Heat Reclaim Ventilator — VAM series

The Heat Reclaim Ventilator Creates a High-Quality Environment by Interlocking with the Air Conditioner

Model Names

VAM150GJVE, VAM250GJVE, VAM350GJVE, VAM500GJVE, VAM650GJVE, VAM800GJVE, VAM1000GJVE, VAM1500GJVE, VAM2000GJVE

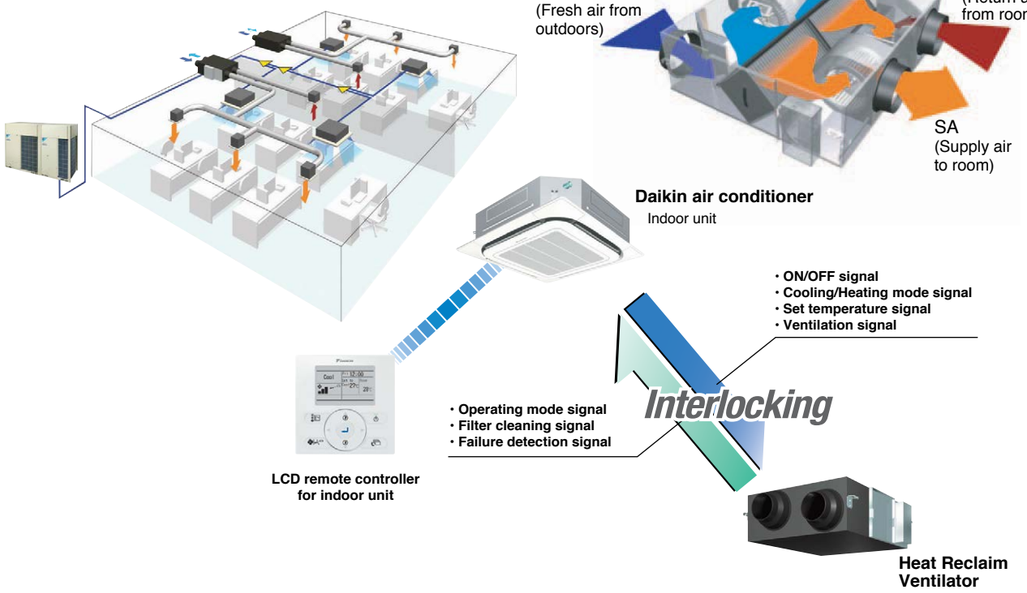
Heat Reclaim Ventilator remote controller*
BRC301B61 (Option)

* This remote controller is used in case of independent operation of Heat Reclaim Ventilator.

***Improved Enthalpy Efficiency*★1**
***Higher External Static Pressure*★2**
Enhanced Energy Saving Functions

This VAM series provides higher enthalpy efficiency★1, due to the greatly enhanced performance of the thin film element. Furthermore, improved external static pressure★2 offers more flexibility for installation. Along with these three outstanding improvements, the nighttime free cooling operation contributes to energy conservation and more comfortable space.

★1 For models: VAM150/250/350/650/800/1000/2000GJVE
★2 For models: VAM150/350/500GJVE



Compact Equipment

With a height of just 306 mm, the unit easily fits in limited spaces, such as above ceilings.

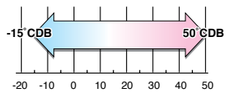
* For VAM500GJVE

Energy Conservation

Air conditioning load reduced by approximately 31%!

Cold Climate Compatible

Standard operation at temperatures down to -15°C.



Air conditioning load reduced by approximately 31%!

Total heat exchange ventilation — 23%

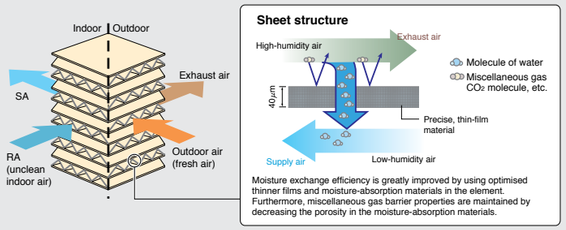
This unit recovers heat energy lost through ventilation and curbs room temperature changes caused by ventilation, thereby conserving energy and reducing the load on the air conditioning system.

Enthalpy efficiency drastically improved by employing thin film element! (VAM-GJ model)

Due to the thinner film…
- Decreases the moisture resistance of the partition sheets drastically.
- Realises more space for extra layers in the element, resulting in increased effective area that supply and exhaust air can be exposed to.

Moisture absorption increased by approx. 10%!

Thickness of the partition sheet **40 μm**



+

Auto-ventilation Mode Changeover Switching — 6%

Automatically switches the ventilation mode (Total Heat Exchange Mode/Bypass Mode) according to the operating status of the air conditioner.

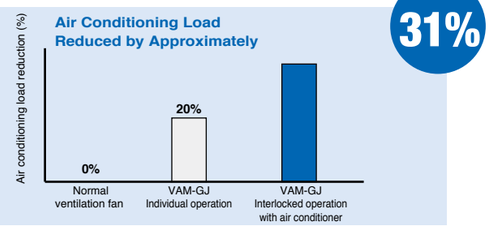
+

Pre-cool, Pre-heat Control — 2%

Reduces air conditioning load by not running the Heat Reclaim Ventilator while air is still clean soon after the air conditioner is turned ON.

=

31%



• The air conditioning load reduction values may vary according to weather and other environmental conditions at the location of the machine's installation.

• The air conditioning load reduction values are based on the following conditions;
Application: Tokyo office building
Building form: 6 floors above ground, 2 floors underground, floor area 2,100 m^2
Personnel density: 0.25 person/m^2
Ventilation volume: 25 m^3/h
Indoor air conditioning level: summer 25°C 50% RH, intermediate seasons 24°C 50% RH, winter 22°C 40% RH
Operating time: 2745 hours (9 hours per day, approx. 25 days per month)
Calculation method: simulation based on "MICRO-HASP/1982" of the Japan Building Mechanical and Electrical Engineers Association.

Nighttime free cooling operation*1

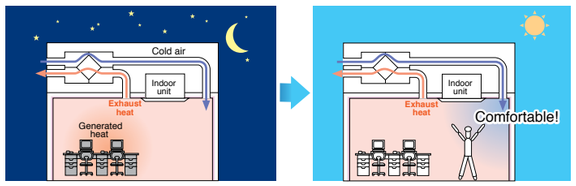
Air conditioning sensible heat load reduced by **approx. 5%*2!**

Nighttime free cooling operation is an energy-conserving function that works at night when air conditioners are off. By ventilating rooms containing office equipment that raises the room temperature, nighttime free cooling operation reduces the cooling load when air conditioners are turned on in the morning. It also alleviates feelings of discomfort in the morning caused by heat accumulated during the night.

- Nighttime free cooling operation only works to cool and if connected to Building Multi or *VRV* systems.
- Nighttime free cooling operation is set to "off" in the factory settings, so if you wish to use it, request your dealer to turn it on.

*1 This function can be operated only when interlocked with air conditioners.
*2 Value is based on the following conditions:
- Cooling operation performed from April to October.
- Calculated for air conditioning sensible heat load only (latent heat load not included).

The indoor accumulated heat is discharged at night.
This reduces the air conditioning load the next day thereby increasing efficiency.



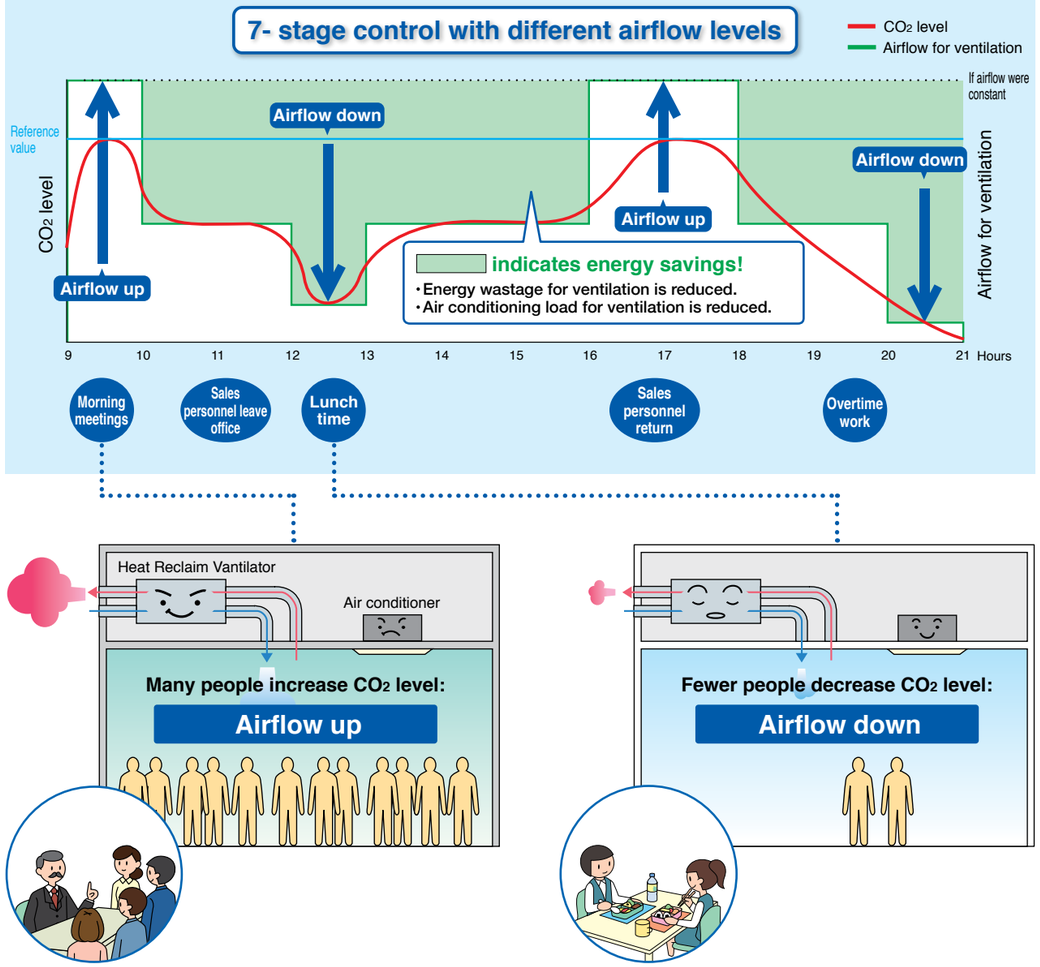
*Interlocked operation with an air conditioner

Heat Reclaim Ventilator — VAM series

CO_2 Sensor Optional Kit Connection

The CO_2 sensor controls airflow so that it best matches the changes in CO_2 level. This prevents energy losses from over-ventilation while maintaining indoor air quality with optional CO_2 sensor.

● **Example of CO_2 sensor operation in an office room:**

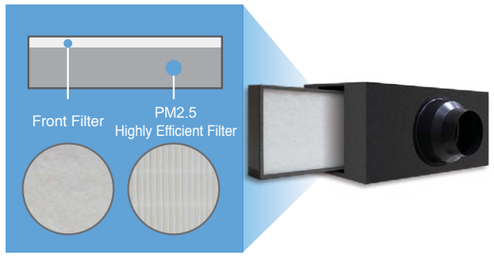


Heat Reclaim Ventilator — PM2.5 filtration unit (Option)

Rapid urbanization has increased industrial and automobile emissions, resulting in higher PM2.5 levels. This has become the source of respiratory diseases and poses a serious threat to a long term health issue. As the air quality has worsened, research has shown the harmful effects of PM2.5 on the health of the general public.

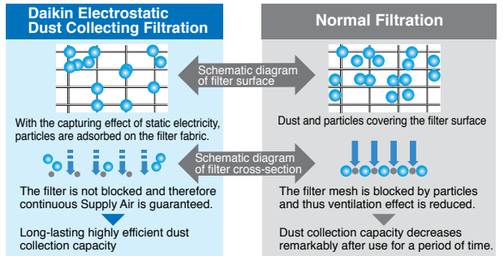
Double-layered efficient filtration

PM2.5 filters are double-layered.
1. The front filter effectively removes large particles.
2. The PM2.5 filter layer contains a large amount of static electricity to capture particulate matter efficiently.



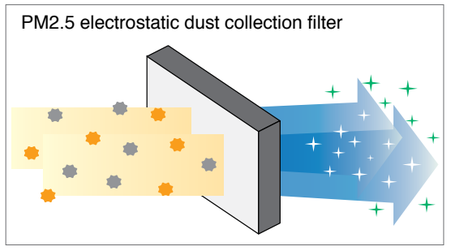
Electrostatic dust collection filter: more efficient and longer lasting effect

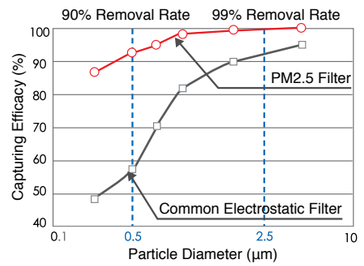
The PM2.5 filter layer contains a large amount of static electricity to capture particulate matter efficiently, including those smaller than the grid mesh.
The filter is difficult to be blocked by particles and has good ventilation and long life span.



Filtering PM2.5 efficiently for healthier and more comfortable environments

The PM2.5 filtering series heat reclaim ventilator is equipped with an electrostatic dust collection filter for PM2.5 removal. This filter not only removes 99% or more of 2.5 µm; it also eliminates up to 90% of 0.5 µm matter!



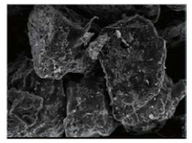


*Test results by the Heating, Ventilation and Air Conditioning Lab at Tongji University
Test environment: temperature 25-26°CDB, humidity 58-60%RH

Extra-High Performance Filter Against Sulfur Oxides and Nitrogen Oxides

Effective Use of Active Carbon Material to Enlarge the Adsorption Area

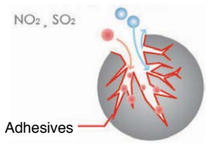
As an expert in the research and development of filters, DAIKIN has specifically selected active carbon material as the main substance to constitute the filter against sulfur oxides and nitrogen oxides. The material's usable pore surface is fully exploited, thus extending the filter's durability.



Note: Surface area of active carbon: 700 m^2/g
Given a newspaper page of 40.6 cm wide by 54.6 cm long, each gram of active carbon has a surface area of 3,000 newspaper pages.

Intelligent Identification, Super-effective Adhesion

The special substance added in the pores of active carbon can exclusively target sulfur oxide and nitrogen oxide gases and stick to them without blocking other unidentified gases. This ensures long durability of the filter.



Note: The figures are based on in-house tests under the following lab conditions: temperature 22 to 25°CDB, humidity 35 to 40% RH, air flow rate 0.2 m/s.

SPECIFICATIONS

MODEL				VAM150GJVE	VAM250GJVE	VAM350GJVE	VAM500GJVE	VAM650GJVE	VAM800GJVE	VAM1000GJVE	VAM1500GJVE	VAM2000GJVE
Power Supply				1-phase, 220-240 V/220 V, 50 Hz/60 Hz								
Temp. Exchange Efficiency		Ultra-High	%	79	75	79	74	75	72	78	72	77
		High		79	75	79	74	75	72	78	72	77
		Low		84	79	82	80	77	74	80.5	75.5	79
Enthalpy Exchange Efficiency	For Heating	Ultra-High	%	72	71	70	67	67.5	65	70	65	72
		High		72	71	70	67	67.5	65	70	65	72
		Low		76	74	77	74	71.5	67.5	72.5	67	75
	For Cooling	Ultra-High	%	66	63	66	55	61	61	64	61	62
		High		66	63	66	55	61	61	64	61	62
		Low		70	66	70	59	64	64	68.5	64	66
Power Consumption	Heat Exchange Mode	Ultra-High	W	125	137	200	248	342	599	635	1,145	1,289
		High		111	120	182	225	300	517	567	991	1,151
		Low		57	60	122	128	196	435	476	835	966
	Bypass Mode	Ultra-High	W	125	137	200	248	342	599	635	1,145	1,289
		High		111	120	182	225	300	517	567	991	1,151
		Low		57	60	122	128	196	435	476	835	966
Sound Level	Heat Exchange Mode	Ultra-High	dB(A)	27-28.5	27-29	31.5-33	33-35.5	34-36	39-40.5	39.5-41.5	39.5-41.5	41.5-43.5
		High		26-27.5	26-27.5	30-31.5	31.5-34	33-34.5	37-39.5	37.5-39.5	37.5-39.5	39-43
		Low		20.5-21.5	21-22	23-25	25-28.5	27.5-29.5	35-37.5	35-37.5	35-37.5	36-39
	Bypass Mode	Ultra-High	dB(A)	28.5-29.5	28.5-30.5	33-34.5	34.5-36	35-37.5	40.5-42	40.5-42.5	41-43	43-45.5
		High		27.5-28.5	27.5-29	31.5-33	33-34.5	33-35.5	38.5-40	38.5-40.5	39.5-41	40.5-45
		Low		22.5-23.5	22.5-23	24.5-26.5	25.5-28.5	27.5-30.5	36-38.5	36-38.5	36.5-38	37.5-39.5
Casing				Galvanised steel plate								
Insulation Material				Self-extinguishable polyurethane foam								
Dimensions (HXWXD)			mm	278×810×551		306×879×800		338×973×832	387×1,111×832	387×1,111×1,214	785×1,619×832	785×1,619×1,214
Machine Weigh			kg	24		32		45	55	67	129	157
Heat Exchange System				Air to air cross flow total heat (Sensible heat + latent heat) exchange								
Heat Exchange Element Material				Specially processed nonflammable paper								
Air Filter				Multidirectional fibrous fleeces								
Fan	Type			Sirocco fan								
	Airflow Rate	Ultra-High	m^3/h	150	250	350	500	650	800	1,000	1,500	2,000
		High		150	250	350	500	650	800	1,000	1,500	2,000
		Low		100	155	230	320	500	700	860	1,320	1,720
		Ultra-High	ℓ/s	41	69	97	138	180	222	277	416	555
		High		41	69	97	138	180	222	277	416	555
		Low		27	43	63	88	138	194	238	366	477
	External Static Pressure	Ultra-High	Pa	120	70	169	105	85	133	168	112	116
		High		106	54	141	66	53	92	110	73	58
		Low		56	24	67	32	35	72	85	56	45
	Motor Output		kW	0.030×2		0.090×2		0.140×2	0.280×2		0.280×4	
Connection Duct Diameter			mm	ϕ100	ϕ150		ϕ200		ϕ250		ϕ350	
Unit Ambient Condition				-15°C–50°CDB, 80%RH or less								

Note: 1. Sound level is measured at 1.5 m below the centre of the body.
2. Airflow rate can be changed over to Low mode or High mode.
3. Sound level is measured in an anechoic chamber. 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(A) higher than the unit's sound level.
5. The specifications, designs and information given here are subject to change without notice.
6. Temperature Exchange Efficiency is the mean value between cooling and heating.
7. Efficiency is measured under the following conditions:Ratio of rated external static pressure has been maintained as follows; outdoor side to indoor side = 7 to 1.
8. In conformance with JIS standards (JIS B 8628), operating sound level is based on the value when one unit is operated, with the value converted for an anechoic chamber. This is transmission sound from the main unit, and does not include sound from the discharge grille. Thus it is normal for the sound to be louder than the indicated value when the unit is actually installed.
9. Sound level from the discharge port causes the value to be approximately 8 dB(A) (models with the airflow rate of less than 150 to 500 m^3/h) to approximately 11 dB(A) (models with the airflow rate of 650 m^3/h or more) greater than the indicated value. Furthermore, fan rotation and noise from the discharge grille may increase depending on the on-site duct resistance conditions. Please consider noise countermeasures when installing the unit.
10. With large models in particular (1500 and 2000 m^3/h models), if the supply air (SA) grille is installed near the main unit, the noise of the main unit may be heard from the discharge grille via the duct, and this will result in a marked increase in noise. In such cases, if peripheral effects are included (such as reverberation of the floor and walls, combination with other equipment, and background noise), sound level may be as much as 15 dB(A) higher than the indicated value. When installing a large model, please provide as much separation as possible between the main unit and the discharge grille. If the equipment and discharge grille are near each other, please consider countermeasures such as the following:
•Use a sound-muffling box, flexible duct and sound-muffling air supply/discharge grilles
•Decentralised installation of discharge grilles
11. When installing in a location with particularly low background noise such as a classroom, please consider the following measures to avoid transmission sound from the main unit:
•Use of ceiling materials with high sound insulating properties (high transmission loss)
•Methods of blocking sound transmission, for example, by adding sound insulating materials around the bottom of the sound source.
Alternatively, consider supplementary methods such as installing the equipment in a different location (corridor, etc.)

PM2.5 Filtration Unit

Models			BAF249A150	BAF249A300	BAF249A350	BAF249A500
Heat Reclaim Ventilator Models			VAM150GJVE	VAM250GJVE	VAM350GJVE	VAM500GJVE
Dimensions (H × W × D)		mm	220 x 603 x 366	220 x 603 x 366	300 x 623 x 366	300 x 623 x 366
Connection Duct Diameter		mm	Ø100	Ø150	Ø150	Ø200
Airflow Rate		m^3/h	150	250	350	500
PM2.5 Filter	Initial Pressure Drop	Pa	34	30	31	42
	Filter Lifetime [1]		1 year			
	Filtration Efficiency [2]		99% or higher			
	Filter Material No. [3]		BAF244A300		BAF244A500	

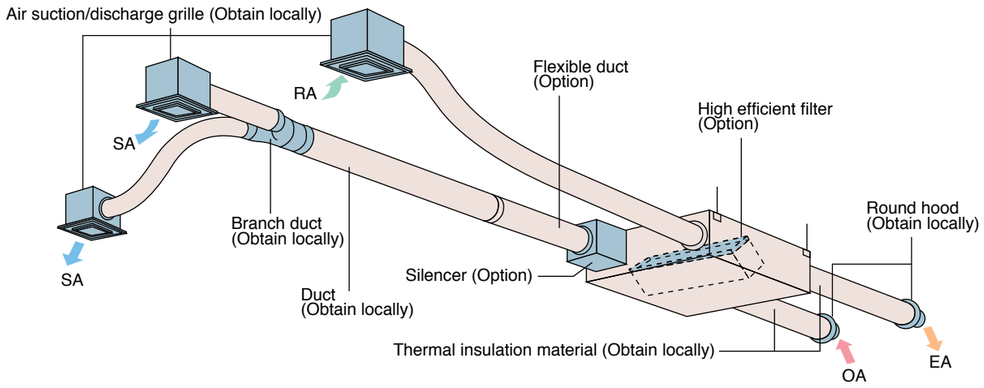
Note: 1. Annual usage: 400 hrs/month x 12 months = 4,800 hrs
2. 99% or higher removal rate of ultra-fine particles with diameters of 2.5 μm or more; 90% or higher removal rate of ultra-fine particles with diameters of 0.5 μm.
3. Filters come with applicable filtration units with a one-year life. They can be purchased and replaced according to their model numbers.

PM2.5 with Activated Carbon Filtration Unit

Models			BAF249A150C	BAF249A300C	BAF249A350C	BAF249A500C
Heat Reclaim Ventilator Models			VAM150GJVE	VAM250GJVE	VAM350GJVE	VAM500GJVE
Dimensions (H × W × D)		mm	220×603×366	220×603×366	300×623×366	300×623×366
Connection Duct Diameter		mm	Ø100	Ø150	Ø150	Ø200
Airflow Rate		m^3/h	150	250	350	500
PM2.5 Filter	Initial Pressure Drop	Pa	34	30	31	42
	Filter Lifetime [1]		1 year			
	Filtration Efficiency [2]		99% or higher			
	Filter Material No. [3]		BAF244A300		BAF244A500	
Activated Carbon Filter	Initial Pressure Drop	Pa	3	5	5	9
	Filter Lifetime		1 year			
	Filter Material No. [3]		BAF244A300C		BAF244A500C	
Total Initial Pressure Drop for PM2.5 with Activated Carbon Filtration Unit		Pa	37	35	36	51

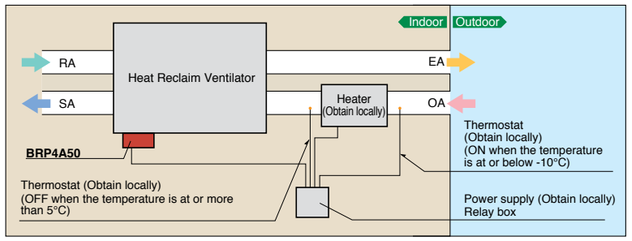
Note: 1. Annual usage: 400 hrs / month × 12 months = 4,800 hrs.
2. 99% or higher removal rate of ultra-fine particles with diameters of 2.5 μm or more; 90% or higher removal rate of ultra-fine particles with diameters of 0.5 μm.
3. Filters come with applicable filtration units with a one-year life. They can be purchased and replaced according to their model numbers.

OPTIONS



PC board adaptor for heater control kit (BRP4A50)

When the installation of an electric heater is required in a cold region, this adaptor with an internal timer function eliminates the complicated timer connecting work that was necessary with conventional heaters.



Note when installing

- Examine fully an installation place and specification for using the electric heater based on the standard and regulation of each country.
- Supply the electric heater and safety production devices such as a relay and a thermostat, etc of which qualities satisfy the standard and regulation of each country at site.
- Use a non-inflammable connecting duct to the electric heater. Be sure to allow 2 m or more between the electric heater and the Heat Reclaim Ventilator for safety.
- For the Heat Reclaim Ventilator, use a different power supply from that of the electric heater and install a circuit breaker for each.

Option List

Item			Type	VAM150 · 250 · 350 · 500 · 650 · 800 · 1000 · 1500 · 2000GJVE
Controlling device			Heat Reclaim Ventilator remote controller	BRC301B61
		Centralised controlling device	Residential central remote controller	DCS303A51 Note 1
			Central remote controller	DCS302CA61
			Unified ON/OFF controller	DCS301BA61
			Schedule timer	DST301BA61
	PC Board Adaptor		Wiring adaptor for electrical appendices	KRP2A61
			For humidifier	KRP50-2
			Installation box for adaptor PCB	KRP50-2A90 (Mounted electric component assy of Heat Reclaim Ventilator)
			For heater control kit	BRP4A50
		For wiring	Type (indoor unit of *VRV*)	FXFQ-S FXFQ-P / FXZQ-A2 / FXCQ-M / FXKQ-MA / FXDQ-PB FXDQ-NB / FXSQ-P / FXDYQ-MA / FXMQ-P / FXMQ-M / FXUQ-A / FXHQ-MA / FXAQ-P / FXLQ-MA FXNQ-MA
				KRP1C63★ / KRP1BA57★ / KRP1B61★ / KRP1B61 / KRP1B56★ / KRP1C64★ / KRP1B61 / KRP1C64★ / KRP1B61 / KRP1C67 / KRP1BA54 / — / KRP1B61
		Installation box for adaptor PCB★		Note 2, 3 KRP1H98A / Note 4, 6 KRP1BA101 / Note 2, 3 KRP1B96 / — / Note 4, 6 KRP1BA101 / Note 2, 3 KRP4A98 / — / Note 2, 3 KRP4A96 / — / — / Note 3 KRP1CA93 / Note 2, 3 KRP4AA93 / —

Note: 1. Installation box ☆ is necessary for each adaptor marked ★.
2. Up to 2 adaptors can be fixed for each installation box.
3. Only one installation box can be installed for each indoor unit.
4. Up to 2 installation boxes can be installed for each indoor unit.
5. Installation box ☆ is necessary for second adaptor.
6. Installation box ☆ is necessary for each adaptor.
7. *1 For residential use only. When connected with a Heat Reclaim Ventilator (VAM), you can only switch the power ON/OFF. Cannot be used with other centralised control equipment.

Item			Type	VAM150GJVE	VAM250GJVE	VAM350GJVE	VAM500GJVE	VAM650GJVE	VAM800GJVE	VAM1000GJVE	VAM1500GJVE	VAM2000GJVE
Additional function		Silencer		—			KDDM24B50	KDDM24B100			KDDM24B100×2	
			Nominal pipe diameter mm	—			ϕ 200		ϕ 250			
		High efficiency filter		KAF242H25M		KAF242H50M		KAF242H65M	KAF242H80M	KAF242H100M	KAF242H80MX2	KAF242H100MX2
		Air filter for replacement		KAF241G25M		KAF241G50M		KAF241G65M	KAF241G80M	KAF241G100M	KAF241G80MX2	KAF241G100MX2
Flexible duct (1 m)				K-FDS101D	K-FDS151D		K-FDS201D		K-FDS251D			
Flexible duct (2 m)				K-FDS102D	K-FDS152D		K-FDS202D		K-FDS252D			
Duct adaptor				—							YDFA25A1	
			Nominal pipe diameter mm	—							ϕ 250	
CO_2 sensor				—		BRYMA65			BRYMA100		BRYMA65	BRYMA100