



Task – T1735422
Product Design Assessment (PDA)
Cryogenic Ball & Globe Valve - New
PDA No. 18-BK1735422-PDA

Attention: Mr. Kwangcheol Shin, BMT CO., LTD. (249723)

The documents shown in the attached list are reviewed in accordance with the applicable requirements indicated in the PDA along with the service restrictions and comments.

We recommend that you monitor the ABS Rules, Guides and other standards used in the Assessment. These Rules, Guides and standards often change on an annual basis, and you must comply with the new Rules, Guides and standards in order for the product to be used on an ABS classed vessel or facility contracted under the new Rules, Guides or specifications.

For any clarifications, contact Mr. Che-Sik Nam at +82-(0)51-460-4042, (cnam@eagle.org)

Very truly yours,

Jang-Ho Yoon
Director, Engineering

Electronically Signed by Seong-Ju Kang

Documents List

Drawing No.	Rev. No.	TITLE	Status
161115-01-119-01 170329-115-01, 02, 03 & 04	A	Cryogenic Ball Valve: FCB Series (Unidirectional)	Approved
161114-02-119-01 170403-01-119-01	A	Cryogenic Globe Valve: FGB Series & FCGBARF1	Approved

Electronic copies of the documents appropriately stamped are available through the ABS Eagle Construct Engineering Manager (O2E), Web portal.

Include: PDA Certificate



CERTIFICATE NUMBER
18-BK1735422-PDA

DATE
25 Apr 2018

ABS TECHNICAL OFFICE
Busan Engineering Services

CERTIFICATE OF Design Assessment

This is to certify that a representative of this Bureau did, at the request of
BMT CO., LTD.

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Cryogenic Valve**

Model: **Cryogenic Ball Valve: FCB Series (Unidirectional) Cryogenic Globe Valve:
FGB Series & FCGBARF1**

This Product Design Assessment (PDA) Certificate 18-BK1735422-PDA, dated 25/Apr/2018 remains valid until 24/Apr/2023 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Yun-Sung Kim
Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

BMT CO.

35, SANMAKGONGDANNAM 11-GIL

YANGSAN

Korea, Republic of

Telephone: 82-55-783-1000

Fax: 82-55-783-1110

Email: jsjang@superlok.com

Web: www.superlok.com

Tier: 5 - Unit Certification Required

Product: Cryogenic Valve

Model: Cryogenic Ball Valve: FCB Series (Unidirectional)
Cryogenic Globe Valve: FGB Series & FCGBARF1

Intended Service:
Cryogenic Liquid and Gas Transportation

Description:

Cryogenic Ball Valves - 1/2", 3/4", 1", 1-1/2", 2", 2-1/2", 3", 4", 6" (Unidirectional)

Cryogenic Globe Valves - 1/2", 3/4", 1", 1-1/2", 2", 4", 6", 8"

Rating:

Design Pressure: 19 barG at 38 degree C

Design Temperature: -196 degree C thru +80 degree C

Material/ Ball Valve: Body/Ball ASTM A182 Gr. F316

Material/ Globe Valve: Body/Disc ASTM A182 Gr. F316/ A276-316 (1/2" thru 2")

Material/ Globe valve: Body/Disc ASTM A351-CF8M/ A276-316 (4" thru 8")

Service Restriction:

Unit certification is required for the products intended to be used at a working temperature below -55 degree C and testing specified in section 5C-8-5/13.1.1 of the ABS Steel Vessel Rules is to be carried out in the presence of the Surveyor as required.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Material testing of the products intended to be used at a working temperature below -55 degree C is to be witnessed by an ABS Surveyor in accordance with 5C-8-6/1.3 of 2018 Steel Vessel Rules.
3. For valves used for isolation of instrumentation in piping not greater than 25 mm, unit production testing need not be witnessed by the Surveyor. Records of testing are to be available for review in accordance with 5C-8-5/13.1.1 b) of 2018 Steel Vessel Rules.
4. All valves are to bear permanent identification, such as the manufacturer's name or trademark, standard of compliance, material identify, pressure rating, etc. as required by the standard of compliance and at which the manufacturer guarantees the valve to meet the requirements of the standards. Such markings may be cast or forged integral with, stamped on, or securely affixed by nameplate on the component, and are to serve as a permanent means of identification of the component throughout its service life in accordance with 4-6-2/5.11.4 and 4-6-1/7.1.4 of the Steel Vessels Rules 2018.
5. The cryogenic ball valves, 2-1/2" thru 6", seat pressure test is carried out by normal flow direction only. The cryogenic ball valves has a bleeding hole on the upstream side to prevent over-pressure of valve body cavity by liquid gas vaporizes and to be used the system as fluid pressurizing direction 1-way. This ball valves are not applicable to the bi-directional flow.

Notes/Drawing/Documentation:

1. DWG. Nos.(Ball): 161115-01-119-01, Rev. A, DWG. No.: 170329-115-01, 02, 03 & 04, Rev. A
2. DWG. Nos.(Globe): 161114-02-119-01, Rev. A, 170403-01-119-01, Rev. A
3. Prototype test report:
 - BMT-CTR-1710N-01 thru 13, Dated 20-NOV-2017
 - BMT-CTR-180207-01 thru 04, Dated 07-FEB-2018
4. Burst test report: BIT180102-01 & 02, dated 03-JAN-2018, BIT180321-01, Dated 21-MAR-2018
5. Flow test report:
 - TCHPV-KL-18-001 thru 013, Dated 08-JAN-2018
 - TCHPV-18-03-105 thru 108, Dated 22-MAR-2018

Terms of Validity:

This Product Design Assessment (PDA) Certificate 18-BK1735422-PDA, dated 25/Apr/2018 remains valid until

BMT CO.

35, SANMAKGONGDANNAM 11-GIL

YANGSAN

Korea, Republic of

Telephone: 82-55-783-1000

Fax: 82-55-783-1110

Email: jsjang@superlok.com

Web: www.superlok.com

Tier: 5 - Unit Certification Required

24/Apr/2023 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:

2018 Steel Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-1/7.1.4, 4-6-2/5.11.4, 5C-8-5/13.1, 5C-8-6/2.2, 5C-8-6/Table 4 & 4-6-2/5.15

National:

NA

International:

IGC Code(2016 Edition), 5.13.1, 6.2.2, Table 6.4
BS6364 (1984 Edition)

Government:

NA

EUMED:

NA

OTHERS:

NA