



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-12214

This Certificate consists of 3 pages

This is to certify that the
Vent Head for Tank
with type designation(s)

**WIN2000 - Type 1 and 1-B; WIKO5000 Type 1;
WIKO5000 Type 1-A**

Manufactured by
Winteb v.o.f
Winschoten, Netherlands


is found to comply with
Det Norske Veritas' Rules for Classification of Ships
IACS Req.P3 1991, Rev. 2 2004

Application

May be used on air pipes from fuel tanks and seawater ballast tanks according to DNV Rules for Classification of Ships and the International Convention on Load Line.

Type:	Sizes:
WIN2000 - Type 1 and 1-B	DN 50, 65, 80, 100, 125, 150, 175, 200, 250 & 450
WIKO5000 Type 1	DN 300, 350 and 400
WIKO5000 Type 1-A	DN 50, 65, 80, 100, 125, 150, 175, 200, 250, 300, 350, & 400

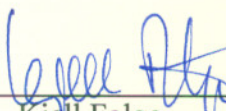
Place and date
Høvik, 2006-05-09
for DET NORSKE VERITAS AS


John Olav Nøkleby
Head of Section



Local Office
DNV Rotterdam

This Certificate is valid until
2010-06-30


Kjell Folge
Surveyor

Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: P-12214
File No.: 793.10
Case No.: 262.1-001135

Product description

Ball Type Air Vent Heads.

The sealing is provided by one or two polyethylen float balls. The vent heads can be provided with stainless steel flame screen and closing device.

Type 5000-1-A is executed with overflow, type 5000-1-B is executed with cap. The connection is flanged

Material:

<i>Housing</i>	<i>Float</i>	<i>O-Ring</i>
AlMg3Si acc. to DIN1725 AlMg5Si acc. to DIN 1725 AlMg7Si acc. to DIN1725 GG-25 acc. to DIN 1691 GGG-40 acc. to DIN 1693 G-CuAl10Ni acc. to DIN 1725 CuNi10Fe acc. to DIN 1714 G-CuSn10Zn acc. to DIN 1705 G-CuZn33Pb acc. to DIN 1709	Polyethylen	Nitrile rubber

Application/Limitation

This Type Approval does not include the flame screen function.

No Product Certificate is required.

Type Approval documentation

- MPA NRW Test report nos. 22 0440 5 96-01, -02 and -03 dated 26. April 1996 (Impact and compression test on ball floats)
- Hochschule Bremen, Test report: WIN 2000/1 dated 15. December 2000 (Tightness and flow resistance test)
- Test report dated 15. April 1986 from Prof. dipl.ing. Rudolf Zuhlke, Hochschule Bremen, with flow characteristic curves.
- Test report dated July 1997 from Prof. Dr.-ing. Jens Jensen, Hochschule Bremen, with flow characteristic curves.
- Test reports as received with letter from DNV Rotterdam dated 27 October, 1998.
- Drawing No.: WIN2000-01 Rev.04 dated 2005-06-28,
- Drawing No.: 50-01. rev.3 and 150-01, rev.7.
- Drawing No.: 50-150-01-A rev. 00, WIKO5000 type 1-A DN50-150
- Drawing No.: 200-400-01-A rev. 00, WIKO5000 type 1-A DN50-400 & type 1 DN300-400
- Test report No.: WINTeB 2005/1 with Annexes 1-3.



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Tests carried out

Flow Characteristic Test, Tightness Test, Impact and Compression Test on ball floats.

Marking of product

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

- Manufacturer's name
- Type designation

Certificate retention survey

For retention of the Type Approval, a DNV Surveyor shall perform a survey every second year, to verify that the conditions for the type approval are complied with.

END OF CERTIFICATE

Legal