DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP00000KJ
Revision No:
1

This is to certify:

That the Change over Valve

with type designation(s)
Diverter valve, 06520, 06530

Issued to
Herose GmbH Armaturen und Metalle
Bad Oldesloe Schleswig-Holstein, Germany

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 :

Change over Valve.
Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Type:	Temperature range:	Max. working press.:	Sizes:
Diverter valve			
06520	-196°C to + 120°C	PN 50	DN 20
06530	-196°C to + 120°C	PN 50	DN 20

Issued at **Høvik** on **2018-01-22**

This Certificate is valid until **2023-01-21**.
DNV GL local station: **Essen**

Approval Engineer: **Guido Friederich**

for **DNV GL**
Digitally Signed By: Drews, Olaf
Location: DNV GL Hamburg, Germany
Signing Date: 25.01.2018

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.

Product description

Type 06520 Divertor valve
Female thread connection (G) acc. to ISO 228/1, NPT acc. to ANSI B 1.20.1
Materials:

Body	Mat.No.1.4308	ASTM A351 CF8
Ball	Mat.No.1.4571	ASTM A276 Grade 316Ti
Stem	Mat.No.1.4301	ASTM A276 Grade 304
Bolts:	Mat.No.1.4301	ASTM A194 B8
Lever	Mat.No.1.4308	ASTM A351 CF8
Bush	Mat.No.CW614N	ASTM C38500

Size range: DN 20
Pressure rating: PN50

Type 06530 Divertor valve
Female thread connection (G) acc. to ISO 228/1, NPT acc. to ANSI B 1.20.1
Materials:

Body	Mat.No.1.4308	ASTM A351 CF8
Ball	Mat.No.1.4571	ASTM A276 Grade 316Ti
Stem	Mat.No.1.4301	ASTM A276 Grade 304
Bolts:	Mat.No.1.4301	ASTM A194 B8
Lever	Mat.No.1.4308	ASTM A351 CF8
Bush	Mat.No.1.4301	ASTM A276 304

Size range: DN 20
Pressure rating: PN50

Application / Limitation

Operating fluids: Air, gases, nitrogen, vapours, cryogenic liquefied gases including LNG.
Design temperature: - 196°C to + 120°C

Limitation

Valves not suitable for sour gas and fluids specified as toxic or dangerous fluids.

Valves with threaded connections are NOT permitted for installation on board of DNV GL classed liquefied gas tankers and in ship's LNG and gas fuel systems.

For valves to be installed on board of ships other than liquefied gas tankers the following limitations apply:
Valves for installation in systems operating with flammable gases are to be classed within Pipe Class I, see DNV GL Rules Pt. 4 Ch. 6 - Piping systems.
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.

Type Approval documentation

The approval is based on the following documentation :
- Design drawings including parts lists with material specification
- Manufacturer's brochure on each valve.
- Test reports submitted with the manufacturers application

Production testing

Application in machinery 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	Type of certificate / Issued by
DN > 100 mm / PN > 16 bar	VL Certificate / DNV GL
DN ≤ 100 mm / PN ≤ 16 bar	W Works Certificate / Manufacturer
Ship side valves DN > 100 mm regardless of pressure rating	VL Certificate / DNV GL

Material certificates (valve bodies)
In accordance with DNV GL Rules Pt.4 Ch.6 – Piping systems, Section 2 – Table 3
Note:
Valves having a nominal diameter DN >100 and to be fabricated with a design temperature > 400°C shall provide VL material certificates for valve body and bolts.

Marking of product

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

- Manufacturer's name and/or trade mark
- Valve type designation
- Valve size
- Design pressure
- Design temperature

Periodical assessment

A condition for retention of the Type Approval Certificate in its validity period is that periodical assessments are successfully carried out.

The objective of the periodical assessment is to verify that the conditions for the type approval have not been altered. The main scope of the periodical assessment will normally include:
- 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 and at other companies that are given the responsibility for manufacturing of the products.
- Review of the TA documentation and that this is still used as a basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.

END OF CERTIFICATE