

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Valves**

with type designation(s)
5-1/8 7.5K MV Manual Gate Valves
Part Numbers: See Page 2

Issued to

National Oilwell Varco
Houston, Texas, USA

is found to comply with
DNVGL-OS-E101 – Drilling plant, Edition July 2015
DNVGL-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2015

Application :

See Page 2

Issued at **Houston** on **2017-05-05**

This Certificate is valid until **2022-05-04**.

DNV GL local station: **Approval CMC**

Approval Engineer: **Kevin Bui**

for **DNV GL**

Christian Nilsen
Team Lead

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.



Job Id: **262.1-015284-2**
Certificate No: **TAD00000NR**

Design Codes/Standards Used as References

- API 6A, Specification for Wellhead and Christmas Tree Equipment, 20th Edition
- NACE MR0175, Materials for Use in H₂S-containing Environments in Oil & Gas Production, 2015

Product Descriptions

<u>Part No.</u>	<u>Rev.</u>	<u>Description</u>
20403969	C	5-1/8 7.5K MV Manual Gate Valve
20406412	B	5-1/8 7.5K MV Manual Gate Valve
20407562	C	5-1/8 7.5K MV Manual Gate Valve
50000028	D	5-1/8 7.5K MV Manual Gate Valve
50000029	D	5-1/8 7.5K MV Manual Gate Valve
51022101	3	5-1/8 7.5K MV Manual Gate Valve

Application/Limitation

<u>Design Parameter</u>	<u>Value</u>
Max Working Pressure	7,500 psi
Shell Test Pressure	11,250 psi
Temperature Class	P+U (-20 to 250 °F)
Material Class	DD-0.5 (Sour Service)
Product Specification Level	2
Performance Requirement	1

Type Approval Documentation

- Drawings:

<u>Drawing No.</u>	<u>Rev.</u>	<u>Title</u>
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- Calculations:

See Design Package for Calculations for 5-7.5K MV Manual Gate Valves.

- Material Specifications:

<u>Title</u>	<u>Spec. No./Rev.</u>	<u>Material</u>	<u>Min YS(psi)</u>	<u>Min Avg CVN(ft.lb)</u>
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See Material Specifications for additional material requirements.

- Notes:

Other part numbers or revisions may be acceptable under this TAC provided critical aspects of the design remain the same. Changes shall be documented and approved by NOV Engineering and Quality. DNVGL Surveyor shall verify these changes before issuance of Product Certificates.

Tests Carried Out

- See Test Reports for 5-7.5K MV Manual Gate Valve, PN 20406412, SN EE01C00158-0009-1.

Fabrication Procedures

- Procedures related to testing, NDE, welding, marking, etc. shall be reviewed by DNVGL Surveyor.

Marking of Products

- Products shall be marked at least with part and serial numbers for traceability.

Periodical Assessments

- Periodical assessments shall be carried out bi-yearly for retention of TAC.

Comments

- Project No. PP176165-3, Attn. Mike.Nguyen@nov.com.
- This TAC replaces TAC No. D-5033.