

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Valves**

with type designation(s)
3-8K RX Reset Relief Valves
Part Numbers: See Page 2

Issued to

National Oilwell Varco
Houston, Texas, USA

is found to comply with
DNVGL-OS-E101 – Drilling facilities, Edition January 2018
DNVGL-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2017

Application :

See Page 2

Issued at **Houston, TX** on **2018-02-26**

This Certificate is valid until **2023-02-25**.

DNV GL local station: **Approval CMC**

for **DNV GL**

Approval Engineer: **Kevin Bui**

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.



Job Id: **262.1-015140-2**
Certificate No: **TAD00000WN**

Design Codes/Standards Used as References

- API 6A, Specification for Wellhead & Christmas Tree Equipment, 20th Ed, Where Applicable
- API 7K, Specification for Drilling & Well Servicing Equipment, 6th Ed
- NACE MR0175, Materials for Use in H₂S-containing Environments in Oil & Gas Production, 2015 Ed

Product Descriptions

<u>Part No./Rev.</u>	<u>Description</u>
36000-NF/CDS/5	8K RX Reset Relief Valve, 3.5 OD BW x 3.5 OD BW
36000-02/CDS-2.56SPI/5	8K RX Reset Relief Valve, 3-1502 x 2.56-10K
36000-02-51/5	8K RX Reset Relief Valve, 3-1502 x 3-1502

Application/Limitation

<u>Design Parameter</u>	<u>Value</u>
Nom Size	3 in
Max Working Pressure	8,000 psi
Shell Test Pressure	12,000 psi
Temperature Class	P+U (-20 to 250 °F)
Material Class	DD (Sour)
Product Specification Level	3
Performance Requirement	1

Type Approval Documentation

- Drawings:

<u>Drawing No./Rev.</u>	<u>Title</u>
	8K RX Reset Relief Valve, 3.5 OD BW x 3.5 OD BW
	8K RX Reset Relief Valve, 3-1502 x 2.56-10K
	8K RX Reset Relief Valve, 3-1502 x 3-1502
	Adapter, 3-1502F x 3.5 OD BW
	Adapter, 3-1502M x 3.5 OD BW
	Adapter, RX Flange x 2.56-10K
	Adapter, RX Flange x 3-1502F
	Adapter, RX Flange x 3-1502M
	Body
	Bonnet
	Bushing
	Insert
	Nut 3-1502
	Nut Retainer 3-1502
	Piston
	Piston Cap
	Piston Seal Retainer
	Spring
	Sub

- Calculations:

See Design Package.

- Material Specifications:

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<u>Title</u>	<u>Material</u>	<u>Min YS(ksi)</u>	<u>Min Avg CVN(ft.lb)</u>
Adapter, 3-1502F x 3.5 OD BW			
Adapter, 3-1502M x 3.5 OD BW			
Adapter, RX Flange x 2.56-10K			
Adapter, RX Flange x 3-1502F			
Adapter, RX Flange x 3-1502M			
Body			
Bonnet			
Bonnet Bolt 5/8-11			
Bushing			
Insert			
Nut 3-1502			
Nut Retainer 3-1502			
Piston			
Piston Cap			
Piston Seal Retainer			
RX Flange Bolt 7/8-9			
Spring, 183K Min TS			
Sub			

These charpy V-notch impact values are in longitudinal direction at minimum design temperature. See material specifications for additional requirements. See BOM's for alternative materials.

- Notes: Other part numbers or revisions may be acceptable under this TAC provided critical aspects of the design remain the same. Changes shall be documented and approved by NOV Engineering and Quality. DNV GL Surveyor shall verify these changes before issuance of Product Certificates.

Test Reports

<u>Document No./Rev.</u>	<u>Title</u>
PTR/2015-10-15	FAT, 3-8K Relief Valve, PN 36000-02-51, SN 2169816-01
PTR/2013-05-09	FAT, 3-8K Relief Valve, PN 36000-NF/CDS, SN 1411878-01

Marking of Products

- For traceability to TAC, products and data books shall be marked at least with manufacturer name, part number and serial number.

Periodical Assessments

- For retention of TAC, periodical assessments shall be required after 2 years +/- 90 days and after 3.5 years +/- 90 days per DNVGL-CP-0338.

Fabrication Procedures

- Procedures related to testing, NDE, welding, marking, etc. shall be reviewed by DNV GL Surveyor.

Project Information

- Project No. A0496602, Attn. Daryl Weyand.
- This TAC replaces D-4980.