Certificate no.:
TAP00002ZK

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Air Reservoir

with type designation(s)
VES0011274

issued to
A.S.T.R.A. REFRIGERANTI S.r.l. - AIR COM Plant
San Pietro Mosezzo, NO, Italy

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

Application:

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Temperature range:	**-7.7°C to +80°C**
Design pressure:	**11 bar**
Sizes:	**Ø550**

Issued at **Høvik** on **2025-02-06**

This Certificate is valid until **2030-02-05**.

for **DNV**

DNV local unit: **Italy/Malta CMC**

Approval Engineer: **Tobias Berntsen**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Vessel main data:

VES0011274
Designed to DNV Ship Rules Pt.4 Ch.7, Class II and ASME VII Div 1.
Nominal diameter: 550 mm
Shell thickness: 5 mm
Minimum head thickness: 4.5 mm

Materials:

Shell and ends – P295GH according to EN 10028-2.
Nozzles – ASTM A105, ASTM 106 Gr. B.

Application/Limitation

Design pressure:	11 bar
Hydrostatic test pressure:	16.5 bar
Design temperature:	-7.7 / +80 °C
Medium:	Air
Corrosion allowance:	1 mm
Joint efficiency:	0.85

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Type Approval documentation

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

Marking of product

Minimum marking requirements shall be as outlined in the edition of the Rules (as mentioned on the front page of this certificate).

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.

To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com.