



Certificate No:
TAD00001JN

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Accumulators

with type designation(s)
**Accumulators, Piston, 5000 psi, 35 Gallon Capacity, Stainless Steel Body,
Dwg. No. 147A50-280-C111, Rev. 01**

Issued to

**Tobul Accumulator Incorporated
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 :

See Page 2

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

Issued at **Houston** on **2023-08-15**

This Certificate is valid until **2028-08-14**.

for **DNV**

DNV local unit: **Houston Offshore Services**

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

**Brandon D Caraway
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.



Form code: TA 251

Revision: 2022-12

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Product description

ASME *Boiler and Pressure Vessel Code*, Section VIII, Division 1, 2021 Edition
ASME B1.1, *Unified Inch Screw Threads (UN and UNR Thread Form)*, 2008 Reaffirmed Edition,
ASME B1.9, *Buttress Inch Screw Threads 7°/45° Form with 0.6 Pitch Basic Height of Thread Engagement*,
2007 Reaffirmed Edition

Product description

Piston Type Accumulator, 35 Gallon Capacity, Model No. 147A50-280-C111

Application/Limitation

Design Parameter	Value	Equivalent
Max. Internal Working Pressure	5,000 psi	344 bar
Internal Hydrostatic Test Pressure	7500 psi	517 bar
Design Temperature	200°F	93°C
Minimum Design Temperature	-20°F	-29°C
Corrosion Allowance	0in	0mm
ASME Code Stamp 'U'	Yes	

Type Approval documentation

Tests carried out

Testing performed on SN 402382, on 2023-08-10.

Marking of product

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

1. Part and Serial Number
2. Manufacturer's name and trademark
3. Additional marking at manufacturer's option
4. As required in Paragraph UG-116 of ASME Section VIII Division 1, 2021 Edition

Periodical assessment

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

Other conditions/comments

- Cylinder Castings are to be processed per ASME BPVC Section VIII, Division 1, Appendix 7 and 8, for a quality factor of 90% (cylinder) and 85% (end caps).
- DNV Ref. Project Nos. A1334752.