

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Gas Freeing Cover**

with type designation(s)

**Type GF**

Issued to

**PRES-VAC Engineering A/S  
ALLERØD, Denmark**

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 all vessels classed by DNV GL.****Sizes: Free opening diameter (mm): 80, 100, 125, 150, 200, 250, 300 and 350**Issued at **Høvik** on **2017-05-23**This Certificate is valid until **2022-05-22**.for **DNV GL**DNV GL local station: **Copenhagen**Approval Engineer: **Mehdi Rowshan**

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**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.



## Product description

Flanged gas freeing cover with clamped cover and integrated flame screen (incl. a IIB element conversion kit)

The product design has full compliance with IMO MSC/Circ. 677 (as amended by MSC.1/Circ. 1324), EN ISO 16852:2010

Materials:

| Parts:         | Material 1 | Material 2       |
|----------------|------------|------------------|
| Flange         | AISI 316   | ST 37-2 (S235JR) |
| Locking device | AISI 316   | AISI 316         |
| Cover          | AISI 316   | ST 37-2 (S235JR) |
| Wire Mesh      | AISI 316   | AISI 316         |
| Seat           | PTFE/ FKM  | NBR/ FKM         |

## Application/Limitation

The flame screen may be used for crude oil, petroleum products and flammable chemicals with following Maximum Experimental Safe Gap (MESG  $\geq 0,65$ ), apparatus Group IIB

The flame screen may be used as end of line device for openings to atmosphere on tanks

Installation on board of vessels with class notation of "Tanker for oil" or "Tanker for oil Products" is to comply with the DNV GL Rules Pt.5 Ch.6 & Pt.5 Ch.5, where applicable.

Products covered by this certificate may be used on Gas-freeing systems of inerted and non-inerted tankers ( reference is made to IMO MSC/Circ.677 [1.2.9]).

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
- Flow test data, incl. flow rates under both positive and negative pressures, operating pressures, operating sensitivity, flow resistance and velocity

DNV GL product certificate is not required with reference to DNV GL Ship rules Part 5 Chapter 5 Section 1, Table 7 and DNV GL ship rules Pt.5 ch.6 Sec.1 Table 6.

## Type Approval documentation

### Tests carried out

Corrosion test, hydraulic test, Flow test, Flash-back test

### Marking of product

For traceability to this type approval each device is at least to be marked with:

- Manufacturer's name or trade mark
- Type designation
- Valve setting
- Additional marking acc. IMO MSC/Circ. 677 sec. 4.1

### Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform a survey - before the expiry date of this certificate - to verify that the conditions for the type approval are complied with.