DNV·GL

Certificate No:
TAD000013U

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Accumulators

with type designation(s)
Accumulator, Piston Style, Stainless Steel Body, 1 Qt. Capacity

Issued to
Tobul Accumulator Incorporated
Bamberg, SC, 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 2018

Application :

See Page 2.

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

Issued at **Houston** on **2019-07-10**
This Certificate is valid until **2024-07-09**.
DNV GL local station: **Certification & Inspection Services**

Approval Engineer: **M. Kevin Mandeville Jr.**

for **DNV GL**

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.

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Job Id: **262.1-031176-1**
Certificate No: **TAD000013U**

The following design codes/standards were used as a reference:

ASME *Boiler and Pressure Vessel Code*, Section VIII, Div. 1, 2017 Edition
ASME B1.1, *Unified Inch Screw Threads (UN and UNR Thread Form)*, 2008 Edition
ASME B1.9, *Buttress Inch Screw Threads 7°/45° Form with 0.6 Pitch Basic Height of Thread Engagement,* 2007 Edition

Product description

Piston Style Accumulator, Stainless steel body, 1 Quart capacity

Application/Limitation

Design Parameter	Value	Equivalent
Max. Internal Working Pressure	7,500 psi	
Internal Hydrostatic Test Pressure	11,250 psi	
Max External Working Pressure†	9,558 psi	
Design Temperature	200F	
Minimum Design Metal Temperature	-20F	
Corrosion Allowance	0 in	
ASME Code Stamp "U"	Yes	

†Note: Accumulator is not rated for external gauge pressure. This statement does not, however, prohibit subsea applications.

Type Approval documentation

Additional Manufacturing Location

Tobul Accumulator Incorporated
7540 Fairview Street
Houston, TX 77041

Tests carried out

Type Testing carried out on 2019-07-02 on Serial No. 390353, under DNV GL job A0705933.

Marking of product

For traceability to this Type Approval Certificate, the products are to be marked as follows:

1. Part and Serial Number
2. Manufacturer's name and trademark
3. Additional markings at the manufacturer's discretion.

Periodical assessment

For the retention of the Type Approval Certificate, DNV GL's surveyor shall perform a survey after two and three-and-a-half years, in accordance with DNV GL's Class Program for Type Approval, DNVGL-CP-0338.

Other Conditions/Comments

- Cylinder Castings are to be processed per ASME BPVC Section VIII, Div. 1, Appendix 7 and 8 for a quality factor of 85%.
- DNV GL Ref. Project No: A0661945

END OF CERTIFICATE