

Cimbria Fan Range



Improved technology for a better environment – that is what we call »Grain Care«



For many years our research and development department has been working on one specific challenge: to combine improved dust separating efficiency with reduced energy consumption. After a long and at times difficult struggle this objective has been achieved.

The solution works on the principle of the recovery of energy with the help of a regenerative impeller. This turbine rotates at a reduced speed compared to the intake impeller – and transfers the energy from the rotating air back to the motor. This patented product provides unsurpassed dust separation combined with low energy consumption. As a result, the application of robust and self-cleaning centrifugal dust separation has moved into areas where a dust filter unit so far has been the only viable solution.

Cimbria Cyclofan

Effective Dust Separation

The Cimbria Cyclofan is a combination of a fan and a highly efficient mechanical dust separator, specially developed to process moist air from grain dryers.

The effective separation of dust particles is based on the centrifugal force in a rotating air-stream, which is obtained by a specially designed centrifugal impeller and increased by means of guide vanes.

The powerful rotation hurls the dust particles against the cylinder walls, where the dust-laden air is separated from the rest of the air in the separation section and led to the mini cyclone. The mini cyclone separates the remaining air – approximately 5 % of the total amount of air – from the dust, which is then discharged through an air lock valve into a bag or a dust container. The air from the mini cyclone is returned to the suction side of the Cyclofan.

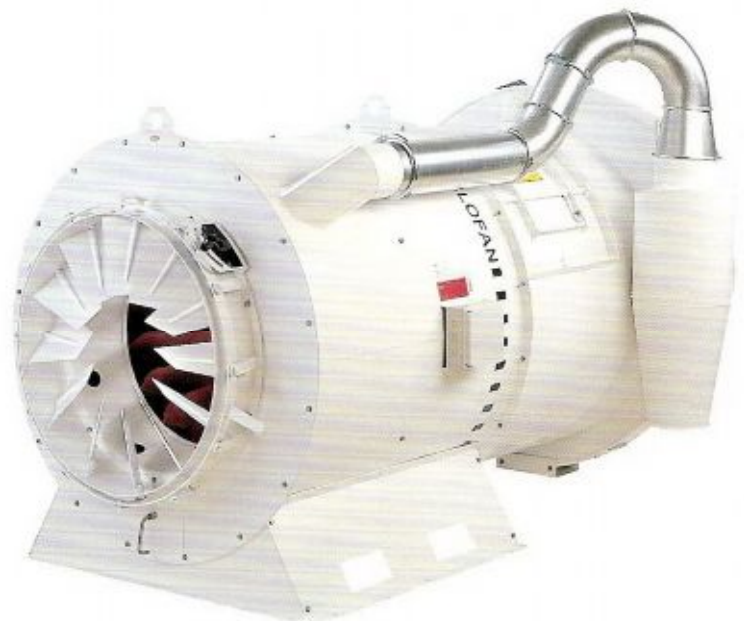
Owing to the extremely high rotational speed, the Cyclofan achieves a dust separation efficiency of up to 98 % when dealing with dust from barley – an outstanding result compared to the conventional use of fans and cyclones.

The separation ability of the Cyclofan depends mainly on the composition and the particle size of the dust. Since the method of separation is based on the centrifugal force there is obviously a lower limit where the shape and weight of the dust particles are not sufficient and the dust particle will therefore not be affected by the rotation. The separation efficiency of the Cyclofan is measured as a percentage, which is why the amount of dust remaining in the discharge air will always depend on the amount of dust entering the Cyclofan.

The Cyclofan is supplied with an air volume regulator, a so-called Varifan, which enables infinitely variable regulation of the air volume from 100% to 60% and correspondingly reduces the energy consumption.

As already mentioned, the Cyclofan is highly suitable for use in processing moist air from grain dryers. However, in other aspiration plants, where a large volume of air is needed and a reduced emission of dust is necessary, a Cyclofan is also the best solution in order to mechanically minimise the emission of dust. Performance in this case is surpassed only by typical air filters, a solution which is associated with significantly higher costs.

The Cyclofan can be installed both vertically and horizontally since the mounting position has no effect on the degree of separation.



Cimbria Super Cyclofan

Efficiency exceeding 99%

The Cimbria Super Cyclofan is a further development of the dust separating Cimbria Cyclofan. Thanks to a double impeller system, a very smooth cylinder made of stainless steel and a bigger separation section, which allows an increased amount of air to pass to the mini cyclone, a further optimisation of the ability of the fan to separate dust can be achieved.

The structure and the particle size of the dust are still decisive factors with respect to efficiency, but the limits of performance have been pushed back even further, and the degree of separation of normal dust from grain can exceed 99%.

Another advantage of the Cimbria Super Cyclofan is the unique design with an extra impeller. Ordinary Cyclofans have vanes that ensure that the rotation of the air stream is realigned when exiting the fan in order to avoid turbulence. In the case of Super Cyclofans, a regenerative impeller leads the energy that is provided by the air stream back to the motor via a V-belt transmission system. Super Cyclofans therefore offer approximately 20 % higher air volumes than normal Cyclofans with the same motor size – as well as providing twice the efficiency in terms of separation.

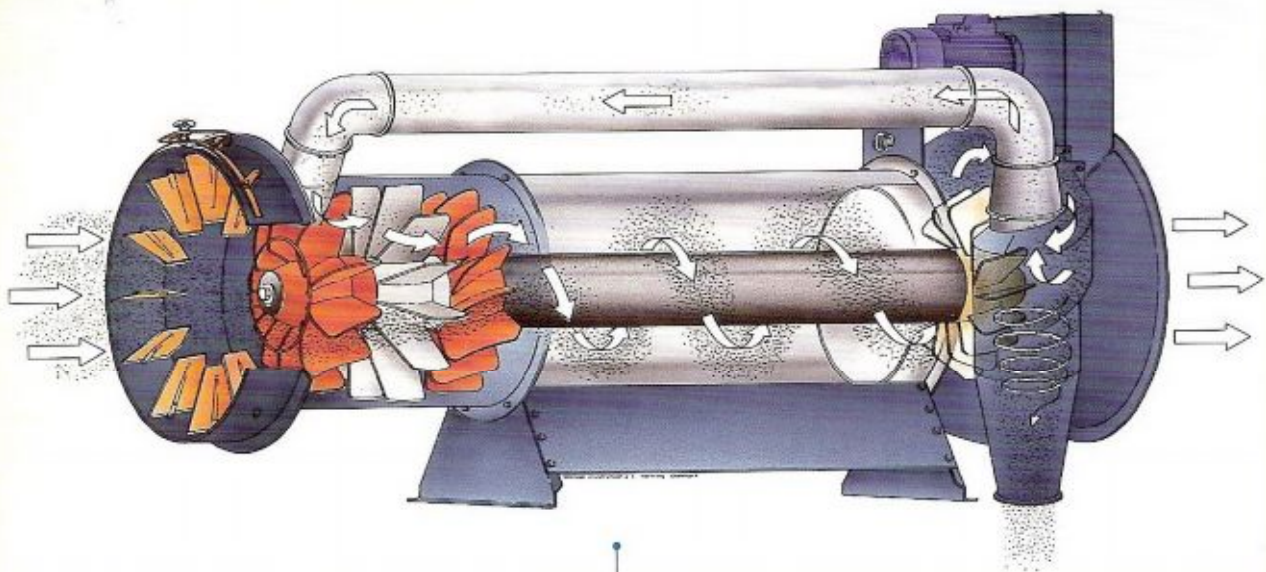
In this case the Varifan air volume regulator also provides infinitely variable regulation of the air volume from 100% to 60% along with a reduction in the energy consumption.

With its high separation factor and low energy consumption the Super Cyclofan can undertake a wide range of aspiration tasks. When the separation of moist, dust-laden air is required, the Super Cyclone is a practical alternative to filter units.

The Super Cyclofan can be mounted both vertically and horizontally, as the position has no effect on the degree of separation of dust.

Cimbria has patented the most effective mechanical dust separation fan.

The effective dust separation gives you a guaranteed environmental advantage.



The principle in the patented Super Cyclofan is a further development of the well known Cyclofan principle. The air stream is put into an extremely high rotation and at the same time the pressure is increased. In the rotating air stream the dust particles are hurled against the cylinder and »skimmed off« before the air leaves the Cyclofan.

Cimbria Varifan

Cimbria Varifan is an air volume regulator shaped as a rosette, which is placed at the inlet of the fan. The Varifan enables infinitely variable regulation of the efficiency of the fan between 60% and 100% and simultaneously adjusts the energy consumption of the motor. The entire Cimbria fan range is equipped with Varifans.



Cimbria Axial Fan

The Cimbria Axial Fan is a very efficient, low-pressure fan, specially developed for aspiration from Cimbria continuous flow dryers. The Axial Fan is equipped with a robust nylon impeller and, unlike all other Cimbria fans, the Varifan air volume regulator is not mounted externally but is installed in the actual fan housing.

Axial Fans are not suitable for dust separation, but their benefits lie primarily in their ability to expel large amounts of air at low cost. Axial Fans can be mounted both horizontally and vertically.

Cimbria Silencer

Cimbria is able to deliver both pipe and cascade Silencers and can therefore minimise the noise emission from the entire range of Cimbria fans.

The Silencers are made of galvanised plates and insulated with mineral wool that is attached between the shell and a perforated plate to absorb the noise. To achieve the correct solution for noise reduction please contact Cimbria's technical department in order to obtain a calculation and performance of the project concerned.



Cimbria Air-Lock Valve

In connection with Cimbria's dust-collecting Cyclofans, the Air-Lock Valve is mounted between the bottom outlet of the mini cyclone and the dust bag, where it ensures a uniform, continuous discharge of dust and other particles, and at the same time minimises the amount of air escaping through the outlet into the dust bag.

Cimbria Centrifugal Fan CM

The Cimbria Centrifugal Fan type CM is a medium-pressure fan having backward curved impeller blades manufactured in steel plate. The impeller is self-cleaning and dynamically balanced.

The CM Fans are as standard equipped with throttle valves but can also be supplied with the specially developed Varifan.



Technical Data

Cimbria Cyclofan Typical Dust Separation Efficiency 96-98%			
Type	kW	Air Volumen	Pressure Ps
CF 10	7,5	13.000 m ³ /h	75 mm WG
CF 15	11,0	16.000 m ³ /h	75 mm WG
CF 20	15,0	23.000 m ³ /h	75 mm WG
CF 30	22,0	29.000 m ³ /h	75 mm WG

Cimbria Super Cyclofan Typical Dust Separation Efficiency 98-99,2%			
Type	kW	Air Volumen	Pressure Ps
CF 610	7,5	12.500 m ³ /h	75 mm WG
CF 615	11,0	15.500 m ³ /h	75 mm WG
CF 920	15,0	30.500 m ³ /h	75 mm WG
CF 930	22,0	35.000 m ³ /h	75 mm WG

Axial Fan			
Type	kW	Air Volumen	Pressure Ps
ACG 1055	5,5	17.500 m ³ /h	60 mm WG
ACG 1075	7,5	24.000 m ³ /h	60 mm WG
ACG 1110	11,0	35.000 m ³ /h	60 mm WG
ACG 1150	15,0	42.000 m ³ /h	60 mm WG
ACG 1185	18,5	47.000 m ³ /h	60 mm WG

Centrifugal Fan			
Type	kW	Air Volumen	Pressure Ps
CM 82	5,5	8.200 m ³ /h	125 mm WG
CM 84	7,5	11.000 m ³ /h	125 mm WG
CM 87	11,0	16.000 m ³ /h	110 mm WG
CM 620	15,0	21.000 m ³ /h	125 mm WG
CM 625	18,5	22.000 m ³ /h	158 mm WG
CM 630	22,0	27.000 m ³ /h	165 mm WG





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