



**VIKING
NORSAFE**
Boats and davits

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

HD-21 MKII - Free Fall Lifeboat Davit



TECHNICAL SPECIFICATION

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

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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	Free Fall Lifeboat Davit
Model	HD-21 MKII
Application	Free fall lifeboat handling
Drawing reference	G-504430
Execution	Hydraulic pivoting davit
Boarding position	Inboard on deck level (aft boarding platform)
Operating position	From deck side
Davit system weight (Approx.)	5000 kg, davit incl. winch (dry weight)
Safe Working Load (SWL)	6300 kg
Trim / list conditions	10° / 20°
Max. lowering height	20 m (including 10°/20° trim/list condition)
Operation temperature	-20°C till +45°C (other range on request)
Max. hoisting speed	0~5 m/min
Max. lowering speed	0~5 m/min
Pivot bearing type	Bronze bearings
Wire sheaves	Galvanized, equipped with ball bearings
Installation	4 (four) 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 Free Fall Lifeboat Davit system is especially designed for safe and efficient launching and retrieval of a VIKING Norsafe Free Fall Lifeboat. 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:

- Free fall launch of the fully loaded lifeboat, included free fall launch of the fully loaded lifeboat with list/trim 20°/10°, completely independent of any power supply.
- Controlled launch of the fully load lifeboat, with the ships EL. Power available, controlled from the onboard the ship.
- Recovery of the boat including crew of 3 persons. (Recovery of the fully loaded boat is possible)

The davit system is based on a hydraulic driven jib cylinder system (2 cylinders) and a hydraulic driven lifeboat winch. Both the winch and the cylinders are supplied with hydraulic energy from one common power unit. This system, based on the use of hydraulic driven jib/winch, is a sufficient solution both



with respect to operation performance, simplicity, safety, maintenance and reliability. Since the whole system is oil filled and totally enclosed, corrosion and wear is reduced to an absolute minimum. A safety valve is installed on the hydraulic power unit. The safety valve will protect the hydraulic system and components on the davit to not become damaged due to wrong operation when used. All internal hydraulic piping is properly done and completed on the entire davit system. Small hydraulic pipes have to be installed from the power unit to the control valve and further to the davit (pipe ends on davit at low point of aft support leg).

All control levers are spring-centered. In order to operate the davit relevant control lever has to be pushed in the required direction to cause the desired motion. Once the lever is released it will return back to center position, and the activated motion will cease immediately.

On the top of the A-frame, there is a parking stay for the lifting traverse. This parking stay also acts as mechanical end stopper since the pressure will open the hydraulic safety valve on the hydraulic power unit.

The hydraulic cylinders for luffing of the davit jib is fitted with a mechanical stroke limitation. The limitation allows the luffing to be undertaken at full speed. The hydraulic cylinders for luffing of the davit A-frame jib is fitted with a pilot operated load-holding valve in each connection port. The valves are mounted direct to cylinder ports. These valves has a dual function:

- Maintaining the luffing speed at a constant value independent of the load.
- Blocking the cylinder motion in the case of hydraulic pressure loss. This will freeze the cylinder in the case of hose or pipe failure.

The winches are fitted with hydraulic operated, oil submerged, fail-safe, multidisc brakes. In the case of hydraulic pressure loss due to hose/pipe failure, the brake will be automatically applied and cease the relevant motion.

All selected equipment is chosen and installed to ensure the lowest possible emission of sound and for good access for service and repair.

The davit is equipped with both keel lashing and aft deck lashing. The keel lashing consists of a keel bracket with a bolt on the lifeboat (must be installed during commissioning) and a matching U-bolt on the davit. This lashing prevents the boat from being lifted out the davit by extreme waves/rough sea. The lashing is automatically engaged / released when the boat is recovered / launched. The aft lashing avoids the boat from being accidentally released by rough sea or the operator. This lashing will be engaged / released by the lifeboat crew.

2.2 WINCH AND WIRE

Type	INI winch IYJ2.53-40-57-18-ZPN
Drawing reference	DS-00940
Execution	Hydraulically hoisting / lowering
Brakes type	Negative multi-disk brakes, hydraulically operated
Wire rope type	Galvanized, rotation resistant (certified item)
Wire rope diameter, MBL and spec.	Ø 18 mm, MBL 185.4 kN, 1960N/mm ²
Inner / outer wire end	Secured to drum / Wedge socket and safety wire clamp
Wedge socket	Included (certified item)
Lifting hook/chain	Included (certified item)

2.3. ELECTRICAL

Electric power supply	440V/3ph/60Hz (other on request)
Electrical cabinet	IP56
Remote control	IP56
Power consumption	11.6 kW
Starting method	DOL - Direct on line
Duty rating	S6-40%
Motor space heating	Included, 40W
Electrical cabinet heating	Heat loss from 42V transformer
Transformer	Included, 440/42VAC (other on request)
Emergency stop	Yes, mushroom type

2.4. HYDRAULIC

Type	Independent integrated hydraulic system
Oil flow	29 l/min @60HZ
Max. working pressure	230 bar
Oil amount	120 l
Motor type	132M-4
Hydraulic cylinders	DS-00716
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 - 190 µm Hardtop XP - 50 µm RAL 9016 (Traffic white)
Total dry film thickness	240 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.

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

GENERAL DAVIT	
Additional extension legs	<input type="checkbox"/>
Additional boarding access / maintenance platforms / handrails / ladders /supports for lanterns etc.	<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"/>
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"/>
Additional electric cabinet heater	<input type="checkbox"/>
Alternative cabinet size / material / surface protection	<input type="checkbox"/>
Dual power	<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"/>



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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"/>
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 HD-21 davit types and variants.

VIKING Norsafe GES-21 MKI

(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	



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