

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Check Valve**with type designation(s)
Storm valve straight and angle type

Issued to

Meson AB
Laholm, Hallands Län, Swedenis 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.****Temperature range:** -10°C to 60°C
Max. working press.: 4 bar(g)
Sizes: DN50, DN65, DN80, DN100, DN125 and DN150Issued at **Høvik** on **2020-10-26**for **DNV GL**This Certificate is valid until **2021-11-30**.DNV GL local station: **Malmö**Approval Engineer: **Sarah Miller****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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **262.1-023846-2**
Certificate No: **TAP00000N4**
Revision No: **1**

Product description

Self-closing swing check valves, straight type and angle type with a closing device (hand wheel).

End connections : Flanges PN10 acc. to EN 1092-2 or flanges ANSI 150 acc. to ASME B16.5
(applicable for both straight and angle types and all sizes)
Sizes : DN50, DN65, DN80, DN100, DN125 and DN150
Medium : Sea water and fresh water

Material of construction:

Part	Material grade
Body	Ductile iron EN GJS 400-15 (GGG40)
Disc	Ductile iron EN GJS 400-15 (GGG40)
Sleeve	Brass CW614N (Ms58)
Sealing	NBR
Stem	Brass CW614N (Ms58)
Shaft	Brass CW614N (Ms58)
Plug	Zinc plated steel

Manufacturing locations:

- (1) Meson AB,
Kullgårdsvägen 27
SE-312 34 Laholm, Sweden
- (2) Changzhou LK valves Co., Ltd.,
Building No 16, Xin Yu Logistics Park,
Renmin Road No 8, YaoGuan, Wuijin
Changzhou, Jiangsu Province
Peoples Republic of China

Application/Limitation

Maximum allowable working pressure: 4 bar
Permissible temperatures: -10 °C to +60 °C

The valves can be used in ship side discharge applications.

The valves are not to be considered fire safe.

Material in contact with seawater shall be properly protected. Surface preparation and coating shall be approved by society.

Type Approval documentation

159301 Storm Valve Angle PN10/PN4, Drawing No. 37184 Rev.B
159801 Storm valve, straight type PN10/PN4, Drawing No. 37185 Rev.C
Datasheet Storm valve angle type 159301
Datasheet Storm valve straight type 159801
Pressure tests, procedure and acceptance criteria, Doc. No. 22 (VHB-TS-OTE-0001-C)
Burst Pressure Test of Valve Bodies for LK Valves Storm Valve (procedure), dated 2016-08-31
Burst Pressure Test of Valve Bodies for LK Valves Storm Valve (test report for valve size DN150), dated 2016-11-22
Acquisition letter from Meson acquiring LK valves
Authorization letter dated 2020-03-31 from LK Valves authorizing Meson AB

Job Id: **262.1-023846-2**
Certificate No: **TAP00000N4**
Revision No: **1**

Tests carried out

Burst testing

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

Valves with sizes DN125 and DN150 shall be delivered with DNV GL's product certificate. Other valves may be delivered with manufacturer's works certificate only.

Valve bodies shall be delivered with material certificates in accordance with DNV GL 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.