DNV·GL

Certificate No:
TAP00000VR

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Butterfly Valves

with type designation(s)
DANAIS 150 (150T variant), DANAIS MTII (PN25 or Class 150)

Issued to
KSB-AMRI
La Roche Chalais, Dordogne, France

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
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.

Type:	Temperature range:	Max. working press.:	Sizes:
DANAIS 150 (150T variant)	-50°C to 220°C	25 bar	2" - 18"
DANAIS MTII (PN25 or Class 150)	-50°C to 260°C	25 bar or 20 bar	2" - 24"

Issued at **Høvik** on **2018-05-22**
This Certificate is valid until **2021-12-31**.
DNV GL local station: **Le Havre**

Approval Engineer: **Adel Samiei**

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

Butterfly valves. Wafer-, lug- and flanged type.
Wall thickness according to EN12516
Pressure temperature rating according to ASME B16.34/EN12516-1

Materials:

Part	150		MTII PN25 / Class 150	
Body and Disc	A351 Gr. CF8M (with Mo > 2.75%) A351 Gr. CF3M (with Mo > 2.75%)	Group 14E0	A351 Gr. CF3M (with Mo > 2.75%)	Group 14E0
	A216 Gr. WCC	Group 3E0		
Shaft	1.4462 + 1.4542		1.4462	
Seat	Reinforced PTFE Reinforced PTFE + stainless steel 316L		Reinforced PTFE NICKEL stainless steel 316L	

Sizes:
DANAIS MTII: 2”, 2 ½”, 3”, 4”, 5”, 6”, 8”, 10”, 12”, 14”, 16”, 18”, 20”, 24”
DANAIS 150: 2”, 2 ½”, 3”, 4”, 5”, 6”, 8”, 10”, 12”, 14”, 16”, 18”

Manufacturing locations:
1- AMRI-KSB, La Roche Chalais Dordogne, France
2- AMRI-KSB, Dalian, China

Application/Limitation

The approval is valid for ship piping systems, machinery piping systems and cargo piping systems onboard ships and offshore mobile units.

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

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

Valves covered by this shall be considered fire safe for sizes equal or greater than 3”.

Minimum/Maximum design temperatures are dependent to the body material and the seating material:
PTFE: -50°C to +220°C
Stainless Steel: -50°C to +260°C

Type Approval documentation

Production tests

All valve bodies shall be subjected by the manufacturer to a hydrostatic test at a pressure equal to 1.5 times the nominal pressure (The nominal pressure is the maximum allowable working pressure at room temperature).
All valve assemblies shall be subjected to seat leakage test at 1.1 times maximum working pressure at closed position.
Production Testing and acceptance criteria shall be in accordance with EN 12266-1/ Leakage Rate A.

Valves fitted on ship's side and bottom are also to be hydrostatically tested at a pressure equal to 5 bar applied independently on each side of the closed disc.

Certification

valve bodies shall be delivered with material certificates in accordance with DNV GL Ship Pt.4 Ch.6 Sec.2 Table 3. Materials with VL and W certificates shall be manufactured in a foundry approved by the society.

DNV GL product certificates are required for valves with DN>100 mm and design pressure > 16 bar, and for ship side valves where DN>100 mm regardless of pressure. For other valves a manufacturer's product certificate may be accepted.

Marking of product

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

- Manufacturer's name
- Type designation, size, design Pressure & temperature
- arrow to indicate direction of flow on one way flow valves

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.