FOUR WAY CASSETTE TYPE AIR CONDITIONERS INSTALLATION INSTRUCTIONS

REFRIGERANT R 410A

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 interes 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.

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⚠ 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:
0	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 state in instructions. Please remind the customer to keep the operating instructions for future reference.

⚠ WARNING

De not insal outdoor dust near naturals or veranas, when insalang an-continuous unit on veranas or a lingh rise busings, crisic may climb up to outdoor unit and cross own the hardnate state grant and account of the continuous properties of the cont

On not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen

Oo not insert your fingers or other objects into the unit, high speed rotating fan may cause injury. o not sit or step on the unit, you may fall down accidentally.

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. o 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 coper pipes used with R410A must be more than 0.8 mm. Never use copper pipes thinner than 0.8 mm. It is desirable that the amount of residual oil less than 40 mg/10 m.

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

nstall according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.

istall 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 and

sause Injuly.

To electrical work, follow the local national wiring standard, regulation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or detect found in electrical work, it will cause electrical shock or fire.

The induction of the control of the

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

fire 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 storogy recommended to be installed with Earth Leakeng Circuit Breaker (ELCB) or Residual Current Device (RCD). Otherwise, it may cause underlical shock and fire in case of equipment breakdown or insulation breakdown.

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

uring pump down operation, stop the compressor before removing the refrigeration piping, Removal of refrigeration piping while compressor is operating and valves are operated will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

uring pump down on with trucque wernoth according to specified method. If the files not also over-lightened, after a long period, the filer may break and cause refrigerant giften the filer on with frugrey wernoth according to specified method. If the files not a lower-lightened, after a long period, the filer may break and cause refrigerant

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 in a 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 refrigeration parts. Take care of the liquid refrigerant, it may cause frostlets. Do not release refrigerant during piping work for installation, re-installation and during repairing refrigeration parts. Take care of the liquid refrigerant, it may cause

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 conditions:
Use power supply cord 3 x 1.5 mm² (1.0 - 1.5HP) type designation 60245 IEC 57 or heavier cord.
Use power supply cord 3 x 1.5 mm² (1.0 - 1.5HP) type designation 60245 IEC 57 or heavier cord.
Connect the power supply cord of the air conditioner to the mains using one of the following method.
Power supply point should be in 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 in some countries of the power place and the power supply is prohibited and the same connection of the sound in the same contribution of the connection to the socket.

2 Power supply connection to a circuit breaker for the permanent connection. It must be a double pole switc Installation work.

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

ATTACHED ACCESSORIES

Name		Q'ty
Drain hose with a clip	3	1
Heat Insulator		2
Band		4
Flat washer for M10	0	8
Screw M5	OF THE	4
Remote Control		1
Remote control holder		1
Remote control holder fixing screw	(11111111111111111111111111111111111111	2
Battery	0 ⊕ ⊖	2
Drain elbow	9	1

Applicable piping kit CZ-3F5, 7BP

SELECT THE BEST LOCATION OUTDOOR UNIT

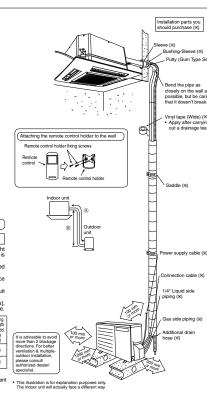
If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.

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

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

If piping length is over the [piping length for additional gas],

	Horse Power (HP)	Piping size		Std.	Max.	Min. Piping	Max. Piping	Additional	Pipin Lengt
Model		Gas	Liquid	Length (m)	Elevation (m)	Length (m)	Length (m)	Refrigerant (g/m)	for ad gas (m)
E9****	1.0HP	9.52mm (3/8")	6.35mm	5	15	3	20	20	7.
E12****	1.5HP	9.52mm (3/8")	(1/4")	5	15	3	20	20	7.



SELECTING THE LOCATION FOR THE INDOOR UNIT

Install the indoor unit once the following conditions are satisfied and after receiving the customer approval

1. The indoor unit must be within a maintenance space.

The indoor unit must be fore from secretariate in early naintenance space.

ny obstacles in path of the air inlet and outlet, and must allow spreading

Obstacles If the height from the floor to ceiling exceeds three meters, air flow distribution deteriorates and the

The installation position must be able to support a load four times the indoor unit weigh

The installation position must be a able to support a load four times the indoor unit weight.

The indoor unit must be away from heat and steam sources, but avoid installing it near an fer interest in the indoor unit must allow easy draining.

The indoor unit must allow easy connection to the outdoor unit.

Place the indoor unit according to the height from the ceiling shown in the illustration below.

The indoor unit must be from at least 3m away from any noise-generating equipment. The elements be shielded with a steel conduit.

If the power supply is subject to noise generation, add a suppressor.

11. Do not install the indoor unit in a laundry. Electric shocks may result.

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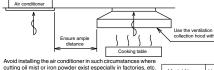
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In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the turbo fan, the fin of the heat exchanger and the drain pump, resulting in heat exchange reduction, spraying, dispersing of water drops, drain pump malfunction, etc.

In these cases, take the following actions:

Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient ca so that it draws oily steam which should not flow into the suction of the air conditioner.

Make enough distance from the cooking room to install the air conditioner in such place where it may not suck in oily steam.



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

Avoid places where sulphurous acid gas or corrosive gas can Model Name Height in the ceiling

INSTALLATION OF INDOOR UNIT

650 (Ceiling opening) (U 530 (Hanging bolt) CEILING OPENING DIMENSIONS AND ne paper model for installation expand or shrink according to mperature and humidity. heck on dimensions before using it. 580 (Unit size) Caution During the installation, care must be taken not to damage electric wires.

The dimensions of the paper model for installation are the same as those of the ceiling opening dimensions.

Be sure to discuss the ceiling drilling work with the workers

Flat washer for M10 (accessory) Pape

After selecting the best location, start installation according to Indoor/Outdoor Unit Installation Diagram.
Fix the unit on concrete or rigid frame firmly and horizontally by hold and (a 10 mm²).

CUTTING AND FLARING THE PIPING

Piping size 6.35 mm (1/4")

Inclined Surface Cracked Uneven

Spanner Torque wrend

Hall union
Auxiliary pipe Connection pip (female side)

SELECT THE BEST LOCATION

INSTALL THE OUTDOOR UNIT

CONNECT THE PIPING

lease make flare after inserting flare nut (locate at joint portion of tube ssembly) onto the copper pipe. (In case of using long piping)

nnect the piping
Align the center of piping and sufficiently tighten the flare nut with fingers.
Further tighten the flare nut with torque wrench in specified torque as stated in the table.

Decide piping length and then cut by using pipe cutter. Remove burrs from cut edge. Make flare after inserting the flare nut (locate at valve) onto the copper pipe. Align center of piping to valve and then tighten with torque wrench to the specified torque as stated in the table.

ecide piping length and then cut by using pipe cutter. Remove burrs om cut edge. Make flare after inserting the flare nut (locate at valve) not the copper pipe. Align center of piping to valve and then tighten tih torque wrench to the specified torque as stated in the table.

Outdoor Multi combination model

S-E9****, CU-2E15***, CU-3E18***, CU-3E18***, S-E12****, CU-4E23***, CU-4E27***, CU-4E27***,

Please cut using pipe cutter and then remove the burrs.
 Remove the burrs by using reamer. If burrs is not removed, gas leaks. Turn the piping end down to avoid the metal powder entering the piping.
 Please make flare after inserting the flare nut onto the copper pipes.

Point down CC Clamp handle Red arrow mark

Connecting The Piping to Indoor Unit

Connecting the Piping to Outdoor Unit

Connecting The Piping to Outdoor Multi

For Gas side piping please refer table and diagram below

0

0

Pipe clamp O

¬×∏

The height of drain may be possible up to 750 mm. Down-slope (1/50 ~ 1/100) Use VP30 or more for confluence

INDOOR UNIT DRAIN PIPING

Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings.

Be sure to perform heat insulation on the drain piping

During drain piping connection, be careful not to exert extra force on the drain port at the indoor unit The outside diameter of the drain connection at the indoor unit is 32 mm.

Drain piping must have down-slope (1/50 to 1/100); be sure not to provide up-and-down slope to preven

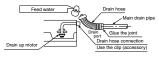
Heat insulation material: Polyethylene foam with thickness more than 8 mm (local supply).

Drain Test The air conditioner uses a drain up motor to drain water. Use the following procedure to test the drain up motor operation

Connect the main drain pipe to exterior and leave it provisionally until the test comes to an end. Feed water to the flexible drain hose and check the piping for leakage. Be sure to check the drain up motor for normal operating and noise when electric wiring is complete. When the test is complete, connect the flexible drain hose to the drain port.

Prior about 600-700cc of water in the drain pan of the indoor unit. (Pour from the position specified in the drawing by using a water supply bottle or other suitable tool.)

Press the drain pump test run on pot to start the drain motor, and verify water drainage. (The drain motor will automatically stop after operating for about five minutes.)







Confirm the red mark of the union (thin side

REFRIGERANT PIPING

Brazing for piping.
a. Execute brazing before tightening the flare nut.

EVACUATION OF THE EQUIPMENT

Two-wsy valve Closed

Closed

Connect approved type polychloroprene sheathed power supply cord 3 x 1.5 mm² type designation 60245 IEC 57 or heavier cord to the terminal board, and connect the others end of the cord to Isolating Devices (Disconnecting means).

use uniters ento or tine cord to Isolating Devices (Disconnecting means).

Connection cable between indoor unit and outdoor unit shall be approved polychioroprene sheathed 4 x 1.5 mm² flexible cord., type designation 60245 IEC 57 or heavier cord. Allowable connection cable length of each indoor unit shall be 30 m or less.

Connect the power supply cord and connection cable between indoor unit and outdoor unit according to the diagram below.

Secure the power supply cord and connection cable onto the control board with the holder.

Terminals on the incoordinate (Colour of wires (connection cable)

Terminals on the outdoor unit (Power supply cord)

Terminals on the incoordinate (Power supply cord)

Attach the control board cover back to the original position with screw For wire stripping and connection requirement, refer to instruction (6) of indoor unit.

5 CONNECT THE CABLE TO THE OUTDOOR UNIT

HEN INSTALLING AN AIR CONDITIONER, BE SURE TO EVACUATE THE

After completing the piping connection, execute vacuum drying for the connecting piping and the indoc The vacuum drying must be carried out by using the service ports of both the liquid and gas side valve CAUTION Use two wrenches and tighten with regular torque.

	Flare	nut fastening	torque N•m	(kgf•cm)	
ø6.35 mm	18 (180)	ø12.7 mm	55 (560)	ø19.05 mm	100 (1020)
ø9.52 mm	42 (430)	ø15.88 mm	65 (660)		
Liquid sic	de piping	Gas side	piping		
ø6.35 mm (1/4")		ø12.7 mm (1/2")			

4

 Execute triazing before tightering the rater on.
 Execute the state of dust. Blow nitrogen gas or air to blow off dust in the pipe before

in hardening of the pipe).

After deforming the pipe, align centers of the union fitting of the indoor unit and the piping, and tighten them firmly with wrenches.

Connect pipe to the service valve or ball valve which is located below the outdoor unit.

After completed the piping connection, be sure to check if there is gas leakage in indoor and outdoor connection.

Vacuum drying

	Flare	nut fastening	torque N•m	(kgf•cm)	
6.35 mm	18 (180)	ø12.7 mm	55 (560)	ø19.05 mm	100 (1020)
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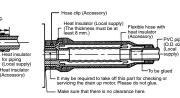
OR DETAIL REFER TO WIRING DIAGRAM AT UNIT)
Remove the control board cover from the unit by loos

Terminals on the indoor unit

15 HEAT INSULATION

⚠ Caution Be sure to perform heat insulation on the drain, liquid and gas piping. Imperfection in heat work leads to water leakage.

Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance



This air conditioner has been tested acc confirmed that there are no faults. How

reactions and the state of the

later plant entreasure. There are 20 ct., when who are a many a common waterial according to the following procedure:
Heat insulation material to be prepared... Adiabatic glass wool with thickness 10 to 20 mm.
Slick glass wool on all air conditioners that are located in ceiling atmosphere.
In addition to the normal heat insulation (thickness: more than 8 mm) for refrigerant piping (ga

piping: thick piping) and drain piping, add a further of 10 mm to 30 mm thickness m

Wall seal

 When the outdoor unit is installed on a higher position than the indoor unit, instal

 wall by transmitting in piping.
 Stuff the space among piping, the electric wire, and- the drain hose with "Putty" and Make sure that rain water do not instill into the wall.

Remove the air inlet grille by moving the catchers to center.

Fitting the decorative pane

crews (4 pcs.).

↑ CAUTION

Temporarily secure the fixing screws (3 pcs.) before fitting the decorative panel. (For temporarily securing the front grille.)

Place decorative panel on the screws

(3 pcs.) before fitting, move de panel as illustrated and tighten all the

Check before hand the height from the

uny use the screws with the length of 35mm which is provided, to fix the decorative panel.

Do not use other screw which is longer it may cause damage to the drain-pan and other components.

Connect a charging hose with a push pin to the Low side of a charging set and the service port of th

• Be sure to connect the end of the charging those with the push pin to the service port.
2. Connect the center hose of the charging set to a vacuum pump.
3. Turn on the power switch of the vacuum pump and make sure that the needle in the gauge moves from 0 cmHg (0 MPa) to -76 cmHg (-0 MPa). Then evacuate the air approximately the minutes.
4. Close the Low side valve of the charging set and turn off the vacuum pump. Make sure that the needle in the gauge does not move after approximately five minutes.
Note: BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID REFRIGERANT GAS LEAKAGE.

Note: BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID REFRIGERANT GAS LEAKAGE.

5. Disconnect the charging hose from the vacurum pump and from the service port of the 3-way valve.

6. Tighten the service port caps of the 3-way valve at a torque of 18 Nm with a torque wrench.

7. Remove the valve caps of both of the 2-way valve and 3-way valve. Position both of the valves to "OPEN" using a hexagonal wrench (4 mm).

8. Mount valve caps not the 2-way valve and the 3-way valve.

• Be sure to check for gas leakage.

If gauge needle does not move from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa), in step ③ above take
the following measure:

the following measure:

If the leak stops when the piping connections are tightened further, continue working from step ③.

Be sure to connect the end of the charging hose with the push pin to the service port

ceiling to the unit.

The front grille fitting direction is determined by the unit direction.

Only use the screws with the length of 35mm

Pipe down Putty
Pipe
Indoor
Unit
Tre
Drain pipe ∞ L * Put the incision at the trap part of the hea

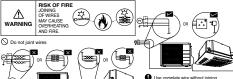
Hang the hinge on the hole of

decorative panel. (The direction of the installation is free.)

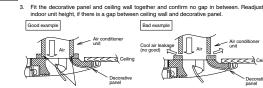


CONNECTING THE CABLE TO THE INDOOR

holder (clamper).
Ensure the colour of wires of outdoor unit and the terminal Nos. are the same to the indoor's respectively. Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for safety reason.



INSTALLATION OF DECORATIVE PANEL The decorative panel has its installation direction. Confirm the direction by displaying the piping side.



Insert firmly the connector of cosmetic louver to indoor pcb CN-STM1, CN-STM2 and CN-DISP. Be caution not to clamp the cord in between control board and control board over After complete, install back removed part follow

⚠ Warning Be sure to hook the air inlet grill string, to prevent grill from falling and causing injury from it.



DISPOSAL OF OUTDOOR UNIT DRAIN WATER

If a drain elbow is used, the unit should be placed on a stand which is taller than 3 cm.

If the unit is used in an area where temperature falls below 0°C for 2 or 3 days in succession, it is recommended not to use a drain elbow, for the 3 days in succession, it is recommended not to drain water freezes and the fan will not rotate. AUTO SWITCH OPERATION



e following operations can be performed by pressing the "AUTO" switch.

AUTO OPERATION MODE

The Auto operation will be activated immediately once the Auto Switch is pressed. TEST RUN OPERATION (FOR PUMP DOWN/SERVICING PURPOSE) The Test Run operation will be activated if the Auto Switch is pressed continuously for more than 5 sec. to below 8 sec. A "pep" sound will occur at the fifth sec., in order to identify the starting of Test Run operation.

CHANGING THE REMOTE CONTROL TRANSMISSION CODE Press AUTO SW continuously for more than 11 sec to below 16 sec, A "pep", "pep", "pep" sound will

occur at the eleventh sec.

Press the "A/C RESET" button once remote control signal will activate the remote control transmission

Press "OFF/ON" button. The new Remo-Con No. will be accepted and memorized, after which the new Remo-Con No. can be used.

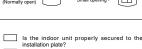
REMO-CON NO. CHANGE IN REMOTE CONTROL

Remove the batteries from the battery compartment of the Remote Control.

On the left side of the battery compartment, there is a small opening in the centre in which Jumper (J_A) can be seen. In the accepted Remo-Con PCB shown beside, Jumper (J_B) can be seen.

or (0_D) can be seen.				
	Remo-Con No.			
	A(Default)			
Ξ	В			
	С			
Т	D			





Jumper (J_A) (Normally short) >

CHECK ITEMS

Is there any gas leakage at flare nut connections?

Is the connection cable being clamped firmly? Is the drainage ok?

temperature control, etc.)

F615950

Power supply cord Indoor and outdoor connection cable

Isolating Devices Indoor Unit **⚠** WARNING

This equipment must be properly earthed.

Note: Isolating Devices (Disconnecting means should have minimum 3.0 mm contact gap.
 Earth wire shall be Yellow/Green (Y/G) in colou and longer than other AC wires for safety reason.

PIPE INSULATION ioned in Indoor/Outd

may form), please increase the insulation by using POLY-E FOAI

Is the Earth wire connection properly done?

Is the cooling/heating operation normal?

As to parts to be sold separately With regards to installation of the parts sold separately, follow the installation manual which is provided with the parts sold

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O POWER O TIMER

Is the power supply voltage complied with rated Is there any abnormal sound? Is the thermostat operation normal?

ner obstacles.
of place any obstacles which may cause a short circuit of discharged air.

If the unit is installed at 10 m distance, the quantity of additional refrigerant should be 50 g (10-7.5) m x 20 g/m = 50 g.