

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Oil/Water Separator

with type designation(s)

Oil separator OA D500, Oil separator OA D368, Oil separator OA D298

Issued to

BITZER Kühlmaschinenbau GmbH
Sindelfingen, Germany

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment

Application :

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

Type:	Max. working temp.:	Working media:	Design pressure:
Oil separator OA D500	-10 / 120 °C	Refrigerant Group 1	-1 / 28 bar
Oil separator OA D368	-10 / 120 °C	Refrigerant Group 1	-1 / 28 bar
Oil separator OA D298	-10 / 120 °C	Refrigerant Group 1	-1 / 28 bar

Issued at **Hamburg** on **2022-05-12**

This Certificate is valid until **2027-05-11**.

for **DNV**

DNV local station: **Augsburg**

Approval Engineer: **Le Loi Nguyen**

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Jonathan Struwe
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.

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 300,000 USD.



Product description

See approved drawings ("Type Approval documentation") for details (e.g. design data, materials, dimensions and media HFC and EN378-1*)

Application/Limitation

Applied Rules

- DNV-RU-SHIP Pt.4 Ch.7 'Pressure Equipment' (Edition July 2021)
- DNV-RU-NAVAL Pt.3 Ch.5 Sec.16 (Edition December 2015)

The oil separators 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 is 0 mm.

Materials

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

The materials used for pressurized parts shall conform DNV-RU-SHIP Pt.2 Ch.2 Sec.3. Manufacturing, workmanship and testing shall be done according to DNV-RU-SHIP Pt.4 Ch.7 Sec.7.

Manufacturers of welded pressure equipment of pressure equipment class II shall hold a valid approval in accordance with DNV Class Programme CP-0261 and CP-0352.

Each oil separator manufactured to this type approval is to be:

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

Remarks

Type Approval documentation

Place of production

Bitzer Kühlmaschinenbau GmbH
Sindelfingen, Germany

Marking of product

For traceability to this type approval the products 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) Maximum allowable working pressure
- e) Design temperature in °C
- f) Hydrostatic test pressure
- g) DNV's identifying mark

Periodical assessment

The objective of periodical assessments 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 with relation to ensuring continue consistent production of the type approved products at the TA applicant's own premises and at other companies that are given the responsibility for manufacturing of the products,
- Review of the TA documentation and that this is still used as basis for the production,
- Review of possible changes to the design, the material and the performance of the product,
- Verification of the product marking.



Job Id: **262.1-037665-1**
Certificate No: **TAP00002J3**

Periodical assessments for type approvals with a validity period of five years will be required after two years (+/- 90 days) and after 3.5 years (+/- 90 days).

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

END OF CERTIFICATE