MITSUBISHI ELECTRIC

Mr.SLIM

Air Conditioners
Indoor unit

PSA-M71KA2 **PSA-M71KA2-ET**
PSA-M100KA2 **PSA-M100KA2-ET**
PSA-M125KA2 **PSA-M125KA2-ET**
PSA-M140KA2 **PSA-M140KA2-ET**

English is original.	INSTALLATION MANUAL	FOR INSTALLER	English
Übersetzung des Originals.	INSTALLATIONSHANDBUCH	FÜR INSTALLATEURE	Deutsch
Traduction du texte d'origine.	MANUEL D'INSTALLATION	POUR L'INSTALLATEUR	Français
Vertaling van het origineel.	INSTALLATIEHANDLEIDING	VOOR DE INSTALLATEUR	Nederlands
Traducción del original.	MANUAL DE INSTALACIÓN	PARA EL INSTALADOR	Español
Traduzione dell'originale.	MANUALE DI INSTALLAZIONE	PER L'INSTALLATORE	Italiano
Μετάφραση του αρχικού.	ΕΓΧΕΙΡΙΔΙΟ ΟΔΗΓΙΩΝ ΕΓΚΑΤΑΣΤΑΣΗΣ	ΓΙΑ ΑΥΤΟΝ ΠΟΥ ΚΑΝΕΙ ΤΗΝ ΕΓΚΑΤΑΣΤΑΣΗ	Ελληνικά
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Oversættelse af den originale tekst.	INSTALLATIONSMANUAL	TIL INSTALLATØREN	Dansk
Översättning från originalet.	INSTALLATIONSMANUAL	FÖR INSTALLATÖREN	Svenska
Aslı İngilizcedir.	MONTAJ EL KİTABI	MONTÖR İÇİN	Türkçe
Językiem oryginału jest język angielski.	INSTRUKCJA MONTAŻU	DLA INSTALATORA	Polski
Originalspråket er engelsk.	INSTALLASJONSHÅNDBOK	FOR MONTØR	Norsk

Manual and DECLARATION OF CONFORMITY Download

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en Go to the above website to download manuals and DECLARATION OF CONFORMITY, select model name, then choose language.

de Besuchen Sie die oben stehende Website, um Anleitungen und KONFORMITÄTSERKLÄRUNGEN herunterzuladen, wählen Sie den Modellnamen und dann die Sprache aus.

fr Rendez-vous sur le site Web ci-dessus pour télécharger les manuels et les DÉCLARATIONS DE CONFORMITÉ, sélectionnez le nom de modèle puis choisissez la langue.

nl Ga naar de bovenstaande website om handleidingen en CONFORMITEITSVERKLARINGEN te downloaden, de modelnaam te selecteren en vervolgens de taal te kiezen.

es Visite el sitio web anterior para descargar manuales y DECLARACIONES DE CONFORMIDAD, seleccione el nombre del modelo y luego elija el idioma.

it Andare sul sito web indicato sopra per scaricare i manuali e le DICHIARAZIONI DI CONFORMITÀ, selezionare il nome del modello e scegliere la lingua.

el Μεταβείτε στον παραπάνω ιστότοπο για να κατεβάσετε εγχειρίδια και τις ΔΗΛΩΣΕΙΣ ΣΥΜΜΟΡΦΩΣΗΣ. Επιλέξτε το όνομα του μοντέλου και, στη συνέχεια, τη γλώσσα.

pt Aceda ao site Web acima indicado para descarregar manuais e DECLARAÇÕES DE CONFORMIDADE, seleccione o nome do modelo e, em seguida, escolha o idioma.

da Gå til ovenstående websted for at downloade manualer og OVERENSSTEMMELSESERKLÆRINGER, vælg modelnavn, og vælg derefter sprog.

sv Gå till ovanstående webbplats för att ladda ner anvisningar och FÖRSÄKRINGAR OM ÖVERENSSTÄMMELSE, välj modellnamn och välj sedan språk.

tr Kılavuzları ve UYGUNLUK BEYANLARINI indirmek için yukarıdaki web sitesine gidin, model adını ve ardından dili seçin.

uk Щоб завантажити керівництва та ДЕКЛАРАЦІЇ ВІДПОВІДНОСТІ НОРМАМ, перейдіть на зазначений вище вебсайт; виберіть назву моделі, а потім мову.

bg Посетете горепосочения уебсайт, за да изтеглите ръководства и ДЕКЛАРАЦИИ ЗА СЪОТВЕТСТВИЕ, като изберете име на модел и след това – език.

pl Odwiedź powyższą stronę internetową, aby pobrać instrukcje i DEKLARACJE ZGODNOŚCI, wybierz nazwę modelu, a następnie język.

no Gå til nettstedet over for å laste ned håndbøker og SAMSVARSERKLÆRINGER, velg modellnavn, og velg deretter språk.

fi Mene yllä mainitulle verkkosivulle ladataksesi oppaat ja VAATIMUSTENMUKAISUUSVAKUUTUKSET, valitse mallin nimi ja valitse sitten kieli.

cs Příručky a PROHLÁŠENÍ O SHODĚ naleznete ke stažení na internetové stránce zmíněné výše poté, co zvolíte model a jazyk.

sk Na webovej stránke vyššie si môžete stiahnuť návody a VYHLÁSENIA O ZHODE. Vyberte názov modelu a zvoľte požadovaný jazyk.

hu A kézikönyvek és a MEGFELELŐSÉGI NYILATKOZATOK letöltéséhez látogasson el a fenti weboldalra, válassza ki a modell nevét, majd válasszon nyelvet.

sl Obiščite zgornjo spletno stran za prenos priročnikov in IZJAV O SKLADNOSTI, izberite ime modela, nato izberite jezik.

ro Accesaţi site-ul web de mai sus pentru a descărca manualele și DECLARAȚIILE DE CONFORMITATE, selectaţi denumirea modelului, apoi alegeţi limba.

et Kasutusjuhendite ja VASTAVUSDEKLARATSIOONIDE allalaadimiseks minge ülaltoodud veebilehele, valige mudeli nimi ja seejärel keel.

lv Dodieties uz iepriekš norādīto tīmekļa vietni, lai lejupielādētu rokasgrāmatas un ATBILSTĪBAS DEKLARĀCIJAS; tad izvēlieties modeļa nosaukumu un valodu.

lt Norėdami atsisiųsti vadovus ir ATITIKTIES DEKLARACIJAS, apsilankykite pirmiau nurodytoje žiniatinklio svetainėje, pasirinkite modelio pavadinimą, tada – kalbą.

hr Kako biste preuzeli priručnike i IZJAVE O SUKLADNOSTI, idite na gore navedeno web-mjesto, odaberite naziv modela, a potom odaberite jezik.

sr Idite na gore navedenu veb stranicu da biste preuzeli uputstva i IZJAVE O USAGLAŠENOSTI, izaberite ime modela, a zatim izaberite jezik.

Contents

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

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1. Safety precautions

► Before installing the unit, make sure you read all the "Safety Precautions".
► The "Safety Precautions" provide very important points regarding safety. Make sure you follow them.
► Please report to your supply authority or obtain their consent before connecting this equipment to the power supply system.

MEANINGS OF SYMBOLS DISPLAYED ON INDOOR UNIT AND/OR OUTDOOR UNIT

	**WARNING** (Risk of fire)	This mark is for R32 refrigerant only. Refrigerant type is written on nameplate of outdoor unit. In case that refrigerant type is R32, this unit uses a flammable refrigerant. If refrigerant leaks and comes in contact with fire or heating part, it will create harmful gas and there is risk of fire.
	Read the OPERATION MANUAL carefully before operation.	
	Service personnel are required to carefully read the OPERATION MANUAL and INSTALLATION MANUAL before operation.	
	Further information is available in the OPERATION MANUAL, INSTALLATION MANUAL, and the like.	

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Symbols used in the text

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

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

Symbols used in the illustrations

⏚ : Indicates a part which must be grounded.
⃠ : Be sure not to do.

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.

⚠ Warning:

- **Carefully read the labels affixed to the main unit.**
- **Ask a dealer or an authorized technician to install, relocate and repair the unit.**
- **The user should never attempt to repair the unit or transfer it to another location.**
- **Do not alter the unit. It may cause fire, electric shock, injury or water leakage.**
- **For installation and relocation 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.**
- **The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.**
- **If the air conditioner is installed in a small room or closed 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.**
- **Keep gas-burning appliances, electric heaters, and other fire sources (ignition sources) away from the location where installation, repair, and other air conditioner work will be performed.**
  If refrigerant comes into contact with a flame, poisonous gases will be released.
- **Ventilate the room if refrigerant leaks during operation. If refrigerant comes into contact with a flame, poisonous gases will be released.**
- **Do not use intermediate connection of the electric wires.**
- **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 wiring connections must be made securely with no tension applied on the terminal connections. Also, never splice the cables for wiring (unless otherwise indicated in this document). Failure to observe these instructions may result in overheating or a fire.**
- **When installing or relocating, or servicing the air conditioner, use only the specified refrigerant written on outdoor unit to charge the refrigerant lines. Do not mix it with any other refrigerant and do not allow air to remain in the lines.**
  If air is mixed with the refrigerant, then it can be the cause of abnormal high pressure in the refrigerant line, and may result in an explosion and other hazards.
  The use of any refrigerant other than that specified for the system will cause mechanical failure or system malfunction or unit breakdown. In the worst case, this could lead to a serious impediment to securing product safety.
- **The appliance shall be installed in accordance with national wiring regulations.**
- **This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.**
- **Children should be supervised to ensure that they do not play with the appliance.**
- **The electrical equipment cover panel of the unit must be firmly attached.**
- **If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.**
- **Use only accessories authorized by Mitsubishi Electric and ask a dealer or an authorized technician to install them.**
- **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.**
- **Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.**
- **The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).**
- **Do not pierce or burn.**
- **The refrigerant detection system refrigerant sensors shall only be replaced with refrigerant sensors specified by the appliance manufacturer.**
- **Maintenance, service and repair operations shall be performed by authorized technician with required qualification.**
- **Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work.**
  A degree of ventilation shall continue during the period that the work is carried out.
  The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.
- **Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects.**
  The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.
- **Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.**

1. Safety precautions

⚠ Warning:

- Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration.
  (Detection equipment shall be calibrated in a refrigerant-free area.)
  Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.
  Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.
  Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
  If a leak is suspected, all naked flames shall be removed/extinguished.
  If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.
  For appliances containing flammable refrigerants, oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.
- Brazed, welded, or mechanical flare connections shall be accessible for maintenance purposes.
- Be aware that refrigerants might not contain an odour.
- Pipe-work shall be protected from physical damage.
- The installation of pipe-work shall be kept to a minimum.
- Compliance with national gas regulations shall be observed.
- Keep any required ventilation openings clear of obstruction.
- Do not use low temperature solder alloy in case of brazing the refrigerant pipes.
- When performing brazing work, be sure to ventilate the room sufficiently.
  Make sure that there are no hazardous or flammable materials nearby.
  When performing the work in a closed room, small room, or similar location, make sure that there are no refrigerant leaks before performing the work.
  If refrigerant leaks and accumulates, it may ignite or poisonous gases may be released.
- Do not turn the breaker OFF except the case of burning smell, or when performing maintenance or inspection.
  The power cannot be supplied to the refrigerant sensor mounted in the indoor unit, and the sensor cannot detect the refrigerant leakage. This may cause a fire.

1.1. Before installation (Environment)

⚠ 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.
- When using any aerosol sprays for interior construction, finishing work, or sealing a wall hole turn off the breaker and ventilate the room well. The refrigerant sensor may react to the gas in the sprays, and it may cause misdetection.

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. Installation location

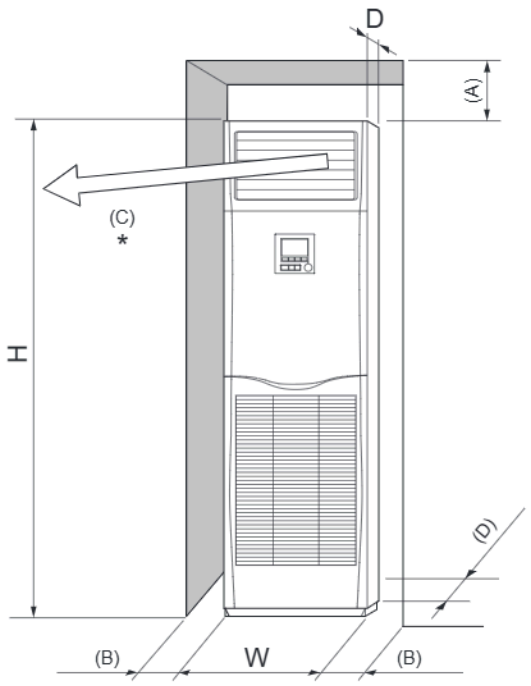

Fig. 2-1

2.1. Outline dimensions (Indoor unit) (Fig. 2-1)

Select a proper position allowing the following clearances for installation and maintenance.

(mm)

Models	W	D	H	(A)	(B)	(C)	(D)
71,100,125,140	600	360	1900	300	Min. 100	Min. 1000	Min. 5

* Do not place any objects within 1000 mm of the air outlet.

⚠ Warning:

Mount the indoor unit on a floor strong enough to withstand the weight of the unit.

Do not install the unit in the environment where any gas equipment for propane, butane or methane, sprays such as bug killer, equipment which generates smoke, and paints and chemicals are used, or in the place where sulfur-based gas is generated.

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3. Installing the indoor unit

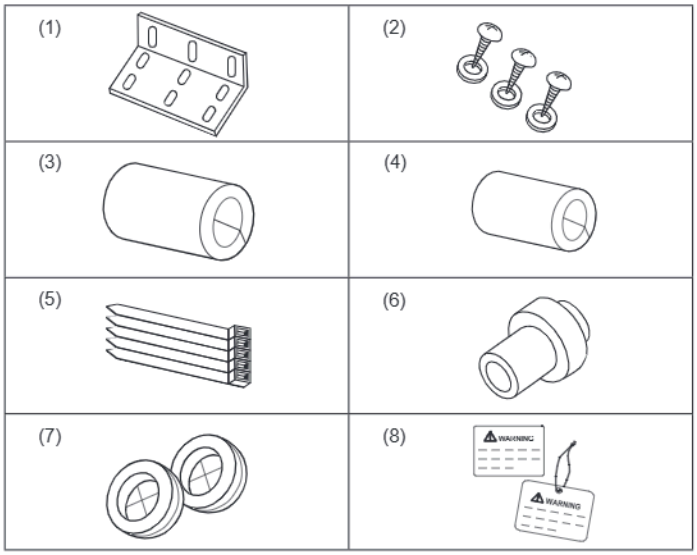

Fig. 3-1

3.1. Check the indoor unit accessories

The indoor unit is supplied with the following spare parts and accessories.

Part number	Accessory name	Q'ty	Setting location
(1)	Tip-over prevention bracket	1	The top surface of the unit.
(2)	Tapping screws (with washer)	3	Inside the air intake grill.
(3)	Gas pipe insulation (large)	1	
(4)	Liquid pipe insulation (small)	1	
(5)	Band	5	
(6)	Drain socket	1	
(7)	Bushing (for the wire hole)	2	
(8)	Breaker notice, label	1	

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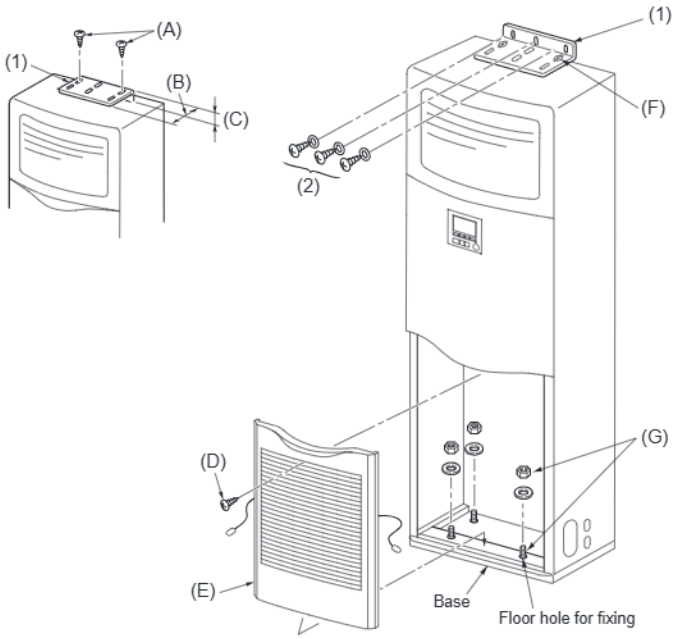

Fig. 3-2

3.2. Tip-over prevention bracket (Fig. 3-2)

To prevent the unit from tipping over attach the tip-over prevention bracket to the wall.

(1) Tip-over prevention bracket
- (A) Tapping screws 4 × 10 (with washer)
- (B) The long edge of the unit
- (C) The short edge of the unit

The tip-over prevention bracket (1) is set on the top surface of the unit. Remove the tapping screws (2), and then reinstall the bracket, as shown in the illustration. For the proper installation distances, see Fig. 3-3.
- (D) Screw
- (E) Remove the screw (D) and then pull the grill forward to remove it.

Example of a tip-over prevention bracket

If the wall or floor is made of a material other than wood, use a suitable device such as a commercially available concrete anchor to hold the unit in place.

(2) 4 × 25 tapping screws
- (F) Hold the bracket in place with the tapping screws (2).
- (G) The bottom of the unit can be held in place by four anchor bolts which can be obtained locally.

3. Installing the indoor unit

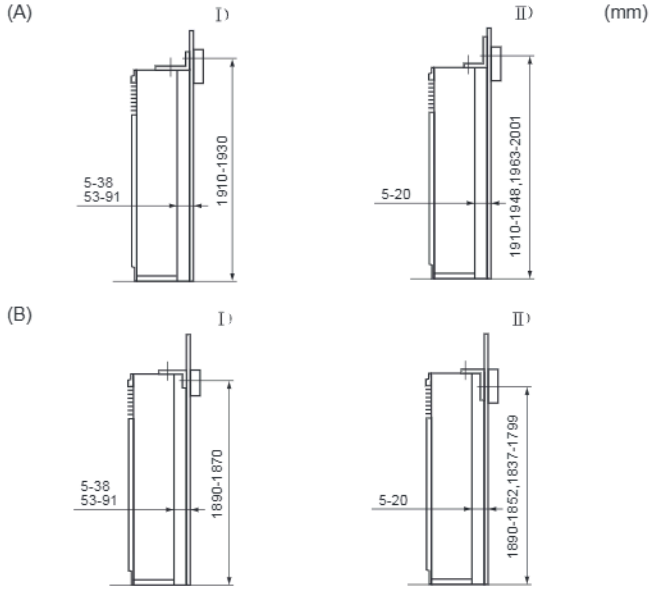

Fig. 3-3

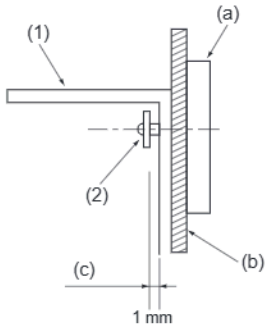

Fig. 3-4

3.3. Mounting the tip-over prevention bracket (Fig. 3-3)

- Select one of the following mounting methods, depending on the height of the frieze inside the wall above the floor.
- In the case of a light steel bed, a frieze is generally not used, so the bracket should be mounted to one of the supports or pillars (obtain the screws locally).
- If the air outlet duct is to be attached to the unit ceiling panel, make sure that the long edge of the bracket is placed against the wall. This will ensure that the bracket does not cover the knockout holes in the unit ceiling panel or the screw holes for attaching the air outlet duct.

(A) The bracket faces up
(B) The bracket faces down
  I) The short edge of the bracket is against the wall
  II) The long edge of the bracket is against the wall

- The distance between the unit and the wall can be varied.
- The vertical dimension shown is the distance from the floor to the bracket mounting screws (the frieze center is within these limits).

- First, mount the bracket on the wall and then tighten the screw so that the bracket can slide up and down. (Fig. 3-4)
  (1) Tip-over prevention bracket
  (2) Tapping screw
  (a) Frieze
  (b) Wall surface material
  (c) Gap of about 1 mm

Floor mounting

Remove the air intake grill, open the floor mounting knockout holes in the base and fix the anchor bolts to the floor.

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4. Installing the refrigerant piping

4.1. Precautions

For devices that use R32/R410A refrigerant

- **Use the refrigerant oil (small amount) applied to the flared sections.**
- **Use C1220 copper phosphorus, for copper and copper alloy seamless pipes, to connect the refrigerant pipes. Use refrigerant pipes with the thicknesses specified in the table to the below. Make sure the insides of the pipes are clean and do not contain any harmful contaminants such as sulfuric compounds, oxidants, debris, or dust.**
- **Make sure the inner and outer surfaces of the pipes and fittings are clean and free of harmful contaminants such as sulfuric compounds, oxidants, rubber, and cutting chips.**
  * **Contamination inside the refrigerant pipes may cause deterioration of the refrigeration oil.**

⚠ Warning:

When installing or relocating, or servicing the air conditioner, use only the specified refrigerant (written on outdoor unit) to charge the refrigerant lines. Do not mix it with any other refrigerant and do not allow air to remain in the lines. If air is mixed with the refrigerant, then it can be the cause of abnormal high pressure in the refrigerant line, and may result in an explosion and other hazards. The use of any refrigerant other than that specified for the system will cause mechanical failure or system malfunction or unit breakdown. In the worst case, this could lead to a serious impediment to securing product safety.

Liquid pipe	ø9.52 thickness 0.8 mm
Gas pipe	ø15.88 thickness 1.0 mm

- **Do not use pipes thinner than those specified above.**
- **Make sure that the inside and outside of refrigerant piping is clean and it has no contaminants such as sulfur, oxides, dirt, shaving particles, etc, which are hazard to refrigerant cycle. In addition, use pipes with specified thickness.**

4. Installing the refrigerant piping

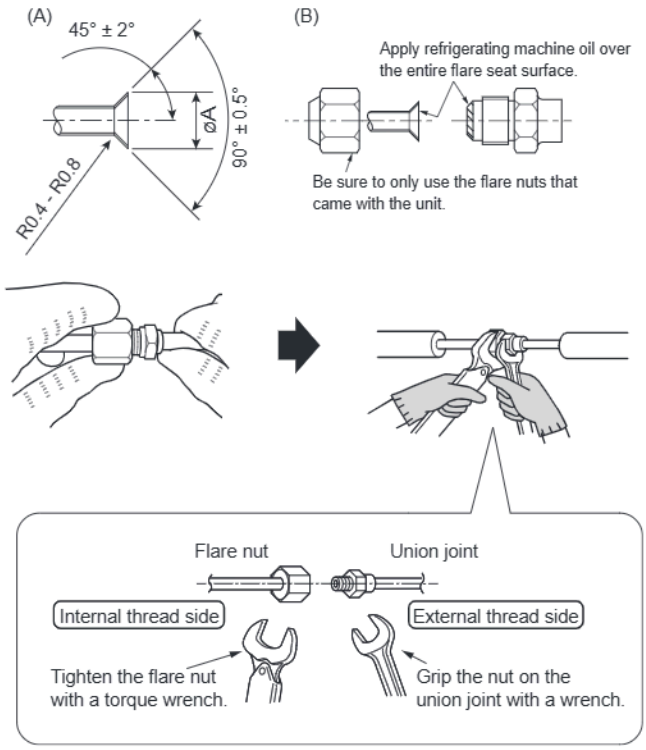


Fig. 4-1

(A) Flare cutting dimensions

Copper pipe O.D. (mm)	Flare dimensions øA dimensions (mm)
ø9.52	12.8 - 13.2
ø15.88	19.3 - 19.7

(B) Flare nut tightening torque

Copper pipe O.D. (mm)	Flare nut O.D. (mm)	Tightening torque (N·m)
ø9.52	22	34 - 42
ø15.88	29	68 - 82

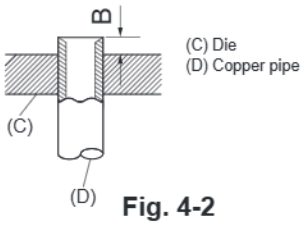


Fig. 4-2

Copper pipe O.D. (mm)	B (mm) Flare tool for R32/R410A Clutch type
ø9.52 (3/8")	0 - 0.5
ø15.88 (5/8")	0 - 0.5

4.2. Indoor unit (Fig. 4-1)

- 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.
- Use correct flare nuts meeting the pipe size of the outdoor unit.
- After connecting the refrigerant piping to the indoor unit, be sure to test the pipe connections for gas leakage with nitrogen gas. (Check that there is no refrigerant leakage from the refrigerant piping to the indoor unit.)
- Use flared nut installed to this indoor unit.
- In case of reconnecting the refrigerant pipes after detaching, make the flared part of pipe re-fabricated.
- Apply refrigerating machine oil over the entire flare seat surface.
  Do not apply refrigerating machine oil to the screw portions.
  (This will make the flare nuts more apt to loosen.)
- Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0.25 times the maximum allowable pressure. No leak shall be detected.

Available pipe size

Liquid side	ø9.52
Gas side	ø15.88

⚠ Warning:

- **Be careful of flying flare nut! (Internally pressurized)**
  Remove the flare nut as follows:
  1. Loosen the nut until you hear a hissing noise.
  2. Do not remove the nut until the gas has been completely released (i.e., hissing noise stops).
  3. Check that the gas has been completely released, and then remove the nut.
- **When installing the unit, securely connect the refrigerant pipes before starting the compressor.**
- **Provision shall be made for expansion and contraction of long runs of piping.**

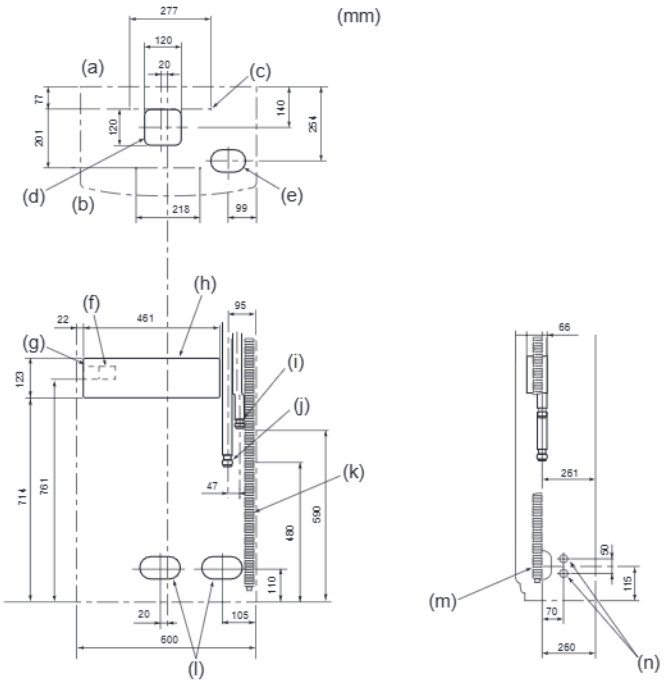


Fig. 4-3

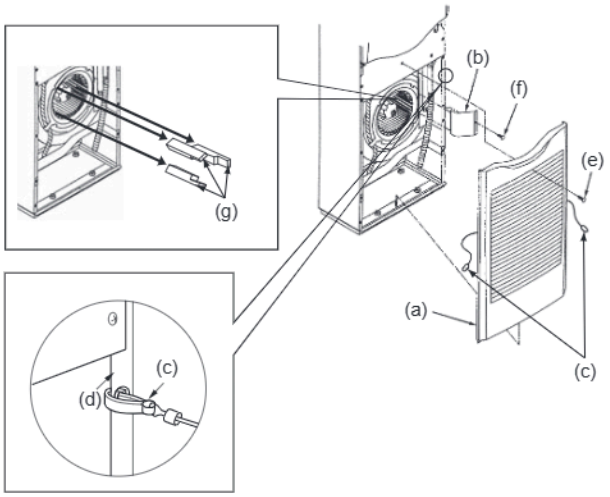
4.3. Refrigerant and drainage pipe locations (Fig. 4-3)

Where knockout holes are indicated, use a saw blade to cut along the groove.
Do not cut the hole larger than the indicated groove.

(a) Rear surface
(b) Front surface
(c) Knockout hole for mounting: 4-10 mm diameter hole
(d) * knockout hole for connections under the unit
(e) 120 × 120 knockout hole for connections under the unit
(f) Indoor/outdoor unit connecting terminals
(g) Power supply terminals
(h) Electrical equipment box
(i) Liquid pipe
(j) Gas pipe
(k) Drain pipe outlet diameter ø26 <PVC pipe VP20 connection>
(l) 140 × 80
Knockout hole for refrigerant and drainage piping and electrical wiring
(m) 90 × 60
Knockout hole for refrigerant and drainage piping
(n) 27 mm diameter knockout hole for electrical wiring (there is a similar hole on the left side)

en

4. Installing the refrigerant piping



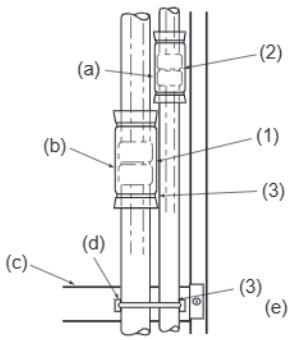
Refrigerant piping connection (Fig. 4-4)

1. Remove the screw from the air intake grill handle and then remove the air intake grill by pulling it up and forward.
2. Remove the tapping screw that holds the pipe support in place and then remove the pipe support.
3. Remove the cushions.

- Be sure to remove the three cushions from the fan before operating the indoor unit.
- After finishing this work, always reassemble the unit.
- When reassembling, hook the air intake grill hangers (c) onto the holes in the sides of the panels.

(a) Air intake grill
(b) Pipe support
(c) Hanger
(d) Side panel
(e) Screw
(f) 4 × 10 tapping screw
(g) Cushion

Fig. 4-4



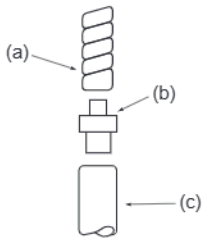
(a) Liquid pipe
(b) Gas pipe
(c) Frame
(d) Square hole
(e) Pass the band through the square hole in the frame to hold the refrigerant pipes in place.
(1) Gas pipe insulation
(2) Liquid pipe insulation
(3) Band

Fig. 4-5

Insulate flare joints (1) and (2) of the gas and refrigerant pipes completely. If any part of the joints are exposed, condensation can drip down. (Fig. 4-5)

- Fasten the gas pipe insulation (1) and the liquid pipe insulation (2) at both ends so that they will not slip and align with one another.
- After the insulation is installed, use a band (3) to fasten the refrigerant pipe to the frame (below the pipe joint section). This will prevent the refrigerant pipe from lifting up off of the frame.
  (When the refrigerant pipe is off of the frame, the grille cannot be installed.)
- After connecting the refrigerant piping to the indoor unit, be sure to test the pipe connections for gas leakage with nitrogen gas. (Check that there is no refrigerant leakage from the refrigerant piping to the indoor unit.)
  Conduct the airtightness test before connecting the outdoor unit stop valve and the refrigerant pipe.
  If the test is conducted after the valve and pipe are connected, gas, which is used for checking the airtightness, will leak from the stop valve and flow into the outdoor unit, resulting in abnormal operation.

5. Drainage piping work

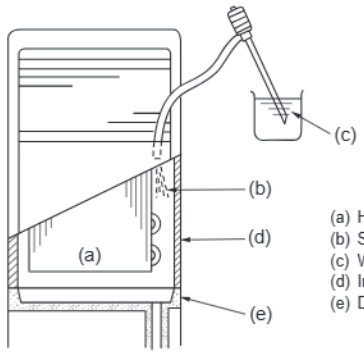


(a) Drain hose
(b) Drain socket
(c) Drain pipe VP20 (obtain locally)

Fig. 5-1

5.1. Drainage Piping Work (Fig. 5-1)

- Install the drain pipe so that it slopes downward (1/100 or more).
- Use VP20 (O.D. ø26 PVC TUBE) for the drain pipes.
- The drain hose can be cut with a knife to match on-site requirements.
- When connecting to the VP20, use the accessory drain socket (b). Securely fasten the socket to the pipe with vinyl chloride type adhesive so that it doesn't leak.
- Do not insert the drain pipe directly into a location where sulfur-containing gas is likely to be generated (i.e. a sewer).
- Make sure that no water leaks from the drain pipe joint.
- If the drain pipe passes through an indoor area, wrap commercially available insulation (polyethylene foam of specific gravity 0.03 with a thickness of 9 mm or more) around it and cover the surface with tape. This will prevent air from entering and condensation from forming.



(a) Heat exchanger
(b) Side plate
(c) Water
(d) Inside wall
(e) Drain pan

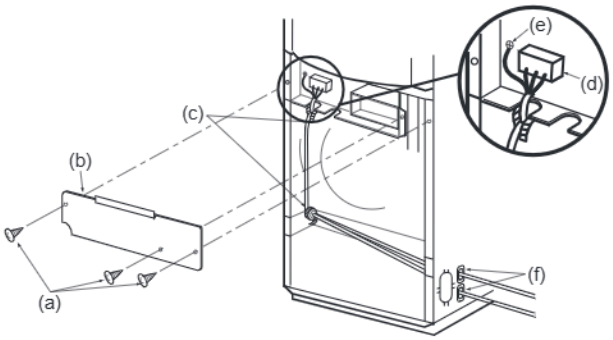
Fig. 5-2

5.2. Drainage check (Fig. 5-2)

- After installing the pipes, make sure that the waste water is being drained out properly and that water is not leaking from the joints (also perform these checks if installation is done during the heating season).
- Insert a water supply pump from the right side of the air outflow port and pump about 1L of water into the unit.

* Pump gently, toward the heat exchanger side plate or the unit inside wall.
* Always pump from the right side of the air outflow port.
* If the unit has a heater, the heater will be attached to the front surface of the heat exchanger, make sure that water does not get onto the heater.

6. Electrical work



(a) 4 × 10 tapping screws
(b) Electrical equipment cover
(c) Wiring bands
(d) Terminal block for indoor and outdoor units connector.
(e) Grounding cable connector
(f) Bushing (for the wire hole)

Fig. 6-1

6.1. Electric wiring (Fig. 6-1)

1. Remove the tapping screws (a) and then remove the electrical equipment cover (b).
2. Connect the electric wires securely to the corresponding terminals.
3. Fasten the wires (d) with the bands (c).

- Always ground the wiring (the ground wire diameter must be 1.6 mm or more).
- If the wires contact the pipes, condensation may drip onto them. Make sure that the wires are properly routed.
- Fasten the power source wiring to the control box using the buffer bushing for tensile force (PG connection or the like)
- After finishing this work, always reassemble the unit.
- For instructions on how to reinstall the air intake grill, see page 8.

⚠ Warning:

- **Never splice the power cable or the indoor-outdoor connection cable, otherwise it may result in a smoke, a fire or communication failure.**
- **Electrical components that can arc or spark, which are not considered ignition sources shall only be replaced with parts specified by the appliance manufacturer. Replacement with other parts may result in the ignition of refrigerant in the event of a leak.**

Wiring circuit breaker and isolating switch (B) must be always ON except when being cleaned or checked. (When R32 is used)
Hang the attached label (8) or attach the sticker, and explain it to customers.
When the wiring circuit breaker or isolating switch (B) is OFF, the refrigerant sensor will not detect refrigerant leakage because electricity is not supplied.
Note: If the power supplies of indoor unit and outdoor unit are separated, hang the attached label (8) on the wiring circuit breaker or isolating switch, or attach the sticker, and explain it to customers.



⚠ Caution:

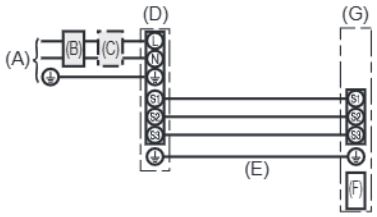
Be careful about the fan rotation when the breaker is ON.
When the refrigerant sensor detects the refrigerant leakage, the fan starts rotating automatically.
This may cause injury.

en

6.1.1. Indoor unit power supplied from outdoor unit

The following connection patterns are available.
The outdoor unit power supply patterns vary on models.

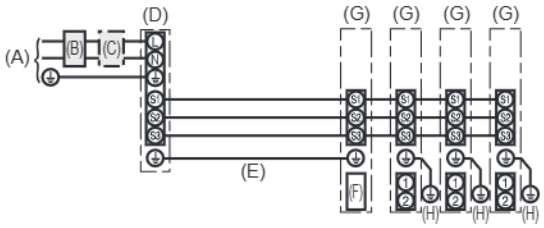
1:1 System



(A) Outdoor unit power supply
(B) Earth leakage breaker
(C) Wiring circuit breaker or isolating switch
(D) Outdoor unit
(E) Indoor unit/outdoor unit connecting cords
(F) Controller
(G) Indoor unit

* Affix a label A that is included with the manuals near each wiring diagram for the indoor and outdoor units.

Simultaneous twin/triple/quadruple system



(A) Outdoor unit power supply
(B) Earth leakage breaker
(C) Wiring circuit breaker or isolating switch
(D) Outdoor unit
(E) Indoor unit/outdoor unit connecting cords
(F) Controller
(G) Indoor unit
(H) Indoor unit earth

* Affix a label A that is included with the manuals near each wiring diagram for the indoor and outdoor units.

6. Electrical work

Indoor unit model			PSA-M·KA Series
Wiring (Wire No. × size (mm²))	Indoor unit-Outdoor unit	*1	3 × 1.5 (polar)
	Indoor unit-Outdoor unit earth	*1	1 × Min. 1.5
	Indoor unit earth		1 × Min. 1.5
Circuit rating	Indoor unit (Heater) L-N	*2	–
	Indoor unit-Outdoor unit S1-S2	*2	230 VAC
	Indoor unit-Outdoor unit S2-S3	*2 *3	24 VDC / 28 VDC

*1. <For 25-140 outdoor unit application>
Max. 45 m
If 2.5 mm² used, Max. 50 m
If 2.5 mm² used and S3 separated, Max. 80 m
<For 200/250 outdoor unit application>
Max. 18 m
If 2.5 mm² used, Max. 30 m
If 4 mm² used and S3 separated, Max. 50 m
If 6 mm² used and S3 separated, Max. 80 m
*2. The figures are NOT always against the ground.
S3 terminal has 24 VDC / 28 VDC against S2 terminal. However between S3 and S1, these terminals are not electrically insulated by the transformer or other device.
*3. It depends on the outdoor unit.

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 60245 IEC 57)
3. Install an earth longer than other cables.

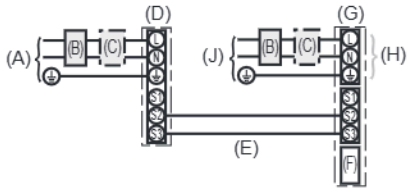
en

6.1.2. Separate indoor unit/outdoor unit power supplies (For PUHZ application only)

The following connection patterns are available.
The outdoor unit power supply patterns vary on models.

1:1 System

* The optional wiring replacement kit is required.

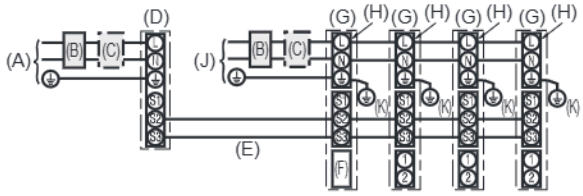


(A) Outdoor unit power supply
(B) Earth leakage breaker
(C) Wiring circuit breaker or isolating switch
(D) Outdoor unit
(E) Indoor unit/outdoor unit connecting cords
(F) Controller
(G) Indoor unit
(H) Option
(J) Indoor unit power supply

* Affix a label B that is included with the manuals near each wiring diagram for the indoor and outdoor units.

Simultaneous twin/triple/quadruple system

* The optional wiring replacement kits are required.



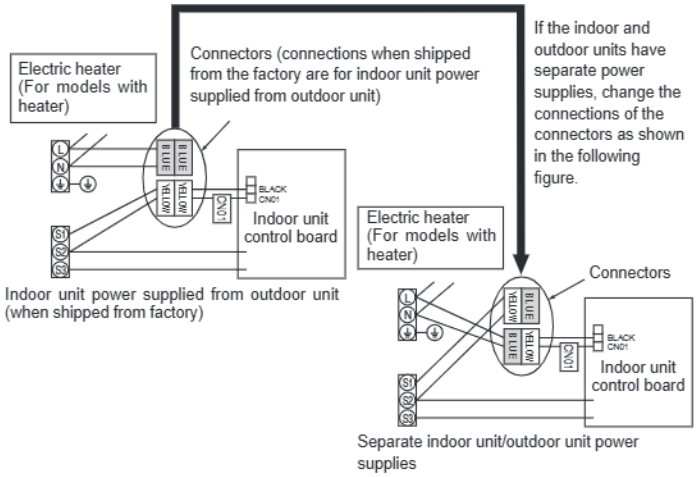
(A) Outdoor unit power supply
(B) Earth leakage breaker
(C) Wiring circuit breaker or isolating switch
(D) Outdoor unit
(E) Indoor unit/outdoor unit connecting cords
(F) Controller
(G) Indoor unit
(H) Option
(J) Indoor unit power supply
(K) Indoor unit earth

* Affix a label B that is included with the manuals near each wiring diagram for the indoor and outdoor units.

If the indoor and outdoor units have separate power supplies, refer to the table at the below. If the optional wiring replacement kit is used, change the indoor unit electrical box wiring refering to the figure in the right and the DIP switch settings of the outdoor unit control board.

	Indoor unit specifications
Indoor power supply terminal kit (option)	Required
Indoor unit electrical box connector connection change	Required
Label affixed near each wiring diagram for the indoor and outdoor units	Required
Outdoor unit DIP switch settings (when using separate indoor unit/outdoor unit power supplies only)	ON 3 / OFF 1 2 (SW8)

* There are three types of labels (labels A, B, and C). Affix the appropriate labels to the units according to the wiring method.

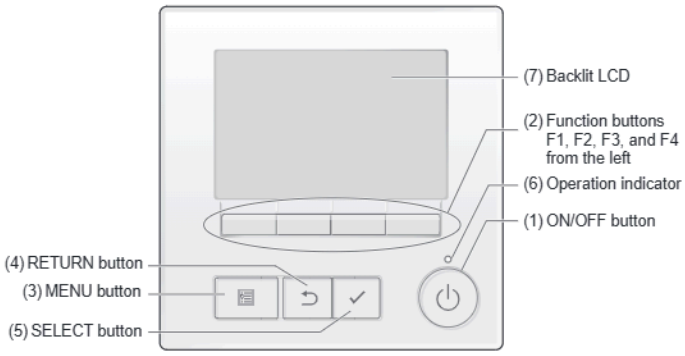


6. Electrical work

Indoor unit model			PSA-M·KA Series
Indoor unit power supply			~/N 230/50 V/Hz
Indoor unit input capacity Main switch (Breaker)		*1	16 A
Wiring Wire No. x size (mm²)	Indoor unit power supply		2 × Min. 1.5
	Indoor unit power supply earth		1 × Min. 1.5
	Indoor unit-Outdoor unit	*2	2 × Min. 0.3
	Indoor unit-Outdoor unit earth		–
Circuit rating	Indoor unit L-N	*3	230 VAC
	Indoor unit-Outdoor unit S1-S2	*3	–
	Indoor unit-Outdoor unit S2-S3	*3 *4	24 VDC / 28 VDC

*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. 120 m
*3. The figures are NOT always against the ground.
*4. It depends on the outdoor unit.

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 60245 IEC 57)
3. Install an earth longer than other cables.



6.2. Function setting

6.2.1. Function setting on the unit

(1) ON/OFF button
Use to turn ON/OFF the indoor unit.

(2) Function buttons
Use to select the operation mode or to set the temperature and fan speed on the Main display. Use to select items on other screens.

(3) MENU button
Use to bring up the Main menu.

(4) RETURN button
Use to return to the previous screen.

(5) SELECT button
Use to jump to the setting screen or to save the settings.

(6) Operation indicator
Stays lit during normal operation. Blinks during startup and when an error occurs.

(7) Backlit LCD
Dot display. When the backlight is off, pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen. Performing any button operation keeps the backlight on.

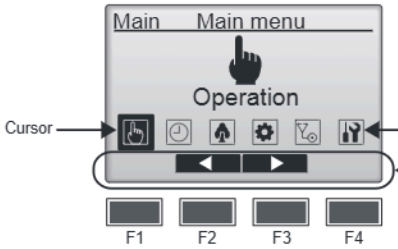
Note:
When the backlight is off, pressing any button turns the backlight on and does not perform its function. (except for the ON/OFF button)

Pressing the MENU button will bring up the Main menu as shown below.

Operation menu *1
Timer menu *1
Energy saving menu *1
Initial setting menu *2*3
Maintenance menu *1
Service menu *2*3

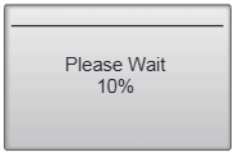
*1 Refer to the operation manual for details.
*2 Explained in this manual.
*3 If no buttons are pressed for 10 minutes on the initial setting screens, or 2 hours on the service screens (10 minutes on some screens), the screen will automatically return to the Main display. Any settings that have not been saved will be lost.
Refer to the indoor unit operation manual for information that is not included in this manual.

Button operations on the Main menu



Move the cursor to the desired function with the F2 and F3 buttons, and press the SELECT button to go to the next page. Password may be required.

Button function guide will appear at the bottom of the screens.



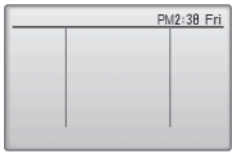
Normal start up (indicating the percentage of process completion)

■ Turning on the power

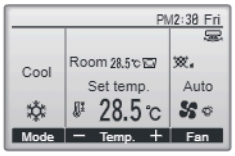
(1) When the power is turned on, the following screen will appear.

Note:
When the power is on for the first time, the Language selection screen will be displayed. Refer to section (5) under "Display setting menu".
Select a desired language. The system will not start-up without language selection.

en



Main display in the Full mode
(while the unit is not in operation)



Main display in the Full mode
(while the unit is in operation)

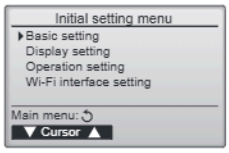
(2) Main display
After the successful startup, the Main display will appear. The Main display can be displayed in two different modes: "Full" and "Basic." Refer to section "Initial setting" for how to select the display mode. (The factory setting is "Full.")

Note:
Refer to the operation manual for the icons on the display.

■ Initial setting (Controller settings)

Note:
Administrator password is required.

From the Main display, select Main menu>Initial setting, and make the controller settings on the screen that appears.



Basic setting menu
- Main/Sub
- Clock
- Daylight saving time
- Administrator password

Display setting menu
- Main display
- Remote controller display details setting
- Contrast•Brightness
- Language selection

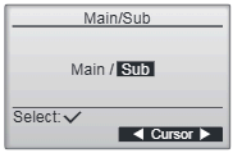
Operation setting menu
- Auto mode

Wi-Fi interface setting

Note:
The initial administrator password is "0000." Refer to section (4) "Administrator password setting" for how to change the password.

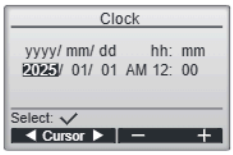
Basic setting menu

[1] Main/Sub setting
When connecting two remote controllers, one of them needs to be designated as a sub controller.



[Button operation]
(1) When the F3 or F4 button is pressed, the currently selected setting will appear highlighted. Select "Sub", and press the SELECT button to save the change.
(2) Press the MENU button to return to the Main menu screen. (This button always brings up the Main menu screen.)

[2] Clock setting



[Button operation]
(1) Move the cursor with the F1 or F2 button to the desired item.
(2) Change the date and time with the F3 or F4 button, and press the SELECT button to save the change. The change will be reflected on the clock display on the Status display and the Main display

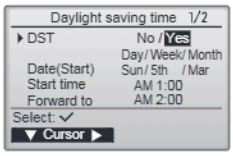
Note:
Clock setting is necessary for time display, weekly timer, timer setting and error history. Make sure to perform clock setting when the unit is used for the first time or has not used for a long time.

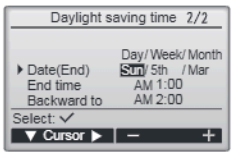
Note:
The clock time is not corrected automatically.
Correct it by yourself periodically.

en

[3] Daylight saving time
The start/end time for daylight saving time can be set. The daylight saving time function will be activated based on the setting contents.

- If a given system has a system controller, disable this setting to keep the correct time.
- At the beginning and the end of daylight saving time, the timer may go into action twice or not at all.
- This function will not work unless the clock has been set.

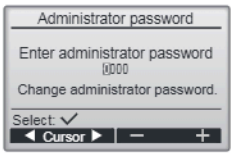




[Button operation]
(1) The daylight saving time function can be activated/deactivated or the start/end times can be set by using the F1 through F4 buttons.
- DST
  Select "Yes" to activate the daylight saving time, or select "No" to deactivate.
- Date(Start)*
  Set the start day of the week, week number, and month for daylight saving time.
- Start time
  Set the start time for daylight saving time.
- Forward to
  Set the time when the clock is to be set forward to at the start time above.
- Date(End) (2nd page)*
  Set the end day of the week, week number, and month for daylight saving time.
- End time (2nd page)
  Set the end time for daylight saving time.
- Backward to (2nd page)
  Set the time when the clock is to be set backward to at the end time above.

(2) Press the SELECT button to save the setting.

* If "5th" is selected for the week number and the 5th week does not exist in the selected month of the year, the setting is considered to be "4th."



[4] Administrator password setting
[Button operation]
(1) A window to enter a new password will appear. Enter a new password, and press the SELECT button.
(2) Press the F4 button (OK) on the password change confirmation screen to save the change. Press the F3 button (Cancel) to cancel the change.

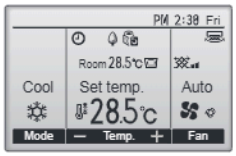
Note:
The initial administrator password is "0000." Change the default password as necessary to prevent unauthorized access. Have the password available for those who need it.

Note:
If you forget your administrator password, you can initialize the password to the default password "0000" by pressing and holding the F1 button for ten seconds on the administrator password setting screen.

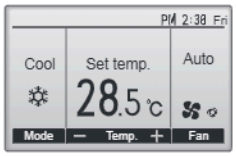
Note:
The administrator password is required to make the settings for the following items.
- Timer setting · Weekly timer setting · Energy-save setting
- Outdoor unit silent mode setting · Restriction setting
- Night setback setting · Initial setting

Refer to the indoor unit operation manual for information about how to make the settings.

en

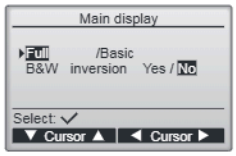


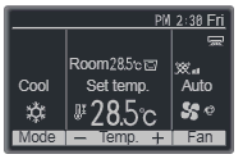
Full mode (Example)



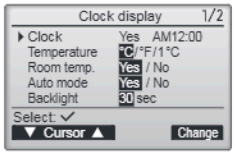
Basic mode (Example)

Display setting menu
[1] Main display setting
[Button operation]
Move the cursor to "Full/Basic," and use the F3 or F4 button to select the display mode "Full" or "Basic." (The factory setting is "Full.")

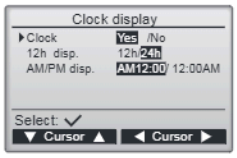




[2] Black and white inversion setting
Move the cursor to "B&W inversion" and use the F3 or F4 button to select the display mode "Yes" or "No." (The factory setting is "No.") Selecting "Yes" will invert the colors of the display, turning white background to black and black characters to white as shown at left.

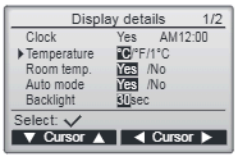


[3] Controller display details setting
Make the settings for the controller-related items as necessary.
Press the SELECT button to save the changes.



[4] Clock display
[Button operation]
(1) Select "Clock" from the display details setting screen, and press the F4 button (Change) to bring up the clock display setting screen.
(2) Use the F1 through F4 buttons to select "Yes" (display) or "No" (nondisplay) and its format for the Status display and the Main display.
(3) Save the settings with the SELECT button. (The factory settings are "Yes" (display) and "12 h" format.)
Clock display:
Yes (Time is displayed on the Status display and the Main display.)
No (Time is not displayed on the Status display and the Main display.)
Display format:
24-hour format
12-hour format
AM/PM display (Effective when the display format is 12-hour):
AM/PM before the time
AM/PM after the time

Note:
Time display format will also be reflected on the timer and schedule setting display. The time is displayed as shown below.
12-hour format: AM12:00 ~ AM1:00 ~ PM12:00 ~ PM1:00 ~ PM11:59
24-hour format: 0:00 ~ 1:00 ~ 12:00 ~ 13:00 ~ 23:59



[5] Temperature unit setting
[Button operation]
Move the cursor to "Temperature" from the display details setting screen, and select the desired temperature unit with the F3 or F4 button. (The factory setting is Centigrade (ºC).)
• ºC: Temperature is displayed in Centigrade. Temperature is displayed in 0.5- or 1-degree increments, depending on the model of indoor units.
• ºF: Temperature is displayed in Fahrenheit.
• 1 ºC: Temperature is displayed in Centigrade in 1-degree increments.

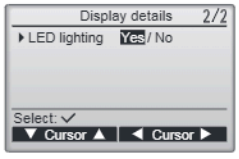
[6] Room temperature display
[Button operation]
Move the cursor to "Room temp." on the display details setting screen, and select the desired setting with the F3 or F4 button.
(The factory setting is "Yes".)
• Yes: Room temperature appears on the Main display.
• No: Room temperature does not appear on the Main display.

Note:
Even when "Yes" is set, the room temperature is not displayed on the Main display in the "Basic" mode.

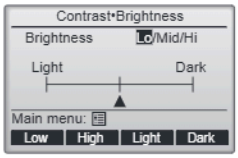
[7] Auto (single set point) mode display setting
[Button operation]
Move the cursor to "Auto mode" from the display details setting screen, and select the desired mode with the F3 or F4 button. (The factory setting is "Yes.")
• Yes: "Auto Cool" or "Auto Heat" is displayed during operation in the Auto (single set point) mode.
• No: Only "Auto" is displayed during operation in the Auto (single set point) mode.

[8] Backlight
The backlight lighting-up time can be set.
[Button operation]
Move the cursor to "Backlight" from the display details setting screen, and select the desired time (5/10/20/30/60 seconds) with the F4 button. (The factory setting is "30" seconds.)

Note:
This setting is effective on the Status display and the Main display.



[9] LED lighting
The LED lighting can be set to either "Yes" (On) or "No" (Off). (The factory setting is "Yes".)
When "No" is selected, the LED will not light up even during the normal operation.

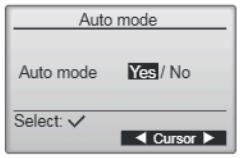


[10] Contrast•Brightness
[Button operation]
Select the desired brightness for the controller LCD with the F1 and F2 buttons.
Adjust the contrast with the F3 or F4 button. The current level is indicated with a triangle.

Note:
Adjust the contrast and brightness to improve viewing in different lighting conditions or installation locations. This setting can not improve viewing from all directions.



[11] Language selection
[Button operation]
Move the cursor to the language you desire with the F1 through F4 buttons.
Press the SELECT button to save the setting.



Operation setting menu
[1] Auto mode setting
[Button operation]
Whether or not to use the Auto (single set point) or Auto (dual set points) mode can be selected by using the F3 or F4 button. This setting is valid only when indoor units with the Auto mode function are connected. (The factory setting is "Yes".)
Press the SELECT button to save the changes made.
- Yes: The Auto mode can be selected in the operation mode setting.
- No: The Auto mode cannot be selected in the operation mode setting.

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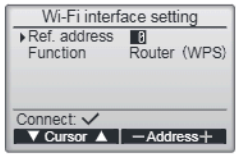
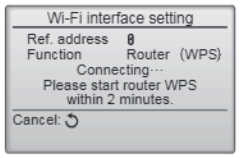
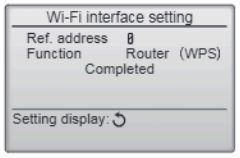


Wi-Fi interface setting
This setting needs to be made only when connecting a separately sold Wi-Fi interface.
[1] Router connection
[Button operation]
(1) Press the F1 or F2 button to select "Ref. address" then "Function."
Press the F3 or F4 button to select the desired settings.
- Ref. address: 0 to 15
- Function: Router (WPS)/Router (AP)



(2) Press the SELECT button. "Connecting…" will appear.
- Router (WPS): Press the WPS button on the Wi-Fi router within 2 minutes.
- Router (AP): Make the network settings by referring to the manual for the cloud service within ten minutes.



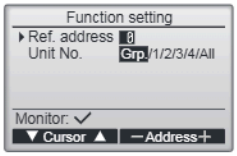
When router connection has been established, "Completed" will appear. If a message other than "Completed" appears, check the connection, and start over from Step (1), or refer to the Wi-Fi interface manual.

Select "Request code" from the Check menu to display or set the following items.

Function	Request code	Send results
Displays the Wi-Fi interface status	504	00: Not connected. The interface has been reset. The interface has been reset to the factory settings. 01: WPS mode 02: AP mode 03: Connecting...
Resets the Wi-Fi interface	505	"Communication completed" will appear when the interface has been reset.
Resets the Wi-Fi interface to the factory settings	506	"Communication completed" will appear when the interface has been reset.

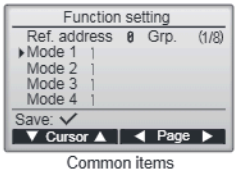
6.2.2. Function setting on the controller

Note:
Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.



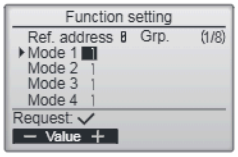
Make the settings for the indoor unit functions via the controller as necessary.
Select "Function setting" from the Settings menu to bring up the Function setting screen.

[Button operation]
(1) Set the indoor unit refrigerant addresses and unit numbers with the F1 through F4 buttons, and then press the SELECT button to confirm the current setting.



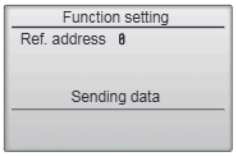
Common items

(2) When data collection from the indoor units is completed, the current settings appears highlighted. Non-highlighted items indicate that no function settings are made. Screen appearance varies depending on the "Unit No." setting.
(3) Toggle through the pages with the F3 or F4 button.
(4) Select the mode number with the F1 or F2 button, and then press the SELECT button.



Individual items

(5) Select the setting number with the F1 or F2 button.
Setting range for modes 1 through 28: 1 through 3
Setting range for modes 31 through 66: 1 through 15



(6) When the settings are completed, press the SELECT button to send the setting data from the remote controller to the indoor units.
(7) When the transmission is successfully completed, the screen will return to the Function setting screen.

Note:
Make the function settings shown in Function table as necessary.

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6. Electrical work

Function table

Select unit number "Grp."

Mode	Settings	Mode no.	Setting no.	Initial setting	setting
Power failure automatic recovery	Not available	01	1		
	Available *1		2	O*2	
Indoor temperature detecting *3	Indoor unit operating average	02	1	O	
	Set by indoor unit's remote controller		2		
	Remote controller's internal sensor		3		
LOSSNAY connectivity	Not Supported	03	1	O	
	Supported (indoor unit is not equipped with outdoor-air intake)		2		
	Supported (indoor unit is equipped with outdoor-air intake)		3		
Auto operation mode *4	Single set point	06	1		
	Dual set point		2	O	
Smart Defrost *4	Available	20	1	O	
	Not Available		2		
14ºC cooling setting *4	Not available 14ºC cooling setting *6	37	1	O	
	Available 14ºC cooling setting *5, *6		2		

en

Select unit numbers 1 to 4 or "All"

Mode	Settings	Mode no.	Setting no.	Initial setting	setting
Filter sign	100 Hr	07	1		
	2500 Hr		2	O	
	No filter sign indicator		3		
Fan speed	Silent	08	1		
	Standard		2	O	
	High ceiling		3		
Fan speed during the cooling thermostat is OFF	Setting fan speed	27	1		
	Stop		2		
	Extra low		3	O	

*1 When the power supply returns, the air conditioner will start 3 minutes later.
*2 Power failure automatic recovery initial setting depends on the connecting outdoor unit.
*3 If there are multiple remote controls (wired or wireless remote control), perform the settings from only one remote control.
*4 It is available when the indoor unit is connected to any of the particular outdoor units.
*5 Mode no.6 must be set to "1".
*6 The changes will take effect when you turn off power supply and then turn it back on.
If you do not perform this operation, the set temperature range may not be set correctly.
Be sure to perform this operation if you change Mode no 37.

7. Test run

7.1. 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

7.2. Test run

The following 2 methods are available.

Note:
If the unit is operated continuously during a test run, the unit stops after 2 hours.

7.2.1. Using controller

Note:
Maintenance password is required.

(1) At the Main display, press the Setting button and select Service>Test run>Test run.
(2) Press the ON/OFF button to cancel the test run if necessary.

Note:
Refer to section "Service menu" for information about the maintenance password.

7.2.2. Using SW4 in outdoor unit

Refer to the outdoor unit installation manual.

7. Test run

7.3. Error code

[Output pattern A] Errors detected by indoor unit

Check code	Symptom	Remark
P1	Intake sensor error	
P2	Pipe (TH2) sensor error	
P9	Pipe (TH5) sensor error	
E6, E7	Indoor/outdoor unit communication error	
P6	Freezing/Overheating safeguard operation	
EE	Communication error between indoor and outdoor units	
P8	Pipe temperature error	
E4	Controller signal receiving error	
FL	Refrigerant leakage	
FH	Refrigerant sensor error	
PL	Refrigerant circuit abnormal	
FB (Fb)	Indoor unit control system error (memory error, etc.)	
– –	No corresponding	
PB (Pb)	Indoor unit fan motor error	

[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	
FL	Refrigerant leakage	
FH	Refrigerant sensor error	
Others	Other errors (Refer to the technical manual for the outdoor unit.)	

- On 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
Controller		LED 1, 2 (PCB in outdoor unit)	
Please Wait	For about 3 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 3 minutes following power-on, operation of the controller is not possible due to system start-up. (Correct operation)
Please Wait → Error code	After about 3 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.

Note:
If the unit is operated continuously during a test run, the unit stops after 2 hours.

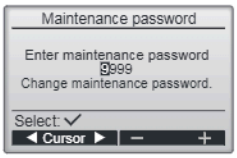
8. Easy maintenance function

■ Service menu

Note:
Maintenance password is required.

At the Main display, press the Setting button and select "Service" to make the maintenance settings.

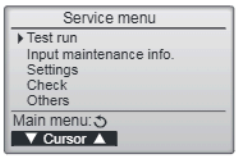
When the Service menu is selected, a window will appear asking for the password. To enter the current maintenance password (4 numerical digits), move the cursor to the digit you want to change with the F1 or F2 button, and set each number (0 through 9) with the F3 or F4 button. Then, press the SELECT button.

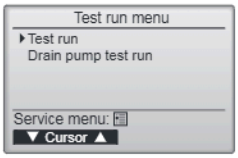


Note:
The initial maintenance password is "9999." Change the default password as necessary to prevent unauthorized access. Have the password available for those who need it.

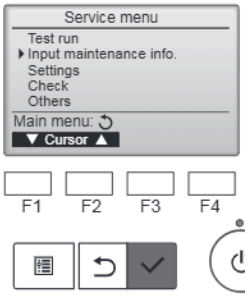
Note:
If you forget your maintenance password, you can initialize the password to the default password "9999" by pressing and holding the F1 button for ten seconds on the maintenance password setting screen.

Note:
Air conditioning units may need to be stopped to make certain settings. There may be some settings that cannot be made when the system is centrally controlled.

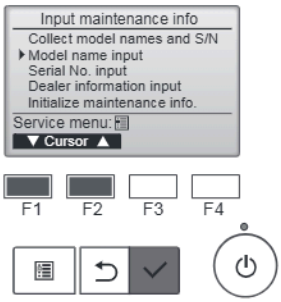




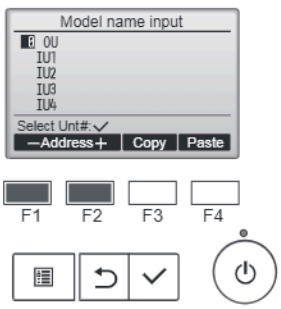
(1) Test run
Refer to section "7. Test run".



(2) Input maintenance information
Select "Maintenance information" from the Service menu, and press the SELECT button.



(1) Model name input [Button operation]
Select "Model name input" with the F1 or F2 button, and press the SELECT button.

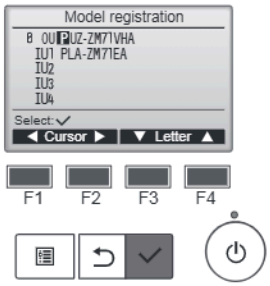


Select the Ref. address, Outdoor unit and Indoor unit to be registered.

Select the Ref. address to be registered with the F1 and F2 buttons.
"Refrigerant address" setting [0] to [15]
*Only a connected address can be selected.

Press the SELECT button.
The registered model information can be copied and pasted into the refrigerant address units.
•**F3 button:** Copies the model information for the selected address.
•**F4 button:** Overwrites the copied model information onto the selected address.

8. Easy maintenance function



Model name input.

Select the unit to be registered with the F1 and F2 buttons.

■ Setting the "Registered unit" [OU] / [IU1] to [IU4]

- OU: Outdoor unit
- IU1: Indoor unit No. 1
- IU2: Indoor unit No. 2
- IU3: Indoor unit No. 3
- IU4: Indoor unit No. 4

* IU2 to IU4 may not appear depending on the type of connected air conditioner (single, twin, triple, quadruple).

Move the input cursor to the left and right with the F1 and F2 buttons, and select the letters with the F3 and F4 buttons.

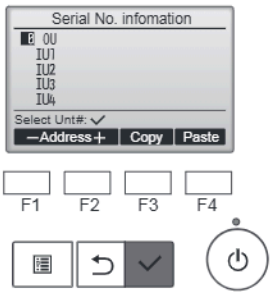
■ Input letters

Select from: A, B, C, D ... Z, 0, 1 2 ... 9, -, space

*Model names can be input up to 18 letters.

Press the SELECT button.

- Repeat the above step, and register the model names for the outdoor unit and indoor unit of the selected refrigerant address.
- Changing the refrigerant address
  After the model name is registered above, press the SELECT button. Change the refrigerant address, and using the previous procedure input the Model name.



(2) Serial No. input

Select "Serial No. input" on the Maintenance information screen, and press the SELECT button.

Register the Serial No. with the procedure given in (1).

*Serial No. can be input up to 8 letters.



(3) Dealer information input

Select "Dealer information input" on the Maintenance information, and press the SELECT button.

The current settings will appear. Then press the SELECT button again.

Move the input cursor to the left and right with the F1 and F2 buttons, and select the letters with F3 and F4 buttons.

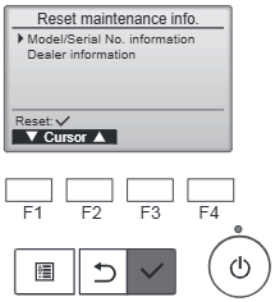
■ Input letters (Telephone Number)

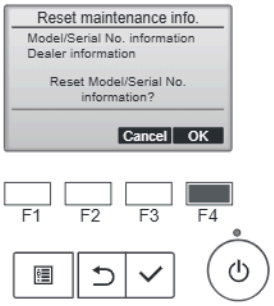
Select from : 0 , 1 , 2 , ... , 9 , - , space

Telephone Number can be input up to 13 letters.

Press the SELECT button.







(4) Initialize maintenance info.
Model/Serial No. information reset.

Select "Initialize maintenance info." on the Maintenance information, and press the SELECT button.

Select "Model/Serial No. information" and press the SELECT button.

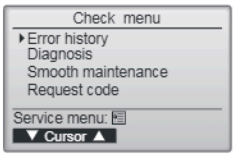
A confirmation screen will appear asking if you want to reset the Model/Serial No. information.

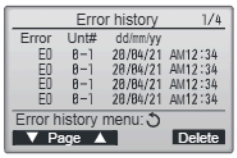
Press the F4 button (OK) to reset the Model/Serial № information.

8. Easy maintenance function

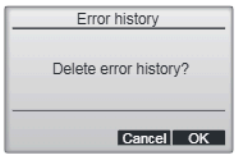
8.1. Self-check

Select "Check" on the Service menu to bring up the Check menu screen.
The type of menu that appears depends on the type of indoor units that are connected.

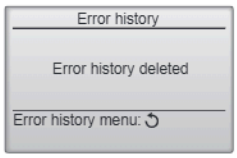




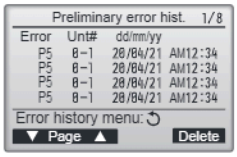
[1] Error history
[Button operation]
Select "Error history" from the Error history menu, and press the SELECT button to view up to 16 error history records. 4 records are shown per page, and the top record on the first page indicates the latest error record.



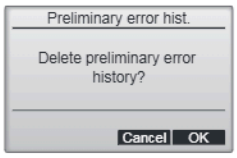
[Deleting the error history]
To delete the error history, press the F4 button (Delete) on the screen that shows error history. A confirmation screen will appear asking if you want to delete the error history.
Press the F4 button (OK) to delete the error history.



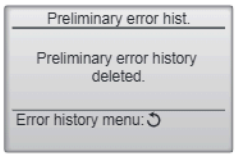
"Error history deleted" will appear on the screen. Press the RETURN button to go back to the Error history menu screen.



[2] Preliminary error history
The detected error signs can be maintained.
Select "Preliminary error hist." from the Error history menu, and press the SELECT button to view up to 32 preliminary error history records. 4 records are shown per page, and the top record on the first page indicates the latest error record.



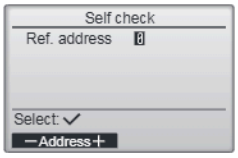
[Deleting the preliminary error history]
To delete the preliminary error history on the screen that shows preliminary error history, press the F4 button (Delete). A confirmation screen will appear asking if you want to delete the preliminary error history.
Press the F4 button (OK) to delete the preliminary error history.

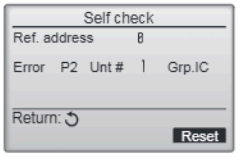


"Preliminary error history deleted" will appear on the screen. Press the RETURN button to go back to the Error history menu.

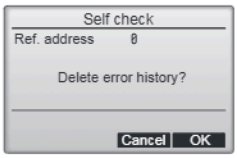
[3] Other options in the Check menu
The following options are also available in the Check menu. Refer to the indoor unit Installation Manual for details.
- Smooth maintenance
- Request code

en

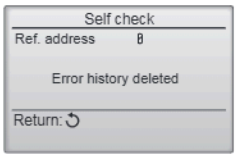




[4] Diagnostic function
Error history of each unit can be checked via the controller.
[Button operation]
(1) Select "Self check" from the Diagnosis menu, and press the SELECT button to view the Self check screen.
(2) With the F1 or F2 button, enter the refrigerant address and press the SELECT button.
(3) Error code, unit number, attribute, will appear. "-" will appear if no error history is available.



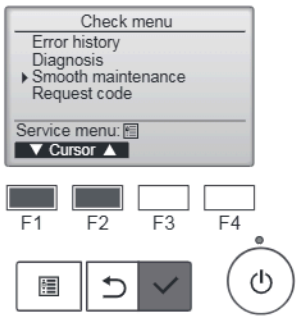
[Resetting the error history]
(1) Press the F4 button (Reset) on the screen that shows the error history.
A confirmation screen will appear asking if you want to delete the error history.



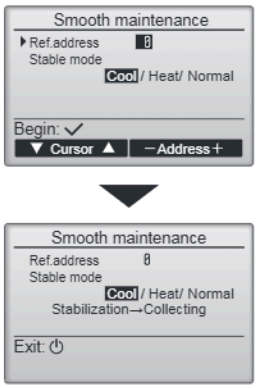
(2) Press the F4 button (OK) to delete the error history. If deletion fails, "Request rejected" will appear, and "Unit not exist" will appear if no indoor units that are correspond to the entered address are found.

8. Easy maintenance function

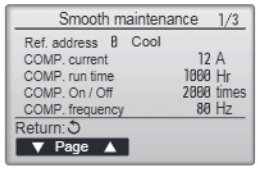
(1)

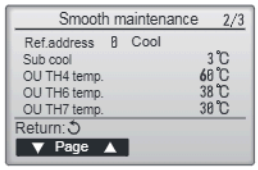


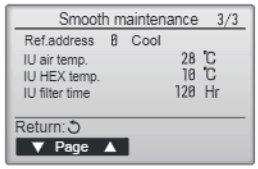
(2)



(3)







[5] Smooth maintenance

Maintenance data, such as the indoor/outdoor unit's heat exchanger temperature and compressor operation current can be displayed with "Smooth maintenance".

* **This cannot be executed during test operation.**
* **Depending on the combination with the outdoor unit, this may not be supported by some models.**

- Select "Service" from the Main menu, and press the [SELECT] button.
- Select "Check" with the [F1] or [F2] button, and press the [SELECT] button.
- Select "Smooth maintenance" with the [F1] or [F2] button, and press the [SELECT] button.

Select each item.

- Select the item to be changed with the [F1] or [F2] button.
- Select the required setting with the [F3] or [F4] button.

  "Ref. address" setting ..... "0" - "15"
  "Stable mode" setting..... "Cool" / "Heat" / "Normal"

- Press the [SELECT] button, fixed operation will start.

* Stable mode will take approx. 20 minutes.

The operation data will appear.

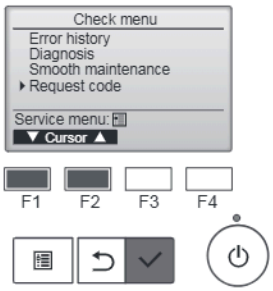
The Compressor-Accumulated operating (COMP. run) time is 10-hour unit, and the Compressor-Number of operation times (COMP. On/Off) is a 100-time unit (fractions discarded)

Navigating through the screens

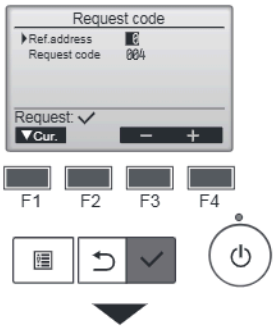
- To go back to the Service menu.....[MENU] button
- To return to the previous screen ..... [RETURN] button

en

8. Easy maintenance function



[6] Request code
Details on the operation data including each temperature and error history can be confirmed with the remote controller.
[Button operation]
- Select "Check menu" from the Service menu, and press the SELECT button.
- Select "Check" with the F1 or F2 button, and press the SELECT button.
- Select "Request code" with the F1 or F2 button, and press the SELECT button.

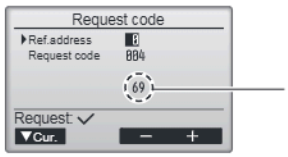


Set the Refrigerant address and Request code.

- Select the item to be changed with the F1 or F2 button.

- Select the required setting with the F3 or F4 button.

■<Ref. address> setting [0] – [15]
■<Request code> setting [Refer to next page]

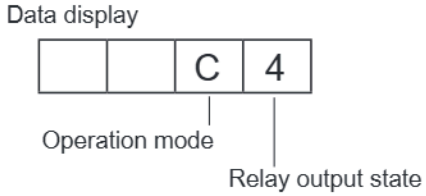


Request code: 004
Discharge temperature: 69°C

Press the SELECT button, Data will be collected and displayed.

Navigating through the screens
- To go back to the Service menu.....[MENU] button
- To return to the previous screen ..... [RETURN] button

<Operation state> (Request code "0")



1) Operation mode

Display	Operation mode
0	STOP • FAN
C	COOL • DRY
H	HEAT
d	Defrost

2) Relay output state

Display	Power currently supplied to compressor	Compressor	Four-way valve	Solenoid valve
0	—	—	—	—
1				ON
2			ON	
3			ON	ON
4		ON		
5		ON		ON
6		ON	ON	
7		ON	ON	ON
8	ON			
A	ON		ON	

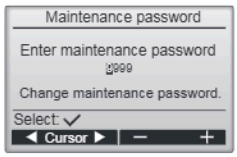
8. Easy maintenance function

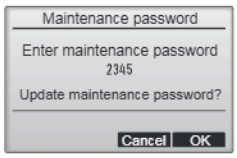
<Request Code list>

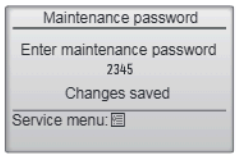
* The Request code 150 – 152 data is the information for the indoor unit to which the controller is connected.

Request code	Request content	Description (Display range)	Unit	Remarks
0	Operation state	Refer to "Operation mode"	–	
1	Compressor - Operating current (rms)	0 – 50	A	
2	Compressor - Accumulated operating time	0 – 9999	10 hours	
3	Compressor - Number of operation times	0 – 9999	100 times	
4	Discharge temperature (TH4)	3 – 217	˚C	
5	Outdoor unit - Liquid pipe 1 temperature (TH3)	-40 – 90	˚C	
7	Outdoor unit - 2 phase pipe temperature (TH6)	-39 – 88	˚C	
9	Outdoor unit - Outside air temperature (TH7)	-39 – 88	˚C	
10	Outdoor unit - Heatsink temperature (TH8)	-40 – 200	˚C	
12	Discharge superheat (SHd)	0 – 255	˚C	
13	Sub - cool (SC)	0 – 130	˚C	
16	Compressor - Operating frequency	0 – 255	Hz	
18	Outdoor unit - Fan output step	0 – 10	Step	
22	LEV (A) opening	0 – 500	Pulses	
30	Indoor unit - Setting temperature	17 – 30	˚C	
31	Indoor unit - Intake air temperature <Measured by thermostat>	8 – 39	˚C	
37	Indoor unit - Liquid pipe temperature (Unit No.1)	-39 – 88	˚C	"0" is displayed if the target unit is not present
38	Indoor unit - Liquid pipe temperature (Unit No.2)	-39 – 88	˚C	
39	Indoor unit - Liquid pipe temperature (Unit No.3)	-39 – 88	˚C	
40	Indoor unit - Liquid pipe temperature (Unit No.4)	-39 – 88	˚C	
42	Indoor unit - Cond./ Eva. pipe temperature (Unit No.1)	-39 – 88	˚C	
43	Indoor unit - Cond./ Eva. pipe temperature (Unit No.2)	-39 – 88	˚C	
44	Indoor unit - Cond./ Eva. pipe temperature (Unit No.3)	-39 – 88	˚C	
45	Indoor unit - Cond./ Eva. pipe temperature (Unit No.4)	-39 – 88	˚C	
100	Outdoor unit - Error postponement history 1 (latest)	Displays postponement code ("--" is displayed if no postponement code is present)	Code	
103	Error history 1 (latest)	Displays error history ("--" is displayed if no history is present)	Code	
104	Error history 2 (Second to last)	Displays error history ("--" is displayed if no history is present)	Code	
107	Operation mode at time of error	Displayed in the same way as request code "0"	–	
150	Indoor - Actual intake air temperature	-39 – 88	˚C	
151	Indoor - Liquid pipe temperature	-39 – 88	˚C	
152	Indoor - 2 phase pipe temperature	-39 – 88	˚C	

8. Easy maintenance function







[7] Changing the maintenance password

[Button operation]

(1) Select "Maintenance password" on the Others menu, and press the SELECT button to bring up the screen to enter a new password.

(2) Move the cursor to the digit you want to change with the F1 or F2 button, and set each digit to the desired number (0 through 9) with the F3 or F4 button.

(3) Press the SELECT button to save the new password.

(4) A confirmation screen will appear asking if you want to change the maintenance password. Press the F4 button (OK) to save the change.
Press the F3 button (Cancel) to cancel the change.

(5) Changes saved" will appear when the password is updated.

(6) Press the MENU button to return to the Service menu or press the RETURN button to go back to the "Maintenance password" screen.

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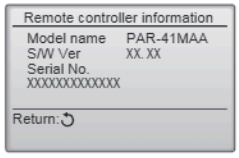


[8] Controller information

The following information of the controller in use can be checked.

- Model name
- Software version
- Serial number

[Button operation]

(1) Select "Others" from the Service menu.

(2) Select "Remote controller information".

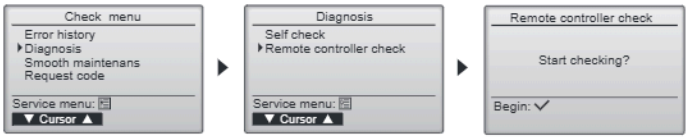
■ Controller check

When the controller does not work properly, use the remote controller checking function to troubleshoot the problem.

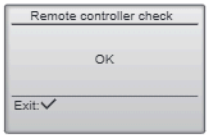
[1] Check the controller display and see if anything is displayed (including lines). Nothing will appear on the controller display if the correct voltage (8.5-12 VDC) is not supplied to the controller. If this is the case, check the controller wiring and indoor units.

[Button operation]

(1) Select "Remote controller check" from the Diagnosis menu, and press the SELECT button to start the controller check and see the check results. To cancel the remote controller check and exit the Remote controller check menu screen, press the MENU or the RETURN button. The controller will not reboot itself.



Select "Remote controller check".



Remote controller check results screen

OK: No problems are found with the controller. Check other parts for problems.

E3, 6832: There is noise on the transmission line, or the indoor unit or another remote controller is faulty. Check the transmission line and the other remote controllers.

NG (ALL0, ALL1): Send-receive circuit fault. Controller needs replacing.

ERC: The number of data errors is the discrepancy between the number of bits in the data transmitted from the controller and that of the data that was actually transmitted over the transmission line. If data errors are found, check the transmission line for external noise interference.

(2) If the SELECT button is pressed after the remote controller check results are displayed, remote controller check will end, and the controller will automatically reboot itself.