Certificate No:
TAM00001BV

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fan Centrifugal

with type designation(s)
CBL centrifugal series

Issued to
Qingdao Henet Marine Equipment Manufacture Co. Ltd.
QINGDAO, **China**

is found to comply with
DNV rules for classification – Ships Pt.5 Ch.5 Oil tankers
DNV rules for classification – Ships Pt.5 Ch.6 Chemical tankers

Application :

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

Max. working press.:	**15000 Pa**
Operating media	**clean air**

Issued at **Hamburg** on **2023-10-23**
This Certificate is valid until **2028-10-22**.
DNV local unit: **Qingdao NB & CMC**

for **DNV**

Approval Engineer: **Ana Cristina Do Carmo Insfran**

Sven Klinger
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

The marine explosion-proof centrifugal fans Type I, and Type II can be widely used for ventilating the ship cabin and forcibly sucking the dangerous gases. Designated in accordance with the requirements given in DNV Rules Pt. 5, Ch.5, Sec 6 [1.2] and DNV Rules Pt.5, Ch. 6, Sec. 10 [1.2].

Types: CBL-15, CBL-16, CBL-17, CBL-18, CBL-19, CBL-20, CBL-21, CBL-22, CBL-23, CBL-24, CBL-25, CBL-27, CBL-32, CBL-34, CBL-36, CBL-40, CBL-44, CBL-46, CBL-48, CBL-50, CBL-56, CBL-63, CBL-67, CBL-71, CBL-75.

Technical Data:

Design: centrifugal fans type I and Type II
Medium: Clean air
Installation: In dry rooms (inlet air temperature between -25°C and +50°C)
Impeller material: 1Cr18Ni9Ti
Casting material: Q235B

For explosion protection of electrical motors please see Application / Limitation below.
Motor standard to EX d IIC T4 Gb.

Application/Limitation

The explosion-proof symbol of explosion-proof fans is Ed II BT4 they can be delivered for gas mixtures or vapour containing combustibles and explosives, for ordinary air, sea air containing self-fog, for air containing, oil fog and other corrupt air supply or extraction.

These explosion-proof fan series are best suited to pumping out gas mixtures or vapour containing combustibles. and explosives in oil cabins holds, pumprooms, battery cabins, ammunition cabins, hangars, paint houses, etc. They can also be used for ventilation of other compartments of shipping and corresponding place of land's.

Electrical motors shall be explosion proof in line with the applicable DNV rules and standards and acc. to the requirements of GB3836-2000.

For the listed fans types: Type I and Type II it shall be installed a wire mesh of not more than 13 mm square mesh in outside openings of the ventilation ducts.

The radial air gap between the impeller and the casing shall not be less than 0.1 of the diameter of the impeller shaft in way of the bearing, but not less than 2 mm.

Electric fan motors shall not be installed in ventilation ducts for hazardous spaces unless the motor is certified for the same hazard zone as the space served.

Type Approval documentation

Tests carried out

Functional performance test acc. to GB1236-2017, rotating friction spark test acc. to GB10686-89

Marking of product

For traceability of this type approval the products are to be marked:
- Manufacture's name or trademark
- Type designation
- Size

Periodical assessment

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 Type Approval are complied with. Refer to DNV-CP-0338, Sec.4.

The certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE