DNV·GL

Certificate No:
TAD00000U5

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Accumulators

with type designation(s)
Gas Cylinder/Bottle (Subsea & Non-Subsea Applicaitons)
Model No. B10E10004X12Q (43.3 Gallon Capacity)

Issued to
Parker Hannifin Corp. dba Accumulator & Cooler Division
Machesney Park IL, United States

is found to comply with
DNVGL-OS-E101 – Drilling plant, Edition July 2015
DNVGL-SI-0166 - Verification for Compliance with Norwegian shelf regulations - Ch.2 Sec.7 DRILL(N), July 2015

Application :

See Page 2.
This Type Approval Certificate is 3 pages long and replaces D-5103, as issued 2013-06-06.

Issued at **Houston** on **2017-09-29**
This Certificate is valid until **2022-09-28**.
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: **262.1-027086-1**
Certificate No: **TAD00000U5**

The following design codes and standards were used as reference:

EN-14359:2006+A1, *Gas Loaded Accumulators for Fluid Power Applications,* 2006 Edition
EN-13445-3, *Unfired Pressure Vessels*, 2014 Edition
ASME B1.9, *Buttress Inch Screw Threads 7°/45° Form with 0.6 Pitch Height of Thread Engagement*, 1985 Edition

Product description

Gas Cylinder/Bottle (Subsea & Non-Subsea Application)
Model No. B10E10004X12Q (43.3. Gallon Capacity)

Application/Limitation

Design Parameter	Value	Equivalent
Maximum Allowable Working Pressure	4,700psi	324 bar
Hydrostatic Test Pressure	7,050psi	486 bar
Maximum Allowable External Working Pressure†	5,192psi (ref.)	358 bar (ref.)
Design Temperature	185°F	85°C
Minimum Design Metal Temperature	14°F	-10°C
Corrosion Allowance	0in	0mm

†Note: Accumulator is not rated for external gage pressure. This statement does not, however, prevent the use of these accumulators in subsea applications.

Type Approval documentation

Tests carried out

No type test renewal required for this revision.

Marking of product

For traceability, the following markings are to be carried out on each product:

1. Serial No.
2. Manufacturer's Name and/or Trademark
3. Additional marking at the manufacturer's discretion
4. As required in Section 7.7 of EN-14359

Certificate Retention Survey

For retention of the type approval certificate, DNV GL's surveyor shall perform a survey every second year in accordance with DNV GL's Type Approval Class Program, DNVGL-CP-0338.

Other conditions/comments

1. DNV GL Ref. Project No. A0447889

END OF CERTIFICATE