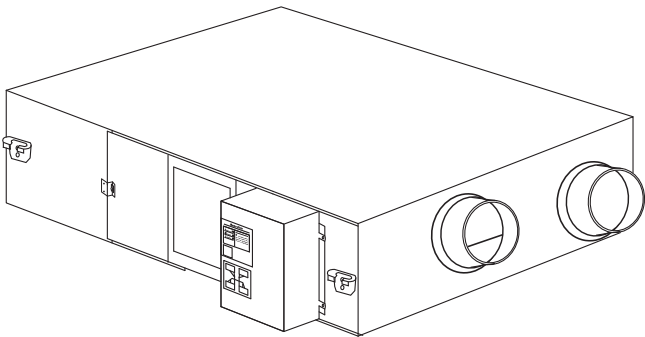


**DAIKIN**

# Installation and operation manual

## Heat reclaim ventilation unit



**VAM350J7VEB**  
**VAM500J7VEB**  
**VAM650J7VEB**  
**VAM800J7VEB**  
**VAM1000J7VEB**  
**VAM1500J7VEB**  
**VAM2000J7VEB**

Installation and operation manual  
Heat reclaim ventilation unit

English



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## 1 About the documentation

### 1.1 About this document



#### INFORMATION

Make sure that the user has the printed documentation and ask him/her to keep it for future reference.

#### Target audience

Authorised installers + end users



#### INFORMATION

This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.

#### Documentation set

This document is part of a documentation set. The complete set consists of:

- **General safety precautions:**
  - Safety instructions that you **MUST** read before installing
  - Format: Paper (in the accessory bag of the heat reclaim ventilation unit)
- **Heat reclaim ventilation unit installation and operation manual:**
  - Installation and operation instructions
  - Format: Paper (in the accessory bag of the heat reclaim ventilation unit)
- **Installer and user reference guide:**
  - Preparation of the installation, good practices, reference data,...
  - Detailed step-by-step instructions and background information for basic and advanced usage
  - Format: Digital files on <http://www.daikineurope.com/support-and-manuals/product-information/>

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.

The original documentation is written in English. All other languages are translations.

#### Technical engineering data

- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of latest technical data is available on the Daikin extranet (authentication required).

## 2 About the box

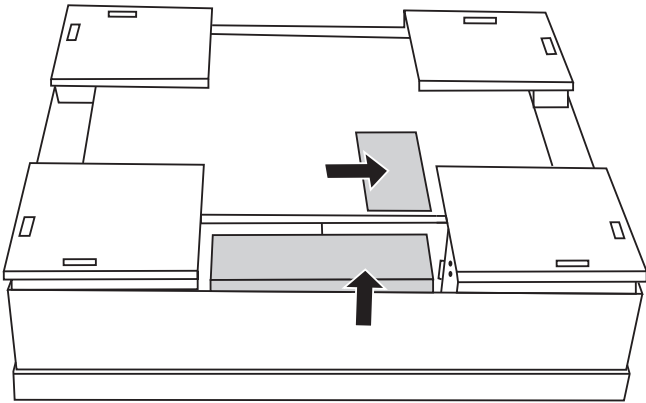
### For the installer

## 2 About the box

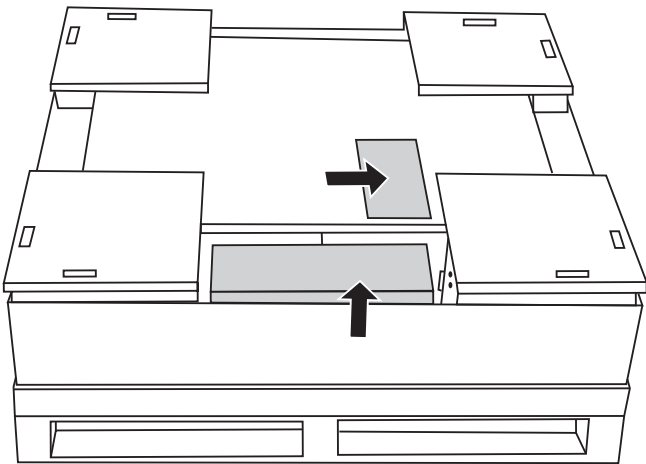
### 2.1 Heat reclaim ventilation unit

#### 2.1.1 To remove the accessories

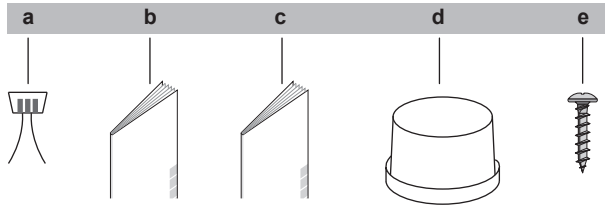
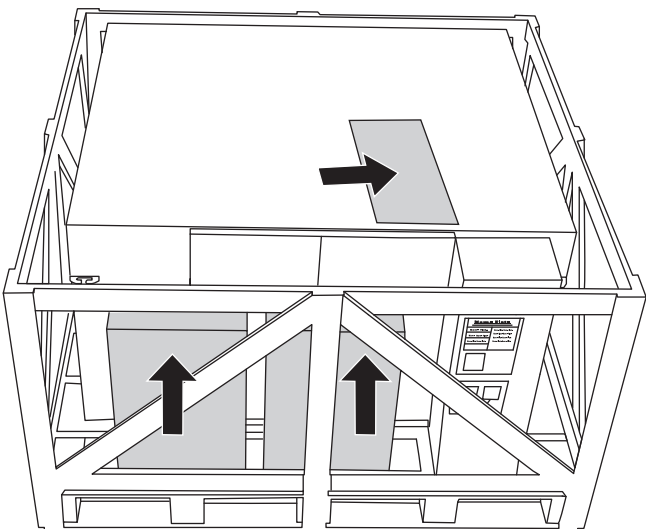
##### VAM350+VAM500



##### VAM650~1000



##### VAM1500+VAM2000



- a Wire
- b General safety precautions
- c Installation and operation manual
- d Duct joints, VAM350~1000 4x, VAM1500+VAM2000 8x
- e Screws, VAM350+VAM500 16x, VAM650~1000 24x, VAM1500+VAM2000 48x

## 3 About the units and options

### 3.1 About the heat reclaim ventilation unit

The heat reclaim ventilation unit is intended for indoor installation.



#### NOTICE

ALWAYS use the air filter. If the air filter is NOT used, the heat exchange elements can get clogged, possibly causing poor performance and subsequent failure.

Operation range	Temperature	-10°C DB~46°C DB
Outdoor air + return air	Relative Humidity	≤80%
Operation range	Temperature	0°C DB~40°C DB
Unit location	Relative Humidity	≤80%

It is possible that, due to condensation, the paper heat exchanger deteriorates when the unit operates in conditions with high indoor humidity combined with low outdoor temperature. If such combined conditions occur for an extended period of time, the necessary precautions have to be taken to prevent condensation. Example: install a pre-heater to heat up the outdoor air.

When the heat reclaim ventilation unit is installed upside down, the minimum allowed outdoor air temperature is 5°C. If this CANNOT be guaranteed, you MUST install a heater to heat up the outdoor air to 5°C.

## 4 Preparation

### 4.1 Preparing the installation site

Do NOT install a heat reclaim ventilation unit or air suction/discharge grille in the following places:

- Places, such as machinery plants and chemical plants, where noxious gases or corrosive components of materials such as acid, alkali, organic solvent and paint are present.
- Places, such as bathrooms, subject to moisture. Moisture can cause electric shock, electric leakage and other failures.
- Places subject to high temperature or direct flames.
- Places subject to much carbon black. Carbon black attaches to air filter and heat exchange elements, disabling them.

### 4.1.1 Installation site requirements for the heat reclaim ventilation unit



#### INFORMATION

Also read the general installation site requirements. See the "General safety precautions" chapter.



#### CAUTION

- The appliance is designed to be a built-in appliance. It must NOT be accessible to the general public. Adequate measures have to be taken to prevent access by other than qualified persons.
- Check if the installation location can support the unit's weight. Poor installation is hazardous. It can also cause vibrations or unusual operating noise.
- Provide sufficient service space and inspection holes. Inspection holes are needed for the air filters, the heat exchange elements and the fans.
- Do NOT install the unit so that it is in contact with a ceiling or wall, this may cause vibration.



#### CAUTION

Appliance NOT accessible to the general public, install it in a secured area, protected from easy access.

This unit is suitable for installation in a commercial and light industrial environment.

#### For VAM800~2000



#### NOTICE

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

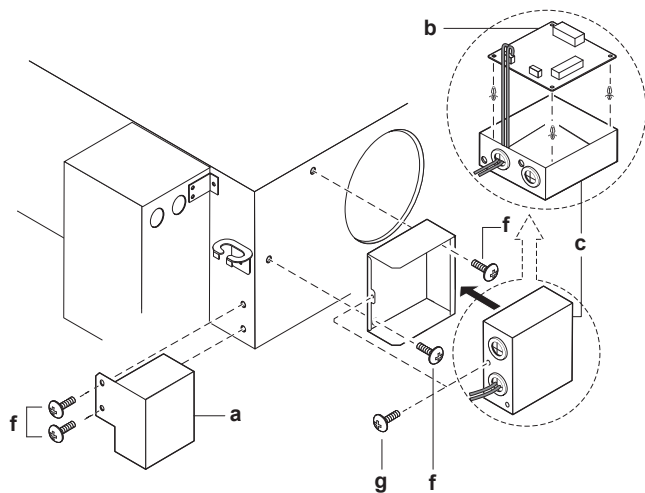
#### Service space

See the installer and user reference guide for more information.

## 4.2 Preparing the unit

### 4.2.1 To install the optional adapter printed circuit board

#### For models 350-500-800-1000

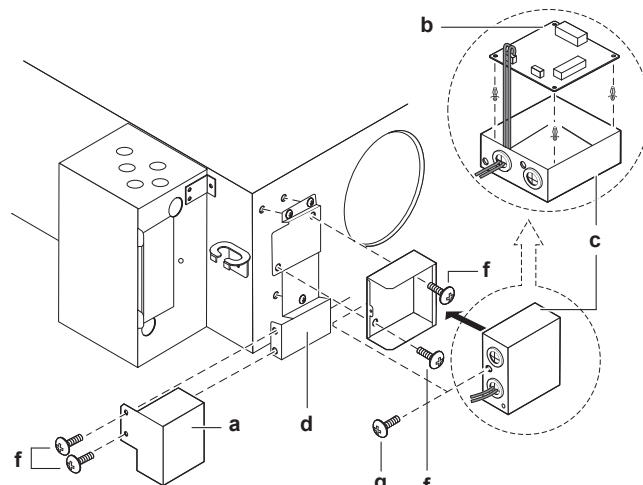


- a BRP4A50A (optional accessory)
- b KRP2A51 (optional accessory)
- c KRP1BA101 (Fixing box)
- f Screw
- g Screw (supplied with the fixing box)

- 1 Remove the screws from the unit.

- 2 Attach the optional adapter printed circuit board (KRP2A51) in the fixing box (KRP1BA101).
- 3 Follow the installation instructions provided with the option kits (BRP4A50A, KRP2A51 and KRP1BA101).
- 4 Guide the circuit board wire through the dedicated holes and attach it as instructed in Opening the switch box in the installer and user reference guide.
- 5 Attach the options to the unit, as shown in the figure.
- 6 After the wires are connected, fasten the switch box cover.

#### For model 650

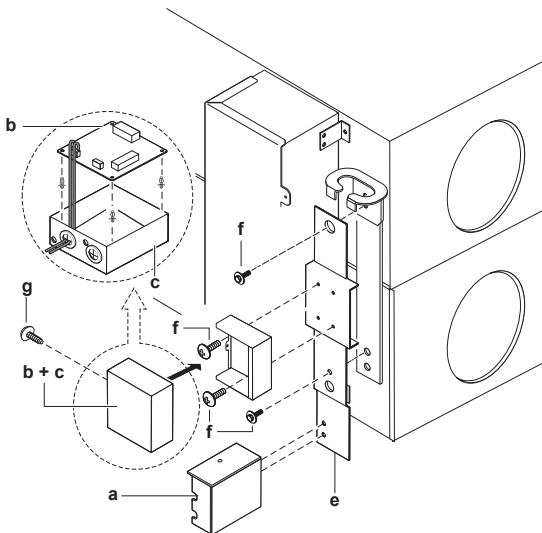


- a BRP4A50A (optional accessory)
- b KRP2A51 (optional accessory)
- c KRP1BA101 (Fixing box)
- d EKMP65VAM (Mounting plate)
- f Screw
- g Screw (supplied with the fixing box)

- 1 Remove the screws from the unit.
- 2 Attach the optional mounting plate (EKMP65VAM) to the unit.
- 3 Attach the optional adapter printed circuit board (KRP2A51) in the fixing box (KRP1BA101).
- 4 Follow the installation instructions provided with the option kits (BRP4A50A, KRP2A51 and KRP1BA101).
- 5 Guide the circuit board wire through the dedicated holes and attach it as instructed in Opening the switch box in the installer and user reference guide.
- 6 Attach the options to the optional mounting plate, as shown in the figure.
- 7 After the wires are connected, fasten the switch box cover.

## 4 Preparation

### For models 1500+2000

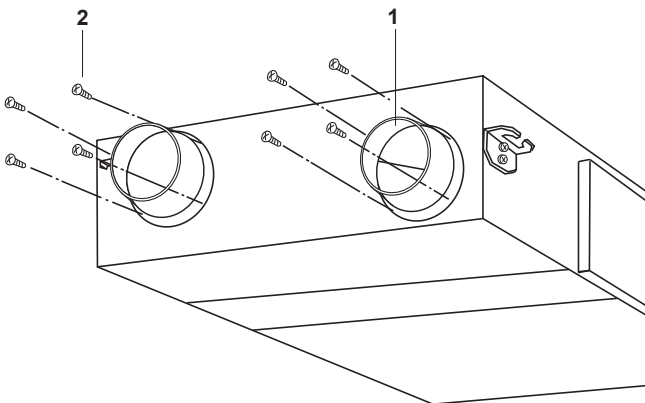


- a BRP4A50A (optional accessory)
- b KRP2A51 (optional accessory)
- c KRP1BA101 (Fixing box)
- e EKMPVAM (Mounting plate)
- f Screw
- g Screw (supplied with the fixing box)

- 1 Remove the screws that are in the middle of the casing fixing plate.
- 2 Attach the optional mounting plate (EKMPVAM) on top of the casing fixing plate.
- 3 Attach the optional adapter printed circuit board (KRP2A51) in the fixing box (KRP1BA101).
- 4 Follow the installation instructions provided with the option kits (BRP4A50A, KRP2A51 and KRP1BA101).
- 5 Guide the circuit board wire through the dedicated holes and attach it as instructed in Opening the switch box in the installer and user reference guide.
- 6 Attach the options to the optional mounting plate, as shown in the figure.
- 7 After the wires are connected, fasten the switch box cover.

### 4.2.2 To install the duct joints

- 1 Position the duct joints over the duct holes.
- 2 Secure the duct joints with the provided screws (accessories).



Models	Number of provided screws	Number of provided duct joints
VAM350	16	4× Ø200 mm
VAM500	16	4× Ø200 mm
VAM650	24	4× Ø250 mm

Models	Number of provided screws	Number of provided duct joints
VAM800	24	4× Ø250 mm
VAM1000	24	4× Ø250 mm
VAM1500	48	8× Ø250 mm
VAM2000	48	8× Ø250 mm

## 4.3 Preparing the electrical wiring

### 4.3.1 Component electrical specifications

Model	350	500	650	800	1000	1500	2000
<b>Power supply</b>							
50 Hz	198~264 V						
60 Hz	198~242 V						
MCA (A)	1.56	2.08	2.80	4.39	4.90	8.78	9.80
MFA (A)	16	16	16	16	16	16	16
<b>Fan motor</b>							
P (kW)	0.08× 2	0.08× 2	0.106 ×2	0.21× 2	0.21× 2	0.21× 4	0.21× 4
FLA (A)	0.62× 2	0.83× 2	1.12× 2	1.76× 2	1.96× 2	1.76× 4	1.96× 4

- MCA** Minimum Circuit Amps
- MFA** Maximum Fuse Amps
- P** Motor Rated Load
- FLA** Full Load Amps



#### NOTICE

When using residual current operated circuit breakers, make sure to use a high speed type 300 mA rated residual operating current.



#### NOTICE

The power supply **MUST** be protected with the required safety devices, i.e. a main switch, a slow blow fuse on each phase and an earth leakage protector in accordance with the applicable legislation.



#### NOTICE

See the engineering data book for details.

### 4.3.2 Specifications for field supplied fuses and wires

<b>Power supply wiring</b>	
Field supplied fuses	16 A
Wire	H05VV-U3G
Size	Wire size <b>MUST</b> comply with the applicable legislation.
<b>Transmission wiring</b>	
Wiring	Shielded wire (2 wire)
Size	0.75~1.25 mm <sup>2</sup>

#### Precautions

When connecting more than one wire to the power supply wiring, use a 2 mm<sup>2</sup> (Ø1.6 mm) gauge wire.

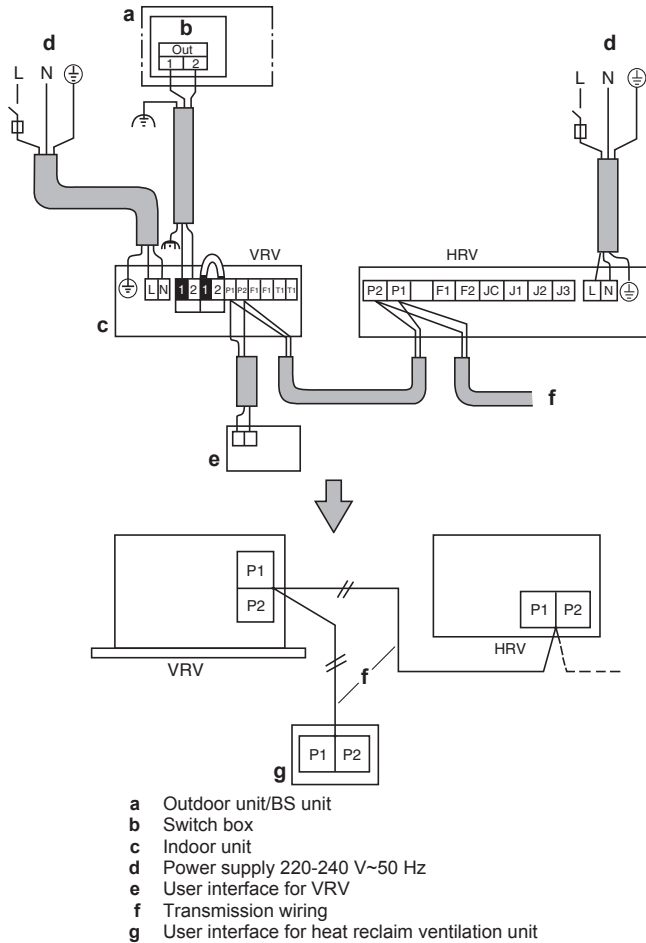
When using 2 power wires of a gauge greater than 2 mm<sup>2</sup> (Ø1.6 mm), branch the line outside the terminal board of the unit, in accordance with electrical equipment standards. The branch **MUST** be sheathed to provide a degree of insulation equal to or greater than the power supply wiring itself.

Keep the total current of crossover wiring between indoor units to less than 12 A.

Do NOT connect wires of different gauge to the same grounding terminal. Loose connections may diminish the protection.

For the user interface wiring, refer to the installation manual of the user interface delivered with the user interface.

### Wiring example



- a Outdoor unit/BS unit
- b Switch box
- c Indoor unit
- d Power supply 220-240 V~50 Hz
- e User interface for VRV
- f Transmission wiring
- g User interface for heat reclaim ventilation unit

- All transmission wiring, except for the user interface wires, is polarised and MUST match the terminal symbol.
- Use shielded cable for the transmission wiring. Ground the shield of the shielded cable to ⊕ at the grounding screw, with the C-cup washer.

## 4.4 Preparing the installation of the ducts

### **i** INFORMATION

- Flexible ducting with sound insulation is effective to reduce blowing noises.
- When you select installation materials, consider the required volume of air flow and the acceptable level of noise for that particular installation.
- When the return air infiltrates into the ceiling and the temperature and humidity in the ceiling become too high, insulate the metal parts of the unit.
- ONLY use the service hole to access the inside of the unit.
- The sound pressure level is less than 70 dBA.

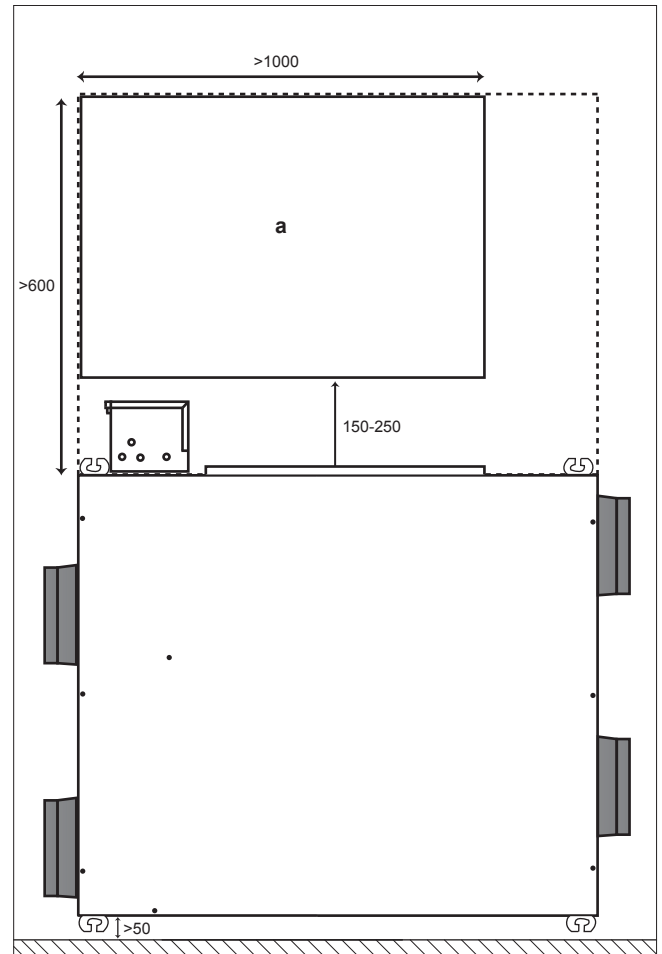


### CAUTION

- For safety reasons, the required minimum length of the ducting is 1.5 m. If the ducting is shorter, or if no ducting is installed, then you MUST install grilles in the duct openings or the openings of the unit.
- Make sure no wind can blow in the ducting.

## 5 Installation

### 5.1 Service space: Heat reclaim ventilation unit



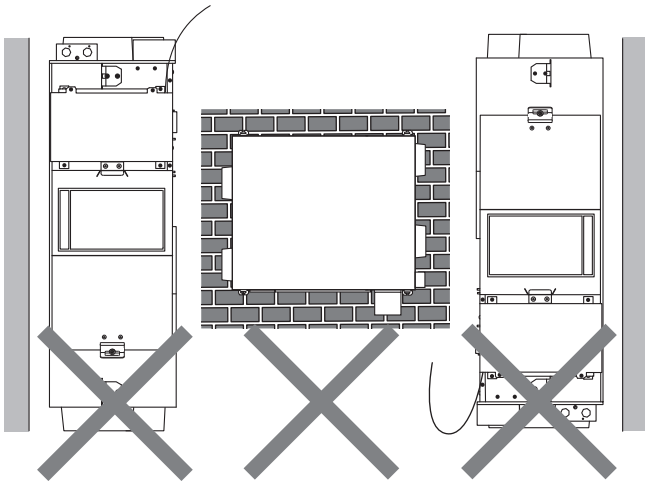
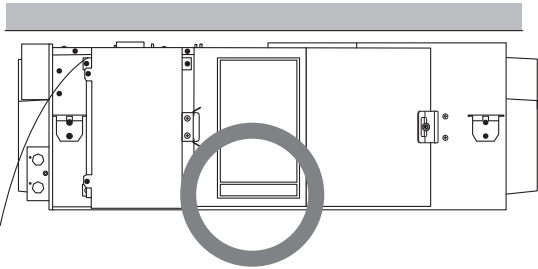
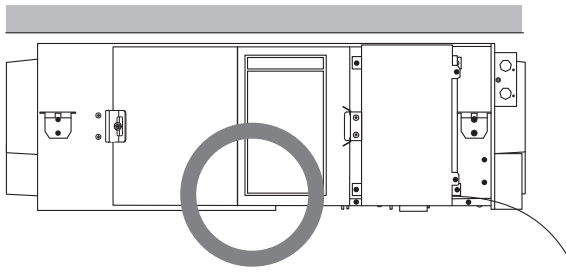
a Service space

(mm)

### 5.2 Unit orientation

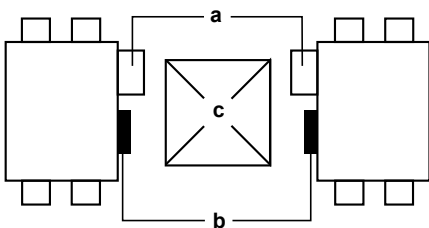
The following illustration helps you to install the heat reclaim ventilation unit in the correct position:

## 5 Installation



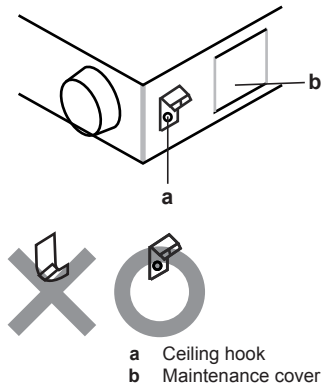
### Installation tips:

- Installing the unit upside down allows for common use of the inspection hole, reducing the required maintenance space. For example, if 2 units are installed closely together, ONLY 1 inspection hole is required for maintaining or replacing filters, heat exchange elements,...



- a Control box
- b Maintenance cover
- c Inspection hole

- When the heat reclaim ventilation unit is installed upside down, the minimum allowed outdoor air temperature is 5°C. If this CANNOT be guaranteed, you MUST install a heater to heat up the outdoor air to 5°C.
- Keep in mind that the ceiling hooks have to be reinstalled when the heat reclaim ventilation unit is installed upside down. They have to be rotated 180°, so that they are upside down (see the illustration).



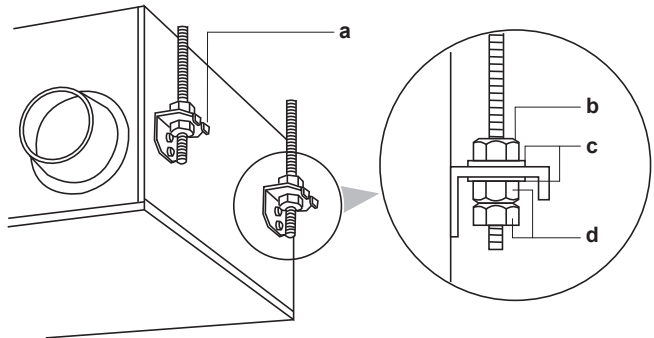
- a Ceiling hook
- b Maintenance cover

### 5.3 To install the anchor bolts

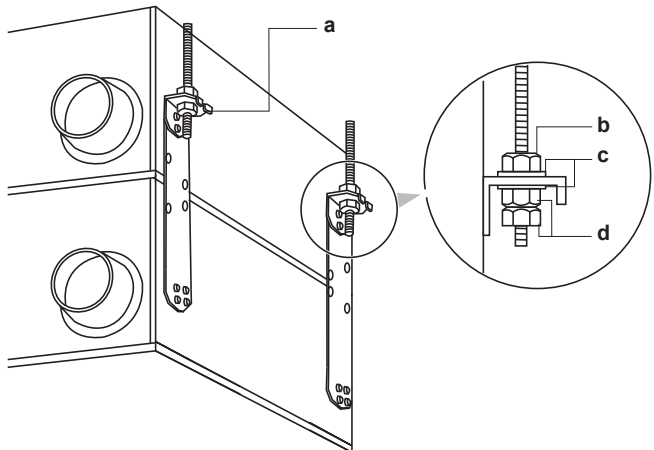
**Prerequisite:** Before you install the anchor bolt, check if foreign objects such as vinyl and paper are still inside the fan housing. If so, remove them.

- 1 Install the anchor bolt (M10 to M12).
- 2 Pass the metal suspension bracket through the anchor bolt.
- 3 Secure the anchor bolt with washer and nut.

#### For VAM350~1000:



#### For VAM1500+VAM2000:



- a Ceiling hook
- b Nut
- c Washer
- d Double nuts



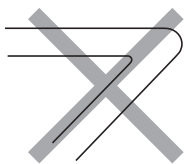
### NOTICE

Always hang up the unit by its suspension brackets.

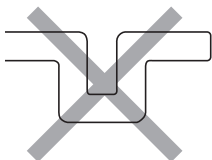
### 5.4 Duct connections

Do NOT connect the ducts as follows:

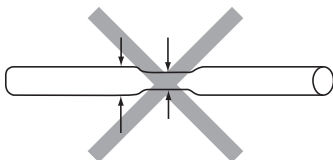




Extreme bend. Do NOT bend the duct over 90°.



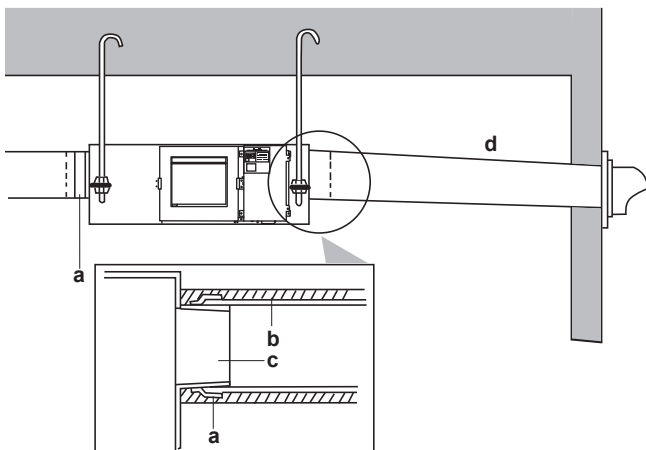
Multi bend



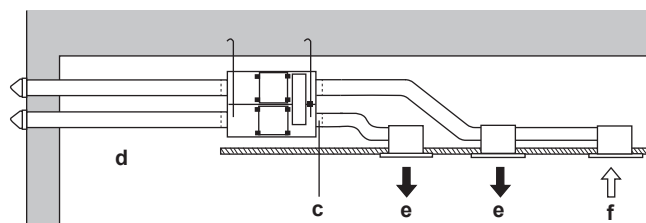
Reduced diameter. Do NOT reduce the duct diameter.

- The minimum bend radius for flexible ducts is as follows:  
( $\text{Øduct}/2$ ) $\times$ 1.5
- To prevent air leakage, wind aluminium tape around the section where the duct joints and the ducts are connected.
- Install the opening of the supply air as far as possible from the opening of the return air.
- Use ducts with a diameter that fit the unit model. See the data book.
- Install the two outdoor ducts with down slope (slope ratio of 1 in 50 or more) to prevent entry of rain water. Also provide insulation for both ducts, to prevent dew formation. (Material: 25 mm thick glass wool)
- If the level of temperature and humidity inside the ceiling is always high, install ventilation inside the ceiling.
- Insulate the duct and the wall electrically when a metal duct has to penetrate the metal lattice and wire lattice or the metal lining of a wooden structure wall.
- Install the ducts in a manner that the wind CANNOT blow inside the ducting.

## VAM350~1000



## VAM1500+VAM2000



- a Aluminium tape (field supply)
- b Insulation material (field supply)
- c Duct joint (accessories)
- d Slope over 1/50
- e Supply air
- f Return air

## 5.5 Electrical wiring



### INFORMATION

Also read the precautions and requirements in the "General safety precautions" chapter.



### WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the applicable legislation.
- Make electrical connections to the fixed wiring.
- All components procured on the site and all electrical construction MUST comply with the applicable legislation.

### 5.5.1 Precautions when connecting electrical wiring



#### DANGER: RISK OF ELECTROCUTION



### WARNING

If NOT factory installed, a main switch or other means for disconnection, having a contact separation in all poles providing full disconnection under overvoltage category III condition, MUST be installed in the fixed wiring.



### WARNING

- ONLY use copper wires.
- Make sure the field wiring complies with the applicable legislation.
- All field wiring MUST be performed in accordance with the wiring diagram supplied with the product.
- NEVER squeeze bundled cables and make sure they do NOT come in contact with the piping and sharp edges. Make sure no external pressure is applied to the terminal connections.
- Make sure to install earth wiring. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earth may cause electrical shock.
- Make sure to use a dedicated power circuit. NEVER use a power supply shared by another appliance.
- Make sure to install the required fuses or circuit breakers.
- Make sure to install an earth leakage protector. Failure to do so may cause electric shock or fire.
- When installing the earth leakage protector, make sure it is compatible with the inverter (resistant to high frequency electric noise) to avoid unnecessary opening of the earth leakage protector.

## 5 Installation

### WARNING

- After finishing the electrical work, confirm that each electrical component and terminal inside the electrical components box is connected securely.
- Make sure all covers are closed before starting up the unit.

### NOTICE

If the power supply has a missing or wrong N-phase, equipment will break down.

### NOTICE

Do NOT install a phase advancing capacitor, because this unit is equipped with an inverter. A phase advancing capacitor will reduce performance and may cause accidents.

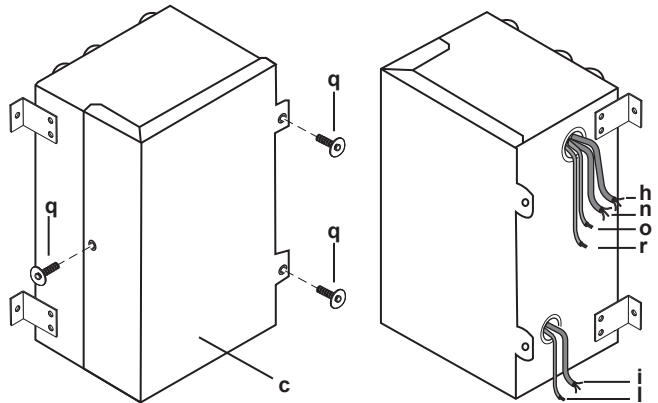
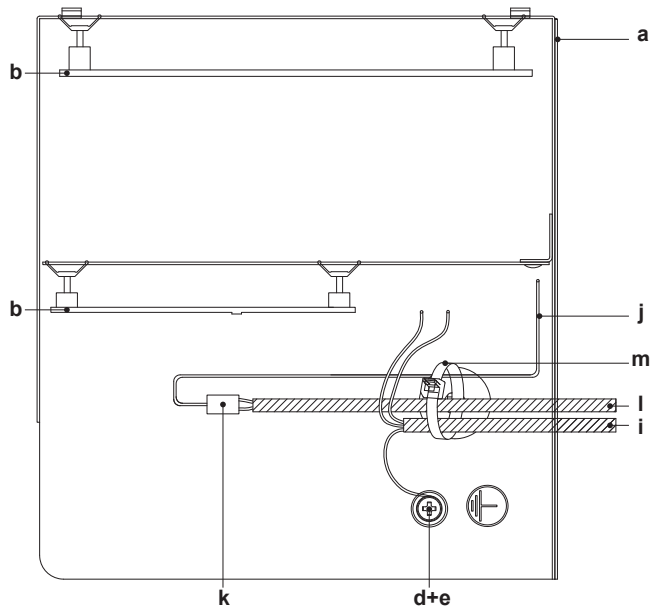
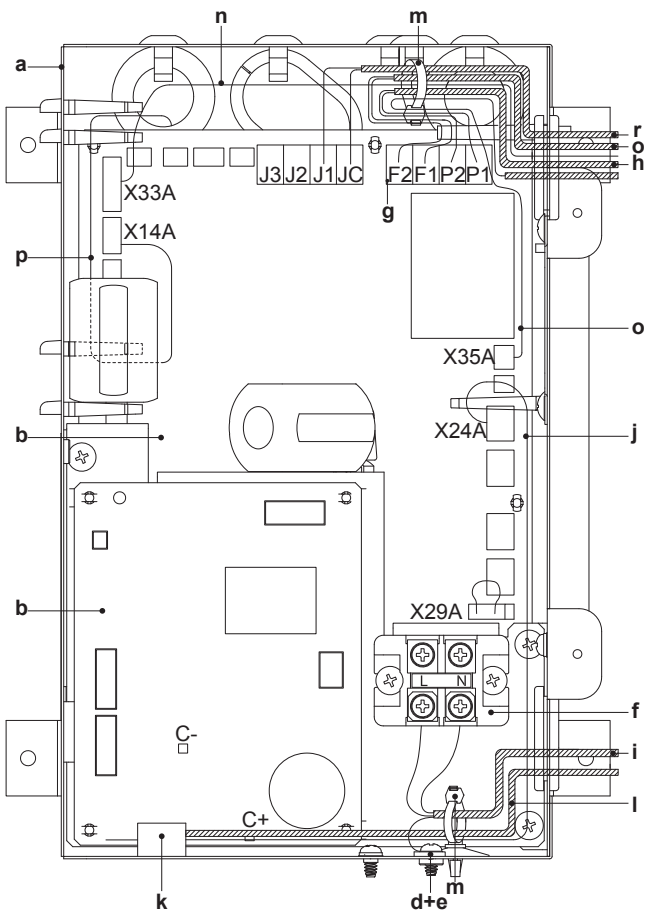
### 5.5.2 Opening the switch box

#### CAUTION

Before opening the cover, be sure to turn off the power switches of the main units and other devices connected to the main units.

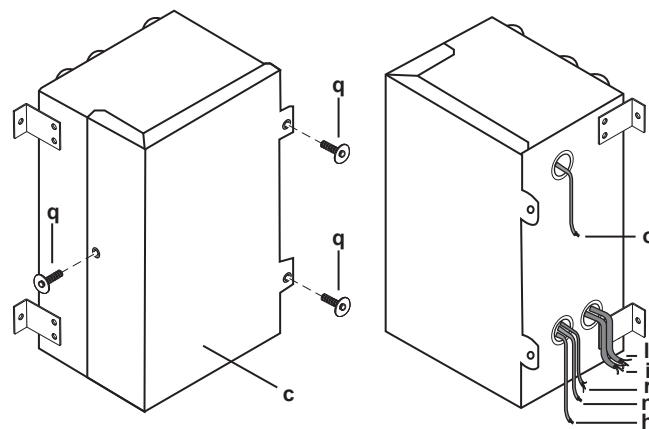
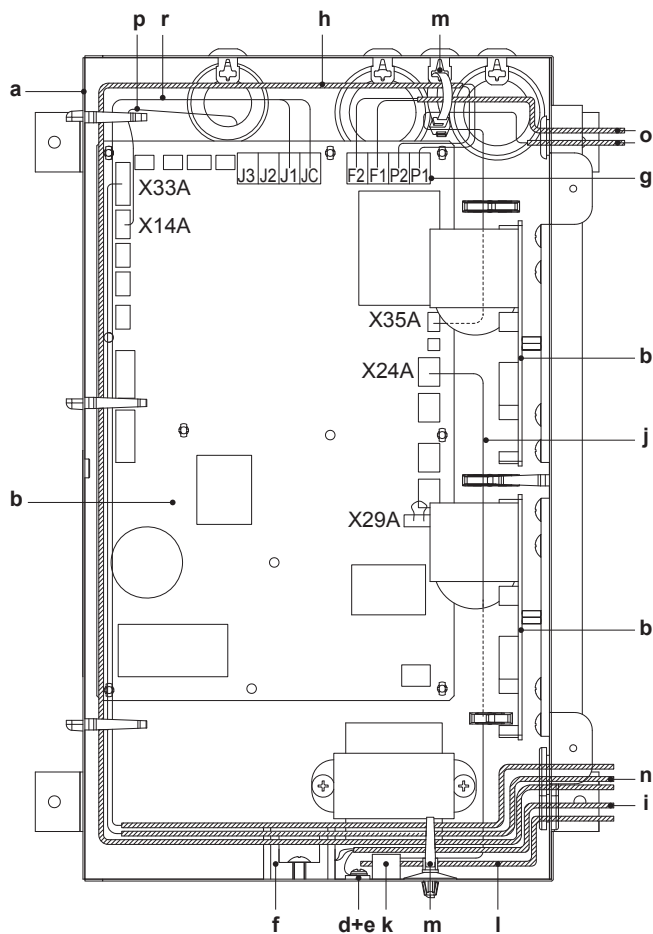
- Remove the screw that secures the cover and open the switch box.
- Secure the power supply control wires with the clamp, as shown in the figures.

#### VAM350~650

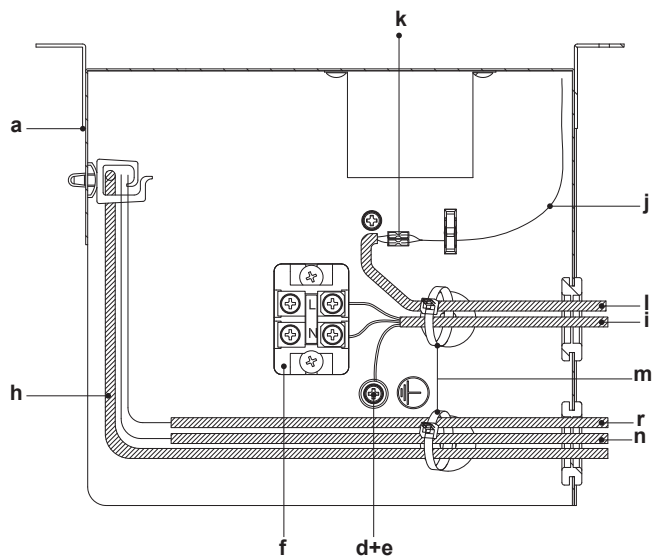


- a Switch box
- b Printed circuit board
- c Switch box cover
- d Securing screw and washer
- e Grounding terminal
- f Terminal board
- g Transmission wiring terminal board (P1, P2, F1, F2)
- h Transmission wiring (to optional user interface)
- i Power supply cable
- j Wires for connection of additional external damper (supplied accessory)
- k Insulated splices-closed barrel connector (0.75 mm<sup>2</sup>) (field supply)
- l Double or reinforced insulated flexible cable (0.75 mm<sup>2</sup>) to external damper (field supply)
- m Tie wrap (field supply)
- n BRP4A50A (optional accessory)
- o KRP2A51 (optional accessory)
- p CO<sub>2</sub> sensor (optional accessory)
- q Tapping screw
- r Wires for fresh-up operation

## VAM800+VAM1000

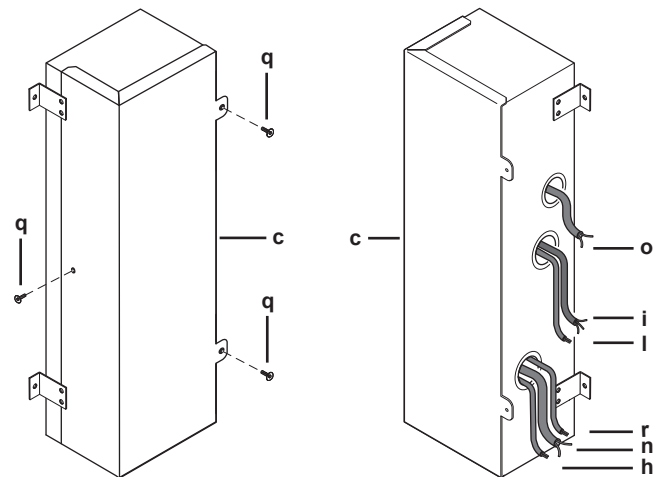
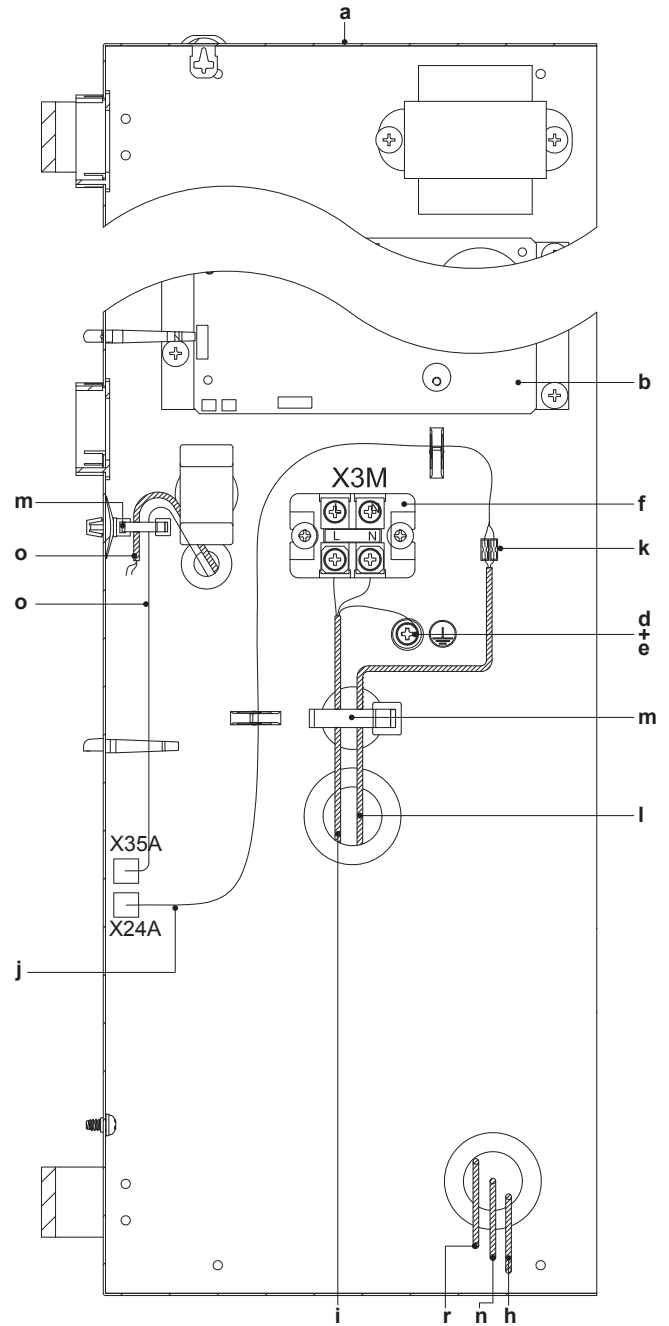
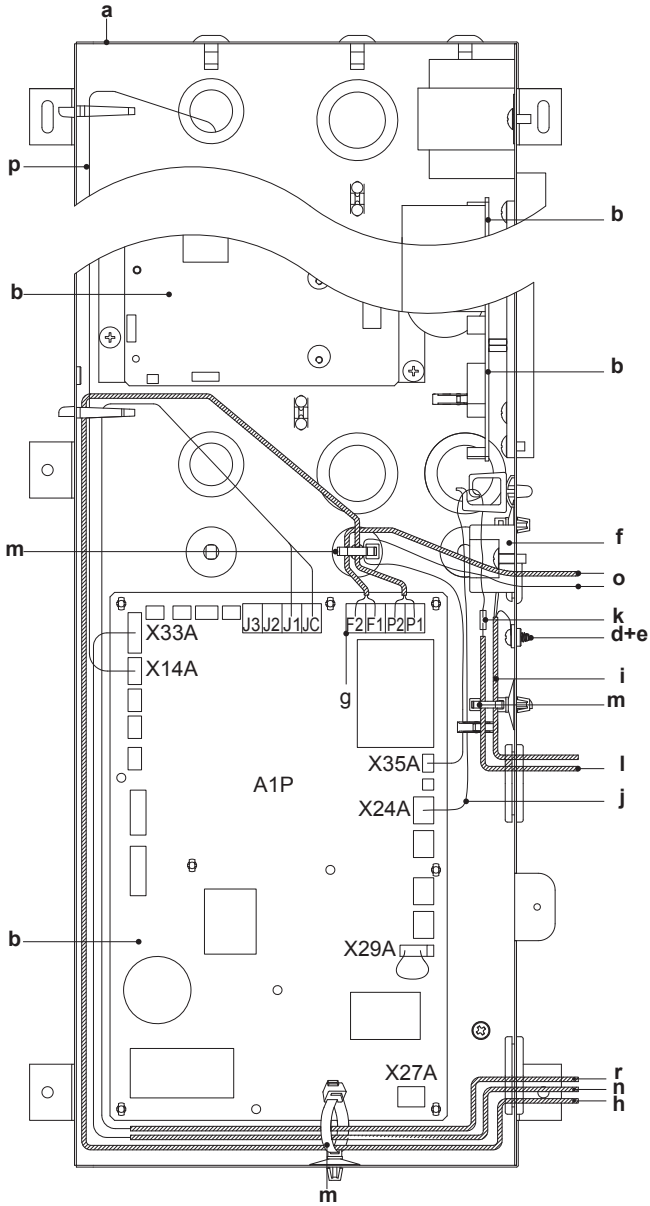


- a Switch box
- b Printed circuit board
- c Switch box cover
- d Securing screw and washer
- e Grounding terminal
- f Terminal board
- g Transmission wiring terminal board (P1, P2, F1, F2)
- h Transmission wiring (to optional user interface)
- i Power supply cable
- j Wires for connection of additional external damper (supplied accessory)
- k Insulated splices-closed barrel connector (0.75 mm<sup>2</sup>) (field supply)
- l Double or reinforced insulated flexible cable (0.75 mm<sup>2</sup>) to external damper (field supply)
- m Tie wrap (field supply)
- n BRP4A50A (optional accessory)
- o KRP2A51 (optional accessory)
- p CO<sub>2</sub> sensor (optional accessory)
- q Tapping screw
- r Wires for fresh-up operation



# 5 Installation

VAM1500+VAM2000



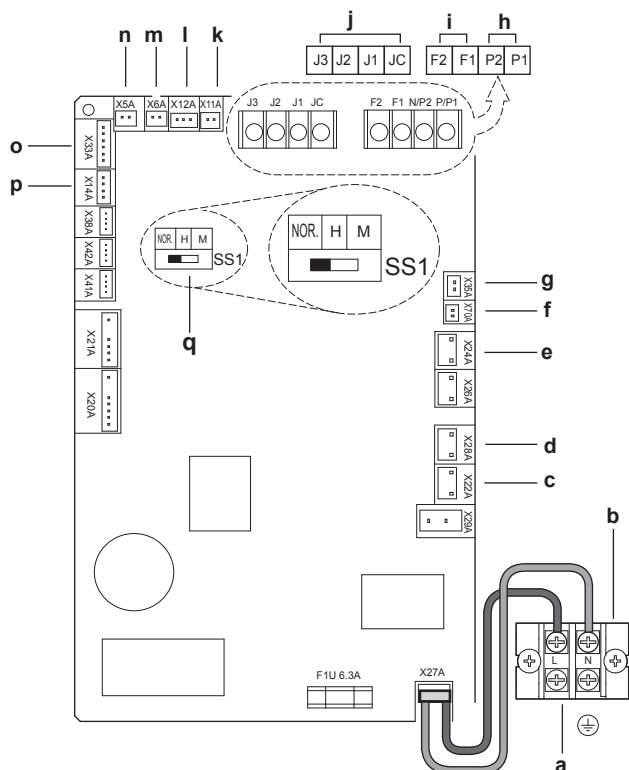
- a Switch box
- b Printed circuit board
- c Switch box cover
- d Securing screw and washer
- e Grounding terminal

- f Terminal board
- g Transmission wiring terminal board (P1, P2, F1, F2)
- h Transmission wiring (to optional user interface)
- i Power supply cable
- j Wires for connection of additional external damper (supplied accessory)
- k Insulated splices-closed barrel connector (0.75 mm<sup>2</sup>) (field supply)
- l Double or reinforced insulated flexible cable (0.75 mm<sup>2</sup>) to external damper (field supply)
- m Tie wrap (field supply)
- n BRP4A50A (optional accessory)
- o KRP2A51 (optional accessory)
- p CO<sub>2</sub> sensor (optional accessory)
- q Tapping screw
- r Wires for fresh-up operation

### 5.5.3 Power supply connection, control wire terminals and switches on the circuit board

#### To connect the power supply

- 1 Connect the power supply to the L and N terminals.
- 2 Secure the power supply with the power supply clamp, as shown in Opening the switch box in the installer and user reference guide.
- 3 Be sure to connect the earth wire.



- a Power supply
- b Terminals
- c Damper
- d Damper (only VAM1500+VAM2000 bottom unit)
- e External damper (field supply)
- f Fan communications
- g KRP2A51 (option)
- h User interface
- i Centralised control
- j External input
- k Outdoor air thermistor
- l Indoor air thermistor
- m Damper (only VAM1500+VAM2000 bottom unit)
- n Damper
- o BRP4A50A (optional accessory)
- p CO<sub>2</sub> sensor
- q Factory setting (No operation if setting is changed)



#### NOTICE

Factory settings: Do NOT change the switch settings when a user interface is connected. SS1 is a setting switch to operate without user interface. Changing the settings when a user interface is connected, will stop the unit from operating normally. Keep the switch on the PCB at the factory setting.

## 6 Configuration

The settings (format: XX(XX)-X-XX), for example 19(29)-1-02, that are used in this chapter are composed of 3 parts, divided by "-":

- Mode number: for example, 19(29), where 19 is the mode number for group settings and 29 is the mode number for individual settings.
- Switch number: for example, 1
- Position number: for example, 02

### 6.1 Operating procedure

You can use either the user interface of the heat reclaim ventilation units or of the air conditioner to adjust the heat reclaim ventilation unit settings.

#### Initial settings

- Mode numbers 17, 18, and 19: group control of heat reclaim ventilation units.
- Mode numbers 27, 28, and 29: individual control.

#### 6.1.1 To change the settings with BRC1E53

Make sure that the switch box lids on the heat reclaim ventilation unit are closed.

- 1 Shortly press a button to turn on the screen light.
- 2 Press and hold the Cancel button (a) for at least 4 seconds to enter the Service Settings menu.
- 3 Go to Field Settings with the Up/Down buttons and press the Menu/Enter button (b).
- 4 Press the Left/Right buttons to highlight the number under Mode.
- 5 Press the Up/Down buttons to select the required mode number.
 

**Result:** Depending on the mode number that you select, starting at 20, you will also have to select a unit number, for the individual control.
- 6 Use the Left/Right buttons to highlight the number under Unit No.
- 7 Use the Up/Down buttons to select an indoor unit number. Selecting a unit number is NOT necessary when you are configuring the entire group.
- 8 Use the Left/Right buttons to select a position number (0 to 15) for the switch number that you want to change.

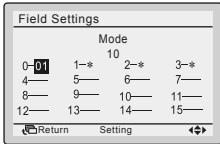
In case of individual settings:

Field Settings			
Unit No.	Mode		
0	1-00	2-00	3-00
4	5	6	7
8	9	10	11
12	13	14	15

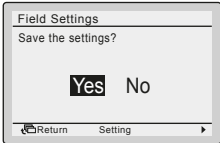
Return      Setting

## 6 Configuration

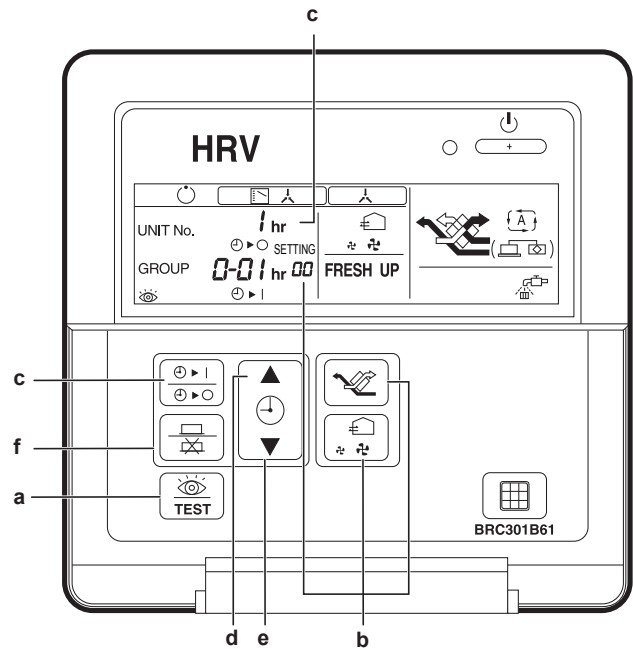
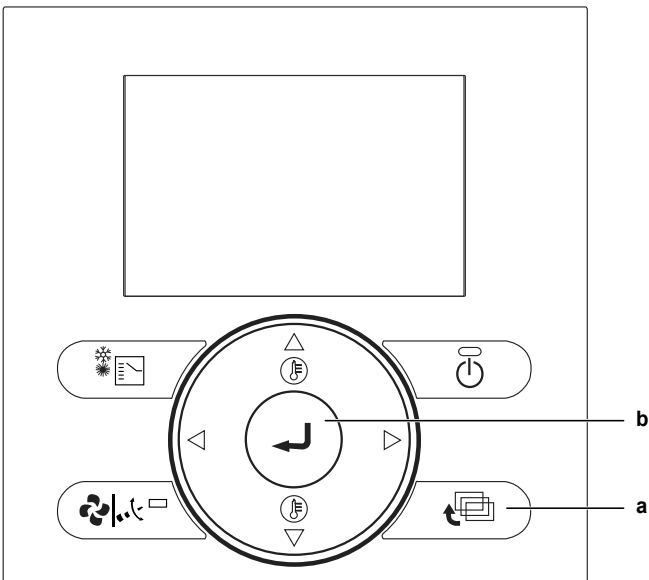
In case of group settings:



- Use the Up/Down buttons to select the required position number.
- Press the Menu/Enter (b) button and confirm the selection with Yes.



- After you have completed all the changes, press the Cancel button (a) twice to return to the normal mode.



### NOTICE

Setting 18(28)-11 CANNOT be selected with this user interface.

### 6.1.2 To change the settings with BRC301B61

Make sure that the switch box lids on the heat reclaim ventilation unit are closed.

- With the unit in normal mode, press the Inspection/Trial button (a) for more than 4 seconds to enter the local setting mode.
- Use the Ventilation mode button (up - b) and the Airflow rate button (down - b) to select a mode number.  
**Result:** The code display is blinking.
- To configure settings for individual units under group control, press the Timer setting on/off button (c) and select the number of the unit that you want to configure.
- To select the setting switch number, press the top section of the Timer button (d). To select the setting position number, press the lower section of the Timer button (e).
- Press the Program/Cancel button (f) once, to enter the setting.  
**Result:** The code display stops blinking and lights up.
- Press the Inspection/Trial button (a) to return to normal mode.

## 6.2 List of settings

Setting mode	Setting switch no.	Setting description	Setting position no.														
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
17(27)	0	Filter cleaning time setting	Approx. 2500 hours	±1250 hours	—	—	—	—	—	—	—	—	—	—	—	—	—
	1	Nighttime free cooling timer (after stop)	Off	On after 2 hours	On after 4 hours	On after 6 hours	On after 8 hours	—	—	—	—	—	—	—	—	—	—
	2	Pre-cool/pre-heat	Off	On	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	Pre-cool/pre-heat duration	30 minutes	45 minutes	60 minutes	—	—	—	—	—	—	—	—	—	—	—	—
	4	Initial fan speed	High	Ultra-high	—	—	—	—	—	—	—	—	—	—	—	—	—
17(27)	5	Yes/No setting for duct connection with VRV system	Without duct	With duct	Without duct	Without duct	With duct	With duct	—	—	—	—	—	—	—	—	—
	6	Setting for cold areas (fan operation when heater thermostat is off)	—	—	Stop	Low	Stop	Low	—	—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	6	Nighttime free cooling (fan settings)	High	Ultra-high	—	—	—	—	—	—	—	—	—	—	—	—	—
	7	Target temperature for independent 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	—	—
8	Centralised zone interlock setting	No	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	
9	Pre-heat time extension setting	0 minutes	30 minutes	60 minutes	90 minutes	—	—	—	—	—	—	—	—	—	—	—	

## 6 Configuration

Setting mode	Setting switch no.	Setting description	Setting position no.														
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
18(28)	0	External signal JC/J2	Last command	Priority on external input	Priority on operation	Disable nighttime free cooling / Forced stop	—	24 hours ventilation On/Off	—	—	—	—	—	—	—	—	—
	1	Setting for direct Power ON	Off	On	—	—	—	—	—	—	—	—	—	—	—	—	—
	2	Auto restart setting	Off	On	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	Output signal to external damper (X24A)	—	—	Damper output operation (fan operation)	Damper output operation (fan operation)	—	—	—	—	—	—	—	—	—	—	—
18(28)	4	Indication of ventilation mode	On	Off	—	—	—	—	—	—	—	—	—	—	—	—	—
	6	Automatic ventilation air flow mode	Linear	—	Fixed A	Fixed B	—	—	—	—	—	—	—	—	—	—	—
	7	Fresh-up mode	No indication supply	No indication exhaust	Indication supply	Indication exhaust	—	—	—	—	—	—	—	—	—	—	—
	8	External input terminal function selection (between J1 and JC)	Fresh-up	Error output	Error output stop operation	Forced off	Fan forced off	Air-flow up	—	—	—	—	—	—	—	—	—
	9	BRP4A50A output switching selection (between X3 and X4)	Heater output	Error output	Fan output (Low/High/Ultra-high)	Fan output (High/Ultra-high)	Fan output (Ultra-high)	Fan output (Low/High/Ultra-high)	—	—	—	—	—	—	—	—	—
18(28)	11	Filter contamination check**	Operation output	Reset filter check	Force filter check	—	—	24-hour ventilation and operation output	24-hour ventilation output	—	—	—	—	—	—	—	—
			No action	—	—	—	—	—	—	—	—	—	—	—	—	—	—



Setting mode	Setting switch no.	Setting description	Setting position no.																				
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15						
19(29)	0	Filter contamination inspection setting	Filter contamination check with fan step 1-15	Filter contamination check with new fan step	Timer based check	Target detection filter with fan step 1-15	Auto ESP selection + target detection filter with new fan step	—	—	—	—	—	—	—	—	—	—						
	1	Low tap setting	Off	Run 1/15 (28 min. off/2 min. on)	Run 1/10 (27 min. off/3 min. on)	Run 1/6 (25 min. off/5 min. on)	Run 1/4 (22.5 min. off/7.5 min. on)	Run 1/3 (20 min. off/10 min. on)	Run 1/2 (15 min. off/15 min. on)	Continuous operation						Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
	2	Supply fan step setting*	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12	Step 13	Step 14	Step 15						
	3	Exhaust fan step setting*	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12	Step 13	Step 14	Step 15						
19(29)	4	24-hour ventilation setting	Off	Run 1/15 (28 min. off/2 min. on)	Run 1/10 (27 min. off/3 min. on)	Run 1/6 (25 min. off/5 min. on)	Run 1/4 (22.5 min. off/7.5 min. on)	Run 1/3 (20 min. off/10 min. on)	Run 1/2 (15 min. off/15 min. on)	Continuous operation						Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
	7	Reference concentration shift for ventilation air flow control (ppm)	0	+200	+400	+600	-200	-400	-600	—	—	—	—	—	—	—	—						
19(29)	8	Stop ventilation by automatic ventilation air flow control	Allowed	NOT allowed	Allowed	NOT allowed	—	—	—	—	—	—	—	—	—	—							
		Fan residual operation	Off	Off	Heater operation	Heater operation	—	—	—	—	—	—	—	—	—	—							
19(29)	9	Normal ventilation tap on automatic ventilation air flow control	—	—	—	—	Control by CO <sub>2</sub> sensor	—	—	—	—	—	—	—	—	—							
		Fresh-up operation**	Off	On	—	—	—	—	—	—	—	—	—	—	—	—							
1A	0	Fresh-up operation**	Off	On	—	—	—	—	—	—	—	—	—	—	—								



### INFORMATION

- Factory settings are marked with grey backgrounds.
- (\*) See the technical data book for pressure drop curves and selection of fan curves (step 1 to 15).
- (\*\*) This setting CANNOT be done with BRC301B61.
- The setting modes are mentioned as group settings. Between parentheses are the setting modes for individual unit control.
- Group number setting for centralised controller

Mode No. 00: Group controller

Mode No. 30: Individual controller

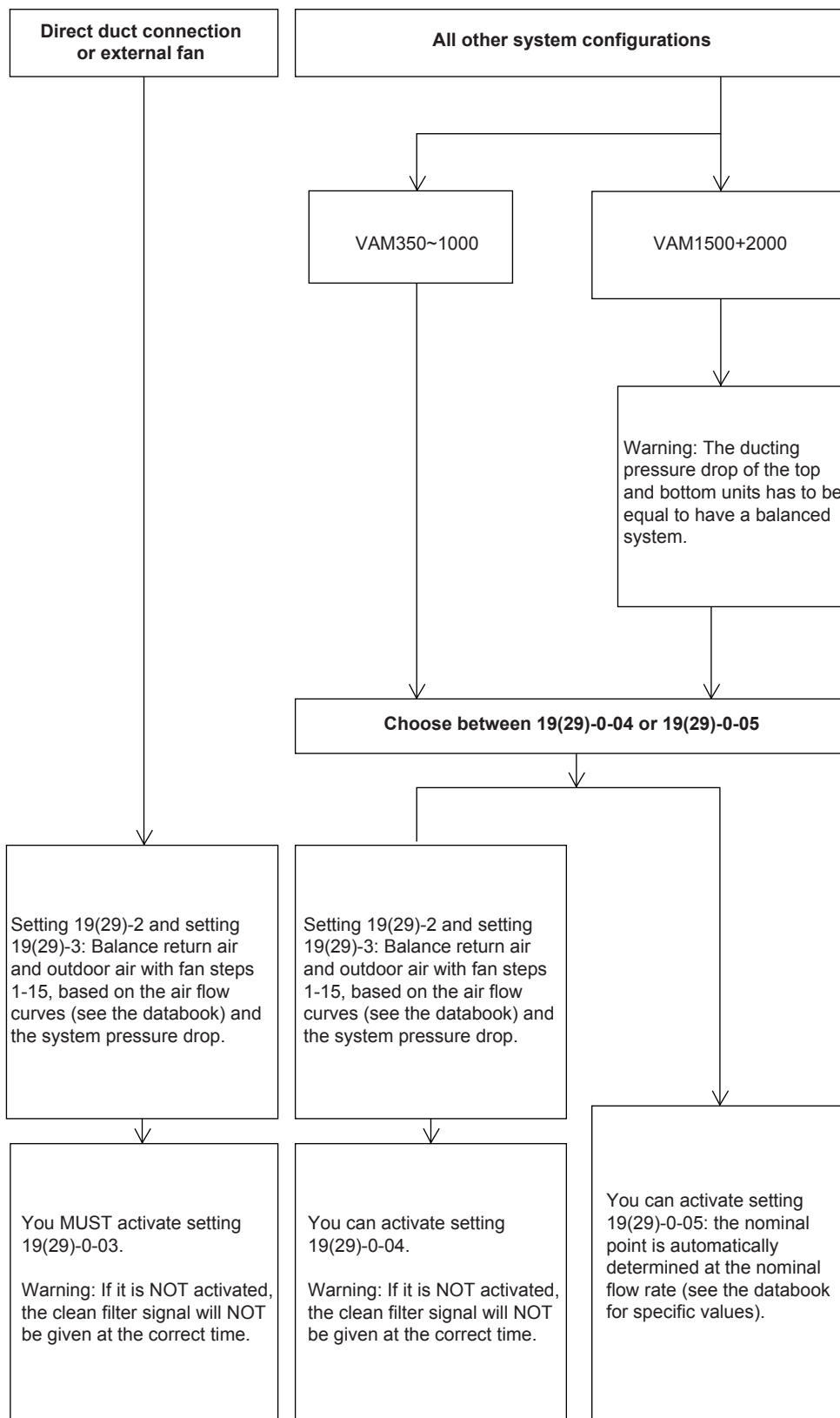
Regarding the setting procedure, see the section "Group number setting for centralised control" in the operating manual of either the on/off controller or the central controller.

### Example

To adjust the auto restart setting to 'on' in the group setting mode, enter mode No. "18", setting switch No. "2" and position No. "02".

### 6.3 Settings for all configurations

Setting 17(27)-4: First choose the fan speed. Set it to high or ultra-high.



#### 6.3.1 About setting 19(29)-0-04 and 19(29)-0-05

- When you have configured setting 19(29)-0-04 successfully, the system automatically changes it to setting 19(29)-0-01.
- When you have configured setting 19(29)-0-05 successfully, the system automatically changes it to setting 19(29)-0-02.

## 6 Configuration

### NOTICE

If you change the ducting, then install clean filters and reconfigure setting 19(29)-0-04 or 19(29)-0-05, otherwise the signal to clean the filters will come too soon. Do NOT adjust the dampers when setting 19(29)-0-04 or 05 is activated.

- If the user interface is switched off while you are activating setting 19(29)-0-04 or 19(29)-0-05, the configuration is aborted. When you switch the user interface back on, the function starts from the beginning.
- Setting 19(29)-0-04 takes between 1 and 6 minutes to complete. You can check if the setting was completed successfully by checking if the field setting is changed to 0-01.
- Setting 19(29)-0-05 takes between 3 and 35 minutes to complete. You can check if the setting was completed successfully by checking if the field setting is changed to 0-02.

### NOTICE

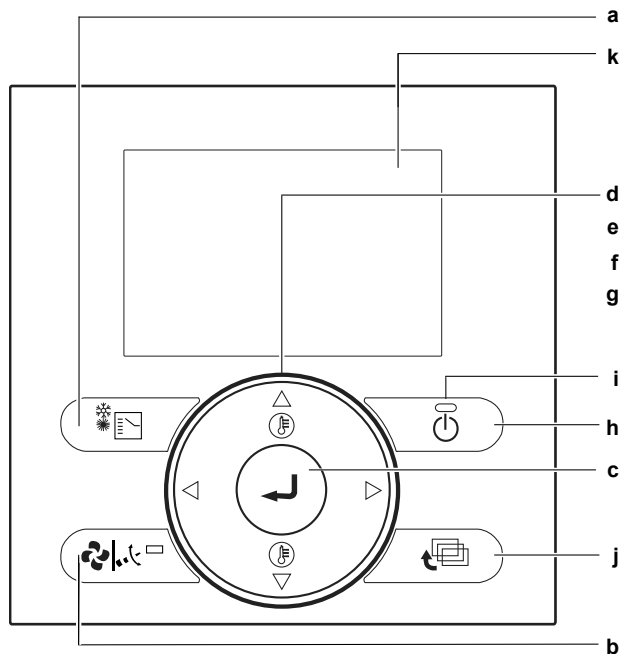
While activating setting 19(29)-0-04 and 19(29)-0-05, the unit is set to heat recovery and the fan is on high or ultra high. After the configuration, the unit is set back to what it was before the configuration.

- You can ONLY activate these settings with clean filters.
- For VAM1500+VAM2000, make sure that the ducting pressure drop of the top and bottom units is balanced.
- The function starts as soon as it is selected and the user interface is on.
- Setting 19(29)-0-04 CANNOT be configured if the outside temperature is  $\leq -10^{\circ}\text{C}$ , which is out of the operation range.
- Setting 19(29)-0-05 CANNOT be configured if the outside temperature is  $\leq 5^{\circ}\text{C}$ . In this case error 65-03 is shown and the unit stops working. Change the setting to 19(29)-0-04.
- The setting CANNOT be configured if there are alerts or errors present.
- If booster fans are used, you can ONLY configure setting 19(29)-0-03.
- You can configure settings 19(29)-0-04 and 19(29)-0-05 for multiple units with 1 user interface.

## 6.4 About the user interface

### 6.4.1 User interface for VRV-system air conditioner

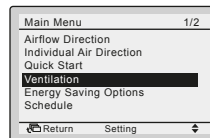
Please read the manual supplied with the user interface (BRC1E53) for more detailed instructions.



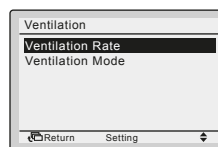
- a Operation Mode Selector button
- b Fan Speed/Airflow Direction button
- c Menu/Enter button
- d Up button
- e Down button
- f Right button
- g Left button
- h ON/OFF button
- i Operation lamp
- j Cancel button
- k LCD (with backlight)

### To change the ventilation rate

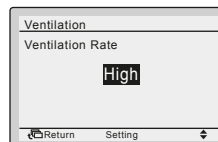
- 1 Press the Menu/Enter button to display the main menu.
- 2 Press the Up/Down buttons to select Ventilation and press the Menu/Enter button.



- 3 Press the Up/Down buttons to select Ventilation Rate and press the Menu/Enter button.



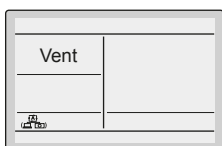
- 4 Press the Up/Down buttons to change the setting to Low or High and press the Menu/Enter button to confirm.



### To select ventilation mode

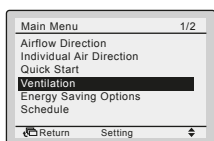
Ventilation mode is used when cooling or heating is unnecessary, so only the heat reclaim ventilation units are operating.

- 1 Press the Operation Mode Selector button several times, until the ventilation mode is selected.

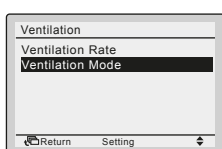


### To change the ventilation mode

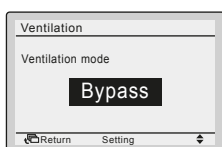
- 1 Press the Menu/Enter button to display the main menu.
- 2 Press the Up/Down buttons to select Ventilation and press the Menu/Enter button.



- 3 Press the Up/Down buttons to select Ventilation mode and press the Menu/Enter button.



- 4 Press the Up/Down buttons to select the required ventilation mode. For more information about ventilation modes, see Ventilation modes in the installer and user reference guide.




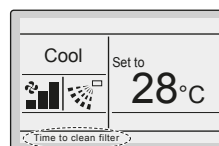
### Ventilation modes

You can change the ventilation mode in the main menu.

Mode	Description
Auto mode	Using information from the air conditioner (cooling, heating, fan, and set temperature) and heat reclaim ventilation unit (indoor and outdoor temperatures), this mode automatically changes between Energy Reclaim Ventilation and Bypass mode.
Energy Reclaim Ventilation mode	The outdoor air is supplied to the room after passing through a heat exchange element, where heat is exchanged with the return air.
Bypass mode	The outdoor air bypasses the heat exchange element. This means that outdoor air is supplied to the room without heat exchange with the return air.

### Time to clean filter indication

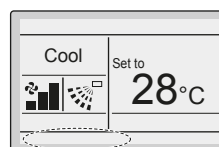
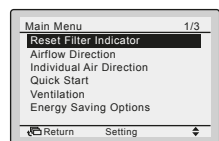
When it is time to clean the filters, the following message or icon shows at the bottom of the basic screen: Time to clean filter or . Clean the filters. For more information, see "8 Maintenance and service" on page 24.



### To remove the Time to clean filter indication

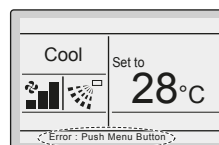
- 1 Press the Menu/Enter button.
- 2 Press the Up/Down buttons to select Reset Filter Indicator.
- 3 Press the Menu/Enter button.

**Result:** You return to the basic screen. The Time to clean filter indication is no longer displayed.

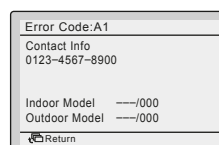


### About error indications

If an error occurs, there is an error icon in the basic screen and the operation lamp blinks. If a warning occurs, ONLY the error icon blinks and the operation lamp does NOT. Press the Menu/Enter button to display the error code or warning and contact information.



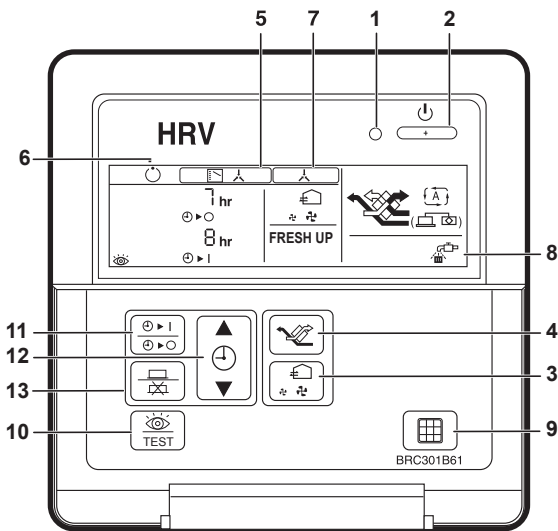
The error code blinks and the contact address and model name appear as shown below. In this case, notify your Daikin dealer about the error code.



#### 6.4.2 User interface for heat reclaim ventilation units

For non-independent systems, starting, stopping and setting a timer is NOT possible with this user interface (BRC301B61). In such cases, use the air conditioner user interface (BRC1E53) or the centralised controller.

## 6 Configuration



- 1 Operation lamp  
This red pilot lamp lights up while the unit is in operation.
- 2 Operation/Stop button  
Press this button once and the unit starts to operate. Press this button again and the unit stops.
- 3 Air flow rate changeover button  
Use this button to change the air flow to "Low", "High", "FRESH UP" Low Fresh-up, or "FRESH UP" High Fresh-up mode.



For "FRESH UP" operation

When this indication does NOT show, the volume of outdoor air supplied into the room and that of the return air exhausted outdoors is equal.

For "FRESH UP" operation

- If the Fresh-up setting is set to "Fresh up air supply": The volume of outdoor air supplied into the room is larger than that of return air exhausted outdoors. This prevents odours and moisture from kitchens and toilets from flowing into the room. This is the factory setting.
- If the Fresh-up setting is set to "Fresh up air exhaust": The volume of return air exhausted outdoors is larger than that of outdoor air supplied into the room. This prevents hospital odours and airborne microorganisms from flowing out of the room into the corridors.

To change this setting, see List of settings in the installer and user reference guide.

- 4 Ventilation mode changeover button:

"Automatic" mode

The unit's temperature sensor automatically changes the operation mode of the unit to Bypass mode and Heat Exchange mode.

"Heat Exchange" mode

In this mode, the air passes through the heat exchange element to effect Total Heat Exchanging ventilation.

"Bypass" mode

In this mode, the air does NOT pass through the heat exchange element but bypasses it to effect Bypass ventilation.

- 5 Indication of operation control method:

When the operation of heat reclaim ventilation units is linked to the air conditioners, this indication may be displayed. While this indication is displayed, the heat reclaim ventilation units CANNOT be turned on or off with the user interface of the heat reclaim ventilation.

- 6 Indication of operation standby:  
This icon indicates that the unit is precooling/preheating. The unit's start-up is delayed until after precooling/preheating is finished.  
Precooling/preheating means that the heat reclaim ventilation units are NOT started while linked air conditioners are starting up, for example, before office hours.  
During this period, the cooling or heating load is reduced to bring the room temperature to the set temperature in a short time.
- 7 Indication of centralised control:  
When a user interface for air conditioners or devices for centralised control are connected to the heat reclaim ventilation units, this icon may be displayed.  
While this indication is displayed, you may NOT be able to turn the heat reclaim ventilation units on or off, or use the timer function with the user interface of the heat reclaim ventilation unit.
- 8 Indication of air filter cleaning  
When the display shows "Clean the air filter", clean the air filter.
- 9 Filter signal reset button
- 10 Inspection button  
ONLY use this button if the unit is being serviced.
- 11 Schedule timer button:  
This button enables or disables the schedule timer.
- 12 Time adjust button:
- 13 Programming button:

### To set the timer

- 1 Press the Schedule timer button.
- 2 Press the time adjust button to set the time.
- 3 Press the programming button to save the setting.

## 6.5 Detailed explanation of settings

### 6.5.1 About the carbon dioxide sensor

With the CO<sub>2</sub> (carbon dioxide) sensor installed, you can adjust the ventilation volume in function of measured CO<sub>2</sub> concentration. The measured concentration value is compared to programmed trigger values. Make sure that ventilation mode and air flow rate are set to automatic.

See "6.2 List of settings" on page 15 for the field setting overview.

- Use setting 19(29)-9-05 to give control to the CO<sub>2</sub> sensor.
- Use setting 19(29)-7 to shift the trigger values.
- Use setting 18(28)-6 to switch between linear and fixed control.

	Linear control	Fixed control
Initialising	20 minutes in high	20 minutes in high
Measuring	Every 5 minutes	Every 20 minutes
Judgement	Every 30 minutes (average of 6 measurements)	Every 20 minutes

Trigger value	Linear control (minutes)			Fixed control	
	UH	H	L	Mode A	Mode B
CO <sub>2</sub> ppm (1)					
≥1450	30	—	—	UH	UH
1300~1450	20	10	—	UH	UH

Trigger value CO <sub>2</sub> ppm (1)	Linear control (minutes)			Fixed control	
	UH	H	L	Mode A	Mode B
1150~1300	10	20	—	H	H
1000~1150	—	30	—	H	H
850~1000	—	20	10	H	L
700~850	—	10	20	L	L
550~700	—	—	30	L	L
400~550	—	—	20	L	stop
0~400	—	—	10	L	stop

(1) CO<sub>2</sub> parts per million  
 UH Ultra high  
 H High  
 L Low

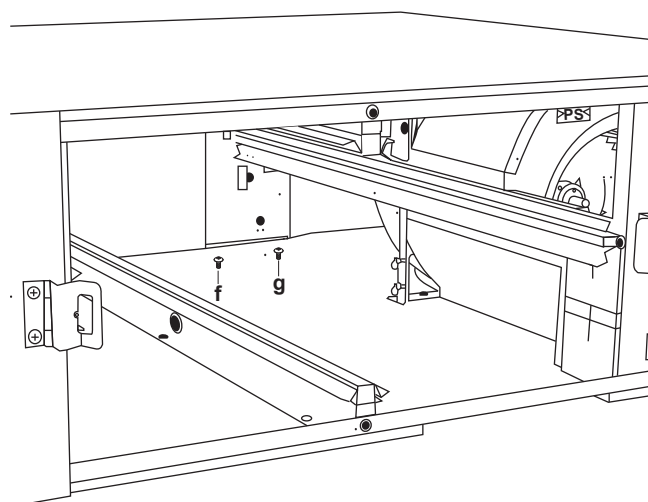
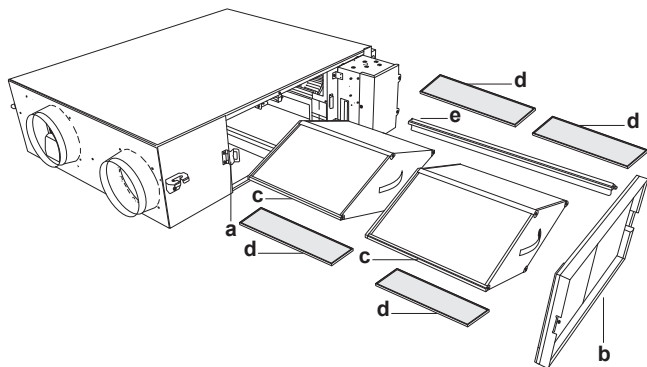
### Example

When the sensor measures 900 ppm in linear control, the unit runs in high mode for 20 minutes and the next 10 minutes in low mode, then measures again.

### Essential wiring

See "5.5.2 Opening the switch box" on page 10 and the installation manual that is delivered with the CO<sub>2</sub> sensor.

### To remove the components



a Hinge mechanism  
 b Service cover  
 c Heat exchange element  
 d Air filter  
 e Heat exchange element rail  
 f Screw 1  
 g Screw 2

- 1 Open the service cover hinge.
- 2 Remove the service cover.
- 3 Remove the 2 heat exchange elements and the 4 air filters.
- 4 Remove the screw from the right heat exchange element rail.

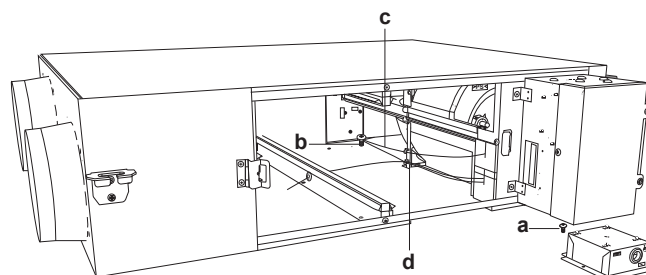
- 5 Remove the heat exchange element rail.
- 6 Loosen screw 2, and remove screw 1.



### INFORMATION

Use a crosshead screwdriver, that has a shank larger than 65 mm and a total length of less than 120 mm.

### To install the carbon dioxide sensor



a Screw 1  
 b Screw 2  
 c Damper motor wire  
 d Clamp

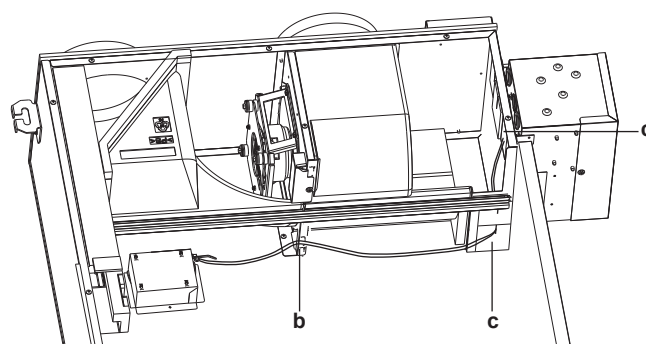
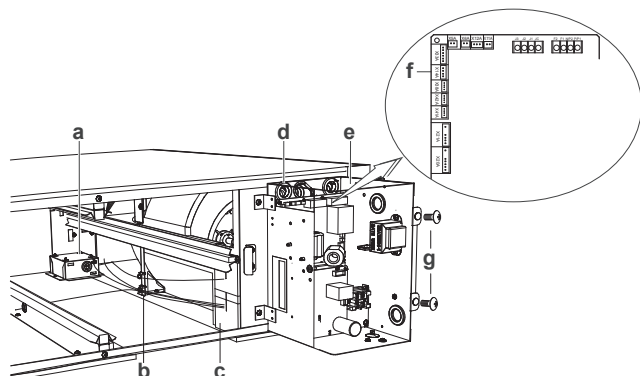
- 1 Use the 2 screws to install the CO<sub>2</sub> sensor. See "To remove the components" on page 23 for details.



### NOTICE

Make sure that the damper motor wire is NOT trapped under the kit.

### To route the wiring of the carbon dioxide sensor



a CO<sub>2</sub> sensor  
 b Clamp  
 c Sealing material  
 d Bush  
 e Switch box  
 f X14A connector  
 g Screw

- 1 Remove the screws of the switch box cover.
- 2 Open the switch box.
- 3 Follow the same path with the CO<sub>2</sub> sensor wire as the damper switch (red) and thermistor (black) wires: through the bush inside the unit and through the left bush in the switch box.

## 7 Commissioning

- 4 Firmly insert the CO<sub>2</sub> sensor wire into the X14A connector.
- 5 Clamp the CO<sub>2</sub> sensor wire together with the damper switch (red) and thermistor (black) wires inside the switch box.
- 6 Cut the accompanying sealing material by following the slit. Stick each piece on top of the sealing material that is attached to the bushing, in order to seal the gap around the CO<sub>2</sub> sensor wire.
- 7 Bundle the excess CO<sub>2</sub> sensor wire together with the damper switch (red) and thermistor (black) wires from the inside of the unit with the accompanying clamp.
- 8 Cut off the excess edge of the clamp.



### NOTICE

To install the heat exchanger rail correctly, the wire **MUST** be clamped.



### NOTICE

When bundling the wires, make sure to open the control box completely.

### To install the components

- 1 Close the switch box cover.
- 2 Install the components. Follow the reverse procedure of "[To remove the components](#)" on page 23.

## 7 Commissioning

After installation and once the field settings are defined, the installer is obliged to verify correct operation. Therefore a test run **MUST** be performed according to the procedures described below.

### 7.1 Precautions when commissioning



#### CAUTION

**Do NOT perform the test operation while working on the indoor units, the outdoor unit or the heat reclaim ventilation units.**

When performing the test operation, NOT only the unit to which the user interface is connected will operate, but all the units that are linked to this one as well. Working on an indoor unit or the heat reclaim ventilation unit while performing a test operation is dangerous.

### 7.2 Checklist before commissioning

After the installation of the unit, first check the following items. Once all below checks are fulfilled, the unit **MUST** be closed, **ONLY** then can the unit be powered up.

<input type="checkbox"/>	You read the complete installation and operation instructions, as described in the <b>installer and user reference guide</b> .
<input type="checkbox"/>	<b>Installation</b> Check that the unit is properly installed, to avoid abnormal noises and vibrations when starting up the unit.
<input type="checkbox"/>	<b>Field wiring</b> Be sure that the field wiring has been carried out according to the instructions described in the chapter " <a href="#">5.5 Electrical wiring</a> " on page 9, according to the wiring diagrams and according to the applicable legislation.
<input type="checkbox"/>	<b>Power supply voltage</b> Check the power supply voltage on the local supply panel. The voltage <b>MUST</b> correspond to the voltage on the identification label of the unit.

<input type="checkbox"/>	<b>Earth wiring</b> Be sure that the earth wires have been connected properly and that the earth terminals are tightened.
<input type="checkbox"/>	<b>Insulation test of the main power circuit</b> Using a megatester for 500 V, check that the insulation resistance of 2 MΩ or more is attained by applying a voltage of 500 V DC between power terminals and earth. <b>NEVER</b> use the megatester for the transmission wiring.
<input type="checkbox"/>	<b>Fuses, circuit breakers, or protection devices</b> Check that the fuses, circuit breakers, or the locally installed protection devices are of the size and type specified in the chapter " <a href="#">4.3 Preparing the electrical wiring</a> " on page 6. Be sure that neither a fuse nor a protection device has been bypassed.
<input type="checkbox"/>	<b>Internal wiring</b> Visually check the electrical component box and the inside of the unit on loose connections or damaged electrical components.
<input type="checkbox"/>	<b>Air inlet/outlet</b> Check that the air inlet and outlet of the unit is <b>NOT</b> obstructed by paper sheets, cardboard, or any other material.
<input type="checkbox"/>	<b>Installation date and field setting</b> Be sure to keep record of the installation date on the sticker on the rear of the front panel according to EN60335-2-40 and keep record of the contents of the field setting(s).

### 7.3 Checklist during commissioning

<input type="checkbox"/>	To perform a <b>test run</b> .
--------------------------	--------------------------------

#### 7.3.1 About the test run

After completing the installation of the system, turn on the power of the heat reclaim ventilation units. Refer to the manual of the user interface of each unit (user interface for air conditioner, central control unit, etc.) for conducting a trial operation.

## 8 Maintenance and service



### NOTICE

Maintenance **MUST** be done by an authorized installer or service agent.

We recommend performing maintenance at least once a year. However, applicable legislation might require shorter maintenance intervals.



### NOTICE

We recommend to clean at least once every 2 years (for general office use). If necessary, shorter maintenance intervals might be required.



### CAUTION

Before accessing, make sure to turn off the operation switch and disconnect the power.



### CAUTION

During operation, **NEVER** check or clean the unit. It may cause electrical shock. Do **NOT** touch the rotating parts, it will cause injury.



## 8.1 Maintenance safety precautions



**DANGER: RISK OF ELECTROCUTION**



**DANGER: RISK OF BURNING**



**NOTICE: Risk of electrostatic discharge**

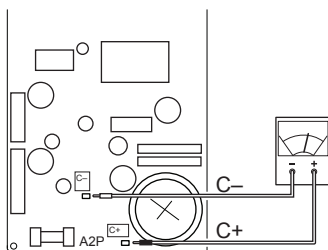
Before performing any maintenance or service work, touch a metal part of the unit in order to eliminate static electricity and to protect the PCB.

### 8.1.1 To prevent electrical hazards

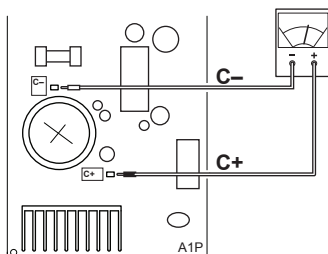
When performing service to inverter equipment:

- 1 Do NOT open the electrical component box cover for 10 minutes after the power supply is turned off.
- 2 Measure the voltage between terminals on the terminal block for power supply with a tester and confirm that the power supply is shut off. In addition, measure points as shown in the figure, with a tester and confirm that the voltage of the capacitor in the main circuit is less than 50 V DC.

#### VAM350~650



#### VAM800~2000



### 9.2.1 Error codes: Overview

Malfunction code	Particular code	Description
R1		EEPROM failure
R5		Locked rotor
R5	22	Unstable fan rpm: failure of filter contamination check or failure of function 19(29)-0-04/-05
R8		Power supply malfunction
RJ		Capacity setting malfunction
C1		Fan communication error
C5		Malfunction of fan motor sensor or fan control driver
CH		CO <sub>2</sub> sensor warning
US		Transmission error between the unit and user interface
UB		Transmission error between main user interface and sub user interface
UR		Wrong user interface installed
UC		Repeated central address
UE		Transmission error between the unit and centralised controller
SD		External protection device activated
E4	01	Indoor air thermistor (R1T) malfunction
E4	02	Indoor air thermistor (R1T) out of operation range

For details refer to the wiring diagram labelled on the outside of the service cover.

## 9 Troubleshooting

### 9.1 Precautions when troubleshooting



**WARNING**

- When carrying out an inspection on the switch box of the unit, ALWAYS make sure that the unit is disconnected from the mains. Turn off the respective circuit breaker.
- When a safety device was activated, stop the unit and find out why the safety device was activated before resetting it. NEVER bridge safety devices or change their values to a value other than the factory default setting. If you are unable to find the cause of the problem, call your dealer.



**DANGER: RISK OF ELECTROCUTION**



**WARNING**


Prevent hazards due to inadvertent resetting of the thermal cut-out: this appliance MUST NOT be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly turned ON and OFF by the utility.

### 9.2 Solving problems based on error codes

In case of a displayed malfunction code, consult the dealer where the unit was purchased.

## 10 Technical data

Malfunction code	Particular code	Description
ES	01	Outdoor air thermistor (R2T) malfunction
ES	02	Outdoor air thermistor (R2T) out of operation range
ES	03	Functions 19(29)-0-04/-05 not possible due to low outdoor temperature operation
ER		Damper-related malfunction
ER		Damper-related malfunction+thermistor

 In case of malfunction with the code on grey background, the unit still operates. However, make sure to have it inspected and repaired as soon as possible.

## 10 Technical data

- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of latest technical data is available on the Daikin extranet (authentication required).

### 10.1 Wiring diagram: Heat reclaim ventilation unit

The wiring diagram is delivered with the unit, located on the outside of the service cover.

#### Legend for wiring diagrams:

A1P	Printed circuit board
A2P~A5P	Printed circuit board assy (fan)
C7	Capacitor (M1F)
F1U	Fuse (250 V, 6.3 A, T) (A1P)
HAP	Pilot lamp (service monitor - green)
K1R	Magnetic relay (A1P)
K2R	Magnetic relay (A1P)
L1R~L4R	Reactor
M1D	Motor (damper)
PS	Switching power supply
Q1DI	Field earth leak detector ( $\leq 300$ mA)
R1T	Thermistor (indoor air)
R2T	Thermistor (outdoor air)
R3T	Thermistor (PTC)
S1C	Limit switch damper motor
V1R	Diode bridge
X1M	Terminal (A1P)
X2M	Terminal (outside input) (A1P)
X3M	Terminal (power supply)
Z1C	Noise filter (ferrite core)
Z1F	Noise filter

#### User interface

SS1	Selector switch
-----	-----------------

#### Connector for option

X14A	Connector (CO <sub>2</sub> sensor)
X24A	Connector (outside damper)
X33A	Connector (contact PCB)

X35A	Connector (power supply adapter PCB)
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#### For VAM350~650

C1	Capacitor (A2P)
F2U	Fuse (250 V, 5 A, T) (A2P)
F4U	Fuse (250 V, 6.3 A, T) (A2P)
K1R	Magnetic relay (A2P)
M1F	Motor (supply air fan)
M2F	Motor (exhaust air fan)
Z2C	Noise filter (ferrite core)






#### For VAM800+VAM1000

F3U	Fuse (250 V, 6.3 A, T) (A2P+A3P)
M1F	Motor (exhaust air fan)
M2F	Motor (supply air fan)

#### For VAM1500+VAM2000

F3U	Fuse (250 V, 6.3 A, T) (A2P~A5P)
K5R	Magnetic relay (A1P)
M2D	Motor (damper)
M1F	Motor (exhaust air fan) (bottom)
M2F	Motor (supply air fan) (bottom)
M3F	Motor (exhaust air fan) (top)
M4F	Motor (supply air fan) (top)
S2C	Limit switch damper motor

#### Symbols:

	Field wiring
	Terminals
	Connectors
	Protective earth
	Noiseless earth

#### Colours:

BLK	Black
BLU	Blue
BRN	Brown
GRN	Green
ORG	Orange
RED	Red
WHT	White
YLW	Yellow

## For the user

### 11 User interface



#### CAUTION

NEVER touch the internal parts of the controller.

Do NOT remove the front panel. Some parts inside are dangerous to touch and appliance problems may happen. For checking and adjusting the internal parts, contact your dealer.

Detailed information on required actions to achieve certain functions can be found in the dedicated installation and operation manual of the indoor unit.

Refer to the operation manual of the installed user interface.

### 12 Maintenance and service



#### NOTICE

Maintenance MUST be done by an authorized installer or service agent.

We recommend performing maintenance at least once a year. However, applicable legislation might require shorter maintenance intervals.



#### NOTICE

We recommend to clean at least once every 2 years (for general office use). If necessary, shorter maintenance intervals might be required.



#### CAUTION

Before accessing, make sure to turn off the operation switch and disconnect the power.



#### CAUTION

During operation, NEVER check or clean the unit. It may cause electrical shock. Do NOT touch the rotating parts, it will cause injury.

#### 12.1 Maintenance of the air filter

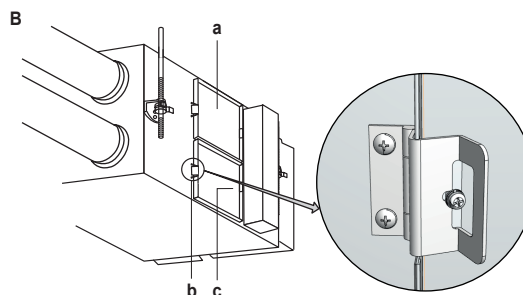
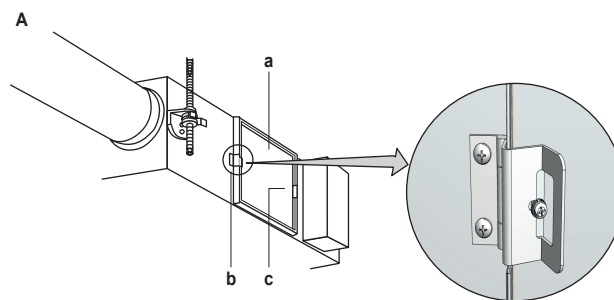


#### CAUTION

- Do NOT wash the air filter in hot water.
- Do NOT dry the air filter over a fire.
- Do NOT subject the air filter to direct sunlight.
- Do NOT use organic solvent such as gasoline and thinner on the air filter.
- Make sure to install the air filter after servicing (missing air filter causes clogged heat exchange element). Replacement air filters are available.

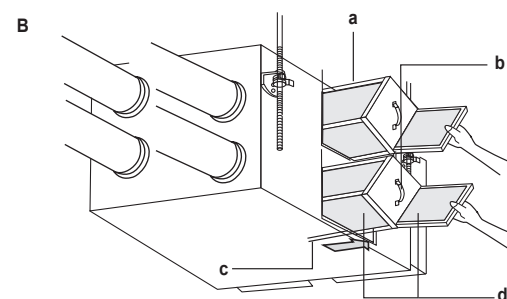
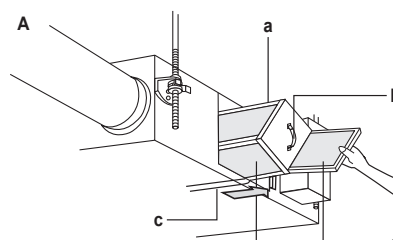
##### To clean the air filters

- Go into the ceiling through the inspection hole, loosen the screw of the hinge mechanism (on the left side) to open the maintenance cover. Take the maintenance cover off by rotating it around the vertical axis of the hanging metal.



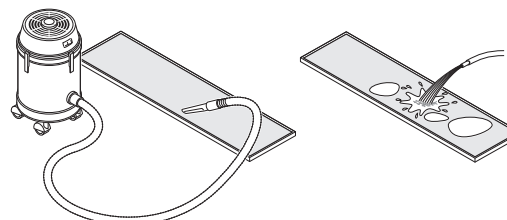
- a Maintenance cover
- b Hinge mechanism
- c Hanging metal
- A Models VAM350~1000
- B Models VAM1500+VAM2000

- Take out the air filters from the unit body.



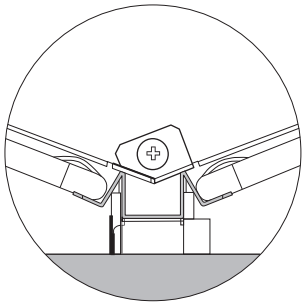
- a Heat exchange element
- b Handle
- c Rail
- d Air filter
- A Models VAM350~1000
- B Models VAM1500+VAM2000

- To clean the air filters, lightly pat it manually or remove dust with a vacuum cleaner. If excessively dirty, wash it in water.



## 13 Troubleshooting

- 4 If the air filters are washed, remove water completely and allow to dry for 20 to 30 minutes in the shade.
- 5 When dried completely, install the air filters back in place after the installation of the heat exchange elements. Make sure the air filters are orientated correctly, as shown in the figure.



- 6 Install the maintenance cover securely in place.

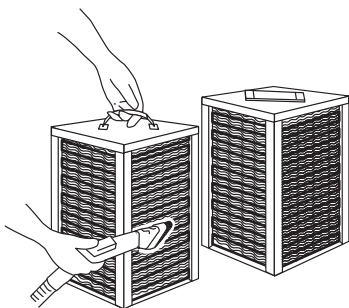
### 12.2 Maintenance of the heat exchange element

#### CAUTION

- NEVER wash the heat exchange element with water.
- NEVER touch the heat exchange paper because it can be damaged if it is forced.
- Do NOT crush the heat exchange element.

#### To clean the heat exchange element

- 1 Take out the heat exchange elements. Refer to "12.1 Maintenance of the air filter" on page 27.
- 2 Equip a vacuum cleaner with a brush on the tip of the suction nozzle.
- 3 Use the vacuum cleaner and lightly contact the brush on the surface of the heat exchange element to remove dust.



- 4 Put the heat exchange element on the rail and insert it securely in place.
- 5 Install the air filters securely in place.
- 6 Install the maintenance cover securely in place.

## 13 Troubleshooting

If one of the following malfunctions occur, take the measures shown below and contact your dealer.

#### WARNING

**Stop operation and shut off the power if anything unusual occurs (burning smells etc.).**

Leaving the unit running under such circumstances may cause breakage, electric shock or fire. Contact your dealer.

If the system does NOT properly operate, investigate the system according to the following procedures.

Malfunction	Measure
If the system does NOT operate at all.	<ul style="list-style-type: none"> <li>▪ Check if there is no power failure. Wait until power is restored and restart operation.</li> <li>▪ Check if no fuse has blown or breaker is activated. Change the fuse or reset the breaker if necessary.</li> <li>▪ Check if the indication of operation control method on the user interface is shown. This is normal. Operate the unit using the air conditioner remote control or centralised controller. Refer to "6 Configuration" on page 13.</li> <li>▪ Check if the indication of operation standby on the user interface is shown. It indicates the pre-cooling/pre-heating operation. This unit is at stop and will start operation after the precooling/preheating operation is over. Refer to "6 Configuration" on page 13.</li> </ul>
The amount of discharged air is small and the discharging sound is high.	<ul style="list-style-type: none"> <li>▪ Check if the air filter and heat exchange element are NOT clogged. Refer to "12 Maintenance and service" on page 27.</li> </ul>
The amount of discharged air is large and the discharging sound is high.	<ul style="list-style-type: none"> <li>▪ Check if the air filter and heat exchange element are installed. Refer to "12 Maintenance and service" on page 27.</li> </ul>

#### INFORMATION

The unit may not operate as requested due to a filter contamination check.

If after checking all above items, it is impossible to fix the problem yourself, contact your installer and state the symptoms, the complete model name of the unit (with manufacturing number if possible) and the installation date (possibly listed on the warranty card).

In case a malfunction code appears on the indoor unit user interface display, contact your installer and inform the malfunction code, the unit type, and serial number (you can find this information on the nameplate of the unit).

For your reference, a list with malfunction codes is provided. Refer to "Error codes: Overview" on page 25. You can, depending on the level of the malfunction code, reset the code by pushing the ON/OFF button. If NOT, ask your installer for advice.

## 14 Relocation

Contact your dealer for removing and reinstalling the total unit. Moving units requires technical expertise.

## 15 Disposal

#### NOTICE

Do NOT try to dismantle the system yourself: the dismantling of the system MUST comply with applicable legislation. Units MUST be treated at a specialised treatment facility for reuse, recycling and recovery.

