



Certificate No:
TAP00002GS

TYPE APPROVAL CERTIFICATE

This is to certify:

That the **Hydraulic Actuator for Valve (Not Hydraulic Motor)**

with type designation(s)
BRC & BRCF Hydraulic Actuators

Issued to

Emerson Automation Solutions, Damcos A/S
Næstved, Sjælland, Denmark

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-OS-E201 – Oil and gas processing systems, Edition July 2021

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.
Dsgn. press./Torque See next page.

Issued at **Høvik** on **2022-02-25**

This Certificate is valid until **2027-02-24**.

DNV local station: **Denmark CMC**

for **DNV**

Approval Engineer: **Maheshraja Venkatesan**

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Zeinab Sharifi
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.

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: 2021-03

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Product description

BRC Actuator: Double-acting balanced, rotary actuator; quarter-turn.

BRCF Actuator: Single-acting spring-return actuator; quarter-turn. The spring provides fail-safety.

Type	Sizes (Nm)								
BRC	125	250	500	1000	2000	4000	8000	16000	3200
BRCF	125	250	500	1000	2000	4000	8000	16000	

The actuators are provided with a direct visual position indicator.

BRC and BRCF actuator components are made of following materials:

Component	BRC Actuator	BRCF Actuator
Housing, Piston, Bottom cover, Top cover	Cast spherical graphite iron (W.no 0.7040)	Cast spherical graphite iron (W.no 0.7040)
Splined shaft	Construction steel (W.no 1.5216)	Construction steel (W.no 1.5216)
Top part cover	Acid proof steel (W.no 1.4436)	Acid proof steel (W.no 1.4436)
Spring housing, Transfer	N/A	Cast spherical graphite iron (W.no 0.7040)
Spring guide	N/A	Construction steel (W.no 1.5216)
Screws for spring housing	N/A	8.8/10.9

Seals: Nitrile rubber, Fluorine rubber, Low nitrile rubber

Application/Limitation

This approval is related to the strength of parts subjected to internal pressure. Actuator functionality and output torque have not been subject to review.

Operating medium is hydraulic oil, and no corrosion allowance is considered.

Design Parameter	BRC Actuator	BRCF Actuator
Nominal working pressure	135 bar	135 bar
Temperature range	-25°C to 80°C with Nitrile rubber. -20°C to 120°C with Fluorine rubber seals. -45°C to 40°C with Low nitrile rubber seals.	-20°C to 80°C with Nitrile rubber.

The actuators have not been subject to fire testing.

Production testing

Each actuator is to be tested at minimum 1.5 x the nominal working pressure before delivery.
Testing shall be witnessed by DNV when product certificate is required by society rules or purchaser.

Type Approval documentation

Tests carried out

Burst test

Marking of product

For traceability to this type approval the actuators are to be at least marked with the following particulars:

- Manufacturer's name or trade mark
- Pressure rating and maximum torque
- Type designation

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.