Panasonic

INSTALLATION INSTRUCTIONS INDOOR UNIT

Model No.: S-25PK** S-50PK** S-71PK** S-100PK**



THIS PRODUCT MUST ONLY BE INSTALLED OR SERVICED BY QUALIFIED PERSONNEL.

Refer to Commonwealth, State, Territory and local legislation, regulations, codes, installation & operating instructions, before the installation, maintenance and/or service of this product.

Refer to the outdoor unit installation instruction manual for the

Note: Ensure to hand over this installation instruction manual to the

person performing the installation and inform the customer to keep it properly stored.

https://eu.datanavi.ac.smartcloud.pa onic.com/documents/

Required tools for Installation Works

index.htm?model=S-25PK4R

	- 1	-				
ı	Phillips screw driver	7	Pipe cutter	1		Torque wrench
2	Flathead screw driver	8	Reamer			18 N•m (1.8 kgf•m)
3	Level gauge	9	Knife			42 N•m (4.3 kgf•m)
ļ	Electric drill, hole core	10	Gas leak detector	r		55 N•m (5.6 kgf•m)
	drill (ø70 mm)	11	Measuring tape			65 N•m (6.6 kgf•m)
5	Hexagonal wrench	12	Thermometer			100 N•m (10.2 kgf•m
	(4 mm)	13	Megohmmeter			Vacuum pump
3	Spanner		Multimotor	1	7	Gauge manifold

Explanation of symbols displayed on the indoor unit or outdoor unit.

ZA2L WARNING	This symbol shows that this equipment uses a flammable refrigerant. If the refrigerant is leaked, together with an external ignition source, there is a possibility of ignition.
CAUTION	This symbol shows that the Operating

This symbol shows that a service **CAUTION**

DISCLAIMER

Panasonic will not be responsible for any accident or damage due to improper installation in anyway not described in the detailed manuals. Malfunction caused by incorrect installation is also not covered by product warranty.

SAFETY PRECAUTIONS

Read the following "SAFETY PRECAUTIONS" carefully before installation

Fleat the following Skill of Principolar Cardenia Skill of Ski

⚠ WARNING This indication shows the possibility of causing death or serious injury. ⚠ CAUTION This indication shows the possibility of causing injury or damage to properties only.

The items to be followed are classified by the symbols:

Symbol with white background denotes item that is PROHIBITED. 0 0 Symbol with dark background denotes item that must be carried out.

Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated
in instructions. Please remind the customer to keep the operating instructions for future reference.

riangle Warning

Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer. Any unfit method or using incompatible material may cause product damage, burst and serious injury.

Do not install outdoor unit near handrail of veranda. When installing air-conditioner unit on veranda of a high rise building, child may climb up to outdoor unit an cross over the handrail causing an accident.

Do not use unspecified cord, modified cord, joint cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances. Pool contact, poor insulation or over current will cause electrical shock or fire. contact, poor insulation or over current will cause electrical shock or fire Do not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen

Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury.

Do not sit or step on the unit, you may fall down accidentally.

Keep plastic bag (packaging material) away from small children, it may cling to nose and mouth and prevent breathing.

When installing or relocating air conditioner, do not let any substance other than the specified refrigerant, eg. air etc mix into refrigeration cycle (piping). Mixi of air etc. will cause abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

Do not pierce or burn as the appliance is pressurized. Do not expose the appliance to heat, flame, sparks, or other sources of ignition. Else, it may explode an cause injury or death.

Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury etc.

Do not use joint cable for indoor / outdoor connection cable. Use the specified indoor/outdoor connection cable, refer to instruction ③ **ELECTRICAL WIRING** and connect tightly for indoor / outdoor connection. Clamp the cable so that no external force will have impact on the terminal. If connection or fixing is not perfect, \bigcirc it will cause heat up or fire at the connection.

 For R32 model, use new piping, flare nut and tools which is specified for R32 refrigerant. Using of existing (R22) piping, flare nut and tools may cause
abnormally high pressure in the refrigerant cycle (piping), and possibly result in explosion and injury. For R32 and R410A, the same flare nut on the outdoor authorniany inight pressure in the temperature of the control of t

are recommended.

If reuse piping is unavoidable, refer to instruction ④ REFRIGERANT INSTALLATION (IN CASE OF REUSING EXISTING REFRIGERANT PIPING) in

outdoor unit installation manual.

Thickness for copper pipes used with R32 must be more than 0.8 mm. Never use copper pipes thinner than 0.8 mm. For copper pipe ø15.88 or more use ness 1.0 mm and above It is desirable that the amount of residual oil less than 40 mg/10 m.

For refrigeration system work, install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.

Engage authorized dealer or specialist for installation. If installation done by the user is incorrect, it will cause water leakage, electrical shock or fire.

0 Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock.

install at a strong and firm location which is able to withstand weight of the set. If the strength is not enough or installation is not properly done, the set will drop 0

For electrical work, follow the national regulation, legislation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire. Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause fire or electrical shock

This equipment is strongly recommended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD), with sensitivity of 30mA at 0.1 sec or less. Otherwise, it may cause electrical shock and fire in case of equipment breakdown or insulation breakdown. 0 During installation, install the refrigerant piping properly before running the compressor. Operation of compressor without fixing refrigeration piping and valves a pened position will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

During pump down operation, stop the compressor before removing the refrigeration piping. Removal of refrigeration piping while compressor is operating and alves are opened will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc. 0 Tighten the flare nut with torque wrench according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause refrigerant gas leakage. 0

After completion of installation, confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire.

Ventilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant contacts with fire.

Be aware that refrigerants might not contain an odour.

This equipment must be properly teat uses. This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, it may caus

Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.

Prevent liquid or vapor from entering sumps or sewers since vapor is heavier than air and may form suffocating atmospheres.

Do not overcharge the unit, refer to gas charge specification in Outdoor Installation manual. Overcharge will cause over current and damage to compress Do not release refrigerant during piping work for installation, re-installation and during repairing a refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.

Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc. Do not touch the sharp aluminium fin, sharp parts may cause injury.

Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture

Select an installation location which is easy for maintenance. 0 ncorrect installation, service or repair of this air conditioner may increase the risk of rupture and this may result in loss damage or injury and/or property.

Power supply connection to the room air conditioner.
Use power supply cord type designation 60245 IEC 57 or heavier cord.
Connect the power supply cord of the air conditioner to a circuit breaker for the permanent connection.
It must be a double pole switch with a minimum 3.0mm contact gap.

Power supply point should be in easily accessible place for power disconnection in case of emergency. nstallation work.

It may need two people to carry out the installation work. Keep any required ventilation openings clear of obstruction.

PRECAUTION FOR USING R32 REFRIGERANT

The basic installation work procedures are the same as conventional refrigerant (R410A, R22) models However, pay careful attention to the following points:

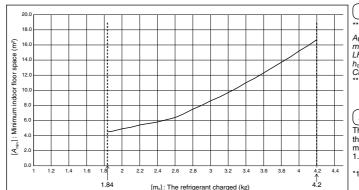
Do not perform flare connection inside a building or dwelling or room, when joining the heat exchanger of indoor unit with interconnecting piping. Refrigerant connection inside a building or dwelling or room must be made by brazing or welding. Joint connection of indoor unit by flaring method can only be made at outdoor or at outside of a building or dwelling or room. Flare connection may cause gas leak and flammable atmosfere.

The appliance shall be stored, installed and operated in a well ventilated room with indoor floor area larger than A_{\min} (m²) [Refer to Check of Density Limit] and without any continuously operating ignition source. Keep away from open flames, any operating gas appliances or any operating electric heater. Else, it may explode and cause injury or death.

Refer to "PRECAUTION FOR USING R32 REFRIGERANT" in outdoor unit installation manual for other precautions that need to pay attention to.

Check of Density Limit

The refrigerant (R32), which is used in the air conditioner, is a flammable refrigerant. So the requirements for installation space of appliance are determined according to the refrigerant charge amount [m=] used in the appliance. Regarding the refrigerant charge amount [m=] used in the appliance, refer to the installation instructions for the outdoor unit. The minimum indoor floor space compared with the amount of refrigerant is roughly as follows:



 $A_{min} = (m_c / (2.5 \times (LFL)^{(5/4)} \times h_0))^2$ not less than safety factor margin A_{min} = Required minimum room area, in m² mc = Refrigerant charge in appliance, in kg LFL = Lower flammability limit (0.307 kg/m³) = Release height is 1.8m. = Concentration factor with a value of 0.75 * The required minimum room area, A_{min}, shall also be governed by the safety factor margin

 $A\min = m_c / (CF \times LFL \times h_0)$ The higher value shall be taken when determining he room area. : Can be installed $1.84 < m_c \le m_{max}$: Can be installed above "Density Limit Line" *1

1 Refer to table and the installation instructions of indoor unit when deciding "Density Limit Line".

[m_c] (kg) [Amin] (m²) 1.8 4.5 2.3 1.9 4.6 2.4 2.0 2.5 4.9 2.1 5.1

5.4

2.2

[m_c] (kg) [Amin] (m²) [m_c] (kg) [Amin] (m²) 5.6 2.8 7.5 2.9 5.8 8.0 3.0 8.6 6.1 3.1 2.6 6.4 9.1 3.2 6.9 9.7

[m_c] (kg) [Amin] (m²) 3.3 10.3 3.8 3.4 11.0 3.9 3.5 11.6 4.0 12.3 4.1 3.6 3.7 13.0 4.2

[m_c] (kg) [Amin] (m²) 13.7 14.4 15.2 15.9

ACCESSORIES SUPPLIED WITH INDOOR UNIT

Make sure all accessory parts listed are with the system before beginning.

Part Name	Figure	Q'ty	Remarks	Part Name	Figure	Q'ty	Remarks
Installation plate		1		Flare insulator	\Diamond	1	For flare nut insulation 200 mm × 200 mm
Screw (4×20)	43333 (3)	5	For installation plate installation	Cable Tie	•	3	For fixing wires (option
Ferrite core		1	For electrical EMC stability (Used when using wired				

SELECT THE INDOOR UNIT INSTALLATION LOCATION

1-1. Indoor Unit

Install the indoor unit once the following conditions are satisfied and after receiving the customer approval The indoor unit must be within a maintenance space.

 The indoor unit must be free from any obstacles in path of the air inlet and outlet, and must allow spread of air throughout the room. If the height from the floor to ceiling exceeds three meters, air flow distribution deteriorates and the effect is decreased.

⚠ WARNING

The installation position must be able to support a load four times the indoor unit weigh The indoor unit must be away from heat and sources of steam, but avoiding installation near an entrance

The indoor unit must allow easy draining.

The indoor unit must allow easy connection to the outdoor unit. The indoor unit must be at least 3 m away from any noise-generating equipment. The electrical wiring must be shielded with a steel conduit

If the power supply is subject to noise generation, add a suppressor.
 Do not install the indoor unit in a laundry. Electric shocks may result.

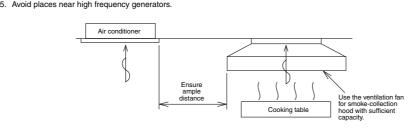
. Installation height is more than 1.8m. ■ Thoroughly study the following installation locations

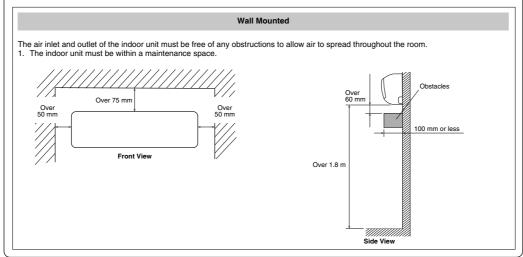
1. In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the fan, the fin of the heat exchanger, resulting in heat exchange reduction, spraying, dispersing of water drops, etc. In these cases, take the following actions:

 Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner. Make sure there is enough distance from the cooking room to install the air conditioner in such place where it may not suck in oily

2. Avoid installing the air conditioner in such circumstances where cutting oil mist or iron powder exist, especially in factories, etc. 3. Avoid places where inflammable gas is generated, flows-in, contaminated, or leaked.

4. Avoid places where sulphurous acid gas or corrosive gas can be generated.



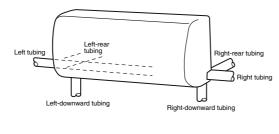


HOW TO INSTALL THE INDOOR UNIT

2-1. Starting the Installation

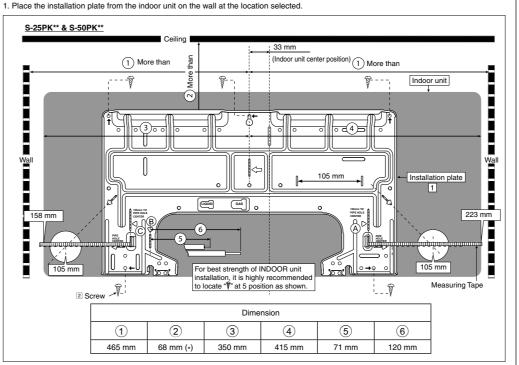
(1) Remove the rear panel

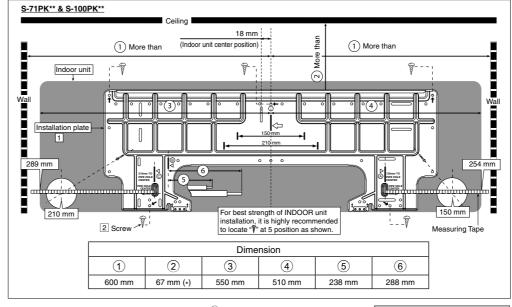
ubing can be extended in 6 directions as shown below. Select the direction you need providing the shortest run o the outside unit.



2-2. How to Fix Installation Plate

The mounting wall should be strong and solid enough to withstand the unit's vibration.





• The center of installation plate should be at more than 1 at right and left of the wall The distance from installation plate edge to ceiling should more than @
 From installation plate center to unit's left side is ③.

From installation plate center to unit's right side is (4)

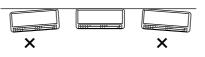
® • For left side piping, piping connection for liquid should be about ⑤ from this line. For left side piping, piping connection for gas should be about 6 from this line.

Mount the installation plate on the wall with 5 screws or more (at least 5 screws).

(If mounting the unit on the concrete wall, consider using anchor bolts.)

• Always mount the installation plate horizontally by aligning the marking-off line with the thread and using a level gauge.

If Wooden Wall (1) Attach the installation plate to the wall with the 5 screws (4 \times 20) provided. (2) Double check with a carpenter's level or tape measure that the panel is level. This is important to install the unit properly.



Dimension 2

If holder at the rear of chassis

(Refer column "2-4 Indoor Unit Installation") need to be used to prop up the unit, this distance shal be 83 mm (S-25PK** & S-50PK**)

82 mm (S-71PK** & S-100PK**)

(3) Make sure the panel is flush against the wall. Any space between the wall and unit will cause noise and vibration If Concrete Wall

(1) When attaching the installation plate to the concrete wall, use the screws (field supply) for concrete or an optional anchor plug and fix to the hole of ø5 mm of the installation plate as shown in the figure under Section 2-2. When fixing with bolt, attach to the hole of ø8 mm.

(2) Double check with a carpenter's level or tape measure that the plate is level. This is important to install the unit properly. (3) Make sure the installation plate is flush against the wall. Any space between the wall and unit will cause noise and vibration Drill the piping plate hole with ø70 mm hole-core drill.

• Line according to the left and right side of the installation plate. The meeting point of the extended line is the center of the hole. Another method is by putting measuring tape at position as shown in the diagram above.

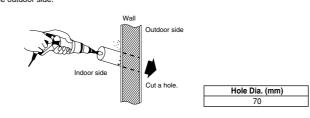
For S-25PK** & S-50PK**, the hole center is obtained by measuring the distance namely 105 mm for left and right hole respectively. For S-71PK** & S-100PK**, the hole center is obtained by measuring the distance namely 210 mm for left hole and 150 mm for right

Drill the piping hole at either the right or the left and the hole should be slightly slanting to the outdoor side.

2-3. To Drill a Hole in the Wall and Install a Sleeve of Piping Before making the hole, check carefully that no studs or pipes are directly run behind the spot to be cut

Avoid areas where electrical wiring is located.

The above precautions are also applicable if tubing goes through the wall in any other location. 2. Using a sabre saw, keyhole saw or hole-cutting drill attachment, cut a hole of ø70 mm in the wall. Hole should be made at a slight



3. Place a plastic cover over the end of the pipe (for indoor side only) and insert the pipe in the wall. This will protect the tube from contacting the metal lath or wire lath, leakage due to condensation or entering small animals through

When the wall is hollow, please be sure to use

Insert the piping sleeve to the hole Fix the bushing to the sleeve. Cut the sleeve until it extrudes about 15 mm from the wall.

4. Finish by sealing the sleeve with putty or caulking compound at the final stage

The piping sleeve assembly to prevent danger caused by mice biting the connection cable.

2-4. Indoor Unit Installation . Do not turn over the uni without shock absorber during pull out the piping. It may cause intake grille damage. Use shock absorber during pull out the piping to protect the intake grille from damage FOR THE RIGHT REAR PIPING Pull out the Indoor piping Right Rear piping Right piping Step-1 Pull out the Indoor piping

Step-2 Install the Indoor Unit Step-3 Secure the Indoor Unit Insert the power supply cord and onnection cable Cover for the Insert the cables from bottom of the unit through the control board hole until Turn the plastic ring until it locke bottom pipina terminal board area. How to keep the cover

> Holder Sleeve for piping hole

Piping

About 70 - 80 mm

Guide surface

Drain cap

S-25PK** & S-50PK**

Adjust the piping slightly downwards

In case of the cover

is cut, keep the cove

at the rear chassis

future reinstallation

* Pull the area of orange color to release holder

* Press the area of orange color to release holder. * Please refer column "How to take out front grille" to remove the front grille.

* 2 holder (S-71PK** &

Connection cable

Change the drain hose position

Rear view for left piping installation

(Left, right and 2 bottom covers for piping.)

OR

A Liquid side

W.

S-71PK** & S-100PK*

Adjust the piping slightly downwar

as shown in the

2. FOR THE RIGHT AND RIGHT BOTTOM Install the indoor unit PIPING Hook the indoor unit onto the upper portion of installation Step-1 Pull out the Indoor piping (Engage the indoor unit with the upper edge of the installation plate). Ensure the hooks Step-2 Install the Indoor Unit are properly seated on the installation plate by moving it in

nsert the power supply cord and Step-3 Insert the cables from bottom of the

Step-4 Secure the Indoor Unit Secure the Indoor Unit Press the lower left and right side of the unit against the installation plate until hooks engages

Step-4

Holde with their slot (sound click). there is an option to use the holder at the rear of chassis to prop up the indoor unit as shown in the illustration for ease of installation Push the holder back to original position before secure the indoor unit.

left and right.

Indoor unit

Insert the connection cable To take out the unit, push the

marking at the bottom unit, and pull it slightly towards you to

disengage the hooks from the unit

Change the drain hose position

3. FOR THE EMBEDDED PIPING

Step-2 Bend the embedded piping · Use a spring bender or equivalent to bend the piping so that the piping is not

Pull the connection cable into Indoor The power supply cord and indoor unit and outdoor unit connection cable can be connected without removing the front

Step-4 Cut and flare the embedded piping · When determining the dimensions of the piping, slide the unit all the way to the left Refer to the column "Cutting and flaring

the piping". Step-5 Install the Indoor Unit

> Please refer to "Connecting the piping" column in outdoor unit section. (Below steps are done after connecting the outdoor piping and gas-leakage

Connect the piping

Insulate and finish the piping Please refer to "Insulation of piping

(This can be used for left rear piping also.)

Step-8 Secure the Indoor Unit

Connection cable More than 950 mm (S-25PK** & S-50PK** L Sleeve for piping hole

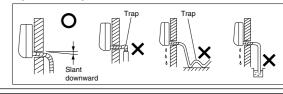
 In case of left piping how to Drain hose (For the right piping, follow the

How to pull the piping and drain hose out PVC tube More than 950 mm (S-25PK** & S-50PK**) Piping More than 1150 mm (S-71PK** & S-100PK**) Piping Indoor unit More than PVC tube (VP-65) for piping for drain I and connection cable PVC tube for drain hose (VP-30)

When there is a long horizontal drain hose runs with very little slope to the run, water is likely to remain inside the hose. Slant the drain hose downward slightly to the outdoors and insulate it with the insulation.

Slant downward not to remain water inside the drain hose.
 Make sure tubing does not become trapped.
 Do not let the tip of the drain hose dip into the drain water.

4. Do not leave the drain hose in the sewerage. This will cause the heat exchanger erosion damage caused by the corrosive gas such as hydrogen sulfide occurred inside the sewerage and lead to a gas leak.



ENGLISH ACXF60-60980 (1/2)

ELECTRICAL WIRING

As to main power source and cable size of outdoor unit, read the installation manual attached to the outdoor unit.

3-1. General Precautions on Wiring

• This air conditioner must be installed in accordance with national wiring regulations. Cables connected to indoor unit must be approved polychloroprene sheathed type 60245 IEC 57 or heavier. The units must be connected to the supply cables for fixed wiring by qualified technician.
 Circuit breaker must be incorporated in the fixed wiring in accordance with the national wiring regulations.
 The circuit breaker must be approved, suitable for the voltage and current ratings of equipment and have a contact separation by 3mm in all poles.

When the supply cable is damaged, it must be replaced by qualified technician. ∴ WARNING •

 Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric Be sure to connect the unit to secure earth connection.

If the earthing work is not carried out properly, electric shocks may result.

Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.

(1) Select a power source that is capable of supplying the current required by the air conditioner.
(2) Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should disconnect all poles with a

contact separation of at least 3 mm.

(3) Always ground the air conditioner with a grounding wire and screw to meet the LOCAL REGULATIONS.

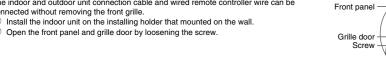
(4) Be sure to connect the indoor/outdoor unit connection wires correctly to terminal board.

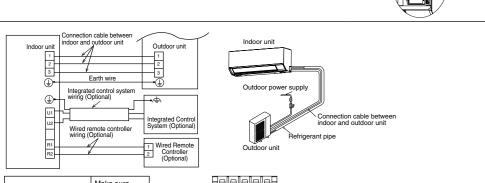
(5) Be sure to turn off the main power before installing and connecting the remote controlle (5) Be safe to writing connection must be done in accordance with the writing system diagram. Wrong wiring may cause the wires overloaded and overheated.

If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off after at least 1 minute has passed. (For the system's automatic setting.) Turning off the power supply on the way may cause an abnormal ope

3-2. Wiring System Diagrams

The indoor and outdoor unit connection cable and wired remote controller wire can be connected without removing the front grille.





3-3. Recommended Wire Length and Wire Size

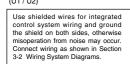
Wired Remote Controller (Optional) Integrated Control System (Optional) Connection cable between

Indoor and Different Outdoor Unit						
Outdoor Unit	Wire Size	Length				
CU-25/50/ 71/95AKR	1.5mm²	Max. 30m				
U-100PZ4R8	1.5mm²	Max. 40m				
U-100PZ4R8			1			

2.5mm² Max. 50m

WARNING | the terminal

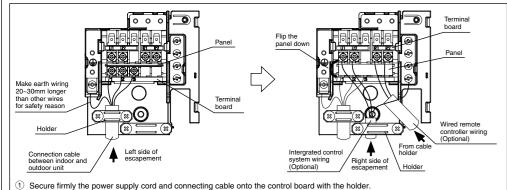
Wire Size Length 0.75mm² (AWG#18) Max. 500m



Use shielded wires for integrated control system wiring and ground the shield on both sides, otherwise misoperation from noise may occur. Connect wiring as shown in Section 3-2 Wiring System Diagrams. Shielded wire

For Optional Parts connecting wiring size, refer to Installation Manual of the Optional Parts.

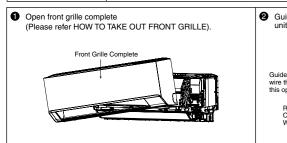
Connect the wired remote controller wire and connection cable between indoor unit and outdoor unit according to the diagram below.



Do not overtighten holder screw, as this may damage the holder. Close grille door by tighten with screw and close the front panel

How To Connect Wired Remote Controller to The Indoor Unit

A CAUTION Be sure to turn off the main power before installing and connecting the remote controller. Otherwise, it will cause the electrical shock.

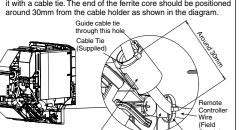


Quide the wired remote controller wire from the back of air-cond unit through an opening at the side of the unit. VIEW A

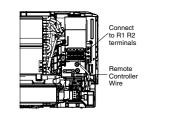
remote controller wire to R1 R2 on the terminal block

Guide the wire near to the cable holder, use a cable tie to band Guide the wire to the top side of control box, connect the the wire and cable holder together.

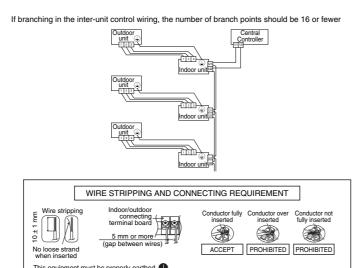
Use ferrite core to clip on the remote controller wire, then tighten it with a cable tie. The end of the ferrite core should be positioned around 20mm from the orbit holder as playin in the discrete around 30mm from the cable holder as shown in the diagram



6 Double check the wire is connected securely and firmly.



Install back the front grille complete. Be careful not to clamp the wire when closing in the front grille complete.



This equipment must be properly earthed. Isolating Devices (Disconnecting means) should have minimum 3.0 mm contact gap. Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for safety reasons. Earth lead wire shall be longer than other lead wires as shown in the figure for the electrical safety in case of the cord slipping out of anchorage. RISK OF FIRE **↑** WARNING

WARNING CAUSE OVERHEATING AND FIRE.

JOINING OF WIRES MAY
CALISE OVERHEATING

REFRIGERANT PIPING

Must ensure mechanical connections be accessible for maintenance purposes

4-1. Connecting the Refrigerant Tubing

Use of the Flaring Method

Many of conventional split system air conditioners employ the flaring method to connect refrigerant tubes that run between indoor and outdoor units. In this method, the copper tubes are flared at each end and connected with flare nuts.

Flaring Procedure with a Flare Tool
(1) Cut the copper tube to the required length with a tube cutter.
It is recommended to cut approx. 30 – 50 cm longer than the tubing length you estimate.

Remove burrs at each end of the copper tubing with a tube reamer or a similar tool. This process is important and should be done carefully to make a good flare. Be sure to keep any contaminants (moisture, dirt, metal filings, etc.) from entering the tubing. NOTE

When reaming, hold the tube end downward and be sure that no copper scraps fall into the tube. Remove the flare nut from the unit and be sure to mount it on the copper tube.
 Make a flare at the end of the copper tube with a flare tool.

NOTE

When flared joints are reused, the flare part shall be re-fabricated. A good flare should have the following characteristics:

inside surface is glossy and smooth 2. edge is smooth 3. tapered sides are of uniform length

Caution Before Connecting Tubes Tightly

1) Apply a sealing cap or water-proof tape to prevent dust or water from entering the tubes before they are used.

(2) Be sure to apply refrigerant lubricant (ether oil) to the inside of the flare nut before making piping connections.

This is effective for reducing gas leaks.

(3) For proper connection, align the union tube and flare tube straight with each other, then screw on the flare nut

lightly at first to obtain a smooth match.

Adjust the shape of the liquid tube using a tube bender at the installation site and connect it to the liquid tubing

4-2. Connecting Tubing Between Indoor and Outdoor Units

(1) Tightly connect the indoor-side refrigerant tubing extended from the wall with the outdoor-side tubing. Indoor Unit Tubing Connection

				Unit : mm
Indoor unit type	S-25PK**	S-50PK**	S-71PK**	S-100PK**
Gas tube	ø9.52	ø12.7	ø15.88	ø15.88
Liquid tube	ø6.35	ø6.35	ø6.35	ø6.35 (ø9.52)
	nt for the indoor unit tubing			ly).

The size of parenthesis indicates the connection tube diameter when using the different-diameter-tube join

How to use different-diameter-tube joint (field supply)

1) When using with single connection Outdoor PZ4 series (S-100PK**) Gas tube (ø15.88) Connect a tube adaptor (ø9.52 - ø6.35) to the liquid tubing side indoor unit

The following examples show the multiple connections. Ine following examples show the multiple connections.

Connectable or disconnectable units vary depending on a series of outdoor units. Refer to the installation instructions for the outdoor unit as well.

Two, three or four indoor units can be operated simultaneously with a single remote controller. Note that

...., under on rour indoor units can be operated simultaneously with a single remote controller. Note that individual operation is not possible.

Master unit and slave unit can be set automatically in twin, triple and double twin system. No address setting is necessary.

To fasten the flare nuts, apply specified the

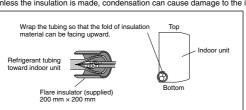
 (2) To fasten the flare nuts, apply specified torque.
 When removing the flare nuts from the tubing connections, or when tightening them after connecting the tubing, be sure to use a torque wrench and a spanner. If the flare nuts are over-tightened, the flare may be damaged, which could result in refrigerant leakage and over injuries a convenient. and cause injury or asphyxiation to room occupants.
For the flare nuts at tubing connections, be sure to use the flare nuts that were supplied with the unit. The refrigerant tubing that is

Г	Tube diameter	Flare nut tightening torque (approximate)	Min. tube thickness
Г	ø6.35 (1/4")	16± 2 N·m {160± 20 kgf·cm}	0.8 mm
Г	ø9.52 (3/8")	38± 4 N·m {380± 40 kgf·cm}	0.8 mm
Г	ø12.7 (1/2")	52± 3 N·m {520± 30 kgf·cm}	0.8 mm
	ø15 88 (5/8")	75+ 7 N·m {750+ 70 kgf·cm}	1.0 mm

Because the pressure is approximately 1.6 times higher than conventional refrigerant R22 pressure, the use of ordinary flare nuts or thin-walled tubes may result in tube rupture, injury, or asphyxiation caused by refrigerant leakage.
In order to prevent damage to the flare caused by over-tightening of the flare nuts, use the table above as a guide when tightening.
When tightening the flare nut on the liquid tube, use an adjustable wrench with a nominal handle length of 200 mm.

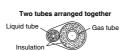
4-3. Insulating the Refrigerant Tubing

Unless the insulation is made, condensation can cause damage to the interior of a property. Use the supplied insulation material.



Tubing Insulation

Must ensure that pipe-work shall be securely mounted and guarded from physical damage. Thermal insulation must be applied to all units tubing, including distribution joint (field supply).
 * For gas tubing, the insulation material must be heat resistant to 120°C or above. For other tubing, it must be heat resistant to 80°C or above. Insulation material thickness must be 10 mm or greater.



noise bothers you from the area between indoor and outdoor units' connection pipes, it is effective to wind the soundproofing materials

CAUTION After a tube has been moving the unit. After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube

(1) At this time, the refrigerant tubes (and electrical wiring if local codes permit) should be taped together with armoring tape in 1 bundle.

To prevent condensation from overflowing the drain pan, keep the drain hose separate from the refrigerant tubing.

(2) Wrap the armoring tape from the bottom of the outdoor unit to the top of the tubing where it enters the wall.

As you wrap the tubing, overlap half of each previous tape turn.

(3) Clamp the tubing bundle to the wall, using 1 clamp approx. each meter.

NOTE

Do not wind the armoring tape too tightly since this will decrease the heat insulation effect. Also ensure that the condensation drain hose splits away from the bundle and drips clear of the unit and the tubing.

If the exterior of the outdoor unit valves has been finished with a square CAUTION To the exterior of the outdoor unit valves has been influenced that a square you allow sufficient space to access the valves and to allow the panels to be attached and removed.

4-5. Finishing the Installation

After finishing insulating and taping over the tubing, use sealing putty to seal off the hole in the wall to prevent rain and draft from entering.

4-6. Additional Precautions for R32 models

Additional Precautions For R32 Models when connecting by flaring at indoor side Ensure to do re-flaring of pipes before connecting to units to avoid leaking Seal sufficiently the flare nut (both gas and liquid sides) with neutral cure (Alkoxy type) & ammonia-free silicone

sealant and insulation material to avoid the gas leak caused by freezing. * Use of silicon containing ammonia can lead to stress corrosion on the joint & can cause leakage.

Neutral cure (Alkoxy type) & ammonia-free silicone sealant is only to be applied after pressure testing and cleaning up by following instructions of sealant, only to the outside of the connection. The aim is to prevent moisture from entering the connection joint and possible occurrence of freezing. Curing sealant will take some time.

Make sure sealant will not peel off when wrapping the insulation.

HOW TO INSTALL THE TIMER REMOTE CONTROLLER OR HIGH-SPEC WIRED REMOTE **CONTROLLER (OPTIONAL PART)**

NOTE

Refer to the Installation Instructions attached to the optional Timer Remote Controller or optional High-spec Wired Remote Controller

PRECAUTIONS ON TEST RUN

Request that the customer be present when the test run is performed. At this time, explain the

operation manual and have the customer perform the actual steps.

Check that the 230-240 VAC power is not connected to the U1 & U2 terminal board terminal. blow in order to protect the PCB.

In this case, recover the connection by disconnect 2P connector wires that originally connected to the indoor unit Electronic Controller (Main). If operation is still not possible after shift to EMG connector, cut the jumper JP040 on the same indoor unit Electronic Controller (Main).

Items to Check Before the Test Run

1) Check that the indoor and outdoor units have correct combination.
2) Turn the remote power switch ON at least 5 hours in advance in order to energize.
3) Fully open the closed valves on the liquid tubing and gas tubing sides.
4) Separate the power supply in accordance with the types of system.
5) In the case of conditions below, restore the detailed setting code nos. 11, 12, 13, 14 of all indoor units in the system to the factory setting and then set up the auto address setting.

• Indoor unit has been communicated with another outdoor unit before

Indoor unit has been communicated with another outdoor unit before.
One or more PCBs of indoor units in the system are replaced.
Detailed setting "Code no." 11 is different from correct indoor unit capacity.
Detailed setting "Code no." 12, 13 or 14 doesn't match for system.
E15, E16 or L09 alarm occurs.
The "Assimpting" screen papeage on the LOD district.

"Assigning" screen appears on the LCD display for more than 10 minutes.

* Factory setting

Copper tubing

XX : Code no.	Item	YYYY : Set data	XX : Code no.	Item	YYYY : Set data		
11	Indoor unit capacity	0000	13	Indoor unit address	0099		
12	System address	0099	14	Group control address	0099		
List of detailed setting items code nos. 11, 12, 13, 14							
Set data							

Code no.	Item	Set data			
Code no.		No.		Description	
i	İ	0003	28	S-25PK** (25)	
11		0009	56	S-50PK** (50)	
11	Indoor unit capacity	0012	80	S-71PK** (71)	
		0015	112	S-100PK** (100)	
		0001	Unit no. 1		
		0002	Unit no. 2		
	1	0003	Unit no. 3		
12	System address	5	5		
		0030	Unit no. 30		
		0099	Not set		
		0001	Unit no. 1		
	Indoor unit address	0002	Unit no. 2		
		0003	Unit no. 3		
13		5	5		
		0064	Unit no. 64		
		0099	Not set		
14 Group control addre		0000	Individual (1:1	= Indoor unit with no group wiring)	
	Group control address	0001		e of the group-control indoor units)	
	Group control address	0002	Sub unit (All g	roup-control indoor units except for main unit)	
	1 [0099	Not set		

Code no. is displayed with 6 digits in wired remote controller, CZ-RTC6 series In this case, read as follows. e.g. $11 \rightarrow 000011$

NOTE

The Item code numbers 11, 12, 13 and 14 can automatically be changed to the appropriate settings from factory settings listed above by making the auto address settings according to the connected outdoor unit capacity and the number of indoor units. If needed to reset the settings after once changed, return all the item codes to the factory shipment-time settings. It is necessary to set the auto address settings once again.

NOTE

In case of checking and changing before setting up the address settings in group connection, turn on only the power of the system to be checked and changed. If you turn on the power to all systems before address settings, the settings of all indoor units may not be seen correctly. After changing, turn off the power supply within 2 minutes or carry out the auto address setting procedures immediately. If the power of the system switched on for a while, the auto address setting may start as a single system and it might not match the multiple systems.

TEST RUN

1. Test Run Using the Wirea Hemote CZ-RTC5B (High-spec wired remote controller)

This mode places a heavy load on the machines. Therefore use it only when performing the test run. (1) Keep pressing the , and Maintenance func 20:30 (THU) (4) Press the button. Test run will be started.

The "Maintenance func" screen appears on the LCD display. (2) Press the vor button to see

each menu. If you wish to see the next screen instantly, press the or Select "4. Test run" on the LCD display and press the $\hfill \Box$ button. Change the display from "OFF" to "ON" by

pressing the 🔻 or 🔺 button. ON Then press the Jutton. (3) Press the button. "TEST" will be displayed on the LCD display.

 \$ Change [→] Confirm
 20:30 (THU)

 The test run can be performed using the HEAT, \$ Sel. ♦ Page [☐] Confirm COOL, or FAN operation mode.

The temperature cannot be adjusted when in test run mode.

If correct operation is not possible, a code in disable and a who are the state of the control of is displayed on the remote controller LCD display. (Regarding the alarm contents, see the SUPPLEMENT at the end of this manual.)

LCD display.

Test run setting mode screen appears on the

(5) After the test run is completed, proceed from Step (1) and change to "OFF" at Step (2).
• To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

20:30 (THU)

;FAN SPEED

MODE

NOTE The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.

CZ-RTC4 / CZ-RTC4A (Timer remote controller) This mode places a heavy load on the machines. Therefore use it only when performing the test run.

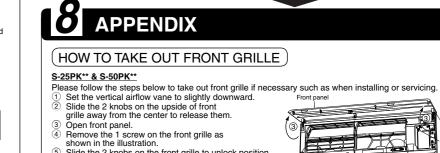
(1) Press the remote controller button for 4 seconds or longer.

Then press the button. *TEST *appears on the LCD display while the test run is in progress.

The test run can be performed using the HEAT, COOL, or FAN operation mode.

• The temperature cannot be adjusted when in test run mode. • If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see the SUPPLEMENT at the end of this manual.) (2) After the test run is completed, press the putton again

Check that "TEST" disappears from the LCD display. •To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.



grille away from the center to release them.

Open front panel. Remove the 1 screw on the front grille as shown in the illustration. Slide the 2 knobs on the front grille to unlock position. Pull the front grille towards you to remove the front grille.

CZ-RTC6 series (Wired Remote Controller)

(1) Keep pressing the E, and buttons

The "Maintenance func" screen appears on the

Select "Test run" on the LCD display and press the button.

Change the display from "OFF" to "ON" by

"TEST" will be displayed on the LCD display.

designated as the sub remote controller.

Ground 1 2 3

1) Press and hold the ** and

2) Select the Code no. 🔽 / 🛆

(3) Select the Set data. ▼DAY/IIME/IIME

The indicator illuminates after

 Code no.
 Item
 Set data

 0000
 0001

 01
 Main/Sub
 Sub
 Main

blinking. Press 🖵

CZ-RTC4A)

7-2. Main-Sub Remote Controller Control

Terminal board for remote control wirin

Connecting 2 remote controllers to control 1

Remote controller (main) Remote controller (sub

1 2 3 Outdoor unit

3-LINE CONNECTION

ote controller setting mode (CZ-RTC4/

pressing the vor button. Then press the 🖃 button.

(3) Press the button.

(2) Press the vor button to see each menu.

(CN040, BLUE) (CN044, BROWI

Jumper (JP040)

his mode places a heavy load on the machines. Therefore use it only when performing the test run.

(4) Press the button. Test run will be started.

test run mode.

One (1) indoor unit can be controlled by two (2) wired remote controllers. In the case of using 2 remote controllers, one of them needs to be

Test run setting mode screen appears on the

•The test run can be performed using the HEAT,

COOL, or FAN operation mode.

The temperature cannot be adjusted when in

If correct operation is not possible, a code

is displayed on the remote controller LCD display. (Regarding the alarm contents, see the SUPPLEMENT at the end of this manual.)

function that cancels the test run after 60 minutes.

(3) Select the "Code no." and "Set RC. Setting mode 20:30 (THU) (4) Press After selection of the code no.

Remote controller setting mode (CZ-RTC6 series)

(1) Press and hold the E, and for 4 seconds

the unit restarts.

Remote controller setting mode (CZ-RTC5B)

(1) Press and hold the , and for 4

seconds or more simultaneous

(Repeat)

or more simultaneo

 $\vee \wedge \rightarrow \dashv$

 \checkmark \land \rightarrow \leftarrow

) Select "RC. setting mode"

3) Select the "Code no." and " Set data".

 Code no.
 Item
 Set data

 0000
 0001

 01
 Main/Sub
 Sub
 Main

(2) Select "3. RC. setting mode".

(5) After the test run is completed, proceed from Step (1) and change to "OFF at Step (2).
•To prevent continuous test run, this remote controller includes a timer

The outdoor units will not operate for approximately 3 minutes after the power iturned ON and after operation is stopped.

When reinstalling the front grille, carry out above steps in the reverse order. After sliders are slide to lock position, please confirm front grille is securely fixed by pulling the front grille towards you.

S-71PK** & S-100PK** Please follow the steps below to take out front grille if necessary such as when installing or servicing.

 Set the vertical airflow vane to slightly downward. ② Slide 2 knobs on the upside of front grille (left and right) away from the center to release them Slide 2 knobs on the upside of front grille to unlock position.

Open front panel. Slide 2 knobs on the front grille to unlock position. Remove 2 screws on the front grille as shown in the illustration.

Push 2 caps upward and remove 2 screws on the front grille as shown in the illustration. 8 Pull the front grille towards you to remove the front grille.

Fasten the chassis to the installation plate with screws (Self purchase,

When reinstalling the front grille, carry out above steps After sliders are slide to lock position, please confirmer front grille is securely fixed by pulling the front grille



AUTO SWITCH OPERATION The below operations will be performed by pressing the "AUTO" switch.

This mode places a heavy load on the machines. Therefore use it only when performing the test run. Press and hold the Emergency button for 4 seconds or more.
The indication lamps (OPERATION TIMER STANDRY) repe

The indication lamps (OPERATION, TIMER, STANDBY) repeatedly light one after the other for 1 second.

• The wireless remote controller address setting mode is set.

Press and hold the Emergency button for 4 seconds or more again.

The indication lamps (OPERATION, TIMER, STANDBY) blink during test operation.

• The test run can be performed using the HEAT, COOL, or FAN operation mode.

• The temperature cannot be adjusted when in test run mode.

• If correct operation is not possible, some of the display lamps (OPERATION, TIMER, STANDBY) will turn ON or OFF.

To stop test operation, press the Emergency button.
 To prevent continuous test run, this mode includes a timer function that cancels the test run after 60 minutes.

NOTE

The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped. Should the power fail while the unit is running
If the power supply for this unit is temporarily cut off, the unit will automatically resume operation once power is restored using the same

mportant Information Regarding The Refrigerant Used Refer to the Installation Instructions attached to the outdoor unit.

settings before the power was interrupted.

CHECK THE FOLLOWING ITEMS WHEN INSTALLATION IS COMPLETE

After completing work, be sure to measure and record trial run properties, and store measuring data, etc.
 Measuring items are room temperature, outside temperature, suction temperature, blow out temperature, wind velocity wind volume, voltage, current, presence of abnormal vibration and noise, operating pressure, piping temperature, compressive pressure, airtight pressure.
 As to the structure and appearance, check the following items.

Is circulation of air adequate? Is draining smooth?

Is there any leakage of refrigerant? Is remote controller switch operated? Is heat insulation complete (refrigerant and drain piping)?

Optional Parts

Teach the customer the operation and maintenance procedures, using the operation manual (air filter cleaning, temperature control, etc.)
 Refer to Installation manual of optional parts (sold separately).

HAND OVER

The English text is the original instructions. Other languages are translation of original instructions.

Install plate

Are the terminal screws loosened? M3...69-98N•cm {7-10kgf•cm} M4...157-196Necm {16-20kgfecm} M5...196-245N•cm {20-25kgf•cm}

As for work specifications of the outdoor unit, read the OUTDOOR UNIT INSTALLATION MANUAL attached to the outdoor unit.

ACXF60-60980 (2/2)