

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP000010A
Revision No:
3

This is to certify:

That the **Ball Valve**

with type designation(s)
FCKH

Issued to

Pister Kugelhähne GmbH
Muggensturm, Baden-Württemberg, Germany

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV class programme DNV-CP-0186 – Type approval – Valves

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Temperature range: -20° to 80°C
Max. working press.: 320 bar
Sizes: DN 25 to DN 100

Issued at **Hamburg** on **2023-02-15**

for **DNV**

This Certificate is valid until **2027-07-06**.

DNV local unit: **Augsburg**

Approval Engineer: **Ana Cristina Do Carmo Insfran**

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Sven Klinger
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Wafer type ball valve with removable handle in closed position.
 Flange connections acc. to SAE, DIN, ANSI, ISO.

Materials:

Valve item	Material type	
	Carbon steel	Stainless steel
Valve body	S 355	1.4418 (DN25); 1.4571 (DN25); 1.4462 (DN80 and DN100)
Ball		1.4408; 1.4571
Ball seal		Delrin
O-Rings		Nitrile; Viton

Design temperatures for rubber materials:

Nitrile: -20°C to +90°C

Viton: -20°C to +150°C

Application/Limitation

The wafer ball valves of type FCKH are type approved for control and shut-off applications for the following operating media:

Air, non-flammable gases, hydraulic oil, lubrication oil.

The type approval does not include any operating gear for remote control of the valves.

The valve may also be used as regulation valves for hydraulic oil.

Remarks:

Valves for applications in sea water systems should be manufactured with stainless steel grades having a minimum pitting resistance equivalent number (PREN) of ≥ 30 .

Lining material used shall be resistant to the fluid flowing through the valves.

Limitation:

Wafer ball valves may not be used for flammable and liquefied gases and applications with flowing media specified as dangerous and toxic fluids.

Type Approval documentation

Type Approval Application: Modification PN320 dated on 2023-01-10

Material and Pressure test _ Certificate no. 188/22 dated on 2022-05-03 and 263/21 dated on 2021-06-09

Drawings Modification Pressure PN 320 bar No.: dated on 2022-12-14

19-025-Z-315-4425-001; 19-025-Z-315-9925-001; 19-080-F-320-39231-001; 19-080-F-320-34231-001;

19-100-F-320-39231-002; 19-100-F-320-4423-001; 19-100-F-320-4423-002; 19-100-F-320-34231-001;

19-100-F-320-34231-002.

Drawings No.:

19-025-Z-315-4425-001 rev. f, dated 2006-11-20

19-025-Z-315-9925-001 dated 15.10.09

19-080-F-320-39231-001 rev. d, dated 2006-11-20

19-080-F-320-34231-001 rev. f, dated 2006-11-20

19-100-F-320-39231-002 rev. d, dated 2006-11-20

19-100-F-320-34231-001 rev. a, dated 2006-11-20

19-100-F-320-34231-002 rev. a, dated 2006-11-20

19-100-F-320-4423-001 rev. d, dated 2006-11-20

19-100-F-320-4423-002 rev. d, dated 2006-11-20

Manufacturer's burst test reports dated 2006-09-28 and 2006-10-19

Manufacturer's strength calculations

Tests carried out

Test standard: Valve standard / DNV Pt.4 Ch.6 DNV CP 0186	Purpose of test
Type of test Pressure test	To confirm the pressure containing capability of the valve body against internal pressure Test pressure = 1,5 times the design pressure Holding time: 2 min for sizes up to DN100 mm
Hydrostatic seat leakage test	To confirm the capability of the seat to comply with the specified leakage rate. The test shall be performed with closed valve with the other end open to atmosphere. The pressure shall be applied independently on each side of the closed ball. Minimum test pressure: Equal to the design pressure Holding time: 5 min for all sizes. Acceptable leakage range: Drop tight

Production testing and product certification

Valves shall be delivered with material certificates in accordance with DNV Rules Pt.4 Ch.6 – Piping systems, Section 2 – Table 3.

DNV product certificates are required for valves with DN > 100 mm and PN > 16 bar and for ship side valves DN>100mm regardless of pressure rating.

For another valves manufacturers certificate, may be accepted.

Other valve documents: Instruction manual/specification sheet.

Marking of product

For traceability to this type approval the products are to be marked with:

- Manufacturers name or trade mark
- Valve type designation
- Size
- Maximum design pressure and temperature
- Arrow to indicate direction of flow on one way flow valves

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to DNV CP-0338, Sec.4.

The certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE