FINTEK

REDESIGN YOUR FEELINGS

Technical Manual SYDNEY and KYOTO

Index

1.Main features

Double ducted machine is different with the normal split type air conditioner, and there is no outdoor unit, and installed with high wall. It is a special solution for commercial and residential buildings.

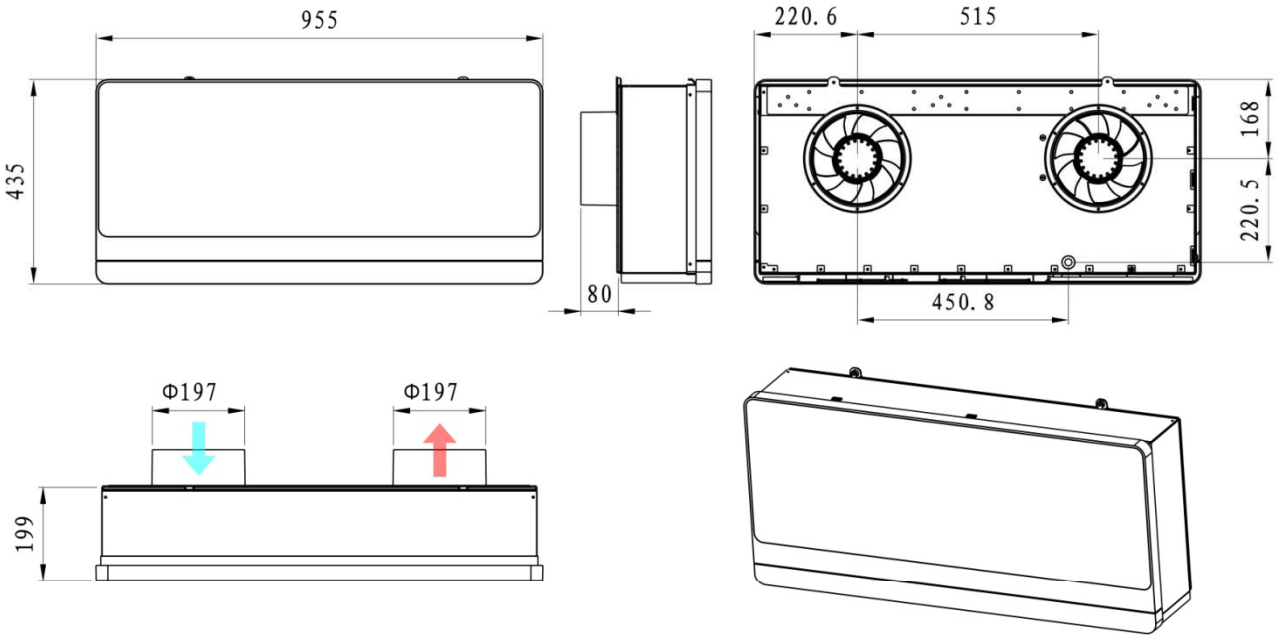
The twin-duct system eliminates security breaches and offers a great look to the building, as only 2x200mm holes are required.

The benefits of no outdoor unit are: no sleeve, no louvers and no rust, ensuring low cost installation and maintenance. The heat pump provides low operating costs when in heating mode.

- R410a gas, friendly refrigerant with high efficiency ozone.
- Auto water evaporation in cooling and heating mode
- Intelligent control technology.
- High-efficiency cooling and heating performance.
- Silent operation
- Full function LCD remote control

3. Overall Dimensions

SYDNEY



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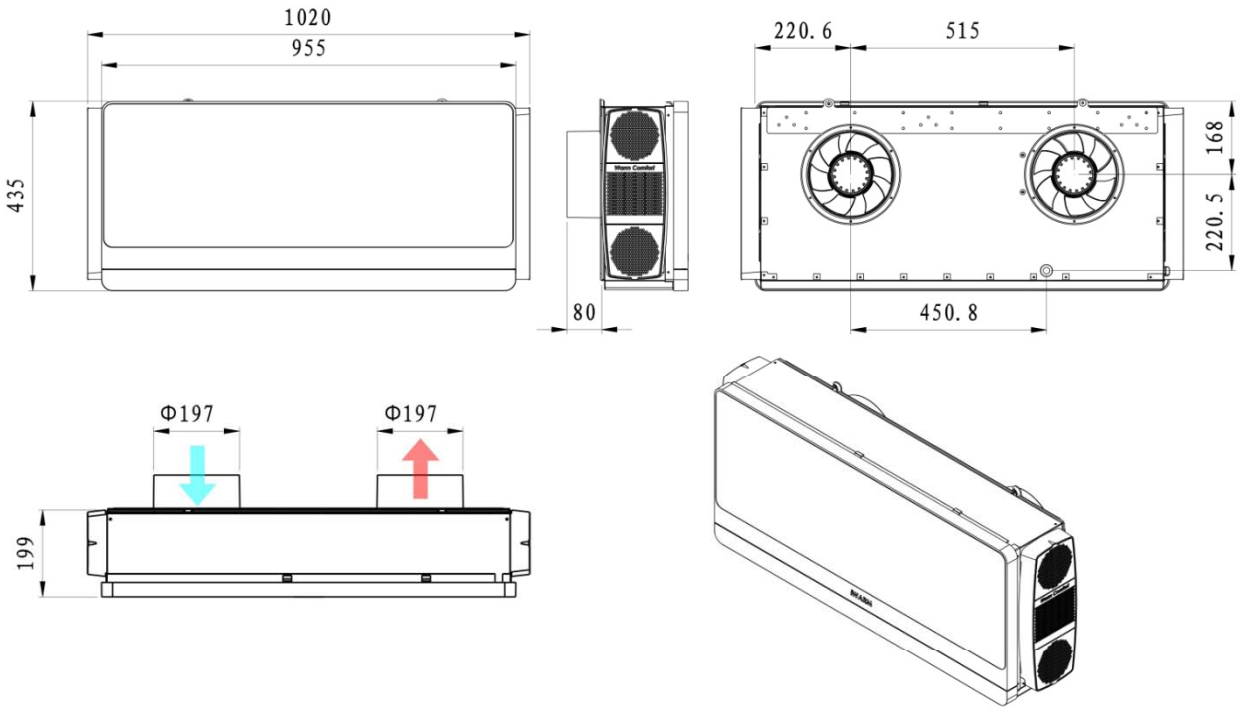
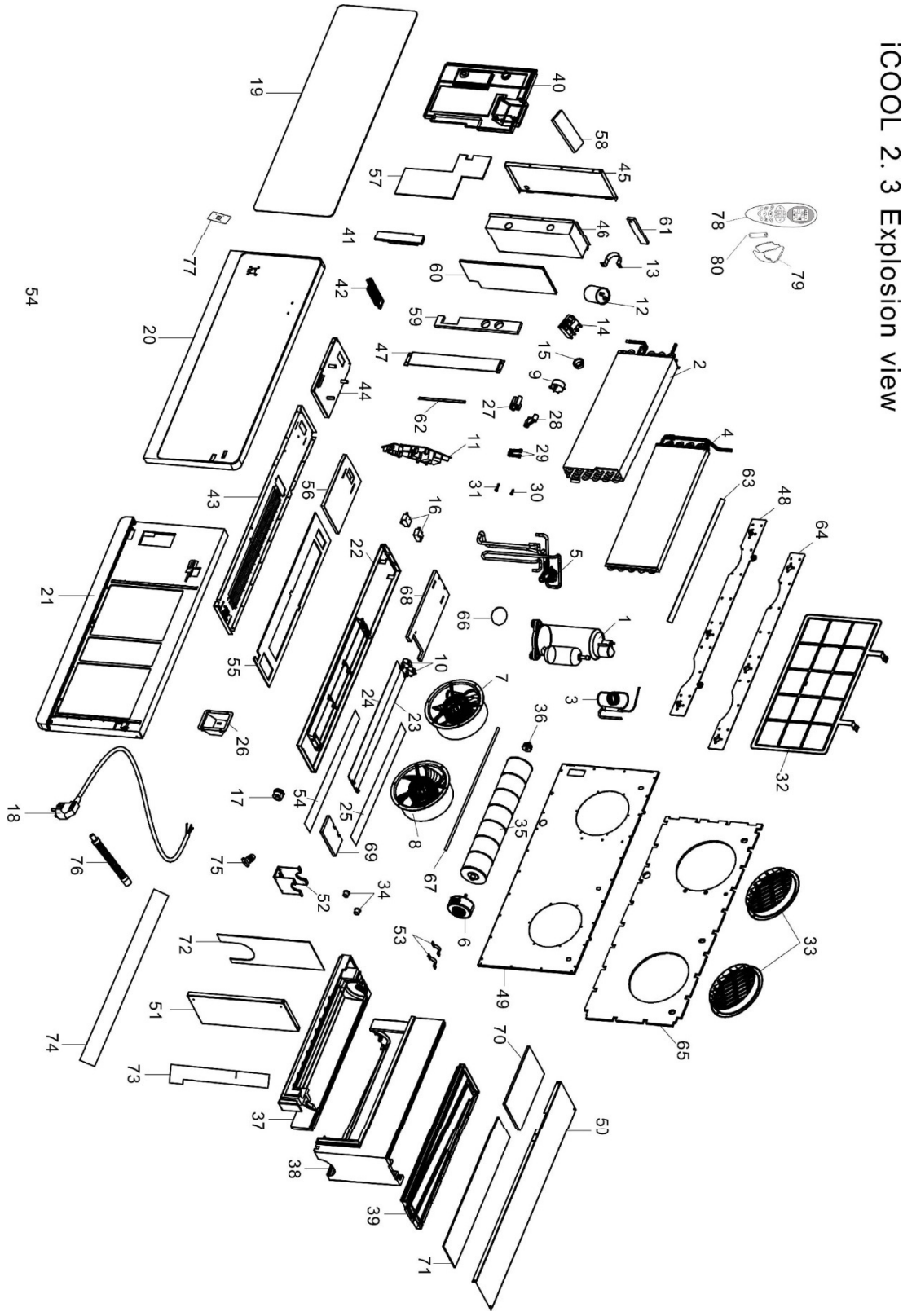


Note : The external pipes are same, Ø197mm .

SYDNEY

4. Explosion view and parts list

4.1 Explosion view



SYDNEY

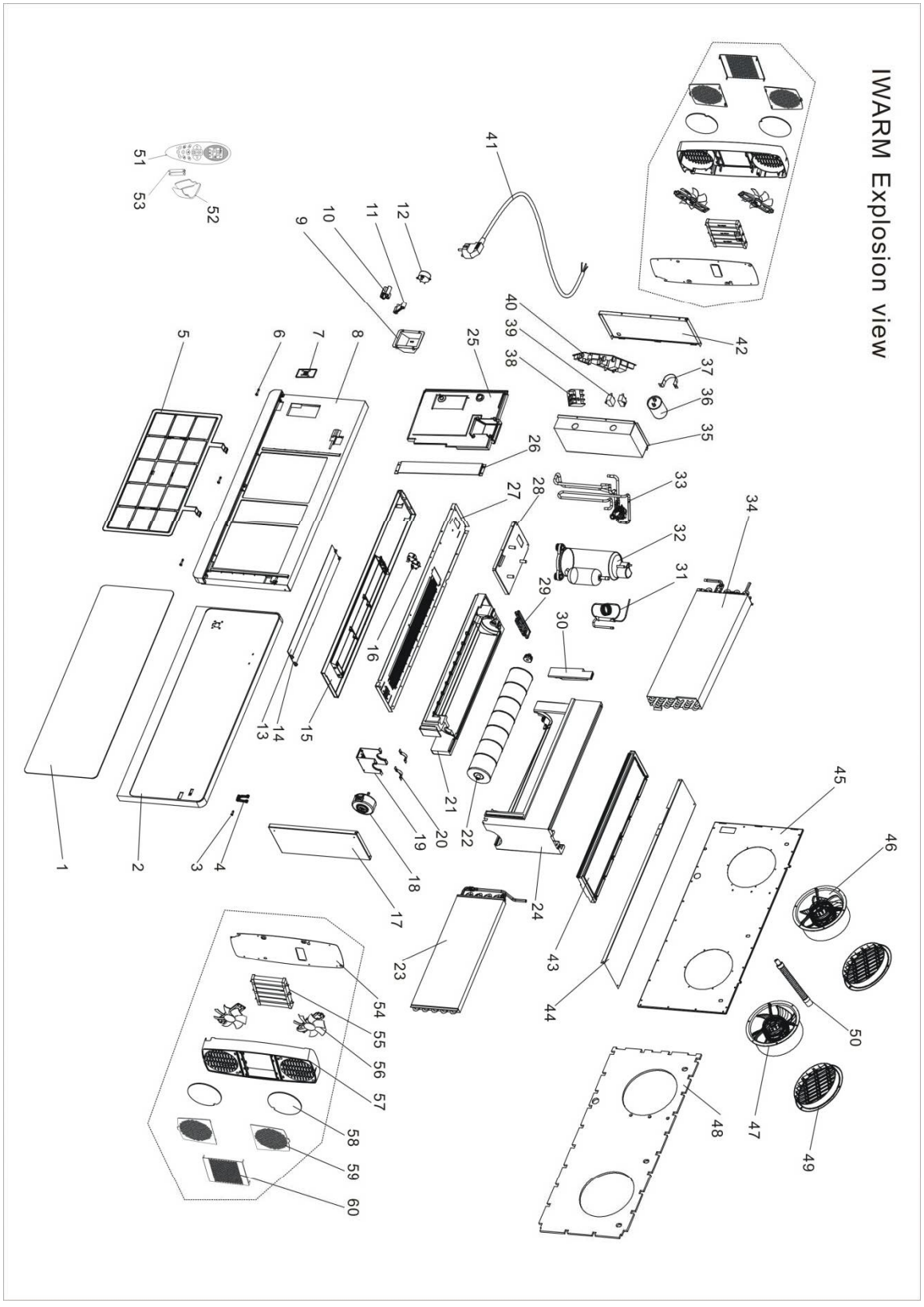
Parts list

No. in Explosive View	FINTEK code BOM	English Name	Qty
1	R133140024	Compressor and accessory	1
2	R122050360	Condenser assy.	1
3	R122060135	Capillary assy.	1
4	R122010207	Evaporator assy.	1
5	R122120281	4-way valve assy.	1
6	R131040178	Indoor motor	1
7	R131040175	Anticlockwise condenser fan	1
8	R131040176	Clockwise condenser fan	1
9	R131060068	Step motor (panel)	1
10	R131060066	Step motor (plap)	1
11	R131010509	Main PCB	1
12	R131160054	Compressor capacitor	1
13	R127030254	Compressor capitor holder	
14	R131030006	3-way terminal block	1
15	128060209	Wire protection ring	1
16	R131130003	Condenser fan capacitor	2
17	R139010035	Power plug protection ring	1
18	R132040139	Power plug	1
19	R128030549	PMMA	1
20	R128030543	Front panel	1
21	R128030545	Front frame	1
22	R128030555	Outlet frame	1
23	R128030557	Flap1	1
24	R128030572	Flap2	1
25	R138140752	Insulation material for flap1	1
26	R128030547	Step motor box	1
27	R128030550	Linkage	1
28	R128030551	Connecting rod	1
29	R128030552	Coupler	1
30	R128030554	Short pin	2
31	R128030553	Long pin	5
32	R128030548	Air filter	1
33	R128030561	Outside grille	1
34	R128030286	Axis sleeve	2
35	R128050021	Tangential fan	1
36	R139050004	Axletree seat	1
37	R128060423	Bottom EPP	1

38	R128060422	Upper EPP	1
39	R128060424	Condenser cover EPP	1
40	R128060427	Front cover EPP	1
41	R128060426	Evaporator cover EPP	1
42	R128060425	Water cover EPP	1
43	R140140071	Bottom metal assy.	1
44	R127020799	Compressor installation plate	1
45	R127041004	Right metal plate	1
46	R127030288	Electrical box	1
47	R127020823	Support plate	1
48	R127080061	Wall bracket assy.	1
49	R127020801	Back metal plate	1
50	R127020803	Top metal plate	1
51	R127041005	Left metal palte	1
52	R127020796	Evaporator motor support	1
53	R127020798	Indoor motor holder	2
54	R138140753	Insulation material for flap2	1
55	R138140699	Bottom plate sponge	1
56	R138140700	Compressor bottom sponge	1
57	R138140725	Front cover EPP sponge	1
58	R138140716	Electrical box top sponge	1
59	R138140717	Electrical box side sponge1	1
60	R138140718	Electrical box side sponge2	1
61	R138140724	Right metal plate sponge	1
62	R138140696	Condenser insulation sponge	1
63	R138140698	Evaporator insulation sponge	1
64	R138140729	Wall bracket insulation sponge	1
65	R138140701	Back metal plate sponge	1
66	R138140573	Capacitor sponge	1
67	R138140723	Condenser fan insulation sponge	1
68	R138140720	Outlet frame sponge1	1
69	R138140721	Outlet frame sponge2	1
70	R138140705	Top metal plate sponge	1
71	R138140706	Condenser cover EPP sponge	1
72	R138140704	Left metal palte sponge	1
73	R138140726	Front cover insulation sponge	1
74	R138140727	EPP insulation sponge	1
75	R139010076	Water plug	1
76	R128070006	Drainage pipe	1
77	R131020097	LED display	1
78	R131170067	Remote control	1
79	R128040261	Remote control seat	1
80	R131100001	Battery	2

KYOTO

4.2 Explosion view



KYOTO

Parts list

No. in Explosive View	FINTEK code BOM	English Name	Qty
1	R128030549	PMMA	1
2	R128030543	Front panel	1
3	R128030554	Short pin	1
4	R128030552	Coupler	2
5	R128030548	Air filter	1
6	R128030553	Long pin	5
7	R131020097	LED display	1
8	R128030545	Front frame	1
9	R128030547	Step motor box	1
10	R128030550	Linkage	1
11	R128030551	Connecting rod	1
12	R131060068	Step motor (panel)	1
13	R128030557	Flap1	1
14	R128030572	Flap2	1
15	R128030555	Outlet frame	1
16	R131060066	Step motor (plap)	2
17	R127041116	Right metal plate	1
18	R131040178	Indoor motor	1
19	R127020796	Evaporator motor support	1
20	R127020798	Indoor motor holder	2
21	R128060423	Bottom EPP	1
22	R128050021	Tangential fan	1
23	R122010207	Evaporator assy.	1
24	R128060422	Upper EPP	1
25	R128060427	Front cover EPP	1
26	R127020823	Support plate	1
27	R140140071	Bottom metal assy.	1
28	R127020799	Compressor installation plate	1
29	R128060425	Water cover EPP	1
30	R128060426	Evaporator cover EPP	1

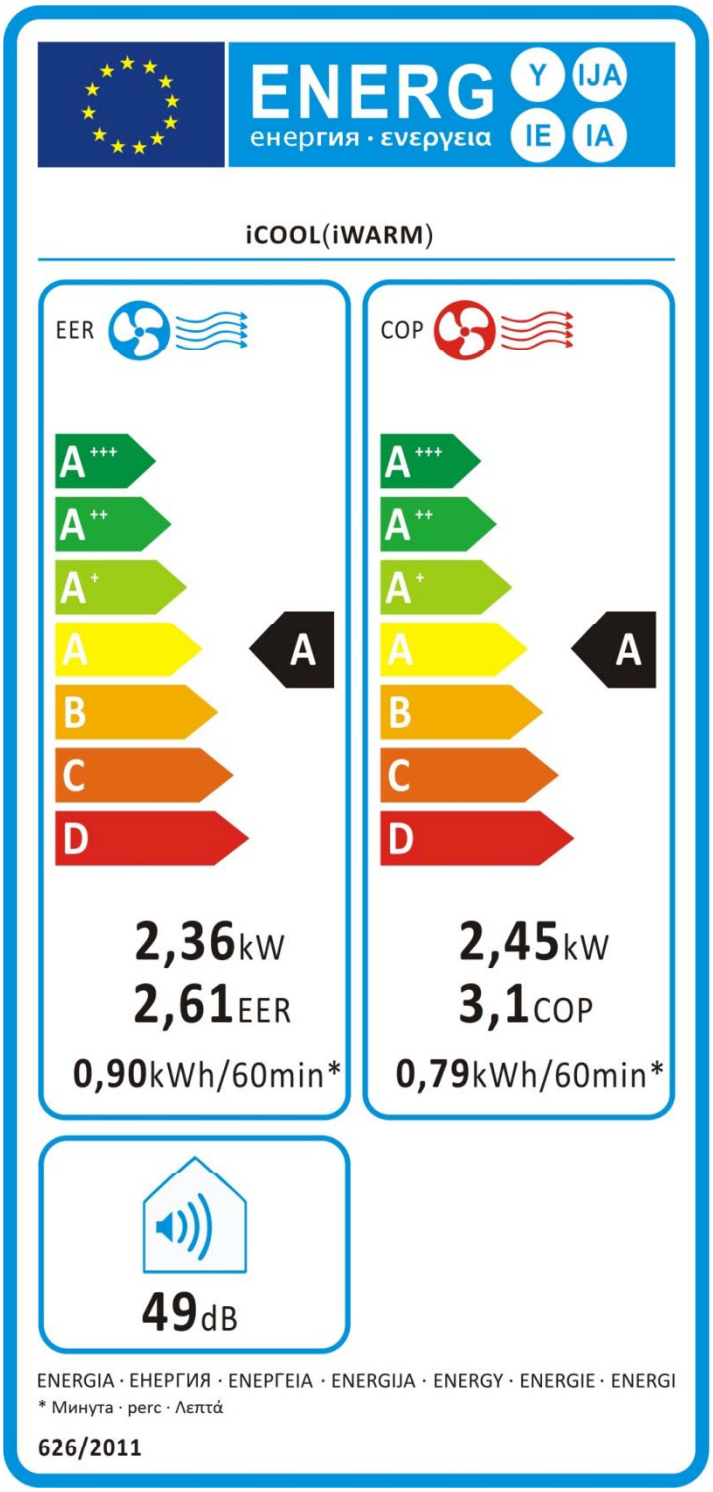
31	R122060135	Capillary assy.	1
32	R133140024	Compressor and accessory	1
33	R122120281	4-way valve assy.	1
34	R122050360	Condenser assy.	1
35	R127030288	Electrical box	1
36	R131160054	Compressor capacitor	1
37	R127030254	Compressor capitor holder	1
38	R131030006	3-way terminal block	1
39	R131130003	Condenser fan capacitor	2
40	R131010509	Main PCB	1
41	R132040139	Power plug	1
42	R127041117	Left metal palte	1
43	R128060424	Condenser cover EPP	1
44	R127020803	Top metal plate	1
45	R127020801	Back metal plate	1
46	R131040175	Anticlockwise condenser fan	1
47	R131040176	Clockwise condenser fan	1
48	R138140701	Back metal plate sponge	1
49	R128030561	Outside grille	2
50	R128070006	Drainage pipe	1
51	R131170148	Remote control	1
52	R128040261	Remote control seat	1
53	R131100001	Battery	2
54	R127041118	PTC heater cover	2
55	R122230031	PTC heater assy.	2
56	R131050102	12VDC fan blade	4
57	R128040450	PTC fixing plastic box	2
58	R128020543	PTC air filter	4
59	R128020519	PTC inlet grille	4
60	R127090128	PTC protection net	2

5.Rated technical data

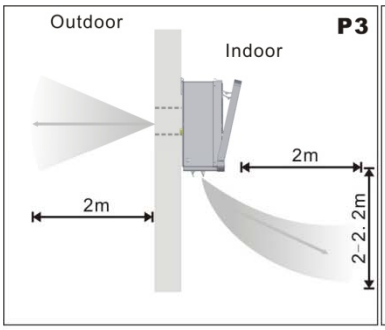
Descriptions	Unit	ICOOL 2.3	IWARM 2.3
Cooling capacity	W (Btu/h)	2360 (8050)	2360 (8050)
Heating capacity	W (Btu/h)	2450(8360)	2450(8360)
Rated voltage	V	230	230
Frequency	Hz	50	50
Electrical heater	W (Btu/h)	-------	1600 (5500)
Absorbed power in cooling	W	904	904
Absorbed current in cooling	A	3.9	3.9
Absorbed power in heating	W	790	790
Absorbed current in heating	A	3.4	3.4
EER label (Cooling Mode)	ABCDEFG	A	A
COP lable (Heating Mode)	ABCDEFG	A	A
Indoor Air low	m3/h	350	350
Outdoor Air low	m3/h	450	450
Noise lever (SPL)	dB(A)	49	49
Dehumidification capacity	L/24h	12.5	12.5
Optional temperature (remote control)	℃	18-30	18-30
Maximum external temperature ***	° C	43	43
Minimum external temperature HP ****	° C	-5	-5
Fuse (T3,15L)	V	250	250
Refrigerant / R410a	g	640	640
Dimension H/W/D	cm	43/95.5/19.5	43/102/19.5
Net Weight	Kg	40	42

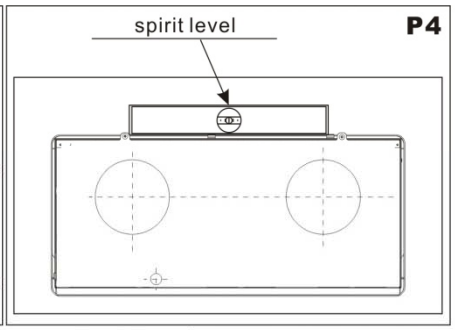
**The above data could be changed in order to improve the performance.
*** The machine can work at T3 condition , with max out door temperature 52 ° C but the cooling performance will be reduced .
**** The machine can work at -15 ° C , but the Heating performance will be reduced .

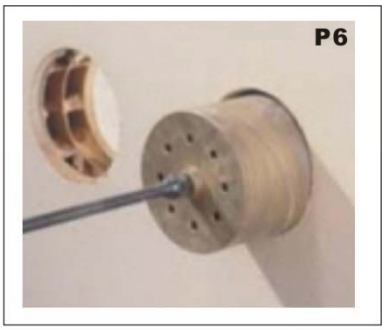
6. Energy label

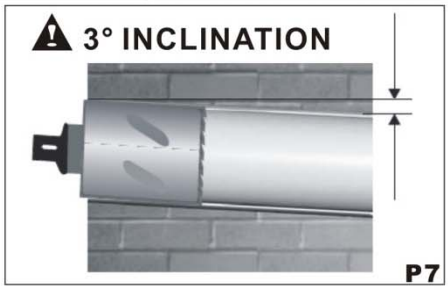


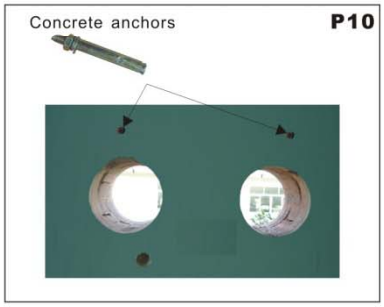
7. Installation

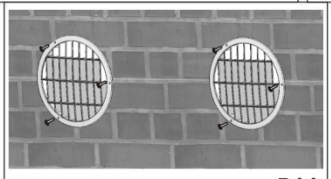


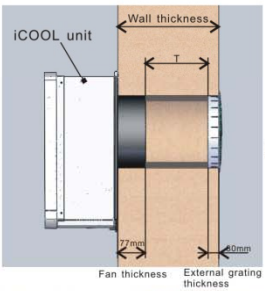


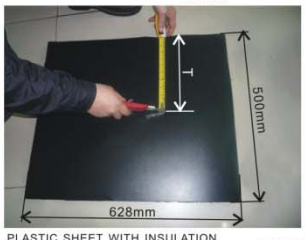


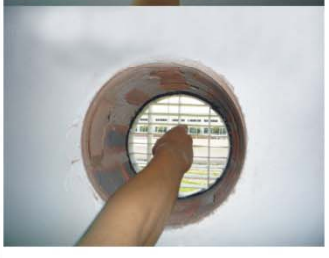


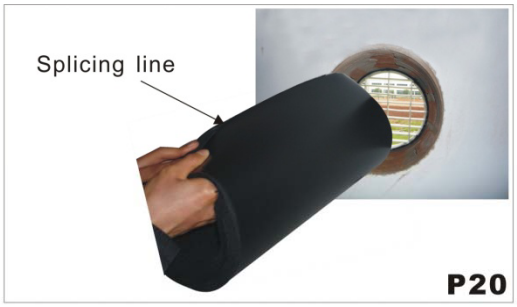


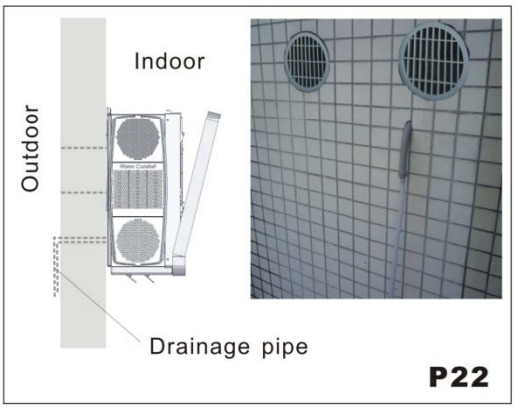






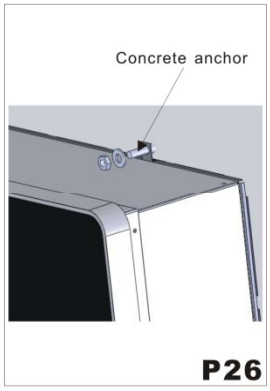


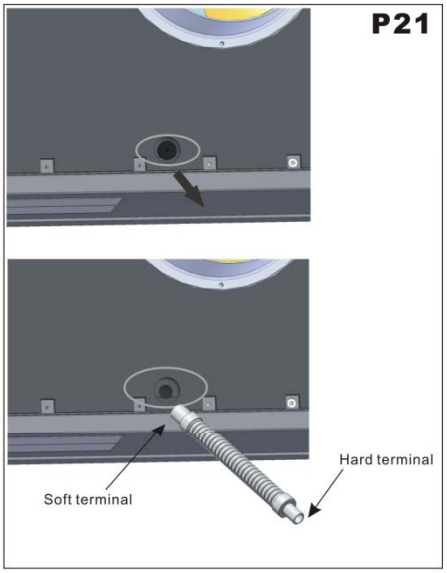

Splicing line
P20

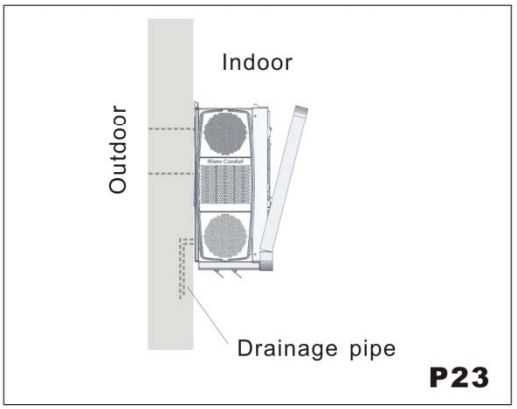

Indoor
Outdoor
Drainage pipe
P22

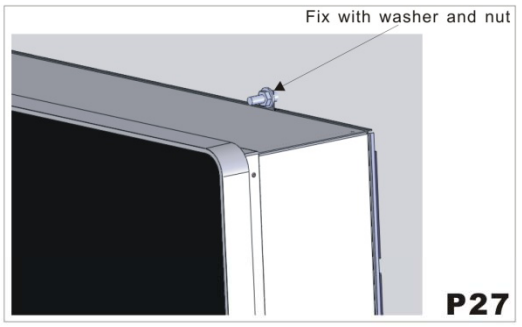

P24

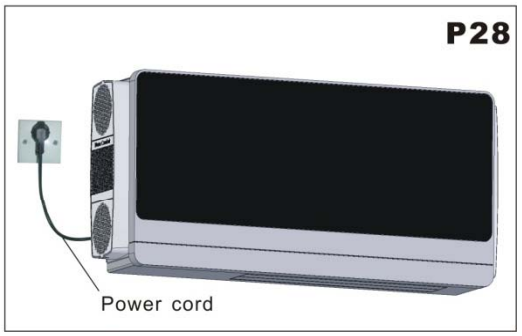

P25

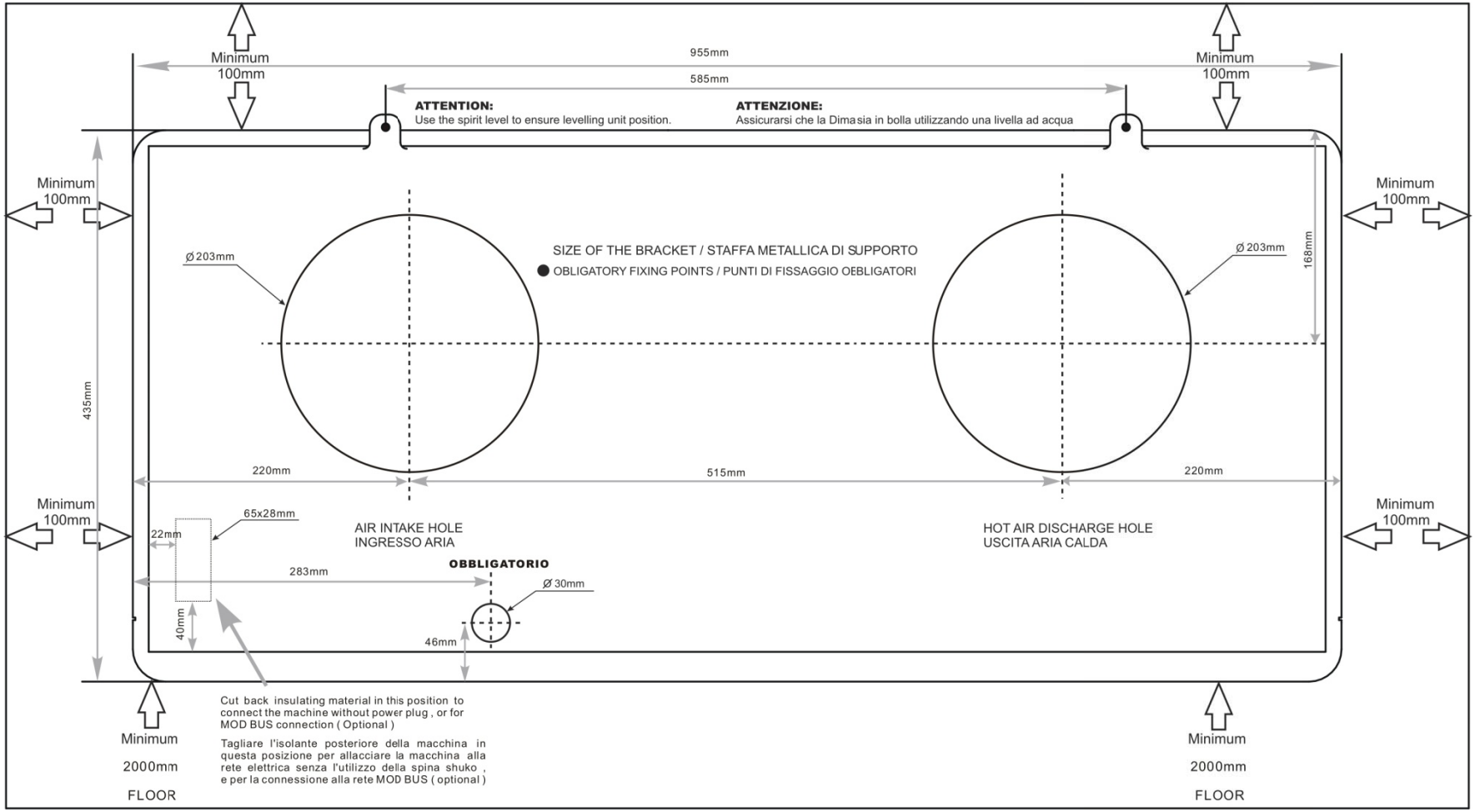

Concrete anchor
P26


P21
Soft terminal
Hard terminal


Indoor
Outdoor
Drainage pipe
P23


Fix with washer and nut
P27


P28
Power cord


Minimum
100mm
955mm
585mm
Minimum
100mm
ATTENTION:
Use the spirit level to ensure levelling unit position.
ATTENZIONE:
Assicurarsi che la Dimasia in bolla utilizzando una livella ad acqua
Minimum
100mm
Minimum
100mm
Ø 203mm
SIZE OF THE BRACKET / STAFFA METALLICA DI SUPPORTO
OBLIGATORY FIXING POINTS / PUNTI DI FISSAGGIO OEBLIGATORI
Ø 203mm
168mm
435mm
220mm
515mm
220mm
Minimum
100mm
Minimum
100mm
65x28mm
22mm
AIR INTAKE HOLE
INGRESSO ARIA
HOT AIR DISCHARGE HOLE
USCITA ARIA CALDA
OBBLIGATORIO
283mm
Ø 30mm
40mm
46mm
Cut back insulating material in this position to connect the machine without power plug , or for MOD BUS connection (Optional)
Tagliare l'isolante posteriore della macchina in questa posizione per allacciare la macchina alla rete elettrica senza l'utilizzo della spina shuko , e per la connessione alla rete MOD BUS (optional)
Minimum
2000mm
FLOOR
Minimum
2000mm
FLOOR

7.1 Positioning the air conditioner (P3)

To maintain the best performance from your air conditioner, prevent breakdowns or hazards, you must position it correctly.Please follow the guidelines and instruction below in full, as failure to do so could cause potential installation problems.

The air conditioner must be installed on an exterior wall that has access to the out side with a minimum of 2 meters clearance to the outside.(See image P3)

The air conditioner must be fitted leaving room all around as illustrated in the paper template.

The wall on which the air conditioner is installed must be sturdy and able to withstand the weight for the air conditioner.

After determining the best place for installation as described above. Please check to ensure that the wall can be drilled in the chosen area without interfering with other structures or installations (beams, piers, pipes, wires, etc.).

Please also ensure that there are no obstacles on the outside of the wall, which may obstruct air circulation through the drilled holes, for example:(plants and their leaves, slats or panelling, drain pipes, overflows and gratings,etc.). Any obstruction could interfere with the correct performances of the air conditioner.

7.2 Paper template (P4)

Fasten the template to the wall once the following guidelines have been thoroughly checked.

• Do not drill any holes until you are completely confident that there are no obstacles in the area you wish to drill and there are no obstructions, which could be hidden by the construction of the wall, for example: electrical wiring, water&gas pipes or supporting lintels or beams.

• Ensure that a spirit level is used, as the air conditioner must be level.

• Follow the installation instructions in full.

•Fasten the template to the wall taking care to check the distance from the floor or ceiling.

•Use a pilot drill to mark the centre of each core hole to be drilled.(See image P5)

7.3 Drilling the wall(P6,P7,P8)

Please note:If you are drilling the hole above ground floor level, please ensure that an area has been secured and while the holes are drilled the outside area is supervised, until drilling has been completed.

Intake and outlet holes

• This operation should be carried out using the proper tools (diamond tip or core borers drills with high twisting torque and adjustable rotation speed).

•Find the holes center drilled before, use a core boring head having a diameter of 200mm to drill the two holes for intake and outlet the air.

•This operation should be carried out using the proper tools (diamond tip or core borers drills with high twisting torque and adjustable rotation speed).

Note: It is recommended that the holes must have a slightly downward inclination of 3-5 degree to prevent any backflow of water from the pipes.

Drainage hole (P8)

This air conditioner has a system to drain the condensate moisture automatically. Please read carefully the following instruction.

Drill a hole through the wall measuring 30mm in diameter in the position shown in the paper template, marked the center before. Drainage occurs by gravity. For this reason, it is essential for the drain line to have a minimum downward inclination at least 3 degrees throughout its length. With this solution, you can drain the condensate moisture to a suitable place to do not cause any problems to your neighbours.

This drainage method is more common use, and the discharge pipe goes outside where there is no problem to connect or to discharge it, this solution is OK for hot country and normal cold temperature outside.

Wall bracket holes (P9)

Drill the holes for anchoring the unit to the wall using preferably the 2 holes with 10mm diameter showed in black on the paper template. As the unit is installed on high wall, it is recommended that the bolts should be fixed very well.

7.4 Fastening the anchors (P10)

Insert the concrete anchors into the holes for the unit, and tighten them inside the wall.

The anchor bolts provided require 10mm holes; the wall should be inspected to determine if provided bolts are useful or if it is necessary to use a different anchorage. The manufacture is not liable in case of underestimation of the structural consistency of the anchorage made at the time of installation.

7.5 Fitting the gratings

After drilling the holes, the plastic gratings supplied with air conditioner need to be fitted on the wall.

1.When gratings is easy accessibility, you could fix the gratings from outside, it is recommended to fasten it to the wall with wall plugs and screws with a diameter of 6mm, and keep the fins in vertical position. (See image P11)

2. When the air conditioner is installed in the high space, and impossible to reach the gratings from outdoor side, you could fix the gratings from inside.

Put the silicon gel around of the soft grating, like Fig17.Then fold the outer grating in half, insert your arm inside the hole with the grating. Let the grating unfold and pull the grating toward you. With a little patience and manipulation, the 2 gratings will fit the end of the holes. (P12,13,14)

After fixing the outside grating,we could inject more gel inside the space between the grating and wall. (See P15,16)

The black silicon gel is just for reference, we could use white or transparent color gel to fix the outdoor grille.(P17)

The above installation solution is just for solid wall.

7.6 Fixing plastic sheet and insulation

After fixing the outside grating,insert the plastic sheet with insulation supplied with the conditioner into the holes.The sheets must be 107mm shorter than the thickness of the wall.(See P18)

Use an ordinary cutter for the operation. (See P19)

Roll the sheet and insert it into the hole, paying attention to the splicing line, which must always face up wards.(See P20)

7.7 Connecting drainage pipe

Connect the drain pipe(from rubber terminal) to the air conditioner (back side) after unplugged the black rubber cup (see P21).

With this solution, you can drain the condensate moisture to a suitable place to do not cause any problems to your neighbours.

1. When the machine is installed in normal climate or hot area, we can connect the drainage pipe to outside, with a proper place. (See P22)
2. When the machine is installed in very cold area, the water in drainage pipe is frozen easily in winter, we could connect the drainage pipe inside the wall, and connect with a proper place.(See P23)

7.8 Fitting the air conditioner on anchors

After checking again that the fastening anchors are securely fastened to the wall, and that any necessary preparations for electric connection and condensate drainage have been made, fasten the air conditioner to its supporting anchors.(See P24)

Lift it up by holding the sides at the bottom, slightly insert the outside fan rings into the two big holes on the wall. (See P25) The air conditioner can now be pushed firmly against the wall,then lift the unit and make sure the anchors and unit match well. (See P26)

Inspect carefully the installation to make sure that the insulating back panel must fit firmly against the wall and there are no fissures at the back of the air conditioner.

Fixing two nuts with top of the machine, to make sure the unit is installed well. (See P27,28)

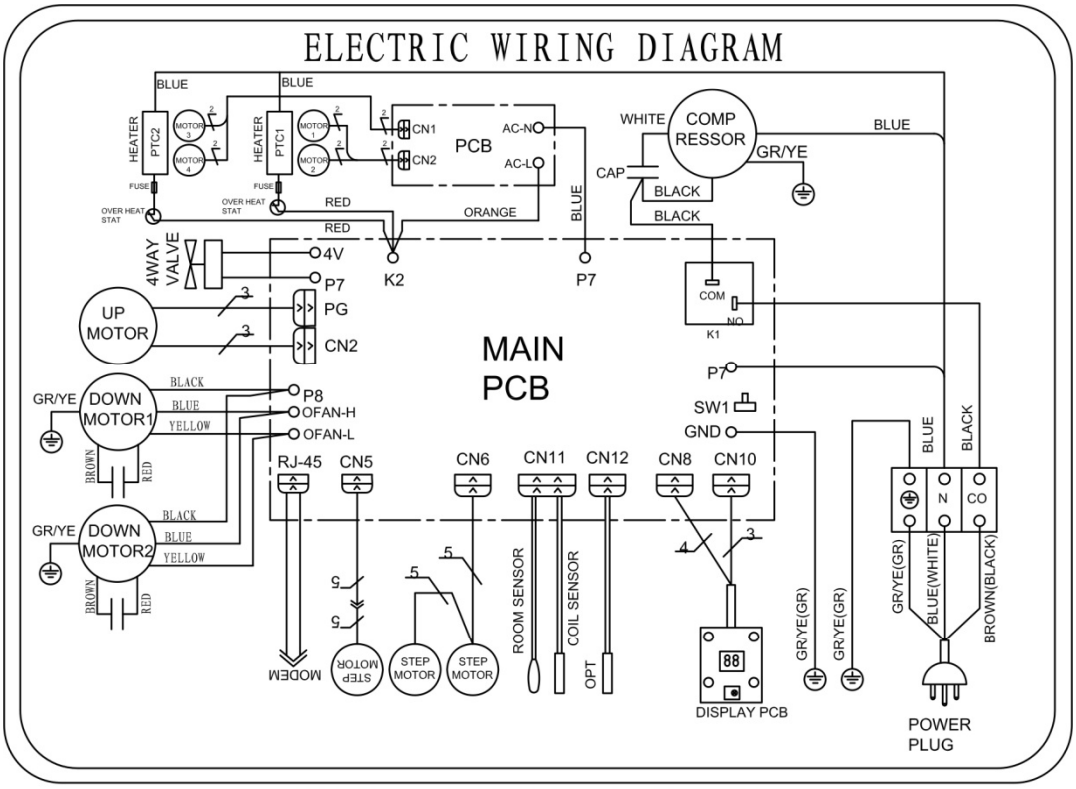
Note:

1. The appliance shall not be installed the laundry.
2. The appliance must be positioned so that the plug is accessible.
3. The appliance shall be installed in accordance with national wiring regulations.

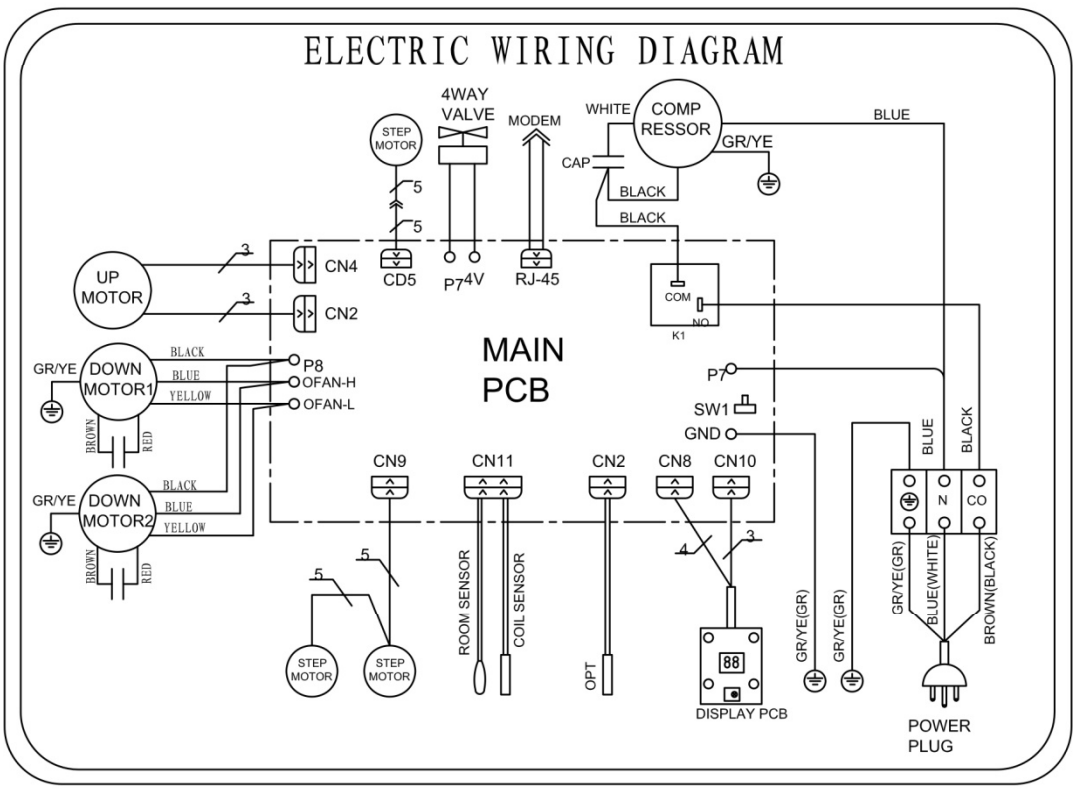
7.9 Power cord connection

For every unit, there would be a power cord on the left side(P28).Connect the plug with the socket, and operate the unit.

8. Electric wiring



Kyoto ELECTRICAL DIAGRAM



Sydney ELECTRICAL DIAGRAM

9. Description of software operation

9.1 Main technical index

PCB should meet the following requirements:

• Measured from the receiver，receiving distance of remote control should ≤8m，receiving angle≤60° cone angle；

• Discrepancy of temperature control≤±1℃；

• Discrepancy of time control≤5min/24h；

• Discrepancy of indoor PG fan speed：±10rpm；

• Rated power supply：AC230±20%，～50Hz；

• PCB should conform to RoHS.

9.2 Definition

• RT：room temperature.

• IPT：indoor coil temperature.

• ST：setting temperature，range 18～30℃

• OPT：outdoor coil temperature.

• NTC data：R25=5.0KΩ±1% B25/50=3470±1%

9.3 Mode introduction

9.3.1 Auto mode

After running the unit by ON/OFF key or choose the auto running mode by remote control, it will fix its running mode by judging room temperature (see below table):

Indoor temp.	**Indoor temp.≤20℃**	**20℃＜indoor＜25℃**	**indoor≥25℃**
Running mode	heating	fan	cooling
Standard fixed setting temperature	20℃	22℃	25℃

Note:

1. When Auto mode is selected, unit would check room temperature first and work with fixed mode as above accordingly. Every 6 minutes, unit would check room temperature again, running mode would be changed according with update room temperature.
2. If working mode is changed by remote control, unit has 3 minutes delay protection for compressor.
3. Fan speed selection: For Dry mode, fan speed is fixed with low speed. For Cooling, Heating and Fan mode, fan would work with set speed.
4. Unit has protection function, including 3 minutes delay function, Anti-cold function before heating, Over heating protection during heating function, Anti-frozen during cooling mode, E1,E2,E3,E4 protection.

9.3.2 Cooling mode

1. Setting temperature range：18℃-30℃。

2. Compressor working conditions： a. Compressor works when RT≥ST+1℃；

b. Compressor stops when RT ≤ST-1℃；

c. -1℃＜RT-ST＜+1℃，compressor maintains the original state。

(RT: room temperature, ST: setting temperature)

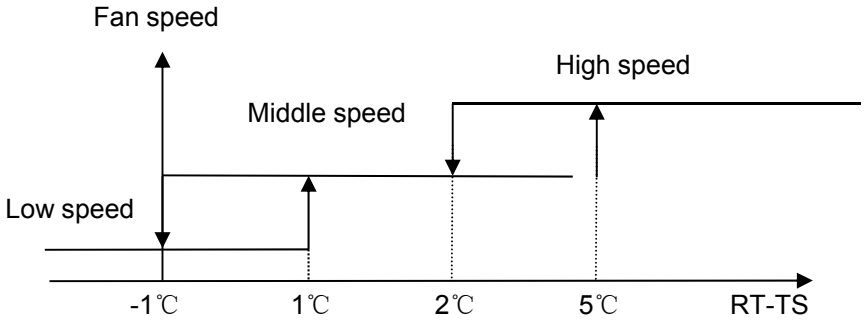
3. Four-way valve working conditions: no power supply.

4. Outdoor fan motor working conditions: start or close same time as the compressor.

5. Indoor fan speed control:

a. Indoor fan will work as Auto speed, low speed, middle speed or high speed.

b. For Auto speed, indoor fan will work as following chart:



9.3.3 Dry mode

1. Setting temperature range：18℃-30℃。

2. Working conditions：unit would work according to indoor temperature and setting temperature.

NO.	conditions	Indoor fan motor	Outdoor fan motor	compressor	Four-way valve
1	RT≥ST	Fixed with low speed	Keep running		no power supply
2	RT<ST		Works for 10 minutes, then stops for 6 minutes		

Note: In dry mode, after unit goes into dry cycle, it will not change the working cycle when indoor temperature changed.

1) When RT≤14℃，dry mode no works, indoor fan works with low speed. When RT>16℃, unit would work normally.

2) Four-way valve：no power supply.

3) Outdoor fan motor working conditions: start or close same time as the compressor.

(RT: room temperature, ST: setting temperature)

9.3.4 Heating mode

1. Setting temperature range：18℃-30℃。

2. Compressor working conditions：

a. Compressor starts condition: RT≤ST+1℃.

b. Compressor stops condition: RT＞ST+3℃；

c. +1℃＜ST-RT≤+3℃，compressor keeps original working state。

(RT: room temperature, ST: setting temperature)

3. First time of starting on the machine, unit would not check room temperature, and compressor starts directly. Only after 3 minutes, unit would check room temperature, compressor would work according with the room temperature.

But unit would check indoor coil temperature as following:

a. If coil temp≥38°, indoor fan works.

b. If coil temp＜38°, indoor fan does not work, with "1 minute Anti-cold protection". 1 minute later, indoor fan would work as setting speed.

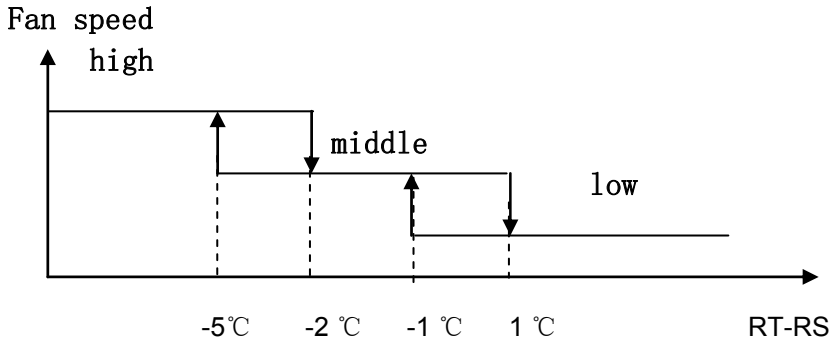
c. If coil temp≥55°, compressor and indoor fan work, outdoor fan stops working,.

d. If coil temp≥64°, compressor and outdoor fan do no work, only indoor fan works.

4. Four-way valve working condition： In heating mode, four-way valve keeps opening (including turning off when unit reaches setting temperature, but except defrost course). When unit is turned into heating mode or turned on, four-way valve will open 5 seconds earlier than compressor. When heating mode is changed or unit is turned off, four-way valve will close 2 minutes later than compressor.

5. Outdoor fan motor working conditions: start or close same time as the compressor. (When unit goes into defrost or over heating protection, it will work according to defrost or over heating protection solution).

6. Indoor fan speed control:
a. Indoor fan will work as Auto speed, low speed, middle speed or high speed.
b. For Auto speed, it will work as following chart:



7. Anti-cold air function: After unit going into heating mode, it would check indoor coil temperature. When IPT≥38℃, indoor fan motor will run as setting speed. When IPT＜38℃,indoor fan would not run, After compressor running for 60 seconds, indoor fan would run again. With anti-cold air function, the yellow timer led will flash with 0.5Hz frequency. (IPT is indoor coil temperature) .

8. Blowing residual heat function: In heating mode, when room temperature rises up to setting temperature, compressor will stop first, and indoor fan will work with low speed for 60 seconds, then stop.

9. Defrost function in heating mode:

Defrost conditions:
1). unit goes into heating pump or works after defrost cycle for 30 minutes
2). compressor continuously runs over 5 minutes,
3). when OPT≤-5℃ for one minute
if meet the above 3 conditions together, unit would begin defrost cycle.

Defrost procedure is as following:
1).Stop the aux electrical heater first if unit has this function.
2). 3 seconds later, compressor, outdoor fan and indoor fan stop working.
3). 1 minute later, 4-way valve stops.
4). Compressor will work again after 90 seconds

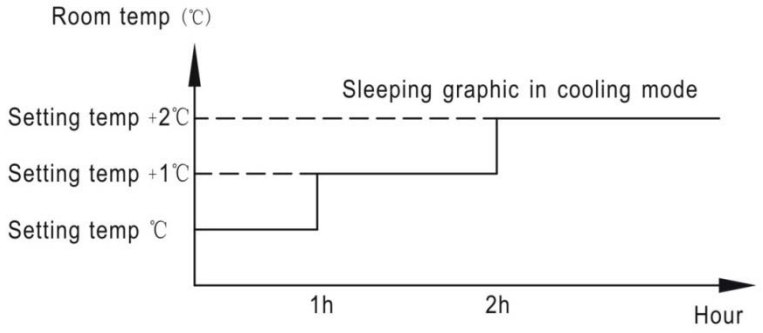
Defrost relieving conditions:
After compressor running for 5 minutes, when OPT (outdoor coil temperature) rises up to 15℃, defrost cycle will be relieved automatically, and unit goes into normal heating mode. For each defrost cycle, the time is no more than 12 minutes (does not include the compressor close time), even OPT (outdoor coil temperature) is less than 15℃. Each defrost cycle time is 5-12 minutes.

Defrost relieving procedure is as following:
1). Outdoor fan will run first, compressor and indoor fan close.
2). Four-way valve will work after 1 minute.
3). Compressor will work again after 30 seconds, indoor fan will work with anti-cold air function, and defrost cycle is off. Aux electrical heater will work as original mode if unit has this function.

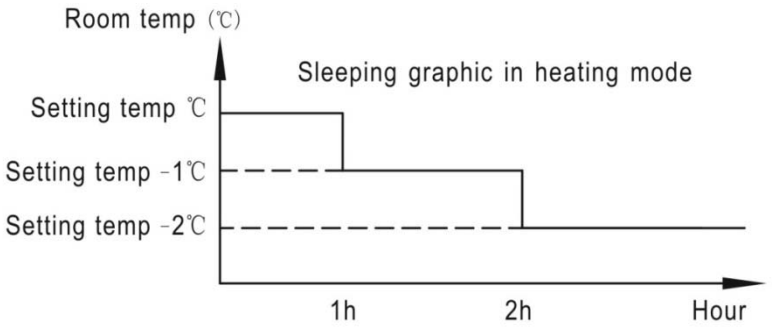
Note: 1). During defrost cycle, yellow Timer led will flash with 1Hz frequency.
2). Temperature detection is valid only when compressor is working.

9.3.5 Fan mode
1. Compressor working state: stop
2. Four-way valve: no electrical power
3. Outdoor fan motor: stop
4. Indoor fan motor speed : Has auto, low, middle and high speed, and auto speed control is same as cooling mode.

9.3.6 Sleeping mode
1. Sleeping mode only works in Heating or Cooling mode, or cooling/heating under Auto function.
2. At the beginning of sleeping running in Cooling mode, if room temperature＞ setting temperature, the compressor, outdoor motor and indoor motor will work, and four-way valve will be close. If room temperature≤ setting temperature, it will directly go into sleeping working fluctuation (see below graphic). Fan speed will be fixed with low speed. Flap direction can be adjusted or stay with one position.



3. At the beginning of sleeping running in Heating mode, if room temperature ＜ setting temperature, the compressor, outdoor fan motor, indoor fan motor and four-way valve will work. If room temperature ≥setting temperature, it will directly go into sleeping working fluctuation (see below graphic). Fan speed will be fixed with low speed. Flap direction can be adjusted or stay with one position.



Note: When setting Timer and Sleeping function same time, unit will work with Timer function.

9.3.7 PTC electrical heater function (Used for iWARM)

1. No auto PTC electrical heater function

2. Manual PTC electrical heater function

PTC would work under the following conditions:

a. The unit is working in heating mode
b. Room temperature RT≤26 ℃

When RT ≤ Ts+1 ℃ , PTC would be on after 1 second delay.
When RT＞Ts +3 ℃ , PTC would be off.

3. Remarks:
When indoor coil temperature ≥ 55 ℃, electrical heater would be off. When indoor coil temperature ≤48℃, the heater would work again.

9.3.8 Timer function

1. Pressing Timer button on remote control to set Timer Off during unit is working, and set Timer On during unit is close.
2. Temperature rising key in the remote control is hour setting, each pressing will increase one hour, and every cycle is 24 hours. Temperature dropping key is minute setting, each pressing will increase 10 minutes, and every cycle is 60 minutes.

Clock setting: Pressing clock key on the remote control, screen would display time signal with flashing. Then pressing temperature rising and dropping keys, time could be adjusted. Temperature rising key is hour setting, each pressing will increase one hour, and every cycle is 24 hours. Temperature dropping key is minute setting, each pressing will increase 10 minutes, and every cycle is 60 minutes.

9.3.9 Emergency function (Not available for the user)

1. There is an emergency button on the main PCB inside the unit. When remote control is lost or damaged, unit would work with Auto mode by pressing this button, indoor fan motor would work with auto speed.
2. During the unit is working, pressing this button can close the machine immediately.
3. During the unit is working with emergency function, the unit would follow remote control instruction once receiving any signal from remote control.

9.4 Flap panel control

• Step motor would control the flap panel moving, run or stop according to the order from remote control.

9.5 Protection function

9.5.1 Compressor 3 minutes delay protection.

a. The compressor will run immediately when it works with first time.

b. Compressor must stops for 3 minutes and reworks again (Except defrost function in heating mode).

9.5.2 Anti-frozen protection in cooling and dry mode.

a. If indoor coil temperature ≤-1℃ for 2 minutes, compressor and outdoor fan motor will stop, indoor fan motor will keep working state and unit goes into anti-frozen protection.

b. When indoor coil temperature ≥8℃, compressor and outdoor fan motor will rework again if the 3 minutes delay protection is over, and unit would exit anti-frozen protection function.

Note: If indoor coil sensor is damaged, anti-frozen protection is no use.

9.5.3 Over-heat protection in heating mode.

In heating mode:

a. When indoor coil temperature ≥55℃， outdoor fan motor will stop.

b. When indoor coil temperature ≤48℃， outdoor fan motor would work again.

c. When indoor coil temperature ≥64℃， compressor and outdoor fan motor will stop together.

d. When indoor coil temperature ≤48℃， proceed normal working (when 3 minutes delay protection is over, compressor and outdoor fan motor would work immediately.).

In this case, four-way valve always opens and indoor fan motor always runs with setting speed.

Note: If indoor coil sensor is damaged, over-heat protection is no use.

9.5.4 Sensor damage protection

1. Room temperature sensor damage:

If room temperature is lower than -40℃ or higher than 120℃， room temperature sensor is supposed to be damaged, unit goes into protection mode as below, and unit will display E1.

a. Compressor will work with 20 minutes on and 5 minutes off in cooling and heating mode.

b. Compressor will work with 10 minutes on and 6 minutes off in dry mode.

c. Unit will work with fan function if unit is in auto mode.

2. Indoor coil temperature sensor damage:

If indoor coil temperature is lower than -30℃ or higher than 90℃， indoor coil temperature sensor is supposed to be damage, unit will display E2.

3. Outdoor coil sensor, room temp sensor or indoor coil sensor OPT or RT IPT sensor was damaged

In the heating mode, every time compressor runs total for 50 minutes, and then defrosts 3 minutes.

Note: When room temperature sensor and indoor coil sensor sensor are damaged same time， unit will display E1, and work with room temperature sensor damaged cycle.

9.5.5 Indoor PG motor problem protection

If indoor fan motor could not receive the feedback pulse for 5 seconds, it would close. Compressor, outdoor fan motor, valve and aux electrical heater will close same time. Indoor unit fan motor would run again after 10 seconds, if still do not receive the speed feedback signal, unit close and display E3.

9.5.6 Refrigerant insufficient protection

After compressor running for 20 minutes in cooling mode, if indoor coil temperature ≥ room temperature - 5℃, and time keeps 40 minutes, unit would stop working and display E4.

After compressor running for 20 minutes in heating mode, if indoor coil temperature ≤ room temperature

+ 5℃, and time keeps 40 minutes, unit would stop working and display E4.

9.5.7 Failure Error code display

If there are problems with some specified components, unit would display failure codes as below:

Failure situation	**Running light flash**	**Code**
Room temperature sensor failure	1/time	E1
Indoor coil temperature sensor failure	2/time	E2
Indoor PG Motor failure	Work 1.5S/Stop 0.5S	E3
Refrigerant Insufficient failure	Work 1.5S/Stop 1S	E4

If there are above 2 failure codes displayed same time, each failure code would be displayed with 5 seconds.

9.5.8 OPT failure protection

For the OPT sensor, it is used for the defrost function in heating mode. If OPT sensor works well, the unit will check the data from OPT sensor, then decide if go to defrost function. Please refer to 11.3.4.

If there is failure with OPT sensor, the unit would work with automatic defrost function. See as below:

Automatic defrost function start condition:

Heating mode, and compressor continuously works for 25 minutes, if IPT-RT≤18℃, the unit would go to defrost function.

Automatic defrost function stop condition:

When the compressor works for 12 minutes, unit would stop defrost function.

9.5.9 Fan speed

Indoor fan speed in cooling mode: Hi/Med/Low: 1250rpm/1100rpm/900rpm
Indoor fan speed in heating mode: Hi/Med/Low: 920rpm/850rpm/800rpm
Outdoor fan speed: Hi/Low: 2350rpm/1800rpm/

10. Precaution

When using electrical appliances, basic safety precaution should always be followed:

• Do not place objects on the product or allow objects to obstruct the inlet or outlet openings. Extreme care should be taken when any product is used by, or near children and pets, and whenever the product is left operating and unattended.

Please note:

Before operating the product, remove the air conditioner from its package and check it is in good condition.

• Do not let children play with the packaging, for example plastic bags.

• Do not operate any product with a damaged cord or plug, or after the air conditioner malfunctions, has been dropped, or damaged in any manner.

• Always operate the product from a power source of the same voltage, frequency and rating as indicated on the product identification plate.

• This air conditioner is not intended for use in wet or damp locations.

• Do not place the air conditioner near an open flame, cooking or heating appliance, or hot surface.

• Do not let the power cord hang over the edge of a table or counter. Arrange the power cord away from an area where it may be tripped over.

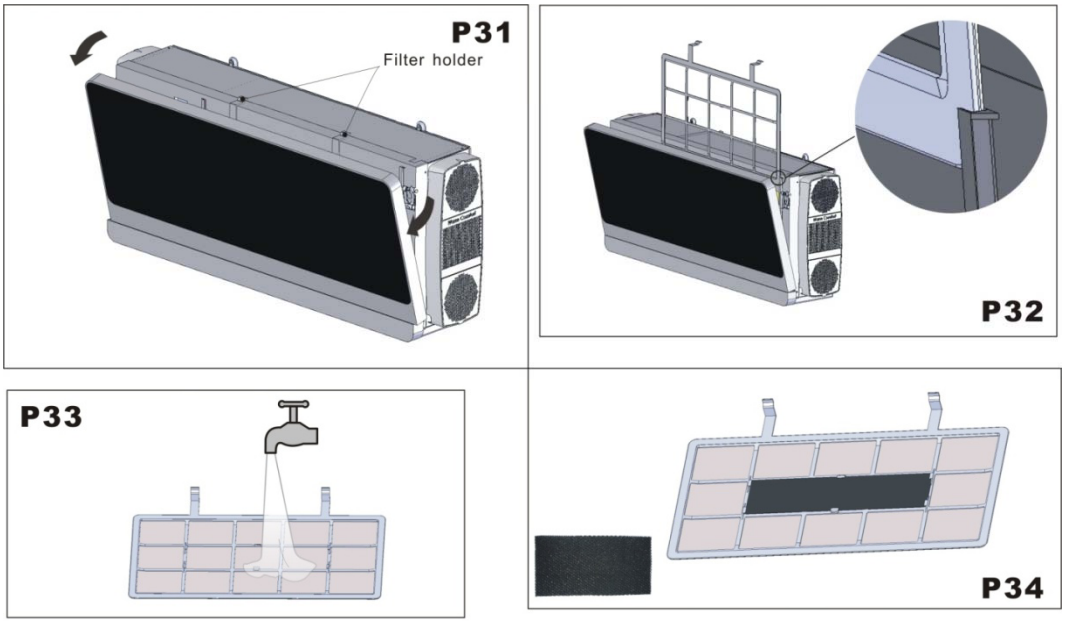
• Never place the power cord under a carpet or rug. Do not operate the air conditioner in areas where petrol, paint, or other flammable liquids are used or stored.

• Do not carry out any cleaning or maintenance or access internal parts until the air conditioner has been disconnected from the mains electricity supply.

• Avoid prolonged direct contact with the flow of the air from the air conditioner and the room being closed with no ventilating for a long period of time.

R25=5.0K 1%							
Temp° C	Resistance value	Temp° C	Resistance value	Temp° C	Resistance value	Temp° C	Resistance value
-1	14.8903	27	4.6300	55	1.7216	83	0.733
0	14.2293	28	4.4569	56	1.6663	84	0.713
1	13.6017	29	4.2912	57	1.6131	85	0.693
2	13.0055	30	4.1327	58	1.5618	86	0.674
3	12.4391	31	3.9808	59	1.5123	87	0.655
4	11.9008	32	3.8354	60	1.4647	88	0.638
5	11.3890	33	3.6961	61	1.4188	89	0.620
6	10.9023	34	3.5626	62	1.3746	90	0.604
7	10.4393	35	3.4346	63	1.3319	91	0.587
8	9.9987	36	3.3120	64	1.2908	92	0.572
9	9.5794	37	3.1943	65	1.2511	93	0.556
10	9.1801	38	3.0815	66	1.2128	94	0.542
11	8.7999	39	2.9733	67	1.174	95	0.527
12	8.4377	40	2.8694	68	1.139	96	0.514
13	8.0925	41	2.7697	69	1.105	97	0.500
14	7.7635	42	2.6740	70	1.072	98	0.487
15	7.4498	43	2.5821	71	1.040	99	0.475
16	7.1506	44	2.4939	72	1.009	100	0.462
17	6.8652	45	2.4091	73	0.980	-2	15.5800
18	6.5928	46	2.3276	74	0.951	-3	16.3200
19	6.3328	47	2.2493	75	0.923	-4	17.0000
20	6.0846	48	2.1740	76	0.897	-5	17.9030
21	5.8475	49	2.1017	77	0.871	-6	18.7603
22	5.6210	50	2.0320	78	0.846	-7	19.6703
23	5.4046	51	1.9651	79	0.822	-8	20.6300
24	5.1978	52	1.9007	80	0.798	-9	21.6403
25	5.0000	53	1.8387	81	0.776	-10	22.7103
26	4.8109	54	1.7790	82	0.754	-11	23.7103

11. Ordinary maintenance



11.1 Filter cleaning:

The filters should be regularly cleaned to keep the air conditioner running efficiently. Clean the filters every two weeks.

How to proceed:

• Disconnection the air conditioner from the electrical supply.

•Open the front panel by hand.

•Take the filter holder (See P31),take out the filter grating from the slot. (See P32).

•Proceed to wash them (not hot water) and only when they are dried replace them in the same way.(See P33)

ATTENTION:

Do not use the air conditioner without filters as it could seriously damage the air conditioner.

11.2 External cleaning:

• Disconnect the air conditioner from the electrical supply.

• Wipe external surfaces clean with a damp cloth only.

• Do not use an abrasive cloth and/or solvents, as this may damage the surfaces.

• Do not use excessively wet cloth or sponges, as water stagnation could damage the air conditioner and compromise safety.

11.3 Active carbon filter (P34)

The unit maybe includes active carbon filter, which not only has the function of eliminating suspended matters that a common mechanical filter has, but also can eliminate foreign matters such as free chlorine, odors, colors and toxic matters that are difficult to filter out by using conventional approaches.

With active carbon filter, the room air would be fresh and good for the body health.

Is advisable to change them every three months, because it is not possible to wash or clean them.

12. Problem and solution

Problem possible causes

• The air conditioner does not work

• The air conditioner does not refrigerate the room

• Strange smell in the room. Water drips from the air conditioner.

• The remote control doest not work.

• The air conditioner does not work for 3 minutes when switched on.

Possible solutions

1. Wrong setting the timer / check it.
2. Problems on the power supply / check it
3. The filter could be dirty / clean it
4. The room temperature is too high / wait until the temperature goes down
5. The temperature is not properly set / check it
6. The grids could be obstructed / check and remove the eventual obstacles
7. Dampness in the room, coming from walls, carpet, furnishing or similar
8. Wrong installation of the air conditioner
9. Wrong connection of the drainage pipe
10. Exhausted batteries
11. Wrong insertion of the batteries inside the remote control
12. Protection of the air conditioner. Wait for 3 minutes and the air conditioner will start to work again.

REMARK:

If the supplied cord is damaged, it must be replaced again.

The max operation temperature for the air conditioner:

Max cooling: outdoor DB43℃ / WB26℃, indoor DB32℃ / WB23℃,

min heating: outdoor DB-5℃ / WB-6℃, indoor DB20℃

Scopri i video di presentazione dei nostri condizionatori e tanto altro sul nostro canale YouTube

http://bit.ly/fintekvideo

FINTEK

REDESIGN YOUR FEELINGS

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