



TYPE APPROVAL CERTIFICATE
No. **MAC122018XG/001**

This is to certify that the product identified below is in compliance with the regulations herewith specified.

<i>Description</i>	BUTTERFLY VALVES
<i>Type</i>	Double Flange, Lug and Wafer
<i>Applicant</i>	LK VALVES AB GARNISONSGATAN 19 SE-25466 Helsingborg SWEDEN
<i>Manufacturer</i>	LK VALVES AB
<i>Place of manufacture</i>	GARNISONSGATAN 19 SE-25466 Helsingborg SWEDEN
<i>Reference standards</i>	Part C, Chapter 1, Section 10 of RINA Rules for the Classification of Ships

Issued in **Hamburg** on **June 11, 2018**. *This Certificate is valid until* **June 10, 2023**


RINA Services S.p.A.
Giuseppe Russo

Alternative Place of Manufacture:

Changzhou LK Valves Co., Ltd,

Building No16, Xin Yu Logistics Park, East Renmin Road No8, YaoGuan Town Wujin Changzhou,
213102 JIANGSU, CHINA

This certificate consists of this page and 2 enclosures.



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Double Flange, Lug and Wafer

Reference documents:

Data Sheets, Configuration Chart & Manufacturing Drawings filed for info under RINA dwg. no. HMMC-11206
Pressure tests, procedure and acceptance criteria filed for info under RINA dwg. no. HMMC-11209

Technical characteristics:

This product is a soft seated butterfly valve with vulcanized rubber liner by injection moulding.
Optional control: actuators, gear or lever.

Design Specification:

Product design	Type	Size (mm)	Pressure Rating	Temperature Range
Double Flange Type	730701, 730702, 730901, 730902, 731701, 731702, 731901, 731902, 732701, 732702, 732901, 732902	DN 40 ~ DN 500	PN 10, PN 16	NBR: -35°C to 95°C EPDM: -40°C to 110°C FKM/FPM: -30°C to 180°C
Lug type	710700, 710701, 710702, 711700, 711701, 711702, 712700, 712701, 712702, 710900, 710901, 710902, 711900, 711901, 711902, 712900, 712901, 712902, 710703, 710903, 711703, 711903, 712703, 712903	DN 40 ~ DN 800	PN 6, PN 10 PN 16, PN 25	NBR: -35°C to 95°C EPDM: -40°C to 110°C FKM/FPM: -30°C to 180°C
Wafer Type	700701, 700702, 701701, 701702, 702701, 702702, 700901, 700902, 701901, 701902, 702901, 702902, 700703, 700903, 701703, 701903, 702703, 702903	DN 40 ~ DN 600	PN 10, PN 16 PN 25	NBR: -35°C to 95°C EPDM: -40°C to 110°C FKM/FPM: -30°C to 180°C

Materials:

Part	Material
Body	Ductile iron EN-JS1030 (GGG40)
Disc	Aluminium bronze CC333G (AB2), Stainless steel 1.4408 (AISI316)
Rubber lining	NBR, EPDM, FKM/FPM
Bearing	Brass
Bushing	Composite
End plug	Steel
Stem	Stainless steel 1.4436 (AISI316), alt AISI 431
Pin	Ductile iron EN-JS1030 (GGG40)



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Double Flange, Lug and Wafer

Fields of application:

This product may be used as a component of the piping systems installed on ships and offshore units classed by the RINA and conveying the following media:

Sea water and fresh water, boiler feed water and condensate, fuel oil, lubricating oil, flammable and non-flammable hydraulic oil, air and other gases.

Acceptance conditions:

These valves body, disc and sealing are to be made of a suitable material for use with the conveyed fluids.

RINA certificate is required for materials of valves for class I piping systems having nominal diameter equal or greater than 50 mm and of valves for class II piping systems having nominal diameter equal or greater than 100 mm.

Manufacturer certificate suffices for materials of valves for class I piping systems having nominal diameter less than 50 mm and valves for class II piping systems having nominal diameter less than 100 mm.

All valves for class I and class II piping systems are to have RINA product certificate.

All valves for class III piping systems may have Manufacturer certificate both for materials and product itself.

All valves fitted on the ship side and collision bulkhead are to be certified as a component of a class II piping system.

Valves intended for class I and Class II piping systems are to be subjected to hydrostatic tests in accordance with standards recognized by the RINA, at a pressure not less than 1,5 times the design pressure, as required by RINA Rules Pt C, Ch 1, Sec 10 Art. 21.4.3a).

Valves intended to be fitted on the ship side below the load waterline are to be subjected to hydrostatic tests under a pressure not less than 0,5 MPa as required by RINA Rules Pt C, Ch 1, Sec 10 Art. 21.4.3b).

These valves mounting to the shell is to be carried out as required by RINA Rules Pt C, Ch 1, Sec 10 Art 2.8.3.

Hamburg June 11, 2018



A handwritten signature in blue ink, appearing to be 'S. De' or similar, is written to the right of the RINA logo.