



Type Approval Certificate

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

This certificate is issued to:

PRODUCER Wouter Witzel Eurovalve B.V.
Industrie Terrein De Pol 12
7581 CZ Losser
The Netherlands

PRODUCT DESCRIPTION Butterfly Valves – resilient seated, 'quarter-turn' type

PRODUCT TYPE	EVS	Wafer type	DN40	to 1400
	EVL	Wafer type	DN80	to 300
	EVBS	Wafer semi-lugged type	DN50	to 300
	EVCS	Wafer type with centring lugs	DN50	to 300
	EVBSL	Wafer semi-lugged type	DN50	to 200
	EVTLS	Wafer lugged type	DN50	to 1200
	EVUS	Wafer U-section short type	DN600	to 2200
	EVMS	Mono flanged short type	DN350	to 1000
	EVML	Mono flanged long type	DN80	to 800
	EVFS	Double flanged short type	DN40	to 2000
	EVFL	Double flanged long type	DN50	to 1500

RATINGS	Size Range	: See above
	Connection	: PN10 /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

Certificate No. 17/30005

Issue Date 11 November 2017

Expiry Date 10 November 2022

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Rotterdam Technical Support Office

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STANDARDS

LR Rules and Regulations for Classification of Ships, July 2017
EN 558-1/2:2008, Series 20 (ISO 5752:1982)
EN 19:2016 (ISO 5209:1977)
API 598:2016
EN 12266-1:2012, P10, P11, P12, Rate A (ISO 5208:2008)
EN 12266-2:2012, F20
EN 593:2009 +A1:2011
ISO 19921:2005 and UK Department of Transport, Survey of
Fire Protection Arrangements in Merchant Ships, Appendix D

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 limitations hereafter:-

- 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;
- Fire Main Isolating valve;
- 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.

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APPLICATION, cont'd

- 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.

LIMITATIONS

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;
 - Flammable oil systems with pressures and/or temperatures exceeding 7 bar or 60°C.
 - 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-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-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.

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LIMITATIONS (continued)

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;
 - Application of 'fire-tested' EV-type butterfly valves is subject to identical restrictions.
8. Application of EV-type butterfly valves is only allowed as "in-line" valve in cargo piping systems on Oil Tanker vessels. In cargo pump rooms only approved 'fire-resistant' types.
9. Following EV-type butterfly valves have been qualified as fire-tested and will be only accepted when fitted as "in-line" valves for essential services mentioned in this document;
 - Valve type: EVTLS, DN50 upto DN600, PN16;
EVFS, DN125 upto DN250, PN16;
EVUS, DN600 upto DN1200.
 - Valve body: EN-JS1030 (GGG40);
 - Disc material: 1.4462 or 1.4517; and Stem material; 1.4462.
 - Disc seat/liner: NBR
10. Application of 'fire-tested' EV-type butterfly valve, in positions where required to be capable of being closed remotely in case of fire (e.g. tank-isolating valve), is not allowed.
11. Application of 'fire-tested' butterfly valve in flammable liquid systems (with f.p. > 60 deg.C) is not allowed inside machinery spaces of Category A or accommodation spaces.
12. Use of 'fire-tested' butterfly valve in flammable liquid systems (with f.p. > 60 deg.C) in other machinery spaces is only allowed, when fitted as 'in-line' valve and located in easily visible and accessible positions.

The approved fire-tested EV-type in flammable liquid systems (with f.p. > 60 deg.C.) is:

 - Valve type: EVFS, DN125 to DN250, PN16; with
 - Valve body: EN-JS1030 (GGG40);
 - Disc material: 1.4462 or 1.4517; and Stem material; 1.4462.
 - Disc seat/liner: NBR

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LIMITATIONS (continued)

13. Use of any other EV-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).
14. Application of EV-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.
15. Application as Fire Main Isolating Valve is acceptable only to:-
 - Valve types: EVS, EVL, EVML, EVBS, EVTLS and EVFS;
 - Valve sizes from 50 mm to 400 mm bore;
 - Valve body to be a ductile material with min. elongation of 12%. (Grey Cast Iron is not allowed);
 - NBR-liner (resilient seat / seals).
16. In all cases, the materials of valve body, disc, seat and seals are to be suitable for the proposed service and media.
17. Valves are to be installed to Manufacturer's instruction and the satisfaction of the attending Surveyor.
18. 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 3 thru 14) mechanical stops to prevent swing-through should be incorporated into the valve body or the associated actuator.

The issue within the scope of this Type Approval shall not prejudice any future action that Lloyd's Register may wish to take regarding the use of the subject valves on board ships or other applications.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

A periodical assessment of the Product Quality Assurance will be required to maintain the validity of the Type Approval of the product(s). This assessment by LR Surveyor is required 30 months after the date of issue of this Certificate.

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