DNV·GL

Certificate No:
TAD000010X
File No:
523.85
Job Id:
262.1-008486-4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valve

with type designation(s)
ARV-0404-X-05

Issued to
The Oilgear Company
Traverse City, MI, USA

is found to comply with
DNV-OS-E101 Drilling Plant October 2013
DNVGL-SI-0166 - Verification for Compliance with Norwegian shelf regulations - Ch.2 Sec.7 DRILL(N), July 2015

Application :

See Design Limitations on Pg. 2

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

This Certificate is valid until **2023-06-29**.

Issued at **Houston** on **2018-06-30**

DNV GL local station: **Houston - Systems & Components**

for **DNV GL**

Approval Engineer: **Srujanbabu Sridharala**

Meindert van Mierlo
Team Lead

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.
If any person suffers loss or damage which is proven to have been caused by any negligent act or omission of the Society, then the Society shall pay compensation to such person for his proven direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question. The maximum compensation shall never exceed USD 2 million.
In this provision the "Society" shall mean DNV GL AS as well as all its direct and indirect owners, affiliates, subsidiaries, directors, officers, employees, agents and any other person or entity acting on behalf of DNV GL AS.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Certificate No: **TAD000010X**
File No: **523.85**
Job Id: **262.1-008486-4**

References

Roark and Young's, 6th Edition, '*Formulas for Stress and Strain*'
API Spec. 6A, '*Specification for Wellhead and Christmas Tree Equipment'* 20th Ed.
ASME Sect. VIII Div. 2, 2004 Edition with Addendum 2005, "Boiler & Pressure Vessel Code"

Product Description

The Proportional anti-recoil valves are intended for use on wire rope riser tensioners used for deep water drilling. All electrical components on the valves are explosion-proof rated.

Application / Limitation

Model ARV-0404-X-05

Maximum Design Temperature	:	50^0C/122^0F
Minimum Design Temperature	:	-20^0C/ -4^0F
Maximum Working Pressure	:	3000 psi
Test Pressure	:	4500
Service	:	Standard
API Monogram	:	No
API PSL Level	:	PSL1 (see comments)
API Material Class	:	BB
API PR Level	:	PR1

Type Approval Documentation

Drawings:

Dwg. No.	Rev.	Description
Model ARV-0404-X-05		

Design Calculations

Doc No.	Rev.	Description

Other Documentation

Doc No.	Rev.	Date	Description

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 option

Periodic Assessment

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

Other Conditions/Comments

Procedures related to testing, welding, NDT, material traceability etc and other quality control issures are to be reviewed/approved by DNV's local surveyor
This Type approval supercedes Type approval certificate number D-5651

END OF CERTIFICATE