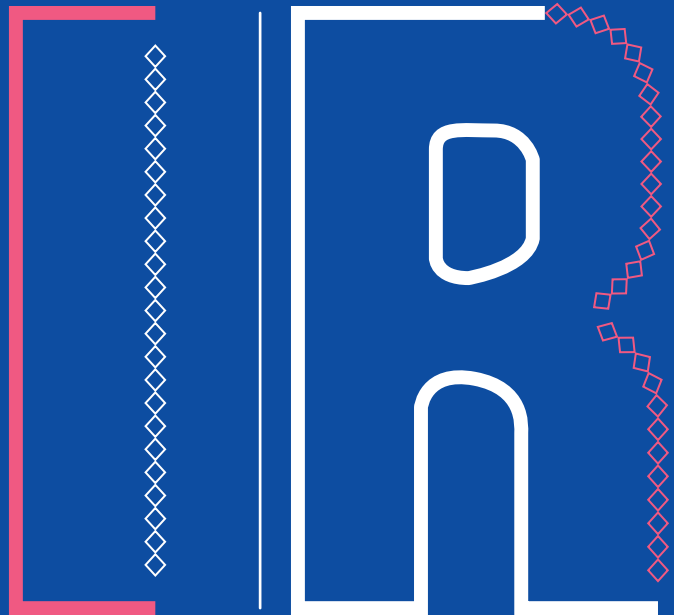
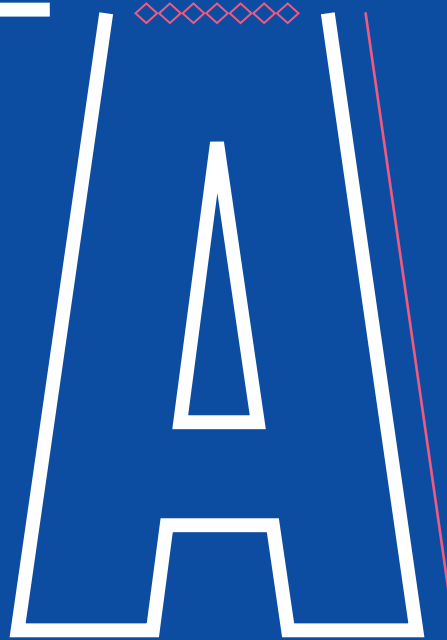
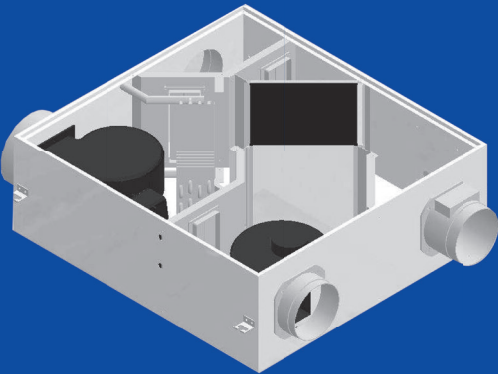
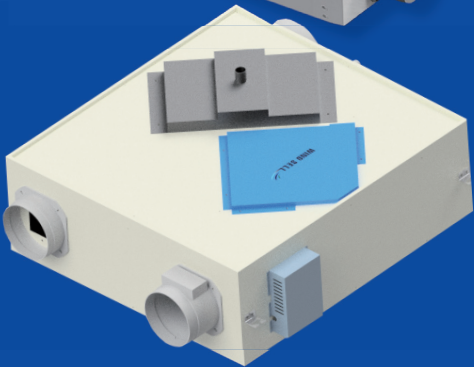
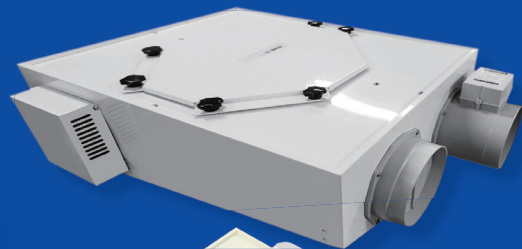


# K-AIR HEAT EXCHANGE VENTILATION SYSTEM

[www.ko-air.com](http://www.ko-air.com)



NEW PARADIGM for the Clean Ventilation System





The NEW Paradigm pursued by K-Air corporation.

## **Find the air quality management in indoor clean rooms from K-Air's various heat recovery ventilation device types!**

### **K-air Co., Ltd.'s main category of heat recovery ventilation system product type information**

- Clean function enhancement type: Ventilation efficiency up, clean function up, virus care function strengthened(cluster ionizer/Uv lamp installed)
- Energy efficiency enhancement type/standard energy efficiency suitable type(heating 75%, cooling 45% or more, FILTER PRE/Medium H12 class or higher\*)
- Thermal storage type supply/exhaust integrated type: installation cost saving type
- Air conditioner integrated type : Air conditioner function complex type(FCU Type/EHP outdoor unit type)
- For vehicles with DC power(12V, 24V) type : small 12V, caravan only(Paltier element type)/large 24V

We are developing and manufacturing various types and models of heat recovery ventilation devices so that customers can select/adopt a product type suitable for their practicality and purpose of use where ventilation is needed.



The K-AIR heat recovery ventilator provides a space where people can breathe comfortably with clean air in the indoor space where they stay.

**Main Business\_** Heat Recovery Ventilator Specialist  **WIND SELL** 

**Main Products\_** Heat Recovery Ventilator for Buildings/Vehicles(Total Heat/Sensible Heat)

#### Guide to main business groups | item

- Ultra-slim ventilation and cleaning function specialized type heat recovery.
- Ventilation device Energy efficiency standard total heat exchanger(general type : heating 75% or more, cooling 45% or more)
- Special purpose building type(school classroom, etc.) heat recovery ventilation device.
- FCU complex type heat recovery ventilation device.
- Air conditioner combined heat recovery ventilation device.
- Integrated heat supply and exhaust heat recovery ventilation device.
- DC12V, 24V power type heat recovery ventilation device for vehicles.
- Commercialization of air brush gate development.
- Commercialization of air curtain range hood development

# Major certification status





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## CONTENS

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### I . K-AIR Heat Recovery Ventilator Control System

### II . K-AIR Heat Recovery Ventilator Control System I Basic specifications for each model

#### III. 1. Air conditioner/heater hybrid type

- FCU complex type(DD type) : 150~500CMH(more than 1,500~3,500Kcal/h)  
(SD type) : 800~1,500cmh(more than 4,000~5,500kcal/h)
- EHP air conditioner combined type(outdoor unit separated type) : 150~350CMH  
(cooling capacity - over 2,500Kcal/h)
- EHP air conditioner combined type(without outdoor unit) : 100~150CMH  
(cooling capacity-1,500Kcal/h or less)

#### 2. Standard type of heat recovery ventilation device

- Ceiling embedding(reinforced cleaning function) : 100~500CMH
- Ceiling embedded type(side inspection hole type) : 100~2,500CMH
- Ceiling exposure type(lower inspection hole type) : 100~350CMH
- Export-only model(wall type, lower inspection hole type) : 150~250CMH

#### 3. Specialized type

- Floor mounted type : 400~500CMH
- Stand type : 800~1000CMH

#### 4. Vehicle use

- Power DC : 12V, 24V(non-start operation type)
- Cooling compensation type Peltier hybrid Type : 50~100CMH
- Large bus type(24V) : 500~1,000CMH

**\* K-AIR Heat Recovery Ventilator's Model Name Grant Guidelines KAV  
(Company Name)-Numbers + English(Capacity + Product Type)**

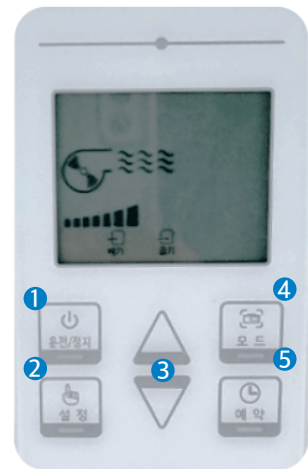
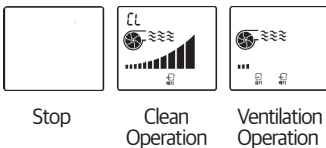


## Heat Recovery Ventilation Device Control System with Remote Control

### More convenient control of all functions

#### 1 Operation/Stop

- Press the [Operation/Stop] button.
- Damper is opened during operation, and Clean Operation is performed by operating the exhaust fan in 5th gear for 30 seconds.
- After clean operation, ventilation is operated with low wind. Select and use the desired air volume and mode.
- When stopping, stop the fan and close the damper.



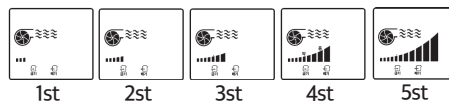
1:1 터치형 리모컨

#### 2 Select Settings

- This button selects each setting function/ID, VSP, FILTER time setting.

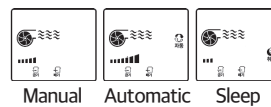
#### 3 Air volume change

- Press the  $\Delta$   $\nabla$  buttons.
- The air volume is changed in 5 steps.



#### 4 Change Operating Mode

- Press the [Mode] button to select the desired operating mode.
- Manual mode : Operates the supply/exhaust fan at the selected air volume level 1~5.
- Automatic mode : 40 minutes of operation and 20 minutes of stop are repeated with the supply/exhaust fan in 3 stages.



#### 5 Turn-Off reservation/Save Settings

##### Turn-Off reservation

- This is a function to reserve a stop operating after a set time.
- Push [Reservation] button one-time, make [stop] reservation.
- $\Delta$   $\nabla$  button for Selecting the time.

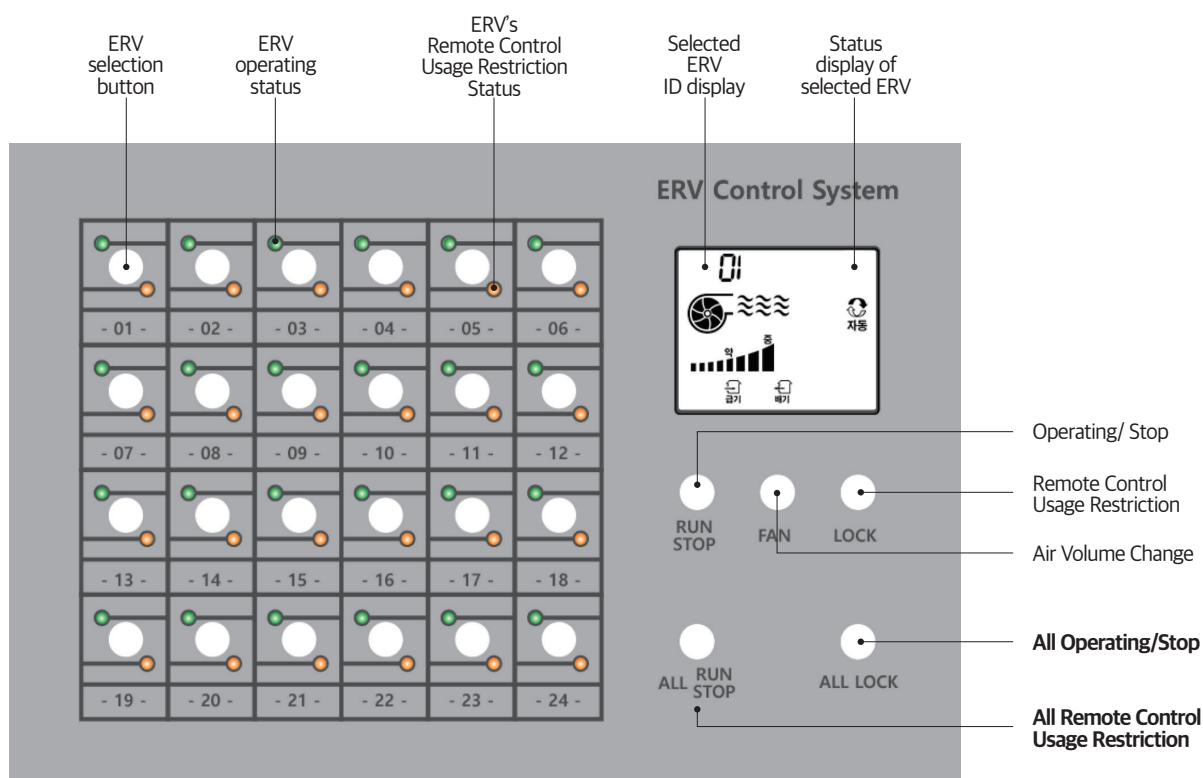
##### Save settings

- This button saves each setting function/ID, VSP, FILTER time setting value.
- Pressing the [Set] button to complete the stop reservation.
- The setting range is 30 to 720 minutes (by 30 minutes).

# WIND SELL

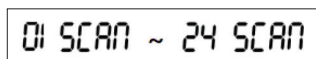
## Heat Recovery Ventilation Device Control System, Central Controller 24 Ports Type

Up to 24 central control controllers for the Windcell ventilation system

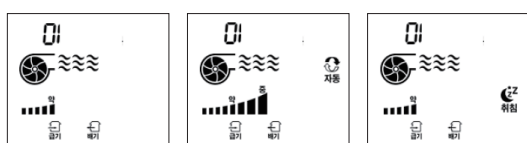


### ✓ ERV SCAN

When power is applied, it scans the connected ERV.



### ✓ Operating Mode Display



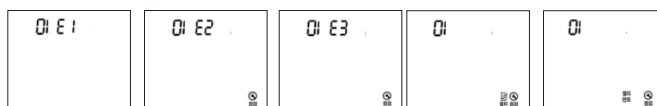
Manual Mode

Auto Mode

Sleep Mode

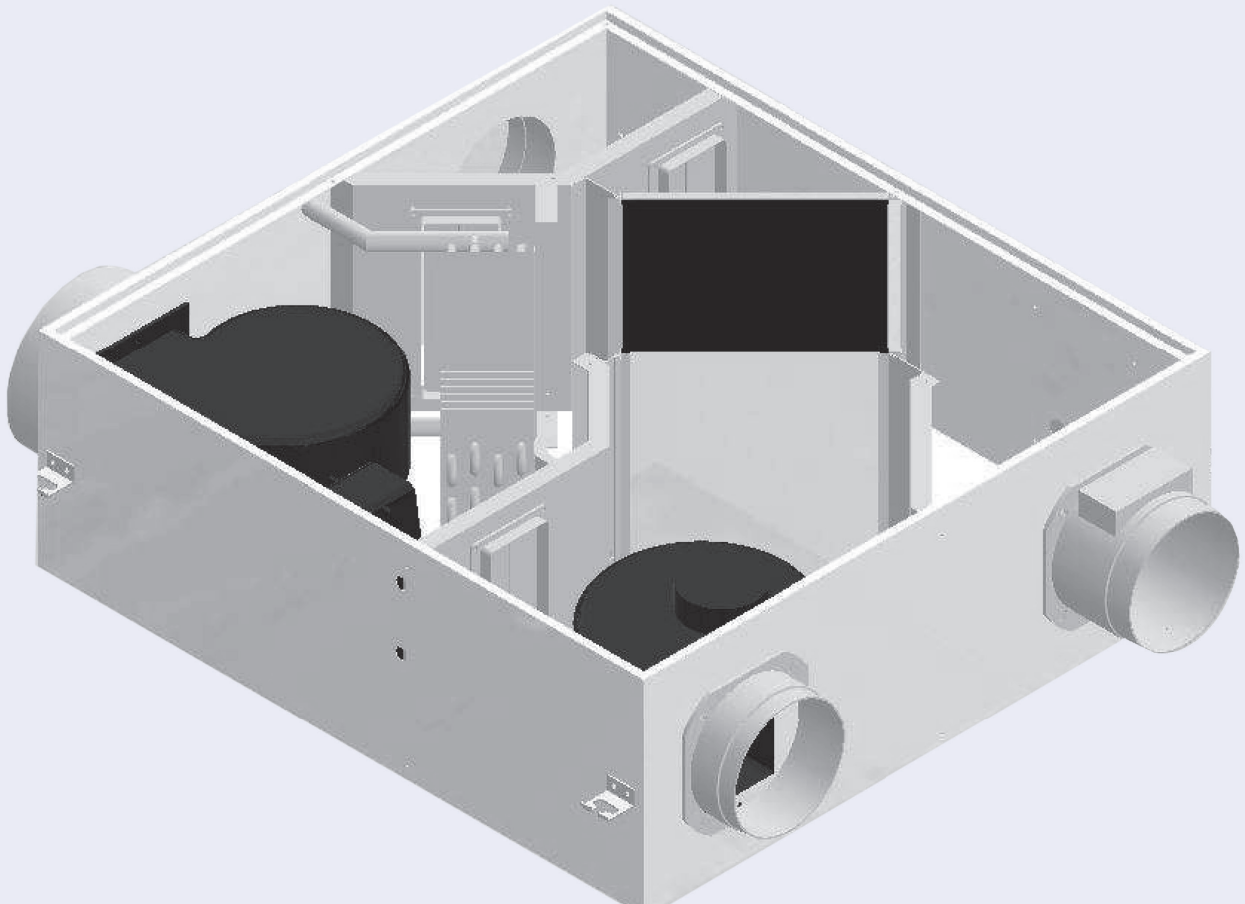
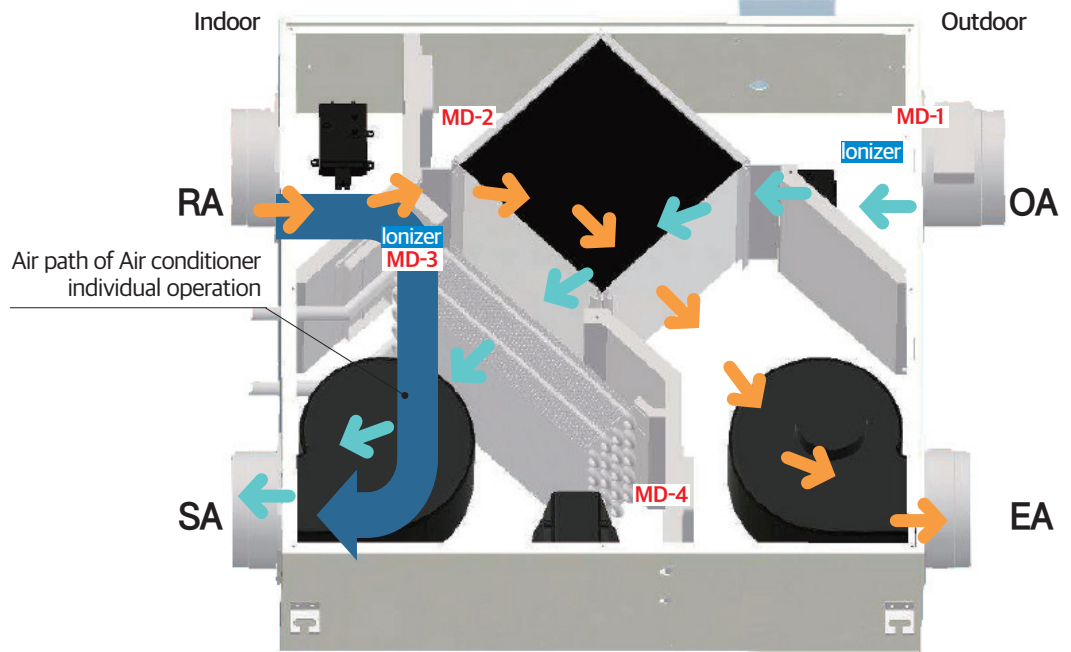
### ✓ Abnormal Alarm Display

- Displays the type of error(alarm) of the ERV where the error(alarm) occurred.
- E1 : FCU communication error • E2 : Air supply fan error • E3 : Exhaust fan error
- Filter inspection(replacement)
- Element inspection(replacement)

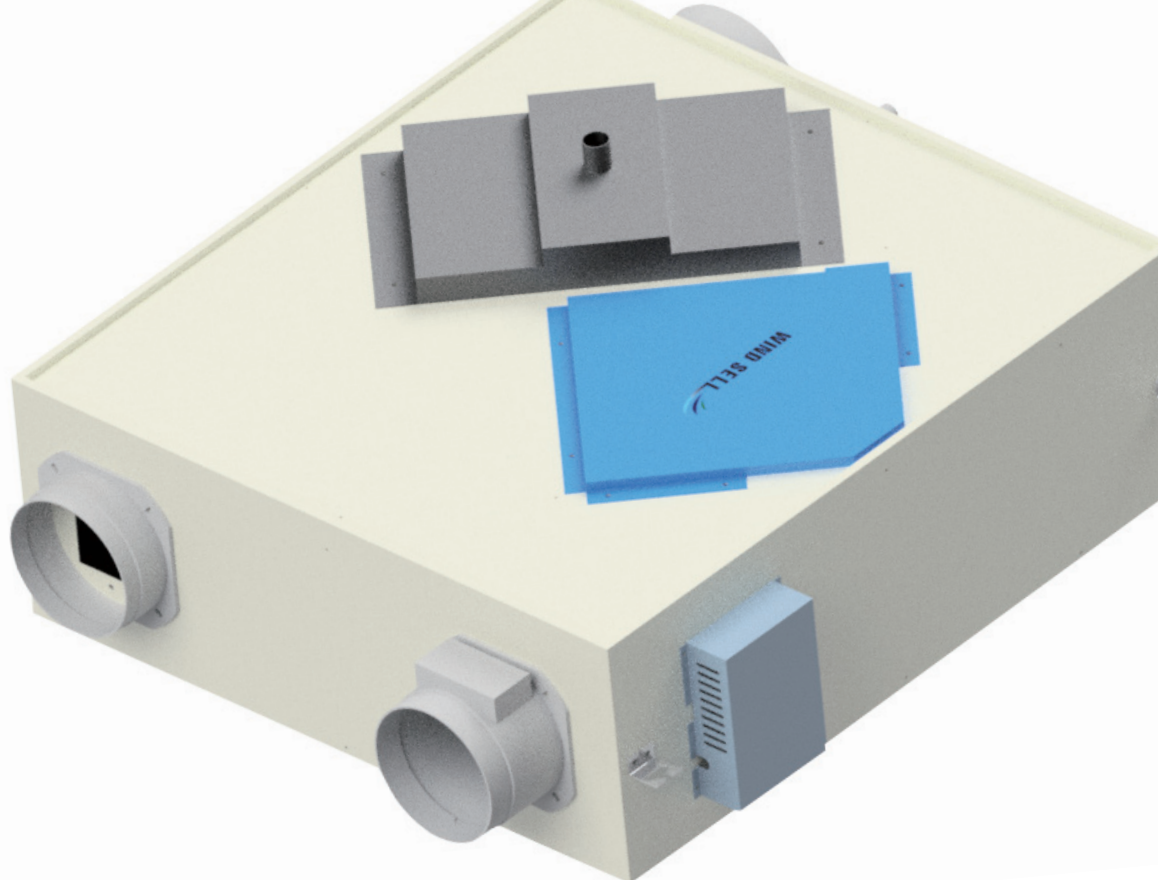


## FCU HYBRID Heat Recovery Ventilation Device Structural Diagram

Composition of  
FCU TYPE HYBRID  
Heat Recovery  
Ventilation Device







K-AIR FCU HYBRID Heat Recovery Ventilation Device Model Standard Specification/Specification Table

Division	Item	Standard	Ventilation device	FCU
			Standard specification	Standard specification
HRV PART	Air volume	CMH/CMM	150~500	4.1~8.3
	Heat exchange efficiency	Cooling	45% or more	-
		Heating	75% or more	-
	ELEMENT	L*W*H	250*250*258	-
	FILTER	PRE+MEDIUM	Pre filter(P)+H12(M)	
Common	Air blower	BLDC blower	IM Innotek-static pressure over 15mmAq Air volume control : 5th stage	
	Dimensions	L*W*H/FLANGE	800*750*270/ OA,EA,RA-D150, SA-D200	
	Virus care	CLUSTER IONIZER	OA, RA -2EA Basic application	
	Specialized function	I.C.W	Operation at device ON/OFF, Removal of adsorbed pollutants in device, FCU heat exchanger DRY	
FAN COIL UNIT PART	FCU	Efficiency	-	2.8K(2,500kca/h)
	Drain	Natural drain	-	D25 Inspection port Integrated type

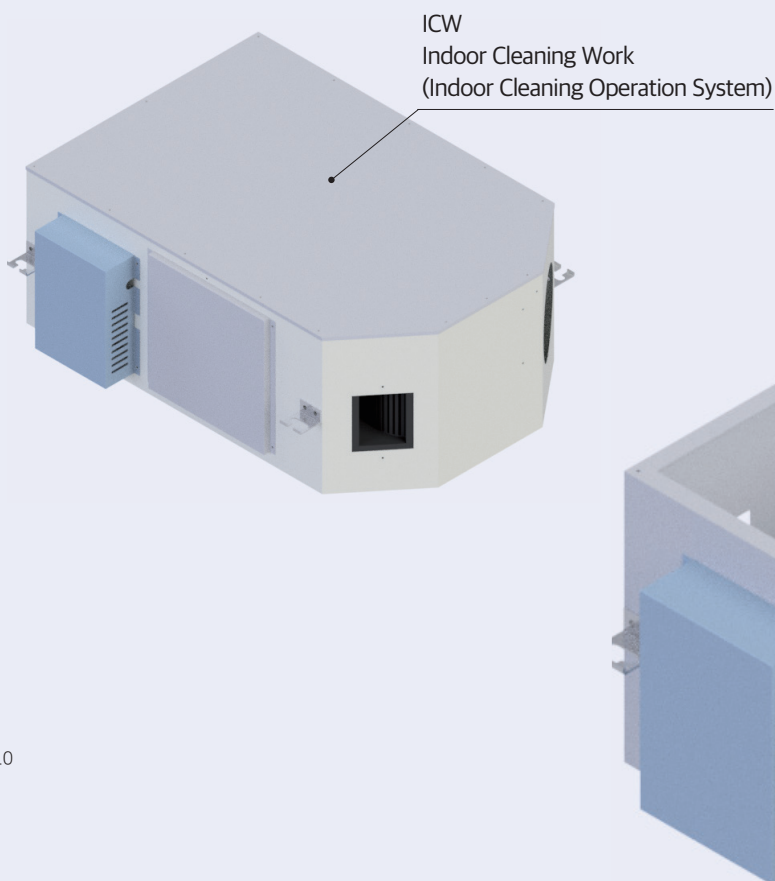
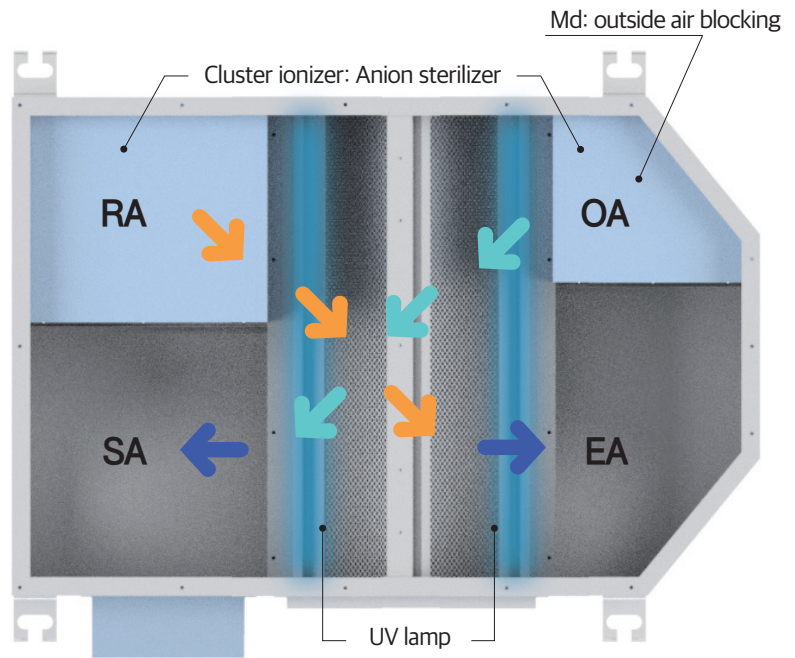
FCU HYBRID  
Heat Recovery  
Ventilation Device Type

- 150~500CMH/2.5~8.3 CMM(1,500kca/h~3,500kcal/h) Ceiling embedded down inspection port type
- 800~1000CMH/13.3~16.6CMM(4,000kca/h~6,000kcal/h) Ceiling embedded side inspection port type
- Design patent registration product registration number : No. 30-1158848

## Structure diagram of air purifier with special type of cleaning function in ceiling embedded + virus care product

Ceiling-embedded heat recovery ventilation device for air cleaning system reinforced type

Ventilation + air cleaning system (HEPA Filter H12 class or higher) +Virus Care System (Cluster ionizer or UV sterilization lamp applied)



## Basic specifications/characteristics of ceiling-embedded cleaning function specialized type air cleaning + virus care products

### Specialized cleaning function(cleaning + sterilization + virus care) heat recovery ventilation device specifications

Model	Place to use mainly	Air Volume MAX (CMH)	Product dimensions (L*H*W)	Basic Operating Specifications	Power consumption (W)	Power supply
KAV - 10CP		100	540*190*350		50	
KAV - 15CP	Hospital, Ward	150	600*240*400	5-stage air volume control(Power save, Low, Medium, High, Special high), internal cleaning operation function <ICW Operation>)	60	220V, 60Hz
KAV - 25CP		250	730*270*500		120	
KAV - 35CP	Other than hospitals, schools, kindergartens(Special purpose buildings)	350	860*330*600		125	
KAV - 50CP		500	860*330*600		150	

### Specialized cleaning function type(cleaning + sterilization + virus care) Basic operation function of heat recovery ventilation system

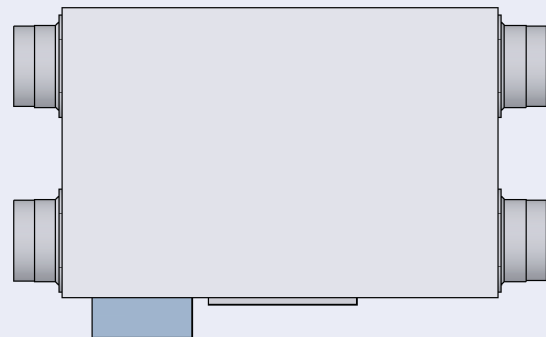
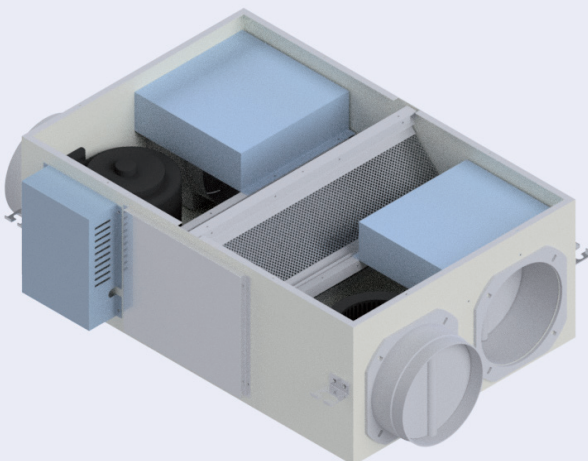
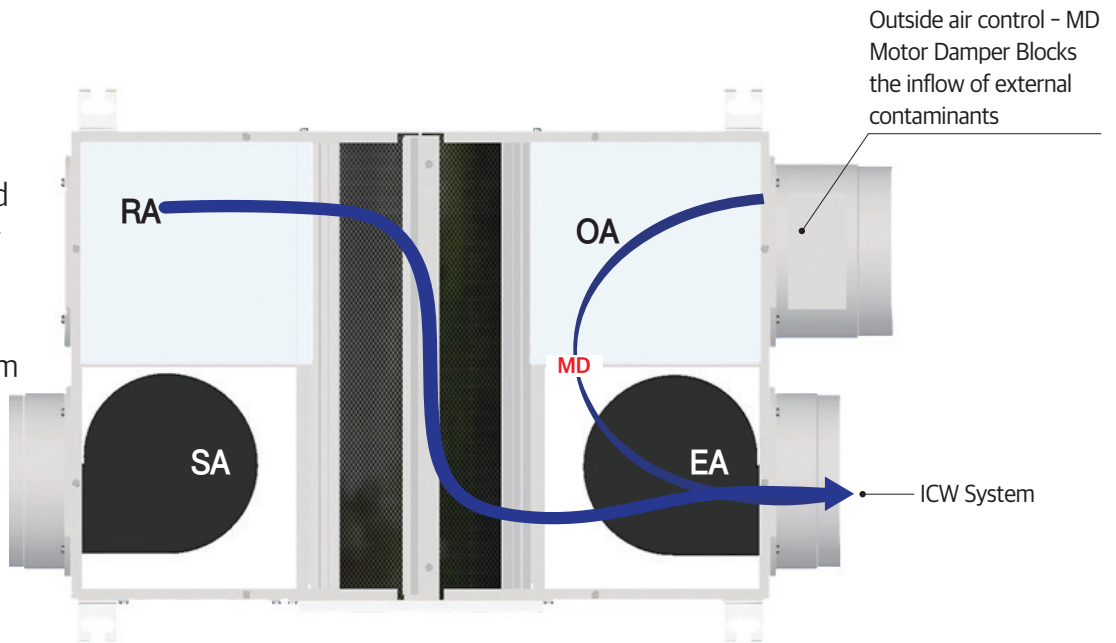
Operating status	Driving status
Equipment initial operation(power on) ICW/P.D.T(Indoor Cleaning Work/Particle Down Time)	ICW Driving/EA FAN - 20 Seconds Special Driving SA FAN - OFF Outdoor air MD : OFF/P.D.T Equipment to prevent reverse inflow of discharged dust OFF for 3 seconds
Negative pressure operation(exhaust priority operation) - Droplet removal operation	EA FAN - Medium, High/ SA FAN - Power saving, Low, Medium operation
Positive pressure operation(air supply priority operation) - CO2 reduction operation	EA FAN - Medium, High/ SA FAN - Power saving, Low, Medium operation
Ventilation operation	EA, SA FAN - Same constant air volume operation
5-stage air volume control	Power saving, weak, medium, strong, special high
Equipped with virus care system	Selective application of UV Lamp or CLUSTER IONIZER

### Characteristics of Ceiling-embedded heat recovery ventilation device for Cleaning system enhancement type

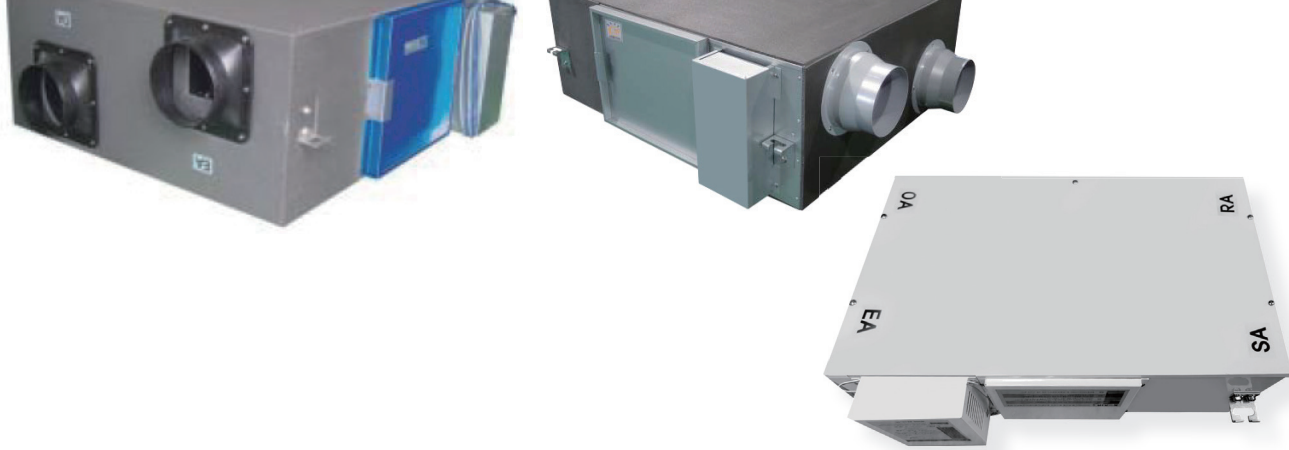
- Heat exchange efficiency - Cooling : 25% or less, Heating : 55% or less.
- 5-stage air volume control(enhanced air volume setting control mode - based on application of negative/positive pressure operation system)
- **Design patent registration model(Patent No. 30-1158848)**
- ICW operation function : Internal cleaning operation function to prevent re-entry of contaminants(smell, dust) adsorbed into the unit(initial operation of the unit, exhaust operation for 20 seconds, operation stopped for 3 seconds, then normal operation)
- **Equipped with virus care system : Optional use of UV Lamp or Cluster Ionizer.**
- Applied central control system : Max. 24 ports can be applied and controlled.
- Fine dust removal/odor removal filter applied HEPA-H12 class or higher/carbon coated non-woven fabric PRE filter applied.

# Ceiling-embedded heat recovery ventilation device energy efficiency standard total heat exchanger structure/basic specifications/characteristics

Basic structure diagram of ceiling-embedded energy efficiency standard type heat recovery ventilation system







### Ceiling-embedded type(side inspection hole type) Specifications/Dimensions

Model	Air volume MAX (CMH)	Product dimension	Connector dimension(Flange)Φ	Power consumption	Power supply
KAV - 10CPS	100	540*300*350	100/65	50 or less	220V 60Hz
KAV - 15CPS	150	600*350*400	125/100	100 or less	
KAV - 25CPS	250	730*400*500	150/125	150 or less	
KAV - 35CPS	350	850*500*650	200/150	200 or less	
KAV - 50CPS	500	850*500*650	200	250 or less	
KAV - 80CPS	800	1400*600*1000	250	450 or less	
KAV - 100CPS	1000	1400*600*1000	250	480 or less	
KAV - 150CPS	1500	1540*600*1100	300	950 or less	
KAV - 200CPS	2000	1540*600*1100	300	1200 or less	
KAV - 250CPS	2500	1720*704*1100	350/300	1200 or less	

### Ceiling embedded type(side inspection port type 100~1000CMH), ceiling exposed type (down inspection port type - 100~350CMH)

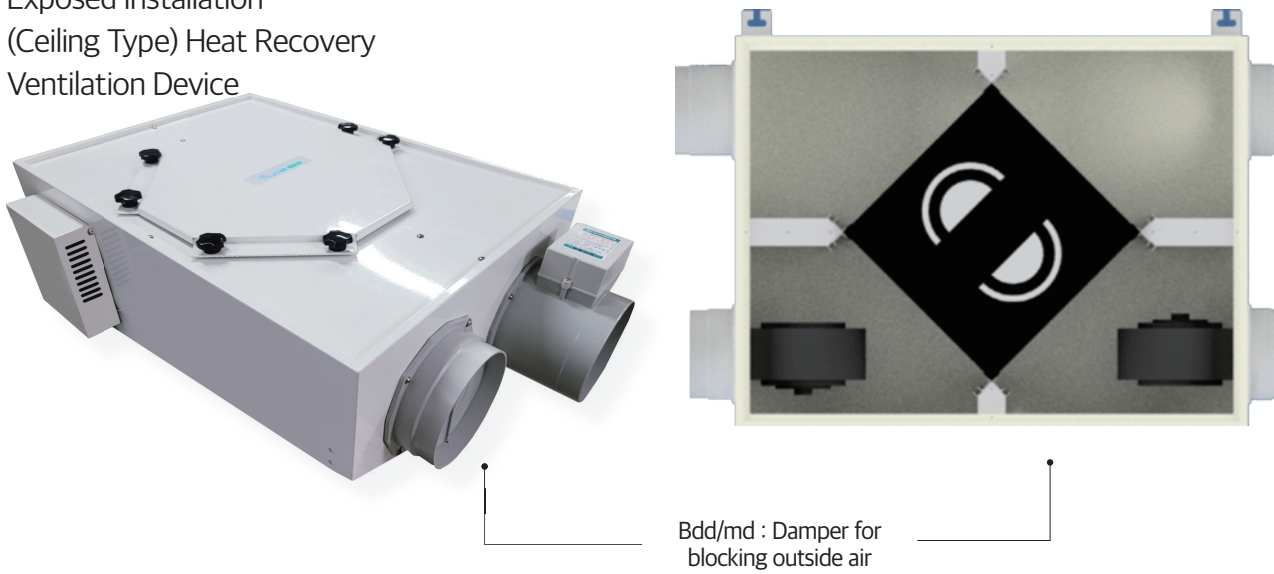
Operating status	Driving status
Equipment initial operation(power on) ICW/PDT(Indoor Cleaning Work/Particle Down Time)	ICW Driving/EA FAN - 20 Seconds Special Driving SA FAN - OFF Outdoor air MD : OFF/P.D.T Equipment to prevent reverse inflow of discharged dust OFF for 10 seconds
Negative pressure operation(exhaust priority operation) - Droplet removal operation	EA FAN - Medium, High/ SA FAN - Power saving, Low, Medium operation
Positive pressure operation(air supply priority operation) - CO2 reduction operation	EA FAN - Medium, High/ SA FAN - Power saving, Low, Medium operation
Ventilation operation	EA, SA FAN - Same constant air volume operation
Equipped with virus care system	Simultaneous operation of UV lamps(OA, RA part)
5-stage air volume control	Saving, weak, medium, strong, special high

### Characteristics of ceiling-embedded energy efficiency standard heat recovery ventilation device

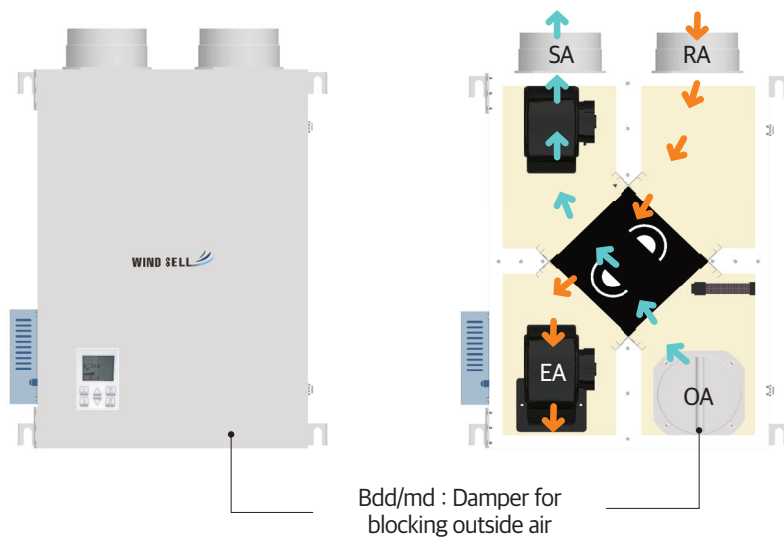
- Customized heat exchange efficiency standard(cooling 45% or more, heating 75% or more) High-efficiency element applied
- 5-stage air volume control : power saving, medium, strong, special high(based on application of negative/positive pressure operation system)
- ICW operation function : Internal cleaning operation function to prevent re-entry of contaminants(smell, dust) adsorbed into the unit
- Application of central control system : maximum 24 pot application control possible
- Filter application : PRE Filter - Carbon coated non-woven filter/Medium filter 10~20T- H12 class Hepa filter

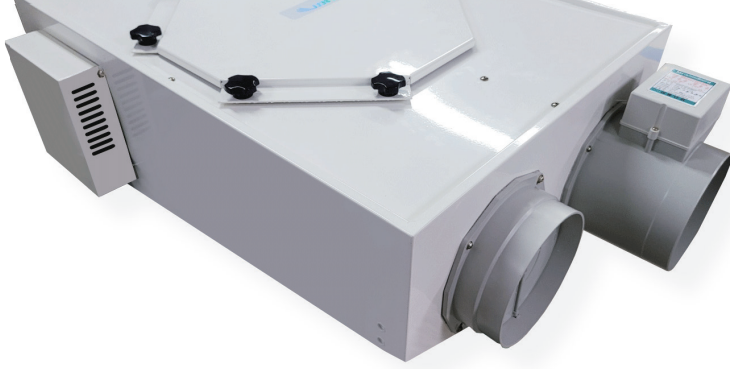
## Exposed ceiling/Wall-mounted heat recovery ventilation device Energy efficiency standard total heat exchanger Structural drawing/ Basic specifications/Features

Structure Diagram of Exposed Installation (Ceiling Type) Heat Recovery Ventilation Device



Structure Diagram of Exposed installation (wall mounted) heat recovery ventilation device





### Bdd/md: Damper for blocking outside air

Model	Air volume MAX (CMH)	Product Dimension (L*H*W)	Operating control	Power consumption	Power supply
KAV - 350SB	350	870*605*350	5-stage air volume control (power save, low, medium, high, special high)	125	DC12V
KAV - 250SB	250	700*500*240		120	
KAV - 150SB	150	700*500*255		60	
KAV - 100SB	100	540*350*190		50	
KAV - 50SB	50	400*250*150		30	

### Export-type product standard specification/specification of clean ventilation system

Operating status	Driving status
Equipment initial operation(power on) ICW/PDT(Indoor Cleaning Work/Particle Down Time)	ICW Driving/EA FAN - 20 Seconds Special Driving SA FAN - OFF Outdoor air MD: OFF/P.D.T Equipment to prevent reverse inflow of discharged dust OFF for 10 seconds
Negative pressure operation(exhaust priority operation) - Droplet removal operation	EA FAN - Medium, High/ SA FAN - Power saving, Low, Medium operation
Cooling/heating interlocking operation(heat storage operation) System operation when operating the air conditioner and heater	EA FAN - OFF/outside air MD : OFF SA FAN - Power Saving Operation(ON)/ Heat Storage MD: Open
Positive pressure operation(air supply priority operation) - Carbon dioxide reduction operation	EA FAN - Medium, High/ SA FAN - Power saving, Low, Medium operation
Quantitative ventilation operation	EA, SA FAN - Operation of the same constant air volume
Cooling/heating operation(applied Peltier element)	Operation possible to change cooling/ heating according to the usage environment

### Characteristics of Exposed Installation (Ceiling type/Wall Mount type) total Heat Ventilation Device

- Ventilation specialized product
- 5-stage air volume control : power saving, low, medium, high, special high(based on application of negative/positive pressure operation system)
- Internal cleaning operation function of the device to prevent re-entry of contaminants (smell, dust) adsorbed into the device
- Filter application : PRE Filter - Carbon coated non-woven filter/Medium Filter - H12 class Hepa Filter
- Application of PCT heater : Temperature correction for bringing OA in winter(10~15°C UP)

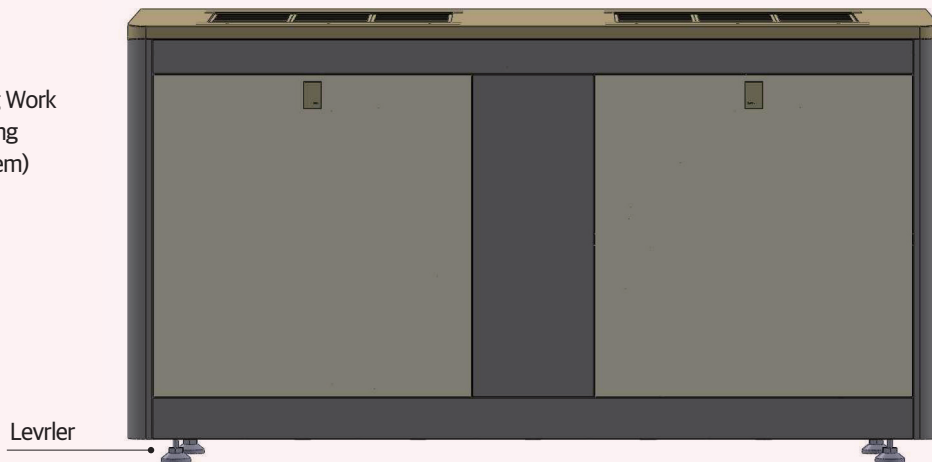
## Heat recovery ventilation system for special-purpose buildings (school classrooms), Structure diagram/basic specifications/ characteristics of floor/stand type total heat exchanger

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Floor type/Stand type heat recovery ventilation system basic specifications for special-purpose buildings



ICW  
Indoor Cleaning Work  
(Internal Cleaning  
Operation System)







K-AIR special purpose type heat recovery ventilator(school/classroom)  
standard specifications/Specification table

Model	Air volume CMH (power save, low, medium, high, special high)	Dimension (L*W*T)	Connector Dimension (Flange)Φ	Power consumption W	Power supply
KAV-45PST	450	1200*640*360	200*2/250(1/2)	320 or less	
KAV-50PST	500	1200*640*360	125/100	350 or less	220V
KAV-80SST	800	1800*550*360	200*2/250(1/2)	450 or less	60Hz
KAV-100SST	1000	850*500*650	250	500 or less	

K-AIR special purpose heat recovery ventilation device(school/classroom) operation function

Operating status	Driving status
Power ON ICW/PDT Mode ON	Exhaust fan operation - 20 seconds of special-high operation Prevent reverse inflow of discharged particles for 3 seconds OFF Normal operation Air volume adjustable
5 stages of Air volume control	Special high, high, middle, low, power saving
Negative pressure operation	Exhaust priority operation : EA - High, medium/SA - Low, power saving
Positive pressure operation	Air supply priority operation : SA - High, medium/EA - Low, power saving

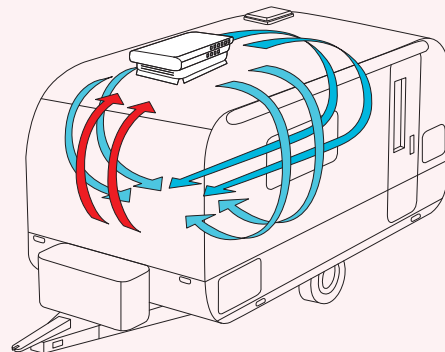
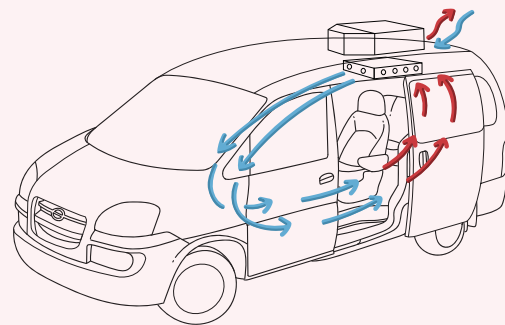
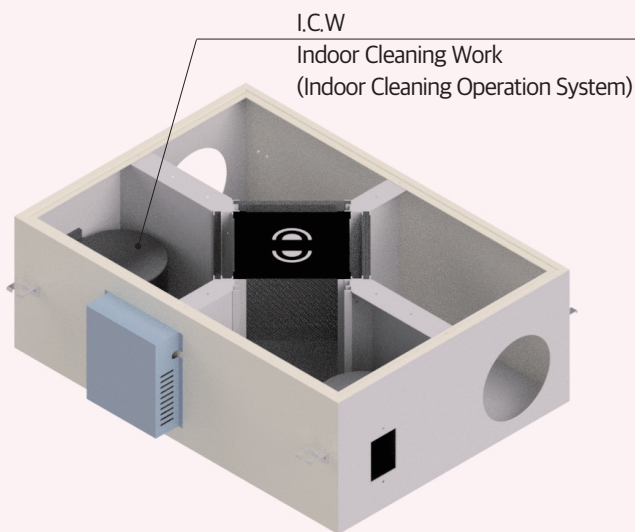
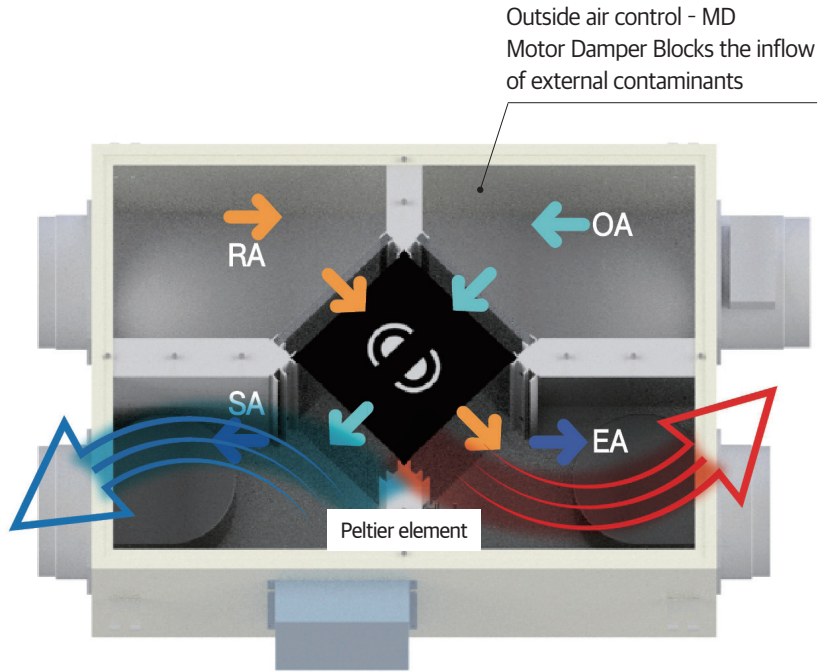
Characteristics of floor  
type/stand type heat  
recovery  
ventilation system for  
special purpose buildings

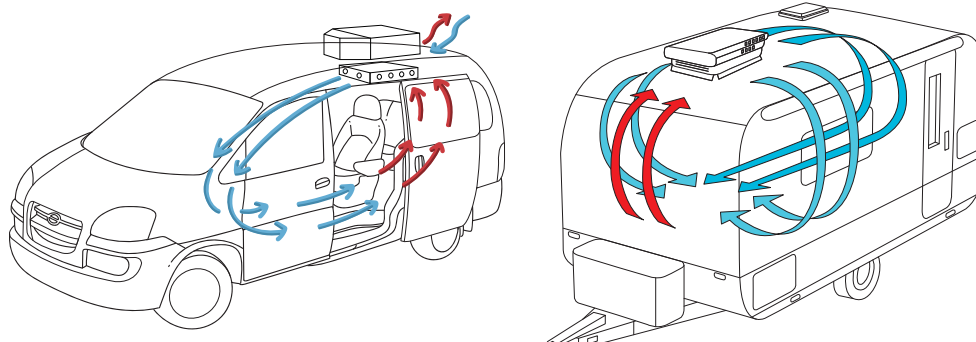
- Customized heat exchange efficiency standards(cooling 45% or more, heating 75% or more)
- 5-stage air volume control: power saving, low, medium, high, special high(based on application of negative/positive pressure operation system)
- Cleaning the inside of the device to prevent re-entry of contaminants(smell, dust) adsorbed into the device
- Application of operation function filter : PRE Filter - Carbon coated non-woven fabric filter/ Medium filter - H12 class Hepa filter
- Integrated supply/exhaust 1-hole 1/2 split duct/separate 2-hole type selectable structure Medium filter - H12 class Hepa filter
- Low-noise design that enables classroom operation
- Filter management is simpler and more convenient, adoption of two separate front doors

## Structure/Basic Specifications/Features of Roof Top Cooling Assistance Function Mounted Sensible Heat Ventilation System for Vehicle DC12V multi-seater/caravan

Sensible heat ventilation system for vehicle DC12V multi seater/caravan

- Caravan only(Rooftop mounted type, Running without power operation)
- Truck only(Rooftop mounted type, Running without power operation)





### Model specifications for DC12V multi-seater/caravan for K-AIR vehicles

Model	Air volume MAX (CMH)	Product dimension (L*H*W)	Operating control	Power consumption (w)	Power supply
KAV-8PA(caravan, truck) Peltier type	80	700*500*250	5-stage air volume control(power save, low, medium, high, special high)	300	DC12V, battery only
KAV-8AA(Caravan) Air conditioner type	80			500	
KAV-10PA(caravan, truck) Peltier type	100			350	
KAV-10PA(caravan, truck) Peltier type	100			550	

### Basic operation function of DC12V multi-passenger/caravan model for K-AIR vehicles

Operating status	Driving status
Equipment initial operation(power on) ICW/P.D.T(Indoor Cleaning Work / Particle Down Time)	ICW Operation/EA FAN - 20 seconds of Special high Operation SA FAN - Off/ICW MD : Open/Outside air MD : Off PDT Prevention of dust inflow All OFF for 10 seconds
Negative pressure operation(exhaust priority operation) - droplet removal operation	EA FAN- Medium, High/ SA FAN - Power Saving, Low, Medium Operation
Cooling function enhancement function	Application of Peltier element : Maintains indoor temperature even during ventilation. Air conditioner mixed type : Ventilation/air conditioner operation Cooling Kcal/h : Over 2,000
Positive pressure operation(air supply priority operation) - Non-stop operation of vehicles	EA FAN - Medium, High/ SA FAN - Power Saving, Low, Medium Operation Possible
Operating with carbon dioxide reduction is possible	Enable to operate by connecting an auxiliary battery of DC12V only without engine running

### Features of DC12V multi-seater/caravan for vehicles

- Ventilation specialized products
- 5-stage air volume control : power saving, low, medium, high, special high(based on negative/positive pressure operation system application)
- Internal cleaning operation function of the device to prevent re-entry of contaminants (smell, dust) adsorbed into the device
- Filter application : PRE Filter - Carbon coated non-woven filter/Medium Filter - H12 class Hepa Filter
- Application of Peltier element : Application of cooling/heating temperature compensation function(loss temperature compensation function during ventilation)

## Structure/Basic Specifications/Features of Vehicle DC24V Bus Roof Top Type Sensible Heat Ventilation System

### Vehicle DC24V Bus Roof Top Type Sensible Heat Ventilation System

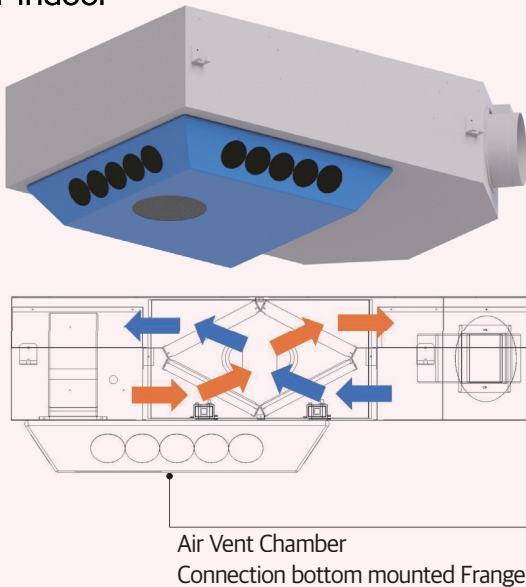
Roof Top mounted type

- Air supply/exhaust integrated type Air Ven type
- Duct Installation type

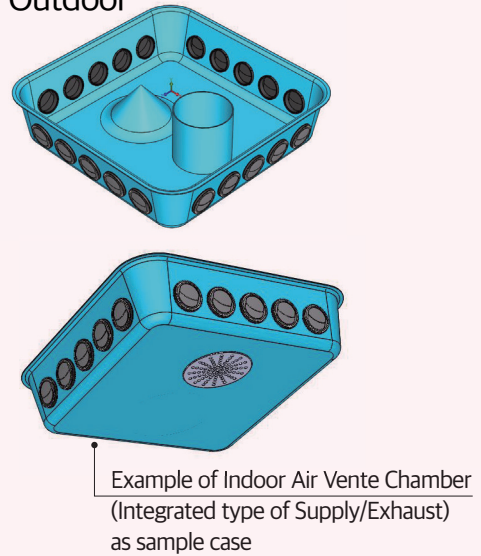
All-in-one air conditioner (under development, expected to be released in 2025)

- 28kw class
- Applied to large buses

#### I Indoor



#### I Outdoor



### Interlocking air conditioner and heater when Bus Roof Top is installed

- Expectation of cooling & heating effect of A/L heat exchanger
- Outdoor air temperature of 60 (Based on Bus Roof Top temperature) Outdoor air occupants are exposed to hot or cold air, preventing discomfort and indoor temperature rise & fall, reducing indoor/outdoor temperature difference/optimizing indoor temperature maintenance

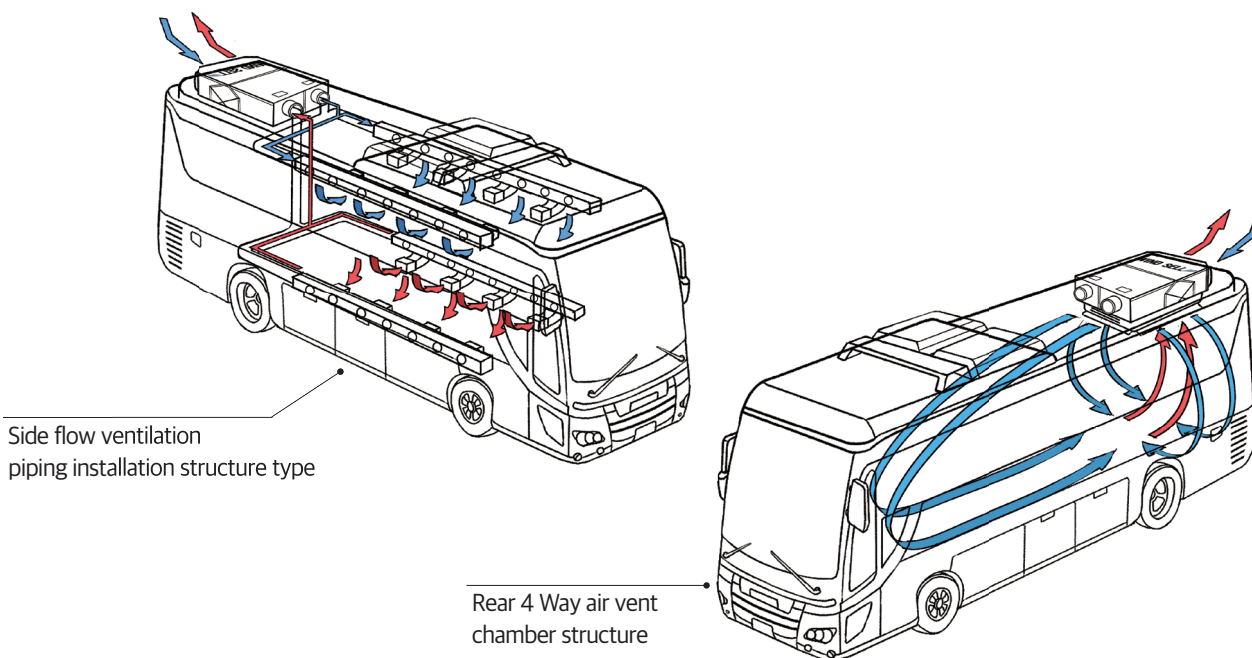


### DC24V Bus Roof Top Type Specifications for K-AIR Vehicles

Model	Air volume MAX (CMH)	Product dimensions (L*H*W)	Operating control	Power consumption (w)	Power supply
KAV-100B(Large type)	1000	900*500*200	5 ste air volume control (Power save, low, medium, high, special high)	240	DC24V
KAV-80B(Middle type)	800	500*300*150		90	
KAV-50B(Small type)	500	300*200*100		60	

### Basic operation function of DC24V bus roof top type for K-AIR vehicles

Operating status	Driving status
Equipment initial operation(power on) ICW/P.D.T door Cleaning Work/Particle Down Time)	ICW Driving/EA FAN - 20 Seconds for Special high Driving SA FAN - OFF Outdoor air MD : OFF/PDT Turn off all equipment to prevent reverse inflow of discharged dust for 10 seconds
Negative pressure operation(exhaust priority operation) - droplet removal operation	EA FAN - Medium, High/ SA FAN - Power saving, Low, Medium operation
Cooling/heating interlocking operation(heat storage operation) System operation when operating the air conditioner and heater	EA FAN - OFF/outside air MD : OFF SA FAN - Power Saving Operation(ON)/Heat Storage MD : open
Positive pressure operation(air supply priority operation) - Carbon dioxide reduction operation	EA FAN - Medium, High/ SA FAN - Power saving, Low, Medium operation
Fixed-rate ventilation operation	EA, SA FAN - Same constant air volume operation

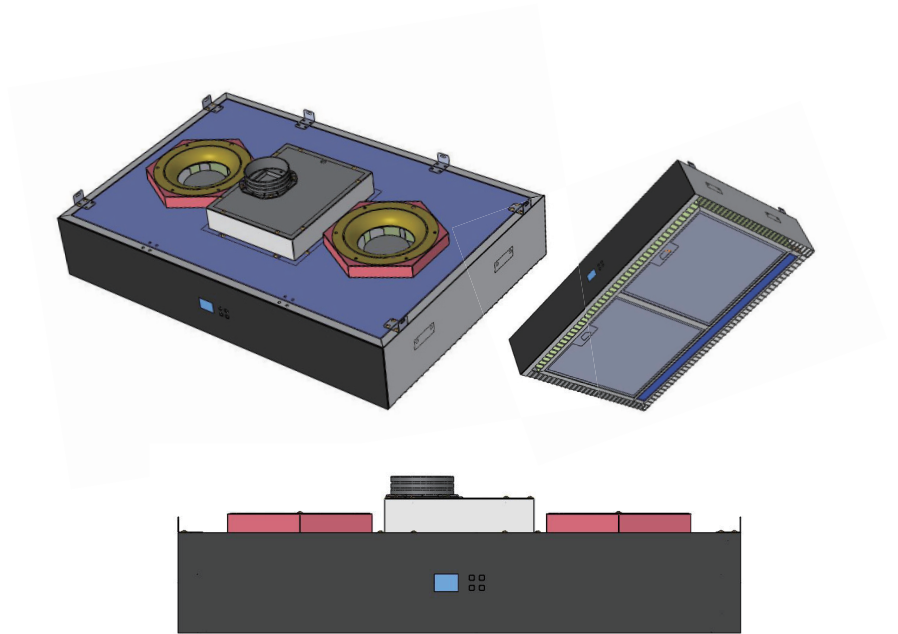


## Major R&D achievements

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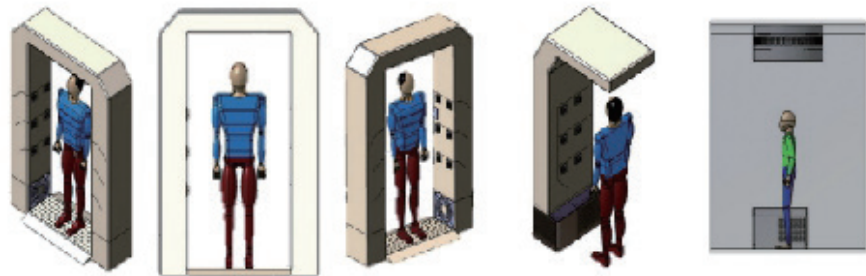
### Air Curtain Type Rang Hood

- Scheduled to be released in the first half of 2023
- Products scheduled for 2nd industrialization
- Completed development and design of 4-way air curtain type range hood
  - Premium Range Hood Kitchen & Ventilation
  - Development of interlocking operation system



### Air Brush Gate

- Scheduled to be released two models in the second half of 2023
- Products scheduled for 3rd
- To prevent adsorbed fine dust virus from entering the room, Development of various types of gate air brush concept designs is progressing



## Institutional basis for the introduction of heat recovery ventilation systems

With the spread of COVID-19, the introduction of safe ventilation methods in dense spaces is becoming more important.

### Institutional basis

- Indoor daycare centers according to the [Infant Care Act] and cooperative daycare centers [Children's Play Facility Safety Management Act] subject to application of the current law
- Added children's playground.(Article 3 of the Indoor Air Quality Management Act)
- Make it mandatory to install indoor air quality measuring devices in underground stations, disclose the results measured by measuring devices, and to operate and manage measuring devices according to standards, and to impose a fine of up to 5 million won in case of violation.(Indoor Air Quality Management Act, Article 4-7, etc.)
- Multi-use facilities mainly used by vulnerable groups such as children, the elderly, and pregnant women who are at high risk of health damage when exposed to pollutants, and more stringent air quality maintenance standards for facilities prescribed by Presidential Decree and pollutants prescribed by Presidential Decree, such as fine dust. to fix.(Indoor Air Quality Management Act, Article 5, Paragraph 2)
- Transport operators of public transportation vehicles must measure the indoor air quality of public transportation vehicles themselves or have a person specified by the Ordinance of the Ministry of Environment measure it, and in case of violation, a fine of up to 5 million won is imposed.(Indoor Air Quality Management Act, Article 9-2, etc.)
- For the Minister of Environment to maintain and manage the indoor air quality of public transportation facilities comfortably, the owners of public transportation facilities, etc. must install air purification facilities prescribed by the Ordinance of the Ministry of Environment or take other measures to manage indoor air quality; Establish air quality improvement measures for underground stations every 5 years, including plans to reduce fine dust, in consultation with the heads of related central administrative agencies and mayors and governors. to implement.(New establishment of Article 9-4 and 9-5 of the Indoor Air Quality Control Act)
- The Minister of Environment and the mayor/provincial governor or the head of a city/county governor publicizes the facilities that exceed the indoor air quality maintenance standard because of a pollution level test.(Article 13, Paragraph 7 of the Indoor Air Quality Management Act)including plans to reduce fine dust, in consultation with the heads of related central administrative agencies and mayors and governors. to implement.(New establishment of Article 9-4 and 9-5 of the Indoor Air Quality Control Act)

### Risks

- The use of air conditioners and heaters increases the risk of virus transmission by droplets in confined spaces.
- According to the WHO guide, the most dangerous place to inhale droplets from an infected person's cough or sneeze is two lines from the front and back of the infected person and both sides(Standard for airplane)
- When exposed to pollutants such as fine dust, indoors are about 1,000 times more likely to be transmitted to the lungs than outdoors.
- A room without proper ventilation can generate harmful substances and cause body fatigue, headaches, and dizziness due to an increase in carbon dioxide concentration.

### Safe ventilation, why is it necessary?

Pollutant	Main sources	Effect on the human body
Fine dust	Inflow of fine dust in the air, Fine dust generated indoors	Causes lung diseases such as silicosis and pneumoconiosis
Carbon dioxide	Human body respiration, combustion apparatus	Difficulty concentrating, drowsiness, headache(risk to health at high concentrations)
Formaldehyde	Plywood, chipboard, insulation material	Eye, skin, mucous membrane irritation, headache, nausea, etc.
Radon	Soil, stone, groundwater, building material	Induces lung cancer
Carbon monoxide	Combustion apparatus, air pollution	Very dangerous even at low concentration
Virus	Infection by droplets	Risk of spreading various viruses such as COVID-19



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Headquarters/Factory

#509, Cheonan Techno Town, 95, 2gongdan 2-ro, Seobuk-gu,  
Cheonan-si, Chungcheongnam-do

T +82) 41-555-1721 F +82) 41-555-1722 [www.ko-air.com](http://www.ko-air.com)

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