

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Winch - Manriding**

with type designation(s)

- Hydraulic Manrider Winch LS2-150HLP-L-E**- Hydraulic Manrider Winch LS2-150HLP-JCxM-E**

Issued to

Ingersoll Rand
SIN-LE-NOBLE, France

is found to comply with

DNVGL-OS-E101 – Drilling facilities, Edition January 2018

Application :**See next page.**Issued at **Høvik** on **2018-11-23**This Certificate is valid until **2023-11-22**.for **DNV GL**DNV GL local station: **Le Havre**Approval Engineer: **Axel Janson**

Per Esvall
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-029789-1**
Certificate No: **TAS00001TH**

Product Description

Hydraulically driven manrider winches with internal failsafe brake and spooling device.

Application/Limitation

<u>Design Parameter</u>	<u>Value</u>	<u>Equivalent</u>
Safe Working Load (SWL):	150 kg	330 lbf
Maximum working pressure:	105 bar	1520 psi
Maximum lifting speed:	30 m/min.	98 foot/minute
Wire Diameter:	10 mm	0.4 in
Minimum design temperature:	-20 °C	-4 °F
Outlet fleet angle wire rope:	2,50°	
Wire Lengths:	54 m (2 layers) 152 m (5 layers)	
Minimum safety factor on wire:	10	
Classification acc. F.E.M:	4M	

Type Approval Documentation

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Fabrication and Testing Procedures

Test Procedures:

1. Overload testing of each winch assembly shall be performed according to DNVGL-OS-E101 Ch.2 Sec.8 (2 x SWL).
2. Pressure testing of hydraulic system shall be performed in accordance with DNVGL-OS-E101 Ch.2 Sec.8.
3. Function testing shall be carried out in accordance with DNVGL-OS-E101 Ch.2 Sec.8. Testing shall include verification of overload protection, emergency stop, limit switch functions and emergency hoisting/lowering.
4. Charpy testing of materials shall be performed in accordance with DNVGL-OS-E101 Ch.2 Sec.2.

NDE Procedures:

5. NDE/NDT shall be performed in accordance with DNVGL-OS-E101 Ch.2 Sec.8.

Welding Procedures:

6. Qualification of welding procedures and qualification of welders shall be in accordance with DNVGL-OS-E101 Ch.2 Sec.8.

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Marking of Product

For traceability the following marking is to be carried out on each winch:

- Part Number
- Serial Number
- Safe Working Load
- Manufacturers Name or Trademark

Comments

- The capacity of the accumulator shall be sufficient to safely recover the riding man from the worst possible position. Limit switches shall be adjusted after installation to establish the allowable extreme positions. Accumulator to be delivered with a separate DNV GL Product Certificate.
- Loose gear such as wire rope, sockets, shackles, swivels etc. shall be delivered with pertinent ILO certificates showing sufficient capacity.
- Supporting foundations are to be separately approved, and are not covered by this design approval. Foundation bolts are to be of min. grade 8.8 and to be delivered with 3.1 certificates.
- This certificate replaces Type Approval Certificate no. D-5703.

Periodical Assessment

For retention of this Type Approval Certificate, DNV GL AS's representative shall carry out surveys every second year in accordance with DNV GL Type Approval Scheme DNVGL-CP-0338.