

**Specifications for the
Mangusta 165 Open
Triple waterjets motoryacht**

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IMPORTANT NOTE

Any comment or request added to this Tech Spec is to be written in RED at the end of each Paragraph. To be considered valid is to be pointed out to Overmarine, discussed and specifically approved.

Notes/Requests/Comments not as per above specification will not be considered valid!

1. General Conditions

1.1 Intent

It is the intent of this document to establish an as accurate as possible description of an ocean going Twin Waterjets Luxury Motoryacht. Besides being specific, this document will also set forth the spirit, which is to guide all parties involved with the realisation of the design, by the making of decisions and value judgements.

1.2 Dimensions

Length over all	163.7 feet	49,9 meters
Length on waterline	133.5 feet	40,7 meters
Beam	30.18 feet	9,2 meters
Draft	5.25 feet	1,6 meters
Displacement at full load conditions	639340 lbs	290 tons
Displacement at half load conditions	573201 lbs	260 tons

1.3 Tank capacities

Fuel oil	10567 US gallons	40000 litres
Fresh water	1056.7 US gallons	4000 litres
Grey/Black water*	79.25 US gallons	300 litres

* Treatment System Installed

These capacities are to be considered as desirable targets depending on the final systems installed. It shall be noted that significant differences must be brought to the attention of the owner's representative already during the preliminary design stage.

1.4 Performance

Top speed at half load	33 knots
Economical Cruising speed at half load	24 knots
Range at economical cruising speed*	700 nautical miles

* One generator always running

1.5 Type and Brief Description

1.5.1 Type of Yacht

Triple-jet diesel Mediterranean Sport motoryacht of contemporary design, in the style of the smaller Mangusta motoryachts, with a modified V planning hull, flared bow and transom type stern with integrated bathing platform.

1.5.2 Construction

Composite hull, with appropriately spaced transverse frames and girders, which run longitudinally as extensions of the engine foundations. All located in the hull bottom below the cabinsole. There shall be three watertight bulkheads (Engine Room Aft blkd, Engine Room Fwd blkd and Collision Blkd).

1.5.3 Propulsion

Three MTU Diesel Engines mod. 16V 4000 M90 – 2720kW (3645HP) at 2100 rpm. Each engine is fitted with a ZF Gearbox model BW7550 and a Kamewa model 80 SII (Wings)/ 71 BII (Booster) water jet.

1.5.4 Lay Out

Interior arrangements and style as per approved General Arrangement Drawings nrs. _____ (dated _____) and sketches prepared by _____

1.6 Design and Specifications

1.6.1 Specification

The document at hand, which should be seen as a complement to the design drawings, describing in detail the construction of the yacht and listing the material and equipment items to be used or installed.

In the case that the specification describes a specific item not or only in a limited way shown on the design drawings, or vice versa, the Builder shall be required to supply the most complete version.

1.6.2 Copyright

All design drawings and the specification are protected by Copyright, they are made available for the sole purpose of enabling the recipient to perform a specific task during the realisation of the design and must not be reproduced wholly or in part or be passed on to third parties without the specific written permission from its author.

1.6.3 Construction Drawings

The Builder's in-house naval architect or an expert firm assigned by the Builder shall be responsible for the hull shape design, for all the drawings required by the Classification Bureau and for the weight calculations.

All the Drawings approved by the ABS (American Bureau of Shipping) Classification Society will be made available for review and comments to the owner's surveyor

1.6.4 Systems Drawings

All drawings and accompanying detailed parts lists to be produced by the Builder's in-house Engineer or an expert firm assigned by the Builder, required for the design of all shipboard systems including all the drawings required by the ABS. The Systems Drawings shall include at least the following:

- Schematics of the individual systems.
- Numbered parts lists accompanying each schematic.

All the Drawings approved by the ABS Classification Society will be made available for review and comments to the owner's surveyor.

1.7 Main Contractor

The building yard awarded the contract for the construction of the yacht, in this specification referred to as the Builder.

1.7.1 Workmanship

All work to the yacht or parts thereof shall be carried out by skilled and experienced tradesmen in accordance with the established good boat building practices and to the satisfaction of the nominated Owner's Representative.

1.7.2 Shop Practice

The Builder's standard workshop practice, which shall be acceptable, provided that the required quality level as set forth in these specifications shall be maintained.

1.7.3 Construction Buildings

Construction is to be carried out under permanent cover, keeping the yacht under construction and its components and materials at all times protected from weather conditions. The internal conditions and the available facilities must suit the requirements of the various aspects of the construction of a composite luxury yacht.

1.7.4 Housekeeping

The yacht and its immediate surroundings are at all times to be kept clean and free from any accumulation of debris and of vermin or insect infestation. Special care is to be taken that drain pipes and other locations, which are similarly difficult to reach at the later stages, are kept open and unclogged at all times. Precautionary measures must be taken to protect the all or partially completed portions of the yacht and the installed components against any form of damage.

1.7.5 Working Hours

The normal Opening Hours by the Shipyard shall be:
Monday through Friday from 7:30-12:30 hours 13:30-17:00 hours.

1.8 Classification

The yacht is to be built under the survey of and in full accordance with the ABS Rules for the Classification-Certification of Yachts (1993) including all Amendments and Notices issued up until the date of signing of the Vessel Construction Agreement.

The class notation shall be: ABS +A1 YACHTING SERVICE AMS
Country of Registry regulations.

1.9 Inspection

The builder shall, during normal working hours, keep the yacht available for inspection by the Owner, the BV surveyor, the naval architect, the designer and the Owner's Representative.

It shall be allowed that photographs are taken from the work in progress.

1.9.1 Inspections by Architect

The naval architect shall, notwithstanding the fact that he is an employee or a subcontractor of the Builder, monitor the work in progress in order to insure that his drawings are adhered to.

1.9.2 Inspections by Owner's Representative(s)

The Owner's Representative shall:

- on a regular basis inspect the work in progress;
- be authorised, on behalf of the owner, to make decisions relating to the execution of the work;
- direct all his comments and remarks with respect to the yacht under construction to the Builder's project co-ordinator;

The Builder shall:

- at regular intervals meet with the Owner's Representative for the purpose of evaluating the status of the project. Any anticipated delay should then be brought to the attention of the owner's representative.

1.10 Schedule

The estimated construction schedule is to be confirmed.

1.11 Trim

When fully commissioned, with all equipment on board and at 60% bunkers, the yacht shall float evenly on her lines. The Builder shall be allowed to place on board up to 6 tons of lead ballast. Such ballast shall be permanently fixed in place through the use of an epoxy compound and subsequently glassed over.

1.12 Documentation

All documentation, text on drawings, equipment panels, handbooks etc. shall be in the English language.

At the handover of the completed yacht the Builder shall deliver to the owner:

- A full duplicate set of "as built" drawings, both in print and on computer discs.
- First The Temporary Class Certificate and then the Class Certificate.
- Complete original manufacturer's manuals, handbooks, drawings and spare parts lists in the English language.

1.12.1 Nameplates

The Builder shall fit nameplates at the main valves etc.

1.12.2 Handbooks

During the course of constructing the yacht the builder shall fully co-operate with and make available all information and documentation to the person, who shall be assigned by the owner to produce the yacht's manuals and maintenance programs.

1.13 Change Orders

The shipyard has the faculty to make the necessary modifications for the good working of the systems. The shipyard must inform the ABS Classification Society and the Owner's Surveyor about these modifications.

1.14 Testing, Commissioning and Seatrials

1.14.1 Testing

During the course of construction, the Builder shall, as requested from the ABS Classification Society, conduct tests on materials for the hull and superstructure. Once the vessel is completed, the BV Surveyor will check the correct working of the systems.

1.14.2 Commissioning

Upon launching, the yacht shall remain at the Builder's dock where all systems and machinery are to be started up and operated, all in accordance with the requirements of the equipment manufacturers and those of the ABS Surveyor.

1.14.3 Seatrials

The Builder shall at his expense and under his responsibility conduct sea trials to test the correct working of the vessel and its equipment.

1.15 Hand Over

After the satisfactory conclusion of the seatrials and the final completion of all rest items, the builder shall have the yacht thoroughly cleaned, upon which the Owner will take delivery, whereby the yacht will go over in the care and responsibility of the Owner's captain and crew.

2 Hull and Superstructure

2.1 General

- The structure shall be built to BV rules.
- The hull shall be built as a single unitised structure in a "female" mould
- The superstructure shall be constructed as single unitised module in a "female" mould.

2.2 Design plans

All the Design plans for the GRP structure are to be approved by the ABS Classification Society.

2.3 Construction Principles of Hull

2.3.1 Watertight- and/or Structural Bulkheads

There shall be three watertight bulkheads, located as follows:

- Collision Bulkhead;
- At the aft side of the engine room;
- At the forward side of the engine room.

2.3.1.1 Watertight Doors, Hatches, Portholes and Windows

In way of all openings, the core material shall be omitted.

The hatches will be located as per General Plan Approved by the Owner

2.3.1.2 Doors

All watertight doors are to be approved by the ABS Classification Society. The hinges, handles and locks of all exposed hatches and doors shall be in the style and quality of the exterior hardware.

- The watertight door shall be located as per General Plan approved by the Owner

2.3.1.3 Hatches

All watertight hatches shall be fitted with drain fittings.

- The watertight hatches shall be located as per General Plan approved by the Owner.

2.3.1.4 Portholes

The portholes will be installed in a moulded-in recesses . The inside face of each individual recess is to be angled for the best optical effect in the interior. For the positions and number see General Plan approved from the Owner.

2.3.1.5 Windows

Fixed windows installed in recesses in the freeboard to be located and dimensioned in accordance with the approved General Arrangement Drawings. Special attention shall be paid to the proper alignment of these windows both in relation to the hull sides and the interior of the owner's area.

2.3.2 Anchor Pockets

On port and starboard, as an integral part of the hull, recesses laid out for self stowing of the anchors. These pockets shall be fully lined with stainless steel.

2.3.3 Engine Foundations

BV scantlings shall be the minimum requirement for the engine foundations.

The Engine girders will have mahogany wood inserts. Engine brackets will be in aluminium .

2.3.4 Waterjet Foundations

Each waterjet intake is to be moulded as an integral part of the hull. The intake tunnel attachment to the hull is to be approved by the ABS Classification Society.

2.3.5 CO₂ Locker

Directly adjacent to but separate from the engine room, a specific storage facility for the fire system's CO₂ bottles and other fire fighting equipment.

2.3.6 Integral Items

2.3.6.1 Fill boxes

Fuel filling caps one on port and one on starboard.

Similar but separate from the fuelling stations, the similarly constructed water filling station.

Grey and black water shore discharge connections are to be provided.

2.3.6.2 Lighting

Provisions shall be made in the fibreglass work for courtesy lights in:

- The bottom and top risers of the port and starboard stairs between the aft deck and the bathing platform.
- The bench seats and raised sunbathing pads.
- At the deck perimeter.
- The Bathing Platform sides.

2.3.6.3 Controls

The control panels for the gangway and similar equipment, shall each be installed in a specific recess, behind its own flush cover.

2.3.7 Bathing Platform

The bathing platform shall be integrated in the stern section of the hull. On port and starboard integral tapered stairs lead to and from the main aft deck. A hydraulically operated door gives access to the Tender Garage. Additionally, there shall be provisions for the following items:

- Recess for the connection of an hand shower with hot and cold water.
- Inside the Tender Garage will be the shore power cables.
- A fresh water shore connection.

2.3.8 Seachests

In the engine room two tank type structures that are open at the bottom, shall be bonded into the hull structure. To these, branch pipes shall be connected.

These seachests shall be fitted with permanent vent lines, taken up to a location above the main deck level.

2.3.9 Bowthruster

A heavy wall FRP tubular section, to be supplied by the bowthruster manufacturer, shall be installed in the extreme forward portion of the hull. The installation of the bowthruster will be done in accordance with the manufacturer specifications and approved by the ABS Classification Society.

2.4 Construction Principles of Superstructure

The construction of the Superstructure will be done in accordance with the design plans approved by ABS Classification Society.

2.4.1 Main Deck

All deck penetrations for cables, piping and ducting will be watertight. Air ducts to be fitted with fire flaps. All deck openings to have rounded corners and is to be reinforced.

2.4.2 Winch pads

On the foredeck, as an integral part of the main deck structure, a heavily reinforced laminate on top of which the anchor winches, chain stoppers, chain rollers shall be installed. This winch mounting platform shall be recessed and fitted with permanent drains. A heavy wall Stainless Steel tube shall connect the anchor winch base plate and the anchor pockets.

On the aft deck two heavily reinforced bases for the mooring winches, tilted to provide a proper lead.

2.4.3 Scuppers and Drains

The scuppers shall be located to guarantee a sufficient drainage of water from the main deck.

The scupper pipes will be fitted through the hull above the water line. They will be provided with a gate-valve fixed at the through hull fitting.

2.4.4 Doubler Plates

Marine wood plate will be fixed by lamination in way of the bollards and all other areas of heavy loading.

2.4.5 Construction openings

In the main deck above the engine room, between pillars, openings shall be planned-in to allow the bringing in of equipment items at an appropriate time during construction. These openings will be closed by means of screws and bedding compound and then covered by a layer of teak with black rubber seams.

2.4.6 Casings

Casings are planned for:

- Engine room air intakes.
- Engine room air exhaust outlets.

The air intake ducts shall be fitted with mist eliminators, and remote controlled fire shutters.

2.4.7 Windows

Windows to be located and dimensioned in accordance with the designer's General Arrangement Drawings. Each window shall be glued into a recess, which is moulded in the hull or superstructure sides. The bottom of this recess must angle downward to prevent water from collecting.

2.4.8 Grilles

Removable decorative grilles are to be installed outside the engine room air intakes. The mist eliminators to be installed behind these decorative grilles.

2.4.9 Fire Hose

The number of the fire hose connections will be in accordance with the rules of the ABS Classification Society.

2.4.10 Fresh Water Connections

Two valves for fresh water connection will be installed one on the aft and the other on the fore of the vessel.

2.4.11 Engine Room Entrance

In the aft part of the superstructure a watertight hatch will be provided. The position will be decided after the final arrangement of the Engine Room.

2.4.12 Emergency Controls Station

In the direct vicinity of the engine room entrance, a moulded-in recess shall be fitted into which, the panel with emergency controls for the SOS valves, fire shutters, fan stops, CO₂ system and similar equipment shall be installed.

2.4.13 Equipment Foundations

On the "roll bar" structure over the wheelhouse reinforced foundations for:

- The signal horn.
- The spot lights

2.4.14 Liferafts

The liferafts shall be installed in accordance with Flag requirements.

2.4.15 Radar Arch and Antenna Support Structure

A gantry type structure as a continuation of the superstructure lines, with provisions for:

- wire and cable ducts;
- downlights and speakers;
- inspection hatches;
- attachment points for antenna support structure, which shall be attached to the gantry by means of bolted flanges.

Equipment items to be installed on the gantry or the antenna support structure shall include but not necessarily be limited to:

- Radar scanner..
- Two DGPS antennas.
- Navtex antenna.
- Wind instruments.
- One Satcom-M dome.
- One VHF antenna.
- Two radar transponders.
- Two cellular telephone antenna's.
- One Iridium antenna.
- One CCTV camera.
- Navigation lights.
- One high power Spot Light.
- Satellite TV dome.
- AM-FM antenna.
- Omni directional TV antenna.
- Flag halyards.

Final electronic equipment to be confirmed after discussion with SNP.

3 Propulsion

The Builder shall install the components of the propulsion system with the utmost care. The following are minimum standards:

- The installation of the propulsion system will be done in accordance with the manufacturers instructions, both of the engines and of the water jets.

3.1 Main Engines

Three MTU Diesel Engines mod. 16V 4000 M90 – 2720kW* (3645HP*) at 2100 rpm.

(* Power losses due to Air T, Δp , etc. to be considered)

3.2 Reduction gears

Three reduction gears ZF Gearbox model BW7550, with the following reduction ratios:

Wings: 2.76:1

Booster: 2.241:1

When viewing from astern the outputs of both gearboxes shall be clockwise to match the rotation direction of the water jets.

The engine manufacturer's delivery shall include for each wing gearbox:

- PTO for Kamewa's pumps.

3.3 Waterjets

Wings Unit: 2x waterjets Kamewa model 80 SII

Booster Unit: 1x Kamewa Mod. 71BII

Waterjets are connected to the output flange of the gearbox by means of a coupling sys. supplied by Kamewa.

The waterjet's manufacturer's delivery shall include:

- All standard equipment as specified in the manufacturer's
- Others as per KAMEWA supply order.

3.4 Flexible Installation

The reduction gearboxes are free standing and coupled to the Engine through a semiflexible coupling supplied by MTU. Each engine and gearbox combination shall be installed on the engine foundations by means of semielastic mounts (MTU Supply).

3.4.1 Flexible Coupling

A flexible coupling, supplied by Kamewa, shall be installed between the gearbox and the Waterjet shaft.

3.4.2 Exhaust Connections

The exhaust pipes shall be connected by means of flanged stainless steel expansion joints supplied by MTU.

3.4.3 Cooling Water Connections

The system will be installed in accordance with the manufacturer instructions and approved by the ABS Classification Society.

3.4.4 Fuel Connections

The system will be installed in accordance with the manufacturer instructions and approved by the ABS Classification Society.

3.4.5 Combustion Air Ducting

Combustion air will be drawn from the engine room. The air intakes dimensions will be sized to satisfy the air quantity by the specifications of the engine builder.

4 Generators

Two KHOLER® model 80EFOZ marine generator, each having a capacity of 80 kW, 380 VAC, 50 Hz, three-phase.

The generator manufacturer's delivery shall include:

- As per standard supply from Kohler_:
- Sound Shield

All pipe connections are to be in accordance with the manufacturer instructions.

4.1.1 Flexible Mounts

The engines shall be installed on a elastic flexible mount (Kohler supply)

4.1.2 Exhaust System

Water injected exhaust system shall be installed in accordance with the manufacturer instructions.

4.1.3 Cooling Water Connections

All cooling water connections through reinforced rubber hoses of sufficient length, shall be installed in accordance with the manufacturer instructions and shielded against heat or damage from abrasion.

4.1.4 Combustion Air Ducting

Combustion air will be drawn from the engine room. The total air intake balance should take consideration of the quantity necessary for both the generators and the engines.

5 Engine Room Ventilation System

The engine room ventilation system shall comprise balanced supply and exhaust systems.

5.1 Supply Air and Exhaust Air

Six 380V 3 phase axial flow fan/blowers (two of them with a variable speed setting system) of sufficient capacity to provide combustion air for the main engines and generators and for adequate engine room ventilation, shall be installed in the engine room air intake ducts.

Combustion air shall be ducted to vicinity of the air intakes on the engines, the generators and to the engine room bilge.

5.2 Ducts

The ducts shall be:

- constructed as an integral part of the vessels structure;
- fitted with fire shutters;
- fitted with water separator filters;

- be fitted with decorative grilles at the exterior.

6 General Requirements for Plumbing Systems

Installation of pipes, connections and material in accordance with the requirements of the ABS Classification Society.

The general requirements for all pipeworks and plumbing systems shall be:

- Stress free installation on properly spaced support brackets and/or hangers.
- Metal pipes to be fitted into the brackets using rubber linings.
- Freon carrying pipes shall be insulated.
- Insulation shall be continuous in way of brackets, hangers, elbows, T-connections, etc.
- Installation with constant drops and straight runs avoiding sharp bends.
- All pipe bends to have smooth radiuses. No mitred joints shall be acceptable.
- Watertight bulkhead- or deck penetrations to be flanged or through the use of an approved fitting.
- Straub® couplings will be acceptable in tight places.
- Pipes which are to be galvanised, shall first be completely fitted in place using untreated steel pipes of the appropriate quality, after which the fabricated pipe sections are to be removed, grit-blasted, galvanised and reinstalled.
- Sight glasses to be fitted in appropriate locations.
- English language name plates to be fitted at main valves and pipes.

The general requirements for all pumps shall be:

- All pumps shall be installed on selected highly flexible rubber mounts in painted stainless steel or aluminium drip trays .
- Pumps to be fitted with valves on both sides, allowing removal or repair.
- All pump capacities in this specification are to be considered minimum capacities. The final capacities are to be determined by the Engineers.

Except when specifically specified otherwise, all overboard valves to be of the marine bronze screw-down-non-return type (SDNR) or equivalent (check valve + gate/ball valve).

7 Fuel System

General description

Design drawings in accordance with the requirements of the ABS Classification Society.

Fuel tank is structural in FRP material treated inside with "Plastigel" (fueltight). It is located ahead the engine room bulkhead. Total capacity is about 40.000 liters.

Tank will be fitted with proper baffles inside.

Each section of the tank has an inspection cover (dimensiones 500x500 mm) bolted through the ceiling with a stainless steel frame and sealed with rubber gasket.

Part of the fuel tank will be in the engine room.

7.1 Fuel filling operation

The filling operation is (by gravity) directly to the structural tank, through two different fill-caps one on port and one on stbd side. Fuel level is indicated by two different system: the first is an electromagnetic level (with a full tank alarm on the deck control panel) installed on a fuel tank porthole and the second is an air level in the engine room.

The fuel tank shall be vented through two vent pipes, one each on port and stbd at the forward side of the tank. The pipes shall be fitted with a flash proof safety screen.

7.2 Fuel suction system

Main engines and generators shall draw from the central section of the tank (see specific dwg) in the engine room (this guarantee that the fuel suction is always the nearest possible to the main engines). The fuel pipes shall be fabricated from AISI 304 stainless steel with bronze valves and fittings and approved armoured flexible hose for short runs. Main Engines and Generators have return pipes outlet directly to the main tank.

At each main engine one fuel prefilter supplied by MTU /Separ SWK-2000/40/UMS.

At each generator one Separ filter model SWK-2000/5 with metal bowls and water alarms.

8 Exhaust Equipment

In accordance with Engine Manufacturer.

8.1 Main Engine Exhaust

The installation of the exhaust gas system will be in accordance with the manufacturer instructions.

A water injection ring shall be fitted in the downward portion of the exhaust line directly above the through-hull fitting.

The entire dry portion of the exhaust line is to be insulated by an appropriate ceramic insulating material.

The exhaust lines shall be fixed in place by means of suitable exhaust pipe hangers.

8.2 Generator exhaust

The installation of the exhaust gas system will be in accordance with the manufacturer instructions. It will be fitted with a wet exhaust system incorporating an injection elbow, fiberglass, with gas/water separation system.

9 Fresh water System

General Description

In accordance with the requirements of the ABS Classification Society.

The fresh water system is composed by :

- Tank(s) with total capacity of about 4000 lt;
- 2 Fresh water pump with an expansion tank (see specific dwg);
- 2 Fresh water maker IDROMAR mod.MC 3J, 2x 180, lt/h. ;
- 3 Water Heaters for the hot water : G&R 120 liters each.

The water tank(s) is filled up by gravity through an appropriate filling-cap on port side. Each tank is provided with one gate valve on the suction line, one on the fill line and one on the vent line (outlet on port side).

The pressure for the system is guaranteed by the fresh water pumps and the expansion tank installed in the engine room.

Each user (basin, shower, etc.) draw from fresh water. Pipe's material is Wisbro-PEX Polyethylene (alimentary type)

Each manifold is accessible by taking away the cabinsole, (see specific drawing).

The Water Heaters (see drawing for the positions) can work independently one from the others.

The water maker(s) draw from the raw water cockpit(s) in the engine room. The outlet of the system goes to the fresh water tank. It's better not to use this system in the port but in deep-sea (see water maker user guide).

The connection for the fresh water shore line is on the side of the "swimming platform. The system is provided with a control pressure valve.

9.1 Freshwater Treatment System

Prior to being distributed to the consumers, the water shall pass through a freshwater treatment, suitable for a fresh water flow of 1.5 m³ per hour. The system shall consist of:

- An ACTIVE CARBON FILTER CT 6R1 supplied by IDROMAR. The function of the filter is to filter (suspended solids up to 10 micron), to dechlorinate and to dechlorinate fresh water contained in ship's stocking before sending it to all services on board. The filter is wholly constructed in Stainless Steel AISI 316L. Filtering cartridges are in polypropylene and active carbon.

A Decalcifier Filter shall be installed on the shore connection line.

9.2 R.O. Watermaker

Two reverse osmosis desalination system Idromar[®] model MC 3J with a capacity of 180 litres per hour each. The system shall draw seawater from a manifold connected to a sea water intake which shall be located deep enough below the waterline to exclude the possibility of drawing air or running dry under all conditions.

The system shall include all plumbing for cleaning the system. A permanent flushing line from the fresh water pressure system shall be fitted. Brine and reject product shall be discharged overboard via a check-valve and a gate-valve fitted above the waterline.

After passing through the re-hardening filter the product water shall be plumbed into the fresh water tank.

10 Black/grey water equipment

In accordance with the requirements of the ABS Classification Society.

General description

The system is mainly composed as follows:

- N°5 Sanisplit units with a small collecting tank and a specific wasting pump 24V – 270 l/h
- Hamann Sewage Treatment Plant mod. Mini Compact (300 litres)

Grey waters are collected in the small collecting tank (one for each two/three bathrooms) under the cabin sole. These tanks are automatically wasted thanks to a specific pump fitted on each tank and runs to the main grey water collecting pipe. The toilets directly discharge into the main black water collecting pipe. The collecting pipes, by pressure, run all the water to the Sewage Treatment Plant. After being treated the water is discharged to overboard. In case of failure of the Hamann system, there is the possibility to by-pass the system discharging directly to overboard.

11 Bilge/Firefighting pump system

In accordance with the requirements of the ABS Classification Society.

General description

The system is mainly composed as follows:

- #1 pump Gianneschi&Ramacciotti – mod. ACM 401 BT – 380V - 2,2 Kw
- #1 pump Gianneschi&Ramacciotti – mod. ACM 401 BT – 24V - 1,5 Kw

All the bilge suction pipes run to a main collecting manifold installed near the Engine room Bulkhead. Each suction line is controlled by a ball valve fixed on this manifold. At the end of each suction line a check valve is fitted, to prevent the flow out of water.

The two electric pumps are in parallel connected to the main bilge manifold and to the raw water intake. Specific valves are fitted so to allow the use of one pump for the bilge and the other for the firefighting at the same time. It's even possible to use both of them together or for the bilge or for the firefighting.

Each bilge suction has its own alarm, this is signaled acustically and visuallly on the bridge panel and in the engine-room panel.

On the aft of the engine room there is an additional bilge submersible pump "Minisub" (you can set it automatic or manual).

On the main deck there are two different connection for the firefighting hoses. Each hoses is 20 mt long and it's possible to size the pressure of the outlet.

NOTE: On the cooling water suction line of each engine is connected a branch pipe that run to the bilge. Each pipe is fitted with a gate valve and only in emergency it's possible, opening this valve and closing the cooling sea water intake of the engine, to waste the bilge.

12 Fire fighting system

In accordance with the requirements of the ABS Classification Society.

Number, type and position of each exstinguisher is in accordance with the BV requirements. In the engine room, besides the portable extinguishers, there is a CO₂ system and an independent Air Compressed System.

12.1 Air compressed system (in accordance with BV requirements)

The control of the system is placed on the Port side of the boat at abaft of the settee. The relay cylinder is in the tender vane on the Port side of the boat. If you pull the control lever the following events happen:

- Start of the hooter;
- The fans/blower stop switching on the pressure switch placed in the engine room;
- Close of the air rolling shutter using the pressure unlock;
- Close the diesel feed to the engines and to the generators using pneumatic pistons;
- Close the diesel return from the engines and from the generators using pneumatic pistons.

12.2 CO₂ System

The control of this system is placed on the Stbd side of the boat abaft of the settee. The relay cylinders are in the tender vane on the Stbd side of the boat.

- 1) If you pull the superior control lever, you unlock the security valve for the system.
- 2) If you pull the inferior control lever the following events happen:
 - Start the hooter;
 - The fans/blower stop switching on the pressure switch placed in the engine room;
 - Close the air rolling shutter using the pressure unlock;
 - Close the diesel feed to the engines and to the generators using two pneumatic pistons;
 - Close the diesel return from the engines and from the generators using pneumatic pistons;
 - A delay cylinder (about 20 seconds) is filled and then the CO₂ is discharged in the engine room through specific nozzles.

NOTE: In case the system start for accident cause, but found close the security valve, the CO₂ will be automatically discharged in the sea.

12.3 Fire fighting equipment

- n° ____ cylinders CO₂ of _____ Kg (each) – in accordance with BV requirements;
- n° 1.. delay cylinder of unloaded of 3 Kg (each), primer time 20/25 sec.;
- n° 2.. control lever to open the CO₂ system positioned on the main deck;
- n° 1.. control lever to open the air compressed system positioned on the main deck;
- n° 1.. air compressed cylinder of 3 lt. ;
- n° 2.. pressure switch to stop fans/blower;
- n° 1.. horn alarm;
- n° 6.. pressure unlock to close the air rolling shutter and the diesel valves;
- n° 7.. powder extinguishers According to ABS Rules and Flag Requirements

13 Winches, Anchors and capstans

13.1 Anchor winches

Two Lofrans® (or equivalent) 380V 3-phase 3,5kW, type “ERCOLE VERTICALE” vertical anchor windlasses, with warping drum, installed in the foredeck, each complete with chain rollers, chainstopper.

Winch operation shall be through two hand-held remote controls, with the cable permanently wired to a hidden watertight junction box. Proper out-of-view storage for the remote controls shall be provided.

13.2 Anchors and chains

Two anchors Galvanised High Tensile Steel 360 Kg (each) mod. High Holding Power. Two lengths each of 140 meter galvanised 19 mm chain.

A specific chain washing system shall be installed. A control switch placed on the bridge panel or on the Remote Control on the fore of the boat. The pressure for the system is guaranteed by a pump fitted in the engine room.

13.3 Capstans

Two Lofrans® (or equivalent) mod. T 2500 380 V 50 Hz 2,5kW on the aft deck.

Capstan operation shall be through footswitches.

14 Electrical System

In accordance with the requirements of the ABS Classification Society.

The yacht's main power supply shall be a 380 Volt, 50 Hertz three phase four wire system with neutral grounded to the hull at one point. Power shall be supplied by two generators capable of running in manual split bus-bar system and or a shore power connector. The secondary supply shall be A 24 Volt DC, two wire floating system with earth fault indication. Both the AC and DC system's monitoring and controlling equipment shall be housed in a specific portion of the main switch board. 12 Volt consumers shall be equipped with 24-12 Volt transformers.

The electrical power supplies on board are based on:

- Nr.02 KOHLER generator power 80EFOZ - 380 VAC 3-phase 80kW - 50 Hz,
- shore power 380 VAC 3-phase 50 Hz of 40kVA
- 24 V DC battery banks,
- 24 to 12 VDC converters for 12 volt consumers.

Additional requirements and standards:

- The main electrical panel will be tested from the Surveyor of the ABS Classification Society.
- All electrical equipment, wiring, cables, fixtures and the complete installation to be in accordance with good practice and workmanship as is applicable on board of top quality vessels.
- All electrical equipment to be located so that it is accessible for maintenance or repair.
- During dock and sea trials, the installation and the generators will be tested under full load conditions.
- Adequate charging capacity will be installed.
- An electrical load list shall be compiled at the earliest possible moment
- Except for small motors with a capacity of less than 1 hp or anywhere else specifically requested, only three phase induction motors shall be acceptable. All motors to have a water tight terminal box.
- All the drawings of the wiring system and of the control panels will be in approved by the BV Naval Registry.
- All cables shall be laid inside a PVC guide, securely fastened with nylon.
- Passage of cables through watertight bulkheads and tanks will be in accordance with the ABS Classification Society.
- Special shielded cables to be used in all possible areas of interference and where required by the equipment manufacturer.

14.1 Engine starting systems

General:

- The starting systems of the main engines shall be 24 VDC and the starting system of the generators shall be 12 VDC.
- Engine's batteries to be of the sealed maintenance free.
- The main engine's batteries are specific and, only in emergency, will be possible to put them in parallel with the service's batteries.

Starting Batteries Main Engines

- One bank of approximately 1700 Cold Cranking Amps, (capacity as per request by the engine manufacturer). These bank shall be charged by:
 - the alternators on the main engines;
 - a specific battery charger
 - the electric Genarators Kohler

Starting Batteries Generators

- One of 850 Cold Cranking Amps for each generator. Each bank charged by the alternator on the generator it serves.

14.2 24 VDC service systems

General:

- Final capacity of batteries and the chargers to be decided based on the electrical load balance.
- Engine's batteries and generator's batteries will be sealed maintenance free.

Service batteries: (Auxiliary power and emergency lighting)

- One bank of approximately 800 Ah (or larger if required by BV) as auxiliary power supply and for emergency lighting (minimal capacity to be 8 hours for approx. 20 fixtures). This bank shall be charged by the alternators on the propulsion engines and a specific battery charger.

24 VDC consumers shall include but not be limited to:

- Navigation lights
- Emergency lights
- Emergency fresh water pump
- Emergency galley refrigeration system
- Spot light on the arch
- Windscreen wipers
- Part of navigation electronics
- Toilet system
- Part of Audio-Video system

14.3 12 VDC Service systems

12 Volt consumers shall be equipped with a 24-12 Volt transformers.

14.4 380 V AC service systems

380 VAC consumers shall include but not be limited to:

- Anchor winches;
- Capstans;
- Engine Room Fans/Blowers;
- Air conditioning System;
- Black water system;

- Grey water system;
- 24V DC lights (through special transformer);
- Fresh water system;
- Kamewa steering boards.

14.5 220 V AC service systems

220 VAC consumers shall include but not be limited to:

- House hold appliances;
- Fluorescent lights;
- Sockets/outlets;
- Part of Audio-Video system
- Part of Navigation Electronics;
- Ice makers.
- Refrigeration System;

14.6 Main Switch Board

The main switchboard shall be located in the “engine room” and is to be a full metal enclosure, dimensioned to permit the bringing in of cables from the sides as well as the bottom.

However the size and total weight of the main board may dictate, that it will be split up in two or three separate sections. This shall be permitted, provided that the combined enclosures will appear as a single unit.

The switchboard shall be fitted with ventilation openings.

The installed equipment shall be arranged in a logical easy to understand manner, be properly labelled and shall include but not be limited to the following items:

- Generator start/stop.
- Shore power circuit breakers.
- Main busbar.
- Circuit breakers for main consumers, outgoing groups, local distribution panels and spares.
- Bilge pump switching.
- Overload alarm systems.
- Electric motor starters.
- Battery switches and condition monitoring equipment.
- The 24 Volt DC distribution system.

14.7 Local Service Control Panels

In selected areas local control panels, consisting of a photographically styled and lettered plate (if visible) or plastic box with labels. In these the are fitted. In general these panels are to be hinged, allowing good access from the front of the panel to the cabinet's interior.

14.8 Lighting

General requirements:

- 24 V AC or 24 V DC throughout the yacht for main illumination comprising but not necessarily limited to:
 - machinery space lighting (engine room, pump room),
 - exterior lights,

- interior lighting (incl. forepeak, lazarette),
- emergency lighting.
- navigation lighting,
- Light fixtures, both interior and exterior shall be from BCM or CEUP or equivalent
- All switches, sockets, dimmers, etc. to be Vimar Series or equivalent

A selection of light fixtures, both interior and exterior, shall be presented to the Owner for approval.

Machinery Space Lighting

- 220 V AC fluorescent fixtures.
- 24 VDC emergency lights.

Exterior lights:

All exterior lights shall operate 24VDC or 24 VAC waterproof fixtures as follows:

- Courtesy lights.
- Strip lighting at seat fronts. (to be confirmed)
- Overhead spots.
- Working lights at foredeck.
- Emergency lights
- Dimmer to permit night time piloting of the vessel without blinding the persons at the steering console

Interior lighting:

- Halogen ceiling spotlights.
- Berth reading lights (if 220VAC with dimmer).
- Fluorescent fixtures in galley.
- Emergency lights
- Free standing lamps (if present) with dimming system in the saloon.

Emergency Lighting (24V DC):

- Unobtrusive emergency light fixtures in with fixtures in each compartment at the ceiling near entrance doors of all accommodation spaces.

Navigation Lights

- Navigation lights normally operating on 24 VDC:
 - White light (in accordance with COLREG 72):
 - Side lights (in accordance with COLREG 72):
 - 360° all-round light (in accordance with COLREG 72):
 - Stern light (in accordance with COLREG 72):
- One spot light

14.9 Shore power supply

Shore Power Cables

- One 25 metre 63 Amp. 380 V shore power cable.
- 25 metre telephone and television cables. (supply SNP)

15 Steering

The installation of the steering system will be in accordance with the KAMEWA instructions.

15.1 Steering console

The definite inventory- and lay out of the equipment in the console shall be worked out in co-operation with the Owner's representative.

16 Bow thruster system

To be defined

The manufacturer's delivery shall include:

- Filament wound composite tunnel with thruster pod assembly, shipped early allowing bonding into the hull at an appropriate time.
- Lubrication oil tank.
- Alarm sensors for low oil level and high oil temperature.
- Main control panel for desk mounting in the wheelhouse with joystick, control buttons and alarm.
- Detailed English language handbooks.

The FRP tubular section shall be installed in the extreme forward portion of the hull. The intersection of this thruster tube and the hull sides, shall be rounded as requested by the equipment manufacturer.

17 Air Conditioning System

17.1 Design Criteria

Cooling

The air conditioning system shall be designed to provide mean internal conditions of +75F/+24°C and a relative humidity of 50% (±5%) under the following ambient conditions:

- | | |
|---------------------------------|------------------|
| - Outside air temperature | max. +95°F/+35°C |
| - Outside air relative humidity | max. 80% |
| - Seawater temperature | max. +90°F/+32°C |

Heating

The heating system shall be designed to provide internal conditions of +73.5°F/+23°C and a relative humidity of 50% (±5%) under the following ambient conditions:

- | | |
|---------------------------|-----------------|
| - Outside air temperature | min. +23°F/-5°C |
| - Seawater temperature | min. +28°F/-2°C |

Setting the main switch on Hot or Cold will automatically reset each thermostat.

17.2 Tempered Water Unit

One/two FRIGIT® or equivalent seawater cooled tempered water unit shall be installed in the engine room. The system will provide cool air in the summer and hot air in the winter time.

- Mod. CHILLER - to be defined;
- n° Refrigerator circuits - to be defined
- n° compressors - to be defined;
- n° cylinders - to be defined;
- cc for each compressor - to be defined;
- electric supply 380V - 3 phases - 50 Hz;
- Kw each compressor - to be defined;

- normal rating – for each compressor - to be defined;
- output at the evaporator - to be defined;
- total refrigeration output - to be defined;
- Sea water condenser composed by two elements in cupro nichel with wide surface in counter-current; outer surface in Copper welded with Silver alloy (30%);
- Water/Freon heat exchanger with two circuits, composed by two interchangeable elements, completely made out of copper and insulated with expanded Polyurethane; no-frost protection on each circuit;
- Safety low and high pressure control with independent signal;
- Anodic protection on the evaporator and on the sea water condenser;
- Display with visualization of inlet/outlet treated water temperature;
- System totally covered by a Stainless Steel cover with variable thickness.

17.3 Fan Coils

The Fan Coils shall be provided with a three velocity selector. They shall be controlled by an electronic thermostat with the visualization of the temperature. Each Fan Coil will be installed with two interception valves to permit an easy dismantling. The Fan Coils will be located depending on the approved General Plan

17.4 Air Handlers Units (fan coils)

- Painted Aluminium structure with high thickness;
- Thermo-acoustic insulation in self-extinguishing material: thk. 11mm;
- Water collecting plate with drainage;
- Thermal exchange through wings battery in Aluminium/Copper, pitch 2.1mm for an high dehumidification;
- Fan gauge installation on an supporting skid;
- Fan provided with a silent block system;
- Fan rpm = ~900
- Velocity setting through special system, to prevent engine's noise.

17.5 Plumbing system

Connection between Fan Coil and Air handler unit through hoses 40 atm and interception valves.

The circulating water system, connecting the main system in the engine room with the Fan Coils, will be realised through the use of copper pipes thermically insulated by a special covering material.

17.6 Sea water pumps

The system will be provided withat least two pumps.

Pump n°1

- To be defined

Pump n°2

- To be defined

18 Tenders and Jetskis

18.1 Tender

To be defined

18.1.1 Launching, retrieving and stowage arrangements

A Specific Crane will provide, through an appropriate hook, the launching and retrieving of the tender and jet Skis. The tender and the Jet Skis will be stowed in the tender garage.

18.2 Jetskis

Two SeaDoo or equivalent model to be defined.

18.2.1 Launching, retrieving and stowage arrangements

A Specific Crane will provide, through an appropriate hook, the launching and retrieving of the tender and jet Skis. The tender and the Jet Skis will be stowed in the tender garage.

19 Deck Equipment and fitting out

19.1 Standards

All aspects of the exterior finishing and fitting out shall be to the highest of standards. By the installation of any equipment item, special attention is to be paid that no corrosion potential or dirt collection points are created.

The general guidelines are:

- All places shall be adequately drained.
- Equipment shall be, if possible, installed recessed and flush.
- All stainless steel items to be installed shall be high gloss polished.
- All storage compartments shall be adequately ventilated, self-draining (if necessary).
- Any door, covering an equipment item such as a refrigerator or icemaker, shall be fitted with a door-coupling mechanism.
- Concealed hinges and flush, recessed or removable handles and locks shall be used whenever possible (not for the Crew hatch).
- Both in the open and closed positions all doors, with the exception of the small locker doors, shall be held firmly in place.

19.2 Gangway

Telescopic Gangway

Length of the gangway will be at least 6,00 m.

Teak grating walking surface

Manually assembled stanchions

Tilting capability

Infrared remote control with three handsets

19.3 Windscreen and windows

The windscreen and windows shall be made with a safety glass, glued into the fibreglass superstructure.

19.4 Portholes

Portholes shall be constructed with stainless steel frame.

19.5 Sliding doors

In the aft part of the sitting area on the main deck a pair of manually operated sliding glass doors constructed with stainless steel frames. The opening mechanism shall include a provision to secure the doors in partially open positions.

19.6 Hatches

In accordance with the requirements of the ABS Classification Society, with central locking mechanism.

19.7 Watertight doors

Number and position depending on General Arrangement Plan

19.8 Safety equipment

The following safety equipment shall be provided, including appropriate stowage and/or deployment arrangements.

First Aid

- Shipboard medical kit.
- Shipboard medical kit.

Flotation

- Number of self inflating life rafts in accordance with passengers+crew number;
- 1 life jacket for each berth;
- 2 life jackets in wheel house
- 4 life jackets for children;
- 2 lifebuoys

Pyrotechnics

- Comet[®] pyrotechnics in accordance with SOLAS requirements. (supply SNP Boat)

Electronic Devices

- Two 9 GHz Jotron radar transponders. (supply SNP Boat)
- One 406 MHz Jotron EPIRBS with automatic hydrostatic release. (supply SNP Boat)

19.9 P.V.C. covers

PVC cover will be supplied for the followings:

- Forward sunbed
- Windscreen
- Aft sun bed

19.10 Miscellaneous

Two Boathooks.

One Spare anchor type Admiralty Kg. 35.

Two courtesy Flags.

One Country of Registry flag.

Twelve pneumatic fenders.

A full set of cleaning equipment.

19.11 Deck supply

Sofas and deck supply in fibreglass or varnished teak as per Builder standard incorporating a refrigerator, an icemaker and provisions for the secure storage of owner supplied items. Special attention is to be paid to the ventilation of the equipment installed.

19.12 Exterior woodwork

Teak decks

Laid teak, 15 mm thick, bonded onto the deck surfaces. The deck is to be traditionally laid with king planks, margin and covering planks and proper detailing around the equipment installed on the deck surfaces. Teak on stairs treads shall be laid to provide a gutter at the sides.

Tables

Securely fixed but simply removable (if possible) varnished teak tables as per the General Arrangement Drawing.

20 Noise-, Vibration- and Insulation Measures

General

The object shall be to produce the quietest possible yacht with an internal climate as prescribed in previous sections of these specifications. From the earliest stage of the design work all the way to the final completion of the yacht all measures shall be taken to reach these objectives.

The following items shall be thoroughly investigated:

- Flexible installation of engines, gears and gen-sets.
- Structure under the main deck in the engine room.
- Construction of watertight bulkheads
- Construction of casings.

20.1 Acoustic and Thermal Insulation Measures

Following a listing of possible insulation measures to give an indication of the extent of the required work.

- Application of BVorbing compounds in specific areas.

- Fully flexible installations of all noise and vibration producing equipment items on base frames with sufficient mass.
- Expansion joints in pipelines.
- Air ducts with internal insulation and silencers.
- Mufflers and sound dampers.
- Fully flexible installation of the interior joinery work.
- Metal sandwich panels and perforated metal plating in the engine room.

20.2 Engine Room

The interior of the engine room will be finished with a specific white paint (Web Coat WG 4010)

Removable floors with aluminium plate, fixed with machine screws to composite or aluminium floor bearers.

Sufficient stainless steel rails and guards will be fitted.

Workbench with electrical outlet, tool storage and, paper towel dispenser, a sink with cold water.

21 Electrical and electronic equipment

21.1 Household Appliances

The appliances shall generally be of the best professional quality. They are to be installed in such a manner as to readily permit service and maintenance. Care shall be taken that sufficient ventilation and air discharge facilities are provided for those equipment items that do so require. The following list is to be defined with the Owner representative or the Captain.

21.1.1 Laundry room

- Model _____ (professional) clothes washing machine.
- Model _____ (professional) condense dryer with.

21.1.2 Galley

- Model _____ oven;
- Model _____ hot plates;
- Model _____ exhaust hood;
- Model _____ microwave, with stainless steel front;
- Model _____ dishwasher;
- _____ modified with compressor in the engine room.
- _____ modified with compressor in the engine room.
- _____ - ice cube maker

21.1.3 Exterior deck

- _____ ice cube maker
- _____ refrigerator.

21.2 Audio-, Television and Video Systems

21.2.1 Antennas

The antennas for reception of radio and television signals shall be located on top of the radar arch. The location of the antennas in relation to each other shall be determined as a result of mutual discussion between both the audio/video- and the navigation/communication equipment suppliers. The final approval of the structure design shall be by the designer.

- SNP Supply

21.2.2 Audio and video equipment

Main saloon

- SNP Supply

Owner's cabin

- | | |
|----------------------|--------------|
| • Television | • SNP Supply |
| • VCR | • SNP Supply |
| • DVD | • SNP Supply |
| • Sat-TV | • SNP Supply |
| • Receiver/amplifier | • SNP Supply |
| • Remote control | • SNP Supply |
| • Loudspeakers | • SNP Supply |
| • Headphones | • SNP Supply |

Guest cabins (3)

- | | |
|----------------------|--------------|
| • Television | • SNP Supply |
| • VCR | • SNP Supply |
| • DVD | • SNP Supply |
| • Sat-TV | • SNP Supply |
| • Receiver/amplifier | • SNP Supply |
| • Remote control | • SNP Supply |
| • Loudspeakers | • SNP Supply |
| • Headphones | • SNP Supply |

Bridge deck and dining area

- | | |
|------------------|--------------|
| • Amplifier | • SNP Supply |
| • Loudspeakers | • SNP Supply |
| • Volume control | • SNP Supply |
| • Remote control | • SNP Supply |

Sun bathing area aft

- | | |
|------------------|--------------|
| • Amplifier | • SNP Supply |
| • Loudspeakers | • SNP Supply |
| • Volume control | • SNP Supply |

Sun bathing area forward

- | | |
|------------------|--------------|
| • Amplifier | • SNP Supply |
| • Loudspeakers | • SNP Supply |
| • Volume control | • SNP Supply |

Crew cabin

- Television/VCR
- Hi-Fi
- SNP Supply
- SNP Supply

Galley:

- Hi-Fi
- SNP Supply

21.3 Navigation and communication equipment

21.3.1 Navigation equipment

One radar	SNP Supply
One autopilot	SNP Supply
One compass	SNP Supply
One rudder feedback unit	Kamewa Supply
One rudder angle indicator	Kamewa Supply
One plotter/DGPS	SNP Supply
One video depth sounder	SNP Supply
One performance measurement system	SNP Supply

21.3.2 Communication equipment

One VHF radio	SNP Supply
One Satcom telephone	SNP Supply
One Telephone exchange	SNP Supply
One GSM telephone	SNP Supply

21.4 Surveillance and security system

21.4.1 Surveillance system

SNP Supply

21.5 Indicative summary of Alarm Points

For details about the alarms of the followings see detailed supply order:

MTU engines (Engine Room and Wheelhouse)

ZF gearboxes (Engine Room and Wheelhouse)

KAMEWA Waterjets (Wheelhouse)

_____ Generators (Engine Room)

Bilges (on the main control panel in the engine room and in the wheelhouse
one alarm for each suction)

Fuel system (wheelhouse)

- Bunker tank
- Separ pre-filters

Tanks (wheelhouse)

- Fresh water tanks low level

Electrical Systems

- Shore Voltage, Amperage, Frequency
- Voltage Starting Batteries
- Voltage and Amperage Service Batteries
- Voltage Radio Battery
- Earth fault Monitoring System

Air conditioning and Cooling

- Tempered water
- Galley Refrigerator # 1 high temp.
- Galley Refrigerator # 2 frost
- Galley Freezer # 1 high temp
- Galley Freezer # 2 frost
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Miscellaneous

- CO² System Engine Room
- Bow-thruster low oil level (wheelhouse)
- RO Watermaker (engine room)

22 Interior Accommodations and Fitting Out

22.1 General Requirements

General

- The quality of the interior of the entire yacht shall be of top luxury yacht quality, on a level equal to the Mangusta Yachts. These criteria shall apply to comparative spaces and include the choice of timbers, fabrics, fittings, fixtures, hardware, finishing levels etc.
- The overall layout of the yacht shall be fully in accordance with the General Arrangement Plan and as further detailed in Accommodation, Visuals and Detail Plans.
- Where reasonably possible the builder must consider the possibility to make all “dead” space suitable to be used for bookshelves, storage lockers, etc.

Ironmongery

- In the crew areas all ironmongery to be confirmed by the Owner;
- In the Owner's and guest areas all ironmongery items to be confirmed by the Owner;
- All doors shall be provided with seagoing catches devices to prevent rattling or spontaneous opening in a seaway.
- Toilet door locks to be keyless with emergency opening facility from the cabins or corridors.
- Grabrails, only for the main stair (the one that go from the main deck to the saloon) shall be fitted in order to permit the safe movement of persons during severe weather conditions.
- As shall be requested/indicated by the Owner or the Designer, invisible secure hanging/fixing of pictures, sculptures and similar items shall be provided.

Ceilings

- Unless specifically mentioned otherwise, all ceiling panels are to be flush and removable.
- Ceilings shall conceal all ducting, cables and other services (not necessarily in the ceiling of main deck hard-top).
- Ceiling details, features and skylights to be presented by the Designer as part of his tender submission package.
- No fittings or fixtures shall be installed on ceiling panel joints.

Supply

- All supply items are to be as similar as possible as shown on the General Arrangement Plan, Detail Drawings and concept Visuals.
- Where required the joinerywork is modified to allow for air conditioning grills.
- The insides of cupboards and wardrobes are to be finished as per Overmarine standard.
- Supply is to be securely fixed to bulkheads and/or cabin soles.
- Any loose or free-standing supply is to have securing arrangements for use at sea.

Mirrors and glass

- Unless specifically stated otherwise, all mirrors shall be of silver plated glass, properly glued and sealed to prevent moisture entrapment.
- All edges of mirrors to be polished. No sharp edges shall be allowed. This includes those installations where the edges may be fitted in a frame or be otherwise not in direct view.
- All interior glass shall be "safety glass", which does not produce sharp pieces when broken.

Mock-ups

Prior to the taking into production of any item of joinerywork, the Builder shall:

- Produce samples of all timbers (minimal dimensions 0.5M² each) complete with all different finishes and colours under consideration for selection and approval by the Owner.