

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Ball Valve**

with type designation(s)
115 Series

Issued to

Hy-Lok Corporation (Kangseo Factory)
Busan, Republic of Korea

is 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 all vessels classed by DNV GL.

Temperature range: See certificate

Max. working press.: See certificate

Sizes: See certificate

Issued at **Høvik** on **2017-09-05**

This Certificate is valid until **2022-06-30**.

DNV GL local station: **Gimhae Station**

for **DNV GL**

Approval Engineer: **Sinisa Sedlan**

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Marianne Spæren Marveng
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: **262.1-007472-4**
Certificate No: **TAP0000124**

Product description

Manually operated floating ball valves with three piece design.

End connections: Threaded tube connections acc. to DIN 2353 / ISO 8434-1 – Light Series (L) and Heavy Series (S)
Female threaded connections acc. to ASME B1.20.1 series NPT
Female threaded connections acc. to DIN ISO 228 - BSP Standard Pipe Thread

Sizes:

End connection type	DN Orifice opening (mm)	Basic part No.	PB Max. working press. (bar)
DIN 2353 / ISO 8434-1 Light Series Tube (L)	4	BVDT – 6L	315
	6	BVDT – 8L	315
	6	BVDT – 10L	315
	10	BVDT – 12L	315
	13	BVDT – 15L	315
	13	BVDT – 18L	315
	20	BVDT – 22L	160
	25	BVDT – 28L	160
	25	BVDT – 35L	160
DIN 2353 / ISO 8434-1 Heavy Series Tube (S)	4	BVDT – 8S	500
	6	BVDT – 10S	500
	6	BVDT – 12S	500
	10	BVDT – 14S	500
	13	BVDT – 16S	400
	13	BVDT – 20S	400
	20	BVDT – 25S	315
	25	BVDT – 30S	315
	25	BVDT – 38S	315
Female BSP - DIN ISO 228	6	BVDF -2G	500
	6	BVDF -4G	500
	10	BVDF -6G	500
	13	BVDF -8G	500
	20	BVDF -12G	315
	25	BVDF -16G	315
	25	BVDF -20G	315
Female NPT - ASME B1.20.1	6	BVDF-4N	500
	10	BVDF-6N	500
	13	BVDF-8N	500
	20	BVDF-12N	315
	25	BVDF-16N	315
	25	BVDF-20N	315

Materials:

Body	ASTM A479 316; EN 10028-7/1.4571; ASTM A108/AISI 12L14; EN 10277-3/1.0715
Ends	ASTM A479 316; EN 10028-7/1.4571; ASTM A108/AISI 12L14; EN 10277-3/1.0715
Stem	ASTM A479 316; EN 10028-7/1.4571; ASTM A108/AISI 12L14; EN 10277-3/1.0715
Ball	SS 316
Seat	POM – MoS ₂ ; PTFE
Seals	NBR (Buna N); Viton; EPDM

Application/Limitation

Valves covered by this certificate may be used under the following design conditions:

Service : Compressed air and water based hydraulic fluids
Temperature range : -20 °C to +100 °C (for seats made of POM – MoS₂);
-20 °C to +65 °C (for seats made of PTFE)
Max. working pressure : As given in Product Description
Sizes and types : As given in Product Description

Valves with threaded piping connections shall not be used for toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.

Valves with threaded connections with tapered thread shall be allowed for:

- piping class I, outside diameter not more than 33.7 mm
- piping class II and class III, outside diameter not more than 60.3 mm.

Valves with threaded connections with parallel thread shall be allowed for piping class III, outside diameter not more than 60.3 mm.

Carbon steels and austenitic stainless steel grades (such as 304, 316, 304L and 316L) are not permitted for use in sea water systems.

Fire safe valves are marked with FS after the basic part No., e.g., BVDT-16S-FS.

Type Approval documentation

Tests carried out

Fire test (Valve BVDF-16N-FS)

Production Testing

Each valve body shall be subjected to a hydrostatic pressure test at 1.5 times the allowable pressure at room temperature.

In addition each valve shall be subject to seat leakage testing at 1.1 times the design pressure in the valve flow direction.

Testing shall follow procedures and acceptance criteria in EN12266-1 (leakage rate A).

Certification

The valves may be delivered with manufacturer's product certificate only.

Valve bodies shall be delivered with material certificates according to DNV GL Pt.4 Ch.6 Sec.2 Table 3.

Marking of product

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

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

Periodical assessment

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

When possible, this assessment may be harmonised with normal surveys for product certification and / or other surveys and audits carried out.

The main elements of the certificate retention survey are:

- Verification of the TA applicant's production and quality system w.r.t. ensuring continued
- consistent production of the type approved products at the TA applicant's own premises
- Review of Type Approval documentation and assurance that it is still used as basis for production
- Review of possible changes in design, materials and performance
- Assurance of traceability between manufacturer's product type marking and Type Approval Certificate.

Renewal should be applied for in writing before the certificate expires.