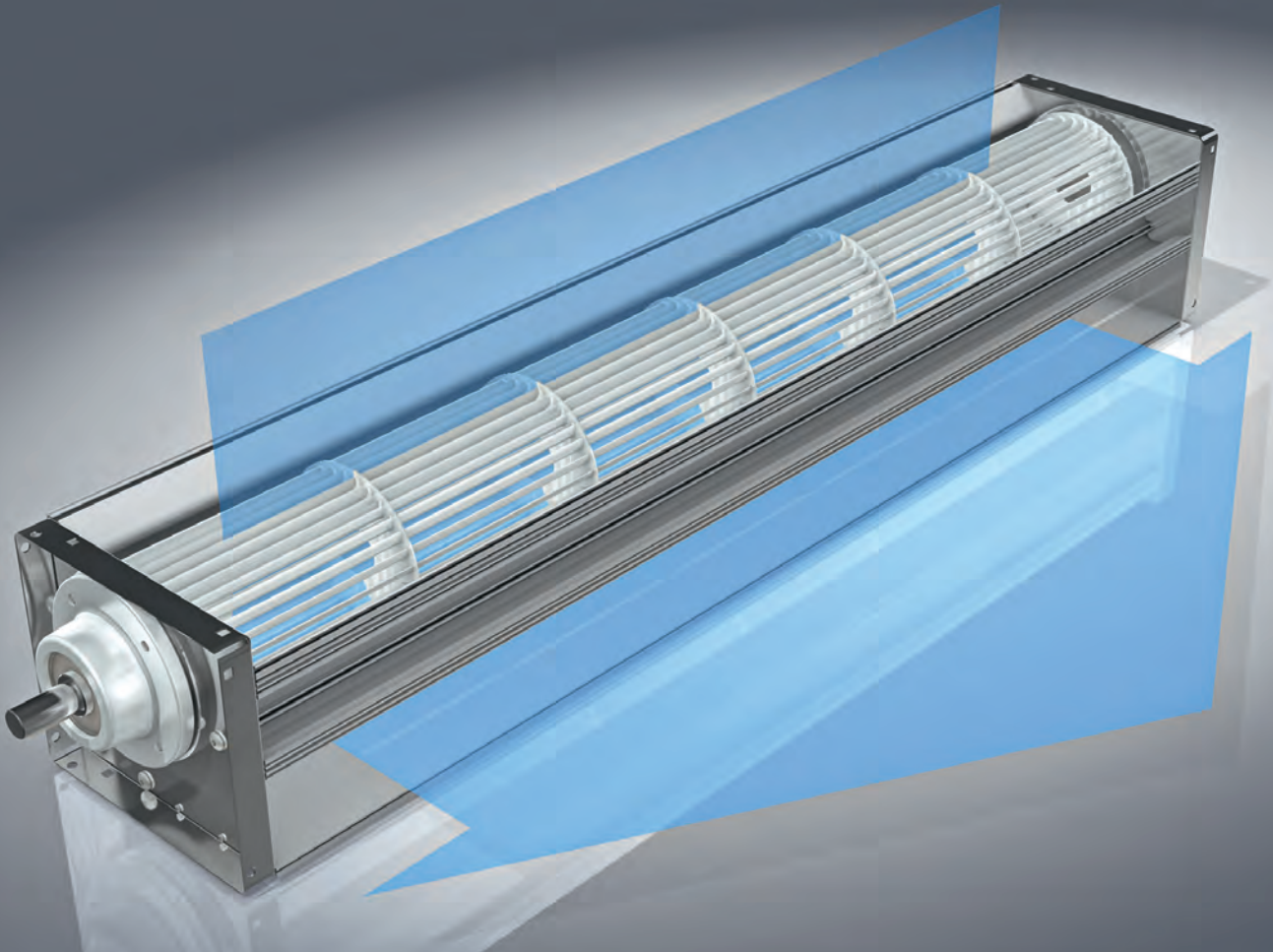




AIR TECH  
SYSTEMS



# LTG Tangential Fans

Even airflow over large areas

in extreme temperature ranges (-180 °C to +800 °C / -292 °F to +1500 °F)

# LTG: traditionally always one step ahead.

For almost 100 years, LTG Aktiengesellschaft has been a pioneer in air handling and air conditioning technology. LTG produces tangential fans and works to improve them in its in-house lab, making them available to many different applications. Profit from our know-how, our decades of experience and our ability to adjust our tangential fans specifically to your application.

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In 2017, LTG Aktiengesellschaft received the Innovation Award of the federal state of Baden-Württemberg for innovative products.



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## The advantages speak a clear language

**Even and long air flows** even across the large surfaces of broad machines or belts.

**Flexible use** due to precise adjustment of the fan length to the machine width, space-saving installation in any installation position with 90° or 180° air flow deflection options, as well as right-hand or left-hand drive options.

**Use under extreme conditions** possible due to the great temperature range from -180 °C to +800 °C and explosion-protected designs according to ATEX. Particularly silent thanks to flow-optimised impeller and housing geometries.

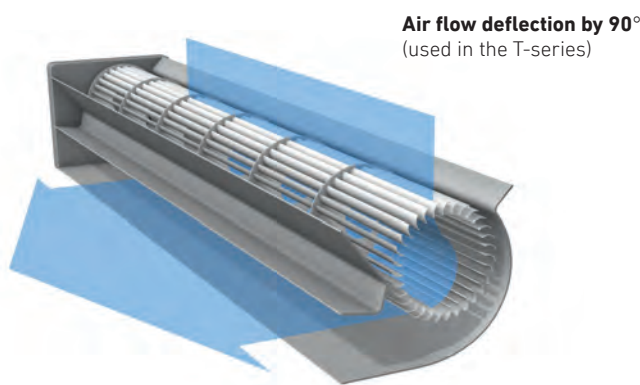
**Long service life** thanks to robust build and high-quality materials.

## Diverse applications

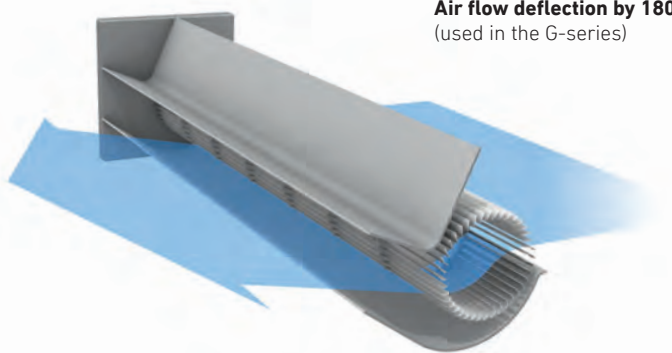
- Air conditioning technology
- Apparatus / plant construction
- Automotive industry
- Bakery technology
- Chemical industry
- Cooling/refrigeration technology
- Drying technology
- Mechanical engineering
- Medical technology
- Packaging industry
- Pharmaceutical industry
- Power plant technology
- Process engineering
- Surface technology
- Tobacco industry
- Textile plant construction

# Improvement of the product quality and rationalisation of the production process.

Many production processes require perfectly even application of air or other gases to a long work surface. LTG tangential fans with their special design meet these requirements optimally.



**Air flow deflection by 90°**  
(used in the T-series)



**Air flow deflection by 180°**  
(used in the G-series)

## Economic efficiency









The robust design and the use of high-quality materials ensure a long service life. The function principle that makes additional air deflectors unnecessary, along with the space-saving build, makes use of tangential fans particularly efficient.

## Flow principle

The tangential fan sucks in air across the entire length of the fan impeller and routes it through the inside of the impeller, where it is deflected and accelerated by the air vortex produced by rotation of the impeller.

Then, the air exits again across the entire impeller length on the pressure side. The air vortex separates the suction and pressure sides of the fan in the narrowest point between the impeller and the vortex builder, and guides the flow together with the fan deflector. This creates the even laminar air flow across the entire outlet width of the fan. The air flow can be deflected by 90° or 180°.

## Applications

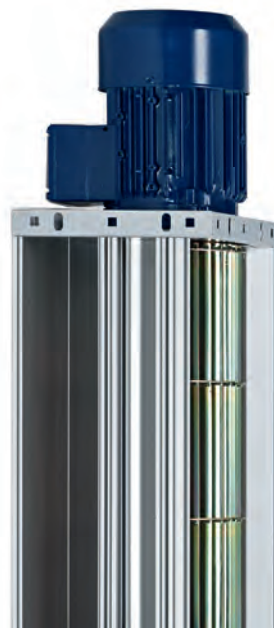
 Cooling	 Heating	 Drying	 Roasting	 Smoking	 Measuring	 Sorting	 Moistening
 Continuous	 Silent	 Hygienic	 Shock resistant	 Emission reducing	 Electronic cooling	 Explosion protected	 Quality

## Our comprehensive product range.

The tried and tested LTG tangential fans are available with a length of 95 mm to 4500 mm and an impeller diameter of 25 mm to 1000 mm. (Special designs on request).



Series	GA	TA   TA t   TA h	TE   TE t
<b>Impeller diameter</b>	25–90 mm (1.0–3.5 in)	40–90 mm (1.6–3.5 in)	60–90 mm (2.36–3.5 in)
<b>Length</b>	210–1227 mm (8.3–48.3 in)	95–1227 mm (3.7–48.3 in)	145–727 mm (5.7–28.6 in)
<b>Temperature of the load</b>	-40 to +70 °C (-40 to +160 °F)	-180 to +120 °C (-292 to +250 °F)	-40 to +300 °C (-40 to +600 °F)
<b>Max. flow rate</b>	1600 m <sup>3</sup> /h (940 cfm)	1860 m <sup>3</sup> /h (1100 cfm)	1200 m <sup>3</sup> /h (700 cfm)
<b>Max. stat. pressure increase</b>	50 Pa (0.2 in H <sub>2</sub> O)	100 Pa (0.4 in H <sub>2</sub> O)	100 Pa (0.4 in H <sub>2</sub> O)
<b>Housing material</b>	Aluminium Stainless steel	Aluminium Stainless steel	Aluminium Stainless steel
<b>Impeller material</b>	Aluminium	Aluminium	Stainless steel
<b>Available drive / motors</b> (EC and bus technology available)	24 V DC 230 V AC 110 V AC	24 V DC 230 V AC 110 V AC	24 V DC 230 V AC 110 V AC



TW   TTF	TM   TM t	VQ
125–200 mm (4.9–7.9 in)	125–200 mm (4.9–7.9 in)	150–1000 mm (5.9–39.4 in)
400–1464 mm (15.8–57.6 in)	400–1464 mm (15.8–57.6 in)	400–4500 mm (15.8–177.2 in)
-25 to +250 °C (-15 to +500 °F)	-25 to +120 °C (-15 to +250 °F)	-40 to +800 °C (-40 to +1500 °F)
15 000 m <sup>3</sup> /h (8800 cfm)	15 000 m <sup>3</sup> /h (8800 cfm)	300 000 m <sup>3</sup> /h (176 600 cfm)
600 Pa (2.4 in H <sub>2</sub> O)	600 Pa (2.4 in H <sub>2</sub> O)	3000 Pa (12 in H <sub>2</sub> O)
Aluminium Stainless steel	Aluminium Stainless steel	Galvanised steel Stainless steel
Galvanised steel Stainless steel	Galvanised steel Stainless steel	Galvanised steel Stainless steel
Shaft drive Either right-hand or left-hand	400 V / 50 Hz 460 V / 60 Hz	Shaft drive Either right-hand or left-hand



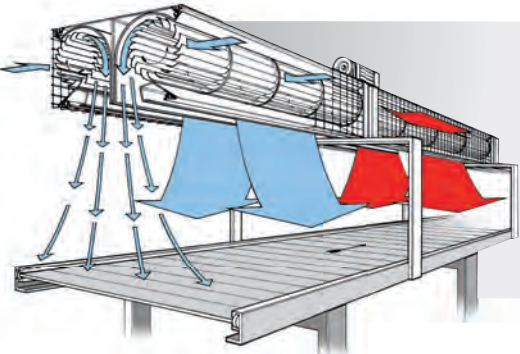
# Air handling components for high-quality and sensitive foods.

Constant high quality standard in production and processing of sensitive food requires innovative air handling concepts, combined with high-quality technology. No matter what food or luxury food or packaging you produce; no matter you handle grain, tobacco, fruit, vegetables, cereals, meat, sausage, baked goods or pastry: If even and careful heat treatment, drying of foods and sorting/separating of foreign bodies is important, LTG tangential fans will help you make your demanding production plant even more perfect.

Advantages such as even air distribution across the machine width are used here, in particular in belt processors. An air flow deflection by 90° ensures a compact modular build in your production machine.

LTG tangential fans are the economically optimal solution with the smallest footprint, no matter if you are drying cereals or sensitive fruits, cooling chocolate or sorting and separating.

Processes such as drying, temperature adjustment, smoking, cooking and baking, cooling and sorting/sifting can be implemented simply, rationally and efficiently with the LTG tangential fans.



Permits treatment of particularly sensitive food and packaging in all kind of processes

### Applications

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Cooling
- 

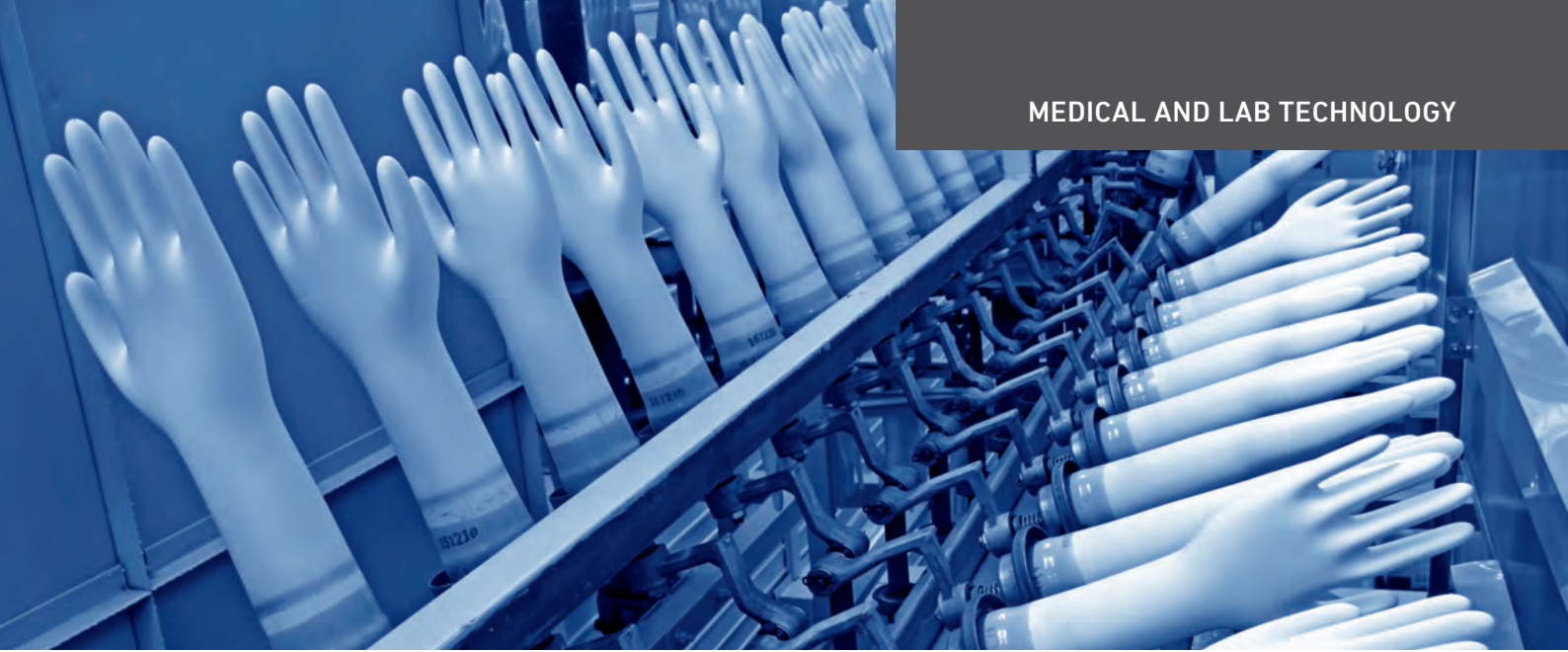
Drying
- 

Roasting
- 

Smoking
- 

Sorting
- 

Continuous



## Optimised air flow in accurate production and analysis processes.

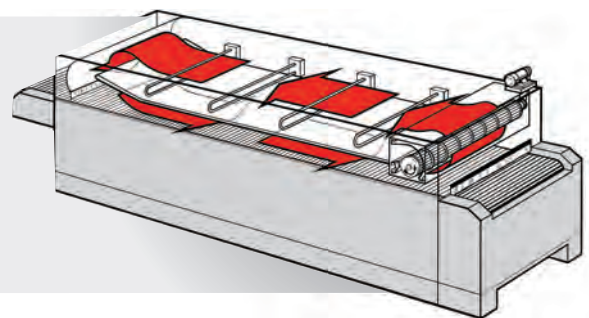
LTG offers many different solutions for air handling equipment in the medical and pharmaceutical industries, for small analysis devices in the lab as well as for complete production plants and halls. No matter if you produce high-quality bandages, dressings, tampons or plasters, using gauze, cellulose or fleece, or if you make medical gloves – LTG tangential fans are already proving their worth in the productions of renowned manufacturers.

As the technology leader, we not only put considerable knowledge into your end products. We are your partner in technically complex processes as well. We have the right air handling solution for nearly any requirement.

We use high-quality materials, special steels, alloys and coatings to meet the highest quality standards. Our fans withstand even aggressive ambient conditions, extreme heat or cold.

From the production of textile basic materials, to sensitive coating processes under a protective atmosphere, to drying of hollow fibre-membranes for dialysis technology, we can efficiently warrant that the greatest hygienic demands are met with secured quality by our LTG tangential fans. All global players have profited from these advantages for decades.

Heating or drying with broad air flow and conveyor belt in counter-flow principle



### Applications



Heating



Drying



Continuous



Hygienic



Explosion protected



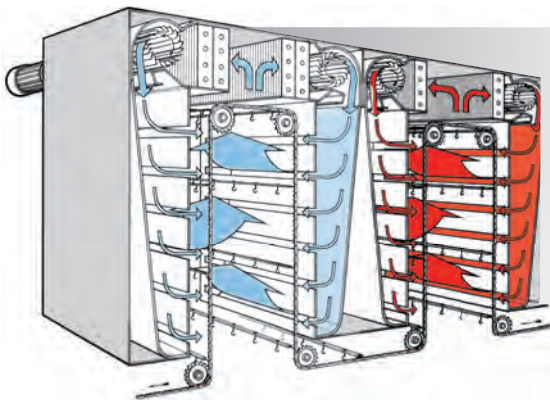
# Innovative drying technology, efficient, economical and process-safe.

High quality standards are required with efficient processes in drying technology today. In particular for convective solutions, LTG tangential fans offer all the properties required, with a broad temperature range from -180 °C to +800 °C (-292 °F to 1500 °F) for heating or cooling using air and even aggressive gases. Applications in ATEX zones can be implemented as well.

LTG tangential fans offer advantages from even air distribution across wide ranges. Many design advantages result in particular for once-through/belt processors, e.g. due to outer bearings and drive components, while integration into the plants is easy.

With their compact dimensions and the special flow principle that permits space-saving arrangement of tangential fans and heat exchangers, among other things the dimensions of such plants can be reduced while keeping the usable space consistent. The fans can be adjusted to the required belt or batch width while keeping the flow and drying situations consistent.

The LTG tangential fans show their advantages when making, processing or refining films or material lanes as well.



An even flow in the heating and cooling zones for different drying processes

## Applications



Cooling



Drying



Heating



Continuous



Explosion protected



Quality





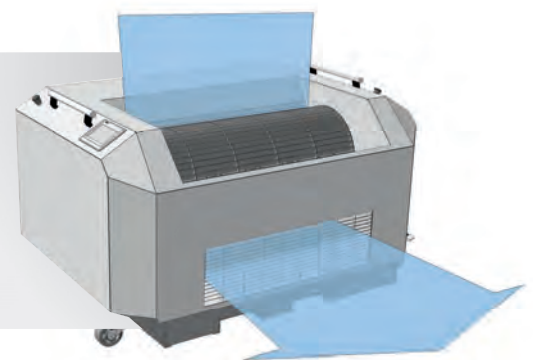
## Air flow as desired, always reproducible at any scale.

Actual road runs are still extremely elaborate and difficult to reproduce and thus to compare. LTG airstream simulators produce realistic air flows on demand in the lab.

Tests under actual conditions are indispensable in development or quality assurance to warrant the function and reliability of many different products. Outer environmental influences such as wind or rain can be simulated at defined temperatures with low effort there, in order to get reliable and reproducible results for an optimal product.

In the automotive industry, for example, our LTG airstream simulators are used by all leading manufacturers world-wide for emission measurement according to the latest standards, such as WLTP. They are also used for aerodynamic and acoustic measurements in environmental chambers or quality test benches. A realistic incident flow is important for many product developments in the areas of sports equipment, clothing or building façades. We create customer-specific solutions for these applications.

Global standard solution for exhaust tests (WLTP) in cars/motorcycles (WLTP/CRF § 1066, WMTC) with measuring certificate and on-site calibration. Customer solutions for high speeds up to 300 km/h (186 mph).



### Applications



Measuring



Moistening



Silent



Emission  
reducing



Quality



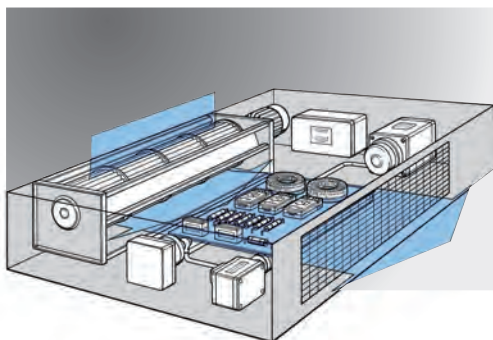
## Solutions from vehicle air conditioning, to brake and engine cooling.

Passenger or cargo transport, by road, by rail, by air or by water: air handling solutions with LTG tangential fans contribute to best passenger comfort and keep the parts or goods cool.

LTG tangential fans can be integrated into railway, bus and cableway technology in diverse manners: for cooling the motors, brake or electronic components, in the ceiling area or in underfloor systems, or for additional electrical heating systems to be used as a door air curtain and frost protection in the area of the doors.

Their homogeneous air distribution ensures integrity and durability of the transported cargo and goods in the container car as well. They offer very flexible and space-saving installation options, even subsequently during maintenance and conversion.

LTG tangential fans travel on the roads around the world in trucks and buses, ensuring optimal air exchange for goods, cargo and passengers. Cooling units in semi-trailers, for example, ensure stable temperatures inside the hold.



Space-saving installation options and long-lived cooling of power electronics

### Applications



Cooling



Heating



Shock resistant



Electronic cooling



Quality



## LABORATORY TEST / EXPERIMENT

**Secure air handling plans in advance. Use the full the potential of existing systems.**

- Optimisation of thermal comfort
- Precise imitation (mock-up)
- Visualisation of flows
- Optimisation of acoustics
- Determination of the required threshold speeds for transport and thermal processes
- Measurement of flow profiles
- Measurement of customer-specific special fans
- Project-specific product optimisations

## FIELD MEASUREMENT / OPTIMISATION

**We review and optimise your ventilation concept or your production process right on site.**

- Optimisation of thermal comfort
- Optimisation of existing air conditioning facilities
- Energetic optimisation
- Review and calibration of airstream simulators
- Determination of boundary parameters such as speed, pressure, temperature, humidity or geometries
- Visualisation of flows
- Acoustic measurements
- Duct work measurements

## SIMULATION / EXPERTISE

**No matter if you need an air conditioning concept or a new production process: use state of the art simulation tools even in the planning stage.**

- Computer-based flow simulation CFD
- Finite-element method
- Development of energy-efficient flow concepts
- Simulation of fibre treatment and sifter processes
- Simulation of temperature adjustment processes
- Wind simulation

## R&D / START-UP

**Use the innovative power and inventive spirit of the LTG engineers for ideal results in your plant.**

- Development of customer-specific products
- Individual prototype construction
- System commissioning and plant service
- Assessment of new concepts before they are implemented
- Review of fans





**AIR TECH  
SYSTEMS**

### **Comfort Air Technology**

Air-Water Systems  
Air Diffusers  
Air Distribution

### **Process Air Technology**

Fans  
Filtration Technology  
Humidification Technology

### **Engineering Services**

Laboratory Test / Experiment  
Field Measurement / Optimisation  
Simulation / Expertise  
R&D / Start-up

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