AIR DIVING SYSTEM "RANA BF"

The Rana BF Air Diving System is fully operational and uses the latest in design and state-of-the-art techniques to ensure safe manned diving from 0 –50 msw.

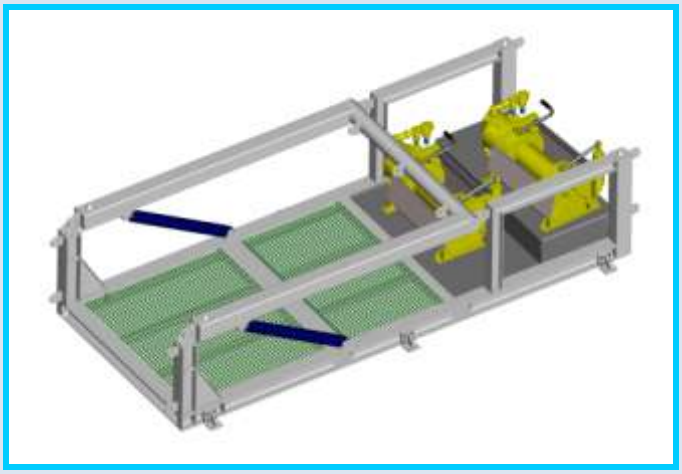
The system was built to ABS standards and is rated to 50 msw (164fsw) water depth.

The diving system consists of the following components:

- 2 x Diving Basket & LARS System
- 1 x Control Room Container with air diving control for 2 divers
- 1 x Containerised Twin Lock DDC Chamber
- 1 x Monkey Hot Water Unit
- 1 x HP Compressor Unit
- 1 x LP Compressor Unit
- 1 x Workshop/Spare Parts Container
- Air and Oxygen quads
- Miscellaneous Diving Equipment

EQUIPMENT DESCRIPTION

The AIR DIVING BASKET & LARS SYSTEM "RANA BF" is a fully portable dive system. The LARS can easily be lifted and transported by using the corner blocks or the forklift lifting points.
Container corner blocks allow the two LARS be stacked on top of each other and transported in a 20' high cub container.
The system has been tested, approved and certified for a working depth up to 50 msw. It is Class certified by ABS and complies with all relevant IMCA regulations.



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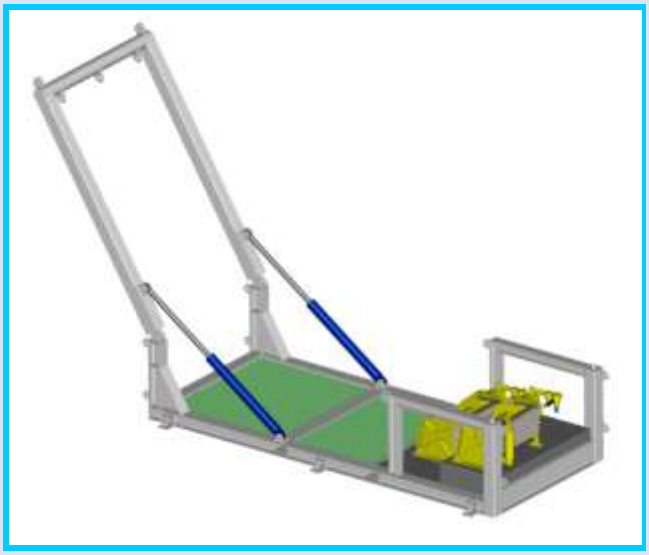

LARS SYSTEM

- The Rana BF Air Diving System is designed for the safe and controlled basket launch of commercial air divers. It is easily transportable and can be used in a variety of locations from an offshore platform or ship's deck to onshore locations like a harbour wall.
- Each LARS consists of a platform with A-frame and two air driven man-riding winches for a diver basket and clump weight.
- Winches are air, planetary driven cable-handling unit with manual release and auto release band brakes, designed for use in the marine or industrial environment.

DIVING BASKET

- The man-riding basket is designed for a safe working load of 800 kg. The basket weight is approx.216 kg.
- It is designed to transport a diver with full outfit and additional tools up to a maximum weight of 500 kg in air.
- It is galvanized and offshore coated to give it maximum protection against corrosion.
- To reduce the risk of unpredictable behaviour of the basket while passing through the splash zone an open structure bottom and top grid are mounted.
- The top grid is to protect the diver against falling tools or material from the surface.
- The LARS is designed with a clump weight and guide wires to increase stability and safety. The clump weight is lowered to a few meters below working depth, then the basket is lowered down the guides wires. This prevents rotation of the basket and the clump weight also acts as a safety stop in the unlikely event of a catastrophic main winch failure.

CONTROL ROOM / DIVING CONTROL PANEL

- The Control room contains communication and video recording system for two divers with diver gas supply control panel.
- Panel, pipelines, gauges, video and communications systems all comply with IMCA standards.

CONTAINERIZED TWIN LOCK DDC CHAMBER

- The air dive chamber is a twin lock hyperbaric chamber; consisting of a main lock and an entry lock.
- It is equipped with a fully redundant primary communication system, plus a back up communication system (self powered phone).
- The internal atmosphere is monitored by a fully redundant system that displays all environmental parameters at the control panel.
- The control panel is furnished with two fully redundant pressurisation lines, one LP and one HP.
- The air dive chamber is has built in breathing system (BIBS) for decompression and emergency use.
- The control panel allows full control of the chamber atmosphere in the main lock and the entry lock and has communications, video, analysers, and electrical equipment.
- The chamber has an internal, portable fire extinguisher.

MONKEY HOT WATER UNIT

- The Monkey hot water unit is a complete, lightweight, portable, divers' water heating system. It uses a positive displacement submersible pump and electrical heating. The power required to operate the system is 220 VAC, 50 Hz, 20 amp, single phase.

HP COMPRESSOR UNIT

- Multi-stage HP compressor used to fill up air quads and bail-out bottles with breathing air

LP COMPRESSOR UNIT

- Diesel powered low pressure compressor unit to supply the winches of the diving systems and for pneumatic tools

WORKSHOP / SPARE PARTS CONTAINER

- Workshop container complete with material and project equipment and containing spare parts, maintenance tools, hoses etc…

AIR & OXYGEN QUADS

- Air supply in cylinder quads for the air diving and oxygen supply for the Twin lock chamber

DIVING MISCELLANEOUS

- Air diving equipment consists of:
- Air bottles/Bail outs with harness
- Diver umbilicals
- Helmets KM17/18
- Hot/Cold water suits

GENERAL TECHNICAL SPECIFICATIONS

Dimensions	Dimensions stored Dimensions operational	: 5185 x 2110 x 1150 mm (LxWxH) : 6500 x 2110 x 4300 mm (LxWxH)
Weight	4000 Kg (including clump weight and basket)	
Work area	Offshore Fixation	: open sea environment : 6 mounting plates
Power supply	Pneumatic air supply and Electrical supply	: 6m^3/min @ 7bar : 400V 50Hz / 440V/60Hz – 3kW CEE connector (3ph+e)
Control	Operation Pneumatic Electric	: 1 operator : 220...230VAC 50/60Hz colour blue
Winches	Brake Test SWL Pay out of length Speed Wires	: man-riding double system automatic and manual band brake : static test=1.5, dynamic test test=1.1 : 800kgf : 100m : max line speed: 24m/min; max free speed: 17m/min : 12mm (SWL 10.9kN)
Diver cage	Material Outer dimensions Weight Payload	: AISI 316 : 1520 x 1000 x 2400 mm (LxWxH) : 200kg (Only structure) : 500kg
Clump weight	Material Dimensions Weight	: carbon steel S355J2 EN10025-2 : 1600 x 300 x 785 (L x W x H) : 400kg (Approx in air)
Safety	• Proven and certified by ABS • 3.1B material certification • clear platform space • free from any sharp obstacle • man-riding winches (double break system)	• Complies with all relevant IMCA regulations • Welding inspection • Anti slide plating

TYPICAL LAYOUT DRAWING: