DAIKIN

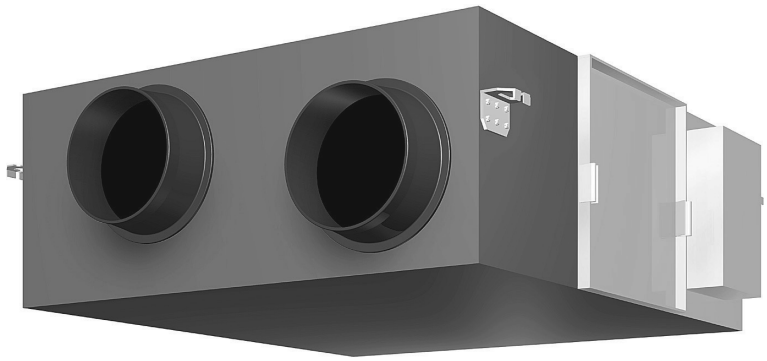
Si71 - 502

# Service Manual

# Heat Reclaim Ventilation

[Applied Models]
VAM 150GJVE
VAM 250GJVE
VAM 350GJVE
VAM 500GJVE
VAM 650GJVE
VAM 800GJVE
VAM1000GJVE
VAM1500GJVE
VAM2000GJVE

# Heat Reclaim Ventilation



**VAM 150GJVE**
**VAM 250GJVE**
**VAM 350GJVE**
**VAM 500GJVE**
**VAM 650GJVE**
**VAM 800GJVE**
**VAM1000GJVE**
**VAM1500GJVE**
**VAM2000GJVE**

# 1. Introduction

## 1.1 Safety Cautions

**Cautions and Warnings**

- Be sure to read the following safety cautions before conducting repair work.
- The caution items are classified into " ⚠ **Warning**" and " ⚠ **Caution**". The " ⚠ **Warning**" items are especially important since they can lead to death or serious injury if they are not followed closely. The " ⚠ **Caution**" items can also lead to serious accidents under some conditions if they are not followed. Therefore, be sure to observe all the safety caution items described below.
- About the pictograms

  △ This symbol indicates an item for which caution must be exercised.
  The pictogram shows the item to which attention must be paid.

  ◯ This symbol indicates a prohibited action.
  The prohibited item or action is shown inside or near the symbol.

  ● This symbol indicates an action that must be taken, or an instruction.
  The instruction is shown inside or near the symbol.
- After the repair work is complete, be sure to conduct a test operation to ensure that the equipment operates normally, and explain the cautions for operating the product to the customer.

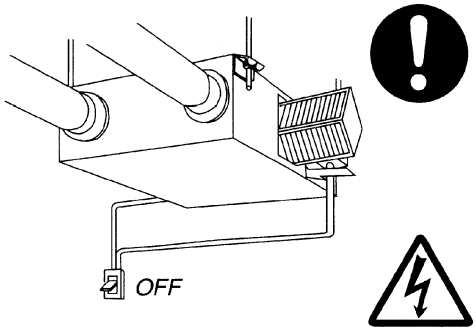
### 1.1.1 Cautions in Operation and Maintenance

# ⚠ WARNING

⚠ WARNING

Never inspect or service the unit by yourself.
Ask a qualified service person to perform this work.
( The qualified service person )

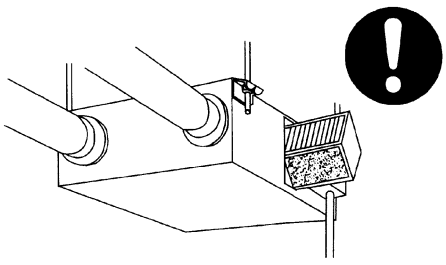
WARNING: Before obtaining access to terminal devices(⚠), all power suppy circuit must be iinterrupted.




Electeic shock may result. Before servicing the unit, always shut off power.

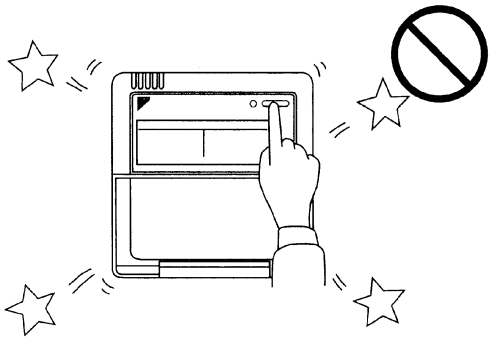
⚠ WARNING

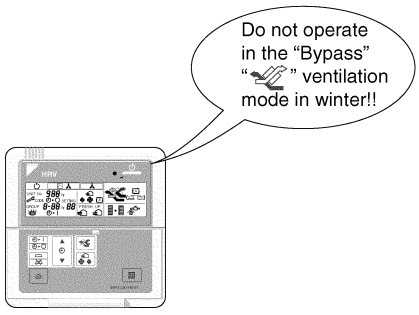
Always use the air filter.
If the air filter is not used, heat exchange elements will be clogged, possibly causing poor performance and subsequent failure.



⚠ WARNING

Do not change operations suddenly . It can result not only in malfunction but also fallure of switches or relays in the body.

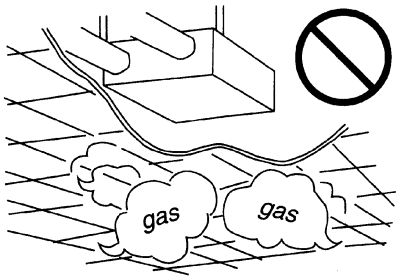




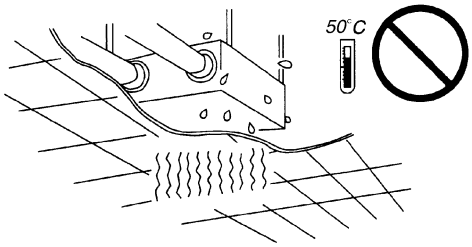
# ⚠ WARNING

⚠ WARNING Do not use a HRV or an air suction/discahrge grille in the folloowing places.

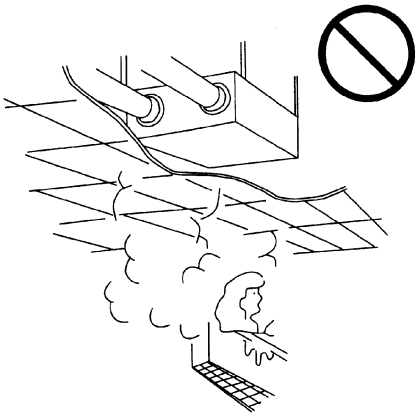
- **Place such as machinery plant and chemical plant where gas, which contains noxius gas or corrosive components of materials such as acid,alkali,organic solvent and paint, is generated. Place where combustible gas leakage is likely.**
  Such gas can cause fire.



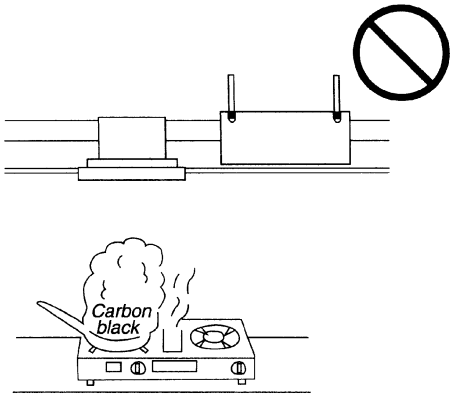

- **Place subjected to high temperature or direct flame.**
  Avoid a place where the temperature near the HRV unit and the air suction/discharge air grille exceeds 50℃ If the unit is used at high temperature, deformed air filter and heat exchange element or burned motor result.




- **Place such as bathroom subjected to moisture.**
  Electric leak or electric shock and other failure can be caused.



- **Place subjected to much carbon black.**
  Carbon black attaches to air filter and heat exchange element, marking them unable to use.



### 1.1.2 Using Icons

Icons are used to attract the attention of the reader to specific information. The meaning of each icon is described in the table below:

### 1.1.3 Using Icons List

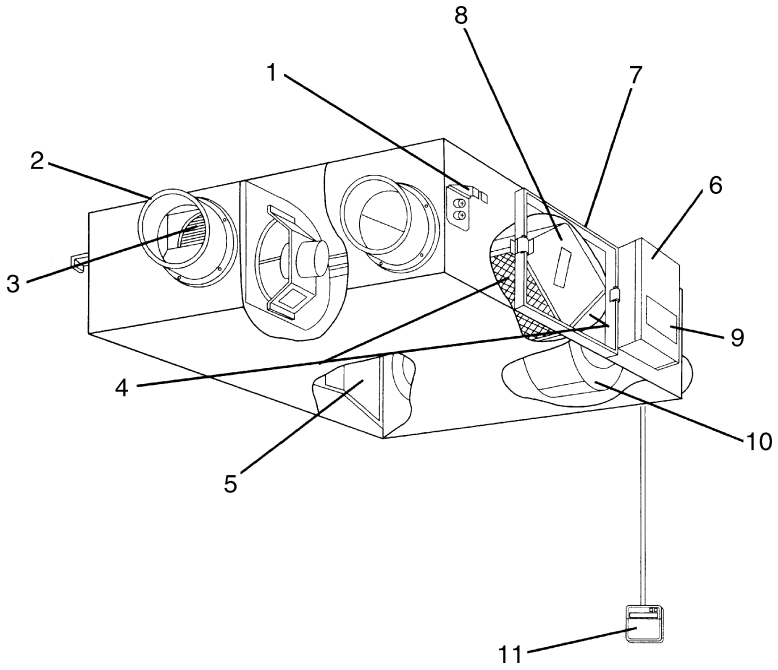
| Icon | Type of Information | Description |
|---|---|---|
| **Note:** | Note | A “note” provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks. |
| **Caution** | Caution | A “caution” is used when there is danger that the reader, through incorrect manipulation, may damage equipment, loose data, get an unexpected result or has to restart (part of) a procedure. |
| **Warning** | Warning | A “warning” is used when there is danger of personal injury. |
| | Reference | A “reference” guides the reader to other places in this binder or in this manual, where he/she will find additional information on a specific topic. |

# Part 1
# General Constructions

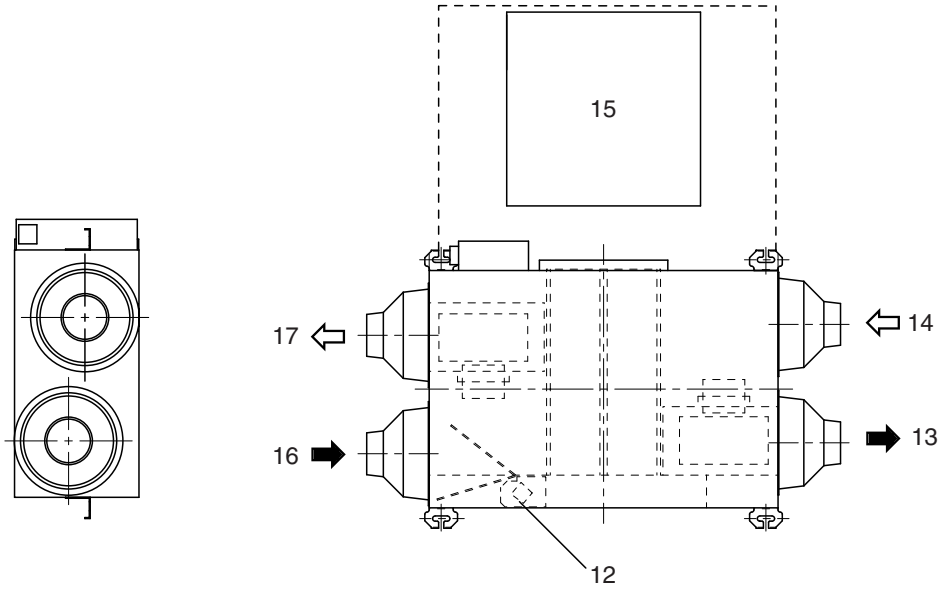
# 1. General Constructions

## 1.1 Explanation

**VAM150GJVE**
**VAM250GJVE**
**VAM350GJVE**
**VAM500GJVE**
**VAM650GJVE**
**VAM800GJVE**
**VAM1000GJVE**



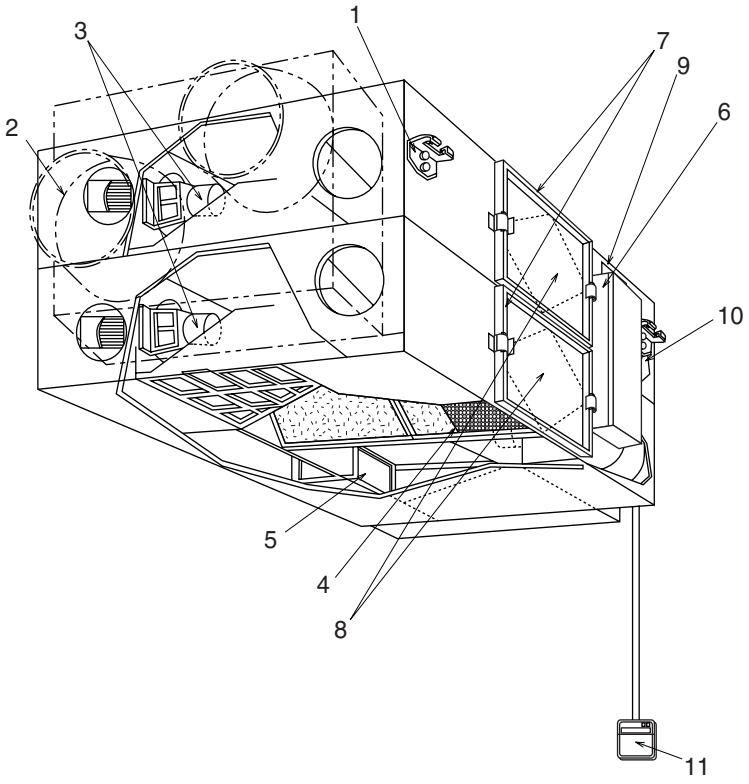

(HL001)



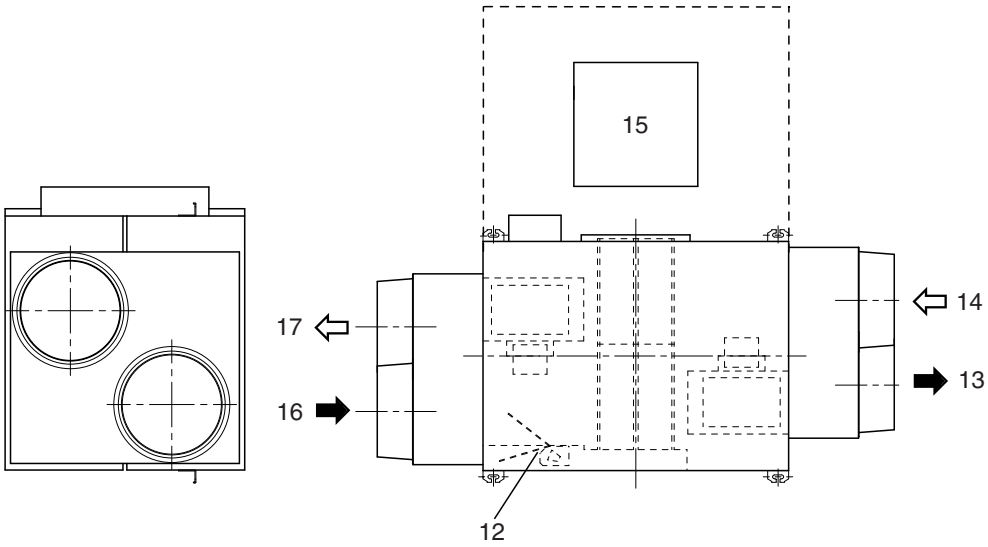

(HL002)

| | | | |
|---|---|---|---|
| 1 | Hanger Bracket | 2 | Duct Connection Flange |
| 3 | Exhaust Fan | 4 | Air Filter (Long Life Filter) |
| 5 | Damper | 6 | Control Box |
| 7 | Maintenance Cover | 8 | Heat Exchange Elements |
| 9 | Name Plate | 10 | Air Supply Fan |
| 11 | Remote Controller (Option Accessory) | 12 | Damper Plate |
| 13 | EA (Exhaust Air) [Exhaust Air to Outdoor] | 14 | OA (Outdoor Air) [Fresh Air from Outdoor] |
| 15 | Maintenance Space for The Air Filters, Heat Exchange Elements and Control Box | 16 | RA (Return Air) [Exhaust Air from Room] |
| 17 | SA (Supply Air) [Feed Air to Room] | | |

**VAM1500GJVE**
**VAM2000GJVE**




(HL016)




(HL017)

| | | | |
|---|---|---|---|
| 1 | H Hock | 2 | Duct Connection Flange |
| 3 | Exhaust Fan | 4 | Air Filter (Long Life Filter) |
| 5 | Damper | 6 | Control Box |
| 7 | Maintenance Cover | 8 | Heat Exchange Elements |
| 9 | Name Plate | 10 | Air Supply Fan |
| 11 | Remote Controller (Option Accessory) | 12 | Damper Plate |
| 13 | EA (Exhaust Air) [Exhaust Air to Outdoor] | 14 | OA (Outdoor Air) [Fresh Air from Outdoor] |
| 15 | Maintenance Space for The Air Filters, Heat Exchange Elements and Control Box | 16 | RA (Return Air) [Exhaust Air from Room] |
| 17 | SA (Supply Air) [Feed Air to Room] | | |

# Part 2
# Product Specification

# 1. Product Specification

## 1.1 Specification

(50 / 60Hz)

| Model name | | | | | VAM150GJVE | VAM250GJVE | VAM350GJVE |
|---|---|---|---|---|---|---|---|
| Power supply | | | | | Single phase 220 – 240 V / 220 V, 50 / 60 Hz | | |
| Temperature exchange efficiency | | | Ultra-High | % | 79 / 79 | 75 / 75 | 79 / 79 |
| | | | High | % | 79 / 79 | 75 / 75 | 79 / 79 |
| | | | Low | % | 84 / 85 | 79 / 79 | 82 / 82 |
| Enthalpy exchange efficiency | Cooling | | Ultra-High | % | 66 / 66 | 63 / 63 | 66 / 66 |
| | | | High | % | 66 / 66 | 63 / 63 | 66 / 66 |
| | | | Low | % | 70 / 70.5 | 66 / 66 | 70 / 70 |
| | Heating | | Ultra-High | % | 72 / 72 | 71 / 71 | 70 / 70 |
| | | | High | % | 72 / 72 | 71 / 71 | 70 / 70 |
| | | | Low | % | 76 / 76.5 | 74 / 74 | 77 / 77 |
| Casing | | | | | Galvanized steel plate | | |
| Insulation material | | | | | Self-extinguishable urethane foam | | |
| Dimensions | | | H × W × D | mm | 278 × 810 × 551 | 278 × 810 × 551 | 306 × 879 × 800 |
| Heat exchange system | | | | | Air to air cross flow total heat (sensible heat + latent heat) exchange | | |
| Heat exchange element | | | | | Specially processed nonflammable paper | | |
| Air filter | | | | | Multidirectional fibrous fleeces | | |
| Fan | Type | | | | Sirroco fan | | |
| | Air flow rate | Heat exchange mode | Ultra-High | $m^3$ / h | 150 / 150 | 250 / 250 | 350 / 350 |
| | | | High | $m^3$ / h | 150 / 150 | 250 / 250 | 350 / 350 |
| | | | Low | $m^3$ / h | 100 / 95 | 155 / 155 | 230 / 230 |
| | External static pressure | | Ultra-High | Pa | 120 / 154 | 70 / 96 | 169 / 222 |
| | | | High | Pa | 106 / 131 | 54 / 65 | 141 / 145 |
| | | | Low | Pa | 56 / 60 | 24 / 20 | 67 / 30 |
| Fan motor | | | | Type | Open type capacitor permanent split-phase induction motor, 4 poles × 2 | | |
| Motor output | | | | kW | 0.030 × 2 | 0.030 × 2 | 0.090 × 2 |
| Operating sound | Heat exchange mode | | Ultra-High | dBA | 27 – 28.5 / 28.5 | 27 – 29 / 29 | 31.5 – 33 / 33 |
| | | | High | dBA | 26 – 27.5 / 27.5 | 26 – 27.5 / 28 | 30 – 31.5 / 30 |
| | | | Low | dBA | 20.5 – 21.5 / 21 | 21 – 22 / 21 | 23 – 25 / 23 |
| | Bypass mode | | Ultra-High | dBA | 28.5 – 29.5 / 29.5 | 28.5 – 30.5 / 30.5 | 33 – 34.5 / 34.5 |
| | | | High | dBA | 27.5 – 28.5 / 28.5 | 27.5 – 29 / 29.5 | 31.5 – 33 / 31.5 |
| | | | Low | dBA | 22.5 – 23.5 / 22 | 22.5 – 23 / 22.5 | 24.5 – 26.5 / 24.5 |
| Operation range (Ambient) | | | | | –15°C to 50°CDB (80% RH or less) | | |
| Connection duct diameter | | | | mm | ϕ 100 | ϕ 150 | ϕ 150 |
| Weight | | | | kg | 24 | 24 | 32 |
| Drawing number | | | | | C : 4D051116 | C : 4D051117 | C : 4D051118 |

Test conditions are as follows.

| Condition | Indoor | | Outdoor | |
|---|---|---|---|---|
| | °CDB | R·H (%) | °CDB | R·H (%) |
| Cooling condition | 27 | 50 | 35 | 60 |
| Heating condition | 20 | 40 | 7 | 70 |

**Note:**

1. Operation sound is measured at 1.5 m below the center of the body.
2. Air flow rate can be changed over to Low mode or High mode.
3. Normal AMP., input, efficiency depend on the other above conditions.
4. Operating sound is measured in an anechoic chamber.
   Operating sound level generally may become greater than this value depending on the operating conditions, reflected sound, and peripheral noise.
5. The sound level at the air discharge port is about 8 dB higher than the unit's operating sound.
6. The specifications, designs and information here are subject to change without notice.
7. Temperature Exchange Efficiency is the mean value in cooling and heating.
8. Efficiency is measured under the following conditions.
   Ratio of rated external static pressure has been kept as follows. Outdoor side to indoor side = 7 to 1

(50 / 60Hz)

| Model name | | | | | VAM500GJVE | VAM650GJVE | VAM800GJVE |
|---|---|---|---|---|---|---|---|
| Power supply | | | | | Single phase 220 – 240 V / 220 V, 50 / 60 Hz | | |
| Temperature exchange efficiency | | | Ultra-High | % | 74 / 74 | 75 / 75 | 72 / 72 |
| | | | High | % | 74 / 74 | 75 / 75 | 72 / 72 |
| | | | Low | % | 80 / 80.5 | 77 / 77.5 | 74 / 74.5 |
| Enthalpy exchange efficiency | Cooling | | Ultra-High | % | 55 / 55 | 61 / 61 | 61 / 61 |
| | | | High | % | 55 / 55 | 61 / 61 | 61 / 61 |
| | | | Low | % | 59 / 59.5 | 64 / 64.5 | 64 / 64.5 |
| | Heating | | Ultra-High | % | 67 / 67 | 67.5 / 67.5 | 65 / 65 |
| | | | High | % | 67 / 67 | 67.5 / 67.5 | 65 / 65 |
| | | | Low | % | 74 / 74.5 | 71.5 / 72 | 67.5 / 68 |
| Casing | | | | | Galvanized steel plate | | |
| Insulation material | | | | | Self-extinguishable urethane foam | | |
| Dimensions | | | H × W × D | mm | 306 × 879 × 800 | 338 × 973 × 832 | 387 × 1,111 × 832 |
| Heat exchange system | | | | | Air to air cross flow total heat (sensible heat + latent heat) exchange | | |
| Heat exchange element | | | | | Specially processed nonflammable paper | | |
| Air filter | | | | | Multidirectional fibrous fleeces | | |
| Fan | Type | | | | Sirroco fan | | |
| | Air flow rate | Heat exchange mode | Ultra-High | $m^3$ / h | 500 / 500 | 650 / 650 | 800 / 800 |
| | | | High | $m^3$ / h | 500 / 500 | 650 / 650 | 800 / 800 |
| | | | Low | $m^3$ / h | 320 / 295 | 500 / 470 | 700 / 670 |
| | External static pressure | | Ultra-High | Pa | 105 / 150 | 85 / 125 | 133 / 170 |
| | | | High | Pa | 66 / 52 | 53 / 67 | 92 / 85 |
| | | | Low | Pa | 32 / 18 | 35 / 38 | 72 / 61 |
| Fan motor | | | | Type | Open type capacitor permanent split-phase induction motor, 4 poles × 2 | | |
| Motor output | | | | kW | 0.090 × 2 | 0.140 × 2 | 0.280 × 2 |
| Operating sound | Heat exchange mode | | Ultra-High | dBA | 33 – 35.5 / 34 | 34 – 36 / 36 | 39 – 40.5 / 39.5 |
| | | | High | dBA | 31.5 – 34 / 32 | 33 – 34.5 / 34 | 37 – 39.5 / 37.5 |
| | | | Low | dBA | 25 – 28.5 / 24 | 27.5 – 29.5 / 28 | 35 – 37.5 / 34 |
| | Bypass mode | | Ultra-High | dBA | 34.5 – 36 / 35.5 | 35 – 37.5 / 37.5 | 40.5 – 42 / 41 |
| | | | High | dBA | 33 – 34.5 / 33.5 | 33 – 35.5 / 35.5 | 38.5 – 40 / 39 |
| | | | Low | dBA | 25.5 – 28.5 / 25.5 | 27.5 – 30.5 / 29.5 | 36 – 38.5 / 35.5 |
| Operation range (Ambient) | | | | | –15°C to 50°CDB (80% RH or less) | | |
| Connection duct diameter | | | | mm | ϕ 200 | ϕ 200 | ϕ 250 |
| Weight | | | | kg | 32 | 45 | 55 |
| Drawing number | | | | | C : 4D051120 | C : 4D051121 | C : 4D051122 |

Test conditions are as follows.

| Condition | Indoor | | Outdoor | |
|---|---|---|---|---|
| | °CDB | R·H (%) | °CDB | R·H (%) |
| Cooling condition | 27 | 50 | 35 | 60 |
| Heating condition | 20 | 40 | 7 | 70 |

**Note:**

1. Operation sound is measured at 1.5 m below the center of the body.
2. Air flow rate can be changed over to Low mode or High mode.
3. Normal AMP., input, efficiency depend on the other above conditions.
4. Operating sound is measured in an anechoic chamber.
   Operating sound level generally may become greater than this value depending on the operating conditions, reflected sound, and peripheral noise.
5. The sound level at the air discharge port is about 8 dB higher than the unit's operating sound.
6. The specifications, designs and information here are subject to change without notice.
7. Temperature Exchange Efficiency is the mean value in cooling and heating.
8. Efficiency is measured under the following conditions.
   Ratio of rated external static pressure has been kept as follows. Outdoor side to indoor side = 7 to 1

(50 / 60Hz)

| Model name | | | | | VAM1000GJVE | VAM1500GJVE | VAM2000GJVE |
|---|---|---|---|---|---|---|---|
| Power supply | | | | | Single phase 220 – 240 V / 220 V, 50 / 60 Hz | | |
| Temperature exchange efficiency | | | Ultra-High | % | 78 / 78 | 72 / 72 | 77 / 77 |
| | | | High | % | 78 / 78 | 72 / 72 | 77 / 77 |
| | | | Low | % | 80.5 / 81 | 75.5 / 76 | 79 / 81 |
| Enthalpy exchange efficiency | Cooling | | Ultra-High | % | 64 / 64 | 61 / 61 | 62 / 62 |
| | | | High | % | 64 / 64 | 61 / 61 | 62 / 62 |
| | | | Low | % | 68.5 / 69 | 64 / 64.5 | 66 / 67 |
| | Heating | | Ultra-High | % | 70 / 70 | 65 / 65 | 72 / 72 |
| | | | High | % | 70 / 70 | 65 / 65 | 72 / 72 |
| | | | Low | % | 72.5 / 73 | 67 / 67.5 | 75 / 76 |
| Casing | | | | | Galvanized steel plate | | |
| Insulation material | | | | | Self-extinguishable urethane foam | | |
| Dimensions | | | H × W × D | mm | 387 × 1,111× 1,214 | 785 × 1,619 × 832 | 785 × 1,619 × 1,214 |
| Heat exchange system | | | | | Air to air cross flow total heat (sensible heat + latent heat) exchange | | |
| Heat exchange element | | | | | Specially processed nonflammable paper | | |
| Air filter | | | | | Multidirectional fibrous fleeces | | |
| Fan | Type | | | | Sirroco fan | | |
| | Air flow rate | Heat exchange mode | Ultra-High | $m^3$ / h | 1,000 / 1,000 | 1,500 / 1,500 | 2,000 / 2,000 |
| | | | High | $m^3$ / h | 1,000 / 1,000 | 1,500 / 1,500 | 2,000 / 2,000 |
| | | | Low | $m^3$ / h | 860 / 840 | 1,320 / 1,260 | 1,720 / 1,580 |
| | External static pressure | | Ultra-High | Pa | 168 / 192 | 112 / 150 | 116 / 140 |
| | | | High | Pa | 110 / 86 | 73 / 72 | 58 / 32 |
| | | | Low | Pa | 85 / 60 | 56 / 50 | 45 / 45 |
| Fan motor | | | | Type | Open type capacitor permanent split-phase induction motor, 4 poles × 2 | | |
| Motor output | | | | kW | 0.280 × 2 | 0.280 × 4 | 0.280 × 4 |
| Operating sound | Heat exchange mode | | Ultra-High | dBA | 39.5 – 41.5 / 39.5 | 39.5 – 41.5 / 41.5 | 41.5 – 43.5 / 42 |
| | | | High | dBA | 37.5 – 39.5 / 37.5 | 37.5 – 39.5 / 39.5 | 39 – 43 / 40 |
| | | | Low | dBA | 35 – 37.5 / 34.5 | 35 – 37.5 / 36 | 36 – 39 / 39 |
| | Bypass mode | | Ultra-High | dBA | 40.5 – 42.5 / 40.5 | 41 – 43 / 42.5 | 43 – 45.5 / 44 |
| | | | High | dBA | 38.5 – 40.5 / 38.5 | 39.5 – 41 / 41.5 | 40.5 – 45 / 42 |
| | | | Low | dBA | 36 – 38.5 / 35.5 | 36.5 – 38 / 37.5 | 37.5 – 39.5 / 41 |
| Operation range (Ambient) | | | | | –15°C to 50°CDB (80% RH or less) | | |
| Connection duct diameter | | | | mm | ϕ 250 | ϕ 350 | ϕ 350 |
| Weight | | | | kg | 67 | 129 | 157 |
| Drawing number | | | | | C : 4D051123 | C : 4D051119 | C : 4D051124 |

Test conditions are as follows.

| Condition | Indoor | | Outdoor | |
|---|---|---|---|---|
| | °CDB | R·H (%) | °CDB | R·H (%) |
| Cooling condition | 27 | 50 | 35 | 60 |
| Heating condition | 20 | 40 | 7 | 70 |

**Note:**

1. Operation sound is measured at 1.5 m below the center of the body.
2. Air flow rate can be changed over to Low mode or High mode.
3. Normal AMP., input, efficiency depend on the other above conditions.
4. Operating sound is measured in an anechoic chamber.
   Operating sound level generally may become greater than this value depending on the operating conditions, reflected sound, and peripheral noise.
5. The sound level at the air discharge port is about 8 dB higher than the unit's operating sound.
6. The specifications, designs and information here are subject to change without notice.
7. Temperature Exchange Efficiency is the mean value in cooling and heating.
8. Efficiency is measured under the following conditions.
   Ratio of rated external static pressure has been kept as follows. Outdoor side to indoor side = 7 to 1

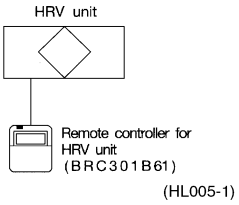
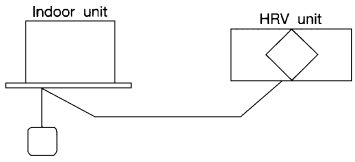
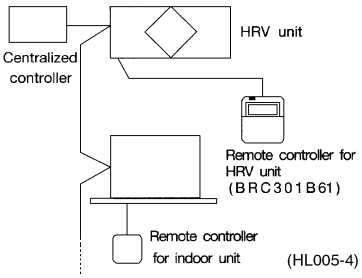
# Part 3
# Operation

# 1. Operation

## 1.1 Explanation for Systems

This product is operated differently depending on the system configuration.
For the operation of the remote controller for indoor unit and centralized controller, refer to the instruction manual provided with each unit.

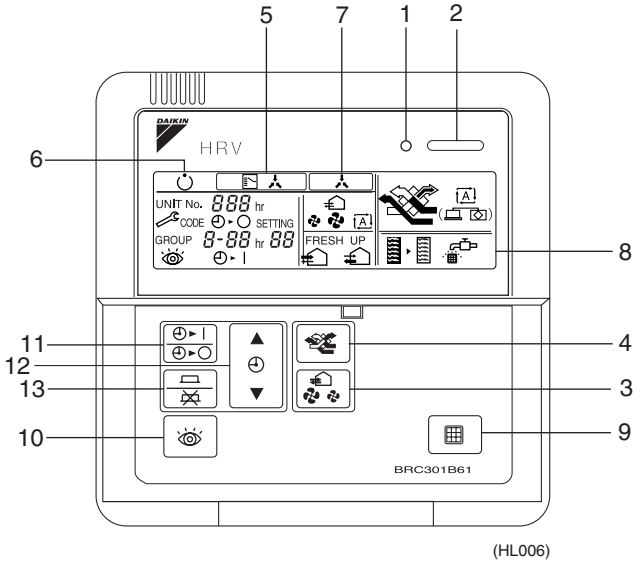
■ **Operation for Each System**

| System Example | | Operation Method |
|---|---|---|
| **Independent System** |  (HL005-1) | The remote controller turns on and off the air conditioner and HRV unit. |
| **Combined Operation System with VRV Systems and Skyair Series** |  (HL005-2) | The remote controller for VRV turns on and off the air conditioner and HRV unit.<br>If only the HRV unit is used without operating the air conditioner, set the unit in the "  " VENTILATION mode. |
| **Centralized System** |  (HL005-4) | When the HRV remote controllers is not connected, the Centralized controller controls the operation of the HRV unit. |
| | | When the HRV remote controllers is connected, operation can be started and stopped using the Centralized controller or the indoor and the HRV remote controllers.<br>During the indication of centralized control "  " appears on the display, the ON/OFF and timer operation may not be possible with the HRV remote controllers. Other operations can be performed using the HRV remote controllers. |

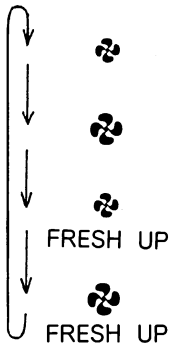
## 1.2 Operation HRV Units with the Remote Control exclusively for Air Conditioning Operation. (BRC301B61)

For non-independent systems, starting/stopping operation and timer operation may not be possible.
Use the air conditioner remote control or the Centralized controller in such cases.

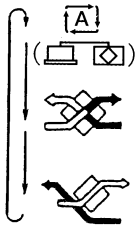
### Remote Controller for HRV BRC301B61




(HL006)




(HL007)



(HL008)

### Operation for INDIVIDUAL SYSTEM

1. Operation lamp
   This pilot lamp (red) light up while the unit is in Operation.
2. Operation/Stop button
   When pushed once, the unit starts operating.
   When pushed twice, the unit stops.
3. Air flow rate changeover button
   Air flow rate can be changed over to “ ” [Low] mode or “ ” [High] mode, “ FRESH UP” [Low FRESH UP] mode, “ FRESH UP” [High FRESH UP] mode.

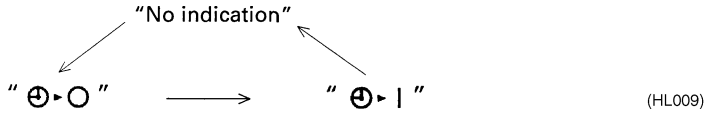
For “FRESH UP” operation
When this indication does not show: The volume of outdoor air supplied into the room and that of the room air exhausted outdoors is equivalent.
For “FRESH UP” operation,

- If it is set to “Fresh up air supply”: The volume of outdoor air supplied into the room is larger than that of room air exhausted outdoors.
  (This operation prevents the odor and moisture from kitchens and toilets from flowing into the rooms.
- If it is set to “Fresh up air exhaust”: The volume of room air exhausted outdoors is larger than that of outdoor air supplied into the room.
  (This operation prevents the hospital odor and floating bacteria from flowing out to the corridors.)

4. Ventilation mode changeover: button
   " " (Automatic) mode ..... The temperature sensor of the unit automatically changes the ventilation of the unit in [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 HRVs are linked with the air conditioners, this indication may be shown. While the indication is shown, the ON/OFF of HRVs cannot be operated by the HRV remote controller.
6. Indication of operation standby:
   It indicates the precooling/preheating operation. This unit is at stop and will start operation after the precooling/preheating operation is over.
   Precooling/preheating operation means the operation of HRVs is delayed during the startup operation of linked air conditioners such as before the 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 centralized control:
   When a remote controller for air conditioners or devices for centralized control are connected to the HRVs, this indication may show.
   During this indication appears on the display, the ON/OFF and timer operation may not be possible with the HRV remote controllers.
8. Indication of air filter cleaning
   When the indication " " appears on the display, clean the filter.
9. Filter signal reset button
10. Inspection button
    This button is to be used only for service. It is not to be used normally.

## HOW TO OPERATE WITH TIMER

11. Push the button " " and select either one of " ▸ " or " ▸ | " .
    Each time the button is pushed, the indication changes as shown below.

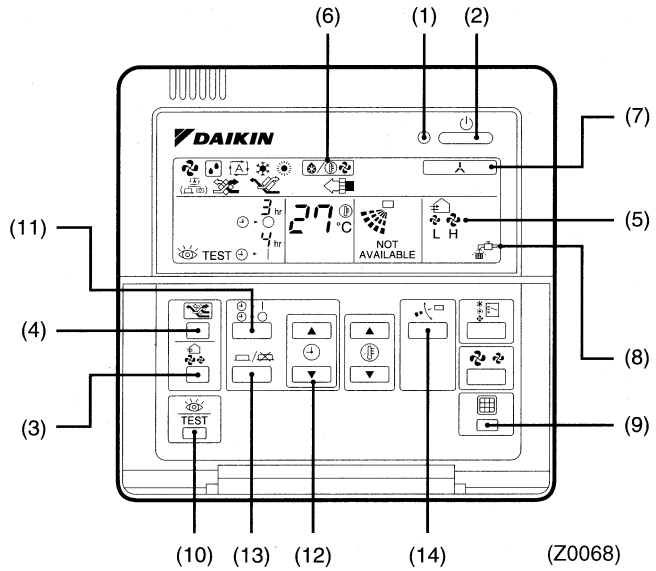


(HL009)

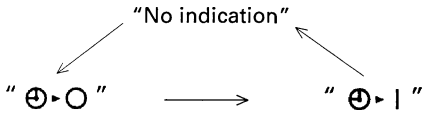
12. Push the button " " and set the time.
    Each time when " ▲ " is pushed, the time advances one hour.
    Each time when " ▼ " is pushed, the time goes back one hour.
13. Push the button " " .
    Then, the reservation is finished.
    Either " ▸ " or " ▸ | " changes from flashing to lighting.
    After the reservation is finished, the remaining time is indicated in the display.
    For cancelling the timer operation, push the button " " once again.
    The indication disappears.

## 1.3 Operating the HRV Unit Using the Remote Controller of the VRV-System Air Conditioner

**Remote Controller for VRV BRC1C51·61**




1. Operation lamp
2. Operation/stop button
3. Air flow rate changeover button
4. Ventilation mode changeover button
5. Indication of air flow rate
6. Indication of operation control method
7. Indication of centralized control
8. indication of air filter cleaning
9. Filter signal reset button
10. Inspection button
11. Push the button " " and select either one of " ▸ " or " ▸ ". Each time the button is pushed, the indication changes as shown below.

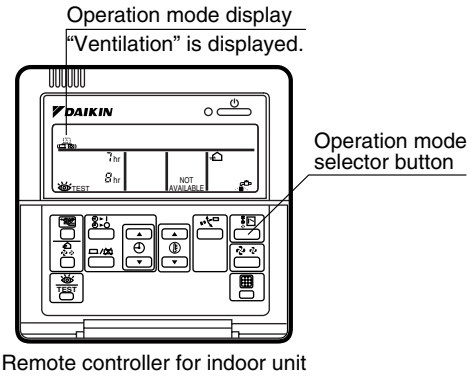



12. Push the button " " and set the time.
    Each time when " ▲ " is pushed, the time advances one hour.
    Each time when " ▼ " is pushed, the time goes back one hour.
13. Push the button " "
    Then, the reservation is finished.
    Either " ▸ " or " ▸ " changes from flashing to lighting.
    After the reservation is finished, the remaining time is indicated in the display.
    For cancelling the timer operation, push the button " " once again.
    The indication disappears.
14. If you press these buttons when using independent operation of the HRV unit, the message "Not Available" will appear on the display for a few seconds.

■ When the VRV-system air conditioner is connected with the HRV unit with a direct duct, the remote controller of the air conditioner cannot be used to select the VENTILATION mode. To use the HRV unit without operating the air conditioner, set the air conditioner in the FAN VENTILATION mode and select the low fan speed.

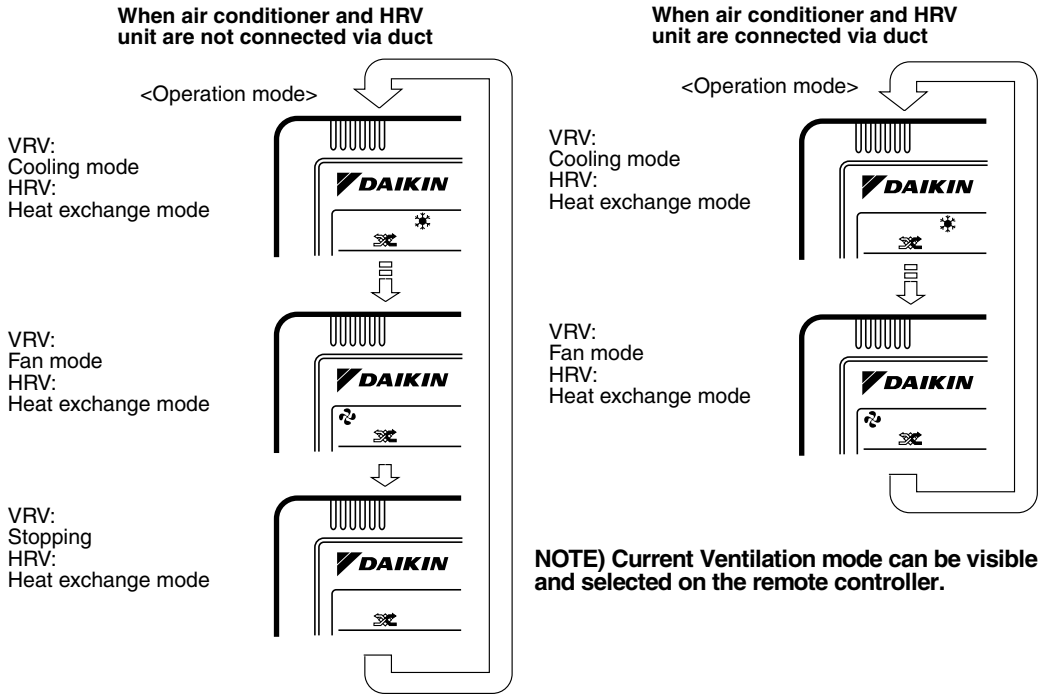
### Operating the HRV unit using the remote controller of the VRV- system air conditioner

**The HRV unit cannot be operated independently when the air conditioner is connected to the HRV unit via a duct. When using the HRV unit, set the air conditioner to "fan" mode on weak fan strength.**




- Each time you press the operation selection button, the operation mode display will change as shown in the figure below.

**Example 1: In case of the remote controller "BRC1C61" and as equivalent.**
**Display changes as below.**




**NOTE) Current Ventilation mode can be visible and selected on the remote controller.**

3P034927-5K

## 1.4 Independent operation of the HRV unit using the Centralized controller (DCS302C(A)61)

- After selecting the zone where the only the HRV unit operation is desired, press the operation mode selector and select " " VENTILATION. The HRV unit can then be operated independently from the air conditioner.
- When the "FILTER" indication appears on the display, clean the filter of the HRV unit. (Refer to the section 3.)

# Part 4
# Maintenance

# 1. Maintenance

## 1.1 Maintenance for the Air Filter

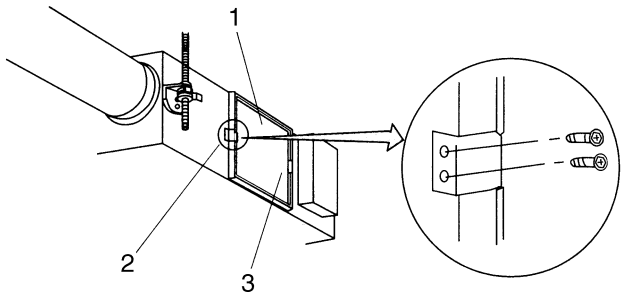
**Caution** During operation, never check or clean the HRV. It may cause electrical shock and it is very dangerous to touch the rotating part. Be sure to turn off the OPERATION switch and disconnect the power.

■ **CLEANING FREQUENCY**

AT LEAST ONCE EVERY TWO YEARS (FOR GENERAL OFFICE USE)
(CLEAN THE ELEMENT MORE FREQUENTLY IF NECESSARY.)

1. Go into ceiling through the inspection hole, remove the hanging metals of maintenance cover and take it off.

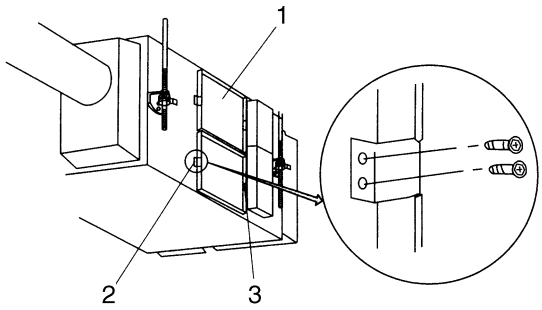
**VAM150~1000GJVE**



(HL003)

| | | | |
|---|---|---|---|
| 1 | Maintenance Cover | 2 | Binding Metal |
| 3 | Hanging Metal | | |

**VAM1500~2000GJVE**

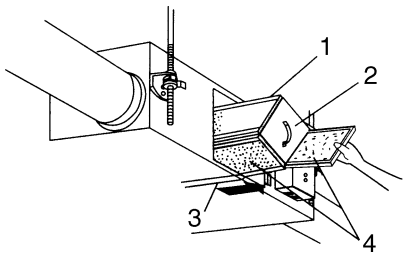


(HL004)

| | | | |
|---|---|---|---|
| 1 | Maintenance Cover | 2 | Binding Metal |
| 3 | Hanging Metal | | |

2. Take out the heat exchange elements from the unit body.

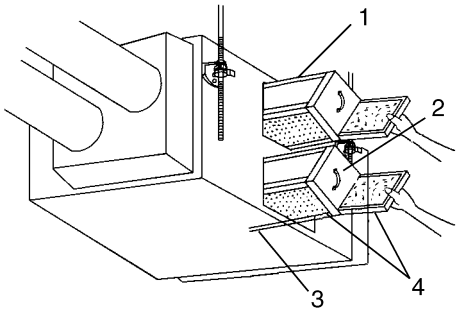
**VAM150~1000GJVE**




(HL013)

| | | | |
|---|---|---|---|
| 1 | Heat Exchange Element (X2) | 2 | Handle |
| 3 | Rail | 4 | Air Filter × 2 |

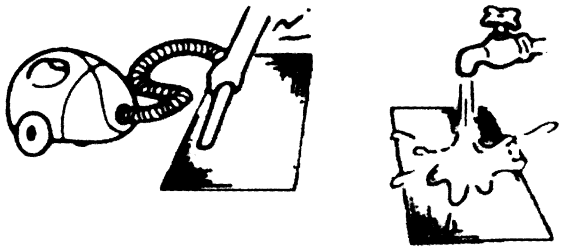
**VAM1500~2000GJVE**




(HL014)

| | | | |
|---|---|---|---|
| 1 | Heat Exchange Element (X4) | 2 | Handle |
| 3 | Rail | 4 | Air Filter × 4 |

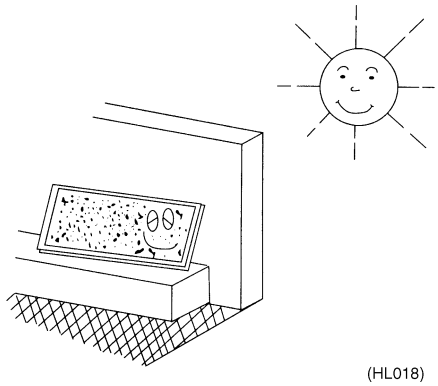
3. To clean the air filter, lightly pat it with hand or remove dust with a vacuum cleaner. If excessively dirty, wash it in water.



(HL015)

4. If the air filter is washed, remove water completely and allow to dry Air filter for 20 to 30 minutes in the shade. When dried completely, install the air filter back in place.

5. Install the maintenance cover securely in place.



(HL018)

**Caution**

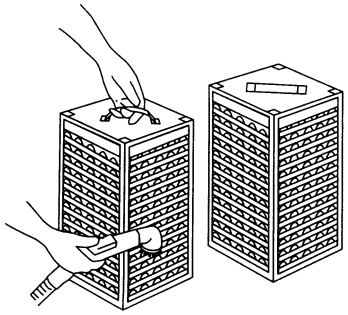
1. Do not wash the air filter in hot water.
2. Do not dry the air filter over a fire.
3. Do not expose the air filter to direct sunlight.
4. Do not use organic solvent such as gasoline and thinner on the air filter.
5. Be sure to install the air filter after servicing.
   (Missing air filter causes clogged heat exchange element.)
   The air filter is an optional item and the replacement is available.

## 1.2 Maintenance for the Heat Exchange Element

■ **CLEANING FREQUENCY**

AT LEAST ONCE EVERY TWO YEARS (FOR GENERAL OFFICE USE)
(CLEAN THE ELEMENT MORE FREQUENTLY IF NECESSARY.)

1. 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 exchanging element when cleaning. (Do not crush the heat exchange element while cleaning.)
2. Install the air filter securely in place.
3. Put the heat exchange element on the rail and insert it securely in place.
4. Install the maintenance cover securely in place.



(HL060)

**Caution** Never wash the heat exchanger element with water.

# Part 5
# Control Functions

# 1. Control Functions

## 1.1 List of Control Functions

| Classification | Function name | Outline of function |
|---|---|---|
| 1. Basic functions (functions related to basic performance) | 1.1 Ventilation operation control function | Controls supply air fan motor, exhaust air fan motor and damper motor. |
| | 1.2 Abnormality control function | Detects abnormalities in thermistor, damper motor and data transmission to prevent errors. |
| 2. Additional functions | 2.1 Ventilation mode changeover function | Operates equipment in selected ventilation mode (total heat exchange, normal, automatic). |
| | 2.2 Automatic ventilation operation function | Selects the most suitable ventilation mode by controlling damper motor according to temperature controller mode, temperature setting and thermistor data. |
| | 2.3 Ventilation capacity changeover function | Operates equipment at set airflow rate. |
| | 2.4 Humidifier operation control function | Controls humidifier output based on temperature controller judgment. **Note 1** |
| | 2.5 Pre-cool/pre-heat function | Prevents equipment operation for a preset time (set time) after air conditioner is turned on. |
| | 2.6 Fresh-up function | Sets motor tap so that supply air fan airflow rate is larger than exhaust air fan airflow rate. |
| | 2.7 Filter sign function | Stores cumulative operation hour data and turns on air filter cleaning indicator. |
| 3. System control functions | 3.1 Remote controller function | Operates equipment according to instructions from remote controller. |
| | 3.2 Group function | Operates two or more units based on instructions from single remote controller. |
| | 3.3 Air conditioner link function | Follows air conditioner ON/OFF instructions. |
| | 3.4 Power ON operation function | Operates equipment when power is turned on. |
| | 3.5 External link operation function | Turns equipment on and off according to external link terminal signal (no-voltage contact a). |
| | 3.6 Centralized control function | Allows remote control operation by centralized control equipment. |
| | 3.7 Timer function | Turns equipment on and off at set time. |
| 4. Other support functions | 4.1 Troubleshooting function | Displays error codes to indicate locations of error. |
| | 4.2 Field setting function | Allows initial setting from LCD remote controller. |

**Note:** **Note 1**
Requires optional humidifier and optional printed circuit board (KRP50-2 : Wiring adapter for remote contact).

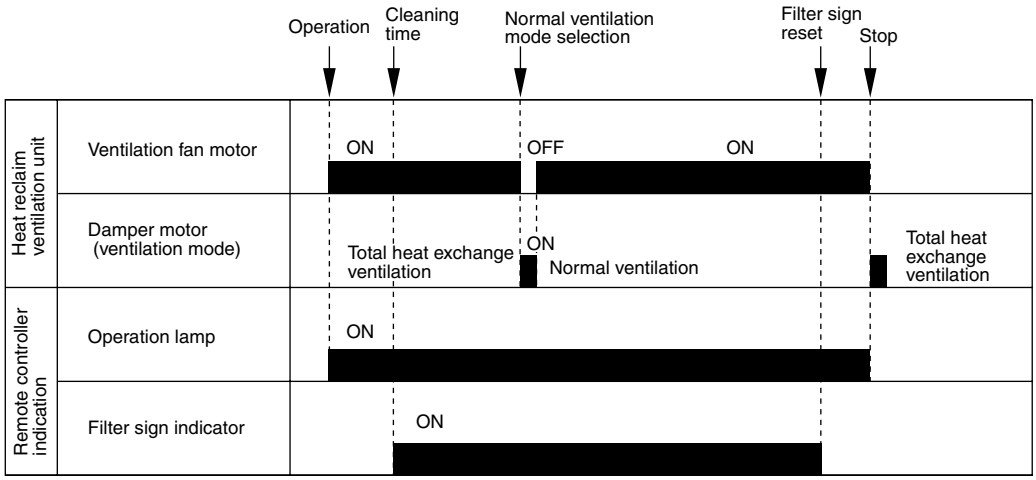
# 1.2 Explanation of Individual Functions

## 1.2.1 Ventilation Operation Control

Controls ventilation fan motors (supply and exhaust air fans) and damper motor.

1) Normal operation

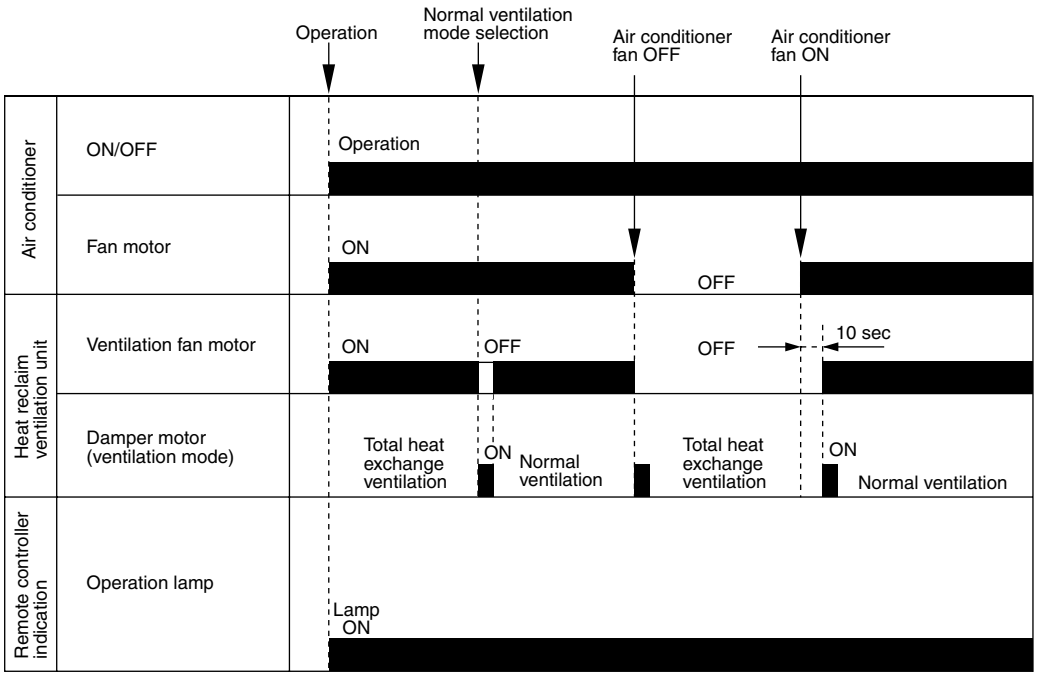
Operation chart




(HL020)

2) Direct duct connection with air conditioner

Operation chart



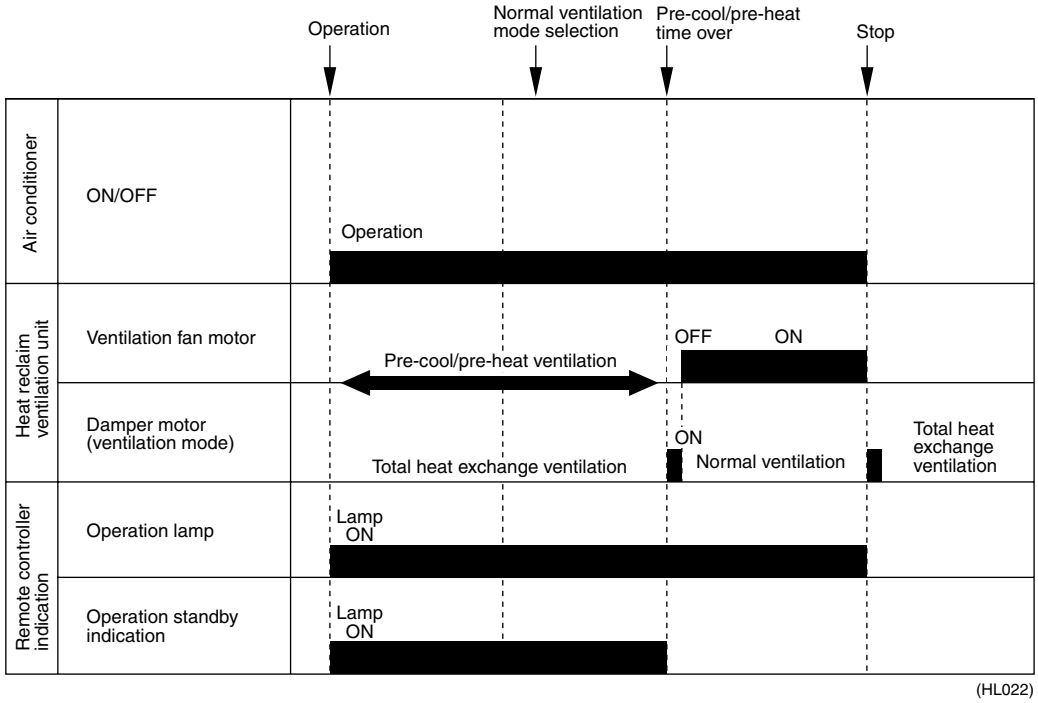

(HL021)

**Note:** Direct duct connection setting can be made in VRV system or using field setting mode of HRV LCD remote controller.

### 1.2.2 Pre-cool/Pre-heat

Pre-cool/pre-heat operations require the following conditions.

1. System
   Pre-heat operation is possible only in air conditioner linked system (1 group, 2-group link). Check the system first.
2. Heat reclaim ventilation setting
   Set Pre-heat ON/OFF to ON.
   Pre-cool/pre-heat On/OFF setting can be made in air conditioner or using field setting mode of LCD remote controller of heat reclaim ventilation unit. (Pre-cool time can be set between 30 and 60 min, and pre-heat time can be set between 30 and 150 min.)
3. Others
   a) Heat reclaim ventilation unit must be in non-operating condition for two consecutive hours or more prior to pre-cool/pre-heat operation.
   b) Temperature control mode of the air conditioner must be set to Cool, Heat or Dry.



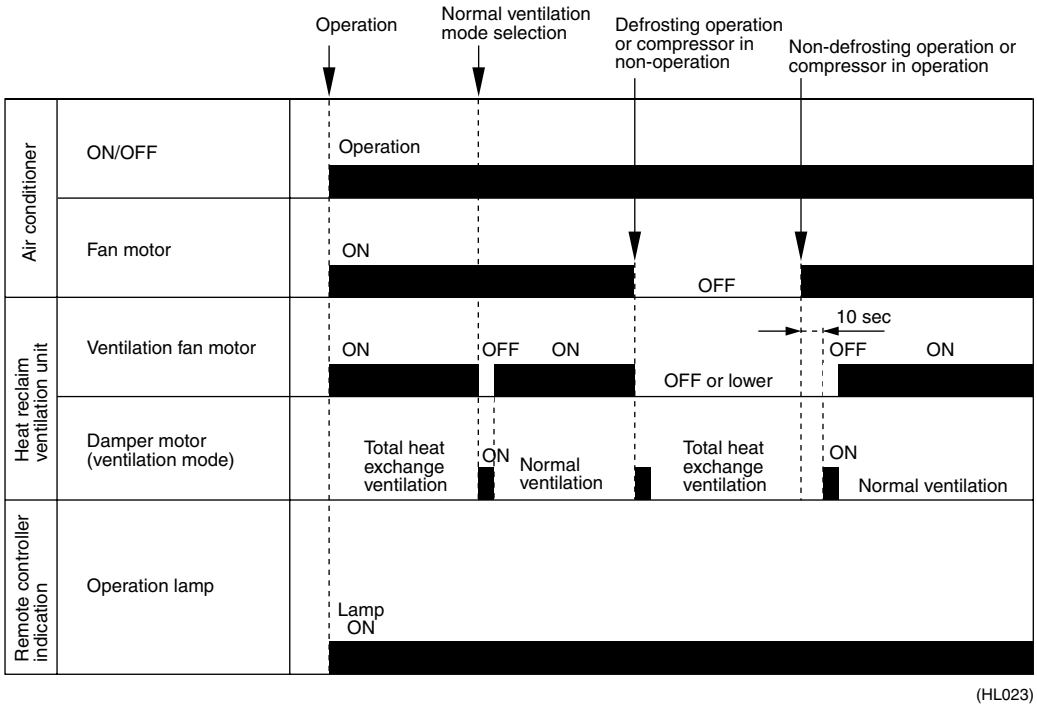

(HL022)

**Note:** Operation standby indication is displayed only on LCD remote controller of heat reclaim ventilation unit.

### 1.2.3 Cold Area Mode

Stops or lowers ventilation airflow during defrosting operation and compressor non-operating condition when equipment in heating mode, thus reducing heating load and cold air draft.

Operation chart (in heating operation only)




(HL023)

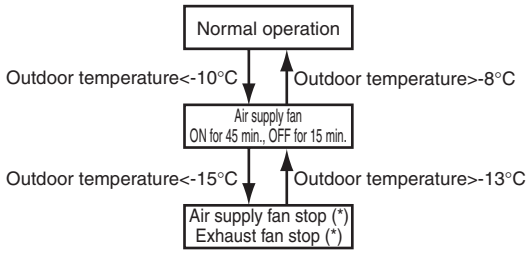
**Note:** Cold area mode can set using remote controller for air conditioner or field setting mode of LCD remoter controller of heat reclaim ventilation unit.

**Protection Control**

**Operation Control in Cold Climates**

To operate the unit at low outdoor temperatures, control the air supply fans and the exhaust fans as shown below for equipment protection.

Models applicable to outdoor temperatures of -15˚C at minimum

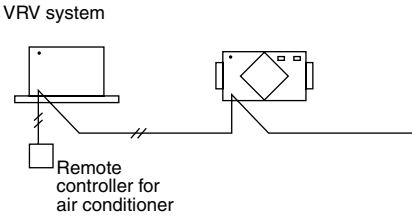



### 1.2.4 Air Conditioner Link Operation

Link system enables simultaneous ON/OFF operation of heat reclaim ventilation unit and air conditioner (VRV system, Skyair).

1) 1 group link control

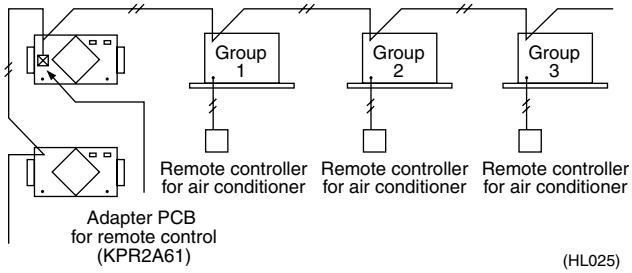
- Allows simultaneous ON/OFF from remote controller for air conditioner.
- Allows independent operation of heat reclaim ventilation unit from VRV-system remote controller during interim periods (not possible when direct duct connection is used).




(HL024)

2) Link control of 2 or more groups (zone link)

- Heat reclaim ventilation unit can be operated when one or more air conditioners are operating.
- Allows independent operation of heat reclaim ventilation unit from VRV-system remote controller during interim periods (direct duct connection is not allowed in this system).




**Note:** With Super Wiring, units of different outdoor systems can be linked in operation.

## 1.2.5 Field Setting, Service Mode

1. Field setting
   Used for initial setting of heat reclaim ventilation unit.
2. Service mode
   Used for confirmation of unit Nos. in the group and reallocation of unit Nos.

**List of Field Setting and Service Mode**

**List of Settings**

| Mode No. | | Setting switch No. | Description of Setting | Setting position No. (NOTE 1) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group settings | Individual settings | | | 01 | 02 | 03 | 04 | 05 | 06 |
| 17 | 27 | 0 | Filter cleaning time setting | Approx. 2500 hours | Approx. 1250 hours | No counting | – | – | – |
| | | 1 | Nighttime free cooling operation start time (after other air conditioners operating together with the unit have been stopped) | Off | 2 hours | 4 hours | 6 hours | 8 hours | – |
| | | 2 | Pre-cool/pre-heat on/off setting | Off | On | – | – | – | – |
| | | 3 | Pre-cool/pre-heat time setting | 30 min | 45 min | 60 min | – | – | – |
| | | 4 | Fan speed initial setting | Normal | Ultra high | – | – | – | – |
| | | 5 | Yes/No setting for direct duct connection with VRV system | No duct (Air flow setting) | With duct (fan off) | – | – | – | – |
| | | | Setting for cold areas (Fan operation selection for heater thermo OFF) | – | – | No duct | | With duct | |
| | | | | | | Fan off | Fan L | Fan off | Fan L |
| | | 6 | Nighttime free cooling operation air flow setting | High | Ultra high | – | – | – | – |
| | | 7 | Centralized/individual setting | Centralized | Individual | – | – | – | – |
| | | 8 | Centralized zone interlock setting | No | Yes | – | – | – | – |
| | | 9 | Pre-heat time extension setting | 0 min | 30 min | 60 min | 90 min | – | – |
| 18 | 28 | 0 | External signal JC/J2 | Last command | Priority on external input | Priority on operation | – | – | – |
| | | 1 | Setting for direct Power ON | Off | On | – | – | – | – |
| | | 2 | Auto restart setting | Off | On | – | – | – | – |
| | | 3 | External damper operation | – | – | On | – | – | – |
| | | 4 | Indication of ventilation mode/Not indication | Indication | No Indication | – | – | – | – |
| | | 7 | Fresh up air supply/exhaust setting | No Indication | No Indication | Indication | Indication | – | – |
| | | | | Supply | Exhaust | Supply | Exhaust | – | – |
| | | 8 | External input terminal function selection (between J1 and JC) | Fresh-up | Overall alarm | Overall malfunction | Forced off | Fan forced off | Air flow increase |
| | | 9 | KRP50-2 output switching selection (between 1 and 3) | Humidifying on/off | Abnormal | – | – | – | – |

| Mode No. | | Setting switch No. | Description of Setting | Setting position No. (NOTE 1) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Group settings | Individual settings | | | 01 | 02 | 03 | 04 | 05 | 06 |
| 19 | 29 | 0 | Ventilation air flow setting | Low | Low | Low | Low | High | High |
| | | 2 | Ventilation mode setting | Automatic | Exchange | By pass | – | – | – |
| | | 3 | “Fresh Up” on/off setting | Off | On | – | – | – | – |
| | | 8 | Electric heater setting | No delay | Exchange | On, off delay | On, off delay | – | – |

**Note:**

1. ▭ indicates the setting position at the factory.
2. The settings are applied to the entire group, but if the mode no. inside the parentheses is selected, the settings can be applied to individual indoor units.
   However, it is only possible to check any changes made to the settings inside the parentheses in individual mode.
   (For group batch operation, the changes are made but the display remains as it was when shipped from the factory.)
3. Do not set anything not shown above. If the applicable functions are not available, they will not be displayed.
4. When returning to normal mode, the remote controller is initialized, so the display might show “88.”
5. Group number setting for centralized controller
   (1) Mode No. 00 : Group controller
   (2) Mode No. 30 : Individual controller
   * Regarding the setting procedure, refer to the section “Group number setting for centralized control” in the operating manual of either the on/off controller or the central controller.
6. Details of external input setting
   “Last command” ..... Only when HRV units are in independent operation. External input is not available with interlocked operation of HRV units and air conditioners.
   “Priority on external input” ... Remote controllers are available while the external input terminal is closed. Remote controllers are not available while the external input terminal is open. External input is not available with interlocked operation of HRV units and air conditioners.
   “Priority on operation” ... Either air conditioner remote controllers with interlocked operation of HRV units and air conditioners, or external input is in operation, when HRV units are in operation.
   Setting is available with interlocked operation of HRV units and air conditioners.
7. Details of external input terminal function are as follows:

| Setting position | Input contact | Fan operation | Operation lamp | |
|---|---|---|---|---|
| 01 | a | ON | Turn ON | Fresh up operation |
| 02 | a | ON | Turn ON | Malfunction code indicates “60” |
| 03 | a | OFF | Blinking | Malfunction code indicates “60” |
| 04 | b | OFF | Turn OFF | Automatic reset OFF |
| 05 | b | OFF | Turn ON | Automatic reset ON |
| 06 | a | ON | Turn ON | Air flow rate increases (Low→High, High→Ultra high) |

* Setting position “04” does not function with interlocked operation of HRVs and air conditioners.

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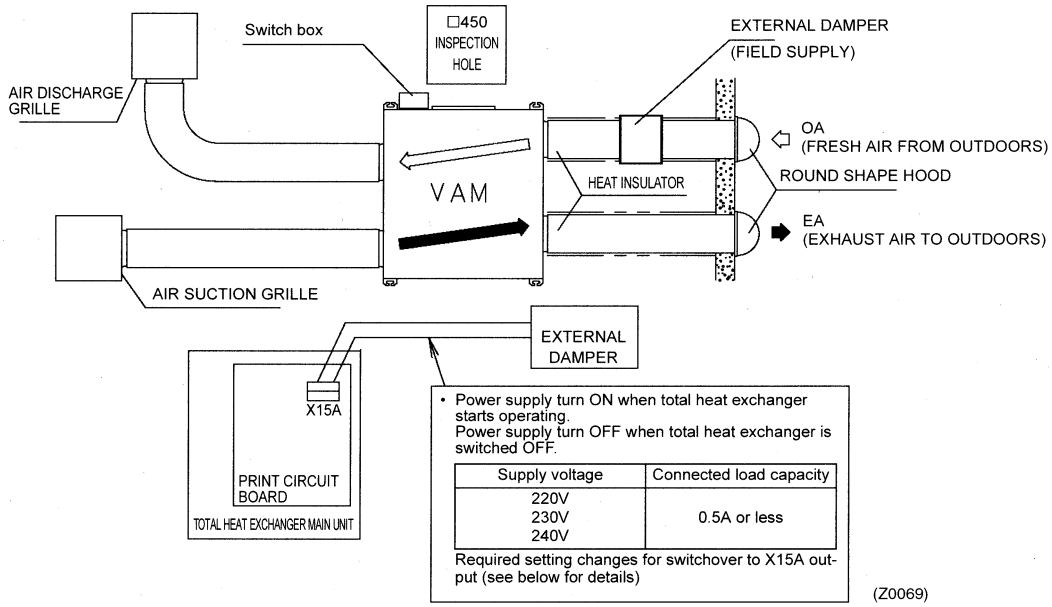
## 1.2.6 External Damper Operation (FIELD SUPPLY)

**Explanation of Functions**

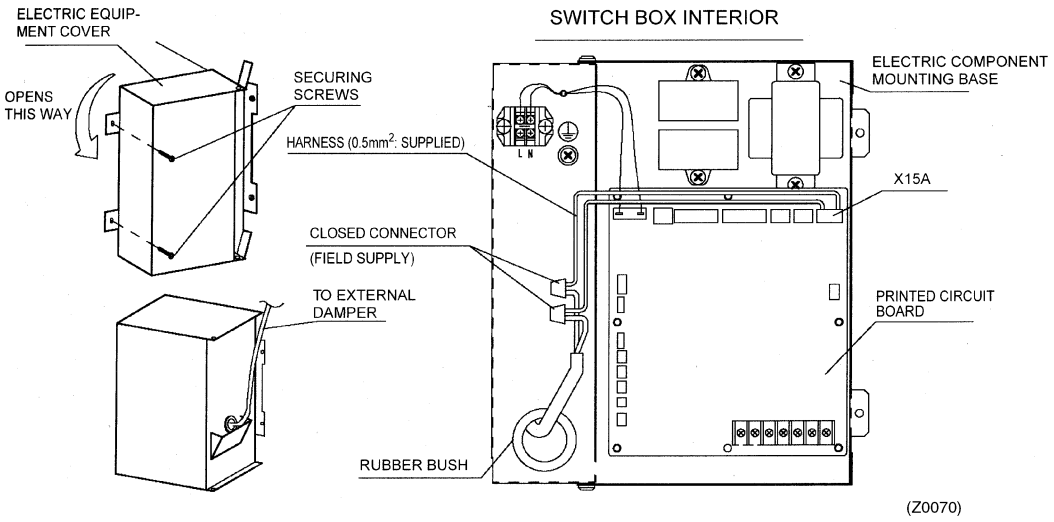
Intake of outdoor air can be prevented when HRV is switched OFF if this damper is incorporated in the system.

1. The total heat exchanger's main unit print board supplies power for external damper.




**Essential Wiring**

1. Connect one end of the harness to the X15A on the print board and the other end to the harness leading to the damper via a connector such as a closed connector.




With regard to closed connector, select one that suits wire diameter.

**Essential Setting Changes**

The X15A output is at the default setting and is not in operation, so the output setting should be changed at the LCD of the remote controller.

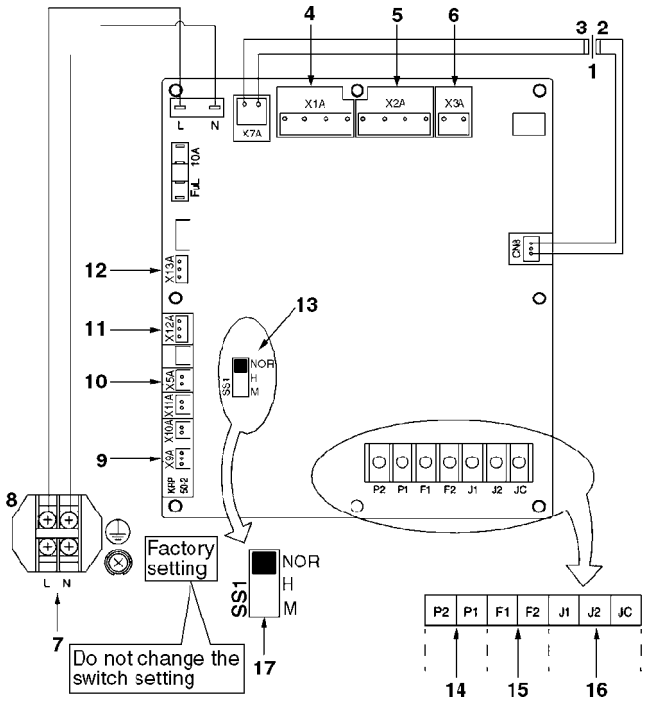
- Setting changes should be made in the following way.
  Mode No.: 18 (group tie up) or 28 (per each unit)
  Setting switch No.: 3
  Setting position No.: 03

# 1.3 Layout of switches on Printed Circuit Board

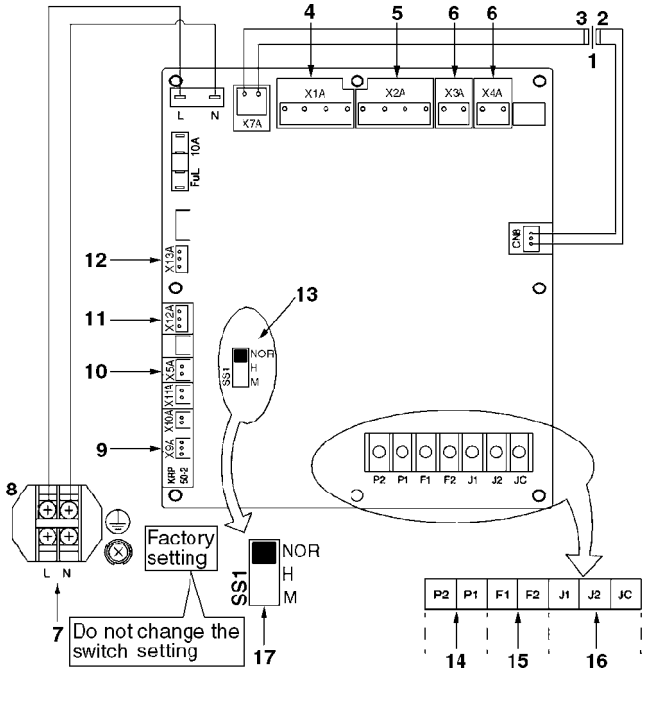
## 1.3.1 Printed Circuit Board

**Layout of switches on printed circuit board**

**<In case of VAM 150 ~ 1000GJVE>**




**<In case of VAM 1500 · 2000GJVE>**




1. Transformer
2. Secondary
3. Primary
4. Connector for supply air fan
5. Connector for exhaust air fan
6. Connector for damper
7. Power supply
8. Terminals
9. Connector for KPR50-2
10. Connector for damper
11. Connector for indoor air thermistor
12. Connector for outdoor air thermistor
13. Selector switch
14. Terminal port for remote controller
15. Terminal port for centralized control
16. Terminal port for no-voltage external input
17. Factory setting

3P034928-5J

### 1.3.2 Function of main connection terminal

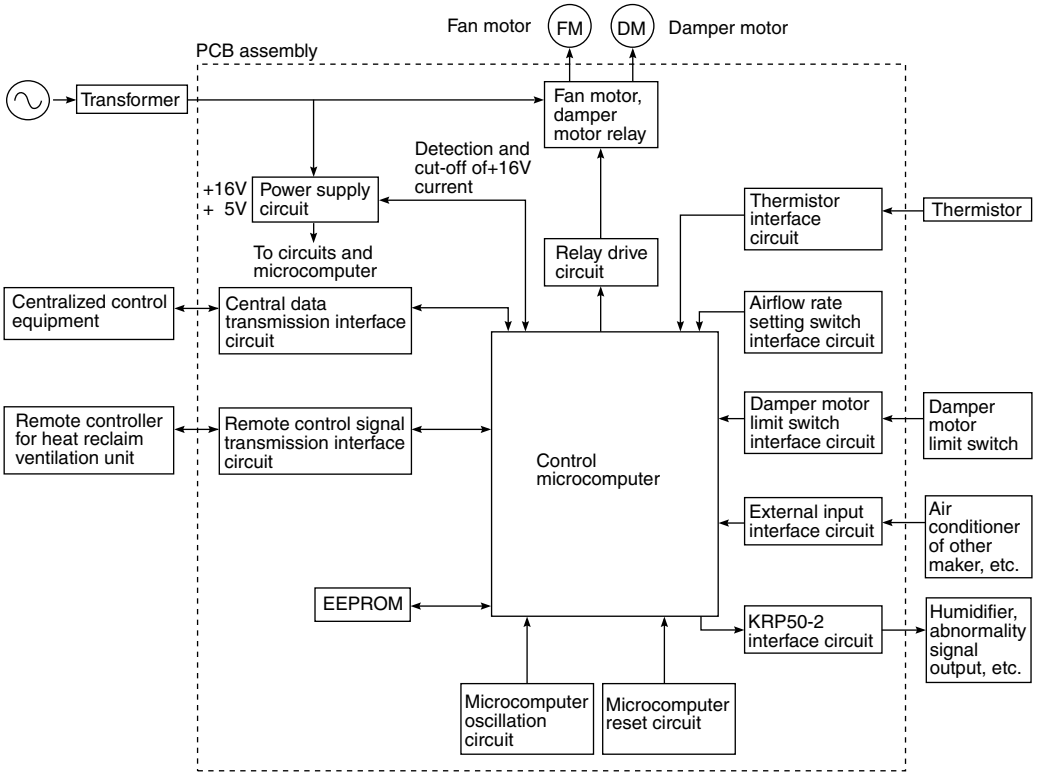
| Terminal No. | | Contents of function |
|---|---|---|
| Power supply | L N<br>TeS1 | Single phase 220 – 240 V 50Hz<br>Single phase 220 – 220 V 60Hz<br>Power supply and earth terminal |
| Remote controller | P1 P2 | Connection terminal for remote controller for HRV unit.<br>This terminal is used to receive information of the indoor unit for interlocked operation. |
| Centralized control | F1 F2 | This terminal is used to receive information when centralized controller is connected. |
| Input from outside | J1 J2 JC | Between terminal no. (J1) ~ (JC)<br>Used for “fresh up operation” by external input.<br>Between terminal no. (J2) ~ (JC)<br>Used for Operation / Stop by external input. |

(HC0043)

# Part 6
# Circuit Operations

# 1. Circuit Operations

## 1.1 Circuit Configuration




(HL026)

## 1.2 Circuit Functions

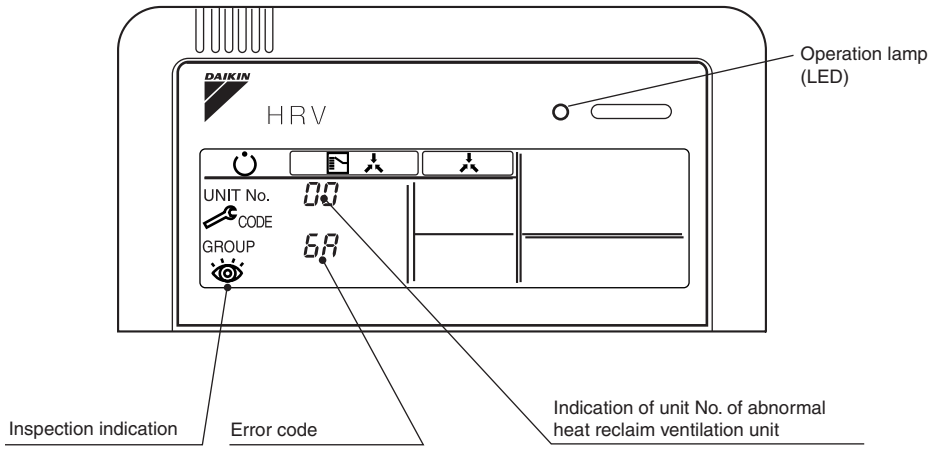
| Classification | Circuit | Function |
|---|---|---|
| Input/output | Central data transmission interface | Used by centralized control equipment for operation control. Allows control of up to 64 groups of air conditioners and heat reclaim ventilation units. Use of KRP2A61 allows zone link operation. |
| | Remote control data transmission interface | Use of dedicated LCD remote controller allows control of up to 16 heat reclaim ventilation units. Also used for linked operation of air conditioners of 2 groups. |
| | Air conditioner link operation | Connects to remote control line of air conditioner for linked operation. |
| Output | KRP50-2 interface | Can be used to output signals of operating condition and abnormalities to external equipment or to connect humidifier via KRP50-2. |
| | Relay drive circuit | Supplies drive voltage to relay coils. |
| | Fan motor, damper motor relay | Power supply relay for fan motor and damper motor. |
| Input | Thermistor interface | Uses thermistor (temperature sensor) to detect inside and outside temperatures. |
| | Airflow rate setting switch interface | Used to set airflow rate of main unit when dedicated remote controller is not used. |
| | External input interface | Used to control main unit with external contact point. (Fresh-up, external link operation, etc.) |
| | Damper limit switch interface | Sends signal of limit switch condition to microcomputer for damper motor cam positioning. |
| Peripheral Parts | Control microcomputer | Controls entire equipment by varying output according to input condition. |
| | EEPROM | Stores operating condition and address data. |
| Microcomputer | Microcomputer reset circuit | Resets microcomputer when power is turned on. |
| | Microcomputer oscillation circuit | Generates clock frequency for microcomputer operation. |
| Power Supply | Power transformer | Produces power supply of approx. 26 VAC from 220-240 VAC. |
| | Power supply circuit | Supplies direct currents (16 VDC, 5 VDC) to control circuits. |

# Part 7
# Troubleshooting

# 1. Troubleshooting

## 1.1 Error Code Indication

When an abnormality is generated, take necessary measures by referring to displayed error code. After the cause of abnormality is removed, operate equipment and check proper functioning.



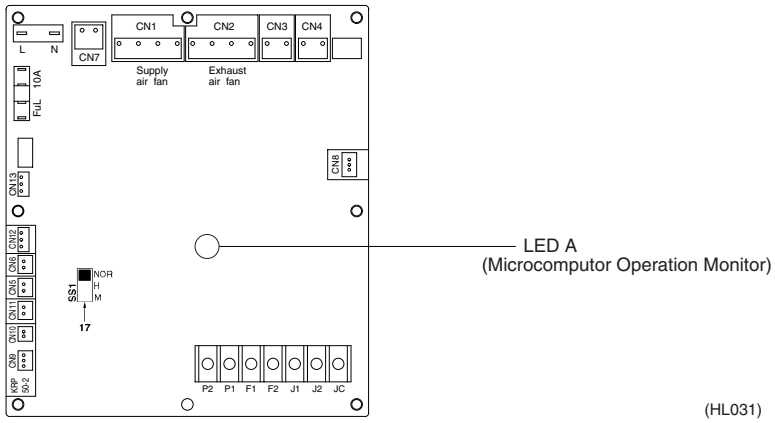

(HL027)

### List of malfunction codes displayed by LCD remote controller

| LCD Remote Controller Display | | | | Description of Abnormality | Page |
|---|---|---|---|---|---|
| Error Code | Operation LED | Inspection Indication | Unit No. | | |
| 60 | ON | OFF | Blinking | Overall alarm | P37 |
| | Blinking | Blinking | Blinking | Overall malfunction | P38 |
| 64 | ON | OFF | Blinking | Inside air thermistor error | P39 |
| 65 | ON | OFF | Blinking | Outside air thermistor error | P40 |
| 6A | ON | OFF | Blinking | Damper system alarm | P41 |
| 6A | Blinking | Blinking | Blinking | Damper system + thermistor error | P42 |
| U5 | Blinking | Blinking | Blinking | Data transmission error between LCD remote controller and main unit | P44 |
| U5 | OFF | Blinking | OFF | LCD remote controller connection error | P45 |
| U8 | OFF | Blinking | OFF | Data transmission error between master-slave LCD remote controllers | P46 |
| UA | OFF | Blinking | OFF | LCD remote controller connection error (no remote controller for air conditioner in air conditioner group) | P47 |
| UC | ON | ON | ON | Overlapping central control address | P48 |
| UE | Blinking | Blinking | Blinking | Transmission error between the unit and centralized controller | — |

In case of the malfunction with the shaded error code, the unit still operates. However, be sure to have it inspected and repaired and as soon as possible.

### Main Unit PCB




(HL031)

## 1.2 Overall Alarm

**Remote Controller LCD Display**

Error Code 60 Inspection OFF Unit No. Blinking

**LED Indication**

Remote Controller ☼ Main Unit ◑

**Error Detection Method**

Abnormalities are detected based on external input terminals (J1-JC).

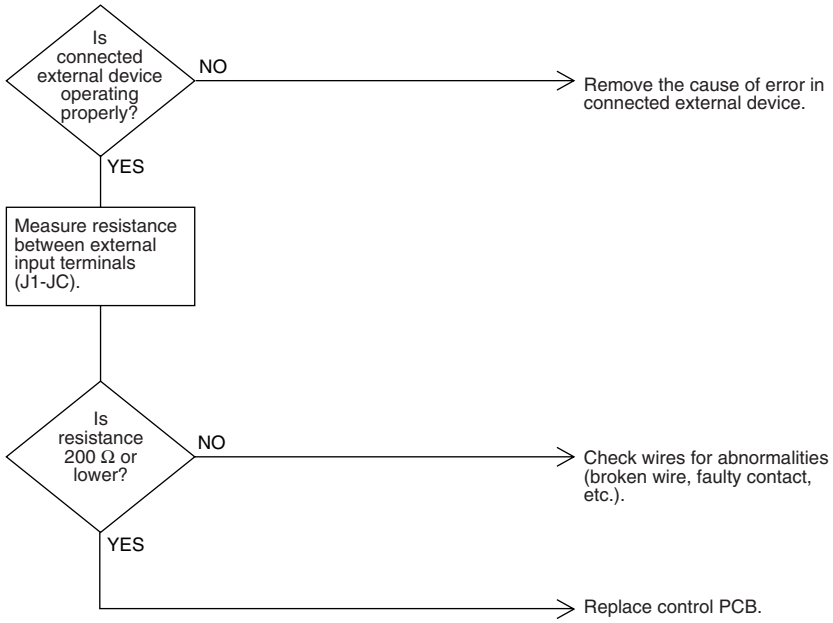
**Error Generating Conditions**

When external input terminal (J1-JC) short-circuit during operation
("Overall Alarm" must be set in field setting mode Note 1).

**Possible Causes**

- Faulty external device
- Broken wire
- Faulty control PCB

**Troubleshooting**




(HF001)

**Note:** **Note 1:**
Refer the field setting mode page 26
{ Setting mode 18
Setting switch 8
Setting position 02

## 1.3 Overall Malfunction

**Remote Controller LCD Display**

Error Code 60 Inspection Blinking Unit No. Blinking

**LED Indication**

Remote Controller ◑ Main Unit ◑

**Error Detection Method**

Abnormalities are detected based on external input terminals (J1-JC).

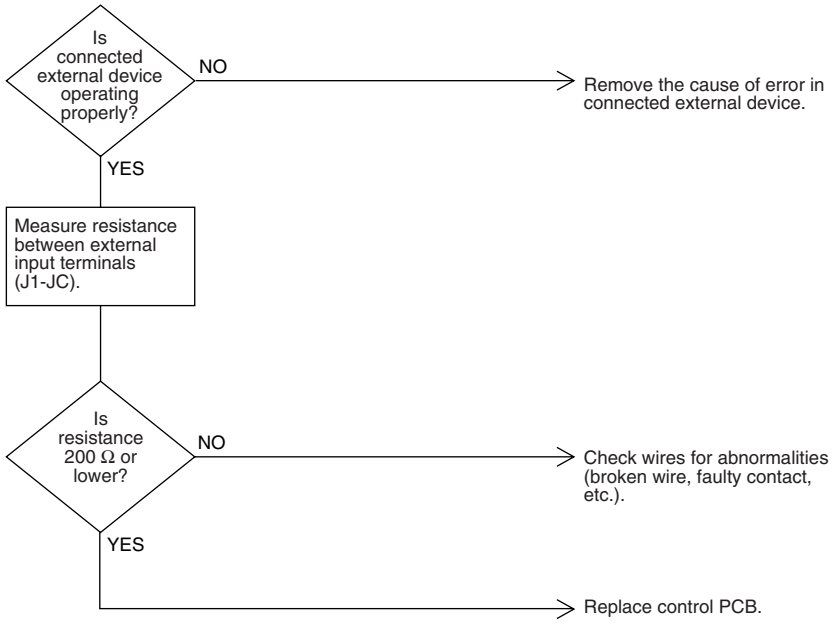
**Error Generating Conditions**

When external input terminal (J1-JC) short-circuit during operation ("Overall Malfunction" must be set in field setting mode Note 2.).

**Possible Causes**

- Faulty external device
- Broken wire
- Faulty control PCB

**Troubleshooting**




(HF002)

**Note:** **Note 2:**
Refer the field setting mode page 26
{ Setting mode 18
Setting switch 8
Setting position 03

## 1.4 Indoor Air Thermistor Error

**Remote Controller LCD Display**

Error Code 64 Inspection OFF Unit No. Blinking

**LED Indication**

Remote Controller ☼ Main Unit ◑

**Error Detection Method**

Temperature detected by inside air temperature sensor is used to detect errors.

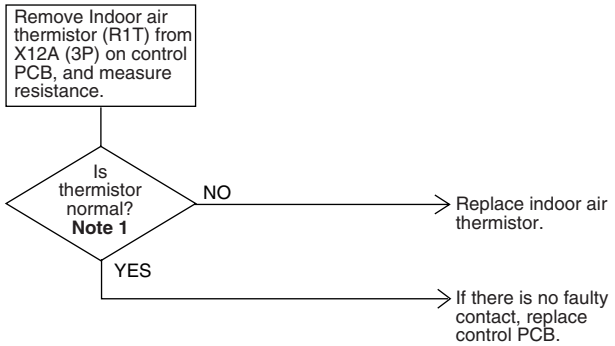
**Error Generating Conditions**

When value detected by inside air temperature sensor is -40°C or below (open circuit) or 70°C or higher (short-circuit).

**Possible Causes**

- Faulty sensor
- Broken wire
- Faulty control PCB
- Faulty contact in connector

**Troubleshooting**




(HF003)

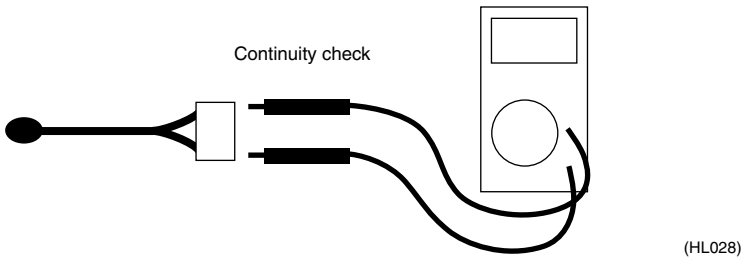
**Note:** **Note 1:**
Refer to the thermistor temperature - resistance conversion table when measuring resistance.

Thermistor temperature - resistance conversion table

| Thermistor temperature | Sensor resistance | Thermistor temperature | Sensor resistance |
|---|---|---|---|
| -10°C or less | 108kΩ or more | 22°C | Approx. 23kΩ |
| -5°C | Approx. 85kΩ | 24°C | Approx. 21kΩ |
| 0°C | Approx. 66kΩ | 26°C | Approx. 19kΩ |
| 5°C | Approx. 51kΩ | 28°C | Approx. 18kΩ |
| 10°C | Approx. 40kΩ | 30°C | Approx. 16kΩ |
| 14°C | Approx. 33kΩ | 35°C | Approx. 13kΩ |
| 16°C | Approx. 30kΩ | 40°C | Approx. 11kΩ |
| 18°C | Approx. 27kΩ | 50°C or more | 7kΩ or less |
| 20°C | Approx. 25kΩ | | |

If measured value deviates significantly from above values, thermistor is faulty.

Use tester to check resistance




(HL028)

## 1.5 Outdoor Air Thermistor Error

**Remote Controller LCD Display**

Error Code 65 Inspection OFF Unit No. Blinking

**LED Indication**

Remote Controller ☼ Main Unit ◑

**Error Detection Method**

Temperature detected by outside air temperature sensor is used to detect errors.

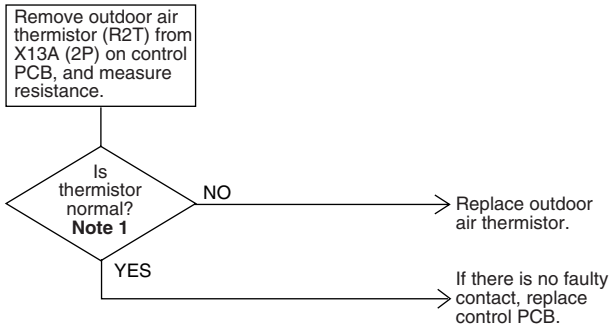
**Error Generating Conditions**

When value detected by outside air temperature sensor is -40°C or below (open circuit) or 70°C or higher (short-circuit).

**Possible Causes**

- Faulty sensor
- Broken wire
- Faulty control PCB
- Faulty contact in connector

**Troubleshooting**




(HF004)

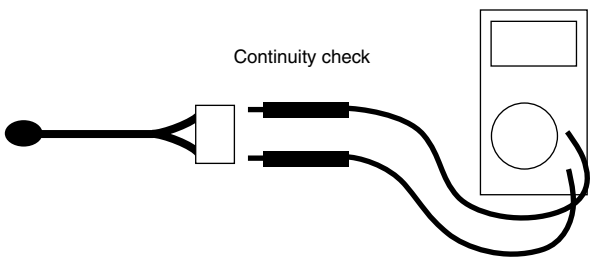
**Note:** **Note 1:**
Refer to the thermistor temperature - resistance conversion table when measuring resistance.

Thermistor temperature - resistance conversion table

| Thermistor temperature | Sensor resistance | Thermistor temperature | Sensor resistance |
|---|---|---|---|
| -10°C or less | 108kΩ or more | 22°C | Approx. 23kΩ |
| -5°C | Approx. 85kΩ | 24°C | Approx. 21kΩ |
| 0°C | Approx. 66kΩ | 26°C | Approx. 19kΩ |
| 5°C | Approx. 51kΩ | 28°C | Approx. 18kΩ |
| 10°C | Approx. 40kΩ | 30°C | Approx. 16kΩ |
| 14°C | Approx. 33kΩ | 35°C | Approx. 13kΩ |
| 16°C | Approx. 30kΩ | 40°C | Approx. 11kΩ |
| 18°C | Approx. 27kΩ | 50°C or more | 7kΩ or less |
| 20°C | Approx. 25kΩ | | |

If measured value deviates significantly from above values, thermistor is faulty.

Use tester to check resistance




(HL028)

## 1.6 Damper System Error (Alarm)

**Remote Controller LCD Display**

Error Code 6A Inspection OFF Unit No. Blinking

**LED Indication**

Remote Controller ☼ Main Unit ◑

**Error Detection Method**

Measurement of damper motor limit ON/OFF time.

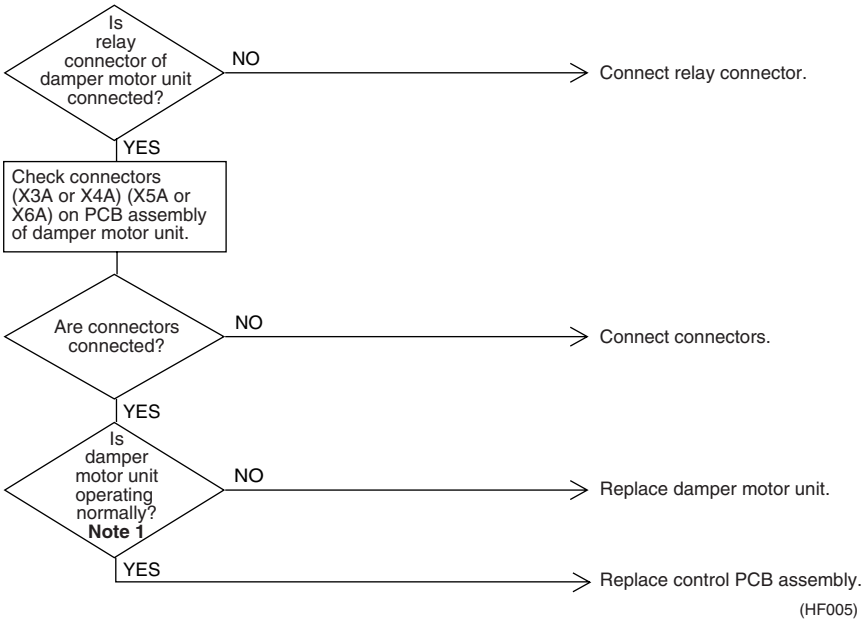
**Error Generating Conditions**

- When damper motor limit switch 1 (or 2) remains ON (or OFF) for more than a certain time duration after ventilation mode is changed.
- When damper motor limit switch 1 (or 2) repeats ON/OFF operations after damper motor 1 (or 2) stops.

**Possible Causes**

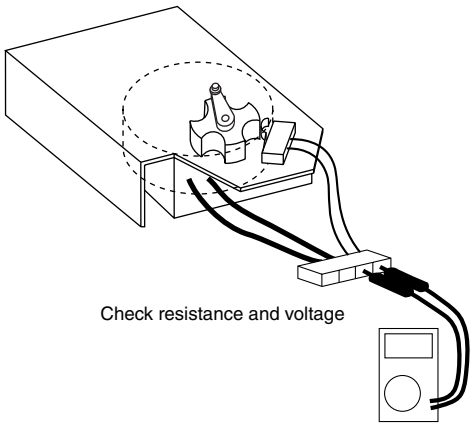
- Faulty damper motor or limit switch
- Broken wire in cable
- Faulty contact in connector (including relay connector)
- Faulty control PCB assembly

**Troubleshooting**




**Note:** **Note 1:**

- Place tester probes on connectors of limit switch. Move switch by hand and check continuity. If tester indicates 0Ω when limit switch turns on, and infinity when it turns off, limit switch is normal.
- Place tester probes on connectors of damper motor and check resistance. If tester indicates approx. 17 kΩ in 200-V model, damper motor is normal.



## 1.7 Damper System Error (Alarm)

**Remote Controller LCD Display**

Error Code 6A Inspection Blinking Unit No. Blinking

**LED Indication**

Remote Controller ◑ Main Unit ◑

**Error Detection Method**

Measurement of damper motor limit switch ON/OFF time and temperatures detected by outdoor and indoor air thermistor.

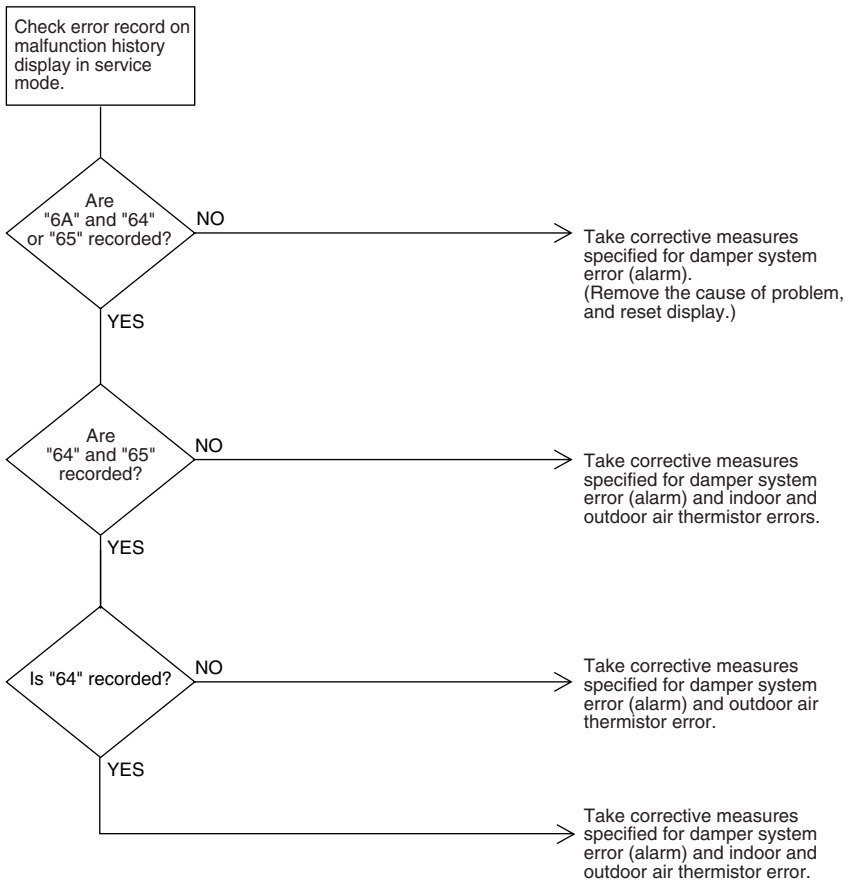
**Error Generating Conditions**

- When damper system error (alarm) and indoor (or outdoor) thermistor error are generated at the same time.
- When damper system error (alarm) occurs and values of indoor and outdoor air thermistor meet frost conditions.

**Possible Causes**

- Faulty damper motor or limit switch
- Faulty indoor air thermistor
- Faulty outdoor air thermistor
- Frosting
- Broken wire in cable
- Faulty contact in connector (including relay connector)
- Faulty control PCB assembly

**Troubleshooting**




(HF006)

## 1.8 Dedicated LCD Remote Controller

When "88" remains on remote controller display.

**Error Detection Method**

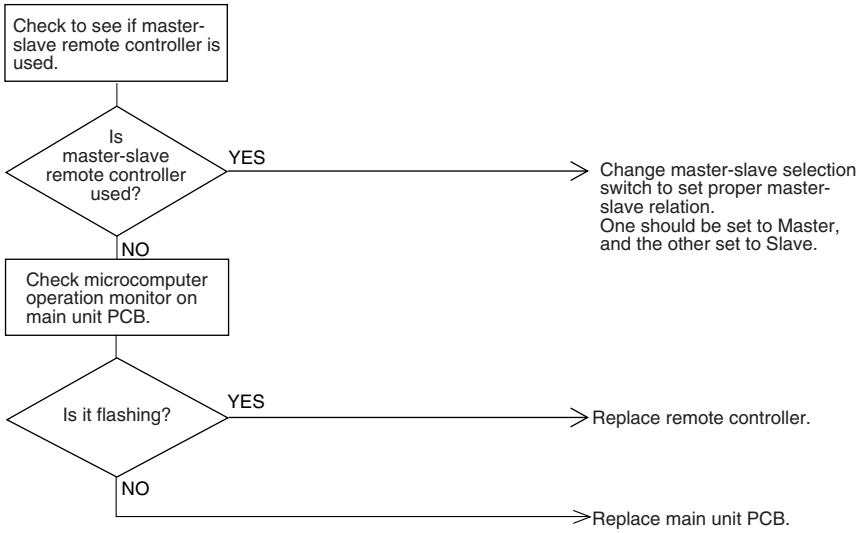
When "88" remains on remote controller display.

**Error Generating Conditions**

**Possible Causes**

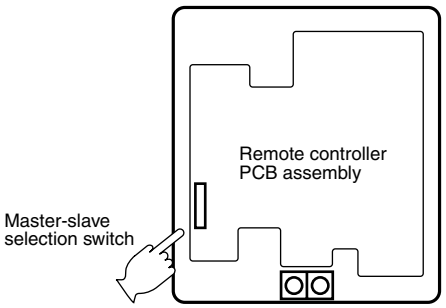
Master-slave setting of remote controller
Remote controller PCB assembly error
Main unit PCB assembly error

**Troubleshooting**



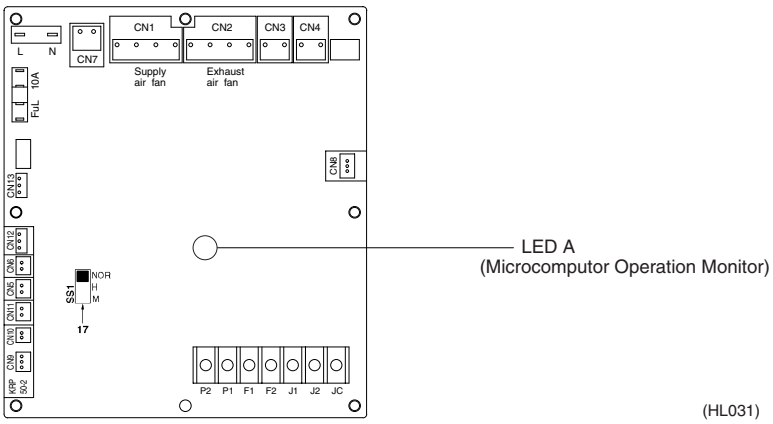

(HF007)

Dedicated Remote Controller




(HL030)

Main Unit PCB




(HL031)

## 1.9 Data Transmission Error (Between LCD Remote Controller and Main Unit)

**Remote Controller LCD Display**

Error Code U5 Inspection Blinking Unit No. Blinking

**LED Indication**

Remote Controller ◑ Main Unit ◑

**Error Detection Method**

Microcomputer checks if data is transmitted properly between main unit and remote controller.

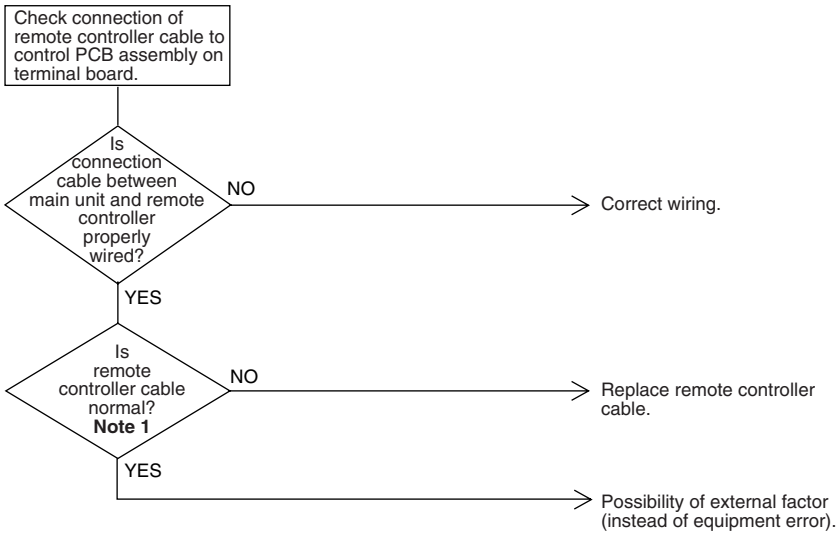
**Error Generating Conditions**

When data transmission is not performed correctly for a certain time period.

**Possible Causes**

- Faulty connection of remote controller cable
- Faulty remote controller cable
- External factor (noise, etc.)

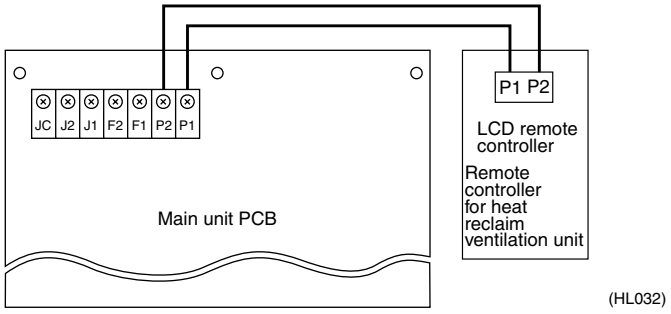
**Troubleshooting**




(HF008)

**Note:** **Note 1:**

1. Use tester to check continuity of remote controller cable.
   - Disconnect cable from main unit terminal board and remote controller terminal board. Measure resistance between wires in cable. Resistance should be ∞ MΩ (infinity).
2. Use tester to check voltage at terminal board.
   Check with power turned on.
   - With remote controller cable disconnected, voltage between P1 and P2 on terminal board should be approx. 16 VDC. If measured value is not approx. 16 VDC, PCB assembly is faulty.
   - Connect remote controller cable and disconnect remote controller. Voltage at the end of remote controller cable should be approx. 16 VDC. If measured value is not 16 VDC, remote controller cable is faulty.
   - Connect remote controller cable and remote controller. Voltage between P1 and P2 on remote controller terminal should be approx. 16 VDC. If measured valued is not 16 VDC, remote controller is faulty.




(HL032)

## 1.10 Data Transmission Error (LCD Remote Controller)

**Remote Controller LCD Display**

Error Code U5 Inspection Blinking Unit No. OFF

**LED Indication**

Remote Controller ◑ Main Unit ◑

**Error Detection Method**

Microcomputer checks if data is transmitted properly between main unit and remote controller.

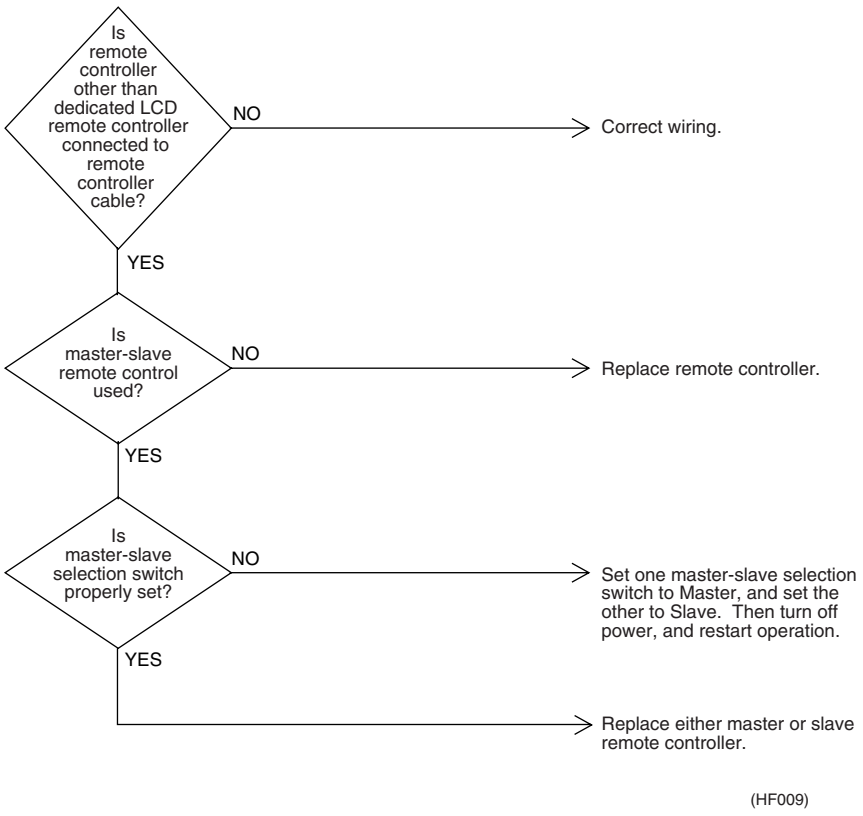
**Error Generating Conditions**

When data transmission is not performed correctly for a certain time period.

**Possible Causes**

- Erroneous connection
- Faulty remote controller setting
- Faulty remote controller

**Troubleshooting**




(HF009)

## 1.11 Data Transmission Error (Between LCD Master Remote Controller and Slave Remote Controller)

**Remote Controller LCD Display**

Error Code U8 Inspection Blinking Unit No. OFF

**LED Indication**

Remote Controller ● Main Unit ◑

**Error Detection Method**

Microcomputer checks if data is transmitted properly between master-slave remote controller.

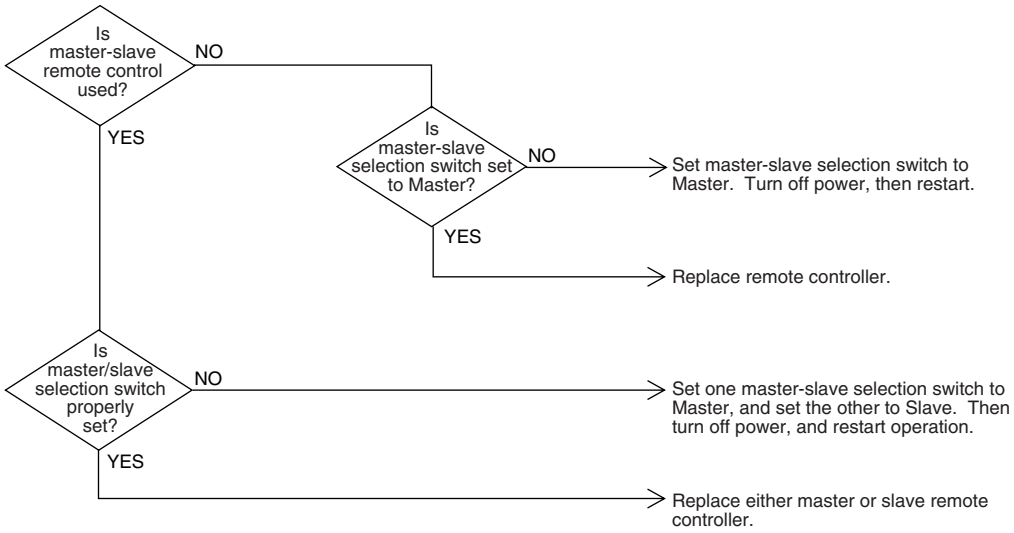
**Error Generating Conditions**

When data transmission is not performed correctly for a certain time period.

**Possible Causes**

- Faulty remote controller setting
- Faulty remote controller

**Troubleshooting**




(HF010)

## 1.12 Field Setting Error

**Remote Controller LCD Display**

Error Code UA Inspection Blinking Unit No. OFF

**LED Indication**

Remote Controller ● Main Unit ◑

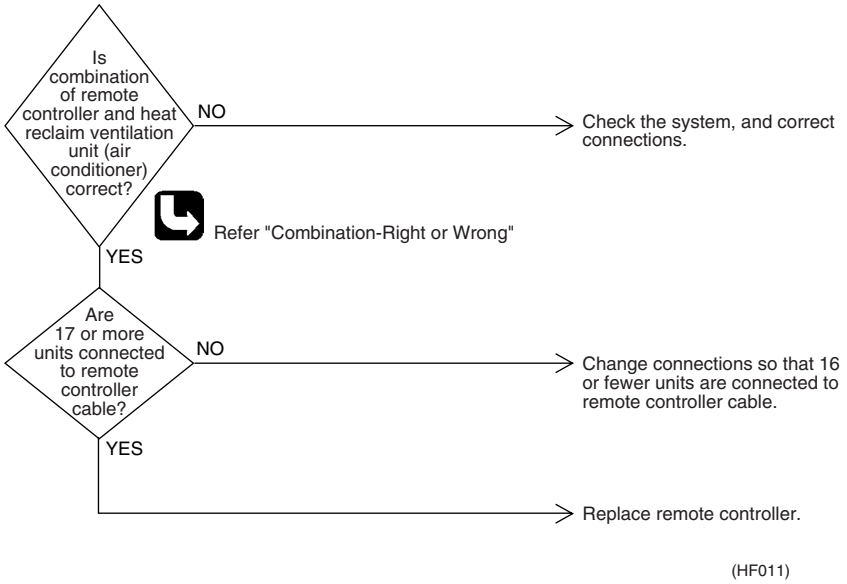
**Error Detection Method**

**Error Generating Conditions**

**Possible Causes**

- Faulty combination of remote controller
- More than 16 units connected to remote controller cable.
- Faulty remote controller

**Troubleshooting**




<Combination-Right or Wrong>

| Main body | Remote controller | Right/Wrong |
|---|---|---|
| Heat reclaim ventilation unit only | Heat reclaim ventilation unit | Right |
| Heat reclaim ventilation unit only | Air conditioner | Right |
| Heat reclaim ventilation unit + air-conditioner | Heat reclaim ventilation unit | Wrong |
| Heat reclaim ventilation unit + air-conditioner | Air-conditioner | Right |

## 1.13 Overlapping Central Control Address

**Remote Controller LCD Display**

Error Code UC Inspection ON Unit No. ON

**LED Indication**

Remote Controller ☼ Main Unit ◑

**Error Detection Method**

Remote controller microcomputer checks for double-setting of addresses.

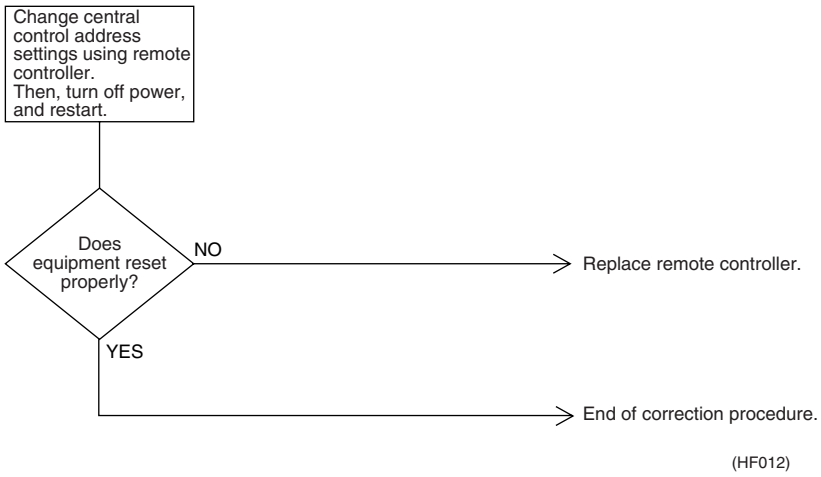
**Error Generating Conditions**

When same address is set to two or more units.

**Possible Causes**

- Overlapping of central control address
- Faulty remote control

**Troubleshooting**




(HF012)

## 1.14 Main Unit PCB Assembly

**Error Detection Method**

Check microcomputer operation monitor.

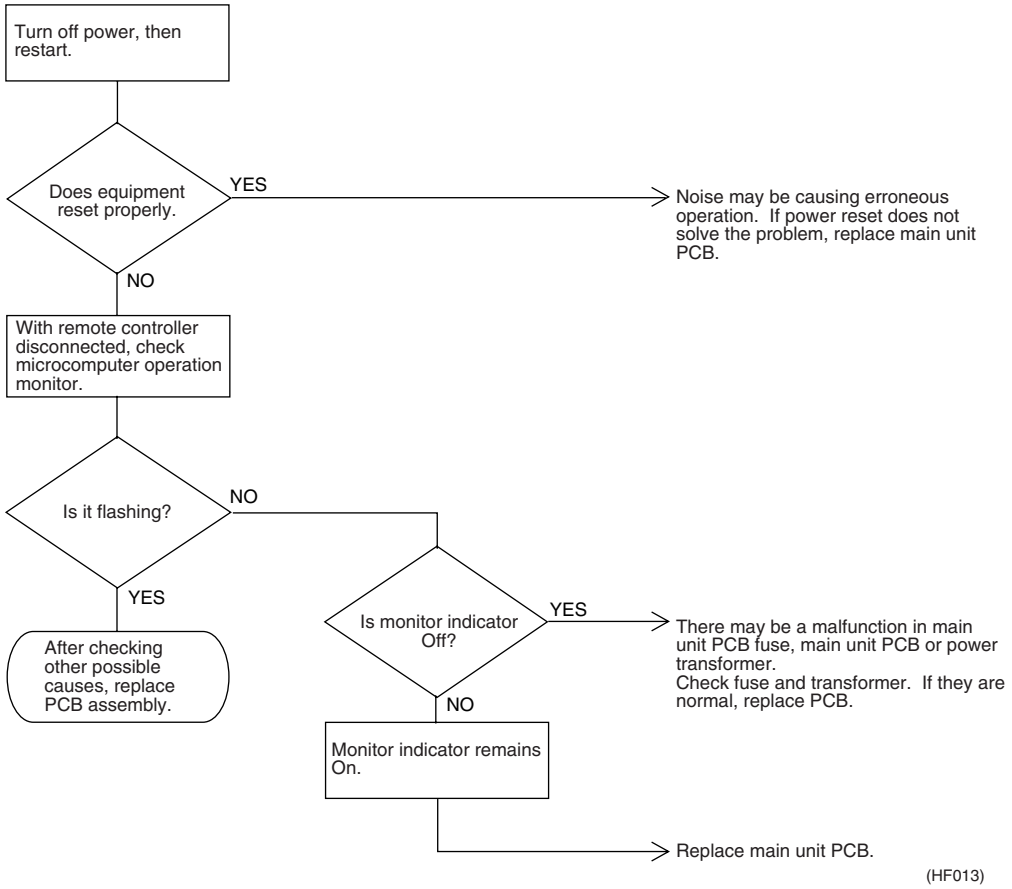
**Error Generating Conditions**

When main unit PCB assembly does not operate.
When communication circuit errors.

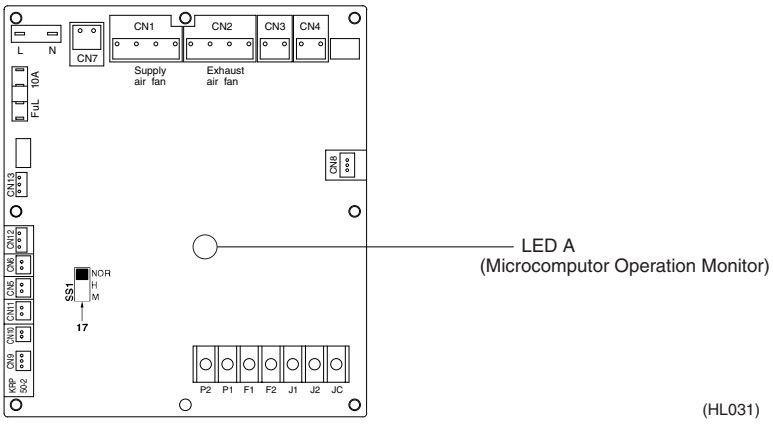
**Possible Causes**

Fuse (excess current)
Power transformer
Noise
Main unit PCB

**Troubleshooting**




Main unit PCB



## 1.15 Dedicated LCD Remote Controller

When no indication is displayed on remote controller

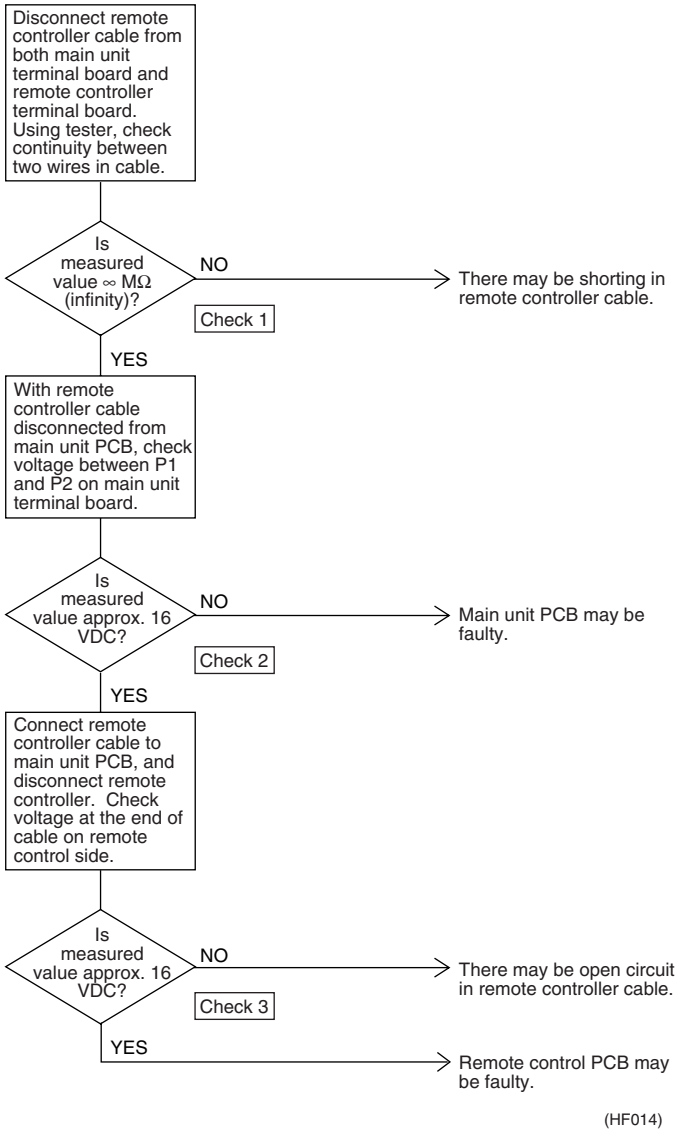
**Error Detection Method**

Check to see if remote controller displays indication.

**Error Generating Conditions**

**Possible Causes**

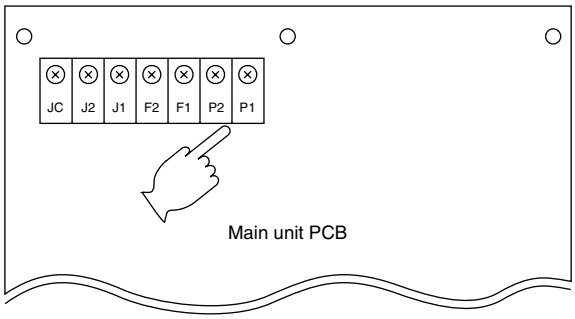
**Troubleshooting**




Check 1, 2, 3 : Refer to page 51

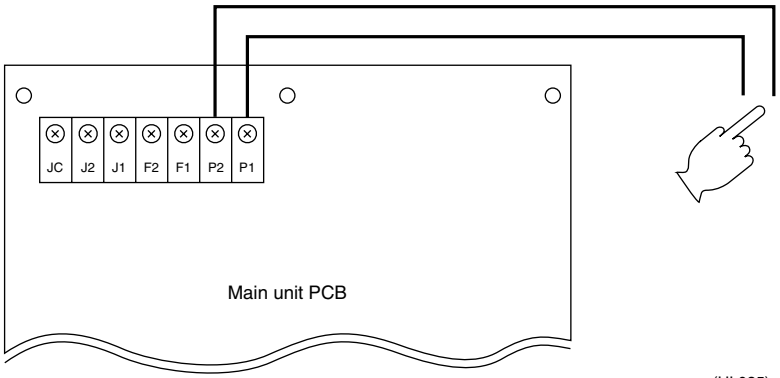
## 1.16 How to Check

**Check 1** Dedicated LCD remote controller (Option)



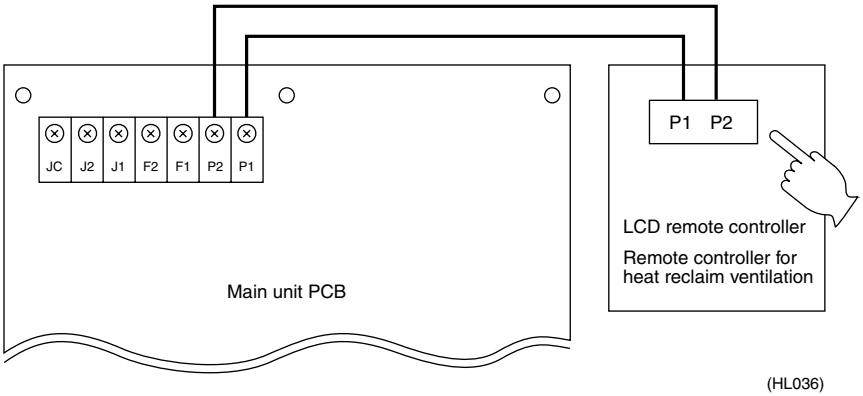

(HL034)

**Check 2** Dedicated LCD remote controller (Option)




(HL035)

**Check 3** Dedicated LCD remote controller (Option)




(HL036)

## 1.17 Thermistor

**Error Detection Method**

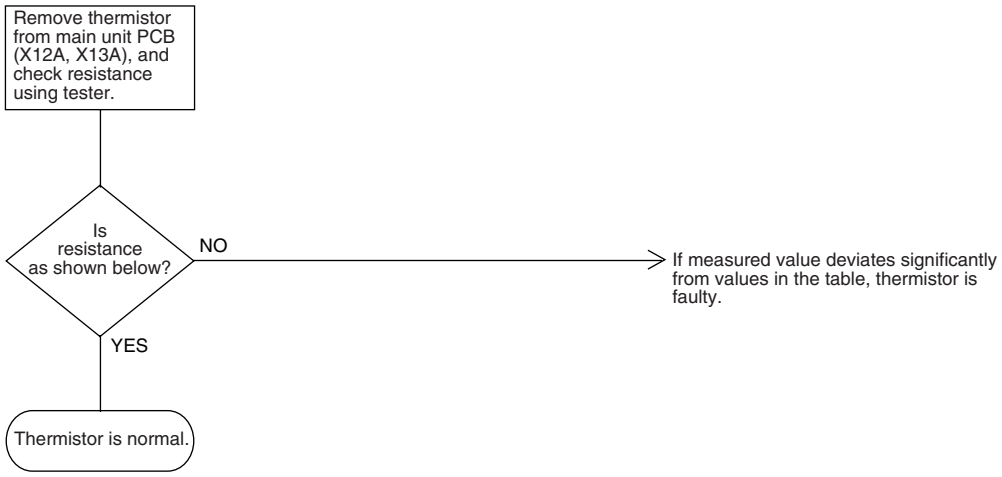
Remove thermistor and check resistance with tester.

**Error Generating Conditions**

**Possible Causes**

- Faulty thermistor
- Broken wire
- Faulty control PCB
- Faulty contact in connector

**Troubleshooting**



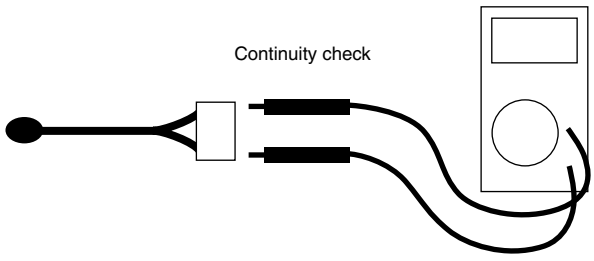

(HF015)

**Note:** Refer to the thermistor temperature - resistance conversion table when measuring resistance.

Thermistor temperature - resistance conversion table

| Thermistor temperature | Sensor resistance | Thermistor temperature | Sensor resistance |
|---|---|---|---|
| -10°C or less | 108kΩ or more | 22°C | Approx. 23kΩ |
| -5°C | Approx. 85kΩ | 24°C | Approx. 21kΩ |
| 0°C | Approx. 66kΩ | 26°C | Approx. 19kΩ |
| 5°C | Approx. 51kΩ | 28°C | Approx. 18kΩ |
| 10°C | Approx. 40kΩ | 30°C | Approx. 16kΩ |
| 14°C | Approx. 33kΩ | 35°C | Approx. 13kΩ |
| 16°C | Approx. 30kΩ | 40°C | Approx. 11kΩ |
| 18°C | Approx. 27kΩ | 50°C or more | 7kΩ or less |
| 20°C | Approx. 25kΩ | | |

If measured value deviates significantly from above values, thermistor is faulty.
Use tester to check resistance




(HL028)

## 1.18 Power Transformer

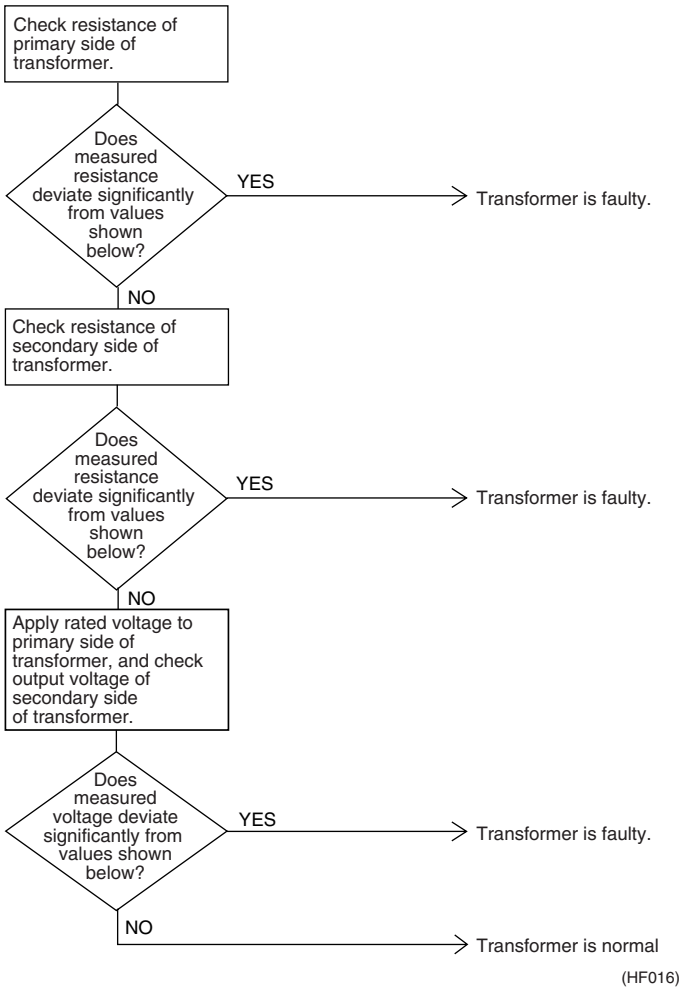
**Error Detection Method**

Check resistance and voltage with tester, and insulation resistance with megger.

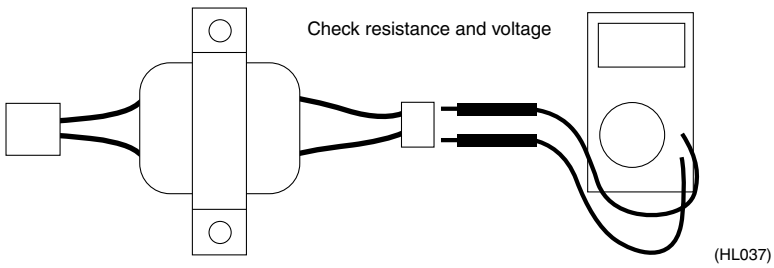
**Error Generating Conditions**

**Possible Causes**

**Troubleshooting**




- Resistance of primary side of transformer: approx. 140Ω
- Resistance of secondary side of transformer: approx. 1.9Ω
- Voltage at secondary side of transformer when rated voltage is applied to primary side: approx. 26 VAC
- Insulation resistance between primary side of transformer and case: 100 MΩ or higher
- Insulation resistance between secondary side of transformer and case: 100 MΩ or higher
- Insulation resistance between primary side and secondary side of transformer: 100 MΩ or higher



## 1.19 Damper Motor

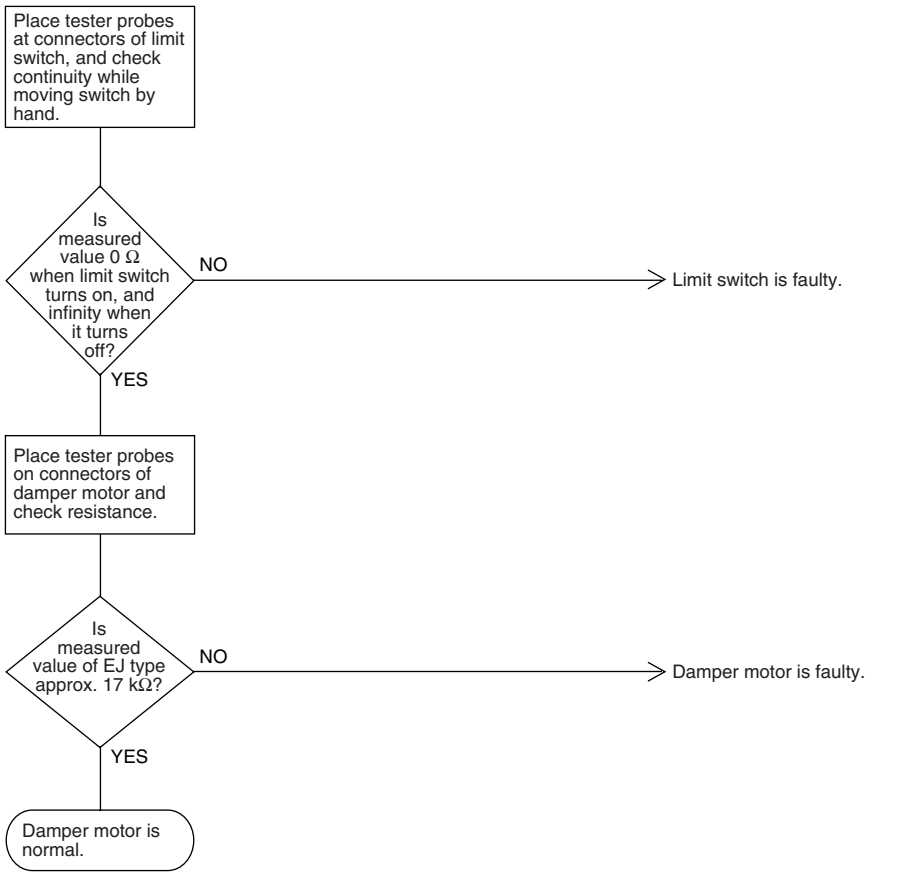
**Error Detection Method**

Check damper motor and limit switch when damper motor does not operate.

**Error Generating Conditions**

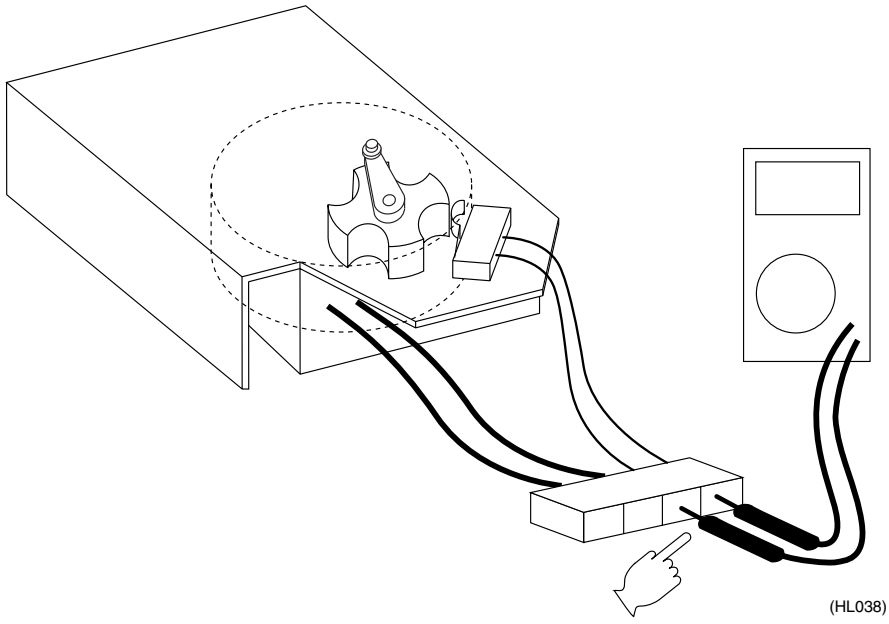
**Possible Causes**

**Troubleshooting**




(HF017)

Check resistance and voltage — DAMPER MOTOR



(HL038)

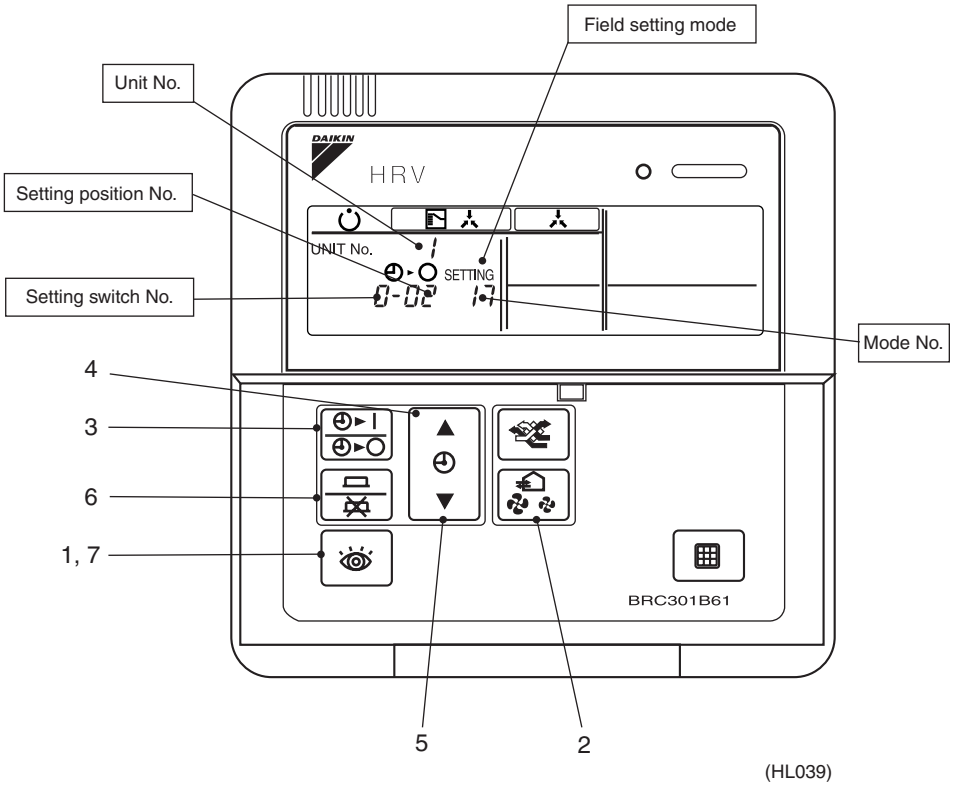
# Part 8 Supplementary Explanation

# 1. Supplementary Explanation

## 1.1 Field Setting, Service Mode Operation

### 1.1.1 Field Setting

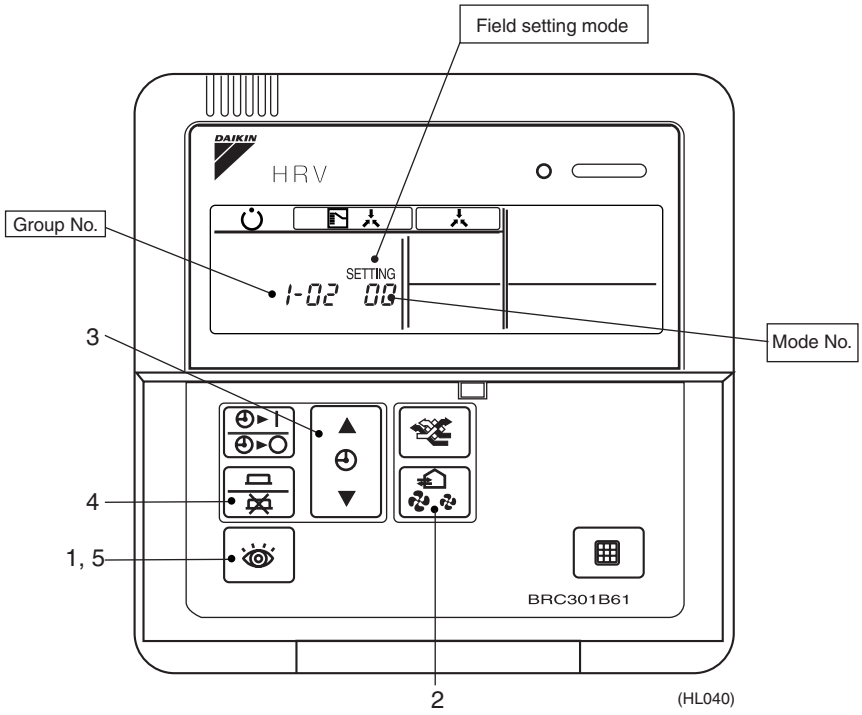
**Initial setting (mode Nos. 17, 27, 18, 28)**




(HL039)

| | |
|---|---|
| Step 1 | With equipment in normal mode, press the button for more than 4 seconds to enter field setting mode. |
| Step 2 | Mode No.: UP ↔ Mode No.: DOWN<br>Use [MODE] and [AIR VOLUME] to select desired mode No. |
| Step 3 | To setting heat reclaim ventilation units by group, press button and select desired unit No. |
| Step 4 | Press button to select desired setting switch No. |
| Step 5 | Press button to select desired setting position No. |
| Step 6 | Press button to enter settings. |
| Step 7 | Press button to return to normal mode. |

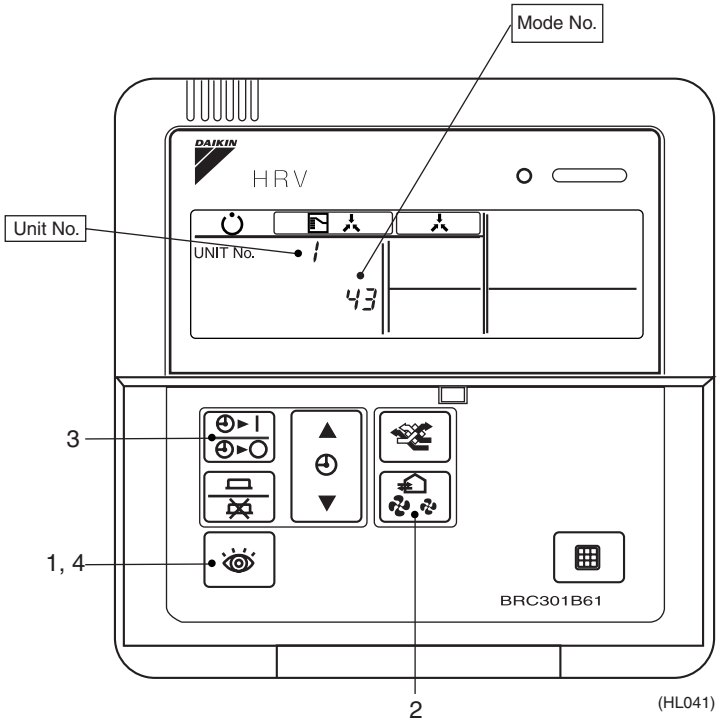
## Centralized control group No. setting (Mode No. 00) Setting of Individual No. (Mode No. 30)




| | |
|---|---|
| Step 1 | With equipment in normal mode, press the button for more than 4 seconds to enter field setting mode. |
| Step 2 | Mode No.: UP ↔ Mode No.: DOWN<br>Use [MODE] and [AIR VOLUME] to select mode No.00 (30). |
| Step 3 | Press or button to select Group No. |
| Step 4 | Press button once to enter settings. |
| Step 5 | Press button to return to normal mode. |

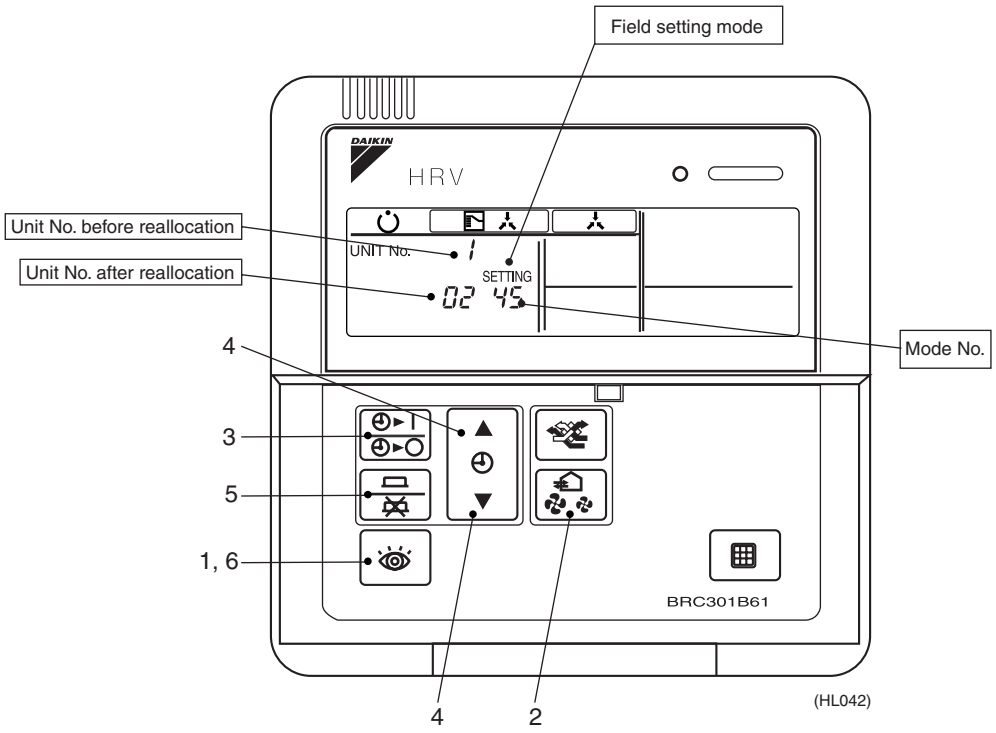
## 1.1.2 Service Mode Operation

### Turn on the forced fan (Mode No.43)




| | |
|---|---|
| Step 1 | With equipment in field setting mode, press the button for more than 4 seconds to enter service mode. |
| Step 2 | Mode No.: UP ↔ Mode No.: DOWN<br>Use [MODE] and [AIR VOLUME] to select mode No.43. |
| Step 3 | Use to select desired Unit No. |
| Step 4 | Press button to return to normal mode. |

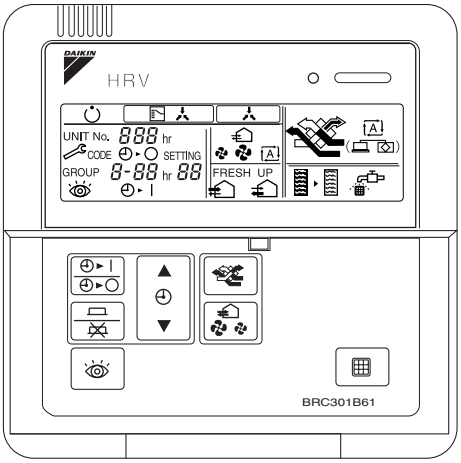
## Unit No. reallocation (Mode No.45)




| | |
|---|---|
| Step 1 | With equipment in field setting mode, press the button for more than 4 seconds to enter service mode. |
| Step 2 | Mode No.: UP ↔ Mode No.: DOWN<br>Use [MODE] and [AIR VOLUME] to select mode No.45. |
| Step 3 | Use to select setting Unit No. |
| Step 4 | Press or button to select Unit No. after reallocation. |
| Step 5 | Press button once to enter settings. |
| Step 6 | Press button to return to normal mode. |

## 1.1.3 Field Setting

**The following shows the procedure for field setting using remote controller of new heat reclaim ventilation unit.**




(HL044)

List of field setting mode Nos.

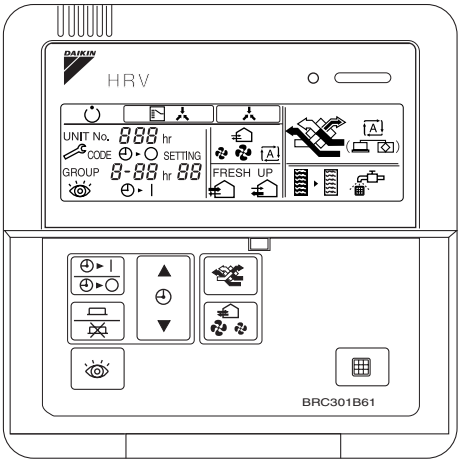
| | |
|---|---|
| Centralized control group No. setting | 00 |
| General setting | 10-29 |
| Centralized control group No. setting (group) | 30 |
| Error record display | 40 |
| Sensor data | 41 |
| Forced fan ON | 43 |
| Individual setting | 44 |
| Unit No. reallocation | 45 |

| | | |
|---|---|---|
| Step 1 | To field setting mode | Press for more than 4 sec. |
| Step 2 | Mode No. selection 1 | [Mode (00-30)] → [Mode (40-49)] → [Mode (50-59)] (Press for more than 4 sec.) (Press for more than 4 sec. ) |
| Step 3 | Mode No. selection 2 | Mode No.: UP ↔ Mode No.: DOWN |
| Step 4 | Switch No. selection | ( ▲ ) Switch No. selection |
| Step 5 | Position selection | ( ▼ ) Position selection |
| Step 6 | Position enter | Enters currently selected position. |
| Step 7 | To normal mode | Exits field setting mode and enters normal mode. |

| |
|---|
| In group control, use to select unit No. |

## 1.1.4 LCD and Operation Panel (Reference Information)

**The following shows the operation panel and LCD of remote controller of new heat reclaim ventilation unit.**




(HL045)

**LCD**

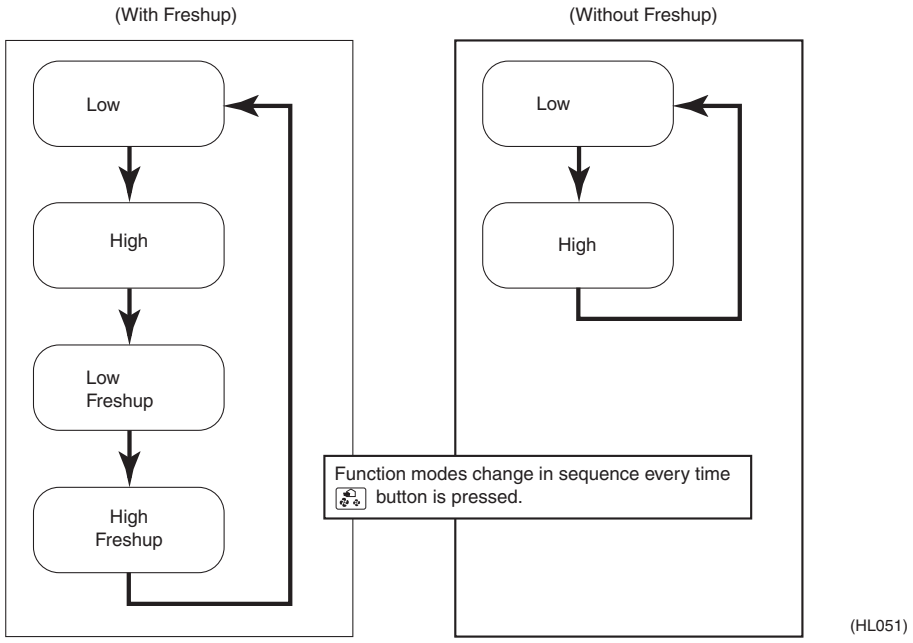
LCD is equipped with a new function that graphically displays currently selected ventilation mode, as shown below.

| | | |
|---|---|---|
| (Ventilation mode: Auto) | Total heat exchange ventilation mode |  (HL046) |
| | Normal ventilation mode |  (HL047) |
| | Display OFF in automatic ventilation mode |  (HL048) |
| (Ventilation mode: Total heat exchange) | |  (HL049) |
| (Ventilation mode: Normal) | Normal ventilation mode |  (HL050) |

Display can be turned off using field setting 19 (29) - 7.

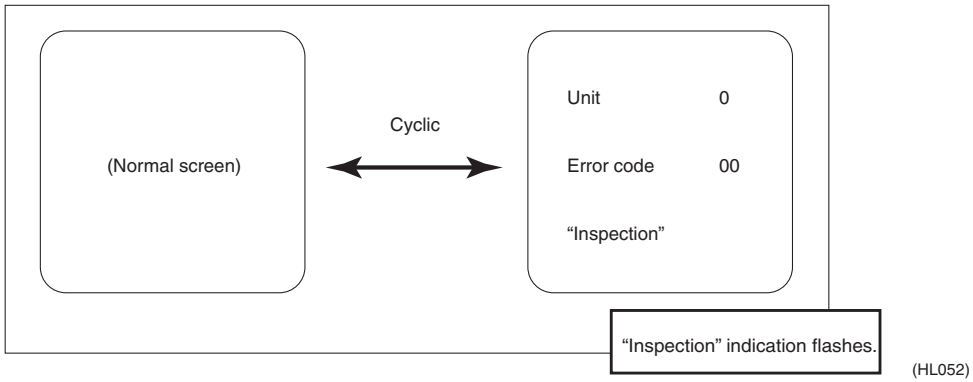
## 1.1.5 Ventilation Volume (Fresh-up)

**Ventilation volume (Fresh-up) setting changes as follows.**




**Inspection**

Inspection operation is shown below.



## 1.1.6 Field Setting

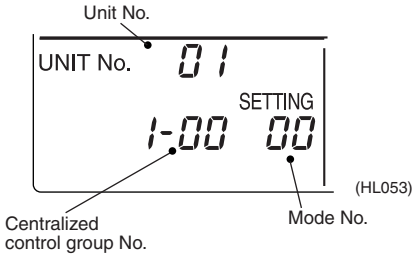
(Example of setting operation)

**Centralized control group No. setting (mode No.: 00)**

1. Press [ ] for more than 4 seconds.
2. Set mode No. to “00” using [ ] or [ ] .
3. Set centralized control group No. using [ ] [ ▲ ] or [ ] [ ▼ ].
4. Enter displayed group No. by pressing [ ] .
5. Press [ ] to return to normal operation mode.

**Centralized control group No. setting (mode No.: 30)**

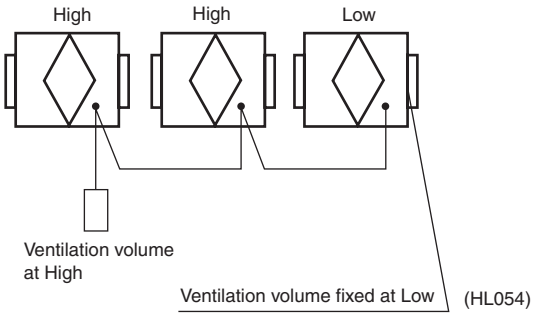
For group control, the following step must be performed.
(*) Set unit No. using [ ] .



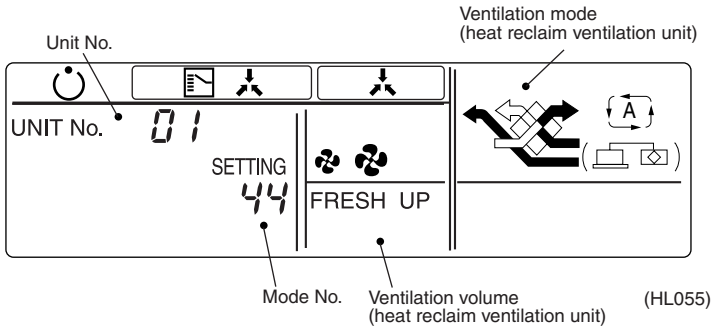

**Procedure for entering individual settings (mode No.: 44)**

■ The setting is generally the same for all units in the same group control system. However, the setting of selected units can be fixed by the following method.

< Example >




1. Press [ ] for more than 4 seconds.
2. Set mode No. to “44” using [ ] or [ ] .
3. Set unit No. using [ ] .
4. Set ventilation mode using [ ] [ ▲ ].
5. Set ventilation volume using [ ] [ ▼ ].
6. Enter settings by pressing [ ] .



## Individual Settings

| Heat Reclaim Ventilation Unit | |
|---|---|
| Ventilation Volume | Ventilation Mode |
| As indicated by LCD | As indicated by LCD |

# Part 9
# Operation Manual

DAIKIN

# OPERATION MANUAL

## Total Heat Exchanger
## **HRV (Heat Reclaim Ventilation)**

MODELS
**(Ceiling mounted duct type)**

**VAM 150GJVE**
**VAM 250GJVE**
**VAM 350GJVE**
**VAM 500GJVE**
**VAM 650GJVE**
**VAM 800GJVE**
**VAM 1000GJVE**
**VAM 1500GJVE**
**VAM 2000GJVE**

3P034927-5J EM03A029 (0511) FS HT

# HRV

HRV; Heat Reclaim Ventilation

Before using the DAIKIN HRV, 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.

# 1. Safety Cautions

**Read the following cautions carefully and use your equipment properly.**
This unit comes under the term “appliances not accessible to the genetic public.”
There are two kinds of safety cautions and tips listed here as follows:

**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.
**Keep these warning sheets handy so that you can refer to them if needed.**
Also, if this equipment is transferred to a new user, make sure to hand over this user’s manual to the new user.

**Warning (During Opertaion)**

- **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 HRV 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.
- **Never inspect or service the unit by yourself.**
  Ask a qualified service person to perform this work.
  (The qualified service person)

**Caution (During Opertaion)**

- **Do not use the HRV 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 little 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 HRV 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.
- **Do not operate the remote controller with wet hands.**
  This may cause electric shock.
- **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.
- **Do not let any kind of sprays get on the remote controller (insecticides, cleaning materials, etc.)**
  This may cause breakage, deformation, or malfunction.
- **Do not wipe the controller operation panel with benzine, thinner, chemical dustcloth, etc.**
  The panel may get discolored or the coating peeled off. If it is heavily dirty, soak a cloth in water-diluted neutral detergent, squeeze it well and wipe the panel clean. And wipe it with another dry cloth.
- **The appliance is not intended for use by young children or infirm persons without supervision.**

- **Young children should be supervised to ensure that they do not play with the appliance.**
- **Consult with installation contractor for cleaning the inside of the air conditioner.**
  Wrong cleaning may make the plastics parts broken or cause failure of water leakage or electric shock.
- **Do not place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit.**
  Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunctions, smoke or fire when making contact with electrical parts.

**⚠ 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 lows 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 in sufficient 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 HRV 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 HRV 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 HRV 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 noxius 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, marking 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.
- **Arrange the drain hose to ensure smooth drainage.**
  Incomplete drainage may cause wetting of the building, furniture etc.
- **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

**MODELS VAM150GJVE VAM250GJVE VAM350GJVE VAM500GJVE VAM650GJVE VAM800GJVE VAM1000GJVE**

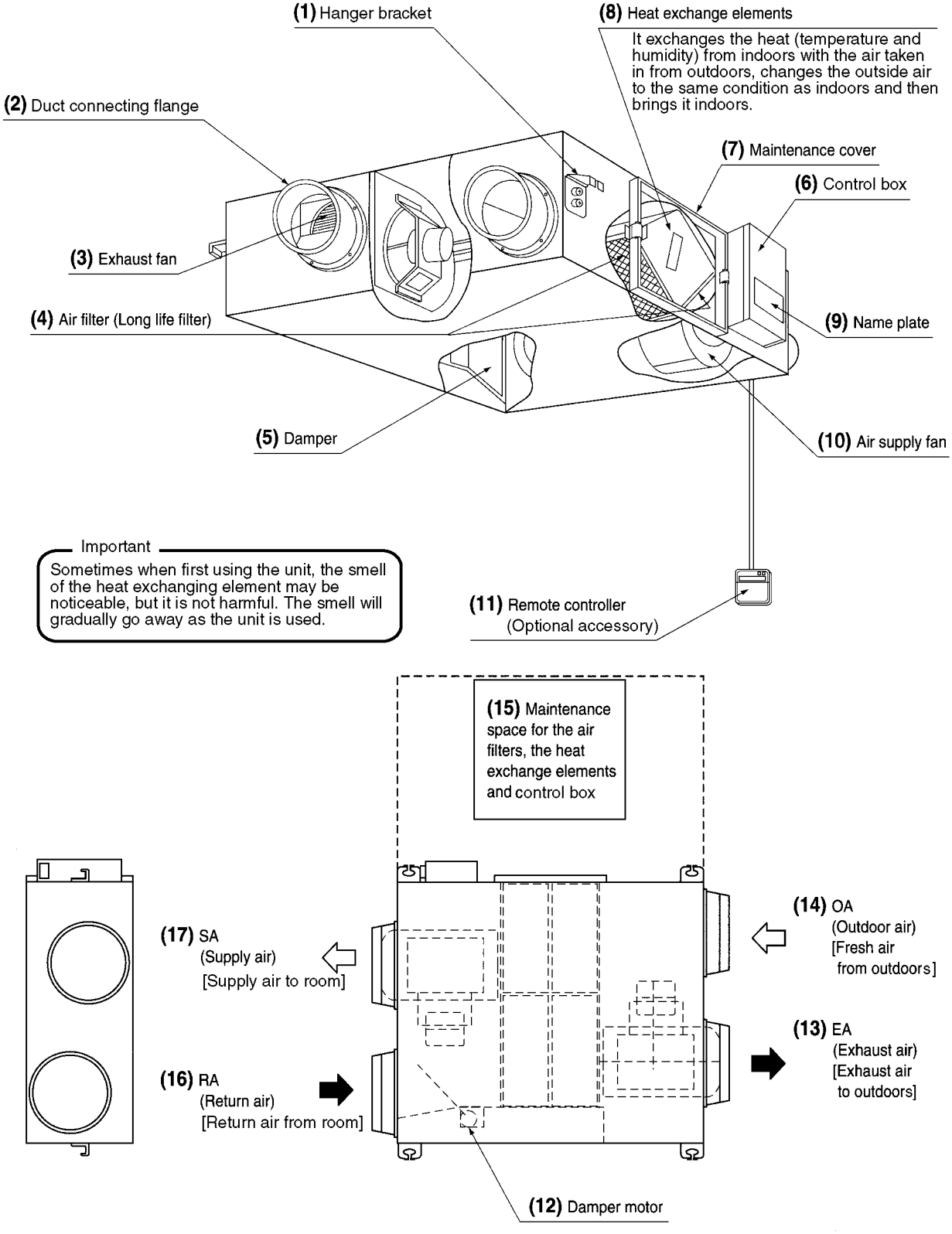
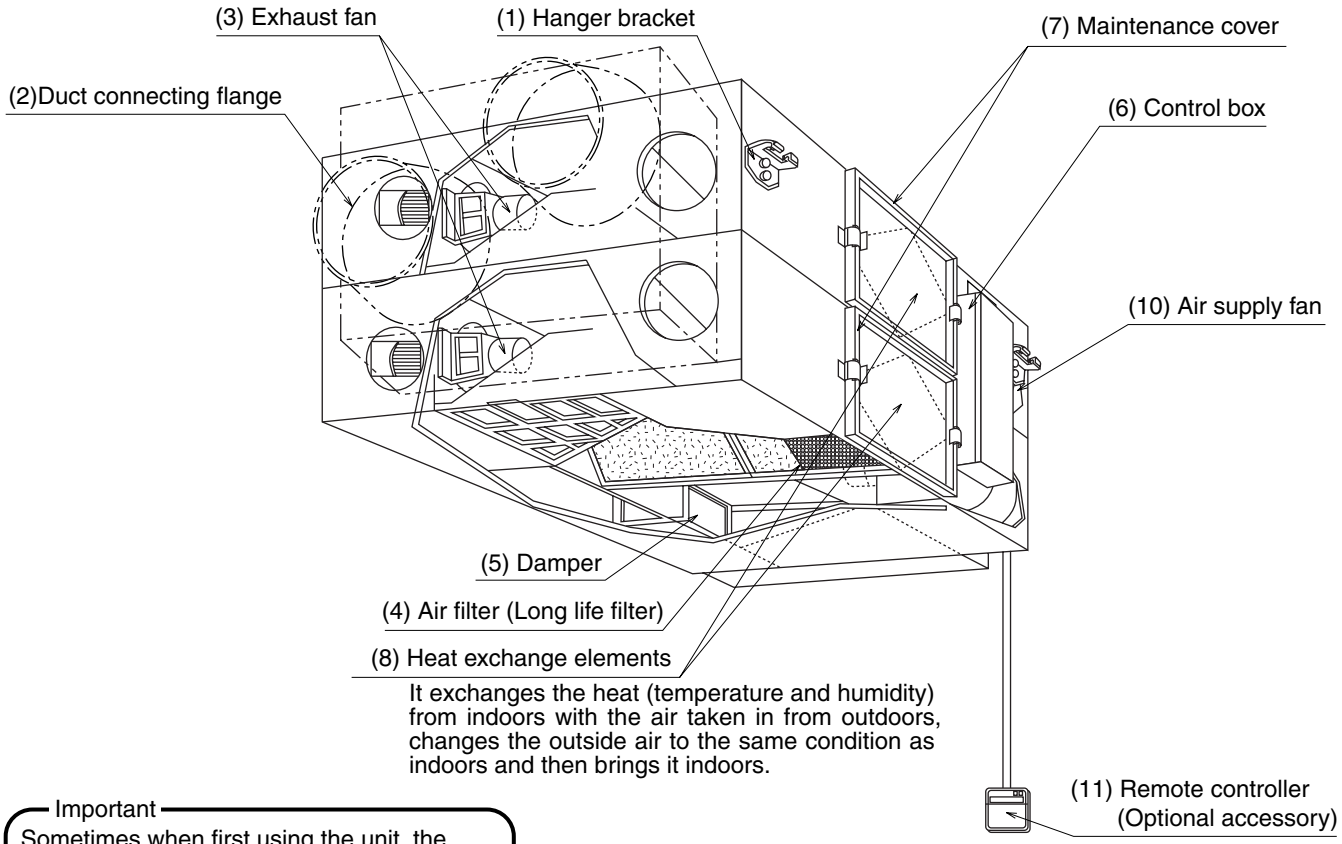



fig 1 [1]

# MODELS VAM1500GJVE VAM2000GJVE




**Important**

Sometimes when first using the unit, the smell of the heat exchanging element may be noticeable, but it is not harmful. The smell will gradually go away as the unit is used.

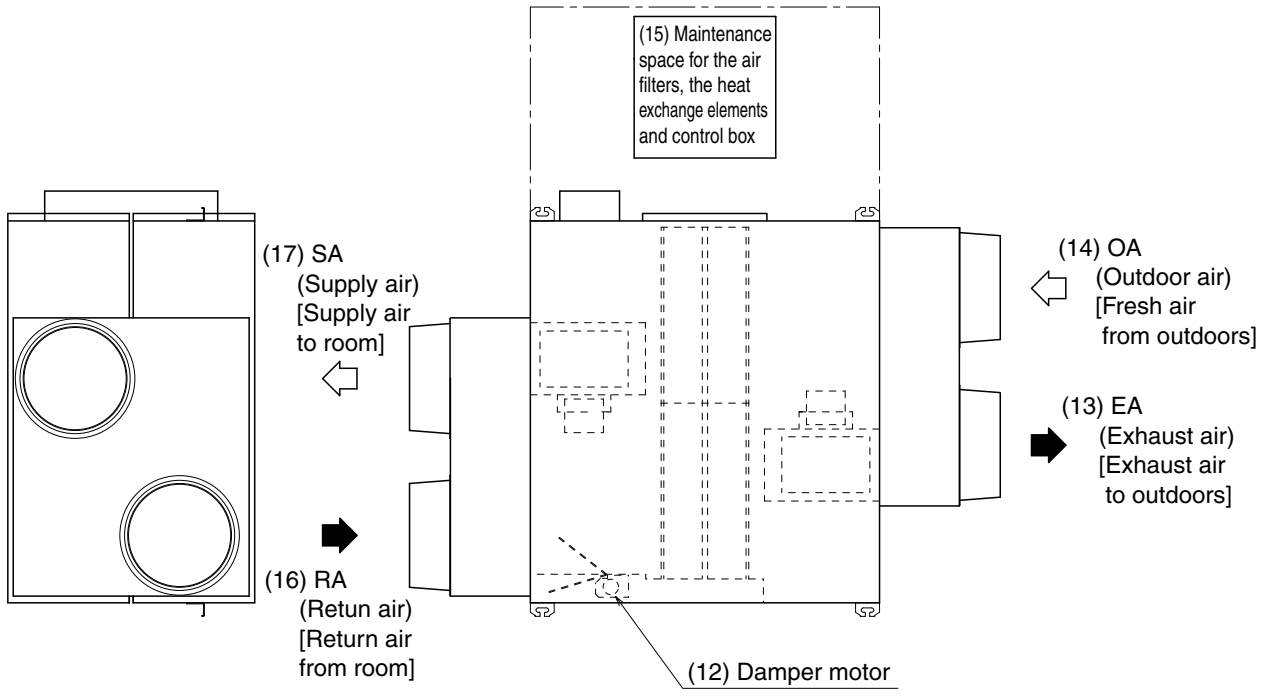
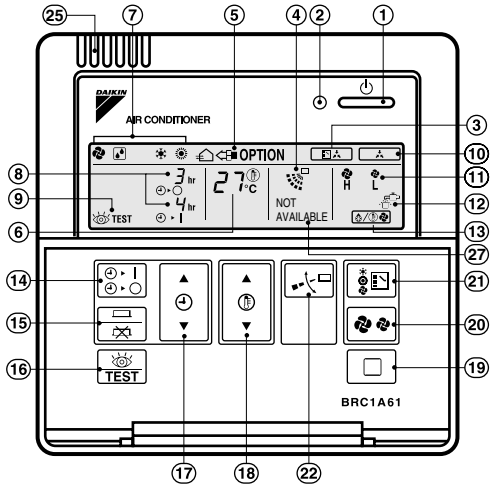
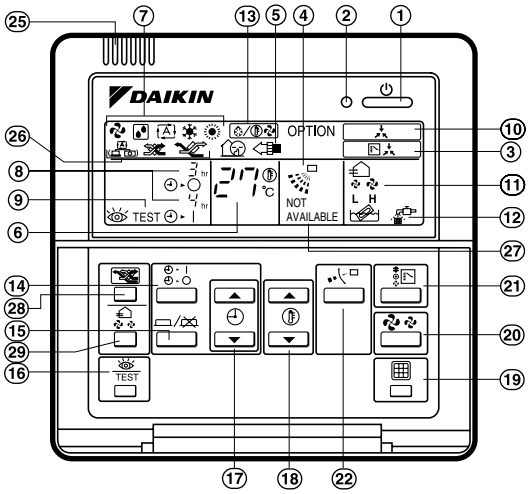



fig 1 [2]

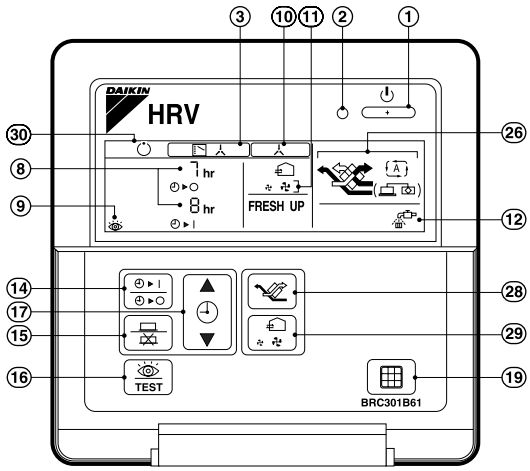
## 2.2 Remote Controller and Changeover Switch: Name and Function of Each Switch and Display




Remote controller for VRV BRC1A61, 62




Remote controller for VRV BRC1C61




Remote controller for HRV BRC301B61

fig 3

- Only the items marked with an asterisk (* mark) are explanation relating to the functions and display of the unit. Unmarked items are functions of the combined air conditioners. When using buttons for functions which are not available (buttons which are not described in the text) will cause “NOT AVAILABLE” to be displayed.
  Contact your dealer for more detailed descriptions of those functions (buttons).

∗**1 On/off button**
Press the button and the system will start. Press the button again and the system will stop.

∗**2 Operation lamp (red)**
The lamp lights up during operation.

∗**3 Display “ ” (changeover under control)**
May be displayed when combined with a VRV-system air conditioner.
While the indication is shown, the ON/OFF of HRVs cannot be operated by the HRV remote controller.
It is impossible to changeover heat/cool with the remote controller when this icon is displayed.

**4 Display “ ” (air flow flap)**
This displays the direction and mode of the air flow flap of the combined air conditioner.

**5 Display “ OPTION ” (ventilation/air cleaning)**
This display shows that the total heat exchange and the air cleaning unit are in operation. (These are optional accessories.)

**6 Display “ ” (set temperature)**
This displays the set temperature of the combined air conditioner.
It is not displayed when the unit is used as an independent system.

**7 Display “ ” “ ” “ ” “ ” “ ”**
**(operation mode)**
This displays the operating status of the combined air conditioner.
- There is no “heating” for the VRVII system (Cooling only type).
- “ ” is only available for systems operating in cooling and heating at the same time.

∗**8 Display “ ” (programmed time)**
This dispay shows the programmed time of the system start or stop.

**9 Display “ TEST ” (inspection/test operation)**
When the inspection/test operation button is pressed, the display shows the mode in which the system actually is.
- Do not use under usual use (service person/installer only).

**10 Display “ ” (under centralized control)**
When this display shows, the system is under centralized control. (This is not a standard specification.) During this indication appears on the display, the ON/OFF and timer operation may not be possible with the HRV remote controllers.

∗**11 Display “ ” (fan speed)**
This display shows the fan speed you have selected.
This is always displayed when you use the remote controller BRC301B61.
But, this is only displayed when the fan speed selection button is pressed. It normally displays the set fan strength of the combined air conditioner. (only to use BRC1C61, BRC1A61, A62)

∗**12 Display “ ” (time to clean air filter)**
Refer to “4-1 How to Clean the Air Filter”.

**13 Display “ ” (defrost/hot start)**
It may be displayed when the combined air conditioner is in heating mode.

∗**14 Timer mode start/stop button**
Refer to the chapter “Operation procedure - Programming start and stop of the system with timer.” (3-2)

∗**15 Timer on/off button**
Refer to the chapter “Operation procedure - Programming start and stop of the system with timer.” (3-2)

∗**16 Inspection/test operation button**
Pressed during inspection or “test run.”
- Do not use under usual use. (service person/installer only)

∗**17 Programming time button**
Use this button for programming start and/or stop time.

**18 Temperature setting button**
Use this button for setting the desired temperature of air conditioner combined with this unit.

∗**19 Filter sign reset button**
Refer to “4-1 How to Clean the Air Filter”.

**20 Fan speed control button**
Press this button to select the fan speed of air conditioner combined with this unit.

∗**21 Operation mode selector button**
Press this button to select the operation mode of air conditioner combined with this unit.

**22 Air flow direction adjust button**
Press this button to select the air flow direction of air conditioner combined with this unit.

**23 Fan only/air conditioning selector switch**
Set the switch to “ ” for fan only operation or to “ ” for heating or cooling operation.

**24 Cool/heat changeover switch**
Set the switch to “ ” for cooling or to “ ” for heating operation.

**25 Remote controller thermo**
This detects the temperature around the remote controller. This is not the same as the temperature of return air from room (RA) by heat exchanger unit.

∗**26 Display “ ” “ ” “ ”**
This displays the ventilation mode.
(BRC301B61, BRC1C61 and so on.)
(This is not displayed on the controller BRC1A61, 1A62)

∗**27 Display "NOT AVAILABLE"**

- "NOT AVAILABLE" may be displayed for a few seconds if the function for the button pressed is not available for the unit or the air conditioner.
- "NOT AVAILABLE" is only displayed when none of the indoor units is equipped with the function in question when running several units simultaneously. It is not displayed if the function is available on even one of the units.

∗**28 Ventilation fan mode selector button**
**(available only connecting the HRV unit)**
This is pressed to switch the fan mode of the HRV unit.

∗**29 Ventilation fan speed control button**
**(available only connecting the HRV unit)**
This is pressed to control the fan speed of the HRV unit.
**(Refer to item 11)**

∗**30 Display " ◌ " (operation standby)**
It indicates the pre-cooling/pre-heating operation. This unit is at stop and will start operation after the pre-cooling/pre-heating operation is over.
Pre-cooling/pre-heating operation means the operation of HRVs is delayed during the startup operation of linked air conditioners such a before the 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.

**31 Display "FRESH UP"**
This displays the status of two fans. Refer to "Operation Procedure"

**Note**

- In contradistinction to actual operating situations, the display on figure 3 shows all possible indications.
- If the filter sign lamp lights up, clean the air filter as explained in the chapter "MAINTENANCE". After cleaning and reinstalling the air filter: press the filter sign reset button on the remote controller. The filter sign lamp on the display will go out.

## 2.3 Explanation for Systems

**This unit can be made a part of two different systems: as part of the combined operation system used together with VRVII SYSTEM Air Conditioners or Sky-air series and as the independent system using only the HRV. An operating remote controller is required when using the unit as an independent system.**
**Ask your dealer what kind of system your system is set up for before operation.**
**For the operation of the remote controller for indoor unit and centralized controller, refer to the instruction manual provided with each unit.**
**See the included operating manuals for details on how to operate each remote control.**

■ **OPERATION for EACH SYSTEM**

**Sample system**
**Independent system**

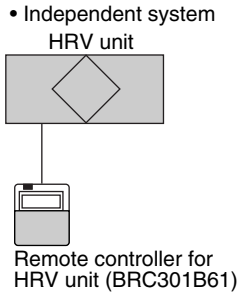



fig 2

[Operation]
The HRV unit can be started and stopped using the remote controller.
You can also select the ventilation amount and the ventilation mode.

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

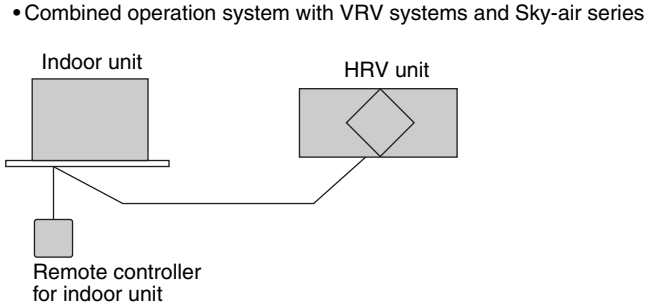



fig 2

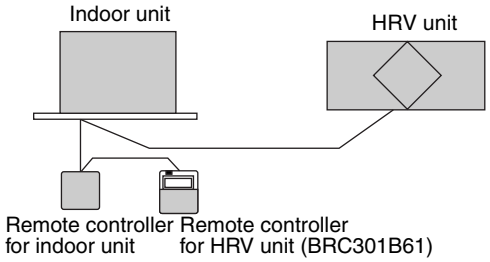



fig 2

[Operation]
The air conditioner remote controller starts and stops the air conditioner and the HRV unit.
You can also select the ventilation amount and the ventilation mode.
During intermediate periods when only the HRV unit is used without the air conditioner, select “ventilation” with the operation selection button.
[Operation method]
The ON/OFF and timer operation can be performed using the HRV remote controllers.
(The indication of centralized control “ ” appears on the display.)
Other operations can be performed using the HRV remote controllers.

Starting and stopping operations of the indoor unit and the HRV unit can be performed using the indoor remote controllers.
(Refer to the section **3-2**)

**Centralized system**

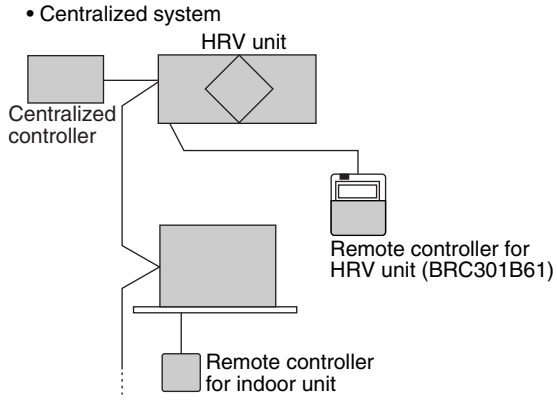



fig 2

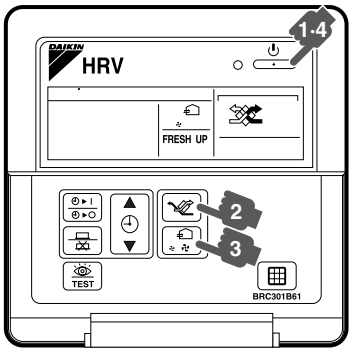
[Operation method]
When the HRV remote controllers is not connected, the Centralized controller controls the operation of the HRV unit.
(Refer to the section **3-3)**

When the HRV remote controllers is connected, operation can be started and stopped using the Cetralized controller or the indoor and the HRV remote controllers.
During the indication of centralized control " " appears on the display, the ON/OFF and timer operation may not be possible with the HRV remote controllers.

Other operations can be performed using the HRV remote controllers. (Refer to the section **3-2, 3-3**)

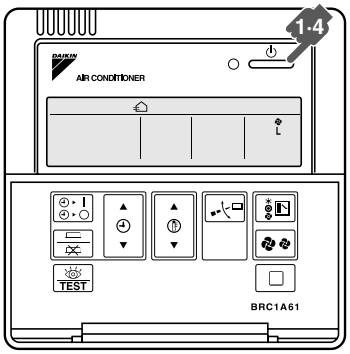
# 3. Operation Procedure

## 3.1 Independent, Combined Operation




Remote controller for HRV BRC301B61


Remote controller for VRV BRC1C61




Remote controller for VRV BRC1A61, 62

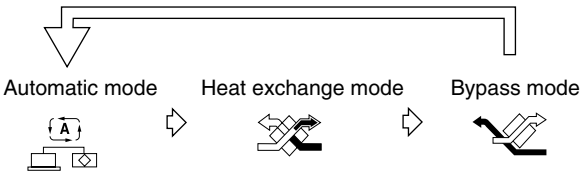
fig 4

**For non-independent systems, starting/stopping operation and timer operation may not be possible.**

**Use the air conditioner remote control or the Centralized controller in such cases.**

1 Press the on/off button. Operation lamp lights up and the system will start operation.

2 Press ventilation mode button if you wish to change the mode.
The display rotates through the following selections every time the button is pressed.




3 Press ventilation fan speed button if you wish to change the fan speed.
The display rotates through the following selections every time the button is pressed.
<In case of the remote controller “BRC301B61”>

The display doesn't disapper.
<In case of the remote controller "BRC1C61, BRC1A61, BRC1A62">

Low L ⇨ High H

After the selection, the ventilation fan speed display dis-appears.
And the fan speed of the combined air conditioner regu-lary displays.

**Stopping the system**

Press start/stop one more time. The operation lamp will go off. The unit will stop.

- After stopping operation, the fan may continue operating for up to a minute.
- The fan may stop, but this is not a malfunction.

**Note**

- **Do not change operations sunddenly.**
  It can result not only in malfunction but also failure of switches or relays in the remote controller.
- **Never press the button of the remote controller with a hard, pointed object.**
  The remote controller may be damaged.

■ **EXPLANATION OF FRESH UP**

- If it is set to "Fresh up air supply" : The volume of outdoor air supplied into the room is larger than that of room air exhausted outdoors. (This operation prevents the odor and moisture from kitchens and toilets from flowing into the rooms.)
- If it is set to "Fresh up air exhaust" :The volume of room air exhausted outdoors is larger than that of outdoor air supplied into the room. (This operation prevents the hospital odor and floating bacteria from flowing out to the corridors.)

**Note**

- This does not be changed with the button of the remote controller BRC1C61. Ask your dealer for the set up of FRESH UP.

■ **EXPLANATION OF VENTILATION MODE**

Automatic mode :When combined with a VRVII-system air conditioner
The unit automatically switches between "Total heat exchange" and "Bypass" based on information from the VRVII system air conditioner (heating, cooling, fan, and set temperature) and information from the HRV unit (indoor and outdoor temperatures).
The unit automatically switches between "Total heat exchange" and "Bypass" when it is combined with an air conditioner (Not producted by Daikin) and based on only the information from the HRV unit (indoor and outdoor temperatures) when the HRV unit is operating alone.

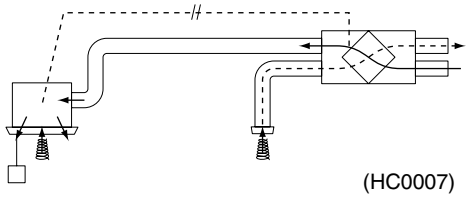
Total heat exchange mode :Outdoor air passes through the heat exchange element and heat exchanged air is sent into the room.

Bypass mode :In this mode outdoor air does not through the heat exchange element, but rather sent into the room as is.

■ **ABOUT DIRECT DUCT CONNECTION SYSTEM**

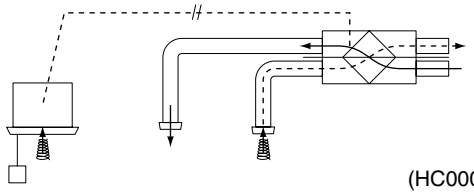
**Installation Examples**

Direct duct connection system



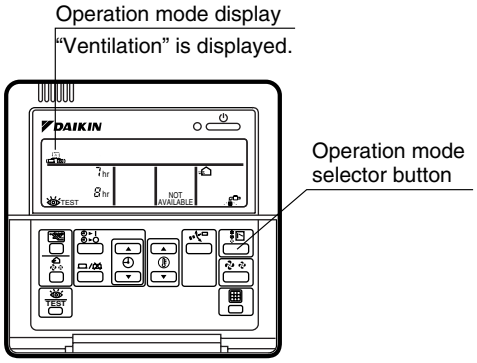
(HC0007)

Independent duct system



(HC0008)

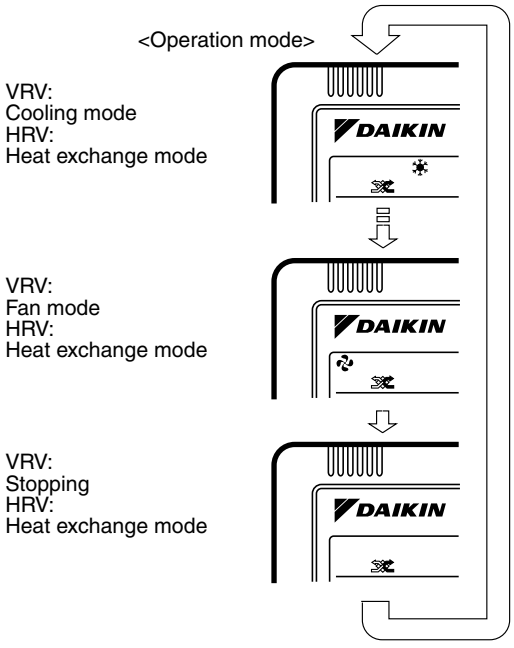
**The HRV unit cannot be operated independently when the air conditioner is connected to the HRV unit via a duct. When using the HRV unit, set the air conditioner to "fan" mode on weak fan strength.**



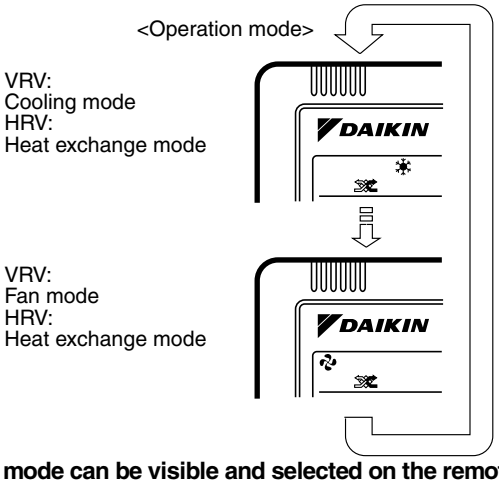

- Each time you press the operation selection button, the operation mode display will change as shown in the figure below.

**Example 1:**
**In case of the remote controller "BRC1C61" and as equivalent.**
**Display changes as below.**

**When air conditioner and HRV unit are not connected via duct**



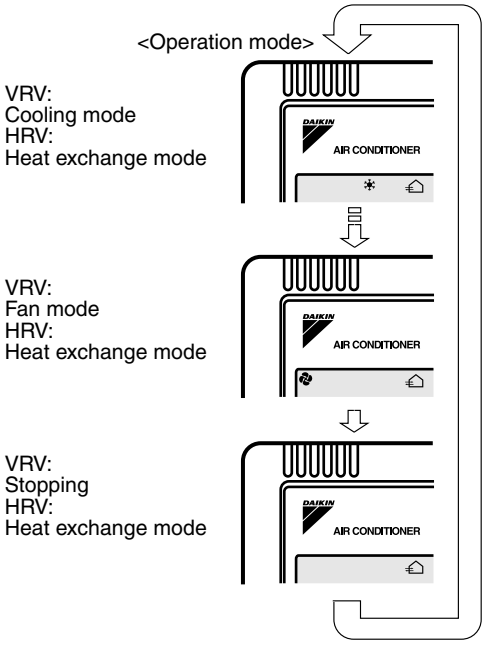

**When air conditioner and HRV unit are connected via duct**



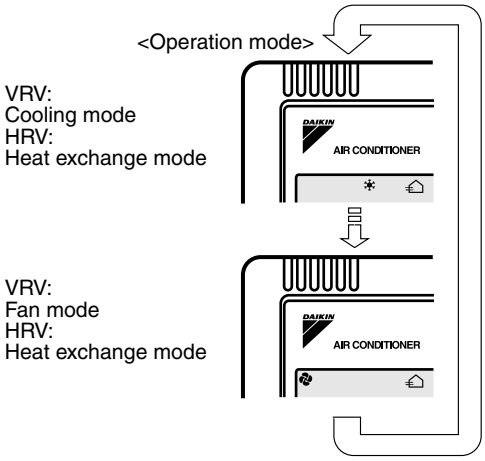

**NOTE) Current Ventilation mode can be visible and selected on the remote controller.**

**Example 2:**
**In case of the remote controller "BRC1A61,62"**
**Display changes as below.**

**When air conditioner and HRV unit are not connected via duct**



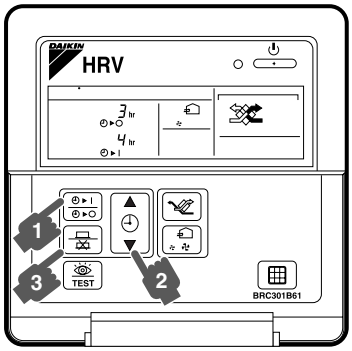

**When air conditioner and HRV unit are connected via duct**



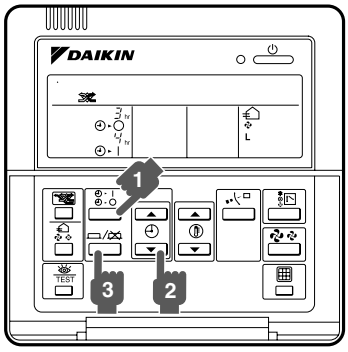

**NOTE) Current Ventilation mode doesn't be displayed.**

- When the display shows " " (time to clean air filter), ask a qualified service person to clean the filters (Refer to the chapter "Maintenance").

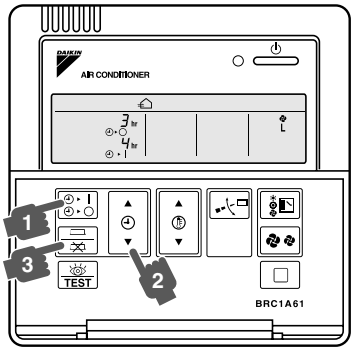
## 3.2 Programming Start and Stop of the System with Timer




Remote controller for HRV BRC301B61




Remote controller for VRV BRC1C61



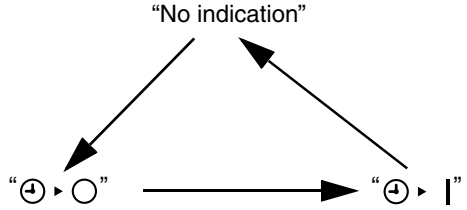

Remote controller for VRV BRC1A61,62

fig 5

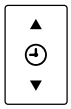
- The timer is operated in the following two ways.
  Programming the stop time ◷ ▸ ◯ "". The system stops operating after the set time has elapsed.
  Programming the start time " ◷ ▸ | ". The system starts operating after the set time has elapsed.
- The start and the stop time can be simultaneously programmed.

1 Press the timer mode start/stop button " " several times and select the mode on the display.
- For setting the timer stop " ◷ ▸ ◯ "
- For setting the timer start " ◷ ▸ | "

Each time the button is pushed, the indication changes as shown below.



Press the programming time button and set the time for stopping or starting the system.



Each time this button is pressed, the time advances or goes backward by 1 hour.

- The timer can be programmed for a maximum of 72 hours.
- Each time when " ▲ " is pushed, the time advances one hour.
  Each time when " ▼ " is pushed, the time goes back one hour.

Press the timer on/off button.
The timer setting procedure ends. The display " ◷ ▸ ◯ " or " ◷ ▸ | " changes from flashing light to constant light.
- After the timer is programmed, the display shows the remaining time.

For cancelling the timer operation, push the timer on/off button " ▭/⏻ " once again.
The indication disappears.

**Note**

- When setting the timer off and on at the same time, repeat the above procedure (from " 1 " to " 3 ") once again.

■ **DETAIL EXPLANATION**

**When you want to stop operation after a desired time,**

**Example:**

Set the time to "8".

↓

" 8hr ◷ ▸ ◯ " will display.

Stops operation 8 hours after the reservation is complete.

The program will be cleared after the operation stops.

- Set the stop time during operation.

**When you want to start operation after a desired time has elapsed**

**Example:**

Set the time to "8".

↓

" 8hr ◷ ▸ | " will display.

Starts operation 8 hours after the reservation is complete.

The reservation is cancelled after operation starts.

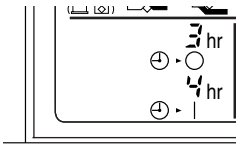
- Set the start time while the unit is stopped.
- The remaining time will count at the same time after reservation is complete.

See the example below if you want to reserve "off after time" and "on after time" at the same time.

**For example: (Refer to figure below)**

When the timer is programmed to stop the system after 3 hours and start the system after 4 hours, the system will stop after 3 hours and start 1 hour later.

**Example:**




- Setting "off after 3 hours" and "on after 4 hours" will

↓

- Operation will stop after 3 hours.
  Operation will then start in 1 hour from the time it stopped.

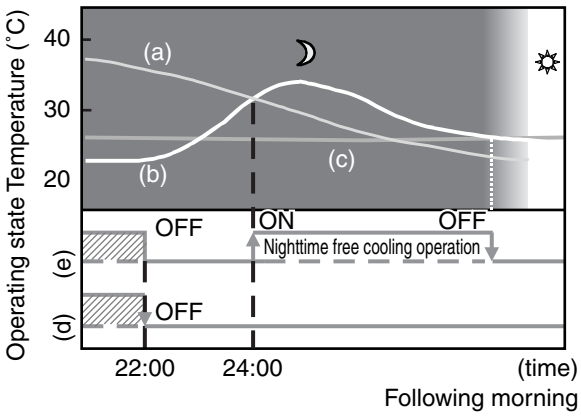
## 3.3 Nighttime Free Cooling Operation

〈**AUTOMATIC HEAT PORGE FUNCTION AT NIGHT**〉

The nighttime free cooling is an energy-conserving 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 only works during cooling and when connected to Building Multi or VRV systems.
- Nighttime free cooling is set to “off” in the factory settings; so request your dealer to turn it on if you intend to use it.

**Operation image**




(a) Outside temperature
(b) Indoor temperature
(c) Set temperature
(d) Operating state of Air conditioner
(e) Operating state of Total heat exchanger

■ **EXPLANATION OF NIGHTTIME FREE COOLING OPERATION IMAGE**

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

**<Conditions>**

(1) the indoor temperature is higher than the air conditioning setting and
(2) the outdoor temperature is lower than the indoor temperature,
If the above conditions are not satisfied, reevaluation is made every 60 minutes.

**Note**

- The night purge operation works when the HRV unit is off. Therefore, it is not possible to stop the night purge operation, though the forced off is input from the optional controllers for centralized control.

# 4. Maintenance (for a Qualified Service Person Only)

**ONLY A QUALIFIED SERVICE PERSON IS ALLOWED TO PERFORM MAINTENANCE**

**Warning**

- **BEFORE OBTAINING ACCESS TO TERMINAL DEVICES, ALL POWER SUPPLY CIRCUITS MUST BE INTERRUPTED.**
- To clean the HRV, or maintenance be sure to stop operation, and turn the power switch off. It may cause electrical shock and it is very dangerous to touch the rotating part.
- Do not wash the HRV with water.
  Doing so may result in an electric shock.

**Caution**

- Use gloves when cleaning.
  Cleaning without gloves may cause injury.
- Watch your step.
  Use caution, as this requires working in high places.
- Do not use benzene or thinner to clean the outside surfaces of the air conditioner.
  This may cause cracks, discoloration, or machine trouble.

## 4.1 How to Clean the Air Filter

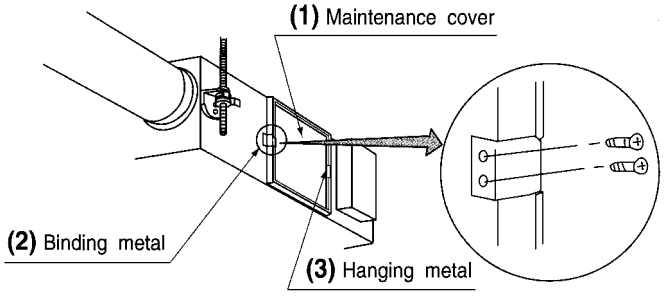
Clean the air filter when the display shows " "
(TIME TO CLEAN AIR FILTER).
It will display that it will operate for a set amount of time.

**CLEANING FREQUENCY**

**AT LEAST ONCE EVERY YEARS**
**(FOR GENERAL OFFICE USE)**
**(CLEAN THE MORE FREQUENTLY IF NECESSARY.)**

- Increase the frequency of cleaning if the unit is installed in a room where the air is etermely contaminated.
- If the dirt becomes impossible to clean, change the air filter (Air filter for exchange is optional).
  1. Detach the maintenance cover.
     Go into ceiling through the inspection hatch, remove binding metal of maintenance cover and take it off.

MODELS VAM150GJVE-1000GJVE




MODELS VAM1500GJVE
VAM2000GJVE

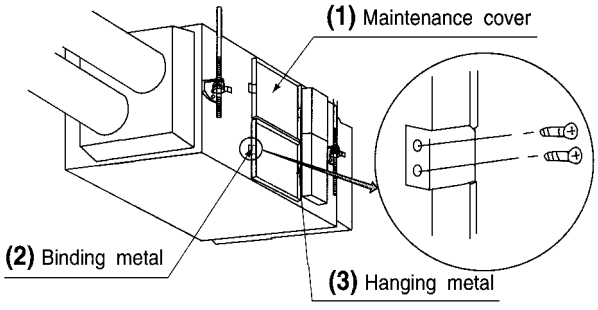
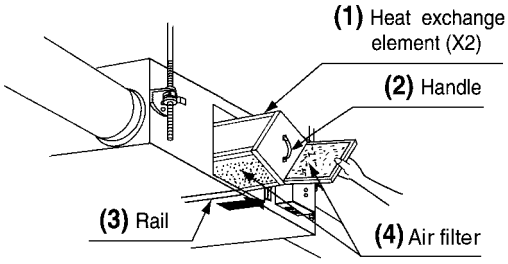



fig 6

2. Detach the air filter.
   Take out from the heat exchange elements.

MODELS VAM150GJVE-1000GJVE




MODELS VAM1500GJVE
VAM2000GJVE

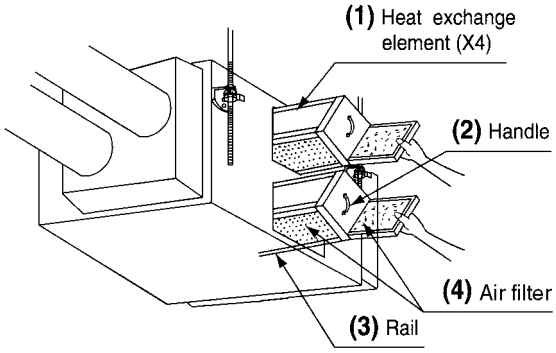



fig 7

3. Clean the air filter.

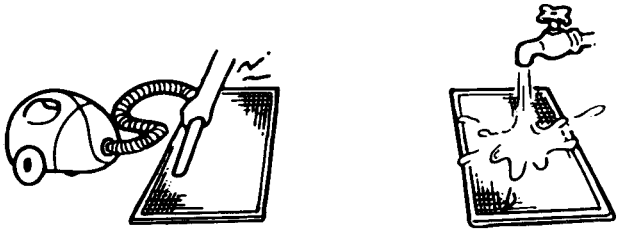


fig 8

Use vacuum cleaner A) or wash the air filter with water B).
A) Using a vacuum cleaner
B) Washing with water
When the air filter is very dirty, use soft brush and neutral detergent.
After cleaning, remove water and dry in the shade.

**Note**

- Do not wash the air filter with hot water of more than 50°C, as doing so may result in discoloration and/or deformation.
- Do not expose the air filter to fire, as doing so may result in burning.
- Do not use gasoline, thinner, or other organic solvents.
  This may cause discoloration or deformation.

4. Fix the air filter.
   If the air filter is washed, remove water completely and allow to dry for 20 to 30 minutes in the shade.
   When dried completely, install the air filter back in place.

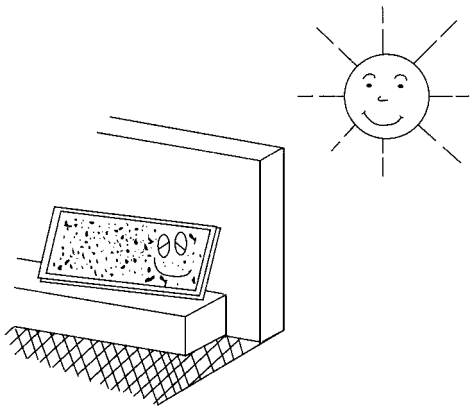


fig 9

**Note**
- Be sure to install the air filter after servicing.
  (Missing air filter causes clogged heat exchange element.)
  The air filter is an optional item and the replacement is available.

5. Install the maintenance cover.
   Refer to the section (4-1, 1).

| For remote controllers which display the filter sign, turn on the power after maintenance, and press the filter sign reset button. |
|---|

∗Consult your dealer if you want to change the time setting for when the filter sign goes on.

**Note**
- Do not remove the air filter except when cleaning.
  Breakdown may occur.

## 4.2 Optimum Operation

Observe the following precautions to ensure the system operates.

- **When the display shows " ", ask a qualified service person to clean the filters (Refer to Maintenance).**
- **Do not operate the HRV unit in Bypass mode when the room air is under heating in winter or when the outside temperature is 30°C or higher.**
  This may cause condensation to form on the main unit or on discharge grill, or around air supply opening.
- **Keep the indoor unit and the remote controller at least 1 m away from televisions, radios, stereos, and other similar equipments.**
  This may cause distorted picture or noise.
- **Turn off the main power supply switch when it is not used for long periods of time. When the main power switch is turned on, some watts of electricity is being used even if the system is not operating.**
- **Do not install the remote controller where the indoor temperature and humidity, respectively, are out of the range of 0-35°C and RH 40-80%.**
  This may cause malfunction.
- **Do not install the remote controller where direct sunlight may fall on it.**
  This may cause discoloration or deformation.

**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.

## 4.3 How to Clean the Heat Exchange Element

**CLEANING FREQUENCY**

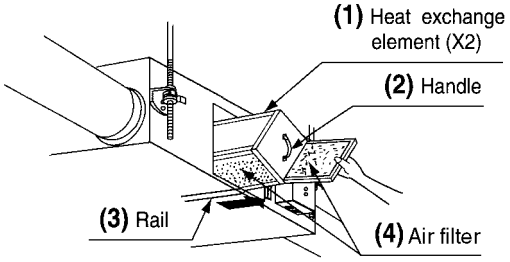
**AT LEAST ONCE EVERY TWO YEARS**
**(FOR GENERAL OFFICE USE)**
**(CLEAN THE ELEMENT MORE FREQUENTLY IF NECESSARY.)**

**Warning**

- **Please exchange the heat exchange element if you find that the knob of the heat exchange element is damaged or is deteriorated when cleaning it.**
  There is falling danger.

1. Detach the maintenance cover.
   Refer to the section (4-1, 1).
2. Detach the air filter.
   Refer to the section (4-1, 2).
3. Take out the heat exchange elements.
   Pull out the air filter and then pull out the two heat exchanger elements.

MODELS VAM150GJVE-1000GJVE




MODELS VAM1500GJVE
VAM2000GJVE

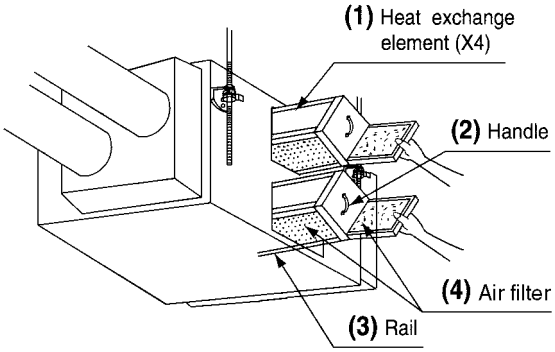



fig 7

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

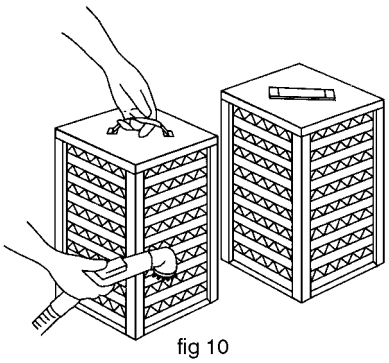


fig 10

- 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.
  (Do not crush the heat exchange element while cleaning.)

**Caution (During Opertaion)**

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

5. Put the heat exchange element on the rail and insert it securely in place.
6. Install the air filter securely in place.
   (Refer to the section (4-1, 4))
7. Install the maintenance cover securely in place.
   (Refer to the section (4-1, 5))

**Caution**

- **Always use the air filter.**
  If the air filter is not used, heat exchange elements will be clogged, possibly causing poor performance and subsequent failure.

## 4.4 Inspection of the Fan Moter

**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. Troubleshooting

## 5.1 The Following Situations are not Malfunctions

- **Operation does not start.**

**<Symptom>**

The icon " [ ] " (under centralized control) is displayed on the remote controller and pressing the on/off button causes the display to blink for a few seconds.

**<Cause>**

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

**<Symptom>**

The fans rotates after 1 minutes when pressing on on/off button.

**<Cause>**

This indicates that the operation is in preparation.
Wait for about 1 minute.

- **Operation stops sometimes.**

**<Symptom>**

"U5" is displayed on the remote controller and the operation stops but then restarts after a few minutes.

**<Cause>**

This indicates that the remote controller is intercepting noise from electrical appliances other than the HRV unit, and this prevents communication between the units, causing them to stop.
Operation automatically restarts when the noise goes away.

- **" 88 " is displayed on the remote controller.**

**<Symptom>**

It displays immediately after the power is turned on, and disappears after several seconds.

**<Cause>**

This indicates that the unit is checking whether or not the remote controller is normal.
It is only displayed temporarily.

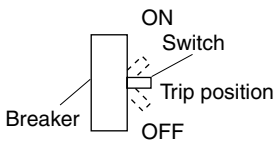
## 5.2 If One of the Following Malfunctions Occurs, Take the Measures Shown Below and Contact Your Daikin Dealer

The system must be repaired by a qualified service person.
DO NOT CHECK AND REPAIR OPENING INSIDE THE UNIT BY YOURSELF.

⚠ **Warning** **When the HRV is in abnormal conditions (smell of something burning, etc), cut off the power, and contact your dealer.**

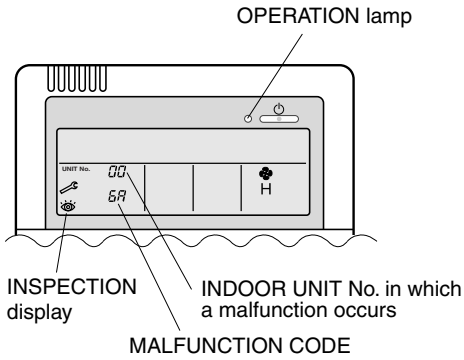
Continued operation under such circumstances may result in a failure, electric shock, and fire.

- **The unit does not operate at all.**
  a. Check if there is a power failure.
  **Measure:** After power has been restored, start operation again.
  b. Check if the fuse has blown.
  **Measure:** Turn the power off.
  c. Check if breaker has worked.
  **Measure:** Turn the power on with the breaker switch in the off position.
  Do not turn the power on with the breaker switch in the trip position.
  (Contact your dealer.)




- **If a safety device such as a fuse, a breaker, or an earth leakage breaker frequency actuates, or ON/OFF switch does not properly work.**
  **Measure:** Do not turn the power on.
- **The remote control buttons do not work well.**
  **Measure:** Turn off the main power switch.

- **If the display " ◎ " (INSPECTION), "UNIT No." and the OPERATION lamp flash and the "MALFUNCTION CODE" appears.**




**Measure:** Notify and inform the model name and what the malfunction code indicates to your Daikin dealer.

- **There are other malfunctions.**
  **Measure:** Stop the unit.

List of malfunction codes of Remote controller of the HRV-system

| Operation lamp | Inspection indicator | Unit No. | Malfunction code | Description |
|---|---|---|---|---|
| On | Off | Blinking | 64 | Indoor air thermistor malfunction |
| On | Off | Blinking | 65 | Outdoor air thermistor malfunction |
| On | Off | Blinking | 6A | Dumper-related malfunction |
| Blinking | Blinking | Blinking | 6A | Dumper-related malfunction + thermistor malfunction |
| Blinking | Blinking | Blinking | U5 | Transmission error between the unit and remote controller |
| Off | Blinking | Off | U5 | Setting error of remote controller |
| Off | Blinking | Off | U8 | Transmission error between main remote controller and sub remote controller |
| Off | Blinking | Blinking | UA | Incorrect combination with indoor unit and remote controller. |
| On | Blinking | On | UC | Central control address over lapping |
| Blinking | Blinking | Blinking | UE | Transmission error between the unit and centralized controller |

■ In case of the malfunction with the code in white letters on the black background in the unit still operates.
However, be sure to have it inspected and repaired and as soon as possible.
If other than the above error codes are displayed, there is a possibility that the problem in question has occurred with a combined air conditioner or outdoor unit. See the operation manuals included with the air conditioners or outdoor units for details.

## 5.3 If the System does not Properly Operate Except for the above Mentioned Case, and None of the above Mentioned Malfunctions is Evident, Investigate the System According to the Following Procedures.

1. **The unit does not operate at all.**
   - Check if there is a power failure.
     After power has been restored, start operation again.
   - Check if the fuse has blown or breaker has worked.
     Change the fuse or set the breaker.
2. **Amount of discharged air is small and the discharging sound is high.**
   - Check if the air filter and heat exchange element are clogged.
     Clean tha air filter and heat exchange element.
3. **Amount of discharged air is large and so is the sound.**
   - Check if the air filter and heat exchange element are not installed.
     Install the air filter and heat exchange element.

## 5.4 The Following Malfunctions must be Cheched by a Qualified Service Person

1. **Do not operate**
   - Are there any problems with the power or wiring?
     Inspect the power and wiring.
   - Are there any problems with the fan unit?
     Inspect the fan motor and fan.

## 5.5 If the System does not Properly Operate Except for the above Mentioned Case, and None of the above Mentioned Malfunctions is Evident, Contact Your Dealer, and Request for Investigation the System According to the Following Procedures by a Qualified Service Person

**The following malfunctions must be cheched by a qualified service person. Do not check by yourself.**

- **The unit does not operate at all.**
  a. Check if there is a power failure.
     After power has been restored, start operation again.
  b. Check if the fuse has blown.
     Change the fuse.
  c. Check if breaker has worked.
     Contact your dealer.
  d. Are there any problems with the power or wiring?
     Inspect the power and wiring.
  e. Are there any problems with the fan unit?
     Inspect the fan motor and fan.
- **Amount of discharged air is small and the discharging sound is high.**
  a. Check if the air filter and heat exchange element are clogged. (Check both SA and RA air filter. Check both sides of elements.)
     Clean the air filter and heat exchange element.
- **Amount of discharged air is large and so is the sound.**
  a. Check if the air filter and heat exchange element are not installed.
     Install the air filter and heat exchange element.

# 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 HRV 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 HRV 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.

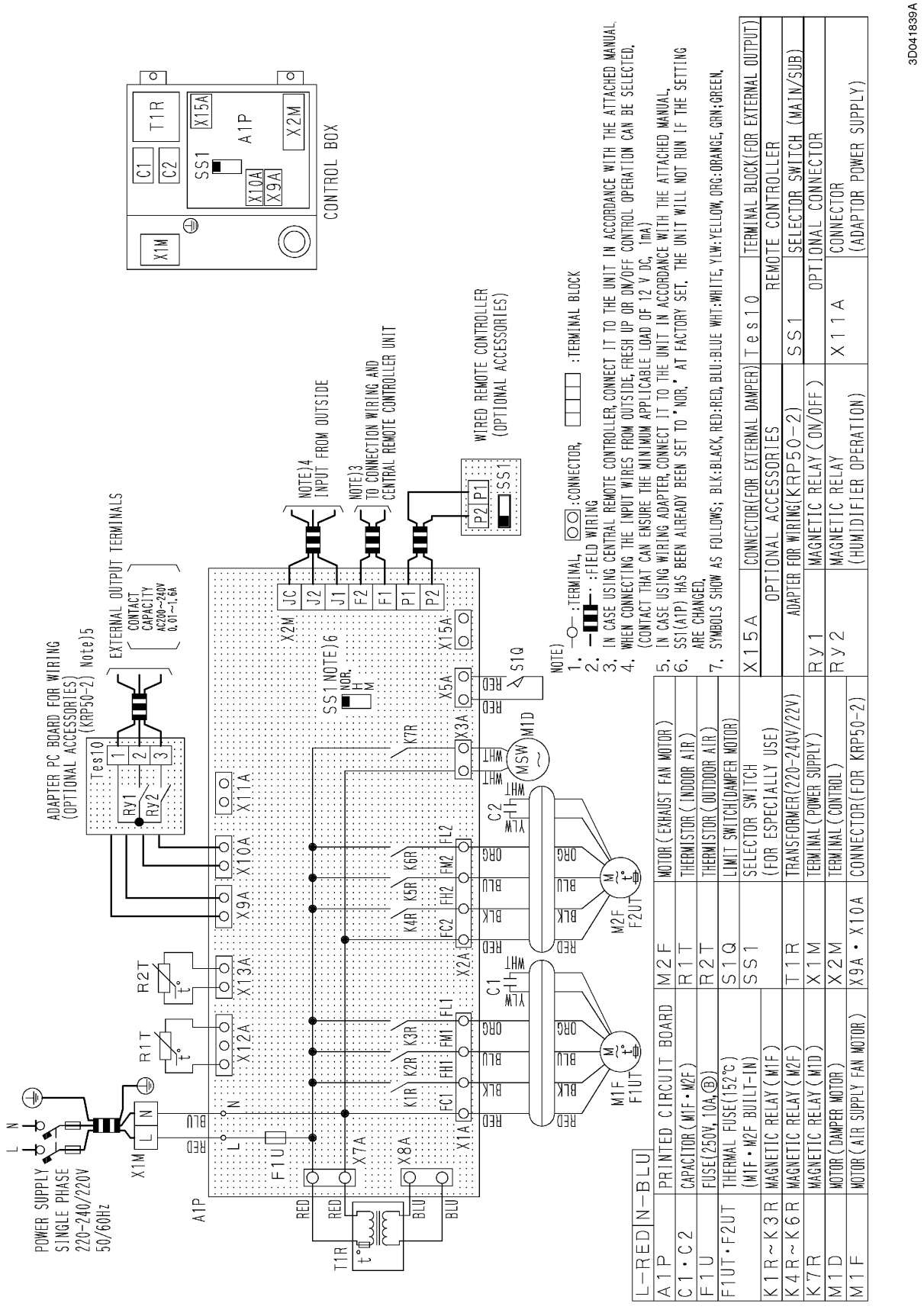
- Normal use without frequent starting and stopping of the machine.
  (Although it varies with the model, we recommend not starting and stopping the machine more than 6 times/hour for normal use.)
- Operation of the product is assumed to be 10 hours/day, 2500 hours/year.

# Part 10
# Appendix

# 1. Appendix

## 1.1 Wiring Diagram

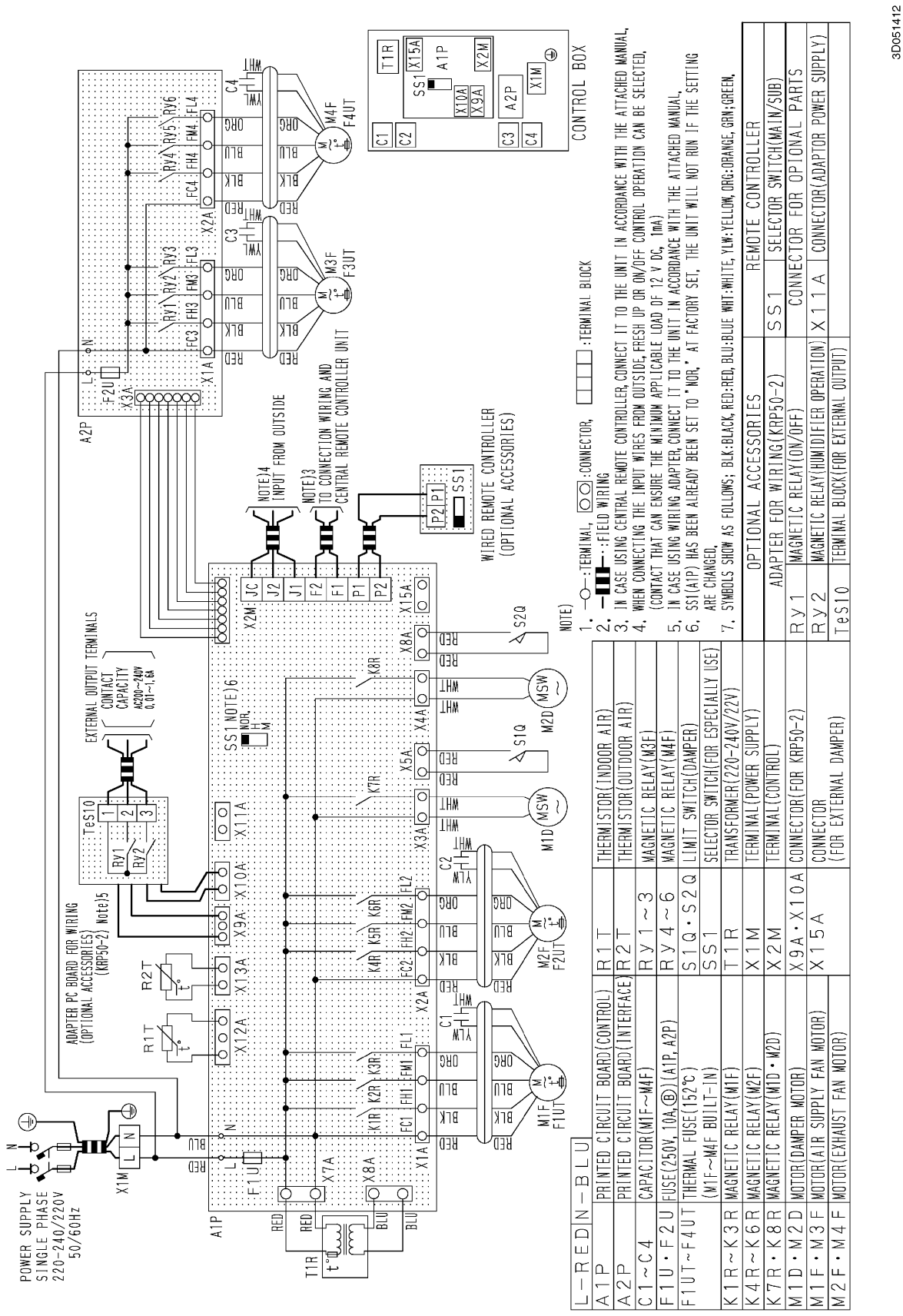
**VAM150GJVE / VAM250GJVE / VAM350GJVE / VAM500GJVE / VAM650GJVE / VAM800GJVE / VAM1000GJVE**




| L-RED N-BLU | | | |
|---|---|---|---|
| A1P | PRINTED CIRCUIT BOARD | M2F | MOTOR(EXHAUST FAN MOTOR) |
| C1・C2 | CAPACITOR(M1F・M2F) | R1T | THERMISTOR(INDOOR AIR) |
| F1U | FUSE(250V, 10A,Ⓑ) | R2T | THERMISTOR(OUTDOOR AIR) |
| F1UT・F2UT | THERMAL FUSE(152℃) (M1F・M2F BUILT-IN) | S1Q | LIMIT SWITCH(DAMPER MOTOR) |
| | | SS1 | SELECTOR SWITCH (FOR ESPECIALLY USE) |
| K1R~K3R | MAGNETIC RELAY(M1F) | T1R | TRANSFORMER(220-240V/22V) |
| K4R~K6R | MAGNETIC RELAY(M2F) | X1M | TERMINAL(POWER SUPPLY) |
| K7R | MAGNETIC RELAY(M1D) | X2M | TERMINAL(CONTROL) |
| M1D | MOTOR(DAMPER MOTOR) | X9A・X10A | CONNECTOR(FOR KRP50-2) |
| M1F | MOTOR(AIR SUPPLY FAN MOTOR) | | |

| | | |
|---|---|---|
| X15A | CONNECTOR(FOR EXTERNAL DAMPER) | Tes10 TERMINAL BLOCK(FOR EXTERNAL OUTPUT) |
| OPTIONAL ACCESSORIES | | REMOTE CONTROLLER |
| ADAPTER FOR WIRING(KRP50-2) | | SS1 SELECTOR SWITCH (MAIN/SUB) |
| Ry1 | MAGNETIC RELAY(ON/OFF) | OPTIONAL CONNECTOR |
| Ry2 | MAGNETIC RELAY (HUMIDIFIER OPERATION) | X11A CONNECTOR (ADAPTOR POWER SUPPLY) |

**VAM1500GJVE / VAM2000GJVE**



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## W

# Drawings & Flow Charts

## V



## W

**Warning**

- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorized parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

For any inquiries, contact your local distributor.

## Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided and choose an outdoor unit with anti-corrosion treatment.

The air conditioners manufactured by Daikin Industries have received **ISO 9001** certification for quality assurance.

**Certificate Number.** JMI-0107
JQA-0495
JQA-1452

All Daikin Industries locations and subsidiaries in Japan have received environmental management system standard **ISO 14001** certification.

**Daikin Industries, Ltd.**
**Domestic Group**
Certificate Number. EC99J2044

**About ISO 14001**

ISO 14001 is the standard defined by the International Organization for Standardization (ISO) relating to environmental management systems. Our group has been acknowledged by an internationally accredited compliance organisation as having an appropriate programme of environmental protection procedures and activities to meet the requirements of ISO 14001.

**Dealer**

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•The specifications, designs, and information in this brochure are subject to change without notice.

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