

Revision no: 01 Rev date: 28/05/2009	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
Doc No: FRB700-TS204-00	<b>FRB 700 Aluminium</b>	Page 1 of 13

- 1. INTRODUCTION**
- 2. SPECIFICATION**
- 3. HULL**
- 4. DECK**
- 5. PROTECTIVE FENDER**
- 6. PROPULSION**
- 7. ELECTRICAL SYSTEM**
- 8. FUEL SYSTEM**
- 9. CONTROLS AND INSTRUMENTS**
- 10. FIXED LIFTING ARRANGEMENT**
- 11. CONSERVATION**
- 12. SAFETY**
- 13. CERTIFICATION**
- 14. EQUIPMENT**
- 15. OPTIONAL EQUIPMENT**
- 16. DOCUMENTATION**
- 17. MARKING**

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
Doc No: FRB700-TS204-00	<b>FRB 700 Aluminium</b>	Page 2 of 13

## 1. INTRODUCTION

The FRB 700 is a rigid fast rescue craft designed for service in the most demanding environment and welded of profiles and plates in marine grade aluminium alloy (AlMg 4.5)

The craft is of a fully planning design with a deep V-bottom construction and competent to be safely launched and retrieved under adverse weather and sea conditions.

The strength of the craft is sufficient to withstand all normal forces encountered under normal use of the craft at maximum speed.

The FRB 700 is designed, built and equipped to comply with the following requirements: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2007/5/EC, issued as Directive on Ships Equipment: Annex A.1, item No. A.1/1.20 and Annex B, **Module B** in the Directive. SOLAS 74 as amended, Regulations III/4, III/26.3, III/34 & X/3, LSA Code, 2000 HSC Code, 8.1 and IMO MSC/Circ.809.

## 2. SPECIFICATION

- Length overall : 7,22 m
- Length hull : 6,25 m
- Beam overall : 2,70 m
- Breadth : 2,20 m
- Draught : 0,40 m
- Height extreme : 2,58 m
- Weight empty (empty fuel) : 1.800 kg
- Minimum capacity : 6 persons ( 5 seated and 1 person on a stretcher)
- SWL with 6 persons : 2.340 kg
- SWL with 10 persons : 2.700 kg
- Max speed with 3 crew : > 30 kts
- Drawing reference : X-000000

## 3. HULL

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
Doc No: FRB700-TS204-00	<b>FRB 700 Aluminium</b>	Page 3 of 13

The hull is stiffened by a system of longitudinal bulkheads and transversal stiffeners and on the outside of the hull there are four spray rails, two on each side of the keel.

All void compartments are filled with polyurethane hard foam.

#### 4. DECK

The under-deck area is strengthened by means of longitudinal and transversal stiffening and bulkheads.

The deck has been coated with a non-skid finish and is self-draining through openings aft.

The steering console is made of marine grade aluminium and as a standard provides seating for a crew of two.

Additional seating is available for the crew and passengers.

The steering console gives extra protection for the helmsman and good view forward, sides and aft.

On top of the steering console a handrail and Plexiglas windscreen are fitted.

The engine room is below and in front of the cockpit fitted with a watertight hatch allowing good access to the engine for inspection and maintenance.

Under the saddle seats a large hatch gives access to the water jet, intermediate shaft, and all fittings.

A stretcher can be stowed on the deck in front of the engine room.

All fittings are of size, strength, material and location best suited to application.

The bow is fitted with an aluminium canopy equipped with a handrail and providing protection and the facility to stow equipment behind a hatch.

Two towing points are fitted to the transom and an on-load painter release mechanism is mounted on the bow.

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
Doc No: FRB700-TS204-00	<b>FRB 700 Aluminium</b>	Page 4 of 13

## 5. PROTECTIVE FENDER

Stability and impact absorption are provided by a heavy duty, mechanically attached flexible closed cell foam collar offering minimal service and maintenance costs

The craft is fitted with a strong protective fender made of special Polyethylene foam. The protective fender will effectively deaden all hard impacts without creating a reactive force.

The protective fender is covered by a heavy reinforced PVC cover with extra protective cladding on the outer surface.

The protective fender is secured to the hull by means of aluminium frames on gunwale and chine level.

Lifelines are fitted in full length of the hull.

## 6. PROPULSION

The FRB 700 has a diesel engine coupled to an Alamarin type 230 water jet via an intermediate shaft. The water jet is protected by a frame installed on the transom of the craft. The engine is freshwater cooled and has a wet exhaust system which is led aft through the stern. The exhaust system is constructed to stop water ingress during normal operation and capsize.

The engine is specially designed, manufactured and approved for use in rescue boats. The air intakes to the engine room are so arranged that they will prevent water from entering the engine room in case the boat would capsize.

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
	<b>FRB 700 Aluminium</b>	Page 5 of 13

## 6.1 ENGINE

The FRB 700 is installed with a single Bukh+Steyr, 6 cylinder and turbo charged diesel engine developing 212 hp at 4300 rpm specially designed, manufactured and approved for use in rescue boats. In the event of capsizing; the engine will automatically stop before complete inversion. The engine is fresh water cooled and has a wet exhaust system fitted aft through the stern designed to stop water ingress during normal operation and capsizing. The engine is provided with a fuel filter/water separator.

### 6.1.1 ENGINE DATA:

Maker	: BUKH STEYR
Model	: MO236K43
Type	: Turbocharged, 4 stroke, 6 cylinders
Power	: 212 hp (156 kW)
Cooling	: Fresh water
Starting method	: Electric
Alternator	: 90 Amp with voltage regulator

## 6.2 WATER JET

The engine is coupled to an Alamarin type 230 water jet via an intermediate shaft. The water jet is protected by a platform installed on the transom of the craft.

- Maker : ALAMARIN
- Model : 230

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
	<b>FRB 700 Aluminium</b>	Page 6 of 13

## 7. ELECTRICAL SYSTEM

The FRSQ 700 is equipped with a 12V electrical system in accordance with regulations. A socket for external charging is fitted to the steering console and a LADAC type LADIX modular system 42VAC/12VDC battery charger incorporating watertight IP67 plug-in connections are installed.

All electric equipment is protected by fuses, with automatic reset.

The system facilitates the addition of an optional engine heater and auxiliary equipment.

### 7.1 BATTERIES

Two heavy-duty batteries, non-spill, 12 Volt/xxx Amp. hours, equipped with isolating switch are installed in the engine compartment and continuously charged.

### 7.2 NAVIGATION LIGHTS

One set of navigation lights is installed to International standard, authority approved for boats up to 12 meters.

### 7.3 SEARCHLIGHT

One hand held search light (50W) with a flexible cable is supplied with external socket on the steering console.

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
	<b>FRB 700 Aluminium</b>	Page 7 of 13

## 8. FUEL SYSTEM

### 8.1 FUEL TANK

The FRB 700 is equipped with one aluminium fuel tank, under deck in front of the engine compartment, with a capacity of 170 litres. Internal baffles are installed to dampen surging and the fuel tank is pressure tested. On top of the fuel tank an inspection hatch is fitted to allow access for routine inspection. The tank is filled and ventilated by means of separate fittings and a level gauge is installed.

## 9. CONTROLS AND INSTRUMENTS

All manoeuvring handles are within reach for the helmsman. To give the FRB 700 precise manoeuvrability it is fitted with a heavy-duty hydraulic steering and control system. An emergency steering and control system is provided for. All instruments are capsulated according to IP 65 standard.

### 9.1 SWITCH PANEL

A circuit breaker switch panel is incorporated into the system. Each circuit breaker is dedicated to individual electrical services.

### 9.2 COMPASS

A compass is mounted on the console directly forward of the Helmsman.

### 9.3 COMMUNICATION

The FRB 700 is optionally fitted with a waterproof radio communication set.

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
	<b>FRB 700 Aluminium</b>	Page 8 of 13

## 9.4 ENGINE MONITORS

The engine has waterproof monitors and controls mounted in the steering console, giving visual readings and acoustic alarms of all main functions and providing start/stop and emergency cut-off functions.

## 10. FIXED LIFTING ARRANGEMENT

The fixed lifting arrangement is designed with a safety factor of 6 and a dynamic factor of 1.5, all welded and fitted with an approved 3.5 t. off-load release hook .

## 11. CONSERVATION

The hull is shot blasted to SA 2,5 and coated with two layers of 2-component epoxy paint.

Total dry film thickness 100-120 microns.

The FRB 700 is available in RAL1016 yellow and RAL2004 orange.

## 12. SAFETY

### 12.1 CAPSIZE REVERSAL EQUIPMENT

Capsize reversal equipment is installed and consists of an aluminium frame, inflation bag, air bottle with release valve and release handle.

The release mechanism can be activated manually, by pulling the release handle, turning the boat upright.

### 12.2 STERN GUARD

The water jet is protected by a marine grade aluminium construction.

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
	<b>FRB 700 Aluminium</b>	Page 9 of 13

### **12.3 LIFELINES**

Substantial lifelines are arranged in a series of loops to the inside and outside of the collar.

### **12.4 STOWAGE**

A weather tight bow compartment is fitted for stowage of equipment.

### **12.5 RADAR REFLECTOR**

A radar reflector is mounted on the self-righting frame.

### **12.6 BILGE SYSTEM**

The boat is equipped with one manual bilge pump, fitted with two strainers, arranged to drain aft via the transom.

### **12.7 SEARCHLIGHT**

One 50-watt hand-operated halogen searchlight with a flexible cable is fitted to the console.

### **12.8 VHF**


Facility for mounting a watertight VHF radio-communication set is provided for on the steering console.

### **12.9 STRETCHER**

Facility for placing a stretcher is arranged on deck forward of the engine compartment.

### **12.10 VISIBILITY**

Retro-reflective strips are fitted in full compliance with the regulations.

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
	<b>FRB 700 Aluminium</b>	Page 10 of 13

### **12.11 PAINTER RELEASE DEVICE**

This painter device is of sufficient strength to withstand the towing forces when the FRB is being towed making headway at speeds up to 5 knots in calm water. The painter device consists of a stainless steel painter hook that can be released at all times from inside the rescue boat by means of a pull cord.

## **13. CERTIFICATION**

### **13.1 THE BOAT**

The FRB 700 is constructed, equipped and supplied with a MED certificate.

### **13.2 LIFTING ARRANGEMENT**

The fixed single-point suspension arrangement is tested and supplied with a test certificate.

### **13.3 FUEL TANK**

The fuel tank is built-in, pressure tested, and supplied with a test report.

### **13.4 RELEASE HOOK**






The off-load release hook is supplied with a test certificate

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
Doc No: FRB700-TS204-00	<b>FRB 700 Aluminium</b>	Page 11 of 13

## 14. EQUIPMENT

The equipment carried, fitted and suitably packed in accordance with the latest SOLAS regulations and standards laid down by Class and Authority.


### 14.1 GENERAL SAFETY EQUIPMENT

- 1 Boat hook
- 2 Paddles
- 1 Buoyant bailer
- 1 Compass (A.1/4.23)  installed on steering console
- 1 Sea anchor
- 1 Painter line, 30 m. with long eye
- 1 Towing line, 50 m.
- 1 Waterproof electric torch light with 1 spare bulb and 2 spare batteries
- 1 Whistle
- 1 First aid kit
- 2 Rescue lines, 30 m. with buoyant rescue quoits
- 1 Searchlight (A.1/1.38) 
- 3 Navigation lights (installed on self right frame)
- 1 Radar reflector (A.1/1.33)  installed on self right frame
- 2 Thermal protective aids (A.1/1.7)  one for 10 persons with a minimum of 2
- 1 Bucket with line
- 1 Safety knife
- 1 Fire extinguisher, 2 kg. dry powder (A.1/3.38)  fitted to the seating arrangement
- 1 Boarding ladder
- 1 Repair kit for fender
- 1 Emergency steering tiller
- 1 Emergency control tiller
- 1 Regulation spare parts and tools kit

Revision no: 01 Rev date: 28/05/2009 Doc No: FRB700-TS204-00	<b>Technical specification</b>  <b>Fast Rescue Boat</b>	
	<b>FRB 700 Aluminium</b>	Page 12 of 13

**Note:**

With the exception of the paddles and boathook, the above-mentioned items are properly stowed away in a weather tight stowage bag that can be found in the bow stowage compartment.

All items that are marked with  have been type approved in accordance with the European Council Directive 96/98 EC on Marine Equipment (M.E.D.) and applicable amendments.

## 15. OPTIONAL EQUIPMENT

### 15.1 RESCUE NET

The FRB 700 can be equipped with a FRSQ - net.  
This FRSQ - net is a rescue net that has been designed for safe and quick recovery of a person from the sea.  
It will be delivered in a weather tight stowage bag and can be fitted permanently into the rescue boat.

### 15.2 BOAT COVER

Upon request the FRB 700 can be supplied with a steering console cover.

### 15.3 VHF

Both handheld and fixed watertight communication sets are available.

Revision no: 01 Rev date: 28/05/2009	<b>Technical specification</b> <b>Fast Rescue Boat</b>	<b>NOREQ®</b>
Doc No: FRB700-TS204-00	<b>FRB 700 Aluminium</b>	Page 13 of 13

## 16. DOCUMENTATION

A total 3 copies of manuals will be supplied with each FRB700. These manuals contain instructions for operation and maintenance; spare parts list, drawings etc. The manuals are in the English language.

## 17. MARKING

The FRB 700 is provided with the following markings/lettering:

- Number of persons for which the rescue boat is approved;
- Ship's name;
- Port of registry;
- Call sign.
- Seawater-resistant instructions for starting and operating are fitted.

