Confirmation of Product Type Approval

Company Name: HEROSE GMBH ARMATUREN UND METALLE

Address: ELLY-HEUSS-KNAPP-STR. 12 BAD OLDESLOE 23843 DE Germany

Product: Cryogenic Valve

Model(s): "Globe valve, Check valve, Gate valve, Strainer, Divertor valve, Safety valve * Detailed Model numbers of each type are indicated on the attachment (catalogue)"

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	25-0381115-PDA	04-FEB-2026	03-FEB-2031
Manufacturing Assessment (MA)	21-4647887	15-FEB-2021	07-MAR-2026
Product Quality Assurance (PQA)	NA	NA	NA

Tier
5 - Unit Certification Required

Intended Service
Cryogenic service including LNG, Ammonia, Methanol, and Hydrogen on board of Ships or Offshore Facilities

Description
Globe valve, Check valve, Gate valve, Strainer, Divertor valve, Safety valve for cryogenic and non-cryogenic applications

Globe valves with flanged, threaded or welded sleeve connection consisting of stainless-steel body, disc seat with PTFE or PTFE compound optional in fire safe design, bonnet with or without extension in stainless steel or bronze, manual or pneumatically operated, with or without non-return function. Bellow sealed bonnet available.

Strainer, check valves, manual or pneumatically operated gate valves and divertor valves made of materials stainless steel or bronze with soft seals, welded, flanged or threaded connection types available.

Standard or full lift safety valves, optional with lifting device or bellow sealed, with thread connection consisting of stainless steel or bronze body, soft or metal seated disc.

*Details of size and material of the valves are indicated on the attachments.

Ratings
Temperature range for valves:

-196°C up to +120°C for valve of 1.4308

-255°C up to +120°C for valve of 1.4409

Safety Valves: from -270°C up to +225°C

* Pressure rating is indicated on the attachments (Attachment rev and Catalogue sheet).

Service Restrictions

1. Unit Certification is required for the products intended to be used at a working temperature at or below -55 deg. C and testing is to be carried out in the presence of the Surveyor, which is to include hydrostatic test of the valve body at a pressure equal to 1.5 times the design pressure, and seat & stem leakage test at a pressure equal to 1.1 times the design pressure in accordance with manufacture's testing procedure. In addition, cryogenic testing consisting of valve operation & leakage verification for a minimum of 10% of each type and size of valve per 5C-8-5/13.1.1(b) & 5C-13-16/7.1.1 of the Marine Vessels Rules.

2. Welded sleeve connections shall only be used for open-ended lines with an external diameter of 50 mm or less and design temperatures not colder than -55°C as per 5C-8-5/8.2.2 of the Marine Vessel Rules.

3. Screwed connection cannot be used for cargo piping and should only be used for accessory lines and instrumentation lines with external diameters of 25mm or less as per 5C-8-5/8.2.3 of the Marine Vessels Rules.

4. Except globe valves that are fire tested (valves up to DN 200) , valves should not be used for gas cargo system piping outside the cargo tanks except for a short length of pipe attached to the cargo tanks in which case, a fire-resisting insulation shall be provided in accordance with 5C-8-5/12.2 of the Marine Vessels Rules.

5. Installation, welding and joining procedures are to the satisfaction of the attending Surveyor.

6. 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. 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 2026 Marine Vessels Rules.

2. Copies of the certificate material test reports are to be made available to the attending Surveyor and are to be traceable to the material.

3. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

4. 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 of the Marine Vessel Rules.

5. The manufacturer is to guarantee that the valve has been tested before shipment to the pressure required by the pressure rating of the valve.

6. Slightly changed scope compared to the previous PDA (no new types, some additional sizes but these are similar also included in other valve types, some types to be removed from new PDA). Type Approvals from other IACS members available (DNV, LR, RINA, ClassNK, and more)

Notes, Drawings and Documentation

See attachment:

25-0381115-PDA Drawing List

25-0381115-PDA_ABS_reapproval_scope

Catalogue sheet 1601036725631

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 03/Feb/2031 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.

ABS Rules
2026 Rules for Conditions of Classification (Part 1A): 1A-1-4/7.7, 1A-1-A3 and A4, which covers the following:

2026 Marine Vessel Rules: 4-6-1/7.1, 4-6-2/5.11 /5.15 & 5.17, 5C-8-5/11.3, 5C-8-5/12.2, 5C-8-5/13.1, 5C-8-5/8.2.1, 5C-8-6/2.2 & 5C-8-6/Table 4, 5C-13-16/7.1, 5C-13-7/Table 4, 5C-13-16/Table 5

2026 Rules for Conditions of Classification – Offshore Units (Part 1B): 1B-1-4/9.7, 1B-1-A2 and A3, which covers the following:

2026 Offshore Unit Rules: 4-2-2/9

International Standards
IGC Code (2016 2nd Edition), 5.11.6.1, 5.12, 5.13.1, 6.2.2, 8.2.5.1, Table 6.4

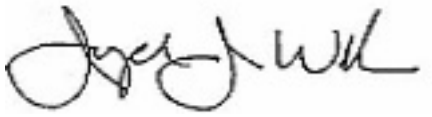
IGF Code (2016 Edition), 16.7.1, Table 7.4

EU-MED Standards
NA

National Standards
BS 6364: 1984 Specification for valves for cryogenic service (published February 1984)

Government Standards
NA

Other Standards
NA



Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 10-Feb-2026 3:35

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 is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

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 prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. 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.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

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.

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.