

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Filter

with type designation(s)

Fuel oil treatment plant KFWA 1 main to KFWA 4 main • connected between storage tank and engine / Fuel oil treatment plant KFWA 1 by to KFWA 4 by • connected between storage tank and service tank

Issued to

Filtration Group GmbH
Hamburg, Germany

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL rules for classification – Ships

Application :

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

Max. working temp.: 2°C up to 55°C

Working media: Diesel fuel acc. DIN 590, DMA, DMX acc. to DIN ISO 8217

Design pressure: up to 6 bar

This Certificate is valid until **2022-04-04**.

Issued at **Hamburg** on **2017-04-05**

DNV GL local station: **Hamburg**

for **DNV GL**

Approval Engineer: **Peter Gierhan**

.....
Olaf Drews
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.

Product description

TECHNICAL DATA

Fuel oil treatment plant

Medium: Diesel fuel acc. to DIN 590,
DMX, DMA acc. to DIN ISO 8217
Flow rates KFWA main / by: 670 [l/h] to 8000 [l/h]
Operating temperatures: 2 [°C] to 50 [°C]
Operating pressure: up to 6 [bar]

Application/Limitation

The fuel oil treatment plants of type KFWA are approved for the treatment of combustibles such as Marine Diesel Oil (MDO) and Marine Gas Oil (MGO) on ships classed with DNV GL.

The selection of the fuel oil treatment plants for the corresponding application and the right installation and maintenance are to be in acc. with the instructions of the manufacturer.

The use of the fuel oil treatment plants outside the range of application is subject to special consideration by DNV GL in each individual case. The installation, operating and maintenance instructions of the manufacturer are to be strictly adhered to. The inlet and outlet of the fuel oil treatment plants are to be fitted with connections where the sealing is not made on the threads.

The approval is related to the strength of the parts subject to pressure, and not the function.

When the fuel oil treatment plants are fitted in the supply lines to the main and auxiliary machinery, they are to be arranged in such a way that they can be cleaned without interrupting the supply of fuel oil.

Each fuel oil treatment plants delivered to DNV GL Class is to be pressure tested to 1.5 x maximum working pressure in the presence of a DNV GL surveyor as described in DNV GL Rules Pt.4, Ch.6.

Upon completion each fuel oil treatment plant is to be presented on board ship to a Surveyor of this Society for final inspection, function and tightness test.

Type Approval documentation

Tests carried out

Final inspection, function and tightness test

Description	Drawing-No.	Dated
KFWA 1-BY FILTER-COALESCE -AZ-	5050-20159445-S00	30.06.2016
KFWA 1-MAIN FILTER-COALESCE -AZ-	5050-20159842-S00	12.07.2016
KFWA 1-BY PUMPENAGGREGAT -AZ-	5050-20158795-S00	17.06.2016
KFWA 1-MAIN PUMPENAGGREGAT -AZ-	5050-20159032-S00	02.06.2016

KFWA 2-BY PUMPENAGGREGAT -AZ-	5050-20157547-S00	18.05.2016
KFWA 2-MAIN PUMPENAGGR -AZ-	5050-20157547-S00	11.05.2016
KFWA 2-BY FILTER-COALESCE -AZ-	5050-20157547-S00	11.05.2016
KFWA 2-MAIN FILTER-COALESCE -AZ-	5050-20157354-S00	02.05.2016

KFWA 3-BY PUMPENAGGREGAT 60Hz -AZ-	5050-20169272-S00	09.03.2017
KFWA 3-BY PUMPENAGGREGAT -AZ-	5050-20158364-S00	08.06.2016
KFWA 3-MAIN PUMPENAGGREGAT 60Hz -AZ-	5050-20162126-S00	07.09.2016
KFWA 3-MAIN PUMPENAGGREGAT -AZ-	5050-20158536-S00	13.06.2016
KFWA 3-BY FILTER-COALESCE -AZ-	5050-20158637-S00	09.08.2016
KFWA 3-MAIN FILTER-COALESCE -AZ-	5050-20158794-S00	17.06.2016

Job Id:
Certificate No: **TAP00000MN**

Description	Drawing-No.	Dated
KFWA 4-BY PUMPENAGGREGAT 60HZ-AZ-	5050-20169304-S00	10.03.2017
KFWA 4-BY PUMPENAGGREGAT -AZ-	5050-20160092-S00	08.07.2016
KFWA 4-MAIN PUMPENAGGREGAT 60HZ-AZ-	5050-20169319-S00	10.03.2017
KFWA 4-MAIN PUMPENAGGREGAT -AZ-	5050-20161241-S00	05.08.2016
KFWA 4-BY FILTER-COALESCE -AZ-	5050-20127402-S00	12.08.2016
KFWA 4-MAIN FILTER-COALESCE -AZ-	5050-20127397-S00	15.08.2016

Marking of product

For traceability to this type approval each filter shall be marked:

- Manufacturer name or trade mark
- Type designation
- Design pressure

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical Assessment to be performed after two and a half year (2.5 years, certificate retention) and prior to renewal after five (5 years, certificate renewal).

The objective of the periodical assessment is to verify that the design and production conditions for the hose assemblies covered by this type approval have not been altered.

Main scope of the assessment:

- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of the type approval documentation and that this is still the basis for the production
- review of design changes , pre- material and performance of the product
- verification of the product marking

END OF CERTIFICATE