Certificate No:
TAD00001HF

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Accumulators

with type designation(s)
Accumulator, Piston Style, Stainless Steel
6,500 PSI MAWP, 100 Gal. Capacity

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 **2022-12-20**
This Certificate is valid until **2027-12-19**.
DNV local unit: **Houston Offshore Services**

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

for **DNV**

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.

The following codes/standards were used as a reference:
ASME *Boiler and Pressure Vessel Code*, Section VIII, Division 2, 2021 Ed.

Product description
Piston Style Accumulator, Model 223A65-800-F057, Stainless Steel body, 100 gallon capacity, 6,500 psi

Application/Limitation

Design Parameter	Value	Equivalent
Max Internal Working Pressure†	6,500 psi	448 bar
Hydrostatic Test Pressure	9,750 psi	672 bar
Minimum Design Temperature	-20°F	-29°C
Design Temperature @MAWP	200°F	93°C
Corrosion Allowance	0.0 in	0.0 mm
Fatigue Life	101 cycles max	
Service	Standard	

†Note: These accumulators are not rated for external gage pressure. This statement does not, however, prevent subsea applications.

Type Approval documentation

Tests carried out
Type test report for serial numbers 400401-400405 on 2022-12-06.

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

Certificate Retention Survey
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 Approvals, DNV-CP-0338.

Other conditions/comments
- Cylinder Castings and Retaining Rings are to be produced per ASME BPVC Section VIII, Division 2, for a quality factor of 100%.
- DNV Ref. Project No. A1266991

END OF CERTIFICATE