



Certificate no.:
TAP00002YC

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Filter

with type designation(s)

DMF1 to DMF5 and MF1S to MF5S, S-ZF1-V to S-ZF13-V and S-ZF0-W to S-ZF13-W, S-HOF-V-01 to S-HOF-V-14

issued to

Headway Technology Group (Qingdao) Co., Ltd.
Qingdao, Shandong Province, China

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment

DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

DNV-OS-E201 – Oil and gas processing systems, Edition July 2022

Application:

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Type:	Max. working temp.:	Working media:	Design pressure:
DMF1 to DMF5 and MF1S to MF5S	-20 to 80 °C	Methanol, Amonia	25 bar
S-ZF1-V to S-ZF13-V and	85 °C	Water	6 bar
S-ZF0-W to S-ZF13-W			
S-HOF-V-01 to S-HOF-V-14	150 °C	Fuel Oil, Chemicals, Water	16 bar

Issued at **Hamburg** on **2024-11-19**

This Certificate is valid until **2029-11-18**.

for **DNV**

DNV local unit: **Qingdao NB & CMC**

Approval Engineer: **Le Loi Nguyen**

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 USD 300 000.

Product description

- Details of filters (e. g. design data, materials or dimensions) see Application/ Limitation and Type Approval documentation listed below.

Application/Limitation

- The filters are approved according to DNV-RU-SHIP Pt.4 Ch.7 (Edition July 2021), DNV-OS-D101 (Edition July 2021) and DNV-OS-E201 (Edition July 2024)
- The material of the filters for Pressure Equipment Class I, II and III shall be delivered with corresponding material certificates according to DNV-RU-SHIP Pt.4 Ch.7 Sec.1 Tab.5, Tab.6 and Tab.7.
- Manufacturing, workmanship, and testing shall be done according to DNV-RU-SHIP Pt.4 Ch.7 Sec.7

Type Approval documentation

	DMF1 to DMF5	MF1S to MF5S	S-ZF1-V to S-ZF13-V
Pd [bar]	25	25	6
Design temperature [°C]	-20 to 80	-20 to 80	85
Medium [-]	Methanol, Amonia	Methanol, Amonia	Water
Pressure Equipment Class	I	I	III

	S-HOF-V-01 to S-HOF-V-14	S-ZF0-W to S-ZF13-W
Pd [bar]	16	6
Design temperature [°C]	150	85
Medium [-]	Fuel Oil, Chemicals, Water	Water
Pressure Equipment Class	II	III

Tests carried out

- Hydraulic pressure tested to minimum 1.5 x design pressure,
- Certified by DNV and to be delivered with a product certificate.

Place of manufacture

Headway Technology Group (Qingdao) Co., Ltd.
No.32 Keyuan Jing 6th Road, Laoshan District Qingdao,
Shandong Province, P.R. China

Headway Technology Group (Qingdao) Co., Ltd.
No. 1201, Xiushan North Road, Xin'An Street, Anqiu,
Weifang City, Shandong Province P. R. China

Marking of product

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

- the name and domicile of the manufacturer,
- the manufacturer's type designation and serial number,
- the year of manufacture,
- the design pressure,
- the design temperature in °C,
- the hydraulic test pressure, and
- DNV's identifying mark.

Periodical assessment

The objective of the periodical assessment is to verify that the conditions for the type approval (TA) 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 TA products at the TA applicant's own premises and at other companies that are given the responsibility for manufacturing of the products,

- review of TA documentation and that this is still used as basis for the production,
- review of possible changes in the design, the materials and the performance of the product, and
- verification of the product marking.

For retention of the TA certificate in its validity period the periodical assessments will be carried out every two years. Unscheduled assessments for retention of the certificate may be carried out when there is reason to believe that the type approval applicant has not adhered to the obligations stipulated in the type approval certificate.

End of Certificate