

16,47 M ALUMINIUM OFFSHORE WORK CAT



0.-GENERAL SCOPE

Catamaran designed for maritime works with symmetrical hulls, built in aluminum, 16.47 m length overall, dynamic positioning system (not classified), propelled by means of Volvo Penta IPS system.

Design speed max. 28 Knots without load on deck (17 Knots loaded with 20 Tones on deck)

Spanish DGMM certificated for navigation Group III, class T, according the scantling rules of the Lloyd's Resister "Rules and regulations for the Classification of Special Service Craft", main tasks , aside from others:

- Harbour services
- Subsea aid works
- Buoying , bathymetric and scientific surveys, etc
- Offshore services (oil rigs, marine wind farms, fish farms, etc)
- Surveillance and control of submarine facilities as gas and oil pipelines ,com cables ,etc, by means of ROBS operated from deck equipment as deck winch and an hydraulically collapsible davit

I – MAIN CHARACTERISTICS

Length overall	16.47 m
Registered length	13.99 m
Length between perpendiculars	14.57 m
Moulded breadth	6,28 m
Max breadth	6.40 m
Construction depth	2,33 m
Registered draught	1,35 m
Displacement at registered draught	42 T
Lightship weight	19 T
Lightship draught	0,85 m
Max displacement	40 T
Max draught	1,30 m
Propulsion engines power	2 x 600 mhp
Rpm	2300 rpm
Engines brand and model	2 x Volco IPS2
Gross Tonnage	41,4 GT
Gross registered tonnes	50,98 GRT
Passengers	3 crew + 12 PAX
Max speed	28 knots
Fuel capacity	3000 L
Hydraulic oil capacity	130 L
Fresh water	390 L
Oily waters	120 L
Sewage waters	80 L
Load capacity on deck	17T



II - SPECIFICATIONS

1) HULL:

Vessel's Layout is showed on "General Arrangement" drawing.

The vessel is a multihull design built in aluminum welded, main deck, superstructure centered that includes crew transfer sitting area and wheelhouse.

On aft section and below the main deck are placed the machinery spaces containing main engines, tanks and auxiliary equipment.

In the middle section two holds with waterproof hatch at same level of the deck.

Located on bow section of machinery room there are the accommodation spaces:

- Starboard hull: dual cabin and bathroom with shower.
- Port hull: dual cabin and kitchen.

The superstructure located above the main deck includes sitting area for crew transfer, the Wheel house and comprises Steering, navigation and communication systems.

Fuel will be stored inside non structural tanks located in machinery spaces as it is shown in "General arrangement" plan.



2) HULL ELEMENTS

2.1) ANCHORING

- FOB anchor 30 kg Claw type, 110 m of chain 9 mm DIN 766 stored inside a chain box placed on bow tack.
- Maxwell windlass MAXWELL RC-10, force 8500 N, 24 V cc, mounted on forecastle.
- Hawse pipe vertically mounted, electrically insulated placed inside tunnel on fore.

2.2) MOORING AND TOWING

- Six mooring bits, the two in aft side reinforced to allow towing.
- Eight hanging stackers in the deck to attach the cargo slings.

2.3) NAVIGATION MAST

- Navigation, communication antenna and lights mast built in aluminum placed over the Wheel house.



2.4) BULWARK

- Entire perimeter bulwark, with bulwark rail on bow and forecastle, safe passenger onboard access with stanchions.
- Removable stanchions to allow crane operations on both sides of working deck.

- Two air supply and exhaust ducts for engines room.
- Removable handrails placed between air ducts, stanchions and bulwark.
- Removable handrails on the aft side.

2.5) METAL LADDERS

- Aluminum ladders placed below deck hatches.
- Stairs with handrails for access to accommodation spaces on hull.

2.6) METALLIC DOORS

- Weather spray door placed on Wheel bridge port side

2.7) WINDOWS AND SIDE SCUTTLES

- Fixed Windows on main deck cabin.

2.8) HATCHES ON DECK

- Two weathertight hatches for access to forepeak, and engine room Freeman or Hercules.
- Two bolted hatches placed over the engine room area on deck to allow the removal of engines for overhauling.

2.9) CATHODIC PROTECTION

- By means of sacrifice anodes Al-Indio placed into boxes in order to reduce water resistance and improve speed.
- Measure and display galvanic current gauge with differential electrode, display on wheel cabin.

2.10) FLOOR FRAMES

- Floor frames and plating in the accommodation in the bow section

2.11) FENDERS

- Two fenders glued on both sides, made of high density Polyethylene foam covered with high abrasion resistance Polyurethane and polyester fabric and placed along working deck.
- Four fenders, same material, two on board side and two on starboard side, diagonally placed.
- Special fender on forecastle to push forward, allowing passengers embarking on oil rigs and offshore wind turbines.

2.12) Diver's and rescue platforms and layers

- Two platforms in the transom one with one foldable layer for divers and rescue.

2.13) WORKING DECK WOOD COVER

- 2 cm of wooden working deck lining glued with Sika procedure.

3) MACHINERY

3.1) MAIN ENGINES AND GEAR-BOXES

- Two propulsion diesel engines with electronic control Volvo Penta IPS2-600
- Elastic engine supports, wet exhaust connected with the IPS2 system outlet in the pod of the system.
- Electronic marine engines steering controls for propulsion and DP system Volvo IPS2

3.2) PROPELLERS.

- Two double fixed pitch propellers counter rotates of tree and four blades according the Volvo IPS2 system

3.3) STEERING EQUIPMENT

- No rudders the steering system is the Volvo IPS2 system.

3.4) GENERATOR SET& HIDRAULIC SYSTEM DRIVE

- Generator set SOLE DIESEL engine model Mini-44 15 KVA 360V AC.
- Wet silencer, muffler, and goose neck discharge on hull side.
- PTO to drive the hydraulic pump to feed the crane by means an electromagnetic clutch drive by belts.

3.5) DECK CRANE

- Marine deck crane CYTECMA CM64/3S with capstan of 1,1 Tones lift capacity, tree hydraulic driven extensions, full extension 8.5 meters. Max lift capacity at full extension with winch 640 Kg.

3.6) ENGINE ROOM VENTILATION SYSTEM

- Four electric fans 24 V DC mounted inside hull's ventilation chambers located on both sides of the vessel.

4) AUXILIARY EQUIPMENT

4.1) BILGE, BALLAST AND FIRE FIGHTING SERVICES

- Two sea water self-priming pumps CREIXENTI model BADALONA 1"1/2 electrically driven working interchangeable through manifolds and sea water inlet valves. Bilge service for space vessels, fire fighting and hosing down.
- Eight 24 V DC electric bilge pumps with float switch located into each watertight compartments, bilge water discharged outlet, but engine room spaces which discharges into oily tank .
- Oily tank with electric level gauge, filling pipe, overflow pipe and drain pipe.

4.2) FUEL SERVICE

- Two non structural tanks placed into engine room spaces with filling pipes, engine supply pipe, return, visual and electric level gauges and cut off valves remotely deck operated.
- Fuel strainer and fuel water separator.

4.3) FRESH WATER SERVICE

- One 390 L capacity tank with electric level gauge 24V DC .
- Water pressure group for bathroom and kitchen.
- 45 L water heater.

4.4) SEWAGE SERVICE

- Black waters tank, 335 L capacity inside starboard hull, for passengers cabin and accommodation spaces, and another one of 170 L capacity, inside board hull. Equipped with macerator and discharge pumps, anti-odour filters and 3 ways valves to discharge on port or in open waters.

4.5) HYDRAULIC SYSTEM

- One hydraulic gear pump, open circuit connected to the generator engine.
- One hydraulic tank in the machine room where is the generator connected by pipes and valves.
- Hydraulic installation components needed to drive the crane.

4.6) HEATING AND AIR CONDITIONING

- Heating and air conditioning system with coolant system by air, in the wheel bridge.

5) ELECTRICITY SYSTEM

380 V/50 Hz AC installation powered by gen set or shore connection, and 24V DC powered by battery charger alternators from main engines or by gen set through rectifier current.

The electric wire will be BV type approved.

5.1) ELECTRICITY BOARDS

- Main electric control board located on Wheelhouse divided between 24V and 380V.
- Lights, communications and navigation control board located on wheelhouse console.
- Emergency board placed in port hull.

5.2) BATTERIES

- Battery set for services (2 batteries 214Ah / 24V DC) located in port engine room.
- Battery set for engine starting (2x2 batteries 100Ah / 24V DC) located in each engine room.
- Emergency battery set (2 batteries 100Ah / 24V DC) located inside a ventilated case on deck.
- Emergency battery set (2 batteries 65Ah /24V DC) for communications systems located on wheelhouse.

5.3) LIGHTNING SYSTEM

- LED lamps on accommodation spaces and common spaces.
- Technical areas fluorescent lamps, 24V or 220V.
- Six LED spotlights pointing to deck working area.

- Emergency lights as per rules.

6) ELECTRONIC EQUIPMENT

- VHF SAILOR RT-5022 with DSC Class A GMDSS
- Receiver Navtex JRC NCR-333
- Radio beacon SAILOR SGE-406II
- VHF portable JOTRON TRONTR20
- Emergency radar transponder JOTRON Tron SART-20
- GPS JRC NWZ-4551 & antennae JLR-4340
- Sounder SOLAS JRC FF60
- Transducer AIMAR B45
- Radar JRC – JMA5106
- AIS transceptor B Class ProAIS, & antennae
- GPS Plotter STANDARD HORIZON CP300
- Auto pilot SIMRAD AP-24 for VOLVO IPS
- Plotter Olex in PC

7) ACCOMODATION

- Cabin, kitchen and bathroom with thermal and acoustic insulation.
- Furniture , sits , bunks , storage , etc construction materials will be a combination of phenolic planks and 4 mm 5083 aluminum sheets.
- 13 suspension marine boat seats for crew transferred.
- 2 pilot seats with pedestal & footrests

8) PAINTING AND PROTECTION

- Below waterline 2 x primer layer and antifouling
- Main deck at bow covered with non slip paint.
- Above waterline polished without treatment and rescue area & company logos with glued vinyl

9) ENGINE ROOM ISOLATION

- A60 Isolation with rock wool panels covered by aluminum sheet and supported by metallic pins.
- Engine room protected area, deck and bulkheads from waterline up to deck included.

10) FIRE FIGHTING , RESCUE , NAUTICAL EQUIPMENT , AND LIGHTNING EQUIPMENT

10.1) FIRE FIGHTING

- Fire fighting hydrant on deck
- Fire fighting hoses ,one on deck and the one in machinery spaces , 18 meters long with nozzle.

- Fixed fire extinguishers system in machinery spaces operated from outside
- Fire detection and alarm system
- Foam fire extinguisher on each engine room.
- Fire extinguisher on each cabin , galley and wheelhouse
- Fireman axe
- Three water buckets for fire fighting

10.2) RESCUE

- Two life rafts SOLAS, 15 passengers capacity with its launching system.
- 12 flares and 2 smoke floating signals
- 4 life buoys, two with rope and two with auto switch lights.
- 15 life jackets
- 1 inflatable boat CE equipped with an outboard engine, crane launched.

10.3) NAVIGATION EQUIPMENT

- 1 Compass
- 1 Log clock
- 1 5 kg hand held sounder, 50 m length rope.
- 1 Divider
- 1 Angle transporter
- 1 Rule of 40 cm
- 1 Megaphone
- 1 Daylight binoculars (6x30)
- 1 Night binoculars (7x50)
- 1 Manual fog horn
- 1 Barometer
- 1 Thermometer
- 1 Fog bell
- 1 Code of rescue signals.
- 1 International code of signals

