



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	Wouter Witzel EuroValve B.V.	
Address	Postbus 54, Losser, 7580 AB, Netherlands	
Place of Production	AVK Valves(Anhui) Co.,Ltd Wujiang Industrial Park, He County, Ma'anshan, China	
Place of Production	Wouter Witzel EuroValve B.V. Industrieterrein De Pol 12, Losser, 7581 CZ, Netherlands	
Type	Butterfly Valves	
Description	Centric, rubber-lined, 'quarter-turn' type EVS-i Flangeless, Wafer type DN400 to DN600 EVCS-i Flangeless, Wafer, Semi Lug DN40 to DN350 EVCLS-i Flangeless, Wafer, Semi Lug with long neck DN40 to DN300 EVTLS-i Flangeless, Wafer, Lugged type DN40 to DN1200 EVFS-i Double flanged type DN40 to DN2000 EVUS-i Double flanged type DN600 to DN2200 EVMS-i Double flanged type DN40 to DN1200 EVFL-i Double flanged type DN40 to DN1400	
Trade Name	Rubber Lined Butterfly Valves - EV-i Range	
Application	See Appendix	

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Specified Standard	Lloyd's Register Rules and Regulations for the Classification of Ships, July 2025	
	EN 558-1/2:2017, Series 20	(ISO 5752:1982)
	EN 19:2016	(ISO5209:1977)
	API 598:2016	
	API 609:2016	
	EN 12266-1:2012, P10, P11, P12, Rate A	(ISO5208:2008)
	EN 12266-2:2012, F20	
	EN 593:2017	(ISO10631:2013)
	JIS B2220:2004	
	ISO 19921:2005	

Ratings	Size Range	: See above
	Connection	: PN6 / 10 /16, Class 150
	Max. Pressure	: 16 bar
	Temperatures	: -10°C to +200°C, depending on materials used
	NBR	: +90 °C
	EPDM	: +120 °C.
	FPM	: +200 °C.
	VMQ	: +200 °C.

Other Conditions	See Appendix
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This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document RTS-TA-PRJ1110051241344/JMB and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Appendix

For: Wouter Witzel Eurovalve BV, Butterfly Valves, EV-i Range, DN40 – DN2200

Application

Use in essential and non-essential piping systems on ships, classed or intended for classification with Lloyd's Register, for the following services and subject to the other conditions, stated in this Appendix:-

- Cargo Oil system (flammable liquids with f.p. < 60 deg.C);
 - Cargo lines; Crude oil washing; Cargo tank venting;
 - Cargo handling; Crude oil; Sludge system;
 - Oil recovery system; Base oil system.
- Inert Gas system;
 - Water seal effluent line; Scrubber effluent line;
 - Inert Gas Main line; Inert Gas Distribution lines.
- Fuel Oil systems (flammable liquids with f.p. > 60 deg.C);
 - Heavy Fuel Oil; Fuel Oil; Diesel Oil; Marine Diesel Oil (MDO);
 - Oil Fuel Bunkering system; Oil Fuel Transfer system.
- Bilge System;
- Ballast-, Ballast Transfer- and Anti-heeling system;
- Sea inlet, Overboard discharges and sea chest connections;
- Salt and Fresh Cooling Water systems for essential services;
 - HT-cooling system, LT-cooling system; Seawater cooling;
 - Auxiliary cooling system (electric drives), Condensate return.
- Sea Water systems for non-essential services;
 - Jet water, Gland system, Dredging system;
 - High velocity water system; Scrubber system, UV system;
 - Anchor wash system, Ballast water treatment system.
- Fresh Water systems for non-essential services;
 - Air Conditioning system, Sanitary Supply services,
 - Waste water, Blackwater system, Greywater system;
 - Desalination system, Drinking water, Potable water;
 - Swimming pool system, Hydrophore system;
 - Fresh water chilled (HVAC) system, Technical water;
 - Wash water (fixed tank cleaning systems).
- Compressed air (non-essential service, < 7 bar);
- Pulper system (domestic waste);
- Bulk handling system (dry cargo in bulk);
 - Brines, Drilling fluids, Mud system and Liquid mud system.

Other Conditions

1. Grey Cast Iron valves are not to be used for the following applications:-
 - as ship-side valves and valves on the collision bulkhead;
 - in piping systems subject to pressure shocks, excessive strains or vibrations;
 - as valves fitted to tanks containing flammable oil under static pressure.
2. Butterfly valves are not to be fitted on the collision bulkhead of passenger ships.
3. The use of butterfly valves as ship-side valves is restricted to machinery spaces and is not suitable for scuppers or comparable fittings. Proposals to use butterfly valves as ship-side valves outside machinery spaces will be specially considered.
4. Ship-side valves are to be installed to the ship shell plating in such a way that the section of pipe immediately inboard of the valve can be removed without affecting the watertight integrity of the hull.
5. For ship-side valves, the disc is not to extend outside the hull plating in when the valve is in open position.
6. Application in bilge systems of passenger ships is not allowed.
7. Application in main bilge lines and bilge suction branches in cargo ships is restricted as follows:-
 - in machinery spaces only allowed as pump suction valve in main bilge line, subject to the valve being located in the immediate vicinity of the bilge pump and fitted in series with a metal-seated non-return valve. The non-return valve is to be fitted on the main bilge line side of the butterfly valve;
 - only allowed in bilge suction branches in holds, when fitted in a pipe tunnel.
8. In "fire safe" execution (see type of "fire safe" valve below), the following applications are acceptable:-
 - as "in-line" and as suction valves on fuel oil, lubricating oil and hydraulic oil double bottom tanks (not deep tanks) only, inside or outside machinery spaces. The use of non-fire safe valve types is only allowed inside a closed pipe tunnel or duct keel;
 - as "in-line" valves in cargo pump rooms/enclosed compartments of cargo oil tankers; and
 - as fire main isolating valves.

The fire safe type valves have the following characteristics/properties:

Valve size:	DN50 - DN1000, PN16; with
Valve body material:	EN-GJS-400-15 (GGG40)
Disc material:	1.4470
Shaft material:	1.4462
Disc seat/liner material:	NBR
O-rings material:	NBR

9. In all cases, the materials of valve body, disc, seat and seals are to be suitable for the proposed service and media and compliant to the Rules.

10. Valves are to be installed to manufacturer's instruction and the satisfaction of the attending surveyor.
11. This Type Approval does not include the consideration and acceptance of any operating gear for the (remote) control of these types of valves. However, for the applications listed above, mechanical stops to prevent swing-through shall be incorporated into the valve body or the associated actuator.

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