

MUND

Duct 100% fresh air MVD DC Installation manual





CL23390 to CL23394 English

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1. INSTALLATION PRECAUTION

- To install properly, please read this manual at first.
- The air conditioner must be installed by qualified persons.
- When installing the indoor unit or its tubing, please follow this manual as strictly as possible.
- When all the installation work is finished, please turn on the power only after a thorough check.
- No further announcement if there is any change of this manual caused by product improvement.

NOTE

The installor should illustrate to users how to correctly use and maintain the air-conditioner, as well as remind users to carefully read and keep both Installation Manual and Owner's Manual well.

CAUTION

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



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of esperience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

- Disconnect the power supply before cleaning and maintenance.
- The appliance must be installed 2,3m above floor.
- The appliance shall be installed keep away from quiet place, such as bedroom.

- Disassembling, replacement and maintenance of filter should be carried out by qualified person.
- The appliance shall not be installed in the laundry.
- 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.
- An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- The appliance shall be installed in accordance with national wiring regulations.
- The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.
- 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 power cord type designation is H05RN-R/H07RN-F or above.

2. INSTALLATION PLACE

- Indoor Unit
- Enough room for installation and maintenance.
- The ceiling is horizontal and it can afford the weight of the indoor unit.
- The air inlet and outlet are not impeded and does not affected by outdoor air too much.
- The air flow can reach every part of the room.
- The connecting pipe and drainpipe can be easily extracted out.
- There is no direct radiation from heat source.
- Outdoor Unit
- Enough room for installation and maintenance.
- The air inlet and outlet are not impeded and does not affected by outdoor air too much.
- Dry and well ventilated place.
- The supporter is flat and horizontal and can afford the weigh of outdoor unit, without noise and vibration.
- The noise and the outlet air will not influence your neighbor.
- No combustible gas.
- Place convenient for piping and wiring.
- Please keep away from the following places, or malfunction may be caused.(if unavoidable, please consult the professionals):
- There is mineral oil like the oil of cutting machine.
- There is much salty air. (Near the coast)
- There is caustic gas such as sulfuric gas. (Near the hotspring.)
- Factory where the voltage fluctuate greatly.
- In the car or in the cabin.
- In the kitchen or a place full of oil steam.
- There is strong electromagnetic wave.

Installation manual

- There is combustible gas or materials.
- There is much evaporating acid or alkaline gas.
- Other special areas.
- Notes Before Installation
- Select the correct carry-in path.
- Move this unit as originally packaged 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.
- Avoid installing it in a narrow sapce which has a high requirement to noise.

NOTE

- Remark per EMC Directive 89/336/EEC
- For to prevent flicker impressions during the start of the compressor(technicalprocess),followinginstallationconditions apply.
- The power connection for the air conditioner has to be done at the main power distribution. The distribution has to be of alowimpedance, normally therequired impedance reaches at a 32A fusing point.
- No other equipment has to be connected with this power line.
- For detailed installation acceptance, please refer to your contract with the power supplier if restrictions do apply for products like washing machines, air conditioners or electrical ovens.
- For power details of the air conditioner, refer to the rating plate of the product.
- For any question contact your local dealer.

3. ACCESSORIES

Table.3-1

Name of Accessor	ies	Qʻty	Outline	Usage	
Installation ma	anual	1	(This manual)		
Wire controlle	er	1		Wire control the air-conditioner	
Pine insula-	12.5-14kw	2			
tion material	20-28kw	4		Heat insulation	
Water outlet joint		1		For drainage	
Clasp	12.5-14kw	1	O	Chucking the joint which connect the drain hose and the outlet of indoor unit	
Water connec- ting pipe	00.00	1		To connect drain pipe	
Adhesive tape for seal	20-28KW	1	0	To connect drain pipe	
Network	12.5-14kw	1	የ የ	The indoor unit which at the terminal of communication system should connect a	
matching wire	atching wire 20-28kw			impedance between port P and port Q	
	12.5-14kw	1	R	Use for pipe connection	
Copper nut 20-28kw		2	ØY	of engineering installation	
Electric throttle connect part A	20-28kw	1	U	Connect electric throttle part A	
Electric throttle connect part B	20-28kw	1	Ĵ	Connect electric throttle part B	
Spring	20-28kw	1		To fixed display box	



- Cautions on remote controller installation
- Never throw or beat the controller.
- Before installation, operate the remote controller to determine its location in a reception range.
- Keep the remote controller at least 1m apart from the nearest TV set or stereo equipment. (It is necessary to prevent image disturbances or noise interferences.)
- Do not install the remote controller in a place exposed to direct sunlight or close to a heatingsource, such as a stove. Note that the positive and negative poles are in right positions when loading batteries.

4. INDOOR UNIT INSTALLATION

Installing Φ10 Hanging Screw Bolts (4 Bolts)

- Please refer to the following figure for the distance measurement between the screw bolts.
- Please install with screw bolts.
- The handling to the ceiling varies from the constructions, consult the construction personnels for the specific procedures.
- The size of the ceiling to be handled.Do keep the ceiling flat. Consolidate the roof beam for possible vibration.
- Cut off the roof beam.
- Strengthen the place cut off, and consolidate the roof beam.
- Carry out the pipe and line operation in the ceiling after finishing the installation of the main body. While choosing where to start the operation, determine the direction of the pipes to be drawn out. Especially in case there is a ceiling, position the refrigerant pipes, drain pipes, indoor & outdoor lines to the connection places before hanging up the machine.
- The installation of hanging screw bolts.

Wooden construction

Put the square timber traversely overthe roof beam, then install the hanging screw bolts. (Refer to *Fig.4-1*)



Fig.4-1

New concrete bricks Inlaying or embedding the screw bolts (Refer to *Fig.4-2*)



Blade shape insertion

Fig.4-2

For original concrete bricks

Slide insertion

Use embeding screw bold, crock and stick harmness (refer to *Fig.4-3*)



(Pipe hanging and embedding screw bolt)

Fig.4-3

Steel roof beam structre

Install and use directly the supporting angle steel. (refer to Fig. 4-4)



Fig.4-4

- Overhanging the indoor unit
- Overhang the indoor unit onto the hanging screw bolts with block.
- Position the indoor unit in a flat level by using the level indicator, unless it may cause leakage.



Fig.4-5

- Install the main body
- Installing the dust proof net and canvas air passage
- Open the air-in grill Anti-clockWise the bolts as indicated in follow figure sketch.Then pull down the air-in grill.

- 2 Take out the air-in grill.
- ③ Dismantle the air filter
- ④ Clean the air filter (Vacuum cleaner or pure water may be used to clean the air filter. If the dust accumulation is too heavy, please use soft brush and mild detergent to clean it and dry out in cool place).
- (5) The air-in side should face down when using water. (See Fig.4-7)
- ⁽⁶⁾ The air-in side should face up when using vacuum cleaner. (See *Fig.4-8*)





Fig.4-6



Fig.4-7



Fig.4-8

- Pipe Connection
- The static pressure outside the unit is 200Pa, the length of the air pipe attached is determined by this parameter.
- The positioning of ceiling hole and indoor unit and hanging screw bolts
- ① Routine method of installation: the size of installation for indoor unit following *Fig.4-9*
- ② Please install with Φ10 hanging screw bolts.
- Carry out the pipe and line operation in the ceiling after finishing the installation of the main body. While choosing where to start the operation, determine the direction of the position the refrigerant pipes, drain pipes, indoor & outdoor lines and linecontrolled lines to the connection places before.

The positioning of ceiling hole and indoor unit and hanging screw bolts

routine method of installation: the size of installation for indoor unit following the Fig.4--9 and Fig.4-10

12.5~14kW



Fig.4-10



The whole unit status show as Fig.4-10.
 Remove the all 11 screw from fixed Safety Drain Tray, and then take off the tray as figure showed in Fig.4-11.

- 3. Take off the tray along the direction of the arrow show in Fig.4-11.4. Clean the tray and evaporator.
- 5. Re-install the unit follow the reverse above orders.

- 1. Please shut down the unit and cut off power cable before maintain the motor.
- 2. Don't heavy pull the foam tray, when dismounting; otherwise the foam tray would break.

The method of installation: Adopt following method if the air-conditioning's size of installationsite is limited and the indoor unit can't put into the installtionsite.



Fig.4-12



Fig.4-13

1. The whole unit status show as Fig.4-12

2. Remove the all 11 screw from fixed Safety Drain Tray, and then take off the tray as figure showed in Fig.4-12.

- 3. Take off the tray along the direction of the arrow show in Fig.4-13
- 4. Clean the tray and evaporator.

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5. Re-install the unit follow the reverse above orders.

CAUTION

1. Please shut down the unit and cut off power cable before maintain the motor.

2. Don't heavy pull the foam tray, when dismounting; otherwise the foam tray would break.



Fig.4-14





The state after fan assembly is taken off

Fig.4-15

- Refer to Fig.4-14, remove all 11 screw from safety drain tray, and take off the safety drain tray.
 Refer to Fig.4-15, remove all 4 bolts from fan assembly, see Fig.4-15, according to which orders to take off the fan assembly.
- Refer to Fig.4-15, horizontal pushing the fan assembly, until it cannot not move any further, and then lift up slightly and take down to remove it.
 After motor maintenance, reinstall the fan assemblies as per the reverse above orders. And connect the motor with electric control box, as well as motor with power cable of capacity.

- 1. Please shut down the unit and cut off power cable before maintain the motor.
- 2. Before dismount the fan assembly, you must remove the motor and electric control box, as well as connective wires between motor and capacity assembly.
- 3. Fan subassembly is very heavy, please be careful during maintaining, otherwise physical injury would be caused.



- 1. Refer to Fig.4-16, remove all 11 bolts from safety drain tray, and take off the safety drain tray.
- 2. Refer to Fig.4-16, remove all 4 bolts from reinforced panel, and take off the panel.
- 3. Refer to Fig.4-16, remove all 4 bolts from fan assembly, see Fig.4-17, according to which orders to take off the fan assembly.
- 4. Refer to Fig.4-17, horizontal pushing the fan assembly, until it cannot not move any further, and then lift up slightly and take down to remove it.
- 5. After motor maintenance, reinstall the fan assemblies as per the reverse above orders. And connect the motor with electric control box,
- as motor with power cable of capacity.

- 1. Please shut down the unit and cut off power cable before maintain the motor.
- 2. Before dismount the fan assembly, you must remove the motor and electric control box, as well as connective wires between
- motor and capacity assembly.
- 3. Fan subassembly is very heavy, please be careful during maintaining, otherwise physical injury would be caused.



Fig.4-18

The method of installation: adopt following method if the air-conditioning's size of installation site is limited and the indoor unit can't put into the installation site.



Installation manual

- 1 The indoor unit show as *Fig.4-19*
- 2 Following *Fig.4-20* twist-off the screws, along the direction of A get off the cover plate A and cover plate B.
- 3 Dismounting bolt A
- 4 Dismounting bolt C
- 5 Along the direction of B and C divided the part B and part C of indoor unit.
- 6 The part A and part B of indoor unit individual put into the positionsite, then install the indoor unit following the reverse order of step 2,3,4 and 5.
- Maintenance of motor







Fig.4-21

- 1 As figure dismounting the bolt of bottom,get down the bottom cover plate.
- 2 As figure dismounting 6 bolts in the front plate.
- 3 Support the fan subassembly from the bottom, then litter up, get down fan subassembly.
- 4 After finished maintenance of motor, then install the motor assembly in the reverse order of step 1,2 and 3.
- 5 During this process, the indoor unit don't need dismounted.

- NOTE
- During teardown and installation, the scroll was allowed direct support by hand
- Fan subassembly is more weightiness, please take careful during teardown and installation, and keep from hurt by fan subassembly.

5. INSTALLATION SPACE

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Confirm that there is enough room for installation and maintenance.



Fig.5-1



- Panel installation
- Unload inner frame. Slide the knob, release the buckle from the outside frame hole, then unload the inner frame.



6. HIGH STATIC PRESSURE TYP



P(Pa) 20/25/28KW 250 225 200 High spée 150 Medium sp ed 100 75 OW S 50 25 Ω 3800 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600 4000 4200 $Q(m^3/h)$

Fig.6-2

Fig.6-1

7. DUCT DESIGN

- Cover the pipe before connecting to keep rubbish, dust or other impurities out.
- As there is no dust filter on the indoor unit, other places which are easy to maintaining such as inhalant duct should be installed with dust filter. (Without dust filter, dust adherent on the air heat exchanger may cause failure and water-leak.
- Key points of duct connection
- Heating capacity and cooling capacity are tested under the standard allowable min. static pressure; the 12.5/14 test static pressure is 50Pa,the 200/250/280 test static pressure is 62Pa.
- The static pressure refer to Table.15-2.



Fig.7-1

Installation of fan duct

- Connect the fan duct as the following. (Refer to Fig.7-2) (Air intake side)
- Connecting air duct and intake flange (Provided at field)
- Use aluminum adhesive tapes etc. to seal the connecting parts of the intake flange and fan duct, for avoiding air leakage. (Air blowout side)
- Connecting air duct and blowout flange (Attached by main body)
- Use aluminum adhesive tapes etc. to seal the connecting parts of the blowout flange and fan duct, for avoiding air leakage.
 Use the bolts (Accessory 8) to connect the blowout flange with the units.





- The air filter is not the standard accessory, but please must be installed air filter in the air intake side of the fan duct system. Use the dust arrest efficiency (use gravimetric method) with above 50%.
- Make sure the air intake side of fan duct slope down. Then it can prevent water logging.
- Select the fan duct, and make the intake side can intake the outside air.
- Otherwise, the units can not run normally.
- Please heat insulating the fan duct for avoiding condensation. (Material: glass wool or polyethylene foamed, thickness: 25mm)
- If use the mental fan duct to make through the mental iron wire, iron net or mental panel of the wooden building, then it must do the (electronic) insulating for the fan duct and the wall.

NOTE

Other assemblies should be prepared on spot except air conditioner main body.

8. THROTTING COMPONENTS MAAINTENANCE

- The throttling components of Model 125, 140 are built in, when the throttling components built in dismountable formaintenance, please open the piping maintaining cover panel directly, and use two spanners to twist the copper nuts then can take out the throttling-components, pay attention to avoid bending the pipe at the same time; after change new throttling components, make sure that the connectors areconnected reliably and tightly.
- The throttling components of Model 200, 250, and 280 are built external, can directly change throttling components.

9. CONNECTION CONDITION

- The total connected capacity of the standard indoor units and fresh air treatment units must be between 50% and 100% of the capacity of the air conditioning outdoor units. the connected capacity of the fresh air treatment units must not exceed 30% of the capacity of the air conditioning outdoor units.
- Then fresh air treatment unit can also be used exclusively. the connected capacity of the fresh air treatment unit must bebetween 50% and 100% of the capacity of the air conditioning outdoor unit.
- System example: check that system connected capacity is within the appropriate range.



- Total connected capacity of standard indoor units and fresh air treatment unit does not exceed 100%. system capacity of 20 HP = indoor unit capacity of 20 HP.
- Connected capacity of fresh air treatment unit does not exceed 30% of this since system capacity of 20 HPx0.3=6 HP> fresh air treatment unit capacity = 5 HP

10. REFRIGERANT PIPE

Cover the pipe before connecting to keep rubbish, dust or other impurities out.

Table.10-1

Piping material		Copper special for air conditioner
Capa	aticyl(kW)	12.5/14/20/25/28
Dining	Gas side	Ф16mm
Fipility	Liquid side	Ф9.52mm

11. INSTALL THE CONNECTING PIPE

- Check whether the height drop between the indoor unit and outdoor unit, the length of refrigerant pipe, and the number of the bends meet the following requirements:
- The max height drop and The length of refrigerant pipe deponding on the ouotdoor unit. (If the height drop is more than 10m, you had better put the outdoor unit over above the indoor unit.)
- The number bends fewer than 15.
- Do not let air, dust, or other impurities fall in the pipe system during the time of installation.
- The connecting pipe should not be installed until the indoor and outdoor units have been fixed already.
- Keep the connecting pipe dry, and do not let moisture in during installation.
- The Procedure of Connecting Pipes Measure the necessary length of the connecting pipe, and make it by the following way.
- Connect the indoor unit at first, then the outdoor unit.
- ① Bend the tubing in proper way. Don,t harm them.
- ② Daub the surfaces of the flare pipe and the joint nuts with frozen oil, and wrench it for 3~4rounds with hands before fasten the flare nuts. (Refer to *Fig.11-1*)
- 3 Be sure to use two wrenches simultaneously when you connect or disconnect the pipes.
- The stop valve of the outdoor unit should be closed absolutely (as original state). Every time you connect it, first loosen the nuts at the part of stop valve, then connect the flare pipe immediately (in 5 minutes). If the nuts have been loosened for a long time, dusts and other impurities may enter the pipe system and may cause malfunction later. So please expel the air out of the pipe with refrigerant before connection.
- Expel the air (refer to the "Expel The Air") after connecting the refrigerant pipe with the indoor unit and the outdoor unit. Then fasten the nuts at the repair-points.
- Notices For Benable pipe.
- The bending angle should not exceed 90 °C
- Bending position is preferably in the bendable pipe. The larger the better it is .
- Do not bend the pipe more than three times.
- Bend the connecting pipe of small wall thickness.
- Cut out a desired concave at the bending part of the insulating pipe.
- Then expose the pipe(cover it with tapes after bending).
- To prevent collapsing of deforming, please bend the pipe at its biggest radius.
- Use bender to get a small radius pipes.
- Use the market brass pipe.
 Be sure to use the same insulating materials when you buy the brass pipe. (More than 9mm thick)



- Locate The Pipe
- Drill a hole in the wall (suitable just for the size of the wall conduit, 90mm in general), then set on the fittings such as the wall conduit and its cover.
- Bind the connecting pipe and the cables together tightly with binding tapes. Do not let air in, which will cause water leakage by condensation.
- Pass the bound connecting pipe through the wall conduit from outside. Be careful of the pipe all ocation to do no damage to the tubing.
- Connect the pipes.
- Then, open the stem of stop valves of the outdoor unit to make the refrigerant pipe connecting the indoor unit with the outdoor unit fluently flow.
- Be sure of no leakage by checking it with leak detector or soap water.
- Cover the joint of the connecting pipe to the indoor unit with the sound proof/insulating sheath (fittings), and bind it well with the tapes to prevent leakage.

12. REFRIGERANT PIPE CONNECTION

12.1 Expel The Air

- Flaring
- Cut a pipe with a pipe cutter.
- Insert a flare nut into a pipe and flare the pipe.



Fig.12-1

12.2 Check The Leakage

Check all the joints with the leak detector or soap water. (See *Fig.10-6* as a reference illustration)



A. Lo-stop valve B. Hi-stop valve C,D. Joints of the connecting pipe to the indoor unit.

Fig.12-2

12.3 Insulation

- Be sure to with insulating materials cover all the exposed parts of the flare pipe joints and refrigerant pipe on the liquid-side and the gas-side. Ensure that there is no gap between them.
- Incomplete insulation may cause water condensation.



Fig.12-3

Table.12-1

Outsida diamatar	A(mm)		
Outside diameter	Max	Min	
Φ6.4mm	8.7	8.3	
Ф9.5mm	12.4	12.0	
Φ12.7mm	15.8	15.4	
Ф15.9mm	19.0	18.6	
Ф19.1mm	23.3	22.9	



Fig.12-4

```
Table.12-2
```

Tubing size	Torque
Ф6.4mm	14.2~17.2N.m(144~176kgf.cm)
Ф9.5mm	32.7~39.9N.m(333~407kgf.cm)
Φ12.7mm	49.5~60.3N.m(504~616kgf.cm)
Ф15.9mm	61.8~75.4N.m(630~770kgf.cm)
Ф19.1mm	97.2~118.6N.m(990~1210kgf.cm)

Installation manual

- Fasten the nut
- Put the connecting tubing at the proper position, wrench the nuts with hands then fasten it with a wrench. (Refer to Fig.12-4)
- Too large torque will harm the bellmouthing and too small will cause leakage. Please determine the torque according to Table.12-2.
- The necessary filling amount of refrigerant
- Refrigerantvolume to be added is calculated according to outdoor unit installation manual .Be sure to add refrigerant measuring by a scale. L: The length of the pipe
- Please record the quantity added and store it carefully for future maintenance.
- Expel the air with a vacuum pump (Refer to *Fig.12-4*) (Please refer to its manual for the way of using manifold valve)
- Loosen and remove the maintenance nuts of stop valves A and B, and connect the charge hose of the manifold valve with the maintenance terminator of stop valve A. (Be sure that stop valves A and B are both closed)
- Connect the joint of the charge hose with the vacuum pump.
- Open the Lo-lever of the manifold valve completely.
- Turn on the vacuum pump. At the beginning of pumping, loosen the maintenance terminator nut of stop valve B a little to check whethertheaircomesin(thesoundofthepumpchanges,andtheindicator of compound meter turns below zero). Then fasten the nut.
- When the pumping has finished, close the Lo-lever of the manifold valve completely and turn off the vacuum pump.
- When you have pumped for over 15 minutes, please confirm that the indicator of multimeter is on -1.0X105Pa (-76cmHg)
- Loosen and remove the quadrangle cover of stop valves A and B to open stop valve A and B completely, then fasten them.
- Disassemble the charge hose from the repair-mouth of stop valve A, and fasten the nut.



All the stop valves should be opened before test operation. Each air conditioner has two stop valves of different sizes on thesideoftheoutdoorunitwhichoperateasLo-stop value, respectively. (Refer to *Fig. 10-6*)



Fig.12-6

13. CONNECT THE DRAIN PIPE

Install indoor unit drain pipe The outlet has PTI screw bread, Please use sealing materials and pipe sheath (fitting) when connecting PVC pipes.

- The drain pipe of indoor unit must be heat insulated, or it will condense dew, as well as the connections of the indoor unit.
- Hard PVC binder must be used for pipe connection, and make sure there is no leakage.
- With the connection part to the indoor unit, please be noted not to impose pressure on the side of indoor unit pipes.
- When the declivity of the drain pipe downwards is over 1/100, there should not be any win ding.
- The total length of the drain pipe when pulled out traversely shall not exceed 20m, when the pipe is over long, a prop stand must be installed to prevent winding.
- The height difference between drain pipe end to ground or drain channel should be more than 50mm, and the drain pipe cannot put in water. If the drain water was discharged to ditch directly, the drain pipe must be upward bent into a U type water seal to avoid odor into the interior through the drain pipe.
- If the negative pressure of drain pan outlet is high, there must be a water elbow in drain pipe to avoid poor drain or blow water for negative pressure. Please install the water elbow as figure 4.4 shown, each unit should install a water elbow. There should be a plug in water elbow for convenient cleaning.
- Refer to the figures on the right for the installation of the pipes.









Caution: While connecting the drain pipe, please use the drain pipe connect to the secondary water holder simultaneously, for avoiding there are little condensate water deposit in the unit when the machine is running under the high humidity working condition.

14. WIRING

- Attaching wiring
- The air conditioner should use separate power supply with rated voltage.
- The external power supply to the air conditioner 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.
- A leakage protector should be installed according to the National Standard concerning electrical appliance.
- Be sure to locate the power wiring and the signal wring well to avoid cross-disturbance and their contact with connecting pipe or stop value body.
- The wiring attached to this air conditioner is 10m long. Be sure to prolong it with wiring of the same type and proper length if necessary. Generally, do not twist two wiring together unless the joint is soldered well and covered with insulator tape.
- Do not turn on the power until you have checked carefully after wiring.
- The Specification of Power

Table.14-1

Capacity(KW)		12.5/14	200/250/280	
Phase		Phase	1-Phase	
Power	Frequency and volt 220-2		220-240V~ 50	/60Hz
Circuit breaker/fuse (A)		reaker/fuse (A)	10/10	16/10
Indoor unit power wiring (mm ²)		wer wiring (mm ²)	2.5(<20 m)-4.0(<50 m)
Indoor/outdoor		Ground wiring	2.0	
wiring(mm ²)		Weak electric signal	0.75(<1200 m)	



A disconnection device having an air gap contact separation in all active conductors should be incorporated in the fixed wiring according to the National Wiring Regulation.

Communication Wiring Chart

Communication wiring will be different according to the horsepower of air-condictioners. The wiring of 71T1 to 160T1 indoor unit, please refer to Fig.14-1, and Fig.14-2 is the communication wiring for 200T1, 250T1 and 280T1 indoor unit.



Fig.14-1



CAUTION

The reserved function is indicated in broken line table, users can select it when necessary.

Terminal board diagram

Please refer to the indoor unit wiring diagram for the detailed wiring. In accord with the communication wiring, terminal board wiring is different according to the horsepower of air-condictioners. The wiring of 71T1 to 160T1 indoor unit, please refer to Fig.14-3, and Fig.14-4 is the wiring for 200T1, 250T1 and 280T1 indoor unit.

NOTE

The air-conditioners can connect with Central Control Monitor (CCM). Before operation, please wiring correctly and set system address and network address of indoor units.



T2B

C. S

τA

15. CONTROL

- Mainboard
- For 125/140 models



For 200/250/280 models

Note:



Capacity set

Base on different purposes to set the switch codes on the main boards of indoor unit, Once finish the setting, please cut off the main power, and then switch on the power again. Otherwise, setting functions could not work.



ENC1 is used for setting the refrigeration capacity(refer to Table.15-1 for different indoor unit) of the indoor unit.

Table.15-1

ENC1(system A)	Toggle switch	For set horsepower
	Code	Capacity(Horsepower)
	0	2200W(0.8HP)
	1	2800W(1.0HP)
	2	3600W(1.2HP)
Note: The horsenower	3	4500W(1.5HP)
has been set before	4	5600W(2.0HP)
leaving the factory, anyone can't	5	7100W(2.5HP)
modify it except the maintenance person	6	8000W(3.0HP)
	7	9000W(3.2HP)
	8	10000W(4.0HP)
	0	11200W(4.0HP)
	0	12500W(5.0HP)
	9	14000W(5.0HP)
	А	16000W(6.0HP)

NOTE

- 200T1(8.0HP): Please dial switch ENC1 to B for system A and 8 for system B.
- 250T1(9.0HP): Please dial switch ENC1 to C for system A and 9 for system B.
- 280T1(10.0HP): Please dial switch ENC1 to D for system A and 9 for system B.
- Static Pressure set

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Fig.15-2

ENC2 is used for setting the Static Pressure(refer to Table.15-2 for different indoor unit) of the indoor unit.

The static pressure in below table is the optimal static pressure range which means the airflow, noise, and dehumidification are all in the best state.

Table.15-2

ENC2	12.5kW	14kW	20kW	25kW	28kW
0	0∼20Pa		(0∼20Pa	
1	21∼80Pa		2	21~60Pa	
2	81~120Pa		6	61~120Pa	
3	121~170Pa		1	l21∼170Pa	
4	171~200Pa		1	71~200Pa	



The system together have 64units (0-63), everyone has only system addresscode, If two addresses are the same in one system, the abnormal operation will occur.

Please switch off the power before setting, otherwise the unexpected error will occur.

- Indoor unit address set
- If the outdoor unit has Auto-address function is not necessary to set manually the indoor unit address.
- If the outdoor unit does not have the Auto-address function or if you want to set the address manually, it should be done by remote control (wireless or wired). In models 200, 250 and 280 must be set two addresses, one on each control board. To do this, first connect the infrared receiver to one PCB, assign the first address and then connect to the other to do the same.
- When connecting a centralized control, if all indoor units are MVD D4+ or MVD DC series, the central control can be connected directly to terminals XYE of the outdoor unit, you must activate the Auto-address dip-switch (except 3 pipes system).

Note: To make the addressing you can contact with Mundoclima after sales service.

- Mainboard codes indication label
- For 125/140 models

SW2 Difinition

ON 12	● 00 means shutting down the unit to"stop cold air" at 15 ℃
SW2 ON 12	● 01 means shutting down the unit to"stop cold air" at 20 ℃
SW2 ON 12	• 10 means shutting down the unit to"stop cold air" at 24°C
SW2 ON 1 2	 11 means shutting down the unit to"stop cold air" at 26°C

SW3 Difini	tion
ON 1 2	• 00 means the time of stopping TERMAL fan is 4 mintues
SW3 ON 1 2	• 01 means the time of stopping TERMAL fan is 8 mintues
SW3 ON 1 2	• 10 means the time of stopping TERMAL fan is 12 mintues
ON SW3	 11 means the time of stopping TERMAL fan is 16 mintues

SW4 Difinition

ON 1 2	 00 means temp.compensation value is 6°C under heat mode
SW4 ON 12	 01 means temp.compensation value is 2°C under heat mode
SW4 ON 12	 10 means temp.compensation value is 4[°]C under heat mode
ON SW4	 11 means temp.compensation value is 8[°]C under heat mode

SW6 Difinition

ON 5W6 1234	 1 means old display penal 0 means new display penal
ON 5W6 1234	 1means DC fan is chosen 0means AC fan is chosen
ON 5W6 1234	 1means factory test mode 0means auto addressing mode (default setting)
ON 5W6 1234	• reserved

For 200/250/280 models

• For A SYSTEM

SW2 Difinition

SW2 ON 1 2	● 00 means shutting down the unit to"stop cold air" at 15℃
SW2 ON	 01 means shutting down the unit to"stop cold air" at 20°C
SW2 ON 1 2	● 10 means shutting down the unit to"stop cold air" at 24℃
SW2 ON	● 11 means shutting down the unit to"stop cold air" at 26℃

SW3 Difinition					
SW3 ON 1 2	 00 means the time of stopping TERMAL fan is 4 mintues 				
SW3 ON 12	 01 means the time of stopping TERMAL fan is 8 mintues 				
SW3 ON 1 2	 10 means the time of stopping TERMAL fan is 12 mintues 				
SW3 ON	 11 means the time of stopping TERMAL fan is 16 mintues 				

SW4 Difinition

ON 1 2	 00 means temp.compensation value is 6[°]C under heat mode 			
SW4 ON 12	 01 means temp.compensation value is 2[°]C under heat mode 			
SW4 ON 12	 10 means temp.compensation value is 4[°]C under heat mode 			
ON SW4	 11 means temp.compensation value is 8°C under heat mode 			

SW6 Difinition

ON 5W6 1234	 1 means old display penal 0 means new display penal
SW6 ON 1234	 1means DC fan is chosen 0means AC fan is chosen
ON 1234	 1means factory test mode 0means auto addressing mode (default setting)
SW6 ON 1234	• reserved

• For B SYSTEM

SW1 Difinition

ON 5W1 1234	 1means factory test mode 0means auto addressing mode (default setting)
SW1 ON 1234	 1means DC fan is chosen 0means AC fan is chosen
SW1 ON 1234	• reserved
SW1 ON 1234	● reserved

SW2 Difinition

SW2 ON 1234	 O0 means shutting down the unit to "stop cold air" at 15[°]C 				
SW2 ON 1234	● 01 means shutting down the unit to "stop cold air" at 20℃				
SW2 ON 1234	● 10 means shutting down the unit to "stop cold air" at 24 ℃				
SW2 ON 1234	• 11 means shutting down the unit to "stop cold air" at 26 ${}^\circ\!\!\!\!C$				
SW2 ON 1234	• 00 means the time of stopping TERMAL fan is 4 mintue				
SW2 ON 1234	 01 means the time of stopping TERMAL fan is 8 mintue 				
SW2 ON 1234	• 10 means the time of stopping TERMAL fan is 12 mintue				
SW2 ON 1234	• 11 means the time of stopping TERMAL fan is 16 mintue				

SW5 Difinition

ON 1 2	● 00 means temp.compensation value is 6°C under heat mode		
SW5 ON 1 2	• 01 means temp.compensation value is 2°C under heat mode		
SW5 ON 1 2	• 10 means temp.compensation value is 4°C under heat mode		
ON SW5	 11 means temp.compensation value is 8[°]C under heat mode 		

SW6 Difinition

ON 5W6 1 2 3	 1 means old display panel 0 means new display panel 			
SW6 ON 123	 1 means auto air blow under auto mode 0 means auto air blow under non-auto mode 			
ON 123	• reserved			

SW7 Difinition

ON 1 2	 standard configuration 		
SW7	 last unit of		
ON	the network		

For both T1

J1, J2 Difinition

J 1 。	 without jumper "J1" for auto restart function 			
J 1	 with jumper "J1" for non-auto restart function 			
J2 。	• reserved			

0/1 Difinition



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- Please adjust the code ENC1 to the suitable position (both system A and B should be adjusted for 200T1, 250T1 and 280T1 indoor unit).
- For 200T1 unit, a mainboard in the electric control should set the code ENC1 to B; the other one should set the code ENC1 to 8;
- For 250T1 unit, a mainboard in the electric control should set the code ENC1 to C; the other one should set the code ENC1 to 9;
- For 280T1 unit, a mainboard in the electric control should set the code ENC1 to D; the other one should set the code ENC1 to 9;
- When using central controller to control the indoor unit, please pay attention to the address setting, as the 220T1, 250T1 and 280T1 units have two or more mainboards. We suggest setting the neighbor address for the mainboards in the same indoor unit. When using a central controller for controlling, mainboards in the same unit must be opened and closed at the same time, for avoiding the unexpected incident.

16. TROUBLE SHOOTING

Table.16-1

NO.	Error code	Indication			
1	Timer LED and run LED flash together,or show "FE <u>"</u>	No address when first time power on			
2	Defrost LED flash or show "E0"	D flash 0" Mode conflict			
3	Timer LED flash or show "E1"	Communication error between indoor and outdoor unit			
4	Run LED flash or show "E2"	Temp.sensor (TA) error			
5	Run LED flash or show "E3"	Temp.sensor (T2) error			
6	Run LED flash or show "E4"	Temp.sensor (T2B) error			
7	Timer LED flash slowly or show "E6"	DC FAN error			
8	Defrost LED flash slowly or show "E7"	EEPROM error			
9	Alarm LED flash slowly or show "Ed"	Outdoor unit error			
10	Alarm LED flash or show "EE"	Water level alarm			
11	Show "H1"	Temp.sensor (T1) error			
12	Show "H2"	Outdoor unit low tem- perature protect			
13	Show "H3"	Outdoor unit high tem- perature protect			



or fan only indicator(cooling only type)

Fig.16-1

17. INSTALL ELECTRIC THROTTLE PART

Please refer to the following figures to install.



18. INSTALL BRANCH PIPE



The piping diameter please refer to the manual of the outdoor unit you choose.

Branch Part should be installed in horizontal mode or vertical mode.



19. 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 indoor unit and outdoor unit are installed properly.
- Tubing and wiring are correctly completed.
- The refrigerant pipe system is leakage-checked.
- The drainage is unimpeded.
- The heating insulation works well.
- The ground wiring is connected correctly.
- Thelengthofthetubingandtheaddedstowcapacityoftherefrigerant have been recorded.
- The power voltage fits the rated voltage of the air conditioner.
- There is no obstacle at the outlet and inlet of the outdoor and indoor and indoor units
- The gas-side and liqid-side stop vaule are both opened.
- The air conditioner 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 indoor unit smoothly.
- Test operation

Set the air conditioner under the mode of "COOLING" with the remote controller, and check the following points per the "Owner's Manual" If there is any malfunction, please resolve it through chapter "Troubles And Causes "in the "Owner's Manual".

The indoor unit

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 air conditioner heats well in the case of the HEATING/COOLING type.

The outdoor unit

• Whether there is vibration or abnormal noise during operation.

Whether the generated wind, noise, or condensed water by the air conditioner have influenced your neighborhood.

Whether any of the refrigerant is leaked.



CAUTION

Protection function will delay the startup of compressor for 3 minutes in case the unit is turned on immediately after power on or restarted after shutdown.

NOTES:





ASK FOR MORE INFORMATION

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TECHNICAL ASSISTANCE

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