

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Butterfly Valves**with type designation(s)  
**ECONAXE- W201/L201**

Issued to

**Wouter Witzel EuroValve B.V.**  
**Losser Overijssel, Netherlands**is found to comply with  
**DNV GL rules for classification – Ships**  
**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**  
**DNV GL class programme DNVGL-CP-0186 – Type approval – Valves****Application :****Butterfly valves approved for use in ship piping, machinery piping and cargo piping systems.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Temperature range:** Dependent on seal material (see certificate)  
**Max. working press.:** Class 150/20 bar  
**Sizes:** DN50 to DN400This Certificate is valid until **2021-04-17**.Issued at **Høvik** on **2016-04-18**for **DNV GL**DNV GL local station: **Rotterdam, Product Certification /Verification**Approval Engineer: **Zeinab Sharifi****Marianne Spæren Marveng**  
**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.

## Product description

Butterfly valves, wafer or lug type. Body lining integrated with the valve seat.

Type: Econaxe

Series: W201 (flangeless wafer type) and L201 (lugged wafer type)

Sizes: DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300, DN350 and DN400.

Design pressure: 20 bar/Class 150

### Materials:

Valve part	Material type	Material-grade/no. , standard
Body	Austenitic stainless steel castings	1.4408, EN 10213
	Carbon steel castings	CF8M, ASTM A351
		WCB, ASTM A351
Disc	Austenitic stainless steel castings	1.0619, EN 10213
		1.4408, EN 10213
lining/seat	Graphite, austenitic stainless steel alloys	RTFE, NBR, EPDM, FPM, 1.4401

## Application/Limitation

The valves are approved for use in ship piping, machinery piping and cargo piping systems.

Maximum allowable pressure shall be according to the relevant tables in EN 12516-1.

Permissible temperatures dependant on lining/seat materials:

Type of rubber	Min. temperature	Max. temperature
NBR	-25°C	100°C
EPDM	-35°C	130°C
FPM (Viton B)	-20°C	200°C
CSM	-20°C	135°C
RTFE*	-29°C	204°C

\*pressure/temperature ratings acc. to API 609.

Parts in contact with seawater shall be suitably protected. Stainless steel valves are not permitted in seawater systems.

These valves may be used for bilge suction when fitted in connection with a non-return valve.

Bilge valves and shipside valves shall be arranged for manual operation even if these valves are remote controlled. A portable hand pump is not accepted as equivalent to manual operation.

When used as shipside valves the disc must not extend outside the hull plating in open position.

The approval does not include any operating gear for remote control of the valves.

Valves having EPDM lining shall not be used in hydrocarbon service.

## Type Approval documentation

Doc./drawing number	Doc./drawing title	Date	DNV GL Status
D-DAAA019-A	Econaxe W201/L201, DN50/DN400	2016-04-14	Type approved
DN50 to DN400, one calculation report for each size.	Stress Calculation, Rev.B -Body Econaxe W201	-	Used for information
DN50 to DN400, one calculation report for each size.	Stress Calculation, Rev. B-Disc Econaxe	-	Used for information
DN50 to DN400, one calculation report for each size.	Stress Calculation, Rev. B-Shaft Econaxe	-	Used for information
M14-H, M22-E, M34-DM50-F, M132-B, M135-B	Material data sheets	-	Used for information
IBB-1500/LRHAM1573573/13	Fire test report, DN50-Dry, PN10, CS body+SS ring.	2015-12-03	Used for information
IBB-1484/LRHAM1573573/5	Fire test report, DN50-Outlet, PN10, CS body+SS ring.	2015-12-01	Used for information
IBB-1486/LRHAM1573573/6	Fire test report, DN50-Inlet, PN10, CS body+SS ring.	2015-12-02	Used for information
IBB-1492/LRHAM1573573/9	Fire test report, DN80-Dry, PN10, SS body+SS ring.	2015-12-02	Used for information
IBB-1490/LRHAM1573573/8	Fire test report, DN80-Outlet, PN10, SS body+SS ring.	2015-12-01	Used for information
IBB-1488/LRHAM1573573/7	Fire test report, DN80-Inlet, PN10, SS body+SS ring.	2015-12-02	Used for information
IBB-1496/LRHAM1573573/11	Fire test report, DN125-Dry, PN10, CS body+SS ring.	2015-12-03	Used for information
IBB-1482/LRHAM1573573/4	Fire test report, DN125-Outlet, PN10, CS body+SS ring.	2015-12-01	Used for information
IBB-1478/LRHAM1573573/2	Fire test report, DN125-Inlet, PN10, CS body+SS ring.	2015-12-01	Used for information
IBB-1498/LRHAM1573573/12	Fire test report, DN200-Dry, PN10, CS body+SS ring.	2015-12-03	Used for information
IBB-1476/LRHAM1573573/1	Fire test report, DN200-Outlet, PN10, CS body+SS ring.	2015-12-01	Used for information
IBB-1480/LRHAM1573573/3	Fire test report, DN200-Inlet, PN10, CS body+SS ring.	2015-12-01	Used for information

## Tests carried out

Fire test reports in accordance with ISO 10497, 2010 Edition.

## Production testing

Each valve body shall be subjected to a hydrostatic pressure test at:

- 1,5 times the allowable pressure at room temperature

In addition each valve shall be subject to seat leakage testing as follows:

- 1,1 times the design pressure in the valve flow direction.
- 5 bar applied independently on each side of the disc.

Testing shall follow procedures and acceptance criteria in EN 12266-1.

Job Id: **262.1-020337-1**  
Certificate No: **TAP00000B4**

### **Certification**

Valve bodies shall be delivered with material certificates in accordance with DNV GL Ship Pt.4 Ch.6 Sec.2 Table 3. Materials with VL and W certificates shall be manufactured in a foundry approved by the society. DNV GL product certificates are required for valves with DN > 100 mm and design pressure  $\geq$  16 bar, and for ship side valves where DN > 100 mm regardless of pressure. For other valves a manufacturer's product certificate may be accepted.

### **Marking of product**

For traceability to this type approval, each valve is at least to be marked with:

- Type designation
- Size
- Pressure rating
- Manufacturer's name or trade mark

### **Periodical assessment**

For retention of the Type Approval a DNV GL surveyor shall perform a survey at the manufacturer's premises every second year and before the expiry date of this certificate, to verify that the conditions for Type Approval complied with.