DNV·GL

Certificate No:
TAP00000KG

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Butterfly Valves

with type designation(s)
BVHD Wafer type (fire safe with RTFE/inconel seats), BLHD Lug type (fire safe with RTFE/inconel seats)

Issued to
GHIBSON ITALIA SRL
Valsamoggia BO, Italy

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL rules for classification – Ships Pt.5 Ch.7 Liquefied gas tankers
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition July 2015
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

Application :

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

Type:	Temperature range:	Max. working press.:	Sizes:
BVHD Wafer type (fire safe with RTFE/inconel seats)	**Dependent on the seat material**	**25 bar**	**DN50 - 400**
BLHD Lug type (fire safe with RTFE/inconel seats)	**Dependent on the seat material**	**25 bar**	**DN50 - 400**

This Certificate is valid until **2021-06-30**.

Issued at **Høvik** on **2016-11-17**

for **DNV GL**

DNV GL local station: **Venice**

Approval Engineer: **Adel Samiei**

Marianne Spæren Marveng
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.

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Job Id:
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Product description

Double Excentric butterfly valves, designed according to EN 593 & EN 12516-1,2 (PN25 or class 150):

Type designation	Type	Size (DN)	Stem
BVHD	Wafer	50 – 300	2 piece
		350 – 400	1 piece
BLHD	Lug	50 – 300	2 piece
		350 - 400	1 piece

Materials:

Part	Material
BODY	Carbon steel ASTMA216 – WCB
	Stainless steel ASTM A351 CF8MK (AISI 316)
	Stainless steel 6MO ASTM A351 CK-3MCuN
	Stainless steel duplex ASTM-A890-Grade 4A
	Stainless steel Super duplex ASTM-A890-Grade 5A
DISC	Stainless steel ASTMA351 CF8M (AISI 316)
	Stainless steel MONEL 400 ASTM A494 Gr. M35-1 (UNS N24135)
	Stainless steel Hastelloy C ASTM A494 CW 12MW (UNS N30002)
	Stainless steel duplex ASTM-A890-Grade 4A
	Stainless steel Super duplex ASTM-A890-Grade 5A
STEM	Stainless steel ASTM A564 Gr. 630 (H1150)
	Steel Duplex ASTM A182 Gr. F51 (UNS S8\31803)
	Steel Super Duplex ASTM A182 Gr. F55 (UNS 32760)
	Hastelloy Alloy C-276 (UNS N 10276)
	Monel Alloy K500 (UNS N05500)
LINING/SEAT	PTFE (not fire tested)
	Reinforced PTFE (fire tested)
	Inconel 625 + Graphite (fire tested)

Application/Limitation

The approval is valid for ship, machinery & cargo piping systems onboard DNV GL classed ships and mobile offshore units.

Minimum design temperature of "Carbon steel ASTMA216 – WCB" is limited to -29°C. Other materials may be used in systems where minimum design temperature is -55°C.

Design temperatures depending on seat and gasket materials:

PTFE: -55°C to +190°C
Reinforced PTFE: -55°C to +230°C
Inconel 625+Graphite: -55°C to +450°C

Lining material used, shall be compatible with the fluid in the system. This shall be documented.

The pressure/temperature rating shall be as specified in EN 12516-1.

Valves covered by this certificate (with RTFE or Inconel seats) are to be considered fire safe and can be installed in systems where fire safe applications are required.

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

This certificate does not cover valves to be installed in LNG/LPG applications when the design temperature below -55°C.

Type Approval documentation

Production tests

All valve bodies shall be subjected by the manufacturer to a hydrostatic test at a pressure equal to 1.5 times the nominal pressure (The nominal pressure is the maximum allowable working pressure at room temperature).

All valve assemblies shall be subjected to seat leakage test at 1.1 times maximum working pressure at closed position.
Production Testing and acceptance criteria shall be in accordance with EN 12266-1.

Valves fitted on ship's side and bottom are also to be hydrostatically tested at a pressure equal to 5 bar applied independently on each side of the closed disc.

Certification

Valve bodies shall be delivered with work certificates (in accordance with DNV GL Ship Pt.5 Ch.7 Sec.1 Table 8) for LNG/LPG applications.
In the other applications, valve bodies shall be delivered with material certificates in accordance with DNV GL Ship Pt.4 Ch.6 Sec.2 Table 3.
Materials with VL and W certificates shall be manufactured in a foundry approved by the society.

In LNG/LPG applications, DNV GL product certificates are required for valves with DN≥100. Other sizes (DN<100) may be delivered with manufacturer's certificate.
In the other applications, DNV GL product certificates are required for valves with DN>100 mm and design pressure ≥ 16 bar, and for ship side valves where DN>100 mm regardless of pressure. For other valves a manufacturer's product certificate may be accepted.

Tests carried out

Marking of product

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

- Manufacturer's name
- Type designation
- Design Pressure

Periodical assessment

For retention of the type approval, a DNV GL Surveyor shall perform a survey at least every second year and before the expiry date of this certificate to verify that the conditions for the type approval are complied with.