DNV·GL

Certificate No:
TAP00001FM

TYPE APPROVAL CERTIFICATE

This is to certify:

That the High Velocity Pressure Relief Valve

with type designation(s)
KSRP

Issued to
Tanktech Co., Ltd.
Busan, Republic of Korea

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

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.
Design: **Rupture pin type**
Sizes: **100, 125, 150, 200, 250, 300**

Issued at **Høvik** on **2019-01-14**
This Certificate is valid until **2024-01-13**.
DNV GL local station: **Gimhae Station**

Approval Engineer: **Adel Samiei**

for **DNV GL**

Marianne Spæren Marveng
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.

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Job Id: **262.1-027952-1**
Certificate No: **TAP00001FM**

Product description

High Velocity Pressure Relief type KSRP made of:

Valve housing, pressure seat body and pressure housing stem:	FCD450
Pressure seat cover, pressure seat, Pressure disc, pressure stem:	SUS316
Weight and dragger:	SS400
O-ring:	Viton
Rupture Pin:	Aluminium (A6061)

Products covered by this certificate are designed and tested according to:

- IMO MSC/Cric. 677 (as amended by MSC.1/Circ. 1324) Revised Standards for The Design, Testing and Locating of Devices to Prevent the Passage of Flame into Cargo Tanks in Tankers
- ISO 16852:2016 : Flame arresters - Performance requirements, test methods and limits for use
- ISO15364:2016 – Standard for ships and marine technology – Pressure/vacuum valves for cargo tanks

Application/Limitation

Products covered by this certificate may be used as vents on tanks for cargo on board ships having class notation "Tanker for Oil", "Tanker for Oil Products" or "Tanker for Chemicals" in below conditions:

Size	Minimum MESG	Apparatus Group	Set Pressure (mm of water)	Max pipe length (m)	Maximum ice thickness	Maximum air leakage rate
DN100	0.90	IIA	1400 to 6000	13.5	10 mm	40 ml/min
DN125	0.90	IIA	1400 to 6000	10	10 mm	40 ml/min
DN150	0.90	IIA	1400 to 2100	7	10 mm	40 ml/min
DN200	0.90	IIA	1400 to 2100	3.5	10 mm	80 ml/min
DN250	0.90	IIA	1400 to 2100	3.5	10 mm	80 ml/min
DN300	0.90	IIA	1400 to 2100	3.5	10 mm	80 ml/min

Products covered by this certificate shall only be used on tankers protected by inert gas system (Reference is made to IMO MSC/Circ.677 [1.2.2]).

Maximum loading rate to be established according to the latest revision of MSC/Circ. 731

Sizing and location to be in accordance with the latest revision of MSC/Circ. 731

Installation on board of vessels with class notation of "Tanker for oil" or "Tanker for oil Products" is to comply with the Rules Pt.5 Ch.5 Sec.5.
Installation on board of vessels with class notation of "Tanker for Chemicals" is to comply with the Rules Pt.5 Ch.6 Sec.9.

Cargo tanks connected to the combined pressure-vacuum main vent line must carry the same type of cargo.

Drawings of stand pipes showing hatches and openings are to be approved in each separate case.

Each finished device to be visually and dimensionally checked and pneumatically leakage tested according to ISO15364:2016 [6.1] & [10].

A copy of the instruction manual shall be kept on board, and is to include:

- Installation instructions
- Operating instructions
- Maintenance requirements including cleaning
- A copy of the laboratory report
- Copy of test reports
- Flow test diagrams
- Warning regarding accumulation of ice to the operators

No product certificate is required.

Type Approval documentation

Tests carried out

Corrosion test, Hydrostatic pressure test, Flow test and set pressure test, Flame transmission tests, Deflagaration test, Flash-Back test, Ice test, Oscillation test, leakage test

Marking of product

Each device shall be permanently marked indicating the following:

- manufacturer's name or trademark;
- manufacturer's designation;
- size of connections
- serial number,
- direction of flow through the device;
- set pressure; If the set-pressure is changed, the marking shall be updated accordingly.

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.