

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Ball Valve**with type designation(s)
FCKH

Issued to

Pister Kugelhähne GmbH
MUGGENSTURM, Germany

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves**Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****Temperature range:** -20° to 90°C**Max. working press.:** 315 bar**Sizes:** DN25 to DN 200Issued at **Hamburg** on **2017-07-13**This Certificate is valid until **2022-07-12**.DNV GL local station: **Augsburg**for **DNV GL**Approval Engineer: **Guido Friederich**

Olaf Drews
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.



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	ST 52.3, 1.0570	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

Tests carried out / Fabrication testing

Production testing and product certification

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

DNV GL 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 certificate periodical assessments shall be carried out at production places by DNVGL surveyor.

The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:

- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.