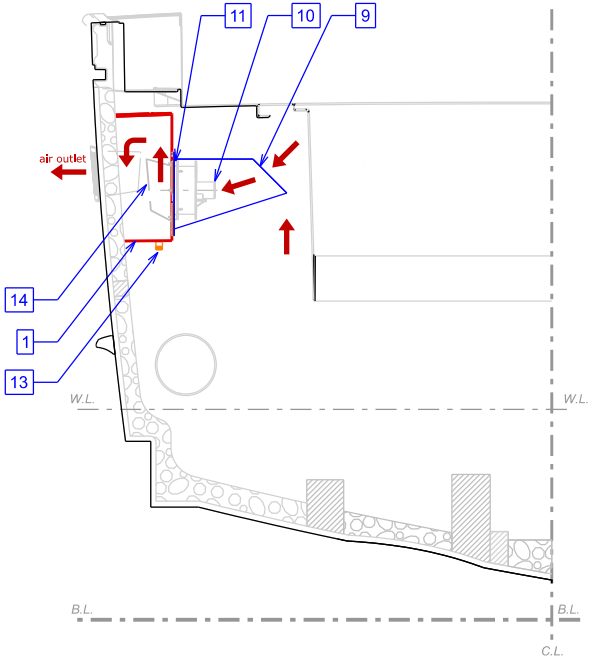
Carbon monoxide poisoning.
Fossil fuel combustion generates a high quantity of carbon monoxide. This gas is a colourless, odourless and highly toxic. When the engines and/or the generator are running, the yacht must be properly ventilated, in particular if underway at low speed, or when the exhaust fumes may blow back on board (e.g. when the yacht is shored or anchored or riding the anchor).

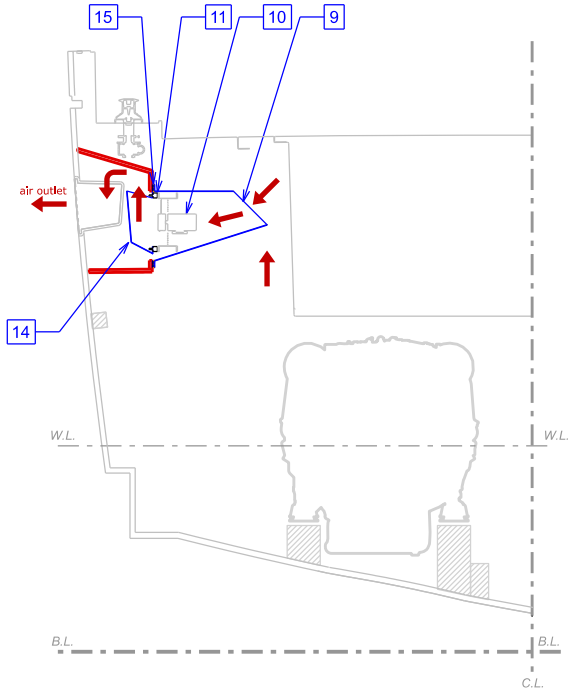
DANGER

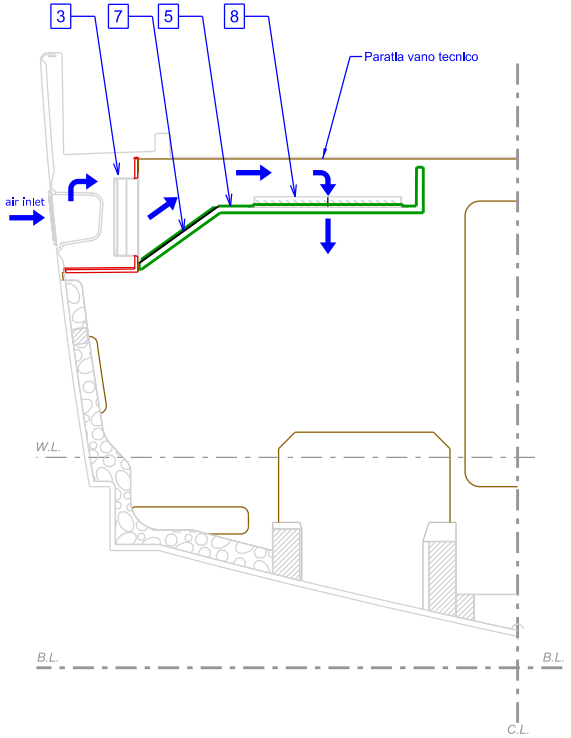
It is strictly forbidden to insert your hands or tools inside the fan when operating or when electrically connected. Before starting the fan, make sure that this one is protected against tampering, in compliance with the laws in force.

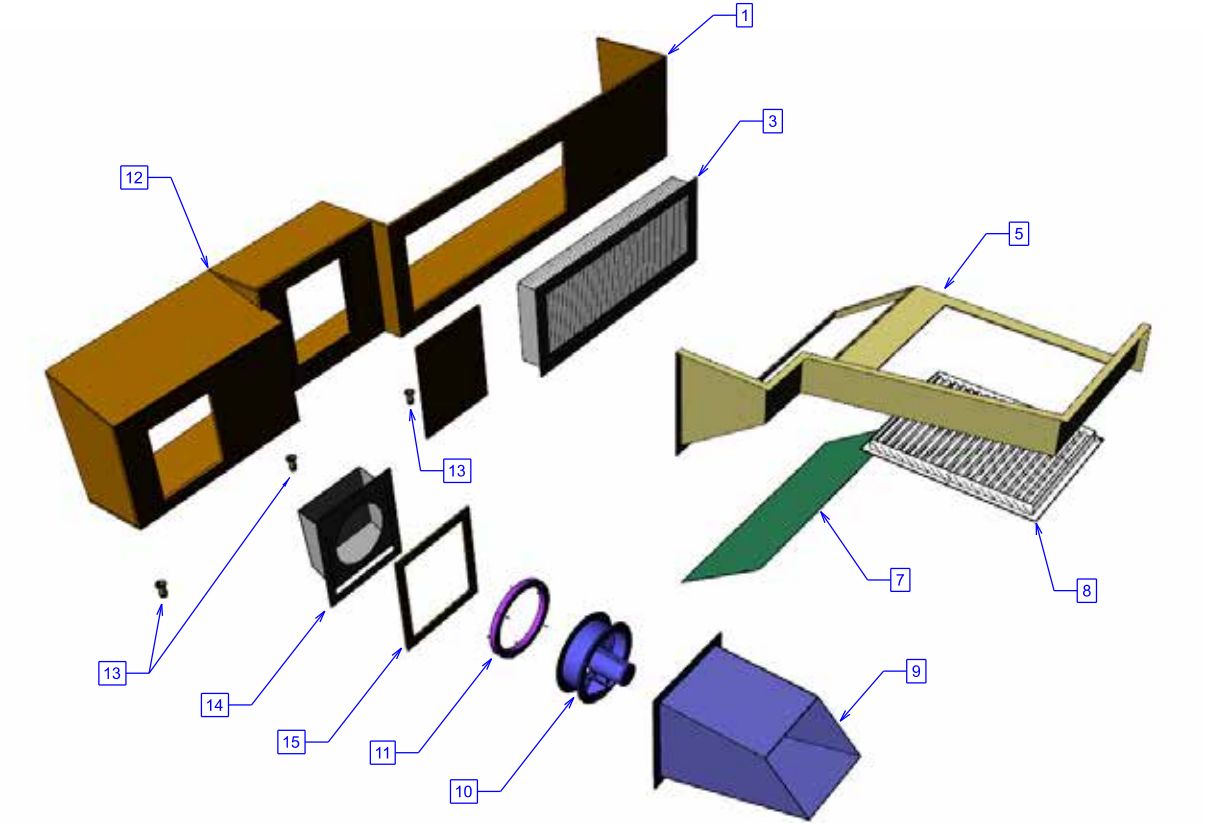
Engine room ventilation system diagram




11
10
9
air outlet
14
1
13
W.L.
W.L.
B.L.
B.L.
C.L.


15
11
10
9
air outlet
14
W.L.
W.L.
B.L.
B.L.
C.L.


3
7
5
8
Paratia vano tecnico
air inlet
W.L.
B.L.
B.L.
C.L.



Comp.	Descrizione	Std/Opt
1	Cassa ventilazione sx	Std
2	Cassa ventilazione dx	Std
3	Separatore acqua/aria	Std
4	Separatore acqua/aria	Std
5	Defence ingresso aria sx	Std
6	Defence ingresso aria dx	Std
7	Chiusura defence	Std
8	Griglia ingresso aria	Std
9	Defence estrazione aria	Std
10	Estrattore elicoidale	Std
11	Anello antivibrante	Std
12	Pannello divisorio	Std
13	Scarico a mare ottone 1"1/4 con portagomma	Std
14	Invito aria estrazione	Std
15	Distanziale	Std

9.2.2 Garage ventilation system

The yacht garage is fitted with a natural ventilation system designed to ensure proper air circulation.

The ventilation flow is structured as follows:

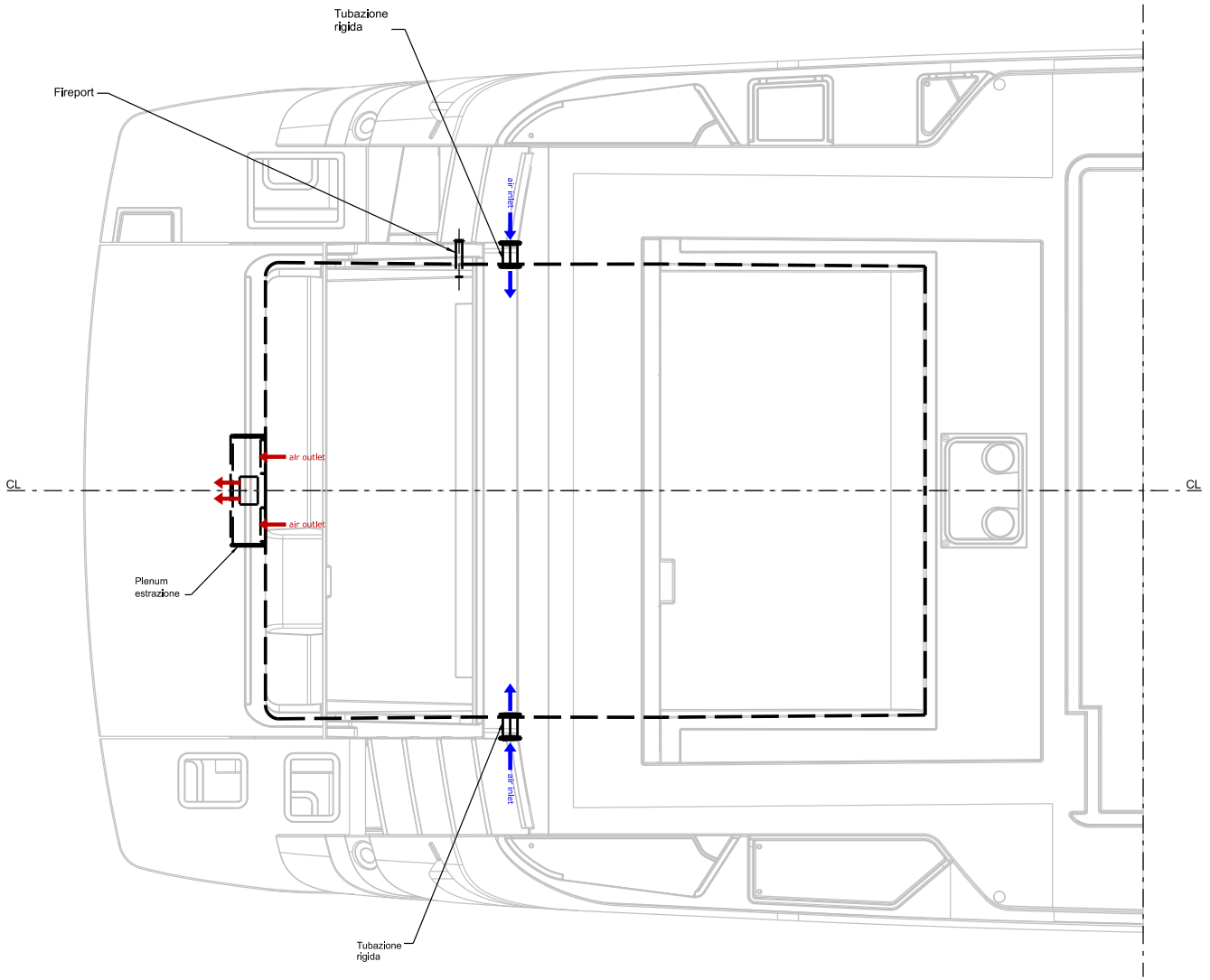
- **Intake (Air inlet):** Outside air flows into the room through two dedicated ducts, situated on both stairs leading down to the aft cockpit.
- **Extraction (Air outlet):** Air is extracted to the outside via an extraction plenum located at the rear of the garage.

CAUTION

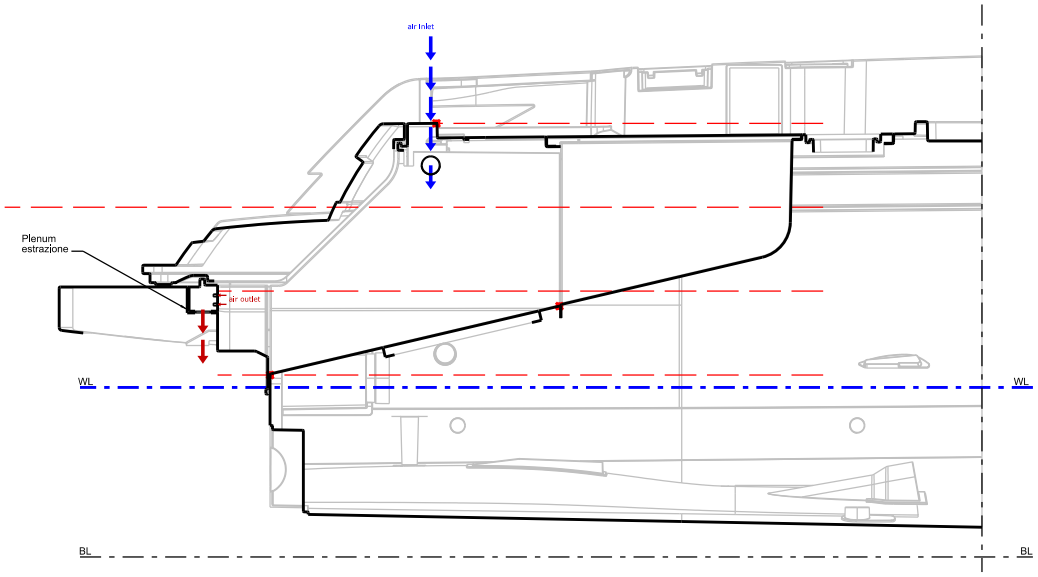
To ensure the system operates efficiently, make sure that the air intakes on the ladder in the cockpit and the extraction plenum are always free from obstructions or debris.

Garage ventilation system diagram

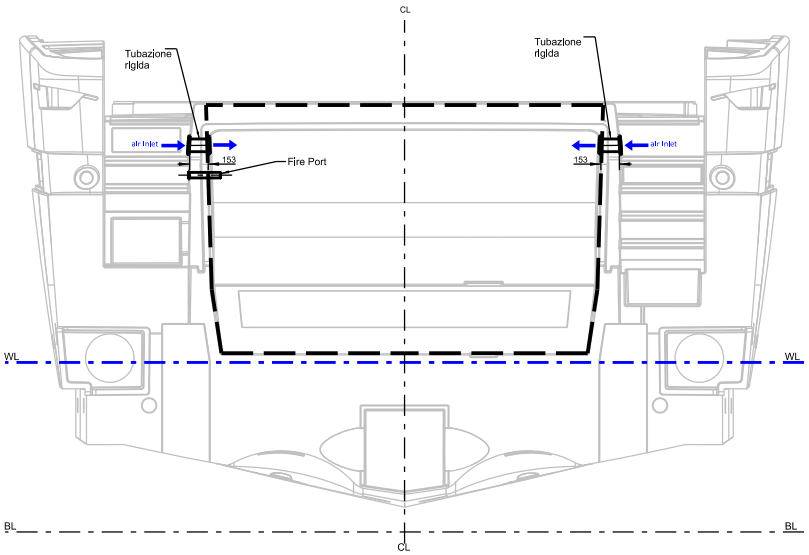
VISTA SUPERIORE
Top View



SEZIONE A-A
(griglie Dx e Sx in posizione simmetrica)



VISTA DA POPPA
Aft View



air inlet

air outlet

9.2.3 Indoor ventilation system

The interior of the yacht is provided with a forced ventilation system, composed of seven dedicated extractor fans.

NOTE
For the exact location of the components and extractors, please refer to the system diagram on the following pages of this manual.

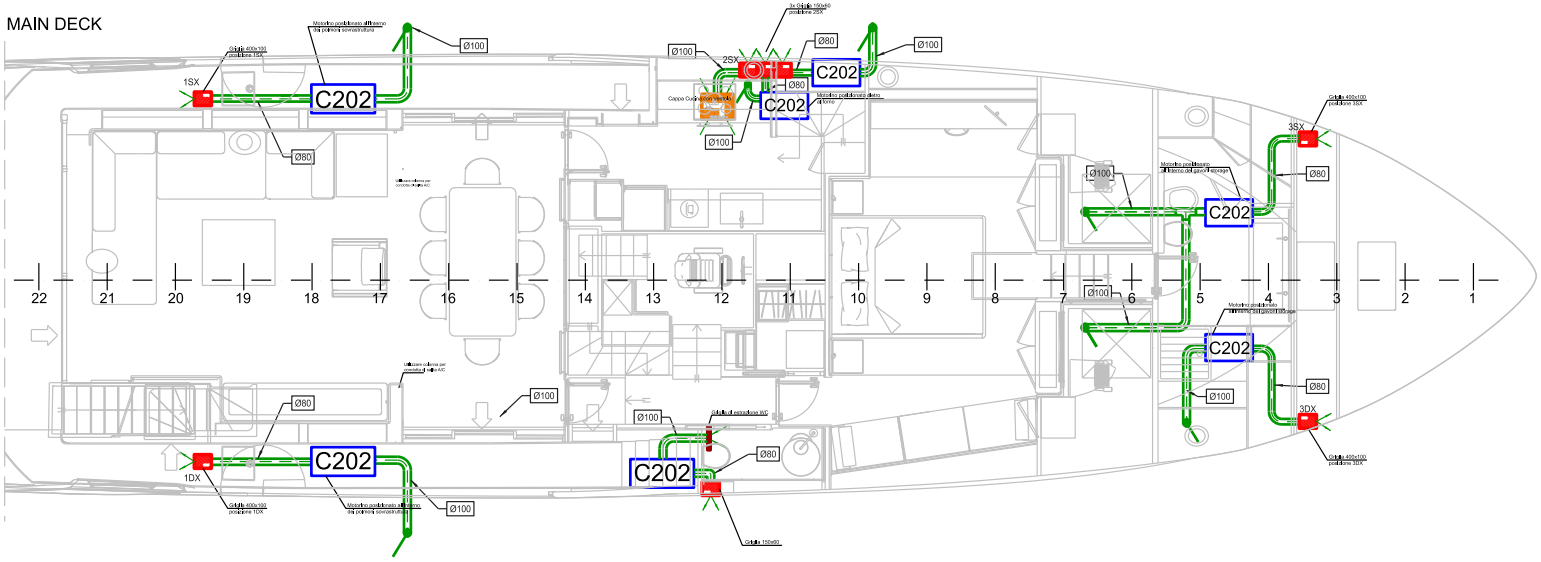
Exhaust air is extracted from the toilet facilities via special extraction grilles.

In the kitchen areas (main deck and crew quarters), dedicated extractor hoods fitted with electric fans are installed.

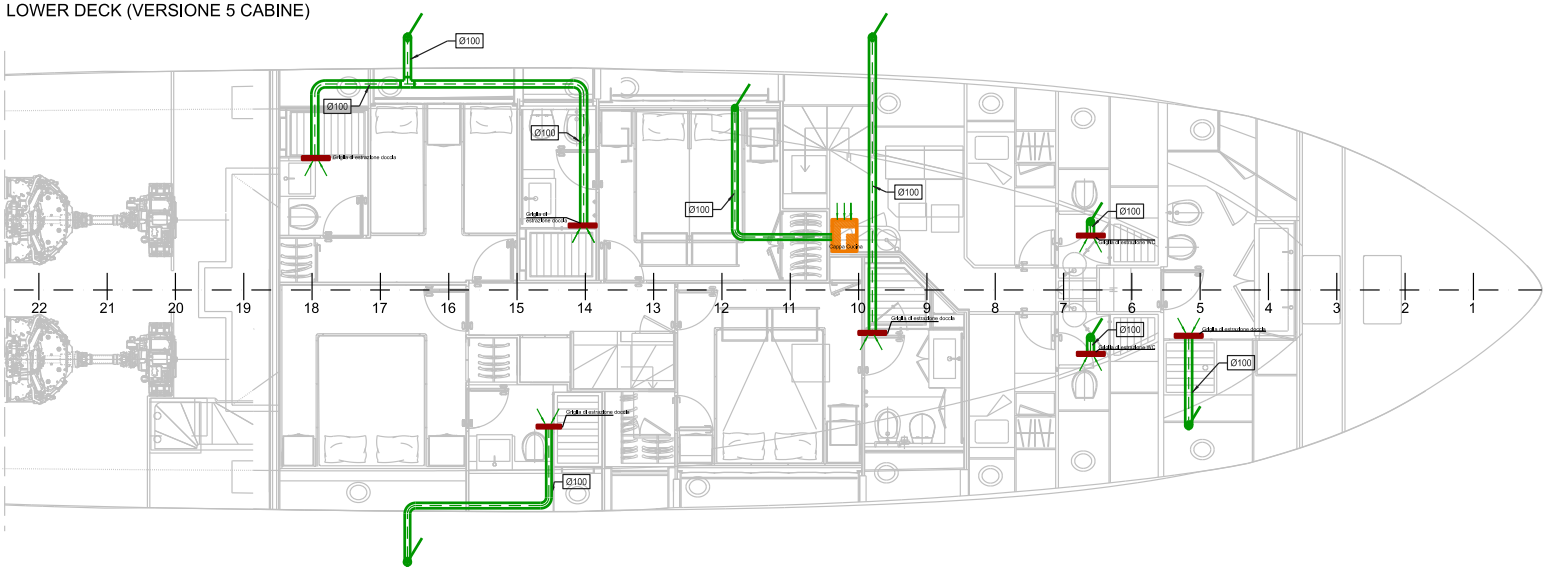
The extracted air is finally expelled outside the vessel through vents fitted with protective grilles.

Indoor ventilation system

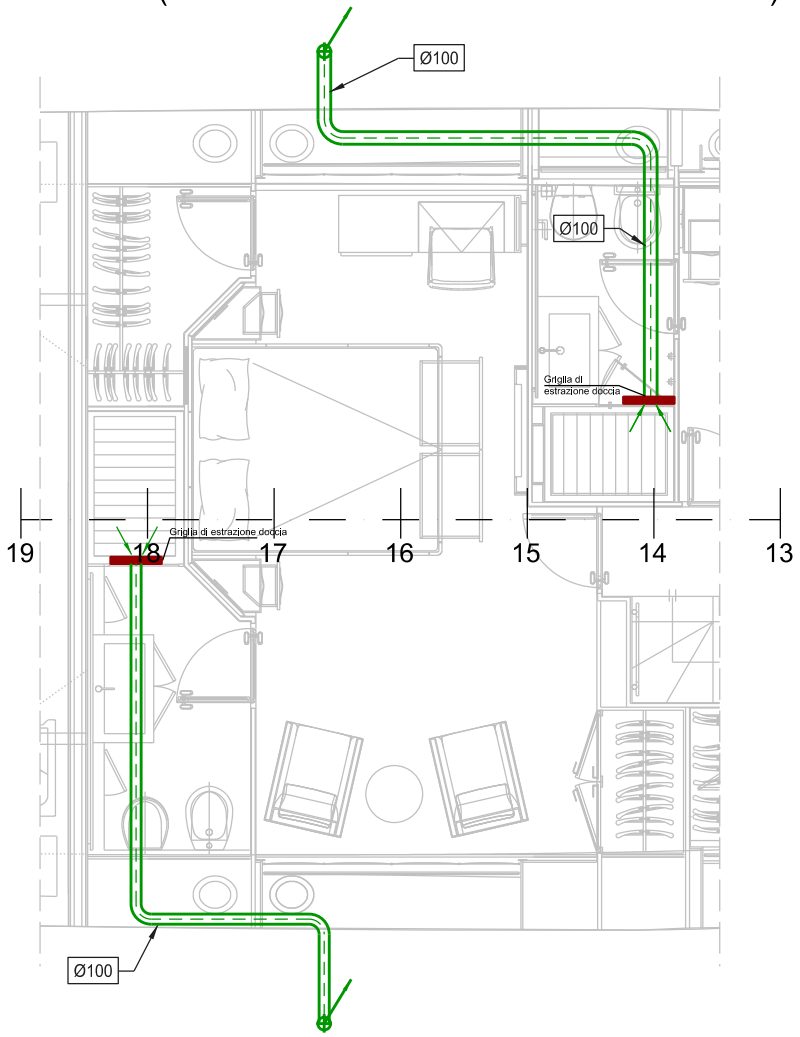
MAIN DECK



LOWER DECK (VERSIONE 5 CABINE)



LOWER DECK (VARIAZIONE PER VERSIONE 4 CABINE)



SIMBOLO	DESCRIZIONE
C202	Estrattore tipo C202 Pot. 0,12 Kwda 90 mc/h
	Salita del tubo al ponte superiore
	Discesa del tubo al ponte inferiore
	Bocchetta di Aspirazione
	Bocchetta di Ventilazione
	Griglia di Aspirazione
	Cappa cucina con ventola di estrazione

ON BOARD AUXILIARY EQUIPMENT

CHAPTER 10

10.1 PREPARATION FOR MOORING AND ANCHORING

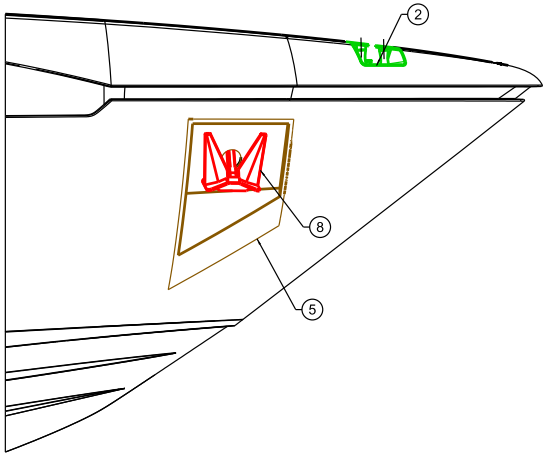
Your yacht is equipped deck instruments necessary for easy and safe mooring.
In addition to the anchor winch, the mooring equipment is located at the bow, on the walk-around, and at stern, and consists of cleats, fairleads and warping winches:

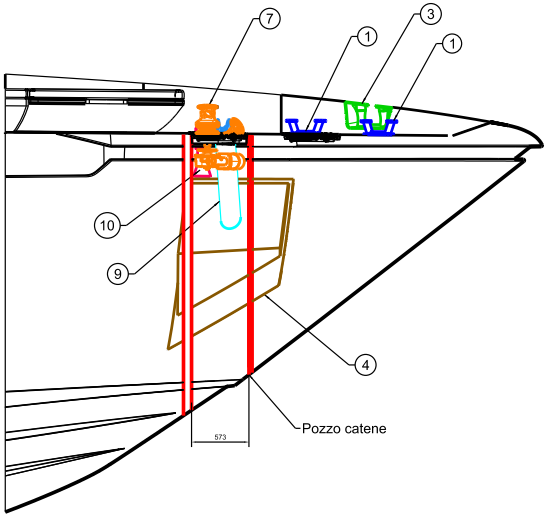
- A retractable cleat may be placed on the stern platform on each side of the yacht for the sole use of service mooring for tenders or jet skis;
- Each stern mooring furniture is arranged with two cleats, a mooring winch and a fairlead;
- Two cleats with fairleads are arranged on each side of the walk-around of your yacht;
- In the bow mooring area, four cleats, two fairleads and two anchor winches.

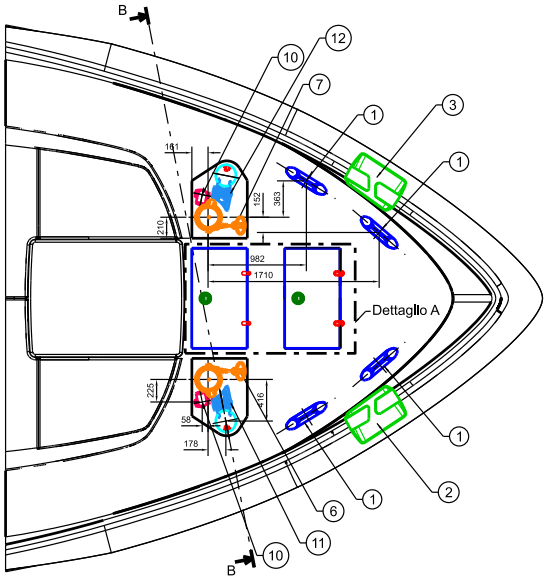
CAUTION

Do not use the stern retractable cleats as permanent mooring points.
They should be used only for the service tender or mooring of watercraft.
Stern cleats cannot be used for hauling tenders or chase yachts.

Bow mooring

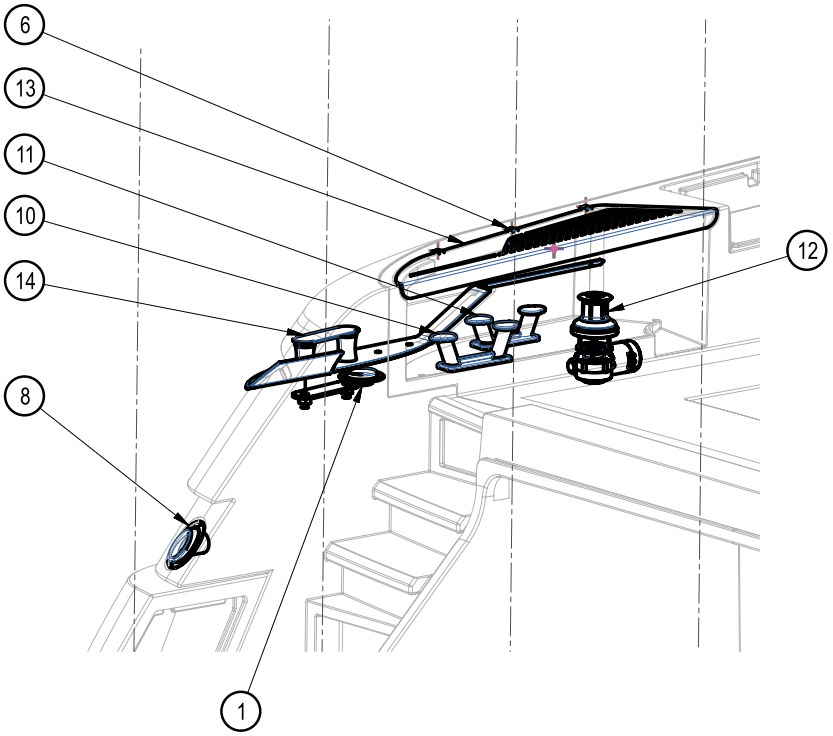


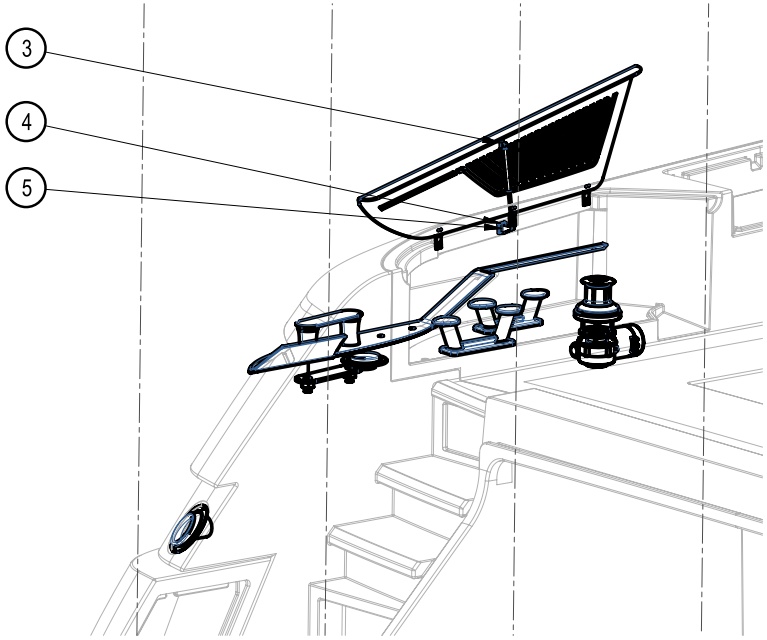




POS.	CODICE	DESCRIZIONE	Q.TA'	
1	56869	Bitta inox L=350 H=145	4	ACERBIS
2	395839	Passacime prua DX INOX Lucido R90	1	
3	395840	Passacime prua SX INOX Lucido R90	1	
4	415696	Cubia Prua SX INOX LUC R90 NEW	1	
5	415697	Cubia Prua DX INOX LUC R90 NEW	1	
6	368844	Verricello Project X5 3KW R100C DX	1	
7	368845	Verricello Project X5 3KW R100C SX	1	
8	249608	Ancora Pool 90Kg	2	Acerbis
9	78853	Tubo D=200	2	
10	330128	Tubo Catena	2	
11	392407	Rullo guida catena INOX con fermo DX R100	1	
12	392406	Rullo guida catena INOX con fermo SX R100	1	
13	101903	Molla a Gas 19_8 -140 F 200N AISI 316L_C	4	
14	49531	Maniglia	2	
15	95818	Cerniera	4	
16	7800	Staffa	4	
17	7801	Staffa	4	
	26617	Catena Zincata 13mm - 120m SP	2	

Stern mooring





POS.	ID PART CONNECTED	DB PART NAME	STD/OPT	PART NAME	QTY
14	9008140	PASSACIME POPPA SX		D762944/2/0	1
13	9008142	ACCIAIO		D804433/0/0	2
12	43960	VERRICELLO 1700W CAPSTAN 24V		D108864/0/0	2
11	56868	BITTA_INOX_ACERBIS_4_L300_H125 - COD 56868		D261594/0/0	2
10	56869	BITTA INOX ACERBIS 5 L350 H145 COD. 56869		D370505/0/0	2
9	9008141	PASSACIMA POPPA DX		D831348/2/0	1
8	9008155	COLLARE BASSO		D804429/1/0	2
7	9008143	ACCIAIO		D831583/1/0	1
6	9007308	CERNIERA ESTERNA INOX 55X35		D718153/1/0	6
5	448856	MM:COD.448856 - STAFFA LUNGA ACCIAIO PORT TONNEGGIO W200		D804439/0/0	4
4		SPESSORE PER STAFFA		D804526/1/0	2
3	7801	STAFFA F PER PISTONE 20KG - COD.7801		N000000359/0	4
2	41417	41417 - MOLLA A GAS 19/8 -120 F 500N AISI 316L		D804443/0/0	4
1	9008154	COLLARE ALTO		D804428/1/0	2

10.1.1 Anchor winch

The yacht is equipped with two winches that moves the anchors housed in the bow.
The anchor chains glides into the yacht through the chain guides and reaches the anchor winches, then winds around the wildcat and glides into the chain pits.
The anchor winches are equipped with control for chain displacement in both directions and with manual brake to lock the chain during mooring.
The winches are equipped with a clutch separating the drive shaft from the wildcat; this allows using it as a warping winch for pulling a line.

The main parts of the winch are:

- **Bushing for lever engagement**
  This device allows the lever engagement.
- **Barrel**
  This device allows pulling a line.
- **Wildcat**
  This device allows weighing and lowering the anchor.
- **Wildcat locking wheel**
  This device allows locking the wildcat rotation for the chain fastening.
- **Lever**
  Adjusts manually the clutch opening and closing, and releases the wildcat.

CAUTION
RIVA is exonerated from any responsibility for any accidents or damage to persons or property caused by incorrect use of the device.

Anchor winch controls

The anchor winches, located in the bow, can be operated by means of the remote control housed inside the bow peak or by means of the controls on the helm station.

CAUTION
If you intend to use the anchor, remove the wildcat lock and the safety lock.

CAUTION
Do not bring body parts or objects near the area where the chain, the line and the wildcat run. Make sure the electric motor is not powered when acting manually on the anchor winch (also when you use the lever to loosen the clutch): people having the remote controls of the anchor winch (remote push-button panel) might accidentally activate it.

CAUTION
Lock the chain with its safety lock before setting up for navigation.

CAUTION
Do not operate the anchor winch electrically with the lever in the drum housing or in the wildcat cover and with the safety lock engaged.

Clutch use
The wildcat is connected to the main shaft by means of the clutch. The clutch opens (disengages) when rotating counterclockwise the lever inserted in the bushing. When rotating clockwise, the clutch will closed (engage).

Anchoring
The wind and the sea conditions highly affect an anchored yacht. Make sure the anchor is set in any situation. It is necessary to understand the principles of the chain length and its effect on the anchor performance.
The radius is technically defined as the ratio between the chain length and the vertical distance from the bow to the sea bottom.

The chain length depends on the type of anchor, on the sea bottom, on the tide, on the wind and on the sea conditions.
The chain length is 5 times the depth of calm sea; it is 7:1 in normal conditions and up to 10:1 in critical conditions.

$$\text{Radius} = \frac{\text{Chain length}}{\text{Bow height + water depth}}$$

as it is necessary to know the length of the chain to be used for mooring.

Chain length = (bow height + water depth) x radius

Anchor weighing
Start the yacht's engine. Make sure the clutch is engaged and pull out the lever. Press the control button available and start to weigh the anchor. If the anchor winch stops without any reason, the anchor might be stuck and therefore the anchor winch thermal switch trips, due to the effect of the effort. In this case, if after several attempts the anchor winch remains stuck, we suggest to manoeuvre the yacht, to release the anchor.
Check the raise of the last metres/feet in order to avoid bow damage.

Anchor lowering
Lower the anchor by means of the electric controls or manually. To carry out this operation manually, open the clutch and let the wildcat rotate freely on its shaft and the chain fall into the water. To brake the anchor chain fall, turn the lever clockwise.
To lower the anchor electrically, press the control button at your disposal.
In this case the anchor lowering is perfectly controllable and the unrolling of the chain or of the line is regular.
Once the yacht is anchored, lock the chain with the safety cable.
The anchor and the chain may damage the yacht bow if the anchor winch is not operated carefully.
We suggest to carry out the operation by means of the remote control located near the anchor winch; this will allow checking the lifting and lowering speed of the chain and the entry and exit of the anchor shaft into the anchor roller. Namely during those operations, an excessive gliding of the chain or a wrong entry or exit of the anchor shaft from the roller, may cause damages to the yacht's bow.



DANGER
Do not use the on board auxiliary equipment for aims or in different ways from those indicated in the manual delivered by the Manufacturer. Always disconnect the warping winches not in use, to prevent accidental activation.



DANGER
Never get too close to moving parts to avoid danger and injury.

CAUTION

The anchoring area is a circle with the centre at the anchoring point and a radius equal to the chain length plus the yacht length.
The entire anchoring area must be free, in case of sudden variations of wind and/or current direction, especially in case of night anchoring.
At night, before dropping the anchor, check that the white anchor light works.
Before dropping the anchor, check the nautical charts: anchoring is prohibited in certain areas, in weeds covered sea bottom, anchoring is unsafe and harmful to the environment, on rocky sea bottom, the anchor may get stranded or lost.
Anchor the yacht with the engines running, both for safety reasons and to compensate the electrical consumption of the winch.
Check the anchoring point frequently.
The distance from obstacles or other yachts must be, at 360°, greater than the length of chain dropped.
During anchor riding it is advisable to leave the winch powered.
Do not reverse the winch rotation suddenly.

CAUTION

The anchor chain is fastened to the yacht by means of a line and an hook system. If it is impossible to remove the anchor from the sea bottom, this system will ease up to resume navigation.

DANGER

When the winch is operating, be extremely cautious of rotating parts; keep your feet, hands and the remote control cable at safe distance.

Anchoring operations

- Make sure that the engines battery breaker is on;
- Turn the anchor winch switch ON, on the main electrical panel;
- When the key-pad is not used, disconnect it to prevent contact oxidation;
- Before operating the anchor winch with the electric control, check that the wildcat clutch is properly engaged and remove the wildcat stopper and the safety wire;
- Let the yacht move backward slowly; if necessary, use the engines;
- Lower the anchor until just below the waterline, and hold;
- Lower the anchor until it reaches the sea bottom;
- Once the anchor holds, leave the lock and the brake engaged.

CAUTION

Operate the anchor winch with the engines running, in order to provide the high current required and reduce the stress by slowly moving the yacht toward the anchor.

Lower and raise the anchor always by using the electrical control, after engaging wildcat and barrel. This latter can be disengaged both for casting off the anchor in case of need and to operate the barrel as a warping winch.

CAUTION
During navigation, make sure that both the chain stopper and the chain brake are securely locked.

Weighing the anchor
To weigh the anchor, perform the same operations previously described above, in reverse order.
In windy or strong current conditions, start the engines and keep the bow toward the anchor position to avoid the breakage of the chock.
Once the anchor is on board, fasten the chain stopper before resuming navigation.

CAUTION
Prior to departing, check that the chain stopper is properly fastened.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

10.1.2 Anchor winch maintenance

Component	Maintenance	Notes and precautions
Reduction motor	Check and cleaning (before each navigation) Check and top up	When you weigh the chain, after an anchor mooring in a muddy or weedy sea bottom, we advise you to wash the chain using the proper system. The outer part of the winch requires frequent washes with fresh water because very much exposed to sea salt during navigation specially with choppy sea.

Reduction motor:

CAUTION
Before carrying out any maintenance operation on the anchor winch cut out electric power connected with it and remove with care the chain from the wildcat.

Remove the layer of salt, which builds up on the anchor winch outer surfaces as soon as possible, to avoid dangerous corrosion, which could jeopardize its integrity.

Wash with fresh water and clean the surfaces, particularly those hidden and hardly reachable and into which the salt remains trapped.

At least once every two months disassemble the exposed parts, clean and check all pieces so that they do not show signs of corrosion and grease the thread of the shaft with sea grease.

In case of anchor winch long inactivity, we advice you to have the motor run idle for a couple of minutes in both directions.

If the electric motor turns with problems we advice you to clean or replace the brushes.

We strongly recommend to separate the anchor winch from the main deck at least twice a year to remove the salt deposits building up under the base.

Anchor winch:

CAUTION
Valves which allow chain washing must be normally closed.
They should only be kept open during the chain washing operation.

10.1.3 Warping winches

At stern, inside each mooring locker, a warping winch is installed on the side. For their operation it is necessary to wind the line into the barrel and to operate the foot button.

The foot buttons for each winch are located at the base of the relevant mooring locker and can be activated by pressing them with one foot:
- BLACK: recovers the line;
- RED: releases the line.

Near the warping winches are fitted two mooring cleats.
For a safe anchor mooring, the lines used for warping have to be fastened to the proper cleats.



DANGER
Do not approach your hands to the sliding area of the mooring rope.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

10.1.4 Warping winches maintenance

Component	Maintenance	Notes and precautions
Reduction motor	Inspection and cleaning	For a correct maintenance and check refer to instruction manual delivered by the Manufacturer.

Reduction motor:



DANGER

Before carrying out any maintenance operation on the anchor winch cut-off the electric power connected with it and remove with care the chain from the wildcat.

The winches are made of materials resistant to sea environment: it is necessary, in any case, to remove periodically the layer of salt which forms on the outer surfaces, to avoid dangerous corrosion, which could jeopardize its integrity.
Wash accurately with fresh water and clean the surfaces, particularly those in which salt remains trapped.



DANGER

Do not bring body parts or objects close to the area where the line runs. Ensure that there is no power to the electric motor when manually operating the winch.

MAINTENANCE

At least once a week:
- Check the operation;
- Wash with fresh water and carry out an accurate cleaning.

At least once every six months grease the terminals of the electric motor.
At least once a year disassemble and check the exposed parts.

10.2 GANGWAY SYSTEM

The system is controlled by a multifunctional hydraulic control unit located in the system room.

CAUTION
Use and suggest to passengers comfortable shoes and eventually help them with the boarding.

CAUTION
Never use slippery products for the gangway cleaning.

WARNING
Never jump on the gangway.

DANGER
Never use the gangway to lift persons, even though the same is provided and tested to lift high loads. Always make sure that the maximum load suggested by the Manufacturer is not exceeded.

CAUTION
Always pay the utmost attention to the movements of the gangway; in case of emergency, press any button of the remote control or of the panel to stop the gangway.

Gangway movement
The gangway is housed on the port side of the engine room and comes out of stair which gives access to the stern cockpit, through the opening of a stanchion step.
The gangway handling is power steered and allows extending or retracting it. Once the gangway has been completely extracted, it is possible to lift or to lower the free end in order to adapt its trim to the shore height.

Gangway controls
The control panel for gangway handling is located in the stern cockpit.
The operations are to be performed by keeping the relevant panel button pressed. The gangway can also be operated from the radio remote control.

DANGER
Never operate the gangway when someone is passing nearby. When walking on the gangway, be cautious and keep hold to the handrail; as, it cannot be considered a rigid and safe support, but simply a help to keep balance.

DANGER
Be careful of moving parts and hands.

DANGER
Never start navigation if the gangway in not correctly retracted.
Make sure that the gangway, the garage hatch and the swim ladder are correctly closed, before undertaking the navigation.

CAUTION

The hydraulic gangway, even if easy manoeuvrable, might damage people and things. Its use is recommended only to well experienced people.



DANGER

Be careful of moving parts and keep your hands away.

MAINTENANCE

At least once a week carry out the washing with fresh water and an accurate cleaning. At least once a month:

- Check the oil level in the control unit, when necessary top-up;
- Check the possible presence of oil leaks and bleeding;
- Check the operation of the emergency pump;
- Check the possible presence of corrosion;
- Grease the pulley gliding races of the steel cable.

At least once every six months;

- Grease the swivel pins and the gliding sleeves;
- Tighten the locking bolts.

CAUTION

Always check for the correct gangway position from the shore.
Never jump on the gangway.

CAUTION

Position the gangway in such a way that it cannot touch the shore, either because of the normal yacht swinging or of the tide change. Should the gangway strike against the shore, it could get seriously damaged.

CAUTION

Do not use the gangway as a springboard.

CAUTION

To avoid compromising the seals, perform the wash, avoiding that in the box enters water pressure.



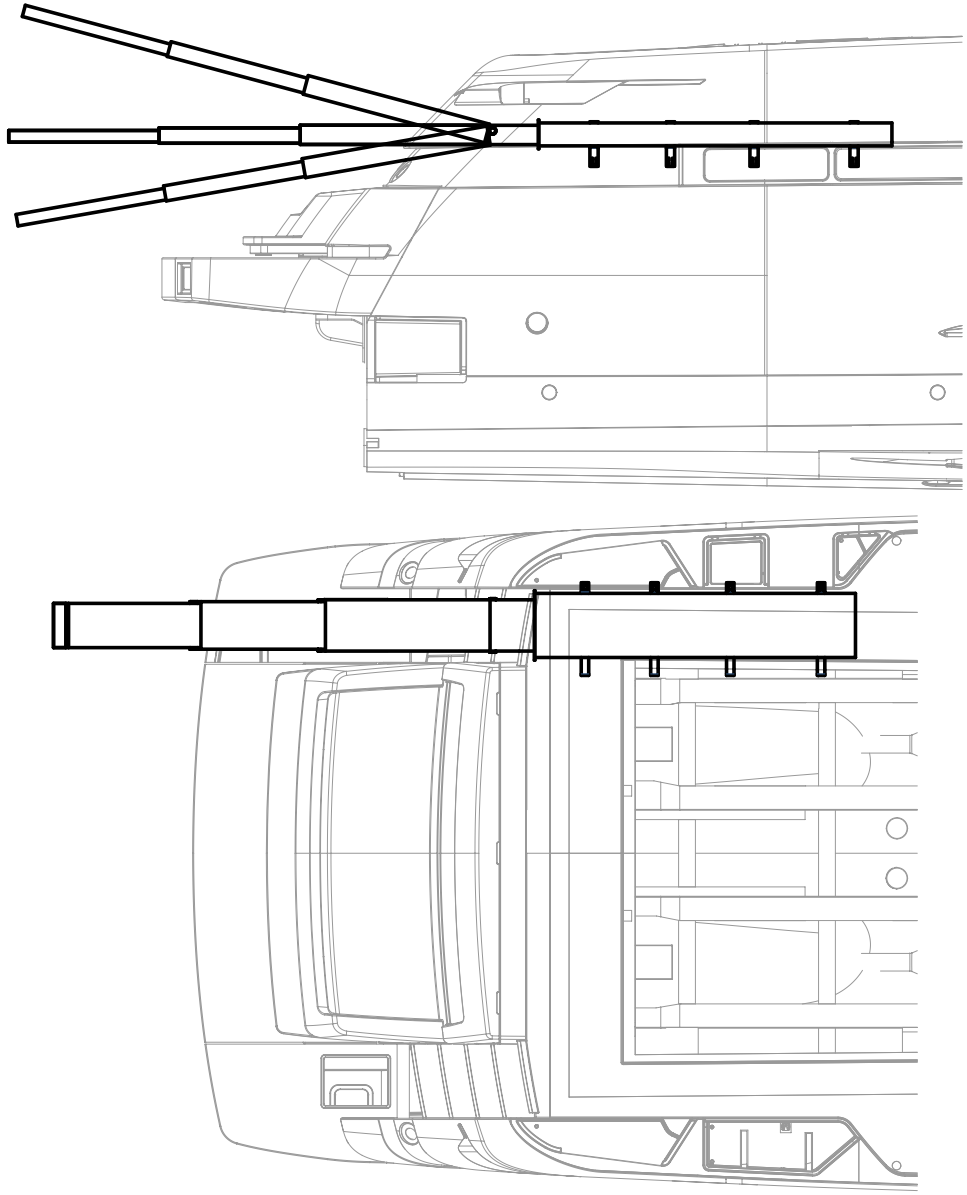
DANGER

Risk of electric shock from leakage currents. Do not swim in the waters of ports or marinas.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

Gangway arrangement system



10.2.1 Gangway system maintenance

Component	Maintenance	Notes and precautions
Gangway control unit	Oil check and top-up	Check monthly and before each navigation the oil level inside the tank. Top up keeping the oil level at about three-quarters of the tank's capacity, and using the type of oil recommended by the Manufacturer.
Gangway	Outer cleaning Ordinary maintenance	The gangway are uniquely positioned with respect to all other on-board equipment and are in continuous contact with sea water and exhaust gases. The system therefore requires more thorough cleaning.

To keep all our accessories and their parts in good working order, they should be cleaned carefully and thoroughly as often as possible.

For a careful and thorough clearing operation, cover all the steel parts with a layer of paraffin oil. As far as the coated parts are concerned, use a paste/cream. This will prevent the forming of rust stains, that could give the impression the device is built with materials not suitable for its use.

DANGER

Disconnect the power supply during cleaning or maintenance, so that the gangway cannot be moved by any person.

ENVIRONMENT

Do not discharge hydraulic oil in the sea, but in the special areas for toxic waste disposal.

Verify oil level at each beginning and season end, if below minimum level, top up with the oil recommended by the Manufacturer. Verify the correct operation of emergency pump and hand operation of solenoid valves at each season beginning and end.

CAUTION

During assembly and subsequent topping up, ensure there is no infiltration of any slag, shavings, dust, etc.. into the oil tank and therefore also into the hydraulic circuit.

CAUTION

The spares must correspond to the requirements established by the Manufacturer, this is obviously ensured with the use of original spares.

CAUTION

The check and maintenance operations must be carried out by skilled technicians, instructed about the control unit operating conditions.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

10.3 SWIM LADDER SYSTEM

The yacht is equipped with an extractable swim ladder controlled by a multifunction hydraulic control unit that allows easy access from the sea to the aft platform, and vice versa.
The swim ladder is placed inside the structure of the stern platform on the starboard side, so as not to cause any hindrance during navigation, mooring and unmooring operations.
To make access to the sea more comfortable, two grab bars have been installed on the stern platform, inserted in special seats.



DANGER
Pay attention to moving parts and hands.

MAINTENANCE
At least once a week clean with fresh water and a thorough cleaning.
At least once a month:
- Check the oil level of the control unit, if necessary top up;
- Check for leaks and leakage of oil;
- Check for corrosion;

At least 1 time every 6 months:
- Grease the joint pins and sliding sleeves;
- Tighten the anchor bolts.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

Swim ladder controls
The swim ladder movement control panel is located on the access ladder to the stern cockpit, starboard side. The control panel allows the ladder to be extended from its housing to the stop and retracted back into its housing.



DANGER
Never use the swim ladder while the engines are running.
Caution must be used to avoid approaching the interceptors and propellers as they may be accidentally operated.

CAUTION
Make sure of the correct exit and position of the swim ladder before going down into the water.

The lighted ring around the extraction button indicates that the swim ladder has been extracted from its storage position inside the stern platform.



DANGER
Never navigate with the swim ladder incorrectly stowed.

CAUTION

Pay attention because the ladder can be slippery.
Secure the grip before starting the return on board.

CAUTION

The swim ladder, while easy to manoeuvre, may cause damage to people and property. Use by sufficiently experienced personnel is recommended.



WARNING

To use your yacht safely, always open the swim ladder when you are off and alone on board.



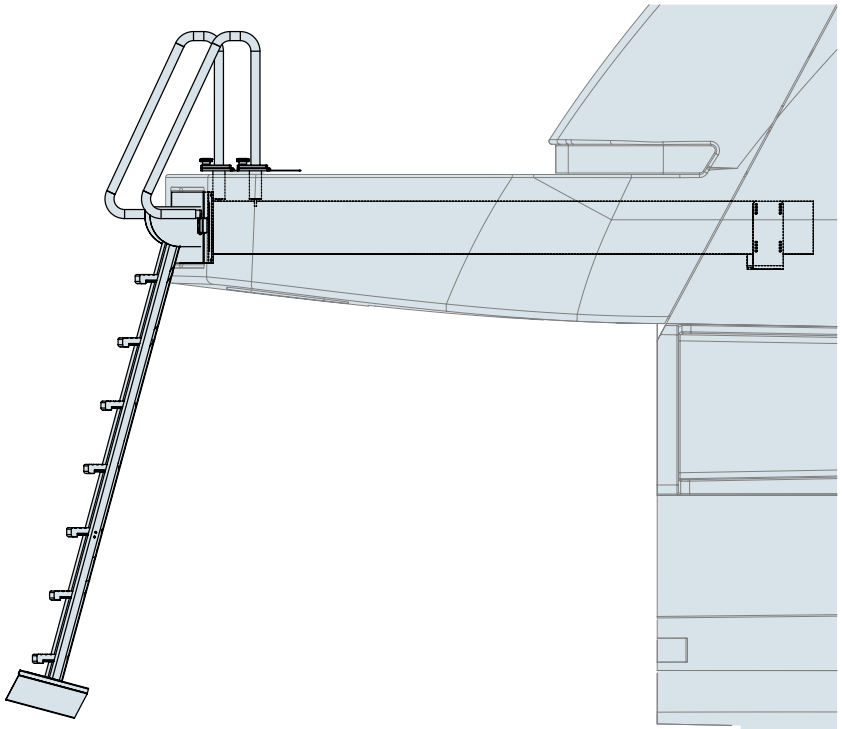
DANGER

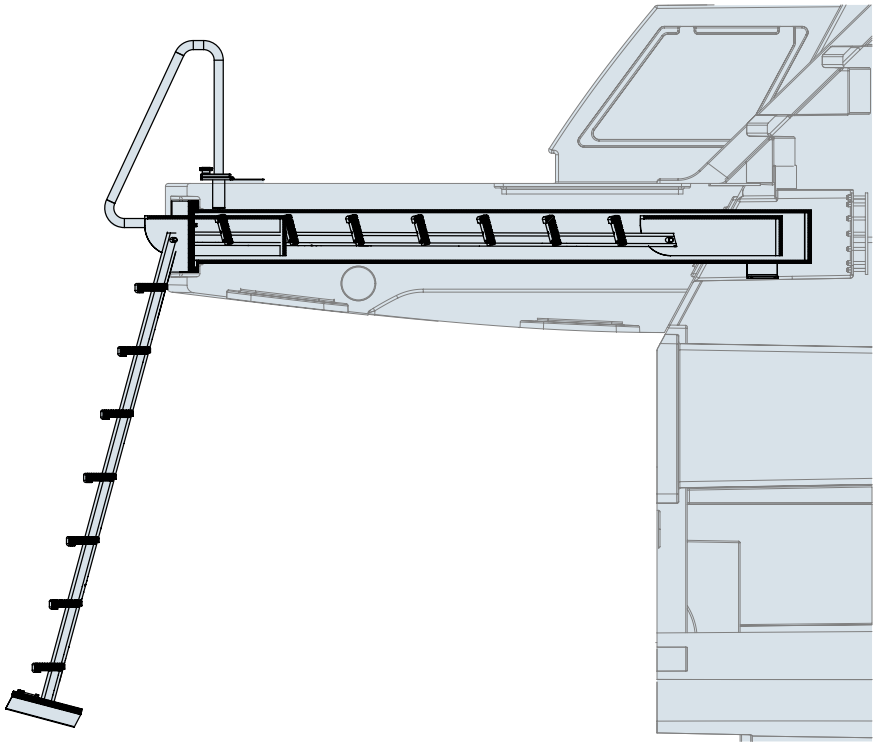
Risk of electric shock from leakage currents. Do not swim in water ports or marinas.

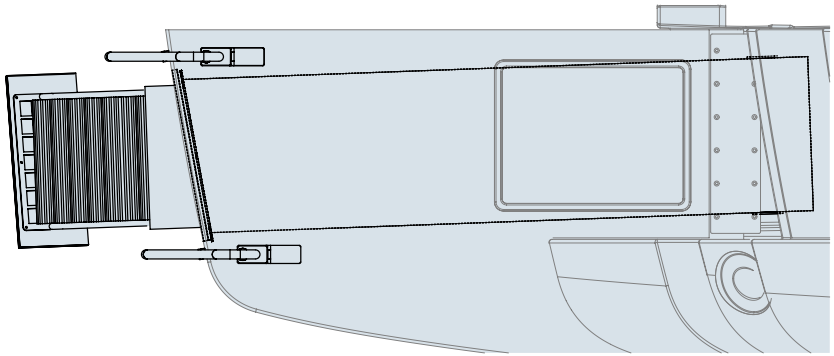
CAUTION

Do not use the swim ladder as a springboard.

Swim ladder system diagram







10.4 GARAGE HATCH AND STERN PLATFORM

Garage hatch

The garage is located astern and can stow inside a tender and a jet ski.

The garage is closed by an electro-hydraulically controlled hatch.

The operating controls of the system are positioned in the stern cockpit.

The garage hatch along with the stern platform is controlled via an electro-hydraulic control unit located in the engine room.

Stern platform system

At the stern of the yacht there is a platform that allows, once the garage hatch is opened, the launch or hauling of a tender and a jet ski.

The stern platform is moved thanks to an electro-hydraulic control unit located in the engine room.

The operating controls of the system are positioned in the stern cockpit.

CAUTION
Keep the platform lowered only for the time necessary for launching or hauling the tender.

DANGER
Don't start navigating with the platform lowered and the garage hatch not properly closed.
This prohibition also applies to low-speed manoeuvres.

DANGER
It is forbidden:
- To handle objects or people with the hatch and the platform.
- To open the hatch and platform in unfavourable weather conditions.
- To leave the hatch or platform open when the yacht is unattended.

DANGER
The garage hatch and stern platform must always remain closed during navigation. Make sure that the locking devices are inserted.

DANGER
Loads inside the garage must be fastened with the outmost care, especially the jet ski.

DANGER
Fuel leaks may result in a risk of fire and explosion.
It is not allowed store fuel or other flammable materials inside the garage.

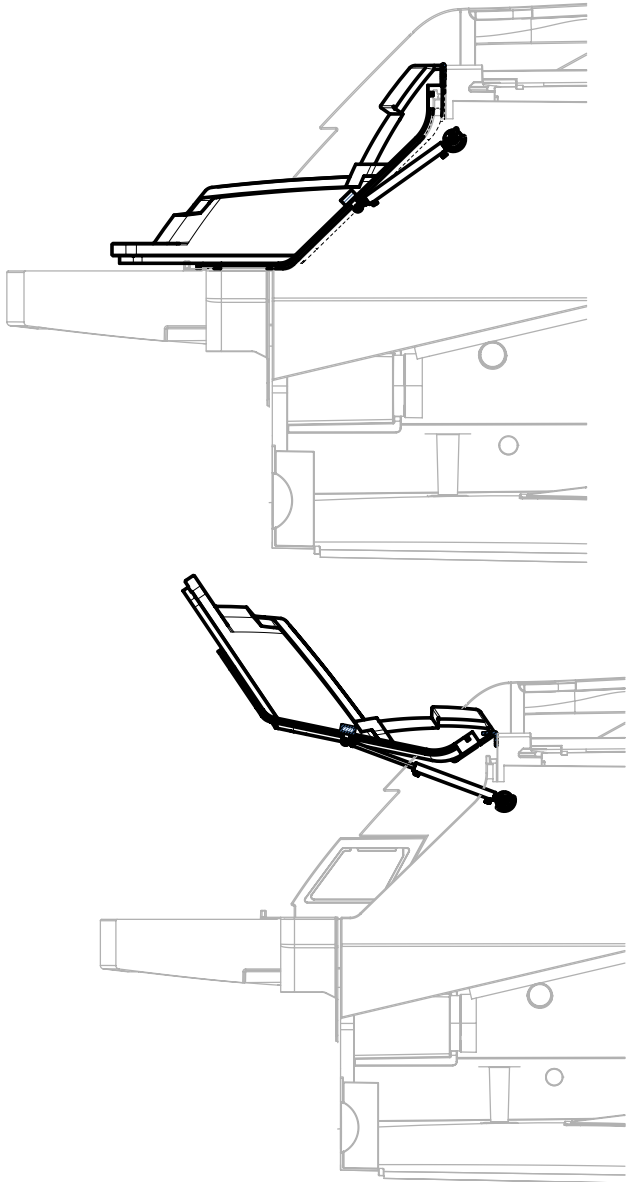
DANGER

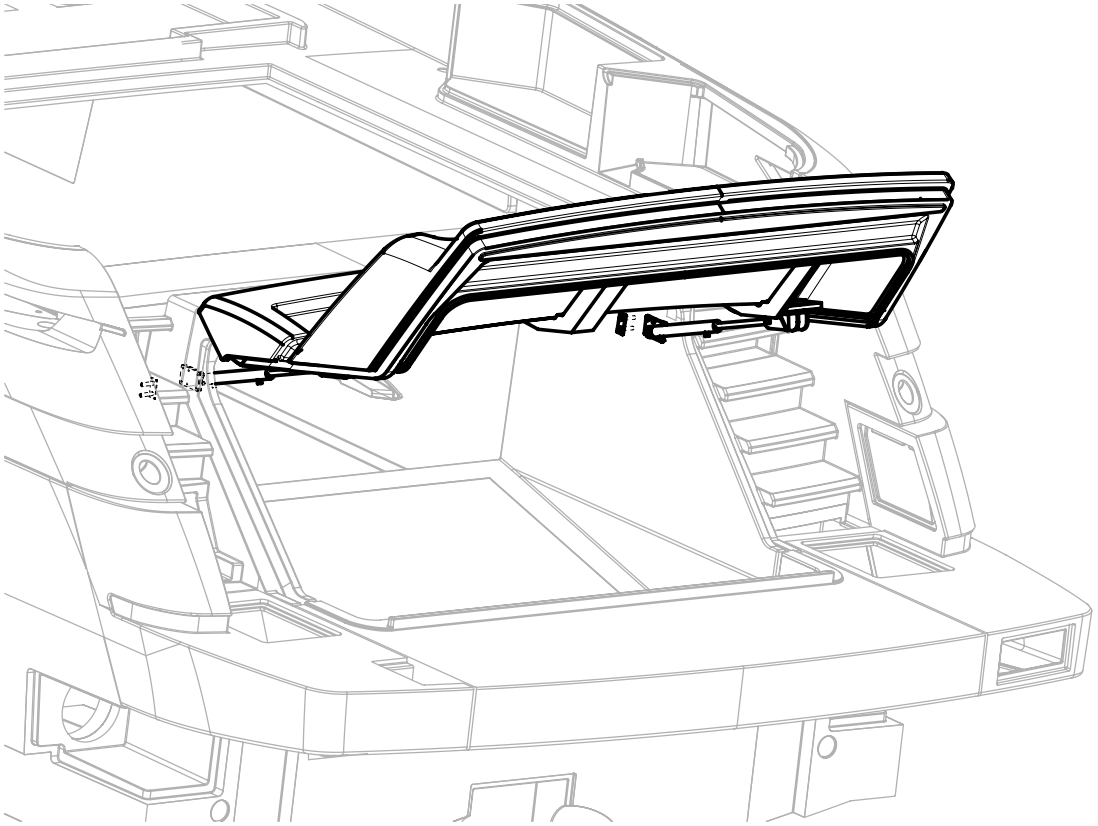
Before closing the garage hatch, make sure that the tender sledge has been completely closed and blocked with the relevant lock pins.

NOTE

For further information on use and maintenance, please refer to the manufacturer's manual.

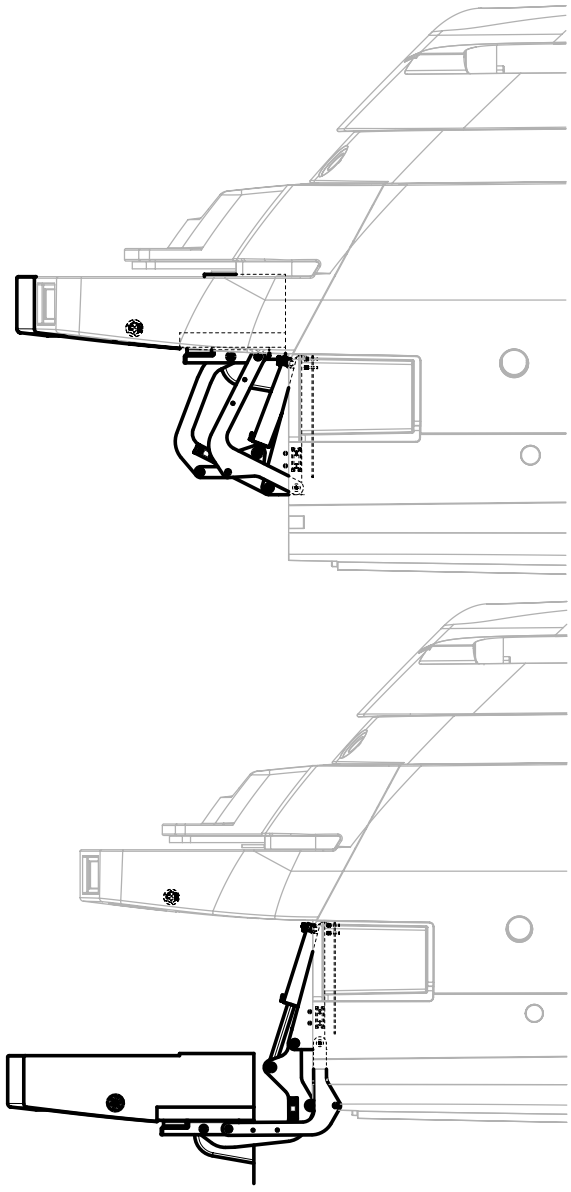
Garage hatch moving system diagram

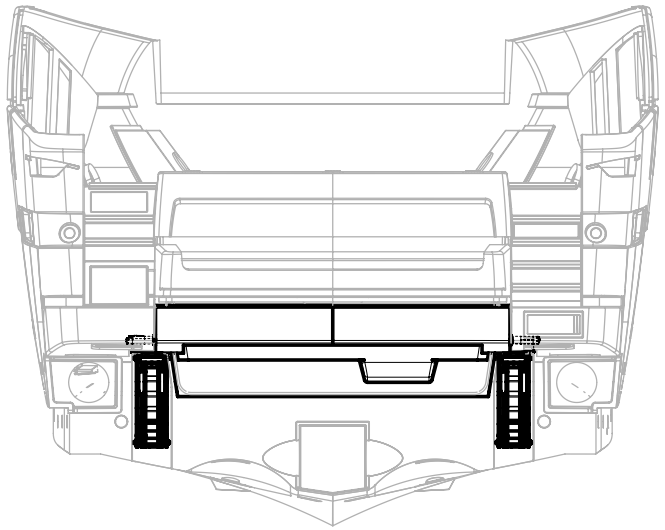


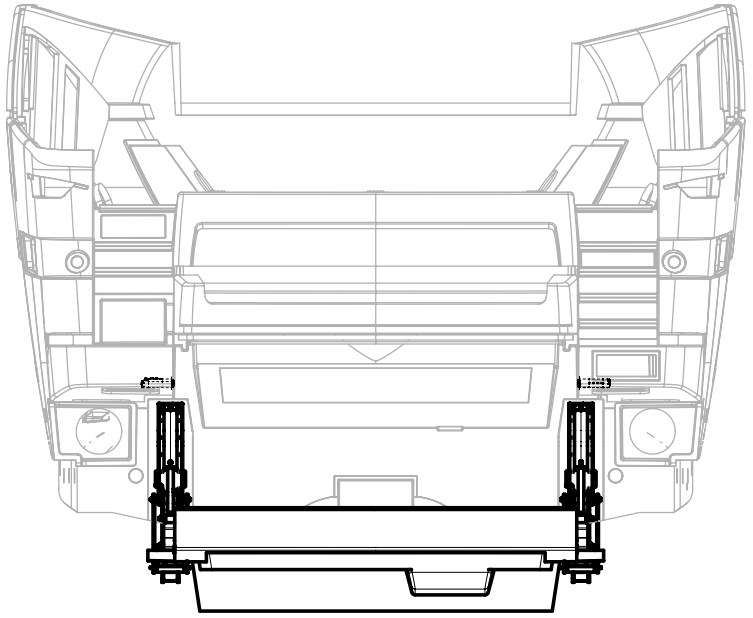


POS.	DB PART NAME
5	GUARNIZIONE
4	TUBI IDRAUL PORTELL POPPA KIT R96
3	MOVIM PORTELLONE POPPA AMARE KIT R96
2	CERNIERA PORTELLONE POPPA R96
1	PASSAPARATIA TUBI PORTELLONE POPPA R96

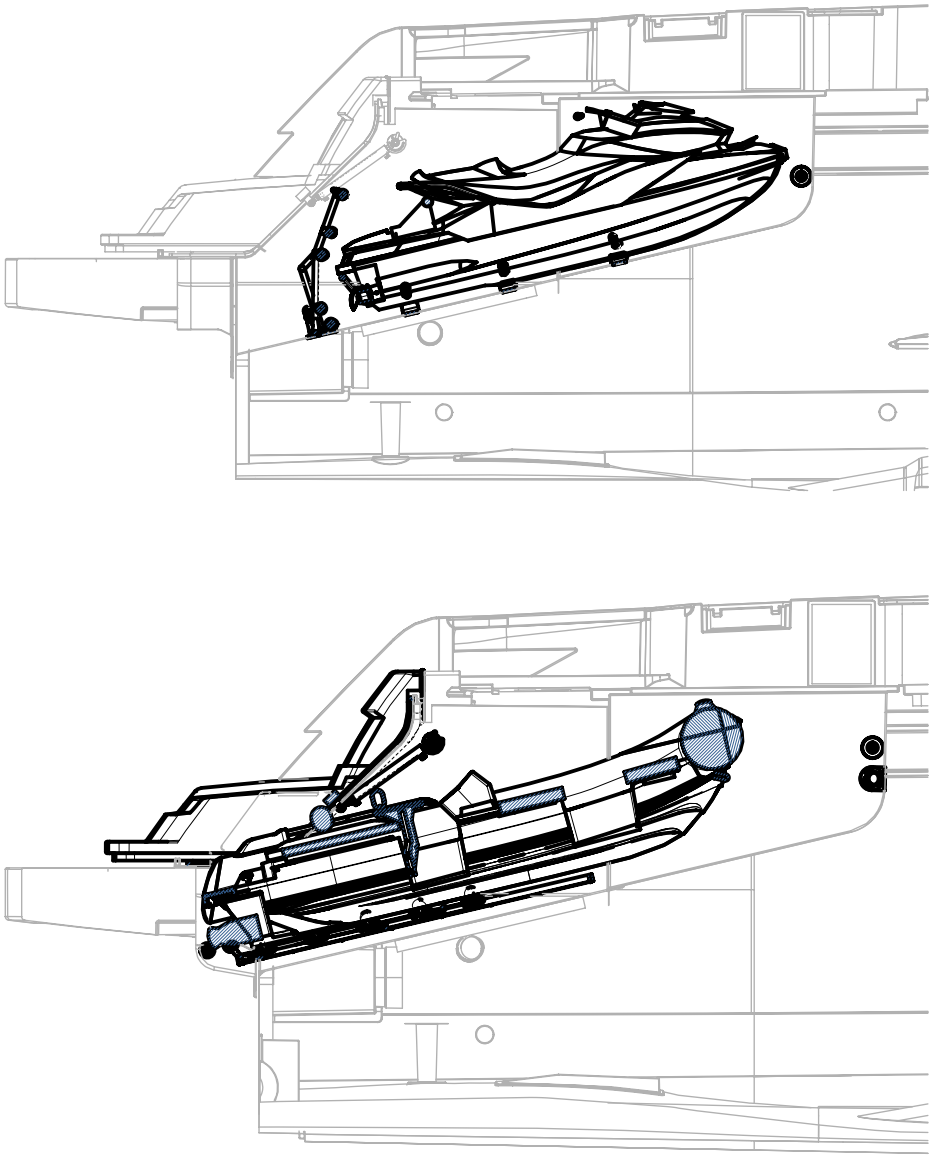
Stern platform moving system diagram

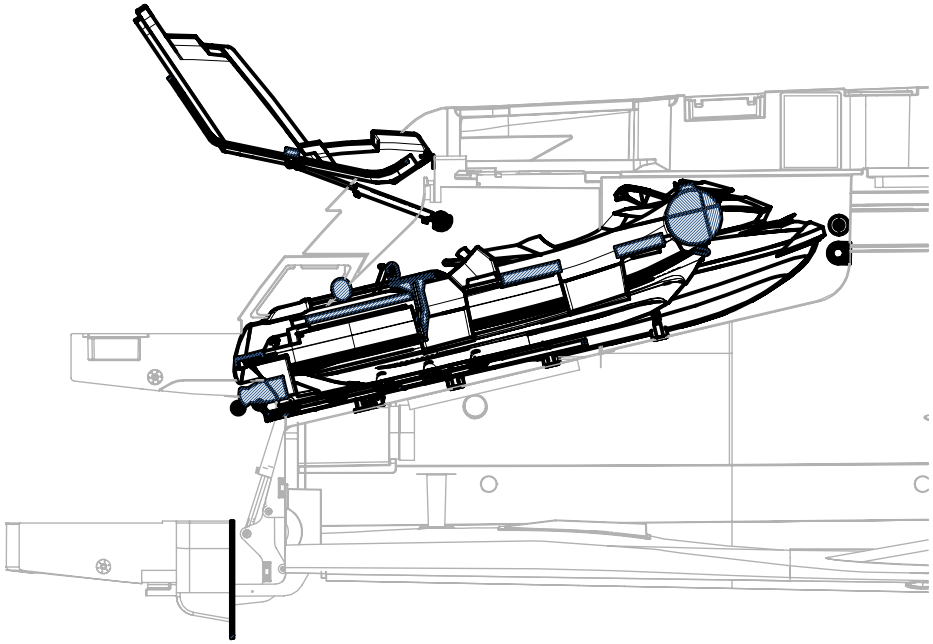


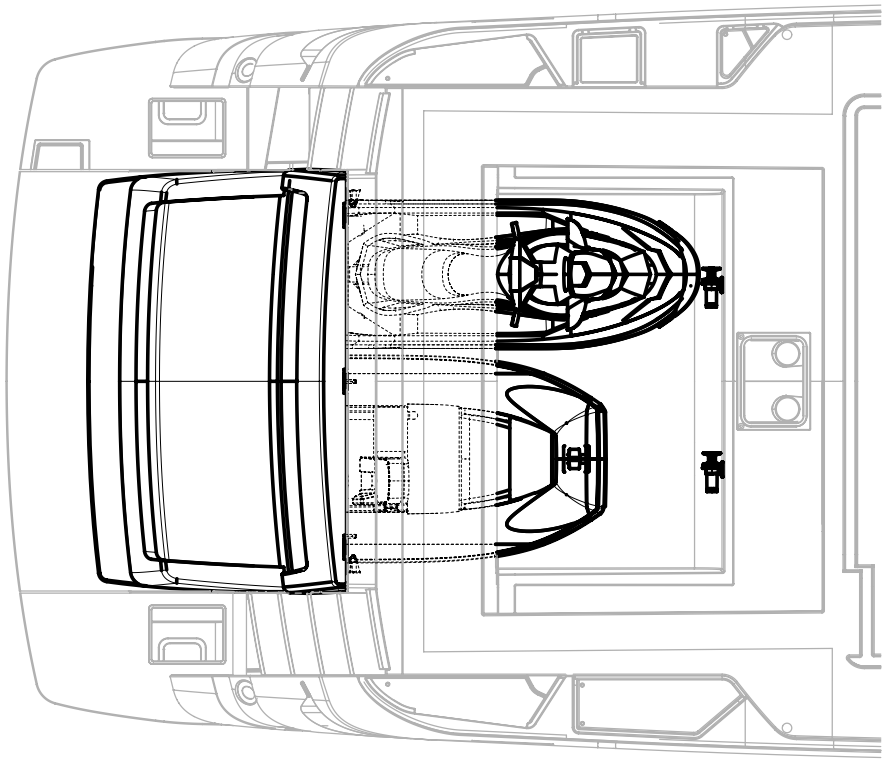


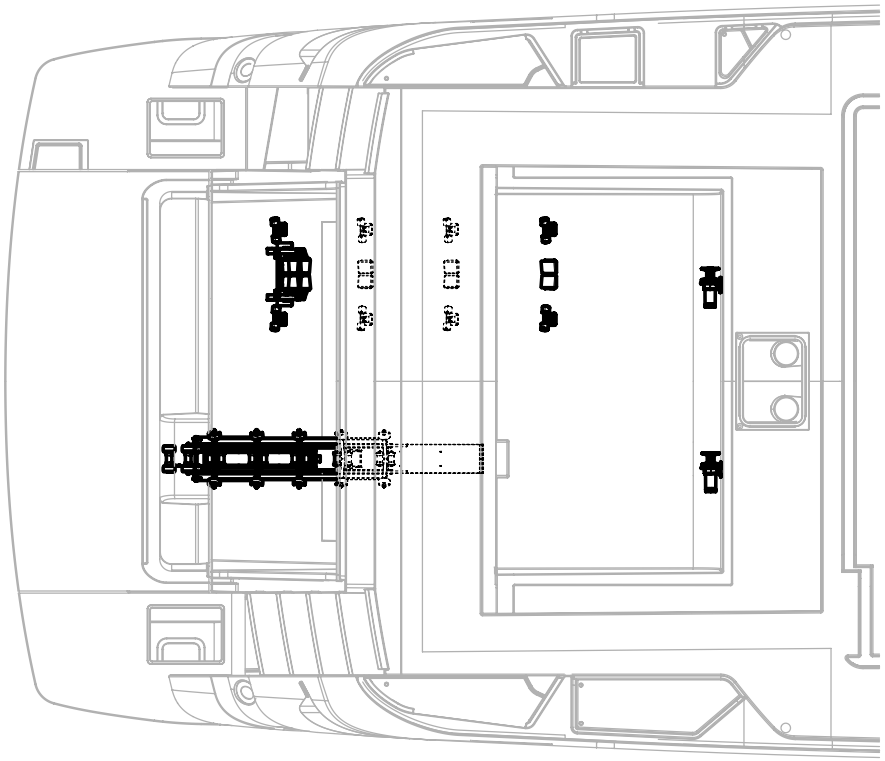


Stern launching/hauling system diagram









POS.	ID PART CONNECTED	DB PART NAME	STD/OPT	PART NAME	QTY
6		VARO DI POPPA		D425765/1/0	1
5		TENDER WILLIAMS SJ395		D871820/0/0	1
4	9008616	SLITTA WILLIAMS TLS 99-5132 3DEG395		D878078/0/0	1
3		VERRICELLO QUICK TOTEM G1100		D000064/0	2
2		SEA DOO RXT-X 325		D991958/0/0	1
1		RULLI PER MOTO		D991961/0/0	1

10.5 WINDSCREEN WIPER SYSTEM

In order to ensure a sufficient visibility under any weather condition, your yacht has been equipped with an efficient windscreen wiping system.

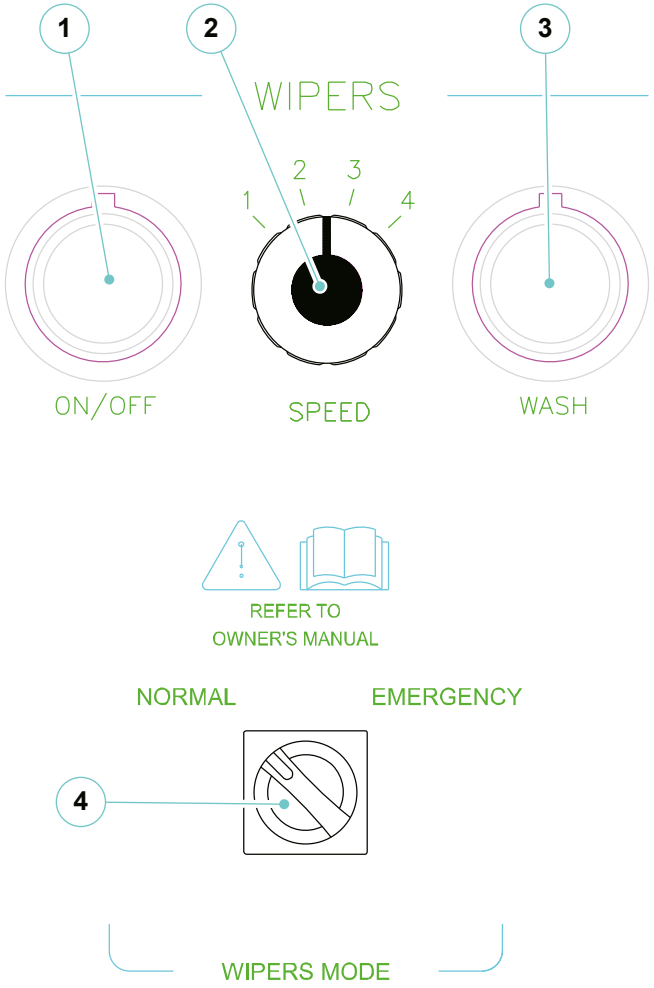
The system is supplied at 24V and allows activating, by means of mechanical brackets and at variable speed, the two windscreen wipers.

The windscreen wiper system is controlled by the relevant panel located in the helm station of the main deck.

1. **ON/OFF**: wipers button activation;
2. **SPEED**: wipers potentiometer speed adjustment;
3. **WASH**: washer button activation.

The system is equipped with an emergency selector switch (**4**) installed on the control panel; during normal operation (NORMAL position), if the wipers do not work (control unit failure), move the selector switch to EMER. and start the primary arm to ensure a minimum of visibility.

In emergency mode, the starboard wiper, opposite the helm, is activated at maximum speed.



10.5.1 Maintenance of the windscreen wiper system

Component	Maintenance	Notes and precautions
Windscreen wiper blades	Cleaning	Clean accurately with fresh water after each navigation return. Clean periodically the windscreen wiping blades using specific detergent or alcohol. Apply Vaseline oil on the blades and grease the arms springs with silicone grease.
	Replacement	Replace the windscreen wiper blades at least once a year with original spares. If necessary and if the blade rubber results to be deformed or worn out, replace them more frequently.
Windscreen washer	Cleaning	If the screen washing system does not work or has a poor performance, check that the supply circuit of the nozzles is not clogged. In such a case, clean the spray holes with a needle.

WARNING

During the cleaning or maintenance operation, make sure that nobody can operate the windscreen wiping system causing damages to persons.

CAUTION

Do not remove foreign bodies activating the blades when the windscreen is dry.

CAUTION

With very harsh weather, and with the freezing risk, detach first the wiping blades from the windscreen surface.

Before activating the windscreen wiping system make sure that ice has not stuck the blades on the windscreen surface; if necessary to spray an anti-freezing agent to detach them.

INFORMATION FOR USE

CHAPTER 11

11.1 GENERAL INFORMATION

This part of the manual describes some basic rules to keep in mind at all times in order to enjoy your yacht safely.

- Make sure that safety equipment is perfectly efficient and available to each passenger.
- Keep a safe distance.
- Check that all yacht safety equipment on board is in good condition and no maintenance activity is overdue.

NOTE

The manufacturer provides some of the international equipment required the owner will have to equip the yacht with devices required by national laws.

- In case of using the fixed fire-fighting system: do not ventilate the engine compartment, until the fire has been completely extinguished.
- Ventilate the engine compartment before entering. Ventilate the lower deck compartment before entering, if portable extinguishers have been used.
- Oils, used filters, emulsions, coolants and electrolytes are all harmful products: avoid contact with the skin and dispose of them carefully.
- In the engine compartment, be cautious with hot and moving parts.
- Wear hearing protection when entering the engine compartment.
- Do not use open flames and do not smoke, when handling fuel or lubricants.
- Do not scatter fuel in the environment.
- Change the fresh water in the tank frequently and treat with bactericides.
- Do not exceed speed limits in harbours or confined waters.
- Reduce speed in the proximity of other yachts or swimmers.
- Adjust speed according to sea conditions.
- Reduce speed before entering the engines room. Modify the course, if necessary.
- Before connecting the shore connection, make sure that the switches on the panel are not activated.
- Before leaving the yacht, turn the battery breakers OFF.
- Handle hot oils carefully, in order to prevent serious burns.
- Do not work on engines or shafts lines without first disabling their start-up.
- Do not inhale exhaust fumes: risk of serious injuries or death.
- Before disconnecting a battery, check if the battery charger is operating. If it is, disconnect it and remove the negative wire first and then the positive one. When reconnecting the battery, follow the same steps in reverse order (the positive wire first and then the negative one).
- Replace any part showing signs of corrosion immediately.
- Do not disconnect the batteries while the propulsion engines are running.
- Do not disconnect the batteries while the generator or propulsion engines are running.



DANGER

The responsibility for the operation of each yacht lies solely with the Captain.
It is the Owner's direct responsibility to ensure, prior to departure, that the safety equipment required by law is present on board and fully functional.



DANGER

We recommend that you read the safety instructions in this manual carefully before you set off on your voyage and before operating the various on-board devices.

11.2 PRECAUTIONS FOR HARSH CLIMATES

Regularly check that all equipment and machinery containing water is protected with the correct proportion of non-toxic antifreeze.
If the outside temperature is below or close to 0°C (32°F), the fresh water and sea water systems run the risk of freezing.
Piping and hoses may break from freezing and this could lead to the yacht sinking.

Systems prone to freezing also include freshwater and saltwater cooling systems.

For more information on the maintenance and service requirements of your yacht and its equipment, and for special information about maintenance in cold weather, see the sections in this manual that refer to the single components, devices and equipment, but be sure to consult the User Manuals provided by the Manufacturers for specific information.

11.2.1 Cooling system

The antifreeze liquid is advised for all kinds of climates: it increases the working temperature range, lowering the freezing point and increasing the boiling point.
When the temperature comes close to 0°C (32°F) it is necessary, in order to avoid the risk of freezing, to make sure that the cooling lines are filled with antifreeze mixture. If not, replace the cooling liquid with such a mixture.
Before filling the system with antifreeze mix, it is necessary to wash the cooling circuit.

Engine cooling systems should be filled with a mixture of 60% water and 40% antifreeze throughout the year to ensure protection against corrosion and freezing down to -27°C (-17°F).

At the beginning of the cold season, the antifreeze content of the coolant must be checked and increased according to the expected outside temperatures.

ENVIRONMENT
Concentrated coolant must be treated as special waste.
When disposing of used coolant, abide by the regulations of the local authority.

NOTE
For information concerning the type of anti-freeze or additive to be used, please refer to the technical documentation supplied by the Manufacturer.

CAUTION
Do not use only water as a cooling liquid, as it is corrosive at the engine operating temperatures and does not protect suitably against boiling and freezing.

CAUTION
We recommend you to use technical liquids approved by the system Manufacturer. Always avoid antifreeze concentration to drop below 40% in volume. Replace the whole cooling liquid according to the schedule indicated by the Manufacturer.

11.2.2 Fuel system

At low temperatures, the fuel forms solidified paraffin suspensions that clog the fuel filters to the point of preventing the regular feeding of the engines.

Fuel as per European standard EN590 guarantees fluidity up to 0°C during the summer period, and up to -20°C during the winter period.

WARNING
There is a special type of fuel for countries subject to very low temperatures.

CAUTION
Do not add petrol to fuel, in order to avoid serious engine damage.

NOTE
For further information on use and maintenance, please refer to the manufacturer's manual.

11.3 PREPARING FOR NAVIGATION

Preliminary checks
An accurate preliminary preparation is fundamental for a safe navigation. The text below summarizes come important advice to be taken into consideration when setting-up for navigation.

- Gather information on the weather forecast and warnings.
- Consult the navigation charts, and consider particularly the cruise distance, courses, sea bottoms features (low and dangerous).
- Consider the quantity of diesel oil necessary.
- Consider the length of navigation.
- Check the displays of the monitoring system for the possible lighting of the bilge pump lights indicating the presence of water. If they are lit up, press the bilge pump button. If the pump works but no water comes out, it means that the suction inlets are clogged (clean them).
- Check the cleanliness of the seacock strainers. If they are dirty, close the hull valves, remove and clean the traps, carefully reinsert them and reopen the hull valves.

WARNING
Once the hull valves have opened again, make sure that there are no leaks.

WARNING
During navigation, regularly check the cleanliness of the sea water strainer baskets. If the yacht crosses a dirty sea area, check the condition of the traps and clean them. This precaution is very important, to avoid the damage of mechanical parts (like engines, generators, etc.), of the exhausts systems and prevent endangering the yacht safety.

- Check oil level in engines, gear boxes and generators. If necessary, top up.
- Check engines and generators coolant level. If necessary, top up.
- Ensure fuel system separator filters are properly clean. If water is present, drain the filters and replace them if necessary.
- Check the hydraulic oil levels of the gangway, wheelhouse, etc.; top up if necessary;

WARNING

To carry out the above mentioned checks and the top-ups, refer to specific manuals supplied by the Manufacturer.

- Check liquid levels (fuel, fresh water) in the tanks.
- Ensure everything necessary has been loaded (provisions, nautical charts, documents, rockets, first aid kit, etc.).
- Check the proper locking of all mobile components located inside the yacht.
- Ensure the load has been distributed evenly, so that the yacht maintains a proper trim.

CAUTION

The materials stowed can alter the trim, especially the transversal one. Try to arrange load equally and securely, in order to avoid sudden displacements.

- Write the list of the safety equipment.

WARNING

The yacht designated captain must make sure that all users are familiar with the location of the current safety systems (fire extinguishers, life raft, life buoys, etc..) And who are aware of how to use them.

CAUTION

Safety equipment should always be checked before each navigation, in order to ensure the good condition of the safety devices and to become familiar with their location and use. The little time spent may be very useful in case of need.

- Check that the life jackets are in good conditions and that they are stored where required and anyway easy to reach (avoid putting obstacles of any kind in front of access hatches).
- Ensure that the collective life rafts are easily accessible and that their mooring and anti-capsize line is in good condition (properly rolled up and not worn out).
- Ensure that the life buoys are stowed in their correct position and fitted with relevant safety rope and that the light buoy battery is charged.
- Check the charge status of the extinguishers. The extinguisher is charged when the pressure gauge indicator is in the green sector.
- Check the operation of the rudders (move steering wheel from end to end, and check their correct operation).
- Check interceptors operation. If not employed, interceptors must be kept in UP position.
- Check navigation lights and horn operation.
- Check the efficiency of the windlass and the anchor chain safety retainer;
- Check transceivers operation.
- Check documents and nautical charts.

- Check proper closing of portholes and hatches and safely secure the equipment.
- Cast off moorings, ensuring no obstacle can hinder unmooring operations (not aligned cables, chain or anchor log engaged in other yachts moorings, etc.).
- Check that the engine room fans and extractors are operating.
- Ensure no flammable or other improper materials have been stowed in engine room.
- Check that the hull valves are in good working order (valves open).
- Ensure engines and generator fuel circuits are operational (open valves).
- Start the generators and after a few minutes of preheating power on through the control panel.
- Disconnect shore inlets/sockets (electric power, water supply, etc.).
- Connect engines and uses battery breakers.
- Verify the battery charge status on the general electrical panel of the technical room or on the monitoring panels. If necessary, recharge them.
- Connect necessary 24 V uses on electrical panels. Disconnect not connected uses after checking their proper operation.
- Start the engines.

CAUTION

The use of side locking systems, such as Cristal or similar ones, is not allowed during navigation.

CAUTION

The removable awnings and related support poles must always be dismantled and stored in the appropriate seats before starting navigation.
When not in use, the poles must be stored in the appropriate seats.
Awnings should only be installed when the yacht is stationary and with favourable weather and sea conditions.
Do not leave the awnings open in the event of heavy rain.
Do not leave the awnings installed on an unattended yacht.
Do not let water pool on the fabric of the awnings.
When not using the awnings, keep the pole engagement holes closed with the appropriate covers.

11.3.1 Weather

Learn to understand weather patterns and signs of change.
Bad weather and sea conditions can cause an uncomfortable and unsafe situation.
Here are a few basic weather-related rules:

- Check the forecast and sea conditions before leaving and while underway;
- A sudden change in wind direction or speed, or an increase in wave height indicates deteriorating weather;
- If a storm approaches, immediately seek a safe harbour;
- If a storm hits, head the bow of your yacht into the wind;
- If you encounter fog, determine your position, set a safe course, slow down and alert other yachts of your presence with a sound signal.

11.4 FIRST PERIOD OF USE

During the first period of yacht operation, beyond the normal maintenance operations indicated in this Manual, we recommend carrying out the following additional operations and more accurate checks.

The duration of this period varies according to the frequency and use modes, but are in any case suitable allow a correct run-in of all systems and on-board components.

WARNING

We recommend consulting the technical documentation provided by the Manufactures of the various on-board systems and components; they can indicate operations, checks and specific times not included in this section of the Manual.

Following the first period of use, the hereunder listed additional operations and checks, should be performed at longer time intervals, although in any case, they play an important role for the safeguarding and reliability of the yacht and navigation safety.

- After starting each engine, check for the correct circulation of the cooling water inside the circuit, by verifying that it comes out of the drains. Check also for the presence of leaks from the sea cock valves and strainers of the cooling circuits.
- Check the possible presence of unusual noises from the engines exhaust.
- Before and after navigation, check for possible leaks in the shaft lines.
- During navigation monitor constantly the temperatures and operation pressures of the devices on board (propulsion engines, generators, gear boxes).
- Through the indicators on the main electrical panel, check the correct level of charge of the service and engine starter batteries. The engine alternators must also properly charge the batteries.
- Verify the efficiency of the rudders (by often checking the tiller angle) and of the interceptors.
- Before and after navigation, check the correct oil level in the rudder systems, hydraulic gangway, operating propeller, etc..
- After the generator to start, wait several minutes before loading it. Bring it slowly to maximum performance monitoring its correct operation.
- Check the correct load level of all extinguishers (fixed and portable ones) installed on board.
- Before and after navigation, check the correct operation of all bilge pumps on board.
- Check tightness and closure of portholes and hatches.
- Check the correct sliding and closure of the salon door, considering that it is not watertight.

DANGER

Before performing the listed checks and maintenance operations, we recommend to read careful the Safety Rules relevant to maintenance, contained in this Manual.

WARNING

Should more or less serious faults be noticed, contact the RIVA After Sales & Service Department as soon as possible.

CAUTION

RIVA declines all responsibility concerning tampering carried out by third parties on equipment installed in the Shipyard. Such tampering or unauthorized installations will not only immediately void the warranty, but may cause damage to the yacht and injuries to the people on board.
RIVA declines all responsibility concerning periodical maintenance activities scheduled by the Shipyard or by Manufacturers, but not carried out, on equipment/components, for which it is necessary to refer to their own Technical Manuals.

WARNING

Avoid prolonged use of engines at low speeds to avoid overheating of exhaust pipes due to reduced cooling water circulation.

11.4.1 Engine drive

Although this yacht is very efficient, due particularly to very sensitive rudders, which allow immediate reaction to controls, its use, considering its high performance and big dimensions, requires a careful and responsible steering.

CAUTION

Even if the automatic pilot controls the route, navigation must be supervised in any case.
Adjust the speed of the yacht and the interceptors' position according to the conditions of the sea and the prevalent direction of the waves; in this way, the structure of the yacht is not submitted to useless stress and the passengers can enjoy more comfort during navigation.

The excellent quality of the engines allows keeping the maximum speed ratio for a long time, without problems.

In order to achieve the best compromise between comfort and speed, while minimising consumption, it is recommended to keep the engine speed in the range between 1500 and 2000 rpm less than the maximum permitted revolutions.

CAUTION

During navigation, the lateral sliding door should normally be kept closed, in order to prevent any exhaust gas and water splash from entering deck compartments. This will improve comfort for the passengers and silence inside the compartments.

Avoid keeping the engines at idle speed for long time, they could get overheated.

Once the yacht has reached the cruise speed, engine control devices should settle on steady values. If the instruments show contrasting or abnormal indications during continuous running, check the systems and the equipment.

Observing the following guidelines will improve comfort, minimize noise inside the yacht, avoid damage and assist in the proper operation of the yacht.

- Do not run the engines at idle longer than necessary.
- Avoid sudden accelerations and decelerations, which create stress on engine turbochargers.
- Run at idle for a few minutes before shutting down the engines, to allow a gradual cool-down.
- Once the yacht is at cruising speed, the engine instrumentation readings should remain steady. However, if, during normal operating conditions, the engine gauges show abnormal or contradicting values, investigate for possible systems and/or equipment problems or failures (stop the engines).
- Monitor the control panel gauges and system condition alerts frequently.
- Once in open waters and well clear of other yachts, increase the engine rpm gradually, until the desired speed is reached. Adjust the interceptors' position for the best performance.
- Adjust the speed to accommodate sea conditions.
- Check the engine exhausts. Very black smoke means in particular dirty filters or unburned fuel, due to improper calibration of injection pumps or injectors. Very white smoke may mean presence of water in the fuel. Bluish smoke may mean abnormal oil combustion.
- In case of abnormal vibration, reduce speed and run at slow rpm until the cause of the vibration is determined. If the vibration is severe, take the engines out of gear. It may be necessary to check the propeller condition. It may also be necessary to have a specialized technician check the alignment of the propeller shafts.
- Perform a visual inspection of the bilges periodically.

Be aware of the fuel supply in relation to the distance you plan to cover.

WARNING

While the yacht is underway, all persons on board must be seated in the designated seating areas in order to prevent injury due to falls caused by sudden yacht movements in active wake areas or in the event of sudden changes in yacht speed or during manoeuvring.

11.5 REFUELLING

Refuel as follows:

- Ensure the yacht is properly moored, stop engines and generators, if running;
- Unscrew the cap of the filling nozzle and make sure that the refuelling pump is of suitable size, then insert the pump held still. The fuel filler is positioned on each side walkway of the yacht;
- Do not top up the tanks at highest level, so as to allow the fuel to expand without spilling out from vents;
- During the refuelling phase, check that there are no accidental diesel spills/leaks due to air pockets and foam. In the final stage of refuelling (at about two thirds of capacity), it is advisable to pause frequently to allow any foam to dissolve;
- Screw the cap of the filler pipe and wipe any fuel drips on the hull and teak.

CAUTION

Refuelling should be performed in the harbour, in order to allow fuel to cool down, without to condensate. After each refuelling, empty the tanks. Before refuelling, wash the teak near the inlet nozzle with fresh water to avoid its contamination with fuel.

CAUTION

During the refuelling operation ensure that vents are free and open inlet plug on the bulkhead opposite to the one in use, to avoid fuel spills.

ENVIRONMENT

Do not scatter fuel in the environment but dispose of it in the dedicated areas.

ENVIRONMENT

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

DANGER

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

WARNING

The inlet plug carries the indication “DIESEL” to avoid accidental input of different liquids. Line pressure must always remain below 0,3 bar during diesel embarkation.

DANGER

Explosion/fire/pollution hazard

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

DANGER

Explosion/fire hazard

- Stow flammable material in a safety-approved container. Never stow flammable material in non-vented areas.
- Check bilge and engine room for fumes.
- Keep the ventilation system free of obstructions. Never modify the ventilation system.
- Inspect the fuel system for leaks.

11.6 WATER SUPPLY

Proceed as follows to refuel the fresh water tank:

- Ensure the yacht is properly moored;
- Loosen the filling nozzle and insert the hose, which must have suitable dimensions;
- The water supply ports are located along the yacht's walkways;
- At the end of filling, remove the hose and tighten the filler plug or close the tap.

WARNING

The inlet plug carries the indication "WATER" to avoid accidental input of different liquids. To prevent damage to the system and the tank, it is recommended that refuelling be carried out by gravity rather than under pressure.

CAUTION

Frequently change the water in the fresh water tank and disinfect it with suitable products if necessary. Avoid leaving the tanks completely full if there is a risk of freezing. When refilling, do not leave the yacht unattended.

CAUTION

Before refilling the fresh water tank, check that the water coming from the shore system is drinkable.

11.7 SHORE CONNECTIONS

11.7.1 Water connection

To avoid using fresh water from the tank, the yacht may be connected to an external water system using the intake located on the aft starboard side.

By connecting to this socket, all the utilities on the yacht are powered without having to use the freshwater autoclave pumps located on board.

CAUTION

The piping must be disconnected during the periods the yacht is unattended.

NOTE

For more information on use and maintenance, please refer to the manufacturer's manual.

11.7.2 Electrical connection

Proceed as follows to carry out the electrical connection from the shore:

- Open (OFF) the main switch of the shore power socket on the shore panel located in the engine room.
- Open (OFF) the switch on the shore charging point.
- Connect the power cable, first to the yacht and then to the shore power supply.
- Close (ON) the switch on the shore charging point.
- Close (ON) the main switch of the shore power socket.
- From the electrical panel in the system room, select the power supply from the platform and check the voltage using the appropriate meter.
- Before closing the magneto-thermales of the various utilities, check the voltage supplied by the shore charging point.

CAUTION

Do not modify the ground power cable connectors; only use compatible connectors. If the yacht's power cable cannot be inserted into the shore charging point, ask the Harbour Master for an adapter.

DANGER

When plugged in, check that the cable:

- Cannot go in traction due to tide variations, yacht movements, etc.;
- Cannot be damaged by crushing it, etc.

11.8 MOORING AND UNMOORING

CAUTION

Before the unmooring operation, ensure that engines, gear boxes, rudders and bow/stern thrusters are in good working order. During such manoeuvres, the Captain should prevent any unpleasant noise, and/or wake that might bother other people. Before starting this manoeuvre, make sure that doors, hatches, swim ladder, etc. are closed.

CAUTION

The rudder wheels are not interlocked. Before starting the manoeuvre, make sure that the unused station is free from people who may interfere with the controls.

WARNING

Before starting the manoeuvre, make sure that persons on board, do not interfere with the operations and that they stay in safe places, where they cannot get hurt.

The yacht is equipped with very powerful engines, with high-performance rudders and with very efficient thrusters.

Those latter have to be used at very low speed, or without fresh way; at higher speeds, it is possible to obtain a more correct reaction by using the engine throttles in an off-set way.

The ability to exploit such qualities depends on the “familiarity” the Captain has with his yacht. Practice is the only way to acquire confidence, and finally you will be able to safely perform mooring and unmooring manoeuvres even in very difficult or crowded areas.

A basic rule, that should always be applied, is to manoeuvre at low speed, so as to have enough time to react and to better evaluate the situation; in this way, in case of accidental contact with other yachts, you will not cause any serious damage.
Before unmooring check the following:

- That there are no other yachts manoeuvring nearby;
- That the mooring ropes are not damaged;
- That the fenders are in place and well secured (in the event of wind or undertow, equip the crew with fenders to avoid damage);
- That there are no floating objects or loosen ropes which can damage the propellers.

If the yacht is moored with the stern to the shore:

- Undo the stern lines, haul in the chain, until distant from the shore, and head to the exit.

If the mooring is on the side:

- Ease away the mooring rope from stern, warp on bow rope to move away the stern from the shore, manoeuvre for way out.

CAUTION

It is the Owner’s/the operators’ responsibility to make sure that the mooring ropes, the towing ropes, the anchor chain(s), the anchor lines and the anchor(s) are suitable for the intended use of the yacht, i.e. the resistance of the ropes or chains must not exceed 80% of the resistance to breaking of the relevant strength point.

11.8.1 Leaving the mooring

The yacht is steered by means of the steering wheel that moves the rudders (rudder operation is independent from the engine operation).

In case of need and/or when in confined waters, manoeuvre the yacht by using the engines (changing the rpm and reversing the engine direction of rotation).

It is a good rule not to leave the steering wheel, particularly when cruising at high speed or in confined waters.

Do not exceed the speed limits when operating in confined waters, harbours and wherever required.

Keep in mind that the rudders effect is proportional to the propellers rpm and to the yacht fresh way, especially with headway; as a result of an high rpm and an high speed, the rudder efficiency is high, while when the engines are idling, with low fresh way, the reaction of the tiller angle is almost negligible.

WARNING

Before casting off the moorings, disconnect the electrical cables and the pipes connecting to the shore.

11.8.2 Mooring manoeuvre

Before setting back for the harbour, stop in free waters and test the gear boxes and the bow/stern thrusters. Besides check:

- That mooring lines are ready for use;
- That the mooring point and the berthing course are free from incoming, leaving or moored yachts or yachts with the signal of unsteered yacht at shore;
- Check that on the main electrical panel, all necessary uses are supplied (anchor winch, bow/stern thrusters, etc..). Disconnect unnecessary uses;
- That the interceptors are in a raised position;
- That the yacht hook is easily accessible and does not hinder any passage;
- The operation of audible and visual warning devices;
- In case of at-night mooring, have a torch light (possibly operating) handy;
- That the passengers will not interfere with operations and, if participating, they know whom to listen to and what to do;
- That mooring ropes and fenders are correctly arranged.

If necessary, raise the interceptors and reduce the speed.

If the yacht is moored with the stern to the shore:

- Warp on stern ropes and on an anchor log, so as to haul the shore.

If the mooring is on the side:

- Warp on bow and stern ropes, so as to haul parallel to the shore.

Once moored:
- Stop the engines;
- Cut out not in use electrical equipment and check the general condition of the main electrical panel and the indication of voltmeters and ammeters;
- Check bilge pump switches and their regular operation;
- Check bilge and dry it;
- Ensure there are no leakages from shaft stuffing boxes;
- Rinse the yacht with fresh water;
- Connect the shore electric power supply;
- Stop the generators, once cooled down.

Before leaving the yacht, check following:
- Lower deck lights are not powered;
- Ensure that navigation lights and external lights are not powered;
- Ensure that unnecessary devices are not supplied;
- Ensure that devices in use are powered; (bilge pumps);
- Ensure that the shore plug is properly connected and the cable cannot be damaged;
- Disconnect battery breakers;
- Make sure that the devices (life jackets, yacht hook, torches, etc..) are in their correct positions;
- Ensure that all bottles and containers with flammable liquids are properly sealed;
- Make sure that no food residues are left around (they could rot or clog scuppers etc..);
- Ensure that the gangway is in the right position and properly fastened;
- Ensure that mooring is correct (in case of bad weather conditions, tighten the mooring lines as much as possible and check the distance from other yachts is appropriate; ensure fenders are properly fastened, etc..);
- Ensure that sea water intakes are closed;
- That lower deck compartments are properly closed;
- That all portholes and the garage hatch are well closed;
- All fire extinguishers.

11.8.3 Unattended mooring

If the yacht is moored and left unguarded, operate as follows:
- Close sea cocks and overboard drain valves of sea water circuits.
- Check the condition of the main electrical panels and disconnect all unnecessary uses.
- Check all on board compartments, portholes, skylights and bilge.
- Ensure that the yacht is safely moored.
- Disconnect all unnecessary uses.

CAUTION

The electric power supply from shore must be disconnected, especially if the yacht is left unattended for a long time.
It is necessary to recharge the batteries periodically.
Overboard outlets and drain pipes should be regularly checked, in order to ensure good buoyancy.
The electric system should be regularly checked, in order to prevent fires on board.

CAUTION

Inform the harbour manager of the arrangement of the on-board fire-extinguishing system and the activation of the fire-extinguishing control.

CAUTION

Disconnect all pumps of the yacht.

11.9 OPERATION AND PRECAUTIONS DURING NAVIGATION

- During navigation do no unlock the chain stopper because you can seriously damage the yacht bow.
- Maintain a safe speed for the sea conditions, visibility, and when near other yachts.
- Do not exceed speed limits in harbour and confined waters.
- Follow all navigation rules applicable to the waters in which you are operating.
- Provide laminated plastic reference cards for the Rules of Navigation and have them available for quick reference at each helm station.
- Consult charts for information on locations of reefs, rocks, shoals, or other hazards to make sure that the yacht is not at risk of grounding or collision with fixed or floating structures.
- Frequently check that your route ahead and around the yacht is unobstructed (no yachts or objects in the expected route or approaching your yacht).
- Frequently confirm the yacht's position as you cruise, using all available aids, such as charts, visual observations and bearings, depth soundings, GPS, radar, etc..
- If the yacht is controlled by the autopilot, be especially careful to keep a good visual watch. The autopilot cannot see.
- Before night navigation, make sure that navigation lights and search lights are operational. Ensure that the correct navigation lights are turned on for operation at night. Do not keep the anchor riding light on while the yacht is navigating.
- Use navigation lights in all conditions of reduced visibility, such as fog and rain and at all times between sunset and sunrise.

WARNING

When navigating at night, visual sharpness is crucial for a safe passage. To avoid collisions, reduce speed at night to compensate for limitations of visibility.
Avoid switching on inner lights that may affect the captain's night vision.

- Know the characteristics of the sea bottom prior to anchoring. Keep well clear of other anchored yachts.
- During anchoring, pay special attention to avoid the rotating parts of the winch and take precautions when handling the anchor chain as it comes off the winch. Caution is needed to avoid injury to hands and fingers. Also, take care to avoid entangling feet and legs in the anchor rode.
- While the yacht is navigating, all persons on board must be seated in the designated seating areas in order to prevent injury due to falls caused by yacht movements with rough sea and in active wake areas or in the event of sudden changes in yacht speed or during manoeuvring. No one should be seated on the spoiler or forward decks when the yacht is navigating.

WARNING

For comfort and safety, reduce the speed in the presence of waves.

WARNING

Persons entering the engine room when the yacht is navigating should be aware of the hazards of the yacht's motion and their potential exposure to high ambient temperatures, hot equipment components and operating machinery within the engine room.
Prior to entering the engine room, set the yacht on the most comfortable heading for sea and wind conditions. Persons in the engine room should maintain communication with the captain.

CAUTION

To avoid heavy injuries or even death caused by hazards in the engine room, avoid the contact with hot and/or moving parts, while you are working in this area, wear proper safety clothing and also safety goggles and safety gloves. Be extremely cautious in proximity to hot and moving parts. Wear hearing protection if the engine is running.

DANGER

It is forbidden to carry out sudden manoeuvres at high speed.
This can result in accidents to persons on board.

DANGER

It is forbidden to stand or sit on the forward cockpit while cruising at high speed.

DANGER

It is absolutely forbidden to perform reverse run with one of the two engines stopped.
This operation is allowed only in case of endangering life for the persons on board and for the safety of the yacht itself, however when the engine is running it should not run higher than 1000 rpm.

WARNING

In order to achieve the best compromise between comfort and speed, while minimizing fuel consumption, it is recommended to keep the engine operating speed in the range between 1500 and 2000 rpm.

11.10 NAVIGATION IN SPECIAL CONDITIONS

11.10.1 Navigation with bad weather conditions

Your yacht has been designed for safe comfortable use, under all weather and sea conditions, bad or favourable; in any case, the navigation safety (especially with bad weather) depends mainly on the Captain's behaviour, who should either not set off or reduce the yacht's speed, sometimes considerably, and steer the yacht with the proper attitude.

It is very important during navigation in harsh weather, to make sure that all pieces of furniture, hatches, and mobile parts, are duly fastened or stowed, to avoid damages and above all to avoid hurting persons on board.
The reliability of the machinery, also due to a perfect maintenance, the scrupulous check during the pre-navigation phase and a Captain of proven experience assume, under adverse sea and weather conditions, an even greater importance.

The following table shows the maximum speed allowed in function of the wave height, in order to safeguard the yacht structural integrity.

Speed (knots)	Wave height in metres
10	3,16
11	2,78
12	2,48
13	2,23
14	2,02
15	1,84
16	1,69
17	1,56
18	1,44
19	1,34
20	1,26
21	1,18
22	1,10
23	1,04
24	0,98
25	0,93
26	0,89
27	0,84
28	0,80
29	0,77
30	0,73

WARNING

RIVA declines any responsibility for the improper use of the yacht, in relation to the wave height conditions.

WARNING

Before undertaking navigation, it is necessary to be aware of the sea and weather conditions you will find along the transfer route and in the area you want to reach.

BEAUFORT SCALE	DESCRIPTIVE TERM	WIND SPEED		PROBABLE WAVE HEIGHT (metres)	
		m/sec	Knots	Aver-age	Max
0	Calm	0 - 0,2	Fino a 1	-	-
1	Light air	0,3 - 1,5	1 - 3	0,1	0,1
2	Light breeze	1,6 - 3,3	4 - 6	0,2	0,3
3	Gentle breeze	3,4 - 5,4	7 - 10	0,6	1,0
4	Moderate wind	5,5 - 7,9	11 - 16	1,0	1,5
5	Gentle wind	8,0 - 10,7	17 - 21	2,0	2,5
6	Fresh wind	10,8 - 13,8	22 - 27	3,0	4,0
7	Strong wind	13,9 - 17,1	28 - 33	4,0	5,5
8	Gale	17,2 - 20,7	34 - 40	5,5	7,5
9	Strong gale	20,8 - 24,4	41 - 47	7,0	10,0
10	Storm	24,5 - 28,4	48 - 55	9,0	12,5
11	Violent storm	28,5 - 32,6	56 - 63	11,5	16,0
12	Hurricane	Over 32,7	Over 64	14,0	

DANGER

Manoeuvrability is at high speeds considerably reduced, so speed should be decreased before making sharp turns in either direction to avoid losing control of the yacht.

11.10.2 Navigation with only one engine

Your yacht is driven by two powerful propulsion systems designed to operate together and at the same time.

In case of failure of one of the propulsion systems, you may navigate with only one engine.

Therefore we suggest You to:
- Shut off the failed propulsion engine;
- Set the position of the steering wheels in the opposite direction of the failed propulsion system; in case the steering wheels cannot contrast the asymmetric push of the operating system, lower the trim tab on the side of the failed system, or reduce the speed;
- Proceed as described in the chapter “Seawater system” to operate the 3-way engine/inverter valve and optimise inverter cooling;
- Head to the nearest landing at a reduced speed;
- Keep the yacht at a speed that allows the best manoeuvrability.

In case one engine stops due to a failure and the gear box is in idle position, during navigation keep constantly an eye on the oil temperature of the gear box connected with the failed system.

The propeller shaft is kept rotating thanks to the water flow through the propeller, under these conditions also some parts of the gear box are kept rotating.

Should the temperature increase excessively over 80 °C, lock the propeller shaft by engaging the gear box: in this way the resistance will be higher, because the gear box is jammed, but oil will not overheat.



WARNING

Your yacht has been designed to navigate driven by two engines; it is possible to navigate with one engine only in case of emergency and for a very short time.



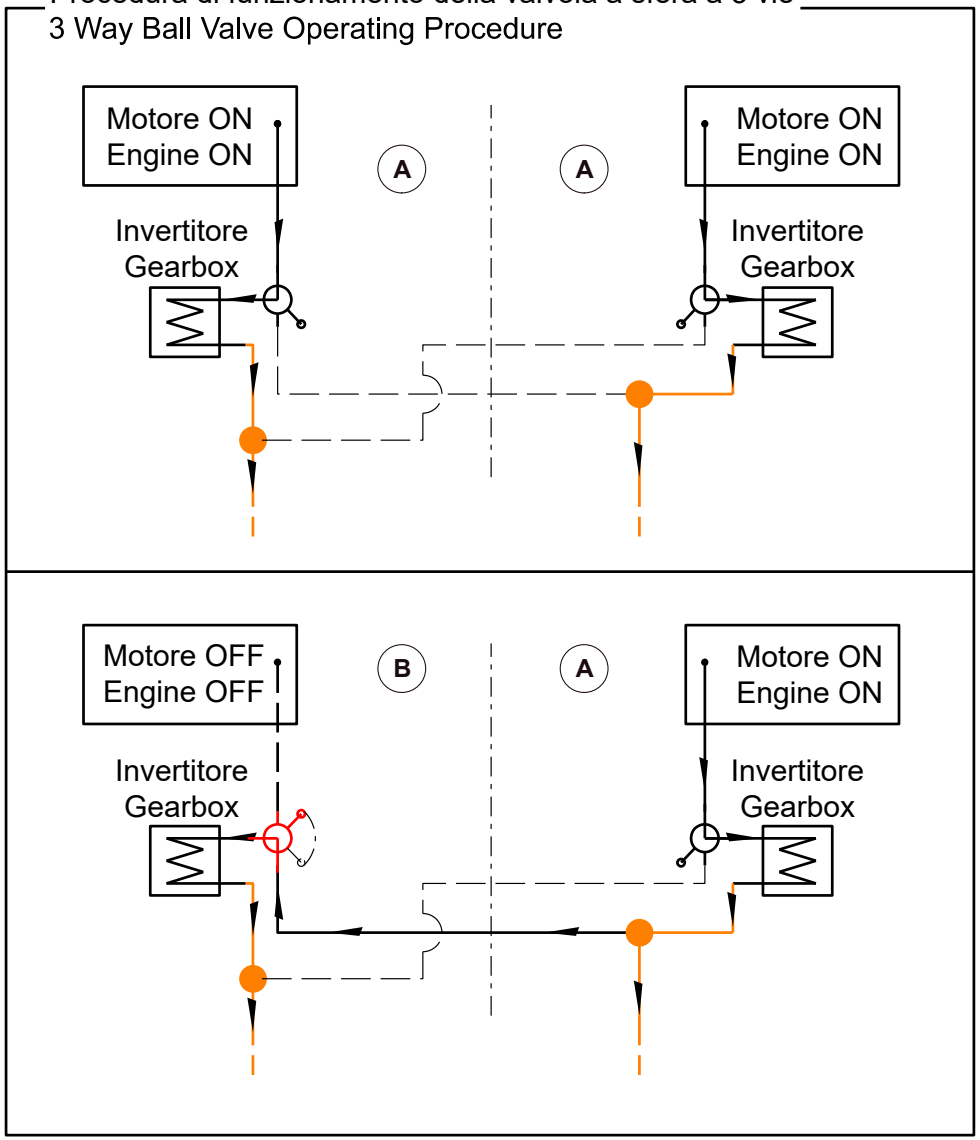
DANGER

It is absolutely forbidden to perform reverse run with one of the two engines stopped. This operation is allowed only if the life of the persons embarked and the safety of the yacht is in danger. However, the engine running must not run at more than 1000 rpm.

This yacht is equipped with Trailing Pump on the gearbox; this system allows navigation with a single engine, safeguarding the mechanical components of the engine off. For long distances a “sea water” cooling circuit has been provided with the following methods of use:

- With both engines working, the 3-way valves, positioned between the engine and the inverter, must be kept in configuration (**A**) (no partialization of the flow of water towards the other inverter).
- If one of the two engines (engine OFF in the figure) goes out or fails, the corresponding valve must be brought into position (**B**) (the inverter now receives a part of cooling water coming from the gearbox delivery in operation).

Procedura di funzionamento della valvola a sfera a 3 vie
3 Way Ball Valve Operating Procedure



11.10.3 Shallow water navigation



DANGER

Use extra caution in shallow water or where underwater/floating objects may be present. Hitting an object at high speed or at an acute angle can seriously injure people and damage the yacht.

CAUTION

Constantly check depth and sea bottom shape with the aid of nautical charts and on-board instruments.

11.10.4 Navigation at night

During night navigation, always switch on navigation lights.
The same recommendations apply to preparation and checks during navigation as for daytime navigation.

CAUTION

At night, the good sight of the crew can be particularly advantageous. Getting used to darkness requires several minutes, during which the ability to see is strongly hindered.
We recommend absolutely not to navigate at night at high speeds, to avoid hit against unexpected obstacles (floating or half-submerged bodies).

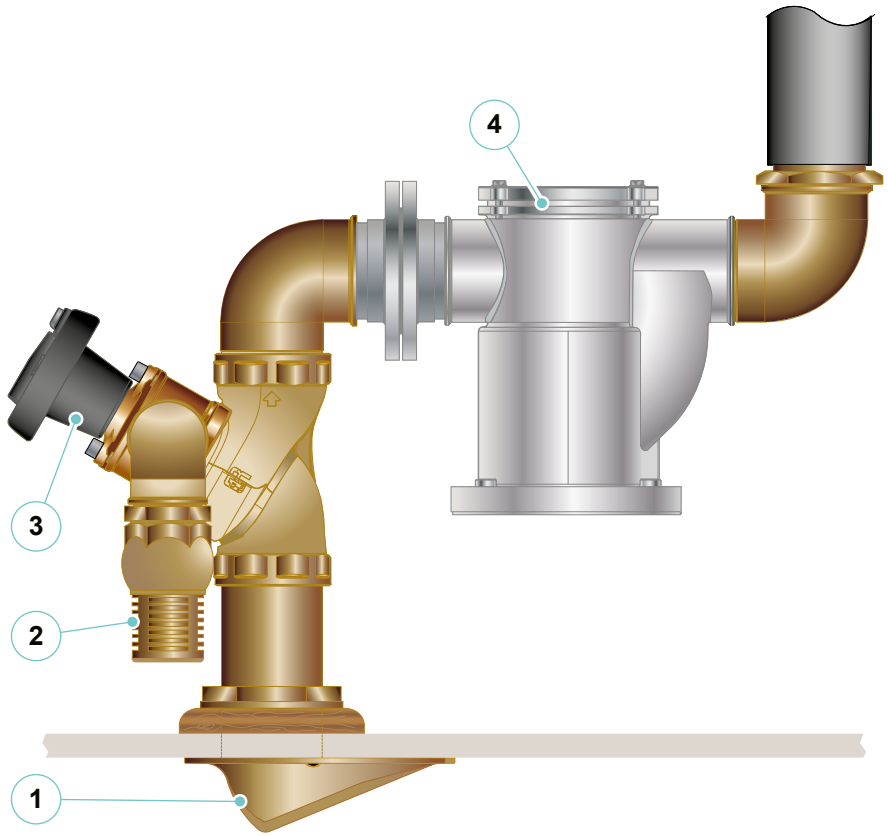
11.11 ENGINE EMERGENCY SUCTION FROM THE BILGE

In the engine room there is the bilge emergency draining system, which operates with shunters, which allow using the sea water pumps, driven by the propulsion engines as draining pumps.
The diverters are valves which, in normal position, ensure the sea water suction for engine cooling, through the sea cocks and the sea water strainers.

In case of emergency, use the handwheels of both valves, taking them to the emergency position; the suction of the pumps, driven by the engines, is now directly diverted towards the bilge.

Should it be necessary to use this draining system, the bilge level must be checked continuously, because in case of complete drainage, the engines will not be cooled down.

CAUTION
In case of emergency it is possible to suck the water from the bilge through the sea water pumps of each engine.



1. Engine sea cocks
2. Bilge emergency suction cocks
3. Suction selection handwheel
4. Engine sea cock strainers

CAUTION
When the bilge is empty, remember turning the valves back to sea water intake position, in order to avoid damaging the engines.

Operating diagram

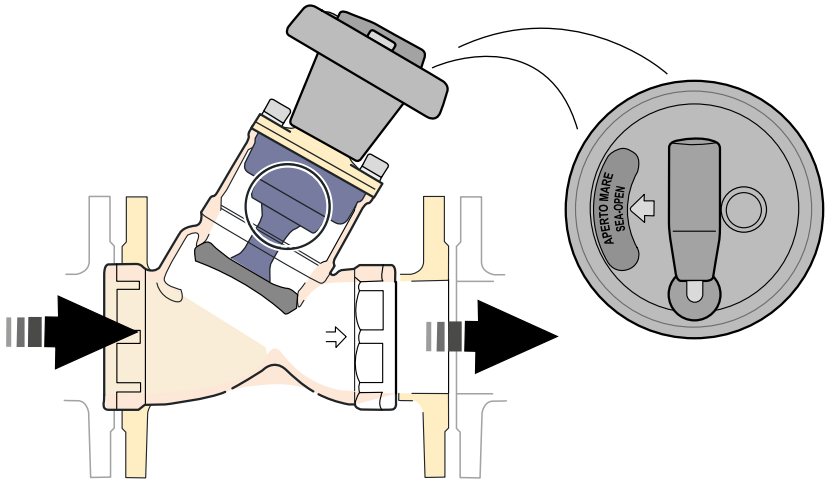
All valves are provided in the SEA-OPEN position.

Before proceeding with the installation, visually check the passage and that the wording through the handwheel window reads: **APERTO MARE / SEA-OPEN**.

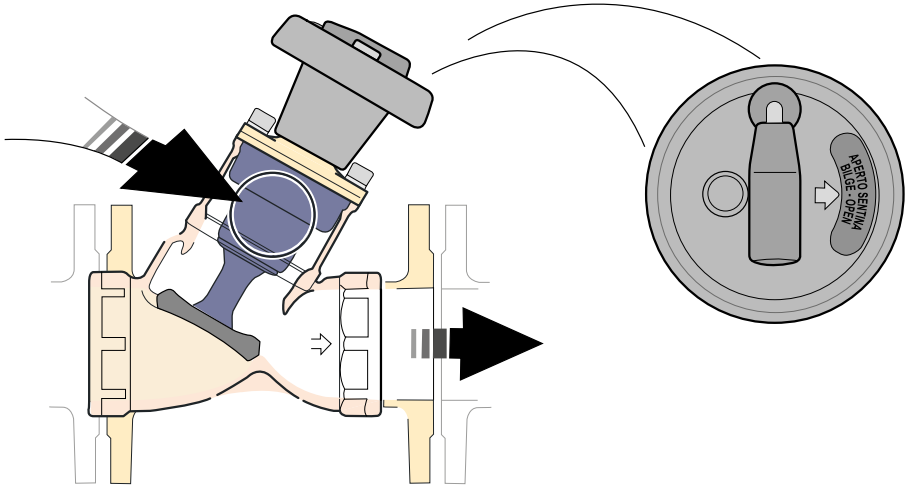
The direction of the water flow through the valve must align with the arrow on each valve.
The valves can be installed both in a vertical or horizontal position (in the flanged version using the special seals available on request) maintaining the handwheel facing the operator.

The handwheel is provided with a position indicator to simplify its use.

SEA - OPEN
APERTO MARE



BILGE - OPEN
APERTO SENTINA

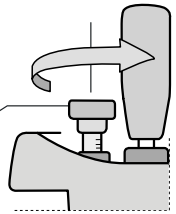


To enable water inlet from **SENTINA / BILGE**, proceed as follows:

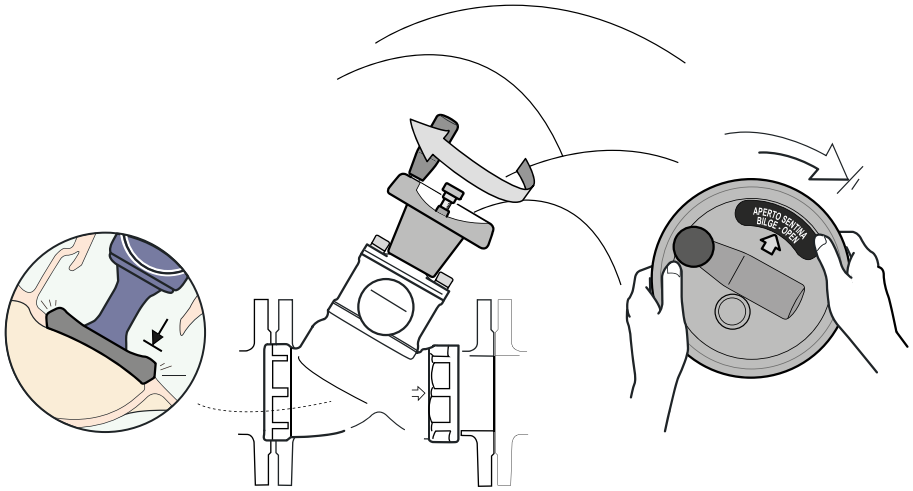
Sollevare la leva del volantino
Raise the handwheel lever



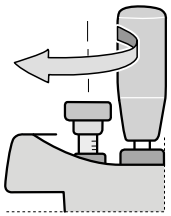
Svitare il perno sino al suo arresto
Unscrew pin until it stops

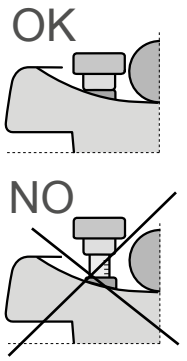


Turn the handwheel clockwise until it stops. In this phase the shutter, located in its housing, offers resistance. With both hands, close until it mechanically locks. The wording in the handwheel window will read: **APERTO SENTINA / BILGE OPEN**, which indicates the inlet position.



Tighten the pin until it stops.





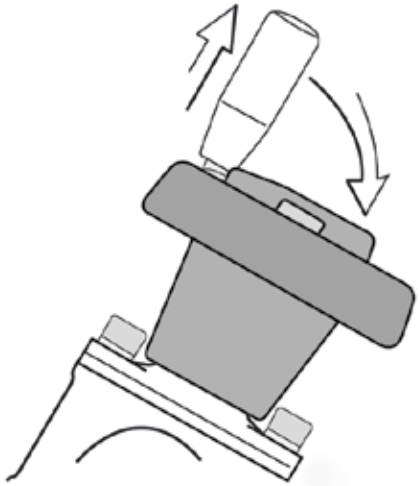
CAUTION

The pin is correctly tightened as shown.
A complete closure of the pin has the purpose of preventing any movement of the shutter.

Lower the handwheel lever into its seat.

To enable water inlet from **SEA**, proceed as described above, turning the handwheel counterclockwise.

Once the operation is finished, the wording in the handwheel window will read: **APERTO MARE / SEA-OPEN** which indicates the inlet position.



Maintenance:

During ordinary maintenance, which must be carried out while the yacht is in dry shore, it is recommended to extract the valve control block as follows:

- Make sure the indicator is set to **SEA-OPEN** (first operate the handwheel anticlockwise).
- Loosen the screws and extract the mechanism from its body, paying special attention to the rubber components (gaskets).

DO NOT remove the handwheel from its seat!

- If necessary, clean the rubber components with fresh water and soap, do not use any chemical cleaners and pay attention not to damage the gaskets.
- If necessary, the control block can be replaced with a new one.
- When reassembling, use silicone grease, and pay special attention to the seats of the gaskets.
- Make sure to insert the mechanism in "**APERTO MARE - SEA OPEN**" position (first turn the handwheel counterclockwise as indicated in the **INSTRUCTIONS**).
- Tighten the screws with a torque of approx. 9 Nm.

11.12 TOWING THE YACHT

In the case of towing or trailer, the peaks must be fixed to share the effort and centre the shot.
It is good practice, after giving time to the cleats, take the top, giving time to the winch: in this way you will have the advantage of greater strength points.
The length of the towing cable must be determined according to sea conditions, so as to amortize the throw without damaging the mooring arrangements.

DANGER
Do not approach and do not carry out any kind of intervention on transmission during the towing because propeller can turn.

Precautions before starting towing:
- Close all the sea valves to avoid accidental water entry;
- Lock the propeller shafts to prevent damage to the gearboxes;
- Maximum towing speed: 5 knots;
- The following procedure applies to calm sea and good weather conditions.

Procedure:
1. Use 2x15m mooring ropes as primary emergency towing arrangement:
   - Prepare both ropes with a bowline knot at one end.
   - Pass the ropes through the roller and fix them on the FWD cleats on the fore deck.
2. Use 2x24m mooring ropes as secondary emergency towing arrangement:
   - Prepare both ropes as above and fix them on the AFT cleat on the fore deck.
   - Adjust the length of the rope to be similar to the primary towing arrangement.



3. Use the orange towing rope to connect to the towing yacht.
   - Double the rope by passing through the bowline knots.

WARNING

In case it is necessary to tow another yacht, do this under calm sea and calm wind conditions only, and tow yachts with a displacement not exceeding 50% of your yacht displacement; in case of emergency, if towing is not possible, give help by taking the people of the other yacht on board, as many as permitted and possible, and reach the nearest harbour.
Anyway, inform immediately the Port Authority.

WARNING

Towing navigation can be carried out continuously for 8 hours, provided that you constantly monitor the gear box oil temperature, which must not exceed 80°C.
If temperature exceeds 80°C, stop navigation and wait until temperature lowers.
When the engine is shut off, the control handle position is unimportant.

CAUTION

Always draw other yachts or let your yacht be towed at low speed. Never exceed the speed of the drawing yacht when you are being towed.

CAUTION

Fasten your yacht to a towing rope so that it can be released when loaded.

CAUTION

It is the Owner's/the operators' responsibility to make sure that the mooring ropes, the towing ropes, the anchor chain(s), the anchor lines and the anchor(s) are suitable for the intended use of the yacht, i.e. the resistance of the ropes or chains must not exceed 80% of the resistance to breaking of the relevant strength point.
The Owner should also determine which action is necessary when fastening a towing rope on board.

CAUTION

Do not stand near the ropes during drawing (or towing) operations, a rope that breaks can be extremely dangerous ("whip lash effect").

DANGER

During towing navigation, the propeller shaft has to be kept turning by the water flow through propeller. We recommend not to carry out any kind of service on the thrust devices (engines, gear boxes, shafts, etc.).

11.13 HAULAGE AND LAUNCH

CAUTION

The lifting method depends on the type of lifting equipment adopted therefore it cannot be suggested.

CAUTION

Before haulage and launching check: that nobody or unexpected material is on board and that materials are properly rigged and locked.

WARNING

Hauling and launching operations have to be carried out only by qualified personnel and in special shipyards and under their direct responsibility. RIVA declines any responsibility for damages to things or persons caused by the wrong performance of hereunder listed operations.

CAUTION

Never place the lifting straps in the areas highlighted on the drawing.



- Lifting equipment must be in a good condition. The towing bands must not be deteriorated and, if possible, must be covered with adequate protection so as not to damage the hull and the anti-fouling system of the hull.

- The travel lift capacity must be greater than the yacht weight.
- Test the stability before lifting the yacht, the yacht gravity centre depends on the load and its displacement.
- On shore the yacht must be placed on a structure with at least 22 support points (10 keel + 12 lateral) of sufficient width and size as to evenly distribute the yacht's weight.
- The hull inclination must be as "natural" as possible, e.g. it must be parallel to the waterline and not to the keel. This to prevent that liquids on board keep a normal level and that rainwater can be drained naturally.

CAUTION

Do not put the lifting straps in way of intakes, of sea discharge or of other protrusions.
Lifting straps must be positioned according to the loading conditions of the yacht at the moment of its lifting, because these vary remarkably, for instance, when the yacht is unloaded and dry or when the yacht is fully loaded. The lifting straps arrangement must each time be carefully evaluated, in order to prevent any damage to the yacht.

CAUTION

RIVA declines all responsibility for the location of the lifting straps, the lowering of the yacht to the ground and the support points carried out in other Shipyards.

DANGER

During haulage and launch, never stay underneath or in proximity of the yacht.

- When ashore, the yacht must be located on a cradle with 7 supports of width and size adequate to distribute the yacht weight evenly.
- The hull inclination must be as "natural" as possible, e.g. it must be parallel to the waterline and not to the keel. This to prevent that liquids on board keep a normal level and that rainwater can be drained naturally.

Cradles

RIVA is capable of providing the cradles for a correct support of the yacht (optional on demand). RIVA is not responsible for any damage resulting from the use of cradles different from those expressly produced by RIVA.

Propping

It is a common procedure to use supporting props if no actual storage capacities are available. It is very important to take some basic precautions while positioning the supporting props for the yacht in order to prevent damage to the hull structures, accidental falls of the yacht or injury to the involved personnel.
The following list contains useful advice.
We also recommend always having propping operations carried out by experienced personnel.

- Use props with adequate strength and stability (each keel prop must support at least 1/7 of the whole weight of the yacht).
- Use correctly dimensioned supporting plates to prevent negative weight concentrations.
- Place the props preferably next to transversal structural reinforcements (stringers).
- Locate the props along the supporting fins of the hull.
- Always place at least 7 props along the keel, 5 props starboard and 5 props port in order to guarantee stability and weight distribution.
- Start positioning the 7 keel supports along a straight line, appropriately spaced to distribute weight.
- It is important that the props have the same height in order to prevent that the load is concentrated mainly on one of them.

- Have the yacht lowered very slowly until it almost touches the keel props, adjust the height of the props until they are in contact with the keel, in order to guarantee a uniform load distribution and a neutral trim of the yacht; keep part of the weight supported by the crane.
- Position the adequately spaced lateral props; it is important to remember that the lateral props must guarantee stability, but the whole weight must be supported mainly by the keel props.
- Check the support for stability, then completely lower the yacht and remove the belts.

The suggestions above are to be considered as being generally valid for propping the yacht without damaging it or harming the personnel involved; however, since the propping conditions may significantly vary depending on the props used and the surface on which the props rest, the above suggestions must be adapted case by case. RIVA is therefore not responsible for any damage to the yacht occurring while the yacht is at dry shore on props.

CAUTION

RIVA declines all responsibility for the location of the lifting straps, the lowering of the yacht to the ground and the support points carried out in other Shipyards.

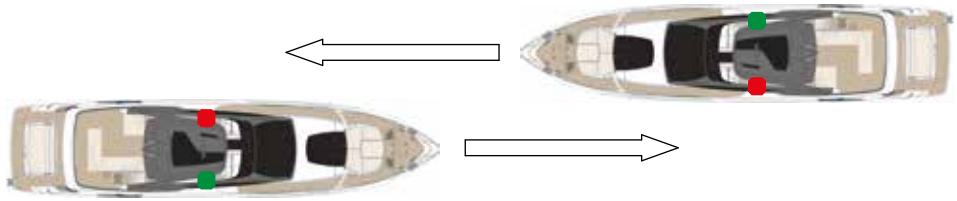
11.14 YACHT STEERING RULES

Yacht in sight
We consider three ways of sighting of another yacht at sea:

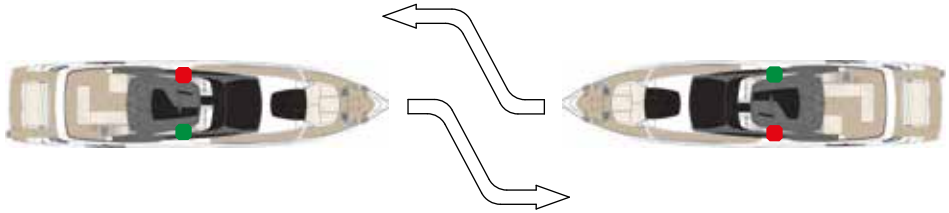
- Encounter
- Cross
- Getting ahead

Generally, the yacht with limited ability to manoeuvre has the right of course. We leave free the course and to pass it to stern. The yacht that has right of course is called privileged yacht. It can maintain its speed and course. The yacht penalized is that must adjust their speed and/or course to maintain the due distance from the privileged yacht.

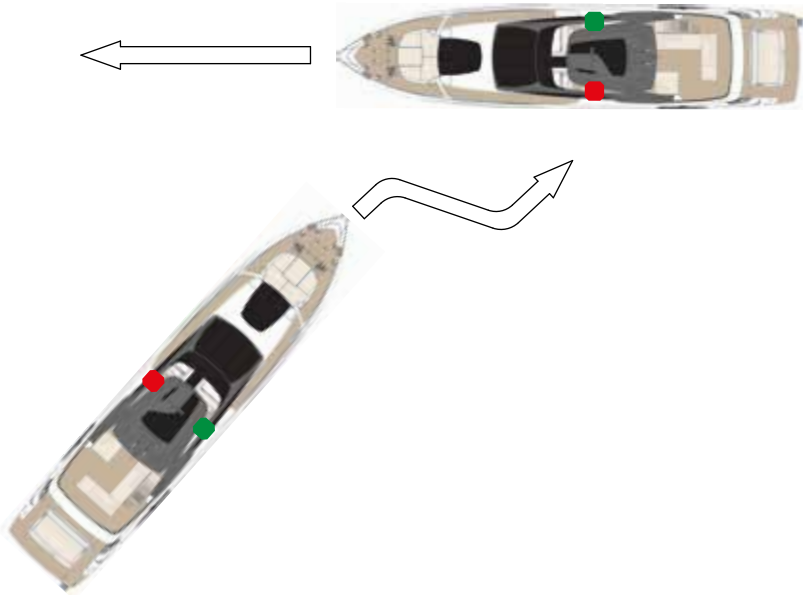
Encounter
When you meet another yacht that goes in the direction parallel, both yachts must adjust their speed and course.



When two mechanical thrust yachts are meeting on intersecting or nearly intersecting courses such as to give rise to the risk of collision, each one must change its course to starboard so that each one passes on the left of the other.



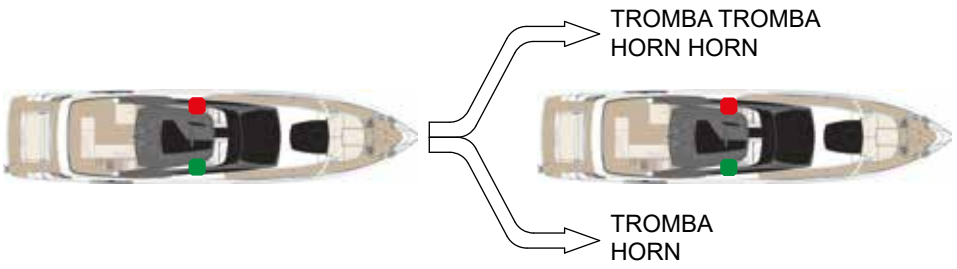
Crossing
When two mechanical thrust yachts are crossing, creating a risk of collision, the one that has the other yacht at its starboard must move away and, if the circumstances so permit, avoid passing on the bow of the other yacht.



Overtaking

Overtaking is defined as when a yacht coming from a direction of more than 22.5 degrees at stern compared to the yacht that it plans to overtake, such that it can only see the light of the yacht stern but neither of the two side lights.

If you find yourself having to pass a yacht proceeding more slowly than you and that is on your course, your yacht is the one penalized. Make all the necessary adjustments to avoid the collision and pass to the bow or starboard. Announce your intentions by sounding the horn twice if you intend to pass on the bow, and one time if you intend to pass at starboard. The yacht that is reached by another yacht takes precedence over the latter and therefore must maintain the same course and the same speed without laying or manoeuvring.
The yacht that has the bow within a 135° angle (formed by the yacht stern light) is considered the yacht that can be reached.



CAUTION

Having the right of course does not relieve you from the responsibility of avoiding a collision.

CAUTION

Yachts with limited ability to manoeuvre usually have the right of course. In the event of an imminent collision, prudence has priority over right of course.

HULL AND FURNITURE MAINTENANCE

CHAPTER 12

12.1 GENERAL MAINTENANCE OUTLINES

The yacht is equipped with a large number of sophisticated devices and systems, which require not only a certain care when it comes to use, but also regular maintenance to obtain correct operation.

One of the factors that might cause problems or faults, is usually the irregular use of the yacht and because of this, of the on-board devices.

Experience indicates that regular use of the devices normally gives fewer problems, and therefore, we recommend operating all on-board devices regularly, for short periods.

Daily checks and regular maintenance are important for maintaining equipment/components in the best working order and efficiency.

If the regular maintenance schedule is not correctly followed, the equipment's performance can deteriorate, causing reduced efficiency, a shorter life and the occurrence of unexpected problems which can compromise safety at sea.

The maintenance schedule is based on time intervals or running hours. For example, if a maintenance task is scheduled every 100 hours or 3 months, this task must be repeated at 200 hours or after 6 months, at 300 hours or after 9 months, and so on.
In case of a long period of inactivity (for example, during winter), it is advisable to lay up the yacht, possibly under cover.

CAUTION
Some general information about ordinary maintenance tasks, their schedule and procedures is provided herein with.
For further specific information referring to maintenance schedule, see Manufacturer Manuals of on board devices/components, issued by the various Manufacturers.

CAUTION
Look over the maintenance safety rules contained in this manual in order to act with the maximum safety and follow the indications here below.

CAUTION
During the replacements, remove the parts with care and order, in this way the assembly operations are as easy as possible.
Make sure to install genuine spare parts, in this way the system efficiency is not altered.
Sometimes the use of non-genuine spare parts may cause the withdrawal of the Manufacturer's warranty.

CAUTION

Check periodically that all equipment containing water is filled with the correct quantity of anti-freeze.
If the outside temperature drops below 0°C, all fresh or sea water systems are exposed to the risk of freezing and consequent breakage.
Systems especially subject to risks of freezing are all systems and devices containing either fresh or sea water.

WARNING

Before carrying out any maintenance and adjustment operation on the yacht, turn all necessary safety devices on and consider informing all personnel, in particular persons operating nearby. In particular, place warning signs in the areas concerned and prevent any device, if operated, from causing unexpected hazardous conditions, thus endangering the persons on board and/or property.
To avoid pollution, do not scatter any type of waste in the environment, and only use the dedicated disposal areas in the harbours.

CAUTION

When working in the engine room, switch magneto-thermal switches of the bilge draining pumps off, to prevent that fuel, lubricants and other liquid spilling causes sea pollution.

CAUTION

RIVA declines all responsibility for the installation and operation of electric, electronic or mechanical equipment improperly installed by third parties in a manner not authorised by the Shipyard.
RIVA declines all responsibility with regard to tampering carried out by third parties on equipment installed in the Shipyard. Such tampering or unauthorized installations will not only immediately void the warranty, it may also cause damage to the yacht and injuries to the people on board.
RIVA declines all responsibility concerning regular maintenance operations scheduled by the Shipyard or by Manufacturers, but not carried out, on equipment/components, for which it is necessary to refer to the relevant Technical Manuals.

CAUTION

The use of pressurised water on external lighting fixtures is prohibited.

12.2 LONG PERIODS OF YACHT INACTIVITY

Following list only represents a general guide to give the customer an idea of the ordinary maintenances which should be carried out when the yacht remains stationary for a rather long period without being used. We recommend carefully checking the instruction manuals of the single devices, because they often contain detailed information and very important specifications relevant to the maintenance of each device.
The following instructions NEVER REPLACE the specific instructions concerning each single device and issued by the device's Manufacturer.

- **Engines**
  Before winter time let fresh water flow into the sea water circuit, check the antifreeze liquid, the sacrificial anodes against the galvanic currents, remove salt build-ups and spray protective agents.
  Carry out the scheduled maintenance of the propulsion engines, indicated in the Use and Maintenance section.
- **Generator**
  Use the same procedure as for the engines.
- **Inverters**
  Carry out the sheduled maintenance for gear boxes.
- **Batteries**
  Check the liquid level and regularly charge the batteries, protect the terminals with Vaseline grease; the best solution would be to disconnect the batteries from the system and to charge them regularly with a separate battery charger, but this is not always possible on yachts.
- **Watermaker (optional)**
  A proper procedure provided by the supplier in the instruction manual has to be followed when the watermaker is not used for a long time.
- **Washers and Dishwashers**
  Carry out an empty washing cycle, carefully remove all detergent residues.
- **Sun-deck cushions**
  Remove all sun-deck cushions and store them into a dry place.
- **Aluminium and steel**
  Wash all metallic parts with fresh water and protect by rubbing with a rag soaked into Vaseline oil.
- **Wood and interior upholstery**
  Cover the cushions of sofas with sheets and above all cover all windows with the relevant covering sheets, so that as little light as possible is projected inside, because the UV-rays fade the wood and tissue colours.
- **Teak wood deck**
  Wash with water and neutral soap. Sandpaper if strictly necessary.

CAUTION

DO NOT USE mechanical or forced water jet equipment (e.g. pressure washers, etc..) to wash the deck, as this force alters the wood and the caulking sealants (it detaches the microparticles) causing damage in some cases even radical (e.g. detachment of the staves).

CAUTION

DO NOT USE alkaline-based or acid-based detergents or aggressive detergents (soda, solvents, ammonia, etc..) to wash the deck; their aggressive degreasing action corrodes the wood (it eliminates its natural water repellency and whitens its natural colour), while the caulking sealant modifies its physical-chemical qualities, softening the surface, damaging the waterproofing, sealing and anchoring of the deck.

- **Side windows**
  Wash with mild soap and water.

CAUTION

When using the harness support for personnel involved hanging kit for washing the side windows in the hull are prohibited the use of a single point of attack.
For more information on the use and maintenance of the system, refer to the manufacturer's documentation.

- **Sacrificial anodes**
  Check their wear and if necessary, replace the hull, propellers shafts and stabilizer anodes, etc..
- **LOG Transducer**
  Pull out the propeller, clean it and apply the proper propeller plug.
- **Windscreen wiper**
  Wash with fresh water and lubricate with Vaseline oil.
- **Anchor winch**
  Protect the electrical components with a suitable protective spray and lubricate with silicon grease clutches and wildcat.
- **Water tank**
  Wash with disinfectant, drain the fresh water circuit, especially if frost is forecasted.
- **Fuel tank**
  Cleaning by means of a decanter especially if there are traces of water in the fuel.
- **Grey water tank**
  Pour sterilizing products into the washbasin, showers, and bidet wastes. Empty the tank and clean, ensuring the float is efficient.
- **Black water tank**
  Pour a sanitary product containing Paraformaldehyde (available in camping equipment shops) into the WCs and rinse the tank with this mix a couple of times. Drain the tank completely.
- **Air conditioning**
  Before winter:
  - Circulate fresh water in the sea water circuit.

  After winter:
  - Check the anti-freeze mix in the fresh water circuit: top-up or replace it if necessary (perform replacement at least every two seasons);
  - Carry out the maintenance operations suggested by the Manufacturer.
- **Tender engine**
  Wash with the fresh water contained in the cooling system of the engine. Carry out the maintenance as recommended by the supplier.
- **Bow and stern thruster**
  Protect the electrical components with a proper spray and check the oil level.
- **Electro-hydraulic control units**
  Protect with the proper sprays and check the oil level.
- **Fire extinguishers**
  Check the loading condition and expiry date for regular inspections.
- **Safety equipment**
  Check the expiry dates of the self-inflatable means, flares etc..
- **Engine room**
  As for the engine room, we suggest carrying out a general cleaning, by removing all traces of salt drifts on devices and protect all electric, mechanic and hydraulic devices, by spraying them with protective agents.

- Clean all cabins and inspect all dunnages on-board.
- Check all hatches seals and lubricate their contact with appropriate silicone lubricant.
- Clean fan coils with an air jet, sucking the dust from the back net.
- Inspect the outer hull and all components: propeller, anodes, supports, interceptors, fan coils, sea cocks, bow/stern thruster
- Carry out laying up of the yacht in a sheltered and dry place. If the yacht is stationed outside, cover it with a waterproof sheet, in such a way that allows ventilation. Otherwise the formation of damaging moisture could be helped.
- Wash the yacht with fresh water.
- Check all systems and fastenings on the yacht: damages, wear, cracks are signs of unsuitable use. Repair the damaged equipment. If necessary, fit new ones.
- Check the efficiency of limber holes and that they are not clogged so as to cause the leaking of the bilge system.
- Check the fastening of the partial or total covering of the yacht.
- Disconnect all unnecessary utilities.

DANGER

During recharge the batteries produce explosive gas. Do not approach to recharging area with free flames or sparkles.
Avoid wrong connections; never connect a positive terminal (+) with a negative one (-).

12.3 RE-USE OF THE YACHT AFTER A LONG INACTIVITY

CAUTION

After a long period of yacht inactivity, carry out all above-listed operations and following checks:

- Check the condition of all hoses and connections of the steering system, interceptors, gangway, etc..
- Start the engines.
- Stop the engines.
- Clean fuel filters. Replace engine oil filters and add oil to the engines if necessary.
- Check all bilge pumps and their operation.
- Check the operation of the black water, grey water and sea water pumps.
- Check the operation of all on-board instruments used for navigation.

Engines:

After the winter, check engines oil, gear boxes and replace them if necessary. Check oil and fuel filters and replace them if necessary.

- Adjust the belt tension of the alternator belts both of engines and generators.
- Fill the fuel tank. Vent the air of the fuel system.
- Start propulsion engines.
- Let the engine run at middle speed for some minutes, before letting them run at full speed.

Generators:
- Start the engine of the power generators.

Hull:
- Verify the hull.
- Have the bottom hull accurately cleaned, as well as the rudders and interceptors with brushes (with water) or a jet-cleaner (dry) to remove seaweed and scales.
- Check the paintwork condition of the hull. If necessary, have 2 coats of suitable antifouling paint applied by specialized personnel.

Propellers and anodes:
- Verify the propeller condition and possible leaks from the seals, if necessary adjust them.
- Check the conditions of the sacrificial anodes; if necessary, replace them.

Batteries:
- Check the charge of the batteries, and that their terminals and housings are dry and clean.

12.4 HULL MAINTENANCE

Component	Maintenance	Notes and precautions
Bottom hull	Periodical cleaning and check of antifouling treatment (as required according to stationary area, but at least every three months) Check/restoration Preparation of the surface of an already treated yacht	The length of the antifouling effects depends mainly on the conditions of the waters where the yacht is stationary. **CAUTION** To remove the old antifouling, do not use sandblasting methods, as it may damage gelcoat surface and the anti-osmosis resin applied by the Manufacturer. As suggested by the antifouling manufacturers, use paint removers or, as an alternative, wet sanding. The Shipyard uses high-quality ant-fouling paint and applies two layers. **CAUTION** Bad maintenance condition (barnacles, etc..) may cause cavitation and damage shaft, rudders, propellers, etc.. **CAUTION** Small areas of paint may peel off from the propellers even after a short period of operation.

12.4.1 Bottom hull

Antifouling treatment
If scales build up on the hull, these cause a remarkable speed reduction and with time may damage the “gel coat”. When you choose an antifouling paint for your yacht, it is important that you find the proper product, suited for your yacht and for the waters in which you are going to navigate. Contact the RIVA After Sales & Service Department.

Check/restoration
The cleaning and checks have to be carried with yacht at dry shore or with the help of a diver. Have the repairs done only with yacht at dry shore.

WARNING
To clean and check the yacht in water: disable the engines and generators start.

CAUTION
There are some hull areas (fastening area of thruster shaft support base, submerged drainage areas, areas around thruster tunnels and shaft exits, etc..) where operations can be carried out after hull pressing; in these areas, fillers are usually used which, over time, may produce local faults, like bubbles or small cracklings. These little faults do not impair the hull mechanical strength at all. To repair them just sandpaper the area, remove the bubbles, and apply fillings suitable for the bottom hull.

- Have the bottom hull accurately cleaned, as well as the rudders and interceptor with brushes (water) or a jet-cleaner (dry) to remove seaweed and scales.
- Let check the paint situation of the bottom hull. If necessary, have 2 coats of suitable antifouling paint applied by specialized personnel.

Preparation of the surface of an already treated yacht
Carefully check the old anti-fouling paint to see if it is still good or if it needs a new layer. Verify that the new product is compatible with the old one.
Contact the RIVA After Sales & Service Department.
If the old antifouling is crusty, thick and tends to scale off, then remove it and start the treatment as for a new yacht.

CAUTION
Antifouling is poisonous and should never be burnt, use only authorized disposal procedures and in case of doubts contact the authorities in charge. The sandblasting operations and removal of antifouling must be carried out with suitable clothes and protections.

WARNING
During the application of antifouling, make sure that following parts of the bottom hull are not painted:
- Depth sounder transducer;
- LOG speed sensor propeller;
- Sacrificial anodes;
- Shafts and propellers.
- Underwater lights;
- Hull porous plate;
- Reference anode of the monitoring system.

12.5 GENERAL MAINTENANCE

Component	Maintenance	Notes and precautions
Gel-coat **CAUTION** The alteration of colour and brightness in correspondence of areas which are highly exposed is considered as normal. The necessary polishing has to be considered as normal maintenance. **MAINTENANCE** At least once a month perform an accurate cleaning of all fibreglass parts. At least once every six months check the status of the fibreglass. When necessary, but at least once every two years, polish all fibreglass parts.	Formation of bubbles Periodical cleaning (as required) Formation of cracks Periodical cleaning (as required)	In some areas of the yacht, bubbles may generate on the gel-coat; these bubbles can break over time, thus exposing the fibreglass underneath. The drawback occurs generally in vicinity sharp angles, and depends on air bubbles that, during fabrication, remain entrapped between fibreglass and gel-coat, although quality checks are carried out by specialised personnel. Broken gel-coat bubbles are easy to repair by filling the voids and touching up with gel-coat that can be requested to the RIVA After Sales & Service Department. **CAUTION** Always wash using neutral products. In case of particularly persistent dirt, do not use products containing ammonia that turn the surface yellowish. When underway, some structural parts of the yacht are subject to bending, and create tension or compression stresses in fibreglass and on the gel-coat; the different elasticity of gel-coat and fibreglass can cause small cracks on the gel-coat surface, in particular in the most stressed areas, e.g. near cleats, stanchions, etc.. This problem, however, does not jeopardize the mechanical and structural characteristics of the hull. **CAUTION** Do not use sandblasting systems to remove any gel-coat. As suggested by gelcoat Manufacturers, use suitable products or, as an alternative, wet sand.

Component	Maintenance	Notes and precautions
Wood and upholstery	Regular cleaning	The worst enemies of these materials are light and moisture; to protect them, they must be kept away from direct light as much as possible and the interior must be ventilated as soon as the weather conditions allow. The use of external awnings is extremely important because there is no species of wood, either natural or dyed, which, when exposed to the sun's rays, does not undergo a change in colour. The woods used for the yacht's fittings are exclusively natural-based materials carefully selected and the painting cycles with which they are treated comply with environmental regulations. Furniture made of wood, precisely because of the natural origin of both the material and the treatments, may be subject, if not properly treated and maintained, to: • Colour variations due to exposure to direct and continuous light. It is advisable to shade the heavily exposed parts with the internal curtains supplied with the yacht; • Retention of dirt if not cleaned promptly, given the characteristic absorbency of wood fibres. It is recommended to use non-aggressive products; • Scratches and marks if in contact with sharp or metallic objects, due to the inevitable relative "softness" of the wood. Despite the painting cycles developed after many years of experience, wood remains a "living" material, and therefore subject to movement and settlement. Scratches causes by bumps must be repaired immediately, to avoid the blackening of the wood below. The technical staff of the RIVA After Sales & Service Department will advise you about the maintenance level you have to apply at the end of each season's use. Correct maintenance will allow you to avoid deterioration which is expensive to repair. **CAUTION** The extremely precious finishes of the polish-varnished woods used for bathroom floors and cockpit tables is the result of careful work: they are water resistant but at the same time delicate and need careful maintenance. Such surfaces must therefore be dried after use or after rain and must be washed and maintained regularly.

Component	Maintenance	Notes and precautions
Wood and upholstery	Regular cleaning	**CAUTION** Upholstery and wooden parts: the leather and wooden parts have to be treated as natural products, subject to colour alteration, particularly if the necessary precautions for good maintenance are not taken. RIVA therefore reserves the right to evaluate any problems and its own responsibility according to case. **MAINTENANCE** At least once a week, carefully wash and clean all teak outside parts, and at least once a year perform a protective treatment with suitable products. **CAUTION** Current use: • Do not walk or jump on the cushions; • Prevent the cushions from turning yellow due to direct exposure to sunlight; • Prevent the absorption of water or moisture by not leaving the upholstery exposed to bad weather, particularly during periods of inactivity. Cleaning: • Remove ordinary dirt with a warm water solution and neutral soap: do not use detergents or solvents; • Dry with a soft rag, not leaving any residues. Preservation: • Store clean, dry upholstery in a cool, ventilated and dry area; • Do not place heavy objects on upholstery when stored.

Component	Maintenance	Notes and precautions
Teak	Regular cleaning	The characteristic of teak is its resistance to weathering and therefore, it does not require maintenance. Over time, teak tends to assume a particular silver colour that may not appeal; in this case, to maintain the original colour of the teak, it needs to be treated regularly with specific products. If the wood has smears that cannot be removed with normal washing, it is necessary to sand the wood to remove stains, and then repaint with wonder teak. You must use fresh water and manual brush (no hard bristles) at least once a day. This will remove any machinery, common dirt from feet and shoes, and normal environmental salt. This process, if carried out regularly, allows constant maintenance of your teak and caulking. In this case only time and wear will naturally deteriorate this product. **CAUTION** Do not clean the teak with stiff brushes, as even rubbing the grain lengthways can damage the softer grain of the wood. Non-black caulking may not behave in the same way as the black one. Any aesthetic issues, such as surface mildew, colour variations, dirt in the caulking are not defects and may be prevented with regular maintenance and service on the teak surface and caulking.

Component	Maintenance	Notes and precautions
Teak	Regular cleaning	**CAUTION** Washing the deck with mechanical equipment or with a jet of pressurised water (hydro-cleaners, for example) IS STRONGLY ADVISED AGAINST since this force alters the wood and the caulking sealants (detaches the micro-particles), even causing serious damage in some cases. Washing the deck with alkaline or acid-based detergents, or however with aggressive agents (soda, solvents, ammonia, etc..) IS STRONGLY ADVISED AGAINST. Their aggressive degreasing action corrodes the wood (eliminates its natural water-repellent properties and bleaches its natural colour), while the physical-chemical properties of the caulking sealant are altered, with its surface portion becoming softened and the impermeability, sealing and anchorage of the deck becoming damaged. **CAUTION** Be careful when cleaning the exterior painted parts. The use of alkaline or acid-based soaps or detergents, which are usually used to remove dirt or salt, can settle on the deck and irreparably damage the teak and caulking sealant. Therefore, teak and caulking sealant must be insulated when these washes are carried out. Therefore, when these washes are carried out, it is necessary to isolate the teak and caulking sealant from any deposits, even temporary, of soaps and/or detergents. If it is not possible to cover the deck when cleaning the structure, we recommend wetting the deck with plenty of fresh water. We recommend the same procedure when refuelling. If fuel seeps into the wood or caulking sealant, the deck will be irreparably damaged there. Use a neutral detergent to clean the teak.

Component	Maintenance	Notes and precautions
Ceilings Panels	Regularly check the flatness of the panels and / or any discontinuities or steps between the ceiling panels	Whenever the ceilings are disassembled, it is compulsory to check the status of the Fit Lock or/ and 3M Dual Lock fastening systems, breakage of the teeth, and/ or the entire system. **WARNING** Do not install Fit Lock or 3M Dual Lock ceiling panels with damaged fastening systems, due to a possible reduction of their retention power. Damaged parts must absolutely be replaced with new ones. In order to be sure that the ceilings have been reassembled correctly, check flatness with the other ceiling panels and the absence of discontinuities and steps between one ceiling panel and the others.

Component	Maintenance	Notes and precautions
Light alloys and stainless steel	Regular cleaning	It is a good rule to accurately wash the entire yacht after each navigation, in particular all metal parts that may be damaged by sea water. Have plenty of fresh water sprayed on handrail, windows, skylights, rub rail, anchors, cleats and ladder. Protect all metal parts with Vaseline oil periodically. **MAINTENANCE** At least once a year check the fastening of all metallic parts of the yacht. **CAUTION** The stern glass door is not watertight, so do not point the bolt of water towards the window, when washing. **CAUTION** Never use brushes or abrasive rags on metallic fittings, not even on rusty spots, scratches on the surface result in a less shiny appearance and diminish the mechanical features.

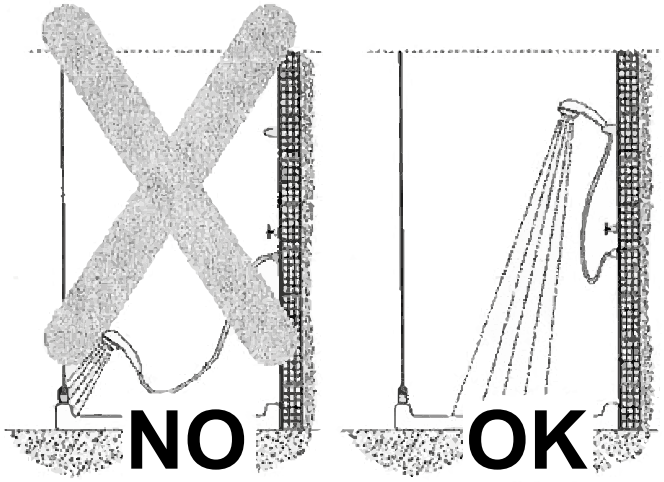
Component	Maintenance	Notes and precautions
Sun-deck cushions	Regular cleaning	Remove the cushions from the seats at regular intervals and let their underside and the seat surface dry. When washing or when it is raining, remove the cushions and stow them in a covered place; however, when cushions are wet, remove them from their seats, to prevent water or moisture from remaining trapped between cushions and underneath surfaces. This could affect the gel-coat and also create osmosis bubbles and deteriorate the cushion cover. The cushions must be washed with running water; do not use jet-cleaners, brushes or abrasive sponges. **MAINTENANCE** At least every 6 months, check seams and fasteners. At least every month carry out the washing of the cushions.
	General Care and Cleaning Guide	• **For light soiling,** a solution of 10% PH neutral soap in warm water applied with a soft damp cloth. Rinse with clean water and dry. • **For heavy soiling,** dampen a soft white cloth with a one to one (1:1) solution of an all purpose and dye-free household cleaner and water. Rub gently and rinse with a damp cloth. **CAUTION** Do not use alcohol-based cleaning agents! **CAUTION** Do not use aggressive detergents and/or solvents, which will cause immediate damage and contribute to the deterioration of the material.

Component	Maintenance	Notes and precautions
Windscreen/windows	Regular cleaning	**CAUTION** Rags and chamois leathers used for cleaning glass must be replaced at least every 3 months. The inner side of windows and windscreen can be cleaned with non-aggressive and non-acid detergents for glass and a soft or paper cloth. **CAUTION** If, after normal cleaning, some traces of dirt or light scratches remain, do not try and remove them with mechanical means or using aggressive detergents, solvents or abrasive products. Contact the RIVA After Sales & Service Department. **CAUTION** For cleaning the outer side of coloured or mirrored (pyrolytic) windows and windscreen: • Evenly wet the whole surface of the glass with plenty of fresh water. • Use a neutral detergent or a delicate commercial product (not alkaline) diluted in fresh water. • Spread the solution with a soft and clean cloth. Frequently rinse the cloth in order to prevent deposits of dust or dirt particles which could scratch the glass or its glazed coating. • Rinse the soapy surface with plenty of fresh (or distilled) water. • We recommend drying the glass with chamois leather only. For cleaning the tinted windows and windscreen it is possible to use the same type of detergent used for internal cleaning (non-aggressive and non-acid).

Component	Maintenance	Notes and precautions
Mirrored glass walls	Regular cleaning	**CAUTION** For cleaning mirrored glass walls only use water and neutral soap. Different products could damage the surface coating.
Windscreen wiper and washer	Regular cleaning (as required)	Wash them carefully with fresh water and coat with Vaseline oil; grease the spring with silicone grease. Check the rubber blade conditions regularly, and replace the blades if worn; this prevents bad visibility problems.
Windscreen and deckhouse glass	Inspection of seals	**CAUTION** At least once every 6 months check the condition of the glass seals. If you feel that the seals have deteriorated due to a wear, please contact RIVA After Sales & Service Department.
Light fittings	Regular cleaning	DO NOT use alcohol-based products to clean the light bodies.

Component	Maintenance	Notes and precautions
Instrumentation and navigation lights	Regular cleaning (as required)	Use clean wet rags for cleaning. **MAINTENANCE** At least once a week, check the operation of the navigation lights. At least once a week, carry out careful cleaning of glasses and headlights. At least once every six months, check the presence of corrosion in the connections of the navigation light cables. At least once every six months, tighten the cable connections of the navigation lights. **CAUTION** Do not use chemical or abrasive products. After navigation, cover instrumentation and equipment.
Metal parts and connectors	Regular cleaning (as required)	Grease connectors and metal parts of the devices installed and exposed to moist and salty environment to prevent oxidation; pay particular attention to the above-mentioned components of the steering system, gangway, hatches, and control units, etc..

Component	Maintenance	Notes and precautions
Plexiglass	Regular cleaning (as required)	To clean the Plexiglas, only use products that do not contain aggressive substances such as alcohol, ammonia or the like. Preference for antistatic liquid detergent. **CAUTION** Never use alcohol or acetone to clean Plexiglas parts; they could crack inside. Use cloth of soft material (such as cotton or felt). To clean, degrease and polish the Plexiglas, spray a small amount of antistatic liquid detergent on the cloth and wipe the surface. The antistatic effect of the cleaner is very useful to prevent dust from being attracted by static electricity generated during rubbing and that makes it very difficult to clean the entire surface smoothly. If the cause of opacity is dirt, simply use an anti-static cleaning fluid and a soft cloth to remove smears: the Plexiglas will clean and bright. If opacity is due to the contact with aggressive substances, it means that the surface has been compromised in the structure and the Plexiglas will not return as before. If the marks are light and have been caused by wear and not from chemicals, anti-scratch paste can solve the problem. Even for light scratches anti-scratch paste is suitable.

Component	Maintenance	Notes and precautions
Shower	Checking and replacing gaskets	**CAUTION** Carry out regular maintenance and/or replacement of the shower box seals, in order to prevent water leakage. **CAUTION** The shower enclosures are made in such a way as to avoid water leaks outside the enclosure, under normal conditions of shower use. However, they do not have a watertight seal.  The functionality of the shower cubicles is subject to the use for which it was designed; the water tightness is therefore conditioned by the correct use.
Fenders	Regular cleaning (as required)	Always keep all the fenders and their sleeves clean by washing regularly with fresh water, in order to prevent the salt deposited on them from scratching the paint of the hull.

Component	Maintenance	Notes and precautions
Back glass wall	Cleaning	The stern glass wall has many functional and aesthetic advantages. The salon door, that completely overlaps the fixed part starboard makes it possible to convert the salon and the cockpit into a single, large room. Of course, this glass wall needs particular care during washing, because a lack of care may allow water to penetrate. To avoid this problem, we advise taking great care to the direction of the water jet for rinsing: it should not be directed frontally and with pressure, but the water should be let flow down from above. **MAINTENANCE** At least once a week, clean thoroughly. At least once a month, check the operation. At least once every six months, check the locking with open door. When necessary have them adjusted.

12.6 MARBLE MAINTENANCE

THE WORST ENEMIES OF MARBLE ARE:
Some substances damage marble more than others.
Keeping them away from surfaces, or at least removing them promptly as soon as they come into contact with the marble is very important if you want to preserve its appearance.

The worst enemies of marble surfaces are:
1. **Water:** a enemy of marble, especially that with a high presence of limestone. If it settles on marble surfaces and is not dried, it can ruin them in the long run.
2. **Coffee, wine and dyes:** as dark substances, coffee, wine and other food dyes can damage marble when they come into contact with it.
3. **Tomato sauce:** tomato sauce, when it stains, is very difficult to remove, and the same applies to marble.
4. **Polishing wax:** marble should be polished from time to time, but never apply too much wax to avoid risking obtaining the opposite effect, i.e. making it dull.
5. **Sugary substances:** fruit, juices and sweet substances, if deposited on marble, can corrode it, ruining its natural lustre. If they accidentally fall on the marble, they need to be cleaned quickly.

HOW TO CLEAN MARBLE:
1. **Damp cloth:** If the stain to be removed is not particularly stubborn, a damp cloth can be used to clean marble surfaces and achieve an excellent effect.
   It is important to always remember to dry the surface, otherwise, limescale will damage it.
2. **Marseille soap:** Marseille soap is also perfect for cleaning marble surfaces. Lightly dampen a cloth and rub it lightly on the soap, then wipe the marble. After rinsing, carefully dry the surface, which will look as good as new.
3. **Hydrogen peroxide:** Hydrogen peroxide is another product that can have infinite uses, including cleaning marble.
Put a drop of hydrogen peroxide on a damp cloth and rub it on the marble surface to quickly restore its shine.
4. **Baking soda:** Baking soda is another useful substance for cleaning marble. Put a tablespoon of baking soda in a glass or container and mix. The resulting compound is a slightly abrasive paste that will penetrate the marble, freeing it from foreign substances, the stains. Baking soda is also perfect for polishing, so the marble will look shinier after the treatment.
5. **Detergents for marble:** On the market, you can find numerous special detergents for cleaning marble surfaces. They are very useful for those who have large marble surfaces to wash, such as floors. Make sure that the detergent is not too acidic and aggressive, or the surface will be weakened over time and more susceptible to stains.

HOW NOT TO CLEAN MARBLE:

CAUTION
Do not use generic household cleaners of any kind.

Cleaning marble with products purchased in non-specialised shops that contain acids, alkalis and other chemicals can mark or damage the surface, leaving the stone more vulnerable to staining.
The most common and popular household cleaners are too aggressive for use on marble and can cause damage.

Trying to save time by using low-end products such as general surface cleaners will only lead to expensive repairs or marble restoration.

CAUTION
Do not use vinegar, ammonia or lemon juice.

Powders and even “soft” creams contain abrasives that can scratch and dull the surface.
Detergent soap scum and water are the main contributors to bathroom wear. Use only specific detergents for marble to avoid most marble cleaning problems.

CAUTION
Do not place toiletry products on the work top.

Hair products, toothpaste, perfumes, colognes, nail products, creams, lotions and potions can stain or mark the surface leaving dots, rings or dull areas.

Protect surfaces by making sure these products do not come into contact with the marble.

12.7 SPEED MULTISENSOR MAINTENANCE (LOG SENSOR)

Component	Maintenance	Notes and precautions
LOG - speed multisensor with valve	Periodical check Ordinary Maintenance	As indicated in the Manufacturer's Manual. **MAINTENANCE** At least once every six months check the correct operation. At least once every six months check the connection of the cables. At least once every six months check the propeller and grease the outer Log.

TROUBLESHOOTING

CHAPTER 13

13.1 GENERAL NOTES

The yacht is equipped with a large number of complex devices and installations. These require regular checks and maintenance to keep their operation correct.
One of the factors that might lead to problems or faults, is usually the irregular use of the yacht and, as a consequence of this, of the on-board devices. Experience has shown that the regular use of the devices normally means fewer problems and , therefore, we recommend regularly operating all on-board devices for short periods.
When an on-board problem is detected, it is essential to carry out a quick check in order to understand its cause and, if possible, to find a remedy. In order to analyse a malfunction it is appropriate to ask the following questions:

- Is the malfunction caused by a human error?
- Is the malfunction due to bad weather conditions ?
- Is the malfunction due to a device failure or to a fault of another external device, but in some way connected to the first one?
- At what stage does the malfunction occur: at the start, at steady state, at device switch OFF?
- Does the malfunction occur repeatedly; if yes in which way?
- What does the malfunction imply from an operating point of view?
- Does the malfunction trigger any signals (luminous and/ or acoustic: sirens, buzzers, etc..) and/or messages on a display and/or anomalous noises (like whistles, beats, buzzes, etc..) and/or anomalous smells (burning smell)?
- Does the malfunction interfere with the operation of other devices?
- Is the malfunction a real apparent fault (that is, it can be cleared after a device reset and following switch ON).

The best, most complete answer we can give to the previous questions, will give us a malfunction analysis.

This section of the Manual analyses the most likely causes, that may lead to the malfunctioning of a component of the main components/devices on board. For any possible analysed cause, a corrective action is advised, in order provide a solution to the problem that is as effective as possible.

WARNING
We recommend, in order to operate with peace of mind, in full safety, taking good note of the Safety Rules relevant to Maintenance described in the “SAFETY RULES”.

WARNING
Corrective actions may only be carried out by specialised and authorised personnel.
RIVA declines all responsibility for proposed corrective actions carried out by unskilled personnel.

CAUTION
For more detailed information, please refer to the various Manufacturer’s Service Departments or contact the RIVA After Sales & Service Department directly.

13.2 PROPULSION ENGINES

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. Engine does not turn when starter is actuated		
- Battery	• Low or defective	• Charge or replace (see Manufacturer's documentation)
	• Defective cable connections	• Check if cable connections are properly secured (see Manufacturer's documentation)
- Starter	• Defective engine wiring or starter	• Check if cable connections are properly secured, contact RIVA After Sales & Service Department
- Engine wiring	• Faulty	• Contact the RIVA After Sales & Service Department
- Local Operation Panel	• Loose seating of assemblies or connectors	• Visual inspection
- ECU engine Control Unit	• Loose plug-in connections	• Check plug-in connections
- Engine	• Gear locked (engine cannot start manually)	• Contact the RIVA After Sales & Service Department
- Start-interlock limit switch	• Not installed or defective limit switch • Defective wiring	• Check limit switch • Check wiring

Trouble	Cause	Corrective action
2. Engine turns but does not fire		
- Starter	• Poor or defective rotation of starter	• Charge or replace battery (see manufacturer's documentation)
- Engine wiring	• Faulty	• Contact the RIVA After Sales & Service Department
- Fuel system	• Not vented	• Check vent
- ECU Engine Control Unit	• Faulty	• Contact the RIVA After Sales & Service Department
3. Engine fires unevenly		
- Fuel injection equipment	• Defective injector	• Replace
- Engine wiring	• Faulty	• Contact the RIVA After Sales & Service Department
- Fuel system	• Not vented	• Check vent
- ECU engine Control Unit	• Faulty	• Contact the RIVA After Sales & Service Department

Trouble	Cause	Corrective action
4. Engine does not reach full-load speed		
- Fuel supply	• Shut OFF	• Open shut-OFF valve before fuel pre-filter (water/fuel separator)
	• Fuel pre-filter clogged (water/fuel separator)	• Replace
	• Fuel filter clogged	• Replace
- Air supply	• Air cleaner clogged	• Replace
- Fuel injection equipment	• Defective injector	• Replace
	• Defective Injection pump	• Contact the RIVA After Sales & Service Department
- Engine wiring	• Faulty	• Contact the RIVA After Sales & Service Department
- Yacht	• Yacht too heavy	• Check yacht's load condition, reduce load if necessary
	• Yacht's trim position	• Trim yacht
	• Marine growths on hull, propeller shaft, propeller, rudder	• Clean
- Rudder	• Rudder position	• Align rudder
- Propeller	• After propeller replacement: propeller too small/large	• Replace only with original spares

Trouble	Cause	Corrective action
5. Engine speed not steady		
- Fuel injection equipment	• Defective injector • Defective injection pump	• Replace • Replace
- Speed sensor	• Faulty	• Contact the RIVA After Sales & Service Department
- Fuel system	• Not vented	• Vent
- ECU engine Control Unit	• Faulty	• Contact the RIVA After Sales & Service Department
6. Charge-air temperature too high		
- Coolant	• Incorrect coolant concentration	• Check (with trial kit)
- Intercooler	• Contaminated	• Contact the RIVA After Sales & Service Department
- Engine room	• Air intake temperature too high	• Check fans and ventilation air supply
7. Charge air pressure too low		
- Air supply	• Air cleaner clogged	• Check air cleaner clogging indicator
- Intercooler	• Contaminated	• Contact the RIVA After Sales & Service Department
- Turbo charger exhaust	• Faulty	• Contact the RIVA After Sales & Service Department
8. Coolant leaks from intercooler		
- Intercooler	• Leaking, major coolant discharge	• Contact the RIVA After Sales & Service Department

Trouble	Cause	Corrective action
9. Exhaust gas black		
- Air supply	• Air cleaner clogged	• Check air cleaner clogging indicator
- Fuel injection equipment	• Defective injector • Defective injection pump	• Replace • Replace
- Yacht	• Overload	• Contact the RIVA After Sales & Service Department
10. Exhaust gas blue		
- Engine oil	• Too much oil in engine • Oil separator clogged	• Drain engine oil • Replace
- Exhaust turbocharger, piston rings, cylinder liner	• Faulty	• Contact the RIVA After Sales & Service Department
11. White exhaust gas		
- Engine	• Not at operating temperature	• Run engine to reach operating temperature
- Fuel system	• Water in fuel	• Check fuel pre-filter (water/fuel separator filter) and drain pre-filter
- Intercooler	• Leaking	• Contact the RIVA After Sales & Service Department

13.3 GEAR BOX

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. Transmission oil temperature too high	• Insufficient water flows through oil heat exchanger • Drain sludge from oil cooler • Undefined range, clutch slipping	• Increase water flow • Clean oil cooler • Adjust mechanism
2. Transmission oil temperature too low	• Excessive water flow through heater exchanger	• Reduce water flow
3. Oil pressure upstream of oil cooler and filter too high (*)	• Clogged oil filter • Oil cooler dirty	• Clean filter and drain off oil sludge • Clean oil side of oil cooler
4. No operating oil pressure (*)	• No oil in transmission • Wrong rotation direction at transmission input • Faulty display unit	• Add oil • Use special transmission version • Remedy fault
5. Operating oil pressure too low (*)	• Oil viscosity too low • Incorrect oil pump ratio • Defective oil pump • Pressure relief valve leaking • Defective timeswitch for pressure modulation	• Use a prescribed oil grade • Adjust oil pump ratio to suit engine operating speed range • Replace oil pump • Remedy the fault • See Manufacturer's documents
6. Operating oil pressure too high (*)	• Oil viscosity too high • Incorrect oil pump ratio	• Use a prescribed oil grade • Adjust oil pump ratio to suit engine operating speed range

(*) see monitoring data.

Trouble	Cause	Corrective action
7. Drive interrupted between transmission input and transmission output; clutch not transmitting torque	• Mechanical transmission actuation: incorrect shift angle	• Adjust setting
	• Electrical transmission actuation: electrical system fault	• Remedy electrical system fault
	• Defective solenoid valve	• Replace
	• Longitudinal valve stuck	• Remedy fault
	• No operating oil pressure	• See “Operating oil pressure too low”
8. Drive between transmission input and transmission output cannot be interrupted; clutch does not disengage	• For possible causes and remedial actions, see “clutch not transmitting torque” fault	• Use a prescribed oil grade • Adjust oil pump ratio to suit engine operating speed range
9. Clutch slips at high engine speed	• Operating oil pressure too low (*)	• See remedy for “Operating oil pressure too low”. If the fault cannot be remedied on board, proceed at reduced engine speed - so that the clutch does not slip - until repairs can be carried out. Avoid changes in direction or only change direction with the propeller almost at a standstill and with engine idle speed as low as possible
10. Oil level decreases rapidly (as indicated on the dipstick). See maintenance job “Oil level check”	• Leaks on housing joints or oil lines, oil escaping from shaft seals	• Correct mechanical fault
	• Oil cooler leaking into cooling system	• Remedy fault, replace oil cooler if necessary
11. Oil level increases. See maintenance job “Oil level check”	• Water entering the oil circuit from the cooling system	• Correct mechanical fault
12. Transmission is too loud at certain speed ranges	• Torsional vibration resonance of propulsion system in engine idle speed range	• Avoid critical speed range. Use more suitable flexible coupling (see Manufacturer’s document)

(*) see monitoring data.

Trouble	Cause	Corrective action
13. Transmission too loud at engine idle speed range	• Torsional vibration resonance of propulsion system in engine idle speed range	• Increase engine idle speed range
14. Engine stalls following rapid change from “Ahead” to “Astern”	• Engine idle speed too low • Change in direction effected too quickly or effected at excessive yacht speed	• Increase engine idle speed range • Change direction (see Manufacturer’s document)

If the fault cannot be remedied, also the transmission lubricating oil supply is at risk. Proceed at reduced engine speed only until repairs can be carried out.

(*) see monitoring data.

13.4 GENERATORS

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. Fluctuating or low oil pressure	• Oil level too low	• Stop the generator immediately and top up with suitable oil
	• Dirty oil	• Replace dirty oil with new suitable oil
2. Cooling water temperature too high	• Excessive load	• Reduce the load
	• Air in the cooling circuit	• Bleed the circuit
	• Coolant low level or wrong mixture	• Restore the cooling water level and correct percentage
	• Sea water intake is obstructed or sea water intake filter is clogged	• Clean sea cock and strainer
3. Black smoke	• Engine room insufficient ventilation	• Check that air intakes are not obstructed
	• Excessive load	• Reduce the load
	• Unsuitable fuel	• Replace with suitable fuel
	• Cooling water temperature too high	• See step 2
	• Lack of maintenance	• Have the scheduled maintenance operations carried out

(*) see monitoring data.

Trouble	Cause	Corrective action
4. Blue smoke	• Excessive oil	• Discharge the excess oil by draining oil filters
	• Dirty oil	• Replace dirty oil with new suitable oil
	• Lack of maintenance	• Have the scheduled maintenance operations carried out
5. White smoke	• Cold generator	• Let the generator warm up
	• Generator with too low load	• Increase the generator load
6. Lack of power	• Engine room insufficient ventilation	• Check that air intakes are not obstructed
	• Fuel filter clogged	• Clean
	• Unsuitable fuel	• Replace with suitable fuel
	• Cooling water temperature too high	• See step 2
	• Lack of maintenance	• Have the scheduled maintenance operations carried out
7. Excessive or unusual noise	• Insulation cover not properly fastened	• Check
	• Leakage from the exhaust	• Check the exhaust
	• Exhaust not properly fastened	• Check the exhaust
	• Lack of maintenance	• Have the scheduled maintenance operations carried out

13.5 BATTERY CHARGER

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. Charger does not work	• No AC voltage coming in	• Check the system • The green 'AC' LED should light up if current is present
	• Input voltage too low	• Check fuses or circuit breakers
	• Charger does not work below 160/80 V	• Check the generator output voltage by disconnecting the connected load, the output voltage should be present
2. Charger does not work while mains voltage is present	• The network frequency may be too high or too low	• Check generator output frequency
	• The frequency must be between 35 and 66 Hz	• Check generator rpm
3. Batteries not fully charged	• Charge current too low	• See "charge current too low"
	• Current to load too high	• Decrease the battery load
	• Charge time too short	• Replace the battery
	• Battery temperature too low	• Use temperature sensor
	• Defective battery (short circuit in cell)	• Replace the battery
4. Battery loses charge quickly	• Battery capacity reduced because: - Wastage - Sulphating/stagnation	• Replace batteries • Charge/discharge several times, this might help, otherwise replace batteries
5. Batteries are warm	• Defective batteries (short circuit in cell)	• Replace batteries
	• Battery temperature too high	• Use temperature sensor
	• Charge voltage too high	• Check the switches setting

13.6 INVERTER

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. No output voltage and no lighting of warning lights (LED off)	• High output voltage	• Check the battery voltage and switch off the charger
	• DC fuse burnt out	• Replace the fuse
	• Switch set on remote control, but this is not available	• Place the switch to ON
2. No voltage in output, LED of battery charge is ON	• Batteries flat	• Charge the batteries, the inverter will switch on when the battery voltage exceeds 24 V
3. No voltage in output, temperature LED ON	• The inverter is overloaded	• Reduce the charge and let the inverter cool down
4. No output voltage, LED “ON” is lit	• Inverter is in stand-by	• Connect a charge or modify the jumper’s settings
5. Low voltage in output	• Low power supply = jumper adjustment	• Connect a charge > 30 W or modify the jumper’s settings
6. The inverter turns on and off, the “ON” LED and the battery charger LED flash in turns	• Batteries flat	• Disconnect the charge and charge the batteries
	• Wires are too thin	• Replace with wires of correct diameter
	• The connections are corroded or faulty	• Tighten connections. If wires are burnt out, replace them
7. The inverter lights ON/OFF, the ON LED is lit, the “overload” LED flashes once a second and the fan operates at full speed.	• The inverter is overloaded	• Reduce the inverter load
	• The inverter has been switched off ten times as a result of an overload or short- circuit condition	• Reduce the load or the short-circuit. Reset the inverter manually through ON/OFF switch

13.7 USES

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. A connected device will not receive power supply	• Power line fuses blown	• Check the line and replace the fuses
	• Wiring disconnected	• Check wiring connections
	• Connections oxidised maintenance	• Check and carry out proper maintenance

13.8 FUEL SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. Irregular fuel supply to engines and generators and engines	• Circuit valves closed or not fully open • Filters clogged	• Check/Open • Clean

13.9 BLACK OR GREY WATER DRAINING SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. Holding tank or grey water tank drain irregular	• Circuit valves closed or not fully open • Lack of maintenance • Abnormal pump operation	• Check/open • Carry out maintenance • Check

13.10 FRESH WATER SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. No water to outlets	• Circuit valves closed or not fully open • Tanks empty • Pump not receiving electric power supply • Protection pump mode	• Check/open • Fill the tanks and bleed the circuit • Check • Reset
2. Pump starts even with outlets closed	• Circuit leaking	• Eliminate leakage
3. The pump gets continuously on/off	• The tank has no air inside the membrane	• Contact the RIVA After Sales & Service Department

13.10.1 Watermaker

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. The pump runs but can't reach the pressure as indicated	• The pump sucks air • Worn valves • Worn seat of pressure relief valve • Improper or worn nozzle • Worn gaskets	• Check the intake pipes. They must be well air-tight • Check and/or replace • Check and clean • Check and/or replace • Check and/or replace
2. Irregular pressure variations	• Worn intake and/or pressure relief valve • Presence of foreign bodies in valves • Air suction • Worn gaskets • Relief valve too open	• Check and/or replace • Check and clean • Check intake pipes • Check and/or replace • Close the valve nut clockwise
3. Drop in pressure	• Worn nozzle • Worn intake and/or pressure relief valve • Presence of foreign bodies in valves	• Replace • Check and/or replace • Check and clean
4. Noise	• Air suction • Broken or unloaded spring of intake and/ or pressure valves • Presence of foreign matters • Worn bearings • Exceeding temperatures of pumped fluid	• Check the suction pipes are well air-tight • Check and clean • Check and clean valves • Replace • Decrease the temperature

13.11 BILGE PUMPS

For further information, please contact the RIVA After Sales & Service.

Trouble	Cause	Corrective action
1. Bilge pump does not run. No water pumped.	• Wire connections	• Check wire connection integrity, make sure wire connections are not corroded. • A visual check may not be enough, a slight pull on each wire will indicate if wires are still connected. • Check to ensure that no wire joints are hanging down into the water.
	• Blown fuse	• Check the correct fuse size (fuse size is printed on the side of the bilge pump). • If fuse size is correct, check the impeller through the inlet opening to be sure it is not jammed or stuck with debris.
2. Repeated blown fuse	• Fuse rating or clogged impeller.	• Re-check fuse to verify compliance to pump specifications. • Also examine impeller area & clean any obstructions.
3. Pump runs without water output	• Airlocking/cavitating	• Inspect & reposition hose for short vertical discharge. • We suggest installing pump below water line to ensure sufficient water flow. • Faulty or clogged check valve may add to pump air locking.
	• Pump strainer & impeller area clogged with debris.	• Disconnect pump & clean outside of strainer, clean debris around impeller, & reattached & re-hook wiring.

Trouble	Cause	Corrective action
4. Pump shaft corroded	• Electrolysis, cracked housing.	• Inspect pump housing for cracks which can cause leakage into motor cavity causing corrosion. • Possible incorrect current running through wiring causing corrosion.
5. Pump stays on after water is pumped out	• Wire connections may be incorrect, automatic pumps may have faulty circuit, possible electrical short.	• On bilge pumps check for correct positive and negative battery connections.
6. Nozzle breakage	• Hose clamp fastened too tightly.	• Suggest using plastic style hose clamp, do not use PVC hose.
7. Pump impeller spins backward	• Check wiring	• Switch wiring for correct polarity.
8. Wires overheated, melted insulation	• Incorrect fuse size, possible jammed impeller	• Inspect & clean impeller area of any debris. • Make sure that impeller is free to rotate. • Check to make certain correct fuse rating is installed. • Replace all damaged wiring.

13.12 HYDRO-ELECTRIC STEERING SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. Air bubbles or foam in the system	• The oil level in the tank is too low and does not allow the suction pipe to be completely plunged. In this way the pump sucks oil and air at the same time	• Verify/Check
	• Possible openings and little holes on the suction pipes or faulty pump seals, which allow air to penetrate	• Verify/Check
2. The pump does not deliver oil	• Wrong rotation direction	• Verify/Check
	• Obstructed ducts or suction strainers	• Verify/Check
	• Too low oil level into the tank	• Verify/Check
	• Air leakages in the suction system	• Verify/Check
	• Too viscous oil with some difficulties in passing through	• Verify/Check
	• The shaft or other components of the pump are broken	• Replace
3. Lack of pressure in the system	• The pump does not deliver oil	• Verify/Check
	• Relief valve is not calibrated	• Verify/Check
	• Free discharge of oil to the tank somewhere in the system	• Verify/Check

Trouble	Cause	Corrective action
4. The pressure of the system is low or fluctuating	• Possible leaks in the piping or elsewhere in pressurized parts of the system	• Verify/Check
	• Relief valve set at a too low rate	• Verify/Check
	• The relief valve remains open or oscillates in its housing	• Verify/Check
	• Restriction of pump suction pipes or possible obstruction of filter	• Verify/Check
	• Air in leakages into suction pipes or by pump seals	• Verify/Check
	• Worn pump	• Verify/Check
5. Too noisy pump	• Wrong pump rotation direction	• Verify/Check
	• Oil with air bubbles	• Bleed
	• Oil viscosity causing obstructions to the suction system	• Verify/Check
	• Irregular inflow of oil to the pump, caused by an insufficient filtering capacity of the filter (the filter could be dirty or not suitable)	• Verify/Check/Clean
	• Big lacks of charge along the suction line	• Verify/Check
	• Worn pump components	• Verify/Check/Replace
	• Relief valve vibrations	• Verify/Check
	• Mechanical vibrations due to a bad anchor action	• Verify/Check

Trouble	Cause	Corrective action
6. Too high temperature	• The pump is working at a higher pressure than the allowed one	• Verify/Check
	• Faulty or worn pump which causes an internal blow-by	• Verify/Check
	• Excessive blow-by through valves and cylinder	• Verify/Check
	• Too viscous oil	• Verify/Check
	• Continuous overloaded operation	• Verify/Check
	• Too high temperature in the room where the pump unit is placed	• Verify/Check
7. Leaks from the seals	• Eventual abrasive substances entered into the oil circulation, which have damaged the pump's shaft	• Verify/Check
	• Seals are faulty, broken or mounted in a wrong way	• Verify/Check
	• Too hot oil	• Verify/Check
8. Pump overcharging the motor	• Too viscous oil	• Verify/Check
	• Obstructed delivery line or excessive resistance	• Verify/Check

13.13 AIR CONDITIONING SYSTEM

For further information, please contact the RIVA After Sales & Service Department.

Problem	Cause	Corrective action
1. High crankcase temperature	• Overheating • Poor circulation of treated water (winter cycle) or condensation water (summer cycle)	• Check coolant charge • Correct circulation
2. Low suction pressure	• Low coolant charge • Poor circulation of condensation water (winter cycle) or treated water (summer cycle)	• Add • Correct circulation
3. System noisy	• Loose fastening bolts • Unit base improperly insulated • Improper support or insulation of piping • Piping vibrations	• Tighten bolts • Insulate foundation • Use correct piping techniques and support piping with suitable hangers • Clip pipes correctly. Check the couplings

Problem	Cause	Corrective action
4. Compressor does not start	• Power OFF • Thermostat misadjusted • Pressure switch open • Faulty wiring • Pumps not operating • Flow-switch does not close • Gas discharging unit	• Check the supply. Check fuses and/or magne-to-thermal switches • Adjust thermostat • Reset switch and check proper calibration • Check diagram and rewire • Check pumps free rotation. • Check the magneto-thermal switches • Restore correct treated water circulation • Check coolant circuit for possible breaks due to transport and installation
5. Compressor cycles intermittently	• Low pressure switch erratic in operation • Low coolant charge • Internal protection tripped	• Check pressure switch setting. Check good circulation of condensed water • Add • Check for any voltage drop, correct
6. High delivery pressure with compressor stop (high pressure switch)	• Coolant overcharge • Insufficient or no condenser water flow; clogged condenser or sea-water strainer • Condensed water pump OFF • Poor treated water circulation (winter cycle) • Air in coolant circuit	• Remove excess coolant • Adjust water regulating valve to condenser; clean condenser or sea-water strainer • Check pump and start • Check for air in the circuit. • Check for possible clogging • Restore vacuum and refill with coolant

13.14 GANGWAY

For further information, please contact the RIVA After Sales & Service Department.

Trouble	Cause	Corrective action
1. The system does not react to the controls	• Flat battery • Fuse	• Verify that the battery of the sender is loaded or correctly inserted • Verify that the self learning of the sender code has been carried out • Check that the hydraulic control unit is correctly supplied; check for the integrity of the 3 A fuse
2. The gangway do not move uniformly	• Thermal protection	• Wait (approx. 5 minutes) and try again. If the problem persists, contact the RIVA After Sales & Service Department

Riva

A FERRETTIGROUP BRAND