

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Well Testing Equipment**

with type designation(s)
Flowhead 7 3/8"-10K

Issued to

Worldwide Oilfield Machine, Inc.
Houston TX, USA
Pune, India

is found to comply with
DNVGL-OS-E101 – Drilling facilities, Edition January 2018
DNVGL-SI-0166 - Verification for Compliance with Norwegian shelf regulations - Ch.2 Sec.7
DRILL(N), July 2015

Application :

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

This Certificate is a renewal of D-5235.

Issued at **Houston** on **2018-04-09**

This Certificate is valid until **2023-04-08**.

DNV GL local station: **Houston, Approval CMC**

for **DNV GL**

Approval Engineer: **Xiangwen Maggie Wang**

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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.



Product description

- 7 3/8" – 10K Flowhead

Reference standards/codes

- API 6A, 'Specification for Wellhead and Christmas Tree Equipment', 20th Edition
- NACE MR0175/ISO 15156, 'Petroleum and Natural Gas Industries – Material for Use in H₂S – Containing Environments in Oil and Gas Production, 3rd Edition
- DNV's Standard for Certification No. 2.22 "Lifting Appliance", 2011 Edition

Application/Limitation

- Max. Working Pressure: 10,000 psi
- Min. Design Temperature: -20 °F (-4 °F for lifting flowhead)
- Max. Design Temperature: 350 °F
- Service: H₂S
- API 6A Material Class: DD-NL
- API 6A PSL: 3/3G
- API 6A PR: 2
- Max. Tensile Load @ 350 °F & 10,000 psi W.P.: 370,000 lb_f
- Max. Tensile Load @ 350 °F & 0 psi W.P.: 1,500,000 lb_f
- Max. Tensile Load @ 250 °F & 10,000 psi W.P.: 750,000 lb_f
- Max. Tensile Load @ 250 °F & 0 psi W.P.: 1,500,000 lb_f
- Max. Gross Weight: 28,000 lbs

Type Approval documentation

Note: Other part numbers or updated revisions may be acceptable under this Certificate provided critical aspects of the design remain the same. Changes shall be documented and approved (via Engineering Change Notice or similar) by the Manufacturer's Engineering and/or Quality department as appropriate. DNV GL's local surveyor shall verify the change before issuance of Product Certificate.

A182 Gr. F22 Cl. 1

Note: see material specifications for additional material requirements.

Tests carried out

1. Test Acceptance Certificate, PR2 7 3/8" 10K Gate Valve, S/N: A-24882 P/N: M0899
2. Pressure Test Certificate for M5248 dated Aug. 5th 2013

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 DNVGL-OS-E101 and requirements of API 6A.

Certificate Retention Survey

For retention of the Type Approval, DNV GL's surveyor shall perform periodical assessment after 2 years and after 3.5 years in accordance with DNV GL's Class Programme DNVGL-CP-0338, Section 4.

Other conditions/comments

- Procedures related to testing, welding, NDT, and other quality control requirements are to be reviewed/approved by DNV GL's local surveyor.
- Valves, P/Ns: M5248-1A & M5248-8 are certified under TAD000007G.

Job Id: **262.1-015947-3**
Certificate No: **TAD00000X9**

- Valves, P/N: M5248-1B are certified under TAC D-5921.
- Swivels, P/N: AS2798 & AS2871 are certified under TAD00000R3.
- Check valves, P/N: M3671 are certified under TAD00000R3.
- Basekts, P/N: M0892C are certified under TAC S-6760.
- Approval for sling set is not included in this TAC and they shall be certified separately.
- DNV GL ref.: A0506005

END OF CERTIFICATE