

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Air Reservoir

with type designation(s)
30L - 3500L

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 :

Starting Air Receivers approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Temperature range: 0°C to +65°C
Design pressure: 33bar
Sizes: 30-160L, 120-540L, 400-1000L, 625-2000L, 1800-3500L

This Certificate is valid until **2021-09-12**.

Issued at **Hamburg** on **2016-09-13**

DNV GL local station: **Essen**

Approval Engineer: **Stefan Wiemer**

for **DNV GL**

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 vessels with an outer diameter of 323,9mm, 480mm, 650mm, 800mm, or 900mm. Design details and materials see approved drawings,
- Approved according to DNVGL rules for classification - Ships Pt.4 Ch.7 (October 2015),
- This DNV GL type approval replaces the previous GL design approval 12980-11 HH (valid until 2016-02-01) and the previous DNV type approval P-13971 (valid until 2016-06-30).

Application/Limitation

- The starting air receivers are graded as pressure equipment class I according to DNVGL rules for classification - Ships Pt.4 Ch.7 Sec.1 Table 2,
- All used material shall be delivered with material certificates according to DNV GL rules for classification - Ships Pt.4 Ch.7 Sec.1 Table 5,
- Each starting air receiver is to be:
 - Hydraulic pressure tested to minimum 1.5 x design pressure,
 - Certified by DNV GL and delivered with a DNV GL product certificate.

Type Approval documentation

Marking of product

For traceability to this type approval the starting air receivers are at least to be marked with:

- a. Name and domicile of the manufacturer
- b. Manufacturer's type designation and serial number
- c. Year of manufacture
- d. Design pressure
- e. Design temperature(s) in °C
- f. Hydraulic test pressure
- g. DNV GL's identifying mark

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 bi-yearly.

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