1 Summary and features

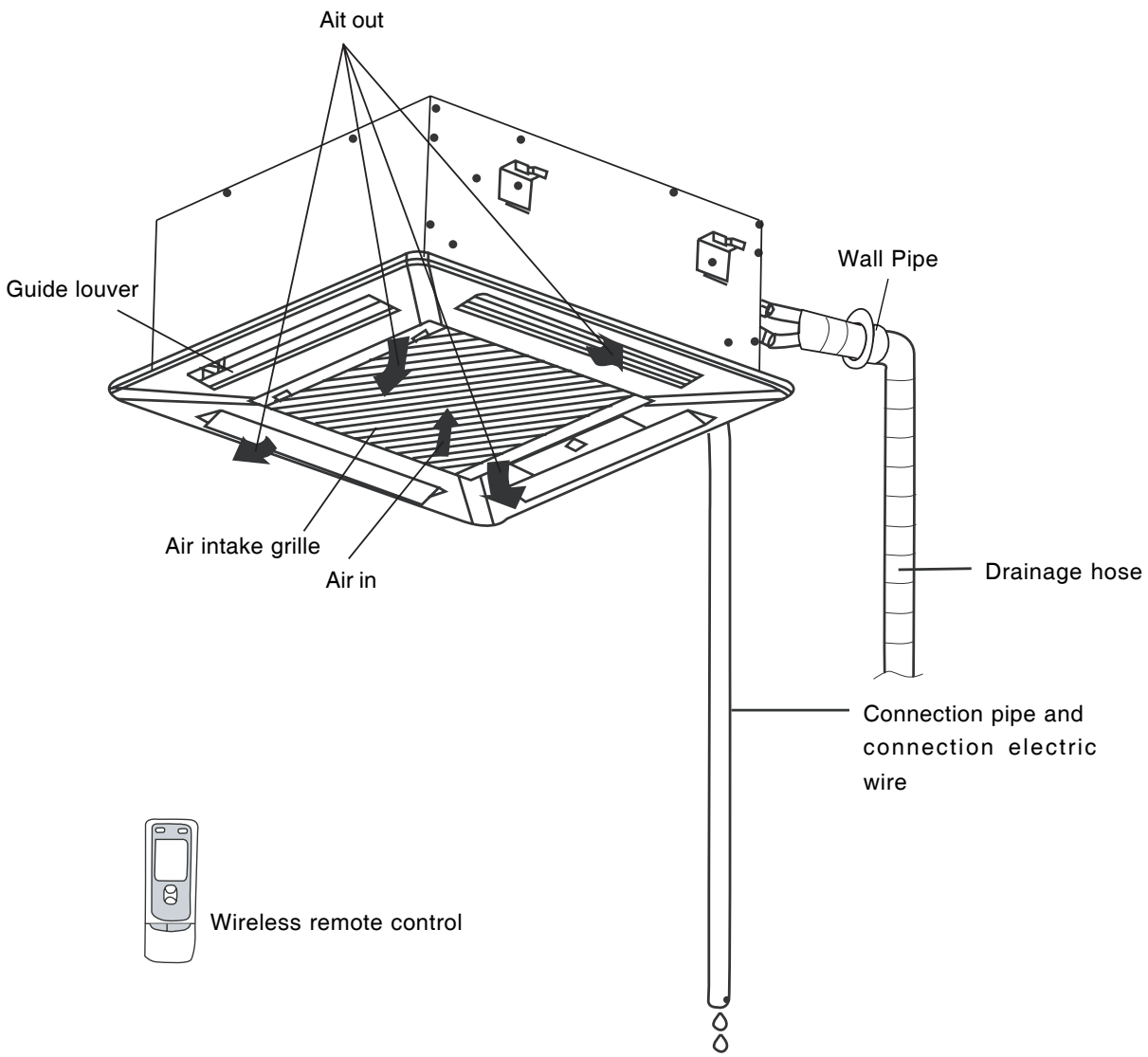
Model	Remarks
GKHD(12)ABNK3A2AI GKHD(18)ABNK3A2AI	1PH 220-240V~ 50HZ R410A

2 Technical specifications

Item	GKHD(12)ABNK3A2AI	GKHD(18)ABNK3A2AI
Fan Motor Speed (r/min) (SH/H/M/L)	820/720/620	820/720/620
Output of Fan Motor (w)	11	11
Input Power of Heater (w)	/	/
Fan Motor Capacitor (uF)	1.5	2.5
Fan Motor RLA(A)	0.2	0.2
Fan Type-Piece	centrifugal fan–1	
Diameter-Length (mm)	φ281X148	
Evaporator	Aluminum fin-copper tube	
Pipe Diameter (mm)	Φ9.52	
Row-Fin Gap(mm)	2-1.5	2.-1.5
Coil length (l) x height (H) x coil width (L)	953X203.2X38.1	953X203.2X38.1
Swing Motor Model	MP35EA	MP35EA
Output of Swing Motor (W)	4	4
Fuse (A)	T3.15AL 250V	
Sound Pressure Level dB (A) (H/M/L)	44/40/36	47/44/39
Sound Power Level dB (A) (H/M/L)***	54/50/46	57/54/49
Dimension (W/H/D) (mm)	Main unit:600x600x230	
	Panel:650x650x50	
Dimension of Package (L/W/H)(mm)	Main unit:848X678X310	
	Panel:730X670X102	
Net Weight /Gross Weight (kg)	20/27	

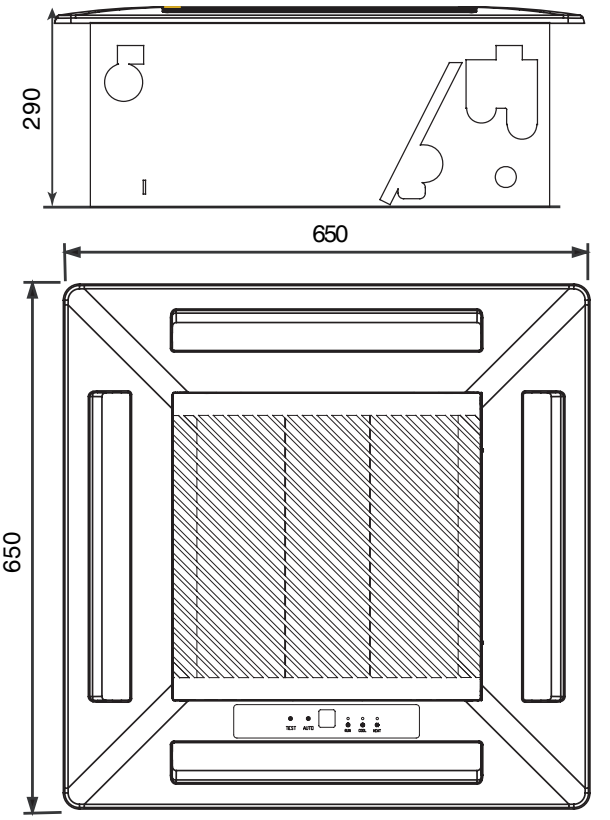
The above data is subject to change without notice. Please refer to the nameplate of the unit.

3 Part name

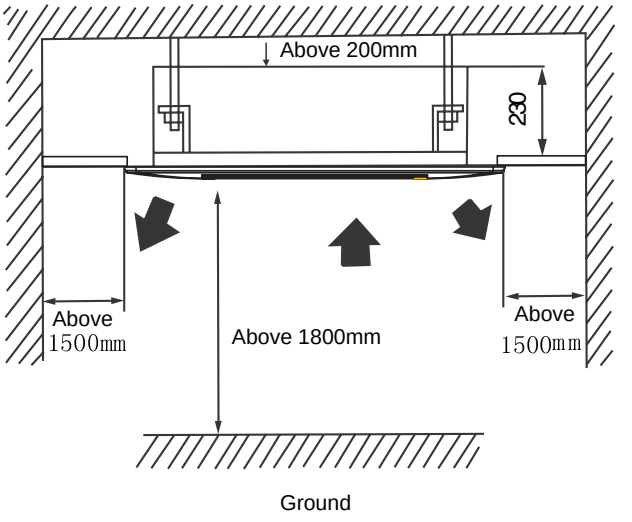

Ait out
Guide louver
Wall Pipe
Air intake grille
Air in
Drainage hose
Connection pipe and connection electric wire
Wireless remote control

4 Outline and installation dimension

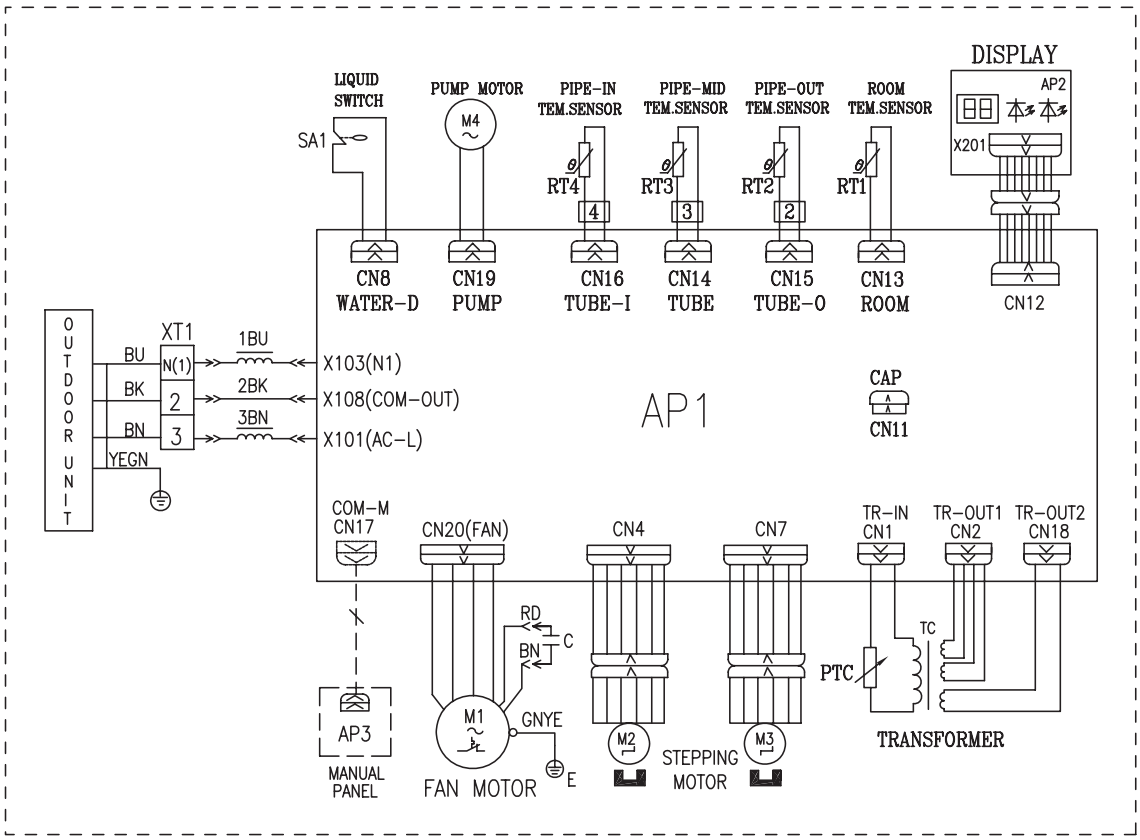
Outline Dimension



Installation Dimension



5 Electrical circuit diagram



These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

6 Controller Function Manual and Operation Instruction

6.1 Controller Function Manual

1 Temperature Parameters

◆ Indoor ambient temperature ($T_{amb.}$) ◆ Evaporator tube temperature (T_{tube})

2 Basic Functions

2.1 Cooling Mode

1.Temp. can be set in the range of 16-30℃.
2. The unit will firstly run at high fan speed for 8s and then switch to preset fan speed.
3. When error of outdoor unit occurs or the unit stops for protection, indoor unit will keep its orignal operating state.

2.2 Dehumidifying Mode

1.Temp. can be set in the range of 16-30℃.
2. The unit will firstly run at high fan speed for 8s and then switch to low fan speed.
3. When error of outdoor unit occurs or the unit stops for protection, indoor unit will keep its orignal operating state.

2.3 Fan Mode

1.Temp. can be set in the range of 16-30℃.Setting temp on wire controller is defaulted to 26℃.
2. The unit will firstly run at high fan speed for 8s and then switch to preset fan speed.
3. When error of outdoor unit occurs or the unit stops for protection, indoor unit will keep its orignal operating state.

2.4 Heating Mode

1.Temp. can be set in the range of 16-30℃.
2. If compress stops at required temp. point,indoor fan will run by blowing residual heat.
3. If compress under heating mode stops for error ,indoor fan will run by blowing residual heat.
4. Function of blowing residual heat:
Receiving the information from outdoor unit that compressor is stopped,guide louver of indoor fan becomes level and indoor fan runs at low speed.
5. Anti-cold air
Guide louver of indoor fan becomes level and indoor fan runs at low speed.If the infomation that compressor is on sent by outdoor unit is received, indoor fan runs at low speed and guide louver keeps level.After 30s, indoor fan and guide louver run according to setting speed and setting state.If the infomation that compressor is off sent by outdoor unit is received,guide louver of indoor fan turns to level position and indoor fan runs at low speed.

2.5 AUTO Mode

1) When Tamb.≥25℃, the unit runs under cooling mode, Tpreset=25℃. (Tpreset=26℃,connected with wire contrller.)
2) When Tamb.≤20℃, the unit runs under heating mode for cooling and heating type,Tpreset=20℃.And it runs under fan modes for cooling only type,Tpreset=20℃.
3) When 20℃<Tamb.<25℃, the unit keeps its original operating state. If first energization, it runs under fan mode.

2.6 Mode Conflict

If indoor room receives information from outdoor unit which is mode conflict, indoor unit will stop all loads(indoor fan,swing) after buzzer gives out a beep.Running indicator falshes 7 times and other indicators keep normal.The mode sending to outdoor unit is also the one received by remote controller.

If indoor room receives information from outdoor unit which is mode conflict after timer on reaches, indoor unit will stop all loads (indoor fan,auxiliary heater) after buzzer gives out a beep.Running indicator falshes 7 times and other indicators keep normal.The mode sending to outdoor unit is also the one received by remote controller.

Note: During mode conflict, water pump is controlled according to Control of Water Pump and Water -full Protection.

3. Other Control

3.1 Buzzer

When the unit is energized or receives signal from valid button or remote controller , the buzzer will give out a beep.

3.2 Auto Fan Speed of Indoor Fan

Indoor fan will automatically select high,middle or low fan speed according to ambient temp.During switchover, there is 3min and 30s delay protection.

3.3 Swing Control

Swing can be controlled by swing button of remote controller or wire controller .

As the right figure (Fig.2),A is close position , B is min. position and C is max. position.The angle between A and B is 64 degrees and betwwen B and C is 60 degrees).

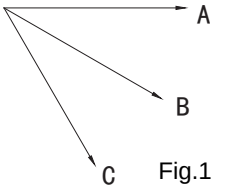


Fig.1

Swing angle:

1. After energization, stepping motor is reset and swing turns toposition A.If swing is not active after startup of unit, guide louver will stop at max. position C.If it is active ,guide louver will swing between min. postion B and max. position C.

As shown in the right figure:

A is close position , B is min. position and C is max. position.The angle between A and B is 30 degrees and betwwen B and C is 60 degrees).

. (30 or 60 degrees above indicates turning angle of guide louver).

3.4 Buttons

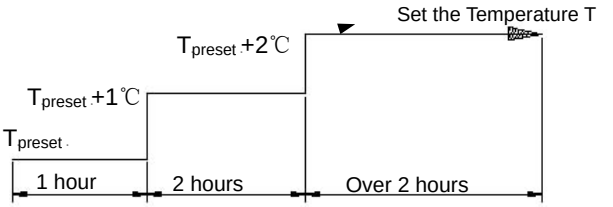
Test button: After energize, press this button, without pressing any other buttons or input of remote-control signal,into forced cooling mode according to nominal cooling condition P1.The unit will be in standby state in 5min.

Press this button for above 3s into forced heating mode according to nominal heating condition P1. The unit will be in standby state in 5min.Press this button again during test state to quit and into standby state.

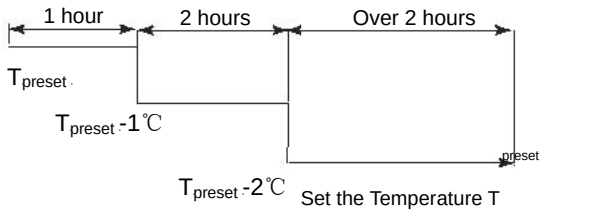
Auto button: If press this button when the unit is off , the unit will run under auto mode.If press it when the unit is on, the unit will stop running.

3.5 Sleep Function

Setting SLEEP function under COOL or DRY mode, preset temperature will automatically rise by 1℃ after 1hour and rise by another 1℃ after 2 hours. Preset temperature will rise by 2 ℃ in total within 2 hours. After that, the unit will run at this preset temperature.



Setting SLEEP function under HEAT mode, the preset temperature will automatically decrease by 1 ℃after 1hour and decrease by another 1℃ after 2 hours. Preset temperature will decrease by 2 ℃ in total within 2 hours. After that, the unit will run at this preset temperature.



No sleep function under fan mode and auto mode.

3.4 Timer Function

1.TIMER ON can be set when the unit is stopped. Upon the time as set , the controller will run under preset mode. The interval of time setting is 0.5h and can be set within 0.5-24h in cycle.

2.TIMER OFF can be set when the unit is running. Upon the time as set ,the unit will be stopped.The interval of time setting is 0.5h and can be set within 0.5-24h in cycle.

3.7 Communication Malfunction

Communication malfunction occurs, if the unit can not receivie correct signal for 3 minutes continuously.Under AUTO HEAT or HEAT mode, the unit runs with blowing residual heat.Under other modes, indoor fan keeps its original operating state. If signal from wire controller can not be received for 1min continuously, wire controller may not be connected.

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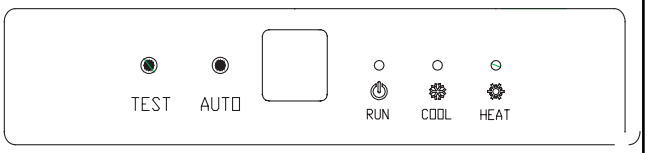
3.8 Memory Function

1.What can be memorized includes: mode(auto.cool,dry,fan.heat),swing, setting temperature, preset fan speed and so on.
2.If the unit is running before re-energization,the indoor unit will send signal of sta to outdoor unit in 3-min. delay.
3.After re-energization, the unit will run under the state befor power failure. .
4.If indoor unit does not connect wire controller and TIMER function is not set at the last remote control command,the system after power failure will memorize the the last remote control command and it runs at the running mode set at last time.If TIMER function is set at the last remote control command,the system after power failure will automatically cancel TIMER. It should be reset.
5. If the system is connected with wire controller.It will run according to wire contoroller's command before power failure and after re-energization.

3.9 Indoor Indicators

1.Communication indicator of indoor mainboard
When indoor unit communicates with outdoor unit or with wire controller, Communication indicator flashes for once.



2. Indicators of indoor light board
Under normal operation, red indicator (running indicator), yellow indicator (heating indicator) and green indicator (cooling indicaor) will show according to corresponding running state.Malfunction is shown priorly and many malfunctions are shown in cycle.
Note:1) Once malfunction occurs,it will be shown.
2). Malfucntion indicator flashes once every 0.5s.The show interval beween two malfucntions is 3s.

No.	Malfunction	Red indicator (running)	Yellow indicator Heating	Green indicator Cooling
1	System high pressure protection	Flash once		
2	Anti-freezing protection	Flash twice		
3	System low pressure protection	Flash 3 times		
4	Exhaust protection	Flash 4 times		
5	Low pressure overcurrent protection	Flash 5 times		
6	Communication malfunction	Flash 6 times		
7	Mode conflict	Flash 7 times		
8	Jumper cap malfunction	Flash 15 times		
9	Defrosting/heating oil return		Flash once	
10	Compressor overload protection		Flash 3 times	
11	System abnormality (for overload cooling,detect outdoor tube temp and for heating ,detect indoor tube temp		Flash 4 times	
12	Module protection		Flash 5 times	
13	PFC protection		Flash 6 times	
14	Compressor desynchronizing error including degaussing error		Flash 7 times	
15	Water-full protection		Flash 8 times	
16	Short and open circuit of indoor ambient temp sensor			Flash once
17	Short and open circuit of evaporator (including outlet/inlet/mid tube temp)			Flash twice
18	Short and open circuit of outdoor ambient temp sensor			Flash 3 times
19	Short and open circuit of outdoor condenser temp sensor			Flash 4 times
20	Short and open circuit of exhaust temp sensor			Flash 5 times
21	E2 is wrong read by reserved outdoor unit			Flash 11 times
22	Ambient temp sensor malfucntion of wire controller	When this temp sensor is used,indoor ambient temp sensor malfuction is shown. (green indicator flashes once)		

3.10 Turbo Function (invalid when connected with wire controller)

After setting of turbo function by remotr controller, indoor fan will run at high speed forcibly and turbo.setiing is send to outdoor unit at the same time.

4. Water Pump Control and Water-full Protection

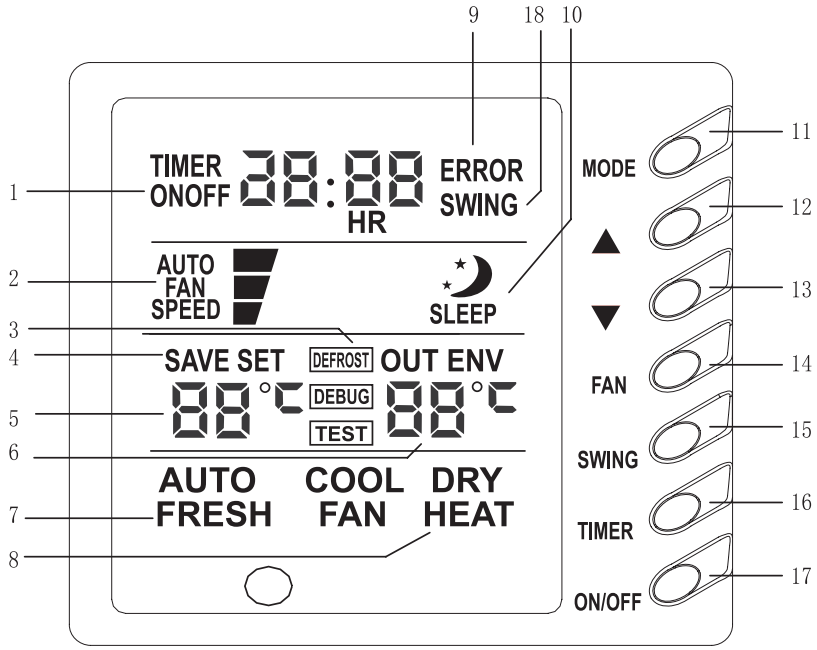
1.During cooling,dehumidifying ,startup of compressor or antifreezing protection,water pump must run at the same time.
2.During stop or stop of unit under cooling or dehumidifying or switchover to other mode, water pump will be stopped in 5 mim.
3.Under any mode water is detected to be full, water pump will start.
4.Water is detected to be full for 8s continuously when the unit is on,the unit will be protected for water full and indoor unit will stop in 1min.
5.During water-full protection, if it is solved and water pump has worked for 10min,water pump should be stopped immediately . but if water pump has not worked for 10min, it can't be stopped until 10min is reached.
6.After water-full protection is solved, press ON/OFF button to stop unit and then press it again to restart unit to quit protection.
7.If water-full protection signal can not be cleared within 2hr, cut off power supply of water pump.
8.If indoor unit in off state during cooling and oil return is stoped by remote controlelr,water pump won't start.Or else, water pump will start.After oil return,the unit will be stopped once cooling temp is reached.(Corresponding expansion valve will be stopped in 5 min.

Note:
1). With wire controller.If water full protection occurs,wire controller will always display E9 (including after protection signal is cleared).It can't be cleared until the unit is stooped.
2) During water full protection ,the signal of turning off the outdoor door unit will be send .

6.2 Instruction to Wire Controller (Optional)

NOTE:

1. Never install the wire controller in a place where is water leakage.
2.Avoid bumping, throwing, tossing or frequently opening the wire controller.



Composition of wire controller

1	Timer display	10	Sleep display
2	Fan speed display (Auto, High, Middle,	11	MODE button
3	Defrosting display	12	Button for temp. increase
4	Saving state display	13	Button for temp. decrease
5	Set temp. display	14	FAN button
6	Ambient temp. display	15	SWING button
7	Fresh air display	16	TIME button
8	Mode (COOL, DRY, FAN, HEAT, AUTO)	17	ON/OFF button
9	Malfunction display	18	Display of Swing state

The Codes of Failure Definitions are as Follows:

Fault code	Meaning	Wire controller
1	Compressor high pressure protection unit stop	E1
2	Indoor unit anti-freezing protection	E2
3	Low-pressure protection unit stop	E3
4	Air exhaust protection unit stop	E4
5	Over current protection unit stop	E5
6	Communication malfunction unit stop	E6
7	Unit modes conflict	E3
8	Jumper malfunction	E3
9	Defrosting /Heating oil return	defrost
10	Compressor overload protection unit stop	E5
11	System Unit malfunction	F2
12	IPM modular protection unit stop	E5
13	PFC protection unit stop	E5
14	Compressor malfunction	E9
15	Water spill protection	E9
16	Indoor ambient temp. sensor malfunction	F0
17	Indoor pipe temp. sensor malfunction	F1
18	Outdoor ambient temp. sensor malfunction	F3
19	Outdoor pipe temp. sensor malfunction	F2
20	Outdoor air exhaust temp. sensor malfunction	F4
21	E2 PROM Error	E3
22	Wire controller ambient temp. sensor malfunction	F5

7 Dissassembly Procedures

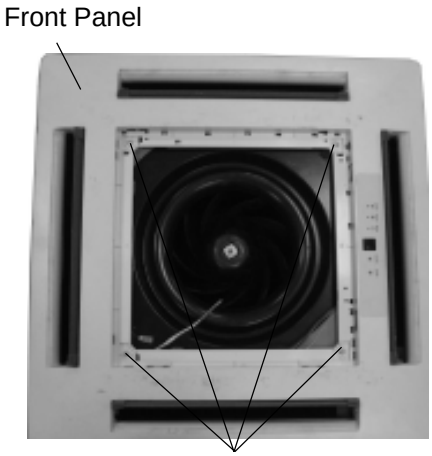
Operating Procedures / Photos

1.Disassemble Front Grill Assy

Push the clasp of front grill toward middle and then lift it to 45 degrees angle.Then remove the front grill.

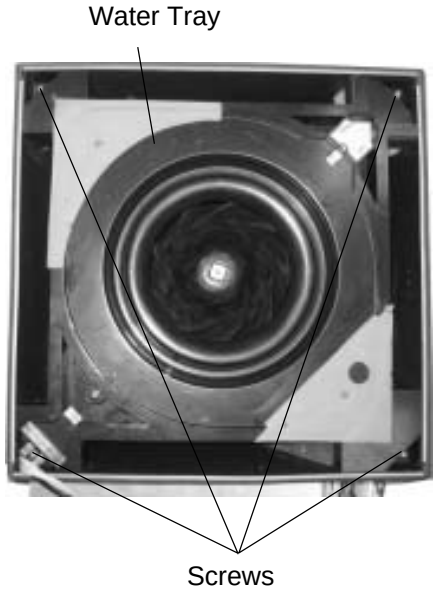
2.Disassemble Front Panel

Unscrew the 4 screws fixing front panel and remove front panel to pull out each wiring terminal to take the front panel out.



3.Disassemble Water Tray

Unscrew the 4 screws fixing water tray.Lift the water tray to remove it.Pay attention to fresh air foam at one side.

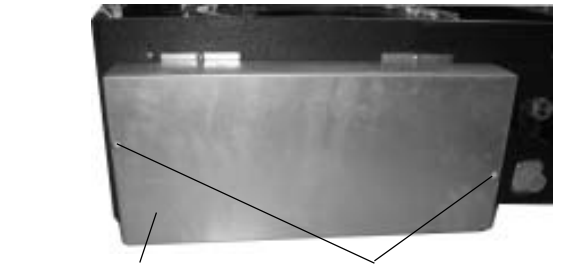


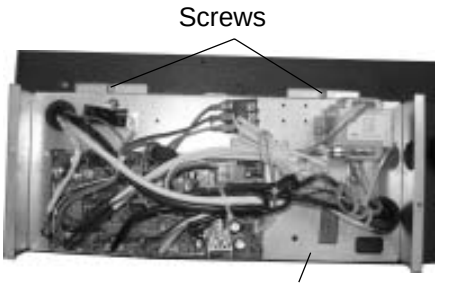
Operating Procedures / Photos

4.Disassemble Electric Box

Unscrew the 2 screws fixing electirc box cover plate to remove it.

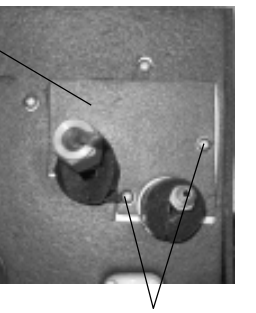
Pull out wiring terminals of motor and temp sensor andunscrew the 2 screws fixing electirc box cover to remove it.





5.Disassemble Outlet Pipe Plate

Unscrew the 2 screws fixing outlet pipe plate and turn it upwards to remove it.



6.Disassemble Water Pump

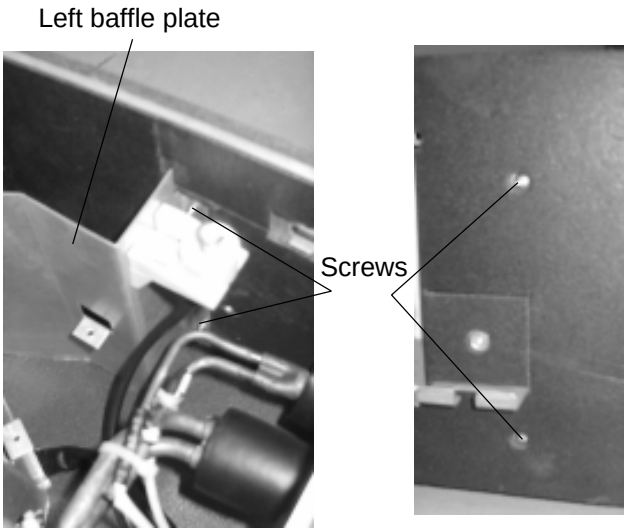
Unscrew the 2 screws fixing water pump mounting rack to pull out drainage pipe of water pump so that water pump and its mounting rack can be removed together.

Unscrew the 2 screws fixing water pump drainage pipe to take drainage pipe out.

Operating Procedures / Photos

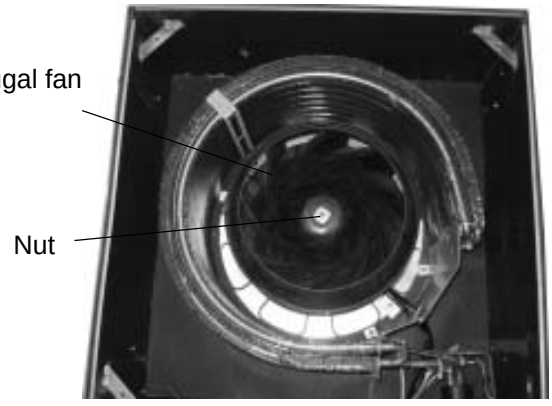
7.Disassemble Left Baffle Plate

Unscrew the 2 screws fixing left baffle plate and lift the plate to remove it.



8.Disassemble Centrifugal Fan

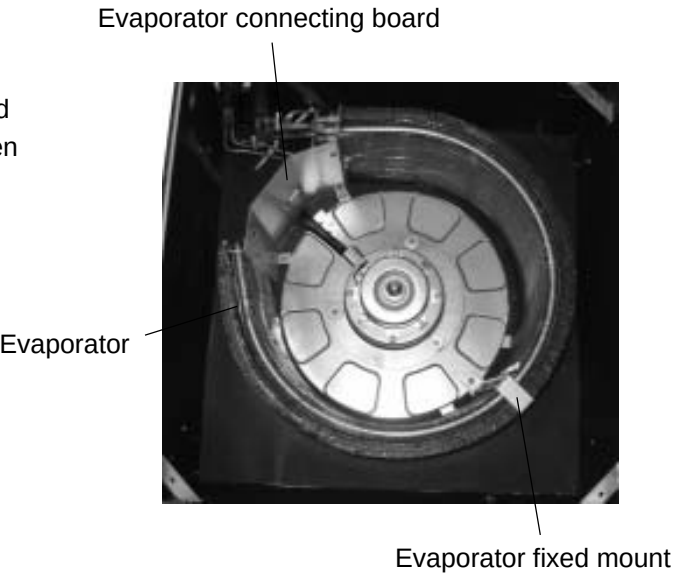
Unscrew the nut fixing centrifugal fan and lift it to remove it.



Operating Procedures / Photos

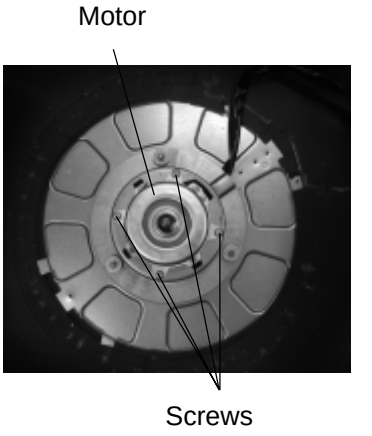
9.Disassemble Evaporator

Unscrew the screws fixing connecting board and fixed mount of evaporator to remove them and then remove evaporator.



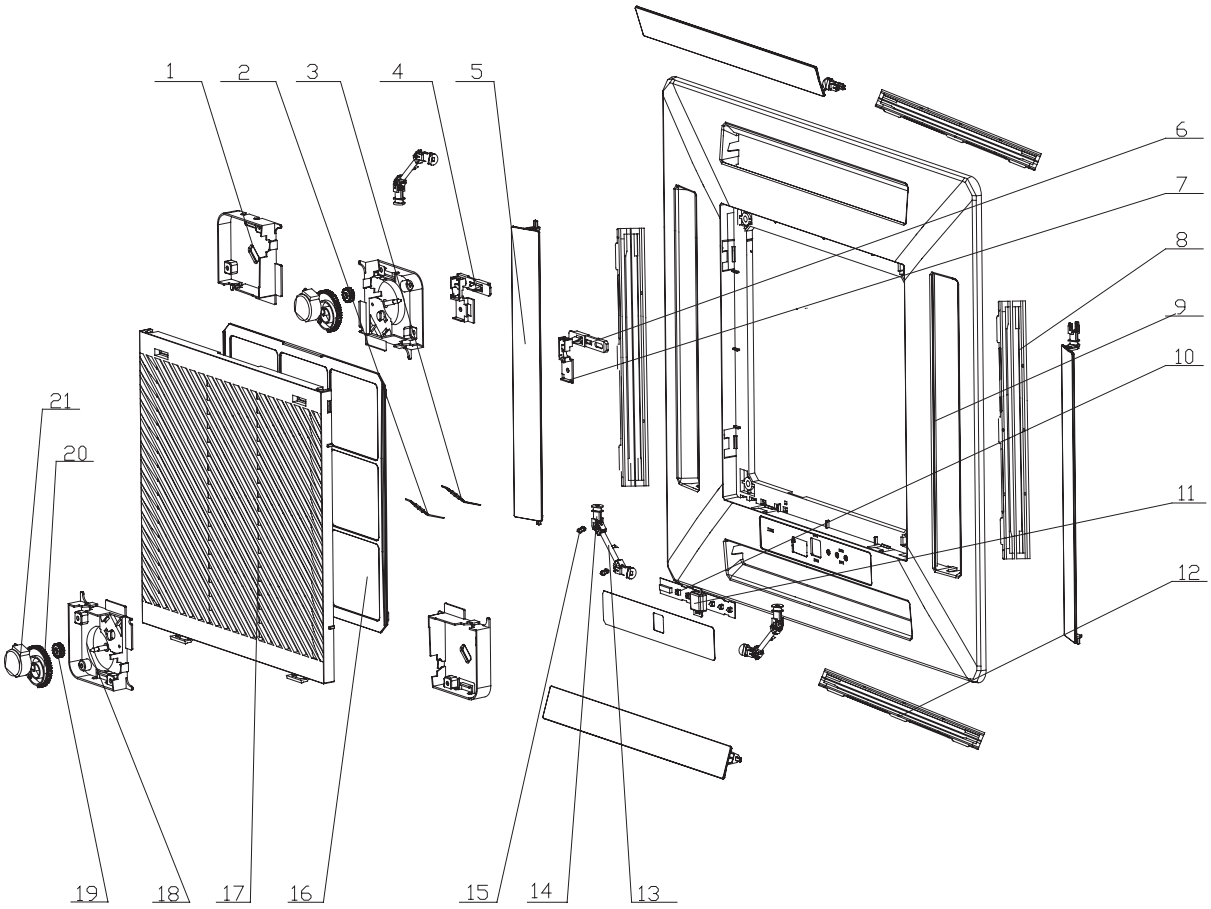
10.Disassemble Motor

Unscrew the 4 screws fixing fan to remove it.



8 Explosive view and spare parts list

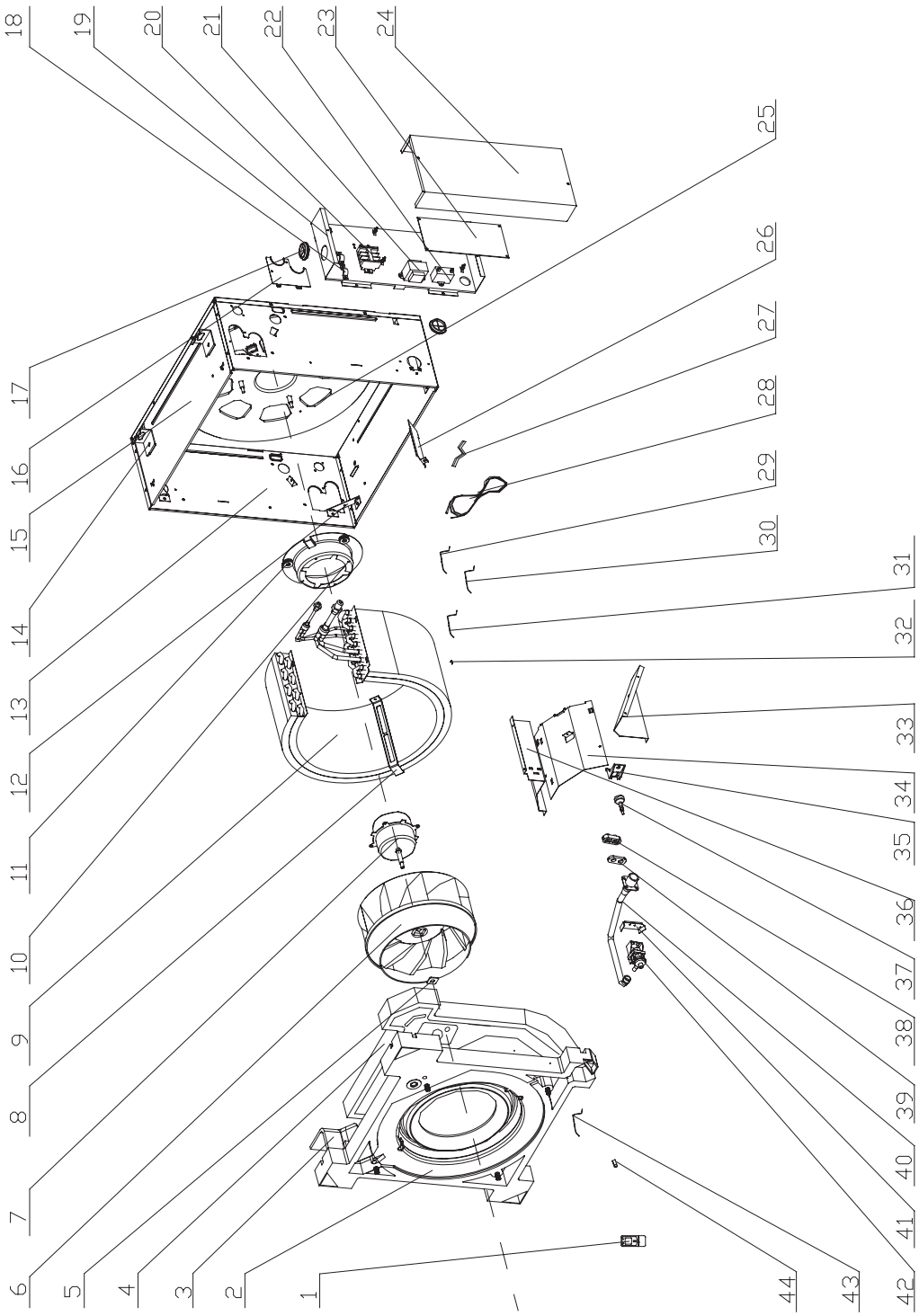
8.1 Exploded View and Parts List of Front Panel



No	Description	Part Code	Qty
		T07	
1	Inner Conner Cover I	22242716	2
2	/	/	/
3	Connecting Wire (8 Core)	400300791	1
4	Right NetHook	26252705	1
5	Air Guider	10512702	4
6	Left NetHook	26252705	1
7	Clamp	26252704	2
8	Air Outlet Foam I	12312704	4
9	Front Panel	20002704	1
10	Receiver PCB KJ	30261001	1
11	Receiving Window	22432705	1
12	Air Outlet Foam II	12312705	4
13	Connecting Lever	10582704	2
14	Gimbal	10562704	4
15	Universal Joint	10562703	8
16	Filter	11122703	1
17	Air Inlet Grille	22412704	1
18	Inner Conner Cover I	22242715	2
19	Small Gear	73012701	2
20	Large Gear	73012702	2
21	Synchronous Motor MP35EA	15210104	2

The above data are subject to be changed without notice.

8. 2 Exploded View of Components and Parts



No	Description	Part Code		Qty
		GKHD(12)ABNK3A2AI	GKHD(18)ABNK3A2AI	
1	Remote Controller Y512	30512520	30512520	1
2	Water Tray	20182703	20182703	1
3	Water Tray Foam for Fresh Air Intaking	12312702	12312702	1
4	Water Tray Foam	12312703	12312703	1
5	Fan Fixer	76712709	76712709	1
6	Centifugal Fan	10312702	10312702	1
7	Motor FN11T	15012707	15012707	1
8	Evap Support	01072714	01072714	1
9	Evaporator Assy	01002921	01002921	1
10	Motor Support	01702702	01702702	1
11	Motor Gasket	76712705	76712705	3
12	Water Tray support	01332706	01332706	4
13	Front Side Plate	01302741	01302741	2
14	Body Fixer	01332705	01332705	4
15	Right Side Plate	01302743	01302743	2
16	Tube-exit plate	01382719	01382719	1
17	Cable-cross Loop	76515202	76515202	2
18	Wire Clamp	71010003	71010003	1
19	Electric Box Assy	01402705	01402705	1
20	Terminal Board RS9413	420111041	420111041	1
21	Transformer 57X35E	43110013	43110013	1
22	Capacitor	33010020	33010026	1
23	Main PCB M901F2J	30039370	30039370	1
24	Electric Box Cover	01412723	01412723	1
25	Base Plate	01222712	01222712	1
26	Cord Baffle Plate	01362701	01362701	1
27	Connecting Wire	40030079	40030079	1
28	Connecting Cable	400204056	400204056	1
29	Tube Sensor	390001981	390001981	1
30	Tube Sensor	390001982	390001982	1
31	Tube Sensor	390001983	390001983	1
32	Sensor Insert B	42020063	42020063	3
33	Left Baffle Plate	01362703	01362703	1
34	Evap Connection	01072713	01072713	1
35	Water Level Switch Support	24212705	24212705	1
36	Right Baffle Plate	01362702	01362702	1
37	Water Level Switch	450127012	450127012	1
38	Pump Gasket 1	76712707	76712707	1
39	Pump Gasket 2	76712708	76712708	1
40	Pump Drainage	05232722	05232722	1
41	Pump Support	01332707	01332707	1
42	Water Pump PSB-7	43130320	43130320	1
43	Room Sensor	3900019813	3900019813	1
44	Wire Clamp	71010105	71010105	1

The above data are subject to be changed without notice.