



## 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.

<b>Manufacturer</b>	<b>Wouter Witzel EuroValve B.V.</b>																				
<b>Address</b>	Postbus 54, Losser, 7580 AB, Netherlands																				
<b>Type</b>	Butterfly Valves																				
<b>Description</b>	<table><tr><td colspan="2">Centric, rubber lined, 'quarter-turn' type</td></tr><tr><td>EVS-i</td><td>Flangeless, Wafer type</td><td>DN400 to DN1000</td></tr><tr><td>EVCS-i</td><td>Flangeless, Wafer, Semi Lug</td><td>DN40 to DN350</td></tr><tr><td>EVCLS-i</td><td>Flangeless, Wafer, Semi Lug with long neck</td><td>DN40 to DN300</td></tr><tr><td>EVTLS-i</td><td>Flangeless, Wafer, Lugged type</td><td>DN40 to DN1200</td></tr><tr><td>EVFS-i</td><td>Double flanged type</td><td>DN40 to DN2000</td></tr></table>			Centric, rubber lined, 'quarter-turn' type		EVS-i	Flangeless, Wafer type	DN400 to DN1000	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	
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<b>Trade Name</b>	Rubber Lined Butterfly Valves - EV-i Range																				
<b>Application</b>	See Appendix																				
<b>Specified Standard</b>	<table><tr><td colspan="2">Lloyd's Register Rules and Regulations for the Classification of Ships, July 2024</td></tr><tr><td>EN 558-1/2:2017, Series 20</td><td>(ISO 5752:1982)</td></tr><tr><td>EN 19:2016</td><td>(ISO5209:1977)</td></tr><tr><td>API 598:2016</td><td></td></tr><tr><td>API 609:2016</td><td></td></tr><tr><td>EN 12266-1:2012, P10, P11, P12, Rate A</td><td>(ISO5208:2008)</td></tr><tr><td>EN 12266-2:2012, F20</td><td></td></tr><tr><td>EN 593:2017</td><td>(ISO10631:2013)</td></tr><tr><td>JIS B2220:2004</td><td></td></tr></table>			Lloyd's Register Rules and Regulations for the Classification of Ships, July 2024		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	
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A member of the Lloyd's Register group

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## Type Approval Certificate

### Ratings

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

### Other Conditions

See Appendix

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-PRJ11100460291/MB 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 – DN2000**

### **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);
  - Bulkhandling system (dry cargo in bulk );
- Brines, Drilling fluids, Mud system and Liquid mud system.

**Other Conditions**

1. Grey Cast Iron valves are not permitted to be fitted on:-
  - Ship's side, bottom and sea chest;
  - Bilge and ballast piping in tanks and in tunnels in double bottom;
  - Piping systems subject to pressure shocks, excessive strains or vibrations;
  - Fitted to tanks containing flammable oil under static pressure.
2. Butterfly valves are not to be fitted on the collision bulkhead.
3. Application of 'EV-i type' butterfly valves as shipside/shell valves is limited to the machinery spaces and not applicable to scuppers or similar fittings. Proposals to use the EV-i-valves as ship-side valves outside machinery spaces will be specially considered
4. The valve should 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. Application of flangeless types (wafer, lug) is not allowed.
5. For shipside valves, the disc is not to extend outside the hull plating in when the valve is in open position.
6. Application in bilge system of passengerships is not allowed.
7. Application in bilge main and bilge branch system is restricted as follows:-
  - In machinery spaces only allowed as pump suction valve in bilge main 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 bilge main side of the butterfly valve;
  - Only allowed as bilge suction in holds of cargo ships, when fitted in a pipe tunnel;
8. Use of EV-i type butterfly valves in fuel oil systems is only allowed as suction valves on double bottom oil fuel tanks outside the machinery space (only when located in a closed pipe tunnel or duct keel).
9. Application of EV-i type butterfly valves is only allowed as "in-line" valve in inert gas piping systems on Oil Tanker vessels. In pump rooms or enclosed compartments only approved 'fire-resistant' types are acceptable.
10. 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.
11. Valves are to be installed to Manufacturer's instruction and the satisfaction of the attending Surveyor.
12. 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 (paragraph 2 thru 9 ) mechanical stops to prevent swing-through should be incorporated into the valve body or the associated actuator.

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