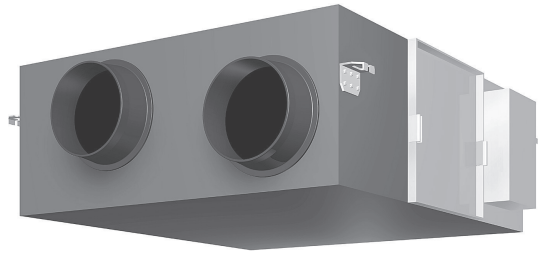
DAIKIN

EDUS711116

Engineering Data

VAM-GVJU
Energy Recovery Ventilator



DAIKIN AC (AMERICAS), INC.

VAM-GVJU
Energy Recovery Ventilators

1. Specifications 2
2. Dimensions 3
3. Wiring Diagrams 5
4. Electric Characteristics 7
5. Sound Levels 8
   5.1 Overall Sound Level 8
   5.2 Sound Power Level 8
   5.3 Octave Band Level 9
6. Performance Characteristics 11
7. Installation Drawing 12
8. Installation Manual 14
9. Operation Manual 35
10. Accessories 49
   10.1 Optional Accessories (For Unit) 49
   10.2 Optional Accessories (For Control) 49

1. Specifications

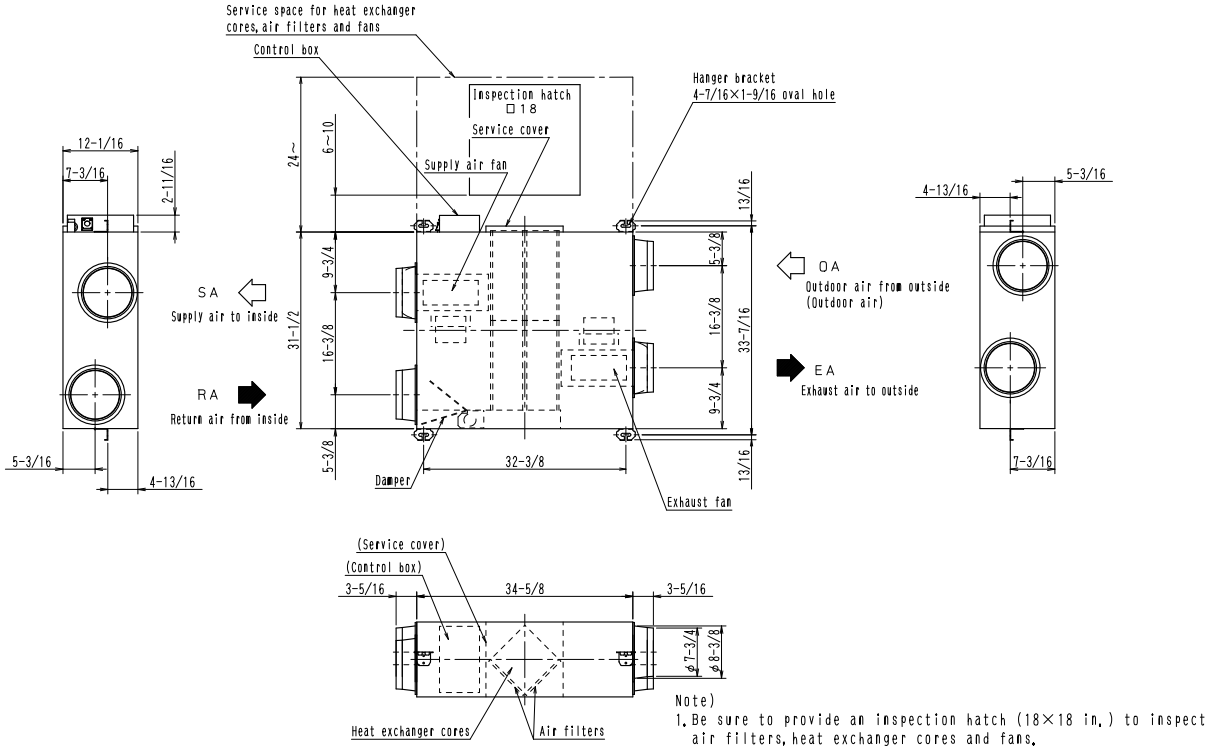
Model name				VAM300GVJU	VAM470GVJU	VAM600GVJU	VAM1200GVJU
		Airflow					
Temperature recovery efficiency percentage	Cooling	100	%	65	68	72	
		75	%	70	72	74	
	Heating	100	%	65	66	70	
		75	%	69		73	
Enthalpy recovery efficiency percentage	Cooling	100	%	40	45	49	
		75	%	48	50	52	
	Heating	100	%	57	59	60	
		75	%	63	65	63	
Power supply				Single phase 208/230V, 60Hz			
Operating current	Heat exchange mode	EX-H	A	1.4	3.5	3.7	7.6
		H	A	1.2	3.1	3.2	6.5
		L	A	0.7	2.5	2.6	5.2
	Bypass mode	EX-H	A	1.4	3.5	3.7	7.6
		H	A	1.2	3.1	3.2	6.5
		L	A	0.7	2.5	2.6	5.2
Power consumption	Heat exchange mode	EX-H	W	307	776	859	1720
		H	W	274	672	725	1484
		L	W	146	545	575	1154
	Bypass mode	EX-H	W	307	776	859	1720
		H	W	274	672	725	1484
		L	W	146	545	575	1154
Casing				Galvanized steel plate			
Insulation material				Self-extinguishing urethane foam			
Dimensions (H×W×D)			in.	12–1/16×34–5/8×31–1/2	15–1/4×43–11/16×32–3/4	15–1/4×43–11/16×47–13/16	30–7/8×63–3/4×47–13/16
Connection duct diameter			in.	ϕ 8	ϕ 10		ϕ 14
Heat exchange system				Air to air cross flow total heat (Sensible + Latent heat) exchange			
Heat exchanger core				Specially processed nonflammable paper			
Air filter				Multidirectional fibrous fleeces			
Fan	Type			Sirocco fan			
	Motor output			2×90 W	2×90 W	2×90 W	4×90 W
	Airflow rate	Heat exchange mode	EX-H	cfm	300	470	600	1200
			H	cfm	300	470	600	1200
			L	cfm	170	390	500	930
		Bypass mode	EX-H	cfm	300	470	600	1200
			H	cfm	300	470	600	1200
			L	cfm	170	390	500	930
	External static pressure		EX-H	in. H_2O	0.64	0.73	0.76	0.56
			H	in. H_2O	0.26	0.39	0.34	0.16
			L	in. H_2O	0.16	0.33	0.32	0.24
Operating sound	Heat exchange mode	EX-H	dB(A)	37.0	42.0	42.5	44.5
		H	dB(A)	33.5	38.5	39.0	41.5
		L	dB(A)	25.5	35.0	36.0	38.5
Weight			LBS	71	121	148	346
Unit ambient condition				5°F~122°FDB 80%RH or less			
Operation mode				ERV mode, Bypass mode, Auto mode			
Accessories				Operation manual, installation manual			
Drawing No.				4D073385	4D073386	4D073387	4D073388

Note:

1. Efficiency is rated based on ANSI/AHRI standard 1060.
2. Operating current and power consumption vary depending on the condition.
3. Operating sound is measured at 59 in. below the center of the unit in an anechoic chamber.
   Operating sound level generally becomes greater than this value depending on the operating conditions, reflected sound and peripheral noise.
4. The sound level at the air discharge port is about 8 dB higher than the above operating sound.
5. The specifications, designs and information here are subject to change without notice.

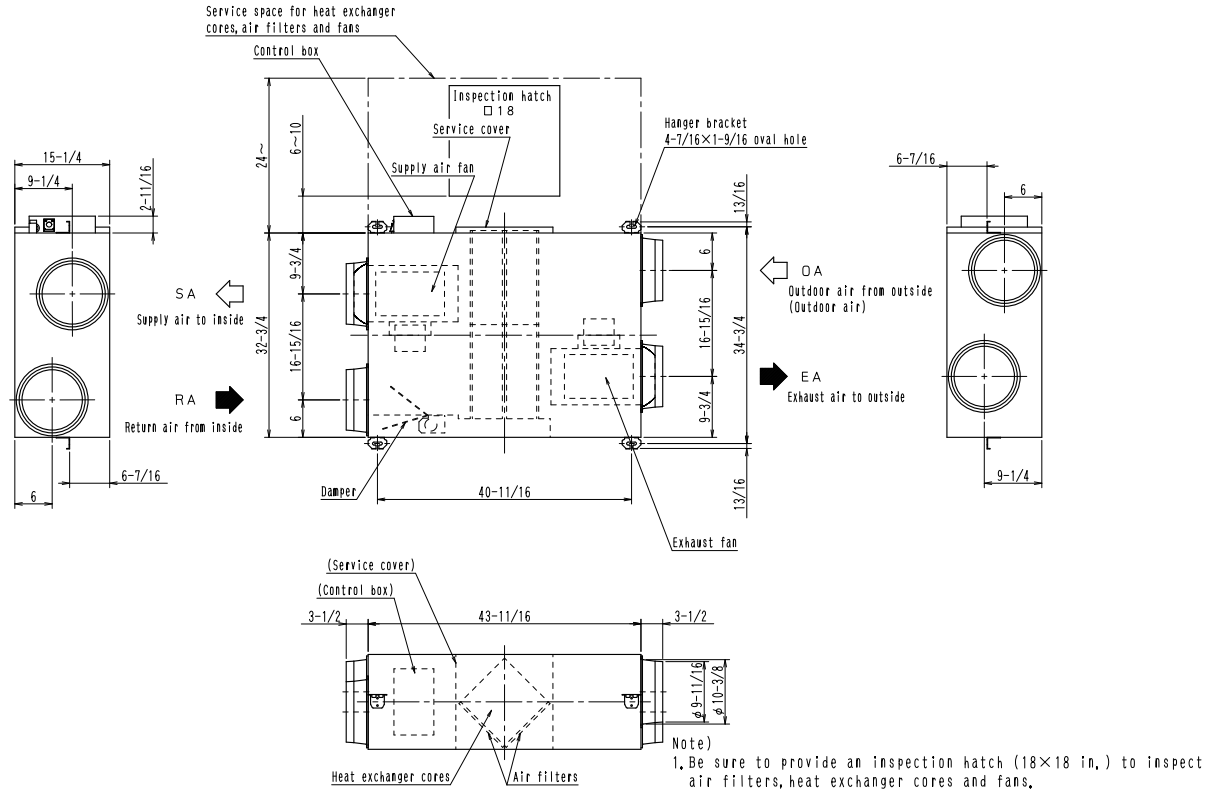
2. Dimensions

VAM300GVJU Unit (in.)



3D073380

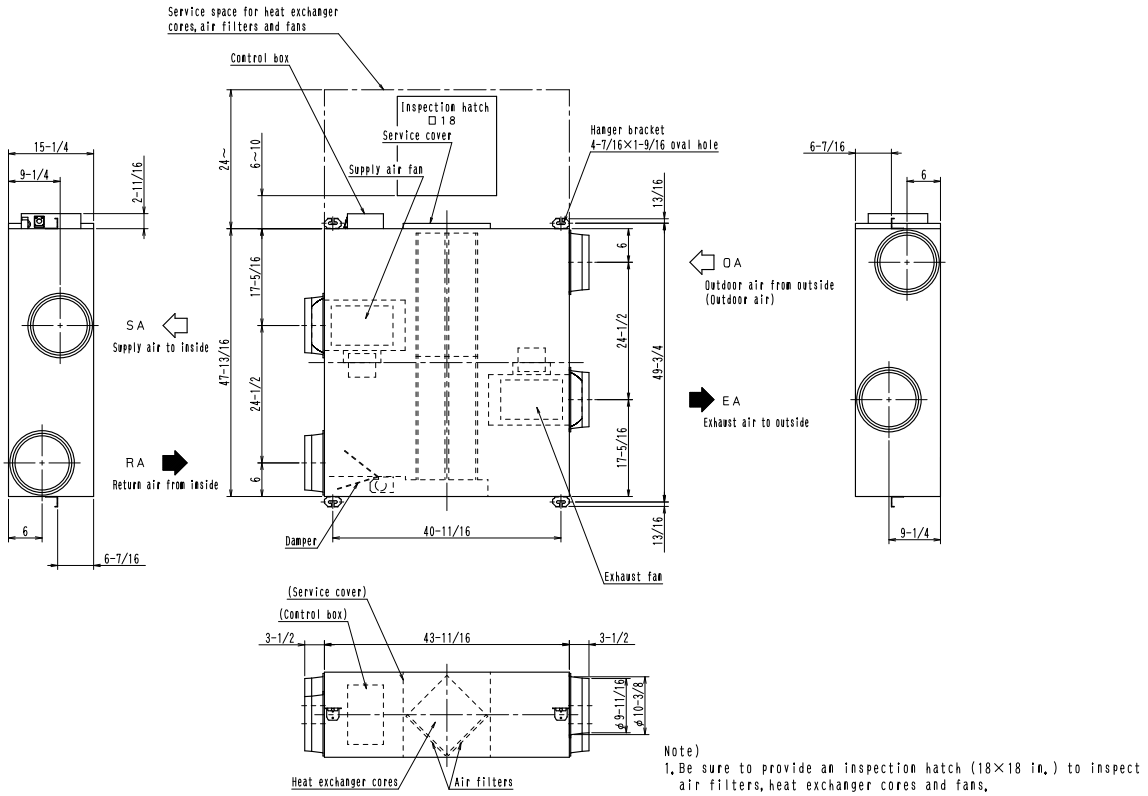
VAM470GVJU Unit (in.)



3D073381

VAM600GVJU

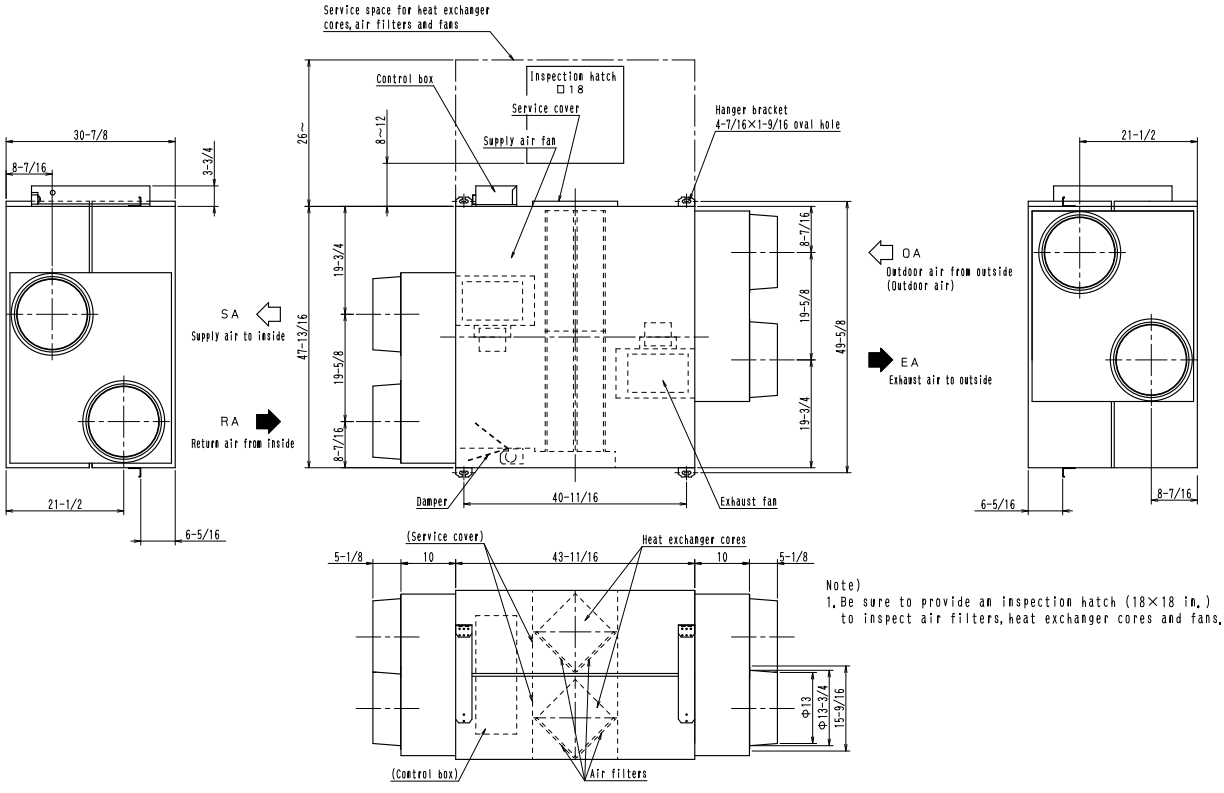
Unit (in.)



3D073382

VAM1200GVJU

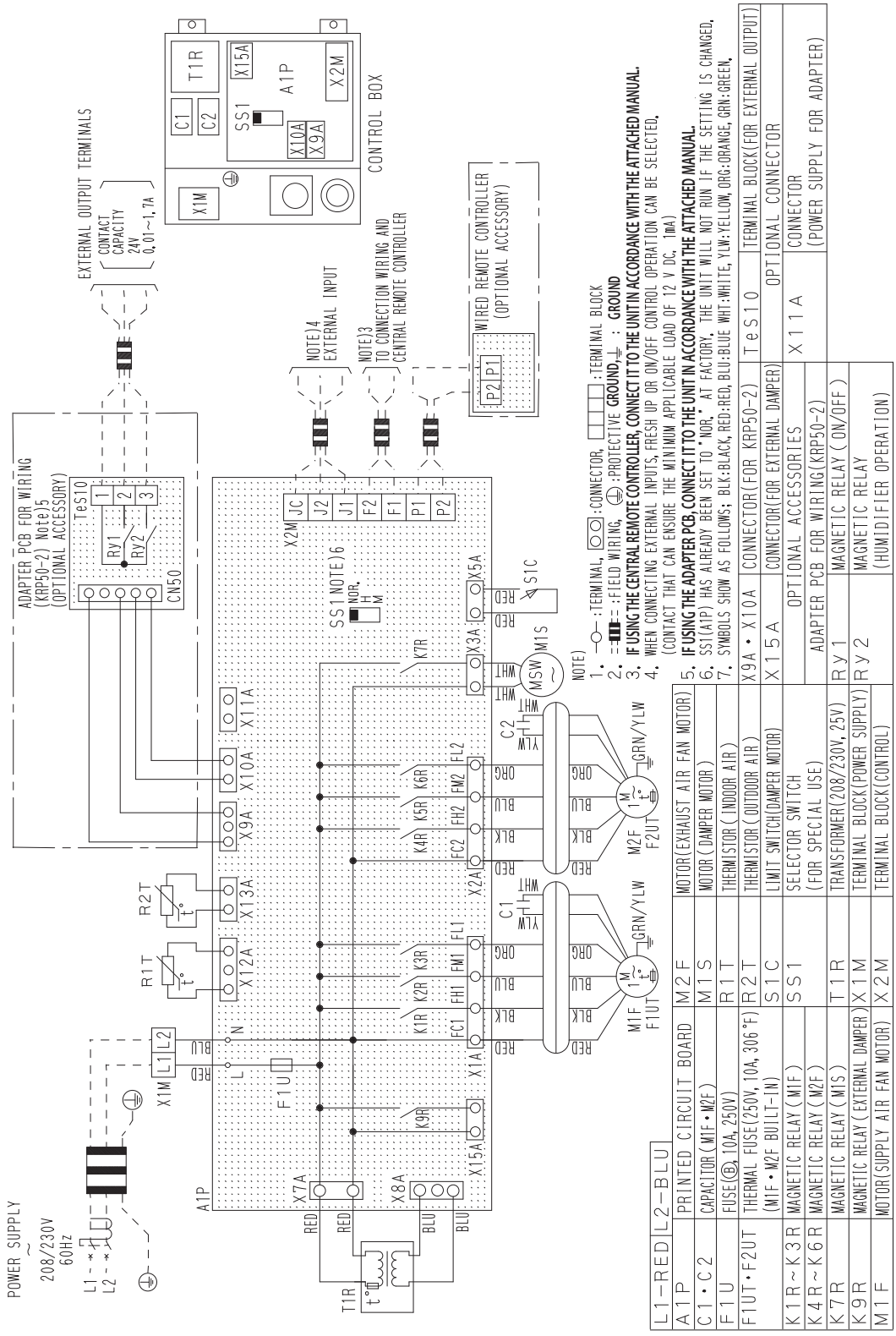
Unit (in.)



3D073383

3. Wiring Diagrams

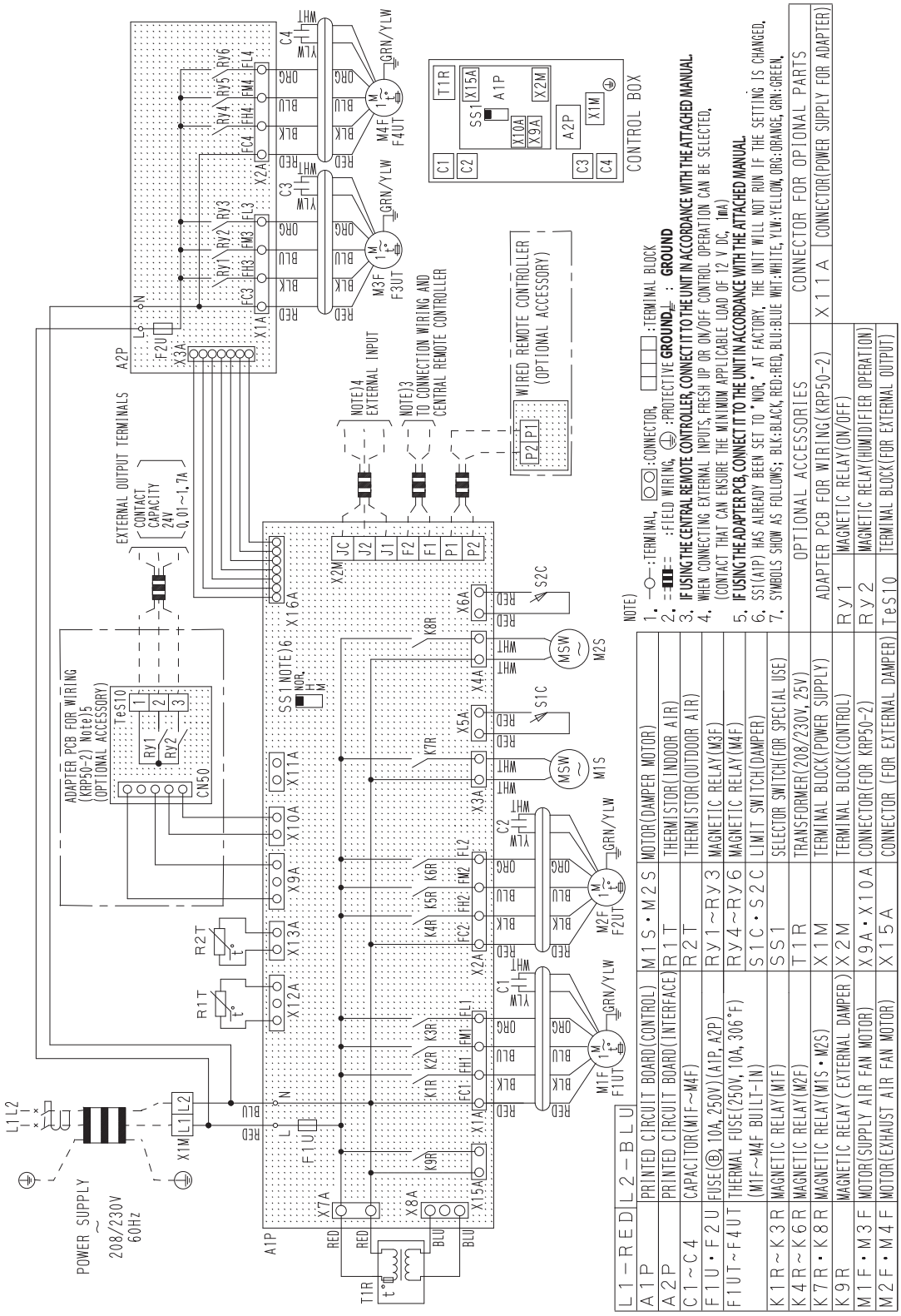
VAM300GVJU/VAM470GVJU/VAM600GVJU



L1—RED L2—BLU			
A1P	PRINTED CIRCUIT BOARD	M2F	MOTOR(EXHAUST AIR FAN MOTOR)
C1・C2	CAPACITOR(M1F・M2F)	M1S	MOTOR(DAMPER MOTOR)
F1U	FUSE(Ⓑ, 10A, 250V)	R1T	THERMISTOR(INDOOR AIR)
F1UT・F2UT	THERMAL FUSE(250V, 10A, 306°F) (M1F・M2F BUILT-IN)	R2T	THERMISTOR(OUTDOOR AIR)
		S1C	LIMIT SWITCH(DAMPER MOTOR)
K1R~K3R	MAGNETIC RELAY(M1F)	SS1	SELECTOR SWITCH (FOR SPECIAL USE)
K4R~K6R	MAGNETIC RELAY(M2F)		
K7R	MAGNETIC RELAY(M1S)	T1R	TRANSFORMER(208/230V, 25V)
K9R	MAGNETIC RELAY(EXTERNAL DAMPER)	X1M	TERMINAL BLOCK(POWER SUPPLY)
M1F	MOTOR(SUPPLY AIR FAN MOTOR)	X2M	TERMINAL BLOCK(CONTROL)
X9A・X10A	CONNECTOR(FOR KRP50-2)	TeS10	TERMINAL BLOCK(FOR EXTERNAL OUTPUT)
X15A	CONNECTOR(FOR EXTERNAL DAMPER)	OPTIONAL CONNECTOR	
	OPTIONAL ACCESSORIES	X11A	CONNECTOR (POWER SUPPLY FOR ADAPTER)
	ADAPTER PCB FOR WIRING(KRP50-2)		
Ry1	MAGNETIC RELAY(ON/OFF)		
Ry2	MAGNETIC RELAY (HUMIDIFIER OPERATION)		

3D073269C

VAM1200GVJU



L1-RED L2-BLU			
A1P	PRINTED CIRCUIT BOARD(CONTROL)	M1S・M2S	MOTOR(DAMPER MOTOR)
A2P	PRINTED CIRCUIT BOARD(INTERFACE)	R1T	THERMISTOR(INDOOR AIR)
C1~C4	CAPACITOR(M1F~M4F)	R2T	THERMISTOR(OUTDOOR AIR)
F1U・F2U	FUSE(Ⓑ, 10A, 250V)(A1P, A2P)	Ry1~Ry3	MAGNETIC RELAY(M3F)
F1UT~F4UT	THERMAL FUSE(250V, 10A, 306°F) (M1F~M4F BUILT-IN)	Ry4~Ry6	MAGNETIC RELAY(M4F)
		S1C・S2C	LIMIT SWITCH(DAMPER)
K1R~K3R	MAGNETIC RELAY(M1F)	SS1	SELECTOR SWITCH(FOR SPECIAL USE)
K4R~K6R	MAGNETIC RELAY(M2F)	T1R	TRANSFORMER(208/230V, 25V)
K7R・K8R	MAGNETIC RELAY(M1S・M2S)	X1M	TERMINAL BLOCK(POWER SUPPLY)
K9R	MAGNETIC RELAY (EXTERNAL DAMPER)	X2M	TERMINAL BLOCK(CONTROL)
M1F・M3F	MOTOR(SUPPLY AIR FAN MOTOR)	X9A・X10A	CONNECTOR(FOR KRP50-2)
M2F・M4F	MOTOR(EXHAUST AIR FAN MOTOR)	X15A	CONNECTOR (FOR EXTERNAL DAMPER)

OPTIONAL ACCESSORIES		CONNECTOR FOR OPTIONAL PARTS	
ADAPTER PCB FOR WIRING(KRP50-2)		X11A	CONNECTOR(POWER SUPPLY FOR ADAPTER)
Ry1	MAGNETIC RELAY(ON/OFF)		
Ry2	MAGNETIC RELAY(HUMIDIFIER OPERATION)		
TeS10	TERMINAL BLOCK(FOR EXTERNAL OUTPUT)		

4. Electric Characteristics

Model	Power supply					FM	
	Hz	Volts	Voltage range	MCA	MOP	KW	FLA
VAM300GVJU	60	208V/230V	Max. 253V Min. 187V	1.6	15	0.09x2	1.4
VAM470GVJU				3.9	15	0.28x2	3.5
VAM600GVJU				4.2	15	0.28x2	3.7
VAM1200GVJU				8.1	15	0.28x4	7.6

Symbols:

MCA : Min. Circuit Amps (A)
MOP : Max. Overcurrent Protective Device (A)
KW : Fan Motor Rated Output(kW)
FLA : Full Load Amps(A)
FM : Fan Motor

Note:

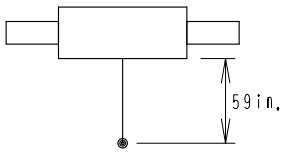
1. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. MCA/MFA
   MCA = 1.25 X FLA(FM1)+FLA(FM2)
4. Select wire size based on MCA.

4D073384

5. Sound Levels

5.1 Overall Sound Level

■ **Location of microphone**



Notes:

1. Operating sound is measured in an anechoic chamber.
2. The operating sound level becomes greater than this value depending on the operating conditions, reflected sound and peripheral noise.
3. Operating sound varies depending on operating and ambient conditions.
4. Ex-H: Extra-high, H: High, L: Low

dB(A)

Power source		Single phase 208V, 60Hz			Single phase 230V, 60Hz		
Ventilation mode		ERV mode					
Airflow rate		Ex-H	H	L	Ex-H	H	L
Model name	VAM300GVJU	34.5	31.5	21.5	37.0	33.5	25.5
	VAM470GVJU	40.0	37.0	33.0	42.0	38.5	35.0
	VAM600GVJU	40.1	37.0	33.1	42.5	39.0	36.0
	VAM1200GVJU	43.0	39.0	35.0	44.5	41.5	38.5

5.2 Sound Power Level

dBA

Power source		Single phase 208V, 60Hz		
Ventilation mode		ERV mode		
Airflow rate		Ex-H	H	L
Model name	VAM300GVJU	54.0	50.9	42.8
	VAM470GVJU	58.6	56.0	52.9
	VAM600GVJU	57.7	54.9	52.0
	VAM1200GVJU	62.2	58.8	51.4

Notes:

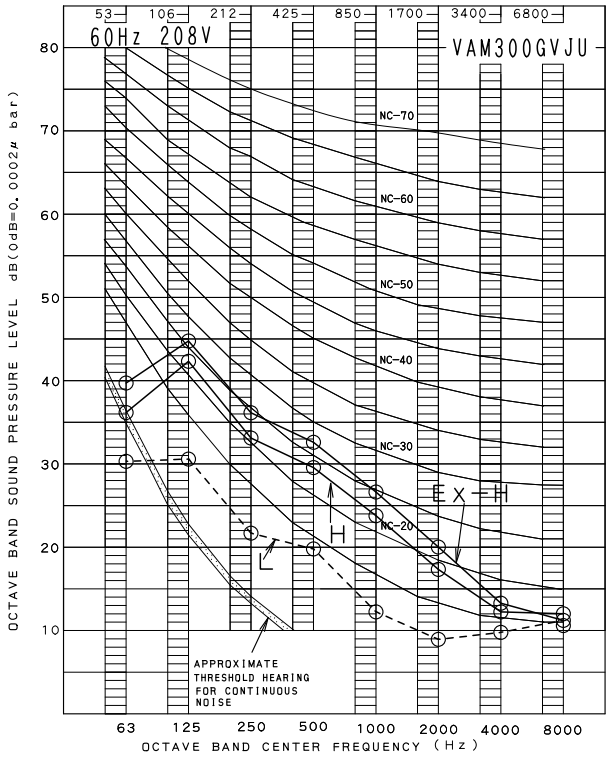
1. These values are based on AHRI Standard 260 “Sound Rating of Ducted Air Moving and Condtioning Equipment.”
2. Power level varies depending on operating and ambient conditions.
3. Ex-H: Extra-high, H: High, L: Low

5.3 Octave Band Level

5.3.1 208V

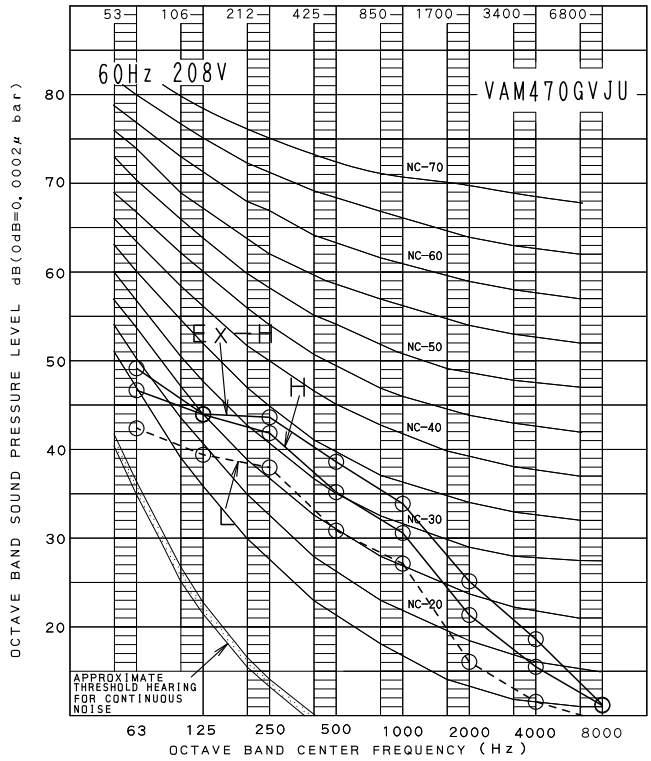
○——○ 208V, 60Hz

VAM300GVJU



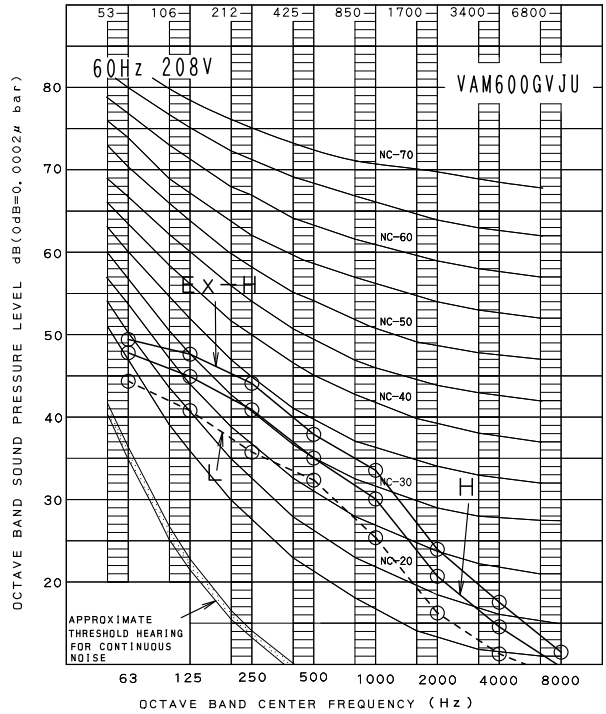
4D073489

VAM470GVJU



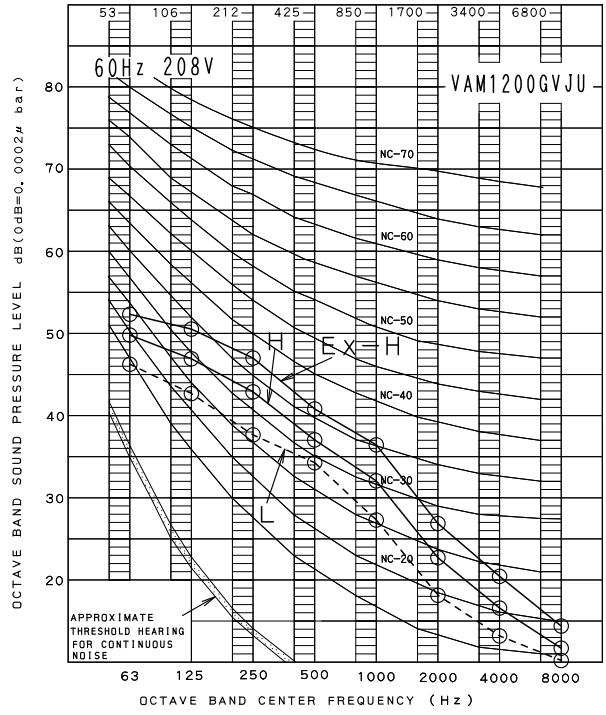
4D073491

VAM600GVJU



4D073493

VAM1200GVJU

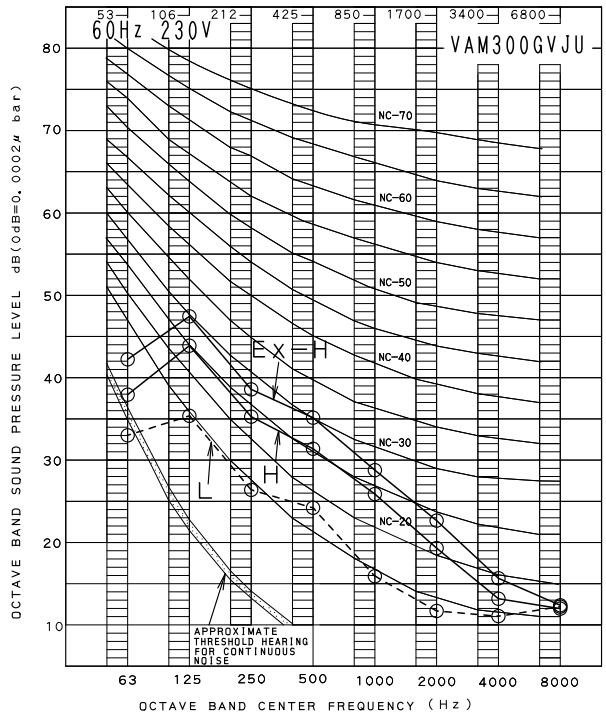


4D073495

5.3.2 230V

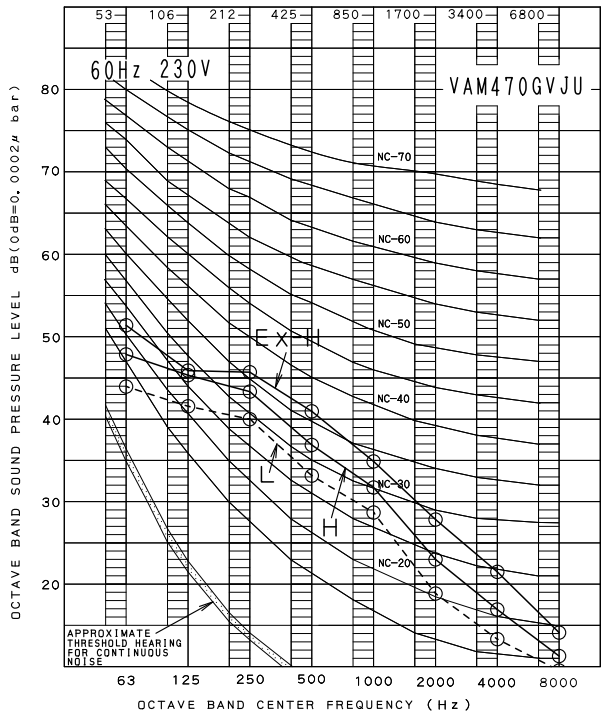
○——○ 230V, 60Hz

VAM300GVJU



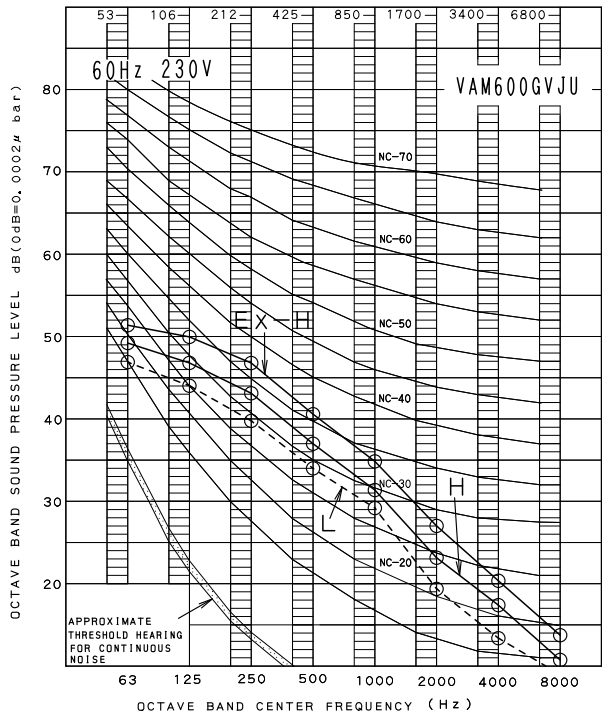
4D073490

VAM470GVJU



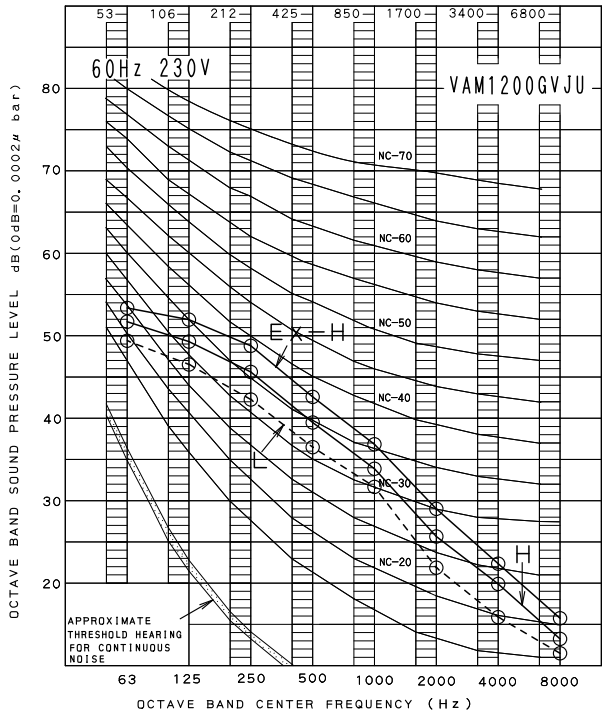
4D073492

VAM600GVJU



4D073494

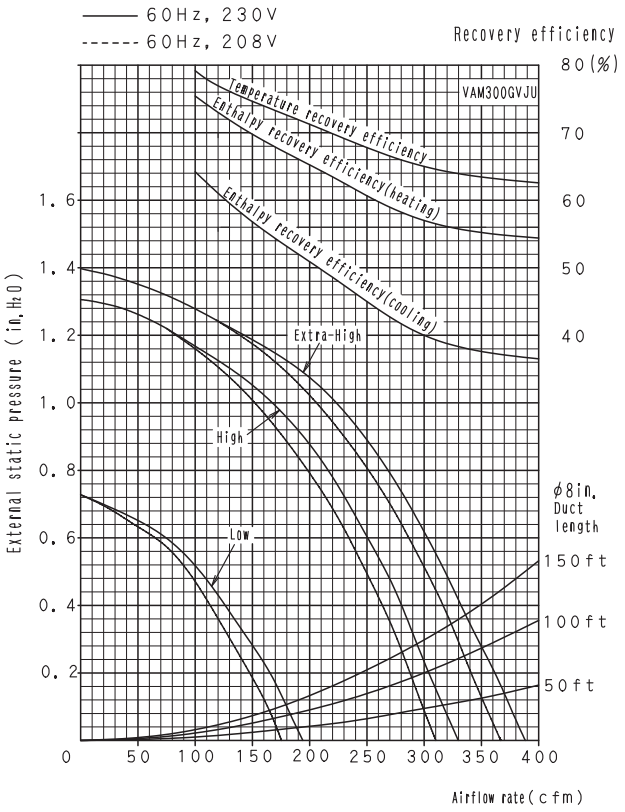
VAM1200GVJU



4D073496

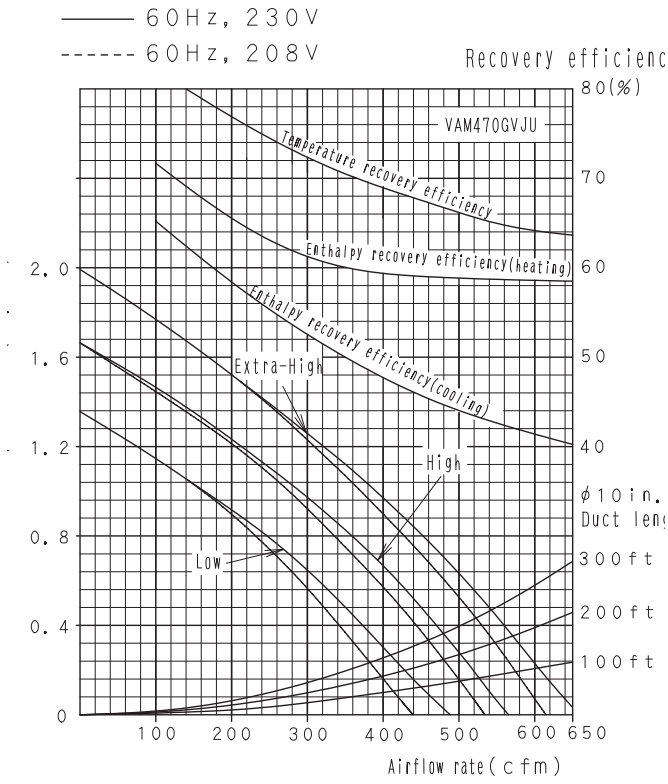
6. Performance Characteristics

VAM300GVJU



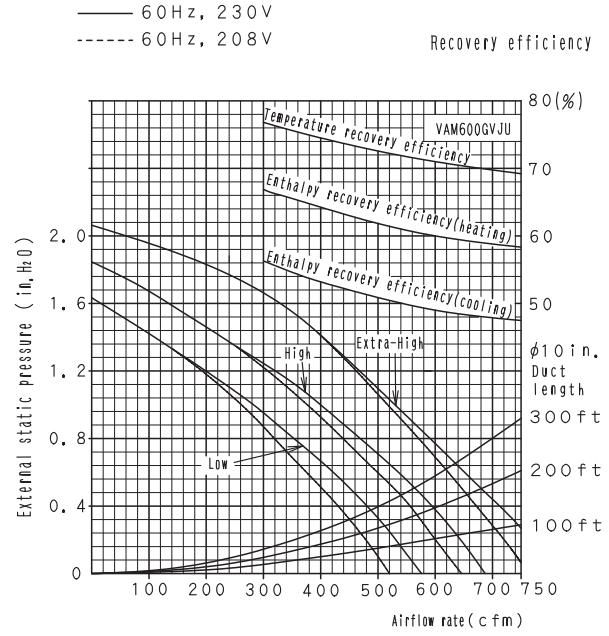
4D073497

VAM470GVJU



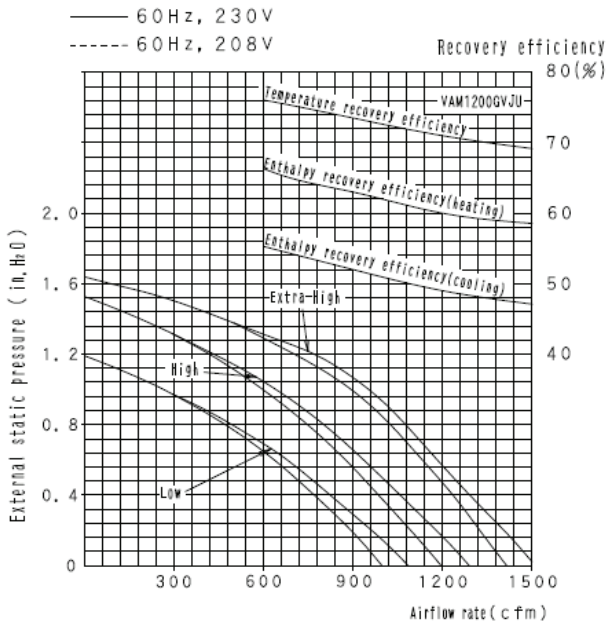
4D073498

VAM600GVJU



C: 4D073499

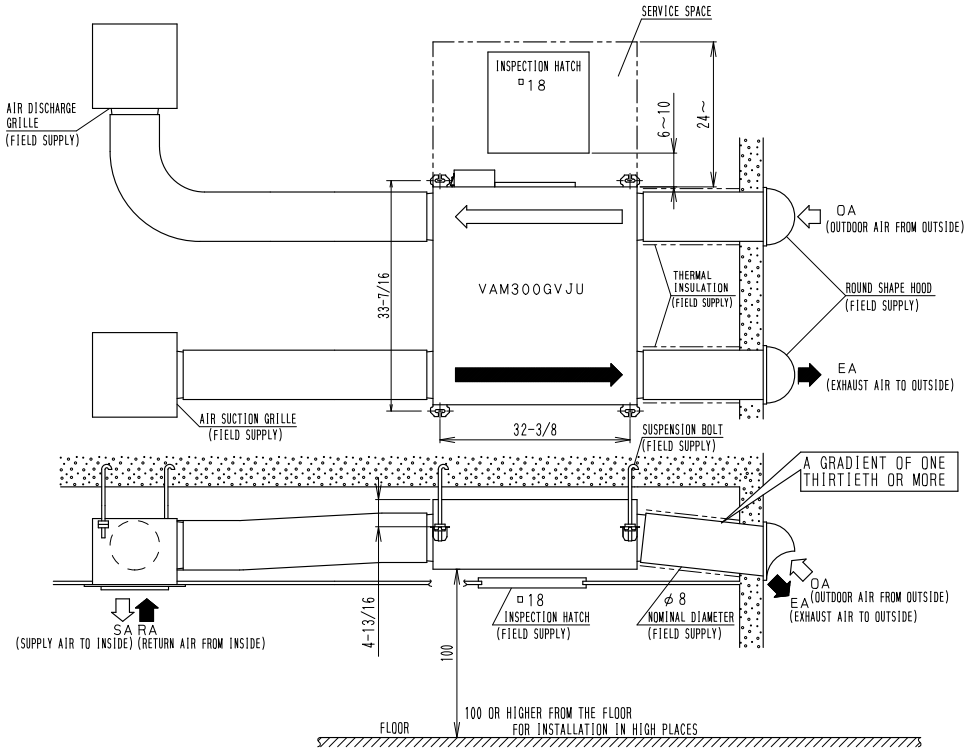
VAM1200GVJU



C: 4D073500

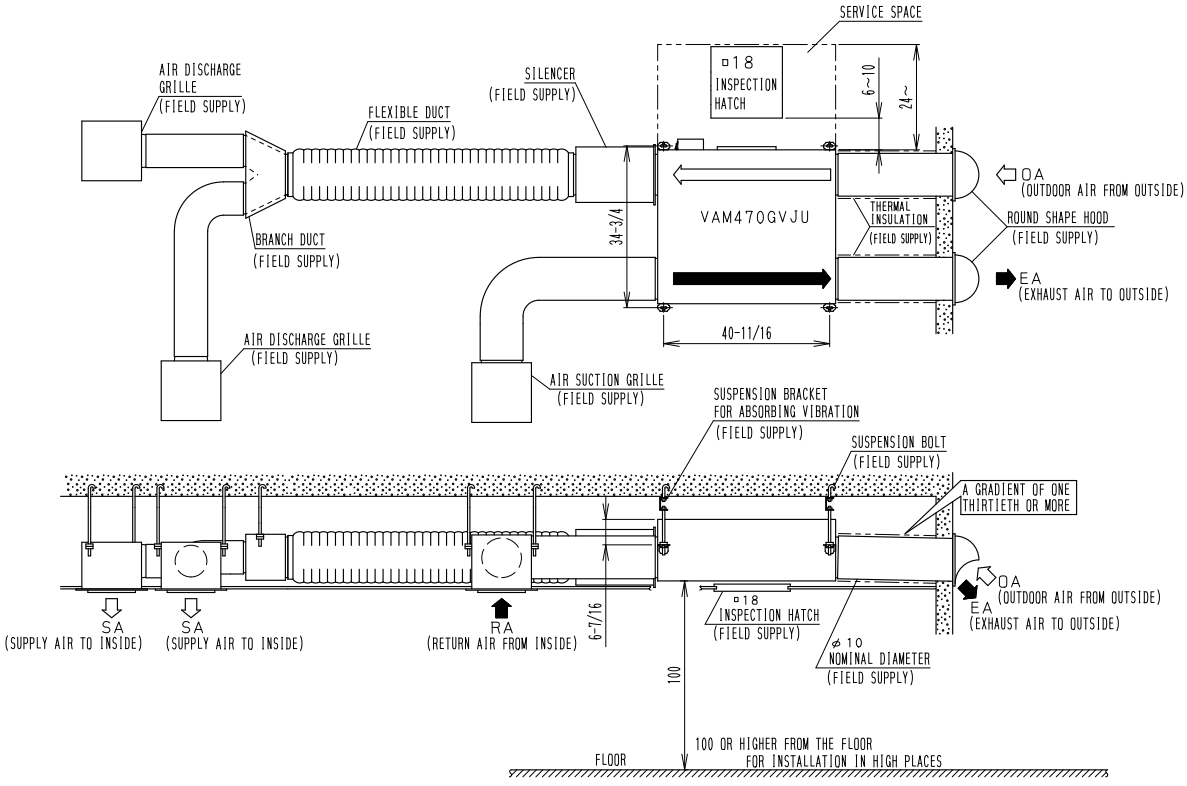
7. Installation Drawing

VAM300GVJU Unit (in.)



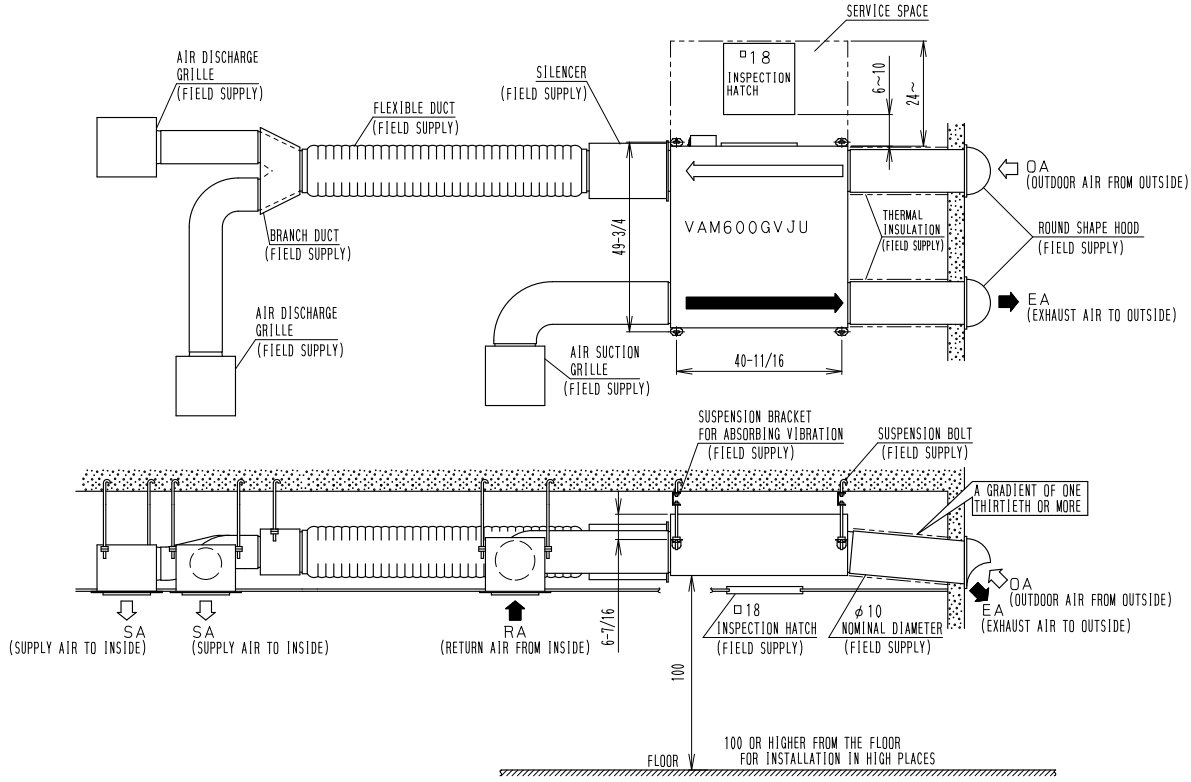
3D073389

VAM470GVJU Unit (in.)



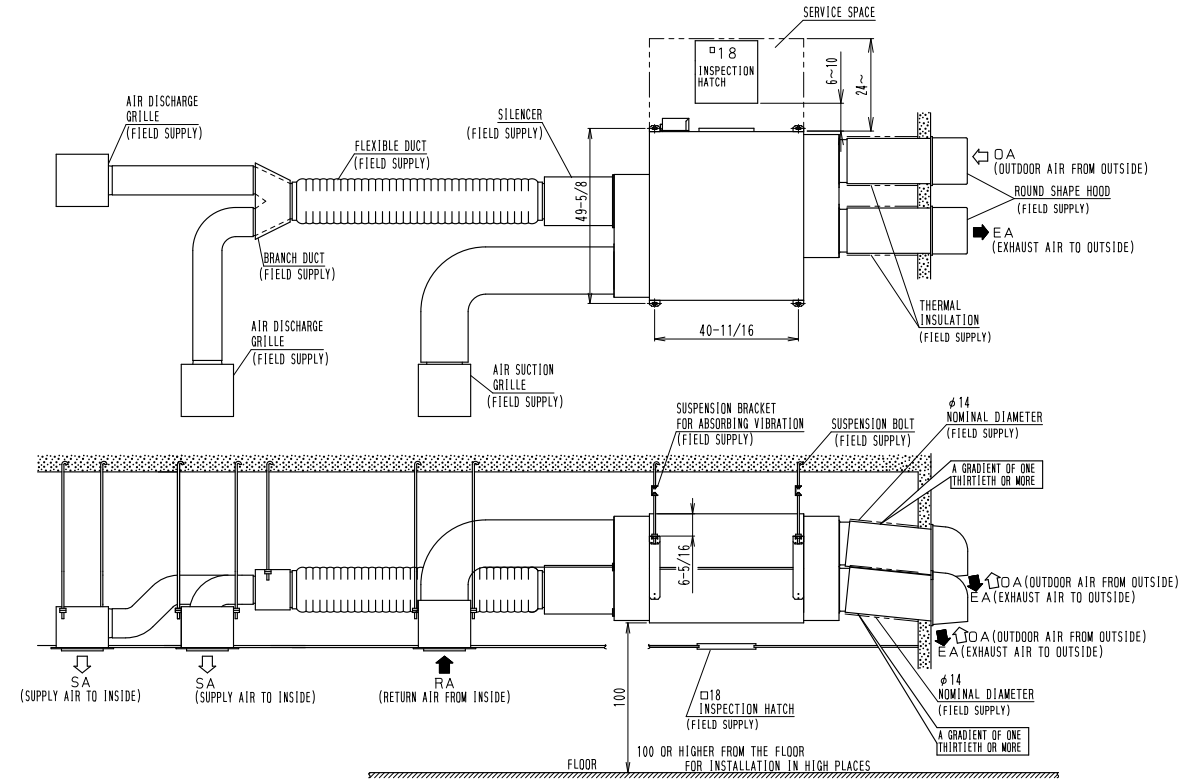
3D073390

VAM600GVJU Unit (in.)



3D073391

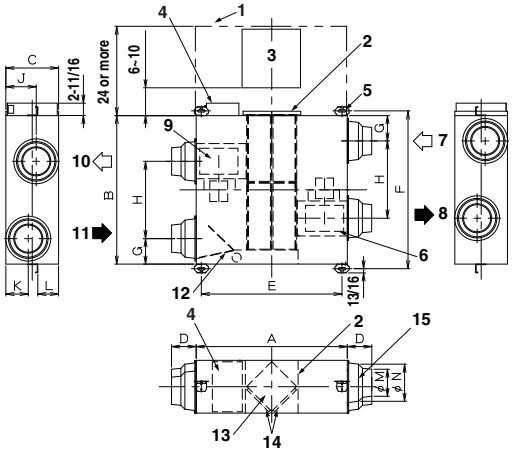
VAM1200GVJU Unit (in.)



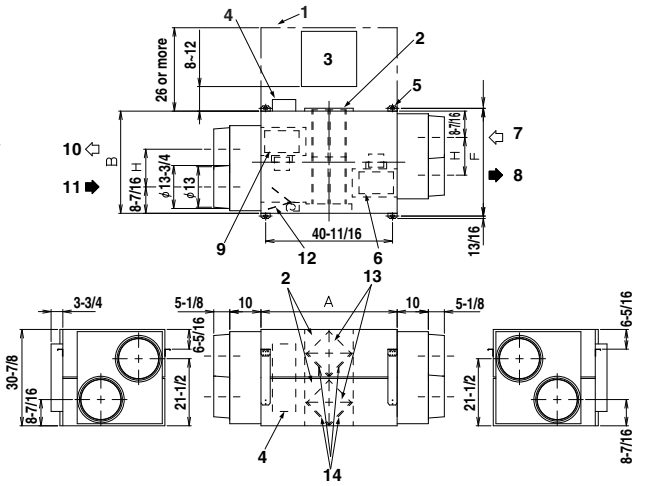
3D073392

8. Installation Manual

- **VAM300GVJU, VAM470GVJU, VAM600GVJU**



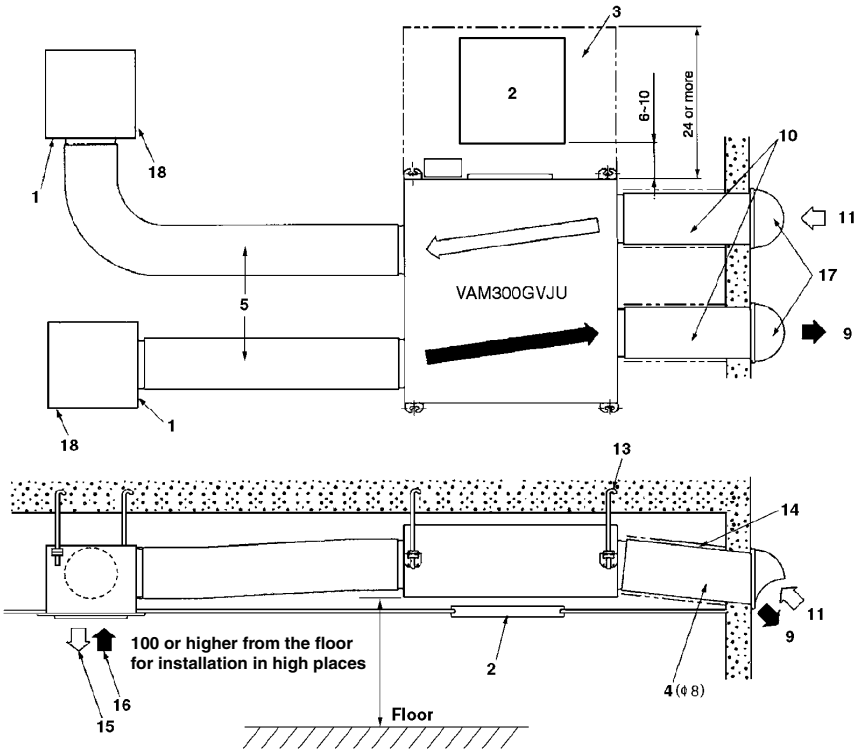
- **VAM1200GVJU**



(in.)

Model name	A	B	C	D	E	F	G	H	J	K	L	M	N
VAM300GVJU	34-5/8	31-1/2	12-1/16	3-5/16	32-3/8	33-7/16	5-3/8	16-3/8	7-3/16	5-3/16	4-13/16	7-3/4	8-3/8
VAM470GVJU	43-11/16	32-3/4	15-1/4	3-1/2	40-11/16	34-3/4	6	16-15/16	9-1/4	6	6-7/16	9-11/16	10-3/8
VAM600GVJU	43-11/16	47-13/16	15-1/4	3-1/2	40-11/16	49-3/4	6	24-1/2	9-1/4	6	6-7/16	9-11/16	10-3-8
VAM1200GVJU	43-11/16	47-13/16	–	–	–	49-5/8	–	19-5/8	–	–	–	–	–

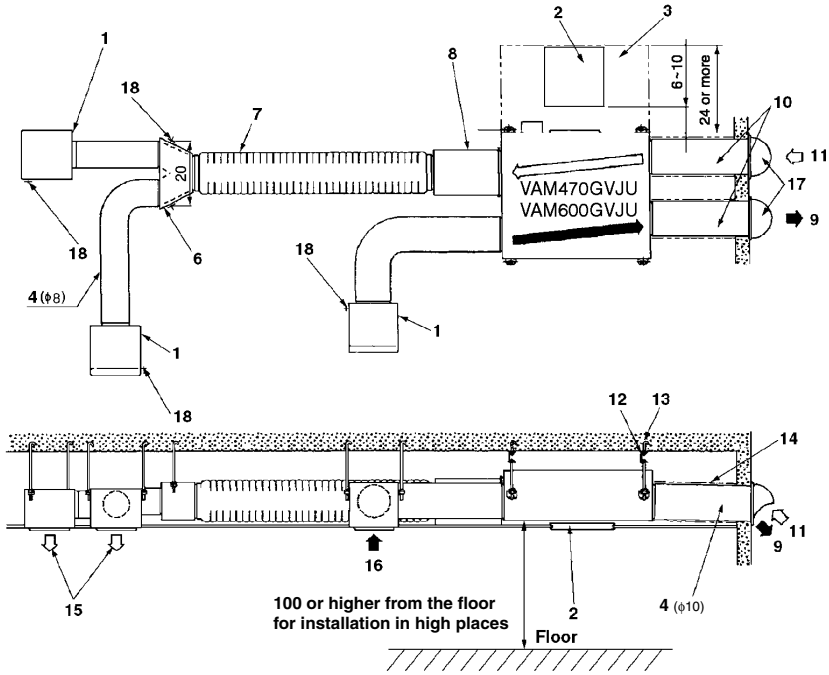
1



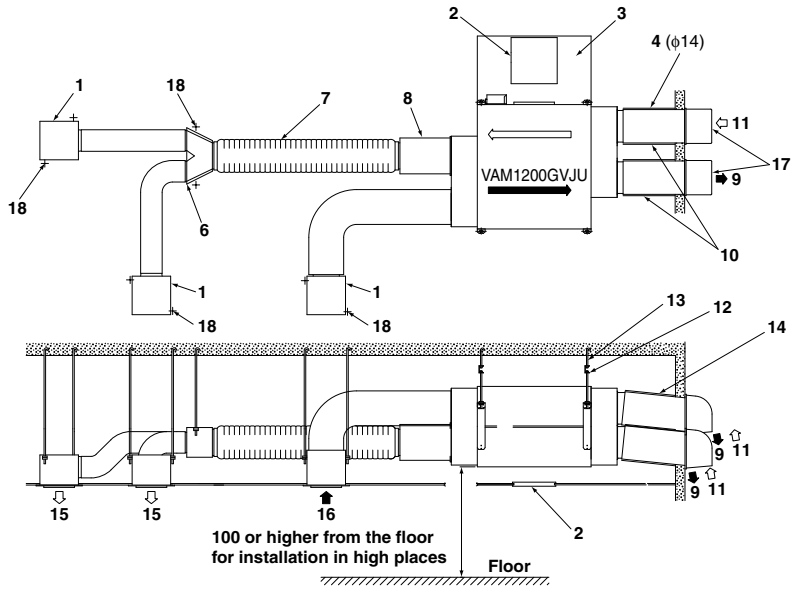
2

[1]

3P034928-7Q



3



4

[2]

3P034928-7Q

DAIKIN

VAM300GVJU
VAM470GVJU
VAM600GVJU
VAM1200GVJU

ERV (Energy Recovery Ventilator) Installation manual

CONTENTS

1. SAFETY CONSIDERATIONS 1
2. BEFORE INSTALLATION 2
3. SELECTING INSTALLATION SITE 3
4. PREPARATIONS BEFORE INSTALLATION 3
5. THE METHOD OF INSTALLATION 4
6. DUCT CONNECTION 5
7. SYSTEM 6
8. ELECTRIC WIRING WORK 8
9. FIELD SETTING AND TEST RUN 13
10. DESCRIPTION OF SYSTEM AND APPLICABLE PATTERNS 15

1. SAFETY CONSIDERATIONS

Read these "SAFETY CONSIDERATIONS for Installation" carefully before installing the ERV unit. After completing the installation, make sure that the unit operates properly during a test run.

Instruct the customer on how to operate and maintain the unit. Inform the customer that this Installation Manual should be kept with the Operation Manual for future reference.

Always use a licensed installer or contractor to install this product. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.

Meanings of **DANGER**, **WARNING**, **CAUTION** and **NOTE** Symbols:

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** ..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** ..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
It may also be used to alert against unsafe practices.

⚠ **NOTE** ..... Indicates situations that may result in equipment or property-damage accidents only.

⚠ DANGER

- **Do not ground units to water pipes, gas pipes, telephone wires or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.**
- **Safely dispose all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails, other metal or wood parts, including plastic packing materials used for transportation may cause injuries or death by suffocation.**

⚠ WARNING

- **Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock or fire.**
- **Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shocks, fire or the unit falling.**
- **Install the unit on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injuries.**
- **Take into account strong winds, typhoons or earthquakes when installing. Improper installation may result in the unit falling and causing accidents.**
- **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 state and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.**
- **Make sure that all wiring is secured, that specified wires are used and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.**
- **When wiring, position the wires so that the control box cover can be securely fastened. Improper positioning of the control box cover may result in electric shocks, fire or the terminals overheating.**
- **Before touching electrical parts, turn off the unit.**
- **Be sure to install a ground fault circuit interrupter if one is not already available. This helps prevent electrical shocks or fire.**
- **Do not change the setting of the protection devices. If the pressure switch, thermal switch or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.**
- **Locate the outdoor 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.**
- **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, may damage furniture, and cause electric shocks and fire.
- **Insulate the duct and the wall electrically when a metal duct is to be penetrated through the metal lattice and wire lattice or metal lining of a wooden structure wall. Improper duct work may cause electric shocks or fire.**
- **Make sure the temperature and humidity near the unit and the air suction/discharge air grille is within limit dictated by the usage conditions.**
  1. **Refrigerated truck or other locations with low temperatures.**
  2. **Place such as bathroom or heated pools subjected to moisture.**

  This may cause fires or electric leak or electric shocks.
- **Make sure that a snow protection measure is taken. If no protection snow may enter through the outdoor ducts, and cause damaging furniture and electric shock and fire.**

3P034928-7Q

⚠ CAUTION

- **Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.**
- **Do not allow children to play on or around the unit to prevent injury.**
- **Be careful when transporting the product.**
- **Do not install the unit in the following locations:**
  (a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in damage.
  (c) Near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.
  (d) Where flammable gas may leak, where there is carbon fiber or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause a fire.
- **Do not allow exhaust air to enter the outdoor air intake vent.**
  This may cause the air of the room to become contaminated, harming the health.

⚠ NOTE

- **Install the power supply and control wires for the unit at least 3.3 feet away from televisions or radios to prevent image interference or noise. Depending on the radio waves, a distance of 3.3 feet may not be sufficient to eliminate the noise.**
- **Dismantling the unit and additional parts must be done in accordance with the relevant local, state and national regulations.**
- **This unit is an appliance that should not be accessible to the general public.**
- **Insulate the two outdoor ducts and the supply air duct to prevent condensation.**
  If this is not done completely, water may enter the building, may damage furniture, etc.
- **In areas where insects are easily attracted to a light, such as where there is a window or light near a ventilation opening, extremely small insects can sometimes infiltrate the room by passing through the ventilation opening.**
  Since totally preventing against infiltration by extremely small insects is difficult, it is important to consider a serious solution like a filter box (field supply) during the design process to protect against insect infiltration.

2. BEFORE INSTALLATION

The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!

1. Decide upon a line of transport.
2. Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.

Hold the unit by the hanger brackets (4) when opening the crate and moving it, and do not lift it holding on to any other part (especially the duct connecting flange).

2-1 PRECAUTIONS

- Be sure to instruct customers how to properly operate the unit (especially maintenance of air filter, and operation procedure) by having them carry out operations themselves while looking at the manual.
- Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.

2-2 DIMENSIONS

- **See figure 1 (All dimensions are in inches.)**
  1. Service space for the heat exchanger cores, the air filters, control box and fans
  2. Service cover
  3. Inspection hatch (□18 in.)
  4. Control box
  5. Hanger bracket (7/16×1-9/16 in. oval hole)
  6. Exhaust fan
  7. OA (Outdoor air) Outdoor air from outside
  8. EA (Exhaust air) Exhaust air to outside
  9. Supply air fan
  10. SA (Supply air) Supply air to inside
  11. RA (Return air) Return air from inside
  12. Damper
  13. Heat exchanger core
  14. Air filters
  15. Duct connecting flange

[in.]

Model name	Weight (LBS)	Applicable nominal diameter of duct
VAM300GVJU	71	ϕ8
VAM470GVJU	121	ϕ10
VAM600GVJU	148	ϕ10
VAM1200GVJU	346	ϕ14

2-3 ACCESSORIES

Check the following accessories are included with your unit.

Name	Duct connecting flange	M4 tapping screw (For connecting duct)	Wire harness for external damper operation
Quantity	4 pcs.	Refer to Table 1	1 pc.
Shape			

Name	Clamp	Insulation tube	
Quantity	5 pcs.	1 pc.	(Other) • Installation manual • Operation manual
Shape			

Table 1
Quantity of tapping screw

Model name	Quantity
VAM300GVJU	16 pcs.
VAM470GVJU, 600GVJU, 1200GVJU	24 pcs.

2-4 OPTIONAL ACCESSORIES

- This unit can be made a part of different systems: as part of the interlocking system used together with VRV System, and as an independent system using only the ERV. A remote controller is required for this unit when using the unit as an independent system.

Table 2	Remote controller type
Interlocking system or independent system	BRC1E71

NOTE) 1
If you use a remote controller which is not listed in above table, please consult your dealer.

- When installing the unit, have ready a round shape hood, an air discharge grille and an air suction grille and other parts needed for the installation.

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING INSTALLATION AND CHECK AFTER INSTALLATION IS FINISHED.

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Is the outdoor duct installed to outside with down slope?	Penetration of rain water may drip.	
Is the unit fully insulated?	Condensate water may drip.	
Dose the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Is wiring correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	Dangerous at electric leakage.	
Is wiring size according to local, state or national codes?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of the unit?	It may result in insufficient ventilation or unusual operating noise.	

Please check all items listed in the “SAFETY CONSIDERATIONS” above once again.

b. Items to be checked at time of delivery

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

c. Points for explanation about operations

The items with ⚠WARNING and ⚠CAUTION marks in the operation manual are the ones pertaining to possibilities for bodily injury and material damage in addition to the general usage of the product. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your customers to read the operation manual.

3. SELECTING INSTALLATION SITE

⚠ CAUTION

- When moving the unit during or after unpacking, make sure to lift it by holding its hanger brackets. Do not exert any pressure on other parts, especially duct connecting flange.
- Attach additional thermal insulation material to the unit body when it is believed that the temperature and the relative humidity in the ceiling exceed 86°F and 80%.
  Use glass wool, polyethylene foam, or similar with a thickness of 7/8 in. or more as thermal insulation material.

(1) Select an installation site where the following conditions are fulfilled and that meet with your customer’s approval.

- Install in a place which has sufficient strength and stability. (Beams, ceiling and other locations capable of fully supporting the weight of the unit.)
  Insufficient strength is dangerous. It may also cause vibration and unusual operating noise.
- Where nothing blocks air passage.
- Do not install the unit directly against a ceiling or wall. (If the unit is in contact with the ceiling or wall, it can cause vibration.)
- Where sufficient clearance for maintenance and service can be ensured.

[PRECAUTION]

- Install the unit, power supply wiring and transmission wiring at least 40 in. away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 40 in. may not be sufficient enough to eliminate the electric noise.)
- The bellows may not be used in some districts, so exercise caution. (Contact your local government office or fire department for details.)

(2) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.
(Installation pitch is mentioned as follows. Refer to it to check for points requiring reinforcing.)

4. PREPARATIONS BEFORE INSTALLATION

(1) Confirm the positional relationship between the unit and suspension bolts. (Refer to figure 1)
Leave space for servicing the unit and include an inspection hatch. (Always open a hole on the side of the control box so that the air filters, heat exchanger cores and fans can be easily inspected and serviced.)

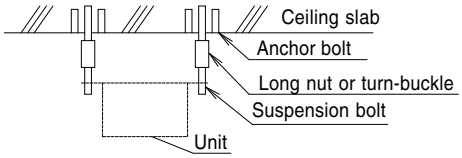
(2) Make sure the range of external static pressure is not exceeded.
(See the fan speed and static pressure performance characteristic drawing as well as the general catalog for the range of the external static pressure setting.)

(3) Open the installation hole. (Pre-set ceilings)

- Once the installation hole is opened in the ceiling where the unit is to be installed, pass transmission wiring and remote controller wiring to the unit’s wiring hole.
  See “**8-2 WIRING EXAMPLE**”.
- After opening the ceiling hole, make sure ceiling is level if needed. It might be necessary to reinforce the ceiling frame to prevent shaking.
  Consult an architect or carpenter for details.

(4)Install the suspension bolts.

(Use 1/2"UNC suspension bolts.)
Use a hole-in-anchor, sunken insert, sunken anchor for existing ceilings, or other part to be procured in the field to reinforce the ceiling to bearing the weight of the unit.



Note: All the above parts are field supply.

5. THE METHOD OF INSTALLATION

⟨⟨As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by Daikin.⟩⟩

- **Example of Installation, VAM300GVJU (See figure 2), VAM470GVJU, VAM600GVJU (See figure 3), VAM1200GVJU (See figure 4)**
  1. **Air suction/discharge grille (field supply)**
  2. **Inspection hatch (□18 in.) (field supply)**
  3. **Service space for the heat exchanger cores, air filters, control box and fans**
  4. **Duct (field supply)**
  5. **Duct (field supply) or flexible duct (field supply)**
  6. **Branch duct (field supply) (only for VAM470GVJU~1200GVJU)**
  7. **Flexible duct (field supply)**
  8. **Silencer (field supply)**
  9. **EA (Exhaust air to outside)**
  10. **Thermal insulation (field supply)**
  11. **OA (Outdoor air from outside)**
  12. **Suspension bracket for absorbing vibration (field supply)**
  13. **Suspension bolt (field supply)**
  14. **Gradient of down to outside ≥ 1/30**
  15. **SA (Supply air to inside)**
  16. **RA (Return air from inside)**
  17. **Round hood (field supply)**
  18. **Suspension bolt position**

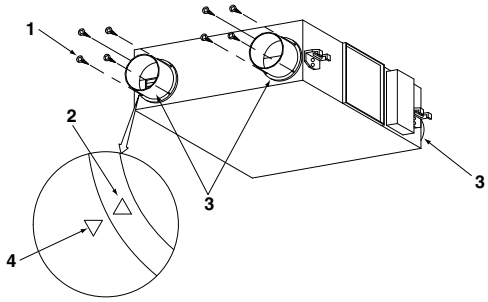
<Cautions on installing the ducts>

- When using the unit at a quiet place, use a silencer (field supply) and flexible duct (field supply) at the part of the air discharge outlet on the indoor side "SA" (supply air to inside) of the unit to counter the noise.
- When selecting installation materials, consider the required volume of airflow and noise level in that particular installation.
- When the outdoor air infiltrates into the ceiling and the temperature and humidity in the ceiling become high, insulate the metal portions of the unit.

(1)Attach duct connecting flange

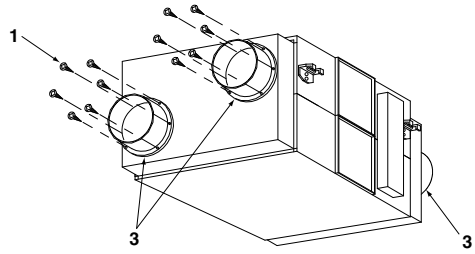
<VAM300GVJU>

Attach the 4 included duct connecting flanges using the included screws.
Match the symbol on the duct joints (the triangle △ on the flange) to the position marking on the unit when attaching.



<VAM470GVJU, VAM600GVJU, VAM1200GVJU>

Attach the 4 included duct joints using the included screws.



[In case of VAM1200GVJU]

1. **Screw**
2. **Duct joint symbol**
3. **Duct connecting flange**
4. **Unit position marking**

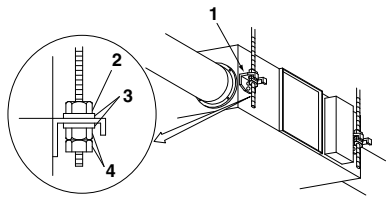
Model	Number of screws
VAM300GVJU	16
VAM470GVJU	24
VAM600GVJU	24
VAM1200GVJU	24

(2)Installing the unit

Pass hanger bracket over the bolts and secure with commercially available washers and nuts.
(When installing the unit, make sure there are no foreign objects (plastic, paper, etc.) inside the fan housing by looking inside through the duct hole before connecting the duct.)

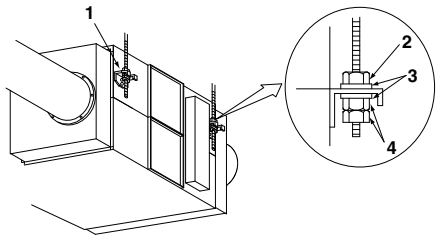
- When reversing the hanger brackets in order to install the unit upside down, be sure to secure them with the original screws.
- Attach the indoor (SA, RA) and outdoor (EA, OA) ducts by referring to figure 2 to 4.

<VAM300GVJU, VAM470GVJU, VAM600GVJU>



3P034928-7Q

<VAM1200GVJU>

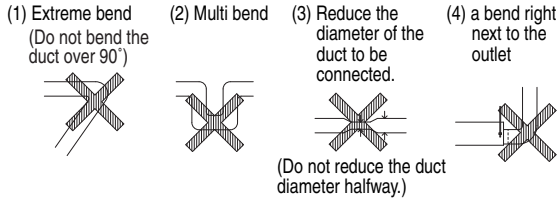


1. Hanger bracket
2. Nut
3. Washer
4. Double nuts

6. DUCT CONNECTION

<Perform duct work by following instructions below>

1. Do not connect the ducts as shown below.



2. The minimum radius of bends for flexible ducts are as follows.
4 in. diameter duct : 4 in.
6 in. diameter duct : 6 in.
8 in. diameter duct : 12 in.
10 in. diameter duct : 15 in.

3. To prevent air leakage, wind aluminum tape round the section after the duct connecting flange and the duct are connected. (Refer to the figure below.)

4. To prevent air leakage, install the opening of the indoor air intake as far as from the opening of the exhaust suction.

5. Use the duct applicable to the unit used (Refer to figure 1.)

6. Install the two outdoor ducts with down slope (slope of 1/30 or more) to prevent entry of rain water. Also, provide insulation for both ducts to prevent dew formation.
(Material : Glass wool of 1 in. thick)
If the unit is going to be used in cold places where the outside temperature reaches 14°F or below, insulate the indoor ducts as well.

7. If the level of temperature and humidity inside the ceiling is always high, install a ventilation equipment inside the ceiling.

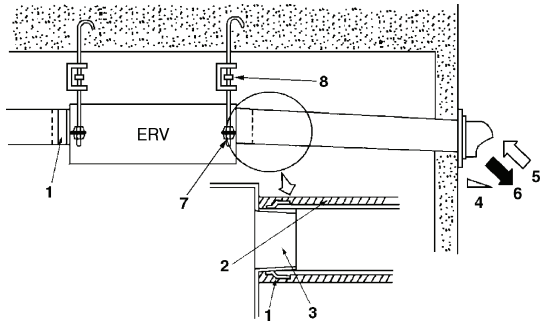
8. Insulate the duct and the wall electrically when a metal duct is to be penetrated through the metal lattice and wire lattice or metal lining of a wooden structure wall.

9. Using flexible or silent ducts can be effective in reducing the air discharge sound of the supply air to inside (SA). Select materials keeping in mind the fan speed and operating sound of the unit. Consult your Daikin dealer for selection.

10. Set the pitch between the exhaust air outlet (EA) and the outdoor air intake (OA) to at least 3 times the duct diameter.

11. Do not use a bent cap or a round hood as the outdoor hood if they might get rained on directly. (We recommend using a deep hood (field supply).)

12. When using a deep hood, make sure the duct from the deep hood (outer wall) to the unit is at least 40 in. long.

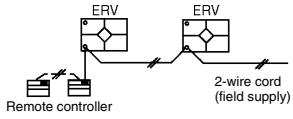
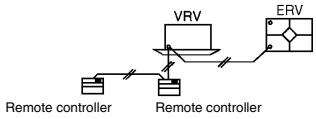
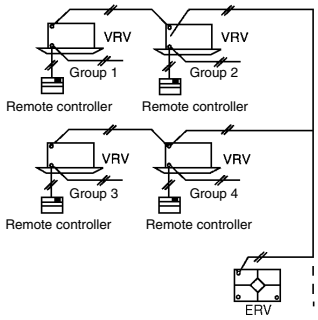


Select the proper materials taking fan speed and noise levels into consideration before installation.

1. Aluminum tape (field supply)
2. Insulation material (field supply)
3. Duct connecting flange (accessory)
4. Slope over 1/30
5. OA (Outdoor air) Outdoor air from outside
6. EA (Exhaust air to outside)
7. Suspension bolt (field supply)
8. Suspension bracket for absorbing vibration (field supply)

7. SYSTEM

7-1 Independent system
Interlocking system with VRV or SkyAir system

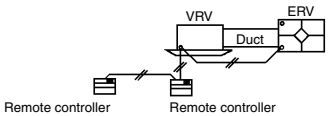
SYSTEM			Standard method	Related items in Electric wiring
Independent system			• Up to 16 units can be controlled with the remote controller. (A system with two remote controls can be created in the main/sub setting.) • All ERV operations can be used and indicated. • Operation monitor output and humidifier operation are possible using the Adapter PCB. • Remote control cord should be field supply. (Maximum cord length : 1640 ft.)	10-1-1
Interlocking system with VRV or SkyAir system	1-group linked operation system		• A combined total of up to 16 air conditioners and the ERV can be controlled. • The ERV mode can be operated independently when air conditioners are not being used. • Using the field setting of the remote controller for air conditioners, various settings such as pre-cool/pre-heat reservation on/off, ventilation rate, ventilation mode, etc.	10-2-1
	Multi-group (2 or more) linked operation system		• Since all VRV units are connected to a single line in view of installation, all VRV units are subjects for operation. • If there are problems operating all VRV units, do not use this system.	10-2-3

NOTE

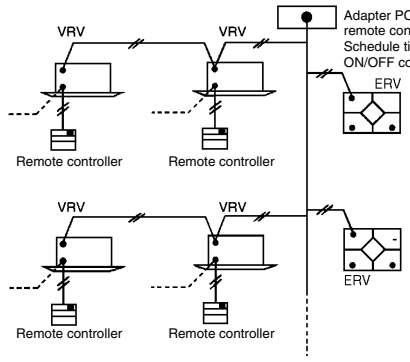
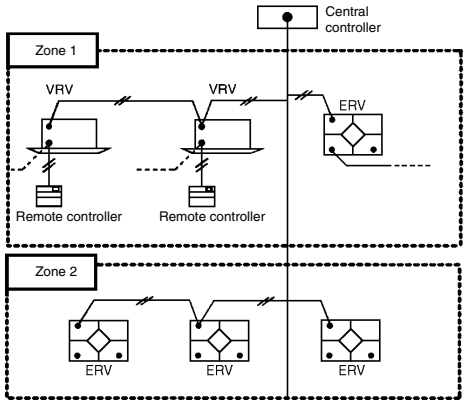
(1) Adapter PCB : KPR50-2 ; Installation box for adapter PCB : KRP50-2A90

(2) Operation of two or more group is not possible with a direct duct connection as below.

(3) The direct duct connection can also be selected for 1-group linked operation system.

SYSTEM		Standard method	Related items in Electric wiring
Direct duct connection system		• The ERV operates only when the air conditioner fan is ON. • When the air conditioner is not being used, the ERV can be operated in circulation or ventilation modes. • Other specifications are the same as those of the standard system.	10-2-2

7-2 CENTRALIZED CONTROL SYSTEM (VRV SYSTEM)

SYSTEM			Standard method	Related items in Electric wiring
Centralized control system	"All"/individual control system		• Use of the ON/OFF controller, Adapter PCB for remote control or Schedule timer enables centralized control of the entire system. (maximum of 64 groups) • The ON/OFF controller can turn on or off the individual units. • The schedule timer and ON/OFF controller can be used together. However, the Adapter PCB for remote control cannot be used with another centralized control device.	10-3-2
	Zone control system		• Use of the centralized controller enables zone control via the centralized control line. (maximum of 64 zones) • The centralized controller displays the "Filter" indication and abnormality warnings, and enables resetting. • The centralized controller allows ventilation operation for each zone independently.	10-3-3

[Caution]

(1) Adapter PCB : KRP50-2, schedule timer DST301BA61, ON/OFF controller. DCS301C71, Central remote controller: DCS302C71

8. ELECTRIC WIRING WORK

- Shut off the power supply before doing any work.
- All field supplied parts, materials and electric works must conform to local codes.
- Use copper wire only.
- All wiring must be performed by an authorized electrician.
- See also the “Wiring Diagram label” attached to the control box cover when laying electrical wiring.
- Wire the remote controller as shown in the wiring diagram label. See the “Remote Controller Installation Manual” for details on how to install and lay the wiring for the remote controller.
  Install a ground fault circuit interrupter for the power supply wiring.
- Make sure the ground resistance is no greater than 100Ω . This value can be as high as 500Ω when using a ground fault circuit interrupter since the protective ground resistance can be applied.
- Do not let the ground wire come in contact with gas pipes, water pipes, lightning rods, or telephone ground wires.
  - Gas pipes: gas leaks can cause explosions and fire.
  - Water pipes: cannot be grounded if hard vinyl pipes are used.
  - Telephone ground and lightning rods: the ground potential when struck by lightning gets extremely high.
- Do not turn on the power supply (wiring interrupter or ground fault circuit interrupter) until all other work is done.
- Use vinyl cord with sheath or cable (2 wire) of AWG18-16 for transmission wiring.

⚠ CAUTION

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

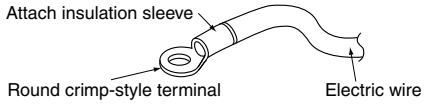
8-1 PRECAUTIONS WHEN LAYING POWER SUPPLY WIRING

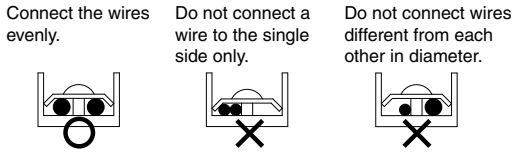
[PRECAUTION]

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

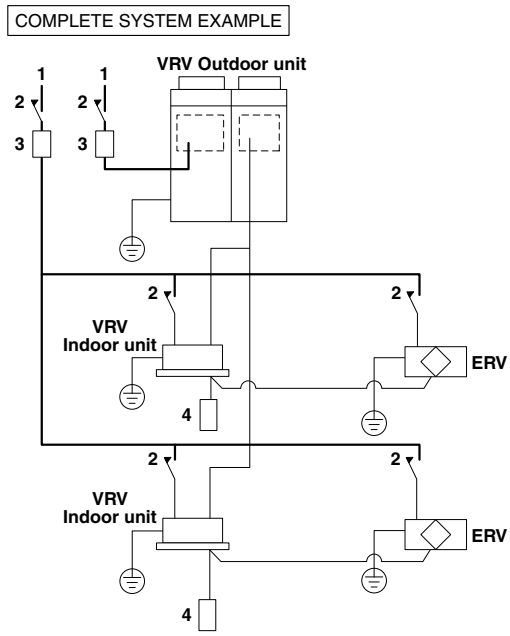
	Tightening torque (ft·lbf)
Terminal block for remote controller/ Transmission wiring (X2M)	0.59 – 0.71
Power supply terminal block (X1M)	0.88 – 1.06
Ground terminal (M4)	1.07 – 1.43

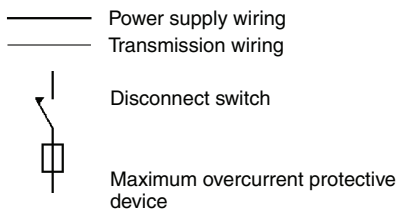
6. Connect round crimp-style terminals provided with insulation sleeves to the terminal block for power supply.
   Be sure to follow the instructions provided below if the specified terminals cannot be used.
   Otherwise, abnormal heat may be generated as a result of the loosening of the wires.





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





1. Power supply
2. Disconnect switch
3. Maximum overcurrent protective device
4. Remote controller

1. Component electrical specifications

Units			Power supply		Fan motor	
Model		Voltage range	MCA	MOP	KW	FLA
VAM300GVJU	Single phase 208/230V 60 Hz	Max.253V Min.187V	1.6	15	0.09 × 2	1.4
VAM470GVJU			3.9	15	0.28 × 2	3.5
VAM600GVJU			4.2	15	0.28 × 2	3.7
VAM1200GVJU			8.1	15	0.28 × 4	7.6

Symbol) MCA: Minimum Circuit Ampacity (A)
MOP: Maximum Overcurrent Protective Device (A)
KW: Motor Rated Output (kW)
FLA: Full Load Ampacity (A)

⚠ NOTE

1. When using a ground fault circuit interrupter, make sure to select one useful also to protection against overcurrent and short-circuit.
2. The length of the transmission wiring and remote controller wiring are as follows.
- Length of outdoor-indoor transmission wiring … max 3280 ft. (total wiring length 6560 ft.)
- Length of remote controller wiring between indoor unit and remote controller … max 1640 ft.

8-2 WIRING EXAMPLE

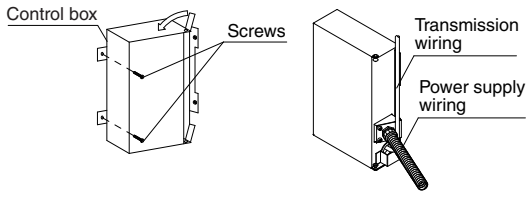
⚠ CAUTION

Before opening the control box, be sure to turn off the power supply of the units and other devices connected with the units.

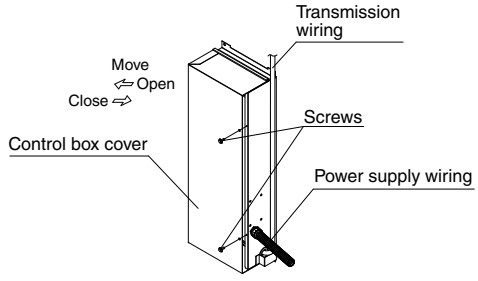
<OPENING THE CONTROL BOX>

1. Remove the screws fixing the cover and open the control box as shown below.
2. Secure the power supply wiring and the transmission wiring with the clamp, as shown in 8-2.

<VAM300GVJU, VAM470GVJU, VAM600GVJU>



<VAM1200GVJU>



3P034928-7Q

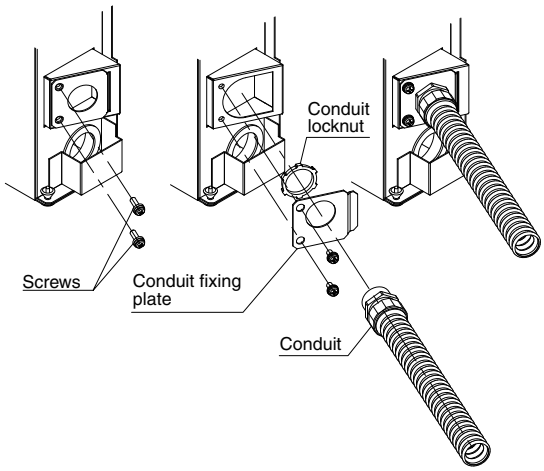
⚠ CAUTION

If the unit is installed upside down, be sure to use a liquid-tight connector of conduit for power supply and ground wiring to prevent water from infiltrating.

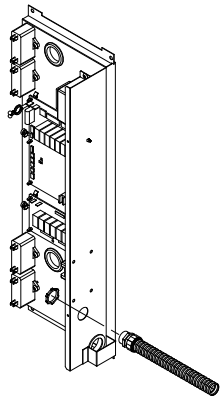
<FIX THE CONDUIT (FIELD SUPPLY)>

<VAM300GVJU, VAM470GVJU, VAM600GVJU>

- To make a conduit connection for power supply and ground wiring, remove the screws and detach the conduit fixing plate from the control box.
- Attach the conduit to the conduit fixing plate and fasten it with a conduit locknut.
- Then, put them back to the original position with the screws.



<VAM1200GVJU>

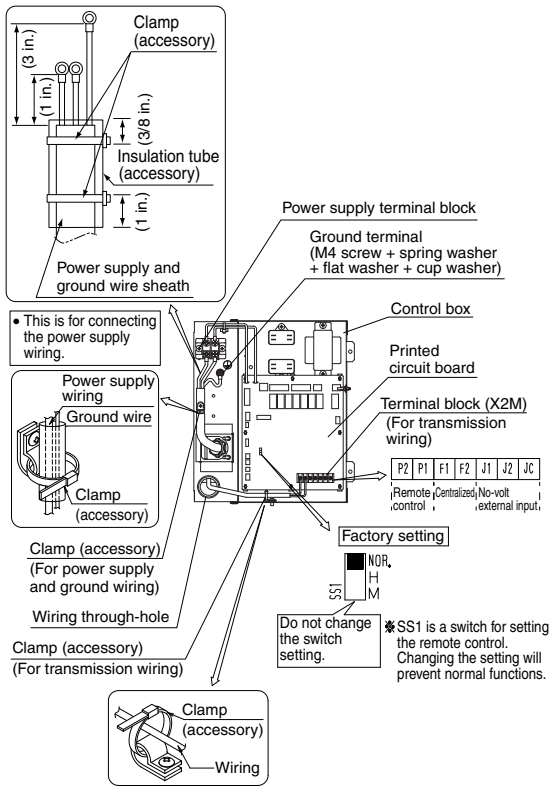


⚠ NOTE

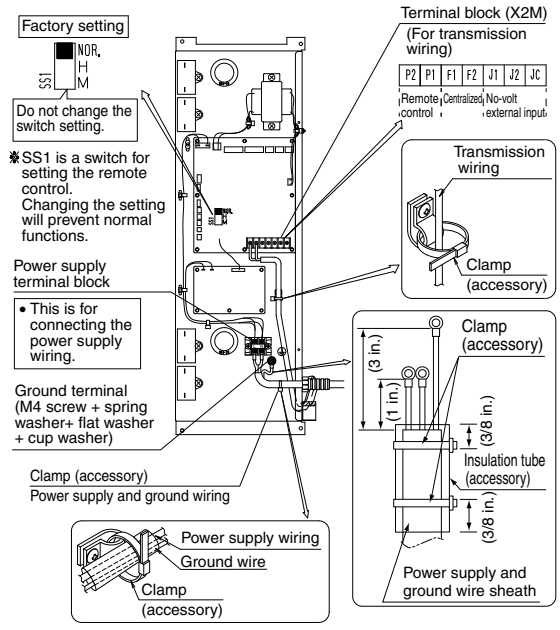
In case of installing the optional Adapter PCB the installation box (option) is needed. See 8-4 on how to install it.

<WIRING PROCEDURE>

<VAM300GVJU, VAM470GVJU, VAM600GVJU>



<VAM1200GVJU>

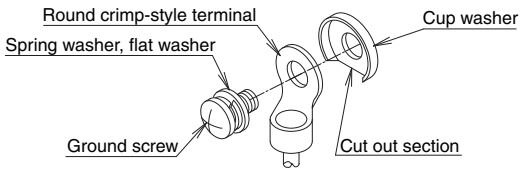


⚠ CAUTION

- Use an appropriate screwdriver for tightening the terminal screws.
  A screwdriver with a small head will damage the head and make proper tightening impossible.
  Over-tightening the terminal screws may break them. See the table for the tightening torque of the terminal screws shown in 8-1.
- Be sure to attach sealing material or putty (field supply) to the hole of wiring to prevent the infiltration of water as well as any insects and other small creatures from outside. Otherwise a short-circuit may occur inside the control box.
- When clamping the wires, be sure no pressure is applied to the wire connections by using the included clamp to make appropriate clamps. Also, when wiring, make sure the control box cover fits snugly by arranging the wires neatly and attaching the control box cover firmly.
  When attaching the control box cover, make sure no wires get caught in the edges. Pass wiring through the wiring through holes to prevent damage to them.
- Make sure the remote controller wiring, the wiring between the units and other electrical wiring do not pass through the same locations outside of the unit, separating them by at least 2 in., otherwise electrical noise (external static) could cause mistaken operation or breakage.

3. Be sure to connect a ground wire.

〈**Precautions when connecting a ground wire**〉
When pulling the ground wire out, wire it so that it comes through the cut out section of the cup washer.
(An improper ground connection may prevent a good ground from being achieved.)



4. Be sure to connect the remote control wiring and the transmission wiring to the terminals on the X2M terminal block.

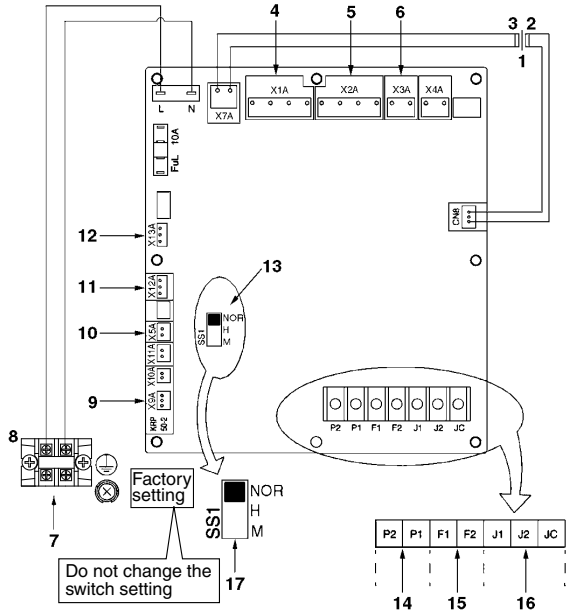
[PRECAUTIONS]

- Refer to the “Remote Controller Installation Manual” on how to install and lay the wiring for the remote controller.
- Do not, under any circumstances, connect the power wiring to the remote controller or transmission wiring terminal block.
  Doing so can destroy the entire system.
- Connect the remote controller and transmission wiring their respective terminal blocks.
- Use non-shielded wire in transmission wiring.

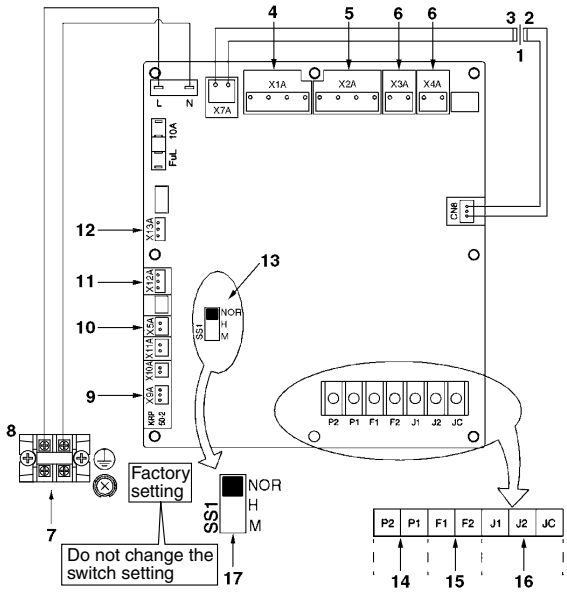
8-3 Power supply connection, transmission wire terminals and switches on the printed circuit board

- Connect the power supply to the L_1 and L_2 terminals.
- Secure the power supply with the power cord clamp.
- Be sure to give a grounding connection.

<VAM300GVJU, VAM470GVJU, VAM600GVJU>



<VAM1200GVJU>

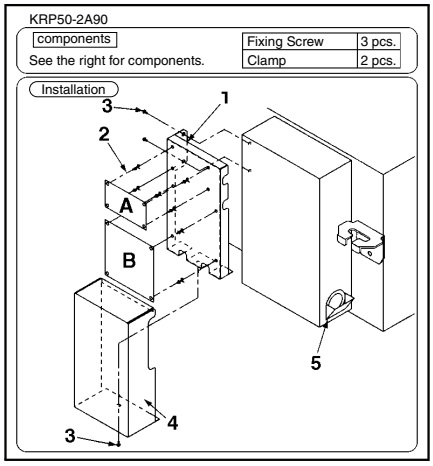


1. Tranformer
2. Secondary
3. Primary
4. Connector for supply air fan motor
5. Connector for exhaust fan motor
6. Connector for damper motor
7. Power supply
8. Terminal block
9. Connector for KPR50-2
10. Connector for limit switch
11. Connector for indoor air thermistor
12. Connector for outdoor air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

8-4 How to install the optional Adapter PCB
(KRP4A72, KRP50-2)

<VAM300GVJU, VAM470GVJU, VAM600GVJU>

- When installing the optional adaptor PCB, it is necessary to prepare the fixing box (KRP50-2A90)
  1. Open the control box cover by following the procedure described in the “8-2” <OPENING THE CONTROL BOX> section.
  2. Remove the screws and install the adapter PCB.
  3. After wiring, fasten the control box cover.

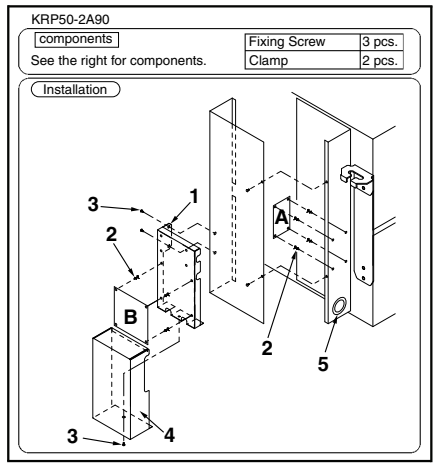


1. Fixing board
2. PCB support (Attached to adapter PCB)
3. Fixing screw
4. Cover
5. Control box

	Applicable adapter name	Kit name	Fixing box
A	Adapter PCB for Humidifier	KRP50-2	KRP50-2A90
B	Adapter PCB for remote control	KRP4A72	KRP50-2A90

<VAM1200GVJU>

- When installing the optional adaptor PCB, it is necessary to prepare the fixing box (KRP50-2A90)
  1. Open the control box cover by following the procedure described in the “8-2” <OPENING THE CONTROL BOX> section.
  2. Remove the screws and install the adapter PCB.
  3. After wiring, fasten the control box cover.
- The adapter circuit board (KRP50-2) can be installed on the inner right-hand side of the control box.
  The attachment box (optional accessory) is not required.



1. Fixing board
2. PCB support (Attached to adapter PCB)
3. Fixing screw
4. Cover
5. Control box

	Applicable adapter name	Kit name	Fixing box
A	Adapter PCB for Humidifier	KRP50-2	
B	Adapter PCB for remote control	KRP4A72	KRP50-2A90

9. FIELD SETTING AND TEST RUN

9-1 Press and hold Cancel button for 4 seconds or longer.
Service settings menu is displayed.

9-2 Select "Field Settings" in the Service Settings menu, and press Menu/OK button.
Field settings screen is displayed.

9-3 Highlight the mode and select desired "Mode No." by using ▲▼ (Up/Down) button.

9-4 In the case of setting per unit during group control (When Mode No. such as "20" , "21" , "22" , "23" , "25" are selected), highlight the unit No. and select "Indoor unit No." to be set by using ▲▼ (Up/Down) button.
(In the case of group total setting, this operation is not needed.)

> In the case of individual setting per unit, current settings are displayed. And, SECOND CODE NO. " - " means no function.

9-5 Highlight SECOND CODE NO. of the FIRST CODE NO. to be changed and select desired "SECOND CODE NO." by using ▲▼ (Up/Down) button. Multiple identical mode number settings are available.

> In case of setting for all units in the remote control group, available SECOND CODE NO. is displayed as " * " which means it can be changed.
> When SECOND CODE NO. is displayed as " - ", there is no function.

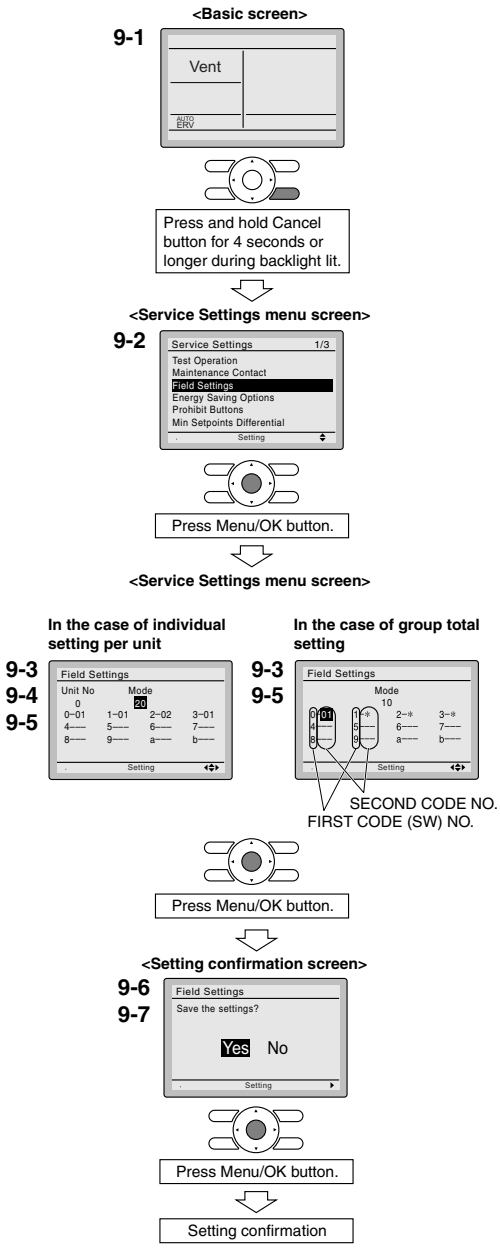
9-6 Press Menu/OK button. Setting confirmation screen is displayed.

9-7 Select "Yes" and press Menu/OK button. Setting details are determined and field settings screen returns.

9-8 In the case of multiple setting changes, repeat "9-3" to "9-7".

9-9 After all setting changes are completed, press Cancel button twice.

9-10 Backlight goes out and "Checking the connection. Please stand by." is displayed for initialization. After the initialization, the basic screen returns.



List of Settings

Mode No.		FIRST CODE NO.	Description of Setting	SECOND CODE 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	Extra high	–	–	–	–
		5	Yes/No setting for direct duct connection with VRV system	No duct (Airflow 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
		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	Airflow increase
		9	KRP50-2 output switching selection (between 1 and 3)	Fan on/off	Abnormal	–	–	–	–
19	29	8	Electric heater setting	No delay	Exchange	On, off delay	On, off delay	–	–
1a	–	0	“Fresh up” on/off setting	Off	On	–	–	–	–

NOTE)

1. The setting positions within the bolded cell “▭” are factory setting.
2. The settings are applied to the entire group, but if the mode No. individual settings is selected, the settings can be applied to individual unit.
   However, it is only possible to check any changes made to individual setting in individual mode. (For group control, 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. 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.

9-11 Perform a test run.

(1) Before turning on the power supply, be sure to check that the control box cover is closed.

(2) Perform a test run according to “OPERATION MANUAL”.

- An error code is displayed on the remote controller when an malfunction occurs. Check the error code on the display to identify the point of trouble. An explanation of error codes and the corresponding trouble is provided in “OPERATION MANUAL”.
  If the display shows any of the following, there is a possibility that the wiring was done incorrectly or that the power supply is not ON, so check again.

Remote controller display	Content
U8	• Incorrect setting the MAIN/SUB of the remote controller.
No display	• The power supply to the unit is off. • The indoor unit and/or ERV have not been wired for power supply. • Incorrect wiring for the remote controller, the transmission wiring and / or the FORCED OFF wiring. • The remote controller wiring is disconnected. • Incorrect setting the “SS1” switch of PC board.

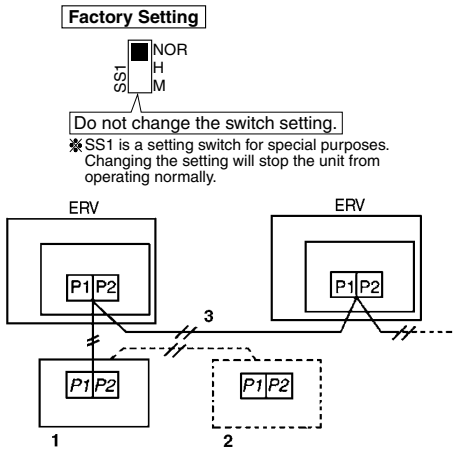
10. DESCRIPTION OF SYSTEM AND APPLICABLE PATTERNS

10-1 INDEPENDENT SYSTEM

10-1-1 When connecting to remote controller

(Refer to “9. FIELD SETTING AND TEST RUN”.)

Check the switch “SS1” on the PC board to the factory setting.

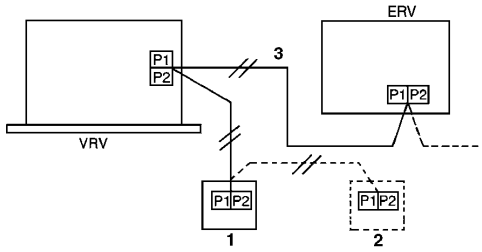


1. Main remote controller
2. Sub remote controller
3. Maximum transmission wiring length : 1640 ft.

10-2 Interlocking system with VRV system

10-2-1 Standard 1-group linked operation system

- The remote control can be used to control up to 16 air conditioner indoor units and ERV units.
- Initial settings can be made for the functions of the ERV units (pre-cool/pre-heat, ventilation rate, ventilation mode and “Fresh up”).
  Use the remote controller to make the initial settings for the ERV units.
  Refer to “9. FIELD SETTING AND TEST RUN”.



1. Main remote controller
2. Sub remote controller
3. Transmission wiring can be extended up to 1640 ft.

Pre-cool/pre-heat function

When the pre-cool/pre-heat function is set, the ERV unit will be turned on at the preset time (30, 45 or 60 minutes) after the VRV-system air conditioner begins cooling or heating operation. The function is set OFF at the factory.

Therefore, to use this function, the initial setting must be made using the remote controller.

If the air conditioner is re-started within two hours after the operation stopped, this function is disabled.

Example 1:

To switch on the pre-cool/pre-heat function and turn on the ERV unit 60 minutes after the air conditioner is turned on.

(1) Set the mode No. to “17” for group control or “27” for individual control, the FIRST CODE NO. to “2” and the SECOND CODE NO. to “02”

(2) Set the mode No. to “17” for group control or “27” for individual control, the FIRST CODE NO. to “3” and the SECOND CODE NO. to “03”

Example 2:

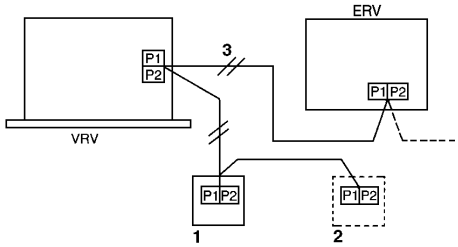
To switch the ventilation airflow to extra high setting.

(The units are set at the high airflow setting at the factory)

Set the mode No. to “17” for group control or “27” for individual control, the FIRST CODE NO. to “4” and the SECOND CODE NO. to “02”

10-2-2 Direct duct connection system for 1-group linked operation system

Transmission wiring and the setting of the switch on the PCB should be the same as for “10-2-1 Standard 1-group linked operation system”.



1.Main remote controller
2.Sub remote controller
3.Maximum transmission wiring length : 1640 ft.

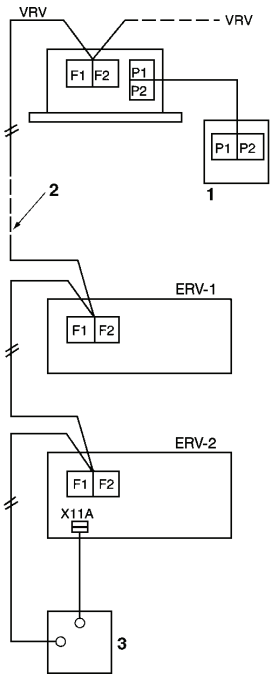
Set the switch on the PCB to the default factory setting.

1. **Be sure to set the initial settings to direct duct connection: Enabled.**
   Set the mode No. to “17”, the FIRST CODE NO. to “5” and the SECOND CODE NO. to “02”.
2. **Settings for other ERV functions should be made using the same method as in “10-2-1 Standard 1-group linked operation system”.**

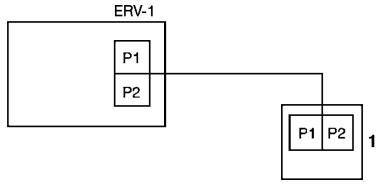
10-2-3 Linked operation with more than two groups

- **Mount the optional KRP4A72 Adapter PCB for remote control on the control box of ERV unit.**
- **A maximum of 64 air conditioners and ERV units can be connected to the F1 and F2 terminals.**
- **Use the remote controller to make the initial settings.**

1. Remote controller
2. Transmission wiring can be extended up to 3280 ft.
3. Optional adapter PCB KRP4A72



<Procedure>



1. Remote controller

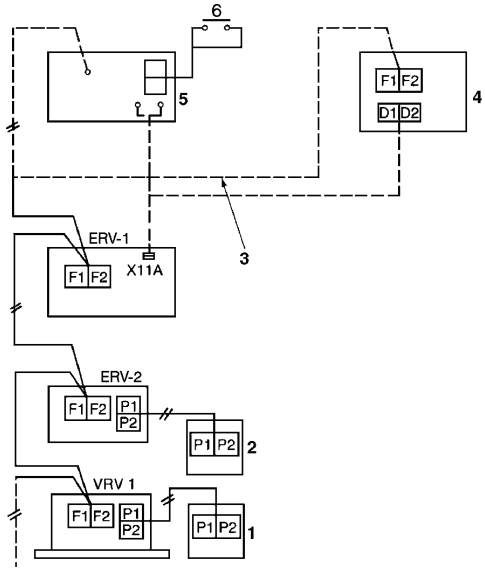
1. Turn on the power supply.
2. Make the remote controller settings; Set the centralized zone interlock setting to ON. Mode No. “17”, FIRST CODE NO. “8” and SECOND CODE NO. “02”.
3. Turn off the power supply.
4. Disconnect the remote controller.
   Now the field settings are complete.

10-3 Centralized control system

10-3-1 “All” control

When using Adapter PCB for remote control (KRP4A72) or schedule timer (DST301BA61)

- A maximum of 64 air conditioners and ERV units can be connected to the F1 and F2 terminals.
- This system does not require group number setting for centralized control. (auto-address system)
- The Adapter PCB for remote control and schedule timer cannot be used together.
- The Adapter PCB for remote control can be mounted on the control box of either the ERV unit or air conditioner. (The ERV unit can accept only KRP4A72.)

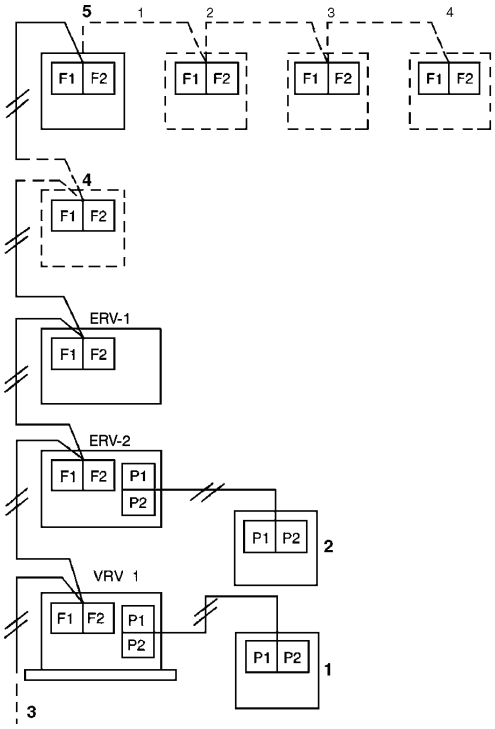


1. Remote controller
2. Remote controller
3. Transmission wiring can be extended up to 3280 ft.
4. Schedule timer (DST301BA61)
5. Adapter PCB for remote control (KRP4A72)
6. ON/OFF signal

10-3-2 "All"/"individual" control

When using the ON/OFF controller (DCS301BA61)

- A maximum of 64 air conditioners and ERV units can be connected to the F1 and F2 terminals.
- This system allows connection of four ON/OFF controllers.
- It is necessary to assign a centralized control group number to each ERV unit and air conditioner.
  Regarding the setting of the group number, refer to the section on "the centralized control group number setting" in the operation manual of the ON/OFF controller.
- Use the remote controller to make the initial settings.

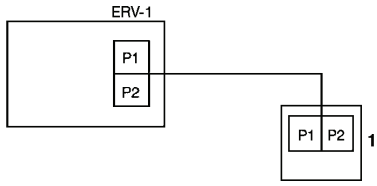


1. Remote controller
2. Remote controller
3. Transmission wiring can be extended up to 3280 ft.
4. Schedule timer
5. ON/OFF controller

Example:

Follow the procedure below to set the centralized group No. 2-05 to ERV 1.

Procedure



1. Remote controller

1. Turn on the ERV-l and ON/OFF controller.
2. Set the central control group number using the field setting on the remote controller.
3. Mode No.: "00"
4. Central control group No.: "2-05"
5. Turn off the ERV-1 and ON/OFF controller.

The setting is now complete.

- For the ventilation airflow setting, follow the procedure described in the **10-3-1** section.

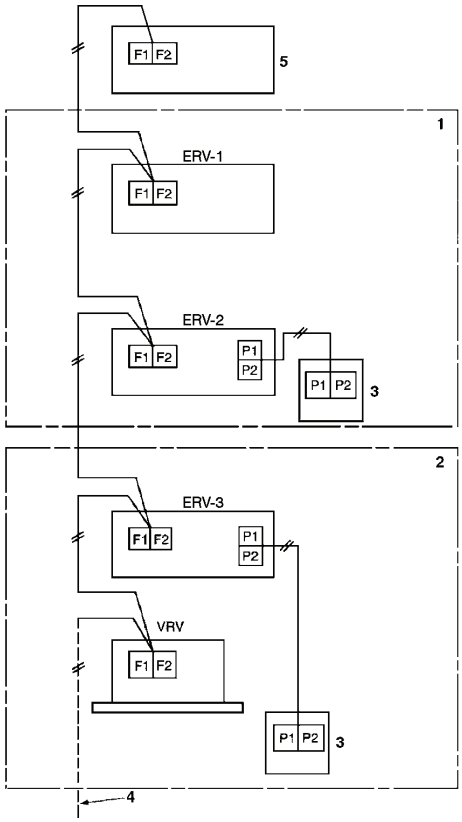
10-3-3 Zone control system

- A maximum of 64 air conditioners and ERV units can be connected to the F1 and F2 terminals.
- The ERV units will turn on and off in according with the zone operation command from the centralized controller.

Zone 2

The ERV units operate in the linked operation mode, as described in the section, "**10-2-3** Linked operation with more than two groups" For the initial setting, follow the procedure described in the **10-2-3** section.

- It is necessary to assign a centralized control group number to each ERV unit and air conditioner.
  Regarding the setting of the group number, refer to the section on "the centralized control group number setting" in the operation manual of the Centralized controller. Refer to the "**10-3-2** "All"/individual control" section for the setting procedure.
- For the ventilation airflow setting, follow the procedure described in the **10-3-1** section.
- For the zone setting from the centralized controller, refer to the operation manual of the centralized controller.
- The centralized controller can be used to control the individual units in the zone for ventilation operation.



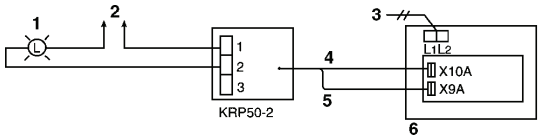
1. **Zone 1**
2. **Zone 2**
3. **Remote controller**
4. **Transmission wiring can be extended up to 3280 ft.**
5. **Centralized controller (DCS302C71)**

10-4 REMOTE CONTROL

10-4-1 Monitor of operation

The operation of the ERV can be monitored from the outside by the connection of the adaptor PCB for remote control KRP50-2 (option)

Be sure to connect the terminal strip on the adaptor PCB for remote control KRP50-2 (option).



1. Operation lamp
2. Power supply
3. Power supply
4. P connecter
5. 3P connecter
6. PC board

Wiring adapter for remote control KRP50-2 (option) (To be placed in the control box of the ERV)

10-4-2 Fresh up operation

<Purposes>

When combined with a local ventilating fan (such as the one in bath room and kitchen), the airflow rate of ERV is balanced by either fan operation or exhaust operation.

However, a circuit with low voltage and current (24V, 10 mA) is formed between the JC and J1, so a relay with low-load contact point must be used.

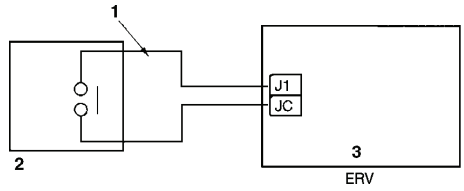
<Functions>

The unit performs overcharged operation to prevent back flow of odor.

<Necessary parts>

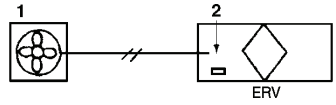
Operation contact of exhaust ventilating fan (field supply)

<Example of control wiring>



1. Transmission wiring can be extended up to 160 ft.
2. (Field supply)
3. PC board

<System description>



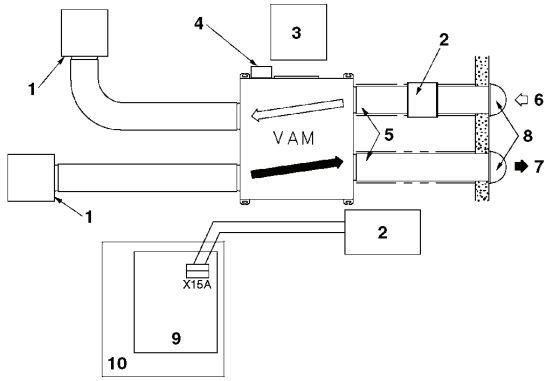
1. Local ventilating fan
2. Power supply

The field setting by the remote controller (9. FIELD SETTING AND TEST RUN)	"J1", "JC" normal open	"J1", "JC" normal close
Fresh up "OFF" (Factory setting)	Normal	Fresh up
Fresh up "ON"	Fresh up	Fresh up

10-4-3 External Damper Operation (FIELD SUPPLY)

- **Explanation of functions**
  Intake of outdoor air can be prevented when ERV is switched OFF if this damper is incorporated in the system.

1. The PCB of the ERV unit supplies power for an external damper.



1. Air suction/discharge grille
2. External damper (field supply)
3. □18 in. Inspection hatch
4. Control box
5. Thermal insulation

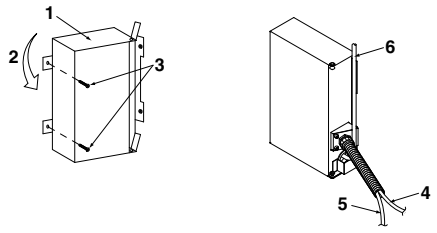
6. OA (Outdoor air from outside)
7. EA (Exhaust air to outside)
8. Round shape hood
9. PC board
10. ERV unit

- Power supply is turned ON when the ERV unit starts operating.
  Power supply is turned OFF when the ERV unit is switched OFF.

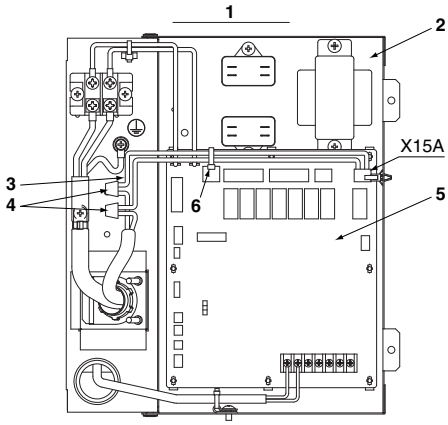
Power supply voltage	Connected load capacity
208V 230V	0.5A or less

Required setting changes for switchover to X15A output (see below for details)

- **Wiring**
  Connect one end of the harness to X15A on the PC board and the other end to the harness leading to the damper via a connector such as a closed connector.



1. Control box cover
2. Open this way
3. Screws
4. To External damper
5. Power supply wiring
6. Transmission wiring



1. Control box Interior
2. Electric component mounting base
3. Harness (AWG20: accessory)
4. Closed connector (field supply)
5. PC board
6. Clamp (accessory)

With regard to a closed connector, select one that suits the wire size.
Secure the harness with the other wires by using the clamp.

- **Setting changes**

To make the X15A output available, change the field setting by the remote controller as below.
Mode No.: 18 (group control) or 28 (individual control)
FIRST CODE NO.: 3
SECOND CODE NO.: 03

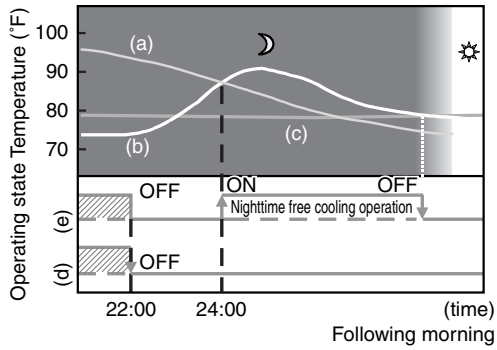
10-4-4 Nighttime free cooling operation

〈AUTOMATIC HEAT PURGE FUNCTION AT NIGHT〉

The nighttime free cooling is an energy-saving function which works at night when the air conditioners are 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 VRV system.
- Nighttime free cooling is set to “off” in the factory setting; so request your dealer to turn it on if you intend to use it.

Operation image



(a) Outdoor temperature
(b) Indoor temperature
(c) Set temperature
(d) Operating state of Air conditioner
(e) Operating state of ERV

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

The unit compares between 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.

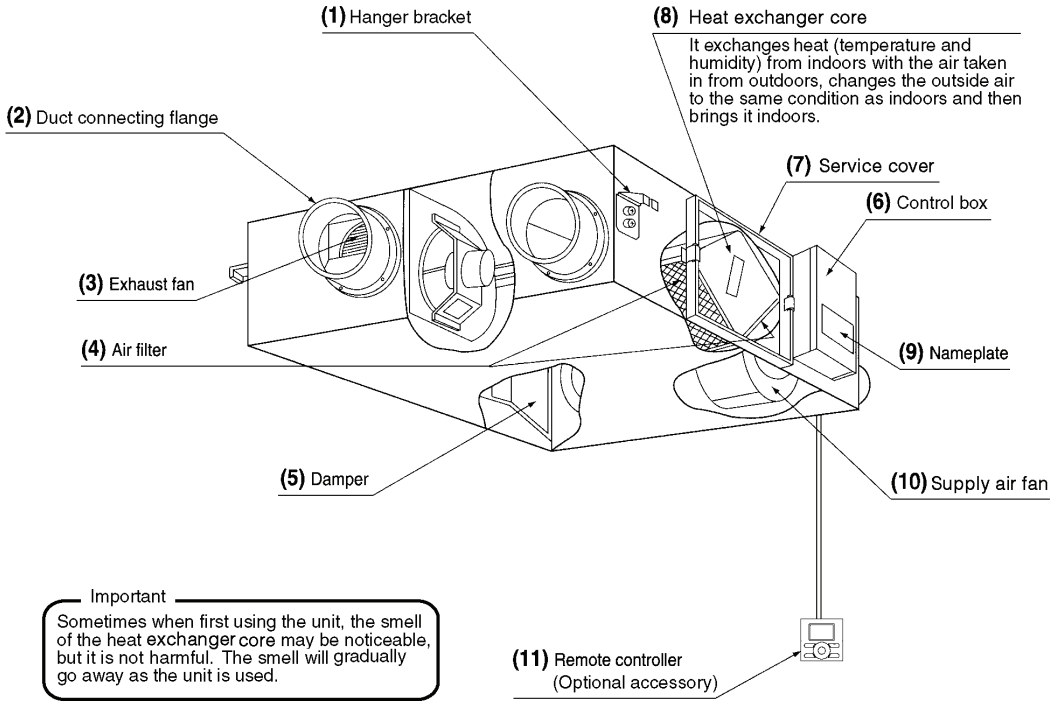
⚠ NOTE

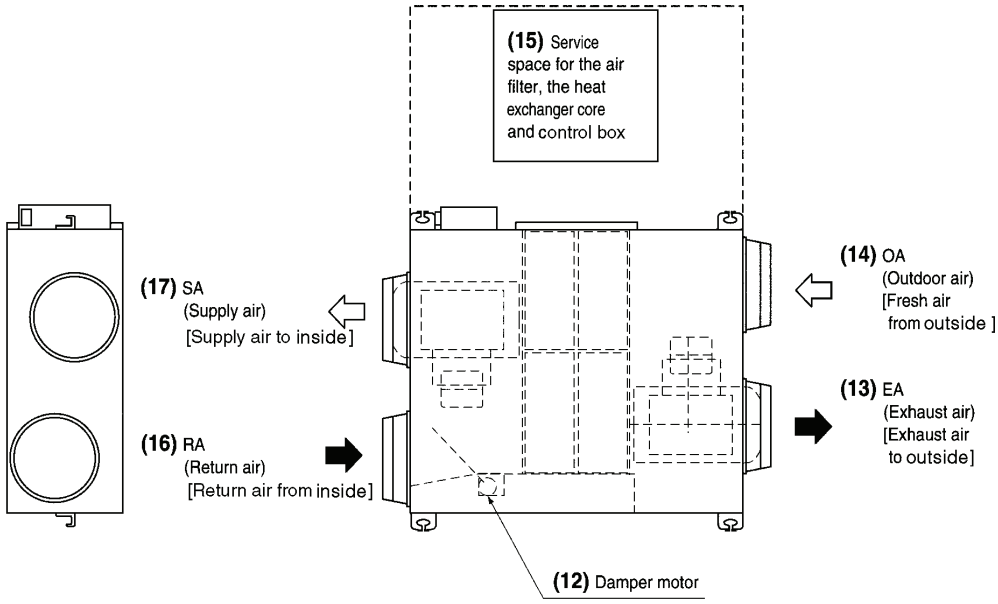
- The Nighttime free cooling operation works when the ERV unit is off. Therefore, it is not possible to stop the nighttime free cooling operation, though the forced off is input from the optional controllers for centralized control.

3P034928-7Q

9. Operation Manual

MODELS VAM300GVJU VAM470GVJU VAM600GVJU



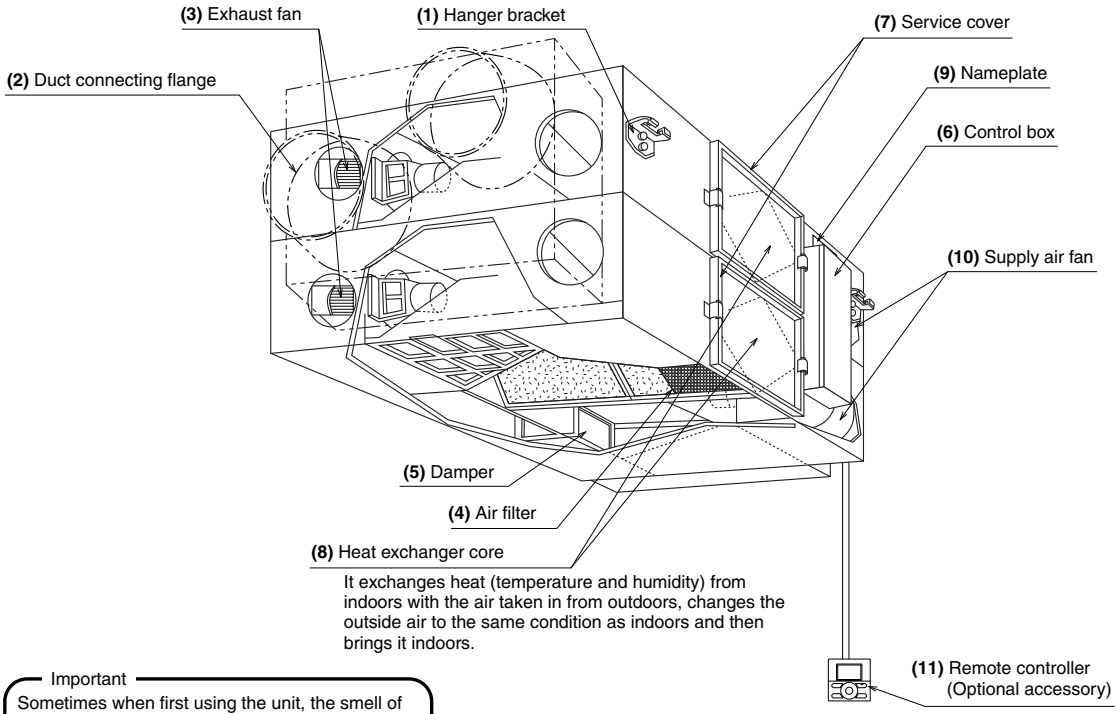


1

[1]

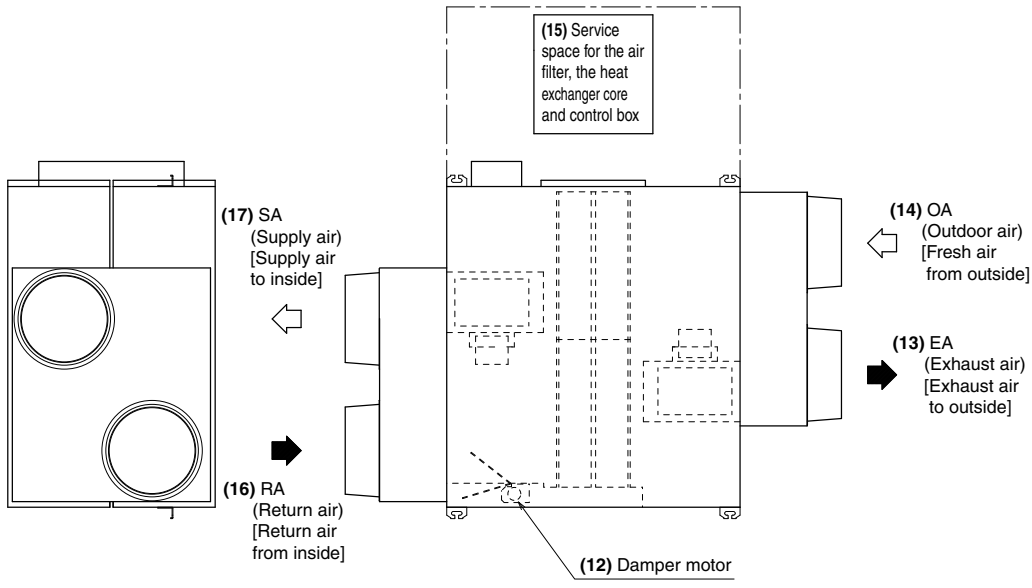
3P034927-7M

MODEL VAM1200GVJU



Important

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

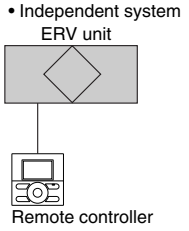


1

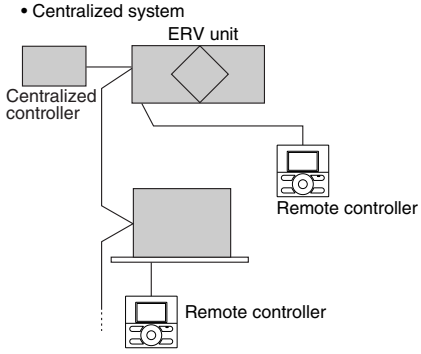
[2]

3P034927-7M

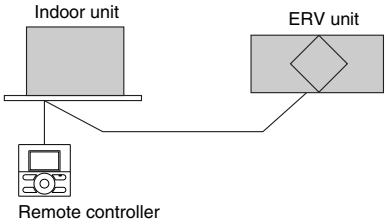
• Independent system



• Centralized system

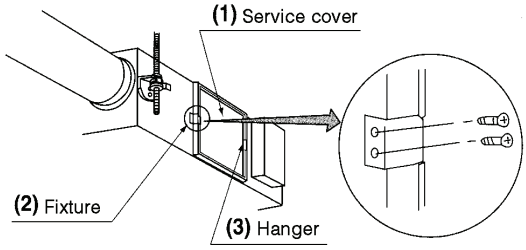


• Interlocking system with VRV or SkyAir system

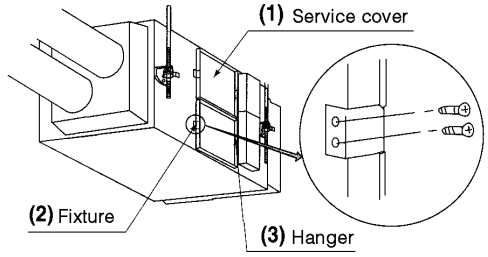


2

MODELS VAM300GVJU - 600GVJU

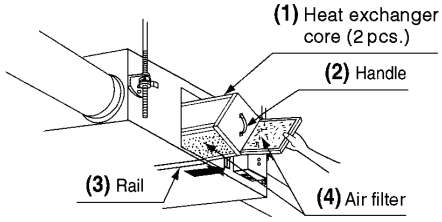


MODEL VAM1200GVJU

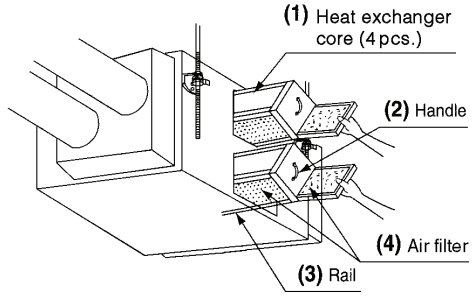


3

MODELS VAM300GVJU - 600GVJU



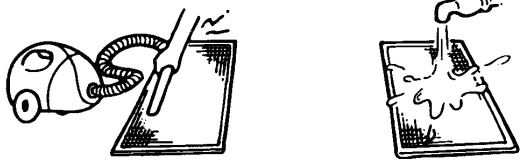
MODEL VAM1200GVJU



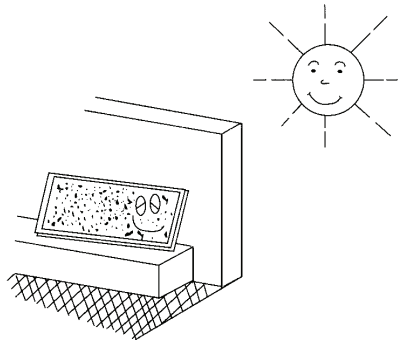
4

[3]

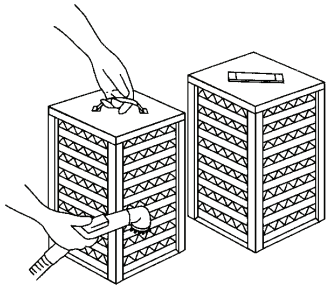
3P034927-7M



5



6



7

[4]

3P034927-7M

DAIKIN

VAM300GVJU
VAM470GVJU
VAM600GVJU
VAM1200GVJU

ERV (Energy Recovery Ventilator) Operation manual

CONTENTS

ILLUSTRATIONS.....[1]~[4]
1. SAFETY CONSIDERATIONS 1
2. WHAT TO DO BEFORE OPERATION 3
3. OPERATION PROCEDURE 5
4. MAINTENANCE (for a qualified service person only) 8
5. TROUBLE SHOOTING 9
6. AFTER-SALES SERVICE 10

1. SAFETY CONSIDERATIONS

Read these ***SAFETY CONSIDERATIONS for Operations*** carefully before installing the ERV unit. After completing the installation, make sure that the unit operates properly during a test run. Instruct the customer on how to operate and maintain the unit.
Inform the customer that this Operation Manual should be kept with the Installation Manual for future reference.
Meanings of **DANGER**, **WARNING**, **CAUTION** and **NOTE** Symbols:

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING**..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ **NOTE** ..... Indicates situations that may result in equipment or property-damage accidents only.

⚠ DANGER

- **Do not install the unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Any abnormalities in the operation of the unit such as smoke or fire could result in severe injury or death. Turn off the power and contact your dealer immediately.**
- **Safely dispose of the packing materials. Packing materials, such as nails, other metal or wooden parts, may cause stabs or other injuries.**
- **Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.**

⚠ WARNING

- **Contact your dealer for repair and maintenance. Improper repair and maintenance may result in electric shock and fire. Only use accessories made by Daikin that are specifically designed for use with the equipment and have them installed by a professional.**
- **Contact your dealer to move and reinstall the unit. Incomplete installation may result in water leakage, electric shock and fire.**
- **Never let the unit or the remote controller get wet. Water can cause an electric shock or a fire.**
- **Never use flammable spray such as hair spray, lacquer, or paint near the unit. Flammable spray may cause a fire.**
- **When a fuse blows out, never replace it with one of incorrect ampere ratings or different wires. Always replace any blown fuse with a fuse of the same specification.**
- **Never inspect or service the unit by yourself. Contact a qualified service person to perform this work.**
- **Turn off all electrical power before doing any maintenance to avoid the risk of serious electric shock; never sprinkle or spill water or liquids on the unit.**
- **Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.**
- **Do not allow children to play on or around the unit to prevent injury.**
- **Do not put a finger or other objects into the air inlet or air outlet. The fan is rotating at high speed and will cause injury.**
- **Check the unit foundation for damage on a continuous basis, especially if it has been in use for a long time. If left in a damaged condition the unit may fall and cause injury.**
- **Placing a flower vase or other containers with water or other liquids on the unit could cause electric shock or fire if a spill occurs.**
- **Never touch the internal parts of the controller. Do not remove the front panel because some parts inside are dangerous to touch. To check and adjust internal parts, contact your dealer.**
- **Be sure to establish a ground connection.**
  Do not ground the unit to an utility pipe, arrester or telephone earth. Incomplete ground may cause electric shock or fire. A high surge current from lightning or other sources may cause damage to the unit.
- **Be sure to install a ground fault circuit interrupter. Failure to install a ground fault circuit interrupter may result in electric shocks or fire.**
- **Consult your dealer if the ERV unit submerges owing to a natural disaster, such as a flood or typhoon.**
  Do not operate the ERV unit in that case, or otherwise a malfunction, electric shock or fire may result.

3P034927-7M

- Do not start or stop operating the ERV unit with the power supply breaker turned ON or OFF.
  Otherwise, fire or water leakage may result.
  Furthermore, the fan will rotate abruptly if power failure compensation is enabled, which may result in injury.
- Do not change operations roughly. It can result not only in malfunction but also failure of switches or relays in the unit.
- Turn off the power supply when the unit is not to be used for long period of time.
  Otherwise, the unit may get hot or catch on fire due to dust accumulation.
- Do not block air inlets or 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.
- Locate the outdoor 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.
- 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.
- 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.

⚠ CAUTION

- Do not use the unit for any other purposes other than ventilation. Do not use the unit for cooling precision instruments, food, plants, animals or works of art.
- Before cleaning, stop the operation of the unit by turning the power off or by pulling the supply cord out from its receptacle. Otherwise, an electric shock and injury may result.
- Do not wash the unit with excessive water. An electric shock or fire may result.
- Avoid placing the controller in a spot splashed with water. Water entering the controller may cause an electric shock or damage the internal electronic parts.
- Do not operate the unit when using a room-fumigation type of insecticide. Failure to observe this could cause the chemicals to be deposited in the unit and can endanger the health of those who are hypersensitive to chemicals.
- The appliance is not intended for use by young children or infirm persons without supervision.
- The remote controller should be kept away from children so they cannot play with it.
- Consult with the installation contractor for cleaning.
- Incorrect cleaning of the inside of the unit could make the plastics parts break and cause water leakage or electric shock.
- It is not good for your health to expose your body to the air flow for a long time.
- Do not allow exhaust air to enter the outdoor air intake vent. This may cause the interior of the room to become contaminated and harming the health.

⚠ NOTE

- Never press the button of the remote controller with a hard, pointed object. The remote controller may be damaged.
- Never pull or twist the electric wire of the remote controller. It may cause the unit to malfunction.
- Do not place appliances that produce open flames in places that are exposed to the air flow of the unit or under the unit. It may cause incomplete combustion or deformation of the unit due to the heat.
- Do not expose the controller to direct sunlight. The LCD display can become discolored and may fail to display the data.
- Do not wipe the controller operation panel with benzene, thinner, chemical dust cloth, etc. The panel may get discolored or the coating can peel off. If it is heavily dirty, soak a cloth in water-diluted neutral detergent, squeeze it well and wipe the panel clean. Then wipe it with another dry cloth.
- Dismantling of the unit and additional parts should be done in accordance with the relevant local, state and national regulations.
- Do not use the unit or an air suction/discharge grille in the following places.
  a. Places with a mist of mineral oil, such as cutting oil.
  b. Locations such as coastal areas where there is a lot of salt in the air.
  c. Locations such as hot springs where there is a lot of sulfur in the air.
  d. Locations such as factories where the power voltage varies a lot.
  e. In cars, boats, and other vehicles.
  f. Locations such as kitchens where oil may splatter or where there is steam in the air.
  g. Locations where equipment produces electromagnetic waves.
  h. Places with an acid or alkaline mist.
  i. Places where fallen leaves can accumulate or where weeds can grow.
  j. Place subjected to much carbon black.
  Carbon black attaches to air filter and heat exchanger core, making them unable to use.
- Take snow protection measures. Contact your dealer for the details of snow protection measures, such as the use of a snow protection hood.
- Do not attempt to do electrical work or grounding work unless you are licensed to do so. Consult with your dealer for electrical work and grounding work.
- Consult your dealer if the unit in operation generates unusual noise.
- Always use the air filter.
  If the air filter is not used, heat exchanger core will be clogged, possibly causing poor performance and subsequent failure.
- Do not operate the ERV unit in Bypass mode when the room air is under heating in winter or when the outdoor temperature is 86°F or higher.
  This may cause condensation to form on the main unit or on discharge grille or around air supply opening.
- 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.

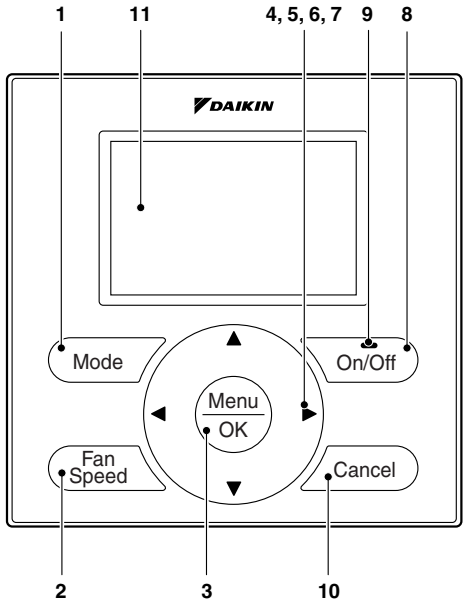
2. WHAT TO DO BEFORE OPERATION

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

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

(1) Hanger bracket
(2) Duct connecting flange
(3) Exhaust fan
(4) Air filter
(5) Damper
(6) Control box
(7) Service cover
(8) Heat exchanger core
(9) Nameplate
(10) Supply air fan
(11) Remote controller (Optional accessory)
(12) Damper motor
(13) EA Exhaust air to outside
(14) OA Outdoor air from outside
(15) Service space for the air filter, the heat exchanger core and control box.
(16) RA Return air from inside
(17) SA Supply air to inside

2-2 BUTTON LOCATIONS AND DESCRIPTIONS OF REMOTE CONTROLLER



1. Operation mode selector button
2. Fan speed control button
3. Menu/OK button
4. Up button ▲
5. Down button ▼
6. Right button ▶
7. Left button ◀
8. On/Off button
9. Operation lamp
10. Cancel button
11. LCD (with backlight)

Functions other than basic operation items (i.e., On/Off, Operation mode selector, Fan speed control, and temperature setpoint) are set from the menu screen.

NOTE

- Do not install the remote controller in places exposed to direct sunlight, otherwise the LCD will be damaged.
- Do not pull or twist the remote controller wire, otherwise the remote controller may be damaged.
- Do not use objects with sharp ends to press the buttons on the remote controller, otherwise damage may result.

1 Operation mode selector button
- Press this button to select the operation mode of your preference.
  *Available modes vary with the indoor unit model.

2 Fan speed control button
- Press this button to select the fan speed of your preference.
  *Available fan speeds vary with the indoor unit model.

3 Menu/OK button
- Used to indicate the main menu.
  For details, refer to the operation manual attached to the remote contoller.
- Used to enter the selected item.

4 Up button ▲
- Used to raise the setpoint.
- The item above the current selection will be highlighted. (The highlighted items will be scrolled continuously when the button is continuously pressed.)
- Used to change the selected item.

5 Down button ▼
- Used to lower the setpoint.
- The item below the current selection will be highlighted. (The highlighted items will be scrolled continuously when the button is continuously pressed.)
- Used to change the selected item.

6 Right button ▶
- Used to highlight the next items on the right-hand side.
- Each screen is scrolled in the right-hand direction.

7 Left button ◀
- Used to highlight the next items on the left-hand side.
- Each screen is scrolled in the left-hand direction.

8 On/Off button
- Press this button and system will start.
- Press this button again to stop the system.

9 Operation lamp (Green)
- This lamp illuminates solid during normal operation.
- This lamp blinks if a error occurs.

10 Cancel button
- Used to return to the previous screen.

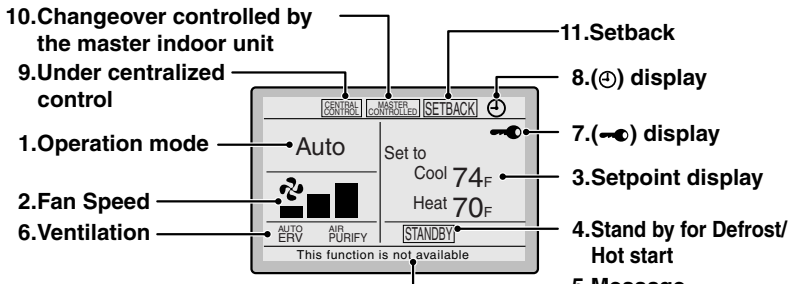
11 LCD (with backlight)
- The backlight will be illuminated for approximately 30 seconds by pressing any button.
- If two remote controllers are used to control a single indoor unit, only the controller to be accessed first will have backlight functionality.

■ NAMES AND FUNCTIONS

Liquid Crystal Display

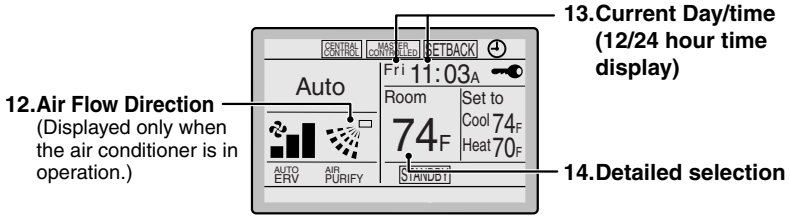
- Two types of liquid crystal display (LCD) are available. The standard display is set by default.
- Detailed display can be selected in the main menu.
- The displayed contents of the screen vary with the operation mode of the indoor unit model. (The following display will appear when the indoor unit is in automatic operation.)
- For details, refer to the operation manual attached to the remote contoller.

[Standard display]

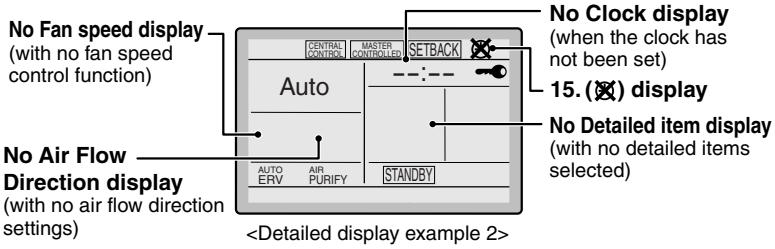


<Standard display example>

[Detailed Display]



<Detailed display example 1>



<Detailed display example 2>

1 Operation mode
- Used to display the current operation mode: Cool, Heat, Vent, Fan, Dry or Auto.

2 Fan Speed
- Used to display the fan speed that is set for the indoor unit.
- The fan speed will not be displayed if the connected model does not have fan speed control functionality.

3 Setpoint display
- Used to display the setpoint for the indoor unit.
- Use the Celsius/Fahrenheit item in the main menu to select the temperature unit (Celsius or Fahrenheit).

4 Stand by for Defrost/Hot start " STANDBY "
If ventilation icon is displayed in this field:
- Indicates that the energy recovery ventilator is connected.

5 Message
The following messages may be displayed.
"This function is not available"
- Displayed for a few seconds when an operation button is pressed and the indoor unit does not provide the corresponding function.
- In a remote control group, the message will not appear if at least one of the indoor units provides the corresponding function.

"Error: Push Menu button"
"Warning: Push Menu button"
- Displayed if an error or warning is detected.

"Time to clean filter"
"Time to clean element"
"Time to clean filter & element"
- Displayed as a reminder when it is time to clean the filter or element (heat exchange core).

6 Ventilation
- Displayed when the energy recovery ventilator is connected.
- **Ventilation Mode icon.**" AUTO ERV ERV BYPASS "
  These icons indicate the current ventilation mode (ERV only) (AUTO, ERV, BYPASS).
- **Air Purify ICON "** AIR PURIFY **"**
  This icon indicates that the air purifying unit (option) in operation.

7 display
- Displayed when the key lock is set.

8 display
- Displayed if the Schedule or Off timer is enabled.

9 Under Centralized control " CENTRAL CONTROL **"**
- Displayed if the system is under the management of a multi zone controller (option) and the operation of the system through the remote controller is limited.

10 Changeover controlled by the master indoor unit
" MASTER CONTROLLED **"** (VRV only)
- Displayed when another indoor unit on the system has the authority to change the operation mode between cool and heat.

11 Setback " SETBACK **"**
- The setback icon flashes when the unit is turned on under the setback control.

12 Air Flow Direction " **"**
- Displayed when the air flow direction and swing are set.
- If the connected indoor unit model does not include oscillating louvers this item will not be displayed.

13 Current Day/Time (12/24 hour time display)
- Displayed if the clock is set.
- If the clock is not set, " -- : -- " will be displayed.
- 12 hour time format is displayed by default.
- Select 12/24 hour time display option in the main menu under "Clock & Calendar".

14 Detailed selection
- Displayed if the detailed display item is selected.
- Detailed items are not selected by default.

15 display
- Displayed when the clock needs to be set.
- The schedule function will not work unless the clock is set.

2-3 Explanation for SYSTEMS

This unit can be made a part of two different systems: as part of an interlocking system together with VRV or SkyAir system and as the independent system using only the ERV unit. The remote controller is required when using the unit as the independent system.
Ask your dealer what kind of system is set up before operation.
See the operation manuals for details on how to operate each remote controller.

■ OPERATION for EACH SYSTEM (Refer to figure 2)

• Independent system

The ERV unit can be operated by the remote controller.

• Interlocking system with VRV or SkyAir system

Both of the air conditioner and the ERV unit can be operated by the remote controller.
In mild climates when only the ERV unit is used without the air conditioner, select "ventilation mode" with the operation mode selector button.

• Centralized system

When the remote controller is not connected with the ERV unit, the centralized controller controls it.

When the remote controller is connected with the ERV unit, operation can be done by the centralized controller or the remote controller.
During the indication of centralized control "CENTRAL CONTROL" appears on the display, the ON/OFF and timer operation may not be possible with the remote controller.

Other operations can be performed using the remote controller.

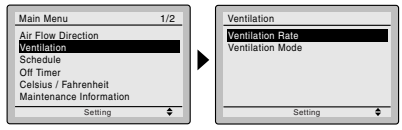
3. OPERATION PROCEDURE

3-1 INDEPENDENT AND INTERLOCKING OPERATION

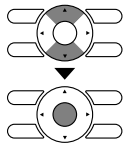
■ VENTILATION SCREEN DISPLAY PROPERTIES

Operation

1



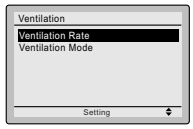
- Press Menu/OK button and display the main menu screen.
- Press ▲ ▼ buttons to select "**Ventilation**" on the main menu screen.
  Press Menu/OK button to display the ventilation screen.



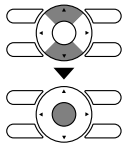
■ CHANGING THE VENTILATION RATE

Operation

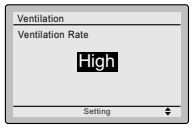
1



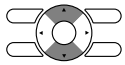
- Navigate to the ventilation screen (see above).
- Press ▲ ▼ buttons to select "**Ventilation Rate**" on the ventilation screen.
  Press Menu/OK button to display the ventilation rate screen.



2

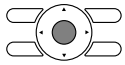


- Press ▲ ▼ the buttons to toggle between the "**Low**" and "**High**" settings.
  * Only modes that can be set are displayed.



3

- Selecting and confirming the desired ventilation rate will take you back to the basic screen.
  (Pressing the Cancel button takes you back to the previous screen without changing the ventilation rate.)

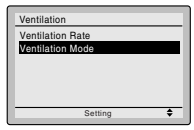


■ CHANGING THE VENTILATION MODE

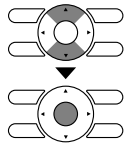
- **Auto mode**
  Using information from the air conditioner (cool, heat, fan, and setpoint) and the energy recovery ventilator unit (indoor and outdoor temperatures), the ventilation mode is automatically changed between ERV and Bypass.
- **ERV mode**
  Outdoor air is passed through the ERV core and is supplied to the conditioned space.
- **Bypass mode**
  Outdoor air is supplied to the conditioned space without passing through the ERV core.

Operation

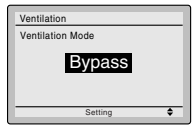
1



- Display the ventilation screen. (See page 5.)
- Press ▲ ▼ buttons to select "**Ventilation Mode**" on the ventilation screen.
  Press Menu/OK button to display the ventilation mode screen.

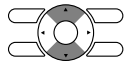


2

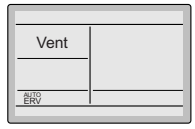


- Pressing the ▲ ▼ buttons cycles through the settings in the order shown below.

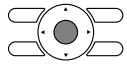
  * Only modes that can be set are displayed.



3



- Selecting and confirming the desired ventilation mode will take you back to the basic screen.
  (Pressing the Cancel button takes you back to the previous screen without changing the ventilation mode.)



NOTE

- **Do not change operations suddenly.**
  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.

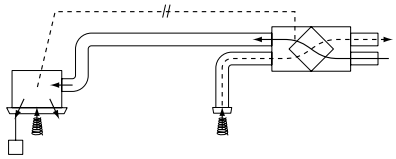
■ FRESH UP OPERATION

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

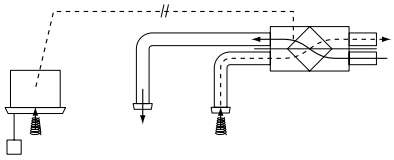
■ DIRECT DUCT CONNECTION SYSTEM

Installation Examples

Direct duct connection system



Independent duct system



The ERV unit cannot be operated independently when the air conditioner is connected to the ERV unit via a duct. When using the ERV unit, set the fan speed of air conditioner to “Low”.

3-2 SCHEDULE AND OFF TIMER

For details of the following settings, refer to the operation manual attached to the remote controller.

■ SCHEDULE

Daily Patterns

- Day settings are selected from three patterns, i.e., “7Days”, “Weekday/Weekend” and “Weekday/Sat/Sun”.

Settings

- Set the startup time and operation stop time.
  - ON: Startup time, cooling and heating temperature setpoints can be configured.
  - OFF: Operation stop time, cooling and heating setback temperature setpoints can be configured.
    (--: Indicates that the setback function is disabled for this time period.)
  - _: Indicates that the temperature setpoint and setback temperature setpoint for this time period is not specified. The last active setpoint will be utilized.
- Up to five actions can be set for each day.

■ OFF TIMER

Settings.

- Possible to set in 10 minute increments from 30 to 180 minutes.

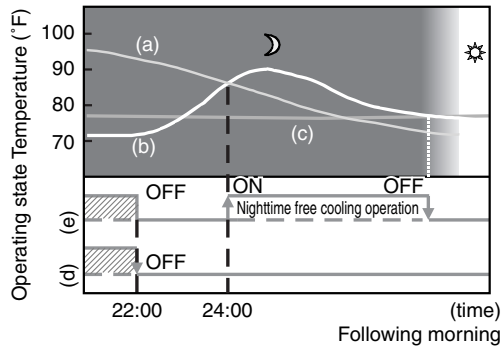
3-3 NIGHTTIME FREE COOLING OPERATION

〈AUTOMATIC HEAT PURGE FUNCTION AT NIGHT〉

The nighttime free cooling is an energy-saving function which works at night when the air conditioner 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 VRV system.
- 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) Outdoor temperature

(b) Indoor temperature

(c) Set temperature

(d) Operating state of Air conditioner

(e) Operating state of ERV

■ EXPLANATION OF NIGHTTIME FREE COOLING OPERATION IMAGE

The unit compares the indoor and outdoor temperatures after the air conditioner 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 nighttime free cooling operation works when the ERV unit is off. Therefore, it is not possible to stop the nighttime free cooling operation, though the forced off is input from the optional controllers for centralized control.

4. MAINTENANCE (for a qualified service person only)

⚠ WARNING

- **ONLY A QUALIFIED SERVICE PERSON IS ALLOWED TO PERFORM MAINTENANCE.**
- **BEFORE SERVICING TURN OFF ALL POWER SUPPLY.**
- To clean or do maintenance on the ERV, be sure to stop operation and turn the power switch off. It may cause electric shock or injury.
- Do not wash the ERV 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 unit.
  This may cause cracks, discoloration or machine trouble.

4-1 HOW TO CLEAN THE AIR FILTER

Clean the air filter when the display shows the message "Time to clean filter" at the bottom.
It will display that it will operate for a set amount of time.

CLEANING FREQUENCY

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

- Increase the frequency of cleaning if the unit is installed in a room where the air is extermely contaminated.
- If the dirt becomes impossible to clean, change the air filter (The replacement air filter is optional).
  1. Remove the service cover.
     Go into ceiling through the inspection hatch, remove a fixture of service cover and take it off.
     (Refer to figure 3)
  2. Remove the air filter.
     Take out from the heat exchanger cores.
     (Refer to figure 4)
  3. Clean the air filter. **(Refer to figure 5)**
     Use a 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 a 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 122°F, 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.
     (Refer to figure 6)

⚠ NOTE

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

  5. Put the service cover back securely in place.
     Refer to the section (4-1, 1).

To reset the filter indicator on the remote controller, press Menu/OK button and select "Reset Filter Indicater" on the main menu screen.

∗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 one of the following messages "Time to clean filter" "Time to clean filter & element" "Time to clean element", ask a qualified service person to clean the filters (Refer to MAINTENANCE).**
- **Do not operate the ERV unit in Bypass mode when the indoor air is under heating in winter or when the outdoor temperature is 86°F or higher.**
  This may cause condensation to form on the unit, discharge grille or around air supply opening.
- **Keep the unit and the remote controller at least 3.3 ft. 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 32-95°F 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.

4-3 HOW TO CLEAN THE HEAT EXCHANGER CORE

CLEANING FREQUENCY

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

⚠ WARNING

- **Replace the heat exchanger core if you find that the knob of the heat exchanger core is damaged or is deteriorated when cleaning.**
  There is falling danger.

1. Remove the service cover.
   Refer to the section (4-1, 1).
2. Remove the air filter.
   Refer to the section (4-1, 2).
3. Take out the heat exchanger cores.
   Pull out the air filter and then pull out the two heat exchanger cores. **(Refer to figure 4)**
4. Use a vacuum cleaner to remove dust and foreign objects on the surface of the heat exchanger core.
   (Refer to figure 7)
   - 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 exchanger core when cleaning.
     (Do not crush the heat exchanger core while cleaning.)

⚠ CAUTION (During Operation)

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

5. Put the heat exchanger core 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 service cover securely in place.
   (Refer to the section (4-1, 5))

⚠ CAUTION

- **Always use the air filter.**
  If the air filter is not used, the heat exchanger core 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 airflow, hold a bar of which the end has a string or other similar lightweight item over the supply grille and exhaust grille.

5. TROUBLE SHOOTING

5-1 THE FOLLOWING SITUATIONS ARE NOT MALFUNCTIONS

- **The unit does not start running.**

<Symptom>
The icon "CENTRAL 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 centralized device controls the unit. The blinking display indicates that the remote controller cannot be used.

<Symptom>
The fans start running after 1 minute when pressing On/Off button.

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

- **The unit 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 ERV unit, and this prevents communication between the units, causing them to stop.
Operation automatically restarts when the noise goes away.

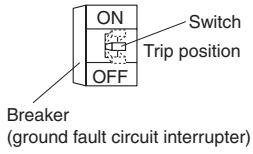
5-2 IF ONE OF THE FOLLOWING MALFUNCTIONS OCCURS, TAKE THE MEASURES SHOWN BELOW AND CONTACT YOUR DAIKIN DEALER

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

⚠ WARNING

When the ERV 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 and contact your dealer.
  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.)

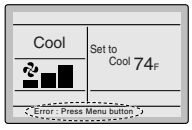


- **If a safety device such as a fuse, a breaker or a ground fault circuit interrupter frequency actuates, or ON/OFF switch does not properly work.**
  Measure: Do not turn the power on.
- **The remote controller buttons do not work well.**
  Measure: Turn off the main power switch.

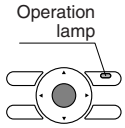
Error Code Display

Operation

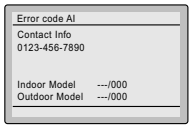
1



- If an error occurs, either one of the following items will flash in the basic screen.
  "Error: Push Menu button"
  * The operation lamp will flash.
  "Warning: Push Menu button"
  * The operation lamp will not flash.
- Press Menu/OK button.



2



- The error code will flash and the service contact and model name or code may appear.
- Notify your Daikin dealer of the Error code and model name or code.

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

List of error codes of Remote controller of the ERV-system

Error code	Description
64	Indoor air thermistor malfunction
65	Outdoor air thermistor malfunction
6A	Dumper-related malfunction
6A	Dumper-related malfunction + thermistor malfunction
U5	Transmission error between the unit and remote controller
U5	Setting error of remote controller
U8	Transmission error between main remote controller and sub remote controller
UA	Incorrect combination with indoor unit and remote controller.
UC	Central control address over lapping
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 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 an interlocked 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, CONTACT YOUR DEALER, AND REQUEST FOR INVESTIGATION THE SYSTEM ACCORDING TO THE FOLLOWING PROCEDURES BY A QUALIFIED SERVICE PERSON

The following malfunctions must be checked 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 discharge air is small and the discharging sound is high.**
  a. Check if the air filter and heat exchanger core are clogged. (Check both SA and RA air filter. Check both sides of cores.)
  Clean the air filter and heat exchanger core.
- **Amount of discharge air is large and so is the sound.**
  a. Check if the air filter and heat exchanger core are not installed.
  Install the air filter and heat exchanger core.

6. 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.
  (Error 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 ERV unit is discontinued, we have the related important parts in stock for 6 years at least. The important parts indicate ones essential to operate the ERV unit.

10. Accessories

10.1 Optional Accessories (For Unit)

Option	Applicable Model	VAM300GVJU	VAM470GVJU	VAM600GVJU	VAM1200GVJU
Auxiliary Component	Air Filter for Replacement	KAF241G50M	KAF241G80M	KAF241G100M	KAF241G100M×2

3D073395

10.2 Optional Accessories (For Control)

Option	Applicable Model		VAM300GVJU	VAM470GVJU	VAM600GVJU	VAM1200GVJU
Control Device	Remote Controller		BRC1E71			
	Centralized Control Device	Central Remote Controller	DCS302C71			
		Unified ON/OFF Controller	DCS301C71			
		Schedule Timer	DST301BA61			
	PC Board Adaptor	Group Control Adaptor PCB	KRP4A72			
		For Humidifier	KRP50-2			
		Installation Box for Adaptor PCB	KRP50-2A90			— (Note: 1)

3D073395

Note:

1. Adaptor PCB for humidifier (KRP50-2) can be mounted on the right-hand side of control box.

Warning

Daikin Industries, Ltd.'s products are manufactured for export to numerous countries throughout the world. Daikin Industries, Ltd. does not have control over which products are exported to and used in a particular country. Prior to purchase, please therefore confirm with your local authorized importer, distributor and/or retailer whether this product conforms tot he applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.

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.

If you have any inquiries, please contact your local importer, distributor, or retailer.

C ETL CM US LISTED

Intertek

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 seashore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the seashore, contact your local distributor.

Dealer

DAIKIN AC *(AMERICAS), INC.*
1645 Wallace Drive, Suite 110
Carrollton, TX75006
info@daikinac.com
www.daikinac.com

● Specifications, designs and other content appearing in this brochure are current as of February 2012 but subject to change without notice.

EDUS711116
Printed in U.S.A. 02/2012 B AK