DNV·GL

Certificate No:
TAD00000BM

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Accumulators

with type designation(s)
Accumulator, Model A2.75L0058X010K (0.25 Gallon Capacity)
Accumulator, Model A2.75L0058X011K (0.25 Gallon Capacity)
Accumulator, Model A5.5L0578X010K (2.5 Gallon Capacity)
Accumulator, Model A5.5L0578X011K (2.5 Gallon Capacity)

Issued to
Parker Hannifin Corp.
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, Edition July 2015

Application :

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This Type Approval Certificate is 4 pages long and replaces D-4378, issued on 2012-02-21.

This Certificate is valid until **2021-03-22**.

Issued at **Houston** on **2016-03-23**

for **DNV GL**

DNV GL local station: **Approval CMC – Houston**

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

Christian Nilsen
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:
Certificate No: **TAD00000BM**

The following design codes and Standards were used as references

ASME *Boiler & Pressure Vessel Code,* Section VIII Division 1, 2015 Edition
ASME B1.1, *Unified Inch Screw Threads (UN and UNR Thread Form)*, 1989 Edition

Product description

Accumulator, Model No. A2.75L0058X010K (0.25 Gallon Capacity)
Accumulator, Model No. A2.75L0058X011K (0.25 Gallon Capacity)
Accumulator, Model No. A5.5L0578X010K (2.5 Gallon Capacity)
Accumulator, Model No. A5.5L0578X011K (2.5 Gallon Capacity)

Application/Limitation

Surface and Subsea Applications

Design Parameter	Value	Equivalent
Maximum Allowable Working Pressure	6,000 psi (Model A2.75L0058X010K & A5.5L0578X010K)	413.6 bar
	7,500 psi (Model A2.75L0058X011K & A5.5L0578X011K)	517.0 bar
Internal Hydrostatic Test Pressure	9,000 psi (Model A2.75L0058X010K & A5.5L0578X010K)	620.4 bar
	11,250 psi (Model A2.75L0058X011K & A5.5L0578X011K)	775.5 bar
Maximum Design Temperature	165ºF	73.9°C
Minimum Design Temperature	-4ºF	-20°C
Corrosion Allowance	Zero (internal & external)	
ASME Code Stamp 'U'	Yes	

Note: Accumulators are not rated for external gauge pressure. This statement does not, however, prevent subsea service.

Type Approval documentation

Marking of product

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

1. Part Number
2. Serial Number
3. Manufacturer's name and trademark

4. Additional marking at manufacturer's option

Certificate Retention Survey

For retention of the Type Approval, a DNV GL surveyor shall perform a survey every second year in accordance with DNV GL's Class Programme for Type Approvals, DNVGL-CP-0388, Section 4.

Other Conditions and Comments

- Hydrostatic test requirements can be waived for the end fittings when these are manufactured under surveillance through an appropriate quality control system and full traceability is imposed on the critical pressure components as per DNV GL fax, reference number OFF-0028-97, dated 1997-10-20. This waiver only applies to the accumulators when they are used per the scope of DNVGL-OS-E101 and will be part of a system with subsequent commissioning and/or operation testing.
- Cylinder Castings are to be processed per ASME BPVC Section VIII, Div. 1, Appendix 7 & 8, for an 85% Quality Factor.
- DNV GL Ref. Project No. PP153290

END OF CERTIFICATE