DNV·GL

Certificate No:
TAD00000TW

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valves

with type designation(s)
3-1/16 20K HPT 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 **2017-10-03**
This Certificate is valid until **2022-10-02**.
DNV GL local station: **Approval CMC**

Approval Engineer: **Kevin Bui**

for **DNV GL**

Brandon Caraway
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Design Codes/Standards Used as References

- API 6A, Specification for Wellhead and Christmas Tree Equipment, 20th Edition
- NACE MR0175, Materials for Use in H_2S-containing Environments in Oil and Gas Production, 2015

Product Descriptions

Part No./Rev.	Drawing No./Rev.	Equiv. Part No.	Description
20417138/H	D20417138-ASM/E	16681220-001	3-1/16 20K HPT Manual Gate Valve
16978568-300/1	51027343-ASM/2	16978568-300	3-1/16 20K HPT Manual Gate Valve

Application/Limitation

Design Parameter	Value
Nom Size	3-1/16 in
Max Working Pressure	20,000 psi
Shell Test Pressure	30,000 psi
Temperature Class	P+U (-20 to 250 °F)
Material Class	EE-NL (Sour Service)
Product Specification Level	3, 3G
Performance Requirement	2

Type Approval Documentation

- Drawings:

Drawing No./Rev.	Title
	Bearing Cap
	Bearing Housing
	Body
	Bonnet Gasket
	Bonnet Gasket
	Bonnet Lower
	Bonnet Upper
	Gate
	Handwheel Adapter
	Lock Ring
	Packing Gland
	Pocket Insert
	Seat
	Stem
	Stem Clamp
	Stem Retainer
	Stem Stop
	Tailrod Stem
	Tailrod Stem Protector

- Calculations:

- Material Specifications:

  See Material Specifications for additional material requirements. See BOM's for alternative Material Specifications.

Component	Spec. No./Rev.	Material	Min YS(ksi)	Min Avg CVN(ft.lb)

Bearing Cap
Bearing Housing
Body
Bonnet Gasket
Bonnet Lower
Bonnet Nut
Bonnet Stud
Bonnet Upper
Gate
Handwheel Adapter
Lock Ring
Packing Gland
Pocket Insert
Seat
Stem
Stem Clamp
Stem Retainer
Stem Stop
Tailrod Stem
Tailrod Stem Protector

- 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. DNV GL Surveyor shall verify these changes before issuance of Product Certificates.

Tests Carried Out

Document No./Rev.	Title

Marking of Products

- For traceability, product and data book shall be marked at least with company name, part number and serial number.

Periodical Assessments

- For retention of TAC, periodical assessments shall be carried out bi-yearly.

Fabrication Procedures

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

Project Description

- Project No. A0446456, Attn. Mike Nguyen.
- This TAC replaces D-5674.