DNV·GL

Certificate No:
TAD00000SG

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valve

with type designation(s)
3 1/16"-15K Magnum Hyd. F.E.

Issued to
Worldwide Oilfield Machine, Inc. (WOM)
Houston TX, United States
Pune, India

is found to comply with
DNV-OS-E101 Drilling Plant October 2013
DNV-OSS-201 - Verification for Compliance with Norwegian Shelf Regulations - Ch.2 Sec.6 DRILL (N), April 2012 (Amended October 2012)

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.
THIS CERTIFICATE REPLACES TAC D-6162 ISSUED MAY 20TH 2015.

Issued at **Houston** on **2017-07-25**
This Certificate is valid until **2019-06-30**.
DNV GL local station: **Certification & Inspection Services**

Approval Engineer: **Xiangwen (Maggie) Wang**

for **DNV GL**

Meindert van Mierlo
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.

Job Id: **262.1-019544-2**
Certificate No: **TAD00000SG**

Product description

- Gate Valve, 3 1/16" 15,000 psi Magnum Hydraulic Gate Valve F.E.

Reference standards

- API 6A, 'Specification for Wellhead and Christmas Tree Equipment', 20th Edition
- NACE MR0175/ISO 15156, 'Petroleum and Natural Gas Industries – Material for Use in H_2S – Containing Environments in Oil and Gas Production, 2nd Edition

Application/Limitation

- Max. Working Pressure: 15,000 psi
- Max. Hyd. Working Pressure: 3,000 psi
- Min. Design Temperature: -20 °F (-50 °F, WM1900H(LX)-6NL only)
- Max. Design Temperature: 250 °F / 350 °F
- Service: H_2S
- API 6A Material Class: DD/EE
- API 6A PSL: 3 / 3G
- API 6A PR: 2 (1, WM1900H(LX)-6NL only)

Note: DNV GL surveyor to check materials used in each project for Material Class trim.

Type Approval documentation

WE5-H	3	Valve, Gate 3 1/16 15,000 psi Magnum Hydraulic F.E.(High Temp)	Assy.
WM1902H	3	Balance Rod	4.6.41/4.6.15
WM1904H	1	Locking Screw	4.6.22
WM1905H	2	Flange Nut	4.6.11
WM1907H	2	Piston	4.6.11
WM1909H	2	Stem Protector	4.6.50
WM1910H	1	Packing Gland	4.6.50
CM1914H	1	Bonnet	4.6.11
WM1917	3	Bonnet Gasket	4.6.13
WM1918H	5	Stem	4.6.6/15/60/111/119
CM1919H	4	Gate	4.6.133/136/138
CM1926H-2	1	Body Assembly	Assy.
CM1926HA	0	Body	4.6.11
WM1926HEF-A	0	Plug, Botom	4.6.10
WM1929H	0	Cylinder	4.6.10
WM1921	12	Seat	4.6.135/136/140/144
WM1924	14	Seat Retainer	4.6. 6/15/15.1/60
WM1924	14	Seat Retainer	4.6.111/119(For 250 °F)
WE5-HV	0	Valve, Gate 3 1/16" 15K Magum Hydraulic F.E.	Assy.
SW3173	4	Skirted Seat Assembly	Assy.
SW3173A	1	Skirted Seat	4.6.140
SW3074	7	Seat Retainer	4.6.119
WE5-HN	0	Valve Assembly 3 1/16" 15K Magnum Hydraulic	Assy.

WE5-HS	3	Valve Assembly 3 1/16” 15K Magnum Hydraulic F.E. With Limit Switch	Assy.
M1461-9	1	Stem Protector	4.6.50
WE5-HY	0	Valve, Gate Assembly 3 1/16” 15K Magnum Hyd. F.E. W/ Proximity Switch	Assy.
*WM1900H(PH)	7	BOM. Valve, Gate 3 1/16 15,000 psi Magnum Hydraulic F.E.(High Temp)	-
*WM1900H(PH)T (EE-NL)	4	BOM. Valve, Gate 3 1/16 15,000 psi Magnum Hydraulic F.E.(High Temp)	-
*WM1900H(PH)-NL	1	BOM. Valve, Gate 3 1/16 15,000 psi Magnum Hydraulic F.E.(High Temp)	-
*WM1900H(SK)-4	0	BOM. Valve, Gate 3 1/16” 15K Magum Hydraulic F.E.	-
*M4940-B	0	BOM. Valve Assembly 3 1/16” 15K Magnum Hydraulic	-
*M5587	3	BOM. Valve Assembly 3 1/16” 15K Magnum Hydraulic F.E. With Limit Switch	-
*WM1900HY(PH)T(EE-NL)	0	BOM. Valve, Gate Assembly 3 1/16” 15K Magnum Hyd. F.E. W/ Proximity Switch	-
* WM1900H(LX)-6NL	5	BOM. Valve, Gate Assembly 3 1/16” 15K Magum Hydraulic F.E.	-

*BOMs/Part Numbers for information only

4.6.6	7	Inconel 718	120 ksi	
4.6.10	11	Low Alloy Steel	60 ksi	
4.6.11	16	Low Alloy Steel	75 ksi	
4.6.13	3	316 S.S.	30 ksi	
4.6.14	6	410 S.S.	75 ksi	
4.6.15	11	17-4 S.S.	105 ksi	20 ft-lbf
4.6.15.1	0	17-4 PH S.S.	115 ksi	20 ft-lbf
4.6.18	7	A193/A194 Bolting	105 ksi	
4.6.22	5	4140 Commercial Heat Treat	110 ksi	
4.6.50	2	Low Carbon Steel	60 ksi	20 ft-lbf
4.6.60	6	Inconel 725	120 ksi	20 ft-lbf
4.6.111	1	Low Alloy Steel	85 ksi	20 ft-lbf
4.6.119	2	410 S.S.	85 ksi	20 ft-lbf
4.6.133	1	AISI 4140	50 ksi	20 ft-lbf
4.6.135	1	AISI 4140	70 ksi	20 ft-lbf
4.6.136	1	718 Inconel	100 ksi	20 ft-lbf
4.6.138	1	AISI 410 SS	50 ksi	20 ft-lbf
4.6.140	1	AISI 410 SS	70 ksi	20 ft-lbf

Test carried out

1. PR-2 Test Report: DOC#ENG.TEST.MAG.011 REV.0

Marking of product

For traceability the following marking is to be carried out on each product:

1. Serial No.
2. Manufacturer's name or trademark.
3. Marking shall be in accordance with DNV-OS-E101 Ch. 2 Sec.7 A300 and requirements of API 6A.

Periodical assessment

For retention of the Type Approval, DNV GL's surveyor shall perform a survey every second year in accordance with DNV GL's Standard of Certification No. 1.2.

Other conditions/comments

1. Procedures related to testing, welding, NDT, and other quality control requirements are to be reviewed/approved by DNV GL's local surveyor.
2. DNV GL ref.: PP124258-75/A0426821

END OF CERTIFICATE