



**BUREAU
VERITAS**

*Marine & Offshore
Division*

Certificate number: 23071/B1 BV

File number: ACM 135/2681/5 - 8

Product code: 2223H

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

Parker Hannifin Manufacturing Germany GmbH & Co. KG
Bielefeld - GERMANY

for the type of product

CHECK VALVES, NON-RETURN VALVES
NON RETURN VALVES RHD, RHDI, RHV-R-ED, RHZ-R-ED, RHV-M-ED and RHZ-M-ED

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships
BUREAU VERITAS Rules for the Classification of Offshore Units

This certificate is issued to attest that BUREAU VERITAS 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: 01 Mar 2021

For BUREAU VERITAS,

At BV HAMBURG, on 14 Apr 2016,

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. 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 Division 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 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 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Non-Return Valves RHD, RHDI, RHV-R-ED, RHV-M-ED, RHZ-R-ED and RHZ-M-ED

1.1 Design:

Poppet check valves with 90° valve seat with an elastomer sealing disc

RHD with tube connection both ends

RHDI with female thread both ends

RHV/RHZ with tube connection to male stud

R-ED means Male BSPP thread – ED-seal and **M-ED** means Male metric thread – ED-seal

The Non-Return Valve Cartridge **RVP** and the Internal parts of Non-Return Valve **I-TL** are amongst others important parts of the Non Return-Valves.

1.2 Identification:

| File Number | Valve Type | Series | Outer Diameter [mm] | Nominal Pressure [bar] |
|----------------|------------|-----------|---------------------|------------------------|
| ACM 135/2681/5 | RHD | L (Light) | 06 mm to 18 mm | 400 |
| | | L (Light) | 22 mm to 42 mm | 250 |
| | | S (Heavy) | 06 mm to 25 mm | 420 |
| | | S (Heavy) | 30 mm to 38 mm | 250 |
| ACM 135/2681/6 | RHDI | L (Light) | 1/8" to 3/8" | 400 |
| | | L (Light) | 1/2" | 315 |
| | | L (Light) | 3/4" to 1 1/2" | 250 |
| ACM 135/2681/7 | RHV | L (Light) | 06 mm to 18 mm | 400 |
| | | L (Light) | 22 mm to 42 mm | 250 |
| | | S (Heavy) | 06 mm to 25 mm | 420 |
| | | S (Heavy) | 30 mm to 38 mm | 250 |
| ACM 135/2681/8 | RHZ | L (Light) | 06 mm to 18 mm | 400 |
| | | L (Light) | 22 mm to 42 mm | 250 |
| | | S (Heavy) | 06 mm to 25 mm | 420 |
| | | S (Heavy) | 30 mm to 38 mm | 250 |

1.3 Material:

| Body | Sealing Disc | Spring |
|-----------------|--------------|-----------------|
| Steel | NBR | Steel |
| Stainless Steel | FKM | Stainless Steel |

Temperature range for Seals: NBR (-35 °C to +100 °C) / FKM (-25 °C to +200 °C).

2. DOCUMENTS AND DRAWINGS :

According to the Manufacturer's Catalogue 4100-10/UK.

3. TEST REPORTS :

Leakage Tests performed at Parker Hannifin's premises in Bielefeld/GERMANY.

4. APPLICATION / LIMITATION :

4.1 Non-Return Valves intended to be used in connection to the EO/EO-2 Tube Fittings for Marine and Offshore Piping Systems.

4.2 The nature of materials, valve body, and sealing disc included, is to be selected according to the nature of the fluid to be conveyed.

4.3 The manufacturer's assembly instructions are to be complied with.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 The Valves are to be supplied by the manufacturer in compliance with the type described in this certificate.

5.2 This type of product is within the category HBV of BUREAU VERITAS Rule Note NR320.

5.3 **Parker Hannifin Manufacturing Germany GmbH & Co. KG** has to make the necessary arrangements to have its works recognized by BUREAU VERITAS in compliance with the requirements of NR320 for HBV products:

Parker Hannifin Manufacturing Germany GmbH & Co. KG
Bielefeld/GERMANY.

6. MARKING OF PRODUCT :

Each valve should be identified with:

- Manufacturer's name or logo
- Type designation
- Nominal pressure (PN)
- Working temperature (max/min)
- Size

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 products at any time and that **Parker Hannifin Manufacturing Germany GmbH & Co. KG** will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the products and the conditions of this approval.

7.2 This certificate supersedes Type Approval Certificate No. 23071/B0 BV issued on 01/03/2016 by the Society.

*** END OF CERTIFICATE ***