

# TYPE APPROVAL CERTIFICATE

**This is to certify:**

**That the Pressure-Vacuum Relief Valve**

with type designation(s)  
**WIN2000HIASPV (Spring loaded), WIN2000HIASPV (Magent Operated)**

Issued to  
**Winteb B.V.**  
**Winschoten, Netherlands**

is found to comply with  
**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**  
**DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018**  
**DNV GL class programme DNVGL-CP-0187 – Type approval – Air vent heads**

**Application :**

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

<b>Type:</b>	<b>Design:</b>	<b>Sizes:</b>
<b>WIN2000HIASPV (Spring loaded)</b>	<b>Spring loaded</b>	<b>DN50,65,100,125,150,200,250,300,350</b>
<b>WIN2000HIASPV (Magent Operated)</b>	<b>Magent Operated</b>	<b>DN50,300,350</b>

Issued at **Høvik** on **2019-11-06**

for **DNV GL**

This Certificate is valid until **2023-04-18**.  
 DNV GL local station: **Rotterdam, Offshore & Newbuilding**

Approval Engineer: **Adel Samiei**

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**Zeinab Sharifi**  
**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.



Job Id: **262.1-029956-1**  
Certificate No: **TAP00001AG**  
Revision No: **1**

## Product description

Pressure vacuum valves in two types (spring loaded or magnet operated) with a non-metallic float (PE) and Aluminium (AlMg7Si according to DIN1725) housings, NBR gasket

## Application/Limitation

This certificate covers the design assessment of the pressure vacuum valve. Installation and other additional requirements related to installation are out of scope of this certificate.

The products covered by this certificate fulfils the functionality requirements of air vent heads as described in DNVGL-CP-0187. They may be installed on vessels in lieu of air vent heads (e.g. inerted or not inerted ballast water tanks).

Pressure vacuum valve opening pressures:

- Spring loaded: Over pressure: 0.07 to 0.2 bar (Tolerance:±0.01 bar) (\*)
- Magnet Operated: Over pressure: 0.07 bar
- Both types: Vacuum: 0.03 to 0.07 bar (Tolerance:±0.01 bar)

(\*) Intermediate over pressure settings are accepted; if a class surveyed pressure test is available.

Products covered by this certificate is not intended to prevent the passage of flame and shall not be used on tanks containing fluids with a flashpoint below 60 °C.

Products covered by this certificate are watertight up to 4 bar, when submerged in water..

Both types of design have the same vacuum side and therefore the 80% of maximum blocking velocity (resulted from Discharge/reverse test) for both are the same (Magnet operated P/V valves are only approved for sizes DN50, 300, 350):

Size	DN50	DN65	DN100	DN125	DN150	DN200	DN250	DN300	DN350
80% of velocity (m/s)	55.28	35.28	29.44	23.28	17.84	14.40	15.28	21.36	20.80

Flow diagrams shall be in accordance with test Synthesis Report No. WINTEB 1702 dated 2017-12-16 and test report no. 1802 (issued by HSB) dated 2019-01-25.

A product certificate is not required for installation on DNV GL classed vessels.

## Type Approval documentation

Drawing number WIN2000HIASPV-01 revision C

Drawing number W300-61 revision 0

Set pressure test report witnessed by DNV GL dated 2017-11-22

Set pressure test report witnessed by DNV GL dated 2018-03-26

Set pressure test report witnessed by DNV GL dated 2018-11-12

Discharge/reverse test ILR-EAD VB 17-554 dated December 2017 carried out by Technische Universität Dresden

Tightness test pressure test reports witnessed by DNV GL surveyor dated 2017-11-22

Flow test Synthesis Report No. WINTEB 1702 dated 2017-12-16 carried out by Hochschule Bremen, Energy Engineering Laboratory

Compression loading and impact test report on non-metallic float dated 2018-02-01 & 2018-04-12.

Drawing PE-ball revision 0 dated 2018-02-20

Flow test no. 1802 issued by HSB dated 2019-01-25


## Tests carried out

Flow test, tightness test according to DNVGL-CP-0187, vacuum test, overpressure test, Discharge test, compression loading and impact test on non-metallic float

## Marking of product

Each device shall be permanently marked indicating the following:

- manufacturer's name or trademark;
- manufacturer's designation;



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- size;
- set pressure (both over pressure and vacuum conditions).

### **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.