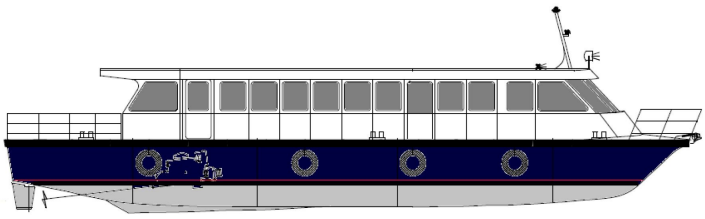
NEW BUILD - 20m 100 Passenger Cat



Listing ID - 1101

Description	**NEW BUILD - 20m 100 Passenger Cat**
Date Launched	Built to Order
Length	20m (65ft 7in)
Beam	7m (22ft 11in)
Draft	0.8m (2ft 7in)
Location	ex factory, India
Broker	Geoff Fraser geoff.fraser@seaboats.net +64 21 61 222 5

1.1 DESCRIPTION

The Vessel is of the Twin Hull 'Catamaran' type and based on PRAGA's highly successful and well proven Fibreglass (GRP) 20.00 meter Catamaran of which Five vessels have already been built in India to the design of M/s DON TATE ASSOCIATES of the U.K. The vessel is to be constructed in accordance with the IV Act under the Supervision and Certification of IR Class.

The Catamaran is designed to give a very stable and spacious craft with One decks which allow craft for a variety of purposes. The main deck can be fitted out with seating for 100 persons.
She can be used in Coastal Waters as well as in Rivers and Backwaters. Operation of the vessel is very economical since the power requirements of the very efficient Catamaran hulls is surprisingly low allowing a larger budget for fit-out. A Speed of 8.0 knots can be achieved with just 2 x 88. hp Inboard Marine Diesel Engines.

1.2 PRINCIPLE DIMENSIONS

Length overall: 20m
Length at Waterline: 18.30m

Beam: 7m
Draft: 0.80m
Displacement: 32 Tonnes (Approximately)
Power: 2 x 103 HP @ 2500 RPM
Speed: 10.00 Knots (Cruising)
11.30 Knots (Maximum)
Crew: 4 (Minimum)
Passengers: 100 (Main Deck)

2. CONSTRUCTION

The Hulls of the Vessel shall be of GRP, stoutly built to withstand the intended use with minimum maintenance. They shall be sufficiently stiffened and divided into 6 Watertight compartments in each Hull, by means of Marine Plywood Bulkheads. The Scantlings shall be in accordance with those approved by the IRS. The hulls shall be joined together in a manner which will ensure complete integrity of the whole vessel and able to withstand the intended loads and conditions of use.

The Deck and Superstructures shall be constructed with GRP composite. Decks will be sheathed with GRP layers to ensure full waterproofing.

3. GENERAL ARRANGEMENT

The vessel/s shall be arranged as follows:

Wheel House:

The wheel-house is mounted at the forward end of the Main Deck enabling the Helmsman to have clear and unobstructed view in all directions. All Steering and Controls for operation of the vessel including all instrumentation is provided at a console in front of the Helmsman allowing full and easy control of the vessel from the Steering Position. A windscreen wiper will be provided. The benches are provided on each side of the wheelhouse for the crew. Access is from a door at the rear of the wheelhouse.

Main Deck:

The main deck can be arranged to seat up to 100 Passengers. The central row of the seats will be raised by 200 mm above the deck level.

Windows shall be of tinted glass.

Aft Deck:

Toilets : Two toilets are constructed separately at the aft end of the lower deck, shielded by a screen. Water closets and washbasins are provided. A separate Crew's toilet (Optional Extra) can also provided with shower facilities.

Crew Galley: (Optional Extra) will be fitted with a kerosene cooking stove, storage lockers and small sink with fresh water connection.

4. MACHINERY

4.1 MAIN ENGINES AND GEARBOXES

Two (2) off freshwater heat exchange, sea water cooled, **Sole S.A. (Sole Diesel)** model – **SM 103** (103 HP @ 2500 RPM), medium continuous rating diesel engines shall be installed coupled to Twin Disc Technodrive **TM-170** Gear Boxes **Ratio 2.04:1**. Alarms on main engine function (no shutdowns).

The engines shall be fitted with an electric starter motor, crankshaft p.t.o. FOR steering pumps and water injected exhaust elbows. An auxiliary p.t.o. and bilge pumps shall be fitted to the engines. Engine instrument panal and key, stop/start to be provided for the main helm. Main engines to be resilently mounted to ship's structure. Crank case breather shall be plumbed to above deck. Axial (Davis Craig) or equivalent fans shall be fitted, 240V in the machinery space for forced ventilation. (Remote shut off shall be fitted). Fire flaps shall be fitted on intake and exhaust vents.

SM-103 Model

More than 30 years of experience with Mitsubishi engines, give the credibility to our final product. A complete range from 16 to 105 HP gives the best coverage to a wide range of boats for leisure or commercial application. Mitsubishi engines are meaning of reliability, hardiness and durability. These engines are settled in many industrials applications.

6-cylinder inboard engine, it delivers an output of 103 hp (75.80 kW) at 2500 rpm and 4996 cc. This marine engine offers low-consumption engine. It delivers high torque throughout the rpm range. Very suitable in all kind of displacement ships and sailboats.

Broad Specifications:
Model: SM-103
Base Engine Manufacturer: Mitsubishi
Max Power: 75.8 kW - 103.0 CV
Max. RPM : 2500
Cycle: 4
No. Cylinder & Arrangement: 6 - In line
Bore and stroke: 94.0 - 120 mm
Displacement: 4996 cc
Aspiration: Naturally aspirated
Standard Voltage: 12V Displacement

4.2 STERN GEAR & EXHAUST SYSTEM

Stern Gear: Will consist of suitable stainless steel shafts fitted in brass sterntubes and water-lubricated Cutless rubber bushes driving 3-bladed balanced Bronze propellers.

Exhaust: Will be of water-injected type with exhaust gases being emitted through the hull sides along with the raw water from the engines cooling system through suitable neoprene / chloroprene hoses. Exhaust outlets will be fitted with a non-return flap.

4.3 FUEL TANKS

Two in numbers of mild steel fuel tanks of 360 litres capacity each shall be installed in separate compartment forward of the engine compartment. Provision will be made for filling from the side decks. Tanks will be installed and tested according to the Mercantile Marine Department of India (MMD) regulations and all fuel lines shall be of copper pipe and flexible armoured-hose. Duplex filters and water separators shall be provided in the fuel line. Provision will be made for emergency shut-off valves on the fuel tanks accessible from the deck.

4.4 STEERING SYSTEM

The vessel is steered by a Wheel from the Helmsmans position through a Hydraulic system. The rudders are mounted through the hull in suitable watertight bearings with tillers linked across the hulls by a connecting pipe. The rudders are of stainless steel plate attached by a flange to stainless steel rudder stocks. An emergency hand -tiller is provided as per regulations.

MAC N HOM HYDRAULIC STEERING SYSTEM

Depending upon the size of vessel, torque required for rudder-stock and angle of turning of rudder plate, we offer 5 models of Rudder Controls for In-Board vessels and 1 model for Out-Board vessels.

The ergonomics and features of our controls are the most advanced available and are suitable for most kinds of dual engine application boats. The shapely, balanced handle's provide a very comfortable feel and the state of the art mechanism guarantees a smooth yet solid action, assuring you have maximum control at all times. This control is designed for twin engine applications.

The series of controls are suitable for use with both 3300/33C universal or OEM type control cables without the need for adaptation at the control.

FEATURES

• All controls include start in gear protection
• Designed for use with both 3300/33C universal and OEM shift and throttle cable connections
• Suitable for most boat/dual engine combinations
• Can be used in dual station, dual engine applications with the DS unit
• Dual action levers (throttle and shift control in each handle)
• Trim & Tilt options available
• Drag adjustment on all models
• Easy installation and set up
• Designed and assembled in the USA
• New master trim button in handle to trim both engines with separate trim switches in the base of the control for individual trimming

5. RANGE & SPEED ESTIMATE

The Range and Speed estimates are given below based on Engine Data and Standard Propeller Efficiencies.
20 Meter Displacement Catamaran
Shaft Drive – Passenger Catamaran
Main Engines – Sole Diesel 2 x SM-103 (103 BHP @ 2500 rpm)
Displacement – 32 Tonnes
Fuel – 720 Litres

6. ELECTRICAL

A 12 v DC and a 220v AC 3 – phase system will be provided.
The 12v system is powered by 4 Nos. of heavy-duty 180 amp/hr batteries, in two banks of 2 batteries each connected to and charged by Alternators on each engine.
This battery system is sufficient for starting engines and will be fitted with an Isolation switch.
An Invertor for supplying back-up 220v power for emergency Lights will also be provided.
A 220v, 3 – phase system, powered by an auxiliary Diesel Genset of 16.40 kVa capacity will supply power for equipment such as Air Conditioning, Refrigerators, Lighting, Electronic / Music equipment etc..

The following shall be supplied:
a) Adequate lighting points in all areas including in all hull compartments and decks.
b) Navigation Lights as per Regulations
c) One 6” Searchlight mounted on top of wheelhouse.
d) Windscreen Wiper
e) Air Horn
f) Suitable Power Points for all electrical equipment.
g) Distribution Panels with MCB’s, switches and gauges. All wiring and equipment will be to ISI Standards and fitted in proper conduits.
h) Shore Supply Panel and Socket.

7. NAVIGATION & COMMUNICATION

The following Navigation & Communication Electronics will be supplied with the vessel unless mentioned as an Optional Extra as listed in 7.1 and 7.2 of this Technical Specification. For further information you can contact **Messrs. A. S. Moloobhoy & Sons** who are the equipment suppliers in India or your local Furuno Office or Representative or Agent.
Product Brochures can be made available on request.

7.1 NAVIGATION ELECTRONIC EQUIPMENT

(a) **GPS-Chartplotter-Echo Sounder (Optional Extra)**
With a sleek all-glass front, refined graphical user interface, built-in RezBoost Fish Finder, and an internal GPS antenna, **Furuno NavNet TZtouch2** is a beauty to behold and use. Whether you are searching for hot fishing grounds, plotting your next route, or using your Radar to navigate through fog, TZtouch2 delivers smooth operation with familiar touch gestures. Sporting and edge-to-edge glass front, NavNet TZtouch2 is beautifully designed, allowing you to build a navigation suite that is not only functional, but offers a luxurious look and feel.

Following in the footsteps of the original NavNet TZtouch, TZtouch2 is all about usability - the newly refined graphical user interface makes operation a breeze! Accessing different displays is achieved by tapping on the Home icon, or utilizing the new “Edge Swipe” motion. Swiping from the left edge reveals the NavData panel, where you can customize content to simplify navigation and chart usage. From here, you can set the autopilot, check tide information and much more. Swiping up from the bottom of the screen unveils the new Layers menu, a practical way of changing settings on the fly without having to venture into deeper menu systems. Since the screen remains visible at all times, changing settings is now simpler than ever. There are similar, contextual functions when available by swiping from the top or right side of the screen.

A 56-channel Furuno GPS Receiver is built into the display. You can connect an external antenna for redundancy, but the primary GPS receiver is built-in, saving you money on additional equipment and installation cost.

The built-in Fish Finder is a dual-frequency (50/200kHz), 600W/1kW power output sounder. It includes Furuno’s unique Bottom Discrimination and AccuFish modes, and also incorporates another new Furuno proprietary

Fish Finder technology, called RezBoost. RezBoost is a revolutionary new feature that utilizes Furuno’s exclusive digital signal processing protocol to produce fantastic target resolution and separation, without the need to change out your transducer, or purchase expensive broadband transducers. With RezBoost, you can now achieve target separation and resolution that was previously limited to Furuno commercial-grade Fish Finders.

NavNet TZtouch2 is a component-based system that utilizes Furuno’s award winning network products. You can add a variety of UHD Radars, from a 4kW Dome up to a 25kW Open Array. As with NavNet TZtouch, you can integrate, display, and control the NavPilot Autopilot, and Furuno’s new FI70 Instrument. Both of these products have displays that match TZtouch2, giving your helm a beautiful all-glass finish. Additional sensors that can be added to the network include AIS, Weather Fax, Sirius/XM Satellite Weather, Fusion Marine Stereo, and IP Cameras, as well as NMEA2000 and Furuno CAN bus devices. It even includes one NMEA0183 output port to send data to legacy systems.

NavNet TZtouch introduced the capability to access tablets and smartphones via WiFi and TZtouch2 continues that ability. You can download and utilize several FREE apps for both Apple and Android devices for use with your TZtouch2 display. More wireless capabilities are coming soon, including connection to the ActiveCaptain service that delivers crowd-sourced points of interest, Community Charts that allow users to report changes such as depth, obstructions, etc., and finally a TimeZero Cloud Data Service that will allow you to back up and synchronize your data across your TimeZero devices.

Features & Specifications:
Display size: 12.1”
Resolution: WXGA 1280 x 800
GPS/WAAS: 56 Channel GPS receiver built in
Fish Finder: 50/200kHz, 600W or 1kW
Memory: 30,000 User Points, 30,000 Track Points, 200 Planned Routes with 500 Points/Route
Interface: 1 Port, CanBUS/NMEA2000
LAN: 1 Port, Ethernet 100 BASE-TX
Wireless LAN: IEEE802.11B, 2.4GHz band

USB: 1 Port, USB 2.0
Video Out: 1 Port, HDMI
Video In: 2 Ports, NTSC/PAL
Waterproofing: IP56
Power: 12-24 VDC, 3.0-1.5 A

(b) **Fluxgate Compass (Optional Extra)**
Furuno PG-700 Fluxgate Compass heading sensor incorporates innovative electromagnetic compass technology for highly accurate and stable readouts of your ship's'heading. These sophisticated components are contained within a rugged, compact case that protects against the elements at sea. Unique design elements make the PG-700 virtually maintenance-free and easy to install.

Features:
(i) Angular velocity sensor and magnetic bearing sensor incorporated
(ii) Automatic determination of installation site suitability
(iii) L-shaped mounting base for mounting on bulkhead
(iv) Output of magnetic bearing data to FURUNO CAN bus device
(v) Includes 6 Meter, double-ended NMEA2000 Micro Cable

(c) **Navtex Receiver (Optional Extra)**
The **Furuno NX-300** receives NAVTEX messages and verifies the ID of received messages. It features two narrowband receivers, one tuned to the 518 kHz international Navtex frequency and the other to the 490 kHz domestic or local country frequency.
Features:
Reliable, uninterrupted reception of Navtex messages
Designed for small boats and Fishing Vessels
No consumables or paper required
Ultra clear 4.5" "acklit silver bright LCD
Compact, stylish display and antenna unit
28,000-character memory capacity for message storage
Memory backup with a long life lithium battery
Low power consumption
NAV Data Display mode
Multi-language menu

(d) **Radar (Optional Extra)**
Ultra High Definition (UHD™) Digital Radar

FURUNO DRS4D has taken its NMEA award-winning radar technology to the next level with Ultra High Definition Digital Radar. UHD™ offers crystal clear, noise-free target presentation with automatic real-time digital signal processing. Antenna rotation speed (24/36/48 rpm) is automatically shifted to the appropriate pulse length. Commercial-grade radar performance is now available in the ultimate MFD navigation suite.
The DRS4D incorporates a 4kW T/R within a sleek 24" radome.

Standard Features:
PSU012 Power Supply Unit is required option for use with TZT9, TZT14 or TZTBB
4kW, 36 n.m. Radar Antenna for NavNet 3D and TZtouch in a stylish 24" Radome

Ultra High Definition (UHD™) Digital Radar offers crystal clear, noise-free target presentation with automatic real-time digital signal processing

Real-time digital auto Gain/Sea/Rain controls to deliver noise-free radar presentation

Radar antenna rotation speed (24/36/48 rpm) is automatically shifted to the appropriate pulse length

Simultaneous scanning technology drives our powerful dual-range radar, providing unsurpassed target detection. With each sweep of antenna, dual progressive scan transmissions are sent, received and processed to display two separate radar ranges on your NavNet 3D display simultaneously. Each radar presentation acts autonomously, allowing for manipulation of individual gain and clutter controls

Radome incorporates a Network port to which certain Furuno network sensors; including the WS200 Wind Sensor, SC30 Satellite Compass and GP330B GPS Receiver, can be directly connected. Power for these networked sensors is supplied directly from the radome itself, allowing for flexible installation of multiple sensors without the need to run cables all the way to the main processor unit

(e) **Satellite Compass (Optional Extra)**
The **Furuno SC30** Satellite Compass provides highly accurate attitude information for navigation equipment such as radar, plotter, autopilot, fish finder and sonar. It can be used for a wide variety of applications on any type of vessel.

The SC30 comes with a compact GPS antenna and built-in processor. This all-in-one system delivers incredibly accurate heading and roll & pitch information as well as heaving information, GPS position, SOG (Speed Over Ground), COG (Course Over Ground) and ROT (Rate Of Turn) data.

Employing a two-antenna system with a 3-axis gyro and acceleration sensors, the SC30 enables high-speed response capability. Advanced digital signal processing techniques compute accurate heading based on sensor data. NMEA2000 interface is standard for simple installation, while the optional interface unit IF-NMEASC is available for conventional NMEA0183, AD10 and contact closure.

Revolutionary 2-antenna and rate sensor system
In order to calculate roll & pitch data, a satellite compass requires two vectors. The new SC30 employs a 2-antenna system that calculates a single vector while a 3-axis rate gyro and acceleration sensors add the 2nd vector. This configuration enables the SC30 to calculate highly accurate roll and pitch data without using a third sensor. The SC30 employs the LAMBDA algorithm developed by Prof. Teussen, Delft University of Technology, The Netherlands.

Standard Features:
Stylish design to complement the appearance of recreational boats
All-in-on system for simple, space-saving installation
Heading accuracy of 1.0 degrees
Short start-up time of 3 minutes
Excellent follow-up rate of 45 degrees/second exceeds requirement for high speed craft
Free from regular maintenance
NMEA2000 interface standard
Power Supply: 12-24VDC

(f) **Autopilot (Optional Extra)**
FURUNO's NavPilot 700 a revolutionary autopilot with a sunlight viewable display designed for a variety of vessels. It utilizes a self-learning and adaptive software algorithm, and plays the ultimate role in course-keeping capability. NavPilot dynamically adjusts essential parameters during navigation, such as vessel speed, trim, draught, tide and wind effects, dead band, weather and more. These parameters are stored in system memory and continuously optimized to make the NavPilot more versatile.

Self-learning and adaptive software

From the first dock-side setup through the last voyage you made, NavPilot continues to learn your vessel's steering characteristics, allowing for real-time, dynamic adjustments to make the boat's steering more accurate.

SAFE HELM and POWER ASSIST features provide Efficient and Effective Helm Steering Control

The optional SAFE HELM and POWER ASSIST features provide a unique interface to the vessel's hydraulic hand steering system, providing unrivaled comfort and control of steering directly from any manual helm on the vessel. These two modes greatly reduce steering effort and enhance the safety of your autopilot.

The POWER ASSIST mode incorporates the SAFE HELM concept and provides speed-based, power assisted steering, which greatly reduces manual helm effort in maneuvering situations. POWER ASSIST is a unique helm-activated assisted steering feature that can augment or replace separate electric and power-robbing, engine-driven power steering systems on many vessels. POWER ASSIST reduces steering system complexity and costs while increasing economy.

SAFE HELM and POWER ASSIST modes will require the optional FPS8 Power Steering Module and an appropriate HRP Pumpset.

If you are interested in utilizing the “SAFE HELM” and “POWER ASSIST” features, it is highly recommend that, when installing the NavPilot 700 Series Autopilot, the optional FPS8 Power Steering Module is purchased and installed at the same time. This will eliminate the need to re-plumb the hydraulic system and run additional connection cables in the future.

FishHunter mode
FishHunter mode is a unique feature of FURUNO’s NavPilot series. Find a fish target with your FURUNO sonar/sounder or bird target with your FURUNO radar and feed it to the NavPilot The NavPilot will activate the FishHunter mode to perform square, zigzag, circle, orbit, spiral or figure-eight maneuvers around the specified target at a user selected distance. This feature can also be used for Man Overboard (MOB).

Furuno's new NavPilot series is designed to match the NavNet 3D, FI-50 Instrument series and other navigation equipment. The “Plug and Play” CAN bus interface allows for easy installation and exceptional interface ability.

Features:
Model / Part #
FAP7001 Control Unit for NAVpilot 700
FAP7002 Processor Unit for NAVpilot 700 Series
FAP6112 Rudder Reference Unit for NAVpilot
PG700 NMEA2000 Rate Compensated Heading Sensor w/ 6M NMEA2000 Cable

Revolutionary SAFE HELM and POWER ASSIST option brings unrivaled steering comfort and control at the helm (This feature will be available in an upcoming software update)

Selectable "Economy" and "Precision" Navigation Modes combine adaptive technology providing fuel and power savings of up to 2.5% or more.

"Precision" XTE accuracy: within 18 ft.
Dual NMEA2000 network interface and Furuno CAN bus interface provides isolation and redundancy for safety

Simplified activation set-up by on-screen wizard

Perfect for inboard or outboard power boats and sail boats

Simple one-touch mode selection enables flexible steering and course control

Perfect cosmetic match with NavNet 3D, FI50 instrument series, GP33 GPS Navigator and RD33 Data Display
Mix and match up to 6 displays in a single network

(g) **Anemometer (Optional Extra)**

Furuno RD-33 The RD33 is a navigational data organizer that allows the operator to select the perfect way to display data from interfaced equipment such as GPS, chartplotter, radar, fish finder, autopilot, instruments and other sensors including engine information. The high contrast, colour 4.3" LCD may be installed in a compact space, remote from its sources. The screen is impressively bright, remarkably crisp and easy to read. Various display modes are available including Speedometer, Highway and Text. The text mode presents up to six of the most necessary types of data. The display layout can be customized for your specific needs.

This versatile product can also be added to a NavNet 3D system, displaying a variety of navigation data from the CAN bus network.

The RD33 accepts a wide variety of navigation data and displays them in numerical and graphic formats. You may freely select and arrange which data is displayed on the screen. Furthermore, seven patterns of customized display settings can be stored in the memory to give speedy access and convenience while onboard.

The RD33 features a visually appealing fresh new look, combining easy access with user functionality. Thanks to the bright, high-resolution LCD, the RD33 provides an easy-to-read display to monitor information from remote equipment, through an intuitive graphical user interface.

7.2 COMMUNICATION ELECTRONIC EQUIPMENT

(a) **VHF Radio (Fixed 25 Watts) (Optional Extra)**

A **Furuno FM-4721** + Remote Handset (Optional Extra) shall be provided with the vessel.

The FM-4721 is a rugged, reliable 1 W and 25 W radio with built-in DSC functionality built to withstand the harshest conditions that may be encountered at sea. Its compact, waterproof case design allows a simplified installation on steering console, helm or flybridge.

Outlined Specifications as below:
25 W or 1 W RF Output Power

Built-in DSC meets Class D ITU-R M493-11/EN 301 025 requirement

Class D DSC with Distress, Individual and All Sip calls

Navigation information (LAT/LONG, SOG, COG) information shown on display*
Navigate to a DSC Distress Position*

ATIS mode available for inland waterway

Automatic DSC Position Poll request to up four separate vessels

30 W PA/Loudhailer with pre-programmed fog signals and listenback facility

Two Handsets (Remote control speaker/microphone with display) are available

Easy channel selection with large rotary control
Quick access to channel 16/9 Key

Features a large alphanumeric keypad
* Requires connection to external GPS

(b) **SSB Radio (Optional Extra)**
The 150 Watt **Furuno FS-1575** is a reliable MF/HF Radiotelephone for general and distress communications with integrated DSC/DSC Watch Receiver. It facilitates both general and GMDSS communication, operating as a DSC transceiver and as a DSC Watch Receiver on all distress and safety frequencies in MF and HF bands. An optional IB585 NBDP terminal can be connected to the transceiver unit for maritime telex operation and distress message/maritime safety information handling.

The FS 1575 features a bright, high-contrast 4.3" colour LCD (480x272 pixels). Multiple display configurations are available, as well as a Night Mode (white text on black background display) for wheelhouse operation. Instant selection of 256 user-specified channels is provided with a rotary knob or direct keypad input. Quick access to DSC message composition is available by dedicated keys on the control unit.

Quick Access functions: On the menu setting, three quick-access functions can be assigned for 1, 4 and 7 on the numeric keypad, and those assigned functions are displayed on the Radiotelephone display. The list of functions assigned for quick-access includes: TX frequency setting, RX frequency setting, class of emission setting, AGC setting, output power setting, TX frequency monitoring, showing the list of test messages, showing the list of message files, execution of daily test, showing the list of log files, and intercom functions.
Simplified Menu Operation: Numbers are assigned for each of the menu items, and the operator can access each of the menu items either by turning and pressing PUSH TO ENTER knob to select menu items or simply pressing number on the numeric keypad.
The FS1575 fully meets GMDSS carriage requirements for SOLAS ships operating in A3 and A4 sea areas, as well as ITU recommendation on digital selective calling system for use in the Maritime Mobile Service, ITU-R M.493-13.

(c) **Automative Identification System (AIS) (Optional Extra)**

The **Furuno FA-30** Automatic Identification System (AIS) Receiver provides real-time information about AIS-equipped vessels to your NavNet 3D or NavNet vx2, AIS-ready chart plotter, navigation software or radar. The information is graphically presented allowing you to monitor and avoid AIS equipped vessels in your area. The information that the FA 30 receives includes the vessel name and call sign, position, course, speed over ground, and other useful information. Since AIS targets can be received even if they are not within line of sight, the FA30 enhances situational awareness in congested waterways, limited visibility or heavy sea conditions, and gives the navigator much more information about AIS equipped vessels.

The FA 30 has an Ethernet and a serial port. This provides simple and easy connection by Ethernet to NavNet VX2 and NavNet 3D systems, MaxSea NavNet Navigation software, and the MaxSea AIS viewer PC software that is included with the FA30. AIS capable radar, chart plotters and Non-NavNet versions of MaxSea are interfaced through the FA30

serial port. The FA 30 will work with virtually any marine VHF antenna. An optional VHF signal splitter is offered to allow the FA30 to work with an existing VHF radio antenna installation.

(d) Loud Hailer (Optional Extra)
The **Furuno LH-3000** is designed for a wide variety of ships, requiring high quality onboard and ship-to-ship communications under almost any circumstance.
Features:
Hail, Intercom, Alarm functions available
Built-in high quality speaker for Intercom and Hailer Listen capability
20 Watts of output power
Eight warning signals
Up to four intercoms are connectable for two-way communication between master and specific remote or all remote stations
Auxiliary audio input
Hail, Intercom, Alarm functions available
Built-in high quality speaker for Intercom and Hailer Listen capability
20 Watts of output power
Eight warning signals
Up to four intercoms are connectable for two-way communication between master and specific remote or all remote stations
Auxiliary audio input
Specifications:
AUDIO OUTPUT HAILER: 20 W, INTERCOM: 4.0 W,
EXTERNAL: 4.0 W, INTERNAL: 2.2 W
WARNING SIGNALS Manual: MAN, YELP Automatic: UNWY, SAIL, TOW, STOP, ANCH, AGND
POWER SUPPLY 12 VDC
Equipment List:

Standard
1. Loud Hailer LH-3000 1 unit
2. Microphone DM-2003 1 unit
3. Installation Materials and Spare Parts 1 set

Options:
1. Intercom Speaker LH-3010
2. Flush Mount Kit LH-3020
3. Cable for Intercom Speaker 5/10/15/20 m

7.3 DECLARATION ON ELECTRONIC EQUIPMENT
The Federal Maritime and Hydrographic Agency (Bundesamt für Seeschifffahrt und Hydrographie - –SH) issues on application a flag document for yard trials and conveyances. The flag document is proof of the authorization to fly the German flag.
The EURO issues flag attestations for ships operated by the government.
All seagoing vessels that receive proof of flying the federal flag are registered in the flag register of the EU.

For any newly constructed, modified or refitted ship a plan approval of the ship's navigational and radio equipment is required. This plan approval is part of the initial survey. By means of drawings and documents it will be verified, that all requirements regarding arrangement, fitting and installation of the ship's equipment are complied with. This helps to prepare the ship's survey and to avoid costly modifications, which might otherwise become necessary.

The procedure is specified with the, Bedingungen für die Planprüfung der vorgesehenen Aufstellung, Anbringung bzw. des Einbaus von Navigations- und Funkausrüstung sowie Ausrüstung nach COLREG 72“ (BfP) (Conditions for plan approval) of the BSH. This document includes in its annex special requirements regarding the arrangement of certain items of equipment. The BSH forwards a copy of each approval certificate to the ship safety division, in case of newbuildings also a list of the navigation equipment.

7.4 SEARCH & RESCUE ELECTRONIC EQUIPMENT

The following Search and Rescue (SAR) electronic equipment will be supplied with each vessel:

(a) EPIRB (Optional Extra)

Jotron EPIRB model TRON 40S MkII

Float free and manual GMDSS EPIRB. With new state of the art technology. New non hazardous battery and improved visibility when activated. Fits existing brackets.

- 5 years warranty
- New non-haz battery
- Fits existing brackets
- New state of the art technology, improved visibility
- Incorporated into Jotron recycle program

Complies with IMO/SOLAS/GMDSS regulations. MED and FCC approved.

Article numbers:

83050 Tron 40S MkII Complete main unit

Includes: 82819 User manual

Options:

99897 Programming (Country, Call Sign, MMSI)

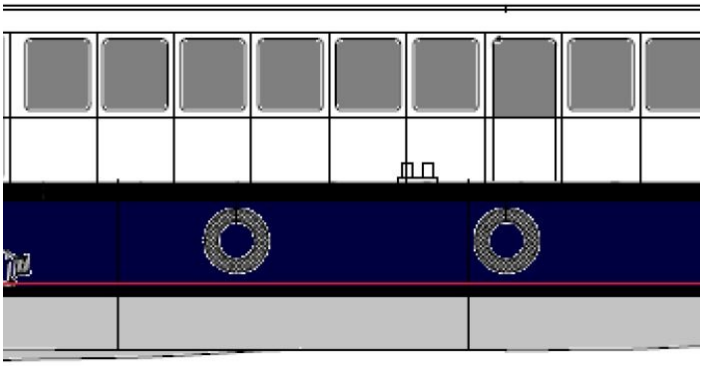
85216 FB-6 Float-free Bracket, automatic release, w/protective cover

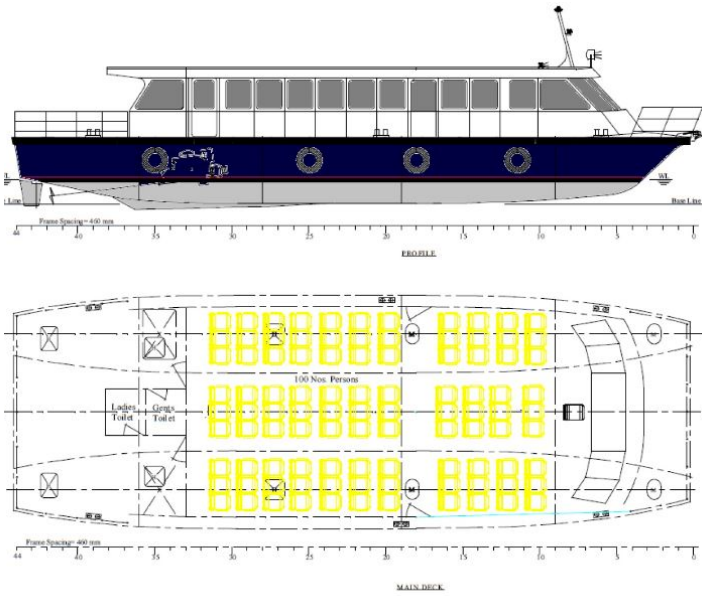
Includes: 80414 Hydrostatic Release Unit (HRU) w/bolt for FB-5/FB-6

97777 FBH-4 Float-free Bracket, automatic release, with heating

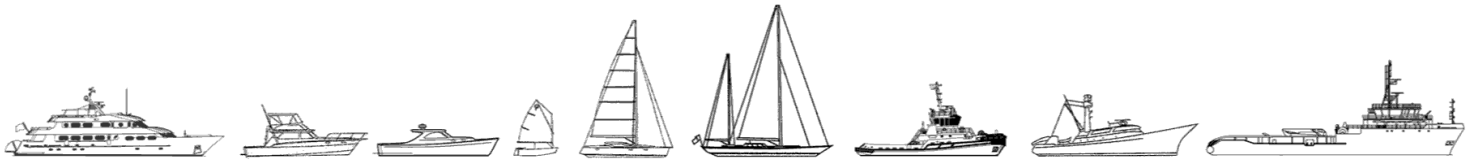
Includes: 97821 Hydrostatic Release Unit (HRU) w/bolt for FB-4 and FBH-4

92410 Thermostat in junction box





The details of all vessels are offered in good faith but we cannot guarantee or warrant the accuracy of this information nor warrant the condition of the vessel. Any buyer should instruct their agents, or their surveyors, to investigate such details as the buyer desires validated. This vessel is offered subject to sale, price change, location or withdrawal without notice.



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