

# WHOLE HOUSE – HEAT RECOVERY UNIT Manual



This series of total heat exchange fresh air fans, with the latest European design, are molded from EPP, the latest eco-friendly material. Lighter, better insulated and quieter than traditional sheet metal models. They feature a special hexagonal heat exchange core-15% lower in height and over 8% higher in enthalpy efficiency than traditional square cores-saving over 20% energy in air.

With our optional smart control panel and multi-functional sensors, the system automatically adjusts fresh air operation based on indoor CO<sub>2</sub>, PM<sub>2.5</sub>, TVOC and other harmful gas levels and humidity, and offers interfaces to connect with intelligent constant temperature and humidity systems.

## Technical Specifications

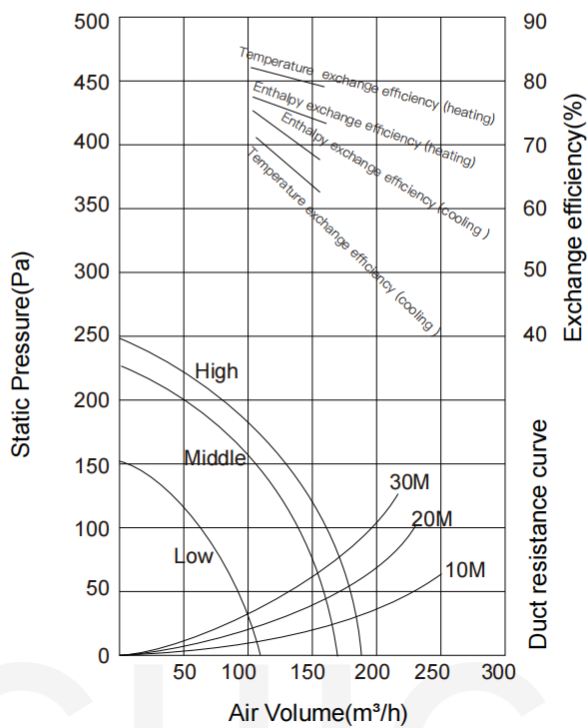
Power Supply:220VAC/50Hz

Storage Temperature: -15°C to 50°C

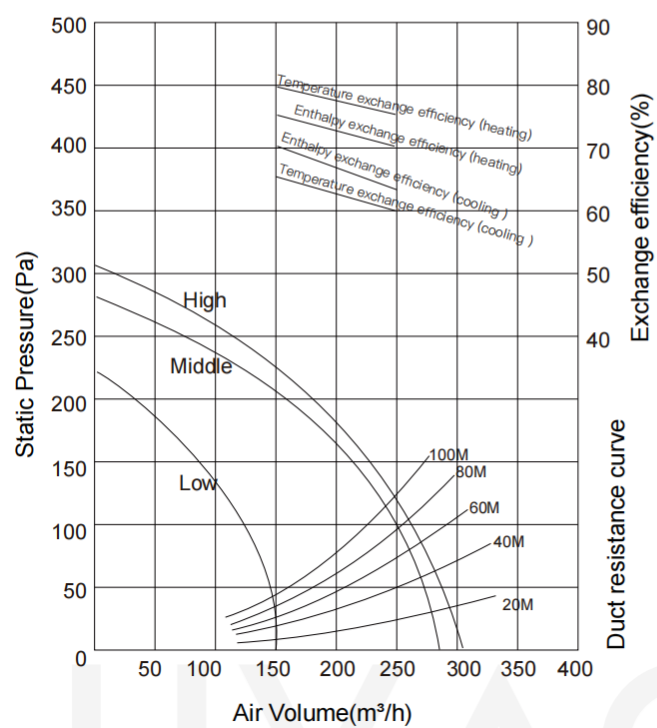
Operating Temperature: -10°C to 40°C

HEAT RECOVERY UNIT (Dual-motor, with filters)						
Performance	Model	CH-EP-150	CH-EP-250	CH-EP-350	CH-EP-250L	CH-EP-350L
Basic Performance	Static Pressure (PA)	100	120	140	110	130
	Air Volume (CMH)	150	250	350	250	350
	Noise (dB)	28	33	34	33	36
	Power (w)	98	134	190	140	200
Sensible Heat Exchange Efficiency %	Cooling	68	65	54	73	70
	Heating	80	78	75	85	83
Enthalpy Exchange Efficiency %	Cooling	70	63	56	68	65
	Heating	78	70	65	82	71
Pipe Diameter	Unit (mm)	ø125	ø125	ø150	ø125	ø150
Dimensions	Unit (mm)	650*575*260	650*575*260	1120*575*260	650*575*260	1120*575*260
Weight	Unit (kgs)	12	12.5	13	15	15.5
HEAT RECOVERY UNIT (Dual-motor DC motors, with filters)						
Performance	Model	CH-EP-150DC	CH-EP-250DC	CH-EP-350DC	CH-EP-250LDC	CH-EP-350LDC
Basic Performance	Static Pressure (PA)	100	120	140	110	130
	Air Volume (CMH)	150	250	350	250	350
	Noise (dB)	26	31	33	32	34
	Power (w)	90	120	160	130	170
Sensible Heat Exchange Efficiency %	Cooling	68	65	54	73	70
	Heating	80	78	75	85	83
Enthalpy Exchange Efficiency %	Cooling	70	63	56	68	65
	Heating	78	70	65	82	71
Pipe Diameter	Unit (mm)	ø125	ø125	ø150	ø125	ø150
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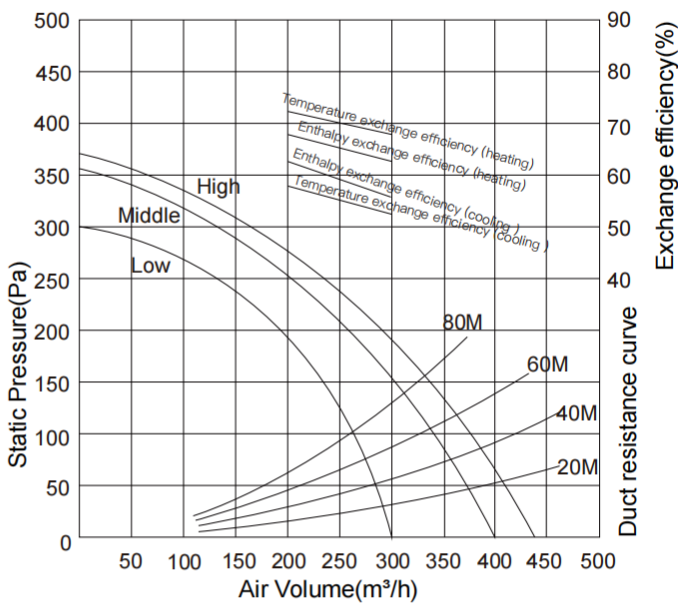
Static Pressure - Air Volume Curve



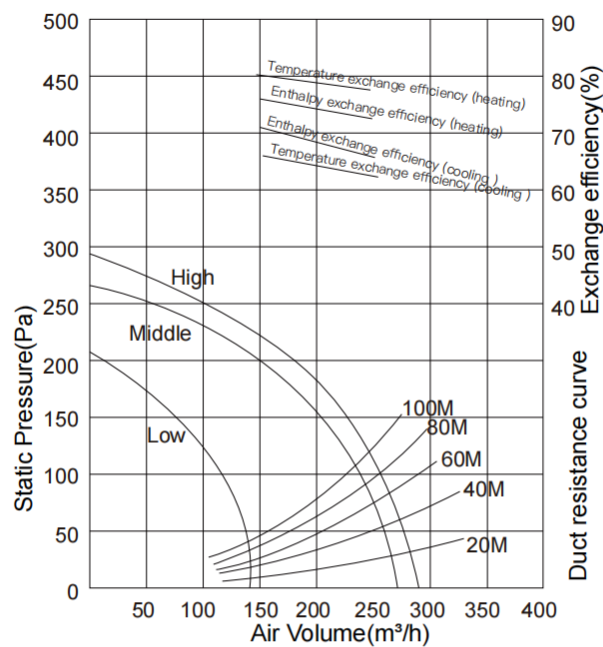
CH-EP-150/150DC



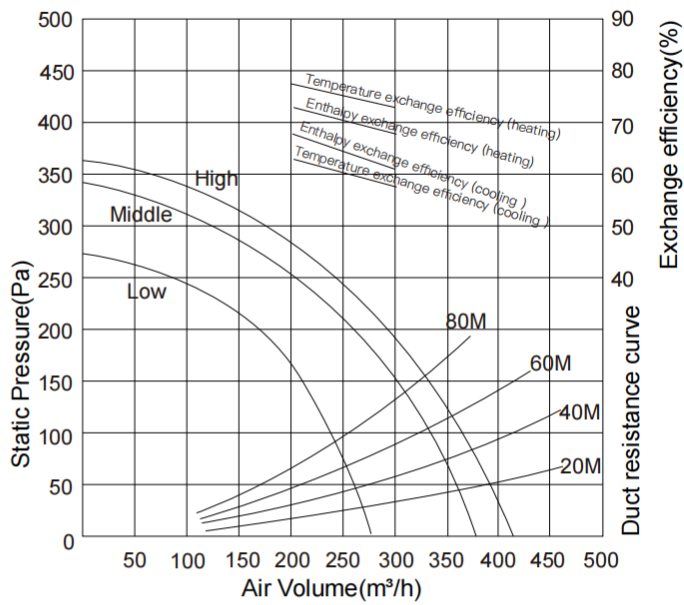
CH-EP-250/250DC



CH-EP-350/350DC



CH-EP-250L/250LDC



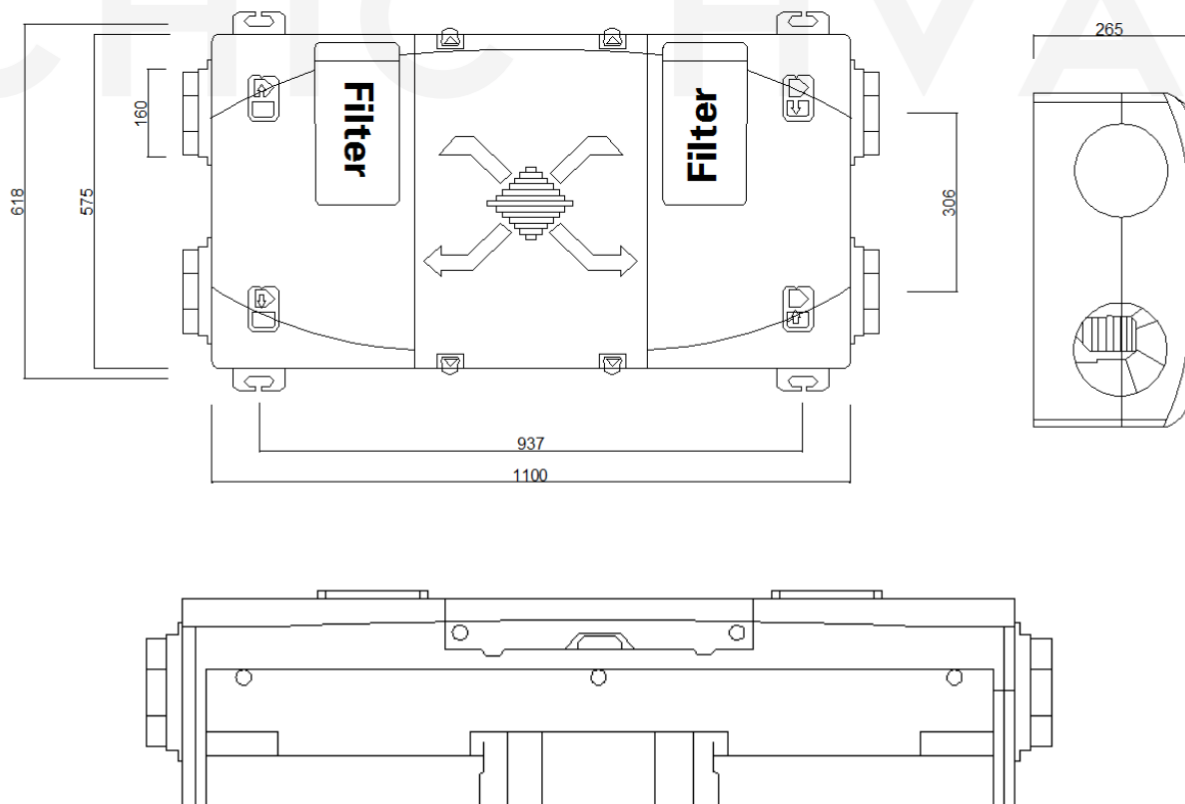
## Static Pressure - Air Volume Curve

The length of the air duct in the curve diagram corresponds to the straight pipe length when the friction coefficient  $\lambda=0.02$ .

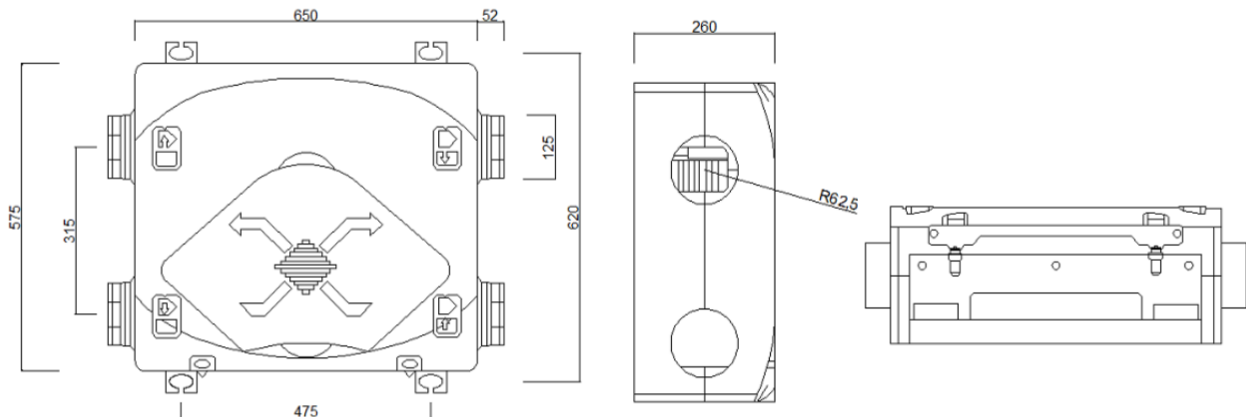
Models CH-EP150/250 are suitable for  $\Phi 125$  pipe diameter;  
Model CH-EP350 is suitable for  $\Phi 160$  pipe diameter.

## External Dimensions and Installation

### CH-EP-250L/350L, CH-EP-250L/350L-DC External Dimensions



### CH-EP-150/250/350、CH-EP-150/250/350-DC External Dimensions



## Installation and Selection

Multiple standards define fresh air volume for healthy indoor air quality. ASHRAE 62—1989 requires  $\geq 0.35$  air changes per hour (ACH) and  $\geq 15$  cfm (25 CMH) per person; Chinese standards mandate  $\geq 30$  CMH/person for living spaces. Formula:

$$\text{Fresh air (CMH)} = \text{Area (sqm)} \times \text{Net height (m)} \times \text{ACH}$$

Example: A 130-sqm apartment (2.7m net height, 0.35 ACH) needs  $130 \times 2.7 \times 0.35 = 123$  CMH → Choose Model 150 (covers 4 people's minimum needs). Note: These are minimums; account for local conditions and usage.

## Installation (Ceiling-mounted total heat exchangers)

- Keep fresh air intake & exhaust  $\geq 2$ m apart (prevent backflow).
- Install near the shortest duct run (reduce resistance).
- Add a power outlet nearby.
- Leave an access panel (front/ceiling) for maintenance.

### Duct Design:

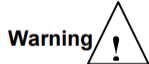
Verify duct air resistance with professionals. Follow HVAC standards: minimize duct length/bends. The system is independent; ducts can suspend from the ceiling.



1. Outdoor air intakes must not draw in combustible or harmful gases.
2. Install them where total heat exchange exhaust won't short-circuit back.
3. Fit bird/insect screens on outdoor vents.
4. Slope outdoor ducts outward during installation.

## Pre-installation Checks

- Read the manual carefully before installation.
- Non-compliance may damage the product or cause injury.
- Check labels to confirm product suitability.
- Installers must be trained, experienced technicians.
- After installation, test operation per the manual.



Electric shock hazard! Can injure people or damage equipment. Disconnect power before service.

Do not open the unit's casing – it's factory-sealed. The unit comes pre-assembled for ceiling mounting (with provided hardware), but full installation requires duct and wiring work.

## Unit Installation

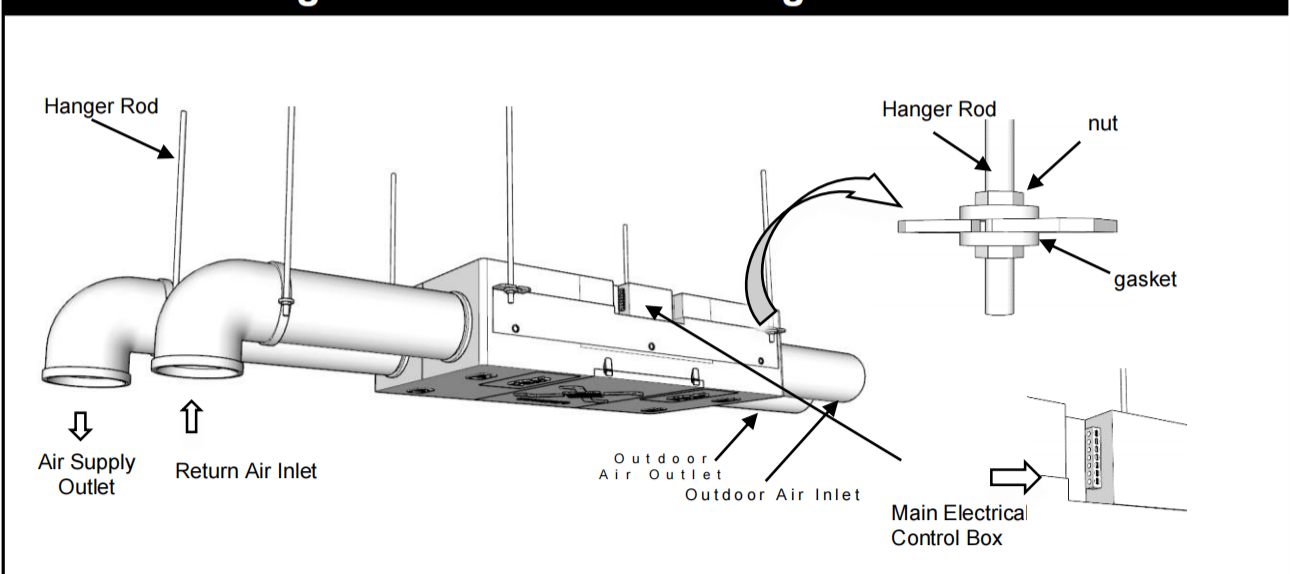
### Ceiling Mounting Requirements:

- Leave  $\geq 20\text{mm}$  space between the unit's top and the ceiling.
- Secure expansion bolts to a solid ceiling.
- Pass bolts through the unit's mounts, then fasten with hex nuts and washers.
- Adjust the unit to be level.
- Leave a service access opening near the unit in the ceiling for maintenance.



- When moving the unit, note its weight and center of gravity to avoid dropping.
- Ensure the installation location and method are rated; never use unapproved methods.
- Wear gloves during installation to prevent injury.

## Schematic Diagram of Main Unit Hoisting



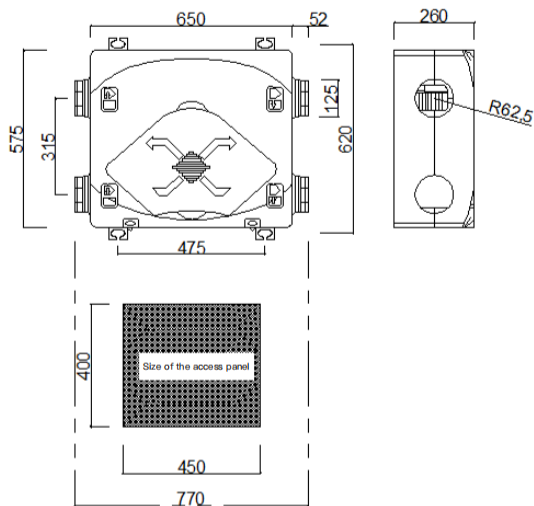
# Installation dimensions for ceiling-mounted main unit

CH-EP-150/250

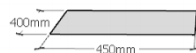
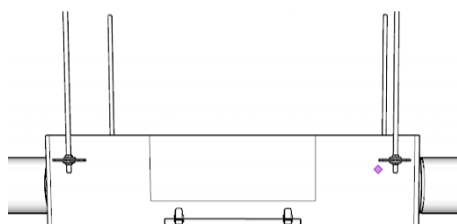
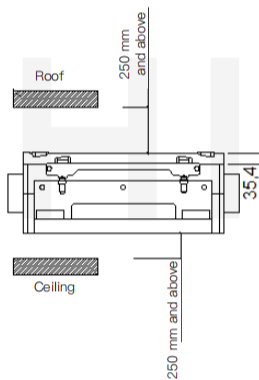
CH-EP-150/250-DC

CH-EP-250L/350L

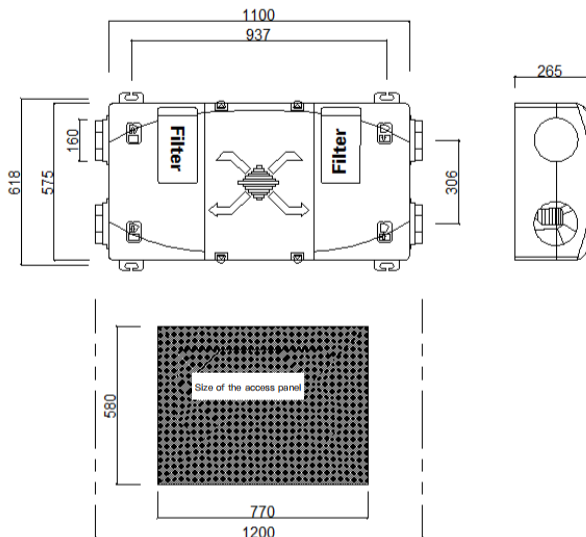
CH-EP-250L/350L-DC



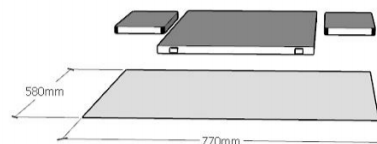
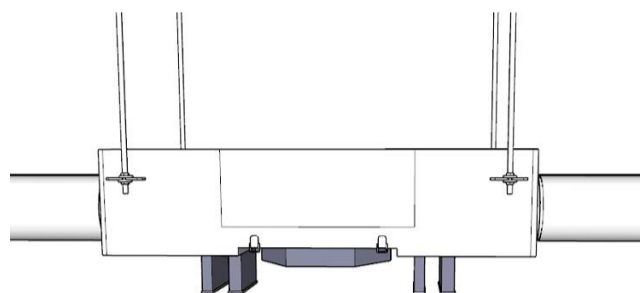
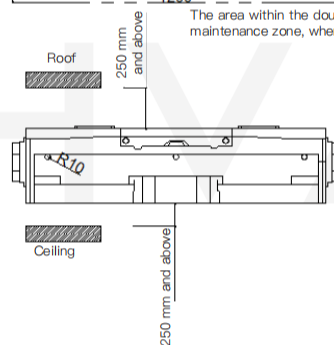
The area within the double-dot dash line is a reserved maintenance zone, where no other facilities shall be installed.



Access panel



The area within the double-dot dash line is a reserved maintenance zone, where no other facilities shall be installed.



Access panel





Prohibit

Keep from liquids/conductive dust.  
Don't use wet hands to operate.  
Avoid high-humidity/explosion-proof environments.  
Wire strictly as per the electrical diagram.

## Maintenance

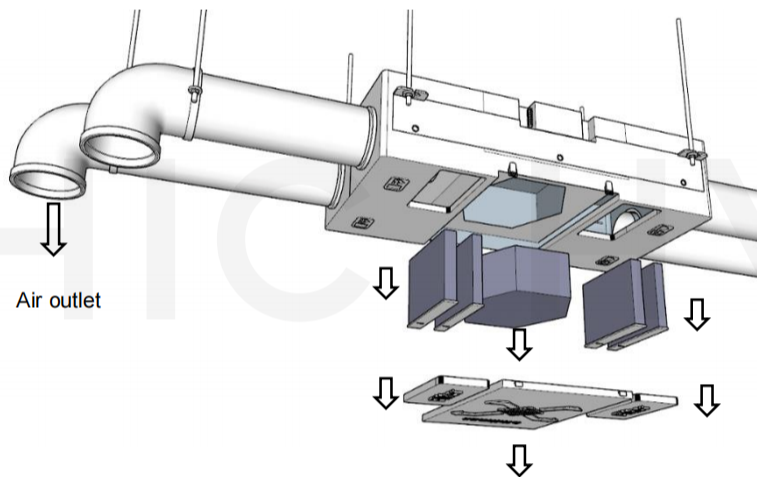
Power off before cleaning.

Open the access panel, carefully pull out the heat exchanger core. Remove the filter; clean it with neutral detergent (water).

Vacuum dust from the heat exchanger core.

Don't clean the filter in reverse (to prevent dust from entering the core). Filter

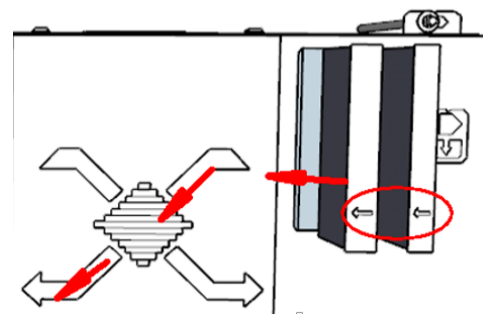
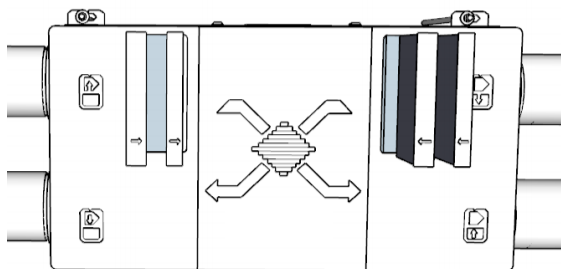
Replacement:



Remove the "filter" cover, pull down the air filter. Replace it with the same-model filter for effective filtration.



**Check the airflow direction**  
(marked on the filter bottom; match the cabinet's label).





# WARNING



**Power Off During Maintenance**  
Turn off the controller switch  
before maintenance.  
Risk of electric shock.



**Use gloves during maintenance.**  
Cuts, protrusions, and sharp  
edges on sheet metal and resin  
parts may cause injury.



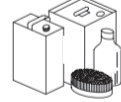
**When removing the access panel  
for maintenance, take care to  
avoid it dropping.**  
Risk of injury from falling panels



**Prohibit**

**Do not use volatile oils or metal  
brushes to clean the HEPA filter.**

May damage the filter,  
allowing debris/dust  
into the room or eyes.



# CHIC HVAC

## Regarding Disclaimer

**Our company shall not be liable for accidents or damages caused by improper installation or use.**

Due to the need for continuous product improvement, our company reserves the right to change product performance and functions without prior notice.