



Certificate no.:
TAD00001R1

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Well Testing Equipment**

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

issued to

Worldwide Oilfield Machine, Inc.
Houston, TX, USA

is found to comply with

DNV-OS-E101 – Drilling facilities, Edition July 2024

DNV statutory interpretations DNV-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2021

Application:

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

Issued at **Houston** on **2024-11-26**

This Certificate is valid until **2029-11-25**.

for **DNV**

DNV local unit: **Certification & Inspection Services**

Approval Engineer: **Xiangwen Maggie Wang**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

7 3/8"-10,000 psi W.P. Flowhead Assembly, H₂S w/Integral Master Valve, PN: M3435

Reference standards

- API 6A, *Specification for Wellhead and Tree Equipment*, 21st Edition
- NACE MR0175/ISO 15156, *Petroleum and Natural Gas Industries – Materials for Use in H₂S – Containing Environments in Oil and Gas Production*, 4th Edition

Application/Limitation

- | | | |
|------------------------------|---|---|
| • Maximum Working Pressure | : | 10,000 psi |
| • Test Pressure, Assembly | : | 10,000 psi |
| • Test Pressure, Component | : | 15,000 psi |
| • Minimum Design Temperature | : | -20 °F |
| • Maximum Design Temperature | : | 250 °F |
| • Material Class | : | DD-0.5 |
| • Product Service Level | : | 3 |
| • Performance Rating | : | PR2F (for valves) |
| • Service | : | H ₂ S |
| • Maximum Axial Load | : | 1,000,000 lbs @ 0 psi
560,000 lbs @ 10,000 psi |
| • Application | : | Surface Well Testing |

Type Approval documentation

Test carried out

Pressure test certificates witnessed by DNV

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. Additional Marking at manufacturer's discretion.

Periodical assessment

For retention of the Type Approval, DNV's surveyor shall perform periodical assessment after 2 years (+/- 90 days) and after 3.5 years (+/- 90 days) in accordance with DNV's Class Programme DNV-CP-0338, Section 4.

Other conditions/comments

1. Procedures related to testing, welding, NDT, and other quality control requirements are to be reviewed/approved by DNV's local surveyor.
2. Clamp (P/N: M6844A-9, SW-4279, M2570-5 & WGC552) are to be certified separately. If purchased, they shall come with DNV Product Certificates.
3. Valves (P/Ns: M2545-A, M2545-B, M3435-F & M3435-D) are to be certified separately.
4. DNV ref.: A1607566.

END OF CERTIFICATE