Certificate No:
TAP00002GB

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Butterfly- and Throttle Valves

with type designation(s)
L, L special bores, M, S

Issued to
Ewald Kraft Apparatebau- und Vertriebs-GmbH
Wuppertal, **Germany**

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

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Type:	Temperature range:	Max. working press.:	Sizes:
L	see certificate	6 bar	DN50 - DN500
L special bores	see certificate	1.4 bar	DN100 - DN300
M	see certificate	6 bar	DN50 - DN500
S	see certificate	6 bar	DN50 - DN700

Issued at **Hamburg** on **2022-01-31**
This Certificate is valid until **2027-01-30**.
DNV local station: **Essen**

for **DNV**

Approval Engineer: **Ana Cristina Do Carmo Insfran**

Olaf Drews
Head of Section

Product description

Butterfly valve type: L, M and S for installations in piping systems.

Valve design:
- Wafer Type Butterfly Valve: Type L
- U-Type Flange Butterfly Valve: Type M
- Lug Type Butterfly Valve: Type S

Flange connections according to:
- EN 1092 PN2.5, PN6, PN10, PN16
- ASME B16.5 Class 150, Class 300

Testing Standard:
- EN 12266-1

Butterfly valve nominal sizes:
- Type L – DN 50 to DN 500
- Type L special bore – DN100 – DN300
- Type M – DN 50 to DN 500
- Type S – DN 50 to DN 700

Pressure ratings: PN 6, PN 10, PN 16, Class 150, class 300

Design temperature: Depending on seat materials

Seat design type	Temperature range [°C]
BZO (NBR)	-20 to 100°
Vulkollan (AU)	-15 to 80°
EPDM	-30 to 120°
Hypalon	-30 to 120°
Silicone	-50 to 180°
Viton	-30 to 200°
Teflon	-80 to 200°

Butterfly valves may be equipped with manual, pneumatic or electric actuator hydraulic[1].

Note 1:
Actuators, remote operating control devices and additional mountings are not included in this type approval.

Materials:

Valve	Material type	EN Standard
Body	Ductile Iron	5.3106; 5.3103 EN 1563 (GGG40 40.3 DIN1693)
	Cast Iron	EN-GLJ 250 EN1561 (GG25 EN 1691)
	Stainless Steel	1.4408; 1.4401; 1.4404; 1.4581; 1.4571; 1.4462 EN 10088-3
	Carbon Steel	1.0145; 1.0577; 1.0596; 1.0038; 1.0044 EN10025/EN 10207
	Casting Aluminium	G-ALSi8Cu3, G-AlMg3 EN 1706
Disc	Stainless Steel	1.4301; 1.4401; 1.4404; 1.4581; 1.4571; 1.4462 EN 10088-3 1.4408 EN10213-4
	Carbon Steel	1.0145; 1.0577; 1.0596; 1.0038; 1.0044 EN10025-2
Shaft	Stainless Steel	1.4301; 1.4401; 1.4404; 1.4581; 1.4571 EN 10088-3
	Carbon Steel	1.0145; 1.0577; 1.0596; 1.0038; 1.0044 EN10025-2
Seat	BZO (NBR)	-
	Vulkollan (AU)	-
	EPDM	-
	Hypalon	-
	Silicone	-
	Viton	-
	Teflon	-

Application

The butterfly valves of type L, Type L special bore, M and S are type approved for the following operating media:

Non-flammable gases, sea water, fresh water, air, oil.[2]

Note 2:
Fuel oil, lubrication oil, hydraulic oil and thermal oil are in this context regarded as “Flammable liquids”.
See DNV Rules, Pt. 4 Ch. 1, Section 3 – Design principles

Limitation

Butterfly valves may not be used for flammable gases and applications with flowing media specified as dangerous and toxic fluids.

Body materials are subjected to requirements according to operating temperatures limits specified in DNV Rules Pt.4, Ch. 6 – Piping Systems, Section 2 – Materials.

Tests carried out

The butterfly valves have been tested in accordance with the following standards:

Test standard: EN 12266-1 DNVGL Pt.4 Ch.6 DNV GL CP 0186		Purpose
Title	Test reference	
Hydrostatic Pressure Test	Valve Body	To confirm the pressure containing capability of the shell against internal pressure Test pressure = 1,5 times the design pressure No leakage is permitted.
Hydrostatic/Pneumatic Seat tightness	Valve seat	To confirm the capability of the seats to comply with the specified leakage rate At the manufacture In the direction(s) for which the valve is designed No visible leakage.
Functional test	Valve assembly	Function test of completed assembled valve.

Type Approval documentation

Certification

Application in machinery and piping systems
Valves intended to be installed in piping system listed in DNV Rules Pt.4, Ch.6 – Section 1 shall be certified according to DNV Rules Pt.4 Ch.6 – Piping systems, Section 9

Valve nominal size / Pressure rating	Type of Product Certificate (PC) / Issued by
DN > 100 mm / PN > 16 bar	VL Certificate / DNV
DN ≤ 100 mm / PN ≤ 16 bar	W Works Certificate / Manufacturer
Ship side valves DN > 100 mm regardless of pressure rating	VL Certificate / DNV

Material certificates (valve bodies)
In accordance with DNV Rules Pt.4 Ch.6 – Piping systems, Section 2 – Table 3

Marking of product

For traceability to this type approval the products are to be marked in particular with:

- Manufacturer's name or trademark
- Valve type designation
- Size
- Maximum design pressure and temperature
- Arrow to indicate direction of flow

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 Type Approval are complied with. Refer to DNV-CP-0338, Sec.4.

- The certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE