



CERTIFICATE NUMBER	22-2298046-PDA
EFFECTIVE DATE	13-Sep-2022
EXPIRY DATE	12-Sep-2027
ABS TECHNICAL OFFICE	Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

ROTH HYDRAULICS GMBH

located at

LAHNSTRASSE 34, , D-35216 BIEDENKOPF, Germany

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Accumulator, Bladder
Model: BLAK 10-330-22, BLAK 20-330-22, BLAK 24-330-22, BLAK 32-330-22, BLAK 42-330-22, BLAK 50-330-22
Endorsements:
Tier: 5 - Unit Certification Required

This Product Design Assessment (PDA) Certificate remains valid until 12/Sep/2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Dimitrios Nikolakis, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

ROTH HYDRAULICS GMBH

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Tier: 5 - Unit Certification Required

Product: Accumulator, Bladder

Model: BLAK 10-330-22, BLAK 20-330-22, BLAK 24-330-22, BLAK 32-330-22, BLAK 42-330-22,
BLAK 50-330-22

Endorsements:

Intended Service:

For installation in hydraulic and fluid power systems.

Description:

Seamless forged bladder type accumulators.

Capacity (liter): 10, 20, 24, 32, 42, 50

Shell thickness (mm): 8.35

Length (A), approx. (mm): 598; 908; 1043; 1428; 1568; 1943.

Material grade of shell/ connection bladder: 34CrMo4/ 42CrMo4

Rating:

Maximum allowable pressure (bar): 330

Test pressure (bar): 472

Working temperature range (°C): -15 to 80

Service Restriction:

1. Unit Certification is required for this product as per 4-1-1/Table 5 of the Marine Vessel Rules. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2. Each accumulator unit which may be isolated from the system is to be protected by its own relief valve or equivalent. Where a gas charging system is used, a relief valve is to be provided on the gas side of the accumulator in accordance with Section 4-6-7/3.5.4 of the Marine Vessel Rules.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Bladder accumulators are to be manufactured, tested and inspected in accordance with the applicable requirements of the design standard and to the satisfaction of the attending Surveyor.
3. Witnessed pressure testing is required in accordance with Section 4-4-1/7.11.2 of the Marine Vessel Rules and is not to be less than 1.3 times the maximum allowable working pressure or at such pressures as specified by the standard or code of compliance.

Notes/Drawing/Documentation:

See attachment

Terms of Validity:

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STANDARDS

ABS Rules:

2022 Rules for Condition of Classification: 1-1-4/7.7, 1-1-A3 and 1-1-A4, which covers the following:

2022 Rules for Building and Classing Marine Vessel Rules: 4-1-1/Table 5, 4-4-1/1.1, 4-4-1/1.5-1.9, 4-4-1/Tables 1, 2 & 3, 4-4-1A1, 4-6-7/3.5.4

2022 Rules for Conditions of Classification - Offshore Units and Structures: 1-1-A2, 1-1-A3, 1-1-4/9.7, which covers the following:

2022 Rules for Building and Classing Mobile Offshore Unit Rules: 6-1-5/Table 1, 2 & 3, 6-1-5

2022 Rules for Conditions of Classification – Steel Vessels for Service on Rivers and Intracoastal Waterways: 1-1-4/7.7, 1-1-A3 and A4 which covers the following:

2022 Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways: 4-3-8/1.11

National:

DIN EN 14359:2017-09

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA