



TYPE APPROVAL CERTIFICATE

Certificate No:
TAP00000B4
Revision No:
3

This is to certify:

That the **Butterfly Valves**

with type designation(s)
ECONAXE- W201/L201, ECONAXE- VG

Issued to

Wouter Witzel EuroValve B.V.
Losser, Overijssel, Netherlands

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.

Type:	Temperature range:	Max. working press.:	Sizes:
ECONAXE- W201/L201	Dependent on seal material (see certificate)	Class 150/20 bar	DN50 to DN600
ECONAXE- VG	Dependent on seal material (see certificate)	Class 150/16 bar	DN50 to DN300

Issued at **Høvik** on **2021-03-29**

for **DNV**

This Certificate is valid until **2026-04-17**.

DNV local station: **Netherlands CMC**

Approval Engineer: **Rob Oerlemans**

Zeinab Sharifi
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

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

Body: W201 (flangeless wafer type) and L201 (lugged wafer type)
 Sizes: DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300, DN350, DN400, DN450, DN500, DN600
 Design pressure: 20 bar/Class 150

Body: VG (Flangeless wafer type with centring lugs)
 Sizes: DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300
 Design pressure: 16 bar/Class 150

Materials:

Valve part	Material type	Material-grade/no., standard
Body	Austenitic stainless-steel castings	1.4408, EN 10213
		CF8M, ASTM A351
		CF3M, ASME SA351
	Carbon steel castings	WCB, ASTM A216 1.0619, EN 10213
	Aluminium Bronze	CC333G
Disc	Austenitic stainless-steel castings	1.4408, EN 10213
		CF8M, ASTM A351
		CF3M, ASME SA351
	Aluminium Bronze	CC333G
lining/seat	Graphite, austenitic stainless-steel alloys	RTFE, NBR, EPDM, FPM, 1.4401, Inconel 625

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 dependent 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.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. Valves of austenitic stainless steel shall not be used in direct contact with seawater.

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 -rev	Doc./drawing title	Date
D-DAAA019-A	Econaxe W201/L201, DN50/DN400	2016-04-14
DN50 to DN400, one calculation report for each size.	Stress Calculation, Rev.B -Body Econaxe W201	-
DN50 to DN400, one calculation report for each size.	Stress Calculation, Rev. B-Disc Econaxe	-

DN50 to DN400, one calculation report for each size.	Stress Calculation, Rev. B-Shaft Econaxe	-
M14-H, M22-E, M34-D, M50-F, M132-B, M135-B	Material data sheets	-
IBB-1500/LRHAM1573573/13	Fire test report, DN50-Dry, PN10, CS body+SS ring.	2015-12-03
IBB-1484/LRHAM1573573/5	Fire test report, DN50-Outlet, PN10, CS body+SS ring.	2015-12-01
IBB-1486/LRHAM1573573/6	Fire test report, DN50-Inlet, PN10, CS body+SS ring.	2015-12-02
IBB-1492/LRHAM1573573/9	Fire test report, DN80-Dry, PN10, SS body+SS ring.	2015-12-02
IBB-1490/LRHAM1573573/8	Fire test report, DN80-Outlet, PN10, SS body+SS ring.	2015-12-01
IBB-1488/LRHAM1573573/7	Fire test report, DN80-Inlet, PN10, SS body+SS ring.	2015-12-02
IBB-1496/LRHAM1573573/11	Fire test report, DN125-Dry, PN10, CS body+SS ring.	2015-12-03
IBB-1482/LRHAM1573573/4	Fire test report, DN125-Outlet, PN10, CS body+SS ring.	2015-12-01
IBB-1478/LRHAM1573573/2	Fire test report, DN125-Inlet, PN10, CS body+SS ring.	2015-12-01
IBB-1498/LRHAM1573573/12	Fire test report, DN200-Dry, PN10, CS body+SS ring.	2015-12-03
IBB-1476/LRHAM1573573/1	Fire test report, DN200-Outlet, PN10, CS body+SS ring.	2015-12-01
IBB-1480/LRHAM1573573/3	Fire test report, DN200-Inlet, PN10, CS body+SS ring.	2015-12-01
Material Data Sheet M217-B	Austenitic Stainless-Steel Casting	2016-06-29
GD103-02-06-01-007-B-Body Econaxe W201-Wafer_DN450 to DN600	Calculations Econaxe W201- DN450_DN600	2020-04-17
GD103-02-06-01-007-B-Body Econaxe VG-Wafer_DN50 to DN300	Calculations Econaxe VG - DN50 to DN300	2020-04-17
		-
DDA1800-B, DDA2000-C, DDA2400-C	Body casted - Econaxe W201 - DN 450 to DN 600	-
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DDB1800-B, DDB2000-C, DDB2400-C	Body casted - Econaxe L201 - DN 450 to DN 600	-
		-
DDG0200- <u>B</u> , DDG0300- <u>B</u> , DDG0400- <u>B</u> , DDG0500- <u>B</u> , DDG0600- <u>B</u> , DDG0800- <u>C</u> , DDG1000- <u>B</u> , DDG1200- <u>B</u> , DDG2500- <u>B</u>	Body casted - Econaxe VG - DN 50 to 300	-
DGA1800-B, DGA2000-B, DGA2400-B,	Body machined - Econaxe W201 - DN 450 to DN 600	-
DGB1800-B, DGB2000-B, DGB2400- <u>C</u>	Body machined - Econaxe L201 - DN 450 to DN 600	-
DGA1801-A, DGA2001-A, DGA2401-A,	Body machined - Econaxe W201 - DN 450 to DN 600 (thick bearing)	-
DGB1801-A, DGB2001-A, DGB2401-A	Body machined - Econaxe L201 - DN 450 to DN 600 (thick bearing)	-
DGG0200-A, DGG0301-A, DGG0400-A, DGG0500-A, DGG0600-A, DGG0800-B, DGG1000- <u>B</u> , DGG1200- <u>B</u> , DGG2500-A	Body machined - Econaxe VG - DN 50 to DN 300	-
PDS03.11.001 - Econaxe - W201	Product Data Sheet - Econaxe W201	30/01/2020
PDS03.12.001 - Econaxe - L201	Product Data Sheet - Econaxe L201	30/01/2020
PDS03.13.001 - Econaxe – VG	Product Data Sheet - Econaxe VG	17/04/2020
DDAAA017-F	GA Drawing - Econaxe W201 & L201 DN 50-600	-
DTADA000-A	GA Drawing - Econaxe VG - DN 50-300	-
100.02.M014-I - 1.4408-A351 CF8M (SS cast)	Material Data Sheet - M014	-
100.02.M020-E - CC333G (Alu-Bronze Cast)	Material Data Sheet - M020	-

100.02.M022-F - 1.0619-A216 WCB (CS Cast)	Material Data Sheet - M022	-
100.02.M217-C - A351 CF3M, 2.8 Mo (SS Cast)	Material Data Sheet - M217	-
100.02.M239-A - AC-42100 (Alu-alloy Cast)	Material Data Sheet - M239	-

Tests carried out

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

Production testing

Each valve body shall be subjected to:

- hydrostatic pressure test at 1.5 times the maximum working pressure at room temperature.
- seat leakage testing at 1.1 times the maximum working pressure in the valve flow direction.

Testing shall follow procedures and acceptance criteria in EN12266-1 (leakage rate A).

Certification

The Society's product certificates are required for valves with $DN > 100$ mm having a design pressure, $p > 16$ bar and for ship side valves with $DN > 100$ mm regardless of pressure rating. For other valves, works certificate will be accepted. Valve bodies shall be delivered with material certificates in accordance with DNVGL-RU-SHIP Pt.4 Ch.6 Sec.2 Table 3. Approval of manufacturer is required for VL and W material certificates.

Marking of product

For traceability to this type approval the valves are to be marked as a minimum with:

- manufacturer's name or trade mark
- valve type designation
- size
- maximum design pressure and temperature
- arrow to indicate direction of flow

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.