

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fuel-, Lubricating- and Hydraulic Oil Filters

with type designation(s)
Filter series AutoFilt® RF9, LMDP and OTU

Issued to

HYDAC Process Technology GmbH
Neunkirchen, Saarland, Germany

is found to comply with

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

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Type:	Sizes:	Max. working temp.:	Max. working press.:
RF9	0, 0.5, 2, 3, 4, 5, 6, 7	180°C *	16 bar *
RF9	8, 9	120°C *	10 bar *
LMDP-S	2, 3, 5, 6	180°C	16 bar
LMDP-S	7, 8	120°C	10 bar
LMDP-D	2, 3, 5, 6	180°C	16 bar
LMDP-D	7, 8	120°C	10 bar
LMDP-T	3, 5, 6, 7, 8	100°C	10 bar
LMDP-E	3, 5, 6, 7, 8	100°C	10 bar
OTU	1, 2, 3	120°C	7 bar

* Mentioned operation data apply to the main filter unit (AF) only; components such as heating, bypass filter and gas tank vary from this data; for details see section "Product description".

Issued at **Hamburg** on **2021-06-23**

This Certificate is valid until **2026-06-22**.

for **DNV**

DNV local station: **Essen**

Approval Engineer: **Le Loi Nguyen**

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Jonathan Struwe
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.



Product description

- Ten types of filter assemblies, each consisting of up to seven different components
- The components have a fixed size and are restricted to the operation conditions shown in the table below:

Application/Limitation

- Drawings are approved acc. to DNVGL-RU-SHIP Pt.4 Ch.7 (Edition July 2020, amended August 2020),
- Filters RF9-0 to RF9-7 are graded as pressure equipment class I, filters RF9-8 to RF9-9 are graded as class II, gas tanks and STU units are graded as class III, complying with DNVGL-RU-SHIP Pt.4 Ch.7 Sec.1 Tab.2,
- Operating media: liquid fuels, lubricating oils, flammable hydraulic liquids; HZ & GT see table above,
- Manufacturing, workmanship, and testing shall be done according to DNVGL-RU-SHIP Pt.4 Ch.7 Sec.7,
- Each filter is to be:
 - Hydraulic pressure tested to minimum 1.5 x design pressure,
 - Certified by DNV GL and delivered with a DNV GL product certificate.



Job Id: **262.1-035336-1**
Certificate No: **TAP00002CA**

Type Approval documentation

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 (GL)'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