



Certificate no.:
TAP000031J

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Cooler

with type designation(s)
OWD13, OWD16, OWD21, OWD27 and OWD32

issued to

BITZER Kühlmaschinenbau GmbH
Rottenburg-Ergenzingen, Germany

is found to comply with

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

Application:

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Temperature range: Shell side: -20 to 150 °C / Tube side: -20 to 95°C

Design pressure: Shell side: -1 to 32 bar / Tube side: 10 bar

Operating media: Shell side: Refrigerants (EN 378-1) / Tube side: Water

Issued at **Hamburg** on **2025-07-18**

This Certificate is valid until **2030-07-17**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Le Loi Nguyen**

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

Oil cooler series
OWD13, OWD16, OWD21, OWD27 and OWD32

Application/Limitation

The oil cooler is approved according following rules

- DNV-RU-SHIP Pt.4 Ch.7 (Edition July 2021)
- DNV-RU-NAV Pt.4 Ch.7 (Edition July 2024)

The oil cooler is classified in Pressure Equipment Class II and III (DNV-RU-SHIP Pt.4 Ch.7 Sec.1 Tab.2.)
The materials of oil cooler for Pressure Equipment Class II and III shall be delivered by a material manufacturer holding a valid certificate according to DNV-CP-0346 'DNV approval of manufacturing scheme'.
The materials used for the design and fabrication of the oil cooler shall be suitable for the environmental and specific service conditions, the applicable fluids and shall be resistant to corrosion and wear during the intended service life time.
The welding work for pressure equipment of class II shall be carried out by a welding workshop holding a valid certificate according to DNV-CP-0261 'Approval of manufacturers – Pressure equipment' and CP-0352 'Approval of manufacturers – Manufacture of welded products – Welding workshop'.

Place of manufacturer

Bitzer Kühlmaschinenbau GmbH
Peter-Schaufler-Platz 1, 71065 Sindelfingen, Germany

Place of production

Bitzer Kühlmaschinenbau GmbH
Etzwiesenstraße 42-44, 72108 Rottenburg-Hailfingen

Type Approval documentation

Tests carried out

Oil cooler is to be:

- constructional tested and hydraulic pressure tested to 1.5 times design pressure.
- certified by DNV and delivered with a product certificate.

Marking of product

For traceability to this type approval, the products shall be marked with:

- Name of manufacturer
- Type designation / serial number
- Total shell volume in liters
- Allowable temperature range in degrees Celsius
- Maximum allowable working pressure
- Test pressure
- Date of manufacture (month/year)

The location and process of stamping of the accumulators shall not be detrimental to their strength.

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment every second year and before the expiry date of this certificate, to verify that the conditions for the type approval are complied with.
When possible, this assessment may be harmonised with normal surveys for product certification and / or other surveys and audits carried out.

The main elements of the certificate retention survey are:

- Verification of the TA applicant's production and quality system w.r.t. ensuring continued consistent production of the type approved products at the TA applicant's own premises



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- Review of Type Approval documentation and assurance that it is still used as basis for production
- Review of possible changes in design, materials and performance
- Assurance of traceability between manufacturer's product type marking and Type Approval Certificate.