

- EN INSTALLATION AND OPERATION MANUAL
- ES MANUAL DE INSTALACIÓN Y FUNCIONAMIENTO
- DE INSTALLATIONS- UND BETRIEBSHANDBUCH
- FR MANUEL D'INSTALLATION ET DE FONCTIONNEMENT
- IT MANUALE D'INSTALLAZIONE E D'USO

- PT MANUAL DE INSTALAÇÃO E DE FUNCIONAMENTO
- DA INSTALLATIONS- OG BETJENINGSVEJLEDNING
- NL INSTALLATIE- EN BEDIENINGSHANDLEIDING
- SV INSTALLATION- OCH DRIFTHANDBOK
- EL ΕΓΧΕΙΡΙΔΙΟ ΕΓΚΑΤΑΣΤΑΣΗΣ ΚΑΙ ΛΕΙΤΟΥΡΓΙΑΣ

INDOOR UNITS SYSTEM FREE RPK-(0.6-4.0)FSN(H)3M

Wall Type



English

Specifications in this manual are subject to change without notice in order that HITACHI may bring the latest innovations to their customers. Whilst every effort is made to ensure that all specifications are correct, printing errors are beyond HITACHI's control; HITACHI cannot be held responsible for these errors.

Español

Las especificaciones de este manual están sujetas a cambios sin previo aviso a fin de que HITACHI pueda ofrecer las últimas innovaciones a sus clientes.

A pesar de que se hacen todos los esfuerzos posibles para asegurarse de que las especificaciones sean correctas, los errores de impresión están fuera del control de HITACHI, a quien no se hará responsable de ellos.

Deutsch

Bei den technischen Angaben in diesem Handbuch sind Änderungen vorbehalten, damit HITACHI seinen Kunden die jeweils neuesten Innovationen präsentieren kann.

Sämtliche Anstrengungen wurden unternommen, um sicherzustellen, dass alle technischen Informationen ohne Fehler veröffentlicht worden sind. Für Druckfehler kann HITACHI jedoch keine Verantwortung übernehmen, da sie außerhalb ihrer Kontrolle liegen.

Français

Les caractéristiques publiées dans ce manuel peuvent être modifiées sans préavis, HITACHI souhaitant pouvoir toujours offrir à ses clients les dernières innovations.

Bien que tous les efforts sont faits pour assurer l'exactitude des caractéristiques, les erreurs d'impression sont hors du contrôle de HITACHI qui ne pourrait en être tenu responsable.

Italiano

Le specifiche di questo manuale sono soggette a modifica senza preavviso affinché HITACHI possa offrire ai propri clienti le ultime novità.

Sebbene sia stata posta la massima cura nel garantire la correttezza dei dati, HITACHI non è responsabile per eventuali errori di stampa che esulano dal proprio controllo.

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Dansk

Specifikationerne i denne vejledning kan ændres uden varsel, for at HITACHI kan bringe de nyeste innovationer ud til kunderne. På trods af alle anstrengelser for at sikre at alle specifikationerne er korrekte, har HITACHI ikke kontrol over trykfejl, og HITACHI kan ikke holdes ansvarlig herfor.

Nederlands

De specificaties in deze handleiding kunnen worden gewijzigd zonder verdere kennisgeving zodat HITACHI zijn klanten kan voorzien van de nieuwste innovaties.

Iedere poging wordt ondernomen om te zorgen dat alle specificaties juist zijn. Voorkomende drukfouten kunnen echter niet door HITACHI worden gecontroleerd, waardoor HITACHI niet aansprakelijk kan worden gesteld voor deze fouten.

Svenska

Specifikationerna i den här handboken kan ändras utan föregående meddelande för att HITACHI ska kunna leverera de senaste innovationerna till kunderna.

Vi på HITACHI gör allt vi kan för att se till att alla specifikationer stämmer, men vi har ingen kontroll över tryckfel och kan därför inte hållas ansvariga för den typen av fel.

Ελληνικά

Οι προδιαγραφές του εγχειριδίου μπορούν να αλλάξουν χωρίς προειδοποίηση, προκειμένου η HITACHI να παρέχει τις τελευταίες καινοτομίες στους πελάτες της.

Αν και έχει γίνει κάθε προσπάθεια προκειμένου να εξασφαλιστεί ότι οι προδιαγραφές είναι σωστές, η HITACHI δεν μπορεί να ελέγξει τα τυπογραφικά λάθη και, ως εκ τούτου, δεν φέρει καμία ευθύνη για αυτά τα λάθη.



⚠ ATTENTION

This product shall not be mixed with general house waste at the end of its life and it shall be retired according to the appropriated local or national regulations in a environmentally correct way.

Due to the refrigerant, oil and other components contained in Air Conditioner, its dismantling must be done by a professional installer according to the applicable regulations.

Contact to the corresponding authorities for more information.

⚠ ATENCIÓN

Este producto no se debe eliminar con la basura doméstica al final de su vida útil y se debe desechar de manera respetuosa con el medio ambiente de acuerdo con los reglamentos locales o nacionales aplicables.

Debido al refrigerante, el aceite y otros componentes contenidos en el sistema de aire acondicionado, su desmontaje debe realizarlo un instalador profesional de acuerdo con la normativa aplicable.

Para obtener más información, póngase en contacto con las autoridades competentes.

⚠ ACHTUNG

Dass Ihr Produkt am Ende seiner Betriebsdauer nicht in den allgemeinen Hausmüll geworfen werden darf, sondern entsprechend den geltenden örtlichen und nationalen Bestimmungen auf umweltfreundliche Weise entsorgt werden muss.

Aufgrund des Kältemittels, des Öls und anderer in der Klimaanlage enthaltener Komponenten muss die Demontage von einem Fachmann entsprechend den geltenden Vorschriften durchgeführt werden.

Für weitere Informationen setzen Sie sich bitte mit den entsprechenden Behörden in Verbindung.

⚠ ADVERTISSEMENT

Ne doit pas être mélangé aux ordures ménagères ordinaires à la fin de sa vie utile et qu'il doit être éliminé conformément à la réglementation locale ou nationale, dans le plus strict respect de l'environnement.

En raison du frigorigène, de l'huile et des autres composants que le climatiseur contient, son démontage doit être réalisé par un installateur professionnel conformément aux réglementations en vigueur.

⚠ AVVERTENZE

Indicazioni per il corretto smaltimento del prodotto ai sensi della Direttiva Europea 2002/96/EC e Dlgs 25 luglio 2005 n.151

Il simbolo del cassonetto barrato riportato sull' apparecchiatura indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti.

L'utente dovrà, pertanto, conferire l'apparecchiatura giunta a fine vita agli idonei centri di raccolta differenziata dei rifiuti elettronici ed elettrotecnici, oppure riconsegnarla al rivenditore al momento dell' acquisto di una nuova apparecchiatura di tipo equivalente.

L'adeguata raccolta differenziata delle apparecchiature dismesse, per il loro avvio al riciclaggio, al trattamento ed allo smaltimento ambientalmente compatibile, contribuisce ad evitare possibili effetti negativi sull' ambiente e sulla salute e favorisce il riciclo dei materiali di cui è composta l' apparecchiatura.

Non tentate di smontare il sistema o l'unità da soli poichè ciò potrebbe causare effetti dannosi sulla vostra salute o sull' ambiente.

Vogliate contattare l' installatore, il rivenditore, o le autorità locali per ulteriori informazioni.

Lo smaltimento abusivo del prodotto da parte dell'utente può comportare l'applicazione delle sanzioni amministrative di cui all'articolo 50 e seguenti del D.Lgs. n. 22/1997.

⚠ CUIDADO

O seu produto não deve ser misturado com os desperdícios domésticos de carácter geral no final da sua duração e que deve ser eliminado de acordo com os regulamentos locais ou nacionais adequados de uma forma correcta para o meio ambiente.

Devido ao refrigerante, ao óleo e a outros componentes contidos no Ar condicionado, a desmontagem deve ser realizada por um instalador profissional de acordo com os regulamentos aplicáveis.

Contacte as autoridades correspondentes para obter mais informações.

⚠ ADVASEL!

At produktet ikke må smides ud sammen med almindeligt husholdningsaffald, men skal bortskaffes i overensstemmelse med de gældende lokale eller nationale regler på en miljømæssig korrekt måde.

Da klimaanlægget indeholder kølemiddel, olie samt andre komponenter, skal afmontering foretages af en fagmand i overensstemmelse med de gældende bestemmelser.

Kontakt de pågældende myndigheder for at få yderligere oplysninger.

⚠ VOORZICHTIG

Dit houdt in dat uw product niet wordt gemengd met gewoon huisvuil wanneer u het weg doet en dat het wordt gescheiden op een milieuvriendelijke manier volgens de geldige plaatselijke en landelijke reguleringen.

Vanwege het koelmiddel, de olie en andere onderdelen in de airconditioner moet het apparaat volgens de geldige regulering door een professionele installateur uit elkaar gehaald worden.

Neem contact op met de betreffende overheidsdienst voor meer informatie.

⚠ FÖRSIKTIGHET

Det innebär att produkten inte ska slängas tillsammans med vanligt hushållsavfall utan kasseras på ett miljövänligt sätt i enlighet med gällande lokal eller nationell lagstiftning.

Luftkonditioneringsaggregatet innehåller kylmedium, olja och andra komponenter, vilket gör att det måste demonteras av en fackman i enlighet med tillämpliga regelverk.

Ta kontakt med ansvarig myndighet om du vill ha mer information.

⚠ ΠΡΟΣΟΧΗ

Σημαίνει ότι το προϊόν δεν θα πρέπει να αναμιχθεί με τα διάφορα οικιακά απορρίμματα στο τέλος του κύκλου ζωής του και θα πρέπει να αποσυρθεί σύμφωνα με τους κατάλληλους τοπικούς ή εθνικούς κανονισμούς και με τρόπο φιλικό προς το περιβάλλον.

Λόγω του ψυκτικού, του λαδιού και άλλων στοιχείων που περιέχονται στο κλιματιστικό, η αποσυναρμολόγησή του πρέπει να γίνει από επαγγελματία τεχνικό και σύμφωνα με τους ισχύοντες κανονισμούς.

Για περισσότερες λεπτομέρειες, επικοινωνήστε με τις αντίστοιχες αρχές.

INDEX**PART I OPERATION**

1. GENERAL INFORMATION
2. SAFETY
3. IMPORTANT NOTICE
4. SYSTEM DESCRIPTION
5. BEFORE OPERATION
6. MAIN PARTS
7. AVAILABLE REMOTE CONTROL SWITCH
8. AIR FLOW DIRECTION
9. EMERGENCY OPERATION
10. OTHER INDICATIONS
11. AUTOMATIC CONTROL
12. MAINTENANCE
13. TROUBLESHOOTING

PART II INSTALLATION

14. NAME OF PARTS
15. BEFORE INSTALLATION
16. INDOOR UNIT INSTALLATION
17. REFRIGERANT PIPING WORK
18. DRAIN PIPING
19. ELECTRICAL WIRING
20. TEST RUN

ÍNDICE**1ª PARTE - FUNCIONAMIENTO**

1. INFORMACIÓN GENERAL
2. SEGURIDAD
3. AVISO IMPORTANTE
4. DESCRIPCIÓN DEL SISTEMA
5. ANTES DEL FUNCIONAMIENTO
6. PIEZAS PRINCIPALES
7. MANDOS A DISTANCIA DISPONIBLES
8. DIRECCIÓN DEL CAUDAL DE AIRE
9. FUNCIONAMIENTO DE EMERGENCIA
10. OTRAS INDICACIONES
11. CONTROL AUTOMÁTICO
12. MANTENIMIENTO
13. RESOLUCIÓN DE PROBLEMAS

2ª PARTE - INSTALACIÓN

14. NOMBRE DE LAS PIEZAS
15. ANTES DE LA INSTALACIÓN
16. INSTALACIÓN DE LA UNIDAD INTERIOR
17. INSTALACIÓN DE LA TUBERÍA DE REFRIGERANTE
18. TUBERÍA DE DESAGÜE
19. CABLEADO ELÉCTRICO
20. PRUEBA DE FUNCIONAMIENTO

INHALTSVERZEICHNIS**TEIL I - BETRIEB**

1. ALLGEMEINE INFORMATIONEN
2. SICHERHEIT
3. WICHTIGER HINWEIS
4. SYSTEMBESCHREIBUNG
5. VOR DEM BETRIEB
6. HAUPTTEILE
7. VERFÜGBARE FERNBEDIENUNG
8. LUFTSTROMRICHTUNG
9. NOTBETRIEB
10. ANDERE ANZEIGEN
11. AUTOMATISCHE STEUERUNG
12. WARTUNG
13. FEHLERBEHEBUNG

TEIL II - INSTALLATION

14. TEILENAME
15. VOR DER INSTALLATION
16. INSTALLATION DES INNENGERÄTS
17. VERLEGUNG DER KÄLTEMITTELLEITUNGEN
18. ABFLUSSLEITUNGEN
19. KABELANSCHLUSS
20. TESTLAUF

INDEX**PARTIE I - FONCTIONNEMENT**

1. INFORMATIONS GÉNÉRALES
2. SÉCURITÉ
3. REMARQUES IMPORTANTES
4. DESCRIPTION DU SYSTÈME
5. AVANT LE FONCTIONNEMENT
6. PRINCIPAUX COMPOSANTS
7. TÉLÉCOMMANDE DISPONIBLE
8. DIRECTION DU DÉBIT D'AIR
9. FONCTIONNEMENT DE SECOURS
10. AUTRES INDICATIONS
11. CONTRÔLE AUTOMATIQUE
12. MAINTENANCE
13. DÉPANNAGE

PARTIE II - INSTALLATION

14. NOMENCLATURE DES PIÈCES
15. AVANT L'INSTALLATION
16. INSTALLATION DE L'UNITÉ INTÉRIEURE
17. TRAVAUX DE TUYAUTERIE FRIGORIFIQUE
18. TUYAU D'ÉVACUATION
19. CÂBLAGE ÉLECTRIQUE
20. TEST DE FONCTIONNEMENT

INDICE**PARTE I - FUNZIONAMENTO**

1. INFORMAZIONI GENERALI
2. SICUREZZA
3. NOTA IMPORTANTE
4. DESCRIZIONE DEL SISTEMA
5. PROCEDURA PRELIMINARE
6. COMPONENTI PRINCIPALI
7. DISPOSITIVO DI CONTROLLO REMOTO DISPONIBILE
8. DIREZIONE DEL FLUSSO DELL'ARIA
9. FUNZIONAMENTO DI EMERGENZA
10. ALTRE INDICAZIONI
11. CONTROLLO AUTOMATICO
12. MANUTENZIONE
13. RISOLUZIONE DEI PROBLEMI

PARTE II - INSTALLAZIONE

14. NOMENCLATURA DEI COMPONENTI
15. PRIMA DELL'INSTALLAZIONE
16. INSTALLAZIONE DELL'UNITÀ INTERNA
17. POSA DEI TUBI DELLA LINEA DEL REFRIGERANTE
18. LINEA DI DRENAGGIO
19. COLLEGAMENTO DELLO SCHEMA ELETTRICO
20. PROVA DI FUNZIONAMENTO

ÍNDICE**PARTE I - FUNCIONAMENTO**

1. INFORMAÇÃO GERAL
2. SEGURANÇA
3. NOTA IMPORTANTE
4. DESCRIÇÃO DO SISTEMA
5. ANTES DE ARRANCAR A UNIDADE
6. PEÇAS PRINCIPAIS
7. INTERRUPTOR DO CONTROLO REMOTO DISPONÍVEL
8. DIREÇÃO DO FLUXO DE AR
9. FUNCIONAMENTO DE EMERGÊNCIA
10. OUTRAS INDICAÇÕES
11. CONTROLOS AUTOMÁTICOS
12. MANUTENÇÃO
13. RESOLUÇÃO DE PROBLEMAS

PARTE II - INSTALAÇÃO

14. NOME DAS PEÇAS
15. ANTES DA INSTALAÇÃO
16. INSTALAÇÃO DA UNIDADE INTERIOR
17. TRABALHO DE INSTALAÇÃO DE TUBAGEM DE REFRIGERAÇÃO
18. TUBAGEM DE DESCARGA
19. LIGAÇÕES ELÉTRICAS
20. FUNCIONAMENTO DE TESTE

INDHOLDSFORTEGNELSE**DEL I - BETJENING**

1. GENEREL INFORMATION
2. SIKKERHED
3. VIGTIG MEDDELELSE
4. SYSTEMBESKRIVELSE
5. FØR DRIFT
6. VIGTIGE DELE
7. TILGÆNGELIGT FJERNBETJENING
8. LUFTSTRØMSRETNING
9. NØDDRIFT
10. ANDRE INDIKATIONER
11. AUTOMATISK BETJENING
12. VEDLIGEHOLDELSE
13. FEJLFINDING

DEL II – MONTERING

14. NAVN PÅ DELE
15. INDEN MONTERING
16. MONTERING AF INDENDØRSENHED
17. KØLERØRSARBEJDE
18. AFLØBSRØR
19. ELEKTRISK LEDNINGSFØRING
20. TESTKØRSEL

INHOUDSOPGAVE**DEEL I - BEDIENING**

1. ALGEMENE INFORMATIE
2. VEILIGHEID
3. BELANGRIJKE MEDEDELING
4. SYSTEEMBESCHRIJVING
5. VOORDAT U HET SYSTEEM IN GEBRUIK NEEMT
6. BELANGRIJKSTE ONDERDELEN
7. BESCHIKBARE AFSTANDSBEDIENINGEN
8. LUCHTSTROOMRICHTING
9. NOODBEDIENING
10. OVERIGE INDICATORS
11. AUTOMATISCHE BESTURING
12. ONDERHOUD
13. PROBLEMEN OPLOSSEN

DEEL II INSTALLATIE

14. NAMEN VAN ONDERDELEN
15. VÓÓR INSTALLATIE
16. INSTALLATIE VAN BINNENUNITS
17. INSTALLATIE VAN DE KOUDEMIDDELLEIDINGEN
18. AFVOERLEIDING
19. ELEKTRISCHE BEDRADING
20. PROEFDRAAIEN

INNEHÅLLSFÖRTECKNING**DEL I – DRIFT**

1. ALLMÄN INFORMATION
2. SÄKERHET
3. VIKTIG ANMÄRKNING
4. SYSTEMÖVERSIKT
5. FÖRE DRIFT
6. HUVUDDelar
7. TILLGÄNGLIG FJÄRRKONTROLL
8. LUFTFLÖDETS RIKTNING
9. NÖDDRIFT
10. ÖVRIGA INDIKATIONER
11. AUTOMATISK KONTROLL
12. UNDERHÅLL
13. FELSÖKNING

DEL II - INSTALLATION

14. DELARNAS NAMN
15. FÖRE INSTALLATIONEN
16. INSTALLATION FÖR INOMHUSENHETER
17. KYLRÖRSARBETE
18. DRÄNERINGSRÖR
19. ELEKTRISKA KABLAR
20. PROVKÖRNING

ΕΥΡΕΤΗΡΙΟ**ΜΕΡΟΣ Ι-ΛΕΙΤΟΥΡΓΙΑ**

1. ΓΕΝΙΚΕΣ ΠΛΗΡΟΦΟΡΙΕΣ
2. ΑΣΦΑΛΕΙΑ
3. ΣΗΜΑΝΤΙΚΗ ΠΑΡΑΤΗΡΗΣΗ
4. ΠΕΡΙΓΡΑΦΗ ΣΥΣΤΗΜΑΤΟΣ
5. ΠΡΙΝ ΤΗ ΛΕΙΤΟΥΡΓΙΑ
6. ΚΥΡΙΑ ΕΞΑΡΤΗΜΑΤΑ
7. ΔΙΑΘΕΣΙΜΟΣ ΔΙΑΚΟΠΤΗΣ ΤΗΛΕΧΕΙΡΙΣΤΗΡΙΟΥ
8. ΚΑΤΕΥΘΥΝΣΗ ΡΟΗΣ ΑΕΡΑ
9. ΛΕΙΤΟΥΡΓΙΑ ΕΚΤΑΚΤΟΥ ΑΝΑΓΚΗΣ
10. ΑΛΛΕΣ ΕΝΔΕΙΞΕΙΣ
11. ΑΥΤΟΜΑΤΟΣ ΕΛΕΓΧΟΣ
12. ΣΥΝΤΗΡΗΣΗ
13. ΑΝΤΙΜΕΤΩΠΙΣΗ ΠΡΟΒΛΗΜΑΤΩΝ

ΜΕΡΟΣ ΙΙ-ΕΓΚΑΤΑΣΤΑΣΗ

14. ΟΝΟΜΑΤΑ ΕΞΑΡΤΗΜΑΤΩΝ
15. ΠΡΙΝ ΤΗΝ ΕΓΚΑΤΑΣΤΑΣΗ
16. ΕΓΚΑΤΑΣΤΑΣΗ ΕΣΩΤΕΡΙΚΗΣ ΜΟΝΑΔΑΣ
17. ΕΡΓΑΣΙΕΣ ΣΩΛΗΝΩΣΕΩΝ ΨΥΚΤΙΚΟΥ ΜΕΣΟΥ
18. ΣΩΛΗΝΩΣΗ ΑΠΟΧΕΤΕΥΣΗΣ
19. ΗΛΕΚΤΡΙΚΗ ΚΑΛΩΔΙΩΣΗ
20. ΕΛΕΓΧΟΣ ΛΕΙΤΟΥΡΓΙΑΣ

EN	English	Original version
ES	Español	Versión traducida
DE	Deutsch	Übersetzte Version
FR	Français	Version traduite
IT	Italiano	Versione tradotta
PT	Português	Versão traduzida
DA	Dansk	Oversat version
NL	Nederlands	Vertaalde versie
SV	Svenska	Översatt version
EL	ΕΛΛΗΝΙΚΑ	Μεταφρασμένη έκδοση

PART I- OPERATION

1 GENERAL INFORMATION

1.1 GENERAL NOTES

No part of this publication may be reproduced, copied, filed or transmitted in any shape or form without the permission of Johnson Controls-Hitachi Air Conditioning Spain, S.A.U.

Within the policy of continuous improvement of its products, Johnson Controls-Hitachi Air Conditioning Spain, S.A.U. reserves the right to make changes at any time without prior notification and without being compelled to introducing them into products subsequently sold. This document may therefore have been subject to amendments during the life of the product.

HITACHI makes every effort to offer correct, up-to-date documentation. Despite this, printing errors cannot be controlled by HITACHI and are not its responsibility.

As a result, some of the images or data used to illustrate this document may not refer to specific models. No claims will be accepted based on the data, illustrations and descriptions included in this manual.

No type of modification must be made to the equipment without prior, written authorisation from the manufacturer.

1.2 PRODUCT GUIDE

1.2.1 Prior check

**NOTE**

Check, depending on the name of the model, the type of air conditioning system fitted, the abbreviated code and reference in this instruction manual. This Installation and Operating Manual only refers to RPK-(0.6-4.0)FSN(H)3M units.

Check, in accordance with the Installation and Operating Manuals included with the outdoor and indoor units, that all the information necessary for the correct installation of the system is included. If this is not the case, please contact your distributor.

1.2.2 Classification of indoor unit models

Unit type (indoor unit): RPK							
Position-separating hyphen (fixed)							
Capacity (HP): (0.6-4.0)							
FS: SYSTEM FREE							
N: R410A refrigerant							
(H): Without expansion valve							
3: Series							
M: Made in Malasia							
XXX	-	XX	FS	N	(H)	3	M

2 SAFETY

2.1 SYMBOLS USED

During normal air conditioning system design work or unit installation, greater attention must be paid in certain situations requiring particular care in order to avoid injuries and damage to the unit, the installation or the building or property.

Situations that jeopardise the safety of those in the surrounding area or that put the unit itself at risk will be clearly indicated in this manual.

To indicate these situations, a series of special symbols will be used to clearly identify these situations.

Pay close attention to these symbols and to the messages following them, as your safety and that of others depends on it.



DANGER

- *The text following this symbol contains information and instructions relating directly to your safety and physical wellbeing.*
- *Not taking these instructions into account could lead to serious, very serious or even fatal injuries to you and others in the proximities of the unit.*

In the texts following the danger symbol you can also find information on safe procedures during unit installation.



CAUTION

- *The text following this symbol contains information and instructions relating directly to your safety and physical wellbeing.*
- *Not taking these instructions into account could lead to minor injuries to you and others in the proximities of the unit.*
- *Not taking these instructions into account could lead to unit damage.*

In the texts following the caution symbol you can also find information on safe procedures during unit installation.



NOTE

- *The text following this symbol contains information or instructions that may be of use or that require a more thorough explanation.*
- *Instructions regarding inspections to be made on unit parts or systems may also be included.*

2.2 ADDITIONAL INFORMATION ABOUT SAFETY



DANGER

- **HITACHI is not able to foresee all the circumstances which may result in a potential danger.**
- **Do not pour water in the indoor or outdoor unit. These products are fitted with electric components. If water comes into contact with electric components, this will cause a serious electric shock.**
- **Do not handle or adjust the safety devices inside the indoor and outdoor units. The handling or adjustment of these devices may result in serious accident.**
- **Do not open the service cover or access panel of the indoor and outdoor units without disconnecting the main supply.**
- **In the event of fire, switch off the mains, put out the fire immediately and contact your service supplier.**
- **Check that the earth cable is correctly connected.**
- **Connect the unit to a circuit breaker of the specified capacity.**
- **Do not use sprays, such as insecticides, varnishes or enamels or any other inflammable gas within a metre of the system.**
- **If the circuit breaker or supply fuse of the unit comes on frequently, stop the system and contact the service supplier.**
- **Do not carry out maintenance or inspection work yourself. This work must be carried out by qualified service personnel with suitable tools and resources for the work.**
- **Do not place any foreign material (branches, sticks, etc.) in the air inlet or outlet of the unit. These units are fitted with high speed fans and contact with any object is dangerous.**
- **This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.**
- **Children should be supervised to ensure that they do not play with the appliance.**



NOTE

- *The air in the room should be renewed and the room ventilated every 3 or 4 hours.*
- *The system fitter and specialist shall provide anti-leak safety in accordance with local regulations.*



CAUTION

- *Refrigerant leaks may hinder respiration as the gas displaces the air in the room.*
- *Fit the indoor unit, the outdoor unit, the remote control and the cable at a minimum of 3 metres away from sources of strong radiation from electromagnetic waves, such as medical equipment.*

3 IMPORTANT NOTICE

This air conditioner has been designed for standard air conditioning for human beings. For use in other applications, please contact your HITACHI dealer or service contractor.

The air conditioning system should only be installed by qualified personnel, with the necessary resources, tools and equipment, who are familiar with the safety procedures required to successfully carry out the installation.

PLEASE READ AND FAMILIARISE YOURSELF WITH THE MANUAL BEFORE STARTING WORK ON THE INSTALLATION OF THE AIR CONDITIONING SYSTEM. Failure to observe the instructions for installation, use and operation described in this Manual may result in operating failure including potentially serious faults, or even the destruction of the air conditioning system.

It is assumed that the air conditioning system will be installed and maintained by responsible personnel trained for the purpose. If this is not the case, the customer should include all the safety, caution and operating signs in the native language of the personnel responsible.

Do not install the unit in the following places, as this may lead to a fire, deformities, rusting or faults:

- Places where oil is present (including oil for machinery).
- Places with a high concentration of sulphurous gas, such as spas.
- Places where flammable gases may be generated or circulate.
- Places with a saline, acidic or alkaline atmosphere.

Do not install the unit in places where silicon gas is present. Any silicon gas deposited on the surface of the heat exchanger will repel water. As a result, the condensate water will splash out of the collection tray and into the electrical box. Water leaks or electrical faults may eventually be caused.

Do not install the unit in a place where the current of expelled air directly affects animals or plants as they could be adversely affected.

This heat pump air conditioner has been designed for the following temperatures. Operate the heat pump air conditioner within this range:

Temperature

(°C)

		Maximum	Minimum
Cooling operation	Indoor	30 DB	21.5 DB
	Outdoor	43 DB*	-5 DB*
Heating operation	Indoor	25 DB	17 DB
	Outdoor	15.5 WB*	-10 WB*

DB: Dry Bulb, WB: Wet Bulb

*The temperature may change depending on the outdoor unit.

4 SYSTEM DESCRIPTION

Indoor Unit Type List.

Indoor unit type	Nominal capacity (HP)							
	0.6	0.8	1.0	1.5	2.0	2.5	3.0	4.0
Wall	○	○	○	○	○	○	○	○
Wall (without expansion valve)	○	○	○	○	-	-	-	-

○: Available

5 BEFORE OPERATION



CAUTION

- Supply electrical power to the system for approximately 12 hours before start-up after long shutdown. Do not start the system immediately after power supply, it may cause a compressor failure, because the compressor is not heated well.
- Make sure that the outdoor unit is not covered with snow or ice. If covered, remove it by using hot water (approximately 50°C). If the water temperature is higher than 50°C, it will cause damage to plastic parts.
- When the system is started after a shutdown longer than approximately 3 months, it is recommended that the system be checked by your service contractor.
- Turn OFF the main switch when the system is stopped for a long period of time. If the main switch is not turned OFF, electricity is consumed, because the oil heater is always energized during compressor stopping.

5.1 EFFICIENT USE OF INDOOR UNIT

- Do not leave a window or a door open.

The operating efficiency will be decreased.

It may cause dew condensation of the indoor unit. (Ventilate a room sufficiently too.)

- Attach a curtain or a blind to a window.

Direct sunlight is prevented and the cooling efficiency will be increased.

- Do not use heating appliances during the cooling operation as possible.

The cooling efficiency will be decreased. It may cause dew condensation and dropping dew.

- Use a circulator if warm air stays around ceiling.

The comfortability will be increased. Contact your distributor for the detail.

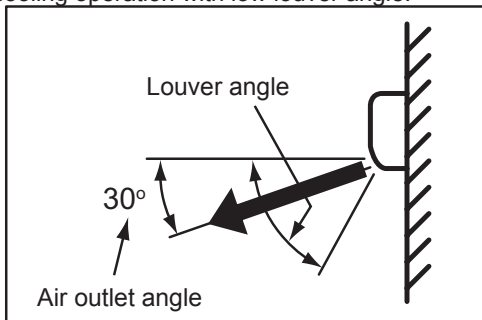
- Turn OFF the main power source if the indoor unit is not used for a long time.

If not, the standby electricity charges will have to be paid even if the indoor unit is unused.

5.2 EFFICIENT USE OF COOLING AND HEATING

COOLING

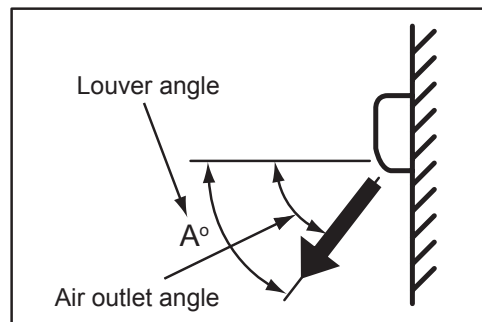
- Air flow direction: the appropriate air outlet angle is approx. 30°. If the cooling is not sufficient, change the air flow direction. Pay attention to dew drop which may occur due to the long cooling operation with low louver angle.



- Air flow volume: "MED" should be usually used. If the air flow volume is set as "HIGH", the air flow will be spread wider than "MED".
- Temperature: the recommended set temperature is 27 to 29°C. If the cooling is not sufficient, set the lower temperature.

HEATING

- Air flow direction: the appropriate air outlet angle is approx. A° as shown in the table. If the heating is not sufficient, change the air flow direction.



HP	A°
0.6-1.5	50
2.0-4.0	60

- Air flow volume: "MED" should be usually used. If the air flow volume is set as "HIGH", the air flow will be spread wider than "MED".
- Temperature: the recommended set temperature is 18 to 20°C. If the heating is not sufficient, set the higher temperature.



NOTE

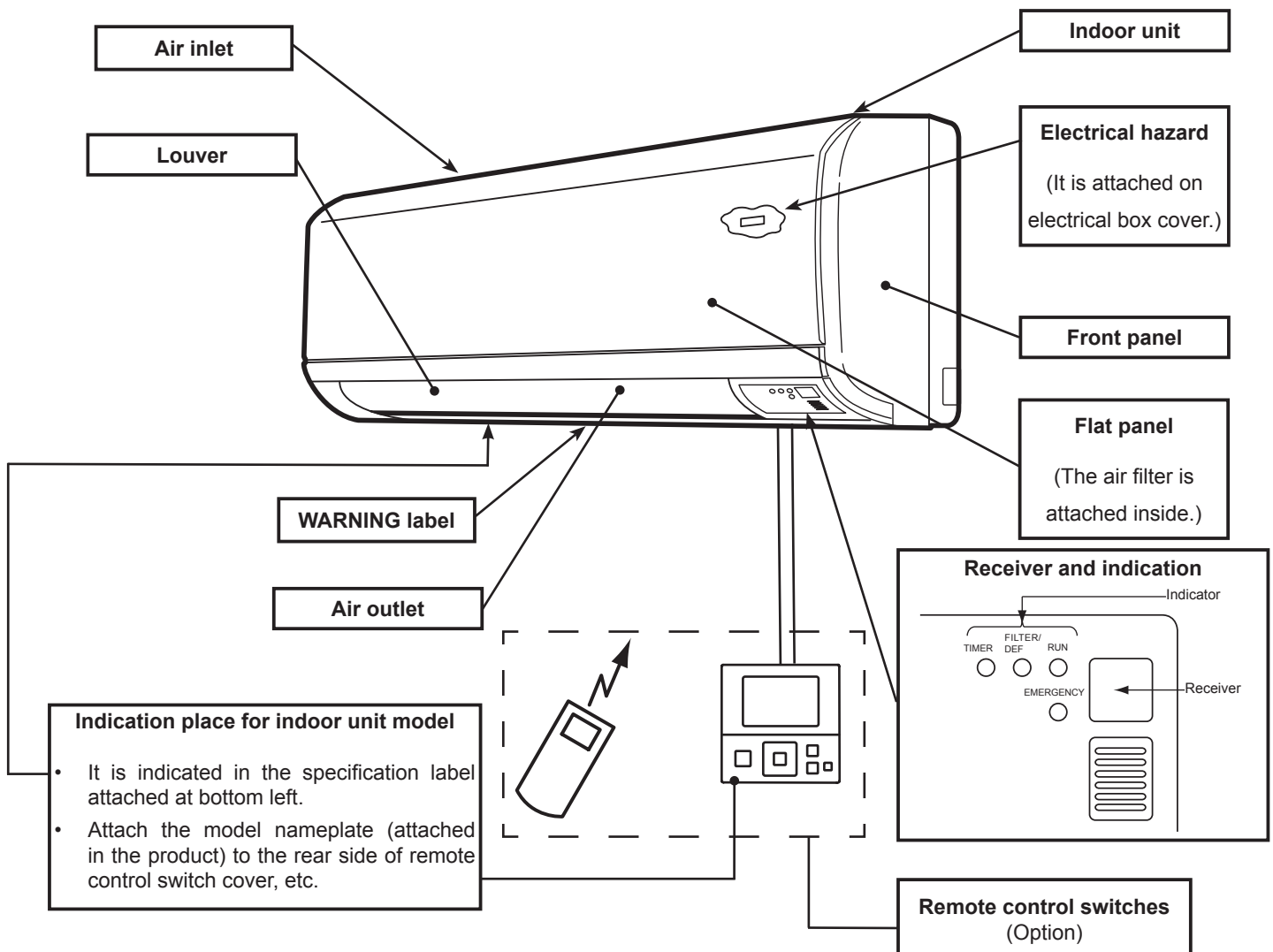
About Multi-Split system

When the number of indoor unit or the operating mode is changed, the air outlet temperature may be changed and the indoor temperature is changed. In this case, set as follows.

- During cooling: lower slightly the temperature setting.
- During heating: raise slightly the temperature setting.

6 MAIN PARTS

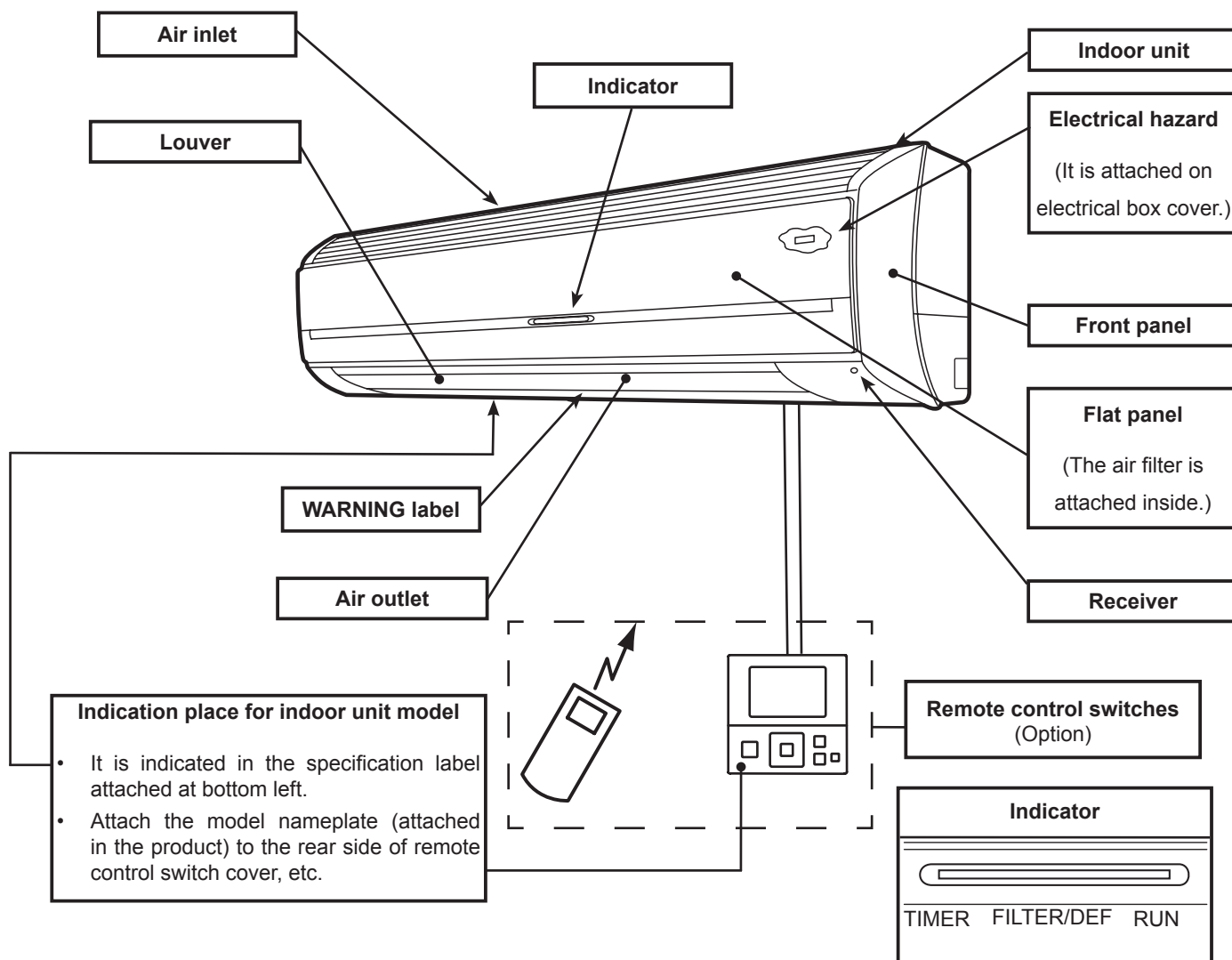
6.1 RPK-(0.6-1.5)FSN(H)3M



NOTE

Press lightly the switches to control the remote control switch.

6.2 RPK-(2.0-4.0)FSN(H)3M

**NOTE**

Press lightly the switches to control the remote control switch.

**NOTE**

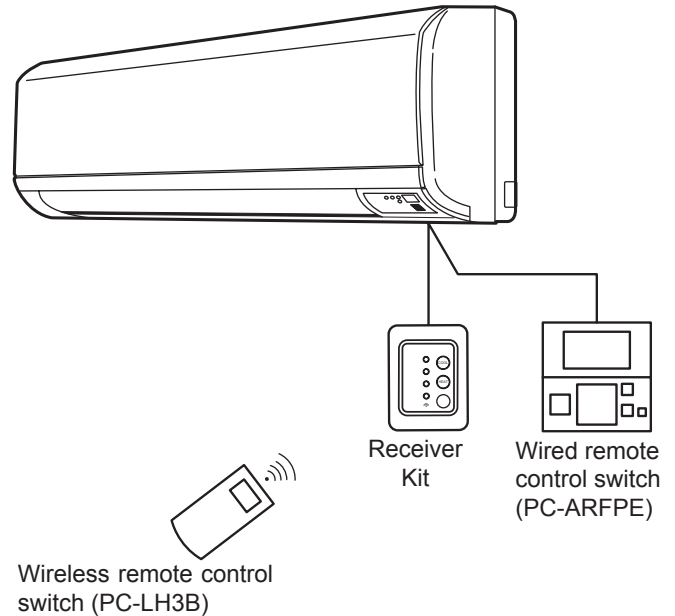
- For UTOPIA or SET-FREE series, either wired or wireless remote control switches are available. However, when the centralized controller is connected, there are restriction in order to operate the multiple indoor units by one wireless remote control switch or utilize the wired and wireless remote control switch together. Contact your distributor or contractor.
- The RUN indicator on indoor unit is turned ON even when the wired remote control switch is utilized. However, the indication for timer settings are only indicated on the wired remote control switch.
- For twin, triple and quad combination, the wired remote control switch shall be utilized. When the wireless remote control switch is utilized, the optional receiver kit is required.
- To utilize the wired and wireless remote control switch together, the optional receiver kit is required.

7 AVAILABLE REMOTE CONTROL SWITCH

HITACHI recommends PC-ARFPE wired remote control switch or PC-LH3B wireless remote control switch in order to obtain the maximum RPK-(0.6-4.0)FSN(H)3M performance. For detailed functions should be referred to remote control Installation and operation manual.

The indoor unit can be operated by both wired and wireless remote control switches operating at the same time. It is necessary to install PC-ALHZF wireless receiver kit.

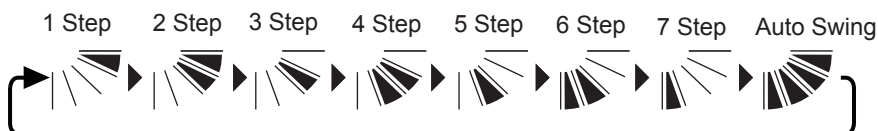
Contact your distributor and contractor for detail.



8 AIR FLOW DIRECTION

8.1 RECOMMENDED AIR FLOW DIRECTION SETTING

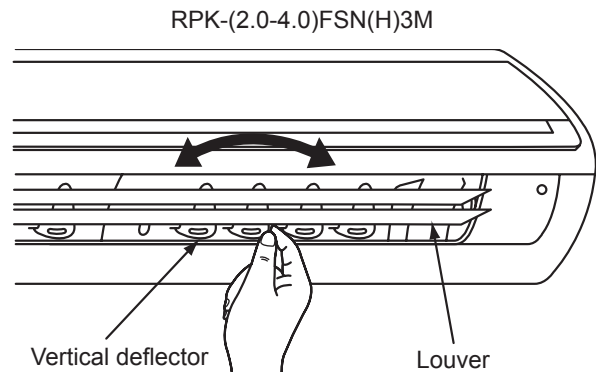
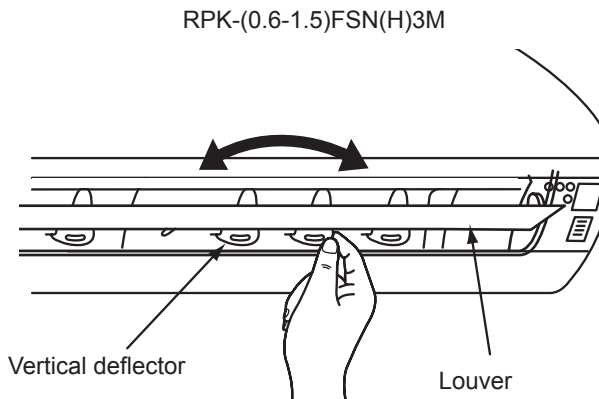
LCD Indication



Model	COOL, FAN and DRY	HEAT
RPK-(0.6-1.0)FSN(H)3M	Step 3	Step 7
RPK-(1.5-4.0)FSN(H)3M	Step 1	

8.2 ADJUSTING VERTICAL DEFLECTOR

The vertical deflector can adjust with moving by hand as shown in the figures blow.



8.3 AUTOMATIC SETTING OF LOUVER

The swing louver is stopped and moved by controlling the remote control switch.

When "Stop" switch is pressed from the remote control switch, the swing louver will be closed automatically and the operation is stopped.

8.4 LOUVER ANGLE DURING HEATING OPERATION

The louver angle is changed automatically during the heating operation.

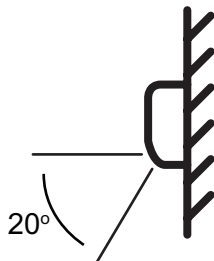
- When the heating operation starts
- When the defrost operation starts



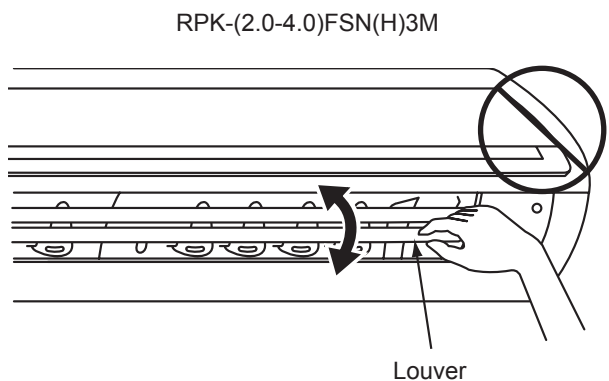
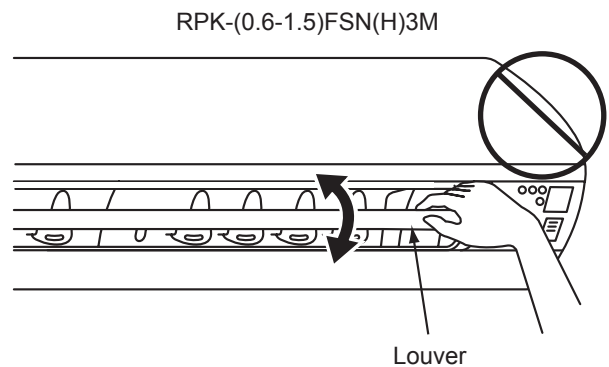
CAUTION

Do not move the louver by hand. If moved, the louver mechanism will be damaged and the air flow direction may not be set.

The louver angle is fixed to 20°.



When the discharge temperature is higher than 30°C, the louver angle is automatically returned to the setting condition.



9 EMERGENCY OPERATION

9.1 FUNCTION

The emergency operation switch is used when the batteries for wireless remote control switch are shortage.

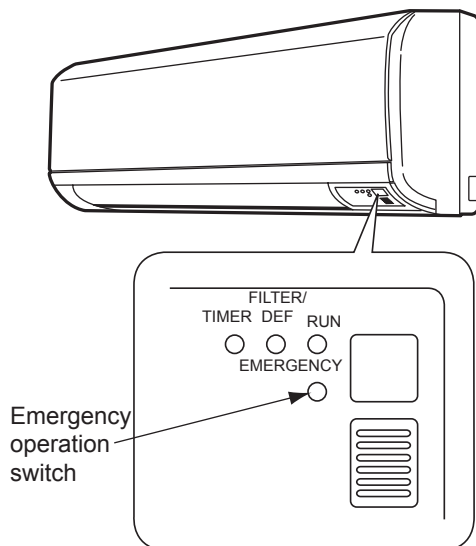
NOTE

The operation is as follows.

- Automatic cooling/heating operation
- Setting temperature: 25°C
- Fan speed: HIGH
- Louver angle: horizontal

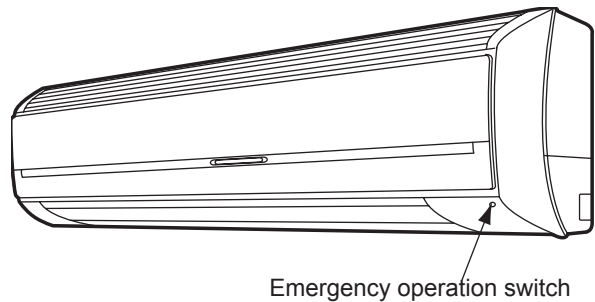
RPK-(0.6-1.5)FSN(H)3M

Press the emergency operation switch.



RPK-(2.0-4.0)FSN(H)3M

Press the emergency operation switch by a stick such as matchstick.



The emergency operation is stopped when the emergency operation switch is pressed again.

NOTE

Do not press the switch by metal sticks such as pen, pin, etc. It may cause failure.

10 OTHER INDICATIONS

10.1 WIRED REMOTE CONTROL SWITCH

Refer to the its corresponding Installation and Operation Manual.

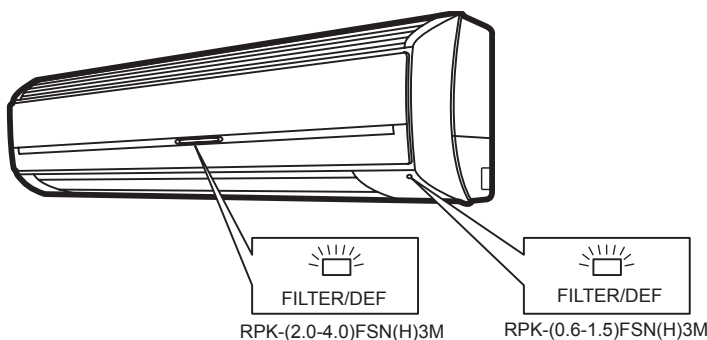
10.2 WIRELESS REMOTE CONTROL SWITCH (PC-LH3B)

10.2.1 In normal condition

1 Defrost

- Defrost operation: the "FILTER/DEF" indicator (yellow) is turned ON during the defrosting. The louver is fixed.

However, the louver indication of LCD continues to activate.



The figure shows for RPK-(2.0-4.0)FSN(H)3M

- Operation stoppage during defrosting

Operation: the RUN indicator (orange) is turned OFF when the operation is stopped during the defrosting.

However, the operation continues with turning ON the "FILTER/DEF" indicator (yellow), and the unit is stopped after the defrost operation is finished.

2 Filter sign

The cleaning period for air filter is notified by turning ON the "FILTER/DEF" indicator (yellow) when the operation time is accumulated 200 hours.

After cleaning, point the transmitter towards the receiver and press "RESET" switch to turn OFF the "FILTER/DEF" indicator.

10.2.2 Abnormality

- When some troubles occur such as safety device actuation, etc. during the test run or the normal operation, the RUN indicator (orange) flashes (0.5 second ON / 0.5 second OFF).
- The alarm codes are indicated by the flashing times of "TIMER" (green) and the "FILTER/DEF" (yellow)

"TIMER" (green): the number of flashing is shown at the tens digit of alarm code.

"FILTER/DEF" (yellow): the number of flashing is shown at the units digit of alarm code.

Example



"TIMER" flashes 3 times
(0.5 second ON / 0.5 second OFF)

"FILTER/DEF" flashes 5 times
(0.5 second ON / 0.5 second OFF)

These indications are repeated until the alarm is reset.

10.2.3 Power failure

- All the indications are OFF.
- Once the unit is stopped by the power failure, the unit will not be started again although the power recovers. Perform the starting procedures again.
- In case of instantaneous power failure within 2 seconds, the unit will be started again automatically.

10.2.4 Electric noise

There could be a case that all the indications are OFF and the unit is stopped. This is occurred by the activation of the micro computer for the unit protection from the electric noise.

Perform the starting procedures again.

11 AUTOMATIC CONTROL

The system is equipped with the following functions.

- **Three minute guard** (enforced stoppage)

The compressor remains off for at least 3 minutes once it has stopped. If the system is started within approximately 3 minutes after it has stopped, the RUN indicator is activated.

However, the cooling operation or the heating operation remains off and does not start until after 3 minutes has elapsed.

- **Three minute guard** (enforced operation)

If all indoor units of the system are Thermo-OFF within approximately 3 minutes after compressor has started, compressor is operated during 3 minutes continuously.

However, if all indoor units of the system are stopped by remote control switch, compressor is stopped.

- **Oil return operation**

If the indoor unit is stopped more than 2 hours continuously, this function is operated during a few minutes.

It has this function to prevent to accumulate in the heat exchanger of stoppage indoor unit at cooling operation.

◆ At cooling operation

- **Frost prevention during cooling operation**

When the indoor unit is operated at low discharge air temperature, the cooling operation may be changed to fan operation (the compressor is stopped.) for a while to avoid frost formation on the indoor heat exchanger.

- **Self-Cleaning expansion valve**

It is for self cleaning the expansion valve when the operation is stopped at cooling.

The sound which the refrigerant flows may be heard from the indoor unit during the selfcleaning. However it is not abnormal.

◆ At heating operation

- **Hot start during heating operation**

To prevent cold air discharge in the room, the fan speed is changed gradually from slow to low. At this time, "HOT-ST" is displayed on LCD when the indoor unit is connected to the wired remote control switch, and the louver is fixed horizontally. After this control is completed, the setting is returned to the set fan speed and the fixed louver is released.

- **During defrosting operation**

When the outdoor unit is performing the automatic defrosting operation, the indoor fan is stopped and the louver is fixed horizontally.

- **Cooling of indoor unit** (after heat exclusion)

When the heating operation is stopped, the indoor fan operation may be maintained at the slow position for the maximum of 2 minutes to lower temperature of the inside unit.

- **Automatic defrosting cycle**

When the heating operation is stopped by pressing RUN/STOP switch, frosting on the outdoor unit is checked and the defrosting operation may be performed for the maximum of 10 minutes.

- **Prevention of overload operation**

When the outdoor temperature is high (approx. 21C°) during heating operation, heating operation is stopped due to activation of the outdoor thermistor until the temperature becomes low.



NOTE

- *If the system is stopped due to a power failure, it will not automatically start again although power is restored. Repeat the start-up procedure from Step 1 to start the system. In the event of a very brief power failure (2 seconds maximum), the settings are memorized. Therefore, the system starts automatically after approximately 3 minutes.*
- *This air conditioner is used hot air circulation system for the heating operation. If the air conditioning room is large or the room temperature is excessively low, it takes time to warm the whole room. "HOT-ST" will be turned OFF after heating the room.*
- *"HOT-ST" may be displayed during or right after the defrosting operation. It is activated to prevent the cold draft. It is NOT abnormal.*

12 MAINTENANCE

DANGER

- Turn OFF the power source before the maintenance work. If not, it may cause a fire or an electric shock.
- Perform the maintenance work with stable footing. If not, it may cause falling or injury.

NOTE

Do not operate the system without the air filter to protect the indoor unit heat exchanger against being clogged.

CAUTION

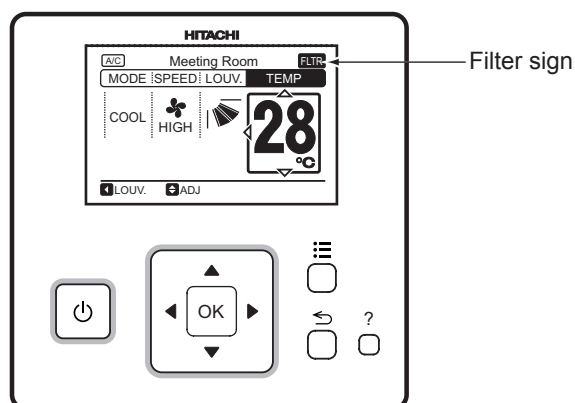
When the flat panel is opened (closed) or the air filter is attached (removed), perform the work according to this operation manual. If not, it may cause falling or injury.

12.1 DAILY MAINTENANCE

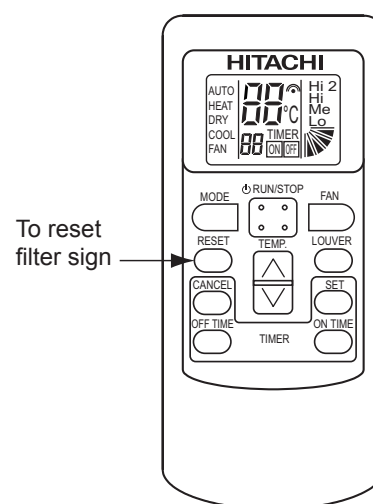
12.1.1 Cleaning air filter

Clean the air filter when the filter sign is turned ON.

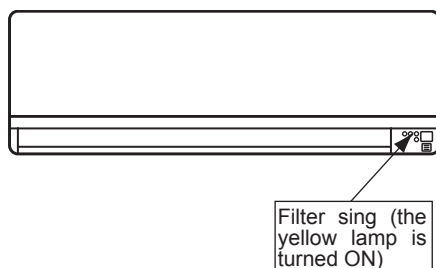
◆ PC-ARFPE



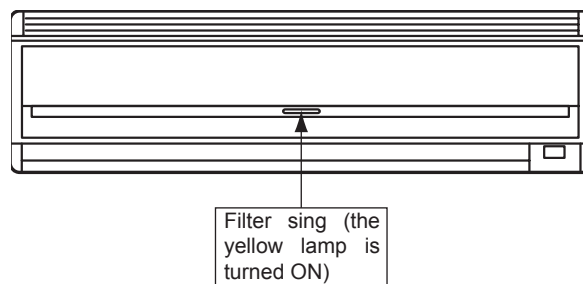
◆ PC-LH3B



RPK-(0.6-1.5)FSN(H)3M

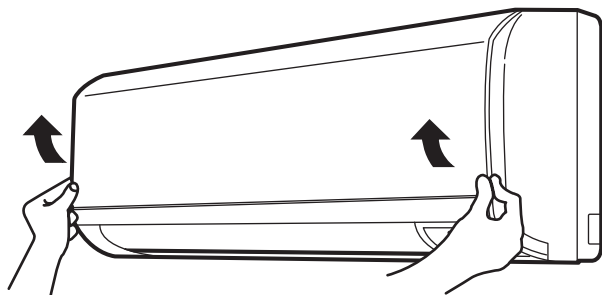


RPK-(2.0-4.0)FSN(H)3M



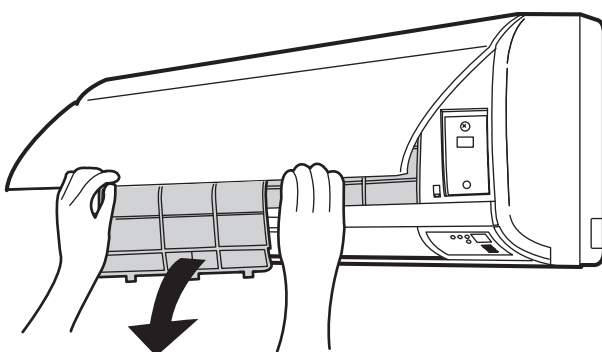
1 Open the flat panel.

Hold the both sides of flat panel and pull up.



2 Remove the air filter.

Lift up the air filter, detach the catches from the indoor unit and remove the air filter downward.



The figure shows for 1.5HP.

3 Clean the air filter.

- Vacuum the dust by a cleaner, or wash the air filter by water or neutral detergent.
- Dry the air filter in the shade



NOTE

- Do not use hot water more than 50°C.
The air filter may be deformed by heat.
- Do not dry the air filter by an open fire, a dryer or a heater. The air filter may be deformed.

4 Attach the air filter. After the air filter is dried, correctly attach it with "FRONT" indication frontward to the indoor unit.

5 Close the flat panel pressing 3 parts.



NOTE

Be sure to attach the air filter. If the indoor unit is operated without the air filter, it may cause malfunction of the indoor unit.

6 Reset the filter sign.

◆ PC-ARFPE

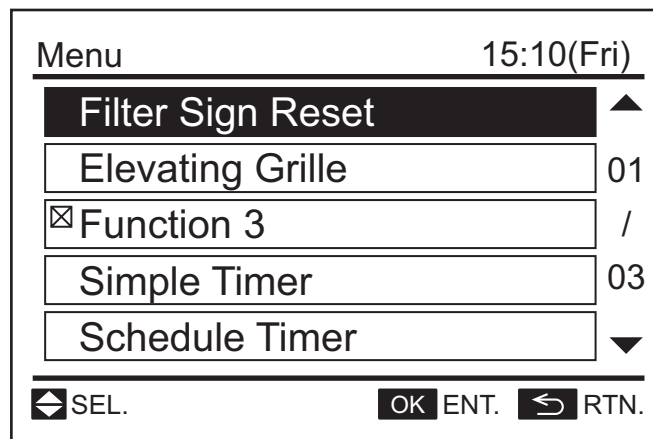


NOTE

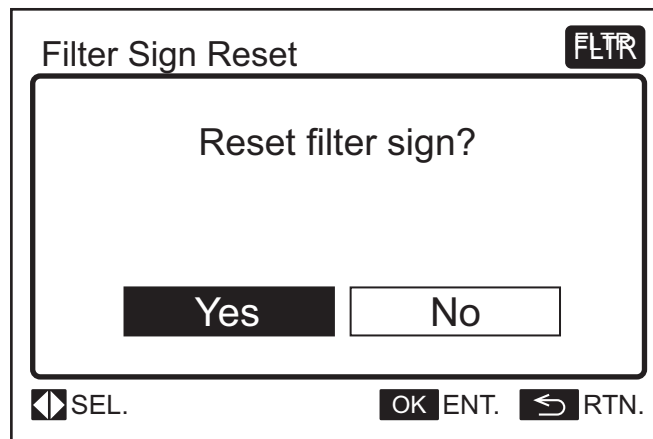
If the accumulated time of filter cleaning is not got to setting time, the indication "☒" is turned ON and "Setting disabled" will be displayed.

- Press "☒" (menu).

Select "Filter sign reset" from the menu and press "OK". The confirmation screen will be displayed.



- Select "Yes" by pressing "◀" or "▶" and press "OK". The indication of "FLTR" will be turned OFF and the screen will return to the normal mode.



◆ PC-LH3B

Point the transmitter toward the receiver and press "RESET" switch. The filter sign of unit is turned OFF and the next filter cleaning will be accumulated.

12.1.2 Maintenance for flat panel



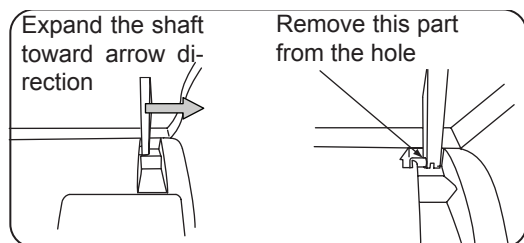
NOTE

- Use a soft cloth to clean the flat panel. If benzene, thinner or detergent (with surfactant) is used to clean, the resin part may be changed color or deformed. In addition, pay attention that the parts around the air outlet (louver, guide, etc.) may be damaged if an excessive force is applied.
- The flat panel can be removed and cleaned. Remove it by both hands.

◆ RPK-(0.6-1.5)FSN(H)3M

1 Removing flat panel

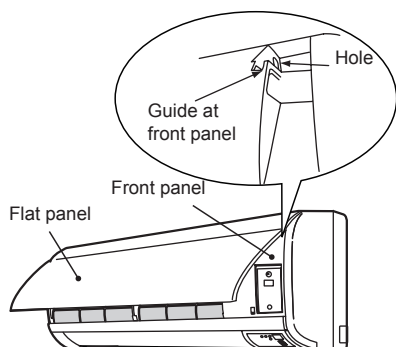
Hold both sides of flat panel and open it fully. After the right arm shaft is expanded outward and the shafts are removed from the front panel, pull the flat panel frontward while the right arm shaft is expanded outward.



Flat panel

2 Attaching flat panel

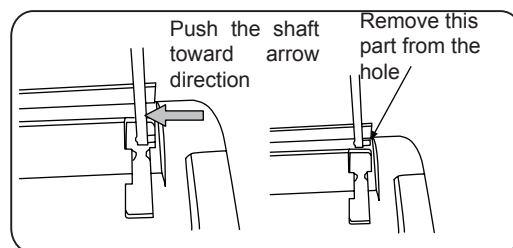
Insert completely the left and right arm shafts of flat panel into the holes along the guide at the front panel. After the flat panel is attached completely, insert the catches for air filter to fix.



◆ RPK-(2.0-4.0)FSN(H)3M

1 Removing flat panel

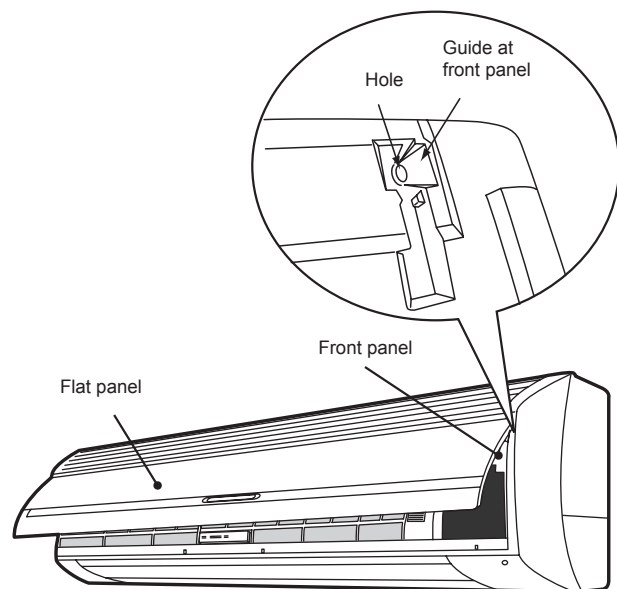
Hold both sides of flat panel and open it fully. After the right arm shaft is pushed inward and the shafts are removed from the front panel, pull the flat panel frontward while the right arm shaft is slightly pushed inward.



Flat panel

2 Attaching flat panel

Insert completely the left and right arm shafts of flat panel into the holes along the guide at the front panel. After the flat panel is attached completely, insert the catches for air filter to fix.



12.2 MAINTENANCE BEGINNING AND ENDING OF USE

Beginning of use

Remove obstacles for the air inlet grilles of indoor unit and outdoor unit and the air outlet.

Check that the air filter is not clogged.

Ending of use

Clean the air filter, the air inlet grille and the flat panel.

13 TROUBLESHOOTING

Phenomenon		Cause and action
Stopped operation	All indication lamps on the remote control switch are turned OFF.	The micro-computer is activated to protect the device from electro-magnetic waves. The operation can be recovered if it is started from the beginning.
	Power failure occurs.	Start the operation from the beginning. If the instantaneous power failure is within 2 seconds, the operation is restarted automatically.
White steam from indoor unit	During the heating operation.	It may occur during the defrosting operation in the heating operation.
White smoke from indoor unit	The heating operation is begun to use.	The dust attached to the heat exchanger is dried.
Mist from indoor unit	The indoor unit is used in a restaurant or a kitchen.	Oil is attached to the fins and the heat exchange efficiency may be decreased.
	During the dry operation	It may occur when the air outlet temperature becomes lower. Raise the set temperature and the air flow volume.
	The cooling operation is performed in high humidity environment.	
Odor from indoor unit	The air flow from the indoor unit has odor.	It may occur because the cigarette smoke and room odor are stuck inside the indoor unit.
		Ventilate well by the fan mode and clean the air filter, the flat panel, the air outlet and the air inlet grille. It may be effective for odor eliminating.
Sound from indoor unit	Sound is heard when starting or stopping the operation.	It is generated because the resin parts are stretched by the temperature change and rubbed with other parts.
	Sound which water flows or is boiled is heard during the operation.	It is generated because the refrigerant flows or the drain-up mechanism drains water. Especially, sound may be heard when starting the operation or stopping the compressor (for approx. 3 minutes).
	Growling sound may be heard temporarily right after the air flow volume is changed.	It is generated because the fan motor makes temporary sound by change of fan speed.
Dew on panel	Dew condensation occurs on the panel or the cabinet or dew drops.	It may occur if the operation is performed in high humidity place (relative humidity is approx. 80%.) for a long time.
Turned ON “HOT-ST” on LCD		The indications may be turned ON or flash according to the operation mode or condition.
Flashing operation mode on LCD		

Trouble		Checking point	Action
Not operated		Check that the main power source is turned ON.	Turn ON the main power source for air conditioner.
		Check that the fuse does not blow out or the circuit breaker of main power source is not tripped.	Replace the fuse or reset the circuit breaker. If the trouble recurs, contact your contractor or distributor.
Operated however, stopped soon	Cooling	Check whether the air inlet and outlet of the outdoor unit are not covered by a paper, a vinyl or other object.	Remove objects covering the air inlet and outlet.
	Heating	Check whether there are any obstacles for the air flow near the air inlet and outlet of the outdoor unit.	Remove the obstacles which prevent the air flow.
		Check whether the outlet air is short-circuited to the air inlet.	
Not cooling or heating well		Check that the operation mode is appropriate.	If the fan mode is selected, switch the operation mode to cooling (heating).
		Check that the set temperature is appropriate.	If not, change the set temperature by pressing “▲” or “▼” by the remote control switch.
		Check that the air flow direction is appropriate.	If not, change the air flow direction. In the case that the footing is not heated well during the heating operation, change the louver downward.
		Check that the air filter is not clogged.	Clean the air filter.
		Check that a window and a door are not opened.	Close the window and the door.
		Check that there are no obstacles for the air inlet and the air outlet of the outdoor unit and the indoor unit.	Remove the obstacles.

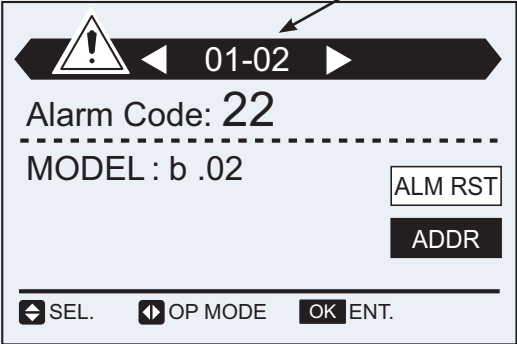
13.1 CONTACT DISTRIBUTOR

If the trouble still remains even after checking previous items or other troubles not mentioned in the previous occurs, stop using the product and contact your distributor or contractor.



CAUTION

If abnormality (burnt odor, etc.) occurs, stop the operation and turn OFF the main power source immediately. If not, it may cause breakage of the product, an electric shock or a fire. Contact your distributor or contractor.

Trouble	Action before contact
The protection devices (fuse, breaker, ELB, etc) are frequently activated or the main power source switch does not work.	Turn OFF the power source.
Water leakage from indoor unit.	Stop the operation.
PC-ARFPE The RUN indicator (red) is flashing. The indoor unit number, the alarm code, the unit model code and the connected number of indoor units are displayed on LCD. In case that the plural indoor units are connected to one remote control switch, the above abnormality informations for each indoor unit are displayed one by one Check the details on LCD and contact your distributor. Indoor unit number  PC-LH3B For the wireless remote control switch, the alarm codes are indicated by the flashing times of indicator on indoor unit.	Refer the alarm code table. Contact your distributor and inform the indication detail on the remote control switch.

Inform the following items to a distributor.

- 1 Unit model
- 2 Content of trouble
- 3 Alarm code No. on LCD or detail of flashing indicator.

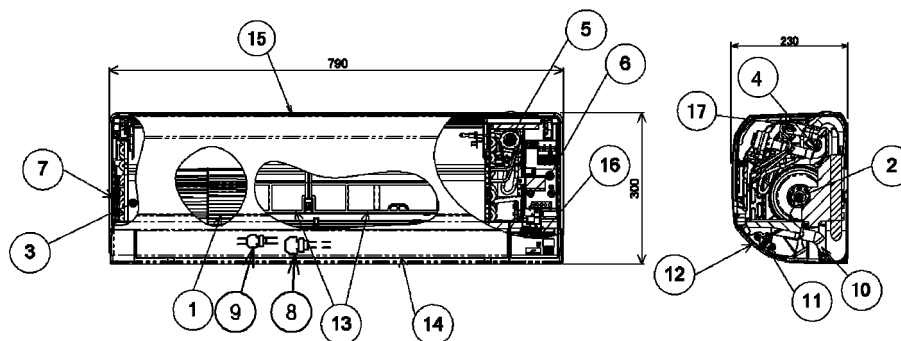
13.2 MAIN ALARM CODES

Code	Category	Content of abnormality
01	Indoor unit	Activation of protection device (float switch)
02	Outdoor unit	Activation of protection device (high pressure cut)
03	Transmission	Abnormality between indoor and outdoor
04		Abnormality between Inverter PCB and outdoor PCB
05	Supply phase	Abnormality power source phases
06	Voltage	Abnormality of voltage drop in outdoor unit
07	Cycle	Decrease in discharge gas superheat
08		Excessively high discharge gas temperature at top of compressor chamber
09	Outdoor unit	Activation of protection device for outdoor fan
11	Sensor on indoor unit	Inlet air thermistor
12		Outlet air thermistor
13		Freeze protection thermistor
14		Gas piping thermistor
19	Fan motor	Activation of the protection device for the indoor fan
20	Sensor on outdoor unit	Compressor thermistor
21		High pressure sensor
22		Outdoor air thermistor
23		Discharge gas thermistor
24		Evaporating thermistor
29		Low pressure sensor
31	System	Incorrect capacity setting of outdoor unit and indoor unit
32		Incorrect setting of other indoor unit number
35		Incorrect setting of indoor unit number
36		Incorrect of indoor unit combination
38		Abnormality of picking up circuit for protection in outdoor unit
39	Compressor	Abnormality running current at constant speed compressor
41	Pressure	Overload cooling
42		Overload heating
43	Protection device	Activation of pressure ratio decrease protection device
44		Activation of low pressure decrease protection device
45		Activation of low pressure increase protection device
46		Activation of high pressure increase protection device
47		Activation of high pressure decrease protection device
48		Activation of overcurrent protection device
51	Inverter	Abnormal inverter current sensor
52		Activation of inverter overcurrent protection
53		Activation of transistor module protection
54		Abnormality of inverter fin temperature
56	Outdoor fan	Abnormality of detection for fan motor position
57		Activation of fan controller protection
58		Abnormality of fan controller
b0	System	Incorrect setting of unit capacity
b1		Incorrect setting of unit and refrigerant cycle number
b5		Incorrect setting of indoor unit number for H-LINK type.
EE	Compressor	Compressor protection alarm

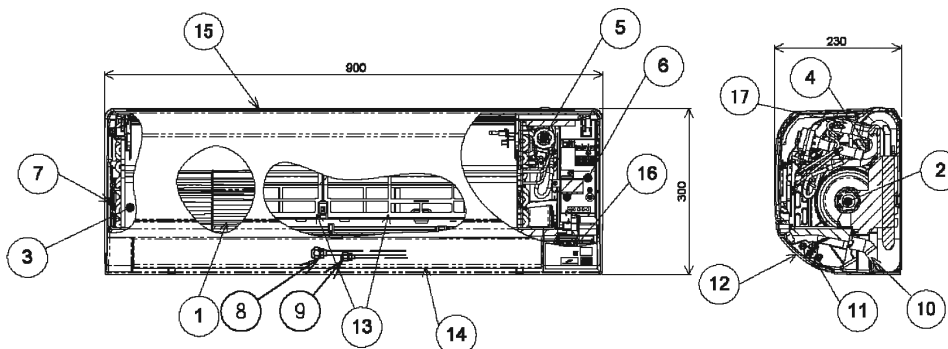
PART II- INSTALLATION

14 NAME OF PARTS

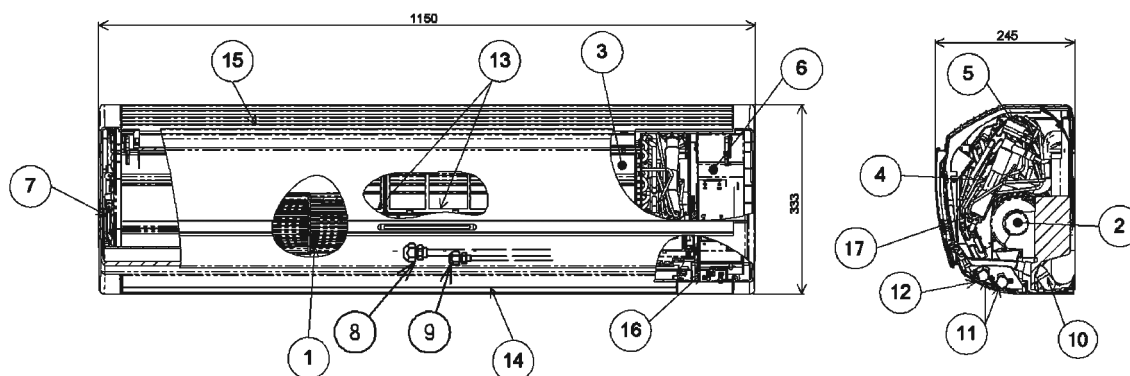
◆ RPK-(0.6-1.0)FSN(H)3M



◆ RPK-1.5FSN(H)3M



◆ RPK-(2.0-4.0)FSN3M



Number	Part name	Number	Part name
1	Fan	10	Drain pipe connection
2	Fan motor	11	Auto louver motor
3	Heat exchanger	12	Drain pan
4	Strainer	13	Air filter
5	Micro-Computer control expansion valve	14	Air outlet
6	Electrical control box	15	Air inlet
7	Bearing	16	Receiver part
8	Refrigerant gas pipe connection	17	Distributor
9	Refrigerant liquid pipe connection		

15 BEFORE INSTALLATION

15.1 COMBINATION OF OUTDOOR UNIT AND INDOOR UNIT

The combination capacity of indoor unit against the outdoor unit is selected by the outdoor unit capacity. Refer to the installation manual of outdoor unit and select the indoor unit and the outdoor unit to be satisfied the combination unit number and the combination unit capacity.

15.2 TRANSPORTATION AND HANDLING



CAUTION

- Do not put any material on the product.
- Do not step on the product.

15.2.1 Transportation

- Transport the product as close to the installation location as practical before unpacking.
- Do not put any material on the indoor unit.
- Pay attention to handle the indoor unit. If an excessive force is applied to the indoor unit, it may cause a breakage.

15.2.2 Handling of indoor unit



DANGER

Do not put any foreign material into the indoor unit and check to ensure that no foreign material exists in the indoor unit before the installation and the test run. Otherwise, a fire or failure, etc. may occur.



CAUTION

- The indoor unit covers are resin made. Do not apply an excessive force to the resin covers or make it fall.
- Do not move the louver by hand. If moved, the louver mechanism will be damaged.



NOTE

To avoid damage to the resin covers, before lifting or moving the indoor unit, put a cloth on the resin covers.

16 INDOOR UNIT INSTALLATION



DANGER

- **Do not install the indoor unit in a flammable environment to avoid fire or an explosion.**
- **Do not put any foreign material into the indoor unit and check to ensure that none exists in the indoor unit before the installation and the test run. Otherwise, a fire or failure, etc. may occur.**
- **Check to ensure that the wall is strong enough. If not strong enough, the indoor unit may fall down on you.**
- **Do not install the indoor unit outdoors. If installed outdoors, an electric hazard or electric leakage will occur.**



NOTE

The expansion valve kit (option) is required for the "indoor unit wall type without expansion valve" installation.

16.1 FACTORY-SUPPLIED ACCESSORIES

Check to ensure that the following accessories are packed with the indoor unit.



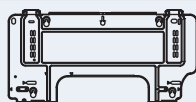
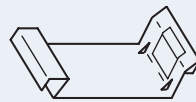
NOTE

If any of these accessories are not packed with the unit, please contact your contractor.

The remote control switch, the branch pipes and the transition wires are optional accessories which are not included with the indoor unit.

Pay attention to the followings when the wireless remote control switch (PC-LH3B) is used.

- For twin, triple and quad combination for individual operation with the wireless remote control switch, the optional receiver kit is required. (This operation is NOT available with the wireless remote control switch if the built-in receiver is only used.)
- For twin, triple and quad combination for simultaneous operation, the wired remote control switch shall be used. When the wireless remote control switch is used, the optional receiver kit (PC-ALHZF) is required.

Accessory		Q'ty			Purpose
		0.6-1.0	1.5	2.0-4.0	
Suspension bracket		1	1	1	For mounting indoor unit
Screw (Ø4 x 25L)		6		8	For fixing suspension bracket
Screw (Ø4 x 40L)		2		4	
Fixing plate		-		1	For fixing piping
Thermal Insulation pipe		1		1	For insulating refrigerant piping
Installation and operation manual		1		1	-

16.2 INITIAL CHECK

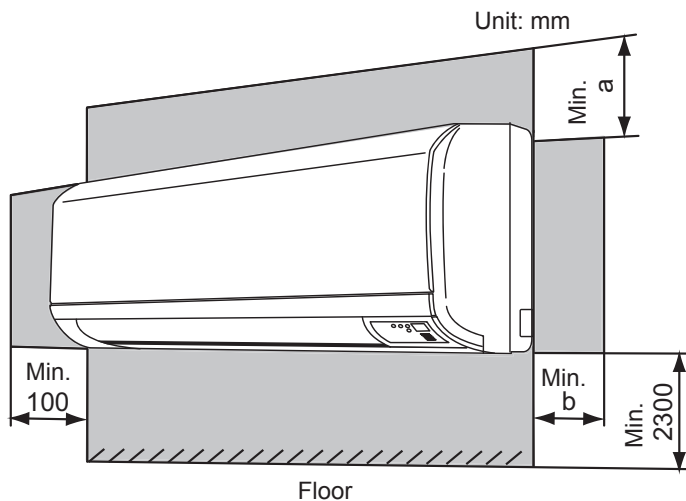
DANGER

- Check to ensure that the number of below is within $0.3\text{kg}/\text{m}^3$. Otherwise it may cause danger situation if the refrigerant in the outdoor unit leaks into the room where this indoor unit is installed.

$$\frac{(\text{Total refrigerant quantity per one outdoor unit})}{(\text{Volume of the room where this indoor unit is installed.})} \leq 0.3\text{kg}/\text{m}^3$$

For detail, refer to the Installation Manual for outdoor unit.

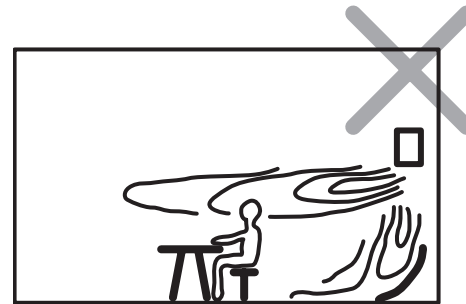
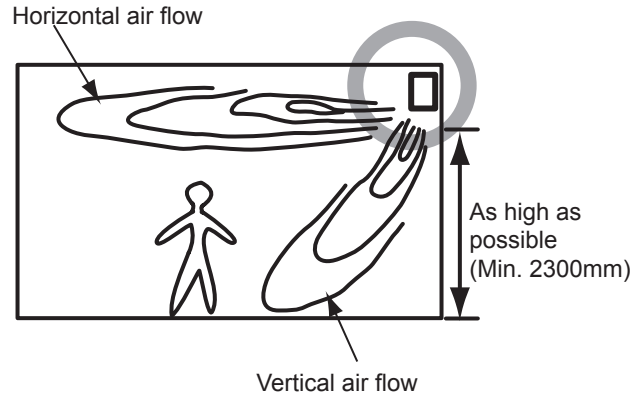
- Make sure that the refrigerant leakage test should be performed. The refrigerant (Fluorocarbon R410A) for this unit is incombustible, non-toxic and odorless. However if the refrigerant is leaked and is contacted with fire, toxic gas will generate. Also because the fluorocarbon is heavier than air, the floor surface will be filled with it, which could cause suffocation.
- Install the indoor unit with a proper clearance around it for operation, maintenance working space and safety.



Unit: mm		
Model	a	b
RPK-(0.6-1.5)FSN(H)3M	150	100
RPK-(2.0-4.0)FSN3M	100	200

- Consider the air distribution from the indoor unit to the space of the room, and select a suitable location so that uniform air temperature in the room can be obtained.
- Avoid obstacles such as electric light, partition which may hamper the air inlet or the air outlet flow.
- In case of using wireless remote controller, do not install the indoor unit within approximately 1 meter from electronic type lighting in order to receive the signal correctly.
- Check to ensure that the ceiling has a sufficient strength to hang the indoor unit. If the strength is insufficient, the vibration or noise may occur during the operation.
- Check whether the wall is vertical and flat.

- Install the indoor unit as high as possible. If it is installed at lower position, the air tends to stagnate downward during the cooling operation. Additionally, the air may flow directly to a person so that may be felt the discomfort.



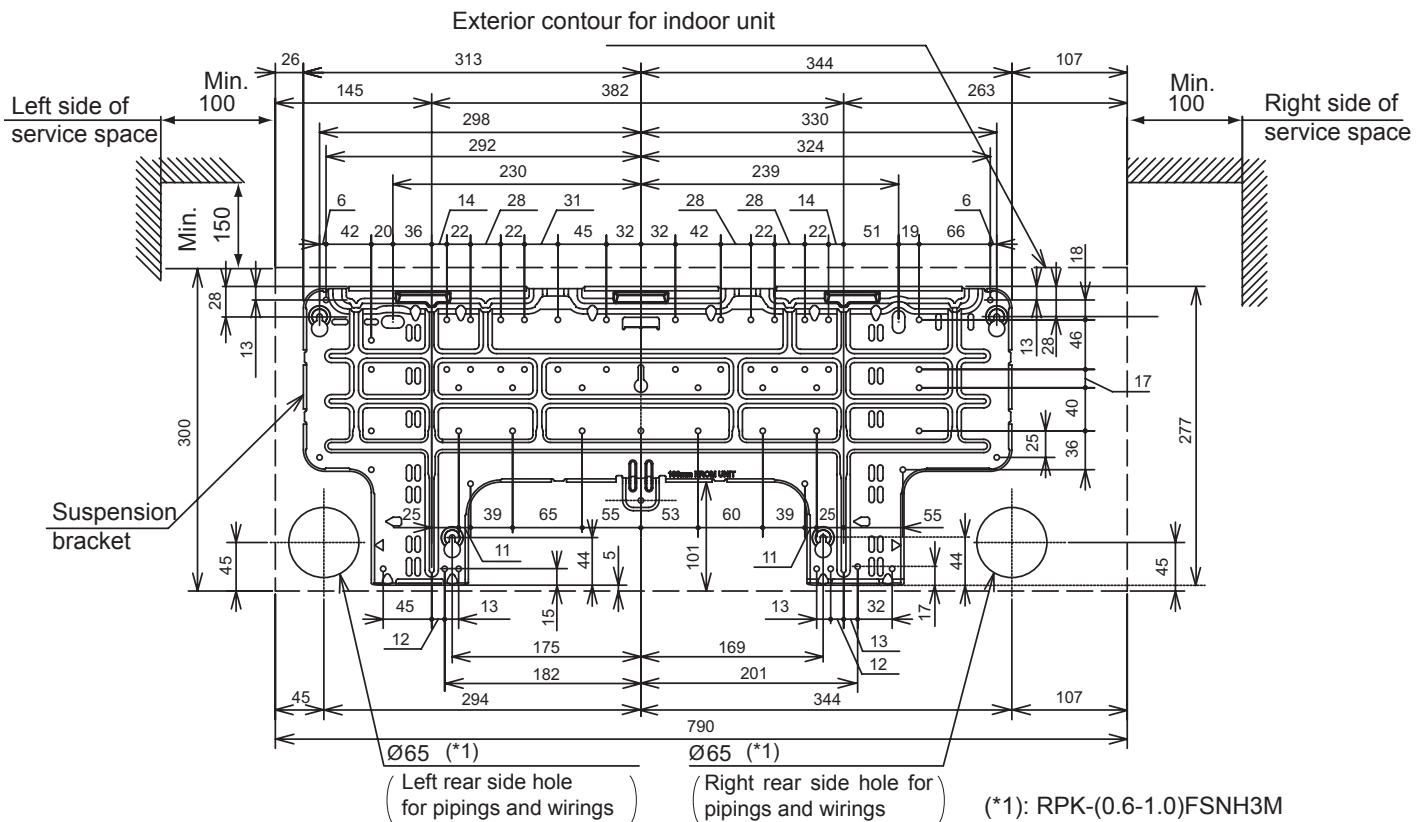
- Avoid the installation place such as near a door or ceiling where the indoor unit may contact external high humidity. Otherwise, dew may occur and drop.
- Avoid installing the indoor unit where the direct airflow blows from the air outlet to the temperature detecting devices such as an alarm device or a control device. It may cause a failure of an alarm device or a control device.
- UTOPIA Series: The twin combination, the triple combination and the quad combination for simultaneous operation of indoor units are installed in a same room and required to operate with equal conditions. In the case of these combination indoor unit types, if each indoor unit is partitioned by a wall, furniture or a curtain, etc, it may cause an operation failure. In addition, in the case of rearranging furniture or remodeling an interior after the installation, pay attention to effects for indoor units combination operation.
- Do not install flammable parts in the service space for the indoor unit.
- Do not install the indoor unit in a machinery shop or kitchen where vapor from oil or its mist flows to the indoor unit. The oil will deposit on the heat exchanger, thereby reducing the indoor unit performance, and may deform and in the worst case, break the plastic parts of the indoor unit.

- Pay attention to the following points when the indoor unit is installed in a hospital or other facilities where there are electromagnetic waves from medical equipment, etc.
 - Do not install the indoor unit where the electromagnetic wave is directly radiated to the electrical control box, remote control cable or remote control switch.
 - Install the indoor unit and components as far as practical or at least 3 meters from the electromagnetic wave radiator.
- Prepare a steel box and install the remote control switch in it. Prepare a steel conduit tube and wire the remote control cable in it. Then, connect the ground wire with the box and the tube.
- Install a noise filter when the power supply emits harmful noises.
- To avoid any corrosive action to the heat exchangers, do not install the indoor unit in an acid or alkaline environment.

16.3 INSTALLATION

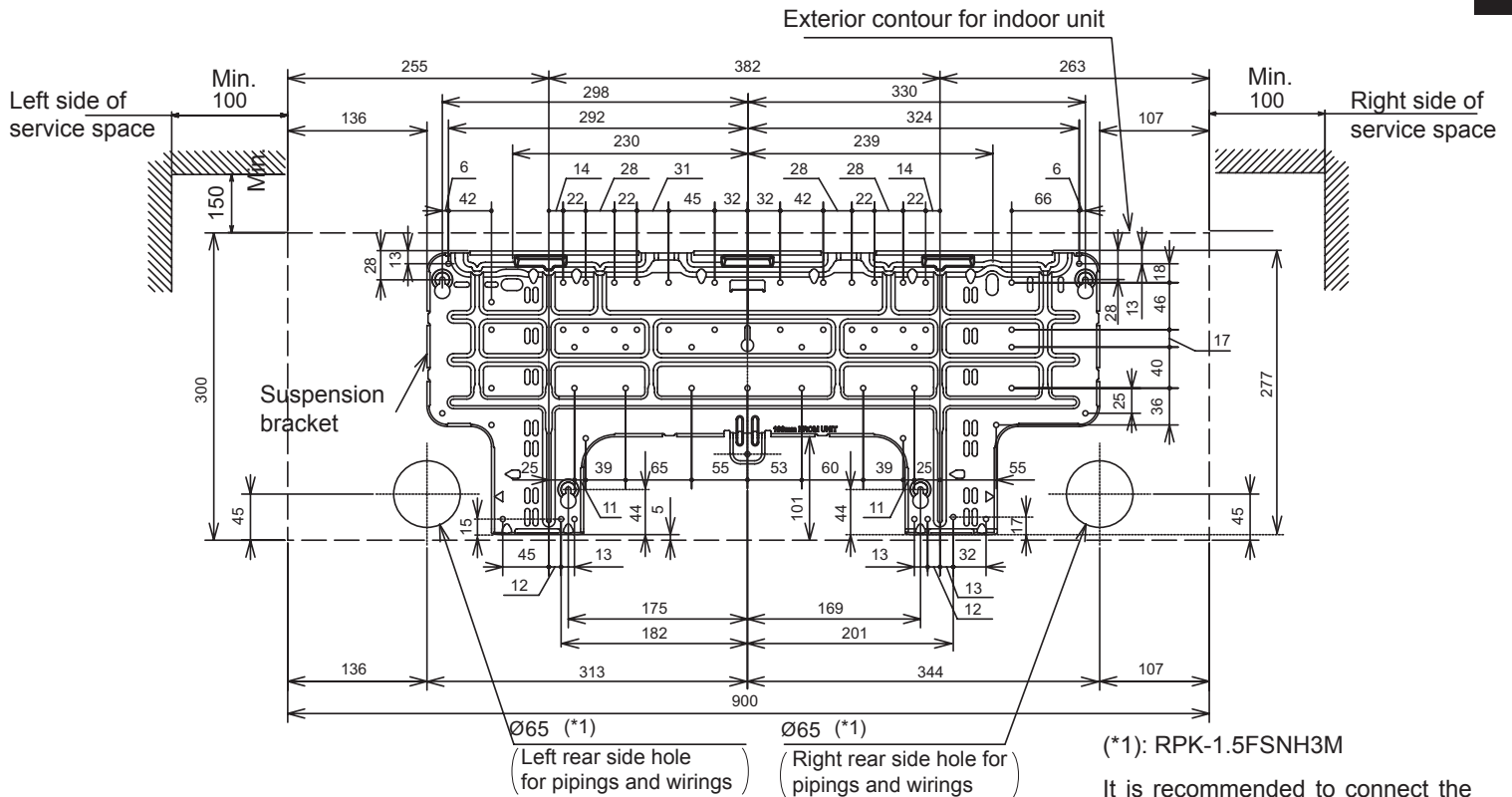
The dimensions of the suspension bracket (accessory) and the unit installation are indicated in following figures.

◆ RPK-(0.6-1.0)FSN(H)3M



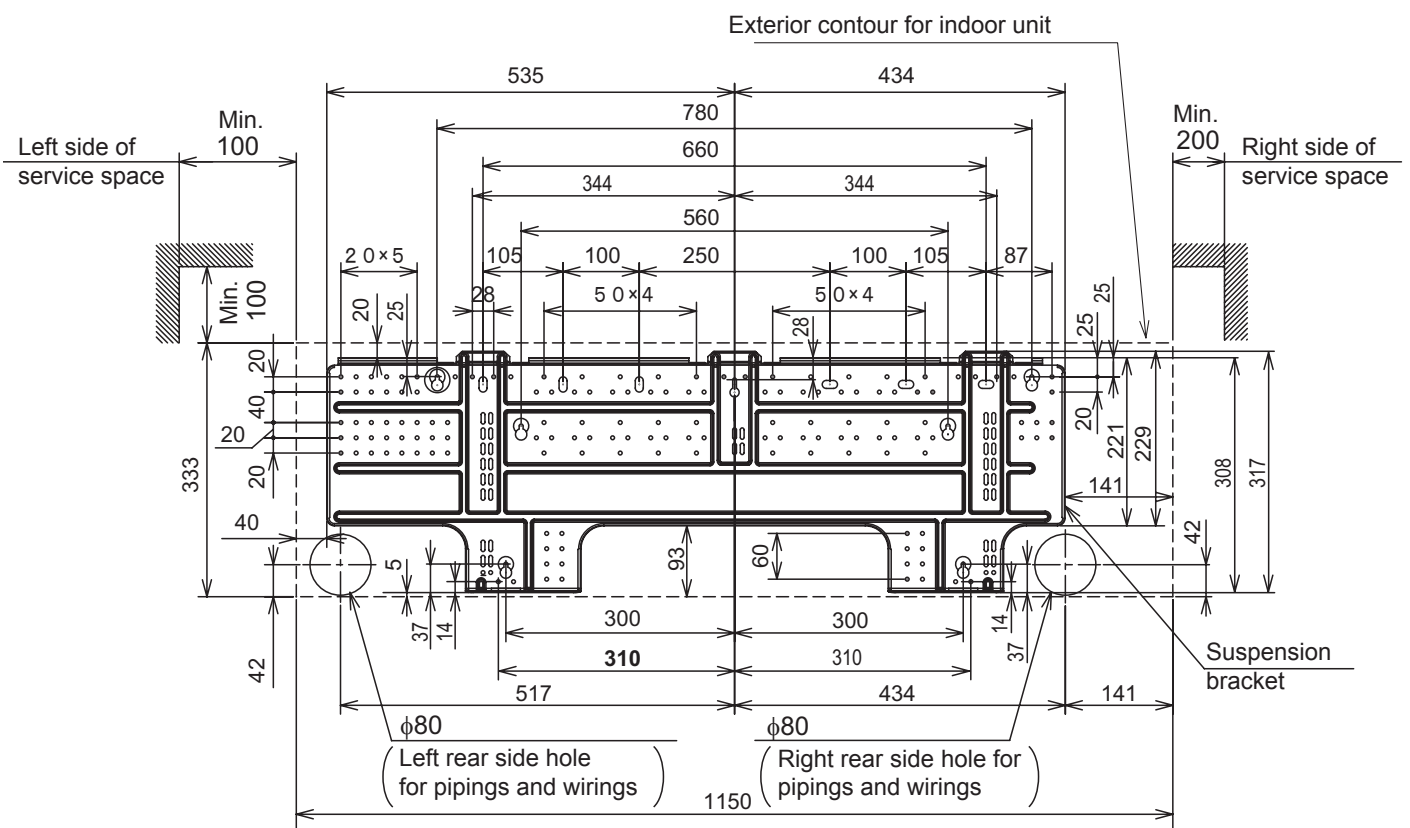
It is recommended to connect the piping at the right rear side of the body to avoid the sound from the refrigerant running through.

◆ RPK-1.5FSN(H)3M



It is recommended to connect the piping at the right rear side of the body to avoid the sound from the refrigerant running through.

◆ RPK-(2.0-4.0)FSN3M



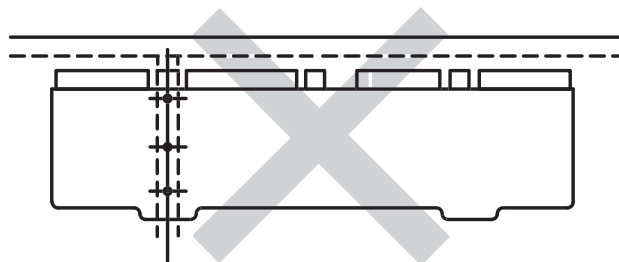
16.3.1 Suspension bracket onto wall

When the suspension bracket is directly attached to a wood wall or a concrete wall, check to ensure that the wall is strong enough to support a weight of 2000N.

16.3.2 Mounting indoor unit between pillars

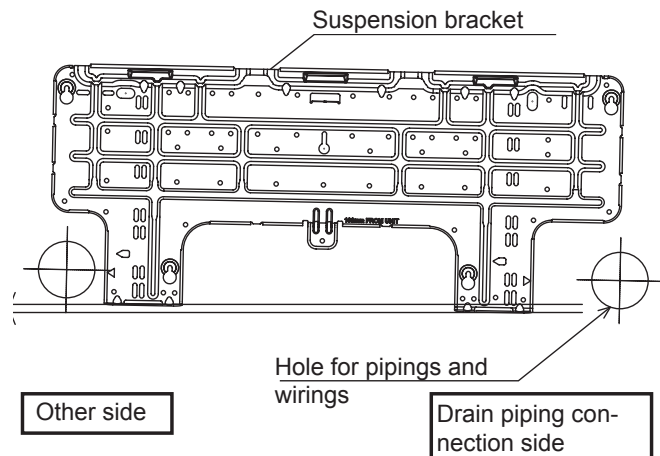
- 1 Core drill (diameter: 65mm for 0.6-1.5HP, 80mm for 2.0 to 4.0HP) facilitates making hole for pipings.
- 2 Do not install the suspension bracket on one pillar.
- 3 The location where the indoor unit is to be installed should be so selected that an unbalanced weight distribution is avoided.

INCORRECT

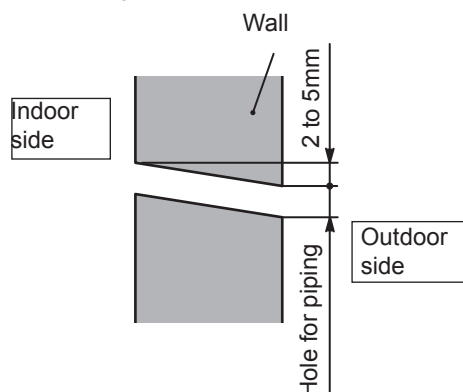


Do not fix the suspension bracket onto the one pillar as shown.

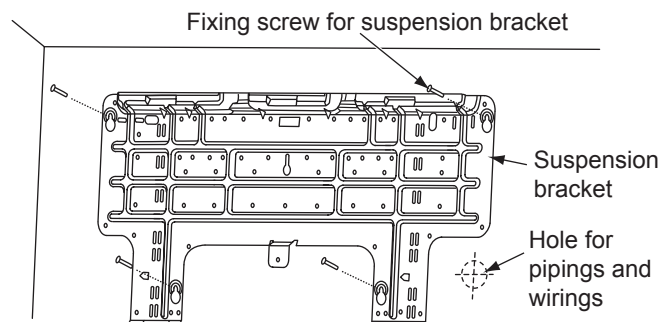
- 4 The suspension bracket should be installed so that the side of drain piping connected is slightly 2 to 3mm lower than the other side, in order to avoid the incorrect position of the drain discharge as shown in the figure below. (Drain piping connection can be performed both right side and left side of the unit.)



- 5 The piping hole shall be opened slightly lower to the outside as shown in the figure below.

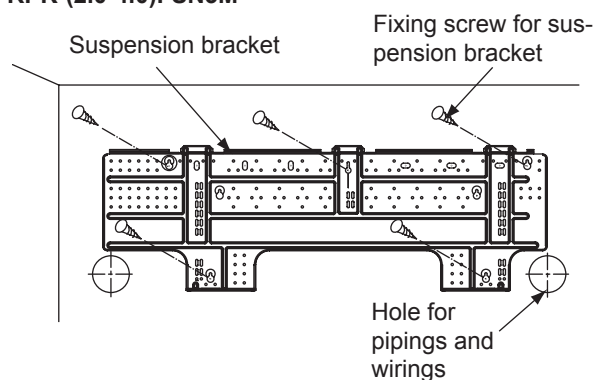


◆ RPK-(0.6-1.5)FSN(H)3M



Fix the suspension bracket by more than 4 fixing screws.

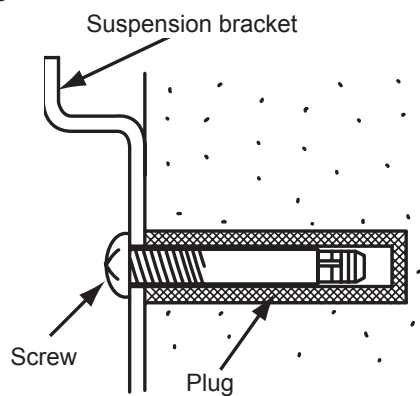
◆ RPK-(2.0-4.0)FSN3M



Fix the suspension bracket by more than 5 fixing screws.

16.3.3 Mounting indoor unit on concrete wall or concrete block wall

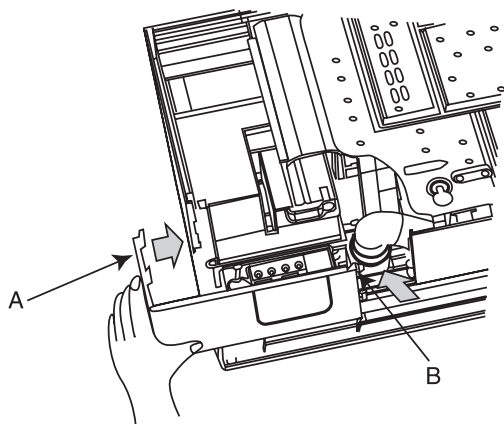
- Attach the suspension bracket to a concrete wall or a concrete block wall with screws and plugs. Fix the suspension bracket directly to the wall by field-supplied plug as shown in the figure below. The plug depth shall be referred to the manufacturer. The plug size shall be selected from the table below.



Plug size	Q'ty	
	RPK-(0.6-1.5)FSN(H)3M	RPK-(2.0-4.0)FSN3M
M4-M5	4	5

- Remove bottom cover.

The bottom cover can be removed as shown below. Pull the bottom cover while pushing A and B, and remove it.



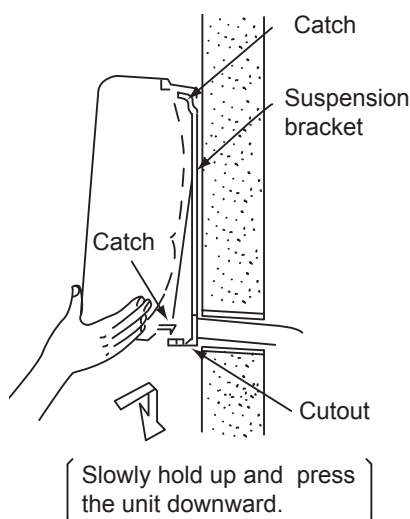
16.3.4 Mounting indoor units



CAUTION

Avoid attaching the refrigerant or the refrigerant oil to the upper part of indoor unit. Otherwise, it will be damaged the indoor unit cover and it may cause falling of indoor unit. If the refrigerant or the refrigerant oil is attached, wipe it off completely.

- Hook the upper part of the indoor unit to the suspension bracket.
- Insert the catches at lower part of indoor unit to the cutouts at the suspension bracket.



When removing the indoor unit, push up the "PUSH" part on the bottom side and pull the unit to the front side. Therefore, the catches are released from the suspension bracket.



CAUTION

Check to ensure that the unit is completely hooked onto the suspension bracket. If not, it may cause vibration of indoor unit. Additionally, the indoor unit may drop from the suspension bracket resulting in a serious accident.

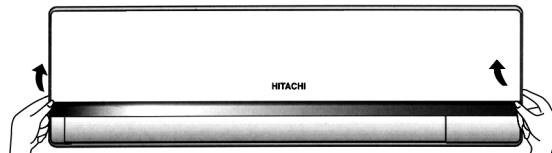
16.3.5 Removing flat panel

If the flat panel is needed to be removed, perform according to the following instructions. Pay attention to the resin components not to scratch.

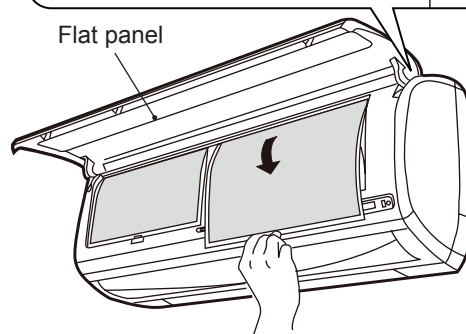
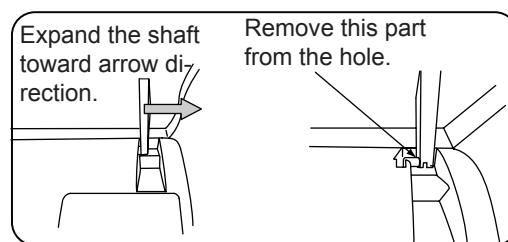
◆ RPK-(0.6-1.5)FSN(H)3M

1 Removing flat panel

- Hold both sides of flat panel and open it fully.

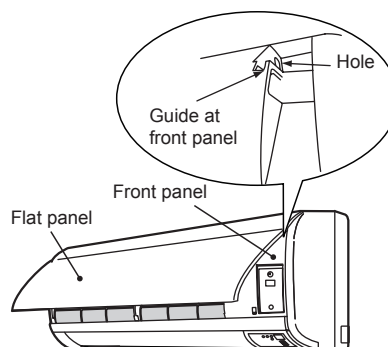


- Lift up the air filter, detach the catches from the indoor unit and remove the air filter downward.
- After the right arm shaft is expanded outward and the shafts are removed from the front panel, pull the flat panel forward while the right arm shaft is slightly expanded outward.



2 Attaching flat panel

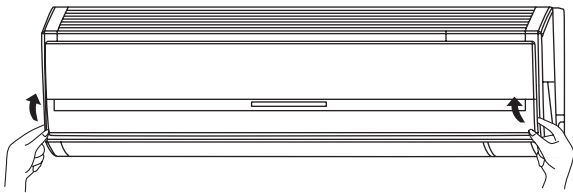
Insert completely the left and right arm shafts of flat panel into the holes along the guide at the front panel. After the flat panel is attached completely, insert the catches for air filter to fix.



◆ RPK-(2.0-4.0)FSN3M

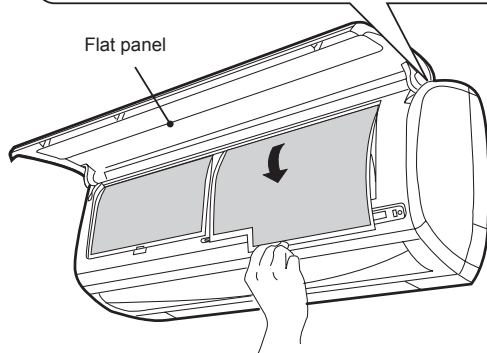
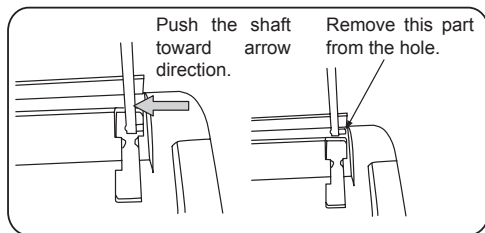
1 Removing flat panel

- a. Hold both sides of flat panel and open it fully.



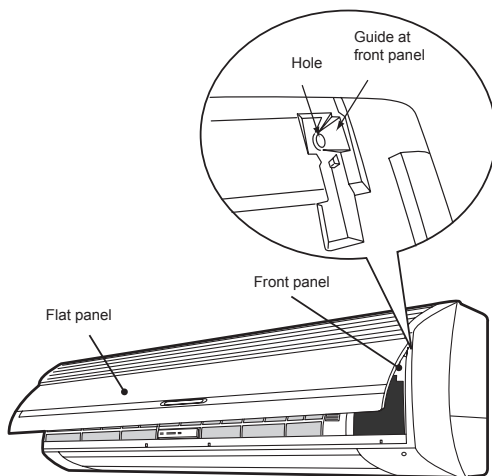
- b. Lift up the air filter, detach the catches from the indoor unit and remove the air filter downward.

- c. After the right arm shaft is pushed inward and the shafts are removed from the front panel, pull the flat panel forward while the right arm shaft is slightly pushed inward.



2 Attaching flat panel

Insert completely the left and right arm shafts of flat panel into the holes along the guide at the front panel. After the flat panel is attached completely, insert the catches for air filter to fix.



CAUTION

When removing front panel, do not apply an excessive force by hitting, etc. It may break the unit body.

16.3.6 Position of piping connection

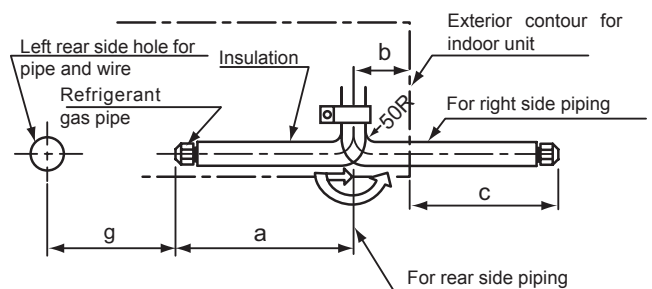
Piping direction for the indoor unit. Four directions of piping connection to the indoor unit can be performed; to the rear side, the bottom side, the right side and the left side of the unit. (*1). Therefore, most appropriate piping for a room can be selected.

(*1): RPK-(0.6-1.5)FSN(H)3M

It is recommended to connect the piping at the right rear side of the body to avoid the sound from the refrigerant running through.

- In case that the pipe is connected at rear or right side, re-bend the refrigerant piping as shown in following figures.

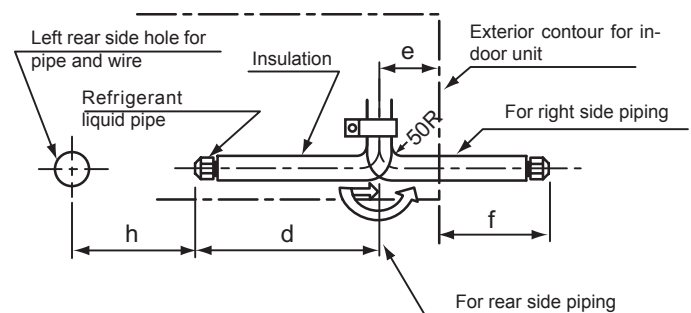
◆ Gas pipe



Unit: mm

Model	Gas piping				
	Diameter	a	b	c	g
RPK-(0.6-1.0)FSN(H)3M	Ø12.7	395	107	288	243
RPK-1.5FSN(H)3M	Ø12.7	395	107	288	262
RPK-(2.0-2.5)FSN3M	Ø15.88	480	141	339	471
RPK-(3.0-4.0)FSN3M	Ø15.88	480	141	339	471

◆ Liquid pipe



Unit: mm

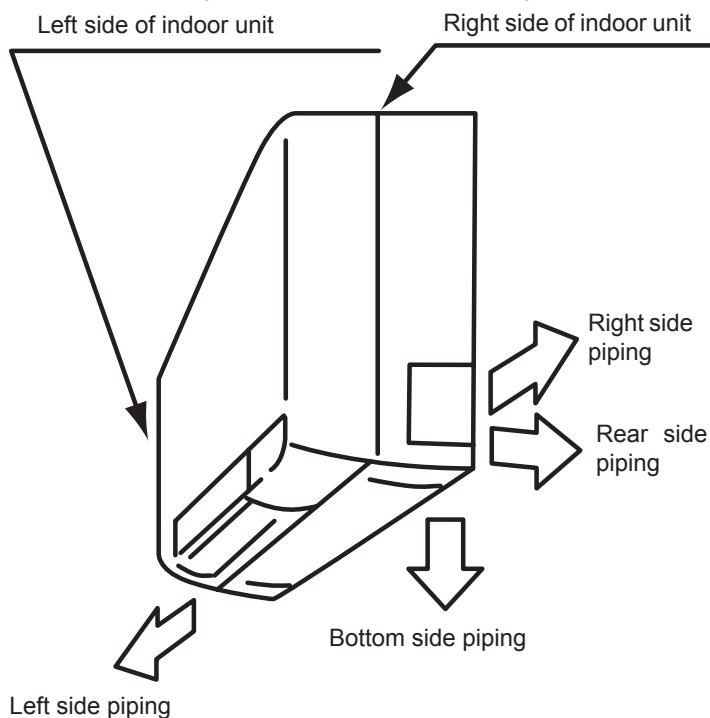
Model	Liquid piping				
	Diameter	d	e	f	h
RPK-(0.6-1.0)FSN(H)3M	Ø6.35	450	107	343	188
RPK-1.5FSN(H)3M	Ø6.35	450	107	343	207
RPK-2.0FSN3M	Ø6.35	540	141	399	418
RPK-(2.5-4.0)FSN3M	Ø9.52	540	141	399	418



NOTE

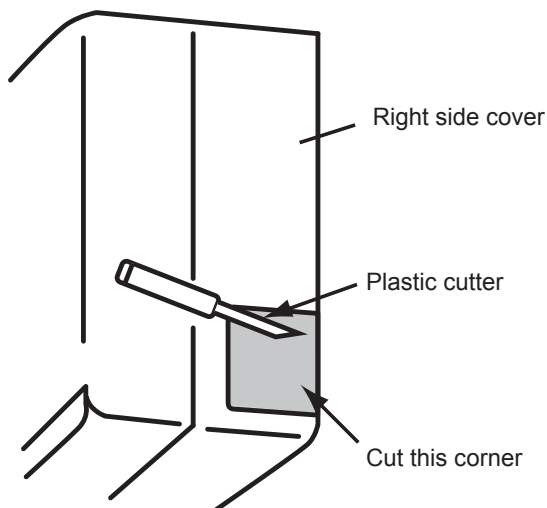
- Do not twist the pipes when connecting.
- Hold the pipe connecting portion firmly when bending.

Direction of piping connection is shown in the figure below.



• Right Side Piping

Cut the corner by plastic cutter as shown below and remove sharp edge completely.



• Left Side Piping

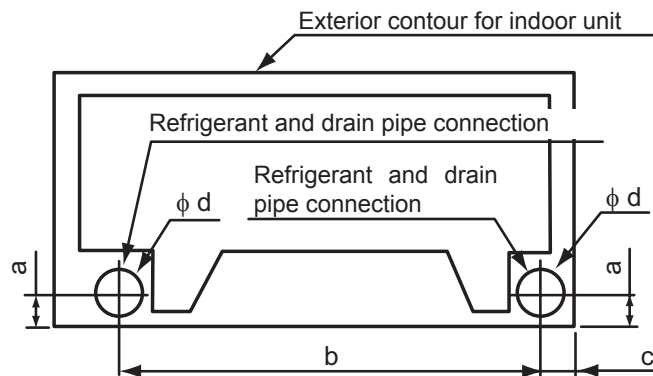
Cut the corner by plastic cutter as same as the right side piping. (Perform this procedure before the indoor unit is hung onto the wall.)

- When the left side piping is selected, the drain pipe outlet should be changed from right side to left side. If it is not changed to left side and the suspension bracket is fixed onto the wall with right down slope, the drain water flows back so that may cause water leakage from the drain pan.
- For the pipe installation embedded in the wall, the positions of piping are as follows.



NOTE

For RPK-(0.6-1.5)FSN(H)3M, it is recommended to connect the piping at the right rear side of the body to avoid the sound from the refrigerant running through.

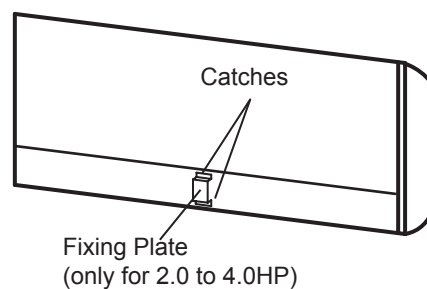


Unit: mm

Model	Liquid piping			
	a	b	c	Ød
RPK-(0.6-1.0)FSN(H)3M	45	638	107	Ø65
RPK-1.5FSN(H)3M	45	657	107	Ø65
RPK-(2.0-4.0)FSN3M	42	951	141	Ø80

Fix the fixing plate for pipes (accessory) as shown in the figure below.

Fix the fixing plate onto upper and lower catches.



17 REFRIGERANT PIPING WORK



DANGER

Use the specified non-flammable refrigerant (R410A) to the outdoor unit in the refrigerant cycle. Do not charge material other than R410A into the unit such as hydrocarbon refrigerants (propane or etc.), oxygen, flammable gases (acetylene, etc.) or poisonous gases when installing, maintaining and moving. These flammables are extremely dangerous and may cause an explosion, a fire, and injury.



NOTE

For RPK-(0.6-1.5)FSN(H)3M

- The optional expansion valve kit is required for the refrigerant piping work. Refer to the "Installation and Operation Manual of the Expansion Valve Kit" for refrigerant piping procedures, pipe sizes, additional refrigerant charge and the number of connectable units.
- The temperature of the liquid piping between the expansion valve kit and the indoor units becomes lower than the standard indoor units. Additional insulation work should be required for the liquid piping depending on the operating conditions.

For the refrigerant piping work, vacuum pump and refrigerant charge, the details shall be referred to "Installation and Operation Manual" of the outdoor unit.

17.1 PIPING MATERIALS

- The tolerance of refrigerant piping length differs depending on the combination with the outdoor unit. The details shall be referred to "Installation and Operation Manual" of the outdoor unit.
- Select the piping size from the following table.

Unit: mm

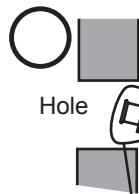
Model	Gas piping	Liquid piping
RPK-(0.6-1.5)FSN3M	Ø12.7 (1/2)	Ø6.35 (1/4)
RPK-2.0FSN3M	Ø15.88 (5/8)	Ø6.35 (1/4)
RPK-(2.5-4.0)FSN3M	Ø15.88 (5/8)	Ø9.52 (3/8)
RPK-(0.6-1.5)FSNH3M	Ø12.7 (1/2)	Ø9.52 (3/8)

- Prepare field-supplied copper pipes.

- Select clean copper pipes. Make sure there is no dust and moisture inside.
- As the new refrigerant (R410A) is adopted, the refrigerant oil has been also changed, which tends to be affected by foreign matters such as moisture, oxide film, fat. Perform the installation work with care not to enter moisture, dust or old refrigerant into the refrigerant cycle, otherwise the parts such as expansion valve bite foreign matter and the operation may be unavailable.
- Use a pipe cutter to avoid a grind swarf generation for the pipe cutting work. (Do not use a saw or a grind stone to cut pipes.) Blow the inside of the pipes with nitrogen or dry air, to remove any dust or foreign materials before connecting pipes.

When installing pipe through the wall, secure a cap at the end of the pipe.

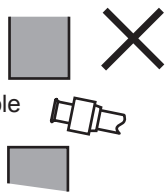
Correct



Hole

Attach a cap or vinyl tape.

Incorrect



Hole

Do not place the pipe directly on the ground.

Correct



Attach a cap or vinyl tape.

Incorrect



Correct



Incorrect



Rain water can enter.



Attach a cap or vinyl bag with rubber band.

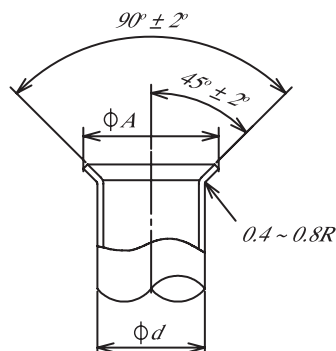


17.2 PIPING CONNECTION

CAUTION

Avoid attaching the refrigerant or the refrigerant oil to the upper part of indoor unit. Otherwise, it will be damaged the indoor unit cover and it may cause falling of indoor unit. If the refrigerant or the refrigerant oil is attached, wipe it off completely.

- 1 Perform the flaring work as shown below.



mm (in.)	
Diameter (ϕd)	A $\begin{smallmatrix} +0 \\ -0.4 \end{smallmatrix}$
6.35 (1/4)	9.1
9.52 (3/8)	13.2
12.7 (1/2)	16.6
15.88 (5/8)	19.7

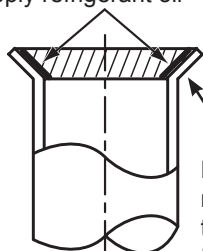
- 2 Use specific flare nut.
- 3 Check that there are no scratch, swarf, deformation, gap, etc. at the flaring part.
- 4 Apply the refrigerant oil in a thin layer to the inside of the flaring part of the pipe before tightening the flare nut. And the flare nut must be tightened using two spanners according to the tightening torque as shown in the figure below. The tightening work will be easier if tightening the flare pipe in order of the liquid pipe, the gas pipe. Check the leakage of the refrigerant after the tightening work.

NOTE

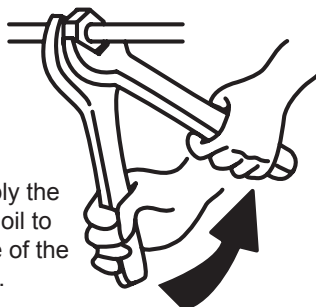
Refrigerant oil is field-supplied.

[Ethereal Oil FVC50K, FVC68D (Idemitsu Kousan Co. Ltd.)]

Apply refrigerant oil



Do not apply the refrigerant oil to the outside of the flaring part.



Required tightening torque

(JIS B8607)

Pipe size	Tightening torque
$\phi 6.35$ (1/4)	14 - 18 (N-m)
$\phi 9.52$ (3/8)	34 - 42 (N-m)
$\phi 12.7$ (1/2)	49 - 61 (N-m)
$\phi 15.88$ (5/8)	68 - 82 (N-m)

CAUTION

Tighten the flare nuts according to the specified torque. If not, it may cause the refrigerant leakage.

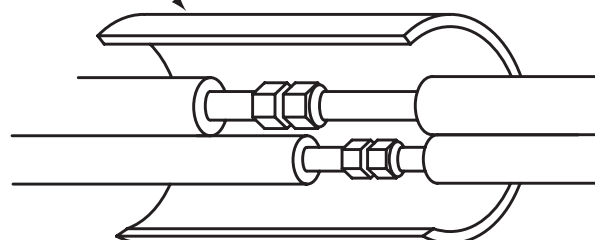
- 5 When on-site piping with joint such as elbow, socket is buried, provide a service access door to facilitate the check for connecting part.
- 6 Perform to support for earthquake resistant to the pipes in order not to damage by an external force.
- 7 Do not clamp tightly the refrigerant pipe when supporting for prevention of heat stress.
- 8 Do not touch the refrigerant pipes to low strength portions of walls or ceilings. If not, it may cause abnormal sound or vibration.
- 9 Perform the air tight test. The air tight procedures should be performed according to "Installation and Operation Manual" of the outdoor unit.
- 10 Insulate each flare connection without gap to prevent of dew condensation by using the accessory thermal insulation pipe. Additionally, insulate field gas and liquid pipings by using field-supplied thermal insulations.

Insulation for Indoor Piping Connection

Wrap the accessory thermal insulation pipe around the flare connection and fix it by tape as shown in the figure below:

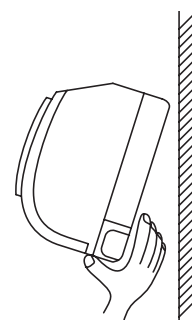
Thermal insulation pipe

(Accessory)



- 11 For left side piping perform the following piping connection work.

- a. It is recommended that the piping connection work be performed by 2 people: one supports the indoor unit and another performs the piping connection.
- b. Prepare the L-shaped pipe before the indoor unit is hung onto the wall.



CAUTION

- Pay attention not to unhook the indoor unit from the suspension bracket.
- Do not apply excessive force to the flare nut when tightening. If applied, the flare nut may crack due to aged degradation and refrigerant leakage may occur. Use the specified tightening torque.

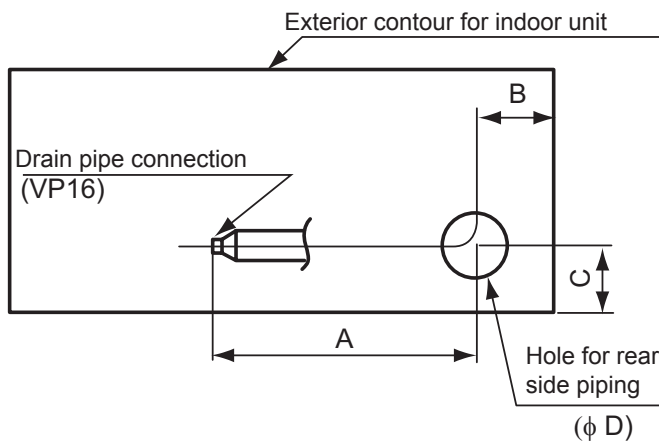
18 DRAIN PIPING

DANGER

Do not insert the drain pipe for the indoor unit to the drainage trench where corrosive gases occur. Poisonous gases flow into the room, so that may cause the poisoning.

NOTE

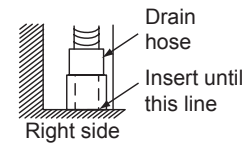
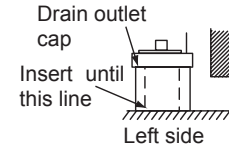
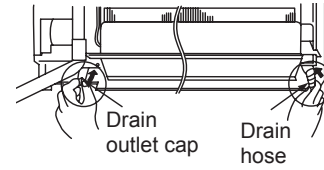
- Do not create an upper-slope or rise for the drain piping, since drain water can flow back to the indoor unit and leakage into the room will occur when the system operation is stopped.
 - Do not connect the drain pipe with sanitary or sewage piping or any other drainage piping.
 - When the common drain piping is connected with other indoor units, the connected position of each indoor unit must be higher than the common piping. The pipe size of the common drain pipe must be large enough according to the unit size and number of units.
 - After performing drain piping work and electrical wiring, check to ensure that water flows smoothly as in the following procedure.
- 1 The standard direction of drain piping connection is rear side as viewed from the discharge grilles. However, it can be performed from the left side or right side.



Unit: mm

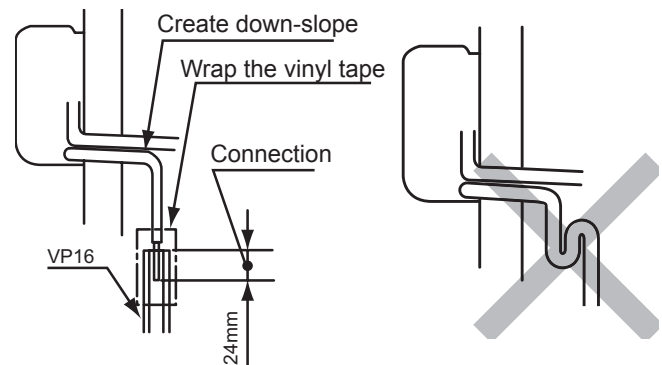
Model	A	B	C	ØD
RPK-(0.6-1.5)FSN(H)3M	568	107	45	65
RPK-(2.0-4.0)FSN3M	550	141	42	80

- 2 When the left side drain piping connection is performed, remove the cap of left side drain pipe, and then attach this cap to the right side drain pipe in order to change drain piping connection from right side to left side. If the cap is fixed tightly, remove the cap by using the plier. (Perform this procedure before the indoor unit is hung onto the wall.)



3 Connecting drain piping

- Provide a vinyl chloride pipe, VP16.
- When the drain hose is used, do not create rising part or twist.



- Wrap surely the vinyl tape around the drain piping connection.
 - Insulate surely the drain pipe after the vinyl chloride pipe connection is completed.
- Do not connect the drain pipe with sanitary or sewage piping or any other drainage piping.
 - After the drain piping work is completed, check that water flows smoothly by pouring water into the drain pan by a cup.
 - Wrap the field-supplied insulation around the drain pipe running through the indoor.
 - When installing the pipe, do not tie the drain pipe and refrigerant pipe together.

CAUTION

- Pay attention not to splash water to the electrical parts such as the fan motor or thermistors.
- When the common drain piping is connected with other indoor units, the connected position of each indoor unit must be higher than the common piping. The size of common drain pipe must be large enough according to the unit size and number of units.

19 ELECTRICAL WIRING



DANGER

- *The electrical wiring work must be performed by authorized installers. If not, it may cause an electric shock or a fire.*
- *Perform the electrical work according to each regulation of region and "Installation and Operation Manual", and the dedicated electrical circuit must be used. If not performing the electrical wiring work completely or a capacity shortage of the power circuit, it will cause an electric shock or a fire.*
- *Use the specified cables for wiring between the outdoor unit and indoor units. Selecting incorrect cables will cause an electric shock or a fire.*
- *Install an ELB (Earth Leakage Breaker) in the power source. If not used, it will cause an electric shock or a fire.*
- *Turn OFF the main power switch of the indoor unit and the outdoor unit before an electrical wiring work or a periodical check is performed. If not, it will cause an electric shock or a fire.*
- *Check to ensure that the indoor fan and the outdoor fan have stopped before electrical wiring work or a periodical check is performed.*
- *Protect the wires, drain pipe, electrical parts, etc. from rats or other small animals. If not protected, rats may gnaw at unprotected parts and at the worst, a fire will occur.*
- *Tighten screws according to the following torque.*

M3.5: 1.2 N·m

M4: 1.0 to 1.3 N·m

- *Connect earth wires for the outdoor / indoor unit to prevent an electrical shock or an unexpected accident. The earth resistance must be less than 1 megohm. The earth work must be performed by authorized installers.*
- *Turn completely OFF the power source to prevent an electrical shock when opening the service cover to perform the electrical work or the maintenance.*
- *Pay attention not to bite electrical wirings when attaching the service cover. It may cause an electrical shock or fire.*



CAUTION

- *Wrap the accessory packing around the wires, and plug the wiring connection hole with the seal material to protect the product from any condensate water or insects.*
- *Lead the wires through the knockout hole in the side cover when using conduit.*



NOTE

- *The procedure of the wiring work shall be performed according to this manual and "Installation & Operation Manual" of the outdoor unit.*
- *Connect correctly the power source line phases.*
3-Phase 4 Wires: L1, N
3-Phase 3 Wires: L1, L2
- *In the case of 3-Phases 4 Wires type. The power source must be applied from L1 line and N line. If applied from L1-L2, L1-L3, the electrical parts will be damaged.*
- *The control cable between the indoor unit and the outdoor unit does not have any polarity. Do not apply an excessively high voltage to the cable (Rated Voltage 5V). It may cause failure.*
- *The remote control switch cable (Field-Supplied) does not have any polarity. Do not apply an excessively high voltage to the cable (Rated Voltage 5V). It may cause failure.*
- *Maintain the rated voltage for the power source. It may be harmful to the unit if the voltage is either too high or too low.*
- *Take enough capacity for the power source. If not, the operation can not be started by the wide voltage reduction.*
- *The expansion valve kit should be used for "indoor unit wall type without expansion valve" installation together. Refer to the "Installation and Operation Manual of the Expansion Valve Kit" for wiring procedures.*
- *The expansion valve kit (option) installation work should be completed before turning on the power for the indoor unit side.*

19.1 GENERAL CHECK

- 1 Make sure that the field-selected electrical components (main power switches, circuit breakers, wires, conduit connectors and wire terminals) have been properly selected according to the electrical data given in "Technical Catalog". Make sure that the components comply with National Electrical Code (NEC).
- 2 Use the shielded twist pair cable for the control cable between the outdoor unit and the indoor unit, the control cable between indoor units and the remote control switch cable of PC-ARFPE.
- 3 Check to ensure that the power supply voltage is within $\pm 10\%$ of the rated voltage.
- 4 Check the capacity of the electrical wires. If the power source capacity is too low, the system cannot be started due to the voltage drop.
- 5 Check to ensure that the earth wire is connected.

19.2 ELECTRICAL WIRING CAPACITY

19.2.1 Field minimum wire sizes for power source

- Use an ELB (Earth Leakage Breaker). If not used, it will cause an electric shock or a fire.
- Do not operate the system until all the check points have been cleared.
 - a. Check to ensure that the electrical resistance is more than 1 megohm, by measuring the resistance between ground and the terminal of the electrical parts. If not, do not operate the system until the electrical leakage is found and repaired.
 - b. Check to ensure that the stop valves of the outdoor unit are fully opened, and then start the system.
 - c. Check to ensure that the switch on the main power source has been ON for more than 12 hours, to warm the compressor oil by the crankcase heater.
- Do not touch any of the parts by hand at the discharge gas side while the system is running, since the compressor chamber and the pipes at the discharge side are heated higher than 90°C.

Model	Power source	Maximum current	Power source cable size	Transmitting cable size
			EN 60335-1 *1	EN 60335-1 *1
RPK-(0.6-4.0)FSN(H)3M	1~ 230V 50Hz	5A	0.75mm ²	0.75mm ²



NOTE

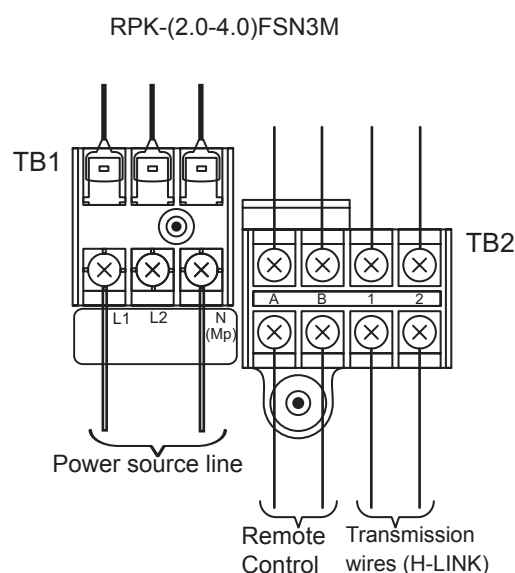
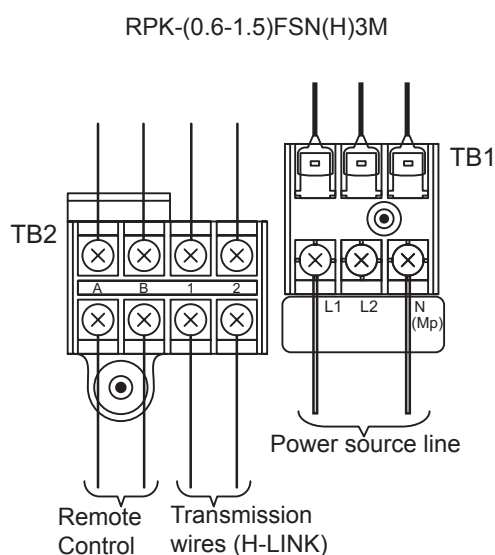
- Follow local codes and regulations when selecting field wires.
- The wire sizes marked with *1 in the above table are selected at the maximum current of the unit according to the European Standard, EN 60335-1. Use the wires which are not lighter than the ordinary tough rubber sheathed flexible cord (code designation H05RN-F) or ordinary polychloroprene sheathed flexible cord (code designation H05RN-F).
- Use a shielded cable for the transmitting circuit and connect it to ground.
- In the case that power cables are connected in series, add each unit maximum current and select wires below.

Selection according to EN 60335-1	
Current i (A)	Wire size (mm ²)
$i < 6$	0.75
$6 < i < 10$	1
$10 < i < 16$	1.5
$16 < i < 25$	2.5
$25 < i < 32$	4
$32 < i < 40$	6
$40 < i < 63$	10
$63 < i$	In the case that current exceeds 63A, do not connect cables in series.

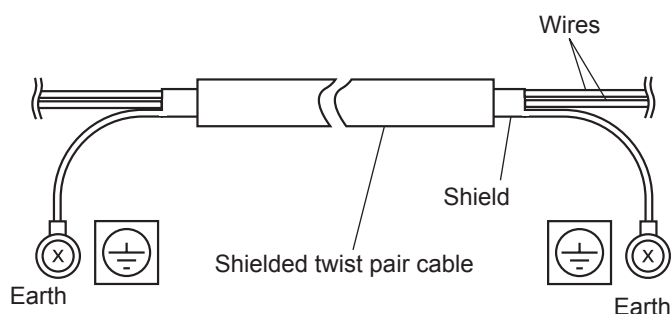
19.2.2 Details of electrical wiring connection

The electrical wiring capacity of the outdoor unit should be referred according to "Installation & Operation Manual" of the outdoor unit. Setting dip switch may be required depending on the combination with the outdoor unit.

- 1 Connect the power source cables (L1 and N phases (1~ 230V 50Hz)) to the terminal board correctly.



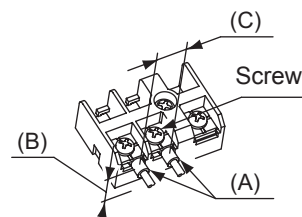
- 2 Connect the control cables between the indoor unit and the outdoor unit correctly. Check to ensure that the terminal for power source cable (Terminals "L1" to "L1" and "N" to "N" of each terminal board (1~230V 50Hz)) between the indoor unit and the outdoor unit coincide correctly. If not, some component will be damaged.
- 3 Use the shielded twist pair cable for control between the outdoor unit and the indoor units. They are connected to the terminals 1 and 2 of the terminal boards. The remote control switch cable is connected to the terminals A and B of each indoor unit terminal board.

**DANGER**

- **Tightly secure wirings to the terminal board according to the specified torque. If tightening the terminals is not completed, heat generation, an electric shock or a fire will occur at the terminal connection.**
- **Make sure that the wires are securely fixed in order not to apply an external force to the terminal connections of the wirings. If fixing is not completed, heat generation or a fire will occur.**
- **Fix the terminals that do not touch to the electrical box surface. If the terminals are closed to the surface, it may cause activation of ELB, heat generation at terminal connection, a fire or an electric shock.**

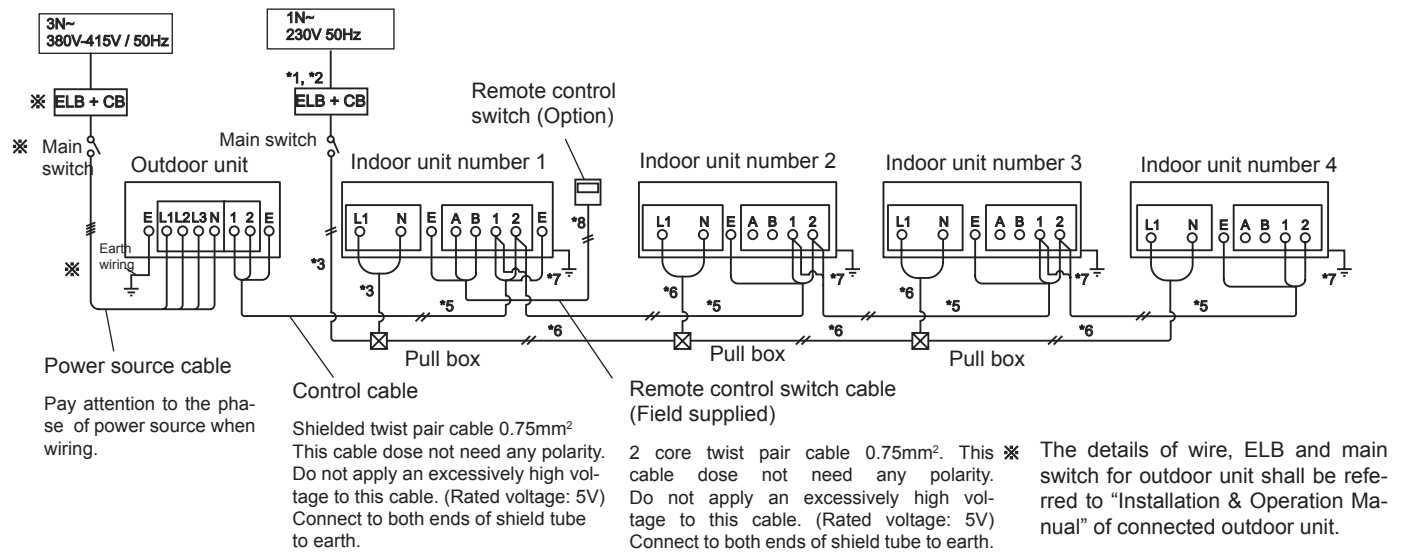
**CAUTION**

- **Do not connect the main power source cables to the control line (Terminals A, B, 1 and 2 of TB2). If connected, the printed circuit board (PCB) will be broken.**
- **Pay attention to followings when wires are connected to terminal board.**
 - (A) Attach an insulation tape or a sleeve to each terminal.
 - (B) Maintain the distance between the electrical box and the terminals to prevent a short circuit.
 - (C) Maintain the distance between the terminals.



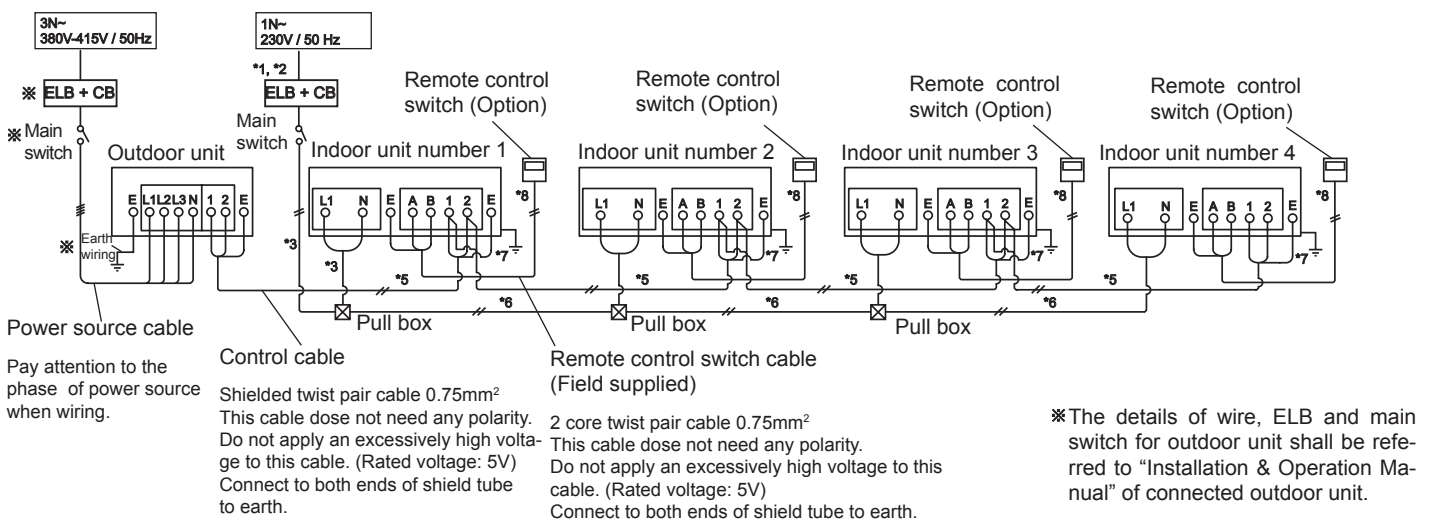
Example of Wiring Connection (Twin, Triple and Quad Combinations for Simultaneous Operation)

◆ 3N~ 400V 50Hz



Example of Wiring Connection (Twin, Triple and Quad Combinations for Individual Operation)

◆ 3N~ 400V 50Hz



Model	ELB	Main switch		Wiring size (mm ²)					
Combination	n / A / mA	Rated current (A)	Fuse capacity (A) or CB	Power source cable	Transition wiring between O.U. and I.U.		Transition wiring between indoor units *6	Earth wiring *7	Remote control switch cable *8
	Indoor *1	Indoor *2	Indoor *2	Indoor *3	Power supply < 20m *4	Control Circuit *5			
Single type	2 / 40 / 30	5	6	1.0	1.0	0.75	-	2.0	0.75
Twin, Triple, Quad							0.75	3.5	

ELB: Earth Leakage Breaker; I.U.: Indoor unit; O.U.: Outdoor unit



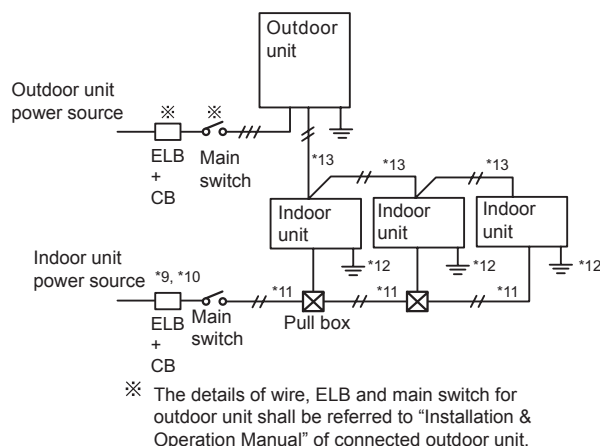
NOTE

For the total wiring length more than 20m, refer to "Installation & Operation Manual" of the outdoor unit.

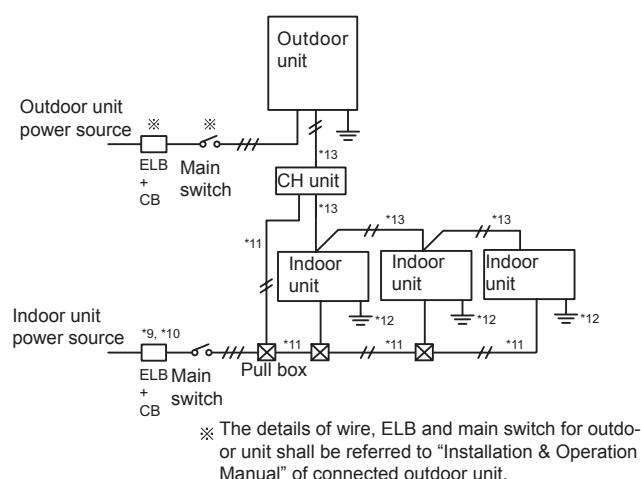
For SET-FREE Series

Select wiring capacity according to the following table. Install the ELB and the main switch to each as shown in the figures below.

◆ Heat pump system



◆ Heat recovery system



Total indoor unit capacity	Power Source					Earth wire size (mm²) *12	Transition wire size for control circuit (mm²) *13	Remote control switch cable (mm²)
	ELB	Main Switch		Minimum wire size (mm²)	Wiring length (m)*11			
	n / A / mA	Switch capacity (A) *10	Fuse capacity (A) or CB *10					
< 7A	2 / 40 / 30	30	15	2.5	30	3.5	2 Core cable (Shielded twist pair cable) 0.75 ~ 1.25	2 core twist pair cable 0.75
<10A		30	20	4.0	34			
< 15A		30	30	6.0	34			

ELB: Earth Leakage Breaker

*1): The above wiring line length shows the case that the indoor units are connected in series. (The voltage drop is within 2%.) When the power source wiring is longer than the above value, select the minimum wiring size which the voltage drop is within 2%.

NOTE

- Check the recommended size of the ELB shown in table. Select high-sensitive high speed ELB when the rated sensitive current is less than 30mA. (The motion time should be within 0.1 second.)
- Use 2 core cable or 2 core twist pair cable (Shielded twist pair cable for the total wiring length more than 100m) for the control cable between the outdoor unit and the indoor unit. The total cable length should be less than 1000m.
- Use 2 core twist pair cable for the remote control switch cable and the control cable between indoor units. The total cable length should be less than 500m. If the total length of the cable is less than 30m, other cables can be used (the cable size is 0.3mm²).
- Select the wiring size, ELB (Earth Leakage Breaker) and isolating switch according to each regulation of region and "Installation & Operation Manual", and the dedicated electrical circuit must be used.
- On the outside indoor unit, the power source cable, control cable and remote control cable shall be installed separately as possible.

NOTE

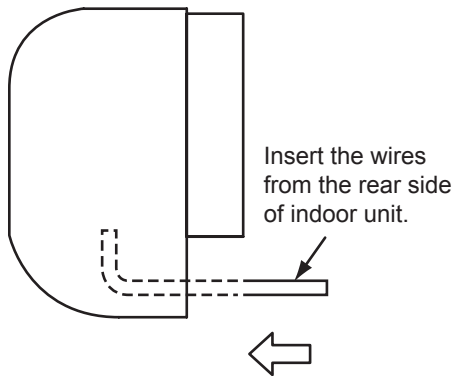
- The dip switches setting in the outdoor unit should be performed according to "Installation & Operation Manual" of the outdoor unit.
- Pay attention that the transition wiring for the remote control switch is required in the following cases.
 - The following functions are set to the sub unit which is not installed the remote control switch.
 - * "Remote ON/OFF function, 1, 2 and 3" (external input / output function)
 - * "Power supply ON/OFF function, 1 and 2" (function selection)
 - * "Prohibiting remote control after manual stoppage" (external input / output function)
 - * "Group setting by the centralized controller"
 - The combination of twin, triple or quad is controlled by one remote control switch.
 - The address of the indoor unit is changed from the remote control switch.

19.3 WIRING CONNECTION

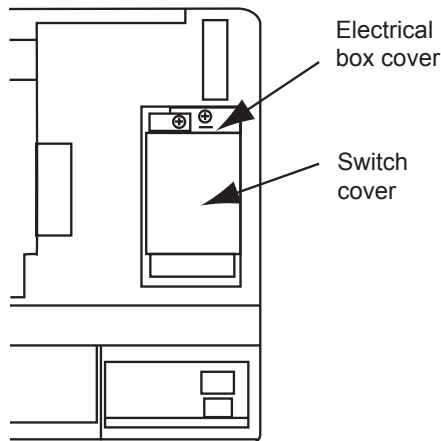
The wiring connection of indoor unit is shown below.

◆ RPK-(0.6-1.5)FSN(H)3M

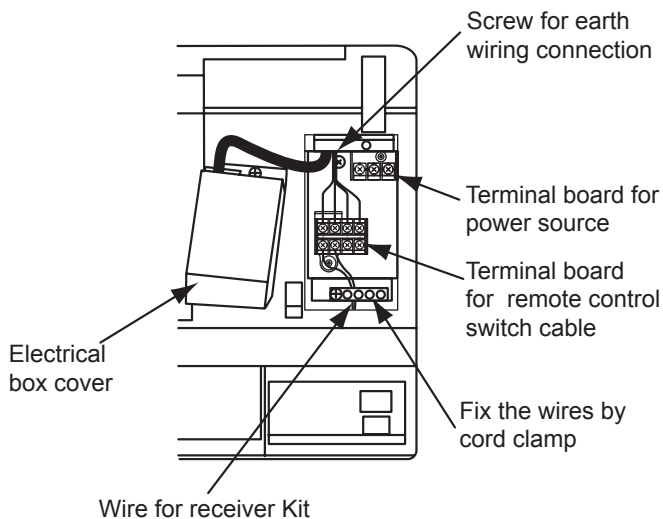
- 1 Insert the wires from the rear side of indoor unit as shown in the figure below.



Position of electrical box cover. The figure below shows that the front panel is removed. The electrical box cover can be opened without removing the front panel.

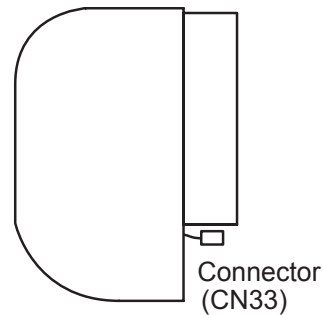


- 2 Open the electrical box cover and perform the field electrical wiring work. Close the electrical box cover after the electrical wiring work is completed.

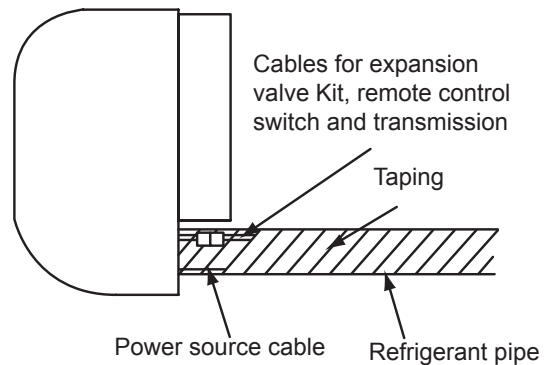


◆ For RPK-(0.6-1.5)FSNH3M

- 1 The procedure of the wiring connection to the terminal boards is the same with the standard indoor unit.
- 2 The connector (CN33) for the expansion valve kit is fixed at the rear side of the electrical control box with tape. Connect the extension cable of optional expansion valve kit to CN33.

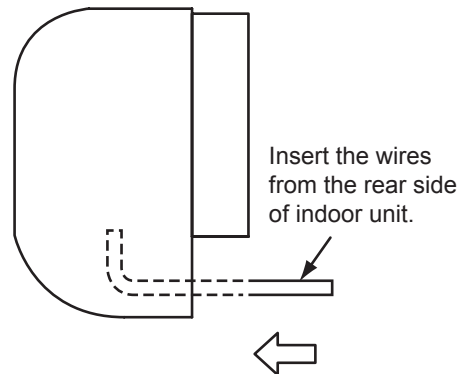


- 3 Securely fix the extension cable (accessory of the optional expansion valve kit) along the refrigerant pipe with tape. At this time, the refrigerant pipe should be positioned between the power source cable and cables for expansion valve kit, remote control switch and transmission in order to prevent malfunction as shown in the figure below.

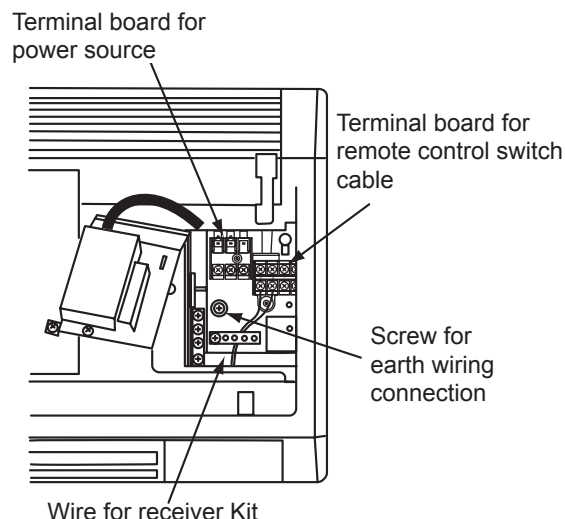
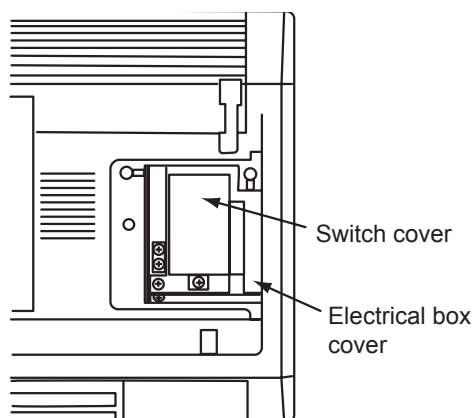


◆ RPK-(2.0-4.0)FSN3M

- 1 Insert the wires from the rear side of indoor unit as shown in the figure below.



Position of electrical box cover. The figure below shows that the front panel is removed. The electrical box cover can be opened without removing the front panel.

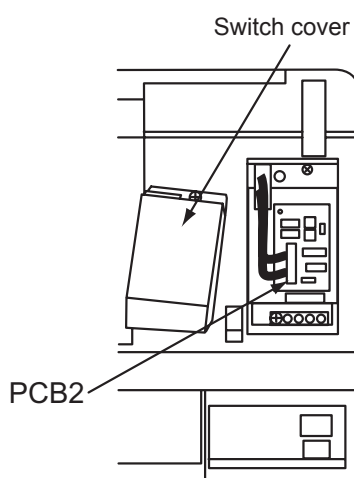


- 2 Open the electrical box cover and perform the field electrical wiring work. Close the electrical box cover after the electrical wiring work is completed.

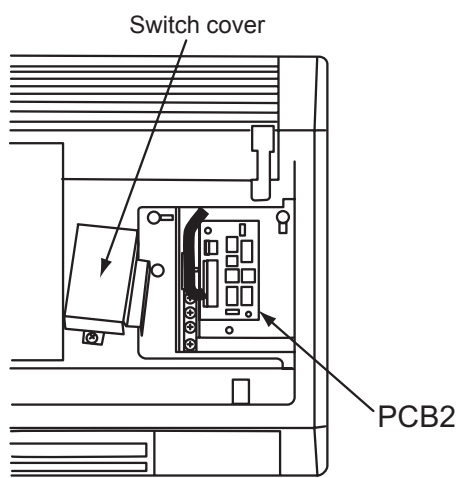
19.4 DIP SWITCH SETTING

- 1 Turn OFF all the power supply to the indoor and the outdoor units before dip switch setting. If not, the setting is invalid.
- 2 The positions of dip switches on PCB are shown in the figure below. Open the switch cover. After the dip switches are set, attach the switch cover again.

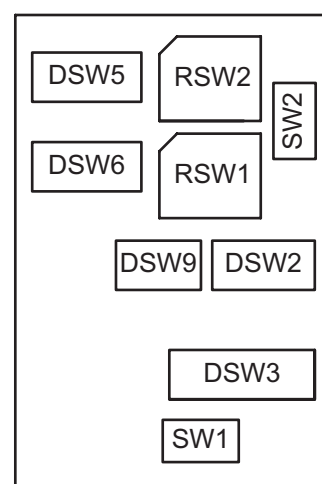
RPK-(0.6-1.5)FSN(H)3M



RPK-(2.0-4.0)FSNH3M



Dip Switch PCB (PCB2)



- 3 Unit No. Setting (RSW1 & DSW6). The indoor unit No. of all indoor units are not required. The indoor unit numbers are set by the auto-address function. If the indoor unit number setting is required, set the unit No. of all indoor units respectively and serially by following setting position. It is recommended that the unit number setting start from "1". For the centralized control, this setting is required.

Unit number setting

DSW6 (Tens digit)	RSW1 (Units digit)	Ex.) Set at number 16 Unit
Before shipment, DSW6 and RSW1 are set to "0". Max. 64 units are available to set when all the equipment to be connected are corresponding to H-LINK II. Max. 16 units when the units corresponding/ non-corresponding to H-LINK II are combined.		Set number 1 pin at ON side

- 4 Capacity code setting (DSW3). No setting is required, due to setting before shipment. This switch is used for setting the capacity code which corresponds to the Horse Power of the indoor unit.

Horsepower	0.6	0.8	1.0	1.5	2.0	2.5	3.0	4.0
Setting position								

- 5 Refrigerant cycle number setting (RSW2 & DSW5). Setting is required. Setting positions before shipment are all OFF.

Refrigerant cycle number setting

DSW5 (Tens digit)	RSW2 (Units digit)	Ex.) Set at number 5 cycle
		DSW5 Set all pins OFF RSW2 Set at "5"
Before shipment, DSW5 and RSW2 are set to "0". Max. 64 cycles are available to set when all the equipment to be connected are corresponding to H-LINK II. Max. 16 cycles when the units corresponding/ non-corresponding to H-LINK II are combined.		

- 6 Fuse recover (DSW7). (This dip switch is located on PCB1.)

* In the case of applying high voltage to the terminal 1 and 2 of TB2, the fuse (0.5A) on the PCB is cut. In such a case, firstly reconnect the wirings correctly to TB2, and then turn on Number 1 pin.

Factory setting	High voltage

- 8 Remote control switch setting (SW2). The setting before shipment is "Wireless".

* In case of using the wired remote control (PC-ARFPE) and the receiver kit (PC-ALHZ), set the SW2 to "Wired". If not, the operation is not available. Connect the remote control switch cables to terminals A and B at the terminal board TB2.

Factory setting	Wired remote control
Wired Wireless	Wired Wireless

- 7 Optional function setting (DSW2). No setting is required. Setting positions before shipment are all OFF.

Factory setting	Distinguish of indoor units using wireless remote control



NOTE

- The "■" mark indicates position of dip switches. Figures show setting before shipment.
- When the unit number and the refrigerant cycle are set, record the unit number and refrigerant cycle to facilitate maintenance and servicing activities thereafter.
- Turn OFF all the power supply of the indoor unit and the outdoor unit before Dip Switch setting. If not, the setting is invalid.
- In case of using the wired remote control or receiver kit PC-ALHZF set the SW2 to "Wired".

- 9 (SW1) No settings are required. Factory setting:



- 10 (DSW9) No settings are required. Factory setting:



NOTE

- In order to identify one indoor unit with its own wireless remote control, set DSW2 pin3 ON and set the wireless remote control at "b" mode. For more information, please refer to the corresponding Installation and Operation Manual.
- When using a wireless remote controller, no additional receivers are required for individual operation.
- For simultaneous operation it is required:
Option 1: PC-ARFPE remote control.
Option 2: In the case of wireless operation with PC-LH3B, PC-ALHZF receiver kit is necessary.
In both options change SW2 to wired setting.

20 TEST RUN

Test run should be performed according to this manual and "Installation & Operation Manual" of the outdoor unit.

DANGER

- **Check to ensure that the electrical resistance is more than 1 megohm, by measuring the resistance between ground and the terminal of the electrical parts. If not, do not operate the system until the electrical leakage is found and repaired.**
- **Do not touch any of the parts at the discharge gas side by hand while the system is running, since the compressor chamber and the pipes at the discharge side are heated higher than 90°C.**



NOTE

- Check to ensure that the stop valves of the outdoor unit are fully opened, and then start the system.
- Check to ensure that the switch on the main power source has been ON for more than 12 hours, to warm the compressor oil by the crankcase heater.

20.1 BEFORE TEST RUN

Recheck that there is not any problems to the installation, and do not perform the test run until all the following checking points have been cleared.

- 1 Check to ensure that the refrigerant piping and the transition wiring are connected to the same refrigerant cycle system. If not, it will cause an abnormal operation and breakage of instruments.
- 2 Do not apply the high voltage to the terminals for the transmission (TB2 [A, B, 1 and 2]).
- 3 Check to ensure that each wire is correctly connected at the phase of power source. If incorrectly connected, the unit will not operate and the remote control switch will indicate the alarm code "05". In this case, check the phase of the primary power source according to the attached attention label on the rear side of the service cover. Then, perform the reconnection work correctly with turning OFF the power supply.
- 4 For wired remote control switch (PC-ARFPE), set the SW2 to "Wired" because the setting before shipment is "Wireless". If not, the operation is not available.



NOTE

The RUN indicator on indoor unit is turned ON even when the wired remote control switch is used. However, the indication for timer settings are only indicated on the wired remote control switch.

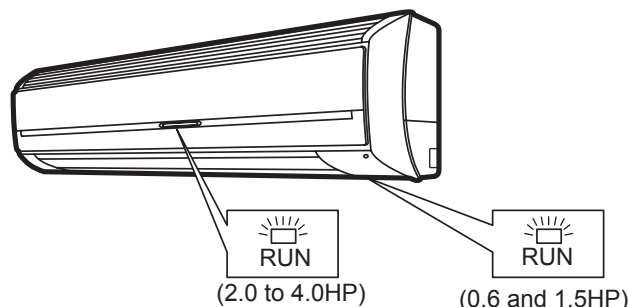
- 5 For the indoor unit wall type without expansion valve, check that the optional expansion valve kit is installed without fail before test run.

20.2 START TEST RUN

After the installation work is completed, test run should be performed.

In the case that indoor units are connected to the VRF system, perform the test run of the indoor unit one by one sequentially and then check accordance of the refrigerant piping system and the electrical wiring system. (If the multiple indoor units are operated simultaneously, the system can not be inspected the system accordance.).

Operate the test run by pointing the transmitter towards the receiver of the indoor unit and press the "RUN/STOP" switch. When the commands are received by the indoor unit, the "RUN" indicator (orange) of the receiver is turned ON.



NOTE

In the case that the "RUN" indicator does not turn ON, the controls may not have reached the receiver. Send the commands again.

For more information, please refer to remote control "Installation & Operation Manual".

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