



INSTALLATION MANUAL

Total Heat Exchanger Heat Reclaim Ventilator

MODELS

(Ceiling-mounted Duct type)

VAM150HRVE6

VAM250HRVE6

Heat Reclaim Ventilator

Heat Reclaim Ventilator

Please read this installation manual carefully and install the unit properly to keep it at full capacity for a long time.

Please provide some necessary parts, for example round hoods, air suction/discharge grilles etc., before the installation of the unit.

INSTALLATION MANUAL - (Ceiling Mounted Duct Type)

Be sure to read this installation manual before commencing installation and perform installation work according to the manual.

VAM150-250HRVE6

Please read these "Safety Precautions" carefully and install the unit properly.

- The precautions described in this document are divided into the following two types. Be sure to follow all the important safety precautions below.

⚠ WARNING	Indicates a potentially hazardous situation that could result in death or severe injury if not avoided.
⚠ CAUTION	Indicates a potentially hazardous situation that, if not avoided, may result in personal injury or property damage, which may lead to severe consequences depending on the circumstances.

- After the installation is completed, perform a test run and check that the unit operates properly. Give the user adequate instructions concerning the use and cleaning of the unit according to the Operation Manual. Inform the user to keep this manual and the Operation Manual together in a handy place for future reference.

⚠ WARNING

Ask your local dealer or qualified personnel to carry out installation work. Do not attempt to install the unit by yourself. Improper installation may result in water leakage, electric shock, or fire.

Installation should be carried out following the installation manual, and no changes should be made to the unit. Improper installation may result in water leakage, electric shock, or fire.

Be sure to use only the specified parts and accessories for installation work. Failure to use the specified parts may result in the unit falling over, water leakage, electric shock, fire, etc.

Install the unit according to this installation manual on a foundation that can withstand its mass. Insufficient strength or improper installation may result in the unit falling over and causing injury.

Carry out the specified installation work in consideration of strong winds such as typhoons or earthquakes. Improper installation may result in an accident due to causes such as the unit falling over.

Do not allow exhaust air to enter the outside air intake vent directly. This may cause the air of the room to become contaminated, resulting in harm to the health.

Locate the outside air intake vent so that it does not take in exhaust air which contains combustion gas, etc. Incorrect installation may cause a loss of oxygen in the room, which may lead to an accident.

Electrical work should be done by a qualified electrician according to the installation instructions. Be sure to use a dedicated circuit and do not add wires. Insufficient power supply circuit capacity or improper construction may cause electric shock or fire.

Earth the unit. Do not connect the earth wire to gas pipes, water pipes, lightning rods, or telephone earth wires. Incomplete earthing may cause electric shock or fire.

Install a circuit breaker. Failure to install a circuit breaker may result in electric shock or fire.

Disconnect the power supply before touching any electric parts. Touching a live part may result in electric shock.

Make sure that all wiring is securely connected to the respective terminal, using the specified wires and ensuring that external forces do not act on the terminal. Incomplete connection or fixing may cause overheating of the terminal or fire.

When connecting the power supply wiring, remote controller wiring, or transmission wiring, form the wiring orderly so that the electrical component box lid or other structures can be securely attached. If the lid is not attached completely, electric shock or fire may result.

⚠ CAUTION

Install the main unit and its power supply wiring, transmission wiring, and remote controller wiring at least 1 meter away from televisions or radios. This is to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter may not be sufficient to eliminate the noise.)

Install the outdoor ducts towards outside with a downward slope to prevent entry of rainwater. If this is not done completely, water may enter into indoor spaces and damage furniture, etc.

Insulate the outdoor ducts to prevent condensation. If this is not done completely, water may enter into indoor spaces and damage furniture, etc.

Insulate the duct and the wall electrically when a metal duct is passed through a metal lattice, wire lattice, or metal lining of a wooden structure. Failure to do so may cause electric shock or fire.

Ensure that the temperature and humidity of the installation site are within the operating temperature/humidity range of the unit. Do not install the unit in a low-temperature chamber such as a refrigerator or at a heated swimming pool. Failure to do so may cause electric shock or fire.

Do not install the unit in places such as the following:

- Place subjected to high temperature or direct flame. Overheat or fire may result.
- Where there is mist of oil, oil spray, or vapor, for example, a kitchen. Fire may result.
- Where toxic gas from acid, alkaline, organic solvents or coating, or corrosive gas is produced, for example, a machinery or chemical plant. Gas poisoning or fire may result.
- Place subject to high humidity. Electric shock or electrical leakage may result.
- Where there is machinery that emits electromagnetic waves. Electromagnetic waves may disturb the control system and cause malfunction of the unit.
- Where flammable gases may leak, where carbon fiber or ignitable dust is suspended in the air or where volatile flammables, such as thinner or gasoline, are handled. If the gas should leak and remain around the unit, it may cause ignition.

Notes

- Give the user adequate instructions concerning the unit's proper operation (especially cleaning air filter and heat exchange elements and operating the unit) by letting the customer operate the air conditioner while referring to the operation manual.
- Do not use the unit in a place where the air contains high levels of salt, such as that near the ocean, or where voltage fluctuates greatly, such as in factories and vehicles or vessels.

Checking accessories

Check that the accessories in the table below are included with your unit.

<Note>

Do not dispose of any parts necessary for installation until the installation is completed.

Name	① Duct connector	② Screw for mounting duct connecting screws	③ Clamp	④ For mounting duct connector Screw quantity	Number of screws
Supplied Quantity	4 pcs.	24 pcs.	8 pcs.	Model names	Number
Usage Quantity	4 pcs.	Right table	7 pcs.	VAM150HRVE6	16pcs.
Shape				VAM250HRVE6	

Optional accessories

- When installing this unit, prepare all components required for installation, such as the optional remote controller, outdoor hood, and intake/exhaust grill. For selection of optional accessories, refer to the general catalog (for designers/construction personnel).

(1) Items to be checked after completion of installation work

Pay extra attention to the contents listed below and check again after the installation work is completed.

Items to be checked	If not correctly done, what is likely to occur	Check column
Is the main unit installed firmly?	The unit may drop, vibrate, or make noise	
Is the outdoor duct installed to outside with a downward slope?	Condensate water may drip, electric shock or fire may occur	
Is the duct fully insulated?	Condensate water may drip	
Does the power supply voltage correspond to that shown on the nameplate?	The unit may malfunction, or the components may burn out	
Are all wirings correct?	The unit may malfunction, or the components may burn out	
Is the unit safely grounded?	Electric shock or fire may occur in the event of electric leakage	
Are wiring sizes according to the specifications?	The unit may malfunction, or the components may burn out	
Are wiring connections not loose?	Electric shock or fire may occur	
Make sure that the insulation resistance value is 1MΩ or greater. • Use a 500V mega tester for insulation measurement. • Do not use a mega tester for low voltage circuits.	Electric shock or fire may occur	
Is something blocking the air outlet or inlet?	Insufficient ventilation or noise may occur	

Please check all items listed in the "Safety Precautions" on the left once again.

(2) Items to be checked at the time of delivery

Items to be checked	Check
Did you explain about the operations while showing the operation manual to your customer?	
Did you hand the operation manual, installation manual, and warranty card over to your customer?	

Points for explanation about operations

- In addition to the general operations, you need to explain the items marked with ⚠ WARNING or ⚠ CAUTION in the operation manual since they are items that could lead to physical injury or property damage. You also need to ask your customer to read them carefully.

VAM150-250HRVE6

1 BEFORE INSTALLATION

Do not dispose of any parts necessary for installation until the installation is completed.
After bringing in the unit, protect it with packing materials to prevent damage and scratches until installation work is commenced.

- (1) Decide on the transportation route.
- (2) Leave the unit inside its packaging while moving until reaching the installation site. Where unpacking is unavoidable, protect the unit with protective plates etc. to avoid damage or scratches to the unit.

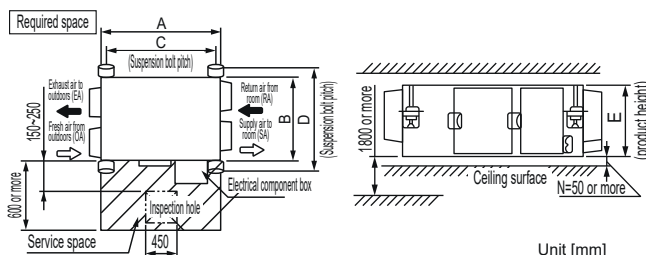
<CAUTION>

- Hold the lifting lug (4 locations) when moving the unit during or after the unpacking.
- Do not apply force to other parts (especially to the electrical component box, air intake, air outlet, and duct connector).

2 SELECTING INSTALLATION SITE

If the temperature and humidity inside the ceiling exceed 30°C or RH80%, apply additional insulation materials to the main unit. Refer to engineering data for operating areas.
Use glass wool or polyethylene foam as insulation not thicker than 10 mm and fits inside the ceiling opening.

- (1) Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.
 - Location with sufficient strength and stability (beams, ceiling, and other locations capable of fully supporting the weight of the unit). Insufficient strength may result in the unit falling over and causing injury. It may also cause vibration and unusual noise.
 - Where nothing blocks air passage.
 - Where the unit is not in direct contact with the ceiling or wall. If the unit is in contact with the ceiling or wall, it can cause vibration.
 - Where sufficient service space and space for duct connection can be secured. For duct connection, refer to the **5 DUCT CONNECTION**.
 - Where the unit is not in direct contact with the ceiling or wall.
 - Where ceiling materials are present (this unit can be installed only above the ceiling). In the absence of ceiling materials, the unit may make noise in quiet places.
- (2) If the unit intakes foggy, misty, or humid air, water droplets will drip from the air filter or heat exchange element, causing water leakage or failure. If the room is under negative pressure or if there is a strong outside wind, the unit may intake outside air even when the unit is not in operation. In such cases, install an electric shutter, etc., to prevent outside air from coming in.
- (3) Suspension bolts are used for installation. Check whether the installation location can withstand the weight of the main unit and, if necessary, reinforce the location with beams, etc., before installing the unit.



	Unit [mm]				
Model Names	A	B	C	D	E
VAM150HRVE6	810	551	759	651	278
VAM250HRVE6					

<CAUTION>

- When exhausting into a common duct, it is compulsory to use a fire-protection device pursuant to the Order for Enforcement of the Building Standards Act. To comply with this legislation, a 2m steel plate rising duct or a backflow prevention damper must be attached.

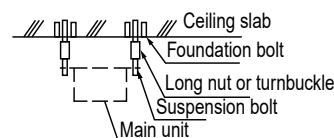
<CAUTION>

- For N dimension, secure the space for downward slope of at least 1/30 necessary for the outdoor duct to be connected. (Refer to **5 DUCT CONNECTION**.)
- Service space is necessary for maintenance (cleaning) of the filters and for servicing of the various parts. Be sure to provide inspection holes and service space.

3 PREPARATIONS BEFORE INSTALLATION

- (1) Confirm the positional relationship between the main unit. Be sure to provide maintenance space for maintenance and inspection of the air filters, heat exchange element, and blower. (Refer to **2 SELECTING INSTALLATION SITE**.)
- (2) Make sure the range of the unit's external static pressure is not exceeded. (See the fan characteristics and engineering data for the range of the external static pressure setting.)
- (3) Open the installation hole in case of pre-set ceilings. Route the power supply wiring, remote controller wiring, and transmission wiring up to the wiring opening on the main unit. (Refer to **6 ELECTRICAL WIRING WORK**.) After cutting the ceiling hole, make sure the ceiling is level. It might be necessary to reinforce the ceiling frame to prevent the ceiling from shaking. Consult an architect or interior designer for details.
- (4) Install the suspension bolts. (Use M10 to M12 suspension bolts.) Use hole-in anchors for existing ceilings, embedded inserts, or embedded foundation bolts for new ceilings to ensure that the ceiling can withstand the unit's weight. Also, adjust the length to the ceiling surface in advance. (Refer to Fig. 1)

Fig. 1



Note) All the above parts are locally procured.

4 INSTALLATION METHOD

<Be sure to use only the specified parts and accessories for facility construction.>

- (1) Install the unit temporarily.
 - Attach the lifting lug to the suspension bolt. Be sure to fix it securely by using nuts (M10, M12) and washers (M10 with external dia. 30 to 34 mm, M12 with external dia. 32 to 37 mm) (locally procured) from the upper and lower sides of the lifting lug. (Refer to Fig. 2)
 - Install the unit after checking the indoor (SA/RA) and outdoor (EA/OA) sides on the duct layout against the nameplate.

⚠ WARNING

Do not insert any part or component between the lifting lug and lifting lug washer.

- (2) Adjust the height of the unit.
- (3) Use a level to make sure that the unit is level.
- (4) Tighten the upper nut to fix the main unit in place.
- (5) Attach the duct connector 1 (accessory) with the screw 2 (accessory) to the indoor and outdoor sides (4 locations each). When attaching, make sure the alignment marking on the main unit matches up with the triangle ▽ on the duct connector. (Refer to Fig. 3)
- (6) Remove the maintenance cover, and remove the tape from the air filter and heat exchange element.
- (7) Attach the maintenance cover.

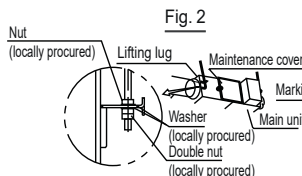


Fig. 2

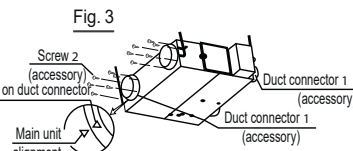


Fig. 3

⚠ WARNING

Install the unit in a location that can adequately withstand its mass. Insufficient strength may result in the indoor unit falling over and causing injury.
• Refer to the "Guidelines for the Seismic Design and Construction of Building Equipment" (Building Center of Japan) for information on the seismic performance of equipment.

<CAUTION>

Be sure to use the provided screws for the duct connector. Failure to use the provided screws could cause screws to contact internal parts, resulting in lower performance.

5 DUCT CONNECTION

Follow the instructions below to connect ducts.

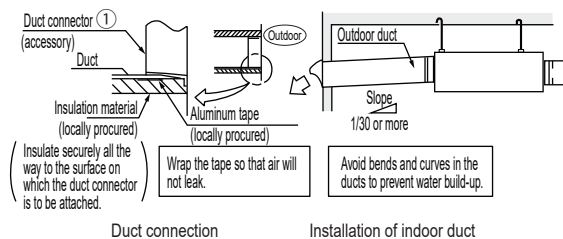
- Use the duct applicable to the model of the unit used.
- Do not connect ducts as shown in the figure on the right (Examples of prohibited duct connection).
- Follow the minimum bending radius for flexible ducts specified in the catalog of the flexible ducts used.
- To prevent air leakage, wind aluminum tape around the section after the duct connector and the duct are connected ①.
- Be sure to insulate the ducts and duct connectors ① (accessory) to prevent condensation. (Material: Glass wool of at least 25mm thickness).

In cold areas where outside temperature falls below -10°C , provide insulation for the indoor duct (SA) to prevent condensation.

- If the level of temperature and humidity inside the ceiling is constantly high, be sure to install ventilation equipment inside the ceiling.
- Install the two outdoor ducts (intake and exhaust) with a downward slope (slope of 1/30 or more) to prevent entry of rainwater.
- Insulate the duct and the wall electrically when a metal duct is passed through a metal lattice, wire lattice, or metal lining of a wooden structure.
- Do not use a bent cap or a round hood as the outdoor hood because it might get wet in rain directly.
In this case, we recommend using a deep hood (optional accessory).
- When using a deep hood, make sure the duct from the deep hood (outer wall) to the unit is at least 1m long.
- Set the pitch between the exhaust air outlet (EA) and the outside air intake (OA) on external wall to 3 times the duct diameter.
- If windows and road lighting equipment are close to the air intake (OA) of suburban buildings and insects tend to swarm around the light, minute insects intruding from outside air intake (OA) may enter into indoor spaces through the air filter.
In such cases, consider full-scale anti-insect measures, such as a filter box (to be locally procured), in the design stage.
- Attach the indoor air exhaust grill (SA) and the indoor air intake grill (RA) in a location where short circuit will not occur.
- Using flexible or silent ducts as the duct to be connected to the indoor air outlet (SA) can be effective in reducing air exhaust noise.
Select materials considering the fan speed required for the unit's application and noise/sound levels. Refer to the technical documentation for the selection of material.
- Be sure to locate the indoor air supply grille (SA) and the indoor exhaust air grille (RA) in the same living space.
Locating them in different living spaces can cause noises coming from the gap in the door or smells moving between sections. It can also cause the doors to open and close by themselves or make the door difficult to close.

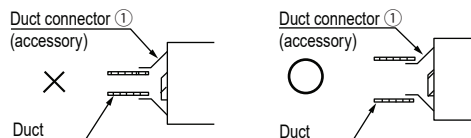
Extreme bend	Multi bend	Significantly reduce the diameter of the connection duct. (Reduce the duct diameter halfway)	A bend right next to the opening for duct connection.

Examples of prohibited duct connection



<CAUTION>

Do not connect the duct to the inside of the duct connector ① (accessory). This may cause reduced fan speed, unusual noise, or failure of the fan motor.



6 ELECTRIC WIRING WORK

- Shut off the power before doing any work.
- All field supplied parts and materials, electric works must conform to local codes.
- Use copper wire only.
- All wiring must be performed by an authorized electrician.
- See also the "Electrical Wiring Diagram label" attached to the electric parts box lid when laying electrical wiring.
- Wire the remote controller as shown in the electric wiring diagram label. See the "Remote Controller Installation Manual" for details on how to install and lay the wiring for the remote controller.
- Install a wiring interrupter or ground-fault circuit interrupter for the power wiring.
- Make sure the ground resistance is no greater than 100 Ω . This value can be as high as 500 Ω when using a ground fault circuit interrupter since the protective ground resistance can be applied.
- Do not let the ground wire should come in contact with gas pipes, water pipes, lighting rods, or telephone ground wires.
 - Gas pipes: gas leaks can cause explosions and fire.
 - Water pipes: cannot be grounded if hard vinyl pipes are used.
 - Telephone ground and lightning rods: the ground potential when struck by lightning gets extremely high.
- Do not turn on the power supply (wiring interrupter or ground-fault circuit interrupter) until all other work is done.

⚠ CAUTION

Before obtaining access to terminal devices, all power supply circuits must be interrupted.

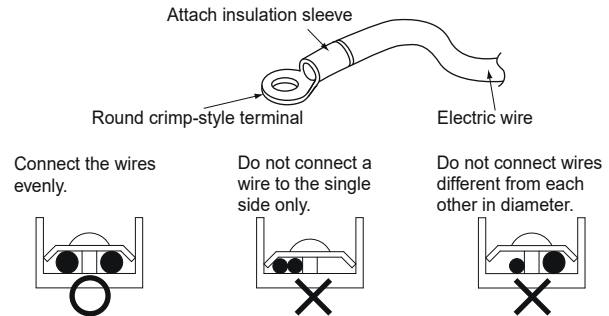
6-1 PRECAUTIONS WHEN LAYING POWER SUPPLY WIRING

[PRECAUTION]

1. A circuit breaker capable of shutting down power supply to the entire system must be installed.
2. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
3. Fit the power supply wiring of each unit with a switch and fuse as shown in the drawing.
4. Be sure to give the electric grounding (earth) connection. Do not use solid conductor in the wiring of earth terminal.
5. Tightening torque for the terminal screws.
 - Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
 - If the terminal screws are tightened too hard, screws might be damaged.
 - Refer to the table below for the tightening torque of the terminal screws.

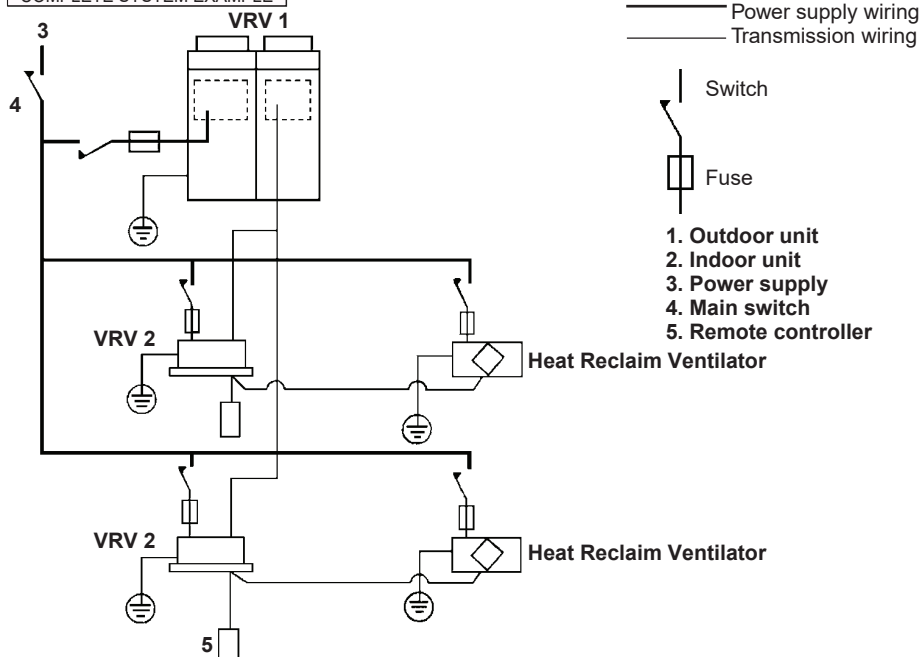
	Tightening torque (N·m)
Terminal block for remote controller/Transmission wiring (X2M)	0.79 – 0.97
Power supply terminal block (X1M)	1.18 – 1.44
Ground terminal (M4)	1.44 – 1.94

6. Connect round crimp-style terminals provided with insulation sleeves to the terminal block for power supply. Be sure to follow the instructions provided below if the specified terminals cannot be used. **Otherwise, abnormal heat may be generated as a result of the loosening of the wires.**



7. Do not connect wires of different gauge to the same grounding terminal. Looseness in the connection may deteriorate protection.
8. Keep the power supply wiring distant from other wires to prevent noise.

COMPLETE SYSTEM EXAMPLE



1. Component electrical specifications

Model	Voltage range 50Hz	POWER SUPPLY		FM	
		MCA	MFA	kW	FLA
VAM150HRVE6	POWER SUPPLY MAX.264V MIN.198V	0.76	15	0.03×2	0.61
VAM250HRVE6		1.01	15	0.03×2	0.81

Symbol) MCA: Min. Circuit Amps (A) MFA: Max. Fuse Amps (A)
 KW: Motor Rated Output (kW)
 FLA: Full Load Amps (A)

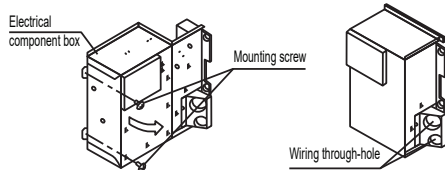
NOTE: For details, refer to ELECTRICAL DATA.

2. Specifications for field supplied fuses and wire

Model	Power supply			Transmission wiring	
	Field supplied fuses	Wire	Size	Wire	Size
VAM150HRVE6	15A	H07RN-F	2.5mm ² (Table 11 IEC 60335 -1), wire must comply with local codes	Shield wire (2 wire)	0.75-1.25 mm ²
VAM250HRVE6					

6-2 Wiring Connection Method

- (1) Remove 2 mounting screws of the electrical component box to open it.
- (2) Perform installation of remote controller and power supply wiring.
Fix the power supply wiring, earth wires, and transmission wiring (signal line and remote controller) securely in place with the clamp ③ (accessory) as shown in the figure on the right.



- (3) When closing the electrical component box, make sure that the cover catches no wire, and then fix it securely with 2 mounting screws.

⚠ WARNING

Form the wiring orderly so that the electrical component box can be securely attached. Electric wires that got pinched or the electrical component box that does not sit properly may cause electric shock or fire.

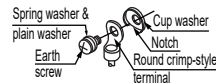
<Connecting power supply wiring and earth wires>

- Pass the power supply wiring and the earth wires through the wiring through-hole (upper) into the electrical component box, as shown in the figure on the right.

- Connect the power supply wiring to the terminal block (X1M).

- Connect the earth wires to the earth terminals.

Take out the earth wire from the notch of the cup washer and lay the wire carefully so that the washer will not catch other wires.



Otherwise, the earth wire may not contact sufficiently, and the earthing effect of the wire may be lost.

Route the wiring so the earth wire and the round crimp-style terminal will not come off of the sheet metal as shown in the figure on the right.

If the power supply wiring, earth wire, and round crimp-style terminal come off the sheet metal, they may contact the connector when the electrical box is closed, resulting in damage.

- Fix the power supply wiring and earth wires securely to the resin clamps ① (2 locations) with the clamp ③ (accessory). (Enlarged view - 1)

<Connecting remote controller wiring and transmission wiring (low voltage)>

- See the "Remote Controller Installation Manual" that comes with the remote controller for details on installation of and wiring for the remote controller.
- Pass the remote controller wiring and the transmission wiring through the wiring through-hole (lower) into the electrical component box, as shown in the figure on the right.
- Connect the remote controller wiring to [P1/P2] and the transmission wiring to [F1 / F2] of the terminal block (X1M), respectively. (No polarity: Enlarged view - 2)
- Fix the power supply wiring and earth wires securely to the resin clamps ② (1 locations) with the clamp ③ (accessory). (Enlarged view - 1)

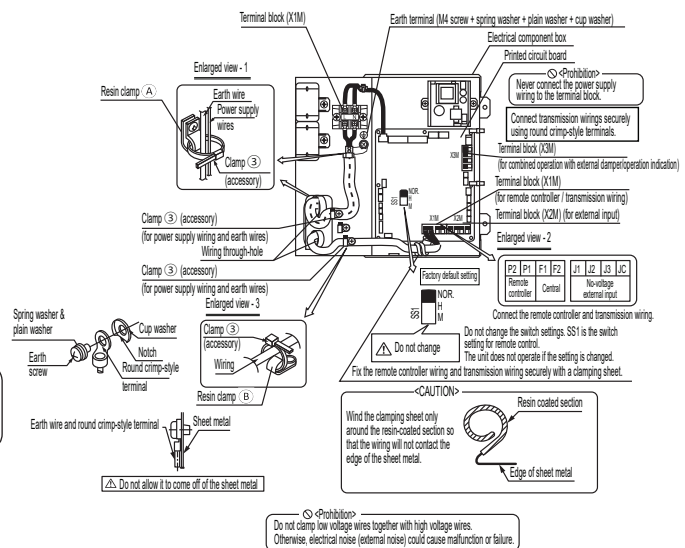
<CAUTION>

- Make sure that all wiring is securely connected to the respective terminal, using the specified wires, and the sheath section is fixed with a provided clamp, ensuring that external forces do not act on the terminal.
- Use the correct screwdriver for tightening the terminal screws. If the screwdriver's blade is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, the screws might be damaged.

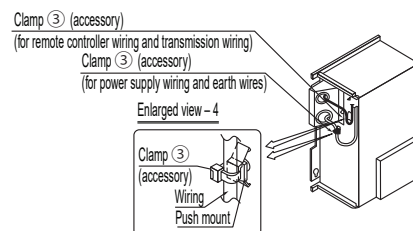
Refer to the table below for the tightening torque of the terminal screws.

	Tightening torque (N·m)
Earth terminal (M4)	1.69±0.25
Terminal block (X1M, X2M, X3M) (M3.5)	0.8±0.08

- When installing the unit upside down, fix the external wiring (power supply wiring, earth wires, remote control wiring, and transmission wiring) to the push mounts (1 location each) with the clamp ③ (accessory) as shown in the figure on the right. (Enlarged view - 4)
Condensation water may enter the electrical component box and cause a failure.



《 In case of reverse installation 》



6-3 Wiring Examples

Examples of wiring for each system are shown below.

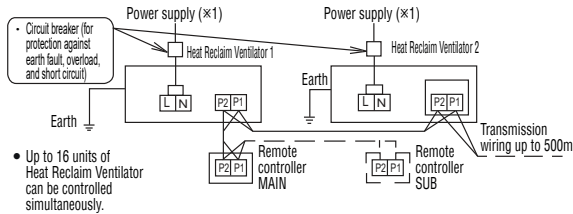
- Remote controller wiring and transmission wiring are not polarized.

⚠ WARNING

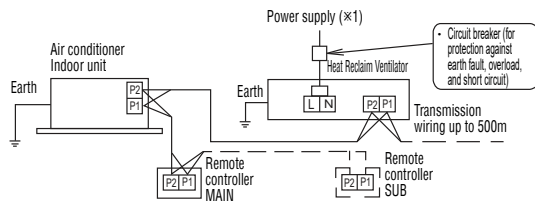
Install a circuit breaker.

Failure to install a circuit breaker may result in electric shock or fire.

For Independent System



Combined operation system with air conditioner



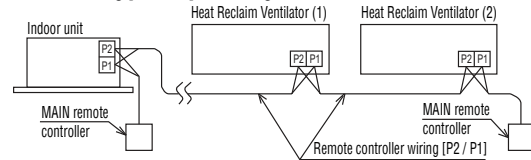
For control by 2 remote controllers (Controlling 1 group by 2 remote controllers)

- When using 2 remote controllers, one must be set to "MAIN" and the other must be set to "secondary".
- <MAIN/SUB change over method>
Refer to the installation manual of the remote controller. (Factory default setting is "MAIN".)
- <Wiring method>

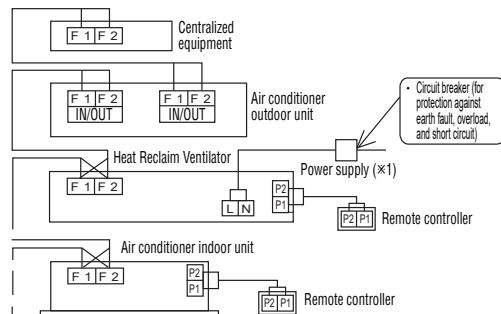
6-2 Wiring Connection

Method

Connect the SUB remote controller to the device at the end of the remote controller wiring [P2 / P1] according to



For central control



- If control is performed with a central device (such as central controller), a group number needs to be set with the remote controller. See the manual of each central device for details.
- Even when the central device is used for controls, you still use the remote controller to change field settings. Install the remote controller in an operable location.

For remote operations

- Remote operation can be performed by connecting the external input (Input A) to terminals J1, J2, and JC of the terminal block (X2M).

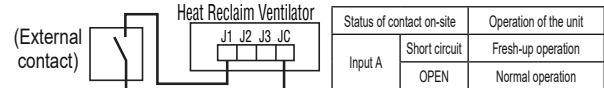
Wire type	Sheathed vinyl cord or cable (2 wire)
Wire size	0.75-1.25mm ²
Wire length	Max. 50m
Specifications for external contact	Contact that can open and close minimum load DC12V, 1mA

Model Name	VAM150HRVE6 VAM250HRVE6
Power supply (×1)	1-phase 220-240V 50Hz

(1) Fresh-up operation

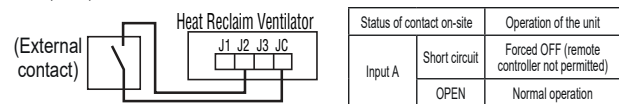
Supply air volume can be set at a higher level than the exhaust air (Supply Fresh-Up) or the other way round (Exhaust Fresh-Up) by input from an external contact point.

- Set the fresh-up mode to "Supply" fresh-up or "Exhaust" fresh-up on the remote controller.
- Make settings according to **7 FIELD SETTING AND TEST RUN**.
- Connect the external input (Input A) to terminals J2 and JC of the terminal block (X2M).



(2) Forced OFF

- Set the external input setting to "Forced OFF" on the remote controller.
- Make settings according to **7 FIELD SETTING AND TEST RUN**.
- Connect the external input (Input A) to terminals J2 and JC of the terminal block (X2M).



In case of operation combined with an external damper

The printed circuit board of the Heat Reclaim Ventilator main unit opens and closes the no-voltage contact used for driving the damper in conjunction with the operation of Heat Reclaim Ventilator.

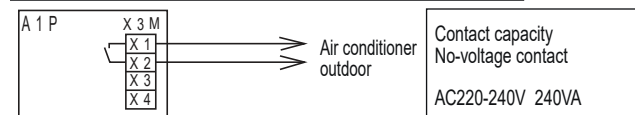
Closes no-voltage contact by operation of Heat Reclaim Ventilator
Opens no-voltage contact by operation of Heat Reclaim Ventilator

• Wiring instructions

The fan operation signal of Heat Reclaim Ventilator is output from terminals X1 and X2 of the terminal block (X3M) on the printed circuit board.



Do not use any code for the electric wire for linking with the external damper. Example: VCTF (unusable); VV cable (usable)



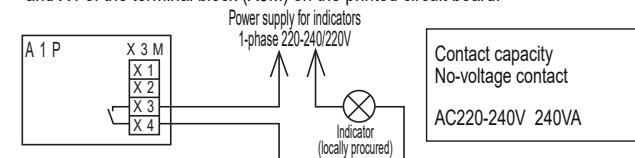
For operation indication

Operation indication of one Heat Reclaim Ventilator will be output.

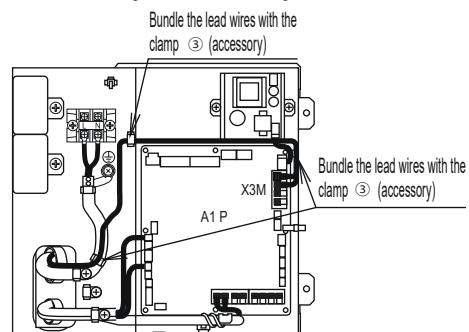
Make settings according to **7 FIELD SETTING AND TEST RUN**.

• Wiring instructions

The operation indication of Heat Reclaim Ventilator is output from terminals X3 and X4 of the terminal block (X3M) on the printed circuit board.



- Instructions on connecting transmission wiring to terminal X3M



7-1 Field Settings

- (1) Make sure the electrical component box is closed before turning on the power.
- (2) Depending on the type of installation, make the field settings from the remote controller following the "Field Settings" section of the installation manual which came with the remote controller.
 - When a change is made to the settings of [Filter contamination setting], [Night time free cooling operation starting time], or [24-hour ventilation setting], provide your customer the information described in the Remarks of the table below.
 - Setting is made by changing the three numbers: "mode number", "setting switch number", and "setting position number".

Descriptions of settings and setting numbers (For other settings, refer to the general catalog.)

Mode No.	Setting switch No.	Setting descriptions	Setting position No.								Remarks
			01	02	03	04	05	06	07	08	
17 (27)	0	Fresh-up (Setting of more supply air/more exhaust air)	Accumulated 2500 hours	Accumulated 1250 hours	No accumulation	—	—	—	—	—	The factory setting for the filter sign display time is 2500 hours (equivalent to 1 year). However, if the unit is installed in a location subjected to dust and particles, the display time can be shortened to allow the filter to be cleaned more frequently. If the setting position "03" is selected, the filter sign will not be displayed. However, advise the customer that the filter needs to be cleaned regularly to prevent clogging.
	1	Nighttime free cooling operation starting time (after the operation stops)	OFF	ON / 2 hours later	ON / 4 hours later	ON / 6 hours later	ON / 8 hours later	—	—	—	The factory default setting for nighttime free cleaning operation is "OFF". However, nighttime free cleaning operation can be set to "ON" by selecting one of the setting position numbers "02" to "05". During night nighttime free cleaning operation, the operation indicator lamp on the remote control is off. If the nighttime free cleaning setting is set to "ON", please explain this to your customer.
	4	Initial setting for ventilation fan	Normal	Ultra high	—	—	—	—	—	—	The factory default setting is the setting position number "01" (the unit operates at a "high" notch when the ventilation rate displayed on the remote control is "high"). By selecting the setting position number "02", the unit operates at the "ultra-high" notch when the ventilation rate displayed on the remote control is "high".
18 (28)	0	External input setting (J2-JC)	Last command	Priority on external input	Priority on operation	Forced OFF	Sync with fan	≠24-hour ventilation ON/OFF	—	—	Selecting the setting position number "04" allows forced OFF by an external input. Selecting the setting position number "06" cancels 24-hour ventilation operation by an external input.
	3	Main unit X3M External contact output changeover (X1-X2)	Humidification operation output	—	Fan operation (Dampener output)	—	Abnormal output	Filter sign output	—	—	—
	7	Fresh-up (Setting of more supply air/more exhaust air)	Supply air	Exhaust air	—	—	—	—	—	—	The factory default setting is the setting position number "01": "Supply" Fresh-Up. Exhaust" Fresh-Up can be set by selecting the setting position number "02".
	11	Main unit X3M External contact output changeover (X3-X4)	Fan operation (Dampener output)	Abnormal output	Filter sign output	Operation output	—	—	—	—	—
19 (29)	1	Intermittent low tap operation setting	NO	Ventilation rate 1/15 Fan OFF for 28 minutes Fan ON for 2 minutes	Ventilation rate 1/10 Fan OFF for 27 minutes Fan ON for 3 minutes	Ventilation rate 1/8 Fan OFF for 25 minutes Fan ON for 5 minutes	Ventilation rate 1/4 Fan OFF for 22.5 minutes Fan ON for 7.5 minutes	Ventilation rate 1/3 Fan OFF for 20 minutes Fan ON for 10 minutes	Ventilation rate 1/2 Fan OFF for 15 minutes Fan ON for 15 minutes	—	The factory default setting for intermittent low tap operation setting is "OFF". The intermittent low tap operation setting can be changed to "ON" by selecting a setting position number.
	4	24-hour ventilation setting	NO	Ventilation rate 1/15 Fan OFF for 28 minutes Fan ON for 2 minutes	Ventilation rate 1/10 Fan OFF for 27 minutes Fan ON for 3 minutes	Ventilation rate 1/8 Fan OFF for 25 minutes Fan ON for 5 minutes	Ventilation rate 1/4 Fan OFF for 22.5 minutes Fan ON for 7.5 minutes	Ventilation rate 1/3 Fan OFF for 20 minutes Fan ON for 10 minutes	Ventilation rate 1/2 Fan OFF for 15 minutes Fan ON for 15 minutes	Continuous operation	The factory default setting for 24-hour ventilation operation setting is "OFF". 24-hour ventilation operation can be set to "ON" by selecting one of the setting position numbers "02" – "08". During 24-hour ventilation operation, the operation indicator lamp on the remote control is off. If the 24-hour ventilation setting is set to "ON", please explain this to your customer.

- The factory default setting position is displayed in the frame.
 - The settings are applied to the entire group, but if the mode number inside the parentheses is selected, the setting can be applied to individual units.
- (3) When selecting the single nighttime free cooling operation, make the field setting as follows:

Units	Setting switch No.	Setting descriptions	Setting position No.												
			01	02	03	04	05	06	07	08	09	10	11	12	13
17 (27)	7	Target temperature for single nighttime free cooling	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C

- The factory default setting for target temperature for single nighttime free cooling is "26°C". Target temperature for single nighttime free cooling can be changed by selecting one of the setting position numbers.
- Refer to engineering data for details on field settings.

7-2 Test Run

- Make sure that all electric wiring works and duct connections have been completed.
(In particular, if a closing damper is installed in the middle of the duct, make sure that it is open.)
- Make sure the electrical component box of the unit is closed before turning on the power.
- Perform a test run following the operation manual and make sure that the unit operates properly.
Check the airflow from each outlet and intake, and if the airflow appears weak, check if the fan is rotating.
"Measures in the event of abnormal completion"
- Blinking operation indicator lamp on the remote controller indicates an error. Confirm the error code on the LCD and check for errors/problems.
Error codes and error descriptions are described in the "Operation Manual" provided.
- In particular, if the display shows any of the conditions listed in Table 1, it may be due to faulty installation or wiring work, or the power may not be turned on.

Table 1

Remote controller display	Problem in installation or wiring work	Measures to be taken
61	• Error in supply voltage "220-240V"	• Supply voltage
U5	• Incorrect setting of "MAIN/SUB" remote controller (two MAIN remote controllers are connected)	• Correct
U8	• Incorrect setting of "MAIN/SUB" remote controller (two SUB remote controllers are connected)	
No display	• Power supply construction work is not done for the total heat exchanger unit	• Reset
	• Power of the total heat exchanger unit is not turned on	• Turn on the power
	• Wrong remote controller wiring or disconnected wires	• Correct the wiring

CAUTION ELECTRIC SHOCK RISK

Disconnect the power supply before changing the wiring or making switch settings.

7-3 Items to be checked after completion of test run

Items to be checked	If not properly done, what is likely to occur	Check
Have you performed a test run	The unit may not operate	
Was air taken into each intake?	Ventilation rate is insufficient, or noise may occur	

- If an error code other than those in Table 1 is displayed, refer to engineering data or operation manual.
Fix the problem and perform a test run again.



CAUTION

- Before handing over the unit to the customer after the test run, make sure that the electrical component box, heat exchange element, and air filter are installed in their proper positions and that the maintenance cover and electrical component box are attached.

DAIKIN AIRCONDITIONING INDIA PVT. LTD.

12th Floor, Building No. 9, Tower A,
DLF Cyber City, DLF Phase - III
Gurugram - 122002, Haryana (India)

MODEL	WEIGHT (kg)
VAM150HVE	22
VAM250HVE	22



OPERATION MANUAL

Total Heat Exchanger Heat Reclaim Ventilator

MODELS

(Ceiling-mounted Duct type)

VAM150HRVE6

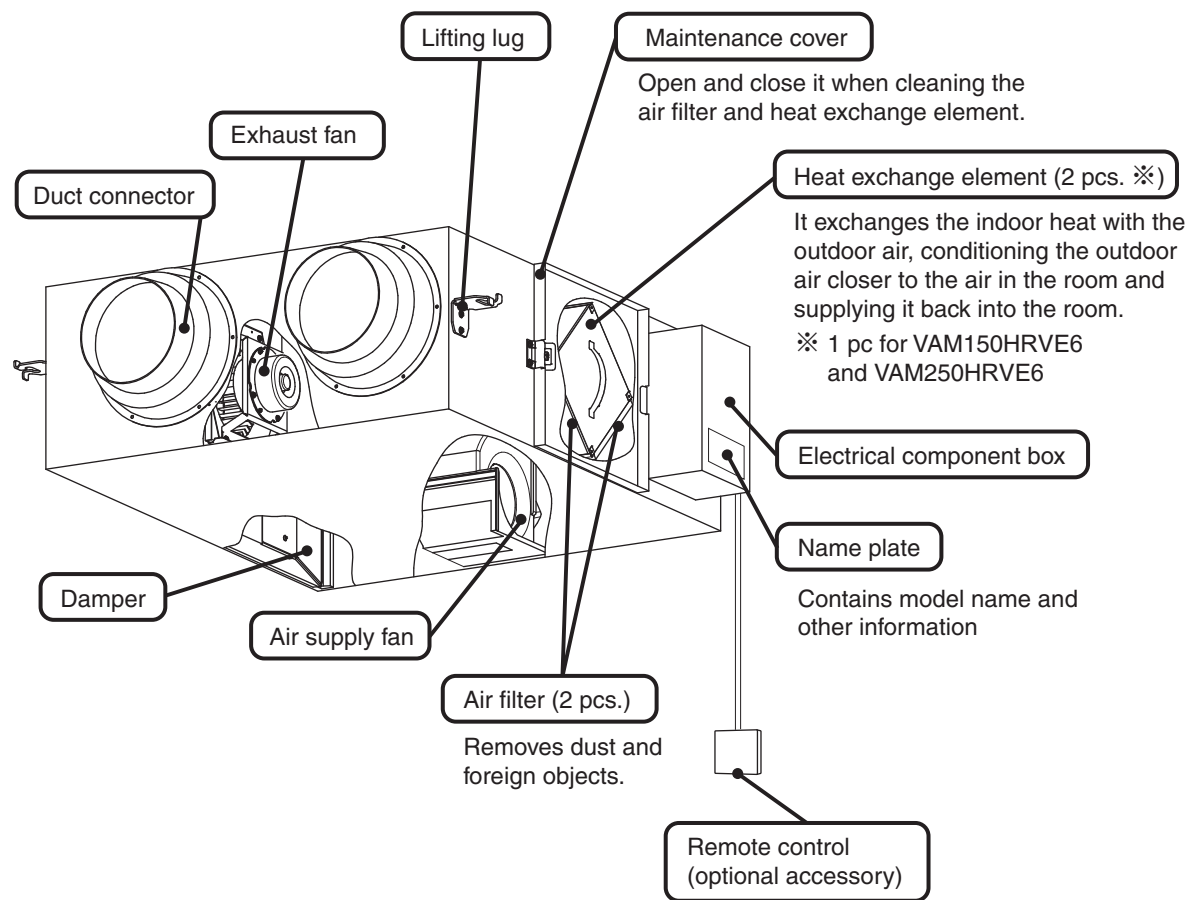
VAM250HRVE6

Heat Reclaim Ventilator

Before using the DAIKIN Heat Reclaim Ventilator, be sure to read this operation manual thoroughly. If you have any problems or there is a malfunction, please refer to this operation manual.

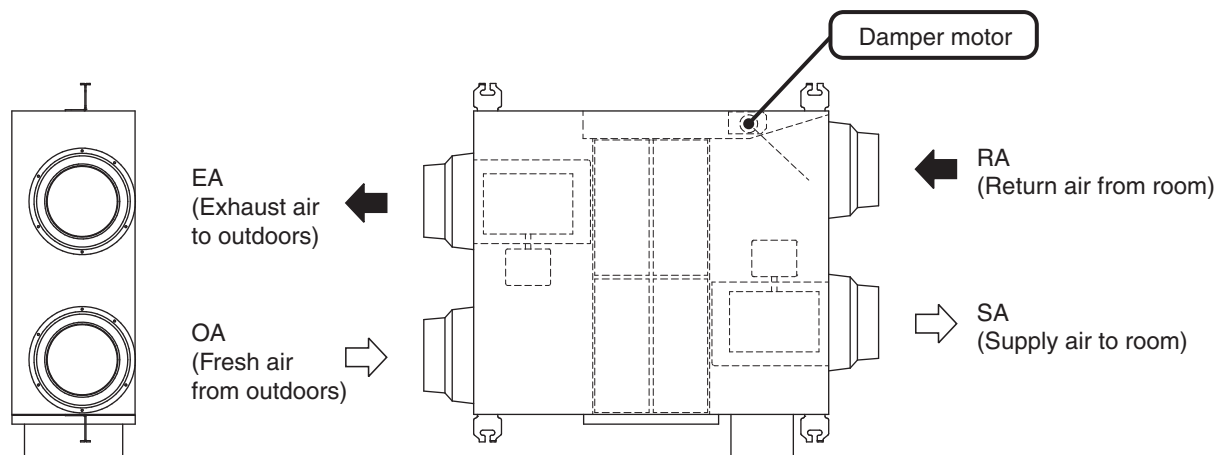
Please keep this manual for your future reference whenever you do not understand how to use it when something is wrong with the unit during the operation.

Name of Parts



Important

When first using the unit, sometimes the smell of heat exchange element may be noticeable; it is not harmful. The smell will gradually go away as the unit is used.



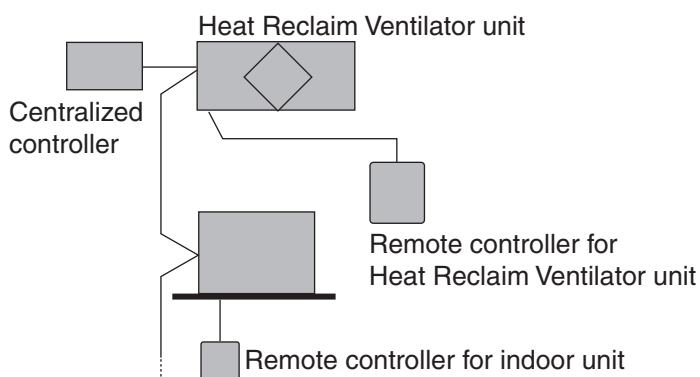
- Independent system

Heat Reclaim Ventilator unit

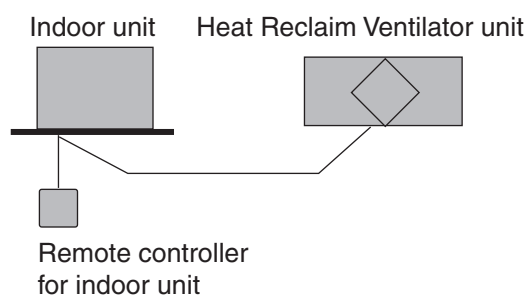


Remote controller for Heat Reclaim Ventilator unit

- Centralized system

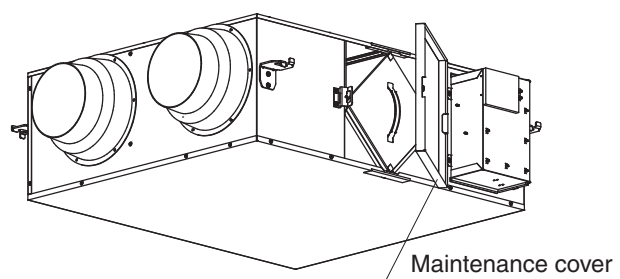


- Combined operation system with VRV systems and Sky-air series



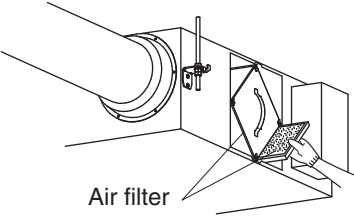
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MODELS VAM150HRVE6 - VAM200HRVE6

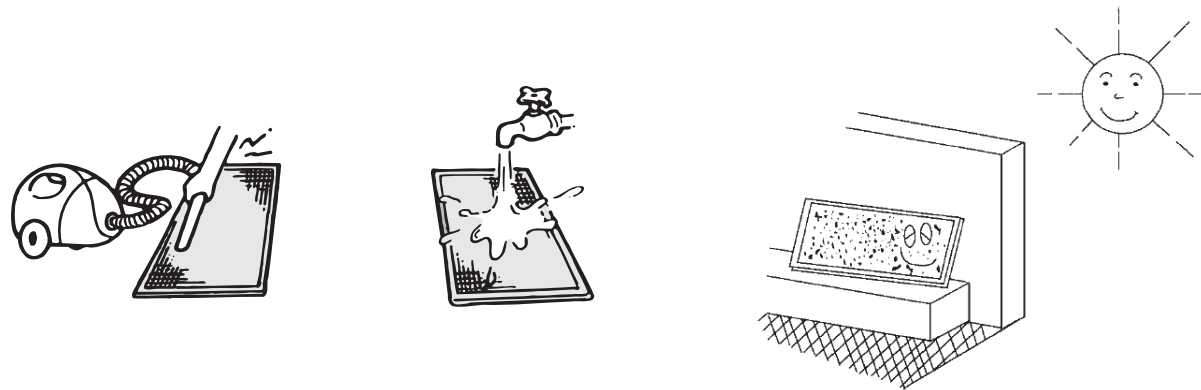


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MODELS VAM150HRVE6- VAM200HRVE6

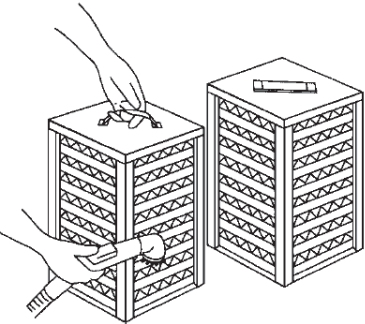


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6

7



8

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1 SAFETY CAUTIONS

Read the following cautions carefully and use your equipment properly.

There are two kinds of safety precaution and tips listed in the following.

⚠ WARNING Improper handling can lead to such serious consequences as death or severe injury.

⚠ CAUTION Improper handling can lead to injury or damage. It could also have serious consequences under certain conditions.

NOTE

- These instructions will ensure proper use of the equipment.

Be sure to follow these important safety cautions.

— ⚠ WARNING (During Operation) —

- **When the unit is in abnormal conditions (smell of something burning, etc.), cut off the power, and contact your dealer.**
Continued operation under such circumstances may result in a failure, electric shock, and fire.
- **It is not good for your health to expose your body to the air flow for a long time.**
- **Do not operate the unit with a wet hand.**
An electric shock may result.
- **Open the windows and ventilate the room if flammable gas is leaked.**
Insufficient ventilation when the unit is turned on or off may cause an explosion from sparks at the electrical connection.
- **Do not wash the Heat Reclaim Ventilator unit with water.**
Electric shock or fire may result. (Not including air filters, etc.)
- **Be sure to stop the unit and turn off the power when cleaning or inspecting it.**
As the fan is rotating at high speed, it will cause injury.
- **Do not insert fingers or sticks into duct flange.**
As the fan is rotating at high speed, it causes injury.
- **Do not use in the atmosphere floating food oil or machine oil.**
It causes crack, electric shock, and ignition.

- **Do not use in the room which have much oil mist such as kitchen, and the atmosphere which contains flammable or corrosive gases and metal dust.**
It causes fire and malfunction.
- **Do not use flammable gases such as hair spray or insecticide nearby the unit. Also, not to wipe the unit or controller by organic solvent such as benzene or thinner.**
It causes crack, electric shock and ignition.
- **If the Heat Reclaim Ventilator unit is submerged by the disaster such as typhoons and floods, consult by the dealer.**
It causes malfunction, electric shock and fire by running the damaged unit.

— ⚠ CAUTION (During Operation) —

- **Do not use the Heat Reclaim Ventilator unit for other purposes.**
In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.
- **Do not use burning appliances directly in the path of the air from the unit.**
Incomplete combustion of the burning appliances may occur.
- **Never expose young children, plants or animals directly to the air flow.**
Adverse influence to little children, animals and plants may result.
- **Neither place a flammable spray bottle near the Heat Reclaim Ventilator unit or indoor intake and outlet grills nor perform spraying.**
Doing so may result in a fire.
- **Turn off the power when the unit is not to be used for long periods of time.**
Otherwise, the unit may get hot or catch on fire due to dust accumulation.
- **Do not block the intake or outlet grills.**
If the fan does not blow air throughout the entire room it may cause machine trouble.
- **Use gloves when cleaning.**
Cleaning without gloves may cause injury.
- **Never touch the internal parts of the controller.**
Do not remove the front panel. Some parts inside are dangerous to touch, and a machine trouble may happen. For checking and adjusting the internal parts, contact your dealer.
- **Young children should be supervised to ensure that they do not play with the appliances.**
It may make your health worse by wrong operation.
- **Do not use heating appliances nearby the Heat Reclaim Ventilator unit.**
It may make the outlet grills' or air filters' shape change by the heat from those appliances.

- **Do not use the unit without air filter.**
The quality of heat exchange element may get worse by dust, and it may cause malfunction.
- **Do not put containers with water such as vases and flowerpots on the Heat Reclaim Ventilator unit.**
It may cause electric shock or fire because water goes into the unit.
- **Make sure your scaffolding hold when working at heights.**
If the scaffolding is unstable, it may cause to fall and injury.

— **WARNING (For Installation)** —

- **Do not attempt to install the unit yourself.**
Ask your dealer for installation of the unit. Incomplete installation performed by yourself may result in a water leakage, electric shock, and fire.
- **Installation should be done following the installation manual.**
Incorrect installation may cause leaking, electric shock, or fire. Injuries may result if the unit falls.
- **Do not allow exhaust air to enter the outside air intake vent.**
This may cause the interior of the room to become contaminated and harming the health.
- **Locate the outside air intake vent so that it does not take in exhaust air which contains combustion air, etc.**
Incorrect installation may cause a loss of oxygen in the room, leading to serious accidents.
- **All wiring must be performed by an authorized electrician.**
To do wiring, ask your dealer. Never do it yourself.
- **Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations.**
Insufficient power circuit capacity or incorrect work may cause electric shock or fires.
- **Install the unit on a foundation strong enough to withstand the weight of the unit.**
A foundation of insufficient strength may result in the unit falling and causing injuries.
- **Connect the remote controller to the correct model.**
This may cause electric shock or fire.
- **Do not connect additional electric wirings.**
This may cause fire.
- **Do not install the Heat Reclaim Ventilator unit at any place where flammable gas may leak out.**
If the gas leaks out and stays around the unit, a fire may break out.
- **Be sure to establish an earth.**
Do not earth the unit to a utility pipe, arrester, or telephone earth.
Incomplete earth may cause electrical shock, or fire.
A high surge current from lightning or other sources may cause damage to the air conditioner.

- **Be sure to install an earth leakage breaker.**
Failure to install an earth leakage breaker may result in electric shocks, or fire.

— **CAUTION (For Installation)** —

- **Do not use the Heat Reclaim Ventilator unit or an air suction/discharge grille in the following places.**
 - a. **Place subjected to high temperature or direct flame.**
Avoid a place where the temperature near the Heat Reclaim Ventilator unit and the air suction/discharge air grille exceeds 40°C. If the unit is used at high temperature, deformed air filter and heat exchange element or burned motor result.
 - b. **Place such as kitchens or other places where oil fumes are present.**
This may cause fire.
 - c. **Place such as machinery plant and chemical plant where gas, which contains noxious gas or corrosive components of materials such as acid, alkali, organic solvent and paint, is generated.**
Place where combustible gas leakage is likely.
This may cause gas poisoning or fires.
 - d. **Place such as bathroom subjected to moisture.**
Electric leak or electric shock and other failure can be caused.
 - e. **Locations below freezing point.**
 - f. **Near machinery emitting electromagnetic waves.**
Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
 - g. **Place subjected to much carbon black.**
Carbon black attaches to air filter and heat exchange element, making them unable to use.
- **Is a snow protection measure taken?**
For detail, consult your dealer.
- **Make sure the temperature and the humidity of the installation location is within the usage range, not exceed the limit.**
Do not install in cold storage or other locations with low temperatures or near heated pools. This may cause fires or short circuits.
- **Install the two outdoor ducts with down slope to prevent rainwater from entering the unit.**
If this is not done completely, water may enter the building, damaging furniture, and cause electric shock and fire.
- **Insulate the two outdoor ducts to prevent dew condensation (and the indoor duct as well if needed).**
If this is not done completely, water may enter the building, damaging furniture, etc.

- **Use electric insulation between the duct and the wall when using metal ducts to pass metal or wire laths or metal plating into wooden buildings.**
This may cause electric shock, short circuits, or fire.
- **Avoid placing the controller in a spot splashed with water.**
Water coming inside the controller may cause an electric leak or may damage the internal electronic parts.
- **Never pull or twist the electric wire of a remote controller.**
It may cause the unit to malfunction.

— **WARNING (For moving and reinstalling/repairing)** —

- **Do not modify the unit.**
This may cause electric shock or fire.
- **Ask your dealer to move and reinstall the unit.**
Incomplete installation may result in electric shock, and fire.
- **Do not disassemble or repair the unit yourself.**
This may cause electric shock or fire.
Contact your dealer to have such work done.
- **When removing the unit, be sure not to tip it.**
The water inside the unit may drip or leak out, and get on furniture, etc.
- **Do not move or attempt to re-install the remote controller yourself.**
Incorrect installation, may cause electric shock or fire. Contact your dealer to have such work done.

2 WHAT TO DO BEFORE OPERATION

This operation manual is for the following systems with standard control. Before initiating operation, contact your Daikin dealer for the operation that corresponds to your system type and mark.
If your installation has a customized control system, ask your dealer for the operation that corresponds to your system.

2-1 NAMES OF PARTS (Refer to figure 1)

- (1) Lifting lug
- (2) Duct connecting flange
- (3) Exhaust fan
- (4) Air filter (Long life filter)
- (5) Damper
- (6) Electric parts box
- (7) Maintenance cover
- (8) Heat exchanger elements
- (9) Name plate
- (10) Air supply fan
- (11) Remote controller (Optional accessory)
- (12) Damper motor
- (13) EA Exhaust air to outdoors
- (14) OA Fresh air from outdoors
- (15) Maintenance space for the air filters, the heat exchange elements and control box.
- (16) RA Return air from room
- (17) SA Supply air to room

2-2 VENTILATION OPERATION

See the operation manual of the remote control for operations.

<Operating Conditions>

To ensure the correct usage of the unit, operate it within the operating conditions specified in the table below.

	Surrounding of total heat exchanger unit	Supplied (outdoor) air	Exhausted (indoor) air
VAM-HRVE6	-10°C to 50°CDB Max. 80%RH	-15°C to 50°CDB Max. 80%RH	-10°C to 50°CDB Max. 80%RH

* If the unit is operated for long periods of time out of temperature or operational humidity range, safety devices may cause the unit to not operate, and water may leak from the unit due to dew condensation.

2-3 OPTIMUM OPERATION

- **Do not operate the unit in Bypass mode when the room air is heated in winter or when the outside temperature is 25°C or higher.**
This may cause condensation to form on the main unit or on the indoor air outlet.
- **Do not install the remote control where the indoor temperature and humidity, respectively, is out of the range of 0-35°C and RH 40-80%.**
This may cause malfunction.
- **Do not change operations suddenly.**
It can result not only in malfunction but also failure of switches and relays in the remote control.
- **Clean the air filter frequently.**
If the unit is used with a clogged air filter, it may lead to lower operation efficiency and failure.

Refer to Page 6 and 7



- **Keep the indoor unit and the remote control at least 1 m away from televisions, radios, stereos, and other similar equipment.**
This may cause distorted picture or noise.
- **Turn off the main power supply when it is not used for long periods of time.**
When the main power switch is turned on, some watts of electricity is being consumed even if the system is not operating.



- **Do not install the remote controller where direct sunlight may fall on it.**
This may cause discoloration or deformation.

The product's method of use varies according to each system.

Check with the dealer on what system has the product been installed with prior to operation.

For operations of remote controls and centralized controller, see their respective operation manual.

NOTE

- When the fan motor fails, the remote controller does not display any error code.
Usage under that status will lead to insufficient ventilation.
The air supply and exhaust fans should be checked once every one or two months.
You can make a simple check such as below way.
To check the wind flow, hold a bar of which the end has a string or other similar lightweight item over the supply grille and exhaust grille.

3 OPERATION PROCEDURE

3-1 24-HOUR VENTILATION OPERATION

The 24-hour ventilation operation is an automatic function that provides ventilation even after the operation has been stopped in order to prevent sick building and sick school syndrome.

After the operation is stopped, the unit switches to continuous operation at low fan speed or intermittent operation.

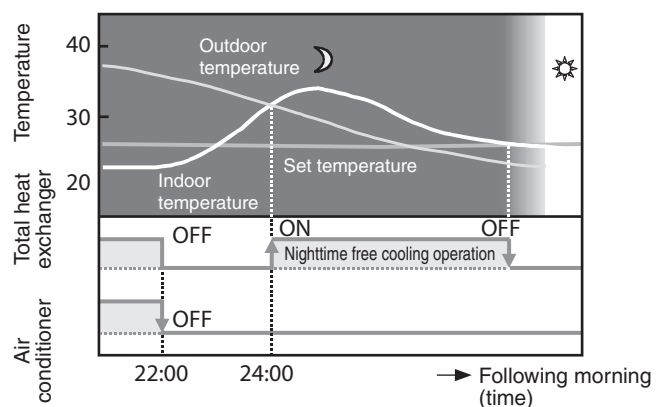
- 24-hour ventilation operation is set to "off" in the factory settings.
Request your dealer to turn it on if you intend to use it.

3-2 NIGHTTIME FREE COOLING OPERATION

The nighttime free cooling is an energy-saving function which works at night when the air conditioners is off; reducing the cooling load in the morning when the air conditioner is turned on by ventilating rooms which contain office equipment which raises the room temperature.

- Nighttime free cooling operation can be performed as stand-alone operation or combined operation.
- The operation lamp on the remote control is OFF during the nighttime free cooling operation.
- Nighttime free cooling is set to "off" in the factory settings. Request your dealer to turn it on if you intend to use it.

COMBINED NIGHTTIME FREE COOLING OPERATION



Nighttime free cooling only works during cooling and when combined with Sky Air or VRV systems.

<Unit operation>

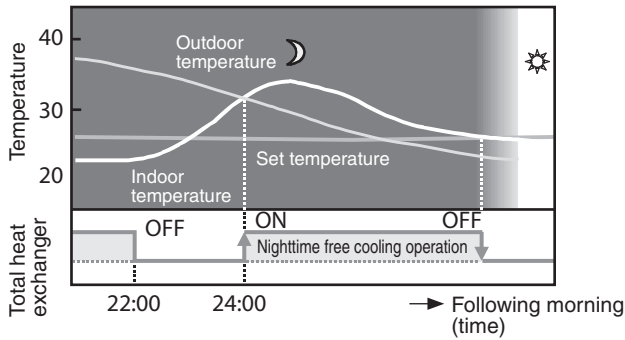
The unit compares the indoor and outdoor temperatures after the air conditioner stops for the night. If the following conditions are met, the operation starts and when the indoor temperature reaches the temperature setting of the air conditioner, the operation stops.

Conditions;

1. The indoor temperature is higher than the temperature setting of the air conditioner combined.
2. The outdoor temperature is lower than the indoor temperature.

If the above conditions are not met, reevaluation is made every 60 minutes.

STAND-ALONE NIGHTTIME FREE COOLING OPERATION



This is performed for independent systems and centralized systems.
Temperature to be set can be selected by making field settings.

<Unit operation>

The total heat exchanger unit compares the indoor and outdoor temperatures after it stops for the night. If the following conditions are met, the operation starts and when the indoor temperature reaches the temperature setting of the total heat exchanger unit, the operation stops.

Conditions;

1. The indoor temperature is higher than the temperature setting of the total heat exchanger unit.
2. The outdoor temperature is lower than the indoor temperature.

If the above conditions are not met, reevaluation is made every 60 minutes.

- For other functions, see the operation manual of the remote control.

4 MAINTENANCE

(for a qualified service person only)

— ⚠ WARNING —

- **Do not use flammable gas (such as hair spray and insecticide) near the main unit. Do not wipe the main unit and remote control with thinner, etc.**
This may cause cracks, electric shock, or ignition.
- **Do not wash the total heat exchanger unit with water (not including air filters).**
If the electrical parts or motors get wet with water, it may cause electric leakage, resulting in electric shock or fire.
- **Be sure to stop the operation, and turn the breaker off before cleaning or inspection.**
As the fan inside the unit is rotating at high speed, it will cause electric shock or injury.

— ⚠ CAUTION —

- **Use gloves when cleaning.**
Cleaning without gloves may cause injury.
- **Watch your step when working in high places.**
If the scaffold is unstable, you may fall or topple down thus causing injury.

NOTE 🛠

- Do not operate the unit without air filter except during cleaning.
Missing air filter causes clogged heat exchange element which may lower operation efficiency and cause a failure.
- When cleaning, replace heat exchange element if its' knob is found damaged or in deteriorating condition as it is a potential dropping hazard.
- Do not install anything (such as kitchen paper) other than the genuine air filters on the air inlet.
Doing so may lower operation efficiency and cause freezing or leakage.
- Cleaning of air filter or heat exchange element, installation and replacement high-performance filter (optional accessory) involves a work in high places and it is dangerous.
Be sure to ask your dealer to have such works done.
- If water is in the unit, clean it by wiping it off with a soft cloth.

4-1 ROUTINE MAINTENANCE

4-1-1 HOW TO CLEAN THE AIR FILTER

Clean the air filter when the Wired Remote Controller displays "Filter sign".

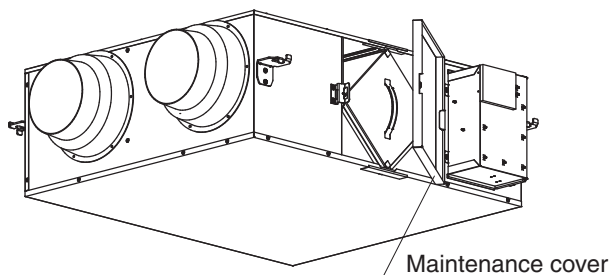
- Clean the air filter at least once a year.
- Increase the frequency of cleaning if the unit is installed in a place where the air is very contaminated.

NOTE

- You may change the timing of indication "Filter sign" to be displayed.
If the unit is used in a place where the air is very contaminated, ask your dealer for solution.
- If the dirt becomes impossible to clean, change the air filter.
(Replacement air filter is optional.
See Page 11 for optional accessories.)

1. Detach the maintenance cover.

Go into ceiling through the inspection hatch and detach the maintenance cover.

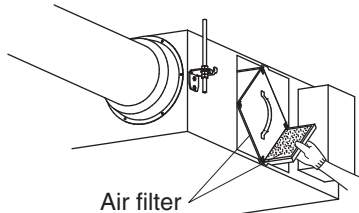


NOTE

- Support the maintenance cover so that it will not fall when the binding metal is removed.

2. Detach the air filter.

Take it out from the heat exchange elements.
Clean the air filter.



3. Use vacuum cleaner or wash the air filter with water.

If the air filter is very dirty, use soft brush and neutral detergent to clean it.



Remove water and dry in the shade.



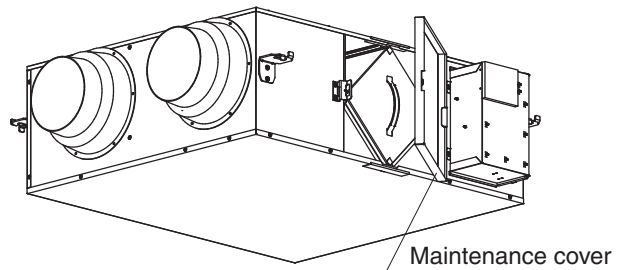
NOTE

- Do not rub the air filter to clean.
This may result in deformation or reduced durability.
- Do not wash the air filter with hot water of more than 50°C.
This may cause discoloration or deformation.
- Do not expose the air filter to fire.
This may result in burning.
- Do not expose the air filter to direct sunlight.
This may cause discoloration or deformation.
- Do not use gasoline, thinner, or other organic solvents.
This may cause discoloration or deformation.

4. Fix the air filter.

Fix it in the reverse order of the above 2.

5. Install the maintenance cover.



6. Turn the "Filter sign" indication off on the remote control.

- Reset the filter sign on the remote control.
The indication can be turned off while the unit is running or after the unit has stopped.

For details, see the operation manual of the remote control.

4-1-2 HOW TO CLEAN THE HEAT EXCHANGE ELEMENT

- Clean the heat exchange element at least once every two years.
- Increase the frequency of cleaning if the unit is installed in a place where the air is very contaminated.

1. Detach the maintenance cover.

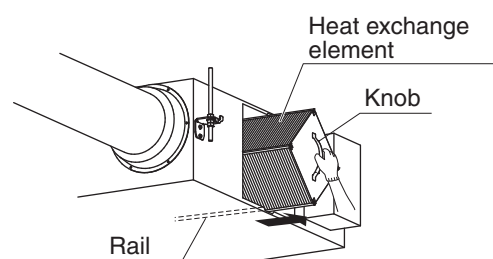
Refer to Page 6 of "How to clean the air filter".

2. Detach the air filter.

Refer to Page 6 of "How to clean the air filter".

3. Take out the heat exchange elements.

Pull out the air filter and then pull out the heat exchange element from the main unit.

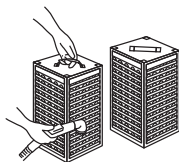


4. Clean the heat exchange element.

Use a vacuum cleaner to remove dust and foreign objects on the surface of the heat exchange element.

- Use the vacuum cleaner equipped with a brush on the tip of the suction nozzle.
- Lightly contact the brush on the surface of the heat exchange element when cleaning.

(Be careful not to crush the mesh of the heat exchange elements.)

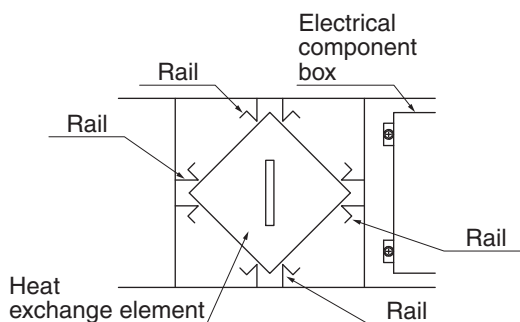


NOTE

- Do not clean the heat exchange element forcefully with a vacuum cleaner. This may crush the mesh of the heat exchange elements.
- Never wash the heat exchange element with water.
- Ask your dealer to professionally clean the heat exchange element if it is very dirty.

5. Install the heat exchange element.

Put the heat exchange element on the rail and insert it securely into place.



6. Fix the air filter.

Fix it in the reverse order of the above 2.

7. Install the maintenance cover.

4-1-3 HOW TO INSTALL AND REPLACE THE HIGH-PERFORMANCE FILTER (OPTIONAL ACCESSORY)

- Replace the high-performance filter at least once a year.
- Increase the frequency of replacement if the unit is installed in a place where the air is very contaminated. (Replacement high-performance filter is optional. See Page 10 for optional accessories.)

1. Detach the maintenance cover.

Refer to Page 6 of "How to clean the air filter".

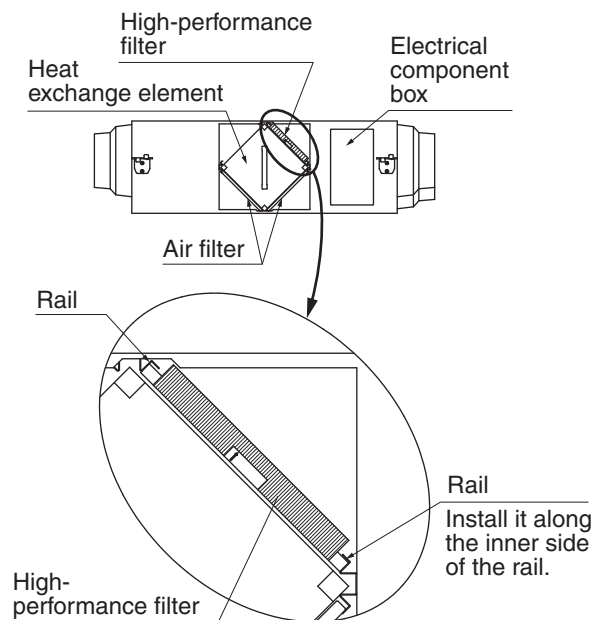
NOTE

- High-performance filter is for single use only. You cannot clean and reuse it.
- Always use the air filter.

2. Installation and replacement of high-performance filter

Installation : Insert the filter in the position shown in the figure below.

Replacement : Pull the high-performance filter towards you and replace it with a new high-performance filter.



3. Install the maintenance cover.

4-1-4 INSPECTION OF THE FAN MOTOR

NOTE

When the fan motor fails, the remote controller does not display any error code.

Usage under that status will lead to insufficient ventilation. The air supply and exhaust fans should be checked once every one or two months.

You can make a simple check such as below way. To check the wind flow, hold a bar of which the end has a string or other similar lightweight item over the supply grille and exhaust grille.

5 TROUBLE SHOOTING

5-1 THE FOLLOWING SITUATIONS ARE NOT MALFUNCTIONS

- **Operation does not start.**

<Symptom>

“Under centralized control” is displayed on the remote control and pressing the on/off button causes the display to blink for a few seconds.

<Cause>

The central device is controlling the unit.
The blinking display indicates that the remote control cannot be used.

<Symptom>

For the contents of the display, refer to the instruction manual of the remote controller.

<Cause>

The pre-cooling/pre-heating operation is taking place.
Operation starts after the pre-cooling/pre-heating operation is over.

<Symptom>

Immediately after the power is turned on.

<Cause>

The operation is in preparation.
Wait for about 1 minute.

<Symptom>

The unit has been in operation for a long time.

<Cause>

The auto cut-off function was triggered.
Operation starts when the ON/OFF button is pressed once and pressed again after several tens of seconds.

- **Operation stops sometimes.**

<Symptom>

“U5” is displayed on the remote control and the operation stops but then restarts after a few minutes.

<Cause>

The remote control is intercepting interference (noise) from electrical appliances other than the total heat exchanger unit and this prevents communication between the units, causing them to stop.

Operation automatically restarts when the interference goes away.

<Symptom>

While in Automatic mode, operation sometimes stops but it restarts.

<Cause>

The exhaust fan temporarily stops operation when the mode is switched between “Total heat exchange” and “Bypass” modes.

- **The unit works even when operation lamp is not ON.**

<Symptom>

The unit sometimes operates even when it is stopped by pressing the ON/OFF button.

<Cause>

The nighttime free cooling operation and 24-hour ventilation operation are set to “ON”.
Refer to Page 5.

- **Operation starts even when the remote control is not operated.**

<Symptom>

Immediately after the power is turned on

<Cause>

Turning on the power and power failure recovery settings are set to “ON”.

CHECK THE FOLLOWING BEFORE REQUESTING FOR SERVICE.

- **The unit does not operate at all.**

<Cause>

Check if there is a power failure.

<Measure>

After power has been restored, start operation again.

<Cause>

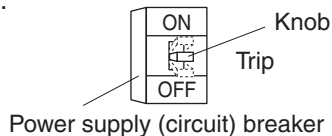
Check if the fuse has blown.

<Measure>

Turn the breaker off and contact your dealer.

<Cause>

Check if breaker switch in the off position or in the trip position.



<Measure>

- Turn the power on if the breaker switch is in the off position.
- Do not turn the power on if the breaker switch is in the trip position. Contact your dealer.

<Cause>

Is "Under centralized control" indication displayed on the remote control?

<Measure>

It is normal. Operate the unit with the centralized controller.

- **Small volume of discharged air and the sound is loud.**

<Cause>

Check if the air filter and heat exchange element are clogged.
(Check both SA and RA air filter. Check both sides of elements.)

<Measure>

Clean the air filter and heat exchange element.
Refer to Page 6 and 7.

- **Large volume of discharged air and the sound is loud.**

<Cause>

Check if the air filter and heat exchange element are not installed.

<Measure>

Install the air filter and heat exchange element in the correct position.

If one of the following malfunctions occurs, contact Daikin dealer.

— ⚠ WARNING —

- **When the unit presents abnormal conditions (burnt smell, etc.), stop the operation and turn the breaker off.**

Continued operation under such circumstances may result in a failure, electric shock, or fire.
Contact your dealer.

Symptom	Take the measures shown below and then contact your dealer
A safety device such as a fuse, a power supply breaker, or an earth	Turn the power off.
ON/OFF switch does not properly work.	Turn the power off.
There are other malfunctions or failures.	Stop the unit.
"Error" or "Alarm" message blinks.	Check the error code.

<List of error codes>

Operation lamp	Error code	Description
Blinking	61	Supply voltage error
ON	64	Indoor air thermistor malfunction
ON	65	Outdoor air thermistor malfunction
ON	6A	Damper-related malfunction
Blinking	6A	Damper-related malfunction + thermistor malfunction
Blinking	U5	Transmission error between the unit and remote control
OFF	U5	Setting error of remote control
Blinking	U8	Transmission error between main and sub remote controls
Blinking	UA	Incorrect combination of the unit and remote control
ON	UC	Overlapped central control address
Blinking	UE	Transmission error between the unit and centralized controller

**** :** The unit may still operate in the case of a malfunction with the error code in white letters on the black background. However, be sure to check the display and contact your dealer as soon as possible.

6 AFTER-SALES SERVICE

After-sales service:

WARNING

- **Do not modify the unit.**
This may cause electric shock or fire.
- **Do not disassemble or repair the unit.**
This may cause electric shock or fire.
Contact your dealer.
- **Do not remove or reinstall the unit by yourself.**
Incomplete installation may cause a water leakage electric shock and fire.
Contact your dealer.

■ When asking your dealer to repair, inform related staff of the details as follows:

- Shipping date and installation date:
- Malfunction:
Inform the staff of the defective details.
(Malfunction code being displayed on the remote controller.)
- Name, address, telephone number

■ Repair where the warranty term is expired

Contact your dealer. If necessary to repair, pay service is available.

■ Minimum storage period of important parts

Even after a certain type of the Heat Reclaim Ventilator unit is discontinued, we have the related important parts in stock for 6 years at least. The important parts indicate parts essential to operate the Heat Reclaim Ventilator unit.

■ Recommendations for maintenance and inspection

Since dust collects after using the unit for several years, the performance will be deteriorated to some extent.

Taking apart and cleaning inside require technical expertise, so we recommend entering a maintenance and inspection contract (at a cost) separate from normal maintenance.

■ Recommended inspection and maintenance cycles

[Note: The maintenance cycle is not the same as the warranty period.]

- Table 1 assumes the following usage conditions.
Normal use without frequent starting and stopping of the machine.
(Although it varies with the model, we recommend not start-ing and stopping the machine more than 6 times/hour for normal use.)
- Operation of the product is assumed to be 10 hours/day, 2500 hours/year.

- Table 1. "Inspection Cycle" and "Maintenance Cycle" Lists

Name of Main Part		Inspection Cycle	Maintenance Cycle [Replacements and/or repairs]
Electric motor	For fan (Note 3)	1 to 2 months	20,000 hours
	For damper		
Printed circuit boards		1 year	25,000 hours

Name of Main Part	Inspection Cycle	Maintenance Cycle [Replacements and/or repairs]
Heat exchange element	1 year	6 to 10 years
Sensor (thermistor)		5 year
Remote control and switches		25,000 hours

NOTE 1

- This table indicates main parts. See the maintenance and inspection contract for details.

NOTE 2

- This maintenance cycle indicates the recommended duration until the need arises for maintenance work; this ensures the product is operational for as long as possible.
- Use it for appropriate maintenance design (budgeting maintenance and inspection fees, etc.).
- Depending on the content of the maintenance and inspection contract, the inspection and maintenance cycles may in reality be shorter than those listed here.

NOTE 3

- Using the unit with a failed motor will lead to insufficient ventilation.
- It is recommended to have the motor inspected once every 1 to 2 months. (Simple check)
- Motor performance can be examined with a stick and string or similarly lightweight item attached to the tip and held at the air supply grille and exhaust grille for movement.

NOTE 4

- Shortening of "maintenance cycle" and "replacement cycle" needs to be considered if the unit is used under severe operation conditions (long operating hours, very frequent ON/OFF, etc.) and harsh operating environment (high temperature, high humidity, etc.).

For details, contact your dealer or the contact center.

■ Recommended replacement cycle of consumables

[Note: The replacement cycle is not the same as the warranty period.]

- Table 2 “Replacement Cycle” Lists

Name of Main Part	Inspection Cycle	Replacement cycle
Air filter (※)	1 year	Replace if filter is damaged
High-performance filter (optional accessory)		1 year

Name of Main Part	Inspection Cycle	Replacement cycle
Heat exchange element	2 years	6 to 10 years

NOTE 1

- This table indicates main parts. See the maintenance and inspection contract or details.

NOTE 2

- This replacement cycle indicates the recommended duration until the need arises for replacement; this ensures the product is operational for as long as possible.
- Use it for appropriate maintenance design (budgeting parts replacement cost, etc.).

※ If the unit is used for a building for The Building Sanitation Act (Former Building Management Act), periodic inspection is required.

For details, contact your dealer or the contact center.
Any failures caused by unauthorized vendors performing dismantling or internal cleaning of the unit will not be covered by the warranty.

■ Moving and disposing the unit

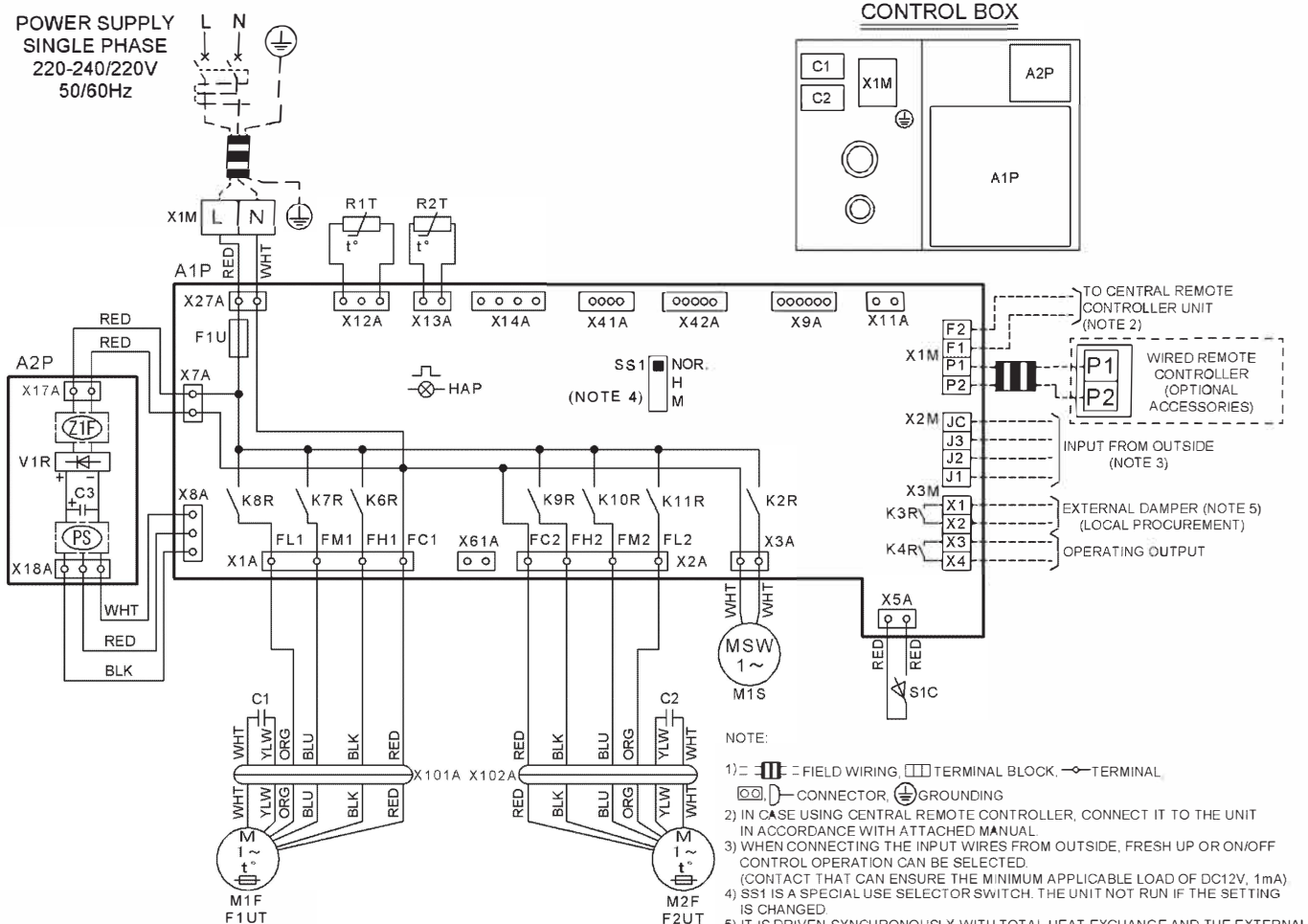
- Contact your dealer or the contact center for moving and reinstalling the total heat exchanger due to relocation, etc., as this requires technical expertise.
- Disposal of the product should be done in accordance with the relevant local regulations.

■ Inquiry

- For after-sales service, etc., contact your dealer or the contact center.

A1P	PRINTED CIRCUIT BOARD
A2P	PRINTED CIRCUIT BOARD (POWER SUPPLY BOARD)
C1-C2	CAPACITOR (M1F,M2F)
C3	CAPACITOR (A2P)
F1U	FUSE (A1P)(T,10A,250V)
F1UT-F2UT	THERMAL FUSE(M1F,M2F BUILT-IN)
HAP	INDICATOR LIGHT (MICROCOMPUTER NORMAL MONITOR GREEN)
K2R	MAGNETIC RELAY(M1S)
K3R-K4R	MAGNETIC RELAY
K6R~K8R	MAGNETIC RELAY(M1F)
K9R~K11R	MAGNETIC RELAY(M2F)
M1S	MOTOR (DAMPER)
M1F	MOTOR (AIR SUPPLY FAN)
M2F	MOTOR (AIR EXHAUST FAN)
PS	SWITCHING POWER SUPPLY (A2P)
R1T	THERMISTOR(INDOOR AIR)
R2T	THERMISTOR (OUTDOOR AIR)
S1C	LIMIT SWITCH (DAMPER)
SS1	SELECTOR SWITCH (FOR ESPECIALLY USE)
V1R	DIODE BRIDGE
X101A,X102A	RELAY CONNECTOR (M1F,M2F)
X1M	TERMINAL (POWER SUPPLY)
X1M	TERMINAL (CONTROL)(A1P)
X2M	TERMINAL (CONTROL)(A1P)
X3M	TERMINAL (CONTROL)(A1P)
Z1F	NOISE FILTER
OPTIONAL CONNECTOR	
X9A	CONNECTOR (WIRING ADAPTER)
X11A	CONNECTOR (ADAPTER POWER SUPPLY)
X14A	CONNECTOR (CO ² SENSOR)
X41A	CONNECTOR (HUMIDITY SENSOR)
X42A	CONNECTOR (HUMIDITY SENSOR)

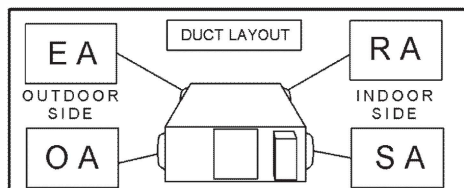
WIRING DIAGRAM



FOR INSTALLATION & RELOCATION WORKER

WARNING

- INSTALL AN EARTH LEAKAGE BREAKER IN ACCORDANCE WITH THE REGULATIONS TO PREVENT ELECTRICAL SHOCK AND FIRE ACCIDENTS.
- BE SURE TO PREFORM GROUNDING WORK.
- ASK AN ELECTRICIAN FOR GROUNDING WORK AND EARTH LEAKAGE BREAKER FACILITIES.



FOR SERVICE MAINTAINANCE WORK

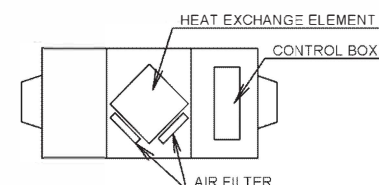
WARNING ELECTRIC SHOCK CAUTION

ALWAYS SHUT OFF ALL POWER SOURCES (INCLUDING REMOTE DISPLAY AND BOOSTER FAN ELECTRIC DAMPER INTERLOCKING POWER SOURCES) DURING SERVICE INSPECTIONS AND CLEANING OF AIR FILTERS AND HEAT EXCHANGE ELEMENTS. IT MAY CAUSE ELECTRIC SHOCK IN THE CHANGING PART OR INJURY IN THE FAN ROTATING PART.

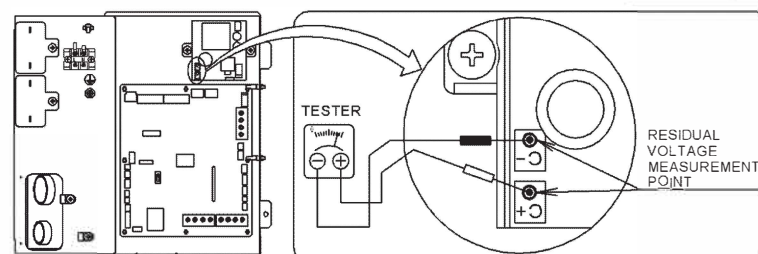
(FOR THE POWER SUPPLY TO BE CONNECTED REFER TO THE TECHNICAL DATA AND INSTALLATION MANUAL OF THE SEPARATELY SOLD ADAPTER).

- INSTALL THE HEAT EXCHANGES ELEMENT AND INSERT IT WITH THE SIDE FACING YOU.
- INSTALLING THE AIR FILTER BY INSERTING THE AIR FILTER IN POSITION SHOWN ON THE RIGHT WITH RESPECT TO THE ELECTRICAL COMPONENT BOX.

FOR THE DETAILS, SEE THE OPERATION MANUAL.



- PAY ATTENTION TO RESIDUAL VOLTAGE. DO NOT TOUCH THE CHANGING PART UNTIL YOU CONFIRM THAT THE RESIDUAL VOLTAGE IS DC50V OR LESS.
- ① TURN OFF THE POWER SUPPLY AND DO NOT OPEN THE LID OF THE ELECTRICAL BOX FOR 10 MINUTES.
 - ② AFTER THAT, USE A TESTER TO CHECK THE POWER SUPPLY IS CUT OFF BETWEEN THE L AND N TERMINALS OF THE POWER TERMINAL BLOCK (X1M).
 - ③ MEASURE THE PART (C+·C-) IN THE FIGURE BELOW WITH A TESTER SO THAT IT DOES NOT COME INTO CONTACT WITH CHANGING PART AND CONFIRM THAT THE RESIDUAL VOLTAGE IS DC50V OR LESS.



DAIKIN**DAIKIN AIRCONDITIONING INDIA PVT. LTD.**

210, 1st FLOOR, OKHLA INDUSTRIAL AREA, PHASE 3, DELHI-110020

PROTECT THE ENVIRONMENT FROM E-WASTE (GUIDELINES)

Meaning of E-waste under E-Waste (Management) Rules,2022 (E-waste Rules)
 -Waste electrical and electronic equipment, whole or in part of reject from their manufacturing and repair process, which are intended to be discarded.

Our product is RoHS compliant.

**Don't dump Electrical and Electronic Products in Garbage Bins****DO'S & DONT'S**

DO'S	
Run and maintain the air conditioner as per the instructions given in the operation / instruction manual	✓
Ensure that an authorised person repairs your air conditioner	✓
Call our local authorised dealer or our toll free number to dispose your air conditioner	✓
Contact an authorised dealer in case of installation or de-installation	✓
Consult our local authorised dealer or our toll free number on the life span of the air conditioner	✓
DONT'S	
Do not try to repair your air conditioner on your own	✗
Do not sell or dispose your air conditioner or parts to an unauthorised Kabbadi wala / Scrap Dealer / Ragpickers	✗
Do not dismantle your air conditioner on your own	✗
Do not get your air conditioner or any parts repaired by an unauthorised person	✗
Do not dispose off the E-waste in landfills	✗
Do not use the air conditioner as furniture after its use	✗

Customer Contact Center : 011-4031 9300/1860-180-3900**For further information visit us at www.daikinindia.com**

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