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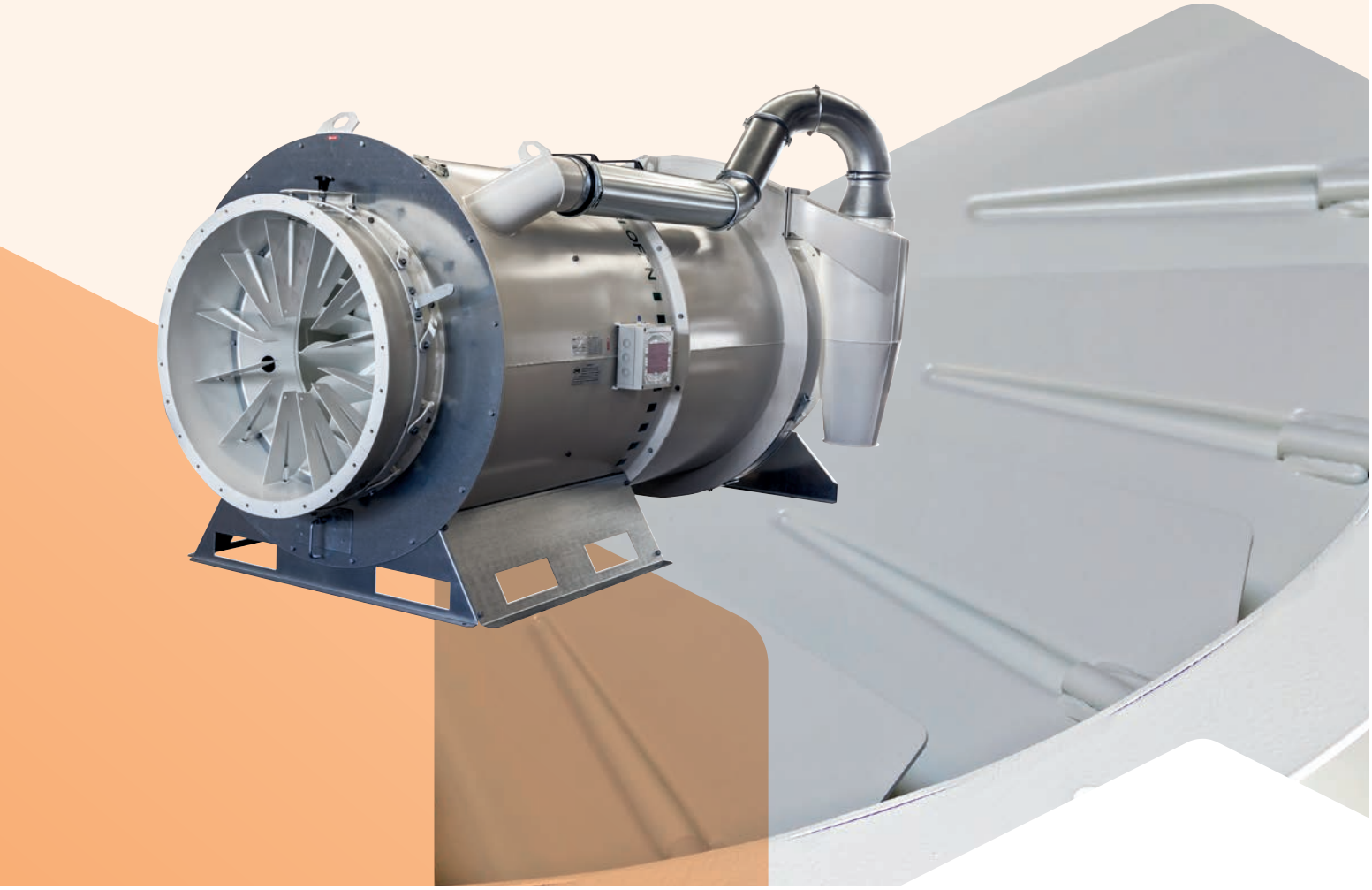
FAN RANGE

DRYING



CONVEYING | DRYING | SEED PROCESSING | ELECTRONIC SORTING | STORAGE | TURNKEY | SERVICE

IMPROVED TECHNOLOGY FOR HIGH-EFFICIENCY DUST SEPARATION

THE RESULT OF RESEARCH AND DEVELOPMENT

For many years the Cimbria research and development department has been working on combining improved dust-separating efficiency with reduced energy consumption.

As a result, Cimbria has patented the most effective mechanical dust-separation fan, the Cimbria Cyclofan, which in one compact unit combines an exhaust fan and a highly effective dust separating cyclone.

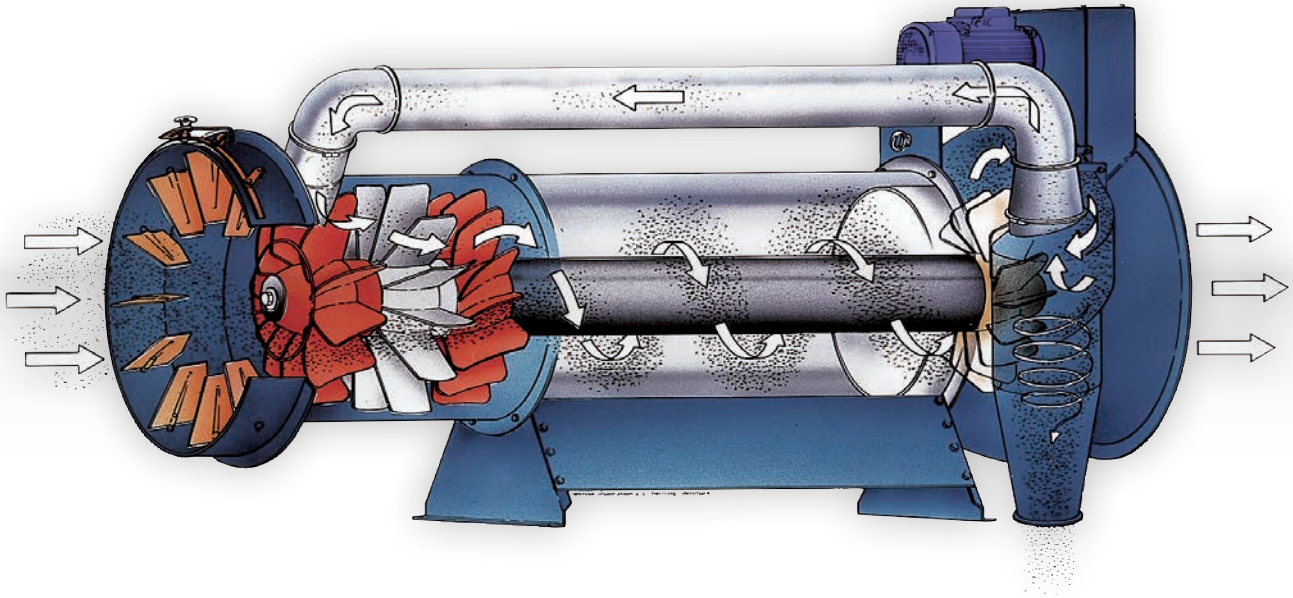
The efficient dust separation gives you a guaranteed environmental advantage.

CIMBRIA.COM

THE RESULT OF RESEARCH AND DEVELOPMENT

The Cimbria Super Cyclofan works on the principle of the recovery of energy by means 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 so far has to date been the only viable solution.



COMPLIANCE WITH LOCAL CONDITIONS

Minimizing the environmental impact from industrial process plants is an ongoing challenge, and for many years Cimbria has used dedicated resources on research and development to keep up pace with ever-stricter legislative demands.

Cimbria cyclofan technology is still considered an efficient solution that can be used wherever local legislation stipulates certain emission values to comply with.

Further to this, we also offer a range of noise silencers for direct mounting at the fan outlet as a useful accessory to our fan range. This enables Cimbria to provide the correct solution if noise is an issue to be considered.

FAN RANGE

CIMBRIA CYCLOFAN

EFFICIENT DUST SEPARATION

The Cimbria Cyclofan is a combination of a fan and a highly efficient mechanical dust separator. The effective separation of dust particles is based on the centrifugal force in a rotating airstream, 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 airlock valve into a bag or a dust container. The air from the mini cyclone is returned to the suction side of the Cyclofan.
Due 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 particles will therefore not be affected by the rotation. The separation efficiency of the Cyclofan is measured as a percentage, and the amount of dust remaining in the discharge air will always depend on the amount of dust entering the Cyclofan. 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 for mechanically minimising the emission of dust. Performance in this case is typically surpassed only by air filters, a solution which is associated with significantly higher costs.

CIMBRIA CYCLOFAN
TYPICAL DUST SEPARATION EFFICIENCY 96-98%

Type	kW	Air Volume	Pressure Ps
CF 10	7.5	13,000 m³/h	75 mm WG
CF 15	11.0	16,000 m³/h	75 mm WG
CF 20	15.0	23,000 m³/h	75 mm WG
CF 30	22.0	29,000 m³/h	75 mm WG

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 aspirate large amounts of air at low cost. Axial Fans can be mounted both horizontally and vertically.

AXIAL FAN

Type	kW	Air Volume	Pressure Ps
ACG 1055	5.5	17,500 m³/h	60 mm WG
ACG 1075	7.5	24,000 m³/h	60 mm WG
ACG 1110	11.0	35,000 m³/h	60 mm WG
ACG 1150	15.0	42,000 m³/h	60 mm WG
ACG 1185	18.5	47,000 m³/h	60 mm WG

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 to avoid turbulence.

In Super Cyclofans, a regenerative impeller leads the energy that is provided by the airstream back to the motor via a V-belt transmission system. Super Cyclofans therefore handle approximately 20% higher air volumes than normal Cyclofans with the same motor size. 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 energy. With its high separation efficiency 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 Cyclofan is a practical alternative to filter units.

CIMBRIA SUPER CYCLOFAN
TYPICAL DUST SEPARATION EFFICIENCY 98-99,2%

Type	kW	Air Volumen	Pressure Ps
CF 610	7.5	12,500 m³/h	75 mm WG
CF 615	11.0	15,500 m³/h	75 mm WG
CF 920	15.0	30,500 m³/h	75 mm WG
CF 930	22.0	35,000 m³/h	75 mm WG

CIMBRIA CENTRIFUGAL FAN

The Cimbria Centrifugal Fan type CM is a medium-pressure fan having backward curved impeller blades manufactured from steel plate. The impeller is self-cleaning and dynamically balanced. The CM Fan is typically used as an aspiration fan on a Cimbria cleaner or as an aeration fan in e.g. silos or flat stores as standard with throttle valves, but can also be supplied with the specially developed Varifan.

CENTRIFUGAL FAN

Type	kW	Air Volume	Pressure Ps
CM 82	5.5	8,200 m³/h	125 mm WG
CM 84	7.5	11,000 m³/h	125 mm WG
CM 87	11.0	16,000 m³/h	110 mm WG
CM 620	15.0	21,000 m³/h	125 mm WG
CM 625	18.5	22,000 m³/h	158 mm WG
CM 630	22.0	27,000 m³/h	165 mm WG

ACCESSORIES

CIMBRIA VARIFAN

The Cimbria Varifan is an air volume regulator shaped like 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 AIR-LOCK VALVE

In Cimbria's dust-collecting Cyclofans, the Airlock 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.
Depending on the dust volumes to be discharged, Cimbria can offer the airlock for direct heating on the Cimbria Q-20 (200x200 mm) or Q30 (300x300 mm) pipe system.

CIMBRIA SILENCER

Cimbria delivers cylindrical square silencers, which can minimise the noise emission from the entire range of Cimbria fans.
The silencers are made of galvanised plate and insulated with mineral wool, which 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, which will calculate the expected performance.

COMPACT EASY-TO-FIT SOLUTION

VERTICAL MOUNTING

The entire Super Cyclofan, Cyclofan and Axifan range is designed for vertical mounting, providing flexibility in the overall solution. The Cyclofan range is well suited as aspiration fans for Cimbria dryers where large volumes of relatively moist air must typically be handled as efficiently and reliably as possible.
Cimbria Cyclofan technology is still considered an efficient solution which can be used wherever local legislation stipulates maximum emission values.

HORIZONTAL MOUNTING

All models of Super Cyclofan, Cyclofan and Axifan can also be fitted in a horizontal position if this is more suitable. Regardless of the mounting position, the dust-separation efficiency will remain unchanged. This flexibility in mounting in combination with the fact that the Cimbria Cyclofan is designed as a compact and sturdy machine makes integration of the equipment into a complete installation easy and fast.

IMPROVING WORKING CONDITIONS WORLDWIDE

Thousands of Cimbria Cyclofans are in operation throughout the world, working under every imaginable climatic condition, and ranging from 24/7/365 aspiration from process drying installations to seasonal operation in connection with e.g. aspiration from seed-processing lines. The Cyclofan has proven itself to be an exceptionally reliable machine, offering better dust-separating efficiency than other dust separating fans with the same energy consumption.
The wide range of fans, combined with all required additional accessories, makes the Cimbria Cyclofan a cost-effective solution wherever dust problems are to be solved.

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