

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Ball Valve**with type designation(s)
Ball valve [Industrial Valves] / SP - SeriesIssued to
PBM, Inc.
Irwin, PA, USAis 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 :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****Temperature range:** -50°C to +230°C
Max. working press.: ANSI Class 300
Sizes: DN 1/4" - DN 6"Issued at **Hamburg** on **2019-10-14**for **DNV GL**This Certificate is valid until **2024-10-13**.
DNV GL local station: **Certification & Inspection Services**Approval Engineer: **Guido Friederich**.....
Olaf Drews
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.



Job Id: **262.1-028036-2**
Certificate No: **TAP00001YF**
Revision No: **1**

Product description

Ball valve series designed for installation in piping systems for different service conditions. The SPE ball valves may be operated either with pneumatic or manual actuator. Valves actuators including additional accessories and mounting parts (positioner, limit switches) are not covered within this type approval.

Design standard: ASME B 16.34

Valve end connections: Female NPT

Design temperature: -50°C to +230°C [Depending on seat material]

Materials

Valve item	Material type	
	Carbon steel	Stainless steel
Valve body	ASTM A216 WCB	ASTM A 479 316 / 316L
Ball		ASTM A 479 316 / 316L
Ball seal		TFM
Stem		ASTM A 479 316 / 316L

Seat material and operating temperature range:

TFM	-50 to +200 °C
VTFE	-29 to +175 °C
S-TEF	-10 to +230 °C

Application

Ball valves for control and shut-off applications to be used e.g. for the following operating media: Air, non flammable gases, water, hydraulic oil, lubrication oil. ¹

Note 1:

Lubrication oil, hydraulic oil and thermal oil are in this context regarded as "Flammable liquids". See DNV GL Rules, Pt. 4 Ch. 1, Section 3 – Design principles

Limitation

Ball valves may not be used for flammable and liquefied gases.

For valves with threaded end connections the following limitations apply:

Threaded joints may be used for outside diameters as stated below except for piping systems conveying toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.

- Threaded joints in CO2 systems shall be allowed only inside protected spaces and in CO2 cylinder rooms
- Threaded joints with tapered thread shall be allowed for pipe class I, outside diameter not more than 33,7 mm.
- Pipe Class II and Class III outside diameter not more than 60,3 mm.
- Threaded joints with parallel thread shall be allowed for Pipe class III, outside diameter not more than 60.3 mm.

See DNV GL Rules Pt. 4 Ch.6, - Piping systems, Section 9.

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Tests carried out / Fabrication Testing

Test standard: Valve standard / DNVGL Pt.4 Ch.6 DNV GL CP 0186 ISO 5208, API 598	Purpose of test
Type of test	
Presssure test	To confirm the pressure containing capability of the valve body against internal pressure Test pressure = 1,5 times the design pressure
Hydrostatic seat leakage test	To confirm the capability of the seat to comply with the specified leakage rate. Test pressure = 1,1 times the design pressure

Certification

Application in machinery and piping systems
Valves intended to be installed in piping system listed in DNVGL Rules Pt.4,Ch.6 – Section 1 shall be certified according to DNV GL Rules Pt.4 Ch.6 – Piping systems, Section 9

Valve nominal size / Pressure rating

DN > 100 mm / PN > 16 bar
DN ≤ 100 mm / PN ≤ 16 bar

Ship side valves DN > 100 mm
regardless of pressure rating

Type of Product Certificate (PC) / Issued by

VL Certificate / DNV GL
W Works Certificate / Manufacturer

VL Certificate / DNV GL

Material certificates (valve bodies)

In accordance with DNV GL Rules Pt.4 Ch.6 – Piping systems, Section 2 – Table

Type Approval documentation

Valve assembly drawing no. SPE-E5Q9G---66--R174", SP Series

Quality Plan Template – SP valves, doc. no.: ITP-106704-SP

pbm Valve brochure

pbm Material specification for austenitic stainless steel and carbon steel material for DNV GI Certification

Material certificates

Valve hydrostatic and tightness test reports, doc. no.:106704

Type Approval Assessment Report (Audit), dated 2019-08-30

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Marking of product

Each valve shall be clearly marked for identification. The identification marking may be performed on the body or on a plate of non-corrosive material. When a metallic plate is used, the plate shall be permanently fixed to the body.

Identification marking on the body shall be located to non stressed areas and shall be clearly legible. The identification marking shall as a minimum include the following:

- Manufacturers name or trade mark
- Valve type designation
- Size
- Maximum design pressure and temperature
- Arrow to indicate direction of flow on one way flow valves

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 Type Approval are complied with. Refer to DNVGL-CP-0338, Sec.4.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>

End of Certificate