

# Fan Programme

# Intelligent Air - all over the world

Dantherm Filtration is a leading supplier of Air Pollution Control solutions for a wide range of industries all over the world.

Dantherm Filtration focuses on individual solutions for individual customer needs. Dantherm Filtration combines the experience and expertise of four internationally recognised suppliers – Airmaster, BMD Garant, Cattinair, and Nordfab – to provide its customers with high efficiency, unbeatable reliability, low energy consumption, and full compliance with all mandatory requirements.

Dantherm Filtration takes care of everything from design and engineering, through feasibility studies, installation and commissioning, to lifetime service and maintenance.

Dantherm Filtration has the expertise, experience, organisation, and commitment to deliver an efficient clean air solution completed to specification, on budget, and on time. That is what we call Intelligent Air.



# Your complete fan system

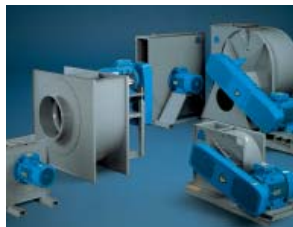
With our wide range of products we have the capacity to solve and handle air technical jobs of any kind for you. This also applies to transport of air with varying contents of materials.

## **For any job**

The COMBIFAB range of fans consists of five basic models, covering airflow up to 120,000 m<sup>3</sup>/h (70,000 cfm) and pressure up to 10,000 Pa (40 inch W.G.). Two direct driven models, preferably for small and medium-sized airflows, and three belt driven models for large airflows.

## **High reliability of operation and low maintenance costs**

Your COMBIFAB has been designed and tested on the basis of many years of experience. Combined with our uncompromising choice of materials, this ensures that you will get a reliable fan - as documented through millions of hours of operation under extremely adverse conditions all over the world.



# Meeting future challenges



Your COMBIFAB will require a minimum of maintenance. The bearings have been dimensioned to last for min. 40,000 hours of operation. Due to the specially developed shaft seals, the fan can work in even the most demanding environments.

## Direct driven or belt driven

Your fan is selected by pressure, airflows, and the type of materials which may be transported with the air. A direct driven fan is basically your most favourable choice price- and energywise. You would, however, select belt driven fans if you need to be able to change your airflow or pressure, or if large airflows are required.

## Effective noise reduction

COMBIFAB is an extremely low-noise fan. Extra noise reduction, typically 15-20 dB(A), is achieved by building the fan into a sound box. The sound box, which has forced cooling air circulation, is made in galvanised, weather resistant steel sheet and is highly suitable for outdoor use.

## For demanding jobs

COMBIFAB is available in galvanised or stainless versions when particular corrosion resistance is required for your production. For removal of air containing high-wearing materials, COMBIFAB is also available with a replaceable wearing skirt and with an impeller for instance in Hardox or stainless steel.



# High efficiency and low energy consumption

## Up to 87% efficiency

The COMBIFAB range of fans focuses on efficiency. Depending on the model and choice of impeller, efficiencies as high as 87% can be achieved - which makes COMBIFAB one of the most efficient ranges of fans available on the market.

## Wide effective working area

The COMBIFAB fan retains its high performance over a working area wider than that of traditional fans. It is thus far less sensitive to the airflow fluctuations usually occurring in an extraction plant - for instance when valves are opened or closed.



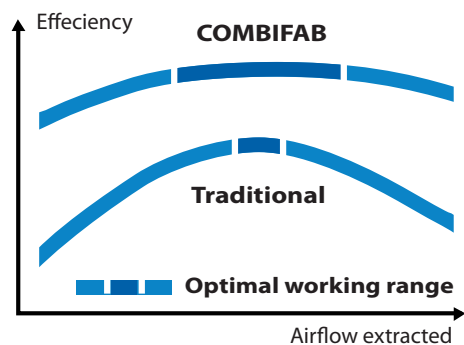
*In COMBIFAB G3 and G5, a solid-cast, hard-wearing bearing block is used; it is very steady in operation. This bearing block is easy to maintain and has long lifetime.*



*Many years of development work - focusing on noise level, energy consumption, flexibility and durability - are behind COMBIFAB.*

## Up to 30% lower energy consumption

One of the heavy energy "consumers" is the fan in the extraction plant. With COMBIFAB, the extraction will require a very low energy consumption. Calculations show actual energy savings of up to as much as 30% by investing in COMBIFAB rather than a traditional fan. By replacing it with a COMBIFAB fan you will thus recover the investment in a short time.



# Bladed impeller - the heart of the system

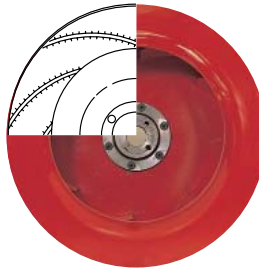
*The geometry of the three different impeller types has been refined through the application of advanced computer programmes, and the interaction with the fan inlet design is one of the secrets behind the fine performance of COMBIFAB.*



## Clean Air impeller - Type R

The clean air impeller is a closed bladed impeller with backward curved blades. This impeller is used for transport of clean air and air with a small quantity of fine dust, such as welding smoke, oil mists, or exhaust gases.

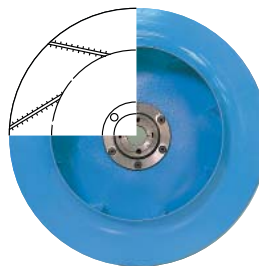
The clean air impeller has an efficiency of up to 87%.



## Chip impeller - Type S

The chip impeller is a closed, partly self-cleaning bladed impeller with straight, backward oblique blades. This impeller is used for transport of grinding and polishing dust, dry sawdust, and shavings, etc.

The chip impeller has an efficiency of up to 81%.



## Transport impeller - Type T

The transport impeller is an open, self-cleaning bladed impeller with straight, radial blades. This impeller is used for transport of shavings, chips, etc.

The transport impeller has an efficiency of up to 61%.



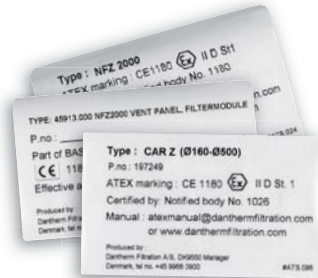


# The ATEX Directive

Dantherm Filtration A/S can supply ATEX compliant components such as filter units and fans; ATEX certified protective systems such as rotary valves, explosion relief doors, and back-pressure flaps are also available according to ATEX directive 94/9/EC.



Full scale explosion test of NF2000



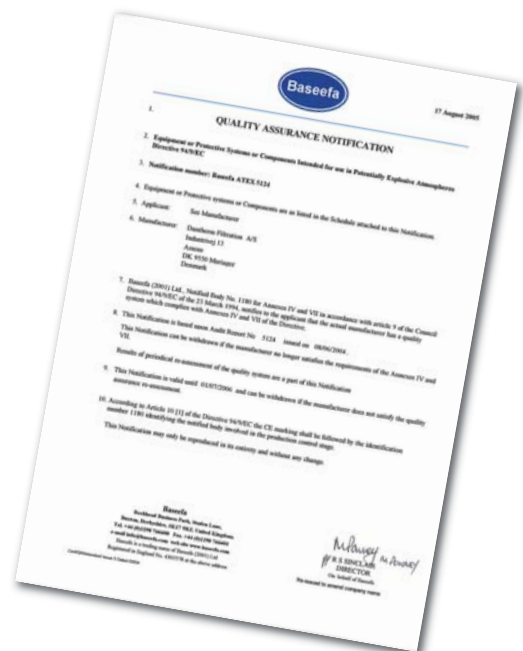
## Requirements of the equipment:

- The explosion strength of the filter has to be proved
- The pressure in the filter is controlled by explosion relief doors or panels. These components must be ATEX approved
- The risk of an explosion spreading has to be prevented by installing safety equipment such as rotary valves, back-pressure flaps, etc.
- Fans, etc. have to be certified when handling potentially explosive dust

## ATEX Directive 99/92/EC

From 1st July 2003 any new equipment installed for use with potentially explosive dusts or in a zoned area must be ATEX certified.

From 1st July 2006 any existing equipment handling potentially explosive dusts or in a zoned area must be Risk Assessed.



The protective systems at Dantherm Filtration A/S are manufactured in accordance with the ATEX design and manufacturing standards.

## World wide sales companies



## The world leader in air pollution control

Dantherm Filtration focuses on individual solutions for individual customer needs. We benefit from the experience and expertise of more than 30,000 air cleaning systems. And we deliver unbeatable reliability, low energy consumption, and compliance with all mandatory require-

ments for a wide range of applications in many different industries all over the world.

Dantherm Filtration is part of the Dantherm Group - a leader in industrial air management, offering industrial cooling,

heating, dehumidification, ventilation, air filtration, and mobile air management. The group has 3,000 employees and operates globally with production and sales companies in Europe, the US, and Asia.



### Dantherm Filtration A/S

Industrivej 13, Assens

DK-9550 Mariager

Tlf: +45 99 68 09 00

Fax: +45 99 68 09 01