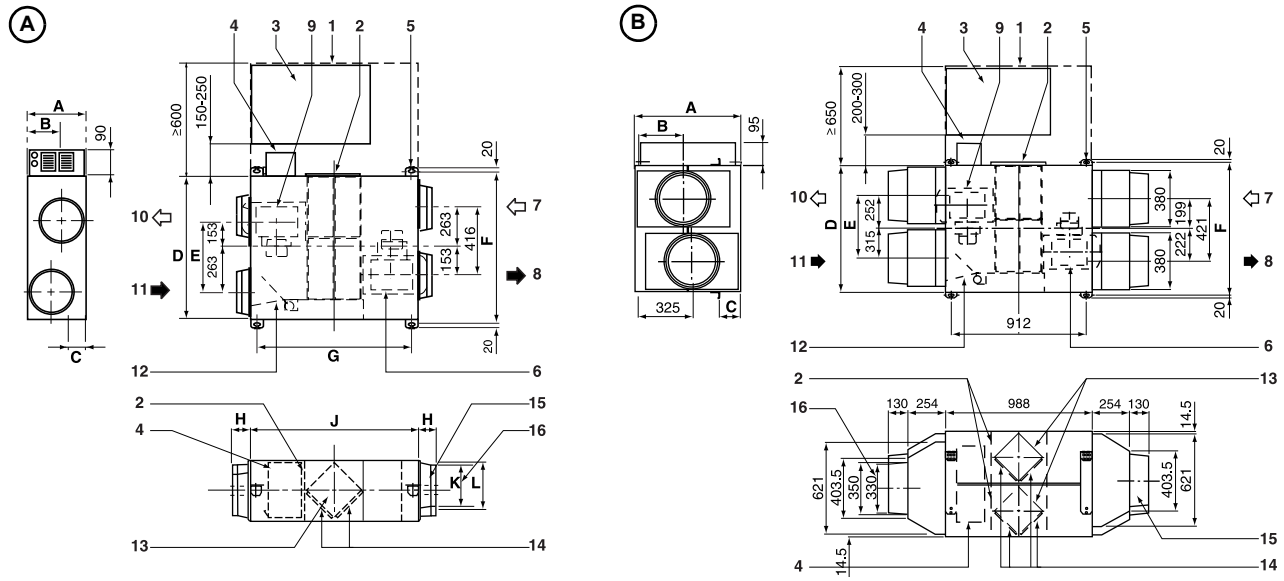
DAIKIN

INSTALLATION MANUAL

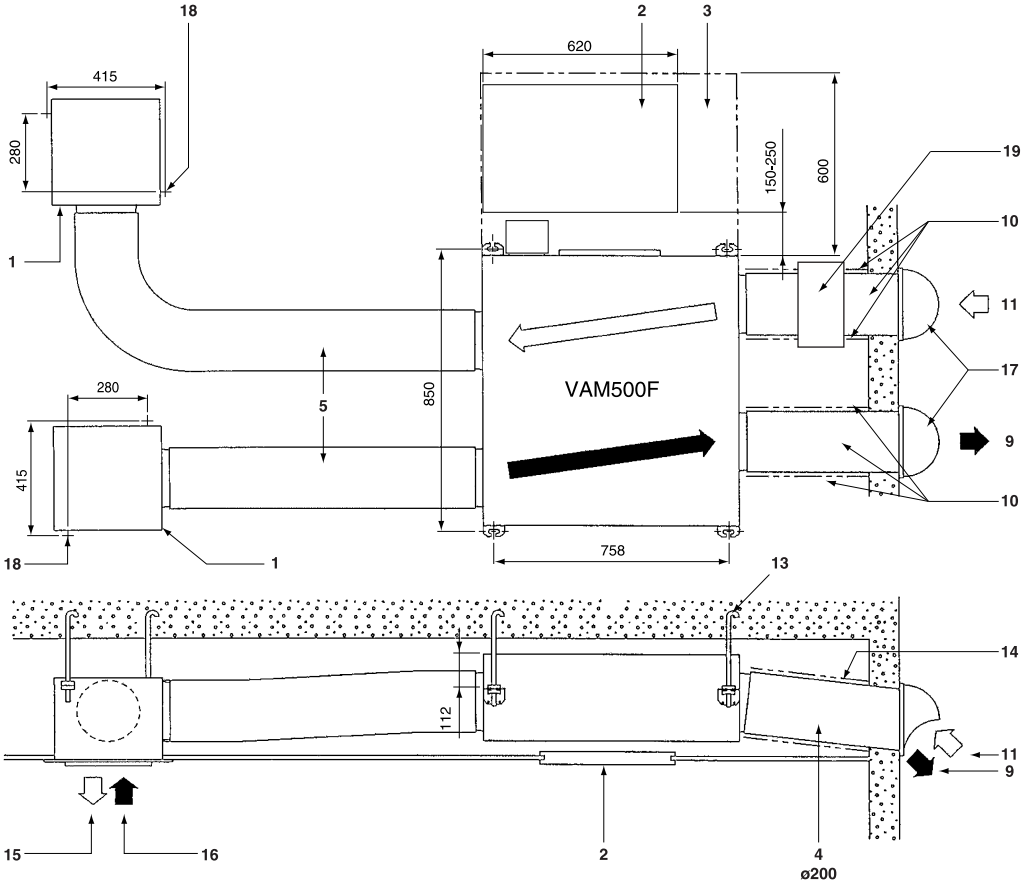
Total Heat Exchanger
HRV (Heat Reclaim Ventilation)
(Ceiling mounted duct type)

VAM350FB
VAM500FB
VAM650FB
VAM800FB
VAM1000FB
VAM1500FB
VAM2000FB

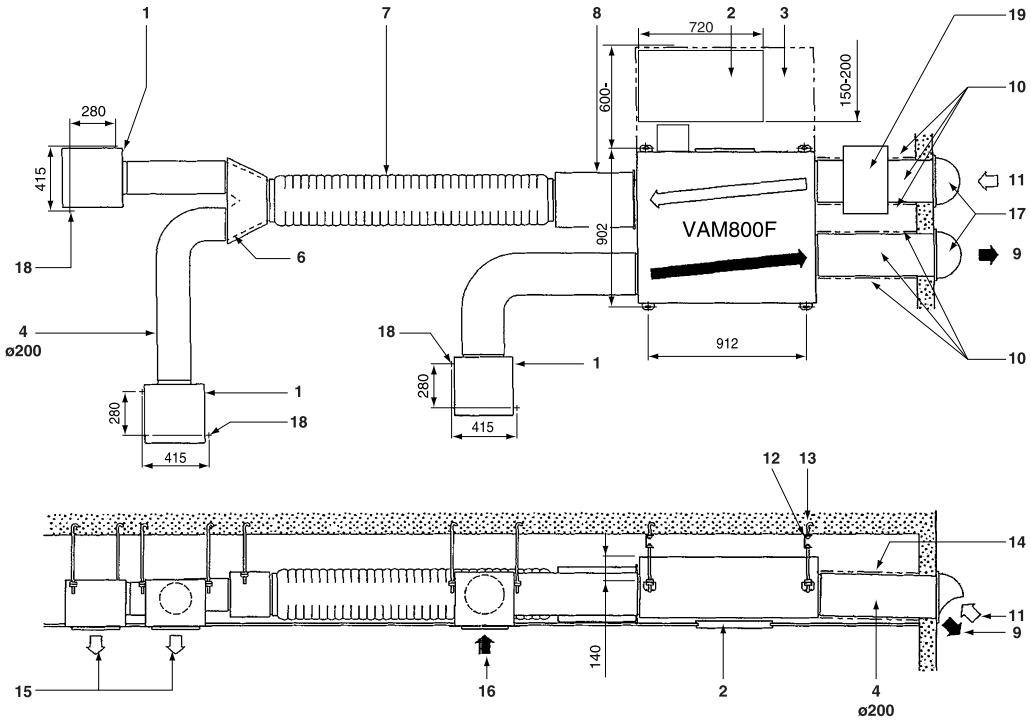


	A	B	C	D	E	F	G	H	J	K	L
VAM350F	285	164	112	800	416	850	758	132	812	146	200
VAM500F								84		197	
VAM650F	348	204	145	852	421	902	912	137	988	196	250
VAM800F								98		246	263
VAM1000F				1140	568	1190					
VAM1500F	710	383	140	852	421	898		130		330	350
VAM2000F				1140	568	1186					

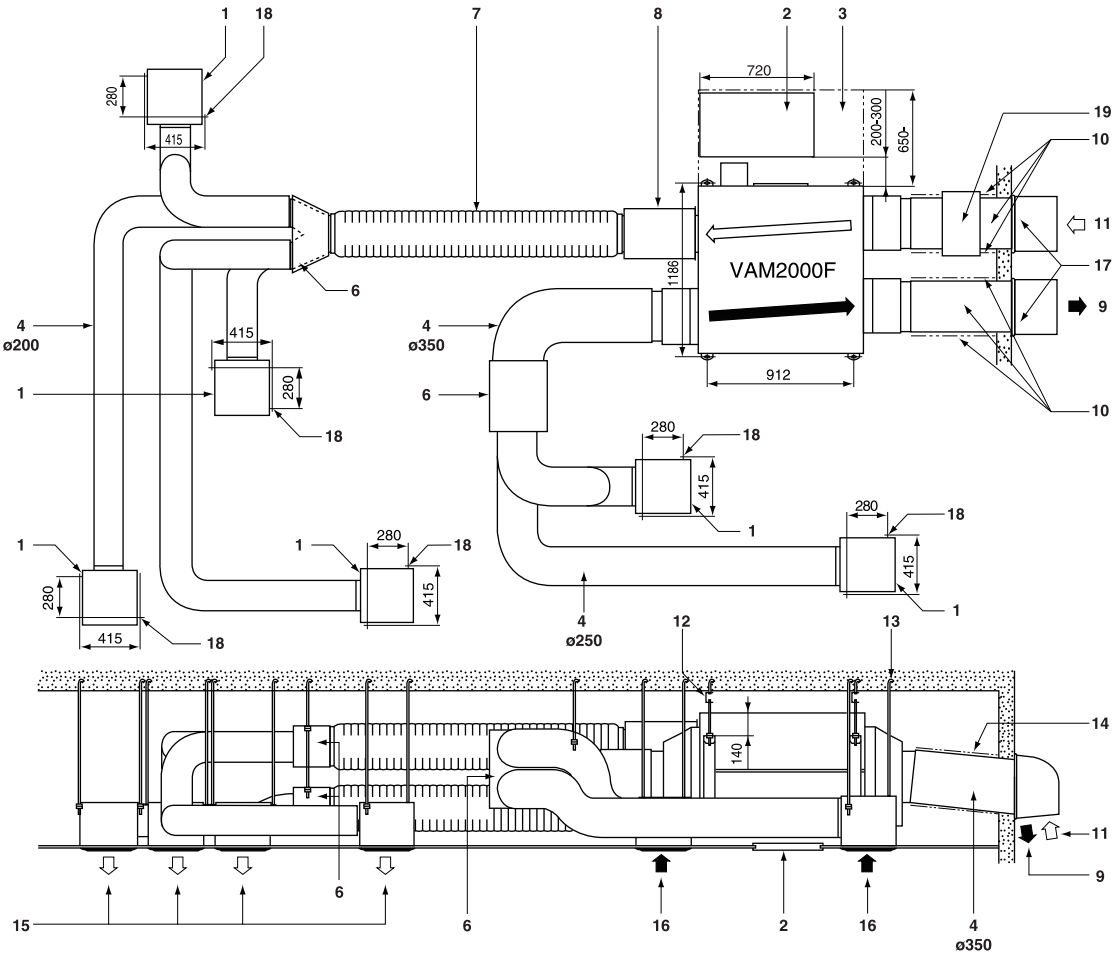
1



2


VAM800F
720
280
415
600-
902
150-200
912
140
ø200

3


VAM2000F
720
280
415
200-300
650-
1186
912
140
ø200
ø350
ø250

4

CE - DECLARATION-OF-CONFORMITY
CE - KONFORMITÄTSERKLÄRUNG
CE - DECLARATION-DE-CONFORMITE
CE - CONFORMITEITSVERKLARING

CE - DECLARACION-DE-CONFORMIDAD
CE - DICHIARAZIONE-DI-CONFORMITA
CE - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ

CE - DECLARAÇÃO-DE-CONFORMIDADE
CE - ЗАЯВЛЕНИЕ-О-СООТВЕТСТВИИ
CE - OVERENSSTEMMELSESERKLÆRING
CE - FÖRSÄKRAN-OM-ÖVERENSTÄMMELSE

CE - ERKLÆRING OM-SAMSVAR
CE - ILMOITUS-YHDENMUKAISUUDESTA
CE - PROHLÁŠENÍ-O-SHODĚ

CE - IZJAVA-O-USKLAĐENOSTI
CE - MEGFELELŐSÉGI-NYILATKOZAT
CE - DEKLARACJA-ZGODNOŚCI
CE - DECLARAŢIE-DE-CONFORMITATE

CE - IZJAVA O SKLADNOSTI
CE - VASTAVUSDEKLARATSIOON
CE - ДЕКЛАРАЦИЯ-ЗА-СЪОТВЕТСТВИЕ

CE - ATITIKTIES-DEKLARACIJA
CE - ATBILSTĪBAS-DEKLARĀCIJA
CE - VYHLÁSENIE-ZHODY
CE - UYUMLULUK-BİLDİRİSİ

Daikin Europe N.V.

01 (GB) declares under its sole responsibility that the air conditioning models to which this declaration relates:
02 (D) erklärt auf seine alleinige Verantwortung daß die Modelle der Klimageräte für die diese Erklärung bestimmt ist:
03 (F) déclare sous sa seule responsabilité que les appareils d'air conditionné visés par la présente déclaration:
04 (NL) verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de airconditioning units waarop deze verklaring betrekking heeft:
05 (E) declara baja su única responsabilidad que los modelos de aire acondicionado a los cuales hace referencia la declaración:
06 (I) dichiara sotto sua responsabilità che i condizionatori modello a cui è riferita questa dichiarazione:
07 (GR) δηλώνει με αποκλειστική της ευθύνη ότι τα μοντέλα των κλιματιστικών συσκευών στα οποία αναφέρεται η παρούσα δήλωση:
08 (P) declara sob sua exclusiva responsabilidade que os modelos de ar condicionado a que esta declaração se refere:
09 (RUS) заявляет, исключительно под свою ответственность, что модели кондиционеров воздуха, к которым относится настоящее заявление:
10 (DK) erklærer under eneansvar, at klimaanlægmodellerne, som denne deklaration vedrører:
11 (S) deklarerar i egenskap av huvudansvarig, att luftkonditioneringsmodellerna som berörs av denna deklaration innebär att:
12 (N) erklærer et fullstendig ansvar for at de luftkondisjoneringsmodeller som berøres av denne deklarasjon, innebærer at:
13 (FIN) ilmoittaa yksinomaan omalla vastuullaan, että tämän ilmoituksen tarkoittamat ilmastointilaitteiden mallit:
14 (CZ) prohlašuje ve své plné odpovědnosti, že modely klimatizace, k nimž se toto prohlášení vztahuje:
15 (HR) izjavljuje pod isključivo vlastitom odgovornošću da su modeli klima uređaja na koje se ova izjava odnosi:
16 (H) teljes felelőssége tudatában kijelenti, hogy a klímaberendezés modellek, melyekre e nyilatkozat vonatkozik:
17 (PL) deklaruje na własną i wyłączną odpowiedzialność, że modele klimatyzatorów, których dotyczy niniejsza deklaracja:
18 (RO) declară pe proprie răspundere că aparatele de aer condiţionat la care se referă această declaraţie:
19 (SLO) z vso odgovornostjo izjavlja, da so modeli klimatskih naprav, na katere se izjava nanaša:
20 (EST) kinnitab oma täielikul vastutusel, et käesoleva deklaratsiooni alla kuuluvad kliimaseadmete mudelid:
21 (BG) декларира на своя отговорност, че моделите климатична инсталация, за които се отнася тази декларация:
22 (LT) visiška savo atsakomybe skelbia, kad oro kondicionavimo prietaisų modeliai, kuriems yra taikoma ši deklaracija:
23 (LV) ar pilnu atbildību apliecina, ka tālāk uzskaitīto modeļu gaisa kondicionētāji, uz kuriem attiecas šī deklarācija:
24 (SK) vyhlasuje na vlastnú zodpovednosť, že tieto klimatizačné modely, na ktoré sa vzťahuje toto vyhlásenie:
25 (TR) tamamen kendi sorumluluğunda olmak üzere bu bildirinin ilgili olduğu klima modellerinin aşağıdaki gibi olduğunu beyan eder:

VAM350FB7VE*, VAM500FB7VE*, VAM650FB7VE*, VAM800FB7VE*, VAM1000FB7VE*, VAM1500FB7VE*, VAM2000FB7VE*,

* = , , 1, 2, 3, ..., 9

01 are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
02 der/den folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
03 sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:
04 conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:
05 están en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativo(s), siempre que sean utilizados de acuerdo con nuestras instrucciones:
06 sono conformi al(i) seguente(i) standard(s) o altro(i) documento(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:
07 είναι σύμφωνα με το(α) ακόλουθο(α) πρότυπο(α) ή άλλο έγγραφο(α) κανονισμών, υπό την προϋπόθεση ότι χρησιμοποιούνται σύμφωνα με τις οδηγίες μας:
08 estão em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s), desde que estes sejam utilizados de acordo com as nossas instruções:
09 соответствуют следующим стандартам или другим нормативным документам, при условии их использования согласно нашим инструкциям:
10 overholder følgende standard(er) eller andet/andre retningsgivende dokument(er), forudsat at disse anvendes i henhold til vore instrukser:
11 respektive utrustning är utförd i överensstämmelse med och följer följande standard(er) eller andra normgivande dokument, under förutsättning att användning sker i överensstämmelse med våra instruktioner:
12 respektive utstyr er i overensstemmelse med følgende standard(er) eller andre normgivende dokument(er), under forutssetning av at disse brukes i henhold til våre instrukser:
13 vastaavat seuraavien standardien ja muiden ohjeellisten dokumenttien vaatimuksia edellyttäen, että niitä käytetään ohjeidemme mukaisesti:
14 za předpokladu, že jsou využívány v souladu s našimi pokyny, odpovídají následujícím normám nebo normativním dokumentům:
15 u skladu sa slijedećim standardom(ima) ili drugim normativnim dokumentom(ima), uz uvjet da se oni koriste u skladu s našim uputama:
16 megfelelnek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azokat előírás szerint használják:
17 spełniają wymogi następujących norm i innych dokumentów normalizacyjnych, pod warunkiem że używane są zgodnie z naszymi instrukcjami:
18 sunt în conformitate cu următorul (următoarele) standard(e) sau alt(e) document(e) normativ(e), cu condiţia ca acestea să fie utilizate în conformitate cu instrucţiunile noastre:
19 skladni z naslednjimi standardi in drugimi normativi, pod pogojem, da se uporabljajo v skladu z našimi navodili:
20 on vastavuses järgmis(t)e standardi(te)ga või teiste normatiivsete dokumentidega, kui neid kasutatakse vastavalt meie juhenditele:
21 съответстват на следните стандарти или други нормативни документи, при условие, че се използват съгласно нашите инструкции:
22 atitinka žemiau nurodytus standartus ir (arba) kitus norminius dokumentus su sąlyga, kad yra naudojami pagal mūsų nurodymus:
23 tad, ja lietoti atbilstoši ražotāja norādījumiem, atbilst sekojošiem standartiem un citiem normatīviem dokumentiem:
24 sú v zhode s nasledovnou(ými) normou(ami) alebo iným(i) normatívnym(i) dokumentom(ami), za predpokladu, že sa používajú v súlade s našim návodom:
25 ürünün, talimatlarımıza göre kullanılması koşuluyla aşağıdaki standartlar ve norm belirten belgelerle uyumludur:

EN60335-2-40,

01 following the provisions of:
02 gemäß den Vorschriften der:
03 conformément aux stipulations des:
04 overeenkomstig de bepalingen van:
05 siguiendo las disposiciones de:
06 secondo le prescrizioni per:
07 με τήρηση των διατάξεων των:
08 de acordo com o previsto em:
09 в соответствии с положениями:
10 under iagttagelse af bestemmelserne i:
11 enligt villkoren i:
12 gitt i henhold til bestemmelsene i:
13 noudattaen määräyksiä:
14 za dodržení ustanovení předpisu:
15 prema odredbama:
16 követi a(z):
17 zgodnie z postanowieniami Dyrektyw:
18 în urma prevederilor:
19 ob upoštevanju določb:
20 vastavalt nõuetele:
21 следвайки клаузите на:
22 laikantis nuostatų, pateikiamų:
23 ievērojot prasības, kas noteiktas:
24 održavajúc ustanovenia:
25 bunun koşullarına uygun olarak:

Machinery 2006/42/EC **
Electromagnetic Compatibility 2004/108/EC *

01 Directives, as amended.
02 Direktiven, gemäß Änderung.
03 Directives, telles que modifiées.
04 Richtlijnen, zoals geamendeerd.
05 Directivas, según lo enmendado.
06 Direttive, come da modifica.
07 Οδηγιών, όπως έχουν τροποποιηθεί.
08 Directivas, conforme alteração em.
09 Директив со всеми поправками.
10 Direktiver, med senere ændringer.
11 Direktiv, med företagna ändringar.
12 Direktiver, med foretatte endringer.
13 Direktiivejä, sellaisina kuin ne ovat muutettuina.
14 v platném znění.
15 Smjernice, kako je izmijenjeno.
16 irányelv(ek) és módosításaik rendelkezéseit.
17 z późniejszymi poprawkami.
18 Directivelor, cu amendamentele respective.
19 Direktive z vsemi spremembami.
20 Direktiivid koos muudatustega.
21 Директиви, с техните изменения.
22 Direktyvose su papildymais.
23 Direktīvās un to papildinājumos.
24 Smernice, v platnom znení.
25 Değiştirilmiş halleriyle Yönetmelikler.

01 Note * as set out in **<A>** and judged positively by **<B>** according to the **Certificate <C>**.
02 Hinweis * wie in **<A>** aufgeführt und von **<B>** positiv beurteilt gemäß **Zertifikat <C>**.
03 Remarque * tel que défini dans **<A>** et évalué positivement par **<B>** conformément au **Certificat <C>**.
04 Bemerk * zoals vermeld in **<A>** en positief beoordeeld door **<B>** overeenkomstig **Certificaat <C>**.
05 Nota * como se establece en **<A>** y es valorado positivamente por **<B>** de acuerdo con el **Certificado <C>**.
06 Nota * delineato nel **<A>** e giudicato positivamente da **<B>** secondo il **Certificato <C>**.
07 Σημείωση * όπως καθορίζεται στο **<A>** και κρίνεται θετικά από το **<B>** σύμφωνα με το **Πιστοποιητικό <C>**.
08 Nota * tal como estabelecido em **<A>** e com o parecer positivo de **<B>** de acordo com o **Certificado <C>**.
09 Примечание * как указано в **<A>** и в соответствии с положительным решением **<B>** согласно **Свидетельству <C>**.
10 Bemærk * som anført i **<A>** og positivt vurderet af **<B>** i henhold til **Certifikat <C>**.
11 Information * enligt **<A>** och godkänts av **<B>** enligt **Certifikatet <C>**.
12 Merk * som det fremkommer i **<A>** og gjennom positiv bedømmelse av **<B>** ifølge **Sertifikat <C>**.
13 Huom * jotka on esitetty asiakirjassa **<A>** ja jotka **<B>** on hyväksynyt **Sertifikaatin <C>** mukaisesti.
14 Poznámka * jak bylo uvedeno v **<A>** a pozitivně zjištěno **<B>** v souladu s **osvědčením <C>**.
15 Napomena * kako je izloženo u **<A>** i pozitivno ocijenjeno od strane **<B>** prema **Certifikatu <C>**.
16 Megjegyzés * a(z) **<A>** alapján, a(z) **<B>** igazolta a megfelelést, a(z) **<C>** **tanúsítvány** szerint.
17 Uwaga * zgodnie z dokumentacją **<A>**, pozytywną opinią **<B>** i **Świadectwem <C>**.
18 Notă * aşa cum este stabilit în **<A>** şi apreciat pozitiv de **<B>** în conformitate cu **Certificatul <C>**.
19 Opomba * kot je določeno v **<A>** in odobreno s strani **<B>** v skladu s **certifikatom <C>**.
20 Märkus * nagu on näidatud dokumendis **<A>** ja heaks kiidetud **<B>** järgi vastavalt **sertifikaadile <C>**.
21 Забележка * както е изложено в **<A>** и оценено положително от **<B>** съгласно **Сертификата <C>**.
22 Pastaba * kaip nustatyta **<A>** ir kaip teigiamai nusprėsta **<B>** pagal **Sertifikatą <C>**.
23 Piezīmes * kā norādīts **<A>** un atbilstoši **<B>** pozitīvajam vērtējumam saskaņā ar **sertifikātu <C>**.
24 Poznámka * ako bolo uvedené v **<A>** a pozitívne zistené **<B>** v súlade s **osvedčením <C>**.
25 Not * **<A>**'da belirtildiği gibi ve **<C>** **Sertifikasına** göre **<B>** tarafından olumlu olarak değerlendirildiği gibi.

<A>	**DAIKIN.TCF.009G2/11-2012**
<B>	**DEKRA (NB0344)**
<C>	**59277-KRQ/ECM95-4303**

**01 ** Daikin Europe N.V. is authorised to compile the Technical Construction File.
**02 ** Daikin Europe N.V. hat die Berechtigung die Technische Konstruktionsakte zusammenzustellen.
**03 ** Daikin Europe N.V. est autorisé à compiler le Dossier de Construction Technique.
**04 ** Daikin Europe N.V. is bevoegd om het Technisch Constructiedossier samen te stellen.
**05 ** Daikin Europe N.V. está autorizado a compilar el Archivo de Construcción Técnica.
**06 ** Daikin Europe N.V. è autorizzata a redigere il File Tecnico di Costruzione.
**07 ** Η Daikin Europe N.V. είναι εξουσιοδοτημένη να συντάξει τον Τεχνικό φάκελο κατασκευής.
**08 ** A Daikin Europe N.V. está autorizada a compilar a documentação técnica de fabrico.
**09 ** Компания Daikin Europe N.V. уполномочена составить Комплект технической документации.
**10 ** Daikin Europe N.V. er autoriseret til at udarbejde de tekniske konstruktionsdata.
**11 ** Daikin Europe N.V. är bemyndigade att sammanställa den tekniska konstruktionsfilen.
**12 ** Daikin Europe N.V. har tillatelse til å kompilere den Tekniske konstruksjonsfilen.
**13 ** Daikin Europe N.V. on valtuutettu laatimaan Teknisen asiakirjan.
**14 ** Společnost Daikin Europe N.V. má oprávnění ke kompilaci souboru technické konstrukce.
**15 ** Daikin Europe N.V. je ovlašten za izradu Datoteke o tehničkoj konstrukciji.
**16 ** A Daikin Europe N.V. jogosult a műszaki konstrukciós dokumentáció összeállítására.
**17 ** Daikin Europe N.V. ma upoważnienie do zbierania i opracowywania dokumentacji konstrukcyjnej.
**18 ** Daikin Europe N.V. este autorizat să compileze Dosarul tehnic de construcţie.
**19 ** Daikin Europe N.V. je pooblaščen za sestavo datoteke s tehnično mapo.
**20 ** Daikin Europe N.V. on volitatud koostama tehnilist dokumentatsiooni.
**21 ** Daikin Europe N.V. е оторизирана да състави Акта за техническа конструкция.
**22 ** Daikin Europe N.V. yra įgaliota sudaryti šį techninės konstrukcijos failą.
**23 ** Daikin Europe N.V. ir autorizēts sastādīt tehnisko dokumentāciju.
**24 ** Spoločnosť Daikin Europe N.V. je oprávnená vytvoriť súbor technickej konštrukcie.
**25 ** Daikin Europe N.V. Teknik Yapı Dosyasını derlemeye yetkilidir.

2P333093-1

Jean-Pierre Beuselinck
Director
Ostend, 4th of February 2013

DAIKIN EUROPE N.V.
Zandvoordestraat 300, B-8400 Oostende, Belgium

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Thank you for purchasing this Daikin HRV.

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

HRV – Heat Reclaim Ventilation

Please read this installation manual carefully and install the unit properly to keep it at full capacity for a long time.

Please prepare some necessary parts, for example round hoods, air suction/discharge grilles etc., before the installation of the unit.

Safety considerations

Please read these "Safety considerations" carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.

Also, inform customers that they should store this installation manual along with the operation manual for future reference.

This air conditioner comes under the term “appliances not accessible to the general public”.

Meaning of warning and caution symbols

WARNING	Failure to follow these instructions properly may result in personal injury or loss of life.
CAUTION	Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

WARNING

- Never inspect or service the unit by yourself.
  Ask a qualified service person to perform this work.
- Electric shock may result. Before servicing the unit, always shut off power.
- Persons servicing the unit are required to wear gloves.
- All wiring must be performed by an authorized electrician and must comply with the applicable legislation.
- Always use the air filter.
  If the air filter is not used, heat exchange elements will be clogged, possibly causing poor performance and subsequent failure.
- Do not change operations suddenly.
  It can result not only in malfunction but also failure of switches or relays in the body.
- This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
  Children should be supervised to ensure that they do not play with the appliance.
- Do not use an HRV or an air suction/discharge grille in the following places:
  - Places such as machinery plants and chemical plants where gas, which contains noxius gas or corrosive components of materials such as acid, alkali, organic solvent and paint, is generated.
  - Places such as bathrooms subjected to moisture.
    Electric leak or electric shock and other failure can be caused.

- Places subjected to high temperature or direct flame.
  Avoid a place where the temperature near the HRV unit and the air suction/discharge air grille exceeds 50°C. If the unit is used at high temperature, deformed air filter and heat exchange element or burned motor result. Unit ambient temperature conditions should be between -15°C and 50°C (80% relative humidity or less)
- Places subjected to much carbon black.
  Carbon black attaches to air filter and heat exchange element, disabling them.
- The equipment is not intended for use in a potentially explosive atmosphere.

■ Improper installation or attachment of equipment or accessories could result in electric shock, short-circuit, leaks, fire or other damage to the equipment. Be sure only to use accessories, optional equipment and spare parts made by Daikin which are specially designed for use with the products as of subject in this manual and have them installed by an installer.

Dimensions

(See figure 1 (A = Models 350F~1000F, B = Models 1500F~2000F))

1	Maintenance space for the heat exchange elements, air filters and fans
2	Maintenance cover
3	Inspection hole Ø450 mm
4	Switch box
5	4x 14x40 mm Ceiling hook (Oval hole)
6	Exhaust air fan
7	OA (Outdoor air) Fresh air from outdoors
8	EA (Exhaust air) Exhaust air to outdoors
9	Supply air fan
10	SA (Supply air) Supply air to room
11	RA (Retun air) Return air from room
12	Damper plate
13	Heat exchange elements
14	Air filters
15	Applicable duct
16	Nominal diameter

Installation

Installation position

CAUTION

- **The appliance is designed to be a built-in appliance. It shall not be accessible to the general public. Adequate measures have to be taken to prevent access by other than qualified persons.**
- **Install the unit in a place strong enough to support its weight.**
  Poor installation is hazardous. It also causes vibrations and unusual operating noise.
- **Provide the service space and the inspection holes.**
  (Be sure to provide the inspection holes to inspect the air filters, the heat exchange elements and fans.)
- **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.)
- **This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**

■ Example of Installation, VAM500F (See figure 2), VAM800F (See figure 3), VAM2000F (See figure 4)

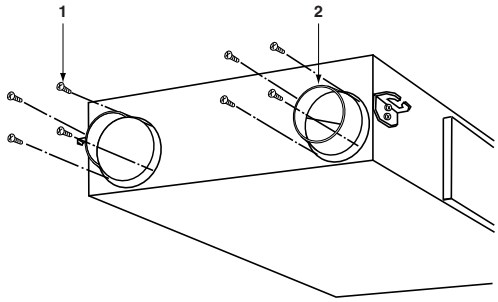
1	Air suction/discharge grille (option)
2	Inspection hole Ø 450 mm (field supply)
3	Maintenance space for the heat exchange elements, air filters and fans
4	Duct (field supply)
5	Duct (Ø200) (field supply) or (*) Flexible duct (option)
6	Branch duct (field supply)
7	(*) Flexible duct (field supply)
8	(*) Silencer (option) (only for VAM500 till 2000)
9	EA (Exhaust air to outdoors)
10	Heat Insulator (field supply)
11	OA (Outdoor air) Fresh air from outdoors
12	Metal suspension bracket for absorbing vibration (field supply)
13	Suspension bolt (field supply)
14	Gradient of down to outdoor ≥1/50
15	SA (Supply air to room)
16	RA (Return air from room)
17	Round hood (field supply)
18	Suspension bolt postion
19	Additional external damper (field supply)

CAUTION
on installing the ducts

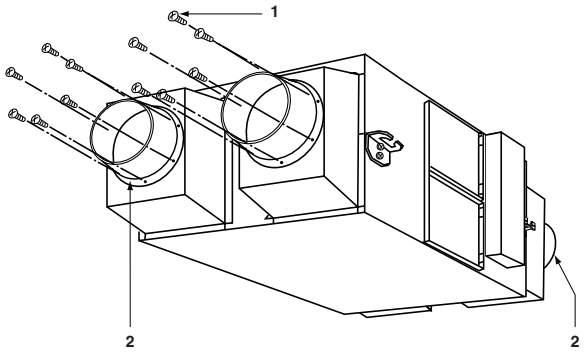
- The parts marked with (*) are effective in reducing blowing noise.
- When using the unit at a quiet place, use the optional silencer box and flexible duct at the part of the air discharge outlet on the indoor side “SA” (supply air to room) of the unit, to counter the noise.
- When selecting installation materials, consider the required volume of air flow 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.
- Access inside the unit is only allowed through the service hole. Install grilles in case no ducts are installed.
- Unit sound pressure level is less than 70dB (A).

Preparations

■ **VAM350F, VAM500F**



■ **VAM650F, VAM800F, VAM1000F, VAM1500F, VAM2000F**



1 Screw (accessories)

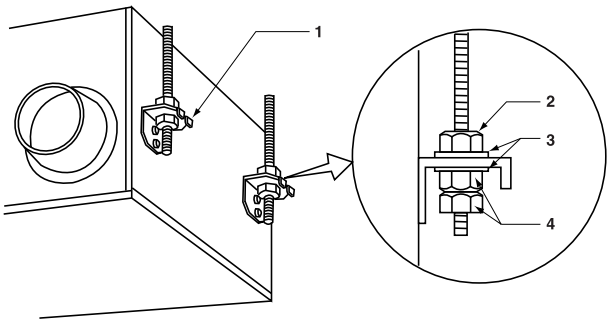
2 Duct connecting flange (accessories)

■ Installation of duct connecting flanges
Attach the provided duct connecting flanges using screws (accessories).

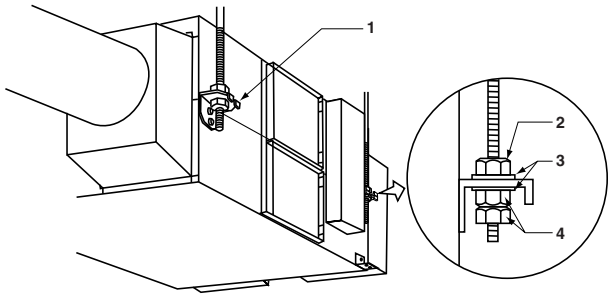
	screws provided
VAM350	16
VAM500	16

	screws provided
VAM650	24
VAM800	24
VAM1000	24
VAM1500	24
VAM2000	24

■ **VAM350F, VAM500F, VAM650F, VAM800F, VAM1000F**



■ **VAM1500F, VAM2000F**



1 Ceiling hook

2 Nut

3 Washer

4 Double nuts

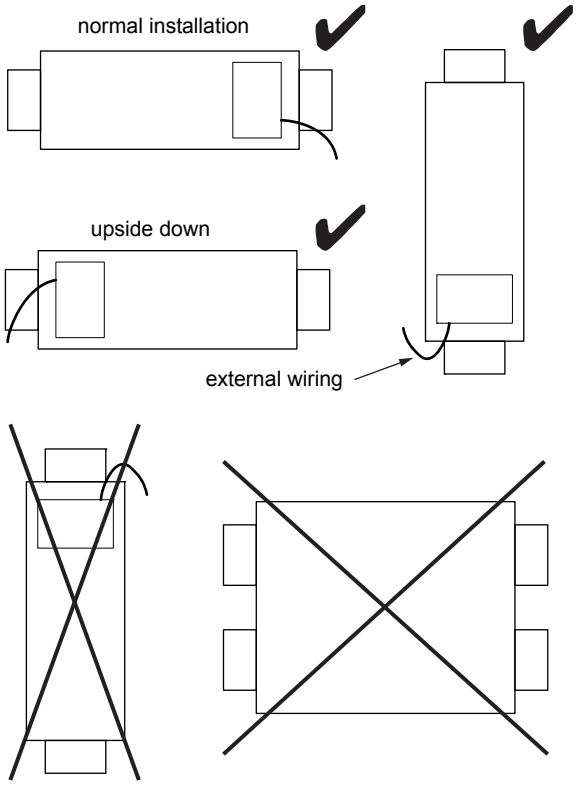
Installation of HRV

■ Install the anchor bolt (M10 to 12) in advance.
Pass the metal suspension bracket through the anchor bolt and secure the anchor bolt with washer and nut.
(Before installation, check for foreign objects such as vinyl and paper remaining inside the fan housing.)

■ Attach the indoor (SA, RA) and outdoor (EA, OA) ducts by refering to the duct diagram on the swithbox.

NOTE Remove the two fixing metals for transportation if it prevents installation work. (Be sure to screw in the removed mounting screw on the body side to prevent air leakage.)

Unit orientation

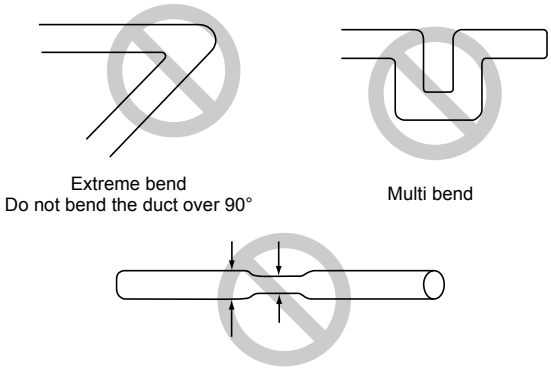


Installation in positions other than horizontal are allowed under the following conditions:

- There shall be no danger of water entering the control box (condensation, nearby piping, etc.).
- The unit shall be sufficiently fixated.
- External switchbox wiring shall point downwards.
- Fan shaft has to remain horizontally.

Duct connection

Do not connect the ducts as follows



Extreme bend
Do not bend the duct over 90°

Multi bend

Reduce the diameter of the duct to be connected.
Do not reduce the duct diameter halfway.

1 The minimal radius of bends for flexible ducts are as follows:
300 mm duct: 200 mm diameter
375 mm duct: 250 mm diameter

2 To prevent air leakage, wind aluminum tape round the section after the duct connecting flange and the duct are connected.

3 Install the opening of the indoor air intake (SA) as far as possible from the opening of the exhaust suction (RA).

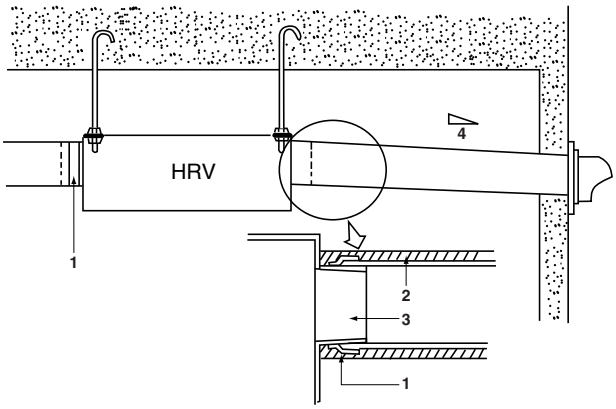
4 Use the duct applicable to the model of unit used (Refer to the outline drawing).

5 Install the two outdoor ducts with down slope (slope of 1/50 or more) to prevent entry of rain water. Also, provide insulation for both ducts to prevent dew formation. (Material: Glass wool of 25 mm thick)

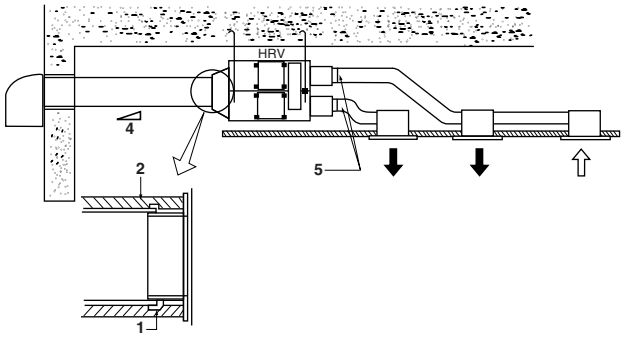
6 If the level of temperature and humidity inside the ceiling is always high, install a ventilation equipment inside the ceiling.

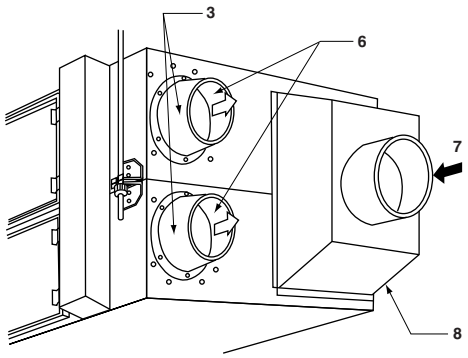
7 Insulate the duct and the wall electrically when a metal duct is to be penetrated through the metal lattice and wire lattice or metal lining of a wooden structure wall.

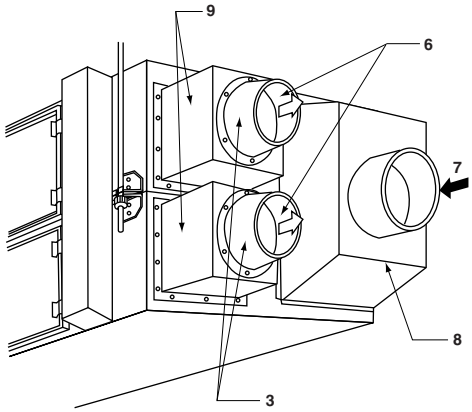
■ **VAM350F, VAM500F, VAM650F, VAM800F, VAM1000F**



■ **VAM1500F, VAM2000F**







1 Aluminium tape (field supply)
2 Insulation material (field supply)
3 Duct connecting flange (option)
4 Slope over 1/50
5 Duct connecting flange (option)
6 SA (Supply air)
7 RA (Return air)
8 Connecting chamber
9 Silencer (option)

■ Use Ø250 mm round ducts for the SA (supply air) and RA (return air) sides

1. Loosen the 12 screws off the SA (supply air) side and remove the connection chamber. Be sure to tighten up these screws back in position in order not to allow any air leak from the unit.

2. Fix the duct connecting flanges (option) with their accompanying 12 screws.

■ Introducing the silencers and other options.
This model handles a high air flow rate.
To reduce the blow-out noise, some optional attachments are available: silencer, flexible duct, thin air intake/exhaust grille, etc.

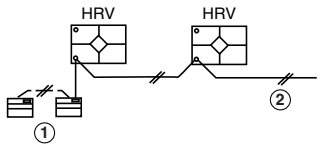
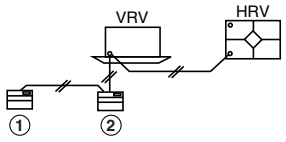
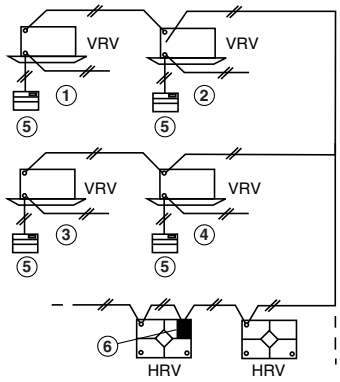
1. Remove the connection chamber off the SA (supply air) side and attach the upper and lower silencers.

2. Now fix the duct connecting flanges (option) and connect the Ø250 mm flexible ducts.

System configuration

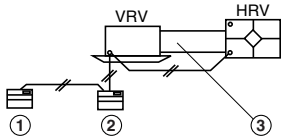
Independent system

Air conditioner linked operation system

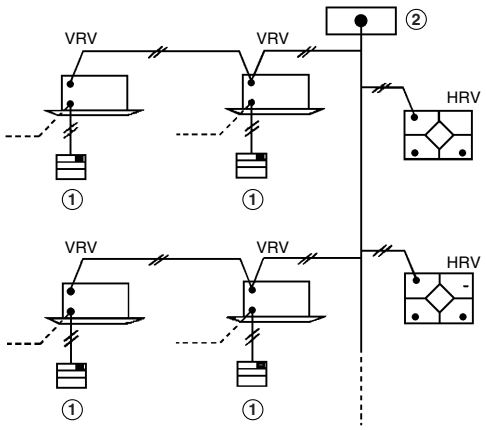
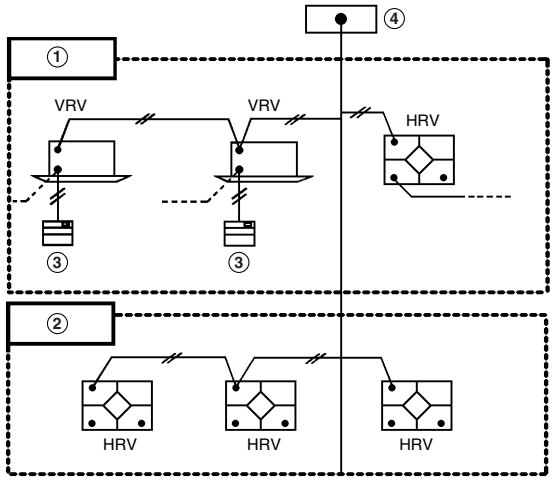
		System	Standard method	Related items in Electric wiring
Independent system		 **1** Remote controller for HRV **2** 2-wire cord (produced locally)	• Up to 16 units can be controlled with the remote controller for HRV. (A system with two remote controls can be created in the master/slave switching.) • All HRV operations can be used and indicated. • Operation monitor output and humidifier operation are possible using Adapter PCB. • Remote control cord should be procured locally. (Maximum cord length: 500 m)	"When connecting to Remote controller for HRV" on page 16
Combined operation system with VRV systems and Sky-air series	1-group linked operation system	 **1** Remote controller for air conditioner (Remote controller for HRV) **2** Remote controller for air conditioner	• A combined total of up to 16 air conditioners and the HRV can be controlled. • The HRV ventilation mode can be operated independently when air conditioners are not being used. • Using the local setting of the remote controller for air conditioners, various settings such as precool/pre-heat reservation on/off, ventilation flow rate, ventilation mode, etc.	"Standard 1-group linked-control system" on page 16
	Multi-group (2 or more) linked operation system	 **1** Group 1 **2** Group 2 **3** Group 3 **4** Group 4 **5** Remote controller for VRV **6** Distant control adapter	• 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.	"Linked control with more than two groups" on page 18

NOTE

- Adapter PCB for external input/output: BRP4A50A; Distant control adapter: KRP2A51 (installation box: KRP1B101).
- Operation of two or more groups is not possible with direct duct connection.
- With VAM types, the direct duct connection shown can also be selected for 1-group operation systems.

	System	Standard method	Related items in Electric wiring
Direct duct connection system	 **1** Remote controller for air conditioner (Remote controller for HRV) **2** Remote controller for air conditioner **3** Duct	• The HRV will operate only when the air conditioner fan is on. • Other specifications are the same as those of the standard system.	"Direct duct connection system for 1-group operation system" on page 17

Centralized control system (VRV system).

		System	Standard method	Related items in Electric wiring
Centralized control system	“All”/individual control system	 **1** Remote controller for air conditioner **2** Adapter PCB for remote controller , Schedule timer, On/Off controller	• 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.	“‘All”/“individual” control" on page 19
	Zone control system	 **1** Zone 1 **2** Zone 2 **3** Remote controller for air conditioner **4** Central controller	• Use of the centralized controller enables zone control via the centralized control line. (maximum of 64 zones) • The central controller displays the “Filter” indication and abnormality warnings, and enables resetting. • The centralized controller allows ventilation operation for each zone independently.	"Zone control system" on page 19

NOTE Wiring adapter for remote contact: BRP4A50A, Adapter PCB for remote control: KRP2A51, schedule timer: DST301B51, on/off controller: DCS301B51, central remote controller: DCS302C51

Electric wiring

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

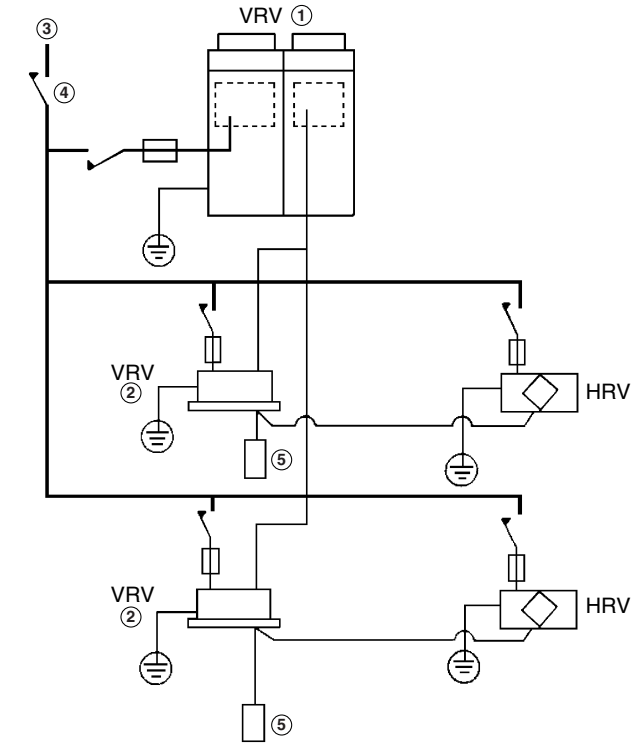
Connection of wiring

- Connect the wires in accordance with the diagram of each system.
- All wiring must be performed by an authorized electrician.
- All field supplied parts and materials and electric works must conform to local regulations.
- Use copper wire only

Connection of wiring

- A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with applicable legislation.
  Do not turn on the main switch until all the wiring is completed.
- 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.
- Fit the power supply wiring of each unit with a switch and fuse as shown in the drawing.
- Be sure to make the electric grounding (earth) connection.

Complete system example



Power supply wiring

Transmission wiring

Switch

Fuse

1 Outdoor unit

2 Indoor unit

3 Power supply

4 Main switch

5 Remote controller

Component electrical specifications

VAM		350FB	500FB	650FB	800FB	1000FB	1500FB	2000FB
Power supply (*)								
50 Hz		Power supply Max. 264 V/Min. 198 V						
MCA	(A)	0.9	1.3	1.6	2.5	3.0	5.0	5.0
MFA	(A)	16	16	16	16	16	16	16
Fan motor (*)								
P	(kW)	0.08x2	0.08x2	0.106x2	0.21x2	0.21x2	0.21x4	0.21x4
FLA	(A)	0.4	0.6	0.7	1.1	1.3	2.2	2.2

(*) MCA: Min. Circuit Amps
MFA: Max. Fuse Amps
P: Motor Rated Output
FLA: Full Load Amps

NOTE For details, refer to ELECTRICAL DATA.

Specifications for field supplied fuses and wire

VAM	350F	500F	650F	800F	1000F	1500F	2000F
Type	JVE, 5VE		JVE, 5VE, 7VE				
Power supply wiring							
Field supplied fuses	16 A						
Wire	H05VV-U3G						
Size	Wire size must comply with local regulations						
Transmission wiring							
Wire	Shield wire (2 wire)						
Size	0.75-1.25 mm^2						

Precautions

1 Do not connect wires of different gauge to the same power supply terminal. Looseness in the connection may cause overheating or electric malfunction.

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



Same gauge wires Different gauge wires

When using two power wires of a gauge greater than 2 mm^2 (Ø1.6), branch the line outside the terminal board of the unit in accordance with electrical equipment standards.
The branch must be sheathed, so as to provide a degree of insulation equal to or greater than the power supply wiring itself.

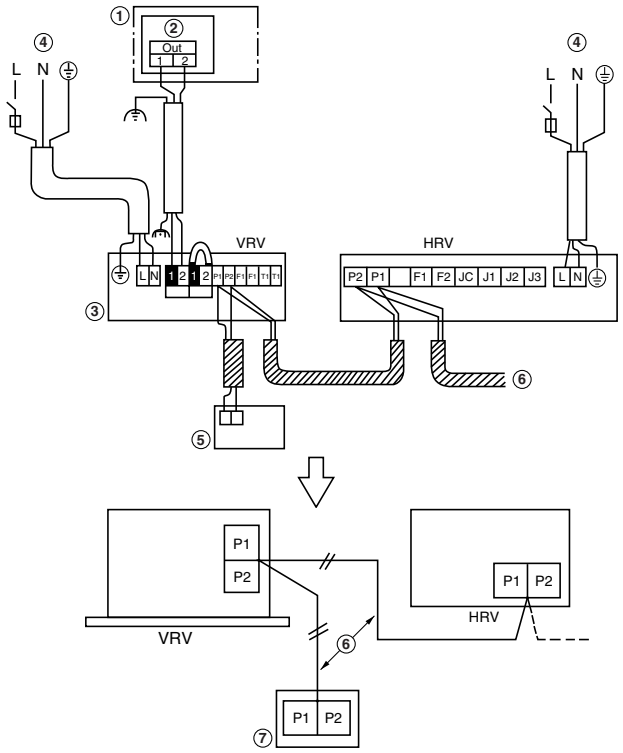
2 Keep total current of crossover wiring between indoor units less than 12 A.

3 Do not connect wires of different gauge to the same grounding terminal. Looseness in the connection may deteriorate protection.

4 Keep the power supply wiring distant from other wires to prevent noise.

5 For remote controller wiring, refer to the Installation manual of the remote controller.

Wiring example



- All transmission wiring except for the remote controller wires is polarized and must match the terminal symbol.
- Use shield wire in transmission wiring. Ground the shield of the shield wire to " ⏚ ", at the grounding screw, with the C-cup washer.

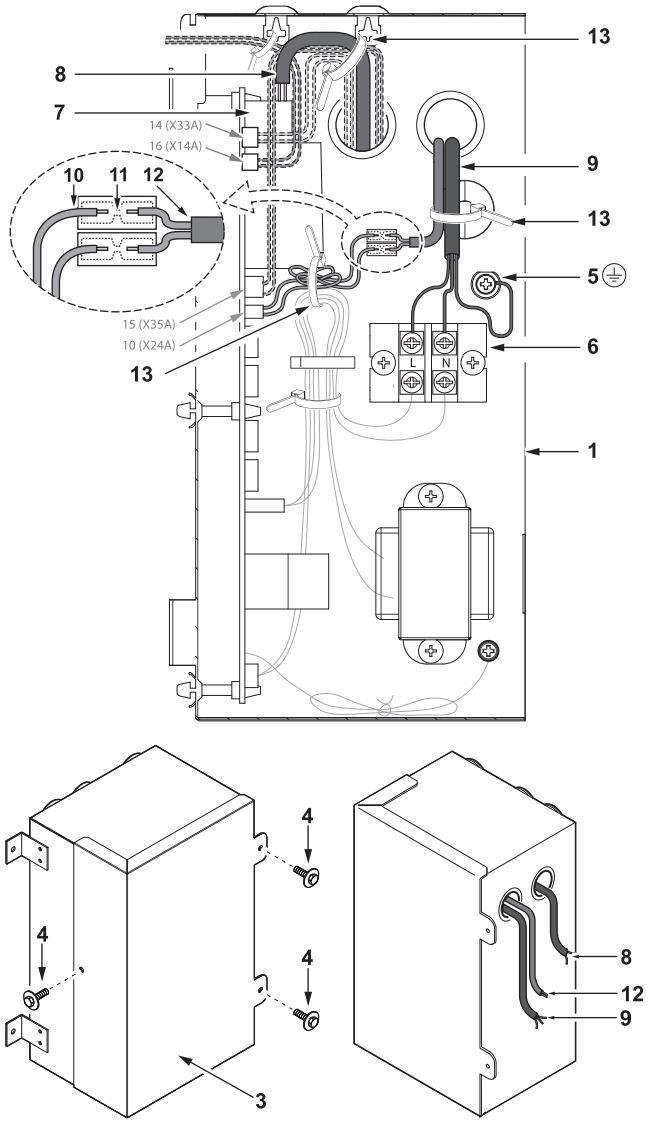
Opening the switch box

CAUTION

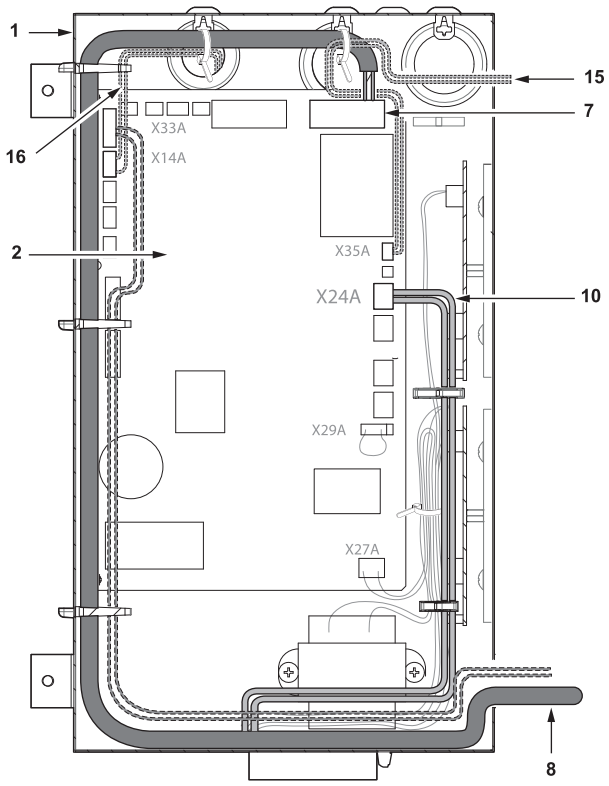
Before opening the cover, be sure to turn off the power switches of the main units and other devices connected with the main units.

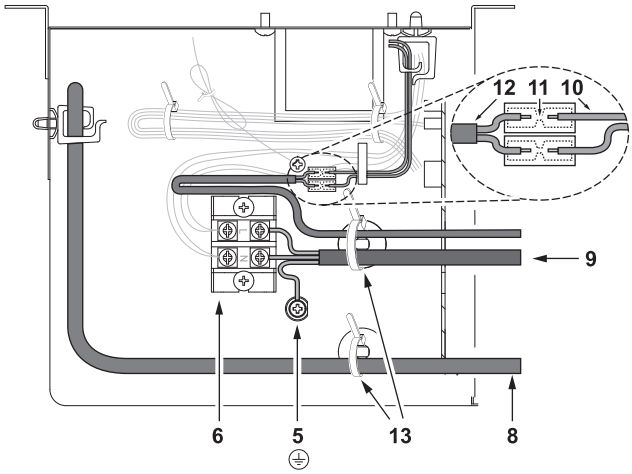
- Remove the screw securing the cover and open the switch box.
- Secure the power cord control wires with the clamp, as shown in the next figures.

■ **VAM350F, VAM500F, VAM650F**

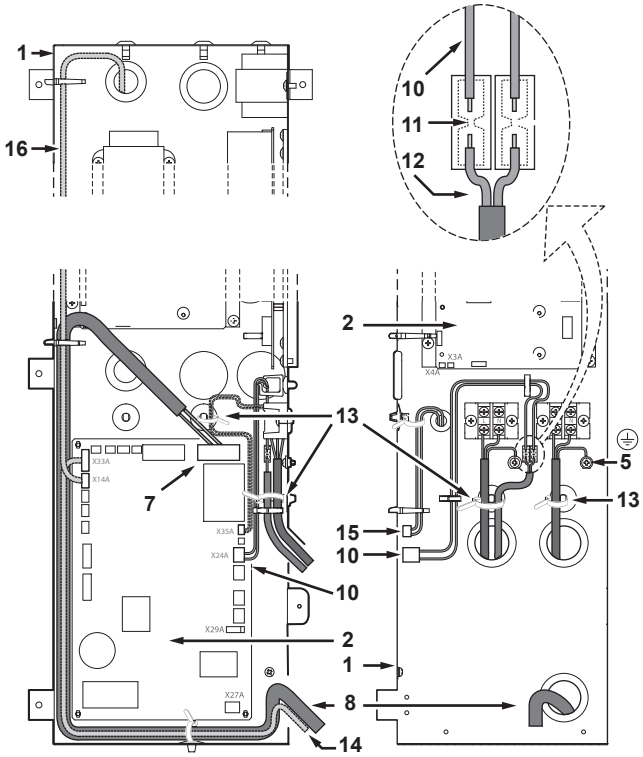


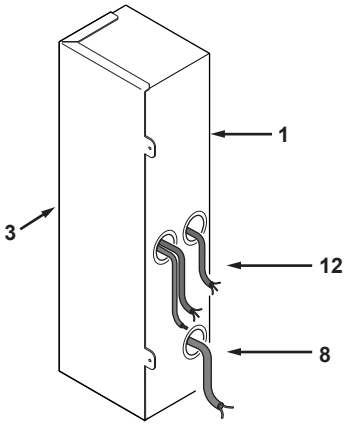
■ VAM800F, VAM1000F





■ VAM1500F, VAM2000F



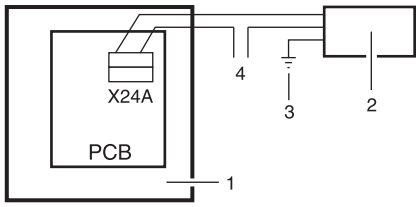


1	Electric component box
2	Printed circuit board
3	Electrical compartment cover
4	Securing screw and washer
5	Grounding terminal
6	Terminal board
7	Transmission wiring terminal board (P1, P2)
8	Transmission wiring (to optional remote controller)
9	Power supply cable
10	Wires for connection of additional external damper (supplied accessory)
11	Insulated splices-closed barrel connector (0.75 mm^2) (field supply)
12	Double or reinforced insulated flexible cable (0.75 mm^2) to external damper (field supply)
13	Tie wrap (field supply)
14	BRP4A50A (optional accessory)
15	KRP2A51 (optional accessory)
16	CO_2 sensor (optional accessory)

Required electrical connections for possible additional field supplied external damper

The external damper prevents the intake of outdoor air if the HRV is switched off. (Refer to figures 2, 3, and 4, item 19).

1. The HRV's main unit PCB operates the HRV and provides a contact for the external damper.



1	HRV main unit
2	External damper
3	Earth to external damper
4	Power source

CAUTION

Make sure you follow the instructions below in detail.

2. **Required electrical connections**
   Connect one end of the accessory harness to the X24A connector on the PCB and the other end to the harness leading to the external damper via an insulated splices-closed barrel connector (0.75 mm^2).
   Make sure that the wire is released from strain. The electrical circuit should have a current protection of 3 A and a maximum voltage of 250 V.

   X24A will make contact when the HRV fan starts operating. The contact will be opened when the the fan is stopped.

How to install the optional adapter circuit board (KRP2A51, BRP4A50A)

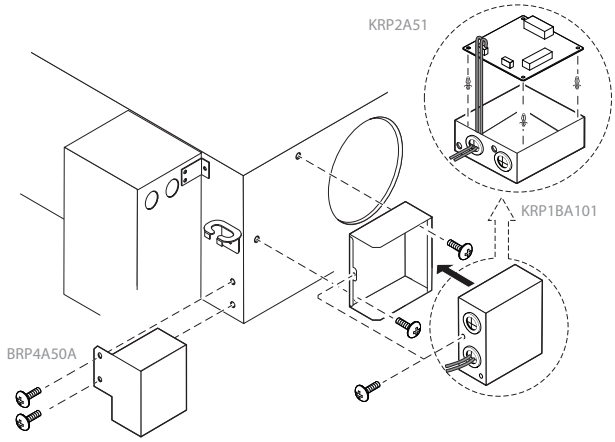
WARNING In case an electrical heater is installed, use nonflammable duct. Be sure to keep 2 m or more between the heater and HRV unit for safety.

When installing any of these options on the VAM1500/2000, it is necessary to prepare the fixing plate (EKMPVAM).

When installing KRP2A51, it is necessary to prepare the fixing box (KRP1BA101).

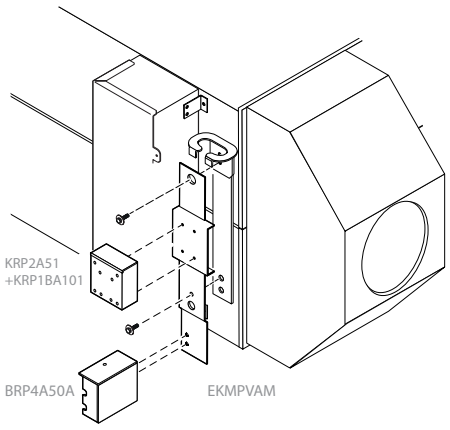
For VAM350/500/650/800/1000

1 Loosen the screws from the unit.
2 Attach optional PCB in box.
3 Guide the PCB wire through the dedicated holes and attach as instructed in "Opening the switch box".
4 Attach the box to the unit.
5 After the wires are connected, fasten the switch box cover.



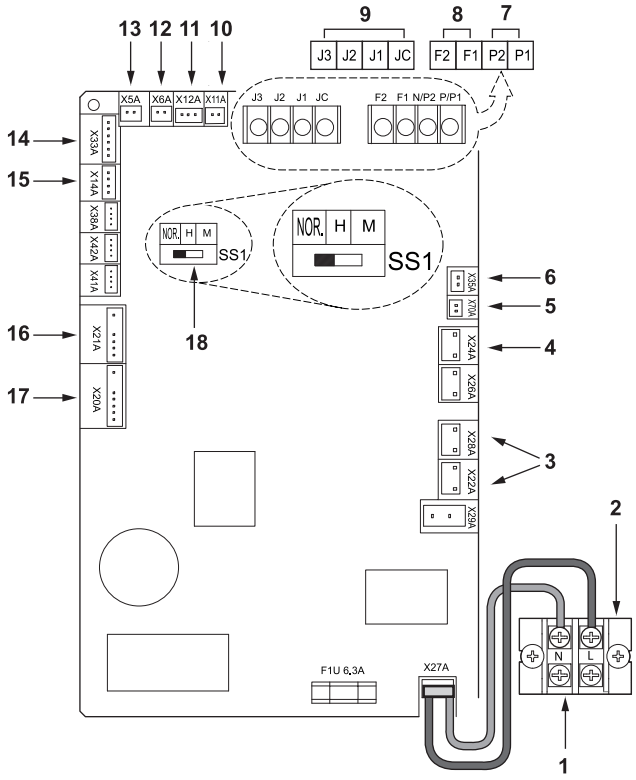
For VAM1500/2000

1 Remove the middle screws of the standard fixing plate.
2 Attach the optional fixing plate (EKMPVAM) on top of the standard one.
3 Attach optional PCB in box.
4 Guide the PCB wire through the dedicated holes and attach as instructed in "Opening the switch box".
5 Attach the box to the fixing plate.
6 After the wires are connected, fasten the switch box cover.



Power cord connection, control wire terminals and switches on the electronic control unit (printed circuit board)

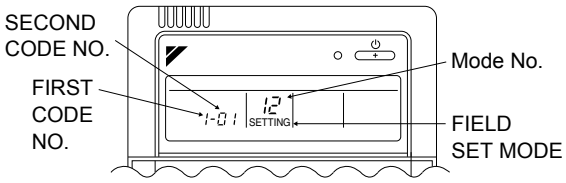
- Connect the power cord to the L and N terminals.
- Secure the power cord with the power cord clamp, as shown in "Opening the switch box" on page 8
- Be sure to connect the electric grounding (earth) wire.



1	Power supply	**10**	Outdoor air thermistor
2	Terminals	**11**	Indoor air thermistor
3	Damper	**12**	Damper
4	External damper (field supply)	**13**	Damper (upper part of VAM1500/2000)
5	Fan communications	**14**	BRP4A50A (option)
6	KRP2A51 (option)	**15**	CO_2 sensor
7	Remote controller	**16**	Exhaust air fan (only VAM350/500/650)
8	Centralized control	**17**	Supply air fan (only VAM350/500/650)
9	External input	**18**	Factory setting No operation if setting is changed

Field setting and test run

- Make sure the switch box lids are closed on the indoor and outdoor units.
- Depending on the type of installation, make the field settings from the remote controller after the power is turned on, following the “Field Settings” manual which came with the remote controller.
  Lastly, make sure the customer keeps the “Field Settings” manual, along with the operating manual, in a safe place.



Local settings

Using the remote controller of the VRV-system air conditioner to make HRV unit settings

Initial settings

1 Mode nos. 17, 18 and 19: Group control of HRV units.

2 Mode nos. 27, 28 and 29: Individual control

Operating procedure

The following describes the operating procedure and settings.

1 Press the INSPECTION/TRIAL button (1) for more than four seconds with the unit in the normal mode to enter the local setting mode.

2 For BRC301B51: use the VENTILATION MODE button (up) and AIRFLOW RATE buttton (down)to select the desired “**mode number**”. The code display will blink.
For BRC1D52: use the TEMPERATURE ADJUSTMENT button (2) to select the desired “**mode number**”.

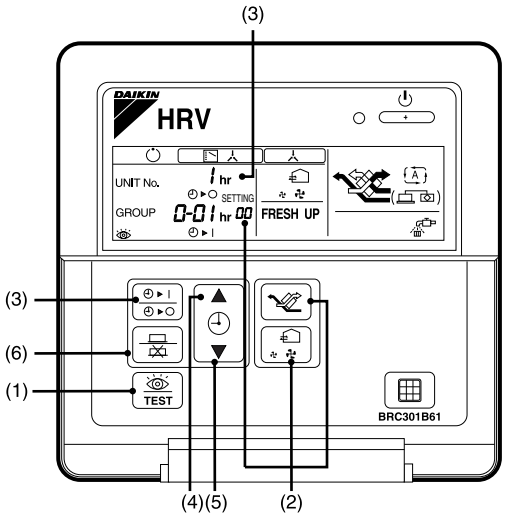
3 To make settings for individual units under group control (when mode No. 27, 28 or 29 is selected), press the TIMER SETTING ON/OFF button (3) to select the “**unit No.**” for which the settings are to be made. (This process is not necessary when settings are made for the entire group.)

4 Press the top section of the TIMER button (4) to select the “**setting switch No.**”

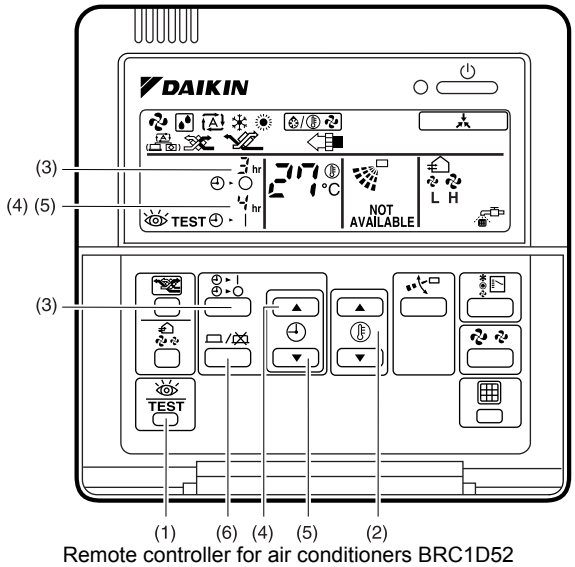
5 Press the lower section of the TIMER button (5) to select “**setting position No.**”

6 Press the PROGRAM/CANCEL button (6) once to enter the settings. (The code display will stop blinking and light up.)

7 Press the INSPECTION/TRIAL button (1) to return to normal mode.



Remote controller for HRV BRC301B61



Remote controller for air conditioners BRC1D52

Setting mode	Setting switch No.	Description of Setting	Setting position No.														
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
17 (27)	0	Filter cleaning time setting	Approx. 2500 hours	Approx. 1250 hours	No counting	–	–	–	–	–	–	–	–	–	–	–	–
	1	Night purge timer (after stop)	Off	On After 2h	On After 4h	On After 6h	On After 8h	–	–	–	–	–	–	–	–	–	–
	2	Pre-cool/pre-heat	Off	On	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	Pre-cool/pre-heat time(min)	30min	45min	60min	–	–	–	–	–	–	–	–	–	–	–	–
	4	Initial fan speed	Normal	Ultra-High	–	–	–	–	–	–	–	–	–	–	–	–	–
	5	Yes/No seting for direct duct connection with VRV system	No duct (Air flow setting)	With duct (fan off)	No duct (Air flow setting)		With duct (fan off)		No duct (Air flow setting)		With duct (fan off)	–	–	–	–	–	–
		Setting for cold areas (Fan operation when heater thermostat off)	–	–	T off: stop	T off: L	T off: stop	T off: L				–	–	–	–	–	–
	6	Night purge fan setting	High	Ultra-High	–	–	–	–	–	–	–	–	–	–	–	–	–
	7	Target temperature for independent night purge	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C	–	–
	8	Centralized zone interlock setting	No	Yes	–	–	–	–	–	–	–	–	–	–	–	–	–
	9	Pre-heat time extension setting	0min	30min	60min	90min	–	–	–	–	–	–	–	–	–	–	–
18 (28)	0	External signal JC/J2	Last command	Priority on external input	Priority on operation	Disable night purge forced stop	–	24 hours ventilation On/Off	–	–	–	–	–	–	–	–	–
	1	Setting for direct Power ON	Off	On	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	Auto restart setting	Off	On	–	–	–	–									
	3	Output signal to external damper (X24A)	–	–	Only in heating mode	Operation signal	–	–	–	–	–	–	–	–	–	–	–
	4	Indication of ventilation mode	On	Off	–	–	–	–	–	–	–	–	–	–	–	–	–
./..	6	Autmatic ventilation air flow table	Linear	–	Fixed A	Fixed B	–	–	–	–	–	–	–	–	–	–	–

NOTE

1. Factory settings are marked in grey backgrounds.

2. (*) Refer to technical data book for pressure drop curves and selection of fan curves (step 1 to 15).

3. The setting modes are mentioned as group settings. Between parentheses are the setting modes for individual unit control.

4. Group number setting for centralized controller
Mode No. 00: Group controller
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.

Setting mode	Setting switch No.	Description of Setting	Setting position No. 01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
18 (28)	7	Fresh-up mode	No Indication Supply	No Indication Exhaust	Indication Supply	Indication Exhaust	–	–	–	–	–	–	–	–	–	–	–
	8	External input terminal function selection (between J1 and JC)	Fresh-up	Error output	Error output stop operation	Forced off	Fan forced off	Air flow up	Humidify drain error	–	–	–	–	–	–	–	–
	9	BRP4A50A output switching selection (between X3 and X4)	Humidifier/ heater output	Error output	Fan output (L/H/UH)	Fan output (H/UH)	Fan output (UH)	Fan output	Fan output	Drain valve output 30min/ 12hour	Drain valve output 30min/ 8hour	Drain valve output 30min 6hour	Drain valve output 30min/ 4hour	–	–	–	–
		(between X1 and X2)	Operation output	Operation output	Operation output	Operation output	Operation output	24hour ventilation and operation output	24hour ventilation output	Feed valve output	Feed valve output	Feed valve output	Feed valve output	–	–	–	–
										Humidify unit connection							
19 (29)	1	Low tap setting	Off	Run 1/15 (28min off/ 2 min on)	Run 1/10 (27min off/ 3 min on)	Run 1/6 (25min off/ 5 min on)	Run 1/4 (22.5min off/ 7.5 min on)	Run 1/3 (20min off/ 10 min on)	Run 1/2 (15min off/ 15 min on)	Continuous operation							
										Step1	Step2	Step3	Step4	Step5	Step6	Step7	Step8
	2	SA fan step setting*	Step1	Step2	Step3	Step4	Step5	Step6	Step7	Step8	Step9	Step10	Step11	Step12	Step13	Step14	Step15
	3	EA fan step setting*	Step1	Step2	Step3	Step4	Step5	Step6	Step7	Step8	Step9	Step10	Step11	Step12	Step13	Step14	Step15
	4	24hour ventilation setting	Off	Run 1/15 (28min off/ 2 min on)	Run 1/10 (27min off/ 3 min on)	Run 1/6 (25min off/ 5 min on)	Run 1/4 (22.5min off/ 7.5 min on)	Run 1/3 (20min off/ 10 min on)	Run 1/2 (15min off/ 15 min on)	Continuous operation							
										Step1	Step2	Step3	Step4	Step5	Step5	Step7	Step8
	7	Reference concentration shift for ventilation air flow control (ppm)	0	+200	+400	+600	–200	–400	–600	–	–	–	–	–	–	–	–
	8	Stop ventilation by automatic ventilation air flow control	Allowed	Not allowed	Allowed	Not allowed	–	–	–	–	–	–	–	–	–	–	–
		Fan residual operation	Off	Off	Heater operation	Heater operation											
	9	Normal ventilation tap on automatic ventilation air flow control	Independent UH	Independent H	VRV control UH	VRV control H	Control by CO_2 sensor	–	–	–	–	–	–	–	–	–	–
1A	0	Fresh up operation On/Off	Off	On	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE

1. Factory settings are marked in grey backgrounds.

2. (*) Refer to technical data book for pressure drop curves and selection of fan curves (step 1 to 15).

3. The setting modes are mentioned as group settings. Between parentheses are the setting modes for individual unit control.

4. Group number setting for centralized controller
Mode No. 00: Group controller
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.

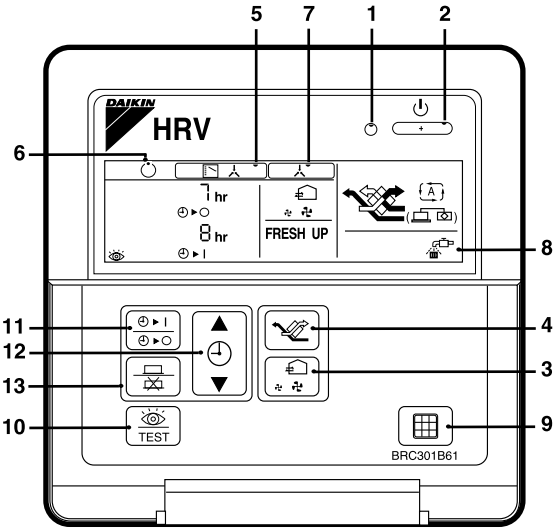
Example

When adjusting the auto restart setting to on in the group setting mode, enter the mode No. “18” setting switch No. “2” and setting position No. “02”.

Operation with the remote control exclusively for Air conditioning operation HRV units (BRC301B61)

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

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



BRC301B61: Remote controller for HRV

1. Operation lamp
This pilot lamp (red) lights up while the unit is in operation.

2. Operation/Stop button
When pushed once, the unit starts operating.
When pushed again, the unit stops.

3. Air flow rate changeover button

Air flow rate can be changed over to " " Low mode or

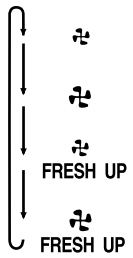
" " High mode,

" FRESH UP" Low FRESH UP mode,

" FRESH UP" High FRESH UP mode.

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

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



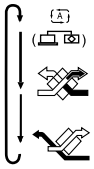
To change the setting, refer to chapter "List of Settings" in the installation manual.

4. Ventilation mode changeover button

" " Automatic mode.
The temperature sensor of the unit automatically changes the ventilation of the unit in Bypass mode and Heat Exchange mode.

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

" " Bypass mode.
In this mode, the air does not pass through the heat exchange element but by passes it to effect Bypass ventilation.



5. Indication of operation control method:
When the operation of HRVs are linked with the air conditioners, this indication may be shown.
While the indication is shown, the ON/OFF of HRVs cannot be operated by the HRV remote controller.

6. Indication of operation standby:
It indicates the precooling/preheating operation. This unit is at stop and will start operation after the precooling/preheating operation is over.
Precooling/preheating operation means the operation of HRVs is delayed during the startup operation of linked air conditioners, for example before the office hours.
During this period the cooling or heating load is reduced to bring the room temperature to the set temperature in a short time.

7. Indication of centralized control:
When a remote controller for air conditioners or devices for centralized control are connected to the HRVs, this indication may show.
When this indication appears on the display, the ON/OFF and timer operation may not be possible with the HRV remote controllers.

8. Indication of air filter cleaning

When the indication " " appears on the display, clean the filter.

9. Filter signal reset button

10. Inspection button
This button is to be used only for service. It is not to be used normally.

How to operate with timer

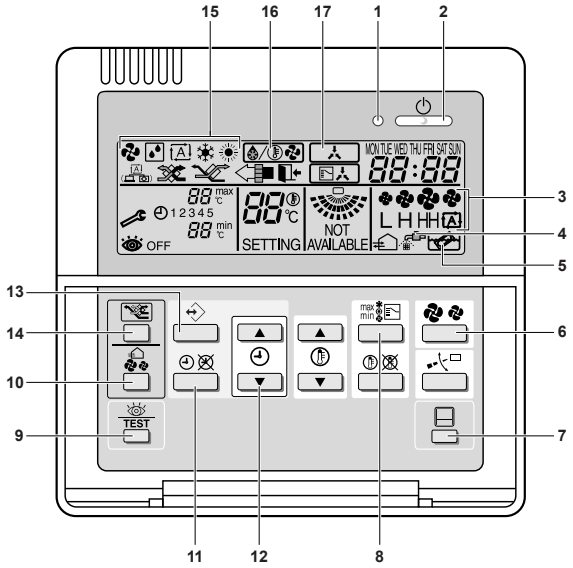
11. Schedule timer button " / ".
This button enables or disables the schedule timer.

12. Push the time adjust button " " to set the time.

13. Push the programming button "/ "
Then, the reservation is finished.

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

Please read the manual supplied with the remote controller for more detailed instructions (optional controllers: BRC1D52 or BRC1E52).



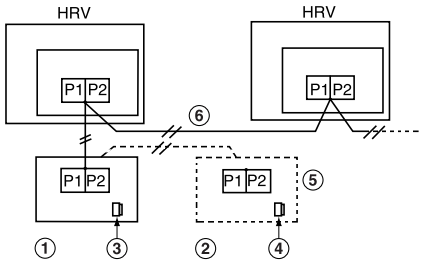
BRC1D52: Remote controller for VRV

1	Operation lamp
2	Operation/stop button
3	Fan speed icon
4	Air filter cleaning time icon
5	Element cleaning time icon
6	Air conditioner fan speed button
7	Air filter cleaning time icon reset button
8	Air conditioner operation mode
9	Inspection button
10	Air flow rate changeover button
11 **12** **13**	} See "How to operate with timer" on page 15
14	Ventilation mode button
15	Operation mode display
16	Defrost/hotstart mode icon
17	Indication of centralized control

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

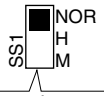
Independent system

When connecting to Remote controller for HRV



1 Master remote controller	**4** Switch position: Slave
2 Slave remote controller	**5** Remote controller for HRV
3 Switch position: Master	**6** Maximum connection line length: 500 m

Factory Setting



Do not change the switch settings.

※SS1 is a setting switch for special purposes. Changing the settings will stop the unit from operating normally.

For raising the remote-controlled ventilation air flow rate from “High” to “Ultra-High”, connect the remote controller for the air-conditioner to HRV and make settings on site.

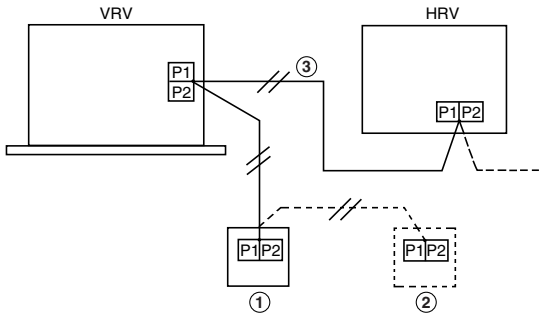
(Refer to "List of Settings" on page 13.)

Set the switch on the printed circuit board to the factory setting.

Wiring and connections in combination with “VRV-SYSTEM”

Standard 1-group linked-control system

- The remote control of the air conditioner can be used to control up to 16 air conditioner indoor units and HRV units.
- Initial settings can be made for the functions of the HRV units (pre-cool/pre-heat, ventilation air flow, ventilation mode and “Fresh-Up”).
  Use the remote controller of the air conditioner to make the initial settings for the HRV units.
  Refer to “Initial setting” under Item "List of Settings" on page 13”



1 Remote controller for air conditioner	**3** Maximum connection line length: 500 m
2 Remote controller for HRV	

Pre-cool/pre-heat function

When the pre-cool/pre-heat function is set, the HRV unit switches 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 of the air conditioner.

If the air conditioner is re-started within two hours after the operation was stopped, this function does not operate.

Example 1:

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

- Set the mode No. to “17” for group control, or “27” for individual control, the setting switch No. to “2” and the setting position No. to “02”
- Set the mode No. to “17” for group control, or “27” for individual control, the setting switch No. to “3” and the setting position No. to “03”

Example 2:

To switch the ventilation air flow to ultra high setting. (The units are set at the high air flow setting at the factory)

- Set the mode No. to “17” for group control, or “27” for individual control, the setting switch No. to “4” and the setting position No. to “02”

■ Connecting the remote controller for HRV

The remote controller for HRV cannot be used for starting/stopping operation or for timer operation. (The centralized control indication will be lit.)

To set pre-cool/pre-heat function settings, change the remote control air flow rate setting from High (H) to Ultra-High (UH), etc., perform initial settings from the remote controller for HRV.

Since it will become a two-remote-control system, perform master/slave setting as shown below.

Remote control	Master/slave setting
Remote controller for air conditioner	Slave
Remote controller for HRV	Master

Refer to “performing initial settings” in the remote control instruction manual.

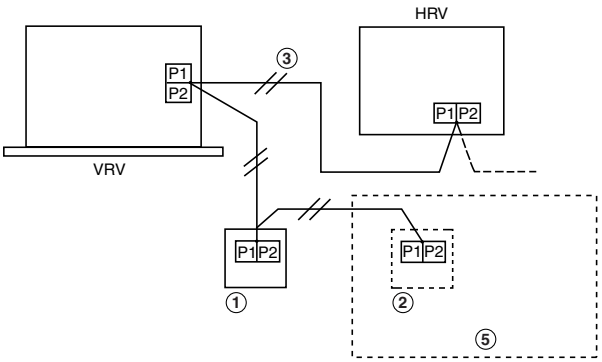
Example 3:

To set the pre-cool/pre-heat reservation function to on and have the HRV start operating 60 minutes after the air conditioner has started, set the same numbers as shown in example 1 using the remote controller for HRV.

Example 4:

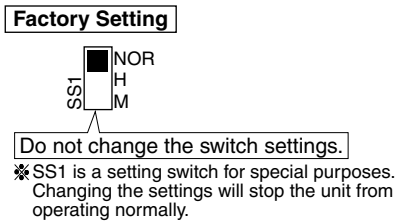
To increase the remote control air ventilation rate setting from High to Ultra-High, set the same numbers as shown in example 2 using the remote controller for HRV.

Air ventilation rate setting using remote control	Default factory settings	When set as in example 5
Low	Low (L) air flow rate	Low (L) air flow rate
High	High (H) air flow rate	Ultra-High (UH) air flow rate



1 Remote controller for air conditioner
2 Remote controller for HRV
3 Maximum connection line length: 500 m

When the remote controller for HRV is connected, set the switches on the HRV unit PCB to the default factory settings.



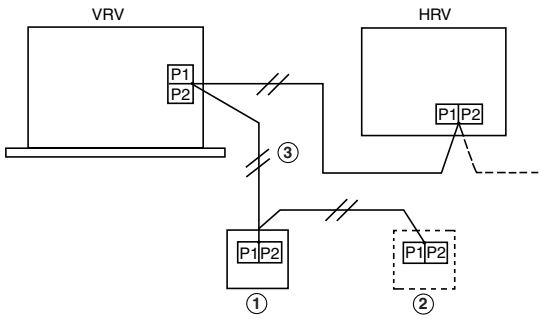
※SS1 is a setting switch for special purposes. Changing the settings will stop the unit from operating normally.

■ Determination of heating/cooling selection rights for VRV-systems is performed using the remote controller for HRV.
The heating/cooling selection rights can be enabled or disabled using the ventilation mode button of the remote controller for HRV.
This operation cannot be performed with the remote controller for air conditioner.

Heating/cooling selection rights	Operation switchover control display
Enabled	Not lit
Disabled	Lit
Not set	Blinking

Direct duct connection system for 1-group operation system

Line connections and the settings of the switches on the HRV unit PCB should be the same as for “Standard system for 1-group system”.



1 Remote controller for air conditioner
2 Remote controller for HRV
3 Maximum total cable length: 500 m

Set the switch of the HRV unit PCB to the default factory settings.

1 Be sure to set the initial settings to Direct duct connection: Enabled.

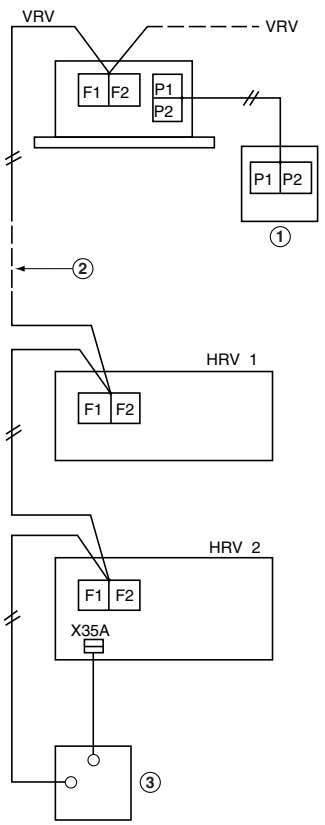
■ When the remote controller for HRV is not yet connected, initial settings can be performed using the air conditioner remote control. Set the mode number to “17”, the setting switch number to “5”, and the setting position number to “02” according to the procedure in "List of Settings" on page 13.

■ When the remote controller for HRV is connected, initial settings should be performed using the remote controller for HRV. Set the same numbers as described above when using the remote controller for air conditioner according to the procedure “Making initial settings” in the remote control instruction manual.

2 Settings for other HRV functions should be made using the same method as in “Standard system for 1-group system”.

Linked control with more than two groups

- Mount the optional KRP2A51 Adapter PCB for remote control to one HRV unit.
- A maximum of 64 air conditioners and HRV units can be connected to the F1 and F2 terminals.
- Use the remote controller of the air conditioner to make the initial settings.



1 Remote controller for air conditioner

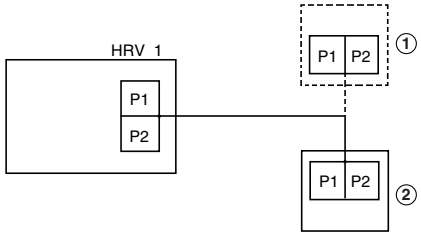
2 Total cable length is maximum 1000 m.

3 Optional distant control adapter KRP2A51

Procedure

1 Turn off the main power.

2 Connect the air-conditioner remote controller.



1 Remote controller for air conditioner

2 Remote controller for HRV

3 Turn on the main power.

4 Make the remote controller settings on site; set the collective zone interlock to ON. Mode number “17”, setting switch number “8” and setting position number “02”.

5 Turn off the main power.

6 Disconnect the remote controller.

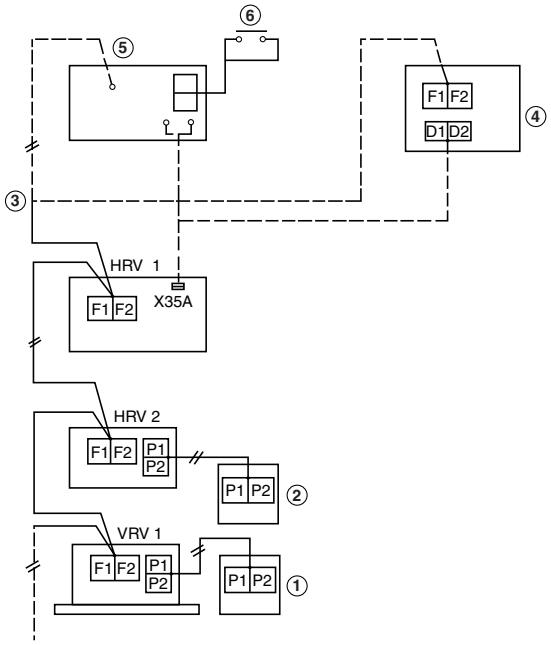
Now the on-site settings are complete.

For raising the remote-controlled ventilation air flow rate “High” to “Ultra-High”, connect the remote controller for the air conditioner to HRV and make settings on site. (Refer to “Initial setting” under item "List of Settings" on page 13.)

Centralized control system

“All” control

When using Adapter PCB for remote control (KRP2A51) or schedule timer (DST301B61)



1 Remote controller for air conditioner

2 Remote controller for HRV

3 Total cable length is maximum 1000 m

4 Schedule timer (DST301B61)

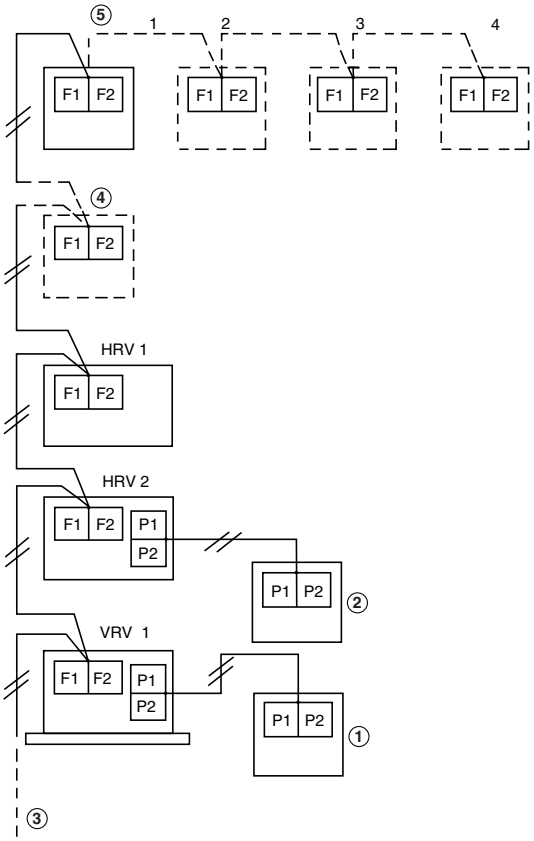
5 Adapter PCB for remote control (KRP2A51)

6 On/Off signal

- A maximum of 64 air conditioners and HRV units can be connected to the F1 and F2 terminals.
- This system does not required 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 electric component mounting base of either the HRV unit or air conditioner. (The HRV unit can accept only the KRP2A51)
- For raising the remote-controlled ventilation air flow rate from “High” to “Ultra-High”, connect the remote controller for the air-conditioner to HRV and make settings on site.
  (Refer to “Initial setting” under item "List of Settings" on page 13.)

“All”/“individual” control

When using the on/off controller (DCS301B61)



1 Remote controller for air conditioner
2 Remote controller for HRV
3 Connecting line can be extended up to 1000 m maximum
4 Schedule timer
5 On/Off controller

- A maximum of 64 air conditioners and HRV 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 central control group number to each HRV unit and air conditioner.
  Regarding the setting of the group number, refer to the section on “the centralized control group number setting” in the operating instructions of the On/off controller.
- Use the remote controller of the air conditioner to make the initial settings.

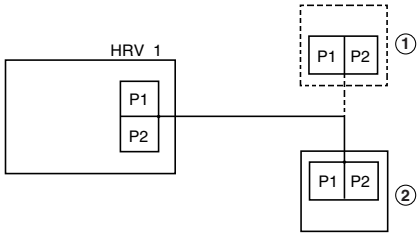
Example:

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

Procedure

1 Turn off the main switch of the HRV-1 and On/off controller.

2 Connect the air conditioner’s remote controller.



1 Remote controller for air conditioner
2 Remote controller for HRV

3 Turn on the main switch of the HRV-1 and On/off controller.

4 Set the central control group number using the local setting on the remote controller.
  Mode No.: “00”
  Central control group No.: “2-05”

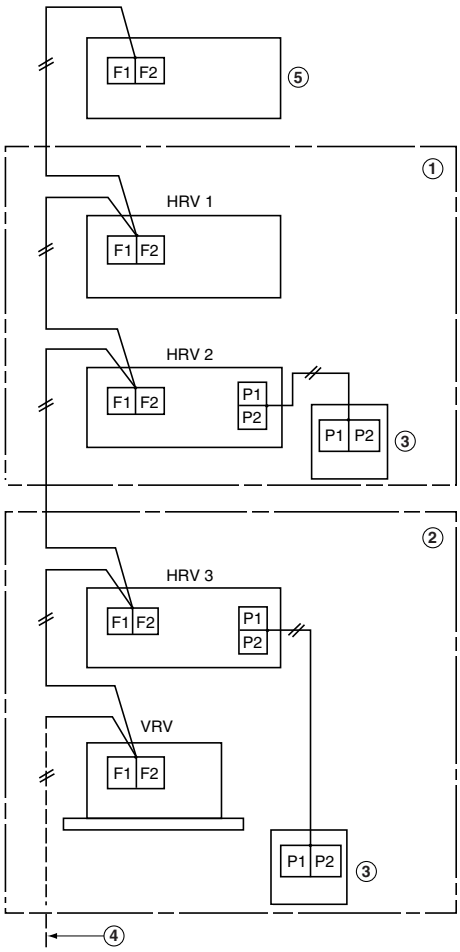
5 Turn off the main switch of the HRV and On/off controller.

6 Disconnect the remote controller.

The setting is now complete.

For the ventilation air flow setting, follow the procedure described in the section ""All” control" on page 18.

Zone control system



1 Zone 1
2 Zone 2
3 Remote controller for HRV
4 Connecting line can be extended up to 1000 m maximum
5 Centralized controller (DCS302C51)

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

Zone 2

The HRV units operate in the zone-linked mode, as described in the section, "Linked control with more than two groups" on page 18. For the initial setting, follow the procedure described in that section.

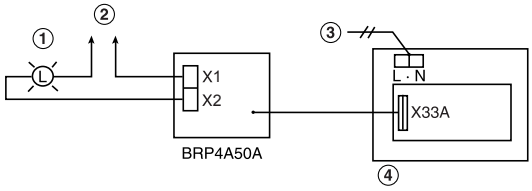
- It is necessary to assign a central control group number to each HRV unit and air conditioner.
  Regarding the setting of the group number, refer to the section on “the centralized control group number setting” in the operating instructions of the Centralized controller. Refer to the section "“All”/“individual” control" on page 19 for the setting procedure.
- For the ventilation air flow setting, follow the procedure described in the section "“All” control" on page 18.
- For the zone setting from the centralized controller, refer to the operating instructions of the centralized controller.
- The centralized controller can be used to control the individual units in the zone for ventilation operation.

Remote control

Monitor of operation

The operation of the HRV can be monitored from the outside by the connection of the adaptor PCB for remote control BRP4A50A (option).

Be sure to connect the terminal strip on the adaptor PCB for remote control BRP4A50A (option).



1 Operation lamp
2 Power source
3 Power source
4 HRV printed circuit board

Wiring adapter for remote contact BRP4A50A (option)

Fresh-up operation

Purposes

When Combined with a local ventilating fan (such as the one in toilet and kitchen), the air flow rate of HRV is balanced by either fan operation or exhaust operation.

However, a circuit with voltaged and low current (16 V, 10 mA) is formed between the JC and J1, so a relay with low-load contact point must be used.

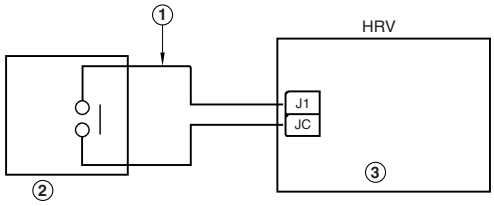
Functions

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

Necessary parts

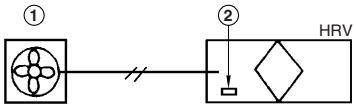
Operation contact of exhaust ventilating fan (Field supply)

Example of control wiring



1 Connecting line can be extended up to 50 m maximum
2 Fan (Field supply)
3 Printed circuit board

System description



1 Local ventilating fan
2 Power supply

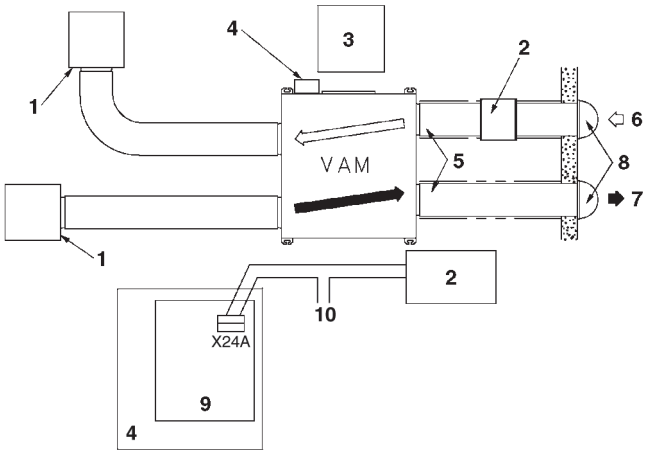
The local setting by the remote controller for the air conditioner (Refer to "List of Settings" on page 13)	“J1”, “JC” normal open	“J1”, “JC” normal close
Fresh-up “OFF” (Factory setting)	Normal	Fresh-up
Fresh-up “ON”	Fresh-up	Fresh-up

External Damper Operation (Field supply)

Explanation of Functions

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

- The HRV’s main unit PCB operates the HRV and provides a signal for the external damper.



1 Air suction/discharge grille
2 External damper (field supply)
3 Inspection hole
4 Switch box
5 Heat insulator
6 OA (Fresh air from outdoors)
7 EA (Exhaust air to outdoors)
8 Round shape hood
9 Print circuit board
10 Power source

- Required setting changes for switchover to X24A output (see below for details)

Essential Wiring

Refer to "Opening the switch box" on page 8.

CO_2 sensor

With the CO_2 sensor installed the ventilation volume can be adjusted in function of measured CO_2 concentration. The measured concentration value is compared to programmed trigger values.
Make sure to have ventilation mode and air flow rate set to automatic.

Refer to "List of Settings" on page 13 for the field setting overview.

- Use setting 19(29)-9-05 to give control to the CO_2 sensor.
- Use setting 19(29)-7 to shift the trigger values.
- Use setting 18(28)-6 to switch between linear & fixed control.

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

Trigger value	Linear control (minutes)			Fixed control	
CO_2 ppm	UH	H	L	mode A	mode B
1450	30			UH	UH
1300	20	10		UH	UH
1150	10	20		H	H
1000		30		H	H
850		20	10	H	L
700		10	20	L	L
550			30	L	L
400			30	L	stop
			30	L	stop

Example

When measured 900 ppm in linear control, the unit runs 20 minutes in H, next 10 minutes in L and after elapse judges again.

Essential wiring

Refer to "Opening the switch box" on page 8 and to the installation manual delivered with the optional CO_2 sensor.

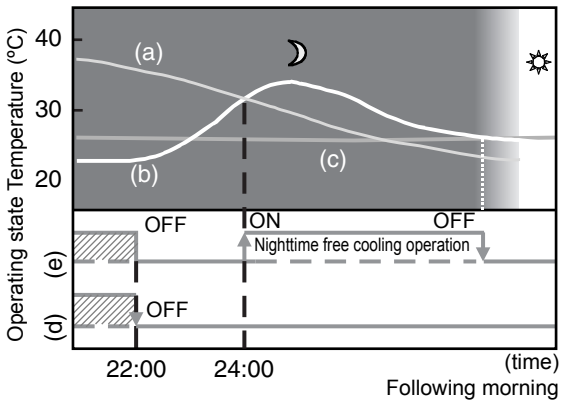
Nighttime free cooling operation

Automatic heat purge function at night

The nighttime free cooling is an energy-conserving function which works at night when the air conditioners is off, reducing the cooling load in the morning when the air conditioner is turned on. This is mainly for rooms that contain office equipment, which raises the room temperature.

- Nighttime free cooling is set to “off” in the factory settings; so request your dealer to turn it on if you intend to use it.

Operation image



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

Explanation of nighttime free cooling operation image

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

Conditions

1. the indoor temperature is higher than the air conditioning setting and
2. the outdoor temperature is lower than the indoor temerature.

If the above conditions are not satisfied, reevaluation is made every 60 minutes.

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

Test run

After completing the installation of the system, check again to make sure that no error was made in wiring or switch setting on the printed circuit boards of the HRV units.

Then, turn on the power of the HRV units. Refer to the manual of the remote controller of each unit (remote controller for air conditioner, central control unit, etc.) for conducting a trial operation.

Wiring diagram

The wiring diagram can be found on the service cover.

	: TERMINALS	BLK	: Black	ORG	: Orange
	: CONNECTORS	BLU	: Blue	RED	: Red
	: FIELD WIRING	BRN	: Brown	WHT	: White
	: PROTECTIVE EARTH	GRN	: Green	YLW	: Yellow
	: NOISELESS EARTH				

A1P ..... PRINTED CIRCUIT BOARD
A2P~A4P ..... PRINTED CIRCUIT BOARD ASSY (FAN)
A5P ..... PRINTED CIRCUIT BOARD ASSY (FAN)
C1 ..... CAPACITATOR (M1F)
F1U ..... FUSE T, 5A, 250V (A1P)
F3U ..... FUSE T, 6.3A, 250V (A2P, A3P, A4P, A5P)
HAP ..... PILOT LAMP (SERVICE MONITOR-GREEN)
K1R ..... MAGNETIC RELAY
K2R, K5R ..... MAGNETIC RELAY
L1R~L4R ..... REACTOR
M1D, M2D ..... MOTOR (DAMPER)
PS ..... SWITCHING POWER SUPPLY
Q1DI, Q2DI ..... FIELD EARTH LEAK DETECTOR (MAX. 300mA)
R1T ..... THERMISTOR (INDOOR AIR)
R2T ..... THERMISTOR (OUTDOOR AIR)
R3T ..... THERMISTOR (PTC)
S1C, S2C ..... LIMIT SWITCH DAMPER MOTOR
X1M ..... TERMINAL (A1P)
X2M ..... TERMINAL (OUTSIDE INPUT) (A1P)
X3M ..... TERMINAL (POWER SUPPLY)
V1R ..... DIODE
Z1F ..... NOISE FILTER
REMOTE CONTROLLER
SS1 ..... SELECTOR SWITCH
OPTIONAL ACCESSORIES
TES10 ..... ADAPTER PC BOARD
CONNECTOR FOR OPTION
X14A ..... CONNECTOR (CO_2 SENSOR)
X24A ..... CONNECTOR (OUTSIDE DAMPER)
X26A ..... CONNECTOR (FILTER SIGN)
X33A ..... CONNECTOR (ADAPTER PCB)
X35A ..... CONNECTOR (POWER SUPPLY)
X41A ..... CONNECTOR (HUMIDITY SENSOR 1)
X42A ..... CONNECTOR (HUMIDITY SENSOR 2)
For VAM350-650
M1F ..... MOTOR (SUPPLY AIR FAN)
M2F ..... MOTOR (EXHAUST AIR FAN)
For VAM800-2000
M1F ..... MOTOR (EXHAUST AIR FAN) (BOTTOM)
M2F ..... MOTOR (SUPPLY AIR FAN) (BOTTOM)
M3F ..... MOTOR (EXHAUST AIR FAN) (TOP)
M4F ..... MOTOR (SUPPLY AIR FAN) (TOP)



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