

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)

Manually operated elevators, SJL-1 to SJL-7

Issued to

**National Oilwell Varco - Varco BJ B.V.
Etten-Leur, Netherlands**

is found to comply with

DNV-OS-E101 Drilling Plant October 2013

Application :

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

This Certificate is valid until **2019-07-16**.

Issued at **Høvik** on **2015-07-17**

DNV GL local station: **Rotterdam, Product
Certification /Verification**

for **DNV GL**

Approval Engineer: **Luisa Brites**

**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

The elevators SJL-1 to SJL-7 are manually operated elevators with conventional center latch collar type for handling a single joint of casing or tubing.

Codes and standards used as references

API Spec. 8C, Drilling and Production Hoisting Equipment (PSL 1 and PSL 2), 5th Edition, April 2012
F.E.M. 1.001, "Rules for the Design of Hoisting Appliances", 3rd Edition, October 1998

Application/Limitation

<u>Design Parameter</u>	<u>Value</u>	<u>(Equivalent)</u>
Load Rating (SJL-1, SJL-2, SJL-3)	5.0 sT	4.5 mT
Load Rating (SJL-4, SJL-5, SJL-6, SJL-7)	7.5 sT	6.8 mT
Min. Design Temperature	-4.0 °F	-20.0 °C
Tubular size range:		
SJL-1	2 3/8" – 5 1/2"	60 mm - 140 mm
SJL-2	5 5/8" – 7 3/4"	143 mm – 197 mm
SJL-3	7 7/8" – 11"	200 mm – 279 mm
SJL-4	11 1/8" – 14"	283 mm – 356 mm
SJL-5	14 1/8" – 20 1/2"	359 mm – 521 mm
SJL-6	20 5/8" – 24 1/2"	524 mm - 622 mm
SJL-7	24 5/8" – 30"	625 mm - 762 mm
Fatigue classification according to F.E.M. (SJL-1, SJL-2, SJL-3, SJL-4):		
- Spectrum Class	P2	
- Class of Utilization	B5	
- Group Classification	E4	
Fatigue classification according to F.E.M. (SJL-5):		
- Spectrum Class	P3	
- Class of Utilization	B4	
- Group Classification	E4	
Fatigue classification according to F.E.M. (SJL-6, SJL-7):		
- Spectrum Class	P3	
- Class of Utilization	B3	
- Group Classification	E3	

Type Approval documentation



Job Id: **262.1-018354-2**
Certificate No: **TAD0000019**

Tests carried out

Test Procedures:

1. Proof load test according to API Spec. 8C, Ch.8.6, to be witnessed by DNV.
2. Charpy impact testing in accordance with API Spec. 8C, Ch. 6.3.

NDE Procedures:

3. Non-destructive examination methods, extent and acceptance criteria shall be in accordance with DNV-OS-E101, Ch.2 Sec.6 [3].

Welding Procedures:

4. Qualification of welding procedures and qualification of welders shall be in accordance with DNV-OS-E101, Ch.2 Sec.6 [2].

Marking of product

Marking of each elevator shall be carried out in accordance with Chapter 10 of API Spec 8C. The marking shall include the following:

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

Comments

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 Plant, followed by issuance of Product Certificate. If the intended installation is DNV classed, then this automatically means DNV product certificate. Fabrication records are to be maintained in accordance with DNV-OS-E101 Ch.3 Sec.3 [2].



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Periodical assessment

For retention of this Type Approval, DNV GL' representative shall carry out surveys every second year in accordance with DNV Standard for Certification No. 1.2.

This certificate replaces former Type Approval Certificate D-6265.

END OF CERTIFICATE