

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP000006M
Revision No:
2

This is to certify:

That the **Butterfly Valves**

with type designation(s)

Wafer types, Lug types, Double flange, Double flange U-type

Issued to

Meson AB

Laholm, Hallands Län, Sweden

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems

DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Type:	Temperature range:	Max. working press.:	Sizes:
Wafer types	see page 2	PN10, PN16, PN25	DN40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600
Lug types	see page 2	PN6, PN10, PN16, PN25	DN40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800
Double flange	see page 2	PN10, PN16	DN40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500
Double flange U-type	see page 2	PN10, PN16	DN500, 700, 800, 900

Issued at **Høvik** on **2021-11-29**

for **DNV**

This Certificate is valid until **2026-08-19**.

DNV local station: **Malmö**

Approval Engineer: **Maheshraja Venkatesan**

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Zeinab Sharifi
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

Butterfly valves – wafer type / lug type / Double flange / Double Flange U-type - with rubber lining
Face to face standard: EN558 - series 13
Flange standard according to EN 1092-2

Types:

Type (*)	Product Group
Wafer types:	700701, 700702, 700703, 701701, 701702, 701703, 702701, 702702, 702703, 700901, 700902, 700903, 701901, 701902, 701903, 702901, 702902, 702903
Lug types:	710700, 710701, 710702, 710703, 711700, 711701, 711702, 711703, 712700, 712701, 712702, 712703, 710900, 710901, 710902, 710903, 711900, 711901, 711902, 711903, 712900, 712901, 712902, 712903
Double Flange:	730701, 730702, 730901, 730902, 731701, 731702, 731901, 731902, 732701, 732901, 732702, 732902
Double Flange U-type	720701, 720901, 721701, 721901, 722701, 722901, 720702, 720902, 721702, 721902, 722702, 722902

(*) Configuration according to "Configuration Chart Butterfly" document no. 34570

One-piece stem, centric located. Disc is secured to the stem by pins. Seat is mechanically retained in the body.

Material of construction:

Part	Material
Body	Ductile iron (Nodular cast iron of ferritic type) EN-GJS-400-15 EN 1563 (EN-JS1030/ GGG40)
Disc	Aluminum bronze CC333G (AB2) Stainless steel: W.no: 1.4408 (AISI316)
Stem	Stainless steel W.no: 1.4436 (AISI316) Stainless steel W.no: 1.4057 (AISI431)
Seat	NBR, EPDM, FKM/FPM

Manufacturing locations:

- (1) Meson AB,
Laholm, Hallands Län, Sweden
- (2) Meson (Changzhou) Flow Control System Co., Ltd
Building No 16, Xin Yu Logistics Park,
Renmin Road No 8, YaoGuan, Wujin
Changzhou, Jiangsu Province
People's Republic of China

Application/Limitation

Valves covered by this certificate are approved to be use in ship and machinery piping systems (class II & III) with below maximum working pressure ranges:

Type	Size	Maximum working pressure
Wafer	DN40 to DN300	PN10 – PN16 – PN25
	DN350 to DN600	PN10
Lug	DN40 to DN300	PN10 – PN16 – PN25
	DN350 to DN600	PN10 – PN16
	DN700 & DN800	PN 6 – PN10
Double flange	DN40 to DN500	PN10 – PN16
Double Flange U-type	DN500 to DN 900	PN10 – PN16

The maximum allowable working pressure shall follow the pressure-temperature tables in the flange standard.

Temperature range based on seat material:

NBR: 0°C to 95°C
EPDM: 0°C to 110°C
FKM/FPM: 0°C to 180°C

The stainless steel AISI316 is not considered seawater resistant. Valves with parts made of AISI316 shall not be used in seawater applications.

The valves covered by this certificate are not considered fire safe.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

The valves covered by this certificate are not to be used as closing valves on fuel oil tanks.

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

The maximum output torque from actuators used on butterfly valves must not exceed the limit at which the valve spindle or disc can be damaged if the disc is restrained in any position.

The valves covered by this certificate shall not to be used for piping subject to pressure shock, excessive strains and vibration.

Type Approval documentation

Drawings:

- 34530 rev D "Butterfly valve Lug"
- 34531 rev C "Butterfly valve Wafer"
- 34532 rev A "Butterfly valve Double Flange"
- Brochure "Butterfly valve wafer type"
- Brochure "Butterfly valve lug type"
- Brochure "Butterfly valve double flange type"

Burst pressure test report dated 04/17/2013 witnessed by DNV local station NANJING.

Burst pressure test report dated 08/06/2014 witnessed by DNV local station NANJING.

Configuration Chart Butterfly document no. 34570

Acquisition letter from Meson acquiring LK valves

Authorization letter dated 2020-03-31 from LK Valves authorizing Meson AB

Documentation related to Double flanged U-type:

- Product information for U-type Butterfly valve dated 19.11.2020
- Datasheet dated 01/22/2020
- Drawings
 - o P13404 Rev. A - Butterfly valve U-flange
 - o BFV U-type Rev. 0 – Butterfly valve U-type
 - o P13080 Rev. C – BFV DF Body DN500 JIS 10K
 - o P13082 Rev. D – BFV DF Body DN700 JIS 10K
 - o P13084 Rev. C – BFV DF Body DN800 JIS 10K
 - o P13086 Rev. C – BFV DF Body DN900 JIS 10K
- Design Check of U-type Butterfly Valves with Appendices A, B, C, D and E dated 2021-05-10

Tests carried out

Burst pressure test

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the standard EN 593 [5] and the latest applicable edition of the Rules (as mentioned on the front page of this certificate), as appropriate.

Marking of product

Minimum marking requirements shall be as outlined in the valve standard EN 593 [8.1].

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 approval are complied with. Reference is made to DNV-CP-0338.