



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 19-APR-2022. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Cryogenic Valve

Model Name(s): Cryogenic Needle Valves: CRYON-8FA, CRYON-8FA8BWA, CRYON-8FA8N, CRYON-8N, CRYON-8BWA8N, CRYON-8BWB8N, CRYON-8BWA8FA, CRYON-8BWB8FA, CRYON-8BWA, CRYON-16FA, CRYON-16FA16BWA, CRYON-16BWA16FA, CRYON-16BWB16FA, CRYON-16BWA

Presented to:

HY-LOK CORPORATION
97, NOKSANSANDAN 27-RO
GANGSEO-GU
46751
Korea, Republic of

Intended Service:	Cryogenic Liquid and Gas Transportation
Description:	Cryogenic Needle Valves - 1/2" & 1" Class 150
Tier:	5
Ratings:	Design Pressure: 10 bar, Design Temperature: -196 degree C thru +80 degree C, Material: Body ASTM A182 Gr. F316, ASTM A351 CF8M, ASTM A351 CF3M
Service Restrictions:	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. 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 2017. 3. Material testing is to be witnessed by an ABS Surveyor in accordance with 5C-8-6/1.3 of 2017 Steel Vessel Rules. 4. 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 2017 Steel Vessel Rules.

Notes / Documentation:

1. DWG. No.: 2006I01H001, Rev.2, 1/2" RF, Class 150 2. DWG. No.: 2006I02H001, Rev.2, 1" RF, Class 150 3. Test report(Pressure, Cryogenic), ATR-16I01-01, CTR-10I01-01, Dated 01 September 2016(ABS) 4. Test report(Burst, Pressure, Cryogenic), Q-F-CVA-01-K01, G-F-CRA-01-K01, Dated 08 November 2001(ABS) 5. Test report(Pressure, Cryogenic), CTR-08E02-01, Dated 02 May 2008(BV) 6. Test report(Pressure, Cryogenic), CTR-12E22-01, Dated 22 May 2012(DNV) 7. Flow test report, FC-17C28-01, Dated 27 March 2017(ABS)

Term of Validity:

This Product Design Assessment (PDA) Certificate 17-BK1625661-PDA, dated 20/Apr/2017 remains valid until 19/Apr/2022 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.

ABS Rules:

2017 Steel Vessel Rules 5C-8-5/13.1, 5C-8-6/2.2, 5C-8-6/Table 4, 4-6-1/7.1.4, 4-6-2/5.11.4 & 4-6-2/5.15

National Standards:

International Standards:

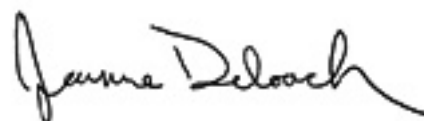
IGC code (2016 Edition) (MSC 370(93)) 5.13.1, 6.2.2, Table 6.4 BS6364 (1984 Edition)

Government Authority:

EUMED:

Others:

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	17-BK1625661-PDA	19-APR-2017	19-APR-2022



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.