



Certificate no.:
TAP00002W2

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Vent Head for Tank**

with type designation(s)
JIS-KS91A-121

issued to

Qingdao Goodwill Marine Valve Manufacturing Co., Ltd.
Qingdao, Shandong, China

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV class programme DNV-CP-0187 – Type approval – Air vent heads

Application:

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

Sizes: DN50 - DN350

Issued at **Hamburg** on **2024-07-01**

This Certificate is valid until **2029-06-30**.

for **DNV**

DNV local unit: **Qingdao NB & CMC**

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

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 air vent heads JIS-KS91A-121 consist of a body with soft sealing (Cushion), metallic float (ball shape) made of stainless-steel wire mesh for application on oil and gas.

The main components and their materials are as follows:

Part	Remark
Body Cover, Body	FC200 (HT200) /QT450
	QT400-15 (Nodular Cast Iron)
Float, Filte, Guid Bolt	Duplex stainless steel 2205
Seal Gasket	NBR
Wire mesh	Stainless steel (SS304/SS316) Size Mesh 30 meshes percent inch (water tank and oil tank)

Note

Refer to DNV Rules Pt.2 Ch 2 section 10 listed in table 7.

Application/Limitation

The air vent heads are type approved for application on air/overflow pipes of tanks as required by DNV Rules Pt.4 Ch.6 Sec. 4 - 11 "Air, overflow and sounding pipes".

The air vent heads are not approved:

- as devices to prevent the passage of flame into cargo tanks. Further they shall not be installed on oil tanks containing oil with flash point $<60^{\circ}\text{C}$.
- permanent discharge/exchange of ballast water flowing through the closing device of the air pipe heads.

On fuel oil service tanks, settling tanks and any other oil tanks with heating temperature above 60°C , the air vent heads are to be fitted with flame screens. Refer to Pt.4, Ch.6 – Section5.

Flow characteristics, Discharge / reverse flow

To prevent blocking of the air vent head by a float during tank discharge the following maximum allowable air velocity shall be observed.

Size/Type	Flowrate at 0.25 bar pressure drop [m ³ /h]	Flow resistance coefficient ξ	80% of blocking velocity [m/s]
DN50	18.75	7.10	24.38
DN65	32.69	6.68	19.45
DN80	48.04	7.09	15.88
DN100	84.6	5.58	15.90
DN125	126.45	6.10	13.09
DN150	230.12	3.82	12.06
DN200	419.66	3.63	14.87
DN250	630.52	3.93	12.87
DN300	895.32	4.03	12.95
DN350	1032.16	3.09	9.34

Manufacturer's instructions are to be observed for selection and installation of the air vent heads.

Tests carried out

1. Flow characteristics test;
2. Float impact test;
3. Tightness test (sealing test);
4. Discharge/reverse flow test;
5. Calculations of wall thickness

Type Approval documentation

Marking of product

For traceability to this type approval each air vent head is to be provided with a name plate specifying at least the following data:

Content	Example
Manufacturer's name	Qingdao Goodwill Marine Valve Manufacturing Co., Ltd.
Type Code	JIS-KS91A-121
Date	2024-06-01
Working pressure	0.03 MPa

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.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

End of Certificate