



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP00001UA
Revision No:
3

This is to certify:
that the Butterfly Valves

with type designation(s)
Concentric, Double Offset Eccentric, Double Offset FSB Series

issued to
Gomotec Co., Ltd.
Busan, Korea, Republic of

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

Application:

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

Type:	Temperature range:	Max. working press.:	Sizes:
Concentric	See page 2	See page 2	DN50 to DN1000
Double Offset Eccentric	See page 2	See page 2	DN50 to DN1000
Double Offset FSB Series	See page 2	See page 2	DN50 to DN1000

Issued at **Høvik** on **2026-02-13**

This Certificate is valid until **2029-09-19**.

for **DNV**

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Marc Avice**

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 USD 300 000.

Product description

Butterfly valves, wafer, Semi-Lug, lug and flanged type with two disc design types of concentric and double offset Eccentric.

Design standards based on valve body material:

Steel: API 609 / ASME B16.34/ JIS B 2064
 Ductile iron: ASME B16.42/JIS B 2064

Face to face end connection design & standards:

- WAFER & LUG : API 609 Cat.A/B, JIS F7480
- FLANGE : API 609 Cat.A/B, JIS F7480

Sizes: DN50 to DN1000 (2", 2 1/2", 3", 4", 5", 6", 8", 10", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 40")

Valves Specifications:

Type:	Concentric	Double offset Eccentric	Double offset FSV
End Connections:	Wafer, Semi-Lug, Lug and Flanged	Wafer, Semi-Lug, Lug and Flanged	Wafer, Semi-Lug, Lug and Flanged
Size:	DN50 to DN1000 (2" to 40")	DN50 to DN1000 (2" to 40")	DN50 to DN1000 (2" to 40")
Flange ratings:	[JIS 5K,10K], [ISO PN6,PN10], ASME 150 lb	[JIS 5K,10K,16K, 20K], [ISO PN6,PN10,PN16], ASME 150 lb	[JIS 5K,10K,16K, 20K], [ISO PN6,PN10,PN16], ASME 150 lb

Material:

Type	Concentric	Double offset Eccentric	Double offset FSV
Part	Material	Standard: ASTM/JIS	Standard: ASTM/JIS
Body	Nodular cast iron of the ferritic type	A395 Gr. 60-40-18 A395 Gr. 65-45-15 A536 Gr.60-40-18 A536 Gr.65-45-12 JISG 5502.FCD (FCD400/450)	A395 Gr. 60-40-18 A395 Gr. 65-45-15 A536 Gr.60-40-18 A536 Gr.65-45-12 JISG 5502.FCD (FCD400/450)
	Carbon Steel	A216 Gr. WCB/ WCC JISG 5101.SC (SC480/ SCPH2)	JISG 5101.SC (SC480/ SCPH2) A216 Gr.WCB/WCC
	Stainless Steel	N/A	A351, JISG 5121.SCS
Disc	Stainless Steel	A351, A217, JISG 5121.SCS A890 Gr. 4A (Duplex) A890 Gr.5A (S. Duplex)	A351, A217, JISG 5121.SCS A890 Gr. 4A (Duplex) A890 Gr.5A (S. Duplex)
	Aluminium Bronze	B148, JISH 5111, 5114 Al- Bronze	B148, JISH 5111, 5114 AL-Bronze

Application/Limitation

The valves are approved for use in ship piping, machinery piping and cargo piping systems.

Design temperatures dependent on lining/seat materials with the worst allowable temperature limit in the assembly:

Type of Material	Min. temperature	Max. temperature
Stainless steel (ASTM A240 Grade 304 / 304L, ASTM A240 Grade 316 / 316L) with TEFLON	-40°C	230°C
TEFLON (PTFE/RTFE)	-40°C	190°C
EPDM	-35°C	120°C
NBR	-18°C	100°C
FKM	-20°C	180°C

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. Valves of austenitic stainless steel shall not be used in direct contact with seawater. Pressure parts shall fulfil the impact test requirements of DNV-RU-SHIP Pt.2 Ch.2 at minimum design temperature.

Nodular cast iron of the ferritic type has the following limitations:

- Specified minimum elongation of 12%, may be used in class II and III piping and in pipes and valves located on the ship's side and bottom and valves on the collision bulkhead. The use of nodular cast iron in class I piping shall be subject to consideration for approval in each case.
- Nodular cast iron shall not be used for media having a temperature exceeding 350°C.
- The use of nodular cast iron for media having a temperature below 0°C shall be considered in each particular case.

Bilge valves and shipside valves shall be arranged for manual operation even if these valves are remote controlled. A portable hand pump is not accepted as equivalent to manual operation.

When used as shipside valves the disc must not extend outside the hull plating in open position.

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

Valves having EPDM lining shall not be used in hydrocarbon service.

Type Approval documentation

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

Tests carried out

Fire safety valves with stainless steel + PTFE/RTFE seat were fire tested according to API 607.

Marking of product

Minimum marking requirements shall be as outlined in the valve design standard API 609 [8].

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

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.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.

Manufactured by:

GOMOTEC CO., LTD
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