

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)
AMS-10

Issued to

Forum B + V Oil Tools GmbH
Hamburg, Germany

is found to comply with

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

DNVGL-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2017

Application :

11 Short Tons Sliptype Elevator.

Issued at **Høvik** on **2018-11-15**

This Certificate is valid until **2023-11-14**.

DNV GL local station: **Hamburg Verification**

for **DNV GL**

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.



Reference Standards

- [1] API Spec. 8C, Drilling and Production Hoisting Equipment, 5th Ed., April 2012
[2] NORSOK R-002, Lifting Equipment, 2017 Edition

Product Description

11 short ton Hydraulic Sliptype Elevator.
Part number: 638310-Y.

Application/Limitation

<u>Design Parameter</u>	<u>Value</u>	<u>Equivalent</u>
Load Rating:	11 sT	10 mT
Pipe Size Range:	194 – 432 mm	7-5/8" - 17"
Hydraulic Work Pressure:	160 bar	2 320 psi
Min. Design Temp. (metallic materials):	-40 °F	-40 °C
API 8C Product Specification Level (PSL):	PSL 1	
Applied Safety Factor:	3	
Hazardous Area Classification:	Zone 1	

Type Approval Documentation

Tests Carried Out

- DVTAMS10 Rev.0 "Test Report – Design Verification Test (DVT)", Test Date 2018.04.03.

Fabrication and Testing Procedures

Test Procedures:

1. Proof load testing of each elevator assembly shall be performed according to API Spec. 8C §8.6.
2. Functional testing shall be performed in accordance with DNVGL-OS-E101 Ch.2, Sec.8, §3 Tests.
3. Charpy testing shall be performed in accordance with DNVGL-OS-E101 Ch.2 Sec.2.

NDE Procedures:

4. NDE/NDT shall be performed in accordance with DNVGL-OS-E101 Ch.2, Sec.8, §3 Tests.

Welding Procedures:

5. Qualification of welding procedures and qualification of welders shall be in accordance with DNVGL-OS-E101 Ch.2, Sec.8, §3 Tests.

Marking of Product

For traceability, the products shall be marked according to API Spec. 8C §10. And shall include:

- Manufacturer's Name or Mark
- Elevator Type
- Reference Standard & PSL number
- Pipe Size Range
- Load Rating
- Part Number
- Serial Number



Job Id: **262.1-028243-1**
Certificate No: **TAD00000X7**

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Other Conditions and Comments

- This elevator design is approved for vertical lifting only under this Type Approval Certificate.
- Elevator bushings are classified as category II equipment under DNVGL-OS-E101, and they are hence not within the scope of this Type Approval Certificate. Bushing components shall be delivered with appropriate works certificate.
- Materials for the main load-bearing components shall be delivered with 3.1 certificates according to EN10204 or similar.
- Each product are to be surveyed during fabrication in accordance with the requirements for equipment of Category I as defined in DNV GL's Offshore Standard DNVGL-OS-E101 Drilling Plant and in accordance with API Spec. 8C, followed by issuance of a DNV GL Product Certificate.

Certificate Retention Survey

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.

END OF CERTIFICATE