Marine & Offshore

Certificate number: 76608/A0 BV
File number: .
Product code: 7334I

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

Meson (Changzhou) Flow Control System Co., Ltd.

Changzhou - CHINA

for the type of product

BUTTERFLY VALVES FOR LIQUEFIED GAS PIPING SYSTEMS

Triple Offset / Eccentric Butterfly Valve with Double Flange Type, Lug Type, Wafer Type and Butt-Welded Type

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships
IGC Code as amended by IMO Res. MSC.441(99)

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: 07 May 2029

For Bureau Veritas Marine & Offshore,
At BV SHANGHAI, on 07 May 2024,
Hong Zhang

This certificate was created electronically and is valid without signature

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Triple-offset Butterfly Valves with fire safe design

1.1 Ratings

Model	Triple-offset BFV
Size range	DN 80 to DN 500
Design Standard	API 609/ASME B16.34/EN593
Class range	PN6/10/16/25/JIS5K/10K/16K/20K/ANSI150/ANSI300
Maximum Working Pressure (MPa)	PN6 : 0,6 / PN 10 : 1,0 / PN16 : 1,6 / PN 25 : 2,5 ANSI150 : 1,9 / ANSI300 : 5,0
Design Temperature (°C)	-196°C to 300°C
End connections	Lug, butt-welded, double flange, wafer

1.2 Materials

Part	Material
Body	ASTM A216 WCB/WCC/A217 WC5/WC6/WC9/C5/C12/C12A/CA15/A352 LCB/LCC ASTM A351 CF3/CF3M/CF8/CF8M/CN7M/CG3M/CG8M/CN3MN/CF8C/CF10/CK3McuN/CF10M/CF3MN ASTM A990 4A/5A/6A/ASTM B148 95800
Stem	ASTM A182 F6a/F316/F51/F53/F55/XM-19/A705 630/INCONEL 718/MONEL K500/ ASTM A705 630
Seat	Option A : ASTM A240 UNS S31803/XM-19/Inconel 718/Monel K500 / ASTM A182 FXM-19 Option B : ASTM A240 UNS S31803 + Graphite/XM-19+Graphite/Inconel 718+Graphite/Monel K500+Graphite/ ASTM A182 FXM-19+Graphite
Disc	ASTM A216 WCB/WCC/A217 WC5/WC6/WC9/C5/C12/C12A/CA15/A352 LCB/LCC ASTM A351 CF3/CF3M/CF8/CF8M/CN7M/CG3M/CG8M/CN3MN/CF8C/CF10/CK3McuN/CF10M/CF3MN ASTM A990 4A/5A/6A/ASTM B148 95800

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Drawing N° DDWG-TOV3W-ANSI300 Rev.B dated 13/03/2023: WAFER Type
- Drawing N° DDWG-TOV3L-ANSI300 Rev.B dated 13/03/2023: LUG Type
- Drawing N° DDWG-TOV3F-ANSI300 Rev.B dated 13/03/2023: DOUBLE FLANGE Type
- Drawing N° DDWG-TOV3B-ANSI300 Rev.B dated 13/03/2023: BUTT WELDED Type
- Drawing N° DDWG-TOV-CS-ANSI300 Rev.B dated 13/03/2023
- Drawing N° DDWG-TOV-T-00063800 Rev.C dated 21/09/2023
- Drawing N° DDWG-TOV-T-00072100 Rev.C dated 13/11/2023
- Drawing N° DDWG-TOV-T-00063700 Rev.C dated 21/09/2023
- Manual of installation, use and maintenance Rev.A/1
- Test procedure N° VCZ-WI-OTE-0013-B dated 01/04/2024

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 - Type tests witnessed by a BV Surveyor including hydrostatic test and seat leakage test at ambient temperature & valve operation and leakage test at the minimum design temperature:

- Test report N° VCZ-FOR-QA-0016-A-Class dated 06/11/2023
- Test report N° HCT2023VB08109-1 including the cryogenic test for size 3"
- Test report N° HCT2023VB08112-1 including the cryogenic test for size 8"
- Test report N° HCT2023VB08108-1 including the cryogenic test for size 20"

3.2 - Fire resistance test not performed.

4. APPLICATION / LIMITATION

4.1 - May be used on cargo handling systems of ships granted with the notation liquefied gas carrier.

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 valve belongs to class I pressure piping according to the relevant requirements stated in Part D, Ch 9, Sec 5 of BUREAU VERITAS Rules for Steel Ships.

4.4 - The valve intended to be installed on BUREAU VERITAS classed ship have to comply with Pt D, Ch 9, Sec 5 & IGC Code and type tests reports witnessed by BUREAU VERITAS are to be available for each type and size of valve.

4.5 - When required in Part D, Ch 9, Sec 6 of the Bureau Veritas Rules applicable to liquefied gas carriers, Charpy V-notch impact test shall be carried out for castings. Castings in steel grades 316 and 316L at any temperature will be impact tested at -196 °C. A reduction may be granted for design temperature above -60 °C after examination by the Society.

4.6 - The materials for valves housing, disc and sealing should be of a suitable type at the temperature and pressure for use with cargoes intended to be carried.

4.7 - The approval does not include any operating gear for remote control of the valves.

4.8 - The valve is to be installed according to manufacturer's instructions and Society's Rule requirements.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products are to be supplied by **Meson (Changzhou) Flow Control System Co., Ltd.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of BV Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - BV Certificates are required for materials of valve housings of Class I (DN≥50). Materials of valve housings of Class I (DN<50) and other pressure boundary parts of Class I are to be with work's certificates.

5.5 - Materials are to comply with the approved drawings and the applicable requirements in Part D of the BV Rules for Steel Ships. Charpy impact test is to be as per the Society's Rules on materials, and where relevant, in accordance with requirements of IGC Code.

5.6 - Each valve is to be tested according BV Rules for Steel Ships Pt D, Ch 9, Sec 5 item 13.3.3.

5.7 - For information, **Meson (Changzhou) Flow Control System Co., Ltd.** has declared to Bureau Veritas the following production site:

Meson (Changzhou) Flow Control System Co., Ltd.

Renmin Road No 8, YaoGuan, Wujin, Building No 16, Xin Yu Logistics Park, Changzhou, CHINA

6. MARKING OF PRODUCT

Each valve shall be permanently marked with at least:

- Manufacturer's name or logo
- Type designation
- Maximum working Pressure
- Society's brand as relevant

7. OTHERS

It is **Meson (Changzhou) Flow Control System Co., Ltd.'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.

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