

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)
0,15 mT Manrider winch, Type W-PL-MR-H/RRC-N

Issued to

National Oilwell Varco Norway A/S
KRISTIANSAND S, Norway

is found to comply with
DNVGL-OS-E101 – Drilling plant, Edition July 2015

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2021-08-25**.

Issued at **Høvik** on **2016-08-26**

DNV GL local station: **Kristiansand S**

Approval Engineer: **Ola E. Ruud**

for **DNV GL**

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.

Product description

0,15 mT Man rider winch

Reference Standards

DNV GL Standard for offshore and platform lifting appliances, May 2016
FEM 1.001 Rules for the Design of Hoisting Appliances, 3rd Edition, Oct. 1998
Eurocode 3 Design of Steel Structures, May 2005
DNV GL Statutory interpretations, DNV GL-SI-0166 Drill(N), July 2015
Norsok Standard R-002, Edition 2, Sept. 2012

Application/Limitation

Design limitations

Design Parameter	Value
SWL	150 kg
Dynamic factor	1,3
Speed range	0-55 m/s
Wire diameter	10 mm
Max. number of layers on drum	3
Min. design temp	-20 °C
Max. design temp	45 °C
Area classification	Zone 1
FEM Appliance group	Q3, U2, A3

Conditions :

Condition	A _x (m/s ²)	A _y (m/s ²)	A _z (m/s ²)	Wind (m/s)
Still water condition	0,00	0,00	0,00	0,00
Operating condition	3,92	3,92	3,92	40,0
Survival condition	9,81	9,81	4,91	70,0

X- Vessel forward direction
Y- Vessel port-starboard direction
Z- Vessel vertical direction

Type Approval documentation

Drwg./Doc. No.	Rev.	Title
D1324-Z-RD-028	0	Design Record Book –Manrider Winch NORSOK
L3945-D1324-G0130	2	General arrangement

Tests carried out

Each product is to be tested according to DNV GL Offshore Standard DNV GL-OS-E101 'Drilling Plant', July 2015, Ch.2, Sec. 6

Job Id: **262.1-023680-1**
Certificate No: **TAD00000FF**

Other conditions and comments

Each product is to be surveyed during fabrication in accordance with the requirements for equipment of Category I as defined in DNV GL Offshore Standard DNV GL-OS-E101 'Drilling Plant', followed by issuance of the Product Certificate.

If : $P \times V > 1,5$, the accumulator shall be delivered with DNV GL Product certificate

It is assumed that the remote control device is delivered with DNV GL Product certificate

It is assumed that at least 3 turns of wire remains on the drum with the hook in the lowest position

EX-documentation for this system is assumed to be submitted in a common complete package to the yard. EX documentation is also to be provided and presented to the DNV GL surveyor at site. It is assumed that the electrical equipment installed is certified for the relevant/correct zone.

For EX components with EX certificates with the special conditions given in the certificate are required, shall be documented and demonstrated to the local DNV GL surveyor

Marking of product

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

- Part.No.
- Serial No.
- Rated Load Capacity
- Manufacturer's Name or Mark

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform a survey every second year and before expiry date of this certificate in order to verify that the conditions of the Type approval are complied with.

END OF CERTIFICATE