Certificate No:
TAD00001F0

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valve

with type designation(s)
Adjustable Chokes, 3 1/16"-15K Type MPX 40D

Issued to
National Oilwell Varco, L.P. - Rig Technologies Division - Creekmont
Houston, TX, USA

is found to comply with
DNV-OS-E101 – Drilling facilities, Edition July 2021
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 **2021-08-18**
This Certificate is valid until **2026-08-17**.
DNV local station: **Houston, Approval CMC**

Approval Engineer: **Xiangwen Maggie Wang**

for **DNV**

Mark Miser
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.

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 300,000 USD.

Product description

- 3-1/16" Adjustable Choke, Type MPX 40D 3-15M Inlet X 3-10M Outlet, Clad Ring Grooves SSTC Drilling Trim, Manually Operated, P/N: 18046874-002
- 3-1/16" Hydraulic Choke, Type MPX 40D 3-15M Inlet X 3-10M Outlet, Linear Hydraulic Actuator, P/N: 18046877-002

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 H_2S – Containing Environments in Oil and Gas Production', 3rd Edition

Application/Limitation

- Max. Working Pressure: 10,000 / 15,000 psi
- Test Pressure: 15,000 / 22,500 psi
- Design Temperature: -20 °F to 350 °F
- Max. Working Pressure (Actuator): 3,000 psi
- Test Pressure (Actuator): 4,500 psi
- Design Temperature (Actuator): -20 °F to 150 °F
- Service: H_2S
- Material Class: EE
- Product Specification Level: 3G
- Performance Requirement: API 6A PR2F

Type Approval documentation

Drawings:

Tests carried out

1. Doc. No. Rev 01, Engineering Report, ERPT - Mission products choke qual, test report for test procedure - D991003570-MAN-001. adjustable choke assy MPX-40i. manually operated type. -20F thru 350F. 15,000 psi Nitrogen Gas / Hydrostatic.
2. Doc. No. VF661, Double Acting Actuator PR2 Test, Dated 03/06/2012

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 2.5 years in accordance with DNV's Class Programme DNVGL-CP-0338.

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. DNV ref.: A1058034.

END OF CERTIFICATE