DNV·GL

Certificate No:
TAP00001GH

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valve for Liquefied Gas

with type designation(s)
HND-FGC and HND-FGC-LT

Issued to
Mt. H Control Valves Co., Ltd.
Busan, Republic of Korea

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL rules for classification – Ships Pt.5 Ch.7 Liquefied gas tankers
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

Application :

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

Issued at **Høvik** on **2018-10-23**
This Certificate is valid until **2023-06-30**.
DNV GL local station: **Gimhae Station**

Approval Engineer: **Sinisa Sedlan**

for **DNV GL**

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.

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Product description

Cryogenic pneumatic control valve. Globe type, flanged.

End connections: Flanges Class 150 acc. to ASME B16.5
Sizes: 2", 3" and 4"

HND-FGC: Bonnet type
HND-FGC-LT: Extension bonnet type

Materials:

Body: ASTM A351 CF8M
Bonnet, soft seat, plug and soft cage: JIS SUS316L
Gaskets: SS316+PTFE
V-Packings: PTFE
Soft seal: PCTFE

Application/Limitation

Valves covered by this certificate may be used in General machinery service or LNG/LPG applications - Cryogenic Service.

Design pressure: 10 bar

Design temperature:
HND-FGC: -50°C to +80 °C
HND-FGC-LT: -196°C to +80°C

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Valves of austenitic stainless steel shall not be used in direct contact with seawater.

The approval does not include actuator and/or other equipment for remote control of the valves.

The valves may not be used as shut off or quick closing valves.

The valves are not to be considered fire safe.

Type Approval documentation

Tests carried out

Pneumatic and Hydrostatic leakage test (seat and body), Cryogenic leakage test (seat and body), functional testing.

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).

In addition to the above tests, cryogenic testing consisting of valve operation and leakage verification (to BS6364) for a minimum 10% of each type and size of valve intended to be used at working temperature below -55°C shall be undertaken. (Refrence is made DNV GL ship rules Pt.5 ch.7 Sec.5 [13.1.1])

Production testing for valves that require DNV GL product certificate shall be witnessed by DNV GL surveyor.

Certification

For LNG/LPG applications:
The valves shall be delivered with DNV GL product certificate when minimum design temperature is less than -55°C or DN≥100. Otherwise manufacturer's product certificate may be accepted.
Material certificates for valve bodies are required in line with DNV GL Pt.5 Ch.7 Sec.1 Table 8.

For other applications:
Manufacturer's product certificate may be accepted.
Material certificates for valve bodies shall be 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:
- Manufacturer's name or trade mark
- Valve type designation
- Size
- Maximum design pressure and temperature
- Arrow to indicate direction of flow

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 approval are complied with. Reference is made to DNVGL-CP-0338.