

Hygienic Air Handling Units

GCH



Hygienic Air Handling Units

Enjoy the Delighting Comfort Brought by High Air Quality

Gmcair air handling units meet the required level of indoor air quality while maintaining the humidity and the temperature under control. They ensure the ideal comfort for commercial buildings with modular, flexible and environmental solutions and provide high energy savings.

Air handling units that offer the advantage of just-in-time delivery with lean production philosophy add value to your projects with long lasting high performance thanks to its easy-to-integrate structure that eliminates all the difficulties during onsite assembly.

GMCAIR Hygienic Air Handling Units

- Ideal comfort and indoor air quality for all seasons
- Wide and sophisticated production options
- 1.000 to 100.000 m³/h airflow range
- 23 different cross section and unlimited product configurations
- Low energy consumption and high comfort
- Superior reliability and high quality
- High performance certified by Eurovent



Air handling units' performances have been tested in TUV laboratories. The models and their conformity to the selection software has been certified by Eurovent.

As a result of the conducted mechanical tests, Untes Air Handling Units are certified to provide class values according to EN 1886 standards.

Meet Our Highest Hygiene Criteria!

Gmcair hygienic air handling units are manufactured and certified according to VDI 6022 hygienic requirements and VDI 3803 structural and technical norms, thus fully compliant with the highest hygiene standards. For today's increasing hygienic requirements, the manufacturing process is particularly

important for hygienic air handling units at every stage of production and in many of its tiniest details. All the requirements of VDI 6022 make it easy to clean and maintain the materials and equipment used. Antimicrobial materials and equipment provide long-term protection against the formation of micro-organisms in hygienic air handling units.

Certified Hygiene Features

The excellent hygienic characteristics of **Gmcair** air handling units have been tested and approved by TÜV. Unlike standard air handling units, hygienic air handling units are produced from stainless steel including internal surfaces, heating and cooling coil frames and rails, filter frames and the drain pans.

In order to prevent bacteria forming at the junctions of the modules, the units are connected with special joining parts and then covered with stainless steel sheet to obtain a smooth surface. All sections are manufactured in an easy-to-clean structure and a special siphon drainage system is installed to prevent water from leaking out when the device is washed and to prevent air leakage from the outside.

Unlike standard air handling units, the supply and return fans chassis are placed at a higher level to make washing and cleaning easier and healthier. In addition, the height of the base is available as 150-200 mm high to ensure continuous drainage.

Depending on the intended use of the air handling units, fans can be used with frequency inverters for speed control in order to provide constant or variable airflow in all conditions. Taking into consideration that it can be easily disinfected, a backward fan is preferred. Depending on demand, plug fan or EC motor driven fan application is also possible.

In order to see the inside of the whole unit during its operation, inspection glasses and all energy cables of the lighting are made and placed in the factory. Unlike standard units, sound attenuators splitters are laid horizontally inside the unit and an empty space is left below it. Thus, the sound attenuators are easily washed. Splitter sheets are completely made of stainless steel.



- ✓ EN 1886
- ✓ VDI 3803
- ✓ VDI 6022
- ✓ DIN 1946
- ✓ EN 13053



All equipment is manufactured and applied in an easily accessible structure that does not allow microbiological environment formation.



Connection parts and air dampers provide excellent airflow and are mounted in construction and standard (EN 1751) to prevent condensation.



Inner and outer surfaces of the sandwich panels (TB2) prevent clogging through a tiny slope.



Inner and outer surfaces are very smooth especially the bottom inner surface to ensure an easy cleaning of the unit.



With its full stainless antibacterial structure, the unit is produced without recess or protrusion and prevents accumulation of dirt and dust.



All the structures are sealed type, and do not retain moisture or odor.



Continuous drainage is ensured by the right equipment design and choice.



The devices are manufactured in a way that they do not lose their hygienic properties during transportation and storage.

Hygienic Air Handling Units

Easy Cleaning and Continuous Drain

The most important feature of Hygienic air handling units is that the inside of the unit and all the equipment used are easily accessible from all sides. That is why access doors are installed in all places where it is necessary to clean the coils and the filters easily. In addition, the proper base height provides uninterrupted drainage while at the same time removes the risk of legionnaire disease.

High Design and Production Technology

Unlike standard air handling units, hygienic air handling units have a unique set of superior design and manufacturing qualities and are designed and tested in accordance with the DIN V 24 194/2 standard which specifies the maximum allowed air leakage class mentioned in the following table.

| | | | |
|--|---------|---------|--------|
| Pressure (Pa) | 200 | 400 | 1000 |
| Air Leakage Quantity (m ³ /m ² .s) | 0,00084 | 0.00132 | 0.0024 |

All surfaces in contact with air have a hygienic structure and prevent bacteria formation. Inner sheets are made of 304 or 316 quality stainless steel.

Excellent Hygienic Air Control

With 23 different cross sections and high indoor air quality up to 100.000 m³/h airflow. Our modular, flexible and energy efficient hygienic air handling units are produced in high hygiene standards for the air conditioning of critical environments where sensitive temperature, humidity and pressure conditions are sought.

- ✓ **EN 1886** Ventilation for buildings-Air handling units-Mechanical performance
- ✓ **VDI 3803** Air conditioning systems-Structural and technical principles
- ✓ **VDI 6022** Hygiene in air-conditioning systems
- ✓ **DIN 1946** Ventilation and air conditioning – Ventilation in buildings and rooms of health care
- ✓ **EN 13053** Ventilation for buildings - Air handling units - Rating and performance for units, components and sections



Hospitals



Cleanrooms



Pharmaceutical Factories

Laboratories

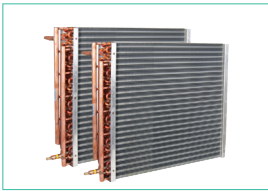
Food Industry

Genetics and Bioengineering

Nanotechnology

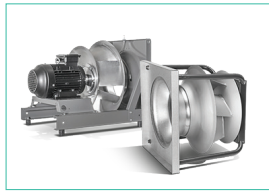
Electronics and Microelectronics

Automotive Industry



Heating and Cooling Coils

The coil cases and sliding rails are made of stainless steel and the epoxy coating is applied as standard. The coils are generally placed before the fine filter or the final filter. Droplet eliminators and condensation pans are installed as standard regardless of the air velocities so that no water droplets occur in the air leaving the coil.



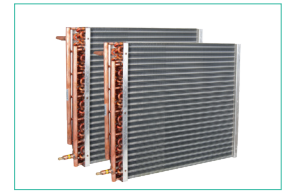
Fans

For constant or variable airflow applications, backward curved belt driven fans, plug fans as well as EC motor driven fans options are available. The fans can be easily cleaned and disinfected. The fan that suits better the project conditions in terms of high efficiency, low sound levels and price-wise are selected. The low natural frequency value ensures optimum sound and vibration control.



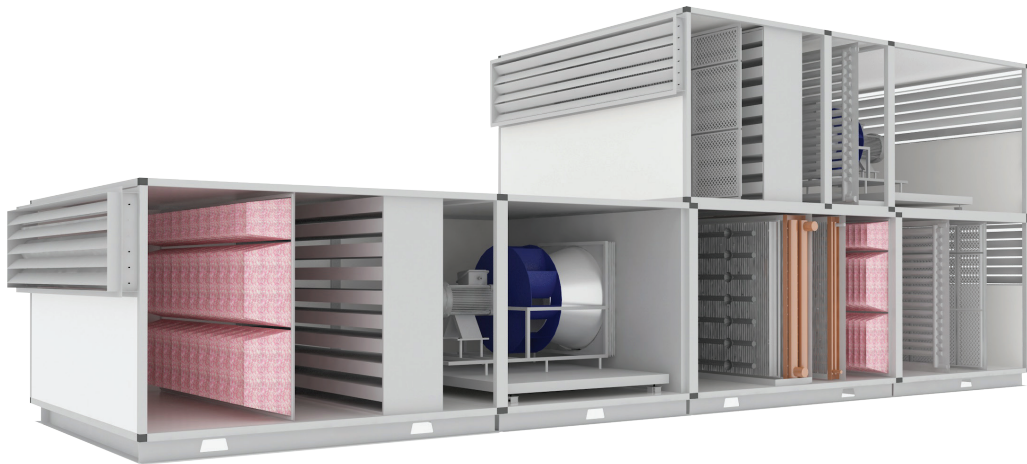
Filters

Filters are selected to ensure a high filtration class, taking into account the recommended pressure drops mentioned in EN 13053, and are fitted with a minimum filter bypass ratio. In the class 1a, 3-stage filtration and final filtration with laminar airflow are applied for room requiring high indoor air quality (heart and vascular operations, organ transplantation operation theaters, etc.).



Run Around Heat Recovery Units

Water to water heat recovery units are made by placing two water coils on the fresh air and exhaust airside and transferring the heat transfer in the water flowing between the coils to the air. This type of heat recovery is more common with efficiencies up to 70%, especially for hygienic applications due to the lack of mixing risk between the fresh air and the exhaust air.



Sound Attenuators

Sound attenuators are made of stainless steel. It is installed as standard in the device and it is installed in a way that it can be easily cleaned by leaving an empty space at the bottom of the attenuator. With the correct geometric selections, the total sound level emitted from the unit is minimized.



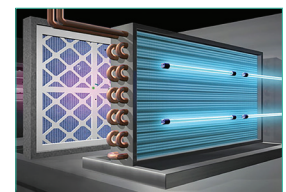
Lighting

The units are equipped with waterproof lighting fixtures to ensure that the filter and all other equipment are clean during operation.



Sterile Humidification

Humidifiers are generally installed prior to the fine filtration without interfering in the air's sterility during its operation. With sterile steam humidifiers, humidification is provided with water that does not allow bacteria formation.



UV Lamps

Their installation in the dark and humid areas of the air handling units prevents molds, bacteria and allergens from forming and multiplying. These damages both reduce the performance of the system (especially the heating and cooling coils) and make it difficult to clean the device. UV rays sterilize the air, eliminating airborne bacteria, molds and allergens and increase indoor air quality by preventing bad smell.

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