



Certificate No:
TAP00002S5

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Butterfly Valves

with type designation(s)
Z Serial, Type ZDRW

Issued to

Zhejiang Yongsheng Technology Co., Ltd
Hangzhou, China

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 :

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

Type:	Temperature range:	Max. working press.:	Sizes:
Z Serial, Type ZDRW	-29°C ~ 230°C	PN 1.6 ~ 2.0 MPa	DN 80 ~ 1200
	-29°C ~ 230°C	PN 1.6 ~ 10 MPa	DN 150 ~ 250

Issued at **Hamburg** on **2023-07-31**

This Certificate is valid until **2028-07-30**.

for **DNV**

DNV local unit: **Shanghai**

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

Sven Klinger
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.



Form code: TA 251

Revision: 2022-12

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Product description

Flange type metal hard seal three eccentric Butterfly Valve Z serial type ZDRW designed for installation in piping systems for different services conditions.

Valves-Flanged, Threaded and Welding End: ASME B16.34

Design and manufacture: JB/T8527-2015

Structural length of the valve: GB/T12221

End size: HG/T20592

Pressure – Temperature Rating: GB/T12224

Test Standard: GB/T13927

Sizes: DN 80 to DN 1200 => Pressure ratings: PN 1.6 ~ 2.0 MPa

Sizes: DN 150 to DN 250 => Pressure ratings: PN 1.6 ~ 1.0 MPa

Design temperature range: -29°C ~ 230°C

Sealing type: soft seal /metal seal

Non-metallic materials name	Material
Graphite pad	Flexible graphite
Dust seal	PPL
Packing	Flexible graphite

Materials:

Valve parte	Material type	Standard
Body	Stainless steel	ASTM A351 CF8; ASTM A216 WCB; ASTM A351 CF8M
Disc	Stainless steel	ASTM A216 WCB
Stem	Stainless steel	A564 630
Seat	Flexible graphite/PPL	-

Note: The materials to be used in piping system shall be suitable for the medium and service for which the intended service.

Butterfly valves may be equipped with manual, pneumatic or electric actuator hydraulic¹.

Note 1:

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

Application

The butterfly valve Z serial type ZDRW are type approved for the following operating media:

Non-flammable gases, steam, 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.

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

DN > 100 mm / PN > 16 bar
 DN ≤ 100 mm / PN ≤ 16 bar

Ship side valves DN > 100 mm
 regardless of pressure rating

Type of Certificate / Issued by

Product Certificate (PC) / DNV
 Product Declaration (PD) / Manufacturer

Product Certificate (PC) / DNV

Material certificates (valve bodies)

In accordance with DNV Rules Pt.4, Ch.6 – Piping systems, Section 2 – Table 3- Materials certificates

Tests carried out

The butterfly valve Z serial type ZDRW have been tested in accordance with the following standards:

Test standard: GB/T600-2008 GB/T12238/2016 DNV Pt.4 Ch.6 DNV 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.

Marking of product

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

Manufacturers name	 ZHEJIANG YONGSHENG TECHNOLOGY CO., LTD		
Tag no.		Model	
Nominal Diameter DN (mm)		Nominal Pressure PN (MPa)	
Rate Kv		Flow Characteristic	
Leakage Class		Rotation Angle (°)	
Input Signal (mA)		Body Material	
Output Signal (mA)		Plug Material	
Air Supply Pressure (MPa)		Seat Material	
Spring Range (MPa)		MFR No.	
Working Temperature (°C)		MRF Date	

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