DAIKIN

OPERATION MANUAL

English

Italiano

Total Heat Exchanger
Heat Reclaim Ventilator -with DX Coil-

MODELS
(Ceiling mounted duct type)

Humidifier With DX coil

VKM50JMV1
VKM80JMV1
VKM100JMV1

Heat Reclaim Ventilator

Heat Reclaim Ventilator

- Thank you for purchasing this Daikin total heat exchanger. Carefully read this operation manual before using the Heat Reclaim Ventilator. It will tell you how to use the unit properly and help you if any trouble occurs. This manual explains about the Heat Reclaim Ventilator unit. Use it along with the operation manual for the outdoor unit and remote controller. After reading the manual, file it away for future reference.
- This unit is an option type for the VRV system air conditioner.
- This unit cannot control room temperature. If this is needed, do not install the Heat Reclaim Ventilator unit alone, but rather install another indoor unit.
- Use the remote controller of the user interface BRC1H52 to control the unit.
- Units are marked with the following symbol:

This means that electrical and electronic products may NOT be mixed with unsorted household waste. Do NOT try to dismantle the system yourself: dismantling the system, treatment of the refrigerant, of oil and of other parts MUST be done by an authorised installer and MUST comply with applicable legislation.
Units MUST be treated at a specialised treatment facility for reuse, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. For more information, contact your installer or local authority.

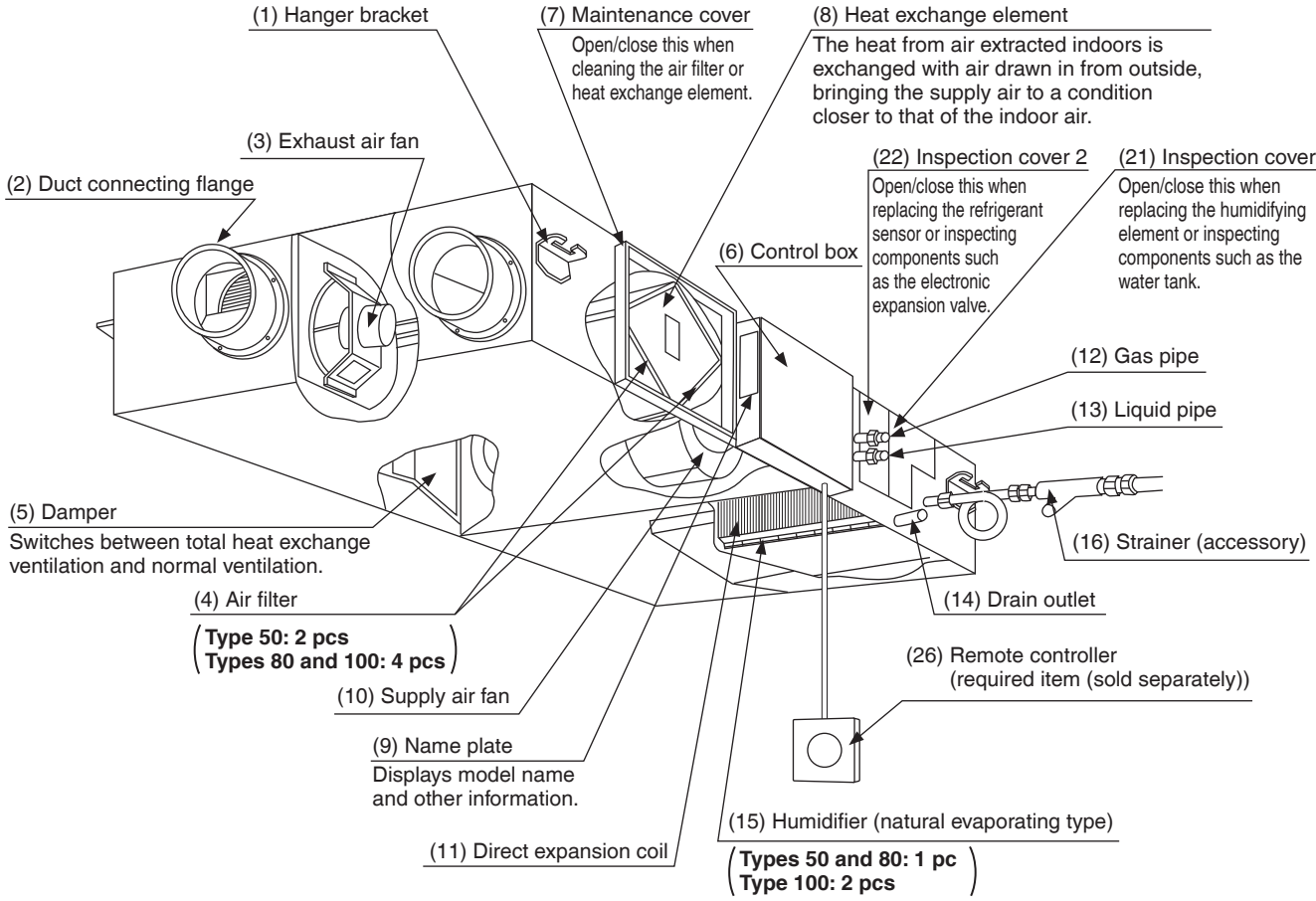
- This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.

Ventilatore a recupero di calore

- Grazie di aver acquistato questo scambiatore di calore totale Daikin. Leggere attentamente questo manuale d'uso prima di utilizzare il ventilatore a recupero di calore. Esso insegna il modo corretto di utilizzare l'unità e fornisce consigli, nel caso si verifichino dei problemi. Questo manuale illustra l'unità ventilatore a recupero di calore. Utilizzarlo insieme al manuale d'uso dell'unità esterna e del telecomando. Dopo aver letto il manuale, conservarlo per riferimenti futuri.
- Questa unità è un tipo opzionale di condizionatore d'aria a sistema VRV.
- L'unità non può controllare la temperatura del locale. Se ciò è necessario, non installare l'unità ventilatore a recupero di calore da sola, invece installare un'altra unità interna.
- Utilizzare il telecomando dell'interfaccia utente BRC1H52 per controllare l'unità.
- Le unità sono contrassegnate con il simbolo seguente:

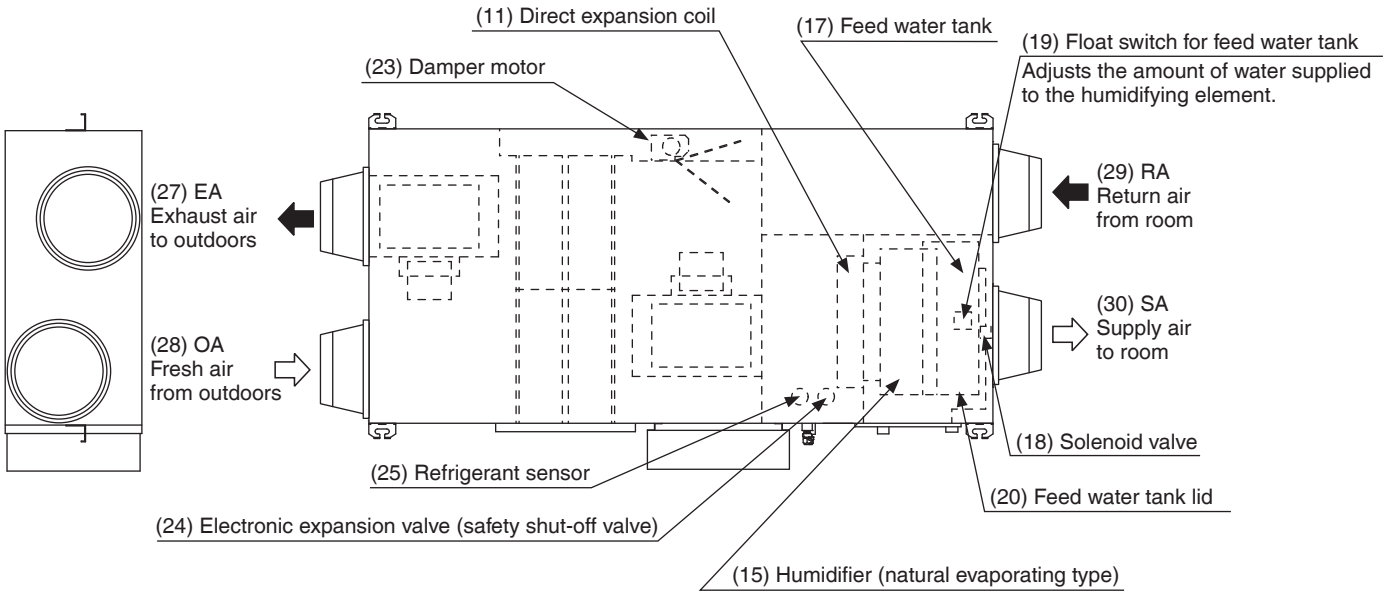
Indica che i prodotti elettrici ed elettronici NON possono essere smaltiti insieme ai rifiuti domestici non differenziati. NON cercare di smontare il sistema da soli: lo smontaggio del sistema e il trattamento del refrigerante, dell'olio e di qualsiasi altra parte DEVONO essere eseguiti da un installatore qualificato in conformità alla legge applicabile.
Le unità DEVONO essere trattate presso una struttura specializzata per il riutilizzo, il riciclaggio e il recupero dei materiali. Il corretto smaltimento del prodotto eviterà le possibili conseguenze negative sull'ambiente e sulla salute dell'uomo. Per ulteriori informazioni, contattare l'installatore o l'ente locale preposto.

- Questo apparecchio è destinato a essere utilizzato da utenti esperti o qualificati in negozi, nell'industria leggera e nelle aziende agricole, o per uso commerciale da parte di persone non esperte.



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.



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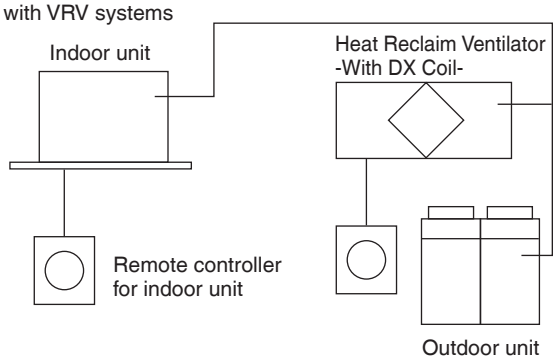
• Independent system
with VRV systems



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CONTENTS

The original instructions are written in English. All other languages are translations of the original instructions.

1 SAFETY PRECAUTIONS

To gain full advantage of the Heat Reclaim Ventilator unit's functions and to avoid malfunction due to mishandling, please read this operation manual carefully before use. This product comes under the term "appliances not accessible to the general public".

- **This manual classifies the precautions into WARNINGS and CAUTIONS. Be sure to follow all the precautions below: They are all important for ensuring safety.**

⚠ **WARNING**..... Improper handling that is highly likely to result in serious consequences such as death or serious injury.

⚠ **CAUTION**..... Improper handling that may result in minor or moderate injury or property damage.
There may be serious consequences depending on the circumstances.

- **After reading, keep this manual in a convenient place so that you can refer to it whenever necessary. If the equipment is transferred to a new user, be sure also to hand over the manual.**

— ⚠ WARNING (General) —

This appliance is not intended for use by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the appliance.
Cleaning and user maintenance must not be carried out by children without supervision.

— ⚠ WARNING (During Operation) —

- **Be aware that prolonged, direct exposure to cool or warm air from the Heat Reclaim Ventilator unit, or to air that is too cool or too warm can be harmful to your physical condition and health.**
- **Do not place objects, including rods, your fingers, etc., in the air inlet or outlet.**
Injury may result due to contact with the Heat Reclaim Ventilator unit's highspeed fan blades.
- **Do not use the Heat Reclaim Ventilator unit in the atmosphere contaminated with oil vapor, such as cooking oil or machine oil vapor.**
Oil vapor may cause crack damage to the Heat Reclaim Ventilator unit, electric shocks, or a fire.
- **Do not use the Heat Reclaim Ventilator unit in places with excessive oily smoke, such as cooking rooms, or in places with flammable gas, corrosive gas, or metal dust.**
Using the Heat Reclaim Ventilator unit in such places may cause a fire or Heat Reclaim Ventilator unit failures.
- **Do not use flammable aerosols (such as hair spray, insecticide, disinfectant, or air duster) or deodorants near the unit, and do not spray them directly onto it.**
Do not wipe the unit with benzine or thinner.
Doing so may cause fire, water leakage, refrigerant leakage, deformation of the unit, or malfunction.
- **To avoid electric shocks, do not operate with wet hands.**
- **Open the windows and ventilate the room if flammable gas is leaked.**
Insufficient ventilation when the unit is turned on or off may cause an explosion from sparks at the electrical connection.
- **Do not wash the Heat Reclaim Ventilator unit with water, as this may result in electric shocks or a fire.**
(Not including air filters or the humidifying element.)
- **Be sure to stop the unit and turn off the power when cleaning or inspecting it.**
Inside the unit are charged components and high-speed rotating fans, which could cause electric shock or injury.
When R32 refrigerant is used, if the refrigerant sensor detects a leak, the fan may suddenly start rotating even while operation is stopped.
- **Never inspect or service the unit by yourself.**
Ask a qualified service person to perform this work. (The qualified service person)
- **Beware of a fire in case of refrigerant leakage.**
If the Heat Reclaim Ventilator unit is not operating correctly, i.e. not generating cool or warm air, refrigerant leakage could be the cause. Consult your local dealer for assistance.
In case of accidental refrigerant leaks, make sure there are no naked flames. The refrigerant itself is entirely safe and non-toxic. R410A is a non-combustible refrigerant, and R32 is a mildly flammable refrigerant, but they will generate a toxic gas when they accidentally leak into a room where combustible air from fan heaters, gas cookers, etc. is present.
Always have qualified service personnel confirm that the point of leakage has been repaired or corrected before resuming operation.
- **Consult your local dealer if the Heat Reclaim Ventilator unit submerges owing to a natural disaster, such as a flood or typhoon.**
Do not operate the Heat Reclaim Ventilator unit in that case, or otherwise a malfunction, electric shocks, or a fire may result.
- **To detect a refrigerant leak, the safety device must be turned on.**
Turn on the refrigerant leak detection sensor alarm.
(Safety device turns on when the Heat Reclaim Ventilator unit is turned on.)
Refrigerant leaks may not be detected correctly when the Heat Reclaim Ventilator unit is not turned on.
- **Start or stop the Heat Reclaim Ventilator unit with the remote controller. Never use the power circuit breaker for this purpose.**
Otherwise, it may cause a fire or water leakage. Furthermore, if an automatic restart control is provided against power failure and the power is recovered, the fan will rotate suddenly and may cause injury.
- **Consult your local dealer regarding cleaning the inside of the Heat Reclaim Ventilator unit.**
Improper cleaning may cause breakage of plastic parts, water leakage and other damage as well as electric shocks.

— ⚠ CAUTION (During Operation) —

- **Do not use the Heat Reclaim Ventilator unit for purposes other than those for which it is intended.**
Do not use the Heat Reclaim Ventilator unit for cooling precision instruments, food, plants, animals or works of art as this may adversely affect the performance, quality and/or longevity of the object concerned.
- **Do not place appliances that produce naked flames in areas exposed to the airflow from the Heat Reclaim Ventilator unit, as this may result in accidents caused by incomplete combustion of the appliance.**

- **Do not place heaters directly below the Heat Reclaim Ventilator unit, as resulting heat can cause deformation.**
- **Be sure that children, plants or animals are not exposed directly to airflow from the Heat Reclaim Ventilator unit, as adverse effects may ensue.**
- **Do not place flammable sprays or operate spray containers near the Heat Reclaim Ventilator unit or indoor intake and outlet grills as this may result in a fire.**
- **Turn off the power when the Heat Reclaim Ventilator unit is not used for long periods of time.**
  Otherwise, the Heat Reclaim Ventilator unit may get hot or catch on a fire due to dust accumulation.
- **Do not block air inlets nor outlets.**
  If the fan does not blow air throughout the entire room, it may cause oxygen deficiency leading to bad health condition or long-term health problems.
- **Do not operate the Heat Reclaim Ventilator unit without air filter.**
  This may cause a malfunction, as performance may be reduced and the heat exchange element may become clogged with dirt or dust.
- **Use gloves when cleaning.**
  Cleaning without gloves may cause injury.
- **Watch your steps at the time of air filter cleaning or inspection.**
  High-place work is required, to which utmost attention must be paid. If the scaffold is unstable, you may fall or topple down, thus causing injury.
- **Do not place water containers (flower vases, etc.) on the Heat Reclaim Ventilator unit, as this may result in electric shocks or a fire.**
- **The appliance is not intended for use by unattended young children or persons who are incompetent to operate air conditioners.**
  It may result in injury or electric shocks.
- **Children should be watched so that they do not play with the indoor unit or its remote controller.**
  Accidental operation by a child may result in injury or electric shocks.
- **This unit is equipped with electrically powered safety measures, such as a refrigerant leak detector. In order to be effective, the unit must be electrically powered at all times after installation, except for short service periods.**
- **Do not place paint solvents or silicone adhesives that emit odours near the refrigerant sensor.**
  They may cause false detection of refrigerant leakage and activate the safety protection device.

⚠ WARNING (For installation)

- **Consult your local dealer about installation work.**
  Doing the work yourself may result in water leakage, electric shocks or a fire.
- **Installation should be done following the installation manual.**
  Incorrect installation may cause leaking, electric shock, or a fire. Injuries may result if the unit falls.
- **Do not install the unit in locations where the temperature in the areas around the unit or indoor intake and outlet grills may fall below freezing.**
  The water of the water pipes, humidifier element, solenoid valves, and other components may freeze, causing breakage and leaks.
- **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 local 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 a fire.
- **Be sure to earth the Heat Reclaim Ventilator unit.**
  Do not earth the Heat Reclaim Ventilator unit to a utility piping, lightning conductor or telephone earth lead. Imperfect earthing may result in electric shocks or a fire. A high surge current from lightning or other sources may cause damage to the Heat Reclaim Ventilator unit.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or a fire.
- **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 a fire.
- **Do not connect additional electric wirings.**
  This may cause a fire.
- **Consult your local dealer regarding what to do in case of refrigerant leakage.**
  When the Heat Reclaim Ventilator unit is installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- **Do not install the Heat Reclaim Ventilator unit at any place where there is a danger of flammable gas leakage.**
  In the event of a gas leakage, build-up of gas near the Heat Reclaim Ventilator unit may result in a fire.
- **During work, strictly prohibit the use of open flames, and carry and operate a portable leak detector (non-torch type).**

⚠ CAUTION (For installation)

- **Do not use the Heat Reclaim Ventilator unit or an air suction/discharge grille in the following places.**
  1. **Place subjected to high temperature or direct flame.**
     Avoid a place where the temperature near the Heat Reclaim Ventilator unit and the air suction/discharge air grille exceeds 40°C. If the unit is used at high temperature, deformed air filter and heat exchange element or burned motor result.
  2. **Place such as kitchens or other places where oil fumes are present.**
     This may cause a fire.
  3. **Place such as machinery plant and chemical plant where gas, which contains noxious gas or corrosive components of materials such as acid, alkali, organic solvent and paint, is generated.**
     Place where combustible gas leakage is likely.
     This may cause gas poisoning or a fire.
  4. **Place such as bathroom subjected to moisture.**
     Electric leak or electric shock and other failure can be caused.
  5. **Locations below freezing point.**
     Using the unit at temperatures below 0°C may cause the drain pan the supply and discharge piping, the humidifying element, the solenoid valves, and other parts to freeze, which can cause accidents.
  6. **Near machinery emitting electromagnetic waves.**
     Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.

7. **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 local 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 electrical shock and a fire.
- **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 a fire.
- **Insulate the outdoor and indoor air supply ducts to prevent condensation (including the indoor exhaust duct if necessary).**
  If insulation is inadequate, water may leak indoors and damage household items 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 and a fire.
- **Carry out drain piping properly to ensure complete drainage.**
  If drain piping is not carried out properly, drain will not flow out. Then, dirt and debris may be accumulated in the drain piping and may cause water leakage. If it occurs, stop the Heat Reclaim Ventilator unit and call your local dealer for assistance.
- **Do not locate the remote controller wherever there is a risk of wetting.**
  If water gets into the remote controller there is a risk of electrical leakage and damage to electronic components. It may result electric shocks or a fire.

⚠ WARNING (For moving and reinstalling/ repairing)

- **Do not modify the Heat Reclaim Ventilator unit.**
  This may cause electric shock or a fire.
- **Consult your local dealer regarding relocation and reinstallation of the Heat Reclaim Ventilator unit.**
  Improper installation work may result in leakage, electric shocks or a fire.
- **Do not disassemble or repair the unit yourself.**
  This may cause electric shock or a fire.
  Contact your local dealer to have such work done.
- **When removing the Heat Reclaim Ventilator unit, be sure not to tip it.**
  The water inside the unit may drip or leak out, and get on furniture, etc.
- **Do not relocate or reinstall the remote controller by yourself.**
  Improper installation may result in electric shocks or a fire.
  Consult your local dealer.
- **When the Heat Reclaim Ventilator unit is malfunctioning (giving off a burning odor, etc.), turn off the power to the Heat Reclaim Ventilator unit and contact your local dealer.**
  Continued operation under such circumstances may result in a failure, electric shocks or a fire.

<CHECK LIST EXCEPT SAFETY CAUTION>

The items described below should be checked and ask your local dealer when you feel uncertain or you can't check by yourself.

■ CHECK LIST ABOUT SELECTING INSTALLATION SITE

- **Is the outdoor unit installed in a well-ventilated location with no obstructions in its vicinity?**
- **Do not use in the locations described below.**
  a. Locations with mineral oil such as cutting oil in the atmosphere.
  b. Locations with salt in the air, such as coastal areas.
  c. Locations with sulfide gas in the air, such as hot springs.
  d. Locations where voltage fluctuates, such as factory.
  e. In automobiles or marine vessels.
  f. Locations containing steam in the atmosphere or splattered oil, such as kitchen.
  g. Locations with mechanical equipment generating electromagnetic wave.
  h. Locations enveloped in acidic or alkaline steam.
- **Has any action for snow protection been taken?**
  Contact your local dealer for details.
- **If mist, fog, or highly humid air is drawn in, water droplets may drip from the air filter or heat exchange element, causing water to leak outside the unit.**
  In such cases, stop operation.
  If water has accumulated inside the unit, clean the unit by wiping away the water with a soft cloth etc.
- **If there is negative pressure indoors or the unit is in a location subject to strong outdoor winds, outdoor air may be drawn in even when operation is stopped.**
  In such cases, to prevent air intrusion, consider installing motorised shutters (sold separately) on both the outdoor air intake (OA) and exhaust air outlet (EA).

■ CHECK LIST ABOUT ELECTRIC WIRING WORK

- **All wiring must be performed by an authorized electrician.**
  Do not conduct the work yourself. Contact your local dealer.
- **Electrical wiring must be done according to the local standards.**
- **Is the circuit specific to air conditioner?**
- **If the power cable is damaged, replacement must be performed by qualified persons.**
  To avoid danger, do not attempt to replace wiring yourself – contact your dealer.

■ CHECK LIST CORRESPONDING TO OPERATING NOISE

- **Is the unit installed at the following locations?**
  a. Location strong enough to support the weight of the unit, and which will not amplify noise or vibration.
  b. Location where the warm air and the noise from the outlet vent of the outdoor unit will not bother neighbors.
- **Are any obstructions near the outlet vent of the outdoor unit?**
  They may reduce the function and increase the operating noise.
- **If any abnormal noise is heard during the operation, contact your local dealer.**

■ CHECK LIST ABOUT DRAIN PIPING AND WATER SUPPLY WORK

- **Make sure the drain works properly.**
  During cooling operation, no drainage from the outdoor drain piping may clog the drain piping with dirt or dust, causing water leakage from the indoor unit.
  Stop the unit operation, and contact your local dealer.

2 WHAT TO DO BEFORE OPERATION

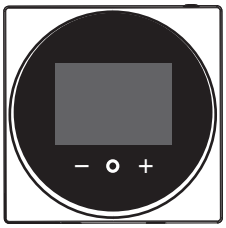
This operation manual is for the following systems with standard control. Before initiating operation, contact your local dealer for the operation that corresponds to your system type and mark. If your installation has a customized control system, ask your local dealer for the operation that corresponds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

2.1 NAMES OF PARTS (Refer to figure 1)

(1) Hanger bracket
(2) Duct connecting flange
(3) Exhaust air fan
(4) Air filter
(5) Damper
(6) Control box
(7) Maintenance cover
(8) Heat exchange element
(9) Name plate
(10) Supply air fan
(11) Direct expansion coil
(12) Gas pipe
(13) Liquid pipe
(14) Drain outlet
(15) Humidifier (natural evaporating type)
(16) Strainer (accessory)
(17) Feed water tank
(18) Solenoid valve
(19) Float switch for feed water tank
(20) Feed water tank lid
(21) Inspection cover 1
(22) Inspection cover 2
(23) Damper motor
(24) Electronic expansion valve (safety shut-off valve)
(25) Refrigerant sensor
(26) Remote controller (required item (sold separately))
(27) EA Exhaust air to outdoors
(28) OA Fresh air from outdoors
(29) RA Return air from room
(30) SA Supply air to room

2.2 User interface

The Heat Reclaim Ventillator unit MUST be connected to a separate user interface.
The user interface BRC1H52 (or a compatible H-type user interface) MUST be used.



⚠ CAUTION

Do NOT wipe the controller operation panel with benzine, thinner, chemical dust cloth, etc. The panel may get discoloured 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. Wipe it with another dry cloth.

This operation manual offers a non-exhaustive overview of the main functions of the system.

For more information about the user interface, see the operation manual of the installed user interface.

2.3 EXPLANATION FOR SYSTEMS

This unit can be used as a independent system for processing outside air, but CANNOT be used as part of the combined operation system used together with indoor units. (VRV system air conditioners)

Sample system (Refer to figure 2)
Independent system

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

NOTE

- This unit cannot control room temperature. If this is needed, do not install the Heat Reclaim Ventilator unit alone, but rather install another indoor unit.

3 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 "4 MAINTENANCE").**
- **Do not operate the Heat Reclaim Ventilator 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.
- **Use city water or clean water and take steps to prevent condensation from forming.**
- **The life of humidifier become shorter when the supply water is hard water.**
  Use a water softener.
- **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

Usage under the failure status of the solenoid valve will lead to insufficient humidification and increased tap water consumption.
The solenoid valve should be checked at the beginning of the heating season.

4 MAINTENANCE (for a qualified service person only)

ONLY A QUALIFIED SERVICE PERSON IS ALLOWED TO PERFORM MAINTENANCE

DO NOT CHECK OPENING INSIDE THE UNIT BY YOURSELF.

- Working at high places can cause accidents. Ask your local dealer for maintenance.

4.1 WHEN TO PERFORM MAINTENANCE OF 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.

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

- Ask your local dealer to clean the air filter.
- Increase the frequency of cleaning if the unit is installed in a room where the air is extremely contaminated.

  Reset the filter sign via the remote controller. For details, refer to the operation manual for the remote controller.

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

⚠ 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.

WHEN TO CLEAN THE HEAT EXCHANGE ELEMENT

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

4.2 SEASONAL MAINTENANCE

4.2.1 AT THE BEGINNING OF THE SEASON

- Ask your local dealer for inspection at the beginning and the end of the humidify season.

For dealers

Inspected part	Content of maintenance		Problems if maintenance is not carried out
	Items to be inspected	Solution	
Strainer (80-mesh)	Check for clogging	Clean if clogged.	Insufficient humidifying.
	Check o-ring for cracks	Replace if cracked.	Leaking.
Feed water tank	Check for operation of float switch	Clean if it does not work properly due to build-up.	Insufficient humidifying. Overflowed feed water tank.
	Check for dirt	Clean if very dirty.	Weak fan strength. Reduced humidifying capacity.
Solenoid valve	Check for shutting and opening. Check in a similar fashion when checking the float switch operation.	Replace if it doesn't work.	Insufficient humidifying. Overflowed feed water tank. (Increased tap water consumption)

4.3 INSPECTION OF THE FAN MOTER

NOTE

- When the fan fails, the remote controller displays error code.
  Usage under that status will lead to insufficient ventilation.
  The supply and exhaust air 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.

4.4 REPLACING THE HUMIDIFIER ELEMENT

- The humidifier element needs to be replaced regularly.
  The humidifier element should in general be replaced once every three years when supply water is soft water, but outside factors (If the water quality is hard water, etc.) as well as operating conditions (24-hour-a-day air conditioning, etc.) may shorten its productive life.
- Contact your local dealer if you have any questions.

5 TROUBLE SHOOTING

5.1 THE FOLLOWING SITUATIONS ARE NOT MALFUNCTIONS

Malfunction		Measure
Operation does not start.	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.	This indicates that the central device is controlling the unit. The blinking display indicates that the remote controller cannot be used.
	The fans rotates after 1 minute when pressing ON/OFF button.	This indicates that the operation is in preparation. Wait for about 1 minute.
	When the unit has been running for an extended period of time.	Automatic shutdown (forget-to-turn-off prevention) control has been activated. Turn the unit off from the remote controller, then turn it on again to resume normal operation.
	The unit is not operating even though it has been turned on via the ON/ OFF button.	This is because strong outdoor wind is causing the fan to rotate. Operation will start automatically once the fan stops rotating.
Operation stops sometimes.	"U5" is displayed on the remote controller and the operation stops but then restarts after a few minutes.	This indicates that the remote controller is intercepting noise from electrical appliances other than the Heat Reclaim Ventilator unit, and this prevents communication between the units, causing them to stop. Operation automatically restarts when the noise goes away.
	In winter, operation stops intermittently but resumes after.	This occurs because the outdoor temperature has dropped. The blower may stop temporarily to protect the unit. When the temperature rises, continuous operation will resume.
	In auto ventilation mode, operation stops intermittently but resumes after.	This is because the fan stops briefly when switching between total heat exchange and normal ventilation.
Unit operates even when the operation lamp is not lit.	The unit operates even though it has been turned off with the ON/OFF button.	The unit is performing humidification residual operation. If the unit has been operating in humidifying ventilation mode, ventilation mode may operate for up to 6 hours after the unit is turned off in order to dry the humidifier element.
Humidification operation does not run.		When the outdoor temperature is high and heating operation is not active, humidification operation will not run.
Unit starts even when remote controller is not operated.	Soon after the unit is turned on.	Power failure recovery is set to "ON".

5.2 IF ONE OF THE FOLLOWING MALFUNCTIONS OCCURS, TAKE THE MEASURES SHOWN BELOW AND CONTACT YOUR LOCAL 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 Heat Reclaim Ventilator is in abnormal conditions (smell of something burning, etc), cut off the power, and contact your local dealer.

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

Malfunction	Measure
The unit does not operate at all.	• Check if there is no power failure. Wait until power is restored and restart operation. • Check if no fuse has blown or breaker is activated. Change the fuse or reset the breaker if necessary. 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. Do not turn the power on. • Check if the indication of the operation control method on the controller is shown. This is normal. Operate the unit using the air conditioner remote control or the central controller.
The amount of discharged air is small and the discharging sound is high.	• Check if the air filter and heat exchange element are Not clogged. Refer to the filter and heat exchange element cleaning section. • Check that the suction grille, outdoor hood, and filter box are not clogged. (If necessary, contact your dealer.)
The amount of discharged air is large and the discharging sound is high.	Check if the air filter and heat exchange element are installed.
Abnormal dryness in winter.	• Check that the water supply service valve is open. • Check that the humidity controller setting is not too low. • Check that no impurities (such as silicone or machining oil) have adhered to the humidifying element. Refer to the humidifying element cleaning section. Soak the element for about 3 hours in an aqueous solution of 25 g of citric acid per 1 L of water, then rinse thoroughly with clean water. Perform washing and rinsing with water at room temperature. Depending on the installation location, cleaning may be required about once a month. Frequent cleaning may shorten the replacement interval. • The humidifier element may have reached the end of its service life. Replacement is required. Please contact the retailer where you purchased the unit.

List of malfunction codes of Remote controller of the Heat Reclaim Ventilator system

Malfunction code	Description
64	Indoor air thermistor malfunction
65	Outdoor air thermistor malfunction
6A	Damper-related malfunction
6A	Damper-related malfunction + thermistor malfunction
A0	The R32 sensor has detected a refrigerant leak
A1	Printed circuit board fault
A6	Unstable fan rpm: failure of filter contamination check or failure of function 19(29)-0-04/-05
A6	Warning for air flow rate drop (for R32 application)[(a)]
A6	Air flow rate dropped below legal threshold limit (for R32 application)[(a)]
A6	Locked rotor
A8	Power supply voltage malfunction
A9	Electric expansion valve drive error
AF	Malfunction of a humidifier system
C1	Fan communication error
C4	Liquid piping thermistor error (faulty connection, disconnection short circuit, fault)
C5	Gas piping thermistor error (faulty connection, cut wire, short circuit, fault)
C6	Malfunction of fan motor sensor or fan control driver
C9	Intake air into coil thermistor error (faulty connection, disconnection, short circuit, fault)
CA	Outdoor air thermistor malfunction (coil outdoor air)
CH	R32 refrigerant sensor error
CH	R32 refrigerant sensor error and replacement timing
U3	Test run not performed
U4	Transmission abnormal between this unit and outdoor unit
U5	Transmission error between the unit and remote controller
UJ	Air flow rate dropped below the legal threshold limit (for R32 application)[(a)]

: 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 outdoor unit. See the operation manuals included with the outdoor unit for details.

(a) : These error codes only apply when the R32 safety system is active. See Installation manual.

6 AFTER-SALES SERVICE AND WARRANTY

6.1 About the refrigerant

This product contains fluorinated greenhouse gases. Do NOT vent gases into the atmosphere.
This unit contains either R32 or R410A refrigerant.
This unit has an automatic refrigerant detection function. You do not need to identify the refrigerant via a field setting.

	Refrigerant type	
	R32	R410A
Global warming potential (GWP)[(1)]	675	2087.5

[(1)] GWP = global warming potential

- Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO_2 equivalent.
- **Formula to calculate the quantity in CO_2 equivalent tonnes:** GWP value of the refrigerant × total refrigerant charge [in kg]/1000
- Contact your installer for more information.

Periodical inspections for refrigerant leaks may be required depending on European or local legislation.
Please contact your local dealer for more information.

6.1.1 About R32 refrigerant leakage safety

- Functionality of the safety measures are periodically automatically checked. In case of malfunction, an error code will be displayed on the remote controller.
- The R32 refrigerant leakage sensor is a semiconductor detector which may incorrectly detect substances other than R32 refrigerant. Avoid using chemical substances (e.g. organic solvents, hair spray, paint) in high concentrations, in close proximity to this unit as this may cause misdetection by the R32 refrigerant leakage sensor.

⚠ WARNING

The R32 refrigerant leakage sensor must be replaced after every detection or at the end of its lifetime. ONLY authorised persons may replace the sensor.

- The sensor has a lifetime of 10 years. The remote controller displays error "**CH-05**" 6 months before the end of sensor life and error "**CH-02**" after the end of sensor life. For more information, refer to the operation manual for the remote controller and contact your dealer.
- To stop the alarm on the remote controller, refer to the operation manual for the remote controller.
- The minimum airflow during normal operation or during the refrigerant leakage detection is always >240 m^3/h.

In case detection occurs when the unit is on standby:

- The remote controller displays error "**A0-11**", is emitting an alarm sound and the status indicator is blinking.
- The fan of the heat reclaim ventilation unit begins rotating at ultra high speed.
- Contact your dealer immediately. For more information, see the installation manual of the outdoor unit.

Airflow rate threshold levels

Airflow rates too low imply a safety concern in case there is R32 leakage. Therefore, when the R32 safety settings are active, three airflow rate threshold levels are taken into account.

Level	Airflow rate	System response	Action required
1	Lower than normal	User interface displays error "**A6-30**".	Auto recovery: no action required. The error disappears. If not, contact your dealer to check for a dirty air filter, leakage in ducting, …
2	Too low	• The remote controller displays error "**A6-29**" or "**UJ-38**". • Operation stops.	Contact your dealer to: • clean the filter. • check the installation for loose ducting, closed dampers,… • reset the remote controller (also possible by user).
3	Below critical airflow threshold	• The remote controller displays error "**A6-28**" or "**UJ-37**". • In case there is a leak, it will be detected but because airflow is below the legal limit, the system will automatically start refrigerant recovery operation to store all refrigerant into the outdoor unit. When recovery is finished, the system unit goes in locked status. Service is needed to repair and reactivate the system. Refer to the service manual for more information.	Contact your dealer to repair and re-activate the system. Refer to the service manual for more information.

6.2 AFTER-SALES SERVICE

⚠ WARNING

- **Do not modify the unit.**
  This may cause electric shock or a fire.
- **Do not disassemble or repair the unit.**
  This may cause malfunction or electric shock, or a fire.
  Contact your local dealer.
- **If the refrigerant leaks, keep out of a fire.**
  The refrigerant used in this unit is safe.
  Although the refrigerant does not usually leak, if the refrigerant leaks out into a room and comes in contact with the combustible air in the equipment such as fan heater, stove, oil (gas) cooker, etc., it will cause toxic gas to be generated.
  Extinguish any open flames (from combustion appliances etc.), ventilate the room, and contact a nearby dealer.
  When a refrigerant leakage failure has been repaired, confirm a service person that the leakage point has been corrected surely before restarting operation.
- **Do not remove or reinstall the unit by yourself.**
  Incomplete installation may cause malfunction, water leakage, electric shock, or fire.
  Contact your local dealer.

■ WHEN ASKING YOUR LOCAL 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 local dealer. If necessary to repair, pay service is available.

■ MINIMUM STORAGE PERIOD OF IMPORTANT PARTS

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

■ RECOMMENDATIONS FOR MAINTENANCE AND INSPECTION

Dust accumulates after the unit has been used for several years, which may result in reduced performance or water leakage.
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, 2,500 hours/year.

- Table 1 “Inspection Cycle” and “Maintenance Cycle” Lists

Name of Main Part	Inspection Cycle	Maintenance Cycle [replacements and/or repairs]
Electric motor (fan, damper, etc.)	1-2 months recommended *1	20,000 hours
Printed circuit boards	1 year	25,000 hours
Heat exchange element		10 years
Direct expansion coil		5 years
Sensor (thermistors etc.)		5 years
Remote controller and switches		25,000 hours
Drain pan		8 years
Expansion valve	1 year	20,000 hours
Solenoid valve	1 year *2	20,000 hours

*1:

- 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.

*2:

- Usage under the failure status of the solenoid valve will lead to insufficient humidification and increased tap water consumption.
  The solenoid valve should be checked at the beginning of the heating season.

Note 1

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

Note 2

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

Shortening of “maintenance cycle” and “replacement cycle” needs to be considered in the following cases.

- When used in hot, humid locations or locations where temperature and humidity fluctuate greatly.
- When used in locations where power fluctuation (voltage, frequency, wave distortion, etc.) is high.
  (Cannot be used if it is outside the allowable range.)
- When installed and used in locations where bumps and vibrations are frequent.
- When used in bad locations where dust, salt, harmful gas or oil mist such as sulfurous acid and hydrogen sulfide may be present in the air.
- When used in locations where the machine is started and stopped frequently or operation time is long. (Example: 24 hour air-conditioning)
- When the supply water is hard water the humidifier’s life become shorter.

■ RECOMMENDED REPLACEMENT CYCLE OF WEAR-OUT PARTS

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

- Table 2 “Replacement Cycle” Lists

Name of Main Part	Inspection Cycle	Replacement Cycle
Air filter	1 year	3 years
High efficiency filter (Optional accessory)		1 year
Humidifier element	1 year	3 years
Fuse	1 year	10 years

Note 1

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

Note 2

This maintenance cycle indicates recommended lengths of time until the need arises for maintenance work, in order to ensure the product is operational as long as possible.
Use for appropriate maintenance design (budgeting maintenance and inspection fees, etc.).

- Water supplied to the humidifier must be clean water that meets the requirements prescribed by the laws and regulations of each country and conforms to the following water quality standards.
  Acid consumption: 50 mg/L or less,
  Total hardness: 70 mg/L or less,
  Ionic silica: 30 mg/L or less
  If the acid consumption, supply water hardness, or ionic silica content is high, it may result in valve blockage, deterioration of the humidifier, and deposition of scale components (white powder) on the surface of the humidifying element. (These values do not guarantee the service life of the humidifying element.)
  When air is supplied directly into the room, scale particles may be dispersed indoors. To prevent this, consider using a filter box (locally procured) as a countermeasure.

- The service life (replacement interval) of the humidifying element is approximately 3 years but may be shorter depending on water quality and operating conditions.
  <Conditions for replacement interval>
  · Evaporative residue: 150 ppm (if 230 ppm, humidifying element service life is approx. 2 years)
  · Total hardness: 53 mg/L, Ionic silica: 20 mg/L
  · Operating time: Approx. 1,300 hours (= 10 h/day × 26 days/month × 5 months)
  · Humidification capacity: Approx. 70% of the initial humidification capacity
  * Replacement interval indicates the recommended time for safe, long-term use of the product. It is not a warranty period.
- If operating the unit continuously for 24 hours a day, regular maintenance (replacement of parts etc.) is required.
- In order to keep the humidifier clean, if the humidification function will not be used for an extended period (2 to 3 weeks or more), stop the water supply, and perform fan operation and then drying operation on the humidifier.
- Do not use a water softener as it can result in the deposition of scale components (white powder) on the humidifying element and dispersion into the air.

Contact your local dealer for details.
Note: Breakage due to taking apart or cleaning inside by anyone other than our authorized dealers may not be included in the warranty.

■ MOVING AND DISCARDING THE UNIT

- Contact your local dealer for removing and reinstalling the total enthalpy heat exchanger when moving house since they require technical expertise.
- This unit contains chlorofluorocarbon in the refrigerant. When discarding, removing installing and maintaining the unit, collect the refrigerant in accordance with the local law for the global environmental destruction prevention. In detail contact your local dealer.

■ WHERE TO CALL

For after-sales service, etc., consult with your local dealer.

■ WARRANTY PERIOD

Warranty period: Within one year after installation.

- If it is necessary to repair the air conditioner within the warranty period, contact your local dealer.

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