Oil mist separators

Assembly & maintenance

Assembly and putting into service
Maintenance of the oil mist separators
Replacement of the micro fibre cartridges

Franke Filter®
clean air creates atmosphere

Welcome to Franke Filter

Franke Filter GmbH is a German industrial company specializing in the manufacture of oil mist separators. Thanks to our extensive market knowledge, we are able to achieve the highest quality standards and offer customized solutions. The range of applications for oil mist separators varies from lubricating oil tanks of water, gas and steam turbines to compressors, gas and diesel engines, pumps and generators. Applications range from hydroelectric power stations, power plants and refineries to turbine manufacturers.

For over 30 years, we at **Franke Filter** have been developing, designing and manufacturing oil mist separators in a very flexible and customer-oriented manner. This enables us to incorporate our know-how and many years of market experience into the development of high-quality products and implement solutions that are individually tailored to each application, true to the motto: “clean air creates atmosphere”.

At Franke Filter, we not only contribute to environmental protection through our products. Since 2021, our company has also been environmentally certified in accordance with DIN EN ISO 14001:2015. In order to supply you with the best possible products, we manufacture according to the latest quality standards. Each individual part and the finished system are subjected to precise and comprehensive quality controls in accordance with DIN EN ISO 9001:2008.

In consultation with our customers, we offer individual solutions for every special application and, on request, carry out the assembly of the filter systems with our staff on site.

THE CORRECT TYPE OF FILTER

Franke Filter is a pioneer in innovative filtration technology for finest oil mist on rotary machines. Our head start in know-how and our absolute quality standards in combination with the desire to always offer our customers the optimum solution make the difference!

Ideas and experience that count

We apply our experiences from several thousand successful projects in each consultation and product.
A decisive factor for the best possible interaction between turbine and filter system is choosing the right size of oil mist separator. This usually depends on the tank size of your turbine.

For most projects, we can use standard values as a guide, but some applications require special adaptations, which we will be happy to calculate and carry out for you individually.

POSSIBLE SYSTEM MODELS

FF2-011 with internal admixed air for small turbines

FF2-166 with integrated return line for medium turbines

FF2-366 with double compressor for heavy-duty-turbines

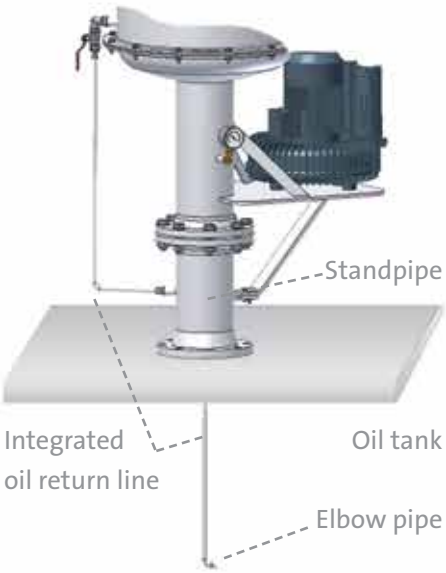
SIMPLE ASSEMBLY

The installation and initial commissioning of our oil mist separators - whether by our technicians or your own personnel - depends on good preparation and quick execution to avoid expensive turbine downtimes.

We offer you an installation service of your oil mist separator or you can complete it by yourself using our detailed documentation. To make things easy, Franke Filter plans all the necessary connections to existing flanges in the correct position during the quotation phase so that installation on site is as quick and uncomplicated as possible. The installation point of the filter system is variable depending on the requirements and space available.

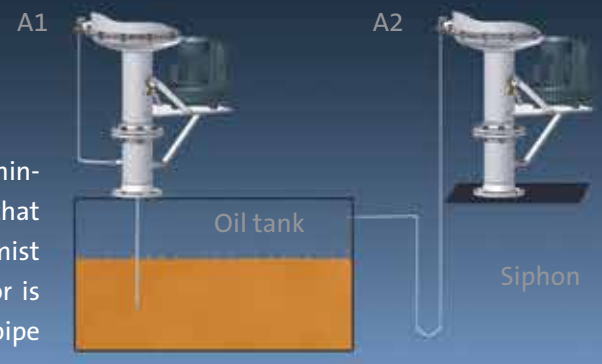
PLACE FOR INSTALLATION – ALMOST FREE OF CHOICE

Assembly directly on the oil tank



The simplest and most economical installation of the oil mist separator is directly next to the turbine on the oil tank. In this case, a length adjusted standpipe ensures the necessary geodetic height (page 5). The filtered lubricating oil is automatically returned through the integrated return line. The installation of additional pipes would only be necessary for any air discharge to the outside. Parallel to this optimum installation variant, it is also possible to install the filter system next to the oil tank at turbine height using an additional frame. Installations outside the turbine hall or outdoors can also be realized if there is no or too little space inside the turbine hall. In this case, laying the pipes for the raw, contaminated air and the return line is more complex. The most important aspect for the proper functioning of all components is the aforementioned geodetic height, which must always be maintained. No matter which installation variant is the right one for your application - we will be happy to take care of the installation and monitor the commissioning.

GEODESIC HEIGHT



Owing to the specific differential pressure of the filter elements, a minimum height over the oil level has to be maintained. This ensures that the filtered lubricating oil can flow from the housing of the oil mist separator back into the lubricating oil tank. If the oil mist separator is installed directly on the tank as shown in the illustration A1, a standpipe with a necessary height is included in the construction.
Siphon solutions as shown in the illustration A2, come into use when the separator is installed at some distance.

PIPE COUPLING

Pipe couplings are used for quick and secure axial connection of pipes during the installation of the oil mist separator. They easily compensate for length tolerances of the pipes and reduce welding work on site.

OIL RETURN & ECONOMISING PIPEWORK INSTALLATIONS

Ideally, the filtered lubricating oil is returned to the turbine's lubricating oil tank via the return line integrated in the standpipe. If greater distances need to be bridged, ***Franke Filter*** has developed reliable intermediate solutions. With the geodetic height always in view, the lubricating oil can be returned to the tank via siphons or a small intermediate tank, which is equipped with a pump as required.

Even if space on the oil tank is very limited, we can almost always fit our compact and precisely manufactured oil mist separators in this position. If, exceptionally, this does not work, you can still save time and material. When designing our system, we made sure that the complex installation of clean air pipes to the outside is not necessary. The degree of separation of more than 99.99% and the efficiency of our systems make these costs superfluous.

The emerging purified air is so clean that it can be released via the attached clean air nozzle directly into the environment, such as the turbine hall.


Pipe coupling

DO NOT WAIT TOO LONG

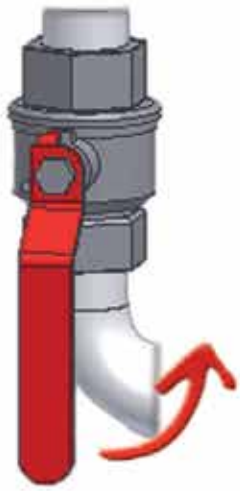
The special composition of our microfibre filter cartridges guarantees consistantly high filter performance over a long period of time. Yet, why and when should the filter cartridges be replaced? Soot particles and smoke deposit can be sucked in through the bearings and enter the filtercartridges with the oil mist, clogging their fine microfibres. The manual for your oil mist separator will tell you exactly when it is the best time to replace the cartridges. Feel free to make an appointment for our experienced technicians to carry out the maintenance work for you. Our aim is to constantly improve our service.

A growing network of service partners is at your disposal in your vicinity.

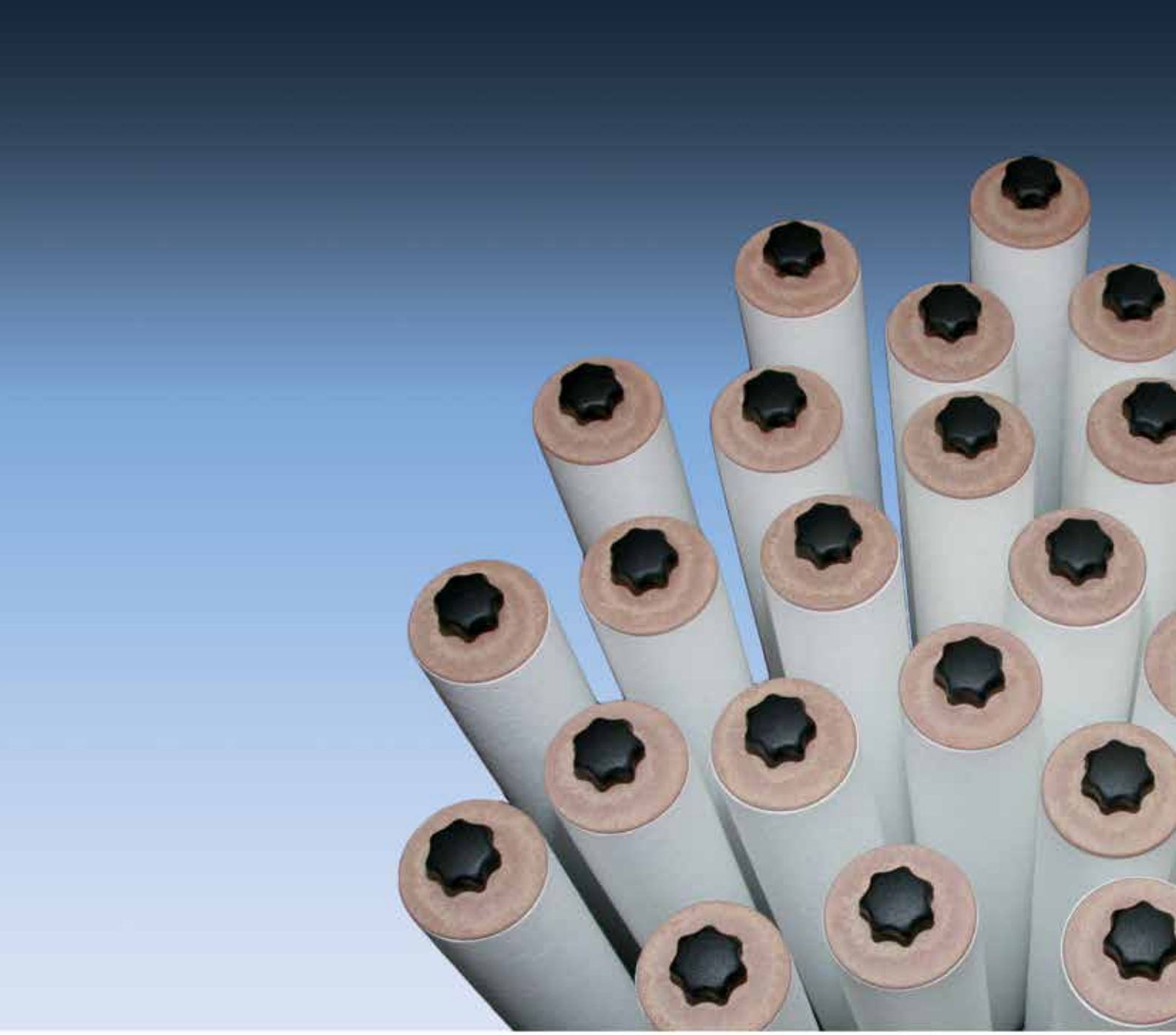
Please find a list of contact persons on the back of this brochure.

VACUUM GAUGE AND THE REGULATION OF EXTERNAL AIR

Every ***Franke Filter*** oil mist separator is equipped with a side channel blower large enough to generate the necessary vacuum in the lubricating oil system. The exact vacuum required to overcome the resistance of the filter cartridges and maintain a constant vacuum throughout the lubricating oil system, is crucial for the best possible degree of separation of oil particles from contaminated air. You can check the current vacuum level by looking at the built-in gauges U1 and U2. After putting the the oil mist separator into service or changing the filter cartridges, the vacuum should be adjusted to account for the weak saturation and low resistance of the cartridges. While gauge U1 displays the vacuum in the system, gauge U2 shows the current differential pressure (the difference in pressure between inside and outside the filter cartridge).



As the filter cartridges become more saturated, the measured value at U1 declines and the value at U2 increases. To reach the necessary vacuum and achieve efficient separation, the external air supply must be slightly regulated.



REPLACING FILTER CARTRIDGES

The U1 gauge displays the vacuum conditions in the entire system during the normal operation of the oil mist separator.

The measured value on gauge U2 indicates the degree of saturation i.e. how quickly the filter cartridge is getting clogged.

As soon as the vacuum gauge reaches a value of around 100 mbar, the filter cartridges must be replaced in order to ensure continuing trouble-free operation and high separation efficiency for a further period of 30.000 hours or more. Replacing the filter cartridges is rather simple. Firstly, turn off the oil mist separator. Then, open the filter cover of the filter housing to access the filter cartridges. Insert the new filter elements and O-rings. The fixing Phillips screws have to be tightened by hand. No tools are required. Applying too much pressure would compress the cylindrical body, applying too little would mean that the filter tube cover and the filter cartridge are not airtight. Once the oil mist separator is back in use, the ball valve that regulates the external air supply must be adjusted.

PUTTING INTO SERVICE AGAIN

ROOM FOR YOUR NOTES

Feel free to take down notes or write down your ideas.

YOUR CONTACT

We are your specialist for filter solutions of finest oil mist at turbines and generators in power stations. We are continuously expanding and improving our worldwide network of partners to provide the best possible consultation service.
We look forward to hearing from you.

Oil mist separators
delivering clean air solutions to power stations worldwide

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