MITSUBISHI ELECTRIC

Mr.SLIM

Air-Conditioners
PMH-P·BA

INSTALLATION MANUAL
FOR INSTALLER

For safe and correct use, read this manual and the outdoor unit installation manual thoroughly before installing the air-conditioner unit.

English

INSTALLATIONSHANDBUCH
FÜR INSTALLATEURE

Aus Sicherheitsgründen und zur richtigen Anwendung vor Installation der Klimaanlage die vorliegende Bedienungsanleitung und das Installationshandbuch gründlich durchlesen.

Deutsch

MANUEL D'INSTALLATION
POUR L'INSTALLATEUR

Avant d'installer le climatiseur, lire attentivement ce manuel, ainsi que le manuel d'installation de l'appareil extérieur pour une utilisation sûre et correct.

Français

INSTALLATIEHANDLEIDING
VOOR DE INSTALLATEUR

Lees deze handleiding en de installatiehandleiding van het buitenapparaat zorgvuldig door voordat u met het installeren van de airconditioner begint.

Nederlands

MANUAL DE INSTALACIÓN
PARA EL INSTALADOR

Para un uso seguro y correcto, lea detalladamente este manual de instalación antes de montar la unidad de aire acondicionado.

Español

MANUALE DI INSTALLAZIONE
PER L'INSTALLATORE

Per un uso sicuro e corretto, prima di installare il condizionatore d'aria leggere attentamente il presente manuale ed il manuale d'installazione dell'unità esterna.

Italiano

ΕΓΧΕΙΡΙΔΙΟ ΟΔΗΓΙΩΝ ΕΓΚΑΤΑΣΤΑΣΗΣ
ΓΙΑ ΑΥΤΟΝ ΠΟΥ ΚΑΝΕΙ ΤΗΝ ΕΓΚΑΤΑΣΤΑΣΗ

Για σωστή και ασφαλή χρήση, διαβάστε προσεκτικά αυτό το εγχειρίδιο, καθώς και το εγχειρίδιο εγκατάστασης της εξωτερικής μονάδας, πριν από την εγκατάσταση της μονάδας κλιματιστικού.

Ελληνικά

MANUAL DE INSTALAÇÃO
PARA O INSTALADOR

Para uma utilização segura e correcta, leia atentamente este manual e o manual de instalação da unidade exterior antes de instalar o aparelho de ar condicionado.

Português

INSTALLATIONSMANUAL
TIL INSTALLATØREN

Læs af sikkerhedshensyn denne manual samt manualen til installation af udendørsenheden grundigt, før du installerer klimaanlægget.

Dansk

INSTALLATIONSMANUAL
FÖR INSTALLATÖREN

Läs bruksanvisningen och utomhusenhetens installationshandbok noga innan luftkonditioneringen installeras så att den används på ett säkert och korrekt sätt.

Svenska

MONTAJ ELKİTABI
MONTÖR İÇİN

Emniyetli ve doğru kullanım için, klima cihazını monte etmeden önce bu kılavuzu ve dış ünite montaj kılavuzunu tamamıyla okuyun.

Türkçe

РУКОВОДСТВО ПО УСТАНОВКЕ
ДЛЯ УСТАНОВИТЕЛЯ

Для обеспечения безопасной и надлежащей эксплуатации внимательно прочтите данное руководство и руководство по установке наружного прибора перед установкой кондиционера.

Русский

Contents

1. Safety precautions

- **Before installing the unit, make sure you read all the "Safety precautions".**
- **Please report to your supply authority or obtain their consent before connecting this equipment to the power supply system.**

⚠ Warning:
Describes precautions that must be observed to prevent danger of injury or death to the user.

⚠ Caution:
Describes precautions that must be observed to prevent damage to the unit.

After installation work has been completed, explain the "Safety Precautions," use, and maintenance of the unit to the customer according to the information in the Operation Manual and perform the test run to ensure normal operation. Both the Installation Manual and Operation Manual must be given to the user for keeping. These manuals must be passed on to subsequent users.

⏚ : Indicates a part which must be grounded.

⚠ Warning:
Carefully read the labels affixed to the main unit.

⚠ Warning:

- **Ask a dealer or an authorized technician to install the unit.**
- **For installation work, follow the instructions in the Installation Manual and use tools and pipe components specifically made for use with refrigerant specified in the outdoor unit installation manual.**
- **The unit must be installed according to the instructions in order to minimize the risk of damage from earthquakes, typhoons, or strong winds. An incorrectly installed unit may fall down and cause damage or injuries.**
- **The unit must be securely installed on a structure that can sustain its weight.**
- **If the air conditioner is installed in a small room, measures must be taken to prevent the refrigerant concentration in the room from exceeding the safety limit in the event of refrigerant leakage. Should the refrigerant leak and cause the concentration limit to be exceeded, hazards due to lack of oxygen in the room may result.**
- **Ventilate the room if refrigerant leaks during operation. If refrigerant comes into contact with a flame, poisonous gases will be released.**
- **All electric work must be performed by a qualified technician according to local regulations and the instructions given in this manual.**
- **Use only specified cables for wiring.**
- **The terminal block cover panel of the unit must be firmly attached.**
- **Use only accessories authorized by Mitsubishi Electric and ask a dealer or an authorized technician to install them.**
- **The user should never attempt to repair the unit or transfer it to another location.**
- **After installation has been completed, check for refrigerant leaks. If refrigerant leaks into the room and comes into contact with the flame of a heater or portable cooking range, poisonous gases will be released.**

1.1. Before installation (Euvironment)

⚠ Caution:

- **Do not use the unit in an unusual environment. If the air conditioner is installed in areas exposed to steam, volatile oil (including machine oil), or sulfuric gas, areas exposed to high salt content such as the seaside, the performance can be significantly reduced and the internal parts can be damaged.**
- **Do not install the unit where combustible gases may leak, be produced, flow, or accumulate. If combustible gas accumulates around the unit, fire or explosion may result.**
- **Do not keep food, plants, caged pets, artwork, or precision instruments in the direct airflow of the indoor unit or too close to the unit, as these items can be damaged by temperature changes or dripping water.**
- **When the room humidity exceeds 80% or when the drainpipe is clogged, water may drip from the indoor unit. Do not install the indoor unit where such dripping can cause damage.**
- **When installing the unit in a hospital or communications office, be prepared for noise and electronic interference. Inverters, home appliances, high-frequency medical equipment, and radio communications equipment can cause the air conditioner to malfunction or breakdown. The air conditioner may also affect medical equipment, disturbing medical care, and communications equipment, harming the screen display quality.**

1.2. Before installation or relocation

⚠ Caution:

- **Be extremely careful when transporting the units. Two or more persons are needed to handle the unit, as it weighs 20 kg or more. Do not grasp the packaging bands. Wear protective gloves as you can injure your hands on the fins or other parts.**
- **Be sure to safely dispose of the packaging materials. Packaging materials, such as nails and other metal or wooden parts may cause stabs or other injuries.**
- **Thermal insulation of the refrigerant pipe is necessary to prevent condensation. If the refrigerant pipe is not properly insulated, condensation will be formed.**
- **Place thermal insulation on the pipes to prevent condensation. If the drainpipe is installed incorrectly, water leakage and damage to the ceiling, floor, furniture, or other possessions may result.**
- **Do not clean the air conditioner unit with water. Electric shock may result.**
- **Tighten all flare nuts to specification using a torque wrench. If tightened too much, the flare nut can break after an extended period.**

1.3. Before electric work

⚠ Caution:

- **Be sure to install circuit breakers. If not installed, electric shock may result.**
- **For the power lines, use standard cables of sufficient capacity. Otherwise, a short circuit, overheating, or fire may result.**
- **When installing the power lines, do not apply tension to the cables.**
- **Be sure to ground the unit. If the unit is not properly grounded, electric shock may result.**
- **Use circuit breakers (ground fault interrupter, isolating switch (+B fuse), and molded case circuit breaker) with the specified capacity. If the circuit breaker capacity is larger than the specified capacity, breakdown or fire may result.**

1.4. Before starting the test run

⚠ Caution:

- **Turn on the main power switch more than 12 hours before starting operation. Starting operation just after turning on the power switch can severely damage the internal parts.**
- **Before starting operation, check that all panels, guards and other protective parts are correctly installed. Rotating, hot, or high voltage parts can cause injuries.**
- **Do not operate the air conditioner without the air filter set in place. If the air filter is not installed, dust may accumulate and breakdown may result.**
- **Do not touch any switch with wet hands. Electric shock may result.**
- **Do not touch the refrigerant pipes with bare hands during operation.**
- **After stopping operation, be sure to wait at least five minutes before turning off the main power switch. Otherwise, water leakage or breakdown may result.**

2. Installing the indoor unit

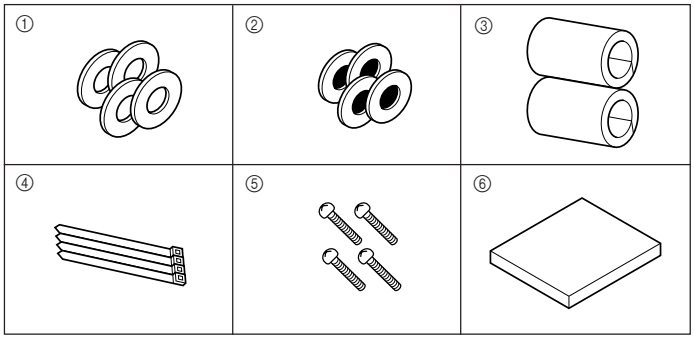
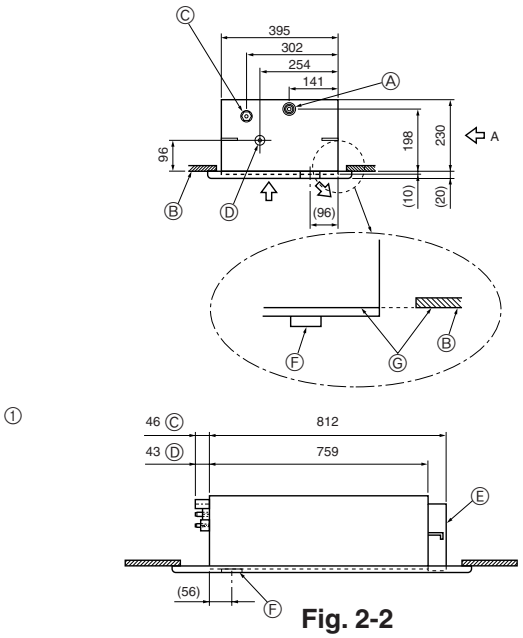


Fig. 2-1

The indoor unit should be supplied with the following spare parts and accessories (contained in the inside of the intake grille). (Fig. 2-1)

	Accessory name	Q'ty
①	Washer	4 pcs
②	Washer (with insulation)	4 pcs
③	Pipe cover	2 pcs
④	Band	4 pcs
⑤	Screw	4 pcs M5 × 0.8 × 30
⑥	Remote controller	1 pc

2.1. Refrigerant and drainage piping locations (Fig. 2-2)



Ⓐ Drain pipe (Use PVC pipe O.D. ø26)
Ⓑ Ceiling panel (underside)
Ⓒ Refrigerant pipe (gas)
Ⓓ Refrigerant pipe (liquid)
Ⓔ Electrical box
Ⓕ Drain pan
Ⓖ Make sure these surfaces are flush with each other.
① Viewed from point A

Fig. 2-2

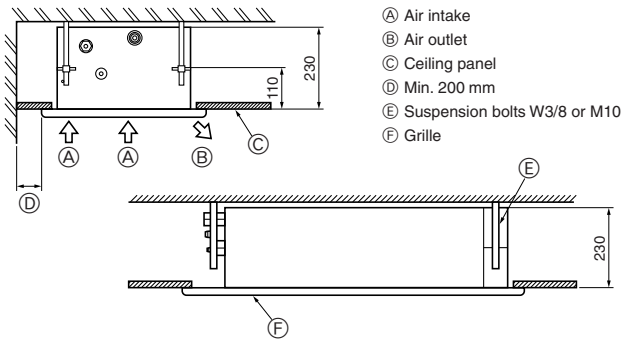
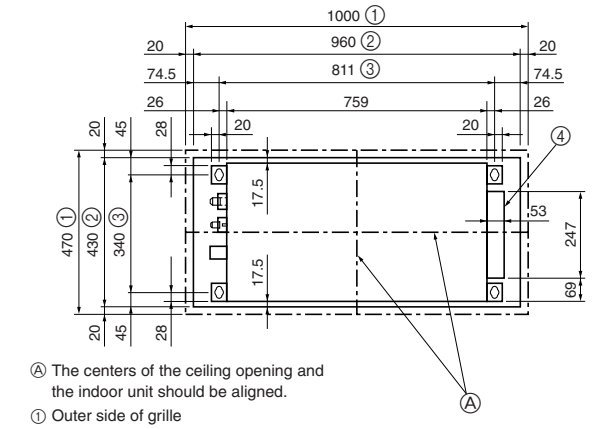


Fig. 2-3

2.2. Service space (Fig. 2-3)

- The dimensions of ceiling opening can be regulated within the range shown in following diagram; so center the main unit against the opening of ceiling, ensuring that the respective opposite sides on all sides of the clearance between them becomes identical.



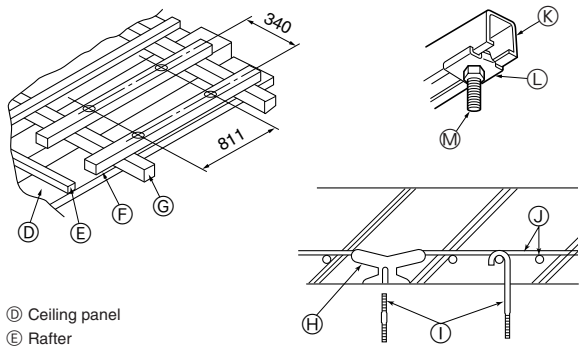
Ⓐ The centers of the ceiling opening and the indoor unit should be aligned.
① Outer side of grille
② Ceiling opening
③ Bolt pitch
④ Electric box

Fig. 2-4

2.3. Ceiling openings and suspension bolt installation locations (Fig. 2-4)

- Make an opening in the ceiling 430 mm × 960 mm in size. This functions as a check window and will be needed later during servicing.
- If the dimensions are not accurate, when the grille is installed there may be gaps between it and the indoor unit. This may result in dripping water or other problems.
- When deciding on placement, consider carefully the space around the ceiling and make your measurements generous.
- Ceiling types and building construction differ. Therefore you should consult with the builder and decorator.
- Using the installation template (top of the package) and the gauge (supplied as an accessory with the grille), make an opening in the ceiling so that the main unit can be installed as shown in the diagram. (The method for using the template and the gauge are shown.)
- Use M10 (3/8") suspension bolts.
  * Suspension bolts are to be procured at the field.
- After suspending the indoor unit, you will have to connect the pipes and wiring above the ceiling. Once the location has been fixed and the direction of the pipes has been determined, place the refrigerant and drainage pipes, the wiring for the remote controller, and the wiring that connects the indoor and outdoor units in their desired locations before suspending the indoor unit. This is especially important in cases where the ceiling is already in existence.

2. Installing the indoor unit



(mm)

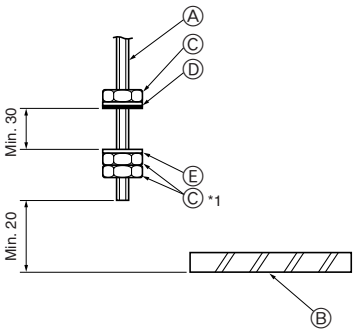
Ⓓ Ceiling panel
Ⓔ Rafter
Ⓕ Beam
Ⓖ Roof beam
Ⓗ Use inserts rated at 100-150 kg each (procure locally)
Ⓘ Suspension bolts M10 (3/8") (procure locally)
Ⓙ Steel reinforcing rod
Ⓚ C channel
Ⓛ Channel suspension bracket
Ⓜ M10 suspension bolt

Fig. 2-5

① Wooden structures (Fig. 2-5)
- Use tie beams (single storied houses) or second floor beams (two story houses) as reinforcing members.
- Wooden beams for suspending air conditioners must be sturdy and their sides must be at least 6 cm long if the beams are separated by not more than 90 cm and their sides must be at least 9 cm long if the beams are separated by as much as 180 cm. The size of the suspension bolts should be ø10 (3/8"). (The bolts do not come with the unit.)
- Use channel, duct and other parts procured locally to suspend the indoor unit.

② Ferro-concrete structures

Secure the suspension bolts using the method shown, or use steel or wooden hangers, etc. to install the suspension bolts.



(mm)

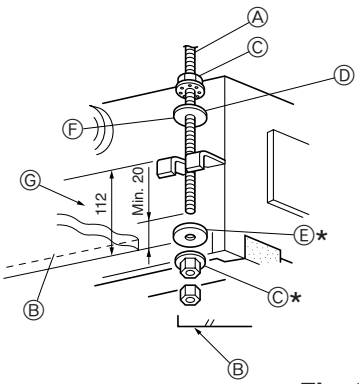
Ⓐ Suspension bolt
Ⓑ Ceiling panel
Ⓒ Nut
Ⓓ Washer (with insulation) ②
Ⓔ Washer (without insulation) ①

Fig. 2-6

2.4. Unit suspension procedures (Fig. 2-6)

Procure 3/8" bolts or M10 bolts locally.
- Adjust the length of the bolt's protrusion from the ceiling surface beforehand.

*1. When using an extra upper nut in suspending the unit, in some cases you may have to add it later.

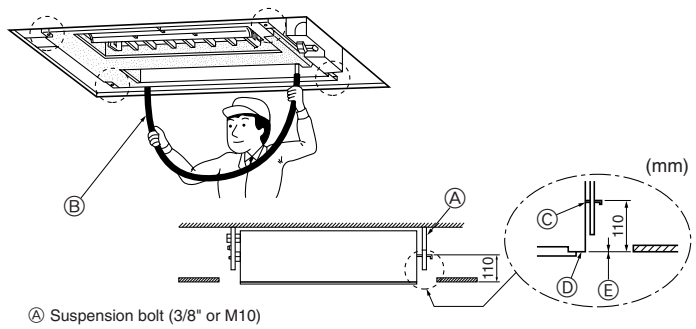


(mm)

Ⓐ Suspension bolt (3/8" or M10)
Ⓑ Ceiling surface
Ⓒ Nut (3/8" or M10)
Ⓓ Washer ② (with insulation)
Ⓔ Washer ①
Ⓕ (Install with insulation facing down)
Ⓖ Measurement to upper face of bracket

Fig. 2-7

Check the pitch of the suspension bolt. (340 mm × 811 mm) (Fig. 2-7)
1. Thread washers ① ② (supplied) and their nuts (procured locally) onto the suspension bolt in advance.
   * Do this in the following order (from the top): nut, insulated washer ②, washer without insulation ①, two nuts.
   * Position insulated washer ② with the insulated surface pointing down, as in the figure.
2. Lift the unit into place, aligned properly with the suspension bolt. Pass the bracket between washers ① and ②, which are already in place, and secure it. Do the same in all four places.
   * Make sure the suspension bolt extends 20 mm or more from the surface of the ceiling. Otherwise you will not be able to install the cover panel (sold separately).
3. If the long opening in the bracket and opening in the ceiling do not align, adjust them until they do.



(mm)

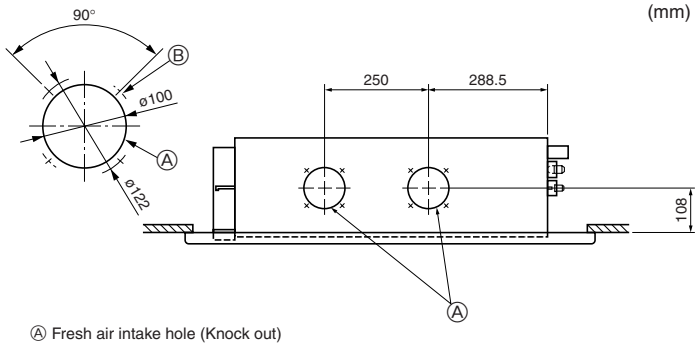
Ⓐ Suspension bolt (3/8" or M10)
Ⓑ Clear plastic tubing
Ⓒ Underside of bracket
Ⓓ Secure front panel here
Ⓔ Make these surfaces are flush with each other (0 - 3 mm)

Fig. 2-8

4. Check that the four corners are all level, using a spirit level or clear plastic tubing with water in it.
   * Make sure that any slant in the unit after installation is less than 0.5 degrees (approx. 6 mm on the long dimension of the unit).

5. Tighten all the nuts. (Fig. 2-8)

2. Installing the indoor unit



(mm)

Ⓐ Fresh air intake hole (Knock out)
Ⓑ 4-ø2.8 burring hole

Fig. 2-9

2.5. Fresh air intake hole (Fig. 2-9)

At the time of installation, use the hole (knock out) located at the positions shown in following diagram, as and when required.

Note:
Make sure that the fresh air intake is no more than 20% of the entire air intake (when the air flow speed is set to its highest setting).

⚠ Caution:
Linkage of duct fan and air conditioner.
If a duct fan is used, be sure to link it with the air conditioner when outside air is taken in.
Do not run just the duct fan. Otherwise, condensation may form.

3. Installing the refrigerant piping

3.1. Precautions for devices that use R407C refrigerant

- **Do not use the existing refrigerant piping.**
- **Do not use crushed, misshapen, or discolored tubing. The inside of the tubing should be clean and free from harmful sulfuric compounds, oxidants, dirt, debris, oils and moisture.**
- **Store the piping to be used during installation indoors and keep both ends of the piping sealed until just before brazing.**
- **Use ester oil, ether oil or alkylbenzene (small amount) as the refrigerator oil to coat flares and flange connections.**
- **Use liquid refrigerant to fill the system.**
- **Do not use a refrigerant other than R407C.**
- **Use a vacuum pump with a reverse flow check valve.**
- **Do not use the tools that are used with conventional refrigerants.**
- **Do not use a charging cylinder.**
- **Be especially careful when managing the tools.**
- **Do not use commercially available dryers.**

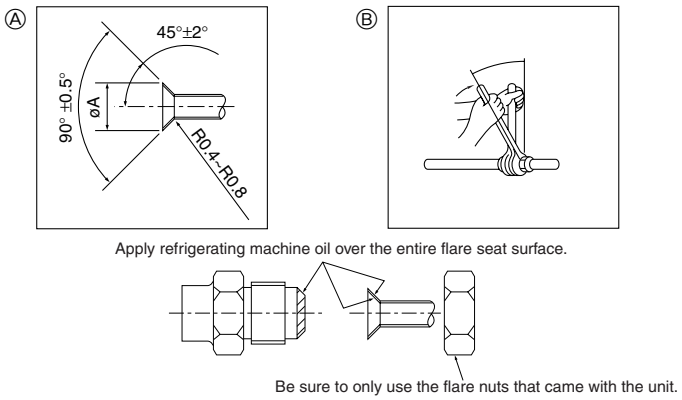


Fig. 3-1

Ⓐ Flare cutting dimensions

Copper pipe O.D. (mm)	Flare dimensions øA dimensions (mm)
ø6.35	8.6 - 9.0
ø9.52	12.6 - 13.0
ø12.7	15.8 - 16.2
ø15.88	19.0 - 19.4
ø19.05	22.9 - 23.3

Ⓑ Flare nut tightening torque

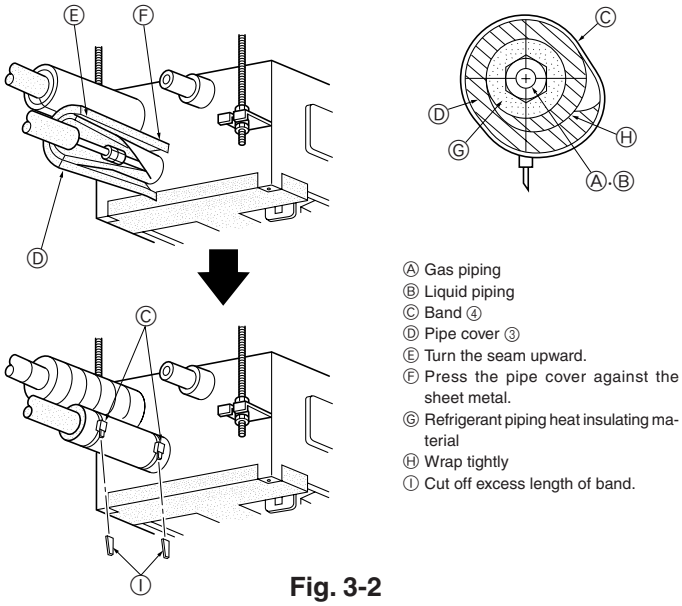
Copper pipe O.D. (mm)	Tightening torque (N·m)	Tightening angle (Guideline)
ø6.35	14 - 18	60˚ - 90˚
ø9.52	35 - 42	60˚ - 90˚
ø12.7	50 - 58	30˚ - 60˚
ø15.88	75 - 80	30˚ - 60˚
ø19.05	100 - 140	20˚ - 35˚

3.2. Indoor unit (Fig. 3-1)

- When commercially available copper pipes are used, wrap liquid and gas pipes with commercially available insulation materials (heat-resistant to 100 °C or more, thickness of 12 mm or more).
- The indoor parts of the drain pipe should be wrapped with polyethylene foam insulation materials (specific gravity of 0.03, thickness of 9 mm or more).
- Apply thin layer of refrigerant oil to pipe and joint seating surface before tightening flare nut.
- Use two wrenches to tighten piping connections.
- Use leak detector or soapy water to check for gas leaks after connections are completed.
- Use refrigerant piping insulation provided to insulate indoor unit connections. Insulate carefully following shown below.

Refrigerant and Drainage Piping Sizes			
Item \ Model		25	35, 50
Refrigerant piping	Liquid	O.D. ø6.35 (1/4")	O.D. ø9.52 (3/8")
	Gas	O.D. ø12.7 (1/2")	O.D. ø15.88 (5/8")
Drainage piping		PVC pipe: O.D. ø26 (1")	

3. Installing the refrigerant piping



Ⓐ Gas piping
Ⓑ Liquid piping
Ⓒ Band ④
Ⓓ Pipe cover ③
Ⓔ Turn the seam upward.
Ⓕ Press the pipe cover against the sheet metal.
Ⓖ Refrigerant piping heat insulating material
Ⓗ Wrap tightly
Ⓘ Cut off excess length of band.

Fig. 3-2

3.3. Refrigerant piping

1) Indoor unit

Installing procedures (Fig. 3-2)

1. Remove the flare nuts and caps from the indoor unit.
2. Flare-cut the liquid and gas pipes then apply refrigerating machine oil (to be locally procured) over the flare-cut seat surface.
3. Quickly connect the refrigerant piping.

∗ Remember to tighten the flare nuts with a double spanner.

4. Slide the supplied pipe cover ③ over the gas piping until it is pressed against the sheet metal inside the unit.
5. Slide the provided pipe cover ③ over the liquid piping until it is pressed against the sheet metal inside the unit.
6. Tighten the pipe cover ③ at the both ends (15 - 20 mm) with the supplied bands ④.

4. Drainage piping work

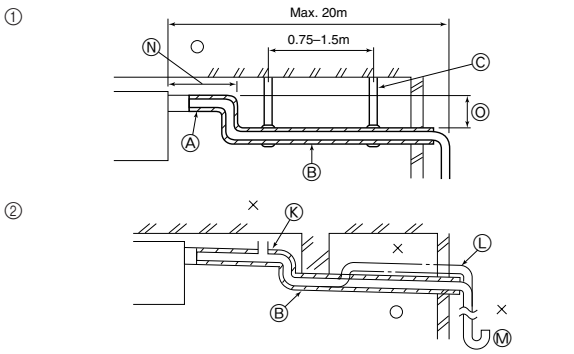


Fig. 4-1

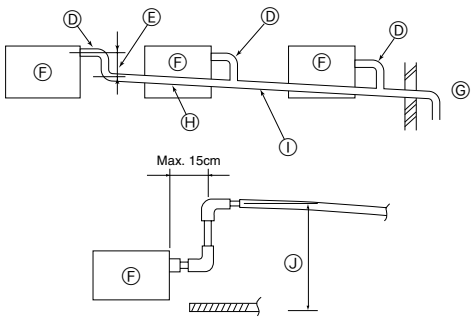
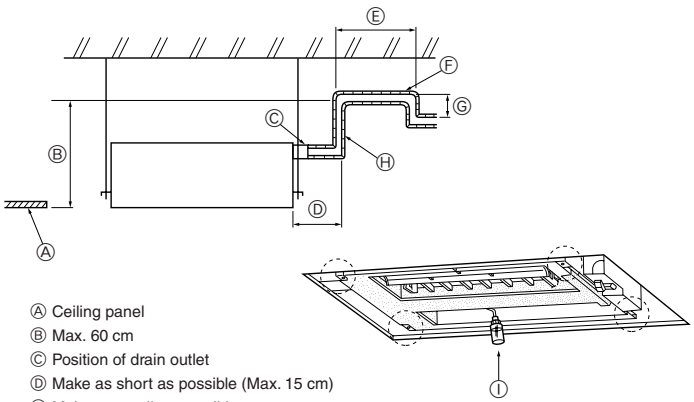


Fig. 4-2



Ⓐ Ceiling panel
Ⓑ Max. 60 cm
Ⓒ Position of drain outlet
Ⓓ Make as short as possible (Max. 15 cm)
Ⓔ Make as small as possible
Ⓕ Downward slope (1/100 or more)
Ⓖ Make as great as possible (Min. 10 cm)
Ⓗ Drainage pipe vertical section
Ⓘ Water bottle (procure locally)

Fig. 4-3

4.1. Drainage piping work

- Use O.D. ø26 PVC TUBE for drain piping and provide 1/100 or more downward slope.
- Be sure to connect the piping joints using adhesive of polyvinyl chloride family.
- Observe the figure for piping work.
- Use attached drain hose to change the pipe extraction direction. (Fig. 4-1)

① Correct piping
② Wrong piping
Ⓐ Insulation (9 mm or more)
Ⓑ Downward slope (1/100 or more)
Ⓒ Support metal
Ⓚ Air bleeder
Ⓛ Raised
Ⓜ Odor trap
Ⓝ Make as little as possible
Ⓞ Make as great as possible (approx. 10 cm)

Grouped piping (Fig. 4-2)

Ⓓ VP20 (O.D. ø26 PVC TUBE)
Ⓔ Make it as large as possible
Ⓕ Indoor unit
Ⓖ Make the piping size large for grouped piping.
Ⓗ Downward slope (1/100 or more)
Ⓘ O.D. ø38 PVC TUBE for grouped piping. (9 mm or more insulation)
Ⓙ Up to 50 cm

In cases of upward drainage

- The largest dimension possible for the vertical section at Ⓑ is 60 cm from the lower surface of the ceiling. Make this vertical section as short as possible.

Water drainage check

1. Fill the drainage pan with about 0.5 liters of water. (Don't pour water directly into the drain pump.)
2. Make a test run of the unit (in Cooling mode).
3. Check for water drainage at the transparent check window and the outlet of the drainage pipe.
4. Stop the test run. (Don't forget to turn off the power.) (Fig. 4-3)

5. Electrical work

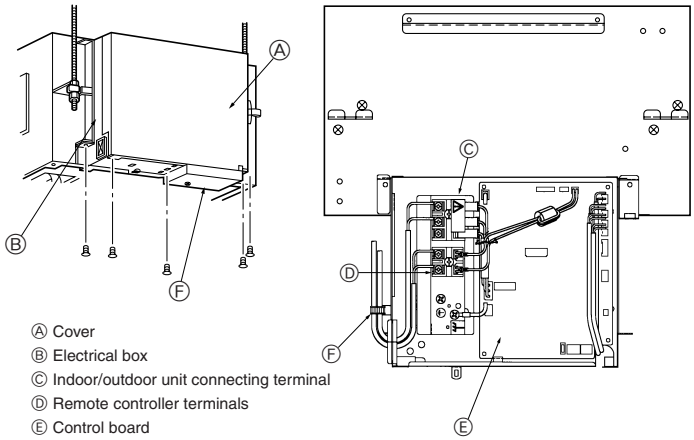


Fig. 5-1

5.1. Electric wiring (Fig. 5-1)

* Make sure all electrical wiring is complete before installing the cover panel.

1. Remove the cover from the address board (two bolts).
2. Remove the cover from the electrical box (one bolt).
3. Remove the bolts securing the electrical box and lower the box (two bolts).
4. Insert the wires into the electrical box.
5. Connect the wires securely to the terminal block.
   * Be sure to make the various wires long enough so the box may be lowered from the unit during servicing.
6. Secure the wires with the wiring clamp on the side of the electrical box.
7. Replace the parts you have removed to their original locations.

A means for the disconnection of the supply with an isolation switch, or similar device, in all active conductors shall be incorporated in the fixed wiring.

Indoor unit model			PMH
Indoor unit power supply (Heater)			–
Indoor unit input capacity (Heater) Main switch (Breaker)		*1	–
Wiring Wire No. × size (mm²)	Indoor unit power supply (Heater)		–
	Indoor unit power supply (Heater) earth		–
	Indoor unit-Outdoor unit	*2	3 × 1.5 (polar)
	Indoor unit-Outdoor unit earth	*2	1 × Min. 1.5
	Remote controller-Indoor unit	*3	2 × 0.3 (Non-polar)
Circuit rating	Indoor unit (Heater) L-N	*4	–
	Indoor unit-Outdoor unit S1-S2	*4	AC 230 V
	Indoor unit-Outdoor unit S2-S3	*4	DC 24 V
	Remote controller-Indoor unit	*4	DC 12 V

*1. A breaker with at least 3 mm contact separation in each pole shall be provided. Use non-fuse breaker (NF) or earth leakage breaker (NV).
*2. Max. 45 m
If 2.5 mm² used, Max. 50 m
If 2.5 mm² used and S3 separated, Max. 80 m
*3. The 10 m wire is attached in the remote controller accessory. Max. 500 m
*4. The figures are NOT always against the ground.
S3 terminal has DC 24 V against S2 terminal. However between S3 and S1, these terminals are not electrically insulataed by the transformer or other device.

Notes: 1. Wiring size must comply with the applicable local and national code.
2. Power supply cords and indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 245 IEC 57)
3. Install an earth longer than other cables.

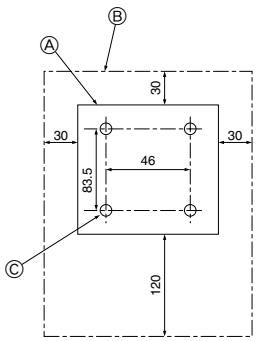


Fig. 5-2

5.2. Remote controller

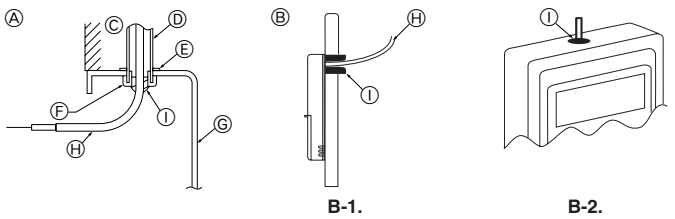
For wired remote controller

1) Installing procedures (Fig. 5-2)

(1) Select an installing position for the remote controller.
The temperature sensors are located on both remote controller and indoor unit.

▶ **Procure the following parts locally:**
Two piece switch box
Thin copper conduit tube
Lock nuts and bushings

(2)



(3)

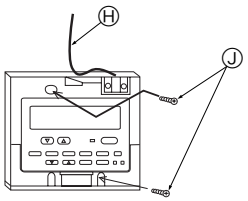


Fig. 5-3

(2) Seal the service entrance for the remote controller cord with putty to prevent possible invasion of dew drops, water, cockroaches or worms.
Ⓐ For installation in the switch box:
Ⓑ For direct installation on the wall select one of the following:
- Prepare a hole through the wall to pass the remote controller cord (in order to run the remote controller cord from the back), then seal the hole with putty.
- Run the remote controller cord through the cut-out upper case, then seal the cut-out notch with putty similarly as above.

B-1. To lead the remote controller cord from the back of the controller:
B-2. To run the remote controller cord through the upper portion:

(3) For direct installation on the wall

Ⓒ Wall
Ⓓ Conduit
Ⓔ Lock nut
Ⓕ Bushing
Ⓖ Switch box
Ⓗ Remote controller cord
Ⓘ Seal with putty
Ⓙ Wood screw

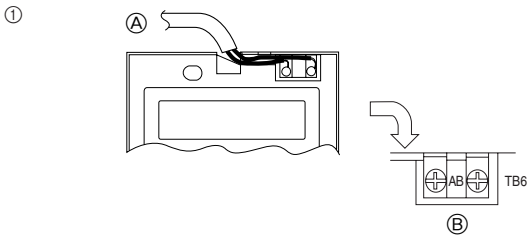


Fig. 5-4

2) Connecting procedures (Fig. 5-4)

① Connect the remote controller cord to the terminal block.
Ⓐ To TB5 on the indoor unit
Ⓑ TB6 (No polarity)

3) Two remote controller setting

If two remote controllers are connected, set one to “Main” and the other to “Sub”. For setting procedures, refer to “Function selection of remote controller” in the operation manual for the indoor unit.

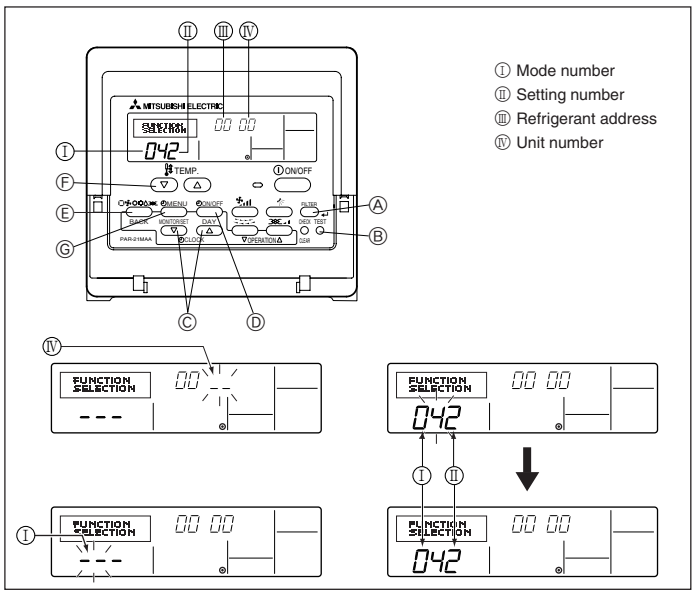


Fig. 5-5

5.3. Function settings

5.3.1 Function setting on the unit (Fig. 5-5)

Changing the power voltage setting

- Be sure to change the power voltage setting depending on the voltage used.

① Go to the function setting mode.
Switch OFF the remote controller.
Press the Ⓐ and Ⓑ buttons simultaneously and hold them for at least 2 seconds. FUNCTION will start to flash.
② Use the Ⓒ button to set the refrigerant address (Ⅲ) to 00.
③ Press Ⓓ and [--] will start to flash in the unit number (Ⅳ) display.
④ Use the Ⓒ button to set the unit number (Ⅳ) to 00.
⑤ Press the Ⓔ MODE button to designate the refrigerant address/unit number. [--] will flash in the mode number (Ⅰ) display momentarily.
⑥ Press the Ⓕ buttons to set the mode number (Ⅰ) to 04.
⑦ Press the Ⓖ button and the current set setting number (Ⅱ) will flash.
Use the Ⓕ button to switch the setting number in response to the power supply voltage to be used.
Power supply voltage
240 V : setting number = 1
220 V, 230 V : setting number = 2
⑧ Press the MODE button Ⓔ and mode and the setting number (Ⅰ) and (Ⅱ) will change to being on constantly and the contents of the setting can be confirmed.
⑨ Press the FILTER Ⓐ and TEST RUN Ⓑ buttons simultaneously for at least two seconds. The function selection screen will disappear momentarily and the air conditioner OFF display will appear.

Function table

Select unit number 00

Mode	Settings	Mode no.	Setting no.	Initial setting	Setting
Power failure automatic recovery	Not available	01	1	○	
	Available *1		2		
Indoor temperature detecting	Indoor unit operating average	02	1	○	
	Set by indoor unit’s remote controller		2		
	Remote controller’s internal sensor		3		
LOSSNAY connectivity	Not Supported	03	1	○	
	Supported (indoor unit is not equipped with outdoor-air intake)		2		
	Supported (indoor unit is equipped with outdoor-air intake)		3		
Power voltage	240 V	04	1		
	220 V, 230 V		2	○	

Select unit numbers 01 to 03 or all units (AL [wired remote controller]/07 [wireless remote controller])

Mode	Settings	Mode no.	Setting no.	Initial setting	Setting
Filter sign	100 Hr	07	1		
	2500 Hr		2	○	
	No filter sign indicator		3		
Fan speed	Standard (PLH/PLA)/Silent (PCH/PCA)	08	1	–	
	High ceiling ① (PLH/PLA)/Standard (PCH/PCA)		2		
	High ceiling ② (PLH/PLA)/High ceiling (PCH/PCA)		3		
No. of air outlets	4 directions	09	1	–	
	3 directions		2		
	2 directions		3		
Installed options (high-performance filter)	Not supported	10	1	○	
	Supported		2		
Up/down vane setting	No vanes	11	1	–	
	Equipped with vanes (vanes angle setup ①)		2		
	Equipped with vanes (vanes angle setup ②)		3		
Energy saving air flow (Heating mode)	Disabled	12	1	○	
	Enabled		2		

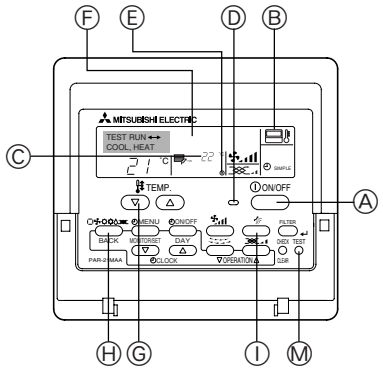
*1 When the power supply returns, the air conditioner will start 3 minutes later.

6. Test run

6.1. Before test run

- **After completing installation and the wiring and piping of the indoor and outdoor units, check for refrigerant leakage, looseness in the power supply or control wiring, wrong polarity, and no disconnection of one phase in the supply.**
- **Use a 500-volt megohmmeter to check that the resistance between the power supply terminals and ground is at least 1.0 MΩ.**
- **Do not carry out this test on the control wiring (low voltage circuit) terminals.**

⚠ Warning:
Do not use the air conditioner if the insulation resistance is less than 1.0 MΩ.
Insulation resistance



Ⓐ ON/OFF button
Ⓑ Test run display
Ⓒ Indoor temperature liquid line temperature display
Ⓓ ON/OFF lamp
Ⓔ Power display
Ⓕ Error code display
Test run remaining time display
Ⓖ Set temperature button
Ⓗ Mode selection button
Ⓘ Fan speed button
Ⓜ TEST button

Fig. 6-1

6.2. Test run

The following 2 methods are available.

6.2.1. Using wired remote controller (Fig. 6-1)

① Turn on the power at least 12 hours before the test run.
② Press the [TEST] button twice. ➡ "TEST RUN" liquid crystal display
③ Press the [Mode selection] button. ➡ Make sure that wind is blown out.
④ Press the [Mode selection] button and switch to the cooling (or heating) mode. ➡ Make sure that cold (or warm) wind is blown out.
⑤ Press the [Fan speed] button. ➡ Make sure that the wind speed is switched.
⑥ Check operation of the outdoor unit fan.
⑦ Release test run by pressing the [ON/OFF] button. ➡ Stop
⑧ Register a telephone number.
The telephone number of the repair shop, sales office, etc., to contact if an error occurs can be registered in the remote controller. The telephone number will be displayed when an error occurs. For registration procedures, refer to the operation manual for the indoor unit.

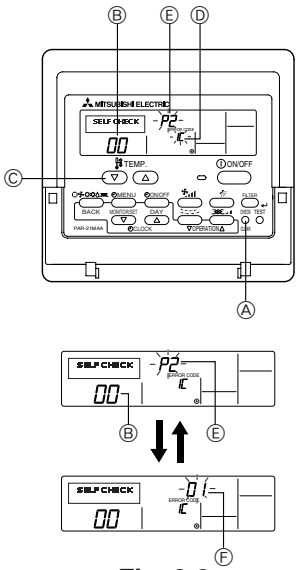
6.2.2. Using SW4 in outdoor unit

Refer to the outdoor unit installation manual.

6.3. Self-check

6.3.1. Wired remote controller (Fig. 6-2)

① Turn on the power.
② Press the [CHECK] button twice.
③ Set refrigerant address with [TEMP] button if system control is used.
④ Press the [ON/OFF] button to stop the self-check.



Ⓐ CHECK button
Ⓑ Refrigerant address
Ⓒ TEMP. button
Ⓓ IC: Indoor unit
OC: Outdoor unit
Ⓔ Check code
Ⓕ Unit address

Fig. 6-2

[Output pattern A] Errors detected by indoor unit

Check code	Symptom	Remark
P1	Intake sensor error	
P2, P9	Pipe (Liquid or 2-phase pipe) sensor error	
E6, E7	Indoor/outdoor unit communication error	
P4	Drain sensor error	
P5	Drain pump error	
P6	Freezing/Overheating safeguard operation	
EE	Communication error between indoor and outdoor units	
P8	Pipe temperature error	
E4	Remote controller signal receiving error	
–	–	
–	–	
Fb	Indoor unit control system error (memory error, etc.)	
– –	No corresponding	

6. Test run

[Output pattern B] Errors detected by unit other than indoor unit (outdoor unit, etc.)

Check code	Symptom	Remark
E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	For details, check the LED display of the outdoor controller board.
UP	Compressor overcurrent interruption	
U3, U4	Open/short of outdoor unit thermistors	
UF	Compressor overcurrent interruption (When compressor locked)	
U2	Abnormal high discharging temperature/49C worked/insufficient refrigerant	
U1, Ud	Abnormal high pressure (63H worked)/Overheating safeguard operation	
U5	Abnormal temperature of heat sink	
U8	Outdoor unit fan safeguard stop	
U6	Compressor overcurrent interruption/Abnormal of power module	
U7	Abnormality of super heat due to low discharge temperature	
U9, UH	Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/Current sensor error	
–	–	
–	–	
Others	Other errors (Refer to the technical manual for the outdoor unit.)	

- On wired remote controller
  Check code displayed in the LCD.

- If the unit cannot be operated properly after the above test run has been performed, refer to the following table to remove the cause.

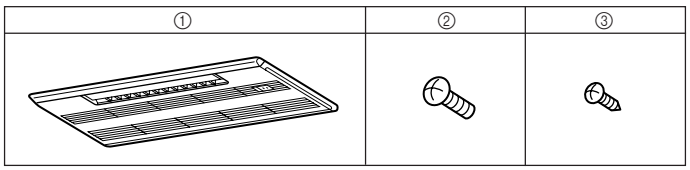
Symptom			Cause
Wired remote controller		LED 1, 2 (PCB in outdoor unit)	
PLEASE WAIT	For about 2 minutes following power-on	After LED 1, 2 are lighted, LED 2 is turned off, then only LED 1 is lighted. (Correct operation)	• For about 2 minutes following power-on, operation of the remote controller is not possible due to system start-up. (Correct operation)
PLEASE WAIT → Error code	After about 2 minutes has expired following power-on	Only LED 1 is lighted. → LED 1, 2 blink.	• Connector for the outdoor unit's protection device is not connected. • Reverse or open phase wiring for the outdoor unit's power terminal block (L1, L2, L3)
Display messages do not appear even when operation switch is turned ON (operation lamp does not light up).		Only LED 1 is lighted. → LED 1 blinks twice, LED 2 blinks once.	• Incorrect wiring between indoor and outdoor units (incorrect polarity of S1, S2, S3) • Remote controller wire short

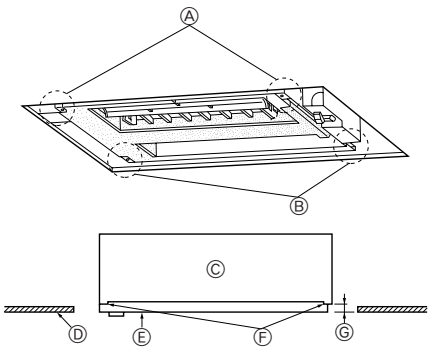
Note:
Operation is not possible for about 30 seconds after cancellation of function selection. (Correct operation)

For description of each LED (LED 1, 2, 3) provided on the indoor controller, refer to the following table.

LED 1 (power for microcomputer)	Indicates whether control power is supplied. Make sure that this LED is always lit.
LED 2 (power for remote controller)	Indicates whether power is supplied to the remote controller. This LED lights only in the case of the indoor unit which is connected to the outdoor unit refrigerant address "0".
LED 3 (communication between indoor and outdoor units)	Indicates state of communication between the indoor and outdoor units. Make sure that this LED is always blinking.

7. Installing the grille





Ⓐ Points for securing the grille
Ⓑ Points for securing the grille
Ⓒ Indoor unit
Ⓓ Ceiling surface
Ⓔ Drainage pan
Ⓕ Places for securing front grille
Ⓖ Make sure these surfaces are flush with each other (0-3 mm).

Fig. 7-1

7.1. Checking the contents

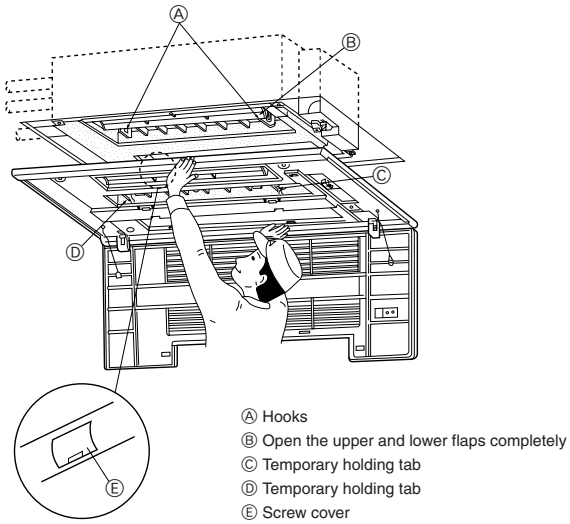
- This kit contains the following parts.

	Accessory name	Q'ty	Remark
①	Grille	1	
②	Screw	6	M5 × 0.8 × 16
③	Screw	1	4 × 16

7.2. Checks before setting in place

- Before installing the front panel, make sure the indoor unit is square with the ceiling opening (or parallel to the angle between the wall and the ceiling).
- Check that the four points where the front panel will be secured are in contact with the ceiling surface (see Fig. 7-1).
- Check that the insulation for the refrigerant pipes, drainage pipes, etc. is in place and that wiring connections and arrangements are complete.

7. Installing the grille



Ⓐ Hooks
Ⓑ Open the upper and lower flaps completely
Ⓒ Temporary holding tab
Ⓓ Temporary holding tab
Ⓔ Screw cover

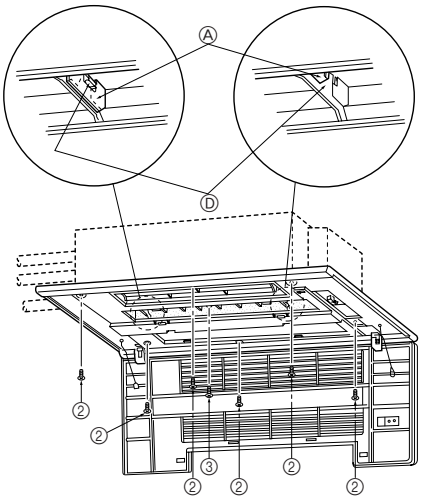
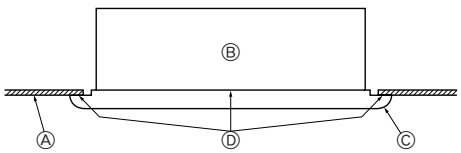


Fig. 7-2



Ⓐ Ceiling surface
Ⓑ Indoor unit
Ⓒ Grille
Ⓓ No gaps here

Fig. 7-3

7.3. Installing the grille

- Open the intake grille by pressing on the place marked Push, and remove the air filter.
- Remove the screw cover in the middle of the blower.
- Open the upper and lower flaps on the indoor unit completely.
- Hook the temporary holding tabs on the front panel to the hooks on the indoor unit (see Fig. 7-2).
- Adjust the front panel so that it fits properly in the angle between the ceiling and the wall, and install the securing bolts ② (supplied with this grille) in their four places at left and right, leaving them slightly loose.
- Next tighten the securing bolts ② and securing screws ③ in the center three places.
- Finally tighten the securing bolts ② in the four places at left and right.
- At this point, make sure there are no gaps between the indoor unit and the front panel, and between the front panel and the ceiling surface. If there are gaps, the wind may come in and it may cause water to drip (see Fig. 7-3).
  * Tighten the securing bolts ② and securing screws ③ completely.
- Replace the air filter and screw cover, and press the intake grille on the place marked Push until you hear it snap into place.

7.4. Checks after installing

- Check that there are no gaps between the indoor unit and the front panel, and between the front panel and the ceiling surface. If there are gaps, the wind may come in and condensation may result.
- Check that the air filter is in place.

This product is designed and intended for use in the residential, commercial and light-industrial environment.

The product at hand is based on the following EU regulations:

- Low Voltage Directive 73/23/ EEC
- Electromagnetic Compatibility Directive 89/ 336/ EEC

Please be sure to put the contact address/telephone number on this manual before handing it to the customer.

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