



CERTIFICATE NUMBER

13-HG1011768-PDA

DATE

20 March 2013

ABS TECHNICAL OFFICE

Hamburg Engineering Department

# CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of  
**PISTER KUGELHAEHNE GMBH - D-76461 MUGGENSTURM**

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, Ball**

MODEL: **BK3 (Stainless Steel), BK3, BKH, BKHU, BKHU3, FBKH, FCKH, FRKH, FSKH, MKH (Stainless Steel), MKH, RKH, SK3, SKH, FCKH-U.**

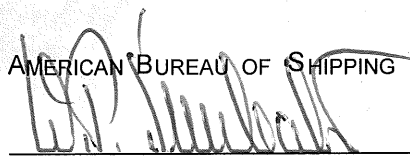
This Product Design Assessment (PDA) Certificate 13-HG1011768-PDA, dated 20/Mar/2013 remains valid until 19/Mar/2018 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

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

  
Wulf-Peter Senebald  
Engineer

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).

## PISTER KUGELHAEHNE GMBH

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**Product:** Valve, Ball

**Model:** BK3 (Stainless Steel), BK3, BKH, BKHU, BKHU3, FBKH, FCKH, FRKH, FSKH, MKH (Stainless Steel), MKH, RKH, SK3, SKH, FCKH-U.

**Intended Service:**

Ball valves for on-board use on vessels and marine structures.

**Description:**

Ball valves (modular system designed range) to suit a wide range of application. All units have a safety margin of at least 2.4 (nominal pressure against burst pressure) , whereby "PN" pressure ratings may be required to be reduced on actual operating temperatures, high pressure surges etc.

For the valve body, adapters, stem and ball a variety of material grades is available, i.e.:

Steel

Grade: S460N (EN 10113-1)

Grade: 11SMn30 (DIN EN 10277-3, No. 1.0715/SAE 1213).

Grade: S355J2G3 (DIN EN 10025, No. 1.0570).

Austenitic Stainless Steel

Grade: X6CrNiMoTi17-12-2 (DIN EN 10088, No. 1.4571/AISI 316 Ti).

Grade: X5CrNiMoTi17-12-2 (DIN EN 10088, No. 1.4401/AISI 316).

Grade: X2CrNiMoTi17-13-2 (DIN EN 10088, No. 1.4404/AISI 316 L).

Material of ball seats: POM, PTFE, PVDF, PEEK, GG25 Gray Cast Iron, Polyimid.

Material of stem and adapter sealings: NBR, FPM, EPDM, PTFE, HNBR.

**Ratings:**

Pressure range of valves: 1.6 MPA to 50 MPA.

Temperature range depending on materials used:

Steel material:

Grade: S460N (-40°C to +120°C).

Grade: 11SMn30, (-20°C to +120°C).

Grade: S355J2G3, (-40°C to +120°C).

Austenitic Stainless Steel material:

Grade: X6CrNiMoTi17-12-2, (-200°C to +200°C).

Grade: X5CrNiMoTi17-12-2, (-200°C to +200°C).

Grade: X2CrNiMoTi17-13-2, (-200°C to +200°C).

**Service Restrictions:**

These valves do require unit certification according to Section 5C-8-5/3.2.1 of the Steel Vessel Rules if they are intended for operating temperatures below -55°C whereby each size and type of valve should be subjected to a tightness test to the minimum design temperature or lower, and to a pressure not lower than the design pressure of the valve. During the test the satisfactory operation of the valve should be ascertained. Ball valves are not to be used in any connection to the vessel's shell. Only fire tested valves may be used in fire main systems, as oil tank shut-off devices or in oil tank remote closing systems. Valve construction materials are to be suitable for the intended service. Metallic materials (except austenitic stainless steels) used in piping systems at or below -18°C are to have adequate notch toughness properties (See Section 4-6-2/3.1.6 of the Steel Vessel Rules). All valves of Classes I and II piping systems having nominal diameters exceeding 50 mm are to have flanged or welded ends (Rules, Section 4-6-2/5.11.3-d).

**Comments:**

The application and installation of the valves is to be in accordance with the manufacturer's specifications, instructions and recommendations. The valve body is to bear permanent indication of maker, reference standard, material identity and pressure rating.

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**Notes / Drawings / Documentation:**

This Product Design Assessment (PDA) is valid only 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.

**Term of Validity:**

This Product Design Assessment (PDA) Certificate 13-HG1011768-PDA, dated 20/Mar/2013 remains valid until 19/Mar/2018 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

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**STANDARDS****ABS Rules:**

The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. The Rules applicable to this assessment are:

ABS Rules 1-1-Appendix 3, 4-6-2/5.11, 4-6-2/3.1.5, 5C-8-5/3.2.1.

**National:**

DIN 3230-1, DIN 3230-2, DIN 3230-3

**International:**

EN 12266-1-2.

**Government Authority:**

NA

**EUMED:**

NA

**Others:**

NA