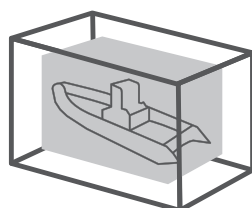


Fast Rescue Boat Launch and Recovery System

The Cube™



Multi-Mission Module

Complete Cube™-ready launch and recovery system for fast rescue boat. Fits in a 20' Cube™-ready mission bay.

Safe and fast deployment in any weather

In emergency situations, safe and fast deployment of the rescue team is essential. This complete 20' Cube-ready Fast Rescue Boat (FRB) Launch and Recovery System (LARS) comprising an SH Defence Cube™ Engineered Frame, a Vestdavit davit crane and a Fassmer Fast Rescue Boat, ensures safe and fast deployment of your rescue team in even the most extreme weather conditions.

Cube-ready, easy connection

The system is Cube-ready and only requires a 20' Cube-ready mission bay including the fully automatic twist-lock system and the standard connection cabinet CubedIn™. The Cube™ Engineered Frame comes with compatible outlets allowing for easy connection to the mission bay connection cabinet CubedIn™.

Safe transport and controlled deployment

The FRB is secured in a cradle and connected to the davit boom during voyage. At deployment of the FRB, the vessel crew operates the davit from the mission bay control panel. The davit crane lifts the FRB out of the cradle and safely lowers the FRB into the water, ready for operation.

Cube™ Engineered Frame

The Cube™ Engineered Frame is provided with container corners enabling secure sea fastening by means of the fully automatic twist-lock system developed by SH Defence. The frame is customised to withstand the loads introduced by the davit system. The surface of the Cube™ Engineered Frame is made of glass-reinforced plastic (GRP) grating, which provides a very strong and anti-slip surface.

The Cube™ Engineered Frame is designed according to DNV GL ST-0378 Offshore and platform lifting appliances and complies with the SOLAS Convention.

The Cube™ can be delivered with detachable crash frame and tarpaulin as an option.

Davit crane

The davit crane manufactured by Vestdavit is a VESTDAVIT PL-3600R, which is a proven design used by navies and coastguards around the world. For further information on the VESTDAVIT PL-3600R, please see product sheet from Vestdavit.

The system also includes a Vestdavit painter line system integrated in the Cube™.

Fast Rescue Boat

The Fassmer Fast Rescue Boat is a FRIR 625 Fast Rigid Inflatable Rescue Boat, applied in many naval vessels world-wide. For further information on the Fassmer FRIR 625 Fast Rigid Inflatable Rescue Boat, please see product sheet from Fassmer.

Description	Value
Cube Engineered Frame	
Manufacturer	SH Defence
Dimensions (L x W x H)	6058 mm x 4901 mm x (5000 mm)
Davit	
Manufacturer	Vestdavit
Lifting capacity (SWL)	4 MT
Paint system	Corrosion class C4
Fast rescue boat	
Manufacturer	Fassmer GmbH & Co. KG
Boat length	6250 mm
Boat width	2630 mm

VESTDAVIT PL-3600R

An economical and highly customizable davit for Fast Rescue Craft and Man Overboard Boats.

VESTDAVIT NEW SYSTEMS

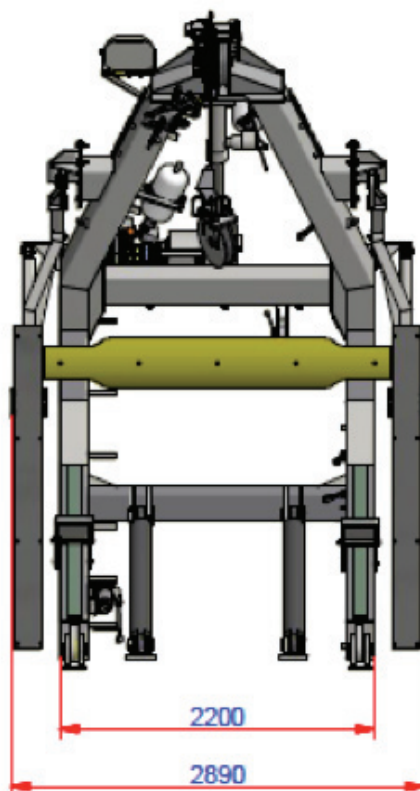


VESTDAVIT PL-3600R

An economical and highly customizable davit for Fast Rescue Craft and Man Overboard Boats.

A highly customizable and popular model suited for both civilian and military clients. The entire system is capable of being transported in a standard 20 foot ISO Container, reducing delivery time and cost.

Typical users	Navy, Coast Guard, Offshore Supply and Support, Wind Farm Supply and Support, Expeditionary Cruise Vessels, Ferries
Capacity	4,000kg
Power	Hydraulic
Optional equip.	Dynamic Shock Absorber, Wave Compensation, Remote Control, Guiding Arms
Approvals	DNV GL – other classification society approval on request
Certificate	CE marking according to the Marine Equipment Directive



Rescueboat FRIR 625

Specification 40.0625-019.30.01.1-TBT

15.01.2021 / T.Lange



SPECIFICATION

Fast Rigid Inflatable Rescueboat FRIR 625



Tel. +49 (0)4406 / 942-0
Email: info@fassmer.de

Fax +49 (0)4406 / 942-100
Internet: www.fassmer.de



Boat Data

Length over all	6.250 m
Length hull	5.400 m
Beam max. (inflated)	2.630 m
Draught	0.430 m
Height to lifting point	1.572 m
Height keel to top	1.950 m
Deadrise aft	24°
Deadrise amidship	28°
Deadrise forward	41°
Capacity	max. 9 persons
Weight	1,800 kg (fully equipped, incl. fuel, without persons)
Max permissible launching weight	2,600 kg
Max payload	800 kg
Engine	STEYR SE 236 E40, 170 kW / 230 hp
Propulsion	Waterjet ALAMARINE 230
Engine start	Electric
Speed with 3 pers	34 knots (abt. 2,050 kg)
Speed with 5 pers	30 knots (abt. 2,200 kg)
Speed at max. payload	28 knots (abt. 2,600 kg)
Fuel	Multi-fuel kit
Fuel capacity	120 Liter
Range	120 nm (2,050 kg, 20 knots)
Lifting arrangement	On-/Off Load Release Hook with hydrostatic interlock
Inflatable Collar	Orca® 866 Fabric, 1,500 g/m ²
Tube diameter	0.50 m
No. of chambers	5
Fixation	removable tube with slide on attachment
Electric	12 Volt DC, 2 pole
Batteries	2 x 12 V / 70 Ah AGM batteries
Instruments	Engine Instruments Electric Fuel Gauge
Communication	Raymarine Ray50 radio telephone



010 Design

The FRIR 625 is a SOLAS Fast Rescue Boat for multirole operation:

- Search & Rescue operation
- Work Boat duties
- Personnell Transport

It has a rigid Hull with an inflatable collar. The deep V hull with spray rails provides excellent manoeuvrability and seakeeping abilities.

The FRIR 625 is built with Hull, Hull Structure, Deck, and Console in Glass Fiber Reinforced Polyester Resin.

027 Approval

- SOLAS 74 as amended, Reg. III/4, III/21, III/31, III/34, X/3
- LSA Code, IMO Res.MSC.48(66) I, V: "International Life Saving Appliance Code"
- 1994 and 2000 HSC Code 8; Chapter 8 "Lifesaving Appliances and Arrangements"
- Resolution MSC.81(70): "Testing of Life Saving Appliances"
- ISO 15372 (2000), MSC/Circ. 1006: "Coated Fabrics for Inflatable Chambers"

The FRIR 625 is prototype tested and in compliance with the requirements of the Marine Equipment Directive (MED) 2014/90 EU as amended by the European Union.

040 Tests

All necessary tests as hoisting arrangement test, overload test, trial trip and function tests to be executed at Fassmer yard.

131/135 Hull, Hull Structure and Deck

Hull and deck built with isophthalic gelcoat outside, followed by alternating glass mats and rowings in orthophthalic fire retardant polyester resin.

Hull strengthened by a structure of longitudinal and transversal girders.

All fitting areas are reinforced by corrosion-resistant backplates. Hull and inner liner are glued and screwed flange-like together in the gunwale area.

The hull is made in high quality vacuum infusion sandwich laminate.

The deck is made in high quality hand sandwich laminate.

Hull structures are made in single skin hand laminate.

136 Hull air cases

Air cases formed by hull and deck filled with approved polyurethane foam providing good stability even flooded, good insulation and safeness against sinking of the boat when damaged.

166 Draining

Self bailing deck through two drainage outlets at the stern.

One electric bilge pump with automatic and manual switch.



222 Flag Pole

Removable s/steel flag pole at stern.

223 Handrails

S/steel handrails on both sides of the console.

236 Cleats & Bollards

Two cleats aft on stern plate, in bow area the cleat is part of the painter post..

One (1) bow eye fitted to the stem.

315 Flooring

Areas destined for walking are having with antislip surface within GRP-surface.

353 Seats

One (1) Jockey seat behind the console.

356 Inventory stowage

A weather tight compartment is provided in the bow of the boat, access through one large top hatch.

358 Battery compartment

A battery box for 2 batteries provided in engine room.

361 Hoisting arrangement

A single point Fassmer Duplex-50E2 (V2-SH) On/Off-load release hook for quick release is installed - compliant with and approved according MSC.320(89), suitable for a max. launching weight of 2,600 kg.

A hydrostatic interlock system secures against accidental release, the release lever is positioned near helmsman seat.

All items of release hook and release system are made from stainless steel, special brass or other sea-water resistant materials.

Extra eyes for transportation or hanging-off-pendant are integrated in the release hook. A suspension link – matching the hook geometry - with two handles (Monkey Face) and eyelet for rope/shackle is provided.

366 Re-righting from capsized position

Marine aluminium equipment rack with inflatable air bag system to re-right the boat from capsized position. Manually activated.

367 Painter fitting

Stainless steel painter fitting is mounted to the aluminium painter post in fore-ship to release the painter also under tension.

**385 Inflatable Collar**

Inflatable collar above the waterline from aft quarter section fwd. to provide increased stability at zero and slow speed. At planning speed dynamic buoyancy lifts up the boat and the collar comes free from the waterline to reduce drag. The collar has fabric flaps incorporating a hard bolt-rope bonded along the length of the collar. The hull is fitted with rail into which the bolt rope flaps are fed through. Aft part of the collar is glued to the hull.

Fabric	Orca® 866 Fabric, 1670 dtx 1,500 g/m ² , polyester, hypalon, neoprene
Shape	Cylindric with cone ends
Tube diameter	0.50 m
No. of chambers	5, each with filling valve and overpressure valve
Lateral rubbing strake	2 rows small 'D', black
Front rubbing strake	1 bow cross (vertical)
Exterior lifeline	Polyester, black on D-ring patches
Interior lifeline	Polyester, black on D-ring patches

401 Colours

GRP Parts:	Traffic grey, RAL 7042
Inflatable Collar:	Orca® "Military Grey"
Rub Rail:	Black

Please note: Life Saving Appliances on all ships to be of an international or vivid reddish orange or at a comparably highly visible colour on all parts where this will assist detection at sea (LSA Code 1.2.2.6).

The owner of the vessel to apply at the approving flag state authority for an exception.

407 Lettering

Ship's name, home port and call sign fitted on removable cover (refer to item 401 "Colours").

408 Retroreflective strips

Fitted on the inflatable collar (item 385).

501 Engine

4-stroke, turbocharged inboard diesel engine	
Maker:	STEYR MOTORS, Austria
Model:	SE 236 E40
Output:	170 kW / 231 hp (crankshaft) @ 3,550 – 4,100 rpm
Cylinders:	6 in line
Displacement:	3,200 cm ³
Max torque:	470 Nm @ 1,800 rpm
Emission Standard:	EPA Tier III; IMO SOLAS
Alternator:	120 A / 12 Volt
Cooling:	Fresh Water
Starting:	Electric



510 Intermediate Shafting

Shaft coupling type MOENNINGHOFF HEXA FLEX BLUE LINE. Flange, hub and shaft from stainless steel. Fixing material corrosion resistant coated. Special fabric design of the coupling ensures axial separation of the waterjet from the engine.

Easy fitting and removal without moving the engine or shaft, maintenance free.

515 Jet

The mounted Alamarine 230 jet is an axial flow, single stage water jet propulsion unit.

Impeller Diameter:	228 mm
Power Range:	max. 190 kW / 260 hp
Impeller Shaft rpm:	max. 4,300 1/min
Reverse Control:	Hydraulic
Material:	Al Si7 Mg Aluminium casting, stainless steel 1.4404, 1.4460, 1.4462 bronze GTp10
Surface Finish:	Epoxy-polyester
Corrosion Protection:	Passive cathodic protection, zinc and aluminium anodes

521 Fuel System

Fuel tank integrated into the hull structure in front of the engine compartment.

Fuel:	The engine is fitted with a Multi fuel kit allowing fuels as: <ul style="list-style-type: none">– Diesel EN-590– Other Diesel fuels: ASTM D975 1D & 2D, JIS K2204 1&2, NATO F-54– Jet fuels (usually with reduced power output): Jet A, Jet A-1, MIL JP-8, JP-5, NATO F-34, F-35, F-44, F-63, F-65– Marine distillates (with special calibration only, except F-75): NATO F-75, F-76, ISO 8217 DMX, DMA– Light heating oils (with special calibration only): DIN 51603, ASTM D396 1&2, BS 2869 A2, CSR 441– Bio fuels (usually with reduced power output; special care regarding fuel ageing is necessary): EN14214 (incl. any blend with EN590), Australian Bio-Diesel Standard (incl. any blend with EN590)
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Capacity:	120 Liter
Tank Material:	GRP with fuel resistant gel coat
Fuel pipes:	Stainless steel (tank to fuel filter) Flexible hoses (fuel filter to engine)
Pre-Filter:	SEPAR 2000/10, flow rate 10 Liter / min
Filling stud:	Stainless steel \varnothing 56 mm on top of bow stowage box, Stb side
Screw plate \varnothing 190 mm with connections on top of the tank. Accessible via deck hatch. Supply line with stop valve.	



541 Engine Cooling

Closed cooling system with heat exchanger and thermostat. Temperature in the closed cooling circuit is controlled by means of a thermostat. The thermostat determines the amount of coolant circulating through the heat exchanger, thus controlling the operating temperature of the engine.

Raw water is delivered from the waterjet to the engine, constantly pumped through intercooler and heat exchanger, and discharged together with the exhaust gas inside the exhaust elbow. The raw water exits through the exhaust pipe system.

Robust raw water cooling filter between waterjet and engine. Nickel coated brass with stainless steel strainer and transparent polycarbonat cover. Flushing connector to flush the raw water circuit with fresh water installed in the engine compartment.

550 Exhaust lines

Wet exhaust system with rubber exhaust gas hose, muffler from synthetic material and stainless steel transom outlet. The muffler is having a non-return valve to prevent water entering the exhaust system from aft, caused by reversing, stopping quickly, or waves from aft.

A temperature sensor at the engine exhaust elbow monitors the raw water- and exhaust gas mix-temperature. An excessive rise will cause an optical and audible alarm at the engine instrument panel and the engine power will be reduced automatically.

576 Steering

Hydraulic steering gear with rudder cylinder. Steering system is complete with a bypass device of plunger for emergency tiller operation.

Helm pump with steering wheel in the console. Rudder cylinder fitted to water jet steering nozzle lever. Helm pump and rudder cylinder connected with flexible hoses.

577 Console

GRP console in front of aft seating bench to cover the engine and to take control and operation elements. Aft upper part isolated from the engine compartment for installation of electric components. Lower fwd part foldable for engine access. Additional large hatches on each side for engine inspection. Console inside with noise insulation.

710 Electric system

- 12 Volt DC; 2 pole; halogen free, oil resistant cables
- 2 Batteries with individual isolation switches
- Isolator between alternator and batteries for charging load distribution
- Circuit breaker for switchable consumers on top side
- Circuit breakers for non switchable consumers inside the console
- 12 Volt power port (outlet / socket)

721 Navigation lights

LED navigation lights in acc. to COLREG requirments for motor vessels under 12m.
2 side lights, 1 top light 360°.



725 Search light

Portable, SOLAS approved search light with cord included in the loose inventory.
To be connected to the power port in the console.

731 Batteries

2 x 12 V / 70 Ah AGM batteries

732 Battery charging and power supply

One lifeboat charger 42VAC with 2 x 7A output (for continuous / maintenance charging) is provided for starter batteries.

Charging voltage	14,4VDC,
Float charge	13,3VDC
Charging Current	7 A
Ingress protection	IP 67

Self-separating charging connector provided with 15m cable.

Number of contacts	4
Max. current (connector)	4 x 32A
Protection class	IP 67

Self-separating charging connector provided with 15m cable.

During boat operation the alternators of the engines are charging the batteries and feeding the consumers.

802 Compass

Approved compass with lighting installed in the console

803 Radar reflector

Fitting for mounting of radar reflector (part of loose inventory) provided.

812 Radio Telephone

Raymarine Ray50 radio telephone with antenna installed in the console.

Separate battery for power supply with charger provided. Battery capacity for 8-hour operation with a duty cycle of 1 : 9. Duty cycle is defined as 6-second transmission, 6-second reception above squelch opening level and 48-second reception below squelch opening level. Separate battery charger.

830 Engine control

Two lever / single action control: one lever operates the engine throttle the other the waterjet reverse bucket.

**837 Engine Instrument Panel**

- Tachometer
- Start Switch
- Warning LED "Check Engine" and "Oil Pressure"
- Warning LED "Battery Charge"
- Ignition Switch
- Emergency Cut-Off Switch
- Warning horn for acoustic alarm

Separate engine control panel with start / stop push button and emergency engine kill switch with cord.

914 Loose equipment

Pos	Pc	Description
1	2	combined boat hook/paddle
2	1	container with: 1 signal whistle 1 waterproof electr. torch with 2 spare bulbs and batteries 1 jack-knife 1 boat manual 1 engine manual

Pos	Pc	Description
3	1	painter ø16mm
4	1	bailer
5	1	radar reflector
6	1	sea anchor with rope
7	2	hauling line each 30m with rescue quoits
8	1	bucket with line
9	1	searchlight
10	2	thermal protective aids
11	1	towing rope 50m
12	1	first aid kit
13	2	fender cushion
14	1	rope ladder
15	1	fire extinguisher