Certificate No: **2605280943211247**
TL Project No: **26-0802**

TYPE APPROVAL CERTIFICATE

This is to certify that the

Lubricating and Hydraulic Oil Filters, 2 Type- RFLD and AFLD

Manufacturer : **HYDAC Filtertechnik GmbH**

Address : **Sulzbach/ Saarbrücken-Dudweiler Saarland, Germany**

Product Type : **RFLD 111, RFLD 241, RFLD 261, RFLD 331, RFLD 501, RFLD 661, RFLD 851, RFLD 951, RFLD 1301, RFLD 952, RFLD 1302, RFLD 1302 GAN, RFLD 2701, RFLD 662, RFLD 852, RFLD 1401, RFLD 4801, RFLD 1501, RFLD 1303, AFLD 123, AFLD 232, AFLD 233, AFLD 332, AFLD 333, AFLD 542, AFLD 543, AFLD 882, AFLD 883, AFLD 1402, AFLD 1403, AFLD 2702, AFLD 2703**

Reference Rule : **TL Rules, Part E, Chapter 103 - Metallic Materials, Special Materials for Naval Ships, 01.01.2022**

TL Rules, Part E, Chapter 107 - Naval Ship Technology, Ship Operation Installations and Auxiliary System, 01.01.2022

TL Rules, Part A, Chapter 2, Material, 01.07.2024

TL Rules, Part B, Chapter 4 - Machinery, 01.01.2026

Subject to the conditions referred to in the following pages, this certificate is valid until **21.06.2031**
Surveyor: **Sezer Mahir TUĞCU**

Issued at **İSTANBUL** on **22.06.2026**

This document is electronically signed and does not require a manual signature

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Emrah SÖĞÜTÇÜ
New Building Division Manager
TÜRK LOYDU

Expire Date of Previous Certificate:

For Information Only

This certificate is subject to terms and conditions described below:
Any significant change in design or construction may render this Certificate invalid. Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. This certificate is not valid for products without marking above mentioned. The manufacturer should notify TÜRK LOYDU of any modifications or changes to equipment in order to obtain valid certificate. This certificate shows that tested specimens as representative of the product complies of the TÜRK LOYDU rules, and relevant international instruments that apply to it.

Product	**: Lubricating and Hydraulic Oil Filters, 2 Type- RFLD and AFLD**
Product Description	**: Switchable change-over inline filters**
Approval No / Date	**: - PAE-EPAS/024684/26-0802/FP, 28.04.2026** **- PAE-EPAS/024683/26-0802/FP, 28.04.2026**
Performed Tests	**: - Visual Inspection** **- Quality Management System Audit** **- Checks according to approved drawings** **- Pressure Tests/ Tightness** **- Test Functional checks** **- Burst Tests** **were found satisfactory.**
Test Place	**: HYDAC FILTERTECHNIK GMBH, Sulzbach/ Saarbrücken-Dudweiler Saarland, Germany**
Last Inspection Date	**: 18.06.2026**
Application/Limitation	**: - Steel casting materials (e.g. SA-216 WCB) shall comply with the requirements of TL Rules for Materials, Chapter 2, Section 6, Table 6.8 and Table 6.12 for low temperature applications.** **- The equipment and associated components shall be designed in accordance with TL Rules for Machinery, Chapter 4, Section 14, including: Table 14.1 - Pressure Vessel Classes Table 14.2** **- Approved Materials All flanges, bolting and connections (including bolt diameter, number of bolts, flange thickness, drilling pattern and pressure rating) shall comply with the applicable standards, such as: ASME B16.5, EN 1092, SAE J518 (SAE 3000 PSI series) etc.**

	Type of Product	Dimension	Max Operation Pressure	Max Operation Temperature	Filter Rating
1	RFLD 111	Shell, external diameter (mm): 72; Length over all (mm): 263	40 Bar	-10 °C / +100°C	Volume (Liter): 2x 0.6
2	RFLD 241	Shell, external diameter (mm): 98; Length over all (mm): 312	40 Bar	-10 °C / +100°C	Volume (Liter): 2x 1.4
3	RFLD 261	Shell, external diameter (mm): 98; Length over all (mm): 366	40 Bar	-10 °C / +100°C	Volume (Liter): 2x 1.8
4	RFLD 331	Shell, external diameter (mm): 124; Length over all (mm): 323	33 Bar	-10 °C / +100°C	Volume (Liter): 2x 2.4 / 2.3
5	RFLD 501	Shell, external diameter (mm): 124; Length over all (mm): 400	33 Bar	-10 °C / +100°C	Volume (Liter): 2x 3.1 / 3.0

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6	RFLD 661	Shell, external diameter (mm): 172; Length over all (mm): 471.5 / 535.5	34 Bar	-10 °C / +100°C	Volume (Liter): 2x 6.8 / 8.2
7	RFLD 851	Shell, external diameter (mm): 172; Length over all (mm): 550 / 619.3	34 Bar	-10 °C / +100°C	Volume (Liter): 2x 8.1 / 9.5
8	RFLD 951	Shell, external diameter (mm): 199.5; Length over all (mm): 596 / 601	34 Bar	-10 °C / +100°C	Volume (Liter): 2x 10.8 / 13
9	RFLD 1301	Shell, external diameter (mm): 199.5; Length over all (mm): 736.5 / 756	34 Bar	-10 °C / +100°C	Volume (Liter): 2x 13.8 / 16
10	RFLD 952	Shell, external diameter (mm): 200; Length over all (mm): 609	40 Bar	-10 °C / +100°C	Volume (Liter): 2x 13
11	RFLD 1302	Shell, external diameter (mm): 200; Length over all (mm): 708	40 Bar	-10 °C / +100°C	Volume (Liter): 2x 16
12	RFLD 1302 GAN	Shell, external diameter (mm): 200; Length over all (mm): 708	50 Bar	-10 °C / +100°C	Volume (Liter): 2x 16
13	RFLD 2701	Shell, external diameter (mm): 291; Length over all (mm): 818	16 Bar	-10 °C / +100°C	Volume (Liter): 2x 44
14	RFLD 662	Shell, external diameter (mm): 171; Length over all (mm): 568	40 Bar	-10 °C / +100°C	Volume (Liter): 2x 8.2
15	RFLD 852	Shell, external diameter (mm): 171; Length over all (mm): 645	40 Bar	-10 °C / +100°C	Volume (Liter): 2x 9.5

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16	RFLD 1401	Shell, external diameter (mm): 214; Length over all (mm): 930	16 Bar	-10 °C / +100°C	Volume (Liter): 2x 24.2
17	RFLD 4801	Shell, external diameter (mm): 410.4; Length over all (mm): 1367	16 Bar	-10 °C / +100°C	Volume (Liter): 2x 113
18	RFLD 1501	Shell, external diameter (mm): 224; Length over all (mm): 899.3	16 Bar	-10 °C / +100°C	Volume (Liter): 2x 22.3 + 2x 1.6
19	RFLD 1303	Shell, external diameter (mm): 200; Length over all (mm):743	40 Bar	-10 °C / +100°C	Volume (Liter): 2x 16
20	AFLD 123	Shell, external diameter (mm): 90; Length over all (mm):376	81,2 Bar	-196°C / +150°C	Volume (Liter): 2x 0,75
21	AFLD 232	Shell, external diameter (mm): 120/127; Length over all (mm):457	75 Bar / 77,9 Bar	-48°C / +150°C - 36°C / +150°C	Volume (Liter): 2x 2,0 / 2,5
22	AFLD 233	Shell, external diameter (mm): 120/127; Length over all (mm):457	55 Bar / 65,5 Bar	-196°C /+ 150°C - 29°C / +150°C	Volume (Liter): 2x 2,0 / 2,5
23	AFLD 332	Shell, external diameter (mm): 168; Length over all (mm):428	90 Bar	-48°C / +150°C	Volume (Liter): 2x 2,2
24	AFLD 333	Shell, external diameter (mm): 168; Length over all (mm):428	54 Bar	-196°C / +150°C	Volume (Liter): 2x 2,2
25	AFLD 542	Shell, external diameter (mm): 168/147; Length over all (mm):535,5/525,5	80 Bar / 48,9 Bar	-48°C / +150°C - 36°C / +150°C	Volume (Liter): 2x 4,3 / 5,3

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26	AFLD 543	Shell, external diameter (mm): 168/147; Length over all (mm):535,5/525,5	50 Bar / 48,9 Bar	-196°C / 150°C - 29°C / +150°C	Volume (Liter): 2x 4,3 / 5,3
27	AFLD 882	Shell, external diameter (mm): 193,8; Length over all (mm):743	47,4 Bar	-36°C / +150°C	Volume (Liter): 2x 16
28	AFLD 883	Shell, external diameter (mm): 204,6; Length over all (mm):743	34,5 Bar	-29°C / +150°C	Volume (Liter): 2x 16
29	AFLD 1402	Shell, external diameter (mm): 210,8; Length over all (mm):924	54,2 Bar	-36°C / +150°C	Volume (Liter): 2x 24
30	AFLD 1403	Shell, external diameter (mm): 209; Length over all (mm):924	40 Bar / 38,2 Bar	-29°C / +80°C - 29°C / +150°C	Volume (Liter): 2x 24
31	AFLD 2702	Shell, external diameter (mm): 277,4; Length over all (mm):807	24,2 Bar	-36°C / +150°C	Volume (Liter): 2x 37
32	AFLD 2703	Shell, external diameter (mm): 275,8; Length over all (mm):807	16,2 Bar / 14,6 Bar	-29°C / +100°C - 29°C / +150°C	Volume (Liter): 2x 37

Approval Conditions **: -**

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