



Marine & Offshore

Certificate number: 33354/B0 BV

File number: ACM 145/2573/2

Product code: 73311

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

GLOBE VALVES FOR LIQUEFIED GAS PIPING SYSTEMS

GLOBE 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: 27 Dec 2023

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 27 Dec 2018,

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 6 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Globe Valves

1.1 Design:

But weld or Socket weld connection for stainless steel pipes according to DIN EN ISO 1127 or ASTM A312.
Flange connection according to DIN EN 1092-1 or ANSI B 16.5

1.2 Identification and Technical data:

Type 01341 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN150 and DN200

Pressure: PN50 (DN150=PN40, DN200=PN25)

Temperature range: -196 °C up to +120 °C

Type 01342 – Globe Valve Angle Type:

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

Pressure: PN50

Temperature range: -196 °C up to +120 °C

Type 01343 – Actuated Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN150 and DN200

Pressure: PN50 (DN150=PN40, DN200=PN25)

Temperature range: -196 °C up to +120 °C

Type 01345 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN40 and DN50

Pressure: PN50

Temperature range: -196 °C up to +120 °C

Type 01351 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100 and DN150

Pressure: PN50 (DN150=PN40)

Temperature range: -196 °C up to +120 °C

Type 01352 – Globe Valve Angle Type:

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

Pressure: PN50

Temperature range: -196 °C up to +120 °C

Type 01353 – Actuated Trailer-valve:

Size range: DN15, DN25, DN40, DN50, DN65 and DN80

Pressure: PN50

Temperature range: -196 °C up to +120 °C

Type 01355 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN40 and DN50

Pressure: PN50

Temperature range: -196 °C up to +120 °C

Type 01420 – Globe Valve Top-Entry:

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

Pressure: PN50

Temperature range: -196 °C up to +120 °C

Type 01423 – Globe Valve - Actuated Top-Entry:

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

Pressure: PN50

Temperature range: -196 °C up to +120 °C

Type 01641 – Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN150 and DN200
Pressure: PN50 (DN150=PN40, DN200=PN25)
Temperature range: -196 °C up to +120 °C

Type 01643 – Actuated Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN150 and DN200
Pressure: PN50 (DN150=PN40, DN200=PN25)
Temperature range: -196 °C up to +120 °C

Type 01645 – Globe Valve “Fire safe”:

Size range: DN10, DN15, DN20, DN25, DN40 and DN50
Pressure: PN50
Temperature range: -196 °C up to +120 °C

Type 01651 – Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100
Pressure: PN50 (DN100=PN40)
Temperature range: -196 °C up to +120 °C

Type 01653 – Globe Valve – Actuated Trailer-valve “fire safe”:

Size range: DN15, DN25, DN40, DN50, DN65 and DN80
Pressure: PN50
Temperature range: -196 °C up to +120 °C

Type 01655 – Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN40, and DN50
Pressure: PN50
Temperature range: -196 °C up to +120 °C

Type 01741 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN150 and DN200
Pressure: PN50 (DN100/DN150=PN40), (DN200=PN25)
Temperature range: -255 °C up to +120 °C

Type 01743 – Actuated Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN150 and DN200
Pressure: PN50 (DN150=PN40, DN200=PN25)
Temperature range: -255 °C up to +120 °C

Type 01745 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN40 and DN50
Pressure: PN50
Temperature range: -255 °C up to +120 °C

Type 01751 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100
Pressure: PN50 (DN100=PN40)
Temperature range: -255 °C up to +120 °C

Type 01753 – Actuated Trailer-valve:

Size range: DN15, DN25, DN40, DN50, DN65 and DN80
Pressure: PN50
Temperature range: -255 °C up to +120 °C

Type 01755 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN40 and DN50
Pressure: PN50
Temperature range: -255 °C up to +120 °C

Type 01841 – Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100
Pressure: PN63/PN50 (DN150=PN40, DN200=PN25)
Temperature range: -255 °C up to +120 °C

Type 01843 – Actuated Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN150 and DN200
Pressure: PN50 (DN100=PN40, DN150/DN200=PN25)
Temperature range: -196 °C up to +120 °C

Type 01845 – Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN40 and DN50
Pressure: PN50
Temperature range: -255 °C up to +120 °C

Type 01851 – Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100
Pressure: PN50 (DN150=PN40)
Temperature range: -255 °C up to +120 °C

Type 01853 – Actuated Trailer-valve “fire safe”:

Size range: DN15, DN25, DN40, DN50, DN65 and DN80
Pressure: PN50
Temperature range: -255 °C up to +120 °C

Type 01855 – Globe Valve “fire safe”:

Size range: DN10, DN15, DN20, DN25, DN40 and DN50
Pressure: PN50
Temperature range: -255 °C up to +120 °C

Type 03341 – Globe Valves, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN150 and DN200
Pressure: PN50 / PN40 (DN200=PN25)
Temperature range: -196 °C up to +120 °C

Type 03343 – Actuated Globe Valves, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN125, DN150 and DN200
Pressure: PN40 / PN25 / PN16 (DN200=PN25)
Temperature range: -196 °C up to +120 °C

Type 03351 – Globe Valves, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100 and DN150
Pressure: PN50 / PN40 / PN25
Temperature range: -196 °C up to +120 °C

Type 03641 – Globe Valves „fire safe“, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN150 and DN200
Pressure: PN40 / PN50 (DN200=PN25)
Temperature range: -196 °C up to +120 °C

Type 03643 – Actuated Globe Valves „fire safe“, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN125, DN150 and DN200
Pressure: PN50 / PN40 / PN25 / PN16 (DN200=PN25)
Temperature range: -196 °C up to +120 °C

Type 03651 – Globe Valves „fire safe“, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100 and DN150
Pressure: PN50 / PN40 / PN25
Temperature range: -196 °C up to +120 °C

Type 03741 – Globe Valve, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN125, DN150 and DN200
 Pressure: PN50 / PN40 / PN25 / PN16 (DN200=PN25)
 Temperature range: -255 °C up to +120 °C

Type 03743 – Actuated Globe Valve, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN125, DN150 and DN200
 Pressure: PN50 / PN40 / PN25 / PN16 (DN200=PN25)
 Temperature range: -255 °C up to +120 °C

Type 03751 – Globe Valve, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN125 and DN150
 Pressure: PN50 / PN40 / PN25 / PN16
 Temperature range: -255 °C up to +120 °C

Type 03841 – Globe Valves „fire safe“, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN150 and DN200
 Pressure: PN40 / PN50 (DN200=PN25)
 Temperature range: -255 °C up to +120 °C

Type 03843 – Actuated Globe Valves „fire safe“, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN125, DN150 and DN200
 Pressure: PN50 / PN40 / PN25 / PN16 (DN200=PN25)
 Temperature range: -255 °C up to +120 °C

Type 03851 – Globe Valves „fire safe“, DIN EN / ANSI Flanges:

Size range: DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100 and DN150
 Pressure: PN50 / PN40 / PN25
 Temperature range: -255 °C up to +120 °C

Type 1114 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN32, DN40 and DN50
 Pressure: PN50
 Temperature range: -196 °C up to +120 °C

Type 1116 – Globe Valve:

Size range: DN10, DN15, DN20, DN25, DN32, DN40 and DN50
 Pressure: PN50
 Temperature range: -196 °C up to +120 °C

1.3 Material and Components:

Standard	DIN EN	ASTM
Body	1.4308 / 1.4409	A 351 CF8 / A 351 CF3M
Valve seal	(25% Carbon filled) PTFE / PCTFE	
Disc	1.4301 / 1.4401	A 276 Grade 304 / A 276 Grade 316
Bonnet gasket	PTFE / Graphite	
Headpiece	1.4301 / 1.4404	A 276 Grade 304 / A 276 Grade 316L
Bolts	1.4301/A2 / 1.4571/A4	A 194 B8 / A 194 B8T
Elongation tube	1.4541 / 1.4571 / 1.4306	A 213 TP 321 / A 213 TP 316Ti / A 312 TP 304L
Bush	CW452K	B 103 Alloy A / B 103 UNS C51900
Stem	1.4301 / 1.4401	A 276 Grade 304 / A276 Grade 316
Gland packing	PTFE / Graphite / MICA	
Gland nut	1.4305 / 1.4571 / 1.4401	A 276 Grade 303 / A 276 Grade 316Ti / A 276 Grade 316
Hand wheel	Aluminum Alloy	
Spring	1.4310 / CW452K / 1.4571	A 276 Grade 302 / B 103 Alloy A / A 276 Grade 316Ti
Pillars	1.4301 / 1.4401	A 276 Grade 304 / A 276 Grade 316

2. DOCUMENTS AND DRAWINGS

- HEROSE Catalogue: Valves for Cryogenic Service, Edition 07/2012
- HEROSE Catalogue: Valves for Cryogenic Service, Edition 06/2017
- HEROSE Catalogue, Edition 10/2018,

3. TEST REPORTS

- Cryogenic test including Pressure test and Leakage test according DIN EN 12567 / DIN EN 1626, witnessed by TÜV Nord.
- Fire test according to DIN EN ISO 10497:2004, witnessed by TÜV Nord.
- Test Report No. 1321 P 0045/13/D/001 witnessed by TÜV Nord.
- Test Report No. 1409 P 0139/15/D/0109 Rev.2 witnessed by TÜV Nord.
- Test Report No. 1320 GK 05850/03 witnessed by TÜV Nord
- Test Report No. 1320 GK 03580/01 witnessed by TÜV Nord: Fire resistance test according to DIN EN ISO 10497:2010
- Inspection Certificate No. N14180XE according to Test Report Reference 1000625611 dated 20/07/2017 issued by DNV/GL
- Inspection Certificate No. N14180XJ according to Test Report Reference 1000624762 dated 10/07/2017 issued by DNV/GL
- Inspection Certificate No. N14180XM according to Test Report Reference 1000630422 dated 11/01/2018 issued by DNV/GL

4. APPLICATION / LIMITATION

- 4.1 Globe 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 This approval does not include any operating gears or actuators for remote control of the valves.
- 4.6 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° 33354/A1 BV issued on 27/10/2017 by the Society.

*** END OF CERTIFICATE ***