



CERTIFICATE NUMBER	21-2105601-PDA
EFFECTIVE DATE	07-May-2021
EXPIRY DATE	06-May-2026
ABS TECHNICAL OFFICE	Busan Engineering Services

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

DK LOK CORPORATION

located at

7 GOLDEN ROOT-RO, 129 BEON-GIL, GIMHAE, Korea, Republic of
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.

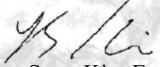
Product: Cryogenic Valve
Model: VYON SERIES
Endorsements:
Tier: 5 - Unit Certification Required

This Product Design Assessment (PDA) Certificate remains valid until 06/May/2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to 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 ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

DK LOK CORPORATION

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Email: dkqa@dklok.com

Web: www.dklok.com

Tier: 5 - Unit Certification Required

Product: Cryogenic Valve

Model: VYON SERIES

Endorsements:

Intended Service:

Cryogenic Piping Systems for LNG/LPG, Liquefied Nitrogen

Description:

Cryogenic Needle Valve (Butt weld/Butt weld, Butt weld/Flange, Butt weld/Thread, Thread/Flange, Thread/Thread, Flange/Flange), Class 150, 1/2", 1"

Rating:

1. Maximum allowable relief pressure (bar): 19 bar at 38 degree C
2. Design Temperature: -196 degree C thru 80 degree C
3. Material contents are shown on the below:
 - a) Body: ASTM A351-CF3M/ CF8M
 - b) Stem: ASTM A479 TYPE 316
 - c) Stem Disc/Bonnet: ASTM A479 TYPE 316

Service Restriction:

1. 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 & 5C-13-16/7.1.1 of the ABS Marine Vessel Rules is to be carried out in the presence of the Surveyor as required.
2. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

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 & 5C-13-16 table 6 of the Marine Vessel Rules.
3. 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 4-6-2/5.1.1.4 and 4-6-1/7.1.4 of the Marine Vessel Rules.
4. Unless specially directed by Administration, this approval will not be construed as a substitute for flag Administration's approval.
5. This certificate is not valid for US flagged vessels.

Notes/Drawing/Documentation:

1. Drawing Nos.: VYON-BW-CL-C2/C3 (Rev.0), VYON-BWRF-CL-C2/C3 (Rev.0), VYON-BWFN-CL-C2/C3 (Rev.0), VYON-FN-CL-C2/C3 (Rev.0), VYON-FNRF-CL-C2/C3 (Rev.0), VYON-RF-CL-C2/C3 (Rev.0)
2. Prototype test report
 - a) Pressure, Cryogenic, Burst & Material test: DKTR-ABS-2103-001, Dated 26 March 2021
 - b) Flow capacity test report: DKTR-FL-2105-001, Dated 04-MAY-2021
 - c) Cryogenic heat conduction test(stem): DKTR-TP210315-01, Dated 15 March 2021

Terms of Validity:

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Tier: 5 - Unit Certification Required

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STANDARDS

ABS Rules:

The Rules for Conditions of Classification, 2021 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2021 Rules for Building and Classing Marine Vessels 4-6-1/7.1.4, 4-6-2/5.11 & 5.15, 5C-8-5/12.2, 5C-8-5/13.1.1, 5C-8-6/2.2(ABS), 5C-13-7/Table 4, 5C-13-16/7.1, 5C-13-16/Table 5 & 6

2021 Rules for Conditions of Classification – Offshore Units and Structures: 1-1-4/9.7, 1-1-A2 and A3, which covers the following:

2021 Rules for Building and Classing Mobile Offshore Units 1-1-4/9.7

National:

BS6364 (1984 Edition)

International:

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

IGF Code (2016 Edition), 16.7.1, 7.4.1.1, Table 7.4

Government:

NA

EUMED:

NA

OTHERS:

NA