

SPLIT SYSTEM**Air Conditioners**

English

Deutsch

Français

Español

Italiano

Ελληνικά

Nederlands

Portugues

Русский

MODELS

(Ceiling suspension type)

| | | | | |
|--------------------|-------------------|-----------------|--------------------|--------------------|
| FH(Y)35BJV1 | FHYP35BV1 | FH35BZV1 | FHQ35BUV1B | FHQ35BVV1B |
| FH(Y)45BJV1 | FHYP45BV1 | FH45BZV1 | FHQ50BUV1B | FHQ50BVV1B |
| FH(Y)60BJV1 | FHYP60BV1 | FH60BZV1 | FHQ60BUV1B | FHQ60BVV1B |
| FHY71BJV1 | FHYP71BV1 | | FHQ71BUV1B | FHQ71BVV1B |
| FHY100BJV1 | FHYP100BV1 | | FHQ100BUV1B | FHQ100BVV1B |
| FHY125BJV1 | FHYP125BV1 | | FHQ125BUV1B | FHQ125BVV1B |

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.
KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.

LESEN SIE DIESE ANWEISUNGEN VOR DER INSTALLATION SORGFÄLTIG DURCH.
BEWAHREN SIE DIESE ANLEITUNG FÜR SPÄTERE BEZUGNAHME GRIFFBEREIT AUF.

LIRE SOIGNEUSEMENT CES INSTRUCTIONS AVANT L'INSTALLATION.
CONSERVER CE MANUEL A PORTEE DE MAIN POUR REFERENCE ULTERIEURE.

LEA CUIDADOSAMENTE ESTAS INSTRUCCIONES ANTES DE INSTALAR.
GUARDE ESTE MANUAL EN UN LUGAR A MANO PARA LEER EN CASO DE TENER ALGUNA DUDA.

PRIMA DELL'INSTALLAZIONE LEGGERE ATTENTAMENTE QUESTE ISTRUZIONI.
TENERE QUESTO MANUALE A PORTATA DI MANO PER RIFERIMENTI FUTURI.

ΔΙΑΒΑΣΤΕ ΠΡΟΣΕΚΤΙΚΑ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ ΠΡΙΝ ΑΠΟ ΤΗΝ ΕΓΚΑΤΑΣΤΑΣΗ ΕΧΕΤΕ ΑΥΤΟ
ΤΟ ΕΓΧΕΙΡΙΔΙΟ ΕΥΚΑΙΡΟ ΓΙΑ ΝΑ ΤΟ ΣΥΜΒΟΥΛΕΥΕΣΤΕ ΣΤΟ ΜΕΛΛΟΝ.

LEES DEZE INSTRUCTIES ZORGVULDIG DOOR VOOR INSTALLATIE. BEWAAR DEZE HAN-
DLEINDING WAAR U HEM KUNT TERUGVINDEN VOOR LATERE NASLAG.

LEIA COM ATENÇÃO ESTAS INSTRUÇÕES ANTES DE REALIZAR A INSTALAÇÃO.
MANTENHA ESTE MANUAL AO SEU ALCANCE PARA FUTURAS CONSULTAS.

ПЕРЕД НАЧАЛОМ МОНТАЖА ВНИМАТЕЛЬНО ОЗНАКОМЬТЕСЬ С ДАННЫМИ
ИНСТРУКЦИЯМИ. СОХРАНИТЕ ДАННОЕ РУКОВОДСТВО В МЕСТЕ, УДОБНОМ ДЛЯ
ОБРАЩЕНИЯ В БУДУЩЕМ.

DAIKIN INDUSTRIES, LTD.

declares under its sole responsibility that the air conditioning models to which this declaration relates:
erklärt auf seine alleinige Verantwortung daß die Modelle der Klimageräte für die diese Erklärung bestimmt ist:
déclare sous sa seule responsabilité que les appareils d'air conditionné visés par la présente déclaration:

verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de airconditioning units waarop deze verklaring betrekking heeft:
declara baja su única responsabilidad que los modelos de aire acondicionado a los cuales hace referencia la declaración:
dichiara sotto sua responsabilità che i condizionatori modello a cui è riferita questa dichiarazione:

δηλώνει με αποκλειστική της ευθύνη ότι τα μοντέλα των κλιματιστικών συσκευών στα οποία αναφέρεται η παρούσα δήλωση:
declara sob sua exclusiva responsabilidade que os modelos de ar condicionado a que esta declaração se refere:
erklærer under egenesvar, at klimaanlægmodellerne, som denne deklaration vedrører:

deklarerar i egenskap av huvudansvarig, att luftkonditioneringsmodellerna som berörs av denna deklaration innebär att:
erklærer et fullstendig ansvar for at de luftkonditioneringsmodeller som berøres av denne deklarasjon innebærer at:
ilmoittaa yksinomaan omalla vastuullaan, että tämän ilmoituksen tarkoittamat ilmastointilaitteiden mallit:

- (I) FHY35BJV1, FHY45BJV1, FHY60BJV1, FHY71BJV1, FHY100BJV1, FHY125BJV1, FH35BJV1, FH45BJV1, FH60BJV1
(II) FHYP35BV1, FHYP45BV1, FHYP60BV1, FHYP71BV1, FHYP100BV1, FHYP125BV1, FH35BV1, FH45BV1, FH60BV1
(III) FHQ35BHV1, FHQ50BHV1, FHQ60BHV1, FHQ71BHV1, FHQ100BHV1, FHQ125BHV1
FHQ35BHV1, FHQ50BHV1, FHQ60BHV1, FHQ71BHV1, FHQ100BHV1, FHQ125BHV1
FUQ71BHV1, FUQ100BHV1, FUQ125BHV1, FUQ71BHV1, FUQ100BHV1, FUQ125BHV1
FAQ71BHV1, FAQ100BHV1, FAQ71BHV1, FAQ100BHV1

are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
der/den folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:

conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:
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:
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:

είναι σύμφωνα με το(α) ακόλουθο(α) πρότυπο(α) ή άλλο έγγραφο(α) κανονισμών, υπό την προϋπόθεση ότι χρησιμοποιούνται σύμφωνα με τις οδηγίες μας:
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:
overholder følgende standard(er) eller andet/andre retningsgivende dokument(er), forudsat at disse anvendes i henhold til vore instrukser:

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:
respektive utstyr er i overensstemmelse med følgende standard(er) eller andre normgivende dokument(er), under forutsetning av at disse brukes i henhold til våre instrukser:
vastaavat seuraavien standardien ja muiden ohjeellisten dokumenttien vaatimuksia edellyttäen, että niitä käytetään ohjeidemme mukaisesti:

EN60335-2-40,

following the provisions of:
gemäß den Vorschriften der:
conformément aux stipulations des:

overeenkomstig de bepalingen van:
siguiendo las disposiciones de:
secondo le prescrizioni per:

με τήρηση των διατάξεων των:
de acordo com o previsto em:
under iagttagelse af bestemmelserne i:

enligt villkoren i:
gitt i henhold til bestemmelsene i:
noudattaa määräyksiä:

*Note as set out in Technical Construction file **A** and judged positively by **KEMA** according to The **Certificate B**.
Hinweis wie in der Technischen Konstruktionsakte **A** aufgeführt und von **KEMA** positiv ausgezeichnet gemäß **Zertifikat B**.
Remarque tel que stipulé dans le Fichier de Construction Technique **A** et jugé positivement par **KEMA** conformément au **Certificat B**.
Bemerk zoals vermeld in het Technisch Constructiedossier **A** en in orde bevonden door **KEMA** overeenkomstig **Certificaat B**.
Nota tal como se expone en el Archivo de Construcción Técnica **A** y juzgado positivamente por **KEMA** según el **Certificado B**.
Nota delineato nel File Tecnico di Costruzione **A** e giudicato positivamente da **KEMA** secondo il **Certificato B**.
Σημείωση όπως προσδιορίζεται στο Αρχείο Τεχνικής Κατασκευής **A** και κρίνεται θετικά από το **KEMA** σύμφωνα με το **Πιστοποιητικό B**.
Bemærk som anført i den Tekniske Konstruktionsfil **A** og positivt vurderet af **KEMA** i henhold til **Certifikat B**.
Information utrustningen är utförd i enlighet med den Tekniska Konstruktionsfilen **A** som positivt intygas av **KEMA** vilket också framgår av **Certifikat B**.
Merk som det fremkommer i den Tekniske Konstruktionsfilen **A** og gennem positivt bedømmelse av **KEMA** ifølge **Sertifikat B**.
Huom jotta on esitetty Teknisessä Asiakirjassa **A** ja jotka **KEMA** on hyväksynyt **Sertifikaatin B**.

Directives, as amended.
Direktiven, gemäß Änderung.
Directives, telles que modifiées.
Richtlijnen, zoals geamendeerd.
Directivas, según lo enmendado.
Direttive, come da modifica.
Οδηγιών, όπως έχουν τροποποιηθεί.
Directivas, conforme alteração em.
Direktiver, med senere ændringer.
Direktiv, med foretagne ændringer.
Direktiver, med foretatte endringer.
Direktiivejä, sellaisina kuin ne ovat muutettuina.

Low Voltage 73/23/EEC
Machinery Safety 98/37/EEC
Electromagnetic Compatibility 89/336/EEC*

| | A | B |
|---------|----------------|------------------------|
| (I) | DAIKIN.TCF.004 | 59277-KRQ/ECM95-4233 |
| (II) | DAIKIN.TCF.016 | 81728-KRQ/ECM98-4341 |
| (III) | DAIKIN.TCF.021 | 2024351-QUA/EMC02-4565 |

DAIKIN

N. Murata

Noboru Murata
Manager Quality Control Department
Sakai, 1st of October 2005

DAIKIN INDUSTRIES, LTD.

Umeda Center Bldg., 4-12, Nakazaki-Nishi 2-chome,
Kita-ku, Osaka, 530-8323 Japan



| | | | | |
|-------------|------------|----------|-------------|-------------|
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| FHY100BJV1 | FHYP100BV1 | | FHQ100BUV1B | FHQ100BVV1B |
| FHY125BJV1 | FHYP125BV1 | | FHQ125BUV1B | FHQ125BVV1B |

**SPLIT SYSTEM
Air Conditioner
Installation manual**

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1. 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 accesible to the general public”.

Meaning of warning and caution symbols.



WARNINGFailure to observe a warning may result in death or serious injury.



CAUTIONFailure to observe a caution may result in injury or damage to the equipment.



WARNING

- Ask your dealer or qualified personnel to carry out installation work. Do not try to install the machine yourself.
Improper installation may result in water leakage, electric shocks or fire.
- Perform installation work in accordance with this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injuries.

- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes. Improper installation work may result in the equipment falling and causing accidents.
 - Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
 - Make sure that all wiring is secured, the specified wires are used, and no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.
 - When wiring the power supply and connecting the wiring between the indoor and outdoor units, position the wires so that the control box lid can be securely fastened. Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.
 - If the refrigerant gas leaks during installation, ventilate the area immediately. Toxic gas may be produced if the refrigerant gas comes into contact with fire.
 - After completing the installation work, check that the refrigerant gas does not leak. Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
 - Before touching electrical parts, turn off the unit.
 - Be sure to establish an earth. Do not earth the unit to a utility pipe, arrester, or telephone earth. Incomplete earth may cause electrical shock, or fire. A high surge current from lightning or other sources may cause damage to the air conditioner.
 - Be sure to install an earth leakage breaker. Failure to install an earth leakage breaker may result in electric shocks, or fire.
-



CAUTION





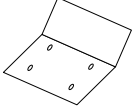
- While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation. Improper drain piping may result in water leakage and property damage.
 - Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.)
 - Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types) Install the indoor unit as far away from fluorescent lamps as possible.
 - Do not install the air conditioner in the following locations:
 - (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen
Plastic parts may deteriorate and fall off or result in water leakage.
 - (b) where corrosive gas, such as sulfurous acid gas, is produced
Corroding copper pipes or soldered parts may result in refrigerant leakage.
 - (c) near machinery emitting electromagnetic waves
Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
 - (d) where flammable gases may leak, where there are carbon fiber or ignitable dust suspensions in the air, or where volatile flammables such as thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.
-





2. BEFORE INSTALLATION

- When moving the unit while removing it from the carton box, be sure to lift it by holding on to the four lifting lugs without exerting any pressure on other parts, especially swing flap, the refrigerant piping, drain piping, and other resin parts.
- Be sure to check the type of refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When selecting installation site, refer to the paper pattern.
- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not use the unit in locations with high salt content in the air such as beachfront property, locations where the voltage fluctuates such as factories, or in automobiles or marine vessels.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

| Name | 1) Drain hose | 2) Clamp | 3) Washer for hanger bracket | 4) Clamp | 5) Paper pattern for installation |
|----------|---|---|---|---|---|
| Quantity | 1 pc. | 1 pc. | 8 pcs. | 6 pcs. | 1 pc. |
| Shape |  |  |  |  |  |

| Name | Insulation for fitting | Sealing pad | (Other) |
|----------|---|--|---------|
| Quantity | 1 each. | 1 each. | |
| Shape | 6) For gas pipe  7) For liquid pipe  | 8) Large  9) Small  | |

2-2 OPTIONAL ACCESSORIES

- The remote controller are required for this indoor unit "Table 1" on page 3. (However, the remote controller is not required for the slave unit of a simultaneous operation system.)
- These are two types of remote controllers: wired and wireless. Select a remote controller from "Table 1" on page 3 according to customer request and install in an appropriate place.

Table 1

| Remote controller type | Cooling only type | Heat pump type |
|------------------------|---------------------------------------|---------------------|
| Wired type | BRC1C517, BRC1D527, BRC1D528, BRC1C61 | |
| Wireless type | BRC7E66, BRC7EA66 | BRC7E63W, BRC7EA63W |

NOTE

- If you wish to use a remote controller that is not listed in “Table 1” on page 3, select a suitable remote controller after consulting catalogs and technical materials.

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.
a. Items to be checked after completion of work



| Items to be checked | If not properly done, what is likely to occur | Check |
|--|--|-------|
| Are the indoor and outdoor unit fixed firmly? | The units may drop, vibrate or make noise. | |
| Is the gas leak test finished? | It may result in insufficient cooling. | |
| Is the unit fully insulated? | Condensate water may drip. | |
| Does drainage flow smoothly? | Condensate water may drip. | |
| Does the power supply voltage correspond to that shown on the name plate? | The unit may malfunction or the components burn out. | |
| Are wiring and piping correct? | The unit may malfunction or the components burn out. | |
| Is the unit safely grounded? | Dangerous at electric leakage. | |
| Is wiring size according to specifications? | The unit may malfunction or the components burn out. | |
| Is something blocking the air outlet or inlet of either the indoor or outdoor units? | It may result in insufficient cooling. | |
| Are refrigerant piping length and additional refrigerant charge noted down? | The refrigerant charge in the system is not clear. | |

b. Items to be checked at time of delivery

* Also review the “SAFETY CONSIDERATIONS”

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

c. Points for explanation about operations

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

2-3 NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

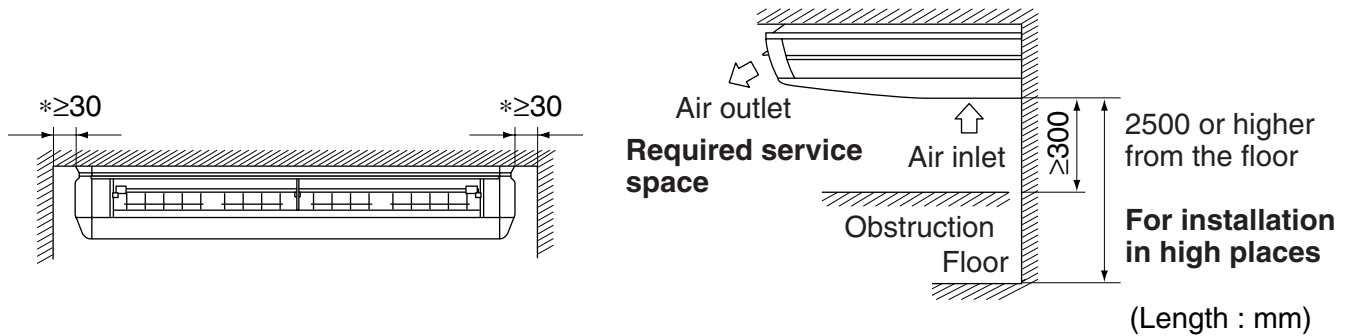
3. SELECTING INSTALLATION SITE

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

- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate can be properly drained.
- Where the ceiling is strong enough to bear the indoor unit weight.
- Where the false ceiling is not noticeably on an incline.
- Where there is no risk of flammable gas leakage.
- Where sufficient clearance for maintenance and service can be ensured.

NOTE 

- If there is space left over in the * section, opening it up 200 mm will make servicing easier.



- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual for the outdoor unit.)
- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.)

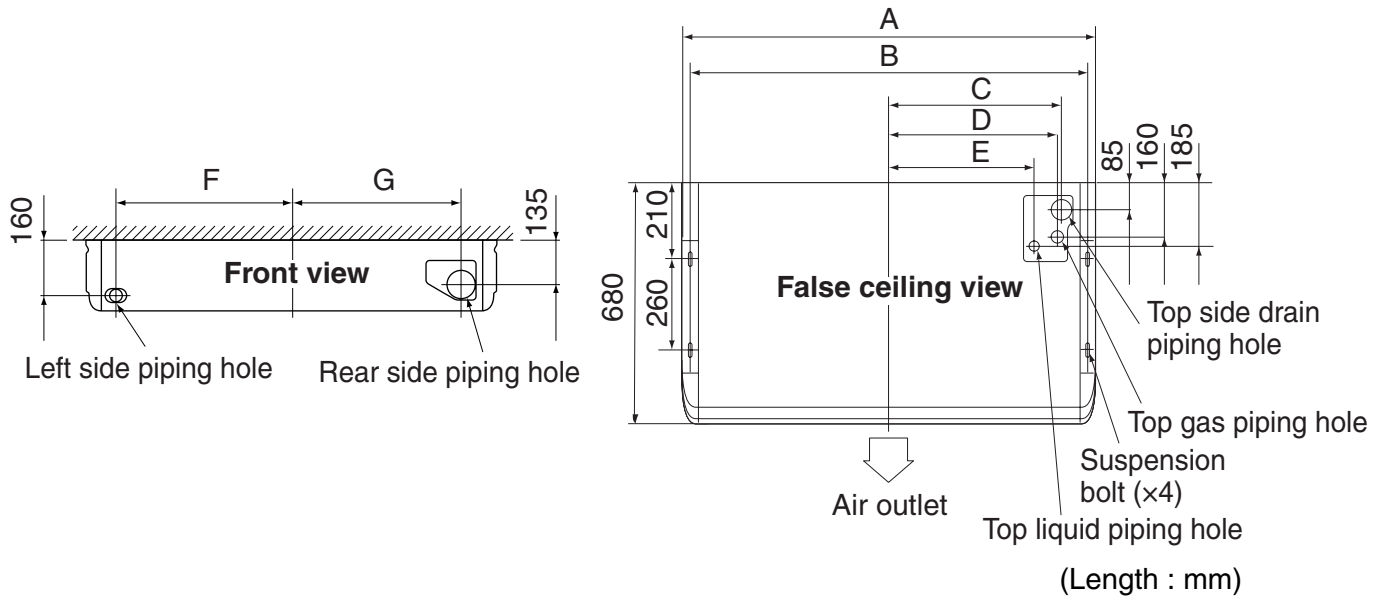
(2) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.

(Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

(3) This product may be installed on ceilings up to 3.5 m in height. However, if the ceiling is higher than 2.7 m, the remote control will have to be set locally. (Refer to "10. FIELD SETTINGS" on page 19)

4. PREPARATIONS BEFORE INSTALLATION

(1) Relation of holes for indoor unit, suspension bolt position, piping and wiring.



| Model | A | B | C | D | E | F | G |
|-----------------|------|------|-----|-----|-----|-----|-----|
| Type 35, 45, 50 | 960 | 920 | 390 | 375 | 310 | 400 | 375 |
| Type 60, 71 | 1160 | 1120 | 490 | 475 | 410 | 500 | 475 |
| Type 100 | 1400 | 1360 | 610 | 595 | 530 | 620 | 595 |
| Type 125 | 1590 | 1550 | 705 | 690 | 625 | 715 | 690 |

(2) Make holes for suspension bolts, refrigerant and drain piping, and wiring.

- Refer to the paper pattern for installation.
- Select the location for each of holes and open the holes in the ceiling.

(3) Remove the parts from the indoor unit.

(3-1) Detach the suction grille.

- Slide the locking knobs (x2) on the suction grille inward (direction of arrows) and lift upwards. **(Refer to Fig. 1)**
- With the suction grille open, remove the suction grille forward, holding on to the rear tabs on the suction grille. **(Refer to Fig. 2)**

Fig. 1

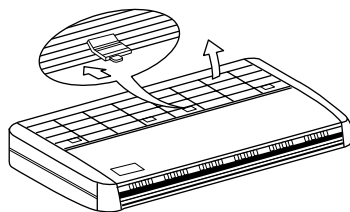
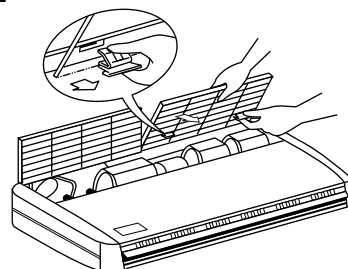


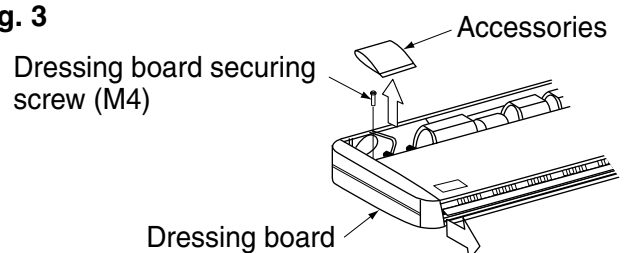
Fig. 2



(3-2) Remove the dressing boards (left and right).

- After removing the securing screws for the dressing boards (one each), pull them forward (in the direction of the arrow) and remove them. **(Refer to Fig. 3)**
- Take out the accessories.

Fig. 3



(3-3) Remove the hanger brackets.

- Loosen the 2 bolts (M8) used to attach the hanger brackets which are on each side (4 places left and right) to within 10 mm. **(Refer to Fig. 4. 5)**
- After removing the securing screws (M5) for the hanger brackets which are on the rear side, pull the hanger brackets back (in the direction of the arrow), and remove them. **(Refer to Fig. 5)**

Fig. 4

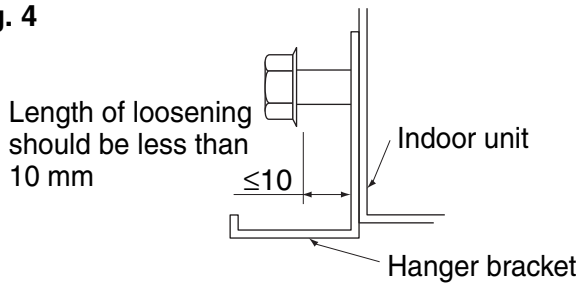
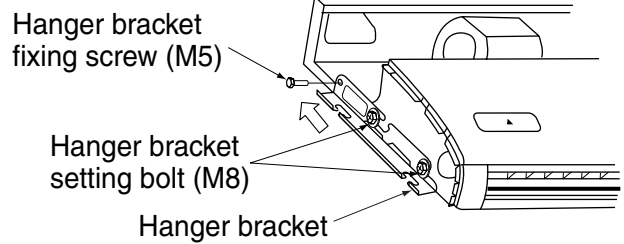


Fig. 5



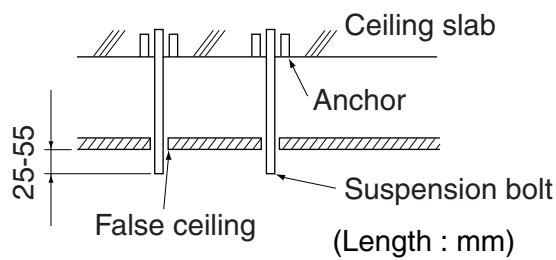
(4) Attach the suspension bolts. (Use suspension bolts which are W3/8 or M8-M10 in size.)

- Adjust the distance of the suspension bolts from the ceiling in advance. **(Refer to Fig. 6)**

NOTE

- Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.

Fig. 6



All the above parts are field supplied.

5. INDOOR UNIT INSTALLATION

It may be easier to attach accessory parts before installing the indoor unit. Therefore, please also read the instruction manuals which are provided with the accessory parts.

As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by our company.

(1) Secure the hanger brackets to the suspension bolts. (Refer to Fig. 7)

NOTE

- To ensure they are safely secured, use the included washers, and secure them with double nuts to make sure.

(2) Lift the indoor unit's main body, insert the bolts (M8) for the hanger brackets into the attachment part on the hanger brackets, while sliding the main body from the front. (Refer to Fig. 8)

(3) Fasten the bolts for the hanger brackets (M8) securely in 4 places, left and right. (Refer to Fig. 8)

(4) Replace the screws for the hanger brackets which had been removed (M5) securely in 2 places left and right. This is necessary to prevent any forward and back slide in the main body of the indoor unit. (Refer to Fig. 8)

Fig. 7

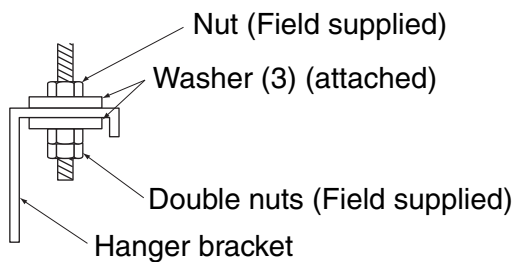
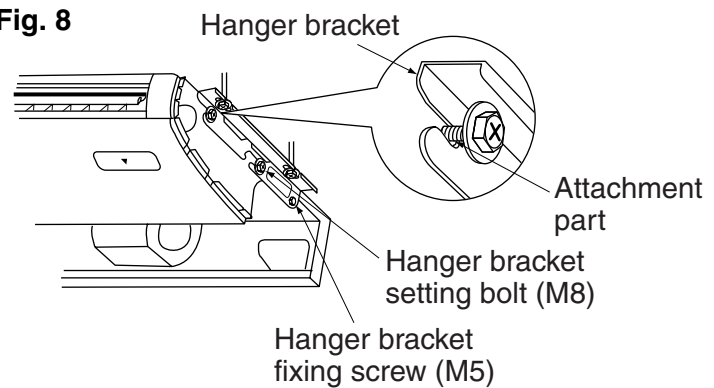
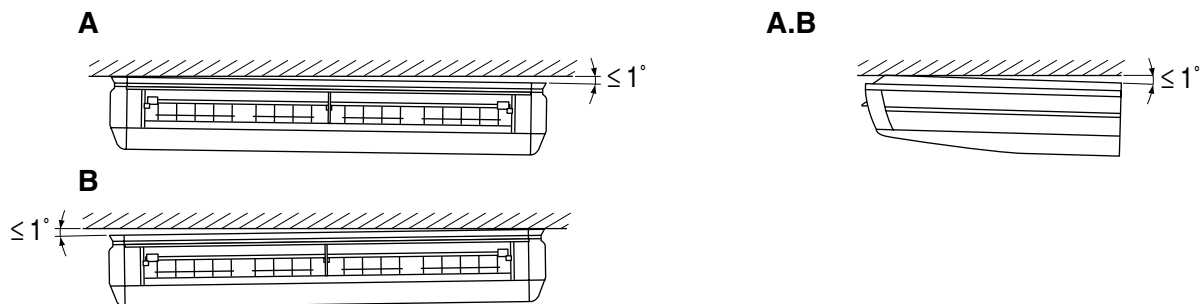


Fig. 8



(5) When hanging the indoor unit main body, be sure to use a level or a plastic tube with water in it to make sure the drain piping is set either level or slightly tilted, in order to ensure proper drainage. (Refer to Fig. 9)

Fig. 9



A. When the drain piping is tilted to the right, or to the right and back.

Place it level, or tilt it slightly to the right or the back. (Within 1°.)

B. When the drain piping is tilted to the left, or to the left and back.

Place it level, or tilt it slightly to the left or the back. (Within 1°.)

CAUTION

Setting the unit at an angle opposite to the drain piping might cause a water leakage.

6. REFRIGERANT PIPING WORK

⟨For refrigerant piping of outdoor units, see the installation manual attached to the outdoor unit.⟩
 ⟨Execute heat insulation work completely on both sides of the gas piping and the liquid piping. Otherwise, a water leakage can result sometimes.⟩

(When using a heat pump, the temperature of the gas piping can reach up to approximately 120°C, so use insulation which is sufficiently resistant.)

⟨Also, in cases where the temperature and humidity of the refrigerant piping sections might exceed 30°C or RH80 %, reinforce the refrigerant insulation. (20 mm or thicker) Condensation may form on the surface of the insulating material.⟩

⟨Before refrigerant piping work, check which type of refrigerant is used. Proper operation is not possible if the types of refrigerant are not the same.⟩

⚠ CAUTION

- Use a pipe cutter and flare suitable for the type of refrigerant.
- Apply ester oil or ether oil around the flare section before connecting.
- To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.
- Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

- The outdoor unit is charged with refrigerant.
- Use copper alloy seamless pipes (ISO 1337).
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. (Refer to Fig. 10)
- Refer to "Table 2" for the dimensions of flare nut spaces.
- When connecting the flare nut, coat the flare section (both inside and outside) with ester oil or ether oil, rotate three or four times first, then screw in. (Refer to Fig. 11)

Fig. 10

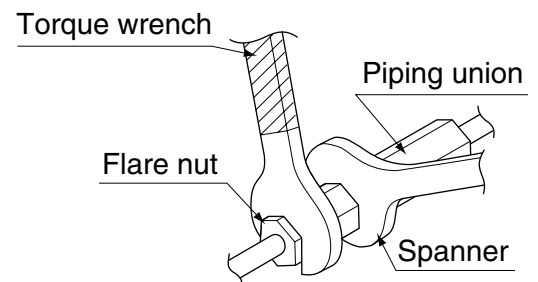
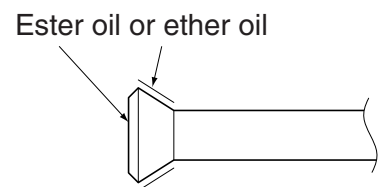


Fig. 11



NOTE

- Use the flare nut included with the unit main body.

⚠ CAUTION

Do not let oil get on the screw holders on the dressing board. Oil can weaken the screw holders.

Table 2

| Pipe size | Tightening torque | Type of refrigerant Applicable model | Flare dimensions A (mm) | | Flare |
|-------------|-------------------|---|---|--------------|-------|
| | | | R22, R407C FH(Y)-BJV1 FHYP-BV1, FH-BZV1 | R410A FHQ | |
| φ6.4(1/4") | 14.2-17.2 N • m | | 8.6 – 9.0 | 8.7 – 9.1 | |
| φ9.5(3/8") | 32.7-39.9 N • m | | 12.6 – 13.0 | 12.8 – 13.2 | |
| φ12.7(1/2") | 49.5-60.3 N • m | | 15.8 – 16.2 | 16.2 – 16.6 | |
| φ15.9(5/8") | 61.8-75.4 N • m | | 19.0 – 19.4 | 19.3 – 19.7 | |
| φ19.1(3/4") | 97.2-118.8 N • m | | 23.3 – 23.7 | — | |

- Refer to "Table 2" to determine the proper tightening torque.

⚠ CAUTION

Overtightening may damage the flare and cause a refrigerant leakage.

— **Not recommendable but in case of emergency** —

You must use a torque wrench but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

After the work is finished, make sure to check that there is no gas leak.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below:

| Pipe size | Further tightening angle | Recommended arm length of tool |
|--------------|--------------------------|--------------------------------|
| φ6.4 (1/4") | 60 to 90 degrees | Approx. 150mm |
| φ9.5 (3/8") | 60 to 90 degrees | Approx. 200mm |
| φ12.7 (1/2") | 30 to 60 degrees | Approx. 250mm |
| φ15.9 (5/8") | 30 to 60 degrees | Approx. 300mm |
| φ19.1 (3/4") | 20 to 35 degrees | Approx. 450mm |

— **⚠ CAUTION** —

CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING

“Do not use flux when brazing refrigerant piping. Therefore, use the phosphor copper brazing filler metal (BCuP-2: JIS Z 3264/B-Cu93P-710/795: ISO 3677) which does not require flux.”

(Flux has extremely harmful influence on refrigerant piping systems. For instance, if the chlorine based flux is used, it will cause pipe corrosion or, in particular, if the flux contains fluorine, it will damage the refrigerant oil.)

- Before brazing local refrigerant piping, nitrogen gas shall be blown through the piping to expel air from the piping.
If you brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the piping, and could cause system malfunction.
- When brazing the refrigerant piping, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant piping. Once this is done, connect the indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 0.02 MPa with a pressure-reducing valve if brazing while inserting nitrogen into the piping. **(Refer to Fig. 12)**

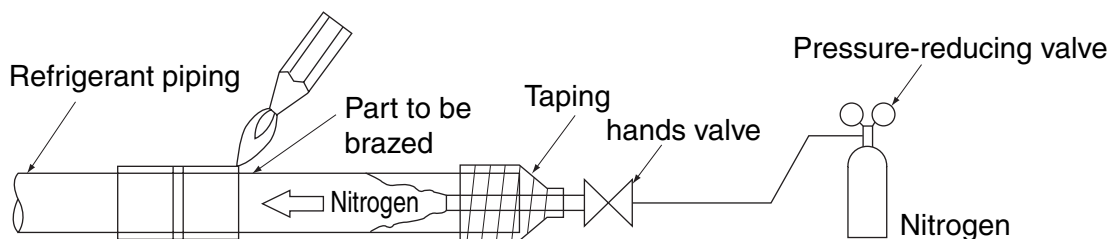


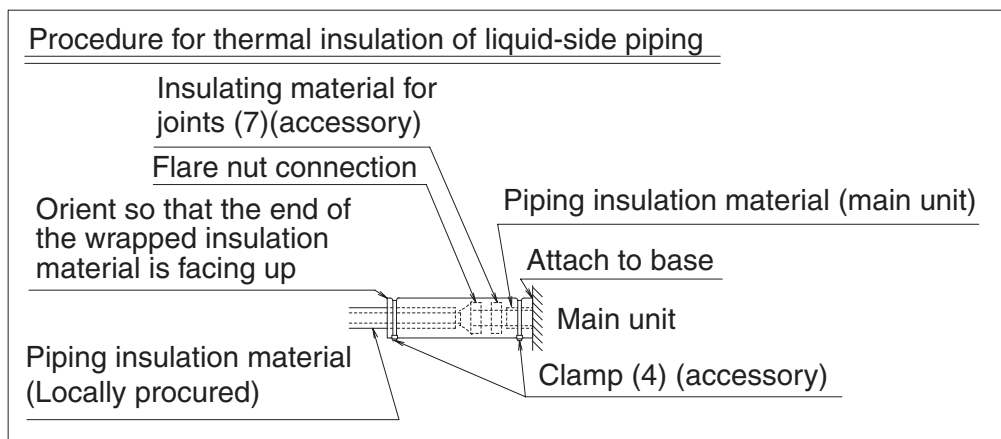
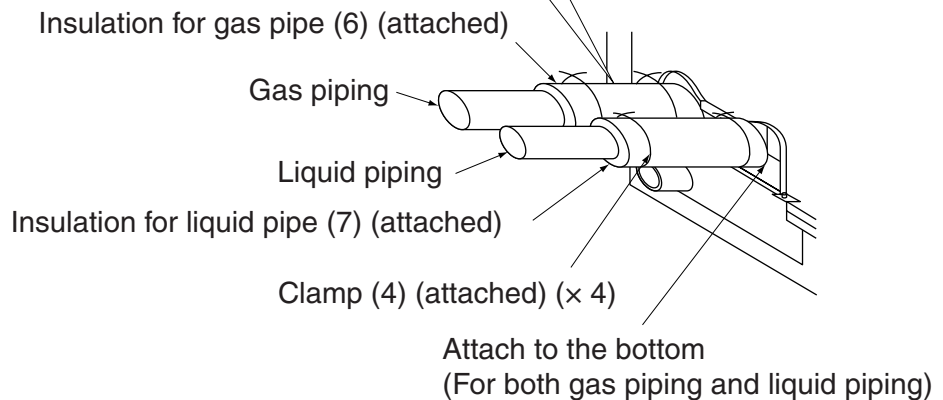
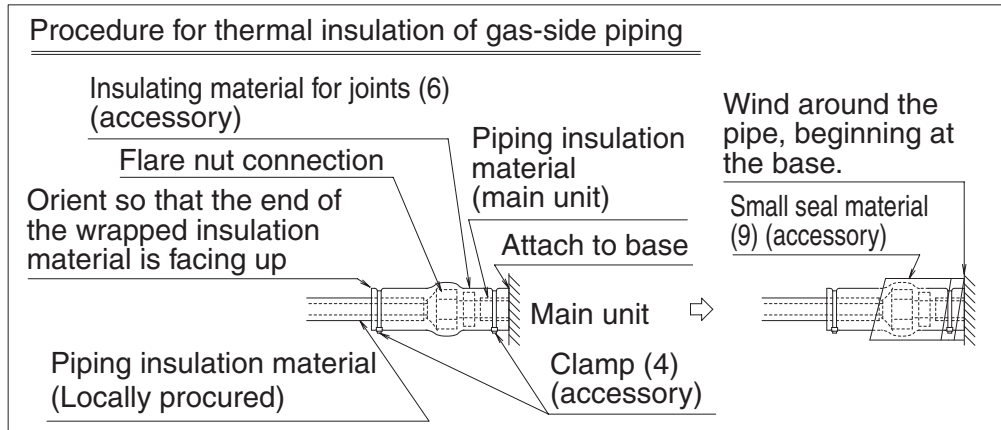
Fig. 12

- Make absolutely sure to execute heat insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the attached heat insulating materials for fitting (6) and (7). (Fasten both ends with the clamps (4).)
(Refer to Fig. 13)
- Wrap the sealing pad (9) only around the insulation for the joints on the gas piping side.
(Refer to Fig. 13)

CAUTION

- Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

Fig. 13



(1) For piping facing back.

- Remove the rear penetration lid and set the piping. **(Refer to Fig. 14.16)**

(2) For piping facing up.

- When setting the piping to face up, the L-shaped branch piping kit sold separately is required.
- Removing the top penetration lid and use the L-shaped branch piping kit sold separately to set the piping. **(Refer to Fig. 14.15)**

(3) For piping facing right.

- Cut out a slit hole on the dressing board (right) and set the piping. **(Refer to Fig. 16)**

Fig. 14

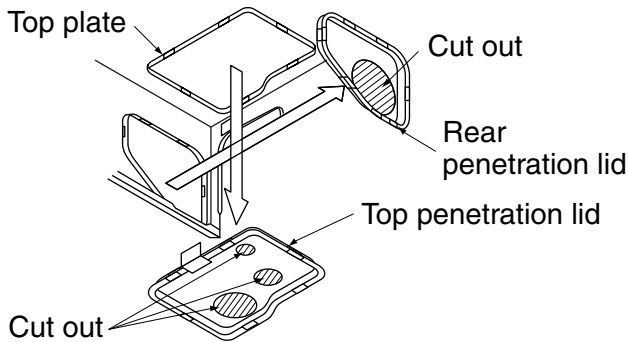


Fig. 15

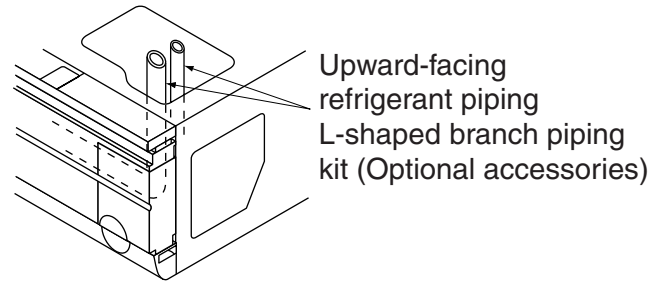
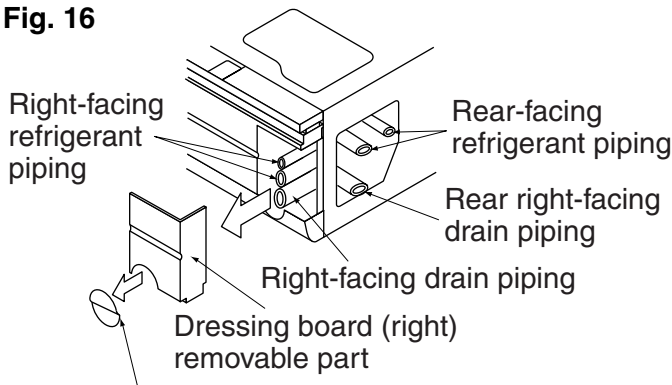
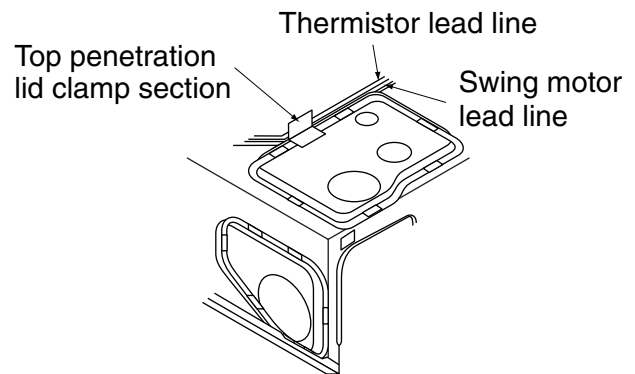


Fig. 16



If only setting the drain piping to face right, cut this section only.

Fig. 17



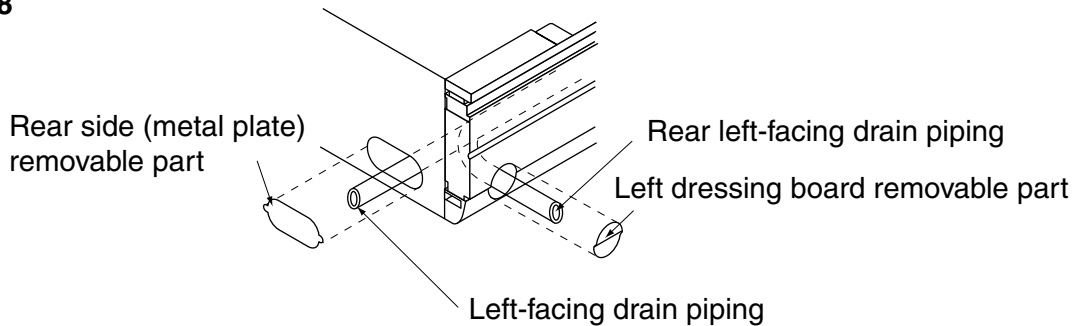
- When piping is complete, cut the removed penetration lid into the shape of the piping using scissors and attach. As when before removing the top penetration lid, secure the lead lines for the swing motor and thermistor by passing them through the clamp section on the top penetration lid. **(Refer to Fig. 14.17)**
- When doing this, block any gaps between the piping penetration lid and the pipes using putty to prevent dust from entering the indoor unit.

7. DRAIN PIPING WORK

(1) Carry out the drain piping.

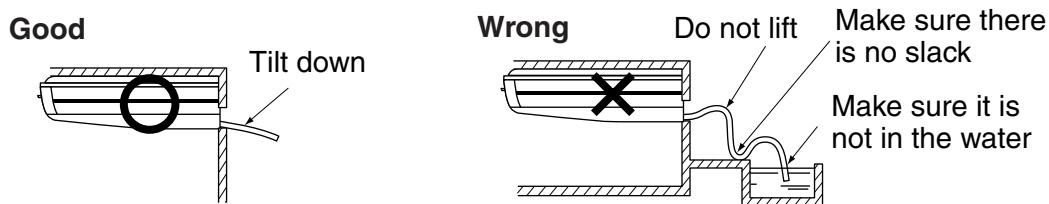
- Make sure piping provides proper drainage.
- You can select whether to bring the drain piping out from the rear right, right, rear left, or left. For rear right-facing and right-facing situations, refer to “6. REFRIGERANT PIPING WORK” on page 9 for rear left-facing and left-facing situations. **(Refer to Fig. 18)**

Fig. 18



- When setting piping facing left, move the rubber stopper and insulation which are attached to the drain pipe connection hole on the left side of the indoor unit to the right-side drain pipe connection hole. When doing this, insert the rubber stopper all the way in to prevent a water leakage.
- Make sure the pipe diameter is the same or bigger than the branch piping. (vinyl-chloride piping, nominal diameter 20 mm, external diameter 26 mm)
- Make sure the piping is short, has at least a 1/100 slope, and can prevent air pockets from forming. **(Refer to Fig. 19)**

Fig. 19



⚠ CAUTION

Water accumulating in the drain piping can cause the drain to clog.

- Be sure to use the included drain hose (1) and clamp (2). Also, insert the drain hose completely into the drain socket, and securely attach the clamp bracket inside the gray tape area on the inserted tip of the drain hose. **(Refer to Fig. 20)** Screw the screws on the clamp bracket until there is 4 mm left. (Pay attention to the direction of the attachment to prevent the clamp bracket from coming into contact with the suction grille.) **(Refer to Fig. 21)**

Fig. 20

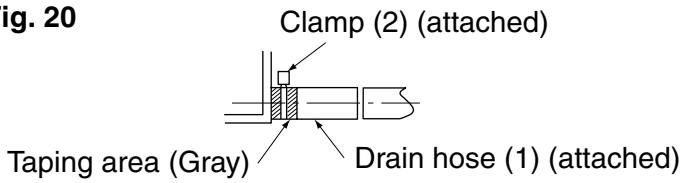


Fig. 22

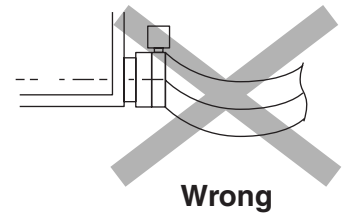
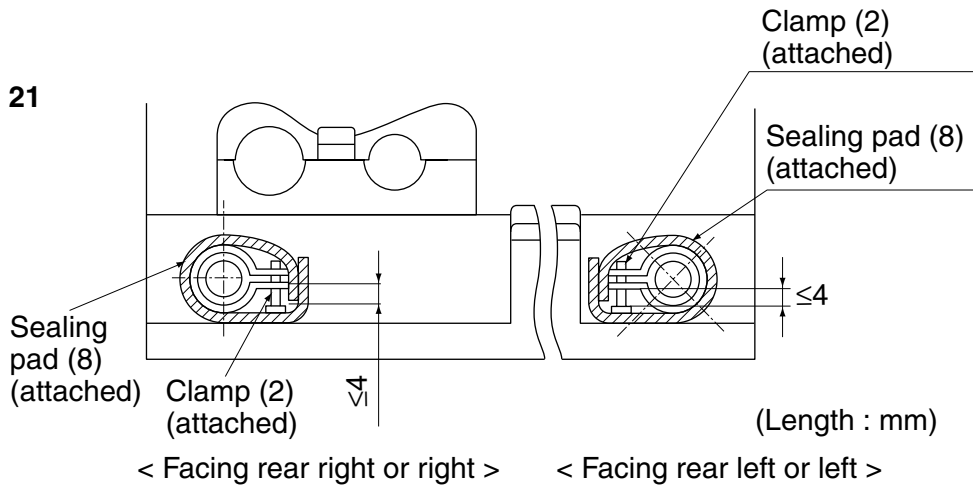


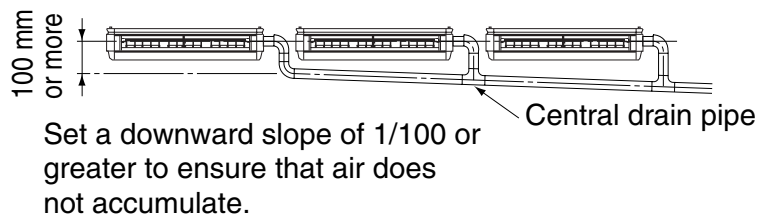
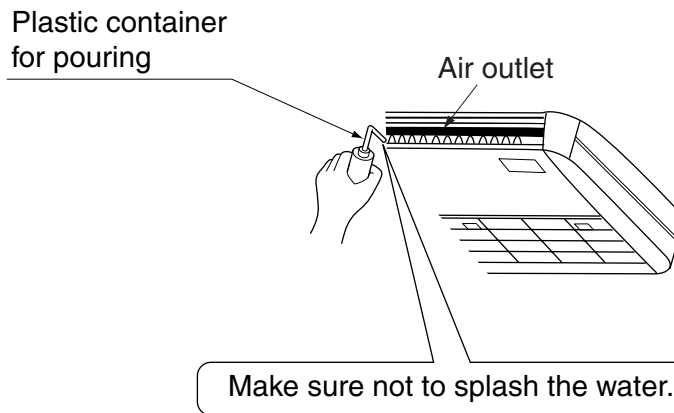
Fig. 21



- Insulate the clamp bracket and drain hose from the bottom using the included sealing pad (8). **(Refer to Fig. 21)**
- Be sure to insulate all drain piping running indoors.
- Do not allow any slack to gather in the drain hose inside the indoor unit. **(Refer to Fig. 22)**
(Slack in the drain hose can cause the suction grille to break.)

(2) Check to make sure the drain flows smoothly after piping is complete.

- Slowly pour 600 ml of drain-checking water into the drain pan through the air outlet.



Water accumulating in the drain piping can cause the drain to clog.



CAUTION

Drain piping connections

Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.

8. WIRING EXAMPLE

For the wiring of outdoor units, refer to the installation manual attached to the outdoor units.

Confirm the system type.

- **Pair or Multi system:** 1 remote controller controls 1 indoor unit. (standard system) (Refer to Fig. 23)
- **Simultaneous operation system:** 1 remote controller controls 2 indoor units. (2 indoor units operates equally) (Refer to Fig. 24)
- **Group control:** 1 remote controller controls up to 16 indoor units. (All indoor units operate according to the remote controller) (Refer to Fig. 25)
- **Two remote controllers control:** 2 remote controllers control 1 indoor unit. (Refer to Fig. 26)

Fig. 23

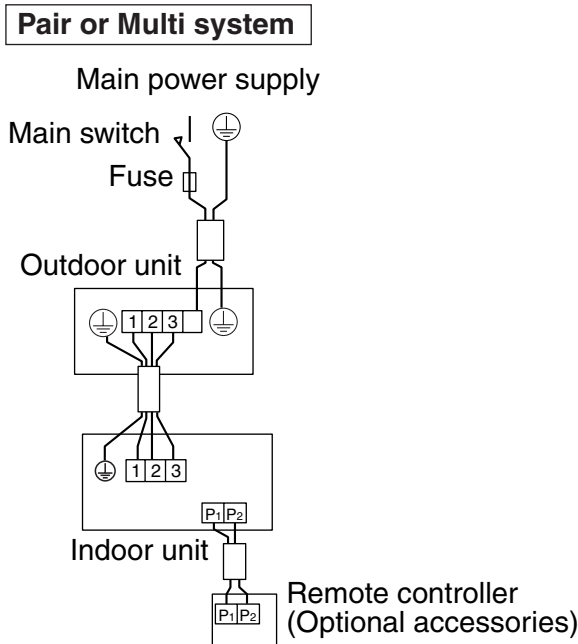


Fig. 24

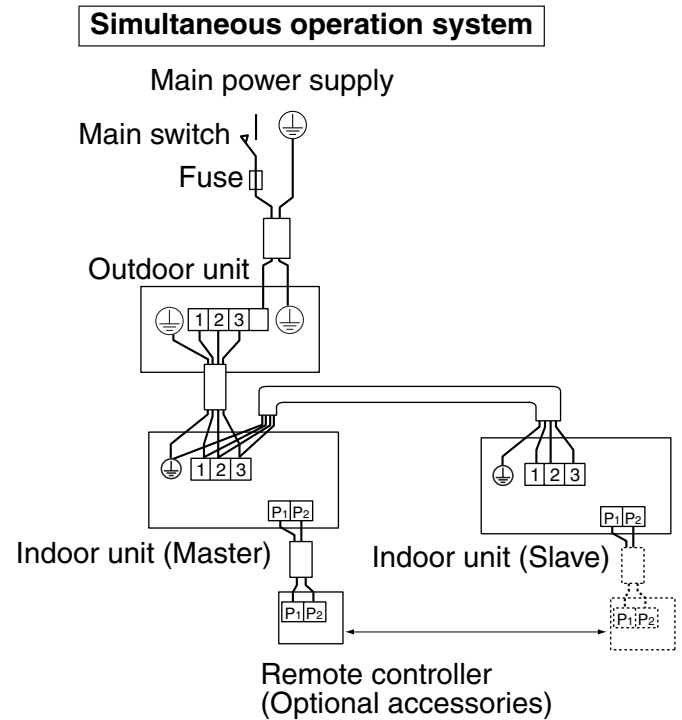


Fig. 25

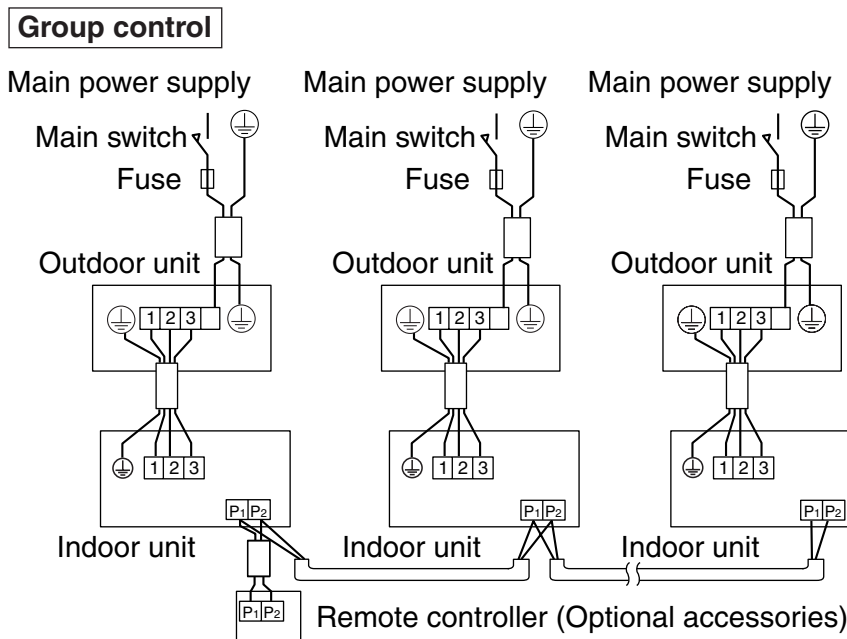
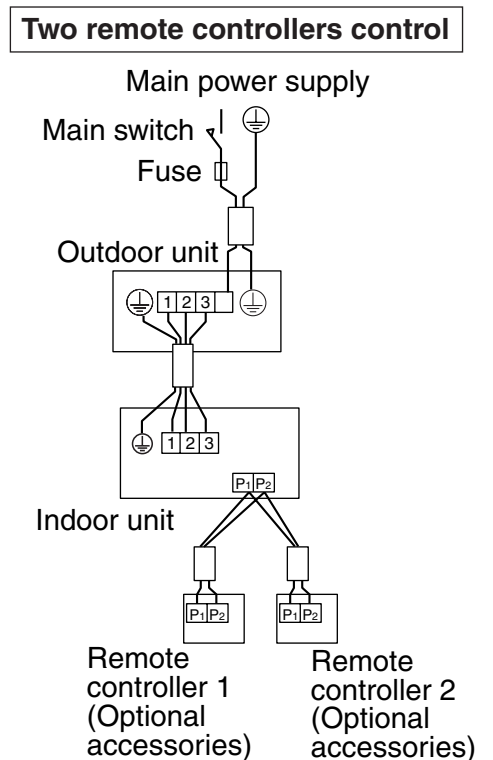


Fig. 26



NOTE

1. All transmission wiring except for the remote controller wires is polarized and must match the terminal symbol.
2. In case of group control, perform the remote controller wiring to the master unit when connecting to the simultaneous operation system. (wiring to the slave unit is unnecessary)
3. For group control remote controller, choose the remote controller that suits the indoor unit which has the most functions (as attached swing flap)
4. When controlling the simultaneous operation system with 2 remote controllers, connect it to the master unit. (wiring to the slave unit is unnecessary)

9. ELECTRIC WIRING WORK

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also “8. WIRING EXAMPLE” on page 15 attached to the unit body.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply electric wire connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.
- Do not connect the ground wire to gas pipes, water pipes, lightning rods, or telephone ground wires.
 - Gas pipes: might cause explosions or fire if gas leaks.
 - Water pipes: no grounding effect if hard vinyl piping is used.
 - Telephone ground wires or lightning rods: might cause abnormally high electric potential in the ground during lightning storms.
- **Specifications for field wire**

Table 3

| | Wire | Size (mm ²) | Length |
|------------------------|---|-------------------------|------------------------|
| Wiring between units | H05VV - U4G (NOTE 1, 3) | 2.5 | — |
| Remote controller cord | Vinyl cord with sheath or cable (2 wires) (NOTE 2) | 0.75 - 1.25 | Max. 500 m (NOTE 3) |

NOTE

1. Shows only in case of protected pipes. Use H07RN-F in case of no protection. (Sheath thickness: 1mm or more)
2. Use double insulated wire for remote controller (Sheath thickness: 1mm or more) or run wires through a wall or conduit so that the user cannot come in contact with them.
3. This length shall be the total extended length in the system of the group control.

CAUTION

- Even if the top or rear penetration lid is removed, pull the remote controller cord and the wiring between units inside the unit using conduits for each, so that the wiring does not come into contact with the opening section of the metal casing.
- Pass conduits through the wall and secure along with the refrigerant piping in order to prevent external pressure being applied to the remote controller cord and wiring between units.
- Prevent dust from entering into the unit by filling the gap between the conduits and the penetration lid (top or rear) with corking or putty.
- Arrange the wires and fix a lid firmly so that the lid does not float during wiring work.
- Do not clamp remote controller cord together with wiring between units together. Doing so may cause malfunction.
- Remote controller cord and wiring between units should be located at least 50 mm from other electric wires. Not following this guideline may result in malfunction due to electrical noise.

Connection of wiring between units and for the remote control cord (Refer to Fig. 27)

- **Wiring between units**

Holding the control box lid, loosen the two securing screws, remove the control box lid, match up the phases on the power source terminal block inside (3P), and make the connections.

After this is done, use the attached clamp (4) to bind wiring between units to the anchor point.

(Refer to Fig. 28)

- **Remote controller cord:** The simultaneous operation multi sub-unit is not required. **(Refer to Fig. 27.29)**

Connect to the remote control terminal block (2P). (There is no polarity.) After this is done, use the attached clamp (4) to bind remote controller cord to the anchor point. **(Refer to Fig. 28)**

Attaching the suction grille and the dressing boards

- Once wiring is complete, firmly attach the dressing side board by reversing the steps taken to remove the suction grille.

Fig. 27

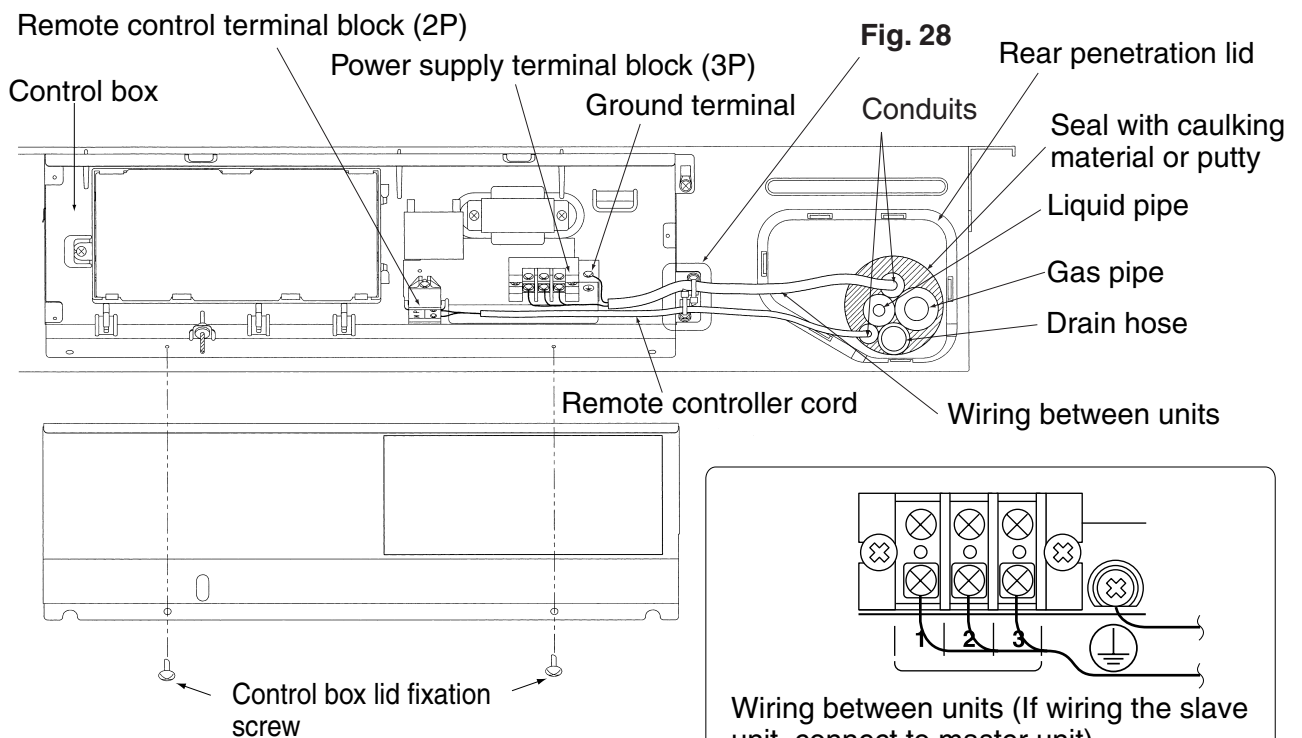


Fig. 28

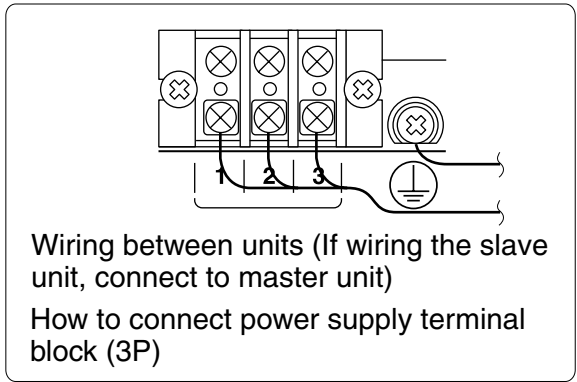


Fig. 28

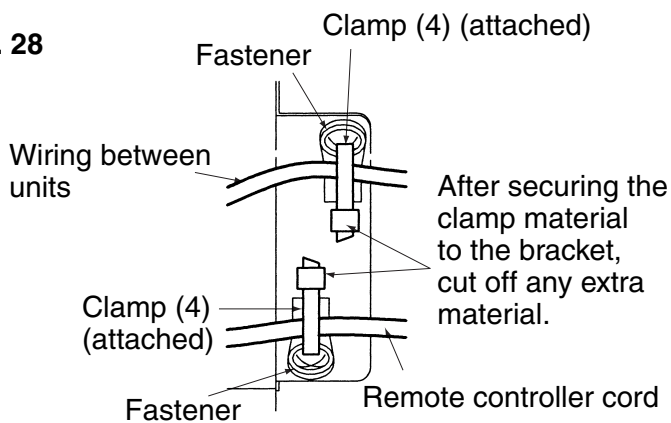
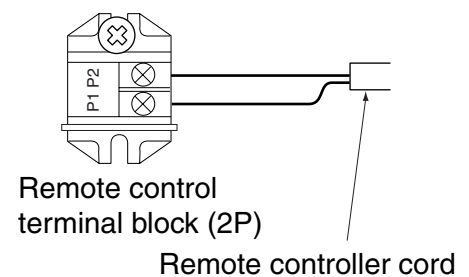


Fig. 29



Observe the notes mentioned below when wiring to the terminals.

Tightening torque for the terminal screws.

- Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.
- Refer to the table below for the tightening torque of the terminal screws.

| Terminal | Size | Tightening torque |
|---------------------------------------|------|-------------------|
| Remote controller terminal block (2P) | M3.5 | 0.79 - 0.97 N•m |
| Power supply terminal block (3P) | M4 | 1.18 - 1.44 N•m |
| Ground terminal | M4 | 1.18 - 1.44 N•m |

Precautions to be taken for power supply wiring

Use a round crimp-style terminal for connection to the power supply terminal block.

In case it cannot be used due to unavoidable reasons, be sure to observe the following instructions.

(Refer to Fig. 30)

- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.) **(Refer to Fig. 31)**
- When connecting wires of the same gauge, connect them according to. **(Refer to Fig. 31)**
- In wiring, make certain that prescribed wires are used, carry out complete connections, and fix the wires so that external forces are not applied to the terminals.

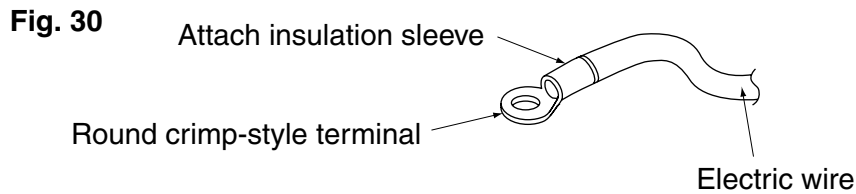
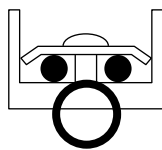


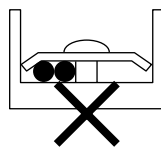
Fig. 31

Connect wires of the same gauge to both side. (GOOD)



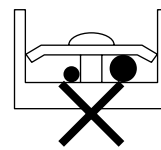
Good

Do not connect wires of the same gauge to one side. (WRONG)



Wrong

Do not connect wires of different gauges. (WRONG)



Wrong

10. FIELD SETTINGS

(1) Make sure the control box lids are closed on the indoor and outdoor units.

(2) Field settings must be made from the remote controller and in accordance with installation conditions.

- Settings can be made by changing the “Mode No.,” “FIRST CODE NO.” and “SECOND CODE NO.”.
- The “Field Settings” included with the remote control lists the order of the settings and method of operation.

10-1 Setting ceiling height

- Select the SECOND CODE NO. that corresponds to the ceiling height “Table 4”.
(SECOND CODE NO. is factory set to “01” for a ceiling height of less than 2.7m .)

Table 4

| Ceiling height (m) | Mode No. | FIRST CODE NO. | SECOND CODE NO. |
|--------------------|----------|----------------|-----------------|
| Less than 2.7 m | 13 (23) | 0 | 01 |
| 2.7 to 3.5 | | | 02 |

10-2 Settings for options

- For settings for options, see the installation instructions provided with the option.

10-3 Setting air filter sign

- Remote controllers are equipped with liquid crystal display air filter signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to “Table 5” depending on the amount of dirt or dust in the room.
(SECOND CODE NO. is factory set to “01” for air filter contamination-light.)

Table 5

| Setting | Spacing time of display air filter sign (long life type) | Mode No. | FIRST CODE NO. | SECOND CODE NO. |
|--------------------------------|--|----------|----------------|-----------------|
| Air filter contamination-light | Approx. 2500 hrs | 10 (20) | 0 | 01 |
| Air filter contamination-heavy | Approx. 1250 hrs | | | 02 |

10-4 Setting indoor unit number of simultaneous operation system

- When using in simultaneous operation system mode, change the SECOND CODE NO. as shown in “Table 6”.
(SECOND CODE NO. is factory set to “01” for Pair system (1 unit))

Table 6

| Setting | Mode No. | FIRST CODE NO. | SECOND CODE NO. |
|--|----------|----------------|-----------------|
| Pair system (1 unit) | 11 (21) | 0 | 01 |
| Simultaneous operation system (2-unit) | | | 02 |
| Simultaneous operation system (3-unit) | | | 03 |
| Double twin multi (4-unit) | | | 04 |

- When using in simultaneous operation system mode, refer to “10-5 Simultaneous operation system individual setting” on page 20 section to set master and slave units separately.

When using wireless remote controllers

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

10-5 Simultaneous operation system individual setting

It is easier if the optional remote controller is used when setting the slave unit.

- Perform the following procedure when setting the master and slave unit separately.

Procedure

(1) Change the SECOND CODE NO. to "02" for, individual setting, so that the slave unit can be individually set. (SECOND CODE NO. is factory set to "01", for unified setting.)

| Setting | Mode No. | FIRST CODE NO. | SECOND CODE NO. |
|--------------------|----------|----------------|-----------------|
| Unified setting | 11 (21) | 1 | 01 |
| Individual setting | | | 02 |

(2) Perform field setting (Refer to 10-1 to 10-4) for the master unit.

(3) Turn off the main power supply switch after (2).

(4) Detach remote controller from the master unit and connect it to the slave unit.

(5) Turn on the main power supply switch again, and as in (1), change the SECOND CODE NO. to "02", individual setting.

(6) Perform field setting (Refer to 10-1 to 10-3) for the slave unit.

(7) Turn off the main power supply switch after (6).

(8) If there is more than one sub-unit, repeat steps (4) – (7).

(9) Detach the remote controller from the slave unit after the setting, and reattach to the master unit.

This is the end of the setting procedure.

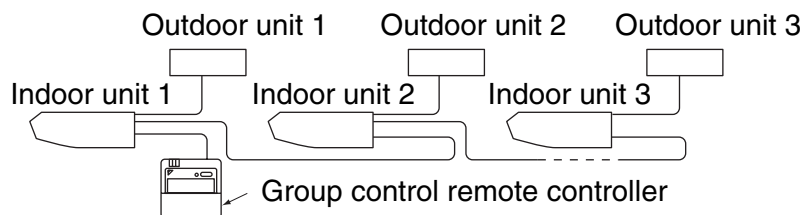
*You do not need to rewire the remote controller from the master unit if the optional remote controller for slave unit is used.

(However, remove the wires attached to the remote controller terminal board of the master unit.)

(Refer to Fig. 24 on page 15)

10-6 When implementing group control

- When using as a pair unit or as a master unit for simultaneous operation multi, you may simultaneous start/stop (group) control up to 16 unit with the remote controller.
- In this case, all the indoor units in the group will operate in accordance with the group control remote controller.
- Select a remote controller which matches as many of the functions (swing flap, etc.) in the group as possible.



Wiring Method (See "9. ELECTRIC WIRING WORK" on page 16.)

(1) Remove the control box lid.

(2) **Cross-wire the remote control terminal block (P₁ P₂) inside the control box. (There is no polarity.)**

(Refer to Fig. 25 on page 15 and Table 3 on page 16)

NOTE

- When combining with a simultaneous operation multi-type, be sure only to connect the wiring to the master unit.

10-7 Two remote controllers control (Controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to “MAIN” and the other to “SUB”.

MAIN/SUB CHANGEOVER


- (1) Insert a  screwdriver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part. (The remote controller PC board is attached to the upper part of remote controller.) (Refer to Fig. 32)
- (2) Turn the **main/sub changeover** switch on one of the two remote controller PC boards to “S”. (Leave the switch of the other remote controller set to “M”.) (Refer to Fig. 33)

Fig. 32

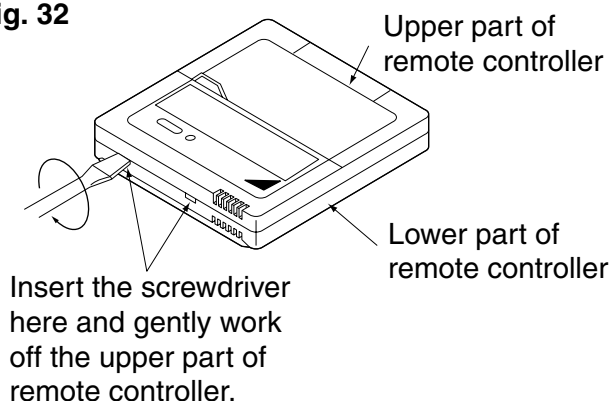
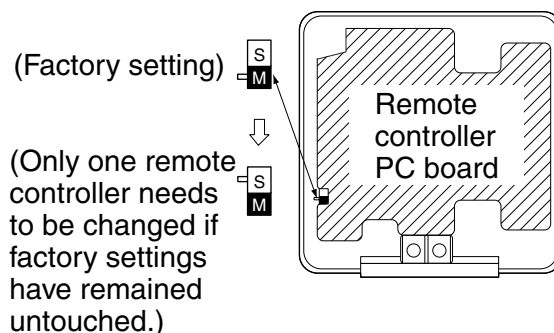


Fig. 33



Wiring Method (See “9.ELECTRIC WIRING WORK” on page16.)

- (3) Remove the control box lid

- (4) Add remote controller 2 to the remote control terminal block (P₁, P₂) in the control box.

(There is no polarity.) (Refer to Fig. 26 on page 15 and Table 3 on page 16)

NOTE

When combining with a simultaneous operation multi-type, be sure only to connect the wiring to the master unit.





11. TEST OPERATION

- (1) Make sure the control box lids are closed on the indoor and outdoor units.

- (2) Refer to the section of “FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.” on page 4.

- After finishing the construction of refrigerant piping, drain piping, and electric wiring, conduct test operation accordingly to protect the unit.

11-1 TEST OPERATION

1. Open the gas side stop valve.
2. Open the liquid side stop valve.
3. Electrify crank case heater for 6 hours. (Not required in case of a unit exclusively designed for cooling only)
4. Set to cooling operation with the remote controller and start operation by pushing ON/OFF button ().
5. Press INSPECTION/TEST OPERATION button 4 times () (2 times for wireless remote controller) and operate at Test Operation mode for 3 minutes.
6. Push AIR FLOW DIRECTION ADJUST button () to make sure the unit is in operation.
7. Press INSPECTION/TEST OPERATION button () and operate normally.
8. Confirm function of unit according to the operation manual.

PRECAUTIONS

1. Refer to "11-2 HOW TO DIAGNOSE FOR MALFUNCTION" if the unit does not operate properly.
2. After completing the test run, press the INSPECTION/TEST OPERATION run button once to put the unit in inspection mode, and make sure the malfunction code is "00". (=normal)
If the code reads anything other than "00", refer to "11-2 HOW TO DIAGNOSE FOR MALFUNCTION".

NOTE

- If a malfunction is preventing operation, refer to the malfunction diagnoses below.

11-2 HOW TO DIAGNOSE FOR MALFUNCTION


With the power on, it is possible to monitor the type of malfunction by looking at the malfunction code displayed in the remote controller.

If nothing is displayed in the remote controller, check the following items before attempting a diagnosis based on the malfunction code, as they might be a cause.

- Disconnected or incorrect wiring (between power supply and the outdoor unit, between the outdoor and indoor units, and between the indoor unit and the remote controller)
- Burnt out indoor or outdoor unit fuse
- "88" will be displayed for a few seconds on the remote controller immediately after the power is turned on. This display indicates that the remote controller is being checked to see whether it is ok or not, and does not indicate a malfunction.

Diagnose with the display on the liquid crystal display remote controller.

1. With the wired remote controller. (NOTE 1)

When the operation stops due to trouble, operation lamp flashed, and "  " and the malfunction code are indicated on the liquid crystal display. In such a case, diagnose the fault contents by referring to the table on the malfunction code list in case of group control, the unit No. is displayed so that the indoor unit No. with the trouble can be recognized. (NOTE 2)

2. With the wireless remote controller.

(Refer also to the operation manual attached to the wireless remote controller)

When the operation stops due to trouble, the display on the indoor unit flashes. In such a case, diagnose the fault contents with the table on the malfunction code list looking for the malfunction code which can be found by following procedures. (NOTE 2)

(1) Press the INSPECTION /TEST OPERATION button, "  " is displayed and " 0 " flashes.

(2) Press the PROGRAMMING TIME button and find the unit No. which stopped due to trouble.

Number of beeps 3 short beeps Perform all the following operations

1 short beep Perform (3) and (6)

1 long beep No trouble

(3) Press the OPERATION MODE SELECTOR button and upper figure of the malfunction code flashes.


(4) Continue pressing the PROGRAMMING TIME button until it makes 2 short beeps and find the upper code.

(5) Press the OPERATION SELECTOR button and lower figure of the malfunction code flashes.


(6) Continue pressing the PROGRAMMING TIME button until it makes a long beep and find the lower code.

- A long beep indicates the malfunction code.

NOTE

1. In case wired remote controller. Press the INSPECTION /TEST OPERATION button on remote controller, "  " starts flashing.
2. Keep down the ON/OFF button for 5 seconds or longer in the inspection mode and the above trouble history disappears, after the trouble code goes on and off twice, followed by the code "00"(normal).
The display changes from the inspection mode to the normal mode.

11-3 Malfunction code

- For places where the malfunction code is left blank, the “” indication is not displayed. Though the system continues operating, be sure to inspect the system and make repairs as necessary.
- Depending on the type of indoor or outdoor unit, the malfunction code may or may not be displayed.

| Code | Malfunction/Remarks |
|-----------|--|
| A1 | Indoor unit's PC board faulty |
| A3 | Drain water level abnormal |
| A5 | Freeze-up protector “or stopped by high pressure control” |
| A6 | Indoor fan motor overloaded, overcurrent or locked |
| AF | Humidifier faulty |
| AH | Air cleaner faulty |
| | Only the air cleaner does not function. |
| AJ | Type set improper |
| | Capacity data is wrongly proset. Or there is nothing programmed in the data hold IC. |
| C4 | Sensor (R2T) for heat exchanger temperature is fault |
| C5 | Sensor (R3T) for heat exchanger temperature is fault |
| C9 | Sensor for suction air temperature is fault |
| CJ | Sensor for remote controller is fault |
| | The remote controller thermistor does not function, but the system thermo run is possible. |
| E0 | Action of safety device (outdoor unit) |
| E1 | Outdoor unit's PC board faulty |
| E3 | High pressure abnormal(outdoor unit) |
| E4 | Low pressure abnormal (outdoor unit) |
| E5 | Compressor motor lock malfunction |
| E6 | Compressor motor lock by over current (outdoor) |
| E7 | Outdoor fan motor lock malfunction |
| | Outdoor fan instantneous overcurrent malfunction |
| E8 | Input overcurrent (outdoor unit) |
| E9 | Electronic expansion valve faulty (outdoor unit) |
| EA | Cooling/heating switch malfunction (outdoor) |
| F3 | Discharge pipe temperature abnormal (outdoor unit) |
| H3 | High pressure switch faulty (outdoor unit) |
| H4 | Low pressure switch faulty (outdoor unit) |
| H6 | Faulty position detection sensor (outdoor unit) |
| H7 | Outdoor motor position signal malfunction |
| H8 | CT abnormality (outdoor unit) |
| H9 | Outdoor air thermistor faulty (outdoor unit) |
| J3 | Discharge pipe thermistor faulty (outdoor unit) |
| J5 | Suction pipe thermistor faulty (outdoor unit) |
| J6 | Heat exchanger thermistor faulty (outdoor unit) |
| J8 | Liquid piping thermistor malfunction (heating) (outdoor) |
| J9 | Gas piping thermistor malfunction (cooling) (outdoor) |
| L4 | Overheated heat-radiating fin (outdoor) |
| | Inverter cooling defect. |
| L5 | Instantaneous overcurrent (outdoor) |
| | Possible earth fault or short circuit in the compressor motor. |
| L8 | Electric thermal (outdoor) |
| | Possible electrical overload in the compressor or cut line in the compressor motor. |
| L9 | Stall prevention (outdoor) |
| | Compressor possibly locked. |

| | |
|-----------|---|
| LC | Transmission malfunction between the outdoor control units' inverters (outdoor) |
| P1 | Open-phase or main circuit low voltage (outdoor) |
| P3 | PC-board temperature sensor malfunction (outdoor) |
| P4 | Heat-radiating fin temperature sensor malfunction (outdoor) |
| PJ | Type set improper (outdoor unit) |
| | Capacity data is wrongly proset. Or there is nothing programmed in the data hold IC. |
| U0 | Suction pipe temperature abnormal or refrigerant shortage |
| U1 | Reverse phase |
| | Reverse two of the L1,L2and L3 leads. |
| U2 | Power source voltage malfunction |
| | Includes the defect in 52C. |
| U4 UF | Transmission error (indoor unit – outdoor unit) |
| | Incorrect wiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wiring between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wiring. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.) |
| U5 | Transmission error (indoor unit – outdoor unit) |
| | Transmission is improper between the indoor unit and the remote controller. |
| U8 | Malfunction in transmission between main and sub remote controls. (Malfunction in sub remote control.) |
| UA | Miss setting for multi system |
| | Setting is wrong for selector switch of multi-system. (see switch SS2 on the main unit's PC board) |
| | Incorrect combination with indoor unit and outdoor unit |
| UC | Central control address overlapping |

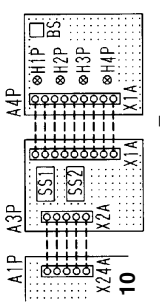
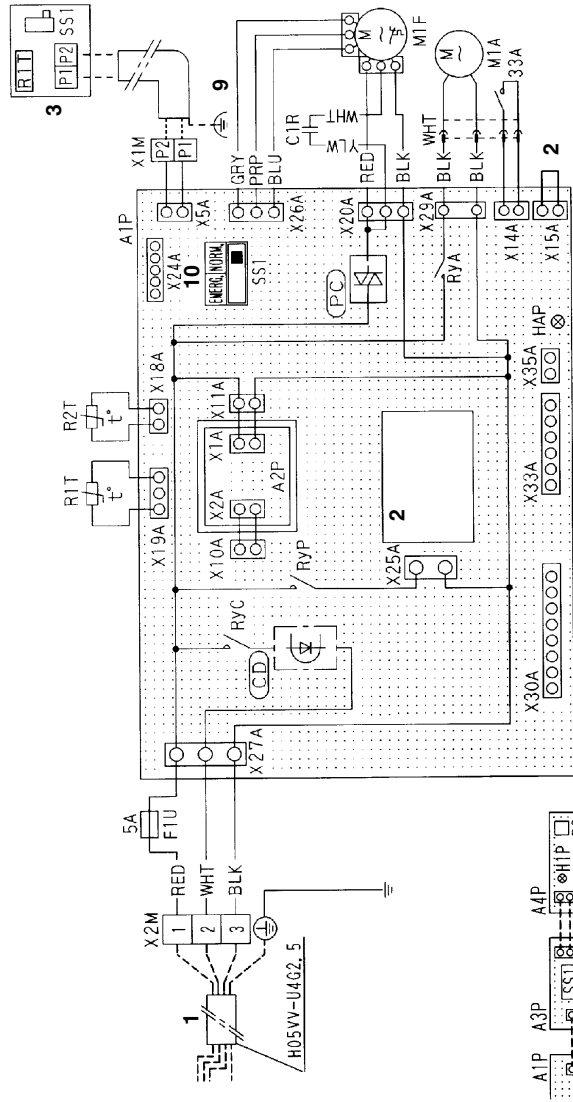
12. WIRING DIAGRAM

(Refer to Fig. 34.35.36.37.38)

| | | | |
|----|-------------------------|----|--|
| 1 | TO OUTDOOR UNIT | 2 | NOTE) 6 |
| 3 | WIRED REMOTE CONTROLLER | 4 | IN CASE OF SIMULTANEOUS OPERATION SYSTEM |
| 5 | INDOOR UNIT (MASTER) | 6 | INDOOR UNIT (SLAVE) |
| 7 | RECEIVER/DISPLAY UNIT | 8 | REMOTO CONTROLLER |
| 9 | NOTE) 7 | 10 | NOTE) 4 |
| 11 | CONTROL BOX | | |

WIRING DIAGRAM

| 1-RED | 2-WHITE | 3-BLACK |
|---|--|--|
| 33A | LIMIT SWITCH (SWING FLAP) | H1P LIGHT EMITTING DIODE (ON-RED) |
| A1P | PRINTED CIRCUIT BOARD | H2P LIGHT EMITTING DIODE (TIMER-GREEN) |
| A2P | PRINTED CIRCUIT BOARD (TRANSFORMER 220-240V/16V) | H3P LIGHT EMITTING DIODE (FILTER SIGN-RED) |
| C1R | CAPACITOR (M1F) | H4P LIGHT EMITTING DIODE (DEFROST-ORANGE) |
| F1U | FUSE (250V.5A) | SS1 SELECTOR SWITCH (MAIN/SUB) |
| HAP | LIGHT EMITTING DIODE (SERVICE MONITOR GREEN) | SS2 SELECTOR SWITCH (WIRELESS ADDRESS SET) |
| M1A | MOTOR (SWING FLAP) | CONNECTOR FOR OPTIONAL PARTS |
| M1F | MOTOR (INDOOR FAN) | X15A CONNECTOR |
| Q1F | THERMO SWITCH (M1F EMBEDDED) | X25A CONNECTOR (FLOAT SWITCH) |
| R1T | THERMISTOR (AIR) | X30A CONNECTOR |
| R2T | THERMISTOR (COIL) | SS1 (INTERFACE ADAPTOR FOR SKY AIR SERIES) |
| RyA | MAGNETIC RELAY (M1A) | X33A CONNECTOR (ADAPTOR FOR WIRING) |
| RyC | MAGNETIC RELAY (OUTDOOR UNIT COMPRESSOR) | X35A CONNECTOR (GROUP CONTROL ADAPTOR) |
| RyP | MAGNETIC RELAY (M1P) | |
| SS1 | SELECTOR SWITCH (EMERGENCY) | |
| X1M | TERMINAL STRIP | |
| X2M | TERMINAL STRIP | |
| (CD) | CURRENT DETECT CIRCUIT | |
| (PC) | PHASE CONTROL CIRCUIT | |
| WIRED REMOTE CONTROLLER | | |
| R1T | THERMISTOR (AIR) | |
| SS1 | SELECTOR SWITCH (MAIN/SUB) | |
| WIRED REMOTE CONTROLLER (RECEIVER/DISPLAY UNIT) | | |
| A3P | PRINTED CIRCUIT BOARD | |
| A4P | PRINTED CIRCUIT BOARD | |
| BS | PUSH BUTTON (ON/OFF) | |



- NOTES)
1. □ □ □ □ : TERMINAL
 2. □ □ □ □ : CONNECTOR
 3. - - - : FIELD WIRING
 4. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
 5. X24A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
 6. REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM, CONFIRM ENGINEERING MATERIALS AND CATALOGS, ETC. BEFORE CONNECTING.
 7. IN CASE INSTALLING THE DRAIN PUMP, REMOVE THE JUMPER CONNECTOR OF X15A AND EXECUTE THE ADDITIONAL WIRING FOR FLOAT SWITCH AND DRAIN PUMP.
 8. GROUND THE SHIELD OF THE REMOTE CONTROLLER CORD TO THE INDOOR UNIT OF THE FH-BVE TYPE.
BLU: BLUE
WHT: WHITE
BLK: BLACK
RED: RED
YLV: YELLOW
PRP: PURPLE
GRY: GRAY
 9. CONFIRM THE METHOD OF SETTING THE SELECTOR SWITCH (SS1) BY INSTALLATION MANUAL AND ENGINEERING MATERIALS, ETC.

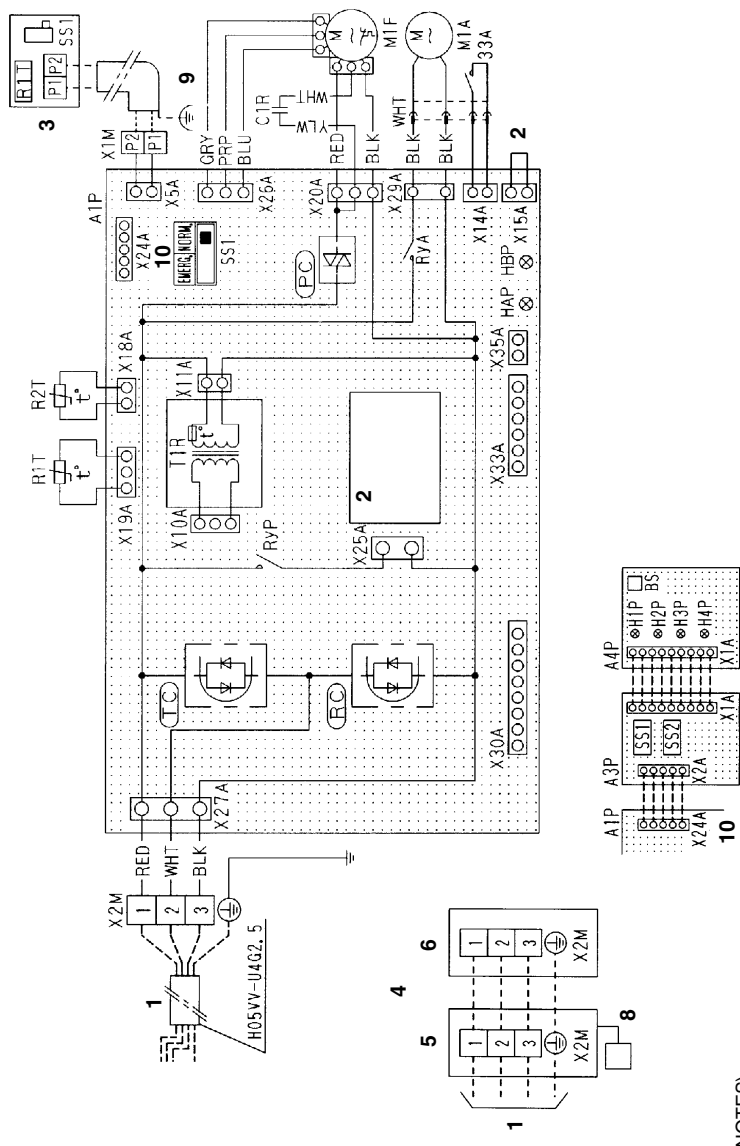
3D027501-1

FH35 • 50 • 60 • 71 • 100 • 125BVE, FH71 • 100 • 125BV1S, FH35 • 45 • 60BJV1, FH35 • 45 • 60BZV1

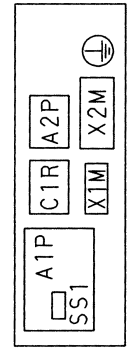
Fig.34

WIRING DIAGRAM

| 1-RED | 2-WHITE | 3-BLACK |
|-------|--|---|
| 33A | LIMIT SWITCH (SWING FLAP) | H1P LIGHT EMITTING DIODE (ON-RED) |
| A1P | PRINTED CIRCUIT BOARD | H2P LIGHT EMITTING DIODE (TIMER-GREEN) |
| C1R | CAPACITOR (M1F) | H3P LIGHT EMITTING DIODE (FILTER SIGN-RED) |
| HAP | LIGHT EMITTING DIODE (SERVICE MONITOR GREEN) | H4P LIGHT EMITTING DIODE (DEFROST-ORANGE) |
| HBP | LIGHT EMITTING DIODE | SS1 SELECTOR SWITCH (MAIN/SUB) |
| M1A | MOTOR (SWING FLAP) | SS2 SELECTOR SWITCH (WIRELESS ADDRESS SET) |
| M1F | MOTOR (INDOOR FAN) | CONNECTOR FOR OPTIONAL PARTS |
| Q1F | THERMO SWITCH (M1F EMBEDDED) | X15A CONNECTOR (FLOAT SWITCH) |
| R1T | THERMISTOR (AIR) | X25A CONNECTOR (DRAIN PUMP) |
| R2T | THERMISTOR (COIL) | X30A CONNECTOR (INTERFACE ADAPTOR FOR SKY AIR SERIES) |
| RyA | MAGNETIC RELAY (M1A) | X33A CONNECTOR (ADAPTOR FOR WIRING) |
| RyP | MAGNETIC RELAY (M1P) | X35A CONNECTOR (GROUP CONTROL ADAPTOR) |
| SS1 | SELECTOR SWITCH (EMERGENCY) | WIRED REMOTE CONTROLLER |
| T1R | TRANSFORMER (220-240V/22V) | R1T THERMISTOR (AIR) |
| X1M | TERMINAL STRIP | SS1 SELECTOR SWITCH (MAIN/SUB) |
| X2M | TERMINAL STRIP | WIRED REMOTE CONTROLLER (RECEIVER/DISPLAY UNIT) |
| PC | PHASE CONTROL CIRCUIT | A3P PRINTED CIRCUIT BOARD |
| RC | SIGNAL RECEIVER CIRCUIT | A4P PRINTED CIRCUIT BOARD |
| TC | SIGNAL TRANSMISSION CIRCUIT | BS PUSH BUTTON (ON/OFF) |



- NOTES)
1. : TERMINAL
 2. : FIELD WIRING
 3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
 4. X24A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
 5. REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM, CONFIRM ENGINEERING MATERIALS AND CATALOGS, ETC. BEFORE CONNECTING.
 6. IN CASE INSTALLING THE DRAIN PUMP, REMOVE THE JUMPER CONNECTOR OF X15A AND EXECUTE THE ADDITIONAL WIRING FOR FLOAT SWITCH AND DRAIN PUMP.
 7. GROUND THE SHIELD OF THE REMOTE CONTROLLER CORD TO THE INDOOR UNIT OF THE FHY-BVE TYPE.
 8. SYMBOLS SHOW AS FOLLOWS: RED: RED BLK: BLACK WHT: WHITE YLW: YELLOW PRP: PURPLE GRY: GRAY BLU: BLUE
 9. CONFIRM THE METHOD OF SETTING THE SELECTOR SWITCH (SS1) BY INSTALLATION MANUAL AND ENGINEERING MATERIALS, ETC.



11

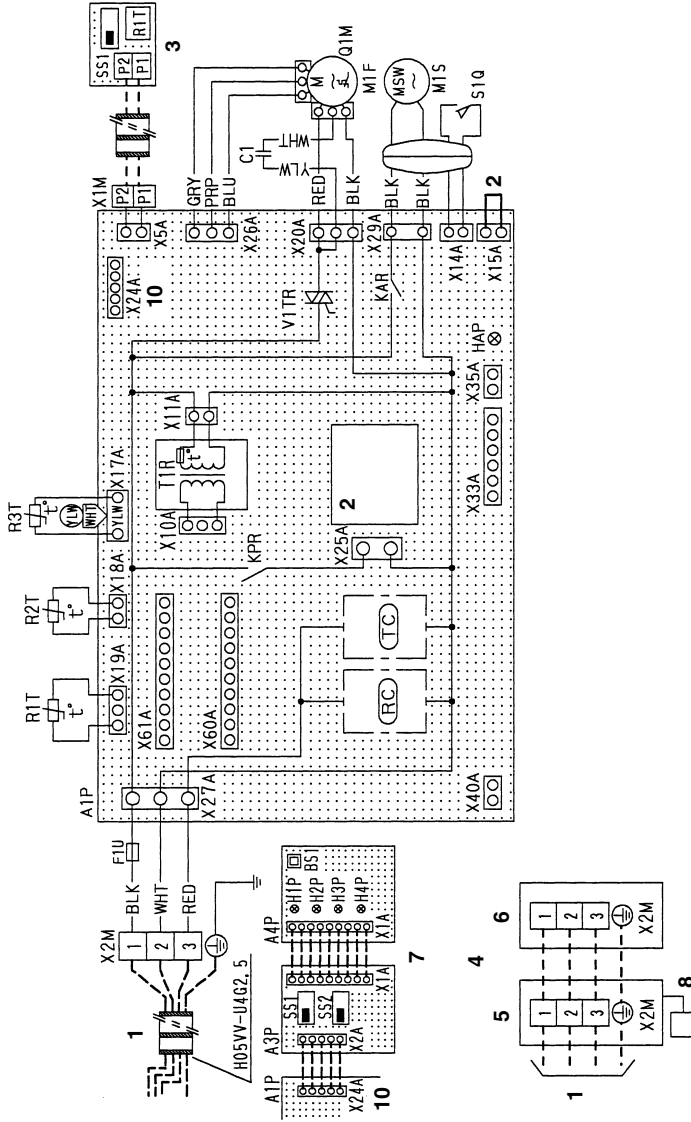
FHY35 • 50 • 60 • 71 • 100 • 125BVE, FHY35 • 45 • 60 • 71 • 100 • 125BUV1

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Fig.35

WIRING DIAGRAM

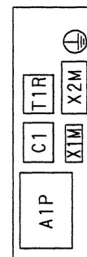
: CONNECTER DISCRIMINATION COLOUR FOR COMPONENTS.
 : CONNECTER COLOUR FOR COMPONENTS.
 : CONNECTER COLOUR FOR PRINTED CIRCUIT BOARD.



NOTES)

- : TERMINAL
- : CONNECTOR
- : FIELD WIRING
- IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
- X24A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
- REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM, CONFIRM ENGINEERING MATERIALS AND CATALOGS, ETC. BEFORE CONNECTING.
- IN CASE INSTALLING THE DRAIN PUMP(M1P), REMOVE THE JUMPER CONNECTOR OF X15A AND EXECUTE THE ADDITIONAL WIRING FOR FLOAT SWITCH AND DRAIN PUMP.
- SYMBOLS SHOW AS FOLLOWS: RED: RED BLK: BLACK WHT: WHITE YLW: YELLOW PRP: PURPLE GRP: GRAY BLU: BLUE

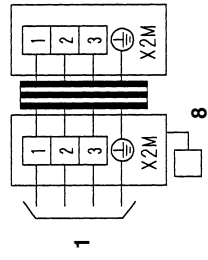
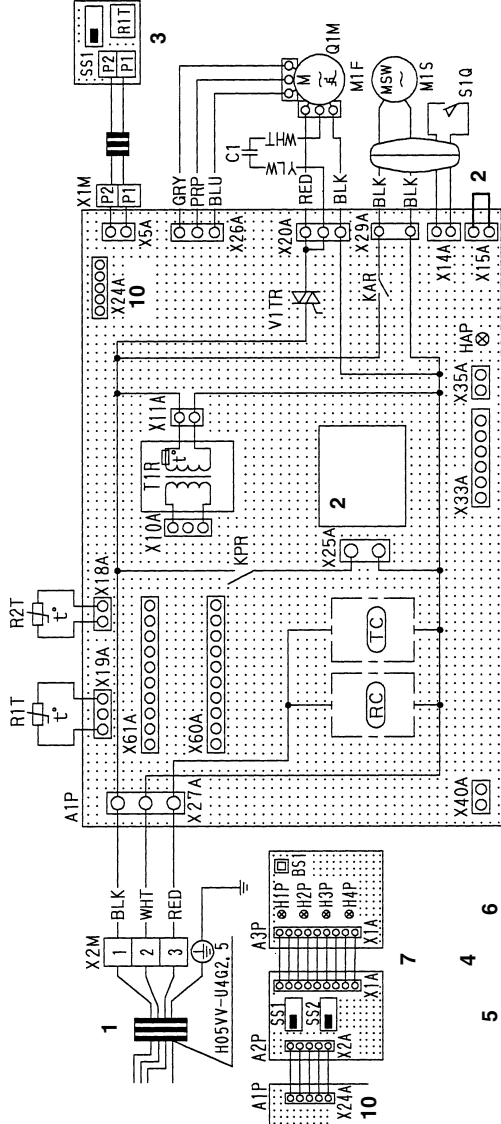
| | | | |
|--|--|------------------------------|--|
| A1P | PRINTED CIRCUIT BOARD | BS1 | PUSH BUTTON (ON/OFF) |
| C1 | CAPACITOR (MHF) | H1P | LIGHT EMITTING DIODE (ON-RED) |
| F1U | FUSE (F5A 250V) | H2P | LIGHT EMITTING DIODE (TIMER-GREEN) |
| HAP | LIGHT EMITTING DIODE (SERVICE MONITOR GREEN) | H3P | LIGHT EMITTING DIODE (FILTER SIGN-RED) |
| KAR | MAGNETIC RELAY (M1S) | H4P | LIGHT EMITTING DIODE (DEFROST-ORANGE) |
| KPR | MAGNETIC RELAY (M1P) | SS1 | SELECTOR SWITCH (MAIN/SUB) |
| M1F | MOTOR (INDOOR FAN) | SS2 | SELECTOR SWITCH (WIRELESS ADDRESS SET) |
| M1S | MOTOR (SWING FLAP) | CONNECTOR FOR OPTIONAL PARTS | |
| Q1M | THERMO SWITCH (M1F EMBEDDED) | X15A | CONNECTOR (FLOAT SWITCH) |
| R1T | THERMISTOR (AIR) | X25A | CONNECTOR(DRAIN PUMP) |
| R2T | THERMISTOR (COIL-1) | X33A | CONNECTOR (ADAPTOR FOR WIRING) |
| R3T | THERMISTOR (COIL-2) | X35A | CONNECTOR (GROUP CONTROL ADAPTOR) |
| S1Q | LIMIT SWITCH (SWING FLAP) | X40A | CONNECTOR (ON/OFF INPUT FROM OUTSIDE) |
| T1R | TRANSFORMER (220-240V/22V) | X60A | CONNECTOR (RECEIVER/DISPLAY UNIT) |
| V1TR | PHASE CONTROL CIRCUIT | X61A | INTERFACE ADAPTOR FOR SKY AIR SERIES) |
| X1M | TERMINAL BLOCK | PRINTED CIRCUIT BOARD | |
| X2M | TERMINAL BLOCK | PRINTED CIRCUIT BOARD | |
| (RC) | SIGNAL RECEIVER CIRCUIT | | |
| (TC) | SIGNAL TRANSMISSION CIRCUIT | | |
| WIRED REMOTE CONTROLLER | | | |
| R1T | THERMISTOR (AIR) | | |
| SS1 | SELECTOR SWITCH (MAIN/SUB) | | |
| WIRELESS REMOTE CONTROLLER (RECEIVER/DISPLAY UNIT) | | | |
| A3P | PRINTED CIRCUIT BOARD | | |
| A4P | PRINTED CIRCUIT BOARD | | |



11

WIRING DIAGRAM

| | | | |
|--|--|------------------------------|--|
| A1P | PRINTED CIRCUIT BOARD | BS1 | PUSH BUTTON (ON/OFF) |
| C1 | CAPACITOR (M1F) | H1P | LIGHT EMITTING DIODE (ON-RED) |
| HAP | LIGHT EMITTING DIODE (SERVICE MONITOR GREEN) | H2P | LIGHT EMITTING DIODE (TIMER-GREEN) |
| KAR | MAGNETIC RELAY (M1S) | H3P | LIGHT EMITTING DIODE (FILTER SIGN-RED) |
| KPR | MAGNETIC RELAY (M1P) | H4P | LIGHT EMITTING DIODE (DEFROST-ORANGE) |
| M1F | MOTOR (INDOOR FAN) | SS1 | SELECTOR SWITCH (MAIN/SUB) |
| M1S | MOTOR (SWING FLAP) | SS2 | SELECTOR SWITCH (WIRELESS ADDRESS SET) |
| Q1M | THERMO SWITCH (M1F EMBEDDED) | CONNECTOR FOR OPTIONAL PARTS | |
| R1T | THERMISTOR (AIR) | X15A | CONNECTOR (FLOAT SWITCH) |
| R2T | THERMISTOR (COIL) | X25A | CONNECTOR(DRAIN PUMP) |
| S1Q | LIMIT SWITCH (SWING FLAP) | X33A | CONNECTOR (ADAPTOR FOR WIRING) |
| T1R | TRANSFORMER (220-240V/22V) | X35A | CONNECTOR |
| V1TR | PHASE CONTROL CIRCUIT | X35A | (GROUP CONTROL ADAPTOR) |
| X1M | TERMINAL BLOCK | X40A | CONNECTOR (ON/OFF INPUT FROM OUTSIDE) |
| X2M | TERMINAL BLOCK | X60A | CONNECTOR |
| (RC) | SIGNAL RECEIVER CIRCUIT | X61A | CONNECTOR (INTERFACE ADAPTOR FOR SKY AIR SERIES) |
| (TC) | SIGNAL TRANSMISSION CIRCUIT | | |
| WIRED REMOTE CONTROLLER | | | |
| R1T | THERMISTOR (AIR) | | |
| SS1 | SELECTOR SWITCH (MAIN/SUB) | | |
| WIRELESS REMOTE CONTROLLER (RECEIVER/DISPLAY UNIT) | | | |
| A2P | PRINTED CIRCUIT BOARD | | |
| A3P | PRINTED CIRCUIT BOARD | | |



NOTES)

- □ □ □ : TERMINAL
- ○ ○ ○ : CONNECTOR
- ≡ ≡ ≡ ≡ : FIELD WIRING
- IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
- X24A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
- REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM, CONFIRM ENGINEERING MATERIALS AND CATALOGS, ETC. BEFORE CONNECTING.
- IN CASE INSTALLING THE DRAIN PUMP(M1P), REMOVE THE JUMPER CONNECTOR OF X15A AND EXECUTE THE ADDITIONAL WIRING FOR FLOAT SWITCH AND DRAIN PUMP.
- SYMBOLS SHOW AS FOLLOWS: RED: RED BLK: BLACK WHT: WHITE YLW: YELLOW PRP: PURPLE GR: GRAY BLU: BLUE

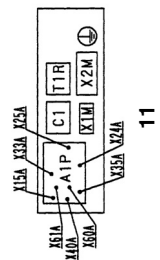


Fig.38

