

HVAC System

BROCHURE



KAIZEN AIRTECH SOLUTIONS

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Introduction

We are Manufacturer, Supplier, Exporter of Hvac Systems in Hospitals, Schools, Shopping Malls, Apartments, Commercial Buildings, Homes, Residential, Marine, Industrial, Automotive (Automobile), Hvac Systems Equipments, Components, Air Washers, Air Handling Units, AHU, Dampers, Attenuators, Air Washers, Chillers, Fan Units, HEPA Filters. Our setup is situated in Pune, Maharashtra, India. Majorly we serve customers from Maharashtra, Gujarat, Tamil Nadu, South India. Kaizen facilitates 360° solution for the HVAC system. Our HVAC System is exclusively designed by understanding the requirement of several industries. With a motive of continuous improvements, we have grown into a considerable realm with a strong presence in sectors like Heating, Ventilation, and Air Conditioning functionalities. Our HVAC system provides you with proper thermal and environmental comfort. A controlled environment is useful for executing critical processes in the best possible way. The modern system includes air filtration and cleaning elements.

Industries we serve:

Kaizen's HVAC System delivers an appropriate combination of heating, ventilating, and air conditioning. A controlled environment is useful for execution of critical processes in the best possible ways. Our HVAC System is exclusively designed by understanding the requirement of several industries.

Prominently we serve the following industries:

- Constructions
- Marines
- Aviation
- Military
- Indoor
- Consumer goods
- Industrial Applications
- Automotive

Benefits of HVAC system

- Design Flexibility
- Humidity Control
- Energy Efficiency
- Adjustable Air Flow Velocity
- Temperature variability adjustment
- Low Vibration
- Environmental impact

- Sound absorbing and damping
- Comfortable cleaner airflow
- Indoor climate and energy
- Remote access

HVAC System Components:

Kaizen facilitates 360° solution for HVAC System. The success of each project of Kaizen is laying on its planning and services.

HVAC system consists of three sections:

1. Air Treatment–

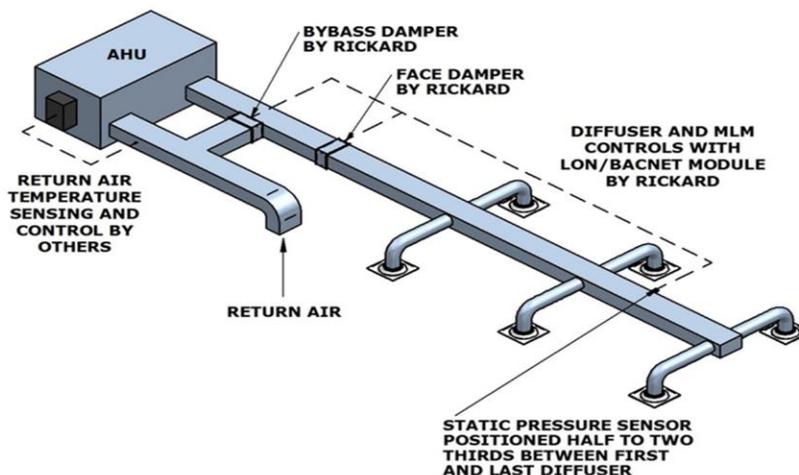
- Air washer
- Air Handling Unit

2. Air Distribution -

- Ducting / Ductwork
- Fire Valves

3. Air Flow Control -

- Diffuser
- Grill
- Damper
- Air Riser
- Air Vent (Diffusion or Grill)



Air Treatment:

Kaizen delivers HVAC solutions for satisfying industry demands. Air Handling Unit (AHU) controls the HVAC system. Kaizen offers chilled water and DX-type of Air Handling Unit.

AHU:

What is AHU?

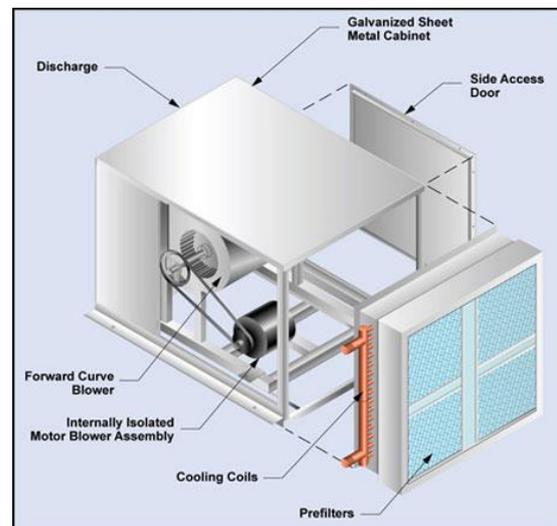
AHU is the most significant source of dust particle elimination and air conditioning. It is installed between unfiltered air and filtered air system. AHU system controls temperature, air filtration and humidity as per the industrial requirement. Kaizen's AHU in the HVAC system readily senses and modifies air conditions for final treatment of air-conditioned environments.

What is function of AHU?

An Air Handling Unit (AHU) is used to re-condition and circulate air as part of a heating, ventilating and air-conditioning system. The basic function of the AHU is to take in outside air, re-condition it and supply it as fresh air to a building.

Uniqueness:

- Available in different sizes and colours
- Temperature control
- Design Flexibility
- User-friendly and easy to maintain
- Humidity control
- Air filtration
- Energy efficient and low sound



Technical Specifications:

Variables	Specifications
Panels	Single/Double skin panels
Insulation	Sandwich PUF insulation

Panel material	Galvanised steel/Aluminium/Stainless steel
Return airflow	8440 m ³ /h
Supply airflow	9215 m ³ /h
Net overall height	Supply=1200 mm Return=1150 mm
Overall width	Supply=1750 mm Return=1750mm
Outer skin material	Grey plastisol
Inner skin material	Galvanised
Overall length	4140 mm
Unit base height	100 mm
Insulation type	Foam

1. Frame Structure

- Aluminium alloy structure, high strength, light-weight, Anti-corrosion
- Adoption of the full aluminium alloy anti cold bridge frame structure
- Every angle of the frame connected the aluminium alloy structure component with the excellent strength, light-weight, anti-corrosion capability

2. Temperature Control

- High-quality air-conditioning 1/2inch copper heat exchange tube. hydrophilic aluminium foil corrugated sheet via mechanical expansion
- Wind resistance and good heat transfer performance

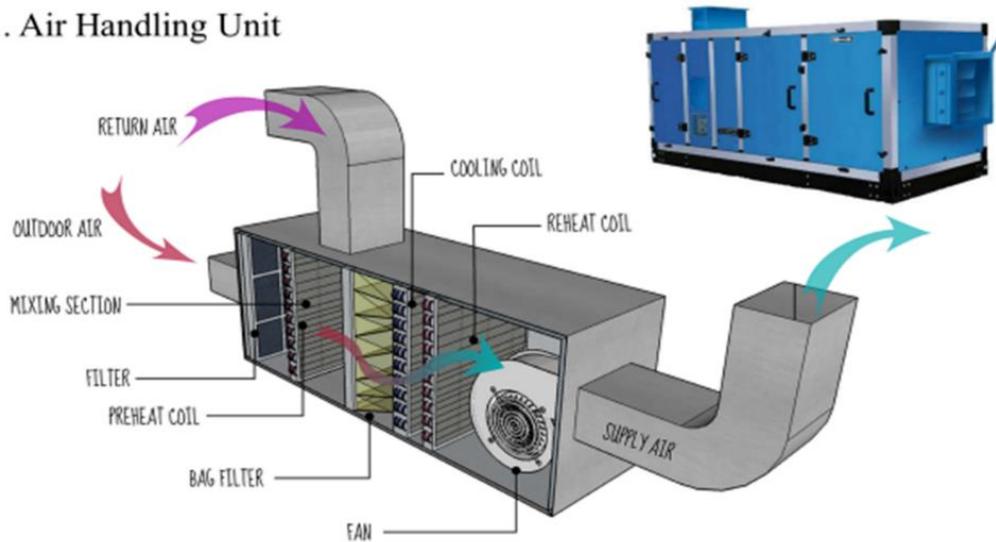
3. Filtration

- Primary filter 10 micron and secondary filter 5 microns with efficiency 90% washable HDPE Media in FRP PU coated frame for GI model mounting after mixing chamber
- Recirculation of 80% air recalculated with 20% fresh air, also an option for ratio customization

- Mini plate HEPA filter in aluminium frame Final = 0.3 microns with an efficiency of 99.997% (anti –microbial treated media)

HVAC

1. Air Handling Unit



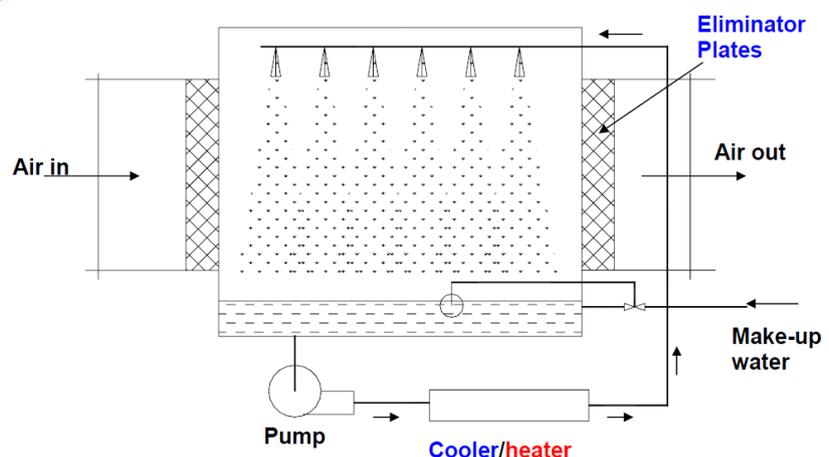
Air washer:

An air washer is a device for conditioning air. In an air washer air comes in direct contact with a spray of water and there will be an exchange of heat and mass (water vapour) between air and water. The outlet condition of air depends upon the temperature of water sprayed in the air washer.

An air washer is basically a piece of equipment that is used to improve the quality of air. It does so by scrubbing the air that moves inside it and then adjusting the humidity levels in order to keep the environment consistent.

In an air washer air comes in direct contact with a spray of water and there will be an exchange of heat and mass (water vapour) between air and water. Hence to continue the process, water has to be externally cooled. Here both latent and sensible heat transfers are from air to water.

The air is drawn in across discs that rotate in water. In the internal water tank, particles, pollen, fine dust, bacteria, viruses and animal hair are washed from the air. The air absorbs humidity at the same time and then the clean humidified air is emitted back into the room.



Air Distribution:

Kaizen offers efficient air distribution systems for HVAC systems with insulated construction for all sizes. With highly customized designs according to space requirements, we deliver high R values for effective working. With flexible duct support and a broad range of commercial application, we serve duct work complying with ISO standards.

Air Distribution System Components include:

- Ductwork
- VRF System
- Split AC

Ducting / Ductwork:

Ductwork refers to the system of ducts (metal or synthetic tubes) used to transport air from heating, ventilation and air-conditioning (HVAC) equipment throughout your home. Properly installed and well-maintained air ducts are a key component of indoor air quality and home comfort.

Kaizen provides ductwork for convenient circulation of cold air by considering space requirements. Ducts are nothing but a channel or passages that circulates conditioned or exhaust air. Ventilation through ducts comprises of maintaining the temperature of air flow air quality control and oxygen. We use ISO graded seals to prevent any leakage and antimicrobial coating. Flexible ducts are often utilized in spaces where hard and rigid ductwork would be difficult or even impossible.

We provide two types of ducting system including:

1. Rectangular ducting
2. Round Ducting

Uniqueness of Ducting system:

- Round and rectangular ducts
- Vibration isolation, volume control, smoke and fire control dampers, turning vanes, plenums, take-offs and terminal units are included
- Customized fiberglass ducts

- Thermal insulation for proper cooling
- Customized Aesthetic look





AIR CONTROL SYSTEMS:

Kaizen's airflow control unit supports you in designing efficient HVAC solutions. We have tested every component of the control unit to ensure premium quality of the product.

Kaizen's control unit includes the following components:

Fire valves:

Kaizen's fire valves are effective in controlling airflow in case of emergency with variable capacity based on the position of valves. We provide customized sizes to meet the requirement complying with international standards.

Thermal Insulation:

Kaizen's fire valves are effective in controlling airflow in case of emergency with variable capacity based on the position of valves. We provide customized sizes to meet the requirement complying with international standards.



Uniqueness:

- Proper cooling with thermal insulation
- Air tightness in ducts
- Increased energy efficiency

Technical specifications:

Ducts have Closed Cell foam with a minimum density of 60 Kg/m³ with minimum R-Value 4.1/inch, and thermal conductivity -0.035 W/cm. confirming to Class 'O' & the inner side stuck to the outer fascia of ducts with proprietary Synthetic adhesive bonding (SR998 or equivalent). It is finished with vapour barrier with Lag coating AF5590 and covered with glass cloth with mechanical protection.

Damper:

Kaizen's damper ensures reliable operating functionality and regulation in the airflow system. Damper maximizes energy efficiency and minimizes installation costs. Damper size varies with the designed air flow system. A damper control the volume of air and thus fire with its angular opening. In the case of fire hazards, dampers close entirely and shut the oxygen supply for fire prevention. There are two types of dampers, i.e., volume control damper and fire damper.



Uniqueness:

- Controlled backdraft with Butterfly damper
- Available with MS and GI powder coat
- Pressure relief with a bypass damper
- Smoke control with smoke damper
- Available with manual resetting system

Air Riser:

For the effective performance of the air control system, there must be a clear path for revert air. Kaizen's air riser works without an adequate reappeared air path will become pressurized. This obstructs supply airflow, and it will cause discomfort to the end user.



Uniqueness:

- Flexible design
- Uniform airflow velocity
- Available in customized size and shape

Diffuser:

A diffuser is a component of air vents. It is necessary for easy extraction of foul air and supply of fresh air. Kaizen offers customized designs for efficient diffusers to deliver conditioned air



into occupied space. Our specially designed diffusers provide a primitive indoor climate to improve productivity. Kaizen uses high-quality industry grade materials and modified designs to ensure premium quality with the aesthetic build.

Uniqueness:

- High-quality diffuser with integrated HEPA filters
- Air distribution and air filtration in one terminal unit
- Modular construction with different, interchangeable front panel
- Available in 1 to 4 - way airflow discharge patterns
- Square and rectangular ceiling diffusers
- Clean and pleasant environment

Technical Specifications:

- Handles large volume of air for a given pressure drop and noise level
- Unbroken horizontal flow pattern from maximum cfm down to minimum
- Available in steel or aluminium
- Provides excellent performance in variable air volume systems
- Available in the fixed or adjustable pattern

Grill:

Kaizen offers a wide range of HVAC grills to control airflow for a comfortable environment in occupied space. We offer customized sizes to satisfy complex requirements. With the availability of different types of grills and diffuser, Kaizen offers complete comforting



solutions have designed a grill which act as a permanent and unmovable fixture for supplying or extracting air vertically without any deflection. Grilles are ceiling and wall mounted. It pulls air back into the central air system for reuse.

Uniqueness:

- Availability in steel, aluminium or plastic construction
- Easy installation

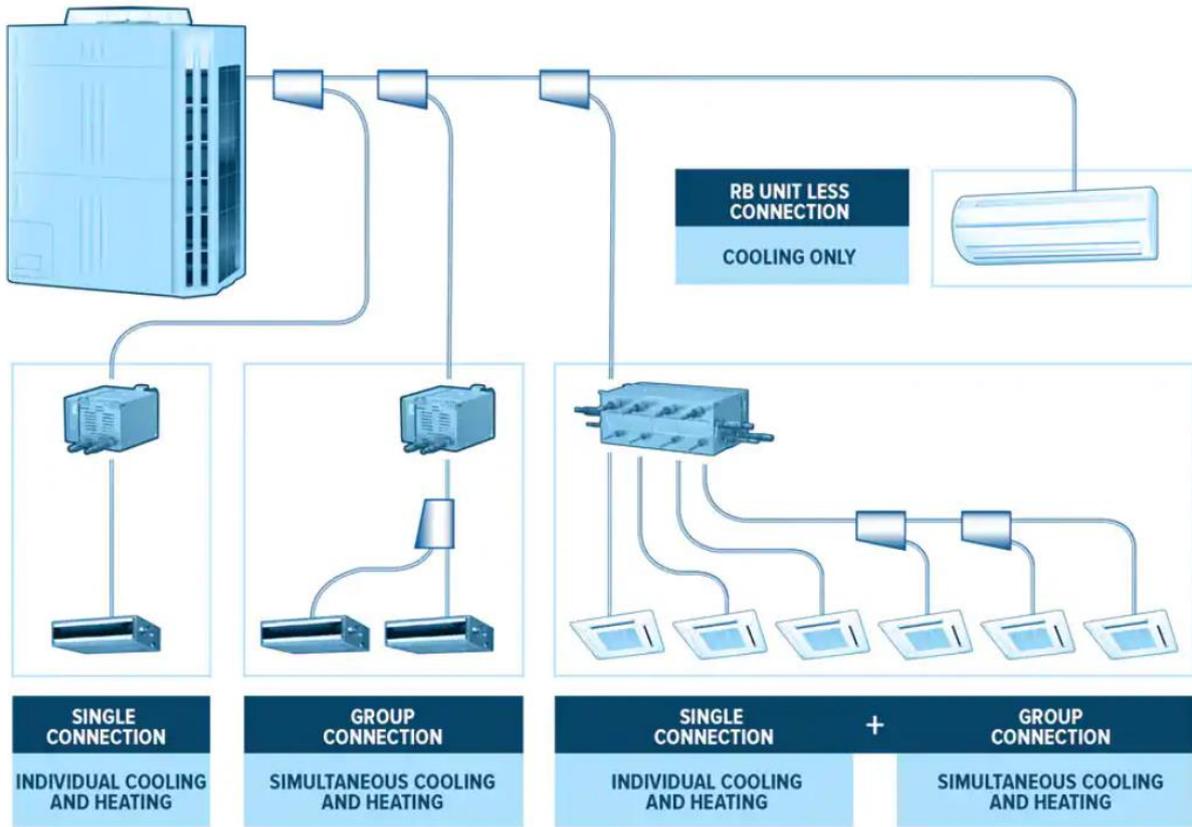
VRF System:

For some commercial applications we use VRF system.

Heat pump systems with heat recovery are used in historical buildings, schools, office buildings, assisted living facilities, hotels, banks, and other commercial buildings where simultaneous cooling and heating is a design requirement.

It as a large-scale ductless HVAC system that can perform at a high capacity.

The specific design of a VRF system varies based on application. In general, VRF technology provides the ability for multiple indoor units or zones to operate on the same system. VRF systems can either be a heat pump system or a heat recovery system, which provides simultaneous heating and cooling.



AC units:

