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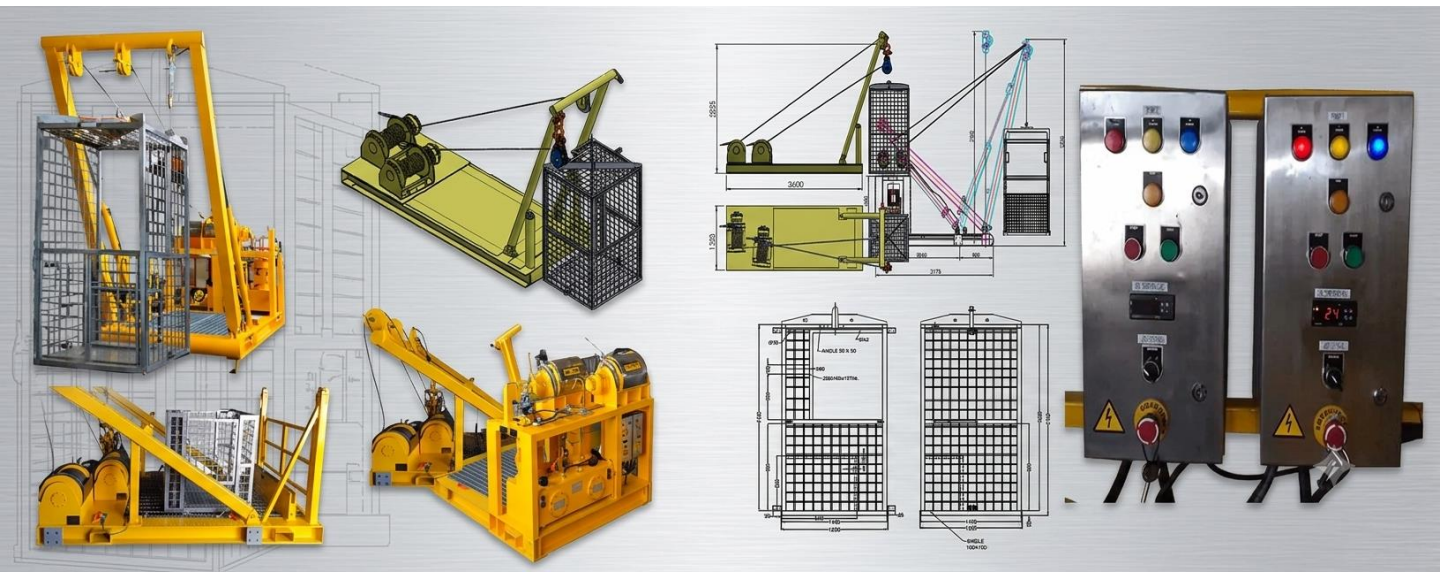
DIVETECH

Diver Launch & Recovery System (LARS)

Diver Launch & Recovery System (LARS) – Single Basket Specification



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Description

The LAR system Single Basket Launch and Recovery System has been specifically designed to give a compact operating footprint to minimize the deck space required on board a vessel or barge. The given LARS has great emphasis for ease of mobilization and demobilization, so that these costs are kept to a minimum.

The launch and recovery system folds down in order that it fits into a standard ISO 20ft shipping container, thus expensive shipping costs for out of gauge size goods are avoided. This also allows for safe storage and protection.

A LARS System typically consists of an A-Frame complete with base, 2 × Hydraulic Winches.

Main Components of the System (Air Diving 50 Mtrs)

Base Skid A-Frame 1.5 tons capacity
Clump Weights
Dive Basket (Two Diver)
Man Riding Winch c/w non-rotating wire 13 mm dia. × Length 90 Mtrs for Dive Basket
Man Riding Winch c/w non-rotating wire 13 mm dia. × Length 160 Mtrs for Clump Weight
Electric Hydraulic Power Pack c/w Star Delta starter, Stainless steel junction box with emergency stop button

General Dimensions

Item	Value
Length Overall	3.175 Meter (3175 mm)
Width	2.000 Meter (2000 mm)
Weight	4 Tons / 4000 Kg
Height (Transport Mode)	2.20 Mtr (2200 mm)
Height (Deployment Mode)	3.79 Mtr (3790 mm)

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Skid Base

The Base Skid is constructed of heavy section universal columns with vertical A-Frame section located at one end. Winch Platforms and the Hydraulic Power Unit are at the other end.

Hydraulic Cylinders are fixed to the base devise to operate the A-Frame. These can be fully retracted to a safe shipping position without the need for removal.

The base frame is covered with a light weight, non-slip, corrosion proof galvanized grating.

The winches are integrally piped in 316 Stainless steel to the hydraulic control valve block, which in turn are connected directly to the supply and return hydraulic supplies of the winches.

The base skid is additionally fitted two inward opening safety gates, which have integrated 316 Stainless steel multi rollers fitted for smooth payment of Umbilicals.

The A-Frame

The A-Frame is moved by hydraulic cylinders to the inboard or outboard positions by operation of the proportional hydraulic control valves.

The A-Frame is fitted with two central sheaves, where the lift wire is positioned for lifting and lowering of the dive baskets.

Additionally, two sheaves for the clump weight wires and two bucket lugs for connection of the clump weight wire end termination are provided.

The head of the A frame also incorporates a limit switch operated with a solenoid valve, in case in darkness or rough seas, if the operator over winches the baskets, once the basket touches the switch, power will be automatically cut off.

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Clump Weight

There are two prefabricated clump weights which allows the clump weight wire to be double weaved through the sheaves located at each end of the clump weight.

This allows free travel of the clump weight in the event of an emergency recovery of the two diver baskets.

Electric Hydraulic Power Unit (HPU)

This is a Triple Electric Hydraulic Power Pack mounted on a removable skid secured within the platform structure.

The Triple Hydraulic Power Pack is equipped with three separate hydraulic reservoirs with rerun line filters, sight glasses and fill points.

The skid is fitted with three electric motors, all with variable displacement, axial piston pumps complete with constant pressure control.

The third electrically driven hydraulic power pack acts as an independent secondary supply in the event of failure of the two primary units.

The hydraulic circuitry is fitted with non-return valves and over pressurization safety valves which operate as and when required during the operation of the diver's lar's system.

The unit is fitted with a single one lever change over valve, which is switched very simply from the primary to the secondary hydraulic system circuits, without the need to disconnect or operate multiple changeover valves.

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Dive Basket (Suitable for Two Divers)

Dimensions

Item	Value
Length Overall	1.200 Meter (1200 mm)
Width Overall	1.200 Meter (1200 mm)
Height Internal	2.050 Meter (2050 mm)
Height Overall	2.200 Meter (2200 mm)

Description

This Diving Cage is completely made with SS 316 stainless steel, with overhead protective frame suitable for two divers.

It incorporates 2 × 50 ltr high pressure emergency air cylinders, clump weight wire guides and diver access points from both sides.

Hand Hold points are located within the cage and the base of the basket is complete SS 316 grade material.

Stainless steel 316 SS mesh cladding is used to enclose the top and sides of the basket.

Stainless steel chairs, carabiners, nuts and bolts are used as standard for the assembly of this basket.

The main structure of the basket is made up of a heavy duty tubular section.

The main lift wire connection point incorporates two additional emergency lift points.

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Dive Basket (Suitable for Two Divers)

Dive Basket Specification

Item	Value
Material	Stainless Steel 316, Rust Proof, Long Life
Diver Comfort	Designed to Account the Height of Two fully Geared Divers with Diving Helmet with Mounted Camera/Light, Hand Holds and Regular Points. Toolbox is provided doubling as a seat for the divers.
Emergency Air Supply	2 × 50 Ltr × 200 Bar Breathing Air Cylinder, connected to a manifold. With valve, 2 × First Stage Regulator, Overpressure 1st Stage Relief Valve, 2 Mtr long Pneumo Hose.
Umbilical Payout	Teflon Roller provided for smooth payment of Diver Umbilical (reduces Drag / Friction of Umbilicals).
Anodizing Protection	Self-Sacrificing Anode bolted on Basket
Main Supply	440 Volt, 50/60Hz, 11kW

Basket Winch

Item	Value
Manufacture	Bell Hydromatics
Model / Type	Man Riding
Minimum Lift Capacity	Hydraulically set to 1.0 Ton (1000 kg)
Maximum Lifting Speed	Operator controllable up to 20 meter per minute
Wire Diameter	13 mm non-rotating
Maximum drum wire capacity	160 Mtr of 13 mm (5 layers) Installed 90 meters

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Dive Basket (Suitable for Two Divers)

Basket Winch

Item	Value
Drive System	Hydraulic Motor, Direct Drive
Primary Brake	Hydraulic Over Center Valve
Secondary Brake	Automatic Mult Disc Brake
Weight	475 Kg

Guide Weight Winch (Emergency Recovery Winch)

Item	Value
Manufacture	Bell Hydromatics
Model / Type	Man Riding
Minimum Lift Capacity	Hydraulically set to 1.0 Ton (1000 kg)
Maximum Lifting Speed	Operator controllable up to 20 meter per minute
Wire Diameter	13 mm non-rotating
Maximum drum wire capacity	160 of 10 mm (5 layers) Installed 160 meters
Drive System	Hydraulic Motor, Direct Drive
Primary Brake	Hydraulic Over Center Valve
Secondary Brake	Automatic Mult Disc Brake
Weight	475 Kg

NOTE: The guide-wire winch used is same as above (Main wire winch), but the guidewire is double reeved through the guide weight sheave. The wire installed on the guide weight 150 meters.

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Hydraulic Power Pack (Electric Driven)

The hydraulic power pack is situated on the A-frame skid directly beneath the winch and control station. The power pack consists of the following:

Primary fixed displacement gear pump and motor

11 kW / 15 Hp power 415 V / 50 / 60 Hz as determined.

Pump, Variable displacement.

32 / 38 litre per minute at 150 bar, normal working pressure was 100 Bar.

Secondary fixed displacement gear pump and motor

11 kW / 15 Hp power 415 V / 50 / 60 Hz as determined.

Pump, Variable displacement.

32 / 38 litre per minute at 150 bar, normal working pressure was 100 Bar.

Hydraulic Tank

200 litre common Hydraulic oil tank with partition up to full oil level, above winch the tanks become common.

Hydraulic Oil filter system

Low oil level cut out

High oil temperature cut out

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Control Station

The control station has the following controls:

A-frame luffing In and Out.

Main wire winch raise and lower.

Guide wire winch raise and lower.

Two stainless steel electrical control boxes (1 × Main and 1 × Emergency) are supplied for operating the system hydraulics.

System Overview

The LARS comprises of the following main systems:

A-frame operated via Hydraulic cylinders for luffing inboard / outboard.

Diver Basket.

Skid with mounting positions for winches and Hydraulics.

Guide Weight winch.

Hydraulic twin power pack with 3 pumps, control operating levers and electric panel.

The Hydraulics power pack is supplied from a single electrical power source to a single control box for both Hydraulic motors.