



Marine & Offshore

Certificate number: 33356/B0 BV

File number: ACM 145/2573/9

Product code: 73511

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

HEROSE GMBH ARMATUREN UND METALLE

Bad Oldesloe - GERMANY

for the type of product

**PRESSURE RELIEF VALVES FOR LIQUEFIED GAS PIPING SYSTEMS
SAFETY VALVES**

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships
BUREAU VERITAS Rules for the Classification of Offshore Units
BUREAU VERITAS Rules for Gas Fuelled Ships
IGC Code
IGF Code

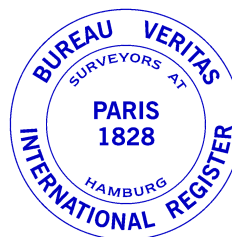
This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 28 Jan 2024

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 28 Jan 2019,

Adama Diene



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 5 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Safety Valves

1.1 Design:

Spring loaded, metal to metal seated or with carbon filled PTFE/PCTFE valve seal, closed or open bonnet with or without lifting.

Inlet: female thread or male thread according to ISO 228/1, ISO 7/1 or ANSI B 1.20.1

Outlet: female thread according to ISO 228/1, ISO 7/1 or ANSI B 1.20.1

1.2 Identification and Technical data:

Type 06011 – Safety Valve:

Size range: DN8, DN10 and DN15

Pressure: PN63

Temperature range: -196 °C up to +65 °C

Type 06012 – Safety Valve:

Size range: DN8, DN10 and DN15

Pressure: PN63

Temperature range: --196 °C up to +150 °C

Type 06016 – Safety Valve:

Size range: DN8, DN10 and DN15

Pressure: PN63

Temperature range: -196 °C up to +150 °C

Type 06383 – Safety Valve:

Size range: DN15, DN20, DN25, DN32, DN40 and DN50

Pressure: PN50

Temperature range: -196 °C up to +185 °C

Type 06386 – Safety Valve:

Size range: DN15, DN20 and DN25

Pressure: PN40

Temperature range: -196 °C up to +185 °C

Type 06387 – Safety Valve:

Size range: DN15

Pressure: PN40

Temperature range: -196 °C up to +185 °C

Type 06388 – Safety Valve:

Size range: DN15, DN20, DN25, DN32, DN40 and DN50

Pressure: PN50

Temperature range: -196 °C up to +185 °C

Type 06413 – Safety Valve:

Size range: DN15, DN20 DN25, DN32, DN40 and DN50

Pressure: PN50

Temperature range: -196 °C up to +185 °C

Type 06416 – Safety Valve:

Size range: DN15, DN20 and DN25

Pressure: PN40

Temperature range: -196 °C up to +185 °C

Type 06417 – Safety Valve:

Size range: DN15

Pressure: PN40

Temperature range: -196 °C up to +185 °C

Type 06418 – Safety Valve:

Size range: DN15, DN20, DN25, DN32, DN40 and DN50

Pressure: PN50

Temperature range: -196 °C up to +185 °C

Type 06420 – Safety Valve:

Size range: DN15, DN20, DN25 and DN32

Pressure: PN50

Temperature range: -196 °C up to +185 °C

Type 06421 – Safety Valve:

Size range: DN15, DN20, DN25 and DN32

Pressure: PN50

Temperature range: -196 °C up to +185 °C

Type 06425 – Safety Valve:

Size range: DN15, DN20, DN25 and DN32

Pressure: PN50

Temperature range: -196 °C up to +185 °C

Type 06426 – Safety Valve:

Size range: DN15, DN20, DN25 and DN32

Pressure: PN50

Temperature range: -196 °C up to +185 °C

Type 06440 – Safety Valve:

Size range: DN15, DN20 DN25 and DN32

Pressure: PN40 (DN15 & DN20=PN50)

Temperature range: -196 °C up to +185 °C

Type 06441 – Safety Valve:

Size range: DN15, DN20 DN25 and DN32

Pressure: PN40 (DN15 & DN20=PN50)

Temperature range: -196 °C up to +185 °C

Type 06445 – Safety Valve:

Size range: DN15, DN20 DN25 and DN32

Pressure: PN40 (DN15 & DN20=PN50)

Temperature range: -196 °C up to +185 °C

Type 06446 – Safety Valve:

Size range: DN15, DN20 DN25 and DN32

Pressure: PN40 (DN15 & DN20=PN50)

Temperature range: -196 °C up to +185 °C

Type 06472 – Safety Valve:

Size range: DN8, DN10, DN15 and DN20

Pressure: PN40

Temperature range: --196 °C up to +150 °C

Type 06474 – Safety Valve:

Size range: DN8, DN10, DN15 and DN20

Pressure: PN63

Temperature range: --196 °C up to +150 °C

Type 06477 – Safety Valve:

Size range: DN8, DN10, DN15 and DN20

Pressure: PN40

Temperature range: --196 °C up to +150 °C

Type 06478 – Safety Valve:

Size range: DN8, DN10, DN15 and DN20

Pressure: PN63

Temperature range: --196 °C up to +150 °C

1.3 Material and Components:

Standard	DIN EN	ASTM
Inlet body	1.4301	A 276 Grade 304 / SA-479.304
Outlet body	1.4308 / CC491K	A-351.CF 8 / B 62 UNS C83600
Body	1.4408	A 351 CF8M
Valve seal	PTFE / Carbon filled (25%) / PCTFE	
Disc	1.4541 / (25% Carbon filled) PTFE / 1.4301 / CC493K / CW452K	A 276 Grade 321 / A 276 Grade 304 / SA-479.304 / SB 505 UNS C93200 / B 103 UNS C51900
Guide plate	1.4301 / CW453K / CC493K	A 276 Grade 304 / SA-479.304 / B 103 UNS C52100/ SB 505 UNS C93200
Stem	1.4301 / CW453K / 1.4571 / CW614N	A 276 Grade 304 / SA-479.304 / SB 103 UNS C52100/ SA-479.316Ti / B 283 UNS C38500
Spring	1.4571	A 276 Grade 316Ti / A 313 Grade 316Ti / SA-479.316Ti / SA-479.316
Bonnet	1.4301 / 1.4308 / 1.4305	A 276 Grade 304 / A 351 CF 8 / A 314 Grade 303
Spring clamp	1.4305 / 1.4301 / CW614N	A 276 Grade 303 / SA-479.304 / B 283 UNS C38500/ EN 12164 R400 / SB 455 UNS C38500
Thread ring	1.4305 / 1.4301 / CW614N	A 276 Grade 303 / SA-479.304 / B 283 UNS C38500/ EN 12164 R400 / SB 455 UNS C38500
Cap	1.4301 / CW614N	A 479 Grade 304 / A 276 Grade 304 / B 283 UNS C38500 / EN 12164 R400 / SB 455 UNS C38500
Lifting device	1.4305 / CW614N	A 276 Grade 303 / SA-479.304 / B 283 UNS C38500
Closing cap	1.4305	A 276 Grade 303
Lifting cap	1.4301 / CW614N	SA-479.304 / B 283 UNS C38500 / EN 12164 R400
Lifting spring	1.4571	SA-479.316 / A 276 Grade 316Ti / A 313 Grade 316Ti
Lifting stem	1.4301 / CW614N	SA-479.304 / B 283 UNS C38500 / EN 12164 R400
Lever	1.4408	A 351 CF8M
Braze fitting	1.4301	A 276 Grade 304
Union nut	CW614N	B 283 UNS C38500

2. DOCUMENTS AND DRAWINGS

- HEROSE Catalogue: Safety Valves, Edition 07/2013 (Types 06011, 06012, 06016, 06386, 06387, 06416, 06417, 06420, 06421, 06425, 06426, 06472, 06474, 06477 & 06478)

- HEROSE Catalogue, Edition 10/2018 (Types 06383, 06388, 06413, 06418, 06440, 06441, 06445 & 06446).

3. TEST REPORTS

- Cryogenic test including Pressure test and Leakage test according DIN EN 12567 / DIN EN 1626, witnessed by TÜV Nord
- Function and Leakage Tests according to ISO 4126-1 performed on 25/06/2015 and 09/07/2015 and witnessed by an IACS Member

- Test Report No. 1320 GK 03780/01 according EN 13648-1, witnessed by TÜV Nord

- Tests performed on 21/03/2012, Test Report No. 1321P0004/2/01 witnessed by TÜV Nord

- Tests performed on 21/03/2012, Test Report No. 1321P0004/2/02 witnessed by TÜV Nord

- Tests performed on 27/03/2012, Test Report No. 1321P0004/2/05 witnessed by TÜV Nord

- Tests performed on 06/06/2012, Test Report No. 1321P0004/2/07 witnessed by TÜV Nord

- Tests performed on 06/06/2012, Test Report No. 1321P0004/2/08 witnessed by TÜV Nord

- Tests performed on 13/07/2015, Test Report No. 1409 P 0137/ 15 / D / 0109 witnessed by TÜV Nord.

4. APPLICATION / LIMITATION

- 4.1 Safety Valves intended to be used for air gases, vapours and cryogenic liquefied gases including LNG; in cargo handling systems of oil tankers and liquefied gas tankers and in piping systems onboard ships and offshore units.
- 4.2 The valves belong to class I according to BUREAU VERITAS Rules Part D, Ch 9, Sec 5 and Part C, Ch 1, Sec 10.
- 4.3 Valves intended to be used for handling of Propylene oxide or Ethylene oxide mixtures shall be of a fire safe type.
- 4.4 The used material should be suitable for the conveyed media.
- 4.5 The valves are to be installed according to the manufacturer's instructions and BUREAU VERITAS Rules requirements.

5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 The valves are to be supplied by **HEROSE GmbH Armaturen und Metalle** in compliance with the type and the requirements described in this certificate.
- 5.2 This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320
- 5.3 BUREAU VERITAS Product Certificate is required.
- 5.4 Arrangements shall be made for a Society's Surveyor to attend the tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme, BV Mode I, has been arranged, in order to issue the BUREAU VERITAS certificate for the units to be fitted on board ships classed with BUREAU VERITAS.
- 5.5 **HEROSE GmbH Armaturen und Metalle** has declared to BUREAU VERITAS that the products detailed in this certificate are manufactured at the production site stated on the front page of this certificate.
- 5.6 Material Requirements according BUREAU VERITAS Rules Part C, Ch 1, Sec 10 and IGC Code Ch 6.
- 5.7 Each valve is to be hydraulically pressure tested to 1.5 times the design pressure.

6. MARKING OF PRODUCT

- Each valve is at least to be marked with:
- Manufacturer's name or logo
 - Type designation
 - Size
 - Design Pressure and Temperature range
 - Society's Brand as relevant

7. OTHERS

- 7.1 This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **HEROSE GmbH Armaturen und Metalle , Bad Oldesloe/GERMANY** will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the units and of the conditions of this approval.
- 7.2 This Certificate supersedes the Type Approval Certificate N° 33356/A0 BV issued on 15/10/2013 by the Society.

*** END OF CERTIFICATE ***