



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **P-14254**

This is to certify that the
Ball Valve

with type designation(s)
Flanged 47 3-piece Valve Series 47

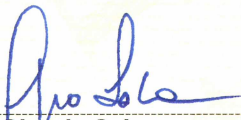
Manufactured by
Habonim Industrial Valves and Actuators
Kfar Hanassi, Israel

is found to comply with
Det Norske Veritas' Rules for Classification of Ships
Det Norske Veritas' Offshore Standards
Det Norske Veritas' Standards for Certification 2.9 No. 5-794.40

Application
The Series 47 valve can be used for the following:
Cargo and fuel oil, Natural gas (LNG/LPG), Nitrogen, Compressed air, Lubricating and Hydraulic oil, Fresh and Sea water.

Temperature range: -40°C to + 300°C dependent on materials used
Max. working press.: 16 bar
Sizes: DN40, DN50, DN80, DN100, 1 1/2", 2", 3", 4"

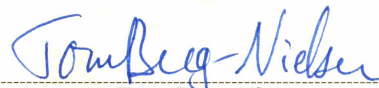
Høvik, 2012-10-05
for Det Norske Veritas AS


Giorgio Saia
Head of Section



DNV local office:
Limassol

This Certificate is valid until
2015-12-31


Tom Berg-Nielsen
Surveyor

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.



Certificate No.: P-14254
File No.: 794.50
Job Id.: 262.1-012348-2

Product description

Series 47:

Full Bore Floating Ball Valve, 3-piece design. The valve has blow-out proof stem and a built in anti-static device

Materials:

Body: Stainless Steel ASTM A351 CF8M, Hastelloy C, Hastelloy C22, Alloy 20, Monel, Duplex Steel, Super Duplex steel, Carbon Steel ASTM A105 Gr. WCB, ASTM A350 LF2, ASTM A479 S31600/S31603

Ball: Stainless Steel ASTM A351 CF8M, Hastelloy C, Hastelloy C22, Alloy 20, Monel, Duplex Steel, Super Duplex steel,

Stem: ASTM A276 316/316L, Hastelloy C, Hastelloy C22, Alloy 20, Monel, Duplex Steel, Super Duplex steel.

Seat: PTFE, RPTFE, NRG, PEEK, TFM, UHMWPE, VESPEL, DELRIN.

Application/Limitation

The Series 47 valve can be used for:

Cargo and Fuel oil, Natural gas (LNG/LPG), Nitrogen

Flange rating: PN16

Maximum working temperatures for valves with the following body materials:

Part and material	Max temp. range
Carbon Steels *)	-40°C to +250°C
Stainless Steels	-48°C to +350 °C

*) - Carbon steel used in body and bonnet shall be charpy tested when the thickness exceeds 6 mm, and the minimum working temperature is -10 °C or lower. Acceptance criteria according to DNV Cert. Notes 2.9 No. 5-794.40, 3.2.4.

In addition to the systems mentioned on the front-page, the valves may be used in the following chemicals:

- Ammonium Nitrate Solution, 93% or less 1)
- Carbon disulphide
- Hydrogen peroxide Solutions of 60% but not over 70% 1)
- Diethyl Ether 1)
- Phosphorus, yellow or white 1)
- Propylene oxide and mixtures of ethylene oxide/propylene oxide 1, 2)
- Sulphuric acid 1)
- Sulphur liquid

Notes:

- 1) - only valves of stainless steel may be used.
- 2) - FBM type valves may not be used in Propylene oxide.

For pressure class I and II, only threaded end connections of conical or parallel with o-ring sealing may be used.

All valves larger than DN 50 for hydrocarbon service shall be fitted with an anti-static device that will ensure electrical conductivity between the ball and the valve body. For valves DN 50 and smaller, only electrical conductivity between ball and stem is required.

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

Valves used in the following systems shall be arranged for local manual operation even if these valves are remote controlled:

- Sea suction and discharge
- Bilge
- Fuel and lubrication oil tanks which are located above the double bottom tanks

For sea suction and discharge valves a portable hand pump is not accepted as equivalent to manual operation.

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



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The valve housing of each valve shall be subjected to a hydrostatic pressure test at minimum 1.5 times the design pressure. The test pressure need not be more than 70 bar in excess of the design pressure. For valves intended for ship's side or bottom the test pressure is not to be less than 5 bar.

Holding time: 2 min. for sizes up to 100 mm/4"

5 min. for sizes 125 - 250 mm/5" - 10",

10 min. for sizes 300 mm - 450 mm/12" - 16",

No leakage is permitted.

The valve assembly shall be subjected to a hydrostatic seat leakage test. The test pressure shall at least be equal to the design pressure. The test shall be performed with closed valve with the other end open to atmosphere. The pressure shall be applied independently on each side.. For valves intended for ship's side or bottom the test pressure is not to be less than 5 bar.

Holding time: 5 min. for all sizes.

Acceptable leakage range: Drop tight

Each valve is to be certified by Det Norske Veritas when required by Det Norske Veritas Rules, or by the Purchaser. DNV product certificate is required for valves with DN> 100 mm and PN> 16 bar and for ship side/bottom valves regardless of pressure rating. For other valves manufacturer's certificate is accepted.

Each product/delivery is to be accompanied by the following documents:

- Work's Certificate for materials used in valve body indicating mechanical and chemical properties. Valve bodies with nominal diameter 100 mm or less will be accepted with test report.
- Instruction manual/specification sheet.

Type Approval documentation

The approval is based on the following documentation :

- Product Data Sheet: "AF47P 3 PIECE VALVE SERIES"
- DNV Survey Report no GAL 11-231

Tests carried out

Burst test of the valve body

Marking of product

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

- Manufacturers name or trade mark
- Type designation

Certificate Retention Survey

For retention of the Type Approval, DNV Surveyor shall perform a survey – every second year and before the expiry date of this certificate to verify that the conditions for the type approval are complied with.

END OF CERTIFICATE