

SYNERGY SINGLE BASKET 2 DIVER LAUNCH & RECOVERY SYSTEM SY-ATLAS-2D-D023-LARS

LAUNCH AND RECOVERY SYSTEM (COMMONLY KNOWN AS LARS) COMPLETE WITH 'A' FRAME STEEL GALVANIZED CAGE (BASKET) & HYDRAULIC WINCHES.

TECHNICAL PROPOSAL

THE DESIGN PARAMETERS OF THE SYNERGY LAUNCH & RECOVERY SYSTEM ENABLE THE FABRICATION AND INSTALLATION OF EXTREMELY PORTABLE COMPACT LARS SYSTEMS. THIS ENABLES MINIMUM UTILIZATION OF SPACE ON BOARD DIVING VESSELS AND BARGES, AS SPACE IS A PREMIUM ON ALL VESSELS.

THE FOOT PRINT OF THE LARS IS DESIGNED IN SUCH A WAY THAT A COMPLETE UNIT WOULD EASILY FIT INTO A 20FT STANDARD CONTAINER, THUS REDUCING SHIPPING COSTS AND PROVIDING EASE OF TRANSPORTATION.

A LARS SYSTEM TYPICALLY CONSISTS OF AN 'A' FRAME COMPLETE WITH BASE, 2 X HYDRAULIC WINCHES (MAIN CAGE AND GUIDE WEIGHT).



THE LARS SYSTEM IS BUILT AS PER THE GUIDELINES OF IMCA AS BELOW

IMCA D023	DESIGN for Surface Oriented (Air) Diving Systems
IMCA D018	Code of Practice for The Initial and Periodic Examination, Testing and Certification of Diving Plant and Equipment



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IMCA D018 –Code of Practice for The Initial and Periodic Examination, Testing and Certification of Diving Plant and Equipment



**Code of Practice for
The Initial and Periodic
Examination, Testing and
Certification of Diving
Plant and Equipment**

IMCA D023 –DESIGN for Surface Oriented (Air) Diving Systems



**Diving Equipment Systems
Inspection Guidance Note**

**DESIGN for Surface Oriented
(Air) Diving Systems**

SYNERGY SINGLE BASKET 2 DIVER LAUNCH & RECOVERY SYSTEM SY-ATLAS-2D-D023-LARS

Description	Length	Width	Height	Weight
LARS Assembly (Transport Mode)	3600mm	1350mm	2200mm	3.5 ton (aprox.)
LARS Assembly (On Board Ship)	3600mm	1350mm	3300mm	3.5 ton (aprox.)

TECHNICAL SPECIFICATION

Depth Capability	50 Meters for Air Diving
Design Guidelines	IMCA D023 /Ref. DNVGL for lifting appliances
Testing Standards	IMCA D018
Certification	IMCA D023 & IMCA D018
Testing Witness	DNV GL
Basket Material	C S Galvanized
Basket/Cage Cylinder	1x 50 Liter @ 200 Bar
Main Lift Wire	13mm dia. Length 160mtrs. Nonrotating (90M installed)
Clump Weight Wire	13mm dia. Length 160mtrs. Nonrotating(160M installed)
Transportation	Fits into a standard 20ft shipping container in resting position

The A frame with Skid

Keeping in mind the restrictions on space and the weight of the LARS system, the base has been designed to Ensure minimum utilization with maximum effect on the diving vessel or barge. The system consists of the main A frame (Rated to 1. ton). The paint is double epoxy heavy duty marine grade paint.

Main Winch for the Basket / Cage

The main winch is manufactured by Bell Fluidtechnics and is certified for Man riding purposes. It is hydraulic 800 kg SWL and tested to 1.2 tons. as per IMCA guidelines. The winch is operator controlled to 18 mtr per min. The winch is powered by heavy duty Radial piston motor coupled to the drum via a planetary gear box. There are three independent braking systems on the winch, one internal disc brake second hydraulic over center valve and the third Manuel band brake. The length of the 13mm wire installed on the winch is 90 mtrs (Drum capacity 150 M)

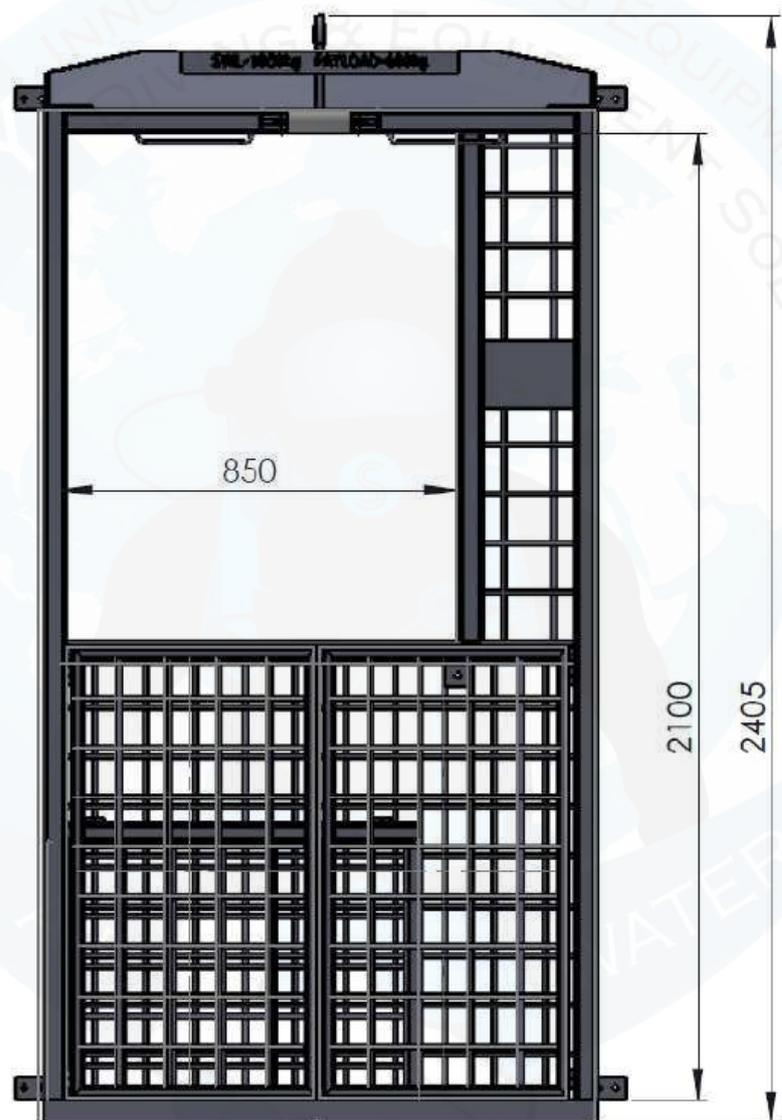
Guide Weight Winch

The main winch is manufactured by Bell Fluidtechnics and is certified for Man riding purposes. It is set hydraulically for 800 kg) and tested to 1.2 tons. as per IMCA guidelines. The winch is operator controlled to 18 mtr per min. The winch is powered by heavy duty Radial piston motor coupled to a planetary. There are three independent brakes on the system, one internal disc brake second hydraulic over center valve and the third Manuel band brake. The length of the 13mm wire on the winch is 150 mtrs. The winch wire is double reeved through the Guide weight to the A frame to be used for SWL of 1 ton and the system tested for 1.5 ton.

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Steel Galvanized Basket

The Two Diver Basket (1200 L x 1030 B mm outer dimensions) provided with the LARS is thus ensuring long life and rust proof service. 50 ltr x 200 bar breathing air cylinder, along with a panel for mounting the 1st stage regulator, manifold etc. for the cylinder are provided with the basket. Appropriate hand holds are provided at regular intervals. The design of the basket has taken into account the height of a fully dressed diver with a diving helmet, mounted camera / light etc. A groove with Teflon roller (which can be opened and closed) to tread the diving umbilicals to the basket is provided on the frame of the basket. The basket is provided with a zinc anode.



Clump Weight

The clump weight provided is 200 kg in weight. It is designed to reduce drag when in difficult current conditions underwater. The clump weight is provided with a zinc anode installed also.

The Control station

- The Control station has the following controls:
- Cage wire winch raise and lower
 - Guide wire winch raise and lower

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Certifications provided with the System
As per IMCA DO18 and IMCA DO23
Man riding winches certification from manufacturer, Test certified by DNV.
Lifting Load test certification and wire rope certificate.
NDT certification (MPI/DP test certificates)
DNV OR BV witness test for entire Launch and Recovery System.
Lifting slings provided with the LARS with certification.

NOTE : DIMENSIONS AND SPECIFICATIONS MAY CHANGE/ VARY WITHOUT NOTICE.



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POWER PACK OPTION

OPTION 1

TWIN POWER PACK

THE POWER PACK CONSISTS OF THE FOLLOWING:

PRIMARY MOTOR & PUMP RATED AS FOLLOWS:

- 11KW /15 HP POWER 415 V/50/60 HZ. (POWER AS DETERMINED).
- 39 LTR/MIN AT 150 BAR,

SECONDARY MOTOR AND PUMP RATED AS FOLLOWS:

- 11KW/15 HP, 415 V/50/60 HZ (POWER AS DETERMINED).
- 39 LTR/MIN AT 150 BAR

200 LITRE COMMON HYDRAULIC OIL TANK WITH PARTITION UP TO FULL OIL LEVEL.

HYDRAULIC OIL FILTER SYSTEM X 2

TWO INDEPENDENT ELECTRICAL STAINLESS STEEL CONTROL PANELS ARE MOUNTED ON THE SKID, FOR PRIMARY AND SECONDARY POWER PACK.

OPTION 2

INDEPENDENT POWER PACK

THE POWER PACK CONSISTS OF THE FOLLOWING:

PRIMARY MOTOR & PUMP RATED AS FOLLOWS:

- 11KW /15 HP POWER 415 V/50/60 HZ. (POWER AS DETERMINED).
- 39 LTR/MIN AT 150 BAR
- HYDRAULIC OIL FILTER SYSTEM

- 1 INDEPENDENT STAINLESS STEEL ELECTRICAL CONTROL PANELS IS MOUNTED ON THE SKID

THESE INDEPENDENT POWER PACKS CAN BE USED AS PRIMARY AND SECONDARY POWER PACK.

CERTIFICATES PROVIDED WITH EACH LARS

A frame	DNV GL load test
Winch	Man riding certificate from manufacturer and DNV
Wire rope	Manufacturer mill certificate
Lars	Bureau veritas function test certificate
Lifting Slings	Bureau Veritas
Basket	Bureau veritas load test certifiacte
Imca	D018 / D023
Class	Bureau Veritas pressure test witness for entire system
Fmea	As built by Synergy
Fmea stamped by class	As built by Synergy and reviewed by Class (optional)
Warranty	One year Synergy manufacturing warranty



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Manufacturer	Synergy Bell
Wire rope	Usha Martin
International	IMCA D018 / D023
Class witness lars	DNV GL (for complete unit)
Lifting	Bureau veritas
NDT	MPI/DP

ORDERING INFORMATION

SR	PART NUMBER	DESCRIPTION
1	SY-ATLAS-2DD023-LARS	SYNERGY SINGLE BASKET 2 DIVER LAUNCH & RECOVERY SYSTEM



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