

CERTIFICATE NUMBER EFFECTIVE DATE EXPIRY DATE ABS TECHNICAL OFFICE 25-0322223-PDA 18-Jul-2025 17-Jul-2030 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, JUCHON-MYEON, 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: Valve

Model: V81, V82, V83, V86, VH86, V23, V15, V16, V46, V56, V96, V103, V33, VP33, VA33, VH36, VL36, V73,

V76, V63, V66, VB16

Endorsements:

Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 17/Jul/2030 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

Seoig-Ju Kang, 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)

7 GOLDEN ROOT-RO

129 BEON-GIL

JUCHON-MYEON

GIMHAE

Korea, Republic of

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Tier: 3 - Type Approved, unit certification not required

Product: Valve

Model: V81, V82, V83, V86, VH86, V23, V15, V16, V46, V56, V96, V103, V33, VP33, VA33, VH36,

VL36, V73, V76, V63, V66, VB16

Endorsements:

Intended Service:

Saturated Steam, Compressed air, Hydraulic oil, Lubricating oil, Fuel oil, Fresh water, Sea water

Description:

- 1. V81
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 2. V82
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 3. V83
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Carbon Steel
- 4 V86
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel
- 5. VH86
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel
- 6. V23
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 7. V15
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass/Alloy 400
- 8. V16
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Alloy20/Alloy C276
- 9. V46
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Carbon Steel
- 10 V56
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Carbon Steel
- 11. V96

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- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel
- 12. V103
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 14. VP33
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 15. VA33
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 16. VH36
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel
- 17. VL36
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel
- 18. V73
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 19. V76
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel/Brass
- 20. V63
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel
- 22. VB16
- 1) Nominal Diameter: As per the attached manufacturer's document
- 2) Body: Stainless Steel

Rating:

- 1. Model: V81
- a. Design Pressure: 68.9bar @38 deg.C b. Design Temperature : -18 ~ 204 deg.C

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2. Model: V82

a. Design Pressure: 172bar @38 deg.Cb. Design Temperature: 10 ~ 65 deg.C

3. Model: V83

a. Design Pressure: 151bar @38 deg.Cb. Design Temperature: -18 ~ 232 deg.C

4. Model: V86

a. Design Pressure : 413bar @38 deg.Cb. Design Temperature : -18 ~ 130 deg.C

5. Model: VH86

a. Design Pressure : 413bar @38 deg.Cb. Design Temperature : -18 ~ 180 deg.C

6. Model: V23

a. Design Pressure : 206bar @38 deg.Cb. Design Temperature : -18 ~ 204 deg.C

7. Model: V15

a. Design Pressure : 345bar @38 deg.Cb. Design Temperature : -18 ~ 232 deg.C

8. Model: V16

a. Design Pressure : 413bar @38 deg.Cb. Design Temperature : -18 ~ 232 deg.C

9. Model: V46

a. Design Pressure : 413bar @38 deg.Cb. Design Temperature : -18 ~ 232 deg.C

10. Model: V56

a. Design Pressure : 413bar @38 deg.C b. Design Temperature : -18 ~ 232 deg.C

11. Model: V96

a. Design Pressure : 413bar @38 deg.Cb. Design Temperature : -18 ~ 121 deg.C

12. Model: V103

a. Design Pressure : 20.6bar @38 deg.Cb. Design Temperature : -18 ~ 93 deg.C

13. Model: V33

a. Design Pressure : 206bar @21 deg.Cb. Design Temperature : -18 ~ 190 deg.C

14. Model: VP33

a. Design Pressure: 206bar @21 deg.C

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b. Design Temperature: -18 ~ 190 deg.C

15. Model: VA33

a. Design Pressure : 206bar @21 deg.Cb. Design Temperature : -18 ~ 190 deg.C

16. Model: VH36

a. Design Pressure : 413bar @21 deg.C b. Design Temperature : -18 \sim 190 deg.C

17. Model: VL36

a. Design Pressure: 413bar @38 deg.Cb. Design Temperature: -18 ~ 482 deg.C

18. Model: V73

a. Design Pressure : 206bar @38 deg.Cb. Design Temperature : -18 ~ 482 deg.C

19. Model: V76

a. Design Pressure: 413bar @38 deg.Cb. Design Temperature: -18 ~ 482 deg.C

20. Model: V63

a. Design Pressure : 20.6bar @20 deg.C b. Design Temperature : -12 ~ 135 deg.C

21. Model: V66

a. Design Pressure : 413bar @20 deg.C b. Design Temperature : -12 ~ 135 deg.C

22. Model: VB16

a. Design Pressure : 413bar @38 deg.Cb. Design Temperature : -18 ~ 232 deg.C

Service Restriction:

Unit Certification is not required for this product. If the manufacturer or purchaser requests 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. The materials for body, disc stem and seat are to be suitable for intended service.
- 3. Maximum service pressure and temperature are not to exceed those specified by the manufacturer.
- 4. All valves intended for installation on the side shell, including valves at the sea chests, are to be hydrostatically tested, before installation, to a pressure of at least 5 bar, in the presence of the Surveyor.
- 5. All valves are to bear permanent identification, such as the manufacturer's name or trademark, material identify, pressure rating, etc. at which the manufacturer guarantees the valves to meet the requirements of the manufacturer's 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 4-6-1/7.1.3 and 4-6-1/7.1.4 of Marine Vessels Rules.

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Notes/Drawing/Documentation:

Drawing Name: Valve List & Drawing

Terms of Validity:

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STANDARDS

ABS Rules:

2025 Marine Vessel Rules 1A-1-4/7.7, 1A-1-A3 & A4, 4-6-2/5.11, 4-6-2/5.15

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA