



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:

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| PRODUCER | Wouter Witzel Eurovalve B.V. Industrieterrein de Pol 12 7581 CZ Lossse The Netherlands |
| PRODUCT DESCRIPTION | Check valve with spring-assisted return Centric rubberseat, Uni-directional, Flangeless Wafer Type |
| PRODUCT TYPE | ECV (DN50 to DN600) |
| RATINGS | Pressure Rating : 150 lbs, PN6, PN10, PN16 Design Pressure : 16 bar Temperature : -10 to 200 oC |
| STANDARDS | LR Rules and Regulations for Classification of Ships, July 2017 EN 558:2008, Series 16 (ISO 5752) EN19: 2016 (ISO 5209) API 598 EN 12266-1:2012, P10, P11, P12, Rate A (ISO 5208) EN 16767: 2016 EN 1074-1 and EN 1074-3 |

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| Certificate No. | 17/30007 |
| Issue Date | 06 December 2016 |
| Expiry Date | 05 December 2021 |
| Sheet | 1 of 3 |



M.P. Breeel
Rotterdam Technical Support Office

Lloyd's Register EMEA
K.P. Van der Mandelelaan 41a, 3062MB Rotterdam

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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:-

- Inert Gas system;
 - Water seal effluent line; Scrubber effluent line;
 - Inert Gas Main line; Inert Gas Distribution lines.
- Ballast-, Ballast Transfer- and Anti-heeling system;
- 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.

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LIMITATIONS

1. Grey Cast Iron (JL 1040) is not permitted to be fitted in following positions (Pt5,12, 4.2.3):
 - Ship's side, bottom plating and sea chest;
 - Bilge and ballast piping in tanks and inside tunnels in double bottom;
 - Piping systems, containing media with temperatures below 0°C and above 200°C;
 - Piping systems subject to pressure shocks, excessive strains or vibrations;
2. Grey cast iron (JL 1040) not allowed for use in starting air systems.
3. ECV-type check valve is not acceptable for use in Class I piping systems;
4. Check valves are not allowed to be fitted on collision bulkhead or in overboard discharges on the ship's shell plating (scuppers and discharges) and sea chest connections;
5. In all cases, the materials of valve body, disc, seat and seals are to be suitable for the proposed service and media.
6. Valves to be installed to Manufacturer's instruction and the satisfaction of the attending Surveyor. The shaft must be in vertical position when fitted in a horizontal pipe.

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. This assessment by LR Surveyor is required 30 months after the date of issue of this Certificate.

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