1 Summary and features

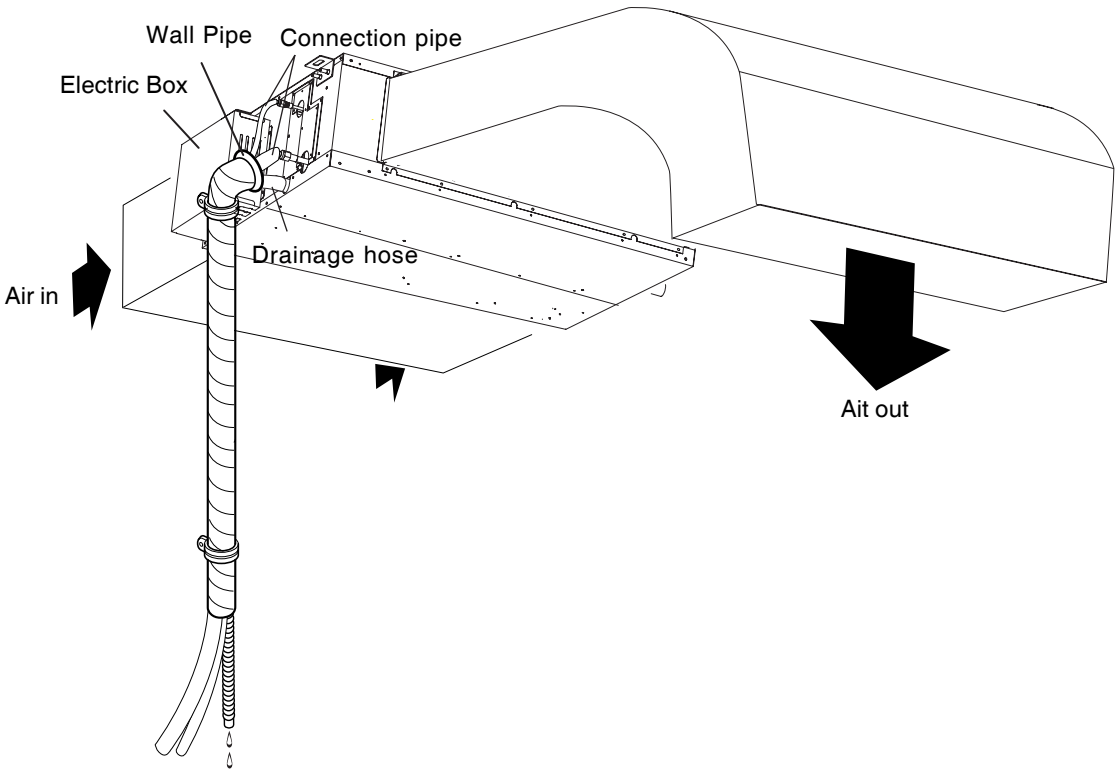
Model	Remarks
GFHD(09)AANK3A1AI GFHD(12)AANK3A1AI GFHD(18)AANK3A1AI	1PH 220-240V~ 50HZ R410A

2 Technical specifications

Item	GFHD(09)AANK3A1AI	GFHD(12)AANK3A1AI	GFHD(18)AANK3A1AI
Fan Motor Speed (r/min) (SH/H/M/L)	830/640/550	1110/910/760	1310/1160/1060/860
Output of Fan Motor (w)	6	6	22
Input Power of Heater (w)	/	/	/
Fan Motor Capacitor (uF)	1	3	3.5
Fan Motor RLA(A)			
Fan Type-Piece	centrifugal fan-2	centrifugal fan-2	centrifugal fan-2
Diameter-Length (mm)	φ155X 175	φ155X 175	φ155X 175
Evaporator	Aluminum fin-copper tube		
Pipe Diameter (mm)	Φ7	Φ7	Φ9.52
Row-Fin Gap(mm)	2-1.6	2-1.6	2.-1.8
Coil length (l) x height (H) x coil width (L)	642X228.6X25.4	642X228.6X25.4	710X254X66
Swing Motor Model	MP24GA	MP24GA	MP24GA
Output of Swing Motor (W)	2	2	2
Fuse (A)	T3.15AL 250V	T3.15AL 250V	T3.15AL 250V
Sound Pressure Level dB (A) (H/M/L)	37/37/30	40/40/33	42/42/33
Sound Power Level dB (A) (H/M/L)***	47/47/40	50/50/43	52/52/43
Dimension (W/H/D) (mm)	913X220X680	913x220x680	1012X266X736
Dimension of Package (L/W/H)(mm)	995X750X258	995X750X258	1120X795X308
Net Weight /Gross Weight (kg)	27/32	27/32	36/39

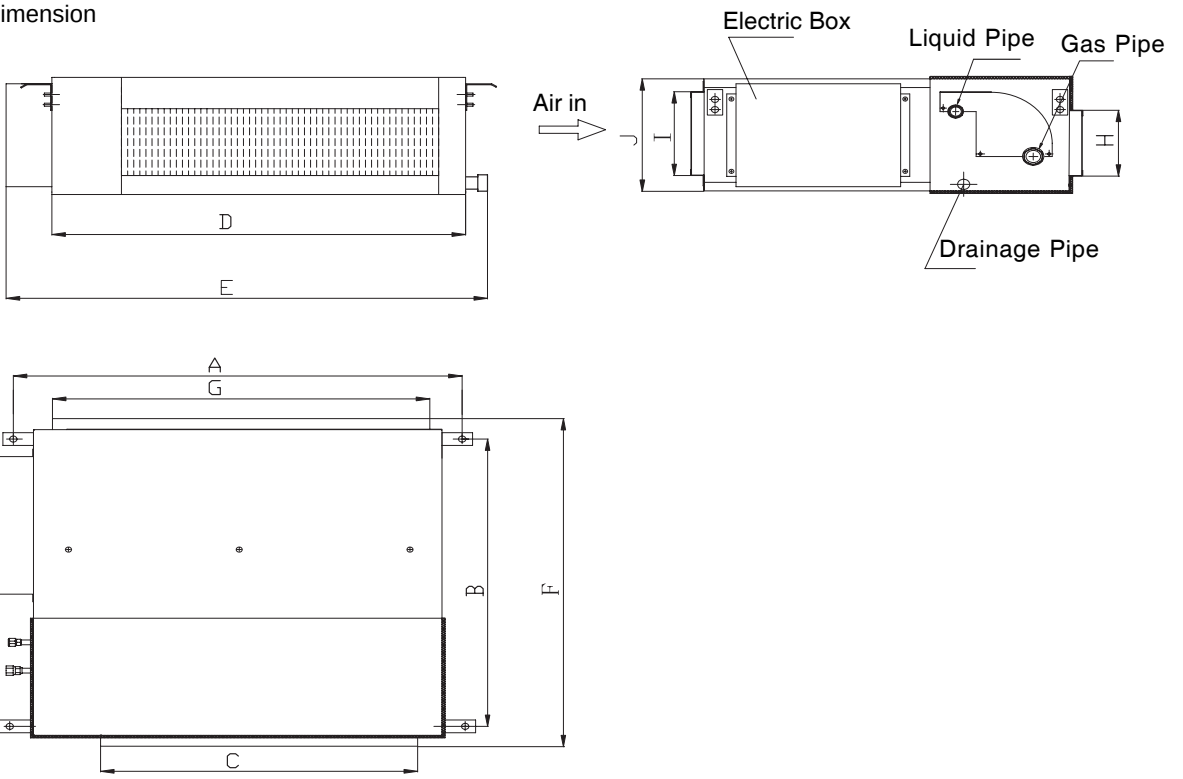
The above data is subject to change without notice. Please refer to the nameplate of the unit.

3 Part name

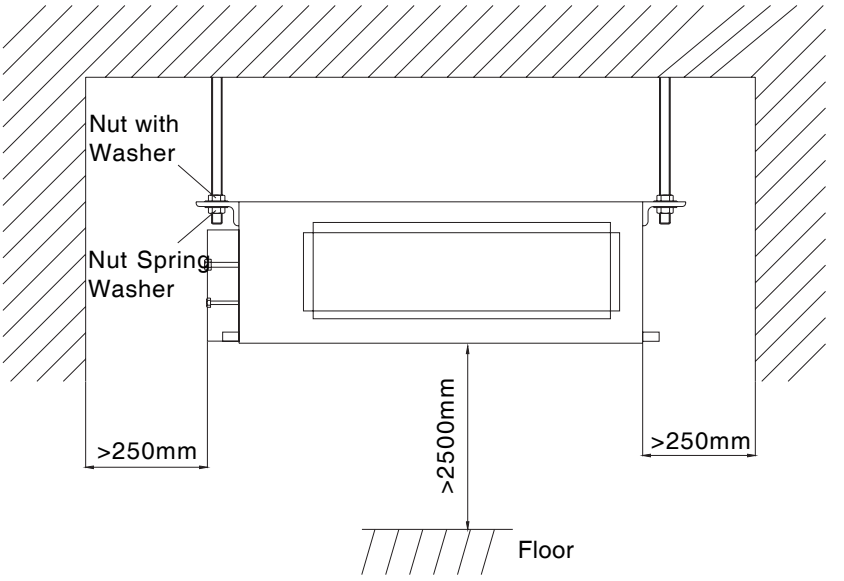

Wall Pipe
Connection pipe
Electric Box
Drainage hose
Air in
Ait out

4 Outline and installation dimension

Outline Dimension



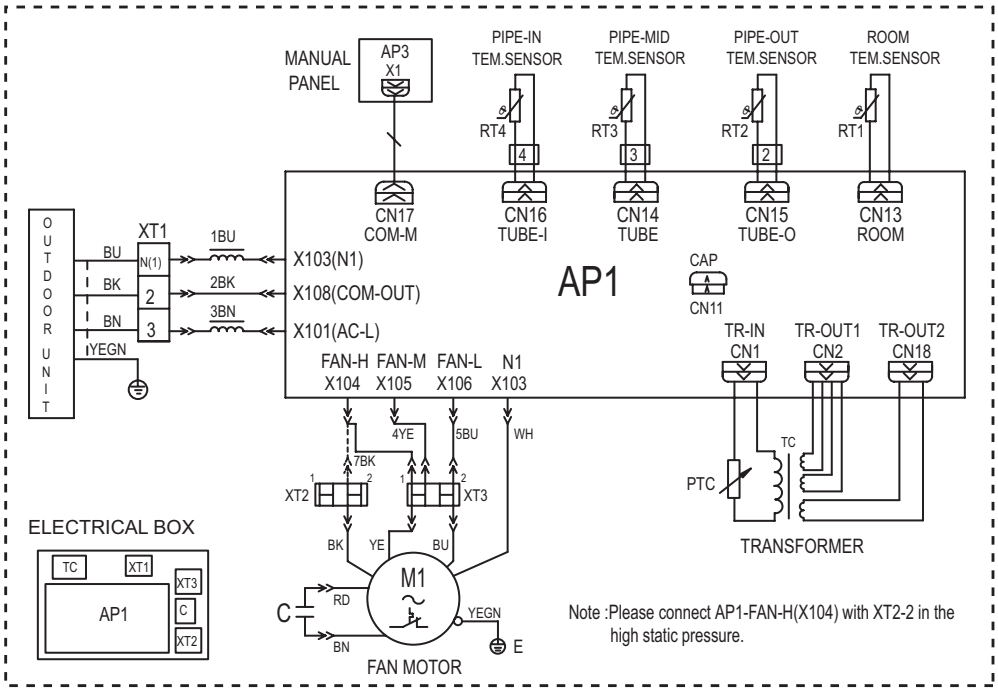
Installation Dimension



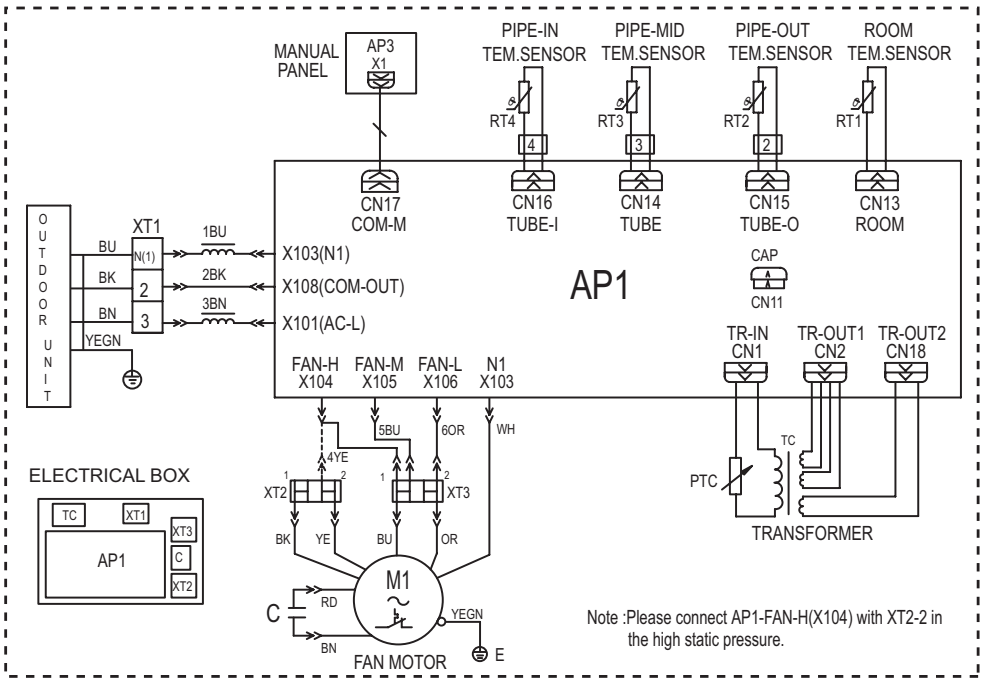
Model	A(㎜)	B(㎜)	C(㎜)	D(㎜)	E(㎜)	F(㎜)	G(㎜)	H(㎜)	I(㎜)	J(㎜)
GFHD(09)AANK3A1AI	856	571	515	790	913	680	750	100	172	220
GFHD(12)AANK3A1AI										
GFHD(18)AANK3A1AI	932	430	738	894	1012	736	738	125	207	266

5 Electrical circuit diagram

GFHD(09)AANK3A1AI GFHD(12)AANK3A1AI



GFHD(18)AANK3A1AI



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

6 PCB function manual

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 manual 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:

Indoor fan switching into low speed will stops after 1 min delay.

5. Anti-cold air

After heating compressor runs, indoor fan runs according to the following conditions:

If compressor runs within 90s and $T_{tube} < 35℃$, indoor fan won't run.When $T_{tube} \geq 35℃$ or compressor run for 90s above,indoor fan will run at low speed .After 3 min at low speed or $T_{tube} \geq 40℃$, indoor fan runs at preset speed. Once running,indoor fan won't stop.Once at preset fan speed, it won't forcibly return to low speed.

2.5 AUTO Mode

1) When Tamb.$\geq 25℃$, the unit runs under cooling mode, Tpreset=$26℃$.

2) When Tamb.$\leq 20℃$, 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.

Note:If wire controller is selected to 03, (1) After auto mode is set, Tamb. displayed on wire controller is ambient temp detected by temp sensor of wire controller. (2) Under heating mode, Tamb. displayed on wire controller is temp detected by temp sensor of manual controller.

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.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.The mode sending to outdoor unit is also the one received by remote controller.

3. Other Control

3.1 Buzzer

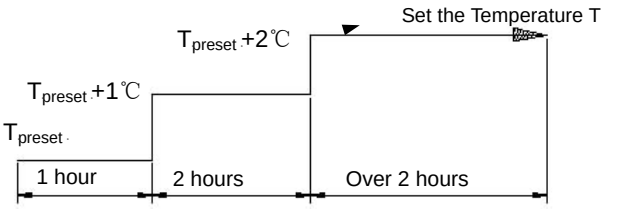
When the unit is energized or receives signal from valid button or remote controller , the buzzer will give out a beep.

3.2 Auto Fan Speed of Indoor Fan

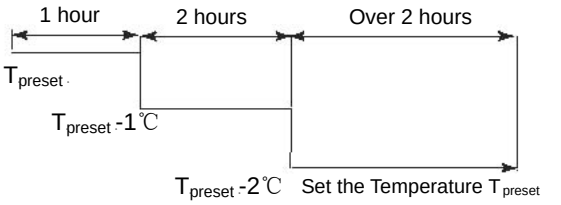
Indoor fan will automatically select high,middle or low fan speed according to ambient temp.During switchover, there is 3min and 30s delay protection.

3.3 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.

3.5 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 mode, indoor fan keeps its original operating state. If signal from wire controller can not be received for 1min continuously, communication malfunction with wire controller occurs.

3.6 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 manual 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 manual controller.It will run according to manual contoroller's command before power failure and after re-energization.

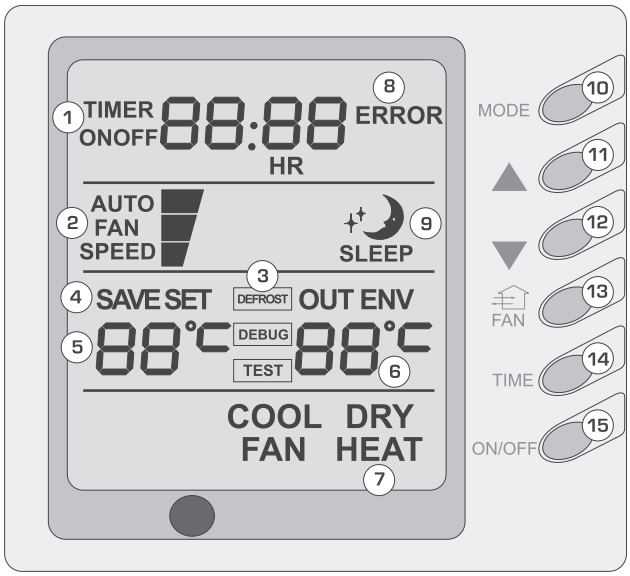
3.7 Malfunction Display

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

6.2 Instruction to Wire Controller

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	Timing display	8	Failure status display
2	Fanspeed display (Auto,High speed, Mediumspeed, Low speed)	9	Sleep status display
		10	Mode key
3	Defrosting status display	11	Set temperature increase key
4	Energy saving status display	12	Set temperature decrease key
5	Set temperature display	13	Fan speed key (fresh air setting)
6	Ambient temperature display	14	Timing key
7	Mode (cooling, dehumidifying,fan, heating, auto)	15	ON/OFF key

7 Dissassembly Procedures

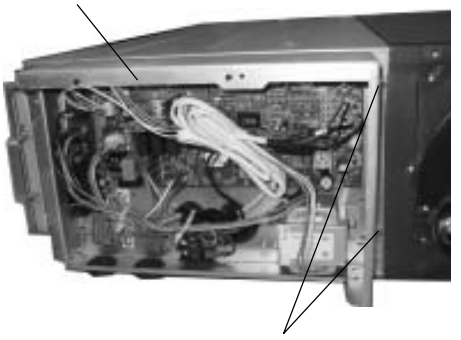
Operating Procedures / Photos

1.Disassemble Electric Box

Unscrew the screw fixing electric box cover to take the cover out.

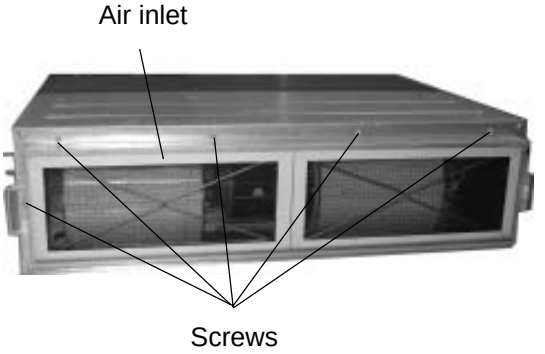
Electric box cover

Pull out motor and wiring terminal of temp sensor. Unscrew the screw fixing electric box (2 pcs at both left and right sides) to take it out.



2.Disassemble Air Inlet

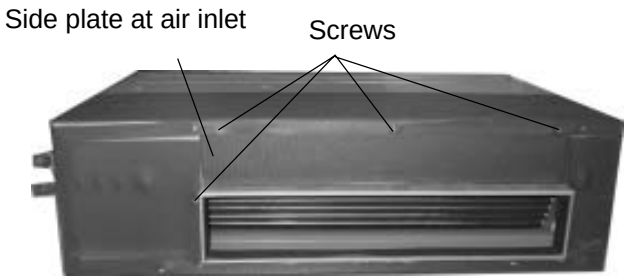
Unscrew the 4 screws fixing air inlet (4pcs at both top lower sides ,1pc at both left and right sides) to take it out.



Operating Procedures / Photos

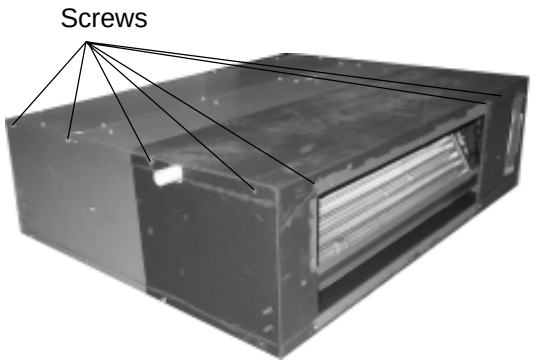
3.Disassemble Side Plate at Air Inlet

Unscrew the screws fixing side plate (3pcs at both top and lower sides ,1pc at both left and right sides) to take it out.



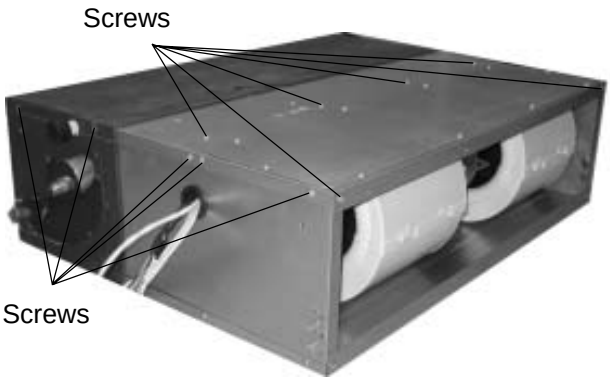
4.Disassemble Lower Cover Plate

Unscrew the screws fixing the lower cover plate to take it out.



5.Disassemble Lower Cover Plate

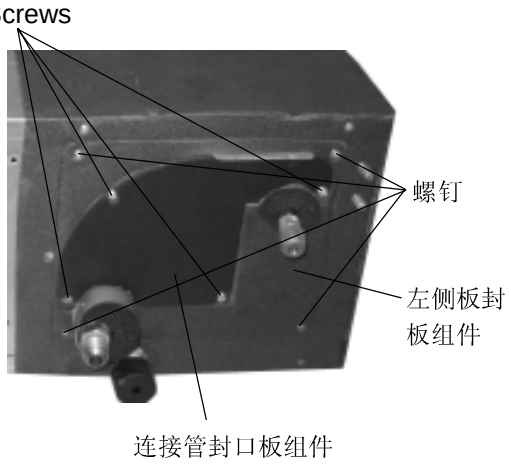
Unscrew the screws fixing the lower cover plate to take it out.



5. 拆连接管封口板组件、左侧板封板组件

拧开固定连接管封口板的螺钉，向上提，拆下连接管封口板。

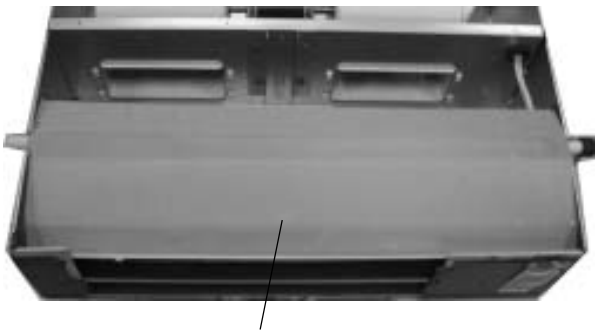
拧开固定左侧板封板组件的螺钉，取下左侧板封板组件。



Operating Procedures / Photos

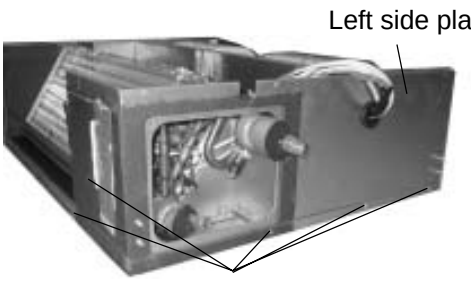
6.Disassemble Water Tray

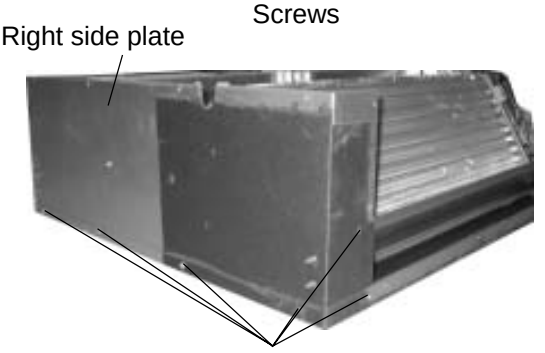
Hold left and right water outlets and then lift the water tray to take it out.

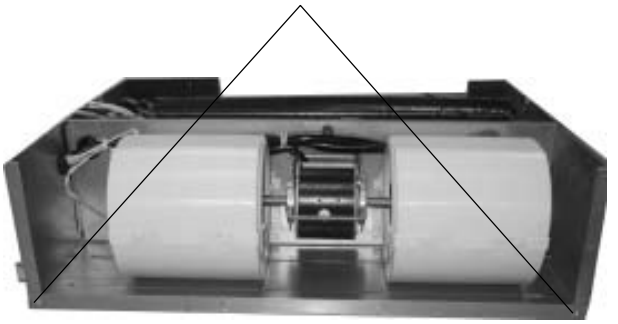


7.Disassemble Left and Right Side Plate Assy

Unscrew the screws fixing left and right side plate (6pcs at both sides) to take them out.



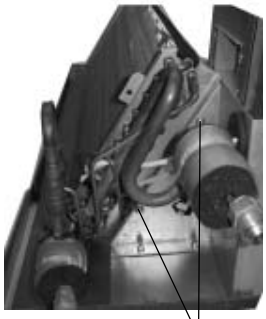




Operating Procedures / Photos

8.Disassemble Evaporator

Unscrew the screws fixing both left and right sides (2pcs) of evaporator to take it out.

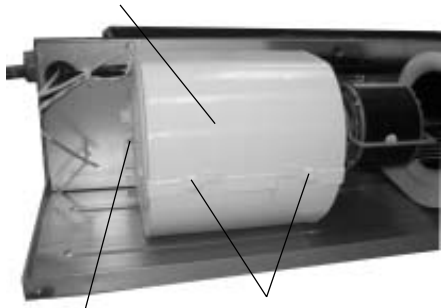


Screws

9.Disassemble Fan Assy

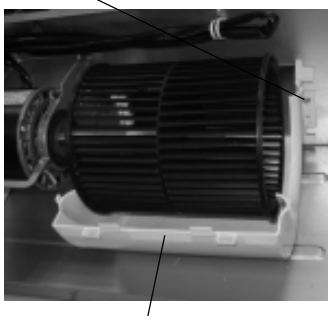
Insert the flat screwdriver into the clasp to make it loose and take front propeller housing out.Unscrew 2 screws at right and left sides to take rear propeller housing out.

Front propeller housing



Clasp

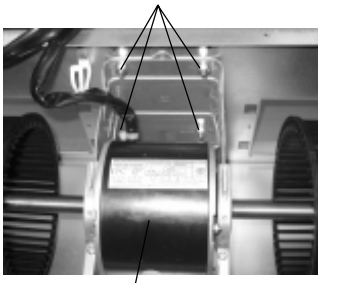
Screws



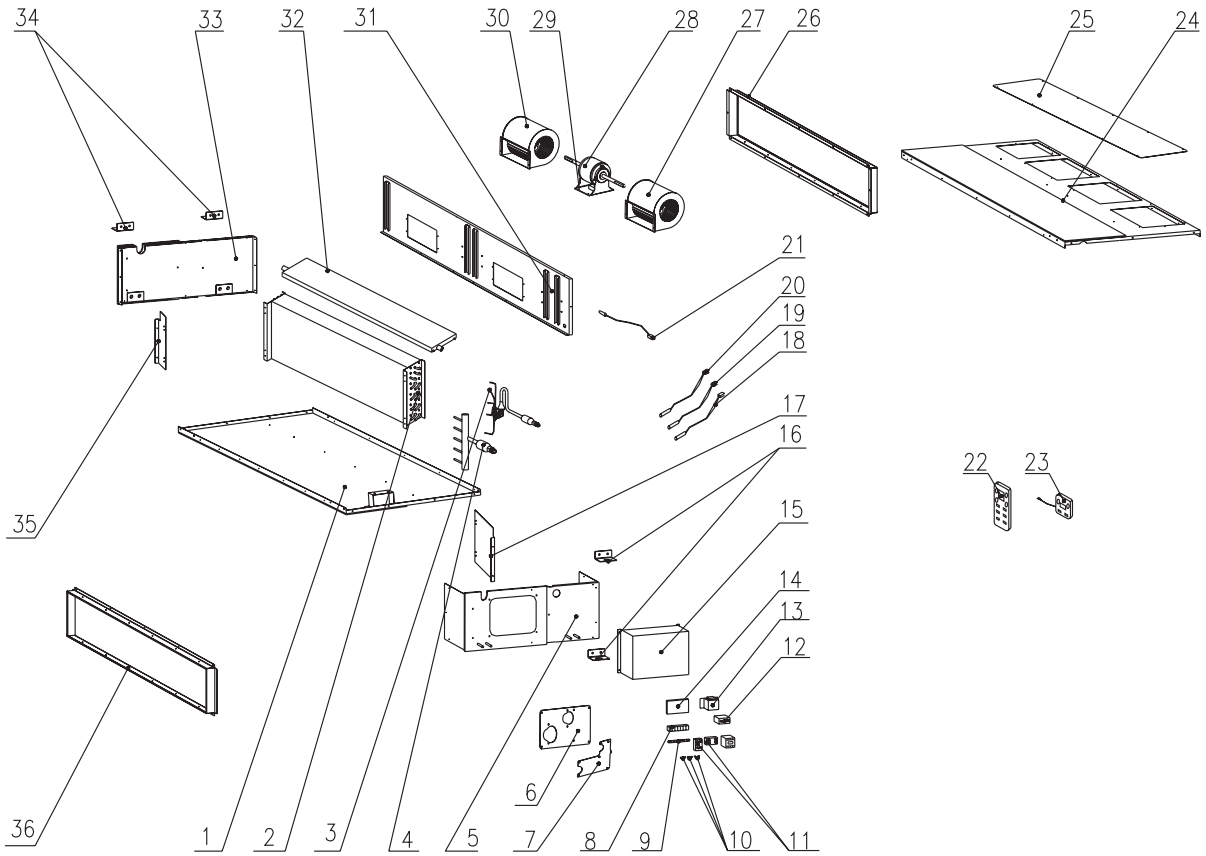
Rear propeller housing

Operating Procedures / Photos

Unscrew nuts fixing motor support to take the motor out.



8 Explosive view and spare parts list



No	Description	Part Code			Qty
		GFHD(09)AANK3A1AI	GFHD(12)AANK3A1AI	GFHD(18)AANK3A1AI	
1	Top Cover	01259051	01259051	01259064	1
2	Evaporator Assy	01039051	01039055	01038623	1
3	Liquid Inlet Pipe	032390521	036324561	03222530	1
4	Collecting Gas Pipe	03829073	036324551	04674601	1
5	Left Side Plate	0130905101	0130905101	0130866802	1
6	Seal of Left Side Plate	01499051	01499051	01498640	1
7	Seal of Connection Pipe	01499054	01499054	01498644	1
8	Terminal Board RS9413	420111041	420111041	420111041	1
9	Isolation Washer D	70410525	70410525	70410525	1
10	Wire Clamp	71010003	71010003	71010003	1
11	Terminal Board 2-8	42011103	42011103	42011103	2
12	Capacitor	33010089	33010027	33010010	1
13	Transformer 57X35E	43110013	43110013	43110013	1
14	Main M901F2BJ	30039372	30039372	30039372	1
15	Electric Box	01425703	01425703	01425703	1
16	Hook	02112446	02112446	02118504	2
17	Left Support of Evaporator	01079055	01079055	01078629	1
18	Tube Temp Sensor20K	390001981	390001981	390001981	1
19	Tube Temp Sensor20K	390001982	390001982	390001982	1
20	Tube Temp Sensor20K	390001983	390001983	390001983	1
21	Room Temp Sensor15K	39000206	39000206	39000206	1
22	Remote Controller ZY512A	305050031	305050031	305050031	1
23	Display Board Z44351_M	30294213	30294213	30294213	1
24	Bottom Cover	01259086	01259086	01258649	1
25	Bottom Cover Assy	01259054	01259054	/	1
26	Cover of Air-in	01259056	01259056	01258650	1
27	Motor Assy	150024011	22202030	15002401	1
28	Motor FG20C	15019053	15019522	15018322	1
29	Motor Support	01709058	01709058	01709056	2
30	Motor Assy	150024011	22202029	15002401	1
31	Fan Fixed Plate	01339095	01339095	01339058	1
32	Water Tray	01279051	01279051	01278633	1
33	Right Side Plate	01309055	01309055	0130867001	1
34	Hook	02112446	02112446	02118504	2
35	Left Support of Evaporator	01079056	01079056	01078625	1
36	Side Plate of Air intake	01499055	01499055	01499061	1

The above data are subject to be changed without notice.