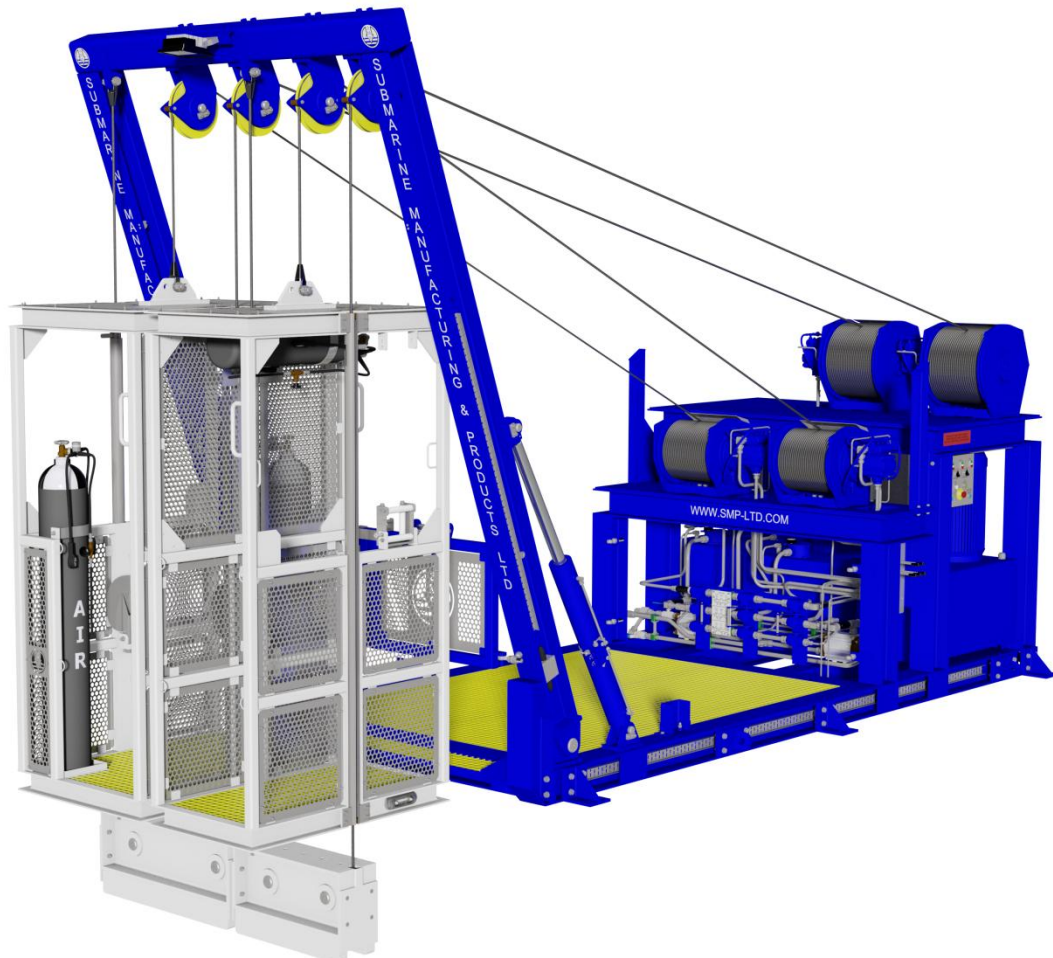




Twin Basket Launch and Recovery System (LARS) LARS-DB-3



Technical Specification

Maximum Diving Depth	: 50 metres
Vessel Freeboard Allowance	: 25 metres
Design	: Lloyds Register - Code for LAME
Certification	: IMCA D 023 Design & IMCA D 018
Primary Basket / Cage Cylinders	: 2 x 50 Litre @ 300 Bar + Bailout regulators
Secondary Basket / Cage Cylinder	: 1 x 20 Litre @ 300 Bar + Bailout regulator
A Frame Safe Working Load	: 2260 kg
System Total Weight	: 7100 kg
Electrical Requirements	: 44kW 380-440 V 3PH 50/60 Hz
HPU	: 3 x 22kW Vane Pump w/ 200 Litre Tank
Hydraulic Working Pressure/Flow	: 100 Bar / 90 lpm @ 1450 RPM max
Main Lift Wire	: 13 mm OD x 100 metres Anti Rotational
Clump Weight Wire	: 13 mm OD x 200 metres Anti Rotational
Operating Temperature	: -20°C to +50°C
Dimensions	: L 4560mm, W 2100mm, H 3666mm



Description

The Twin Basket Launch and Recovery System has been specifically designed to give a compact operating footprint to minimise the deck space required on board a vessel or barge. Emphasis has been placed on ease of mobilisation and demobilisation, so that these costs are kept to a minimum. The LARS A-Frame retracts in order that it fits into a standard ISO 20' shipping container, thus expensive shipping costs for out of gauge size goods are avoided. This also allows for safe storage and protection of the LARS from the elements, during periods when the equipment is not required operationally. The winches and hydraulic power units are integrally piped in 316 stainless steel. For additional personnel safety and reduced risk of oil spillage and contamination SMP avoid the use of hydraulic hoses wherever possible thus reducing downtime and expensive replacement costs.

The main components of the system are broken down as follows:

- Base Skid
- A-Frame
- Primary Dive Basket (Two Diver)
- Primary Clump Weight
- Secondary Dive Basket (Standby Diver)
- Secondary Clump Weight
- 3 x Electric Hydraulic Power Packs
- 4 x Winches
- Hydraulic Control Station
- Electrical Control Enclosure
- Electrical Distribution Enclosure

Optional Extras

Portable Remote Electro / Hydraulic Control Console –
Portable control console for wireless or hard wired remote operation of the system.





Base Skid

The Base skid is constructed of high strength Universal Column with the A-Frame situated at one end, secured to the base via fabricated steel clevis and stainless steel pins. Hydraulic Cylinders are fixed to additional clevises for operation of the A-Frame. The cylinders can be fully retracted to a safe shipping position without the need for removal. The hydraulic system is integrally piped in 316 Stainless Steel from the power packs to the hydraulic control valve block on to the winches and cylinders and back to the power packs.

Winches are situated on a raised pedestal beneath which are three Hydraulic Power Units and the changeover valve arrangement. The base frame walk zone is covered with a light weight, non-slip, corrosion proof composite material grating. The base skid winch pedestal is fitted with brackets used for the storage of the safety gates.



Above: LARS Frame non-slip skid base



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 wires are positioned for lifting and lowering the dive baskets. Additionally there are two sheaves for the clump weight wires and two Becket Lugs for connection of the clump weight wire end termination. The cross head of the A-Frame also incorporates a spotlight for illumination and an electrical IR limit switch sensor which activates a failsafe lock-out system when the basket is raised above the preset level. The A-Frame is fitted with two safety gates which have integrated 316 stainless steel multi rollers fitted for umbilical handling.



Above: A-Frame with Baskets



Above: Cylinder clevis & hydraulics



Clump Weights

There are two pre-fabricated Clump Weights which allow the Clump Weight wires to be doubled weaved through the sheaves situated at each end of the Clump Weight. This allows the free travel of the Clump Weight in the event of an emergency recovery of the two diver basket. The Clumps Weights are of different sizes which relate to the primary or secondary basket sizes, both of which are fitted with dedicated wire guide assemblies. The wire and end termination can be fed through the clump weight by removing the two end plates. Once fed through the endplates should be re-installed for safety and additional wire guidance.



Above: Clump weight - view of pins



Above: Wire & socket access

Triple Electric Hydraulic Power Unit (HPU)

The Triple Electric Hydraulic Power-packs are mounted to the Base Skid below the Winch Pedestal. Each HPU is equipped with separate hydraulic reservoirs, return line filters, sight glasses and fill point. Each HPU is fitted with a 22kW motor with 90 LPM fixed displacement vane pump. Two of the HPUs act as the primary units whilst the third HPU acts as an independent secondary supply in the event of failure of either of the two primary units. The hydraulic system is fitted with non-return valves and over-pressurisation safety valves which operate as and when required during the operation of the diver's LARS system. The unit is fitted with a triple lever emergency change over valve system, which is switched very simply from the primary to the secondary hydraulic system, without the need to disconnect. A schematic logic panel is fitted to the LARS showing the normal operating valve positions and the actual changeover positions for each HPU.



Primary Dive Basket

The Diving Basket is suitable for two divers. It incorporates 2 x 50 litre high pressure emergency air cylinders, Clump Weight wire guides and diver access points from both sides. Grab handles are situated within the cage and the base of the basket is fitted with a light weight, non-slip corrosion proof composite type material grating. Stainless steel perforated panels are used to enclose the top and sides of the basket. Stainless steel chains, karabiners, nuts and bolts are used as standard in the assembly of this basket. The main structure of the basket is made up of high strength mild steel section. The main lift wire connection point incorporates two additional emergency lift points. Internally the basket is fitted with three emergency pad eyes used for support fixings in the event of an emergency. They are fitted one over each seat and one centrally within the basket roof structure frame.

Secondary Dive Basket

The Secondary Diving Basket is suitable for one diver. It incorporates 1 x 20 litre high pressure emergency cylinder, Clump Weight wire guides and diver access points from both sides. Grab handles are situated within the cage and the base of the basket is fitted with a light weight, non-slip corrosion proof composite type material grating. Stainless steel perforated panels are used to enclose the top and two sides of the basket. Stainless steel chains, Karabiners and nuts and bolts are used as standard in the assembly of this basket. The main structure of the basket is made up of high strength mild steel section. The main lift wire connection point incorporates two additional emergency lift points. Internally the basket is fitted with two emergency pad eyes to allow support fixings in the event of an emergency.

Manriding Winches

Four hydraulic Winches are fitted to the SMP Twin Basket LARS. The Winches are fitted with 13mm lubricated galvanised rotational resistant wire ropes, which are crush resistant and reduce sheave wear.

All Winches are certified for personnel lifting and are high performance planetary type powered by high by high efficiency gear motors. The motor torque is transmitted and multiplied by the high efficient gear train within the Winch drums. All rotating components are supported by high anti-friction bearings and run in oil to minimise friction.

The load control system is maintained by a brake valve. The brake valve is also backed up by an internal multi-disc hydraulic release safety brake. An overrun clutch permits a free rotation through the brake in the hoisting direction with immediate lock-up when the hoisting operation is completed.