



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP0000118
Revision No:
1

This is to certify:

that the **Ball Valve**

with type designation(s)
2019D, 2021D, 2013KM(2013KMD)

issued to

Haitima China Corporation
Zhongshan,, Guangdong,, China

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0186 – Type approval – Valves

Application:

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

Type:	Temperature range:	Max. working press.:	Sizes:
2019D	-20 to +200°C	15.2/38.5 bar	DN15,20,25,32,40,50,65,80,100,125,150,200,250
2021D	-20 to +200°C	Class 150	DN25,40,50,65,80,100
2013KM(2013KMD)	-20 to +200°C	61.2/97.1/147.6 bar	DN15,20,25,32,40,50,65,80

Issued at **Høvik** on **2024-02-23**

This Certificate is valid until **2028-12-31**.

for **DNV**

DNV local unit: **Guangzhou FiS**

Approval Engineer: **Thomas Wilhelm Juell**

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.



Form code: TA 251

Revision: 2023-09

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Product description

Description	One piece flanged end ball valve	Two pieces flanged end ball valve	Three pieces screwed end ball valve
Designation	2021D	2019D	2013KM(2013KMD)
Body thickness	ASME B16.34	EN 12516-1	EN 12516-1
End connection	Flange acc. to ASME B16.5	Flange acc. to EN1092-1	Welded and/or threaded
Face to face	ASME B16.10	EN 558-1	DIN 3202-4 M3
Sizes	DN25,40,50,65,80,100	DN15,20,25,32,40,50,65,80,100,125,150,200,250	DN15,20,25,32,40,50,65,80
Part	Material		
Body	ASTM A351- CF8M ASTM A216 - WCB	1.4408 1.0619	ASTM A351- CF8M ASTM A216 - WCB
Stem	ASTM A276 - 316	ASTM A276 - 316	ASTM A276 - 316
Ball	ASTM A351 – CF8M	ASTM A351 – CF8M	ASTM A351 – CF8M
O-ring	Viton	Viton	Viton
Packings	Graphite / CTFE	PTFE / Graphite	Graphite / CTFE
Seat	RTFE	PTFE /RTFE / TFM1600	PTFE / RTFE

Application/Limitation

Valves covered by this certificate are approved to be use in ship piping, machinery piping and cargo piping systems.

Pressure/Temperature rating of each Type/Size:

Type	P/T	Sizes	Maximum working Pressure
2021D	Class 150 (ASME B16.34)	DN25,40,50,65,80,100	19.0 bar
2019D	PN16/40 (EN 12516-1)	DN15,20,25,32,40,50,65,80,100	38.5 bar
	PN16 (EN 12516-1)	DN125,150,200,250	15.2 bar
2013KM (2013KMD)	Class 900 (ASME B16.34)	DN15,20,25	147.6 bar
	PN 100 (EN 12516-1)	DN32,40,50	97.1 bar
	PN 63 (EN 12516-1)	DN65,80	61.2 bar

Note: the effect of seat material as per manufacturer document «Pressure-temperature rating» of seats shall be considered.

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

This certificate does not cover valves to be installed in LNG/LPG applications.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. Valves of austenitic steel shall not be used in direct contact with seawater.

The below valves covered by this certificate are considered fire safe:

Designation	Sizes	Pressure rating
2021D	DN40,50,65,80	Class 150
2019D	DN40,50,65,80,100	PN 40
2013KM(2013KMD)	DN15,20,25	Class 900
	DN32,40,50	PN 100

Valves other than listed in the above table shall not be installed wherever fir safe application is required.

For 2013KM(2013KMD): The leakage tightening is made on the threads (no O-rings present), therefore the valves will have the following limitations:

- Valves with tapered threads:
 - Class I, outside diameter not more than 33.7 mm,
 - Class II and Class III, outside diameter not more than 60.3 mm.
- Valves with parallel threads are only allowed for Class III, outside diameter not more than 60.3 mm.
- In any case, valves 2013KM(2013KMD) shall not be installed in systems conveying toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.

Type Approval documentation

Tests carried out

Fire test according to API 607 fourth edition

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of the certificate).

Marking of product

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

- manufacturer's name or trade mark
- valve type designation
- size
- maximum design pressure and temperature
- arrow to indicate direction of flow
- material designation
- minimum design temperature (for cryogenic applications)

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.