

EC-TYPE EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2014/93/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Devices to prevent the passage of flame into the cargo tanks in oil tankers

with type designation(s)
HI JET ISO II

Issued to

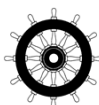
Bay Valves ApS
Nyborg, Denmark

is found to comply with the requirements in the following Regulations/Standards:

Annex A.1, item No. A.1/3.12 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation II-2/4 & II-2/16

Further details of the equipment and conditions for certification are given overleaf.

Høvik, 2015-09-23
for **DNV GL AS**



This Certificate is valid until
2017-06-19

Notified Body No.: **0575**

Vidar Dolonen
Head of Department

DNV GL local office:
Fredericia

Tom Berg-Nielsen
Surveyor

Product description

Integrated weight loaded high velocity- and vacuum relief valve with integrated gas freeing cover, delivered as common or separate units complying with

ISO15364:2007

Ships and marine technology - Pressure/vacuum valves for cargo tanks

IMO MSC/Circ. 677 as amended by MSC.1/Circ. 1009 and MSC.1/Circ. 1324

Revised standards for design, testing and locating of devices to prevent the passage of flame into cargo tanks

EN 16852:2010

Flame arresters

Performance requirements, test methods and limits for use

Materials:

Part	DN80	DN100	DN125, DN150, DN200, DN250, DN350
Valve body/house:	AISI 316	AISI316 ASTM A48	ASTM A48
Check lift handle:	AISI 316	AISI 316	AISI 316
Set flange:	AISI 316	AISI 316	AISI 316
Pressure disc:	AISI 316	AISI 316	AISI 316
Vacuum disc:	AISI 316	AISI 316	AISI 316
Vacuum seat:	AISI 316	AISI 316	AISI 316
Vacuum housing machined:	AISI 316	AISI316 ASTM A48	ASTM A48
Flame screen cover:	AISI 316	AISI316 ASTM A48	ASTM A48

Production Sites

Bay Valves ApS, Nyborg, Denmark and Bay Valves (Nantong) Co.,Ltd., P.R. China.

Application/Limitation

These high velocity valves may be fitted on tanks containing products with Maximum Experimental Safety Gap (MESG) equal to or greater than:

- 0.65 mm for valve sizes DN80, DN100 and DN125
- 0.90 mm for valve sizes DN150, DN200, DN250 and DN350

Maximum standpipe length and set pressure:

Type	Max Eqv. Pipe Length	Min Pipe diameter	Set Pressure	
			Pressure	Vacuum
DN 80	62 m	65 mm	14 kPa to 20 kPa	-3,5 kPa
DN100	30 m	80 mm	14 kPa to 20 kPa	-3,5 kPa
DN125	42 m	100 mm	14 kPa to 20 kPa	-3,5 kPa
DN150	15 m	150 mm	14 kPa to 20 kPa	-3,5 kPa
DN200	3 m	200 mm	14 kPa	-3,5 kPa
DN250	3 m	200 mm	14 kPa to 20 kPa	-3,5 kPa
DN350	3 m	300 mm	14 kPa to 20 kPa	-3,5 kPa

Notes:

The length of standpipe between cargo tank and valve is restricted with regard to hammering. The maximum allowable dynamic pressure drop in the standpipe between the cargo tank and the valve is not to exceed the equivalent (steel-) pipe length as indicated. This is applicable to the high velocity valve only.

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 is to comply with the Rules Pt.5 Ch.3 Sec.5B.

Each finished device to be pneumatically leakage tested at 700 HPa, ref. ISO15364 Pt. 7.3.

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

- 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

Type Examination documentation

Tests carried out

Prototype testing is performed as required by IMO MSC/Circ 677: Ice test, corrosion, hydraulic pressure, flash back (pressure- and vacuum valve), hammering, and flow test. Velocity is measured and documented.

Marking of product

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

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

Mark of Conformity



Job Id: **344.1-003080-5**
Certificate No: **MEDB000005B**

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.

Module E: The quality system for inspection and testing shall be approved by the Notified Body.

Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.

END OF CERTIFICATE