

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Pressure Reducing Valve**with type designation(s)
481, 482, 484, 681, 682, 683, 684

Issued to

**Goetze KG Armaturen
Ludwigsburg, Baden-Württemberg, 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 :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****Temperature range:** see
Max. working press.: certificate
Sizes: 1/4" to 4"Issued at **Hamburg** on **2019-11-18**This Certificate is valid until **2024-11-17**.for **DNV GL**DNV GL local station: **Augsburg**Approval Engineer: **Ana Cristina Do Carmo Insfran****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

Pressure reducing valve type series to be used for pressure reduction in piping systems to avoid any pressure increase on the valve outlet site higher than a defined valve inlet pressure .¹

Threaded connections: ISO 7; DIN EN ISO 228; EN10226

Design pressures and temperatures

Type	Pressure (bar)	Temperature (°C)	Gaskets
481, 482	0,5 - 15	-20 to + 120	FKM, EPDM
484	0,5 - 50	-40 to + 120	FKM, EPDM
681, 682	0,5 - 15	-20 to + 120	FKM, EPDM
683	1,5 - 10	-10 to + 95	NBR
684	0,5 - 50	-40 to + 120	FKM, EPDM

Materials

Type	Materials	DIN EN	ASME	Sizes
481	Stainless steel	1.4408	CF8M	1/2" to 2"
482				DN 15 to DN 100
484				1/4" to 2"
681	Red brass	CC499K	CC499K	1/2" to 2"
682				DN 15 to DN 100
683				3/8" to 1 1/4"
684				1/4" to 2"

Application

The pressure reducing valve type series are type approved for applications in piping systems and on pressure vessels as specified in the Rules Pt.4, Ch.6 Piping Systems and Pt.4, Ch.7 Pressure equipment. Operating media: liquids, air, gases, vapours and warm water.

Note¹

Selection of pressure reducing valve types for specific service conditions and operating media shall be carried out with suitable materials according to the relevant DNV GL Rules and according to the instructions of manufacturer.

Limitation

Pressure reducing valve type series with thread connections are NOT permitted for installation in LNG/LPG systems on board of DNV GL classed liquefied gas tankers and in ship's LNG and gas fuel systems.

See DNV GL Rules Pt.5, Ch.7 – Liquefied gas tankers, Section 5 – Process pressure vessels and liquids, vapour and pressure piping systems, Item 8 – Piping fabrication and joining details, [8.2] – Direct connections/[8.2.1.3].

See also requirements provided in the IGC Code [5.8] and IGF Code [7.3.6].

For valves to be installed on board of ships 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 cylinders 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 call II, outside diameter not more than 60,3 mm.

Tests carried out

Test standards:
DNV GL Rules Pt.4 Ch.6 – Piping systems
DNV GL Class Programme CP 0186 - Valves

Type of test

Pressure test
Test pressure 1,5 times the design pressure
Set pressure test at room temperature

Type Approval documentation

Certification

Application in machinery and piping systems

Valves intended to be installed in piping system listed in DNV GL 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

Type of Product Certificate (PC) / Issued by
VL Certificate / DNV GL
W Works Certificate / Manufacturer

Material certificates (valve bodies)

In accordance with DNV GL Rules Pt.4, Ch.6 – Piping systems, Section 2 – Table 3

Marking of product

Job Id: **262.1-030881-1**
Certificate No: **TAP00001VW**

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

- Manufacturers name or trade mark
- Valve type designation
- Size
- Maximum design pressure and temperature
- Set pressure

Periodical assessment

For retention of the Type Approval, a DNVGL 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 DNV GL – CP - 0338, Sec. 4.

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