

TYPE APPROVAL CERTIFICATE

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

with type designation(s)

7500 psi WP Subsea H.P Bladder Accumulator (Model #FCHB803397-A)

Issued to

**Parker Hannifin EU, Lux, Switz Branch Etoy (Deeside)
Deeside, Clwyd, United Kingdom**

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.****This Type Approval Certificate is 3 pages long and replaces D-4214, as issued on 2011-06-22.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Houston** on **2018-09-05**This Certificate is valid until **2023-09-04**.for **DNV GL**DNV GL local station: **Liverpool**Approval Engineer: **M. Kevin Mandeville Jr.**

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: **262.1-011824-2**
Certificate No: **TAD0000103**

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

ASME Boiler and Pressure Vessel Code, Section VIII, Div. 1, 2017 Ed.

Product description

BLADDER TYPE ACCUMULATOR

7500 psi WP Subsea H.P Bladder Accumulator (Model #FCHB803397-A)

Application/Limitation

Design Parameter	Value	Equivalent
Maximum Allowable Working Pressure	7,500 psi	517 bar
Hydrostatic Test Pressure	11,250 psi	776 bar
Design Temperature	122°F	50°C
Minimum Design Temperature	14°F	-10°C
Corrosion Allowance (internal & external)	0 in	0 mm
Type of Service	Standard	

Note: Not rated for external gage pressure. However, this does not prevent subsea use, provided that the internal pressure remains above the external pressure.

Type Approval documentation

Tests carried out

Hydrostatic Test Procedure #FC320 Rev. 3 dated 12/21/10 for Accumulator Model #FCHB803397-A.

No new type testing required for this renewal.

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Marking of product

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

1. Manufacturer's name and trademark
2. Serial Number
3. Additional marking at manufacturer's option
4. As required in Paragraph UG-116 of ASME BPVC, Section VIII, Div. 1, 2017 Edition

Periodical assessment

For retention of the Type Approval Certificate, a DNV GL surveyor shall perform a periodical assessment after 2 and 3.5 years from the date of issuance per the DNV GL Class Programme for Type Approvals, DNVGL-CP-0338.

Other Comments/Conditions

1. DNV GL Project Reference: A0563141

END OF CERTIFICATE