

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Pressure Vessel**with type designation(s)
Oil Separator LT.172

Issued to

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

is found to comply with

**DNV GL rules for classification – Ships Pt.4 Ch.7 Pressure equipment
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018****Application :****Product(s) approved by this certificate is/are accepted for installation on vessels classed by
DNV GL.****Max. working temp.: 0 to 115°C****Design pressure: 16 barg****Operating Medium Compressed air**Issued at **Høvik** on **2019-12-16**This Certificate is valid until **2024-12-15**.for **DNV GL**DNV GL local station: **Italy/Malta CMC**Approval Engineer: **Maheshraja Venkatesan**

**Zeinab Sharifi
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.



Job Id: **262.1-031470-1**
Certificate No: **TAP00001WB**

Product description

Unfired pressure vessel for compressed air designed according to DNV GL Rules Part 4 Chapter 7 and ASME Code Section VIII Div.1.

Inner diameter: 390 mm
Volume: 172 litres

Materials:

Shell	P295GH (EN 10028-2)
Elliptical head	P295GH (EN 10028-2)
Flanges	P295GH (EN 10028-2)
Cover	P295GH (EN 10028-2)
Couplings	SA-105
Elbow	SA-234 Gr. WPB
Pipe	SA-106 Gr.B
Bolt	SA-449 cl.1

Application/Limitation

Model	Oil Separator LT.172
Medium	Compressed Air
Design pressure (bar)	16
Test pressure (bar)	24
Design temperature (°C)	0/115
DNV GL Pressure vessel class	II
Joint efficiency	0.85
Corrosion allowance (mm)	1

Type Approval documentation

Production Testing

Each pressure vessel shall be tested upon completion to at least 1.5 times the design pressure in the presence of a DNV GL Surveyor.

Certification

Materials for pressure retaining parts are to be delivered with material certificates according to DNVGL-RU-SHIP Pt. 4 Ch. 7 Sec. 1 Table 6, and shall meet the requirements of relevant parts of DNVGL-RU-SHIP Pt. 2 Ch. 2.

Each pressure vessel shall be certified by a DNV GL surveyor and to be delivered with a DNV GL product certificate.

Marking of product

Each pressure vessel shall be permanently and legibly marked on the pressure part or on a nameplate permanently attached to a principal pressure part to show its identity and origin.

The marking of the pressure vessel shall show at least the following particulars:

- manufacturer's name and address
- type designation and serial number
- year of manufacture
- maximum allowable working pressure
- hydrostatic test pressure
- temperature range.

Periodical assessment



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For retention of the Type Approval, a DNV GL 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 DNVGL-CP-0338.