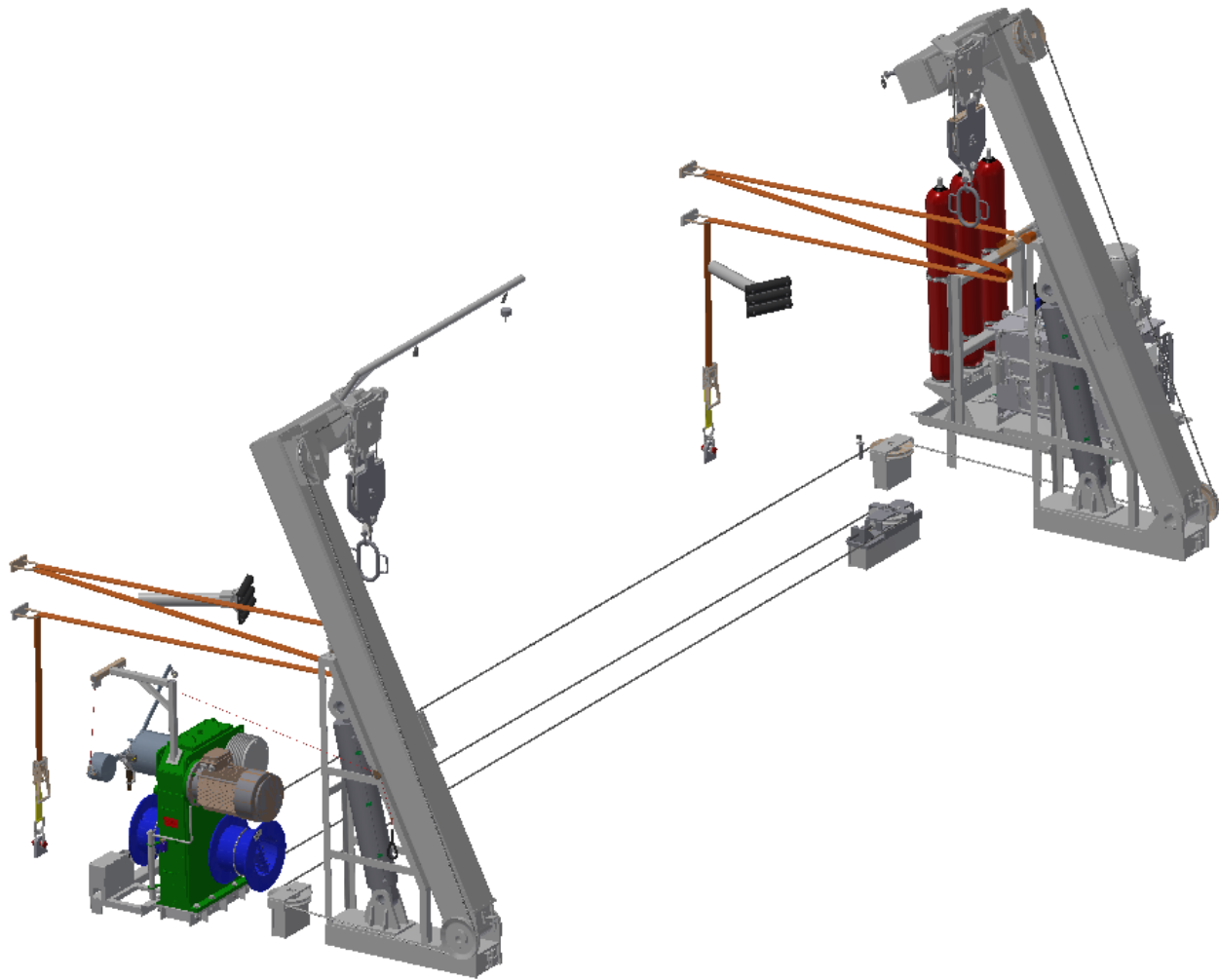




**VIKING
NORSAFE**
Boats and davits

Enterprise No.: NO940411696
www.VIKING-life.com

LHD-90 - Lifeboat Davit



TECHNICAL SPECIFICATION

VIKING Norsafe Life-Saving Equipment Norway AS
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VIKING Project No.: TBA

VIKING Doc. No.: TSD-0254

Rev. Date: 29.05.2020

Rev. No: 3

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1. REGULATION AND CERTIFICATION

Applicable rules and regulations In accordance with IMO/ SOLAS requirements, LSA Code and European Council Directive 2014/90/EU on Marine Equipment (MED)

Certificate MED

Other certificate Class certificate or flag acceptance on request

2. DAVIT SPECIFICATION

2.1. GENERAL DAVIT

| | |
|--|---|
| Type | Hydraulic Luffing Lifeboat davit |
| Model | LHD-90 |
| Application | Conventional lifeboat handling |
| Drawing reference | G-501506 |
| Execution | Hydraulic pivoting davit |
| Boarding position | Inboard on deck level |
| Operating position | From deck and from inside the boat (Gravity lowering) |
| Davit system weight (Approx.) | 5000 kg, davit incl. winch (dry weight) |
| Safe Working Load (SWL) | 9000 kg |
| Trim / list conditions | 10° / 20° |
| Max. lowering height | 35 m (including 10°/20° trim/list condition) |
| Operation temperature | -20°C till +45°C (other range on request) |
| Hoisting speed | 0~5 m/min |
| Min. lowering speed | According to SOLAS regulation ($S = 0.4 + 0.02H$) |
| Pivot bearing type | Bronze bearings |
| Wire sheaves | Galvanized |
| Installation | 8 (eight) deck welding points |
| Deck reinforcement requirements | See general arrangement drawing |
| Davit system H / W / D | See general arrangement drawing |
| Deck space required | See general arrangement drawing |

The Viking Norsafe LHD type Lifeboat Davit system is especially designed for safe and efficient launching and retrieval of Viking Norsafe Conventional Lifeboats. The davit system is designed for long time operation in a tough and corrosive marine/offshore environment. The davit system is designed to fulfil all requirements as given in latest SOLAS/IMO requirements.

The system will allow:

- Launch of the lifeboat in maximum load condition
- Gravity lowering of the loaded lifeboat independent of external power supply
- Retrieval of the lifeboat with a crew of three persons using electric power
- Retrieval of the lifeboat by manual hand-cranking
- Optional approval for rescue function, according to latest SOLAS regulations



VIKING Project No.: TBA

VIKING Doc. No.: TSD-0254

Rev. Date: 29.05.2020

Rev. No: 3

The davit comprises of two pivoting arms, hydraulic power unit and an electrically powered winch operating two wire falls. LHD type davit system is optimized for low height and low depth recesses. It is intended for lifeboats placed onboard ships and similar installations, where compact hydraulically operated davits offer the best solution.

The davit is designed to achieve optimum performance in terms of safety and reliability, and minimal maintenance levels. The davit is designed to minimize noise emission and provide straightforward service access.

To activate the davit, push and hold down the appropriate button or pull the remote control wires to cause the desired operation. When the button/wire is released, davit operation will cease immediately.

The winch is fitted with a one-way clutch. In the event of power loss during hoisting, the brake will automatically activate and davit motion will stop.

A centrifugal brake is located on the winch. The brake controls the speed of descent for the lifeboat. The brake is enclosed, and provides reliable operation in all climate conditions.

Electrical limit switch is used to cut power to the winch, if the boat is hoisted above stowage height.

Electrical limit switches will prevent the boat from being hoisted above its upmost position / stowed position. Electrical limit switches on the winch provide failsafe operation of the hand crank.

2.2 WINCH AND WIRE

| | |
|--|---|
| Type | NW-85 winch |
| Drawing reference | G-501367 |
| Execution | Electrical hoisting / Gravity lowering |
| Brakes type | Centrifugal brakes |
| Wire rope type | Galvanized, rotation resistant (certified item) |
| Wire rope diameter, MBL and spec. | Ø 16 mm, MBL 181 kN, 1960N/mm ² |
| Inner / outer wire end | Secured to drum / fused |
| Wedge socket | Not included |
| Master link w/handle | Included (certified item) |

2.3. ELECTRICAL

| | |
|-----------------------------------|--|
| Electric power supply | 440V/3ph/60Hz (other on request) |
| Electrical cabinet | IP56 |
| Remote control | IP56 |
| Limit switch | IP56 |
| Power consumption | 27 kW |
| Starting method | DOL - Direct on line |
| Duty rating | S2-10min, S6-40% |
| Motor space heating | Included, 40 W |
| Electrical cabinet heating | Heat loss from 42V transformer |
| Wiring | Included, (only power supply cable required) |
| Cables type | Marine type, flame retardant halogen free |
| Transformer | Included, 440/42VAC (other on request) |



**VIKING
NORSAFE**

VIKING Project No.: TBA

VIKING Doc. No.: TSD-0254

Rev. Date: 29.05.2020

Rev. No: 3

Emergency stop Yes, mushroom type

2.4. HYDRAULIC

| | |
|-----------------------------------|--|
| Type | Independent integrated hydraulic system |
| Oil flow | 48.7 l/min |
| Max. working pressure | 220 bar |
| Oil amount | 270 l |
| Motor type | 160L-4 |
| Hydraulic cylinders | 3x blader type 40 l |
| System fittings | ISO 8434-1 (DIN 2353) bite type metric fittings |
| Fittings and hose fittings | Zinc chromate Cr(VI)-free, secured with Denso tape |
| Tubes | AISI 316L |
| UV and weather protection | Shielded from environmental exposure |

2.5. PAINTING SYSTEM

| | |
|--|---|
| Blasting | SA 2.5 |
| Specification | ISO 12944-5 |
| System | Marine paint system (Jotun paint system) |
| Coating Two (2) layers (other on request) | Layer 1 Penguard universal, Alu - 220 µm Hardtop XP - 80 µm RAL 9016 (Traffic white) |
| Total dry film thickness | 300 µm |

2.6. DOCUMENTATION

| | |
|---|--|
| Technical specification davit | According to contract specification |
| General arrangement drawing | According to contract specification |
| Electrical wiring diagram | According to contract specification |
| Starter cabinet drawing | According to contract specification |
| Product certificate | According to contract specification |
| Lubrication oil chart | Viking Norsafe standard |
| Spareparts list | Viking Norsafe standard |
| Operation & Maintenance manual | Viking Norsafe standard |
| Installation manual | Viking Norsafe standard |
| Preservation & storage procedure | Viking Norsafe standard |

3. PACKING

Format Packed for transport in a 40 ft OT container

4. OPTIONS

Note: Some options influence davit weight and performance, some option combinations may be incompatible. Maximum SWL must not be exceeded.



VIKING Project No.: TBA

VIKING Doc. No.: TSD-0254

Rev. Date: 29.05.2020

Rev. No: 3

marking means to be supplied by maker, marking means not supplied by maker.

| GENERAL DAVIT | |
|--|--------------------------|
| Combined Life-/Rescue boat davit function | <input type="checkbox"/> |
| Hoisting fully loaded boat | <input type="checkbox"/> |
| Winterization / cold climate heating / canvas solutions | <input type="checkbox"/> |
| Commissioning performed by Viking Norsafe or Viking Norsafe Service Partners | <input type="checkbox"/> |
| Additional lowering height | <input type="checkbox"/> |
| Additional shock absorber on winch | <input type="checkbox"/> |
| Additional boarding platform, ladders etc. | <input type="checkbox"/> |
| Additional cable trays, supports for lights, lanterns etc. | <input type="checkbox"/> |
| Other options on request | <input type="checkbox"/> |
| ELECTRIC SYSTEM | |
| Voltage variation | <input type="checkbox"/> |
| Protection box for remote control | <input type="checkbox"/> |
| Ex-proof, Zone II 2 G Ex de IIB T3 (other on request) | <input type="checkbox"/> |
| Star Δ starting method | <input type="checkbox"/> |
| Additional electric cabinet heater | <input type="checkbox"/> |
| Alternative cabinet size / material / surface protection | <input type="checkbox"/> |
| HYDRAULIC SYSTEM | |
| Stainless steel fittings and hose fittings | <input type="checkbox"/> |
| Protection cover for control valve | <input type="checkbox"/> |
| Stainless steel HPU tank | <input type="checkbox"/> |
| Alternative HPU size / material / surface protection | <input type="checkbox"/> |
| HPU heater | <input type="checkbox"/> |
| PAINTING SPECIFICATION | |
| Norsok M-501 system (Viking Norsafe Doc. No. TSS-0030) | <input type="checkbox"/> |
| Other painting system and final color | <input type="checkbox"/> |
| SPARE PARTS | |
| Spare parts for Startup / Commissioning | <input type="checkbox"/> |
| Spare parts for Onboard spare | <input type="checkbox"/> |
| Spare parts for 1 year | <input type="checkbox"/> |
| Spare parts for 2 years | <input type="checkbox"/> |
| DOCUMENTATION | |
| Factory acceptance test procedure | <input type="checkbox"/> |
| Factory acceptance test report | <input type="checkbox"/> |
| Inspection and test plan | <input type="checkbox"/> |



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Rev. Date: 29.05.2020

Rev. No: 3

| | |
|--|--------------------------|
| Shipping, handling and lifting procedure | <input type="checkbox"/> |
| Packing & unpacking procedure | <input type="checkbox"/> |
| Commissioning procedure | <input type="checkbox"/> |
| TAG list | <input type="checkbox"/> |
| Winch drawing | <input type="checkbox"/> |
| Noise test report | <input type="checkbox"/> |
| Weight and COG datasheet | <input type="checkbox"/> |
| Weighing report/certificate | <input type="checkbox"/> |
| Other drawings/documentation/procedures | <input type="checkbox"/> |

5. POSSIBLE BOAT FITTING THIS DAVIT SYSTEM

The VIKING Norsafe boats fit the LHD-90 davit types and variants.

| | |
|--------|---------------------|
| JYN-74 | JYN-75 |
| JYN-80 | (Others on request) |

6. YARD SUPPLY / RESPONSIBILITY

| Transport | Depending on contract |
|---|-----------------------|
| Deck foundations / reinforcement | |
| Assembly, erection and welding to deck | |
| Wire installation on winch, routing on davit and termination | |
| Hydraulic piping between HPU unit, davit and control valves | |
| Hydraulic oil filling | |
| All cables to starter cabinet and agreed interface | |
| Testing according to regulation after installation onboard | |
| Preservation and maintenance after davit arrived yard and installed | |



VIKING Project No.: TBA

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Rev. No: 3