



Marine & Offshore

Certificate number: 33515/C0 BV

File number: ACM 145/2573/6

Product code: 7332I

*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*

**CHECK VALVES FOR LIQUEFIED GAS PIPING SYSTEMS**

NON-RETURN 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: 30 Jul 2028**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 30 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 4 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

#### Non-return valves

##### 1.1 Design:

But weld or socket weld connection for stainless steel pipes according to DIN EN ISO 1127 or ASTM A312.  
 Stainless steel body and cap with spring opening pressure: approx. 0.1 bar.  
 Flange connection according to ANSI B 16.5  
 Female thread connection according to ISO 228/1, ISO 7-Rc or ANSI B 1.20.1

##### 1.2 Identification and technical data:

###### Type 05414 – Check 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 05417 – Check valve:

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

###### Type 05419 – Check valves, DIN EN flanges / ANSI flanges:

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

###### Type 05714 – Check 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 05717 – Check valve:

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

###### Type 05719– Check valve, DIN EN flanges / ANSI flanges:

Size range: DN15, DN20, DN25, DN32, 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
<b>Body</b>	1.4308 / 1.4409	A 351 CF8 / A 351 CFM3
<b>Valve seal</b>	(25% Carbon filled) PTFE / PCTFE	
<b>Disc</b>	1.4301 / 1.4401	A 276 Grade 304 / A 276 Grade 316
<b>Bonnet gasket</b>	PTFE / Graphite	
<b>Spring</b>	1.4571	A 276 Grade 316Ti
<b>Bolts</b>	1.4301/A2 / 1.4571/A4	A 194 B8 / A 194 B8T
<b>Cap</b>	1.4404	A 276 Grade 304 / A 276 Grade 316L
<b>Bush from DN65</b>	PTFE	

**2. DOCUMENTS AND DRAWINGS:**

According following documents:

Document no.	Rev.	Designation
05414-DN200-ZULASSUNG	10.02.2020	Check Valve
05414-X-000X-WKSTLISTE	10.02.2020	Check Valve
05417-X-000X-WKSTLISTE	25.08.2015	Check Valve
05419-X-000X-WKSTLISTE	17.10.2016	Check Valve
05714-X-000X-WKSTLISTE	02.04.2020	Check Valve
05717-X-000X-WKSTLISTE	01.10.2019	Check Valve
05719-DNXX-ZULASSUNG	29.04.2020	Check Valve

**3. TEST REPORTS:**

- 3.1 Cryogenic test including pressure test and leakage test according to BS6364, performed at Herose test lab, dd. 26.03.2015 and witnessed by an IACS member.

**4. APPLICATION / LIMITATION:**

- 4.1 Non-return 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 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° 33515/B0 BV issued on 24 Jan 2019 by the Society.

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