



Marine & Offshore

Certificate number: 33354/C0 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 as amended by IMO Res. MSC.447(99)

IGF Code as amended by IMO Res. MSC.422(98)

*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: 26 Jul 2028**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 26 Jul 2023,

Heiko Lange

***This certificate was created electronically and is valid without signature***



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

###### **Type 01423 – Globe valve - actuated top-entry:**

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 01470 – Globe valve top-entry:**

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 01473 – Globe valve - actuated top-entry:**

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 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 01642 – Globe valve “fire safe”:**

Size range: DN 15, DN 20, DN25, DN32, DN 40 and DN50

Pressure: PN 50

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

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

**Type 01653 – Globe valve – actuated trailer-valve “fire safe”:**

Size range: DN20, 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 (DN150=PN40), (DN200=PN25)

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

**Type 01745 – Globe valve:**

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

Pressure: PN50

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

**Type 01751 – Globe valve:**

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

Pressure: PN50

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

**Type 01753 – Actuated trailer-valve:**

Size range: DN20, DN25, DN40, DN50, DN65 and DN80

Pressure: PN50

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

**Type 01755 – Globe valve:**

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

Pressure: PN50

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

**Type 01841 – 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 01843 – 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 01845 – Globe valve “fire safe”:**

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

Pressure: PN50

Temperature range: -196 °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

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

**Type 01853 – Actuated trailer-valve “fire safe”:**

Size range: DN20, DN25, DN40, DN50, DN65 and DN80

Pressure: PN50

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

**Type 01855 – Globe valve “fire safe”:**

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

Pressure: PN50

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

**Type 03341 – Globe valve, 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 valve, DIN EN / ANSI flanges:**

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

Pressure: PN40 / PN25 / PN16 (DN200=PN25)

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

**Type 03351 – Globe valve, 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 valve „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 valve „fire safe“, DIN EN / ANSI flanges:**

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

Pressure: PN50 / PN40 / PN25 / PN16 (DN200=PN25)

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

**Type 03651 – Globe valve „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, DN150 and DN200

Pressure: PN50 / PN40 / PN25 / PN16 (DN200=PN25)

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

**Type 03743 – Actuated globe valve, DIN EN / ANSI flanges:**

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

Pressure: PN50 / PN40 / PN25 / PN16 (DN200=PN25)

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

**Type 03751 – Globe valve, DIN EN / ANSI flanges:**

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

Pressure: PN50 / PN40 / PN25 / PN16

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

**Type 03841 – Globe valve „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 03843 – Actuated globe valve „fire safe“, DIN EN / ANSI flanges:**

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

Pressure: PN50 / PN40 / PN25 / PN16 (DN200=PN25)

Temperature range: -196 °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: -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:**

According following documents:

Document no.	Rev.	Designation
01301_01305_01331_01351_01355_02401_03331_03351_DuE11.22	01	Technical specification
01311_01315_01321_01325_01341_01345_02411_03321_03341_DuE_11.2022.docx	02	Technical specification
01313_01314_01343_01643_02413_03323_03343_baubeschr_2022-11.docx	02	Technical specification
01322_01332_01342_01352_DuE_12.2022.docx	01	Technical specification
01353_01653_01753_01853_DuE_12.2022.docx	01	Technical specification
01641_01645_01741_01745_01841_01845_03641_03741_03841_DuE_12.2022.docx	02	Technical specification
01651_01655_01751_01755_01851_01855_03651_03751_03851_DuE_12.2022.docx	01	Technical specification
01743_01843_03743_03843_DuE_11.2022.docx	02	Technical specification
01341-DN200-00XX-WKSTLISTE	01.10.2019	Globe Valve
01341-DNXX-ZULASSUNG	06.02.2023	shut-off valve
01342-DNXX-ZULASSUNG	06.02.2023	shut-off valve
01343-0219-301X-WKSTLISTE	15.02.2016	Actuated Globe Valve
01343-DNXX-ZULASSUNG	02.02.2023	shut-off valve
01345-DNXX-ZULASSUNG	06.02.2023	shut-off valve
01351-DNXX-ZULASSUNG	06.02.2023	shut-off valve
01352-DNXX-ZULASSUNG	06.02.2023	shut-off valve
01353-DNXX-ZULASSUNG	03.02.2023	shut-off valve
01355-DNXX-ZULASSUNG	06.02.2023	shut-off valve
01420-DNXX-ZULASSUNG	28.01.2020	Globe Valve
01423-DNXX-C-ZULASSUNG	13.10.2022	shut-off valve
01423-DNXX-ZULASSUNG	28.01.2020	Globe Valve
01470-DNXX-ZULASSUNG	24.01.2020	Globe Valve
01473-DNXX-ZULASSUNG	31.01.2020	Globe Valve
01641-DN200-00XX-WKSTLISTE	01.10.2019	Globe Valve
01641-DNXX-ZULASSUNG	19.01.2023	shut-off valve
01642-DNXX-ZULASSUNG	29.01.2020	Globe Valve
01643-0219-301X-WKSTLISTE	15.02.2016	Actuated Globe Valve
01643-DNXX-ZULASSUNG	29.03.2023	shut-off valve
01645-DNXX-ZULASSUNG	20.01.2023	shut-off valve
01651-DNXX-ZULASSUNG	24.01.2023	shut-off valve
01653-DNXX-ZULASSUNG	30.01.2023	shut-off valve
01655-DNXX-ZULASSUNG	24.01.2023	shut-off valve
01741-DN200-00XX-WKSTLISTE	01.10.2019	Globe Valve
01741-DNXX-ZuLASSUNG	24.01.2023	shut-off valve
01743-DN200-ZULASSUNG	27.08.2020	Actuated Globe Valve
01743-DNXX-ZULASSUNG	07.02.2023	shut-off valve
01745-DNXX-ZULASSUNG	25.01.2023	shut-off valve
01751-DNXX-ZULASSUNG	26.01.2023	shut-off valve
01753-X-ZULASSUNG	30.01.2023	shut-off valve
01755-DNXX-ZULASSUNG	26.01.2023	shut-off valve
01841-DN200-00XX-WKSTLISTE	01.10.2019	Globe Valve
01841-DNXX-ZULASSUNG	08.02.2023	shut-off valve
01843-DN200-ZULASSUNG	28.04.2021	shut-off valve
01843-DNXX-ZULASSUNG	08.02.2023	shut-off valve
01845-DNXX-ZULASSUNG	08.02.2023	shut-off valve
01851-DNXX-ZULASSUNG	08.02.2023	shut-off valve
01853-DNXX-ZULASSUNG	08.02.2023	shut-off valve
01855-DNXX-ZULASSUNG	09.02.2023	shut-off valve
03341-DN200-ZULASSUNG	29.04.2021	shut-off valve
03341-DNXX-ZULASSUNG	24.01.2023	shut-off valve
03343-DN200-ZULASSUNG	29.04.2021	shut-off valve
03343-DNXX-ZULASSUNG	06.02.2023	shut-off valve
03351-DNXX-ZULASSUNG	24.01.2023	shut-off valve

Document no.	Rev.	Designation
03641-DN200-ZULASSUNG	07.05.2021	shut-off valve
03641-DNXX-ZULASSUNG	24.01.2023	shut-off valve
03643-DN200-301X-WKSTLISTE	28.01.2020	Actuated Globe Valve
03651-DNXX-ZULASSUNG	25.01.2023	shut-off valve
03741-DN200-ZULASSUNG	06.05.2021	shut-off valve
03741-DNXX-ZULASSUNG	25.01.2023	shut-off valve
03743-DN200-ZULASSUNG	06.05.2021	shut-off valve
03743-DNXX-ZULASSUNG	06.02.2023	shut-off valve
03751-DNXX-ZULASSUNG	25.01.2023	shut-off valve
03841-DN200-ZULASSUNG	06.05.2021	shut-off valve
03841-DNXX-ZULASSUNG	26.01.2023	shut-off valve
03843-DN200-ZULASSUNG	05.05.2021	shut-off valve
03843-DNXX-ZULASSUNG	08.02.2023	shut-off valve
03851-DNXX-ZULASSUNG	06.02.2023	shut-off valve

### **3. TEST REPORTS:**

- 3.1 Test report no. 1320 GK 05850/03 according to DIN EN 1626:2009-01, dd 10.02.2016, witnessed by TÜV Nord/ GERMANY.
- 3.2 Fire resistance test according to DIN EN ISO 10497:2010, test report no. 1320 GK 03580/01, dd. 29.01.2018, witnessed by TÜV Nord / GERMANY.
- 3.3 Inspection certificate no. N14180XE according to test report reference 1000625611 dated 20/07/2017 issued by an IACS member.
- 3.4 Inspection certificate no. N14180XJ according to test report reference 1000624762 dated 10/07/2017 issued by an IACS member.
- 3.5 Inspection certificate no. N14180XM according to test report reference 1000630422 dated 11/01/2018 issued by an IACS member.
- 3.6 Cryogenic test including pressure test and leakage test according to BS6364, performed at Herose test lab, dd. 28.02.2015 and witnessed by an IACS member.
- 3.7 Cryogenic test including pressure test and leakage test according to BS6364, performed at Herose test lab, dd. 08.10.2019 and witnessed by an IACS member.

### **4. APPLICATION / LIMITATION:**

- 4.1 Globe Valves intended to be used for air gases, vapors, ammonia 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 intended to be used for handling of Propylene Oxide or Ethylene Oxide/ Propylene Oxide mixtures shall be of a fire safe design.
- 4.3 The valves belong to class I according to BUREAU VERITAS Rules.
- 4.4 For liquefied gas application, the valve intended to be installed on BUREAU VERITAS classed ship have to comply with applicable BUREAU VERITAS Rules, IGC Code and IGF Code and type tests reports witnessed by BUREAU VERITAS are to be available for each type and size of valve.
- 4.5 The materials for valves housing, disc and sealing should be of a suitable type at the temperature and pressure for use with fluids intended to be carried. In particular the nature of materials, joints included, is to be selected according to the fluid to be conveyed and the temperature.
- 4.6 This approval does not include any operating gears or actuators for remote control of the valves.
- 4.7 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 For information, **HEROSE GmbH Armaturen und Metalle** has declared to BUREAU VERITAS the following production site:  
**HEROSE GmbH Armaturen und Metalle, Bad Oldesloe / GERMANY**
- 5.5 BUREAU VERITAS Certificate is required for materials of valve housings of class I (DN $\geq$ 50) or class II (DN $\geq$ 100). Materials of valve housings of class I (DN $<$ 50) or class II (DN $<$ 100) and for other parts are to be with Work's certificates.
- 5.6 For liquefied gas applications, materials are to comply with the approved drawings and the applicable requirements in BUREAU VERITAS Rules. Charpy impact test is to be as per the Society's Rules on materials, and where relevant, in accordance with requirements of IGC Code and IGF Code.
- 5.7 For liquefied gas applications, each valve is to be tested according to BUREAU VERITAS Rules. For other applications, each valve housing for class I and class II is to be hydraulically pressure tested to 1.5 times the design pressure. Valves intended to be fitted on the shipside below the load waterline are to be tested by hydraulic pressure not less than 0,5 MPa.

**6. MARKING OF PRODUCT:**

Each valve is at least to be marked with:

- Manufacturer's name or logo
- Type designation
- Size
- Design pressure
- Temperature range
- BUREAU VERITAS' marks

**7. OTHERS:**

- 7.1 It is **HEROSE GmbH Armaturen und Metalle**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 This certificate supersedes the Type Approval Certificate N° 33354/B0 BV issued on 27 Dec 2018 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*