

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)
760mT Crown Block

Issued to

MHWirth AS
Kristiansand S, Norway

is found to comply with

DNV-OS-E101 – Drilling facilities, Edition July 2024
DNV statutory interpretations DNV-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2021

Application :

See Page 2

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

This Certificate is valid until **2028-12-09**.

Issued at **Høvik** on **2024-12-10**

DNV GL local station: **Oslo Drilling Systems & Lifting Appliances**

for **DNV GL**

Approval Engineer: **Jan H. Hansen**

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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. If any person suffers loss or damage which is proven to have been caused by any negligent act or omission of the Society, then the Society shall pay compensation to such person for his proven direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question. The maximum compensation shall never exceed USD 2 million. In this provision the "Society" shall mean DNV GL AS as well as all its direct and indirect owners, affiliates, subsidiaries, directors, officers, employees, agents and any other person or entity acting on behalf of DNV GL AS.

Certificate No: **TAD00001NS**
File No: **523.30**
Job Id: **262.1-017872-2**

Reference Standards

API Spec 4F, Specification for Drilling and Well Servicing Structures, Fifth Edition, June 2020
API Spec 8C, Drilling and Production Hoisting Equipment, 5th Edition, April 2012

Product description

The Crown Block is the upper sheave cluster block of the main hoisting system.

Application/Limitation

<u>Design Parameter</u>	<u>Value</u>	<u>(equivalent)</u>
Min. design temperature	-20°C	
Max. design temperature	+45°C	
Load Rating*	760 mT	838 shT
Max line pull	637 kN	65 mT
Drill line configuration	12 falls	
Number of sheaves in Crown Block	5	
Sheave Diameter	60"	1524 mm
Wire Diameter	1 3/8"-1 3/4"	35 mm-44.5mm
Max Fleet angle in Operation	2.0 deg	
Note *: Load rating is from crown block, i.e. not including the weight of the Travelling block and Top Drive		

Type Approval documentation

Testing

- Each product is to be function tested in accordance with DNV-OS-E101 Ch.2 Sec.8, 4.2.
- Charpy Impact testing to be carried out in accordance with DNV-OS-E101 Ch.2 Sec.2, 2.6.
- NDE/NDT shall be performed in accordance with DNV-OS-E101 Ch.2 Sec.8, 3.1
- Qualification of welding procedures and qualification of welders shall be in accordance with DNV-OS-E101 Ch.2 Sec.8, 2.3 and 2.4.

Marking of product

For traceability each product shall be marked with, but not limited to, the following:

- Part No.
- Serial No.
- Rated Load capacity
- Manufacturers Name or Mark
- TAD00001NS

Other conditions and comments

- Wire rope sheaves shall be delivered with DNV Product Certificate and designed according to API Spec 8C.
- Installation lifting is not a part of this Type Approval.
- Each product is to be surveyed during fabrication in accordance with the requirements for equipment of Category I as defined in DNV's Offshore Standard DNV-OS-E101 Drilling facilities, followed by issuance of a Product Certificate. If the intended installation is DNV classed, then this automatically means DNV Product Certificate. Manufacturing records are to be maintained in accordance with DNV-OS-E101 Ch.3, Sec. 3, 2.1.

Certificate Retention Survey



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For retention of the Type Approval, DNV's representative shall carry out biennial Product Audits.

Historic

This Type Approval , TAD00001NS, replaces Type Approval D-5767 issued 28.08.2014.

END OF CERTIFICATE