Certificate no.:
TAD00001NX

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)
5 ST SJH Elevators P/N: 50003135, 50003155, 50003175, 5 ST H-SJH Elevator P/N: 50003275Y

issued to
Varco BJ. B.V.
Etten-Leur, Noord-Brabant, Netherlands

is found to comply with
DNV-OS-E101 – Drilling facilities, Edition July 2024

Application:

See next page.

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

Issued at **Høvik** on **2024-12-03**
This Certificate is valid until **2029-12-02**.
DNV local unit: **Drilling Systems**

for **DNV**

Approval Engineer: **Ole Osuldsen**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Codes and standards used as reference

[1] API Specification 8C – Specification for Drilling and Production Hoisting Equipment (PSL 1 and PSL 2). 5th Edition

[2] FEM Rules for the design of hoisting Appliances 3rd edition 1998.

Product description

SJH Type Elevator: 5 short ton SJH type elevator for vertical and horizontal hoisting

H-SJH Type Elevator: Hydraulic 5 short ton SJH type elevator for vertical and horizontal hoisting

Application/Limitation

SJH Type Elevator

Design Parameter	Value	Equivalent
Max. load rating:	4.5 mT	5 sT
Min. Design Temperature:	-20 °C	-4 °F
Part no. 50003135, tubular size:	60 - 114 mm	2 3/8 - 4 1/2””
Part no. 50003155, tubular size:	114 - 194 mm	4 1/2” - 7 5/8”
Part no. 50003175, tubular size:	178 - 273 mm	7” - 10 3/4”
Classification acc. FEM:	Group E5	

H-SJH Type Elevator

Design Parameter	Value	Equivalent
Max. load rating:	4.5 mT	5 sT
Min. Design Temperature:	-20 °C	-4 °F
Max. Design Temperature:	55 °C	131 °F
Max. hydraulic working pressure:	207 bar	3000 psi
Max. hydraulic WP, CRT350 Panel:	172 bar	2500 psi
Classification acc. FEM :	Group E5	
Max. load rating for jaw sets:	Acc. to table below	

Jaw Sets	Casing Size	Weight Rating [ST]
50003151Y129	4.1/2”	3.0
50003151Y131	5”	3.0
50003151Y132	5.1/2”	3.0
50003151Y135	6.5/8”	5.0
50003151Y136	7”	5.0
50003151Y137	7.5/8”	5.0
50003151Y705	7.3/4”	5.0
50003151Y139	8.5/8”	5.0
50003151Y804	8.3/4”	5.0
50003151Y141	9.5/8”	5.0
50003151Y769*	9.3/4”	5.0
50003151Y649*	9.7/8”	5.0

***On request**

Type Approval documentation

Material specification

Component	Material	Min Yield strength	Min tensile strength
Body	CMS-01 Grade 120-110*	110100 PSI	120000 PSI
Hinge pins	BMS-01 (Class 120)**	120000 PSI	140000 PSI

Tests carried out

Design verification test according to API Spec. 8C Ch.5.5 “Alternative design verification test procedure and rating”.

Testing

- Each product is to be proof load tested according to API Spec. 8C, section 8.6, with a test load of 7,5 short tons.
- Functional testing shall be performed in accordance with Ch.2, Sec.8 of DNV-OS-E101 “Drilling Facilities”. Functional testing shall be performed after installation and be witnessed by DNV.

Other conditions and comments

- The elevator control system needs to be tested to ensure proper integration with other drilling hoisting control systems.
- PSL 2 units shall meet the stricter PSL 2 requirements of API Spec. 8C Ch.5 - 7.

Marking of product

For traceability and compliance with API 8C, sec. 10, the following marking is to be carried out on each product:

- API Spec 8C
- Manufacturers name or mark
- Relevant PSL number
- Rated load capacity
- Bore size
- Unique serial number for each item
- Drillpipe size and style (if lifting drill-pipes, in accordance with API spec. 8C, Ch. 9.8.2)

Certificate retention survey

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days)
and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to
DNV-CP-0338. This certificate is only valid if required periodical assessments are carried out with satisfactory results.

To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE