Certificate No:
TAD00001GE

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valve

with type designation(s)
NV-4" ANTI-RECOIL VALVE ARV-0404-X-MH-4

Issued to
The Oilgear Company
Traverse City, MI, 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 **2022-07-12**
This Certificate is valid until **2027-07-11**.
DNV local station: **Houston, Approval CMC**

Approval Engineer: **Parna Deljo**

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
ARV-0404-X-MH-4, Proportional Anti-Recoil Valve for use on wire rope riser tensioners used for deep water drilling.

Reference Standards
- API Spec 6A, *Specification for Wellhead and Tree Equipment,* 21st Edition.

Application/Limitation

Design Parameter	Value	(Equivalent)
Minimum Design Temperature[1]	: -4˚F	(-20˚C)
Maximum Design Temperature[1]	: 122˚F	(50˚C)
Maximum Working Pressure[2]	: 3626 psi	(250 bar)
Hydrostatic Shell Test Pressure	: 5439 psi	(375 bar)
API 6A Material Class	: BB	
API 6A PSL	: PSL 1	
Service	: Standard	

Note 1: The Design Temperature Rating values are not a designated rating condition of reference standard API 6A, but the values are justified by the manufacturer in the design package listed under "Calculations."

Note 2: The parameter "Maximum Working Pressure" is indicated in lieu of "Rated Working Pressure" because the value is not a designated pressure rating service condition of reference standard API 6A.

Type Approval documentation

Tests carried out

Doc. No.	Date	Title
2022TC3878	2022-06-20	ARV-0404-X-MH-4 NV-4" ANTI-RECOIL VALVE TEST PROCEDURE #336 'C'

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 the manufacturer's discretion

Periodical assessment
Periodical assessments for type approvals will be required after two years (+/- 90 days) and after three-and-a-half years (+/- 90 days) in accordance with 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. When DNV product Certification is required, each product is to be surveyed during fabrication in accordance with the requirements for Category I equipment as defined in DNV's Offshore Standard DNV-OS-E101.
3. DNV ref: A1212003

Revisions

Rev	Issued Date	Description	Revised by
00	2015-09-25	Initial Release (Certification No: D-6188)	J. Huang
01	2022-07-12	TAC D-6188 Renewal	P. Deljo

END OF CERTIFICATION