

## Required tools for Installation Works

1 Philips screw driver	7 Reamer	13 Multimeter	65 Nm (6.6 kgf.m)
2 Level gauge	8 Knife	14 Torque wrench	100 Nm (10.2 kgf.m)
3 Electric drill, hole core drill (ø70 mm)	9 Gas leak detector	15 Vacuum pump	18 Nm (1.8 kgf.m)
4 Hexagonal wrench (4 mm)	10 Measuring tape	42 Nm (4.3 kgf.m)	16 Gauge manifold
5 Spanner	11 Thermometer	55 Nm (5.6 kgf.m)	
6 Pipe cutter	12 Megameter		

## SAFETY PRECAUTIONS

- Read the following "SAFETY PRECAUTIONS" carefully before installation.
- Electrical work must be installed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below.
- Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

<b>WARNING</b>	This indication shows the possibility of causing death or serious injury.
<b>CAUTION</b>	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.
	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.

## WARNING

- 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 and 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. Poor 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). Mixing of air etc will cause abnormal high pressure in refrigeration cycle and result in explosion, injury etc.
- Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury etc.

- For R410A model, use piping, flare nut and tools which is specified for R410A 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.
- Thickness or copper pipes used with R410A must be more than 0.8mm. Never use copper pipes thinner than 0.8mm.
- It is desirable that the amount of residual oil is less than 40mg/10m.

- Engage authorized dealer or specialist for installation. If installation done by the user is incorrect, it will cause water leakage, electrical shock or fire.
- Install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.

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

- Install at a strong and firm location which is able to withstand the set's weight. If the strength is not enough or installation is not properly done, the set will drop and cause injury.

- For installation work, follow all electrical, building, plumbing, local codes, regulations and these installation instructions. If electrical circuit capacity is not enough or a defect is found in electrical work, it will cause electrical shock or fire.

- Do not use spliced wires for indoor / outdoor connection cable. Use the specified indoor / outdoor connection cable, refer to instruction ⑤ **INDOOR/OUTDOOR UNIT 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, it will cause heat-up or fire at the connection.

- 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 must be installed with an Earth Leakage Circuit Breaker (ELCB) or Ground Fault Current Interrupter (GFCI) or Appliance Leakage Current Interrupter (ALCI) that has been certified by an NRTL Certified Testing Agency and that is suitable for the voltages and amperages involved. Otherwise, it may cause electrical shock and fire in case of equipment breakdown.

- During installation, install the refrigerant piping properly before running the compressor. Operation of compressor without fixing refrigeration piping and valves at opened condition will cause cause 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 valves are opened will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

- 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.

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

- Ventilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant comes into contact with fire.

- 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 cause electrical shock in case of equipment breakdown or insulation breakdown.

## CAUTION

- 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.
- Do not release refrigerant during piping work for installation, re-installation and during repairing a refrigeration parts. Be careful with 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.

- Power supply connection to the room air conditioner.

- Power supply cord shall be UL listed or CSA approved 3 conductor with minimum AWG12 wires.

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

- In some countries, permanent connection of this air conditioner to the power supply is prohibited.

- Fix power supply connection to a circuit breaker for permanent connection.

- Use NRTL approved fuse or circuit breaker (rating refers to name plate) for permanent connection.

- Installation work.

- It may need two people to carry out the installation work.

## Attached accessories

No.	Accessories part	Qty	No.	Accessories part	Qty
1	Installation plate	1	5	Remote control holder	1
2	Installation plate fixing screw	5	6	Remote control holder fixing screw	2
3	Remote Control	1	7	Drain elbow	1
4	Battery	2	8	Anti-bacterial filter	1

Piping size	Gas	Liquid
CZ-3F5, 7B	3/8" (9.52 mm)	1/4" (6.35 mm)
CZ-4F7, 10B	1/2" (12.7 mm)	1/4" (6.35 mm)
CZ-5F9, 7, 10B	5/8" (15.88 mm)	1/4" (6.35 mm)

## SELECT THE BEST LOCATION

## INDOOR UNIT

- Do not install the unit in excessive oil free areas such as kitchens, workshops etc.

- There should not be any heat source or steam near the unit.

- There should not be any obstacles blocking the air circulation.

- A place where air circulation in the room is good.

- A place where drainage can be easily done.

- A place where noise prevention is taken into consideration.

- Do not install the unit near a door.

- Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.

- Recommended installation height for indoor unit shall be at least 2.5 m.

## OUTDOOR UNIT

- If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.

- There should not be any animal or plant near the unit which could be affected by hot air discharged.

- Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.

- Do not place any obstacles near the unit which may cause a short circuit of the discharged air.

- If piping length is over the [piping length for additional gas], additional refrigerant should be added as shown in the table.

- Recommended installation height for outdoor unit should be above the seasonal snow level.

Model	Horse Power (HP)	Piping size Gas (mm)	Std. Length (m)	Max. Extension (m)	Min. Piping Length (m)	Max. Piping Length (m)	Additional Refrigerant (g/m)	Piping Length for add. gas (m)
E18NKK	2.0HP	1/2"	1 1/4"	15	3	20	20	10
E22NKK	2.5HP	5/8"	5	15	3	20	20	10

Example: For E18NKK  
If the unit is installed at 12.5 m distance, the quantity of additional refrigerant should be 50 g ... (12.5-10) x 20 g/1m = 50 g.

## Indoor/Outdoor Unit Installation Diagram

Piping direction (Front side)

Do not bend up drain hose

Right Rear Left Left Rear Left bottom

Remote Control

Battery

Anti-bacterial filter

Installation plate (X) you should purchase (X)

Bushing-Sleeve (X)

Sleeve (X)

Putty (X) (Gum Type Sealer)

Bend the pipe as closely on the wall as possible, but be careful that it doesn't break.

Vinyl tape (wide) (X)

Apply after carrying out a drainage test.

To carry out the drainage test, remove the air filters and pour water into the heat exchanger.

Attaching the remote control holder to the wall

Remote control (X)

Remote control holder (X)

Conduit (Power supply cord (X))

Conduit (Connecting cable)

Liquid side piping (X)

Gas side piping (X)

Additional drain piping (X)

Control Board cover

It is advisable to avoid more than 2-bendage directions. For better ventilation & multiple-outdoor installation, please consult authorized dealer/specialist.

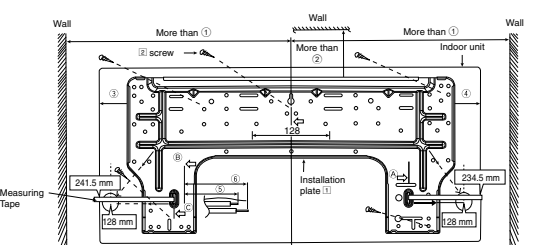
This illustration is for explanation purposes only. The indoor unit will actually face a different way.

## INDOOR UNIT

1 SELECT THE BEST LOCATION  
(Refer to "Select the best location" section)

## 2 HOW TO FIX INSTALLATION PLATE

The mounting wall shall be strong and solid enough to prevent it from the vibration.



Model	①	②	③	④	⑤	⑥
E18NKK, E22NKK	585 mm	82 mm	165 mm	158 mm	169 mm	219 mm

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 be more than ②.

From installation plate left edge to unit's left side is ③.

From installation plate right edge to unit's right is ④.

⑤ : For left side piping, piping connection for liquid should be about ⑤ from this line.

⑥ : For left side piping, piping connection for gas should be about ⑥ from this line.

1. 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.

2. Drill the piping plate hole with ø70 mm hole-core drill.

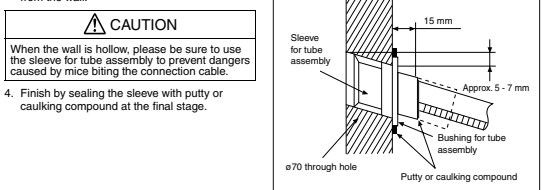
• Line according to the left and right side of the installation plate. The meeting point of the extended line is the center of the hole. Another method is by putting measuring tape at position as shown in the diagram above.

The hole center is obtained by measuring the distance namely 128 mm for left and right hole respectively.

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

## 3 TO DRILL A HOLE IN THE WALL AND INSTALL A SLEEVE OF PIPING

- 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.



Putty or caulking compound

When the wall is hollow, please be sure to use the sleeve for tube assembly to prevent damages caused by mice biting the connection cable.

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

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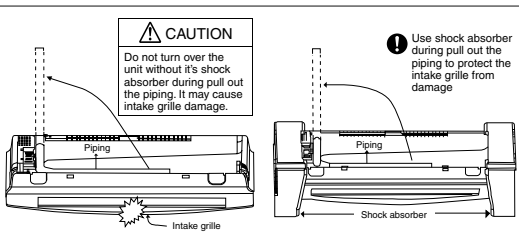
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## 4 INDOOR UNIT INSTALLATION



CAUTION

Do not turn over the unit without it's 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

Shock absorber

Intake grille

Right Rear piping

Tap it with piping in a position as mentioned in Fig. below.

How to keep the cover

In case of the cover is cut, keep the cover at the rear of chassis as shown in the illustration for future reinstallation.

(Left and 2 bottom covers for piping.)

Right and Right Bottom piping

Tap it with piping in a position as mentioned in Fig. below.

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