

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP00000KG
Revision No:
1

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 S.r.l.
Zola Predosa BO, Italy

is found to comply with

DNV GL class programme DNVGL-CP-0186 – Type approval – Valves
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV rules for classification – Ships Pt.5 Ch.7 Liquefied gas tankers
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

Application :

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

Type:	Temperature range:	Max. working press.:	Sizes:
BVHD Wafer type (fire safe with RTFE/inconel seats)	Dependent on the seat material	25 bar	DN40 - 500
BLHD Lug type (fire safe with RTFE/inconel seats)	Dependent on the seat material	25 bar	DN40 - 500

Issued at **Høvik** on **2021-09-10**

for **DNV**

This Certificate is valid until **2026-06-30**.

DNV local station: **Venice**

Approval Engineer: **Rob Oerlemans**

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

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	40 – 300	2 piece
		350 – 500	1 piece
BLHD	Lug	40 – 300	2 piece
		350 - 500	1 piece

Materials:

Part	Material	
BODY	Carbon steel	ASTM A516 Gr.70
		P355NH [1.0565] -EN 10028-3
		P355NL2 [1.1106] -EN 10028-3
		ASTM A216 WCB / GP240GH [1.0619]-EN 10213
		ASTM A352 LCB / G17Mn5 [1.1131] -EN 10213
		ASTM A352 LCC / G20Mn5 [1.6220] -EN 10213
	Stainless steel	ASTM A351 CF8M [AISI 316] / X5CrNiMo19-11-2 [1.4408] -EN 10213
		ASTM A351 CF3M [AISI 316L] / GX2CrNiMo19-11-2 [1.4409] -EN 10213
		6MO- ASTM A351 CK-3MCuN / X1CrNiMoCuN20-18-7 [1.4547]
		Duplex - ASTM-A995-Gr.CD3MN [UNS S31803]/ GX2CrNiMoN22-5-3 [1.4470] -EN 10213
		Super Duplex - ASTM-A995-Gr.CE3MN [UNS S32750]/ GX2CrNiMoN26-7-4 [1.4469]- EN 10213
		Super Duplex - ASTM-A995-Gr.CD3MWCuN
	Nickel and Nickel Alloy	Monel - ASTM A494 Gr.M35-1 [UNS N24135]
		Hastelloy C276 - ASTM A494 CW-12MW [UNS N30002]
		Hastelloy C22 - ASTM A494 CX-2MW [UNS N26022]
DISC	Stainless steel	ASTM A351 CF8M [AISI 316] / GX5CrNiMo19-11-2 [1.4408] - EN 10213
		ASTM A351 CF3M [AISI 316L] / GX2CrNiMo19-11-2 [1.4409] -EN 10213
		6MO ASTM A351 CK-3MCuN / X1CrNiMoCuN20-18-7 [1.4547]
		Duplex ASTM-A995-Gr.CD3MN / GX2CrNiMoN22-5-3 [1.4470] - EN 10213
		Super Duplex ASTM-A995-Gr.CE3MN / GX2CrNiMoN26-7-4 [1.4469] - EN 10213
	Nickel and Nickel Alloy	Monel - ASTM A494 Gr.M35-1 [UNS N24135]
		Hastelloy C276 - ASTM A494 CW-12MW [UNS N30002]
		Hastelloy C22 - ASTM A494 CX-2MW [UNS N26022]
STEM	Stainless steel	ASTM A564 Gr. 630 [H1150]
		Duplex ASTM A182 Gr. F51 [UNS S31803]
		Super Duplex ASTM A182 Gr. F55 [UNS 32760]
	Nickel and Nickel Alloy	Monel Alloy K500 [UNS N05500]
		Hastelloy C276 – ASTM B574 [UNS 10276]
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 classed ships and mobile offshore units.

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

Materials for pressure equipment designed for material temperatures below 0°C shall fulfil the requirements for low temperature service in Pt.2 Ch.2 and Pt.5 Ch.7. , as appropriate.

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

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.

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.

Type Approval documentation

Manufacturer's documentation HDTA – APPLICATION Ghibson Italia Butterfly Valves, High Performance Type HD, Double Excentric Series, *revision 1 dated May 2021*

Fire test reports (according to API607:2010 /ISO10497-5:2004):

Test report No 1344.0AE0202/10 dated 26/10/2010 issued by LAPI, BVHD DN50, seats RTFE+Inconel

Test report No 1345.0AE0202/10 dated 26/10/2010 issued by LAPI, BVHD DN100, seats RTFE+Inconel

Test report No 1346.0AE0202/10 dated 26/10/2010 issued by LAPI, BVHD DN200, seats RTFE+Inconel

Test report No 1347.0AE0202/10 dated 26/10/2010 issued by LAPI, BVHD DN100, seats RTFE+Inconel

Tests carried out

Fire test of sizes DN50, DN100, DN200 according to API 607/ ISO10497

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).

Marking of product

Minimum marking requirements shall be in accordance with EN 19.

Periodical assessment

For retention of the Type Approval, a DNV GL 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 DNVGL-CP-0338.