

PH-Series Hygienic Air Handlers



Phoenix
AIR SYSTEMS™

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Phoenix Air Systems is a leading manufacturer of hygienic air handling systems providing a comprehensive approach for the critical process environment of the food and pharmaceutical grade production and process industries. Our team of experts helps to ensure your building's environment meets your needs. We specialize in production room environmental control for a variety of product types and production requirements.

Phoenix Air Systems can work with your team of experts in each step of the process – from concept and design, proposal, manufacturing and commissioning with outstanding support after the sale. We also offer a standard control system that can be integrated with existing refrigeration controls or process automation systems for enhanced process room environmental control.



We have the knowledge and expertise to help ensure satisfaction of the systems we build. We strive to provide exceptional products at a competitive value while focusing on providing superior service that exceeds customers' expectations.

The Importance of Clean Air

Food and pharmaceutical producers today require hygienics and sanitation in their manufacturing process to help ensure safety and quality in the finished product. A major part of these processing environments is the air; its temperature, moisture, filtration and maintaining positive room pressure.

The air is in contact with the products, equipment and employees. Even a small amount of unconditioned air can adversely affect the processing room and may interrupt production, costing the manufacturer time and money. Proper sizing, features and construction are all key considerations when choosing a hygienic air handling system.

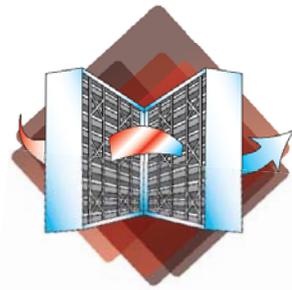


How do PHOENIX AIR SYSTEMS™ Hygienic Air Handlers provide clean air?



Room Pressurization

Keeping a processing room pressurized with conditioned air can help control and eliminate the issues associated with uncontrolled air infiltration from unconditioned areas.



Room Conditioning

Conditioning the air to the specifications of the room includes controlling the temperature and humidity.



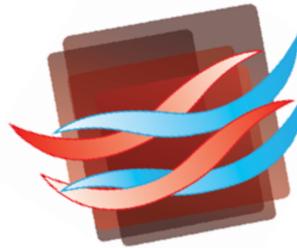
Air Filtration

Since air supplied from the system mixes outdoor air with return air from the process room, it must be filtered properly to a level that helps ensure product quality.



Sanitary Design

The PHOENIX™ Hygienic Air Handling system is designed to supply properly conditioned air in a sanitary area, as such, the system itself must be sanitary. The air handler, constructed with smooth, washable surfaces and stainless steel drain pans throughout, reduces the opportunity for mold, bacteria and other pathogen growth when combined with a regular sanitation regimen.



Air Change Rate

Air change is critical to both process and clean-up operation. Proper air change during the sanitation process facilitates faster drying in post sanitation, resulting in reduced production down-time.



PH-Series Hygienic Air Handler

Integral Exhaust Fans

Direct drive axial fans mounted directly in the return air section for clean up and economizer cycles, with up to 100% exhaust of the system air flow. Fans are factory mounted, wired and controlled.

Dampers

Low leak galvanized steel dampers includes stainless steel side seals, control linkage, and direct drive actuators. Stainless steel construction optional.

Lifting Lugs

Drain Pans

All sections have triple sloped, 304 stainless steel drain pans to remove condensation and prevent standing water in the airstream. Large drain pan connections facilitate removal of water during unit sanitation.

Heating

The heating section can be furnished with direct/indirect gas-fired burners, glycol/hot water coil, refrigerant hot gas coil, electric heater, or steam coils. Heaters are controlled to provide accurate space temperature.

Controls

The standard stand alone Programmable Logic Controller based control system is complete with starters, disconnect, NEMA 4X remote switching panel and touch screen operator interface terminal. PLC Ethernet capability is standard. Controls interface with most central control systems and building management systems. Unit mounted OIT.

Pre-Filters

Front access, 2-inch pre-filters with large external door eases maintenance. Pre-filters protect the unit interior and extends final filter life.

Fan, Motor and Drives

Centrifugal backward inclined plenum fan, with premium efficiency TEFC motor, and industrial drives are standard for long life and ease of maintenance. VFD drives are optional.

Unit Frame

Fully foamed in place drain pans provide a vapor seal and thermal break. The rigid galvanized steel frame is coated with a two-part epoxy finish with lifting lugs on each corner of each section.

Exterior Panels

2-inch insulated exterior cabinet with galvanized interior liner without interior fasteners, provides a smooth watertight surface that will allow for thorough cleaning. Optional stainless steel interior and 4-inch insulated panel also available.

Coils

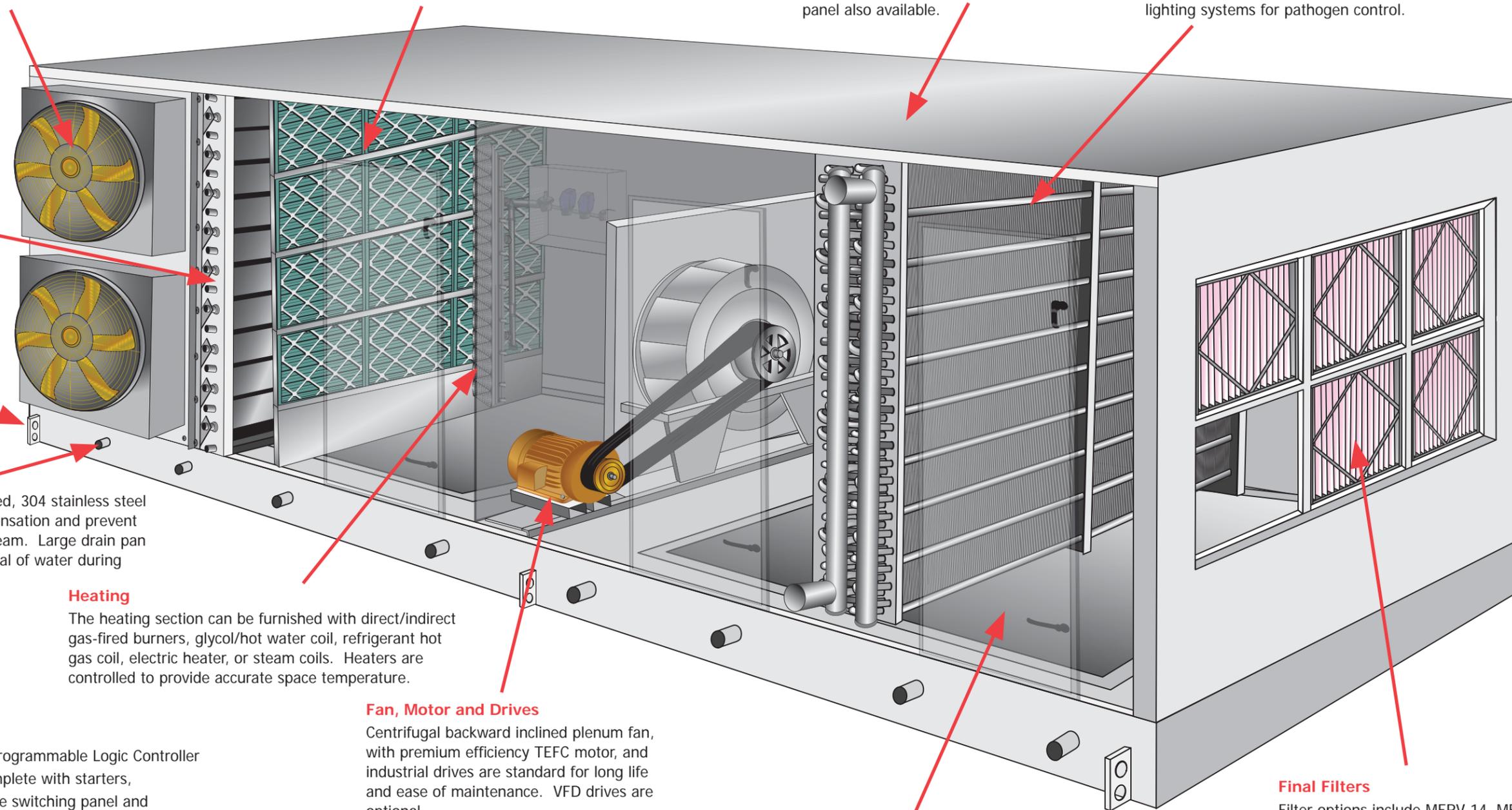
Industrial refrigeration coils are fabricated with stainless steel tubes/aluminum fins with optional galvanized steel or aluminum construction. Copper/aluminum coils for Halocarbons and Glycol applications are also available. Stainless steel intermediate drain pans included with units with 2 or more stacked coils. Optional Ultra violet lighting systems for pathogen control.

Access Doors

Large access doors allow entry to unit sections and components for ease of service and cleaning. Door is complete with safety switch, interior/exterior door handles, and a thermal break to help prevent condensation.

Final Filters

Filter options include MERV 14, MERV 16, and HEPA. Standard differential pressure gauge monitors filter life, with dedicated filter access door for easy upstream loading of filters. Optional stainless steel holding frames and fasteners also available.



Sanitation Cycle

The majority of food processing facilities are required to perform a daily complete wash-down of their production/packaging areas. Longer process shifts result in less time to sanitize the room equipment, pull the room down to temperature, and dry the ceiling.



Processing Room During Traditional Sanitation Cycle

Traditional, conventional ceiling hung evaporators are not capable of quickly removing the excessive “fog” that occurs during the sanitation cycle. Often, these applications make the situation worse as air leaving the ceiling hung evaporator is super saturated, introducing additional fog into the room. Fog is unwanted and counterproductive moisture can delay production and create an unsafe work environment.



Room Sanitation with PHOENIX™ PH Hygienic Unit in Clean-Up Mode.

During production, the unit utilizes a combination of return air and outside air to satisfy room conditions. When the process room stops production and goes into sanitation cycle, the PHOENIX™ PH unit is then switched to “clean-up” mode, introducing 100% outside air into the room.

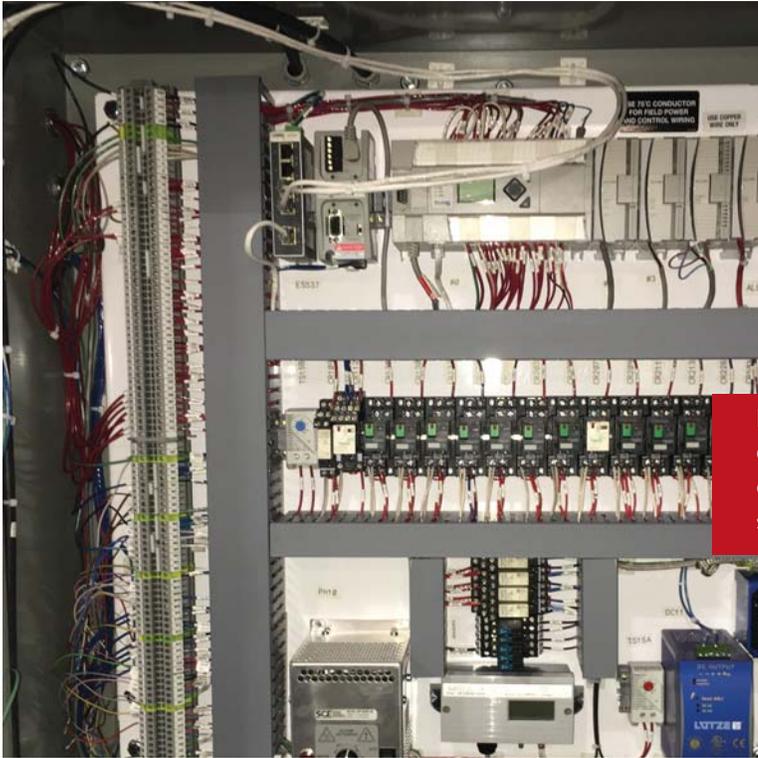
Depending upon the ambient conditions, fresh air may require heating to maximize drying of the process room.

Moist air is exhausted to the atmosphere, allowing a safer sanitation cycle and a shorter post-sanitation drying time.

Phoenix Air Systems™ units are designed to enable the process area to return to production with minimal downtime waiting for the room to “dry out”.



Controls



All PHOENIX AIR SYSTEMS™ units come with an Allen-Bradley MicroLogix™ programmable controller which provides an INDUSTRY STANDARD, dedicated input/output system to enhance reliability and efficiency. Standard EtherNet/IP™ on-line editing and built-in LCD panel provides integration with end users central control systems. Controls are programmable and expandable for custom applications and networking requirements for a variety of building and refrigeration control systems. Optional controllers include Allen-Bradley CompactLogix and ControlLogix.

Phoenix Air Systems' standard unit and remote mounted operator interface terminals (OIT) allows the operator to efficiently monitor the status of control points and adjust set points.

The OIT is programmable, and can be configured to meet the most demanding applications. Additionally, the OIT will allow the operator access to features such as alarm history and trend data for review and refinement of the process room environment.

The Farm to Market *Circle of Production*

Further Processing

Maintaining precise process room temperature and humidity control contributes to an environment which minimizes or eliminates the potential for food contamination leading to the production of a safe and healthy product. **PHOENIX™ PH and PHD Hygienic Air Handling** equipment, with customized refrigeration, filtration, dehumidification, air flow components and industry leading controls, provide the basis for a clean and efficient production environment.



Packaging

Filtration and positive air pressure through packaging insures finished product integrity. **PHOENIX™ PH and PHD** products designed for packaging areas can be customized with filtration, up to and including HEPA levels, appropriate for the product and process.



Sanitation Cycle

A PHOENIX™ single source solution providing both production and sanitation modes maximizes throughput while minimizing down time. Air purge during sanitation mode not only improves worker safety, but also shortens post sanitation production prep time by exhausting saturated air instead of using traditional mechanical evaporation.



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Hygienic Air Handlers
PH-Series Mixed Air Systems

Penthouse Refrigeration Units
PE-Series Cooling/Warehouse



Desiccant Hygienic Air Handlers

PHD-Series Mixed Air or 100% Make Up Air



Make Up Air Systems
PHM-Series 100% Make Up Air

Diffusers
PA-Series Supply/Return
Diffusers & Drain Pans



"The Phoenix Way"

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