



TYPE APPROVAL CERTIFICATE

Certificate No:
TAP000008U
Revision No:
2

This is to certify:

That the Check Valve

with type designation(s)
Liquid mud valve - LMV

Issued to
Winteb B.V.
Winschoten, Groningen, Netherlands

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems

Application :

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

Sizes: DN125, 150, 200, 250, 300

Issued at **Høvik** on **2022-10-31**

for **DNV**

This Certificate is valid until **2025-12-30**.

DNV local station: **Netherlands FIS**

Approval Engineer: **Maheshraja Venkatesan**

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Sinisa Sedlan
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

Float check valve to be used in-line with approved Winteb air vent head type WIN2000 on liquid mud tanks. The valve consists of a housing with a disc float and a bypass pipe to discharge any mud in the pipeline. The opening pressure of the bypass is adjustable by magnets.

Flanged connections PN10 (according to EN1092) or #150 (ASME B16.5)

Valve with size DN200 covered by this certificate is considered gas tight up to 0.25 bar(g) and comply with IMO resolution A.1122(30) towards transport of:

- offshore contaminated bulk liquid P(o)
- offshore contaminated bulk liquid Treated (containing less than 0.8% of an H₂S Scavenger) (o).

Materials:

Housing	Standard	Float	Gasket
AlMg3Si / AlMg5Si/ AlMg7Si	EN 1706	Polyethylene	Neoprene rubber
GG-25	EN 1561		
GGG-40	EN 1563		
G-CuAl10Ni	EN 573		
CuNi10Fe/ G-CuSn10Zn/ G-CuZn33Pb	EN 1982		

Application/Limitation

The certificate covers design assessment of LMV valves. Installation and other additional requirements related to installation are out of scope of this certificate.

Flow characteristic curves for each size have been obtained from the test performed on LMV valves in-line with Winteb 2000 HIAS air vent heads and by clean water.

Blocking velocity obtained from discharge/reverse test:

Nominal size	80% of blocking velocity		
	Without Mesh	Mesh18	Mesh30
DN125	16.4	16.6	17.4
DN150	15.7	15.4	16.5
DN200	15.8	15.8	15.8
DN250	14.3	14.5	15.3
DN300	20.0	17.8	17.4

Product is to be delivered with manufacturer's certificate.

Type Approval documentation

Drawings: LMV125-01 Rev.D dated 2016-01-04, LMV150-01 Rev.H dated 2016-01-04, LMV200-01 Rev.E dated 2016-01-05, LMV250-01 Rev.E dated 2016-01-05, LMV300-01 Rev.A dated 2016-01-08

Test reports:

- Flow characteristic and tightness test report no. WINTEB 2012-2 dated 2012-07-25 (Done by laboratory for hydraulic machinery of the Hochschule Bremen, University of applied science) – Sizes DN125-150-200-250
- Test report_Winteb_LMV300 Rev.0 performed on the test shop of Fairbanks Nijhuis in Winterswijk on 2015-09-21 size DN300
- Flow test report ILR-EAD VB 15-542 dated November 2016 performed on LMV with WIN2000 air vent head.
- LMV Airtight – Pressure test for size DN200 witnessed by DNV dated 2022-01-07

Tests carried out

Flow characteristic, tightness test, discharge/reverse test, gas tightness test on size DN200

Marking of product

For traceability to this type approval the products are to be marked with :

- Manufacturer's name or trademark
- Type designation
- Size



Job Id: 262.1-012039-4
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Periodical assessment

For retention of the Type Approval, a DNV 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 DNV-CP-0338.