

INSTALLATION MANUAL

Fan Coil Unit of Four-Way Cassette Type

Original instructions.
Please read this manual carefully and keep it for future reference.
All the pictures in this manual are for illustrations purpose only.

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1. ABOUT THIS DOCUMENTATION

1.1 About This Document

NOTE

| Make sure that the user has the printed documentation and ask him/her to keep it for future reference.

Target audience

Authorised installers + end users

Note

| This appliance is intended to be used by expert or trained users in shops, in light industry, and on farms, or for commercial and household use by lay persons.

WARNING

| Please thoroughly read and ensure that you fully understand the safety precautions (including the signs and symbols) in this manual, and follow relevant instructions during use to prevent damage to health or property.

Documentation set

This document is part of a documentation set. The complete set consists of:

- General safety precautions:
Safety instructions that you must read before installing
- Fan coil unit(s) installation and operation manual:
Installation and operation instructions
- Controller installation and operation manual:
Installation and operation instructions

Please refer to the product manual for other accessories.

Technical engineering data

Latest revisions of the supplied documentation may be available via your dealer.

The original documentation is written in English. All other languages are translations.

1.2 Safety Instructions

Please thoroughly read and ensure that you fully understand the safety precautions (including the signs and symbols) in this manual, and follow relevant instructions during use to prevent damage to health or property.

Safety Signs

 DANGER	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
 NOTE	Useful operation and maintenance information.

Explanation Of Symbols Displayed On The Unit

	CAUTION	This symbol shows that the operation manual should be read carefully.
	CAUTION	This symbol shows that a service personnel should be handling this equipment with reference to the installation manual.
	CAUTION	This symbol shows that information is available such as the operating manual or installation manual.

 CAUTION

Do not use the fan coil unit for other purposes.
In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.

Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.
Otherwise, an electric shock and injury may result.

In order to avoid electric shock or fire, make sure that an earth leak detector is installed.

Be sure the fan coil unit is grounded.
In order to avoid electric shock, make sure that the unit is grounded and that the earth wire is not connected to gas or water pipe, lightning conductor or telephone earth wire.

Do not operate the fan coil unit with a wet hand.
An electric shock may happen.

Do not touch the heat exchanger fins.
These fins are sharp and could result in cutting injuries.

Do not place items which might be damaged by moisture under the fan coil unit.
Condensation may form if the humidity is above 80%, the drain outlet is blocked or the filter is polluted.

After a long use, check the unit stand and fitting for damage.
If damaged, the unit may fall and result in injury.

To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the fan coil unit.

Arrange the drain hose to ensure smooth drainage.
Incomplete drainage may cause wetting of the building, furniture etc.

Never touch the internal parts of the controller.
Do not remove the front panel. Some parts inside are dangerous to touch, and a machine trouble may happen.

Never expose little children, plants or animals directly to the air flow.
Adverse influence to little children, animals and plants may result.

Do not place appliances which produce open fire in places exposed to the air flow from the unit or under the indoor unit.
It may cause incomplete combustion or deformation of the unit due to the heat.

Do not install the fan coil unit at any place where flammable gas may leak out.
If the gas leaks out and stays around the fan coil unit, a fire may break out.

The appliance should not be used by children without supervision.



DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

2. INSTALLATION INFORMATION

- To install properly, please read this "installation manual" at first.
- The air conditioner must be installed by qualified persons.
- When installing the indoor unit and its tubing, please follow this manual as strictly as possible.
- If the air conditioner is installed on a metal part of the building, it must be electrically insulated according to the relevant standards to electrical appliances.
- When all the installation work is finished, please turn on the power only after a thorough check.
- Regret for no further announcement if there is any change of this manual caused by product improvement.

INSTALLATION ORDER

- Select the location;
- Install the indoor unit;
- Install the outdoor unit;
- Connect the drain pipe;
- Wiring;
- Test operation.

3. FITTINGS

3.1 Attached fittings

Please check whether the following fittings are of full scope. If there are some spare fittings , please restore them carefully

	NAME	SHAPE	Four-way Cassette	Four-way Cassette (compact)
INSTALLATION FITTINGS	1. Installation paper board		1	1
	2. Bolt M6		4	--
	3. Nut		8	--
	4. Washer		8	--
Tubing & Fittings	5. Sponge I (250*250*8)		1	--
	6. Sponge II (60*100*5)		1	--
	7. Soundproof / insulation sheath		2	2
Drainpipe Fittings	8. Drain hose		1	1
	9. Insulation pipe		1	--
	10. Out-let pipe clasp		1	1
	11. Tightening band		5	5

	NAME	SHAPE	Four-way Cassette	Four-way Cassette (compact)
Remote controller & Its Frame	12. Remote controller		1	1
	13. Remote controller support		1	1
	14. Mounting screw(ST2.9X10-C-H)		2	2
	15. Alkaline dry batteries (AM4)		2	2
Others	16. Installation manual	This manual	1	1
	17. Remote controller manual		1	1
	18. Owner's manual		1	1

3.2 Local purchased components

	NAME	SHAPE	Four-way Cassette	Four-way Cassette (compact)
INSTALLATION FITTINGS	1. Expansible hook		4	4
	2. Installation hook		4	4

4. INSPECTING AND HANDLING THE UNIT

At delivery, the package should be checked and any damage should be reported immediately to the carrier claims agent.

When handling the unit, take into account the following:

-  Fragile, handle the unit with care.
- Choose on before hand the path along which the unit is to be brought in.
- Move this unit as originally package as possible.
- When lifting the unit , always use protectors to prevent belt damage and pay attention to the position of the unit's centre of gravity.

5. FAN COIL UNIT INSTALLATION

5.1 Installation place

(refer to fig.5-1,fig.5-2,fig.5-3 and table 5-1 for specification.)

The fan coil unit should be installed in a location that meets the following requirements:

- There is enough room for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the fan coil unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting water pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.



CAUTION

Keep fan coil unit, outdoor unit, power supply wiring and transmission wiring at least 1 meter away from televisions and radios. This is to prevent image interference and noise in those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if 1 meter is kept.)

Before installing the unit, be sure to confirm with the user whether there are wires, water pipes, air pipes and so on in the wall or ground of the installation site to avoid accidents due to damage.

5.2 Installation procedures for fresh air intake duct connection

■ Preparing the connection hole

- Cut off the knockout hole on the side plate with a nipper.
- Cut the inner insulation of the hole portion with a cutter. (refer to fig.5-4)

■ Placing the insulation

- Put the insulation tightly around the hole of the unit as shown.
The ends of the side plate and the inner insulation must be completely adhered without leaving any clearance along the circumference of the hole.
Make sure the inner surface of insulation tightly contacts the inner insulation edge and the side plate. (refer to fig.5-5)

5.3 Install the main body

■ The existing ceiling (to be horizontal)

- 1 Cut a quadrangular hole of 880x880mm or 600x600mm in the ceiling according to the shape of the installation paper board.
 - The center of the hole should be at the same position of that of the fan coil unit body.
 - Determine the lengths and outlets of the connecting pipe, drainpipe and cables.
 - To balance the ceiling and to avoid vibration, please enforce the ceiling when necessary.
- 2 Select the position of installation hooks according to the hook holes on the installation board.
 - Drill four holes of $\phi 12$ mm, 50~55mm deep at the selected positions on the ceiling. Then embed the expansible hooks (fittings).

- Face the concave side of the installation hooks toward the expansible hooks. Determine the length of the installation hooks from the height of ceiling, then cut off the unnecessary part.
 - If the ceiling is extremely high, please determine the length of the installation hook according to facts.
- 3 Adjust the hexangular nuts on the four installation hooks evenly, to ensure the balance of the body.
 - If the drainpipe is awry, leakage will be caused by the malfunction of the water-level switch.
 - Adjust the position to ensure the gaps between the body and the four sides of ceiling are even. The body's lower part should sink into the ceiling for 10~12 mm. (refer to fig.5-6)
 - In general, L is half of the screw length of the installation hook. (refer to fig.5-6)
 - Locate the fan coil unit firmly by wrenching the nuts after having adjusted the body's position well. (refer to fig.5-7)

■ New built houses and ceilings

- 1 In the case of new built house, the hook can be embedded in advance (refer to 2 mentioned above). But it should be strong enough to bear the fan coil unit and will not become loose because of concrete shrinking.
- 2 After installing the body, please fasten the installation paper board onto the fan coil unit with bolts(M6X12) to determine in advance the sizes and positions of the hole opening on ceiling. (refer to fig.5-8)
 - Please first guarantee the flatness and horizontal of ceiling when installing it.
 - Refer to 1 mentioned above for others.
- 3 Refer to 3 above for installation.
- 4 Remove the installation paper board.



CAUTION

After installing the body, the four bolts(M6x12) must be fastened to the fan coil unit onto ensure the body is grounded well.

FIGURES

Fig.5-1

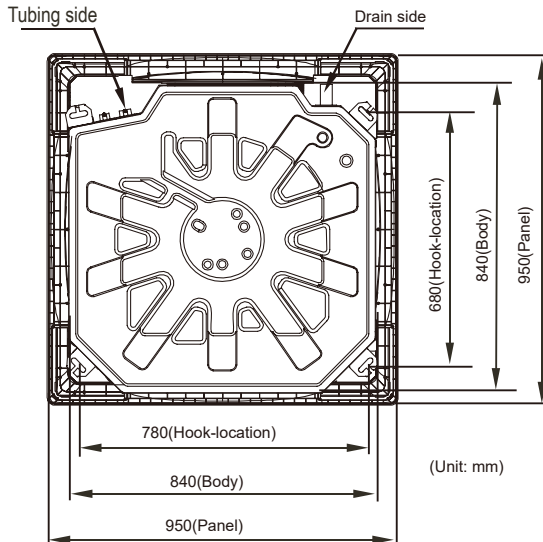


Fig.5-2

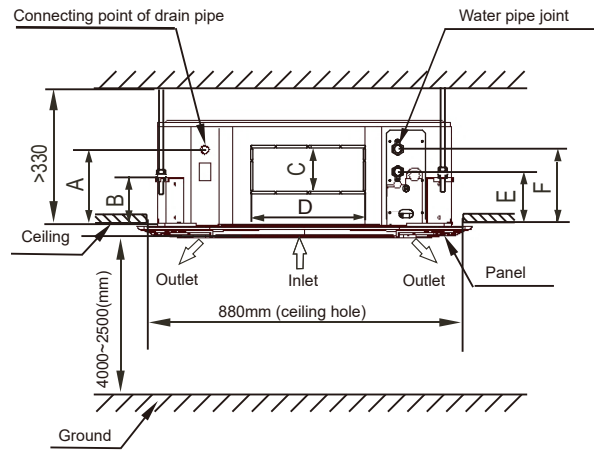


Table 5-1

Model \ Size (mm)	A	B	C	D	E	F
MKA-600RA~MKA-750RA	180	140	85	350	145	195
MKA-850RA~MKA-1500RA	180	140	155	350	155	205

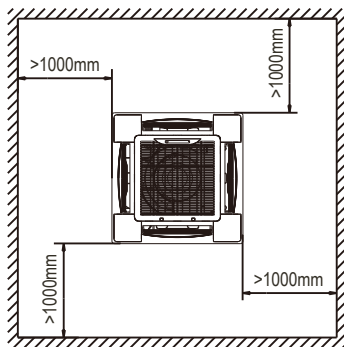


Fig.5-3

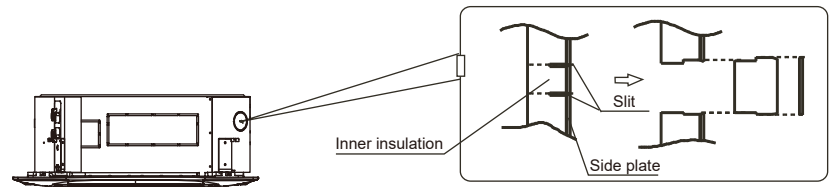


Fig.5-4

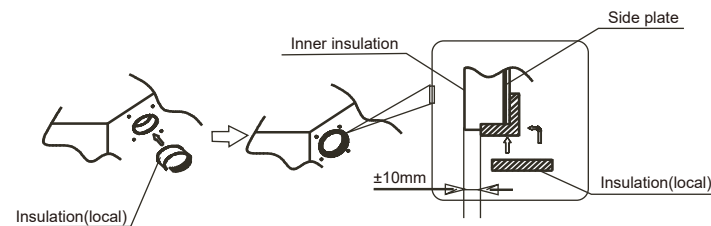


Fig.5-5

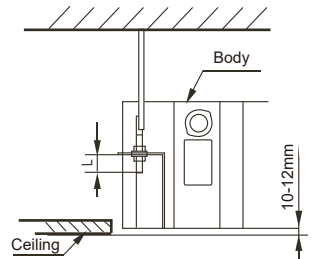


Fig.5-6

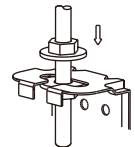


Fig.5-7

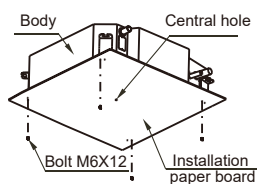


Fig.5-8

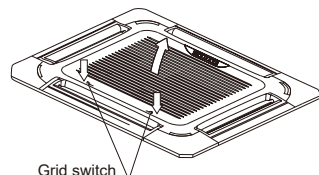


Fig.5-9

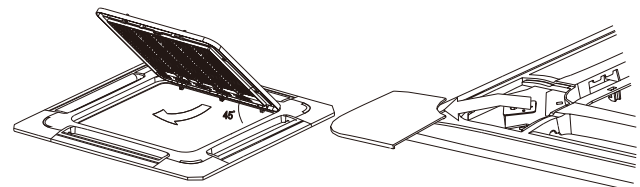


Fig.5-10

Fig.5-11



NOTE

All the pictures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased(depend on model).The actual shape shall prevail.

5.4 Install The Panel



CAUTION

Never put the panel face down on floor or against the wall, or on bulgy objects.

Never crash or strike it.

1 Remove the air-in grill.

- Slide two grill switches toward the middle at the same time, and then pull them up. (Refer to fig.5-9)
- Draw the grill up to an angle of about 45°, and remove it. (Refer to fig.5-10)

2 Remove the installation covers at the four corners

- Wrench off the bolts, loose the rope of the installation covers, and remove them. (Refer to fig.5-11)

3 Install the panel

- Align the swing motor on the panel to the tubing joints of the body properly.
- Fix hooks of the panel at swing motor and its opposite sides to the hooks of corresponding water receiver. Then hang the other two panel hooks onto corresponding hangers of the body.



CAUTION

Do not coil the wiring of the swing motor into the seal sponge.

- Adjust the four panel hook screws to keep the panel horizontal, and screw them up to the ceiling evenly.
- Regulate the panel in the direction of the arrow slightly to fit the panel's center to the center of the ceiling's opening. Guarantee that hooks of four corners are fixed well.
- Keep fastening the screws under the panel hooks, until the thickness of the sponge between the body and the panel's outlet has been reduced to about 4~6 mm. The edge of the panel should contact with the ceiling well.
 - If the gap between the panel and ceiling still exists after fastening the screws, the height of the fan coil unit should be modified again.
 - You can modify the height of the fan coil unit through the openings on the panel's four corners, if the lift of the fan coil unit and the drainpipe is not influenced.

4 Hang the grille to the panel, then connect the lead terminator of the swing motor and that of the control box with corresponding terminators on the body respectively.

5 Relocate the grille in the procedure of reversed order.

6 Relocate the installation cover.

- Fasten the rope of installation cover on the bolt of the installation cover.
- Press the installation cover into the panel slightly.

6. CONNECT THE DRAIN PIPE

6.1 Install the drain pipe of indoor unit

1) The drainpipe can use PVC pipe (external diameter about 37~39mm, inner diameter is 32mm).

2) Joint drainpipe connector to the end side of water pumping pipe, and fix drainpipe together with water outflow pipe and thermal insulation tube by clasp of water outflow pipe (attached).



CAUTION

Don't use forcing strength to crack the water-pumping pipe.

3) Water-pumping pipe and drainpipe from main body must be wrapped by insulation tube evenly, and bound by tighten band for obstructing air getting in and coagulation.

4) Prevent from water backflow into unit inside during shutdown, the drain pipe shall place down side and drain water to outdoor (drain side), the gradient of the drain pipe should be higher than (1/100), without salient and water remain(Refer to Fig.6-1 a).

5) When connecting drainpipe, don't drag the pipe that would pull the main unit. For this, please arrange bearing points every 0.8 to 1.0 meter to avoid pipe be bended (See Fig.6-1 b).

6) When connect a lengthen drainpipe, apply protective tube to wrap its indoor parts for ensuring the lengthen part connected tightly.

7) In case the drainpipe outlet is higher than pumping connective pipe of the main body, the drainpipe must be arranged upwards vertically by using connective assembly of the water outlet for vertical bending, and the height of the drainpipe shall set to the defrosting pan surface no more than 1000mm (four-way cassette) or 600mm (slim four-way cassette), otherwise, too much backflow while shutdown would leads to overflow (Refer to Fig.6-2).

8) Base on the actual requirement to bend piping, and use connective assembly of water outlet in terminal box for pipe layout.



CAUTION

The joints in drain system must be sealed to avoid water leakage.

9) The height from floor to the end of drainpipe or the bottom of drain slot must more than 50 mm. Don't immerse the end of drainpipe or the bottom of drain slot into water. When drain condensate liquid to raceway, please bend the drainpipe to a U-sharped hydroseal for avoiding stench transmitted by drainpipe to indoor.



NOTE

All the pictures in this manual are for explanation purpose only. They may be slightly different from the fan coil unit you purchased(depend on model). The actual shape shall prevail.

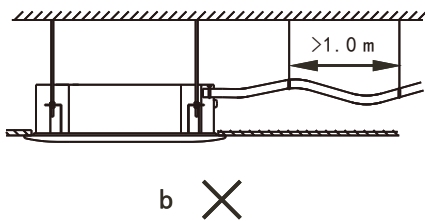
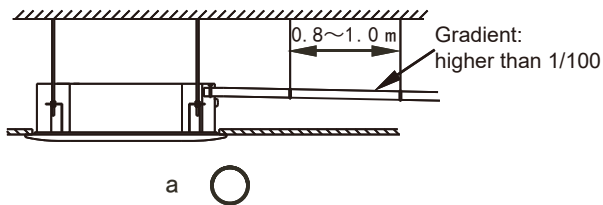
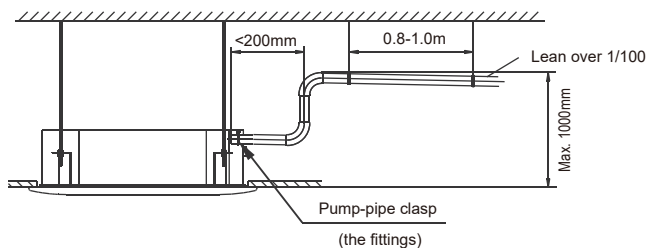


Fig.6-1



6.2 Drainage test

- Check whether the drainpipe is unhindered
 - New built house should have this test done before paving the ceiling.
- 1、 Remove the test cover, and stow water of about 2000ml to the water receiver through the stow tube.
 - 2、 Turn on the power, and operate the fan coil unit under the "COOLING" mode. Listen to the sound of the drain pump. Check whether the water is discharged well (a lag of 1min is allowed before discharging, according to the length of the drain pipe), and check whether water leaks from the joints.
- CAUTIONS: If there is any malfunction, please resolve it immediately.
- 3、 Stop the fan coil unit for there minutes, check if everything is ok. If the drain hose is located unreasonable, water overflow will cause the Alarm indicator lamp flashing (For both cooling and heating type or cooling only type), even the water leak out from the water receiver.
 - 4、 Check the drain pump whether drain water immediately when alarm sound for the high water lever. If the water lever can't come down below to the limited water lever, the fan coil unit will stop. Restart it until turn off the power and drain off all the water.
 - 5、 Turn off the power, drain the water away.
- The drain plug is used to empty the water-receiver for maintenance of the fan coil unit. Please stuff it imposition at all times during operation to avoid leakage.

7. WIRING



CAUTION

The fan coil unit should use separate power supply with rated voltage.

The external power supply to the fan coil unit should have ground wiring, which is linked to the ground wiring of the indoor and outdoor unit.

The wiring work should be done by qualified persons according to circuit drawing.

an all-pole disconnection device which has at least 3mm separation distance in all pole and a residual current device(RCD)with the rating of above 10mA shall be incorporated in the fixed wiring according to the national rule.

The appliance shall be installed in accordance with national wiring regulations.

Be sure to locate the power wiring and the signal wiring well to avoid cross-disturbance.

Do not turn on the power until you have checked carefully after wiring.



NOTE

Remark per EMC Directive 2004/108/EC

For to prevent flicker impressions during the start of the compressor (technical process), following installation conditions do apply.

- 1 The power connection for the fan coil unit has to be done at the main power distribution. The distribution has to be of low impedance, normally the required impedance reaches at a 32 A fusing point.
- 2 No other equipment has to be connected with this power line.
- 3 For detailed installation acceptance please refer to your power supplier, if restrictions do apply for products like washing machines, fan coil unit or electrical ovens.
- 4 For power details of the fan coil unit refer to the rating plate of the product.
- 5 For any question contact your local dealer.

7.1 Connect the cable

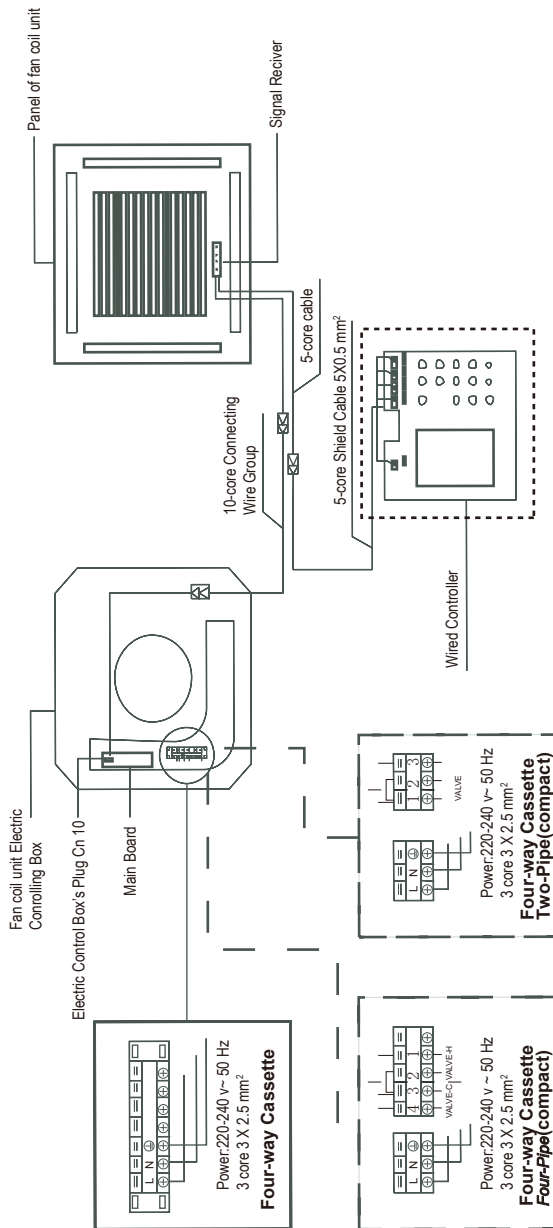
- Disassemble the bolts from the cover.(If there isn't a cover on the outdoor unit, disassemble the bolts from the maintenance board, and pull it in the direction of the arrow to remove the protection board.)
- Connect the connective cables to the terminals as identified with their respective mached numbers on the terminal block of indoor and outdoor units.
- Re-install the cover or the protection board.

■ Table 7-1

AIR FLOW(m ³ /h)		510~2 550
POWER	PHASE	1-phase
	FREQUENCY AND VOLT	220-240 V~ 50 Hz
CIRCUIT BREAKER/FUSE(A)		15/15
FAN COIL UNIT POWER WIRING(mm ²)	BELOW 20 M	Twisted pairwire 2.5 mm ²
	BELOW 50 M	Twisted pairwire 6 mm ²
GROUND WIRING(mm ²)		2.5

The power cord type designation is H05RN-F or above.

7.2 Wiring figure



WIRED CONTROLLER WIRING

8. TEST OPERATION

- The test operation must be carried out after the entire installation has been completed.
- Please confirm the following points before the test operation:
 - The fan coil unit and outdoor unit are installed properly.
 - Tubing and wiring are correctly completed.
 - The water pipe system is leakage-checked.the drainage is unimpeded.
 - The heating insulation works well.
 - The ground wiring is connected correctly.
 - The length of the tubing has been recorded.
 - The power voltage fits the rated voltage of the fan coil unit
 - There is no obstacle at the outlet and inlet of the outdoor and fan coil unit.
 - The fan coil unit is pre-heated by turning on the power.
- According to the user's requirement, install the remote controller frame where the remote controller's signal can reach the fan coil unit smoothly.
- Test operation

Set the fan coil unit under the mode of "COOLING" with the remote controller, and check the following points. If there is any malfunction, please resolve it according to the chapter "Troubleshooting" in this manual.

- Whether the switch on the remote controller works well.
- Whether the buttons on the remote controller works well.
- Whether the air flow louver moves normally.
- Whether the room temperature is adjusted well.
- Whether the indicator lights normally.
- Whether the temporary buttons works well.
- Whether the drainage is normal.
- Whether there is vibration or abnormal noise during operation.
- Whether the fan coil unit heats well in the case of the HEATING/COOLING type.

In the event, client applies for the Remote Control Function:
 Firstly, dial code SW3 must switch off.
 Secondly, connect the signal wires to CN17.
 Finally, the defrost indicator in LCD flashing in 5Hz at the time remote controlling fan coil unit switch be dialed to OFF.



NOTE

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.



CAUTION

A protection feature prevents the fan coil unit from being activated for approximately 3 minutes when it is restarted immediately after shut off.

**GD Midea Heating&Ventilating
Equipment Co.,Ltd.**

Penglai Industry Road,Beijiao,Shunde, Foshan,
Guangdong,528311,P.R.China

16100101A11813 V1.1

版本更改说明（此页不用做菲林）

印刷技术要求

材质	双胶纸80克
规格	210*297
颜色	黑白印刷
其他	/

设计更改记录表

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