Climate Control Systems

For Commercial and Industrial Direct Fired, Indirect Fired and Air Turnover Applications

Seamless Solutions

Applied Air
Applied Air climate control systems are designed to satisfy the needs of both the owner and the specifying engineer. Standard models are available in 150 different sizes and arrangements, from 1,600 to 150,000 CFM. The gas-fired burners have capacities up to 14,086,000 BTUH. Whether units are located indoors or outdoors, mounted on the floor, roof, grade or suspended, and fueled with natural gas or propane, Applied Air has been satisfying the need since 1975. All standard units include the necessary controls to provide years of trouble-free, low maintenance operation. Component parts are of the highest quality. Safety devices, meeting national and local standards, ensure fail safe protection in every Applied Air unit. All Applied Air units are built with U.L. approved components, where applicable. Optional gas controls can be furnished to comply with FM & IRI. Compliance allows the owner to meet insurance underwriter’s requirements and assures the customer of equipment reliability and conformance to recognized standards.

The Leader in HVAC Climate Control Systems

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Indirect Fired systems are flexible units for space heating and make-up air applications.

With Indirect Fired gas heating equipment, the burner flame is never introduced into the circulating air stream. All products of combustion are vented outdoors through the exhaust flue. As a result, Indirect Fired equipment is ideal for:

- Space heating
- Make-up air for applications where Direct Fired units are not allowed
- Heating and ventilating applications

Applied Air manufactures Indirect Fired equipment with heat output from 250,000 BTUH to 6,000,000 BTUH, and air delivery from 3,500 CFM to 94,000 CFM.

The Benefits and Features of Indirect Fired Systems from Applied Air

- The heavy gauge galvanized steel outer panels are designed to eliminate rust for longer life.
- Blowers tested to AMCA standards assure proper airflow for efficient operation.
- The large surface area of the four-pass stainless steel heat exchanger provides high efficiency, without the use of turbolators, and maximum heat exchanger life.
- The 140 point final test procedure for every Applied Air indirect fired unit means fewer start-up problems.
- For maximum flexibility, units can be mounted indoors or outdoors, horizontally or vertically.
- Applied Air Indirect Fired units are 80% efficient and operate above condensing temperature.
- The power venter ensures that all products of combustion are properly vented, even in a negative building.
Direct Fired systems are flexible units for space heating, make-up air and ventilation applications.

When more air is exhausted from a building than is supplied by the mechanical systems, the building is under a “negative” condition and air will leak into the building through cracks, windows and doors. A negative condition results in the following:

- Flues and stacks will experience a backdraft and cause dangerous contaminants to remain in the occupied space. In the case of flues, the products of combustion may condense and corrode the equipment.
- The exhaust system sees a greater static pressure which reduces the capacity of each fan, resulting in an inadequate removal of contaminants and wasted horsepower.
- Drafts and cross currents will increase, causing an uncomfortable or unhealthy work environment.

Direct Firing eliminates the need for heat exchangers, resulting in 100% efficiency. All products of combustion are introduced into the supply air stream at concentrations well below code requirements, providing a safe alternative to units. As natural gas is an abundant, clean and low cost fuel that is readily available, this system is very cost effective to operate.

The Benefits and Features of Direct Fired Systems from Applied Air

- The heavy gauge galvanized steel outer panels are designed to eliminate rust for longer life.
- Blowers tested to AMCA standards assure proper airflow for efficient operation.
- The ETL approved, single speed, natural gas fired unit offers adjustable burner profile plates and control system for modulation down to 4% of full input. This delivers the precise amount of gas to the burner, maintaining the exact temperature setting with the lowest possible gas usage.
- The 140 point final test procedure for every Applied Air Direct Fired unit means fewer start-up problems.
- For maximum flexibility, units can be installed indoors or outdoors, vertically or horizontally, or include evaporative cooling modules.
- Direct Fired units are 100% efficient.
The Air Turnover principle eliminates air stratification in large open space buildings. It does this by recirculating the hot air which becomes trapped at the higher levels. The uniform room temperature improves comfort, conserves energy, eliminates thermal barriers, and eliminates the possibility of condensation forming on stored materials.

In the heating mode:
The Air Turnover System picks up the air at the floor, where it is the coolest, then heats and returns it to the space above. Innovative low velocity, low horsepower propeller fans gently turn over the room air 1 to 3 times each hour to maintain uniform temperatures from floor to ceiling throughout the building.

Cold air from open doors in shipping and receiving areas becomes less of a problem with an Air Turnover unit. Temperature recovery is almost instantaneous after the doors are closed.

In the cooling mode:
The Air Turnover System picks up air at the floor then cools and returns it to the space above. A comfort zone is created from the unit discharge down to the floor level. For buildings requiring cooling from floor to ceiling, extensions are available to get the unit discharge to required height. The centrifugal fans quietly move large volumes of air, turning over the air in the comfort zone 3.5 to 5 times each hour.

The Benefits and Features of Air Turnover Systems from Applied Air

- Fuel is conserved by utilizing heat normally trapped at the ceiling.
- Electrical operating costs can be reduced as much as 40% with low horsepower, high efficiency propeller fans.
- Quiet, warm weather ventilation is available with low power consumption.
- Condensation that might form on stored materials is eliminated.
- Moisture damage is minimized through constant air circulation and uniform room temperature.
- Installation cost is low because no duct distribution system is needed. The availability of large units also means fewer fuel and vent connections.
- Easy to reach controls and burner on floor mounted equipment simplify maintenance.
- Flame safeguard reliability provides safe operation. Electronic programming control monitors the firing sequence.
- Temperature recovery is rapid. The cold air effect from open shipping and receiving area doors is quickly overcome after doors are closed.
Select Seamless Solutions for your Climate Control System Application

Regardless of your climate control needs, Applied Air has the solution – and the experience to know how to help. Some of the most common applications are shown here so that you can pick a system type that best suits your needs.

For more information and answers to your specific questions, contact your Applied Air Representative.

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### Your Climate Control System Application

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<th>Make-up air</th>
<th>Make-up air</th>
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**Air Turnover Systems**

**Direct Fired Systems**

**Indirect Fired Systems**