

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Air Reservoir

with type designation(s)
Air receiver

Issued to

Römer GmbH
Wenden, Nordrhein-Westfalen, Germany

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.7 Pressure equipment

Application :

Air receiver(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature range: 0°C to 85°C

Design pressure: 16 bar

Sizes: 250L, 500L, 1000L, 1500L, 2000L

Issued at **Hamburg** on **2020-02-03**

This Certificate is valid until **2025-02-02**.

DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Stefan Wiemer**

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Harald Pauli
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.



Product description

Welded pressure vessel made from carbon steel, with cylindrical shell and dished ends. Outer diameter from 500 mm to 1100 mm, length of the body from 1160 mm to 2400 mm. For details of the air receivers (e. g. design data, materials or dimensions) see approved drawings (listed below in "Type Approval documentation").

Application/Limitation

The air receiver are approved according to DNV GL Rules Ship Pt.4 Ch.7 'Pressure Equipment' (edition January 2020), they are graded as pressure equipment class II (Pt.4 Ch.7 Sec.1 table 2). The joint efficiency is $v=0,85$, the corrosion allowance 1 mm (carbon steel).

All material used for pressurized parts shall be delivered with material certificates according to DNV GL rules ship Pt.4 Ch.7 Sec.1 Table 6. The material shall be delivered by a manufacturer holding a valid certificate according to DNV GL CP-0346 'DNV GL approval of manufacturing scheme'.

Manufacturing, workmanship and testing shall be done according to DNV GL Rules Pt.4 Ch.7 Sec.7.

Each air receiver manufactured to this type approval is to be:

- Constructionally checked and hydraulic pressure tested to minimum 1.5 x design pressure,
- Certified by DNV GL and delivered with a product certificate.

Type Approval documentation

Marking of product

For traceability to this type approval the products are at least to be marked with:

- the name and domicile of the manufacturer,
- the manufacturer's type designation and serial number,
- the year of manufacture,
- the design pressure,
- the design temperature in °C,
- the hydraulic test pressure, and
- DNV GL's identifying mark.

Job Id: **262.1-009495-4**
Certificate No: **TAP0000211**

Periodical assessment

The objective of the periodical assessment is to verify that the conditions for the type approval (TA) have not been altered.

The main scope of the periodical assessment will normally include:

- verification of the TA applicant's production and quality system w.r.t. ensuring continued consistent production of the TA products at the TA applicant's own premises and at other companies that are given the responsibility for manufacturing of the products
- review of TA documentation and that this is still used as basis for the production
- review of possible changes in the design, the materials and the performance of the product
- verification of the product marking

For retention of the TA certificate in its validity period the periodical assessments will be carried out every second year.

Unscheduled assessments for retention of the certificate may be carried out when there is reason to believe that the type approval applicant has not adhered to the obligations stipulated in the type approval certificate.

END OF CERTIFICATE