

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Plate Heat Exchanger

with type designation(s)
Cooler STBL95B

Issued to

Jiangsu Nantong Shentong Machinery Co., Ltd.
Nantong, Jiangsu, China

is found to comply with

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

Application :

Brazed plate heat exchanger(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature range: -20°C to 140°C

Design pressure: 14 bar

Operating media: Oil or air / water

Issued at **Hamburg** on **2020-10-29**

This Certificate is valid until **2025-10-28**.

DNV GL local station: **Nantong**

for **DNV GL**

Approval Engineer: **Stefan Wiemer**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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

- Brazed plate heat exchanger with four nozzles,
- For details (e. g. design data, materials or dimensions) see Approved Drawings (listed below in "Type Approval documentation").

Application/Limitation

The brazed plate heat exchanger is approved according to DNV GL rules ship Pt.4 Ch.7 'Pressure Equipment' (edition July 2019). It is graded as pressure equipment class II / III (oil or air side / water side) according to DNVGL rules ship Pt.4 Ch.7 Sec.1 Table 2.

The coolant on one side of the plate heat exchanger shall be water with additives against corrosion and freezing (if required). The use of other media than oil or air on the other side of the heat exchanger is outside the range of this type approval and shall be subject to special consideration in each individual case.

Materials used shall conform DNVGL rules ship Pt.2 Ch.2 Sec.3 and shall be delivered with material certificates according to DNVGL rules ship Pt.4 Ch.7 Sec.1 Table 6 and 7.

The manufacturer of the brazed plate heat exchanger falling into DNV GL pressure equipment class II shall hold a valid certificate according to DNV GL CP-0261 'DNV GL approval of manufacturing scheme' (see DNVGL rules ship Pt.4 Ch.7 Sec. 7 [1.1.1]).

Detachable pipe connections (flanges and pipe couplings other than flanges) shall be used within the limits as specified in DNVGL rules ship Pt.4 Ch.6 Sec.9 [5].

Each plate heat exchanger is to be:

- Hydraulic pressure tested to minimum 1.5 x design pressure,
- Certified by DNV GL and to be delivered with a product certificate.

Type Approval documentation

Tests carried out

Burst pressure test witnessed by DNVGL, Report exhibit No. 5-3 Rev. No. 2019/0, 2020-08-07

Marking of product

For traceability to this type approval the products are at least to be marked with:

- the name and domicile of the manufacturer,
- the manufacturer's type designation and serial number,
- the year of manufacture,
- the design pressure,
- the design temperature in °C,
- the hydraulic test pressure, and
- 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