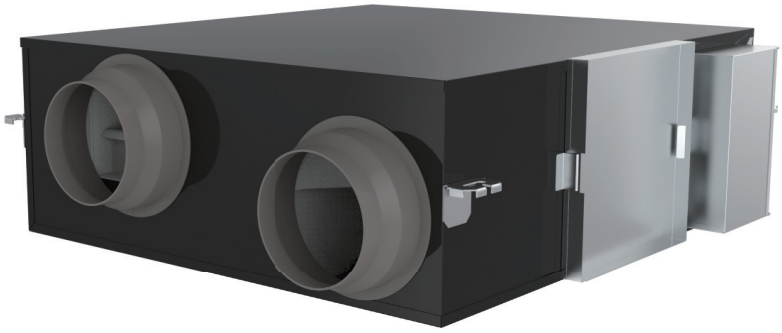


Energy-Recovery Ventilation System
Service Manual

(GC201202-I)

GREE ELECTRIC APPLIANCES, INC.OF ZHUHAI

CONTENTS

PRODUCT

PRODUCT

1 MODELS LIST

1.1 Outdoor Unit

Model	Product code	Air flow (m^3/h)		External static pressure (Pa)		Power supply	Appearance
FHBQ-D8-K(D)	EH01100030 (EH01100100)	H	800	H	50/100	220V-50Hz (208-230V-60Hz)	
		M	600	M	40/85		
		L	480	L	30/65		
FHBQ-D10-K(D)	EH01100040 (EH01100080)	H	820/1000	H	50		
		M	620/750	M	40		
		L	500/600	L	30		
FHBQ-D15-M(D)	EH01100050 (EH01100110)	1500		150		380VAC 3N 50Hz (208-230VAC 3N 60Hz)	
FHBQ-D20-M(D)	EH01100060 (EH01100110)	1800/2000		50/150			
FHBQ-D30-M	EH01100070	2800		125		380VAC 3N 50Hz	

2 NOMENCLATURE

FH	B	Q	-	D	3.5	-	K
1	2	3		4	5		6

No.	Description	Options
1	Unit code	FH: energy recovery unit
2	The structure of heat exchanger	B: plate-type
3	The diathermanous mode	Q: total heat exchange
4	The mode of installation	D: ceiling mounted type
5	Nominal Air Flow	3.5: 350m^3/h; 5: 500 m^3/h; ... 30: 3000 m^3/h
6	The phase of power supply	K: single-phase M: three-phase

3 FEATURES

3.1 Description

Our living environments are more and more affected by modern civilization. As the application of air-conditioning system and various composite materials, popularization of office equipments and development of closeness of constructions and for the purpose of energy saving and reduction of cost which cause decrease of fresh air volume, harmful gas and pollution of creature won't be diluted properly and replaced. Healthy, energy-saving, simple and reliable fresh-air system and equipment has been the focus for engineers and users. Gree energy recovery ventilation system has solved this problem. This kind of system has two-way air exchange function so that the change of indoor temp is little during air exchange. The indoor air can be efficiently filtered by the air filter. New technology and new materials and special technique applied in the unit can ensure low energy consumption, great performance ,low noise and easy installation.

3.2 Standard Features

(1) Replacement and ventilation function

It introduces fresh air into room and discharges indoor airout of room to make you feel comfortable as in the nature.

(2) Energy-recovery function

Internal heat exchanger makes the discharged air and introduced air for cooling and heating exchange. Energy-recovery rate above 70% keeps heat preservation and ventilation realized.

(3) Low-noise design

Special low-noise ventilation fan is set.

(4) Air filtration and purge function

Internal air filter keeps the fresh air introduced into room pure and dustless.

(5) Various series and multiple specifications

There are various series to match with the buildings of various structures.

4 PRODUCT DATA

4.1 Product Data at Rated Condition

Model			FHBQ-D8-K(D)	FHBQ-D10-K(D)
Power supply			220VAC 50Hz (208-230VAC 60Hz)	
Air flow volume (m^3/h)		H	800	820/1000
		M	600	620/750
		L	480	500/600
External statics pressure (Pa)		H	50/100	50
		M	40/85	40
		L	30/65	30
Temperature exchange efficiency (%)		H	70	70/72
		M	72	72/74
		L	74	74/75
Enthalpy exchange efficiency (%)	Heating	H	63	63/66
		M	65	65/68
		L	67	67/70
	Cooling	H	58/57	58/56
		M	60/59	60/58
		L	62/61	62/60
Recommended wiring		mm^2	$1.0mm^2$×3	$1.0mm^2$×3
Power input (W)			400(500)	440(500)
Sound pressure level [dB(A)]			45(50)	46(53)
Dimensions (WXDXH)	Unit (mm)	H	380	380
		M	832	832
		L	1016	1016
	Packaging (mm)	H	415	415
		M	1090	1090
		L	1323	1323
Net weight (kg)			57	57

Gross weight (kg)		66.5	66.5
Loading quantity	20'GP	40	40
	40'GP	85	85
	40'HQ	104	104
Standard wired remote controller		Z4E35M	Z4E35M

Model			FHBQ-D15-M(D)	FHBQ-D20-M(D)	FHBQ-D30-M
Power supply			380VAC 3N 50Hz (208-230VAC 3N 60Hz)		
Air flow volume (m^3/h)		H	1500	1800/2000	2800
		M			
		L			
External statics pressure (Pa)		H	150	50/150	125
		M			
		L			
Temperature exchange efficiency (%)		H	73	71	70
		M			
		L			
Enthalpy exchange efficiency (%)	**Heating**	H	65	62	62
		M			
		L			
	Cooling	H	60/55	58	57
		M			
		L			
Recommended wiring		mm^2	1.5mm^2×5	1.5mm^2×5	1.5mm^2×5
Power input (W)			900(1200)	1200(1450)	2800
Sound pressure level [dB(A)]			48(60)	50(61)	62
Dimensions (WXDXH)	**Unit (mm)**	H	452	452	572
		M	1210	1210	1340
		L	1215	1215	1550
	Packaging (mm)	H	485	485	700
		M	1543	1543	1610
		L	1553	1553	1710
Net weight (kg)			110	110	215
Gross weight (kg)			130	130	236
Loading quantity		20'GP	15	15	9
		40'GP	37	37	24
		40'HQ	44	44	24
Standard wired remote controller			Z4E35M	Z4E35M	Z4E35M

Notes:

(a) The models of 220V power supply type has 3 types of fan speed and the models of 380V have one fan speed.

(b) The temperature exchange efficiency and enthalpy exchange efficiency are tested under these testing conditions as below:

Cooling efficiency:Indoor air 27°C DB, 19.5°C WB, outdoor temperature 35°C DB, 28°C WB.

Heating efficiency:21°C DB, 13°C WB. Outdoor air temperature: 5°C DB, 2°CWB.

(3) Sound power level according to ISO 5151-sound pressure calculated at 1.5m distance.

(4) Operation condition:ambient temperature-15°C-50°C, relevate humidity less than 80％ RH.

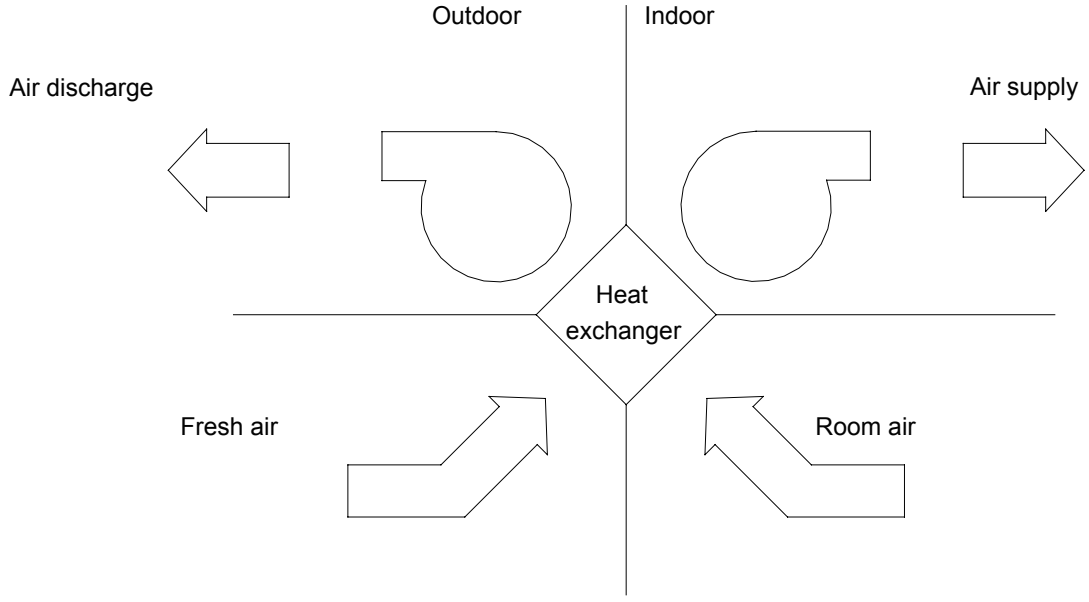
4.2 Electrical Data

Model	Power supply	Fan motor	Max. fuse breaker size	Min. disconnect size
	V, Ph, Hz	FLA Each	Amperes	Amperes
FHBQ-D8-K(D)	220V-50Hz (208V-230V-60Hz)	1.0A×2	3.25A	2.25A
FHBQ-D10-K(D)		1.0A×2	3.25A	2.25A
FHBQ-D15-M(D)	380V 3N-50Hz (208V-230V 3N-60Hz)	1.4A×2	4.55A	3.15A
FHBQ-D20-M(D)		1.4A×2	4.55A	3.15A
FHBQ-D30-M		4.2A×2	13.65A	9.45A

Notes:

(a) RLA: Rated load amperes
(b) LRA: Locked rotor amperes
(c) FLA: Full load current

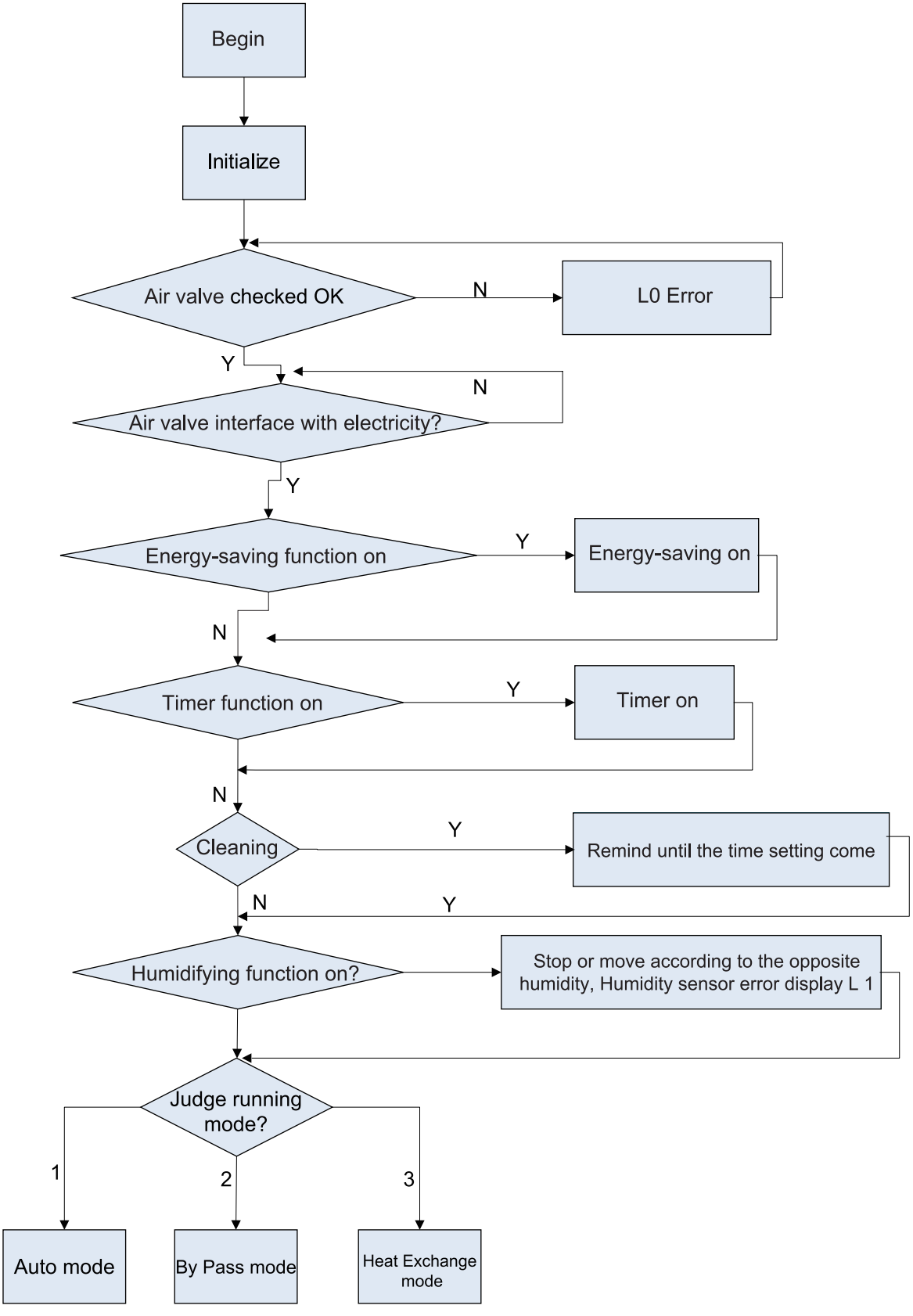
5 PIPING DIAGRAM



CONTROL

CONTROL

1 OPERATION FLOWCHART



2 MAIN LOGIC

2.1 Auto Mode

Detect the temperature indoor and outdoor for durative a period of time.

(1) The system will operate under by pass mode according to temperature and temperature difference between room and outdoors is little in transient season.

The system will operate as such request:

By Pass air valve opens, the air discharge fan and air supply fan will operate according to setting fan speed.

(2) The system will operate under heat exchange mode according to temperature and temperature difference between room and outdoors is large in transient season.

The system will operate as such request:

By Pass air valve closes, the air discharge fan and air supply fan will operate according to setting fan speed.

(3) The system will operate according to the primary mode before the system was off.

2.2 By-pass Mode

(1) Under By pass mode, air valve is open.

(2) The system will operate as such request:

If the air valve is close, the air discharge fan and air supply fan will stop. When the air valve is open , the fan will operate according to setting fan speed.

2.3 Heat exchange Mode

(1) Under Heat Exchange mode, the air valve is close.

(2) The system will operate as such request:

Electrify the air valve motor, judge the position of the air valve. The air discharge fan and air supply fan will stop if the air valve is open, or they will operate according to setting fan speed.

3 WIRED REMOTE CONTROLLER

3.1 Operation View

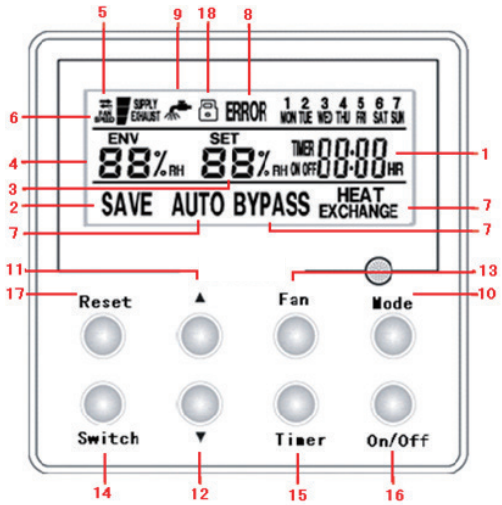


Fig.1 Front panel of wired controller

1	Timing set point	10	Mode key
2	Energy saving status	11	Humidity increasing key
3	Humidity set point	12	Humidity decreasing key
4	Environment temperature	13	Fan speed key
5	Air mode status (fresh air, discharge air, supply air)	14	Switching key
6	Fan speed status (hi/medium/low)	15	Timing key
7	Mode status (Auto, Bypass, Heat exchange)	16	On/Off key
8	Error status	17	Reset key
9	Filter cleaning status	18	Child lock icon

Notice: For FHBQ-D15 and FHBQ-D20, there is no discharge air and supply air modes for the item number 5 and fan speed is uncontrolled for the item number 6.

■Turn On / Off the Unit

(1) Press ON/OFF button to start the unit. (Fig.2)

(2) Press ON/OFF button once again to stop the unit.

(3) Under the “Off” status, pressing the “Mode” key for 5 seconds can activate the memory function upon power failure, In this case, when 01 is displayed at the temperature set point area, it indicates the memory function has been activated. When 02 is displayed, the memory function has been deactivated. Then, by pressing the ‘On/Off” key, this setting can exit. At the setting page, if there is not any operation during 20 seconds, the control will back to the normal “Off” status. The memory function is defaulted to be deactivated.

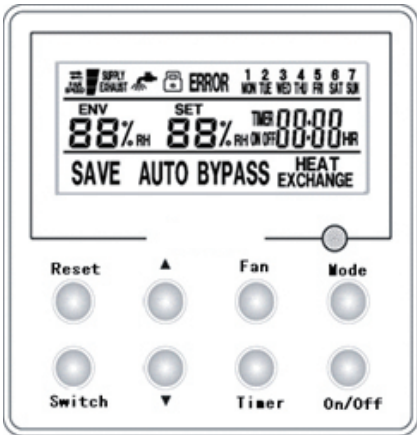


Fig.2

■Fan Speed Control (Fig.3,4) (The figures about relative display area, the same as below.)

As shown in the figure 3, under the fresh air mode, by pressing the “Fan” key, the fan speed will change circularly from low speed to medium speed to high speed, which however is unavailable for FHBQ-D15 and FHBQ-D20.

Fig.3

As shown in the figure 4, under discharge or supply air modes, by pressing the “Fan” key, the fan speed will switch between low and high speed, which is also unavailable for FHBQ-D15 and FHBQ-D20.

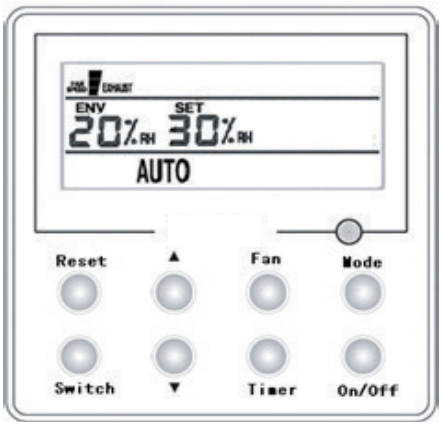


Fig.4

■Humidity Adjustment (Fig.5)

For the unit with humidifying function, pressing the “▲” key will increase the humidity set point; while pressing the “▼” key will decrease the humidity set point. Each press will make the set point change by 5%.

When pressing the “▲” and “▼” keys at the same time for five seconds, “EE” and a lock icon will be displayed. In this case, all key operation will be deactivated. Then, by pressing the “▲” and “▼” keys at the same time for five seconds again, the lock function will be deactivated.

When the control is deactivated by remote monitoring or central control, “CC” will be displayed and all key operation and remote signals are invalid.

The humidity range is 30%-70% (RH).

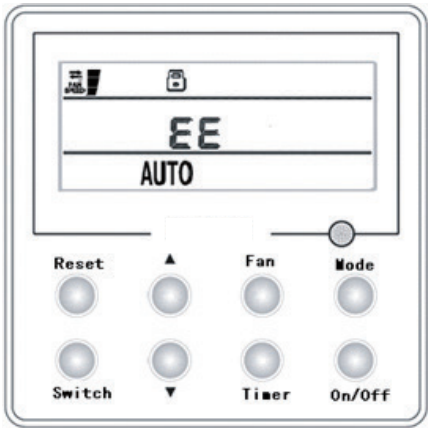


Fig.5

■Reset/ Switch Function Setting (Fig.6)

When it is required to clean the unit, the beeper will raise an alarm for 30s. In this case, by pressing the “Reset” key for five seconds, the runtime for cleaning will become zero, the beeper will stop and the cleaning symbol will disappear.

When the unit is turned on, by pressing the “Timer” key and then quickly pressing the “Switch” key, it will switch to timer for stopping the unit, timer for activating energy saving, timer for deactivating energy saving, and timer for cleaning circularly.

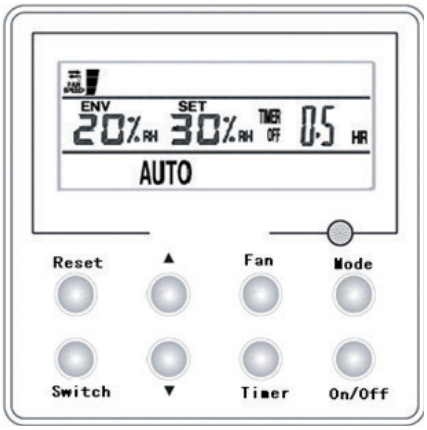


Fig.6

■ Running Mode Setting (Fig.7)

By pressing the “Mode” key, the run mode will change circularly from automatic to bypass to heat exchange.

Under the automatic mode, “AUTO” will light on and the system will operates base on indoor and outdoor temperatures as well as the temperature difference.

Under the bypass mode, “BYPASS” will light on. When the damper is opened, the fan will work based on the air mode and fan speed settings. This mode is generally applicable to transitional seasons and will extend the service life of the heat exchanging core.

Under the heat exchange mode, “HEAT EXCHANGE” will light on. When the damper is closed, the fan will work based on the air mode and fan speed settings. In this mode, it can realize all heat exchange for fresh air, saving more energy and being much healthier.

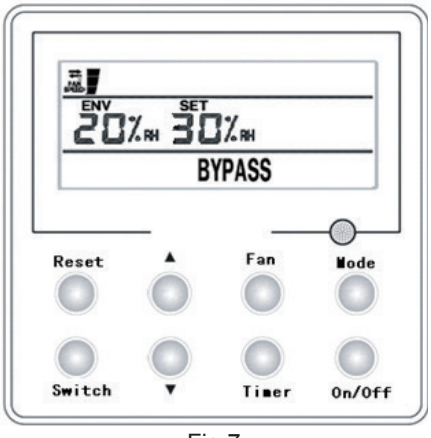


Fig.7

■Timer Setting (Fig.8)

In off status of the unit, timer on can be set and in on status, timer off, energy-saving on and energy –saving off and air clear can be set.

Press Timer button into timer setting status. TIMER,Hr and letters corresponding setting will blink.

(E.g.during timer off setting, Timer,Hr and OFF will flash).In this case, the user can press ▲or ▼to increase or decrease setting time. Repress Timer button to make the timer valid and the timing will be Fig.9 calculated after that. When the unit is under timer state, press theTimer button to cancel it. The time interval is 0.5 hr.

The setting range of Timer on/off is 0.5-24hr.

The setting range of Energy Saving On is 2-5hr and the default is 2hr.

The setting range of Energy Saving Off is 1-4hr and the default is 1hr. (Note: press FAN and ▼ at the same time for 5s only after energy saving timer setting, the energy saving function can operate.

The setting range of Timer Clear is 1250hr, 2500hr and a variable to be determined. The default is 1250hr.

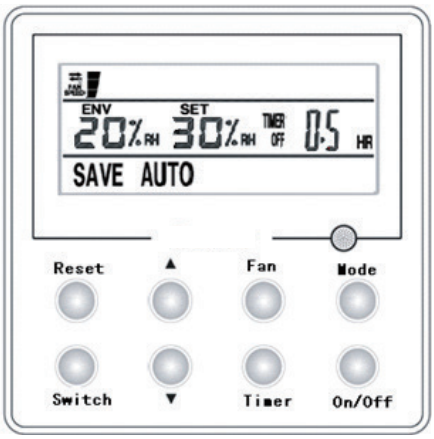


Fig.8

■Ambient Humidity Display

Under normal state, only indoor ambient humidity is display at ENV.

Notice: For the unit with humidifying function, the humidity will be displayed only when this function is activated.

■Humidifying ON/OFF Display

Press MODE and ▼at the same time for 5s to switch between humidifying ON/OFF.

Note:The unit with humidifying function can normally run. The indoor humidity and setting humidity can be displayed only If this function is on. The default is OFF. It is recommended to ON in dry period. The fittings are optional.

■ Fan Mode Display

Press FAN and ▲ at the same time for 5s to switch among half-half air exchange, discharge and supply. Refer to Fig.1 for details. The fan mode is selected by the users. E.g. plus pressure is needed in the room, fan mode can be adopted and if negative pressure is needed, air discharge mode can be adopted. Half-half air exchange is for normal station.

■Energy Saving Mode Display

Press FAN and ▼ at the same time for 5s to switch between energy saving on/off. If under energy saving on state, Energy Saving will be displayed. Refer to Fig.1 for details. If the unit needn't operate for a long time, energy saving mode can be adopted to meet the demands of both function of fresh air exchange and quality of indoor air by users.

■Intelligent Start/Stop

It is also called the central control for dampers, which are used for multiple rooms but are under the control the one unit. It can totally control eight dampers. A patching board is required.

■Address Setting

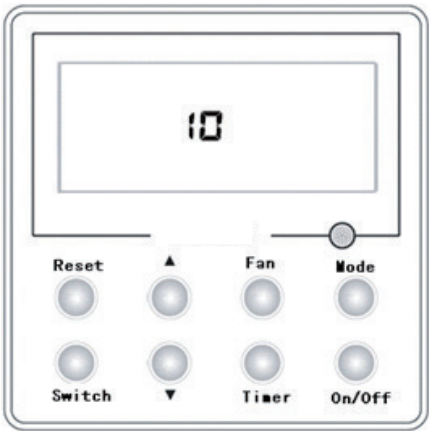
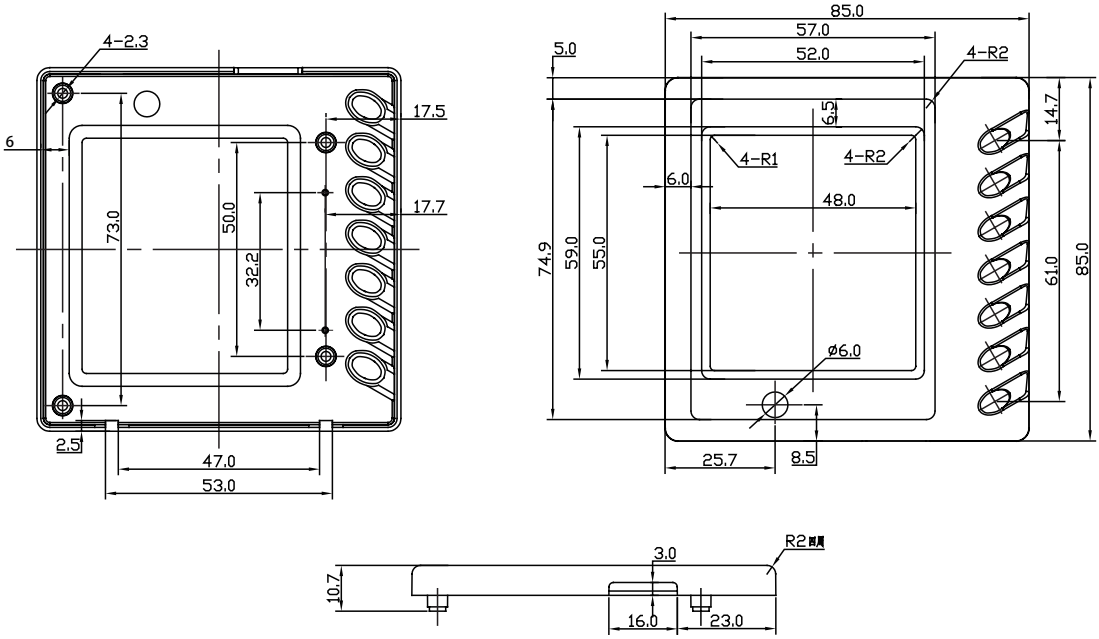


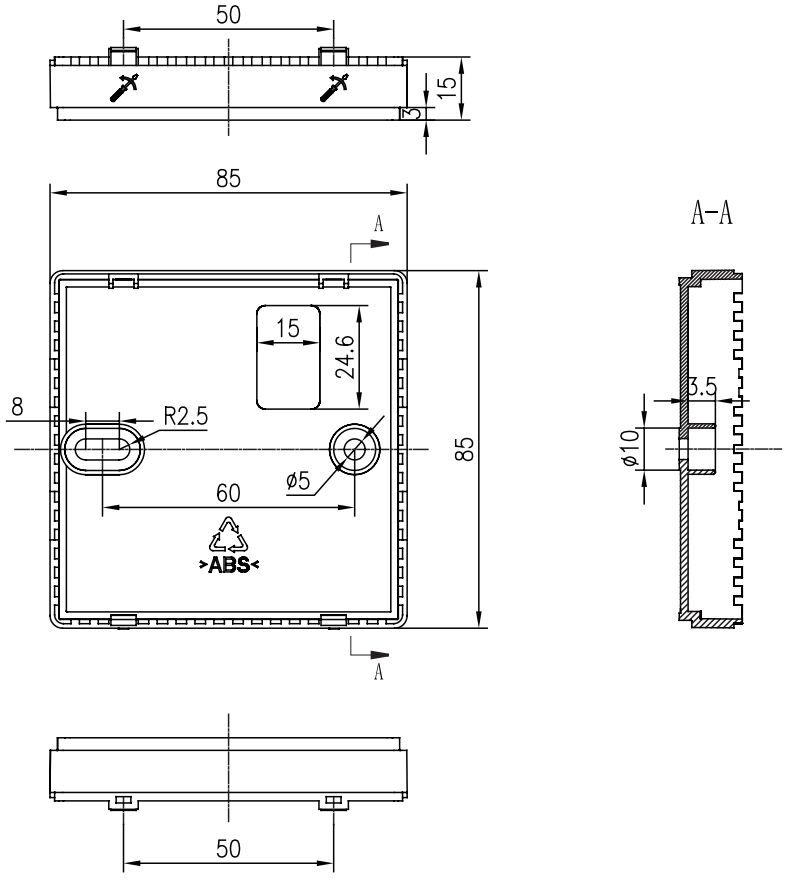
Fig.9

When the unit is off, by pressing the “Mode” and “Switch” keys at the same time for five seconds, it is able to set the address of the control (1~16). At this point, address can be increased or decreased by pressing the “▲” or “▼” key. This address intends to distinguish different dampers. The default address is 16. By pressing the “On/Off” key, this setting will exit. When there is no any key operation in 20 seconds, this setting ends and becomes valid.

3.2 Dimension



Panel dimension and installation dimension



Bottom panel dimension and installation dimension

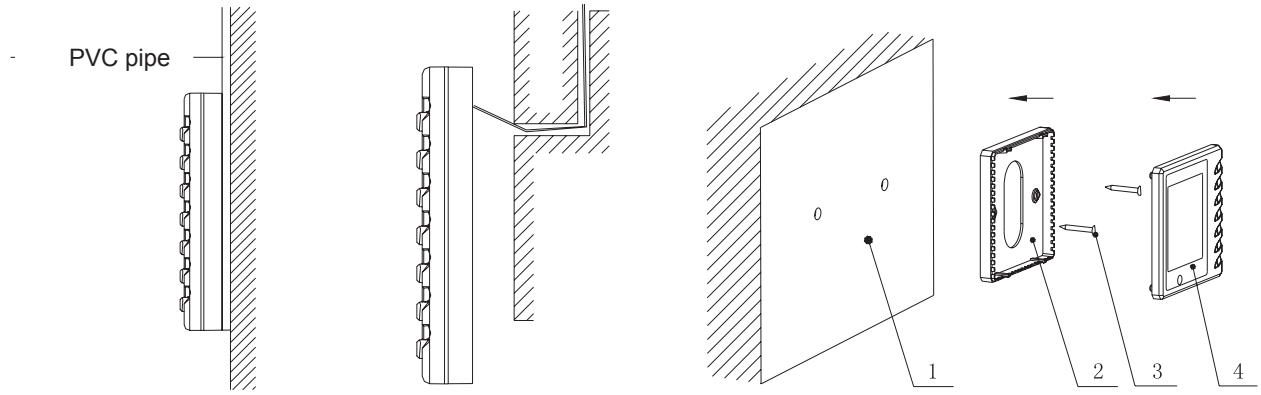
3.3 Installation

Locate the installation position firstly, and then reserve a groove or hole for embedding of communication wire according to its dimension.

If wired controller and indoor communication wire are mounted visibly, 1 # PVC pipe can be used and corresponding grooves should be set in the wall. If in hidden, 1 # PVC pipe can be used.

Whether mounted visibly or in hidden, drill two holes (keep level) in the wall as the distance (60mm) between the two holes in underplate of wired controller, and then inset stopper into the holes through which the wired controller can be fixed. Insert communication wire in the control board. At last, clasp the controller panel.

Note: During installation of underplate of wired controller, pay attention to its direction. The side with 2 breaches must be kept downwards.

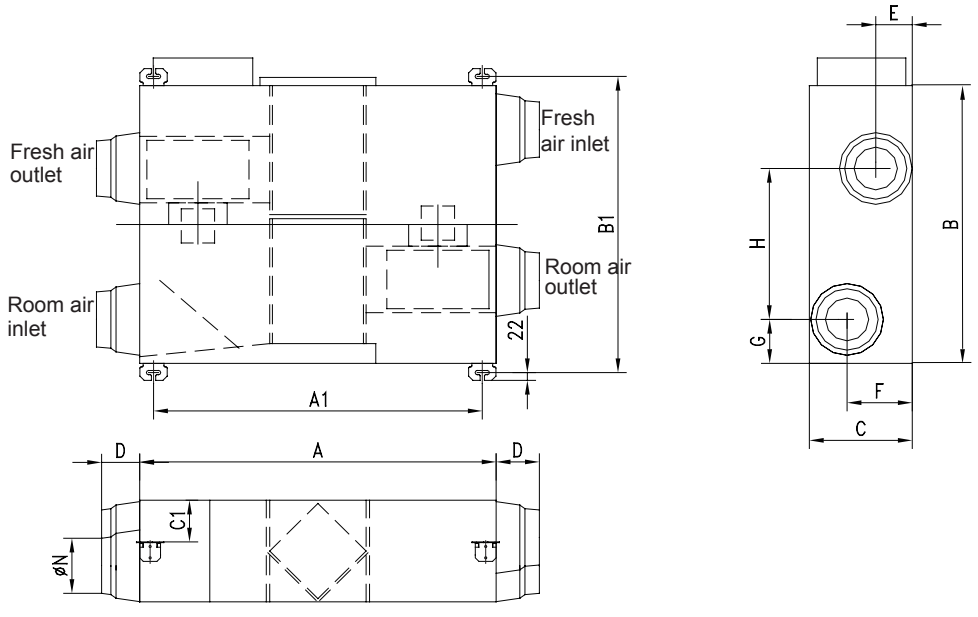


No.	Name	Remarks
1	Wall	The appearance of the controller should be subject to entity.
2	Underplate of wire controller	
3	Screw M4X10	
4	Controller panel	

INSTALLATION

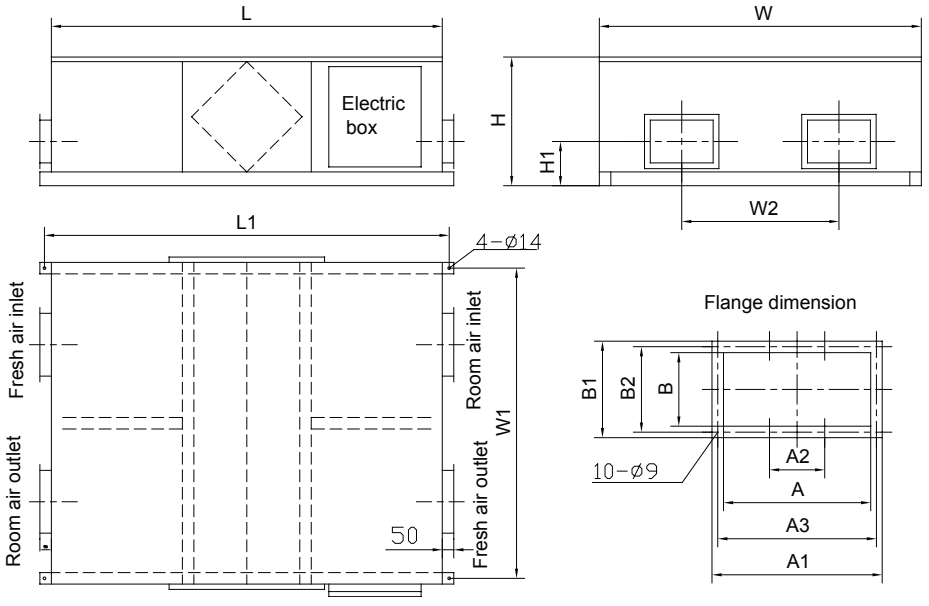
INSTALLATION

1 DIMENSION DATA



Uint: mm

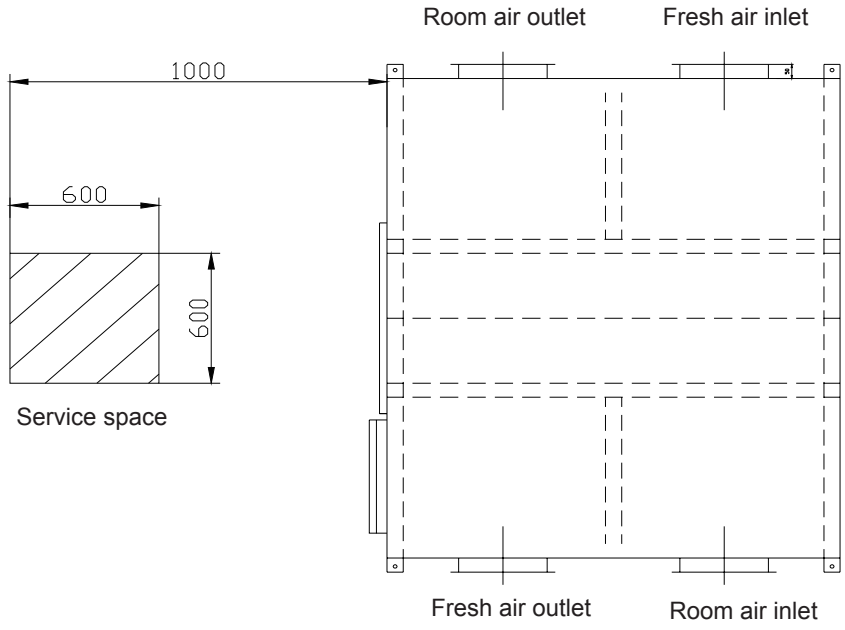
Model	A	A1	B	B1	C	C1	D	E	F	G	H	N
FHBQ-D8-K(D)	1016	960	832	884	380	165	90	150	230	155	372	246
FHBQ-D10-K(D)	1016	960	832	884	380	165	90	150	230	155	372	246
FHBQ-D15-M(D)	1215	1159	1210	1262	452	200	100	190	277	178	737	297
FHBQ-D20-M(D)	1215	1159	1210	1262	452	200	100	190	277	178	737	297



Uint: mm

Model	L	L1	W	W1	W2	H	H1	A	A1	A2	A3	B	B1	B2
FHBQ-D30-M	1550	1650	1340	1310	670	572	249	346	386	180	366	332	372	352

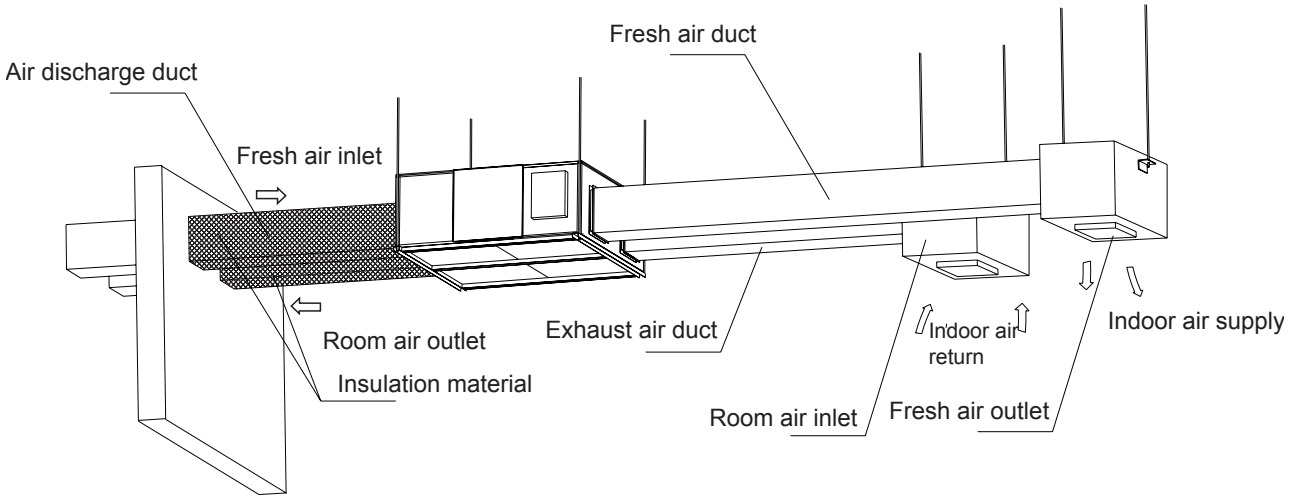
2 INSTALLATION SITE

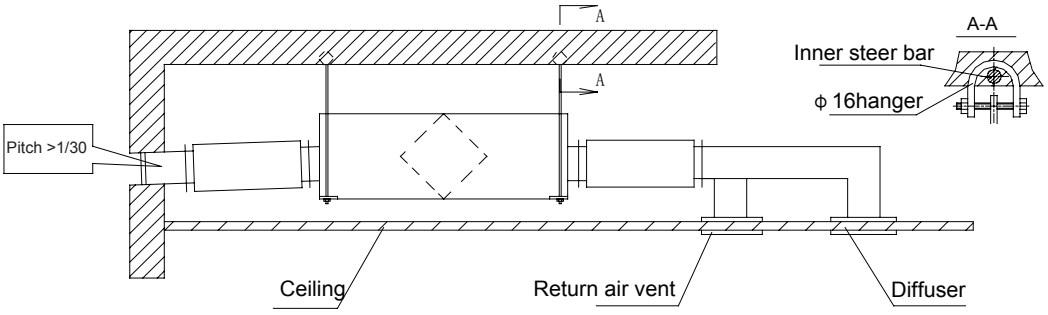


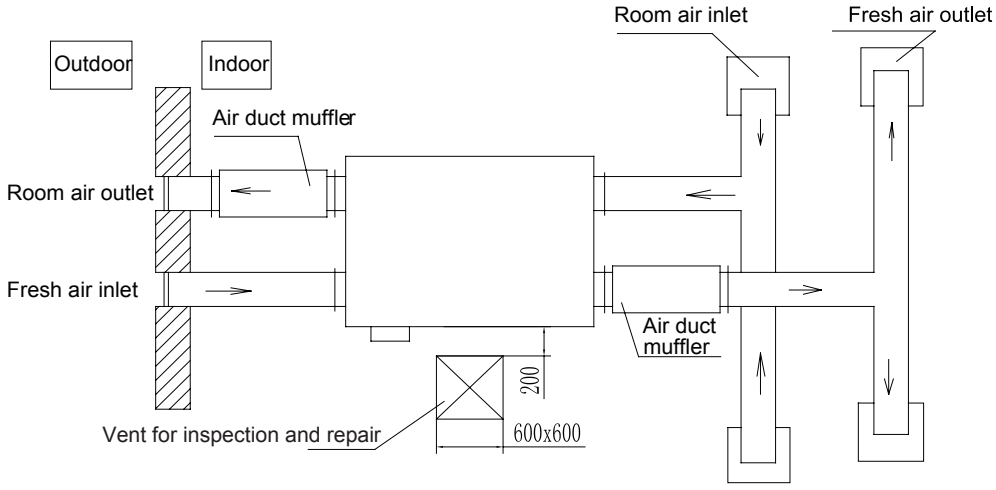
During installation, the two ducts (fresh air inlet and indoor air outlet) outside the room must be installed with anti-condensate and heat insulating materials, and the ones inside the room should also be installed with them if temperature and humidity in the ceiling is high. The ducts outside the room should be kept inclined 1/50~1/30 to avoid water into room.

In order to clean and maintain the filter and heat exchanger core in the system, do keep service space, as shown in the picture above.

3 UNIT INSTALLATION







4 CAUTIONS FOR INSTALLATION

(1) Never lay wires, cables and pipes with toxic, inflammable or explosive gas or liquid in the duct.

(2) The dismountable ports and adjustable parts of duct and fittings can not be installed in the wall or floorslab.

(3) The sundries and filth in or on the duct and fittings should be cleaned before installation.

(4) The construction of bracket or hanger of the duct should accord with the following specifications:

1)The build-in fitting, setting nail or expansion bolt for bracket or hanger should be placed correctly and firmly. The inlet part should be free of oil soil and painting.

2)The layout of the bracket or hanger should accord with design specifications. If there is no design specification, following specifications will apply.

- Pole bracket or inclined bracket is applicable for horizontal duct against wall or pole and support bracket for that far from wall or pole. Strip hanger is applicable for the duct with diameter or length of side below 400mm.
- Arm bracket or inclined bracket is applicable for vetical duct against wall or pole and anchor ear bracket for that far from wall or pole .The vertical pipe outside the room or on the roof should be fixed with derrick or dragline.

3)The hanger's rod should be flat and its screw thread should be full and smooth. Either threaded connection or welding is suitable for joint of hangers. If the former one is adopted, connecting thread of either end should be longer than diameter of hanger; moreover, anti-loosing measure should be made. If the later one is adopted, lapping joint is applicable and its length should be 6 times longer than diameter of hanger at least at two sides.

4)The holes on the bracket and hanger should be drilled mechanically and not with gas cutting.

(5) The bracket and hanger can not set at air vent, valve or service door. The hanger can not be directly fixed at flange. The distance between horizontal duct bracket and hanger can not exceed 4m.If the duct is installed vertically, the distance between them should not exceed 4m and the built-in fittings of each vertical duct should be more than 2 pieces.

(6) The duct flange, hanger and hanger for equipment should be coated with anticorrosion paint.

(7) The floor plate and wall which the duct passes should be repaired after construction. The holes on the external wall should be kept 2/100 gradient at level direction (the internal is higher) to avoid rainwater into the room.

(8) Installation of duct and connection between air vent and duct should be firm. The frame and decorative surface should be solid, external surface should be level and indeformable and adjustment should be flexible.

5 ELECTRIC WIRING WORK

5.1 Wiring Principle

■Layout of Wires

(1) Layout of wires should accord with national wiring criteria.

(2) The power supply must be with rated voltage and special for AC.

(3) The power supply should be reliable to prevent terminals from being stressed. Never pull the power cord forcibly.

(4) The line width of power cord must be large enough. Replace the broken power cord or connecting wire with special cable.

(5) All of the electric installation must be performed by professionals according to local laws and regulations and instructions.

(6) The earthing wire should be reliably connected with special earthing device and be performs by professionals.

(7) Air switch and leakage switch which can cut off the general power supply should be installed.

(8) The air switch should integrate the functions of magnetic release and hot release to protect it for short circuit or overload.

The field wiring should be subject to circuit diagram attache d on the unit.

■Earthing Requirements

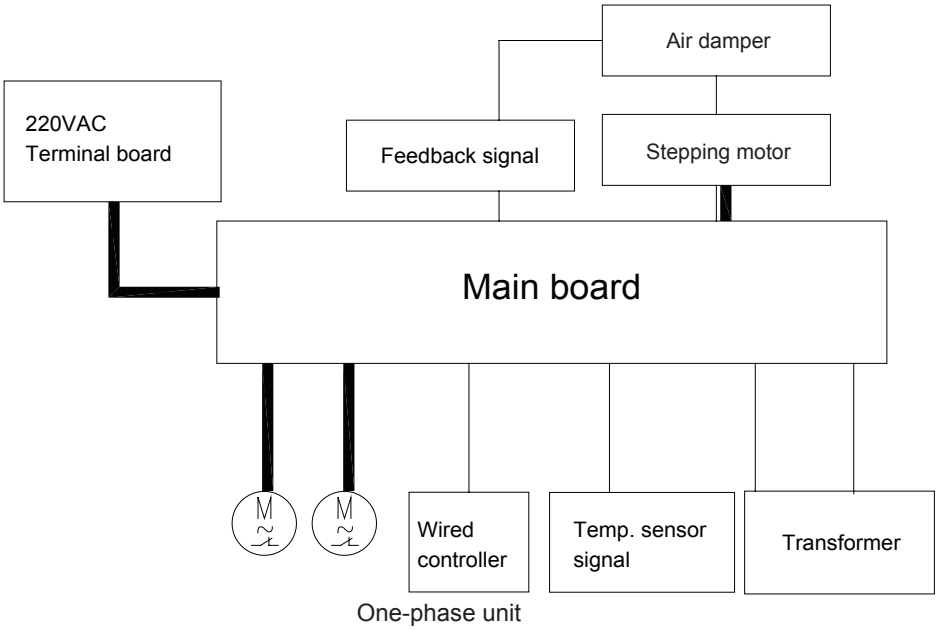
(1) Reliable earthing measure must be adopted. The yellow green earthing wire with the only use never can be cut off and fixed with tapping screws to avoid electric shock.

(2) Earthing resistance should be accord with the criteria.

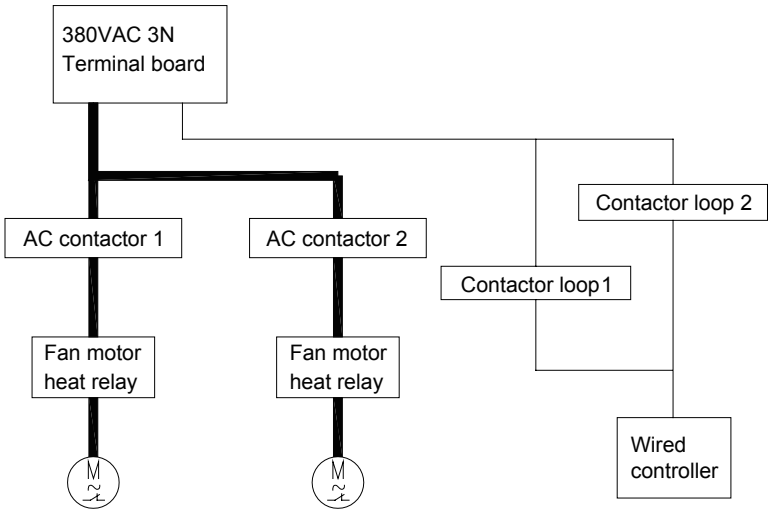
(3) Power supply must be reliably earthed. The earthing wire can not connect with:

a.Tap water pipe; b. Gas pipe; c. Blowing tube; d. Place which specialist considers unreliable.

5.2 Electric Wiring Design



One-phase unit



Three-phase unit

5.3 Specification of Power Supply Wire and Air Switch

Applied models	Power supply	Capacity of air switch (A)	Min. sectional area of earthing wire (mm^2)	Min. sectional area of power cord (mm^2)
FHBQ-D8-K(D)	220V-50Hz (208V-230V-60Hz)	6	1.0	1.0
FHBQ-D10-K(D)	220V-50Hz (208V-230V-60Hz)	6	1.0	1.0
FHBQ-D15-M(D)	380V 3N-50Hz (208V-230V 3N-60Hz)	6	1.0	1.0
FHBQ-D20-M(D)	380V 3N-50Hz (208V-230V 3N-60Hz)	6	1.0	1.0
FHBQ-D30-M	380V 3N-50Hz (208V-230V 3N-60Hz)	6	1.0	1.0

Notes:

(a) The power cord of the unit must be copper cored cable, and working temp can not exceed specified value.

(b) Increase the sectional area of power cord above 15 meters to avoid overload.

MAINTENANCE

MAINTENANCE

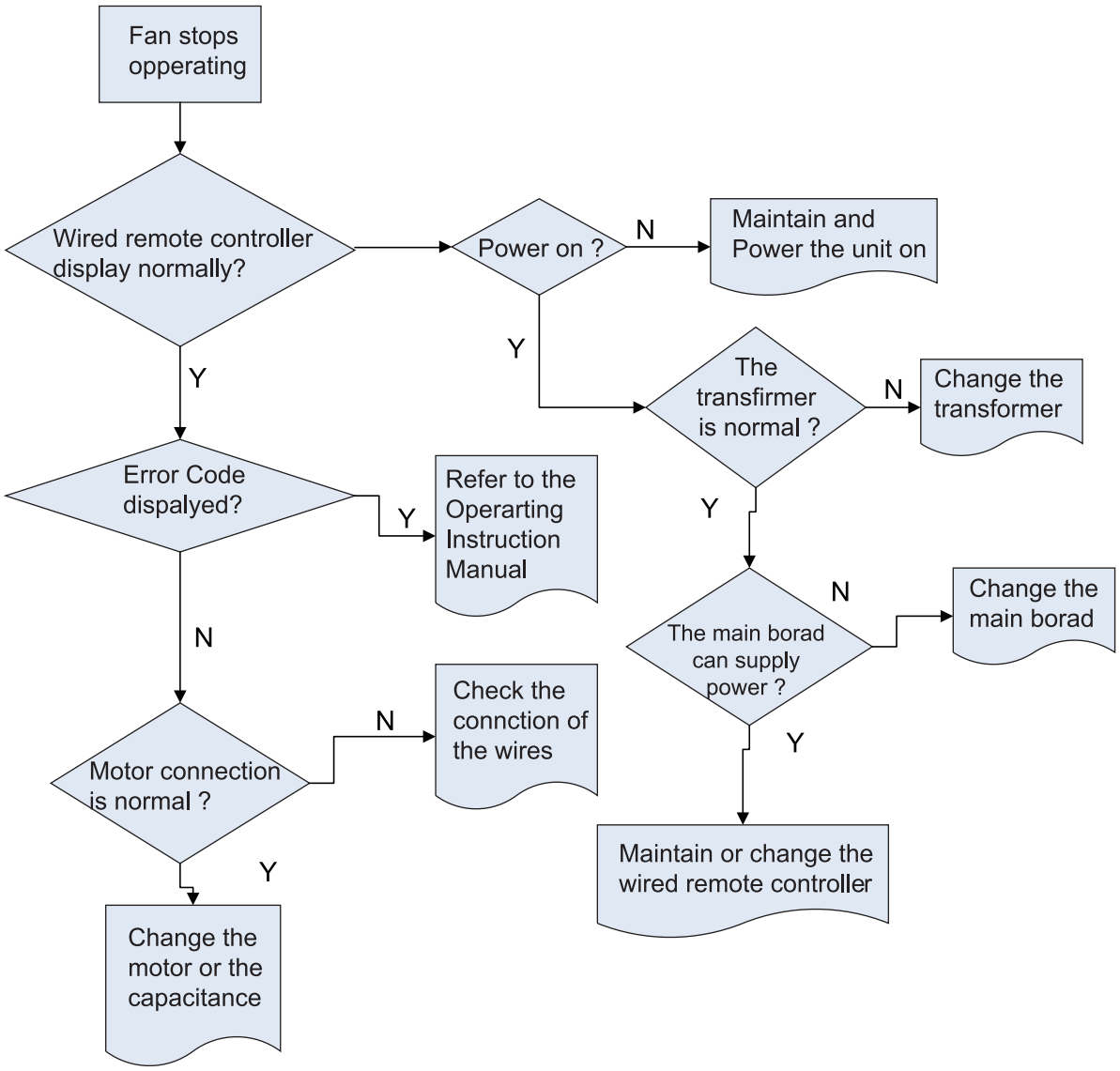
1 TROUBLE TABLE

Error	Error code	Logic
Communication error	E6	Communication between the main board and the wire remote controller is in trouble.
Indoor temp sensor error	F0	Something is wrong with temp sensor or the temperature is overstep the range of the temp sensor.
Humidity sensor error	L1	Humidity sensor is not connected or communication is in trouble.
Outdoor temp sensor error	F3	Something is wrong with temp sensor or the temperature is overstep the range of the temp sensor.
Air valve and relevant fitting error or wrong connection of centralized control wiring of air valve	L0	By-pass door and drive structure of the unit loose.

After debugging and trial run, the unit can be normally used by the user. If any fault occurs, remove it firstly by yourself according to the following table before you contact us.

No.	Phenomenon	Possible causes	Solutions
1	Airflow volume at air outlet/inlet is obviously decreased after a period of time.	Too much dust gathers on the air filter.	Re-fix the collecting place of air vent.
2	Noise occurs at air vent.	Installation of air vent is loose.	Re-fix the collecting place of air vent.
3	The system can not be started.	No power supply or power cord is incorrectly connected. Terminals of main board transformer are loose. Communication fault (E6). Air valve and relative fittings are faulted (L0). The centralized controller of air valve of main board is not connected (L0).	Repair the power supply and check power cord according. Repair the power supply and check power cord according to circuit diagram on the unit. Re-insert and connect transformer terminals. Check the connecting wire between displayer and main board. Check by-pass door and drive structure of the unit and fix it. Connect CONTROPL port of main board; with live line or pinboard of air dampers.
4	There is not air from indoor or outdoor vent after opening the switch.	1. No power supply or power cord is incorrectly connected. 2. Control wire is not or incorrectly connected.	1. Check power and power supply 2. Check the connecting line between operational box and main unit.

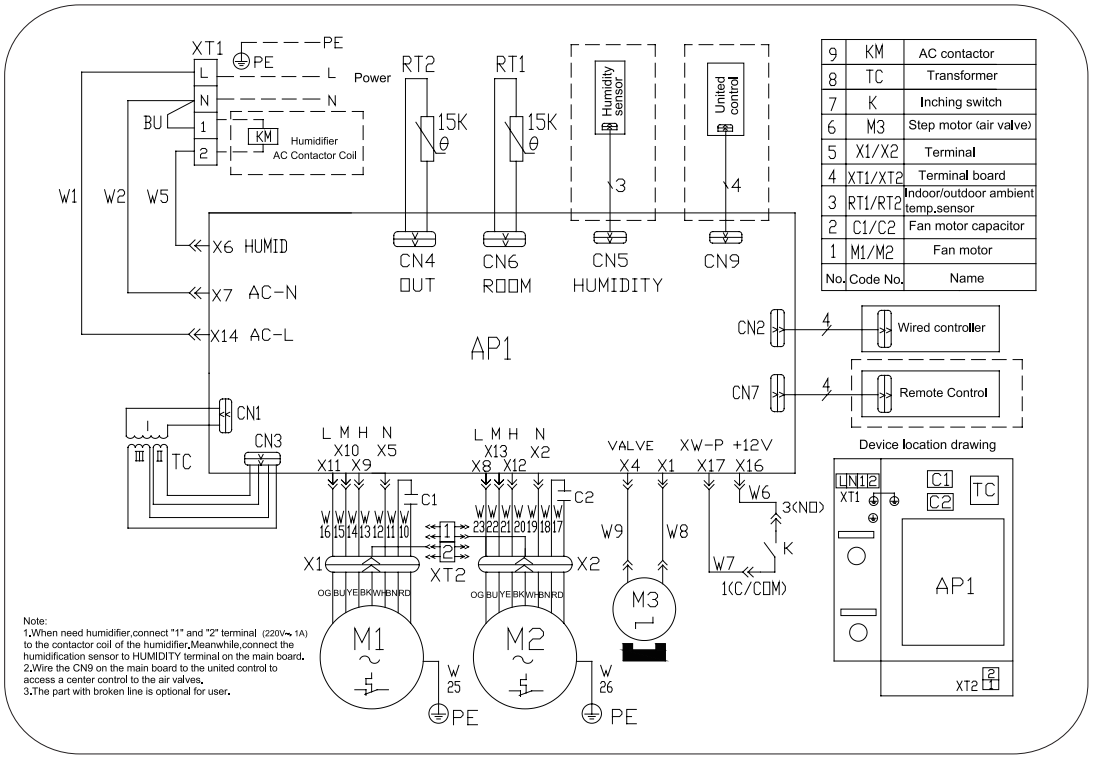
2 FLOW CHART OF TROUBLE SHOOTING



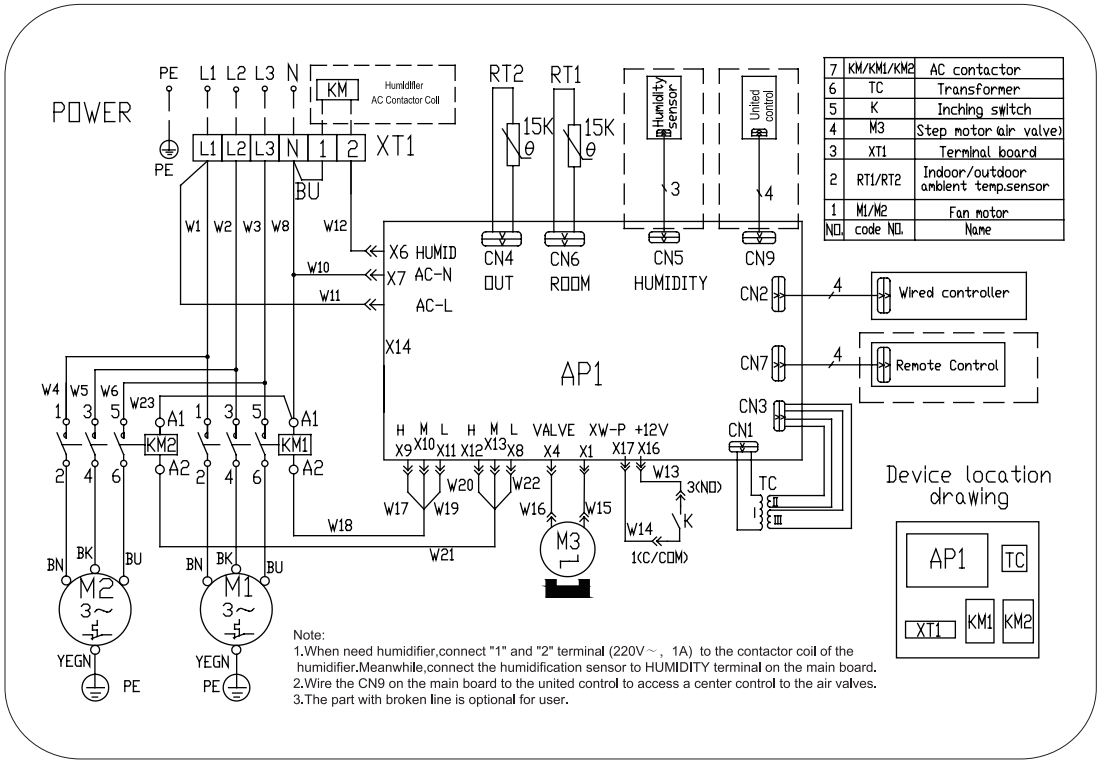
3 WIRING DIADRAM

External wiring figure of the unit(If this one is different from wiring figure of junction box, take the wiring box of junction box as standard) .

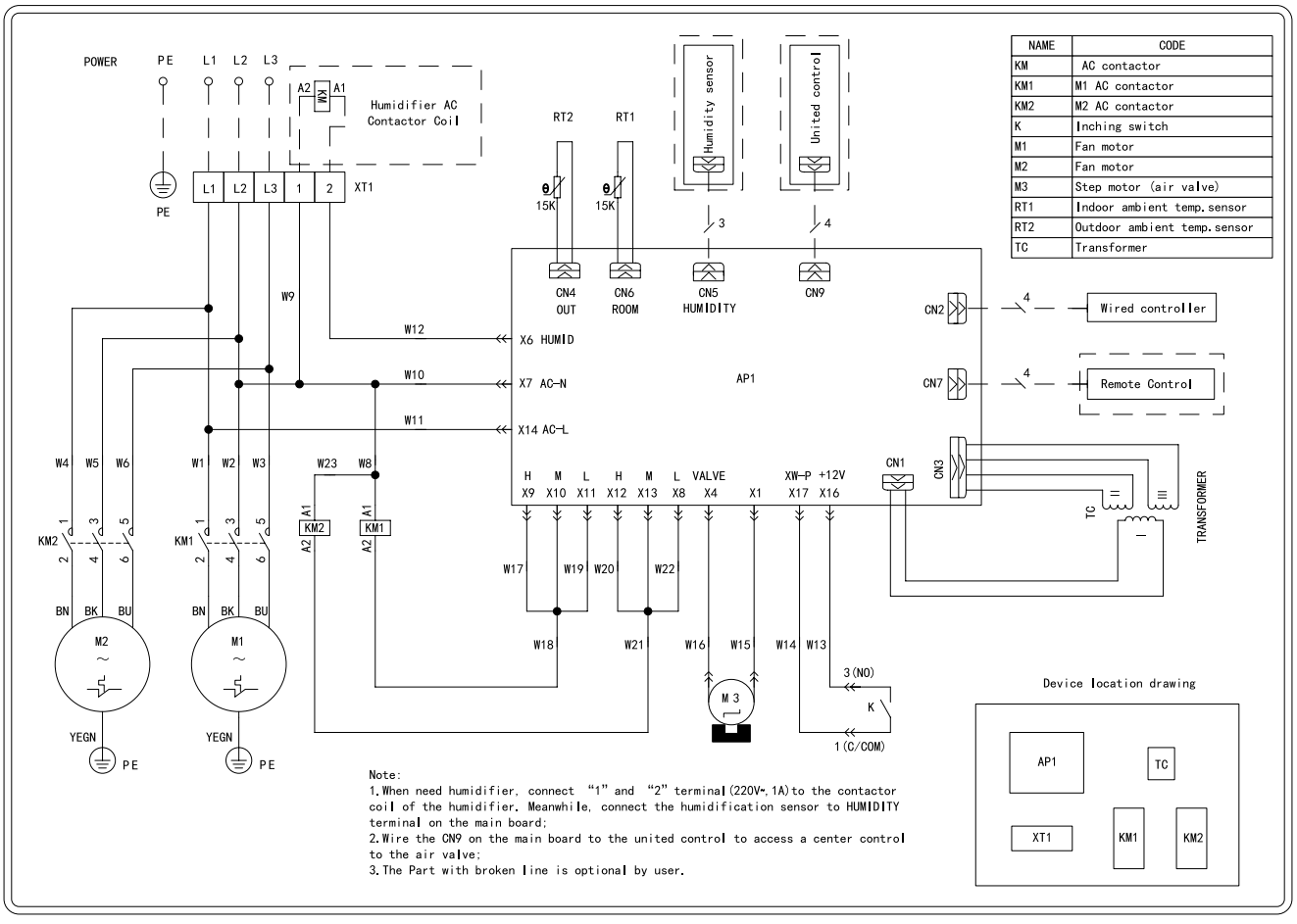
(1) Model: FHBQ-D8-K(D)/FHBQ-D10-K(D)



(2) Model: FHBQ-D15-M/FHBQ-D20-M



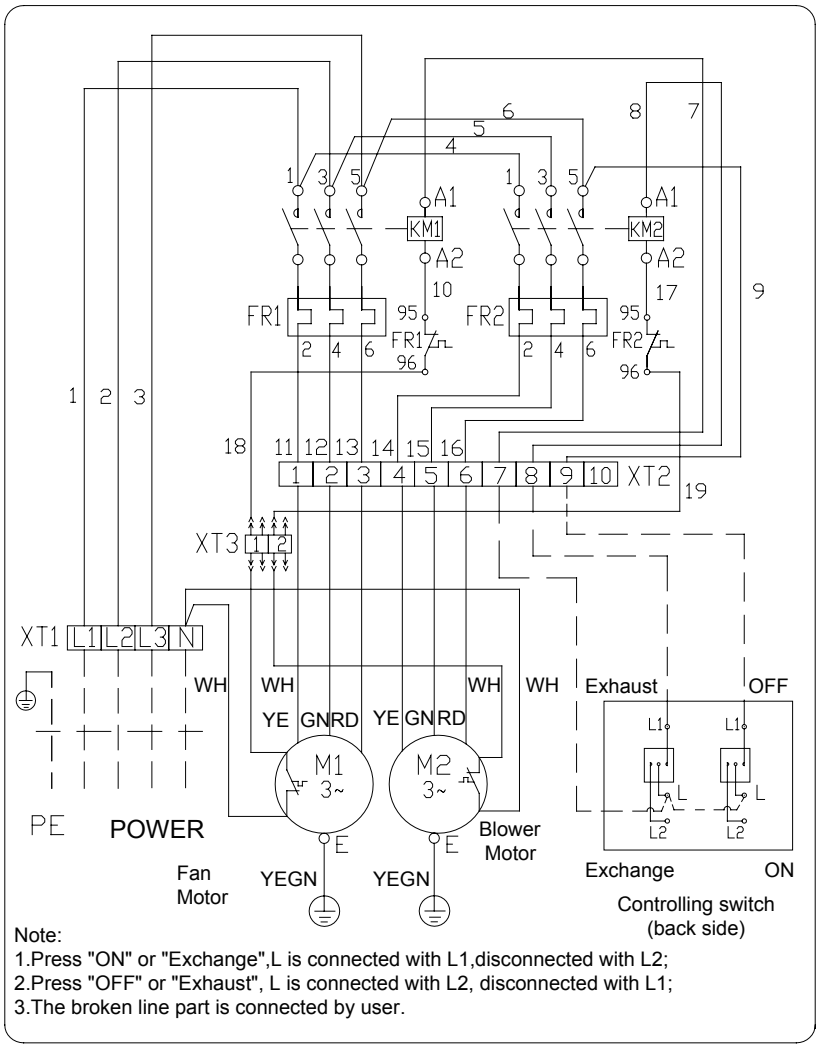
(3) Model:FHBQ-D15-D/FHBQ-D20-D.



NAME	CODE
KM	AC contactor
KM1	M1 AC contactor
KM2	M2 AC contactor
K	Inching switch
M1	Fan motor
M2	Fan motor
M3	Step motor (air valve)
RT1	Indoor ambient temp.sensor
RT2	Outdoor ambient temp.sensor
TC	Transformer

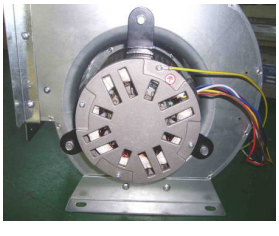
Note:
1. When need humidifier, connect "1" and "2" terminal(220V~,1A)to the contactor coil of the humidifier. Meanwhile, connect the humidification sensor to HUMIDITY terminal on the main board;
2. Wire the CN9 on the main board to the united control to access a center control to the air valve;
3. The Part with broken line is optional by user.

(4) Model: FHBQ-D30-M.

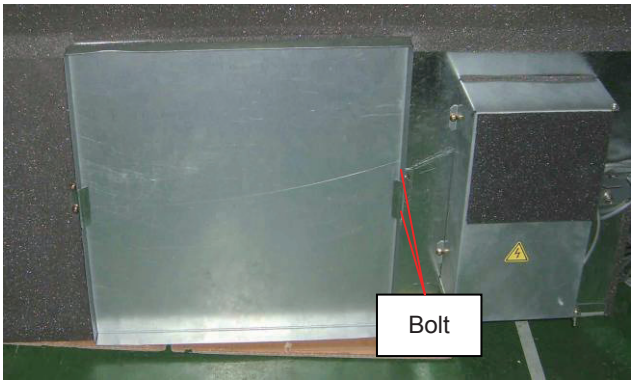


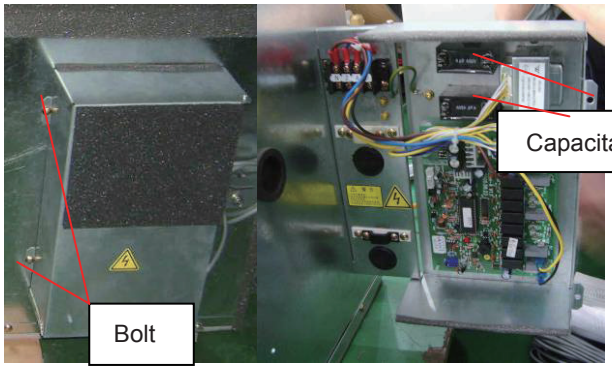
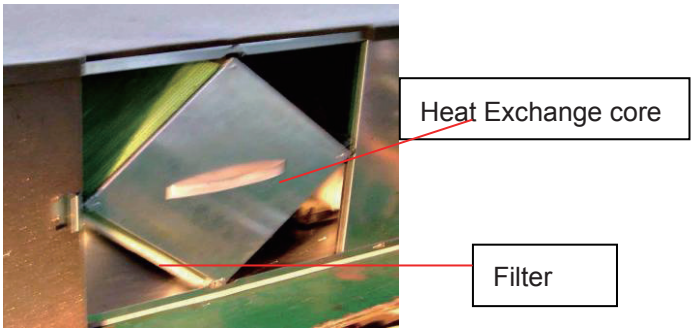
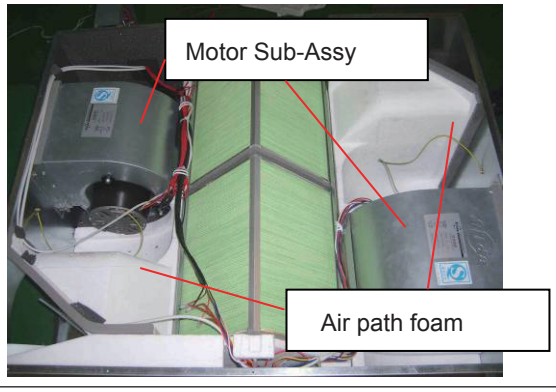
Note:
1.Press "ON" or "Exchange",L is connected with L1,disconnected with L2;
2.Press "OFF" or "Exhaust", L is connected with L2, disconnected with L1;
3.The broken line part is connected by user.

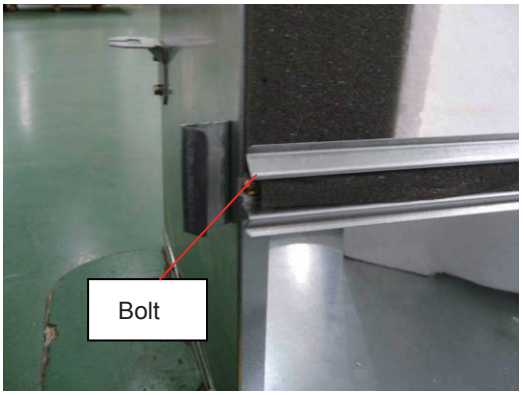
4 DISASSEMBLY AND ASSEMBLY OF MAIN PARTS

Picture	Name	Function
	Acentric Motor Sub-Assy.	Make the air flow.
	Heat Exchange core.	The important Sub-Assy that make the fresh air and room air exchange energy.

4.1 Main parts introduce

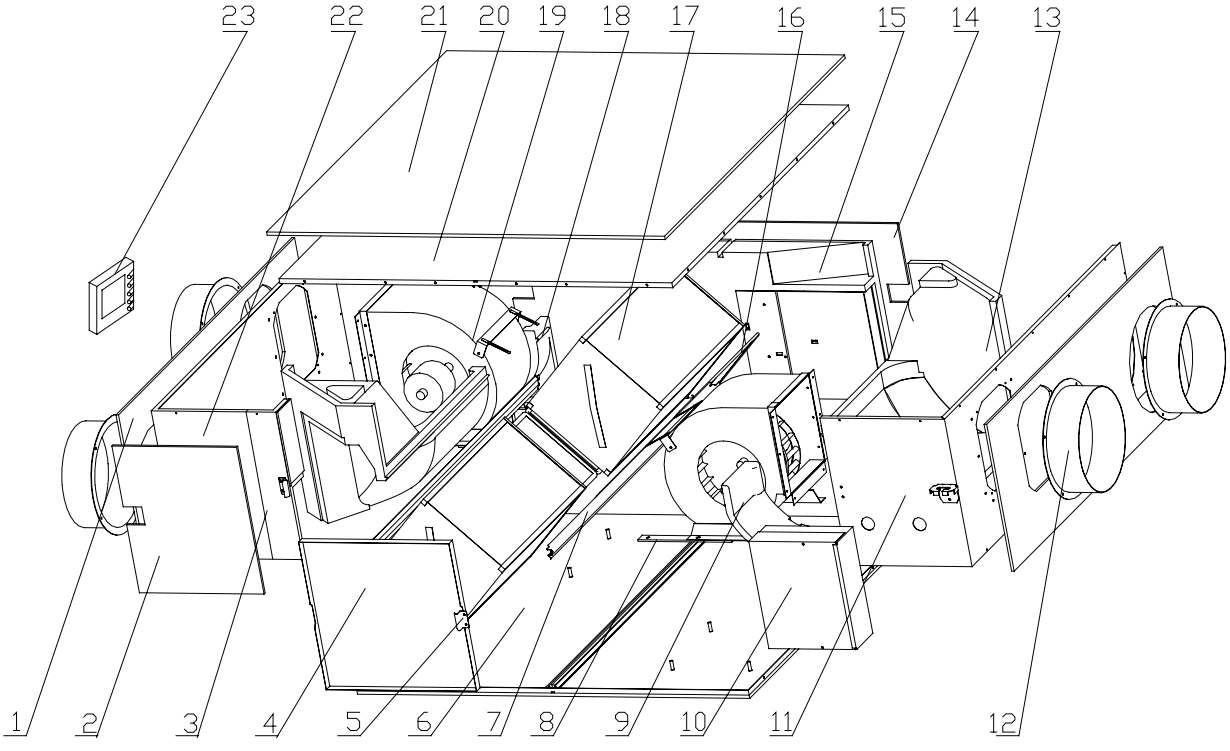
Service door's teardown	Image
Discharge the two bolts on the right of the Service door, and then take down the buckle.	

Electric box's teardown	Image
Remove the two bolts and then circumgyrate the Electric Box to open it.	
Change the heat exchange core and filter	**Image**
After removing the service door, we could be able to take out the core and the filter. The core should be washed by cleaner or other special dust catcher equipments except water.	
Motor Sub-Assy's teardown	**Image**
1.Opening the top cover, take out the core and the filter beforehand.	

Motor Sub-Assy's teardown	Image
2. Remove the bolt as the fig. show and take out the fixing board assy. 3. Take out the air path foam;disentwine the nut that used to fix the fan and pedestal; Remove the bolt that used to fix the fan and side panel.	

5 EXPLODED VIEWS AND PART LIST

(1) Exploded view for models: FHBQ-D8-K(D); FHBQ-D10-K(D); FHBQ-D15-M(D);FHBQ-D20-M(D)



1)FHBQ-D8-K(D) (EH01100030,EH01100100)

No.	Name	Quantity	Code
1	Sponge 1(Left Side Plate)	2	12201137
2	Sponge 2(Left Side Plate)	1	12201138
3	Assy of Left Side Plate	1	01311123
4	Assy of overhauling door	1	01391128
5	Door Holder	1	02208901
6	Base Plate Assy	1	02226001210
7	Retaining Plate Assy	2	01841108
8	Rubber Sheet	2	76718901
9	Foam Assy 3	1	12311101

No.	Name	Quantity	Code
10	Electric Box Assy	1	01396160
11	Sub-assy of Right Side Plate	1	01311125
12	Flange Sub-assy	4	26906056
13	Foam Assy 1	2	12311103
14	sponge(Side of Bottom Plate)	1	12201141
15	By-pass assy	1	04631124
16	Filter Sub-assy	2	1112800101
17	Total heat exchange core assy + sponge	2+2	4901890206+12201142
18	Foam Assy 2	1	12311102
19	Motor Sub-Assy	2	15401109
20	Cover Plate Assy	1	01261109
21	Sponge	1	1220113504
22	Sub-assy of Left Side Plate	1	01311123
23	Display board	1	30294000018

2)FHBQ-D10-K(D) (EH01100040,EH01100080)

No.	Name	Quantity	Code
1	Sponge 1(Left Side Plate)	2	12201137
2	Sponge 2(Left Side Plate)	1	12201138
3	Assy of Left Side Plate	1	01311123
4	Assy of overhauling door	1	01391128
5	Door Holder	1	02208901
6	Base Plate Assy	1	02226001210
7	Retaining Plate Assy	2	01841108
8	Rubber Sheet	2	76718901
9	Foam Assy 3	1	12311101
10	Electric Box Assy	1	01396160
11	Sub-assy of Right Side Plate	1	01311125
12	Flange Sub-assy	4	26906056
13	Foam Assy 1	2	12311103
14	sponge(Side of Bottom Plate)	1	12201141
15	By-pass assy	1	04631124
16	Filter Sub-assy	2	1112800101
17	Total heat exchange core assy + sponge	2+2	4901890206+12201142
18	Foam Assy 2	1	12311102
19	Motor Sub-Assy	2	15401109
20	Cover Plate Assy	1	01261109
21	Sponge	1	1220113504
22	Sub-assy of Left Side Plate	1	01311123
23	Display board	1	30294000018

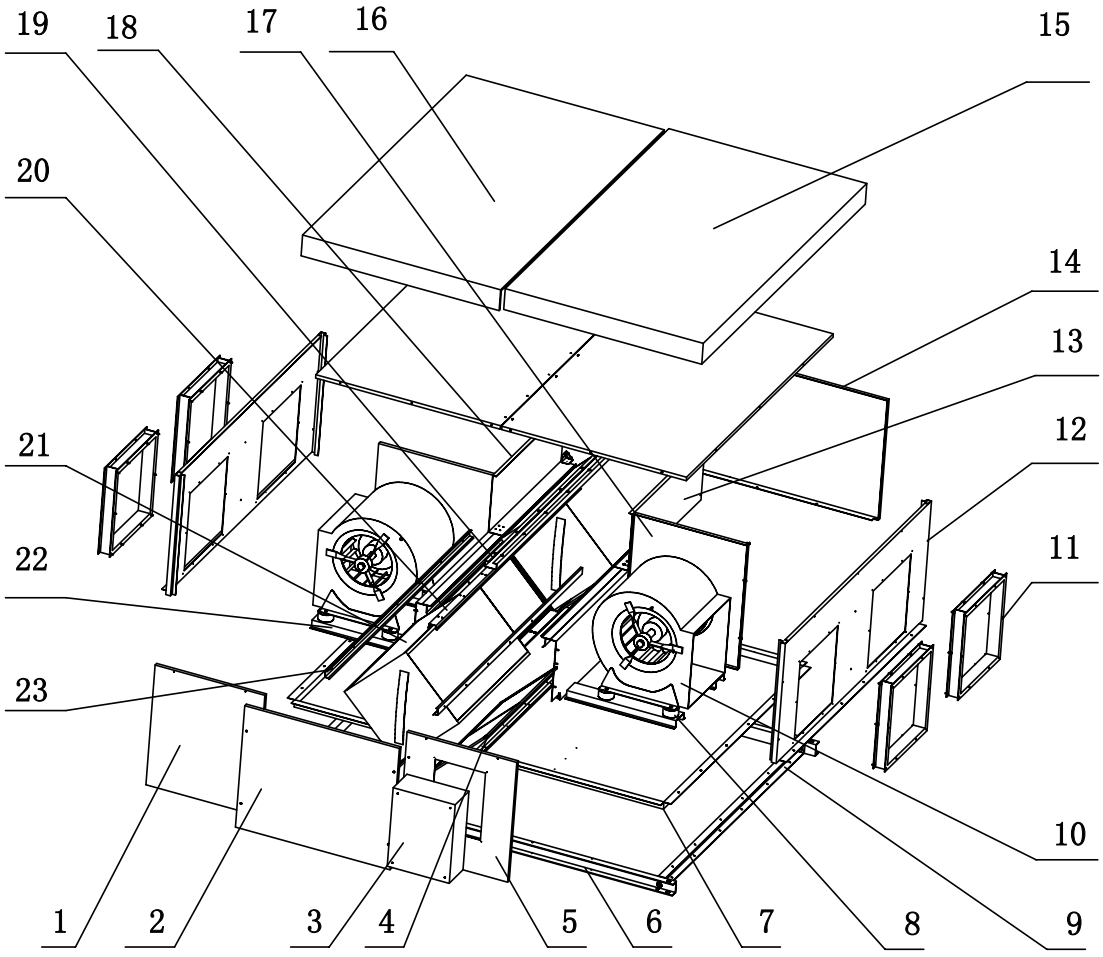
3)FHBQ-D15-M(D) (EH01100050,EH01100110)

No.	Name	Quantity	Code
1	Sponge 1(Left Side Plate)	2	12201145
2	Sponge 2(Left Side Plate)	1	12201146
3	Assy of Left Side Plate	1	01311129
4	Assy of overhauling door	1	01391136
5	Door Holder	1	02208901
6	Base Plate Assy	1	02225200035
7	Retaining Plate Assy	2	01841110
8	Rubber Sheet	2	76718008
9	Foam Assy 3	1	12501111
10	Electric Box Assy	1	01396158
11	Sub-assy of Right Side Plate	1	01311130
12	Flange Sub-assy	4	26906057
13	Foam Assy 1	2	12501109
14	sponge(Side of Bottom Plate)	1	12201148
15	By-pass assy	1	07331106
16	Filter Sub-assy	2	1112800102
17	Total heat exchange core assy + sponge	2+2	4901890207+12201149
18	Foam Assy 2	1	12501110
19	Motor Sub-Assy	2	15401110
20	Cover Plate Assy	1	01261116
21	Sponge	1	1220114304
22	/	1	01311129
23	Display board	1	30294000018

4)FHBQ-D20-M(D) (EH01100060，EH01100130)

No.	Name	Quantity	Code
1	Sponge 1(Left Side Plate)	2	12201145
2	Sponge 2(Left Side Plate)	1	12201146
3	Assy of Left Side Plate	1	01311129
4	Assy of overhauling door	1	01391136
5	Door Holder	1	02208901
6	Base Plate Assy	1	02225200035
7	Retaining Plate Assy	2	01841110
8	Rubber Sheet	2	76718008
9	Foam Assy 3	1	12501111
10	Electric Box Assy	1	01396158
11	Sub-assy of Right Side Plate	1	01311130
12	Flange Sub-assy	4	26906057
13	Foam Assy 1	2	12501109
14	sponge(Side of Bottom Plate)	1	12201148
15	By-pass assy	1	07331106
16	Filter Sub-assy	2	1112800102
17	Total heat exchange core assy + sponge	2+2	4901890207+12201149
18	Foam Assy 2	1	12501110
19	Motor Sub-Assy	2	15401110
20	Cover Plate Assy	1	01261116
21	sponge	1	1220114304
22	/	1	01311129
23	Display board	1	30294000018

(2) Exploded view for model: FHBQ-D30-M(D)



FHBQ-D30-M(D)(EH01100070) Parts List

No.	Name	Quantity	Code
1	Front side plate assy 1	1	01318912
2	Assy of overhauling door	1	01398904
3	Electric Box Assy	1	01396168
4	Filter Sub-ass	4	11128001
5	Front side plate assy 2	1	01316080
6	Hanger crossbeam	2	01871226
7	Bottom plate assy	1	02228904
8	Rubber gasket	8	76018401
9	Hanger longeron Sub-assy	2	01871224
10	Acentric motor	2	15706001
11	Air inlet/outlet assy	4	01491143
12	Side plate(air outlet)	2	01318918
13	Clapboard assy 1	1	01248901
14	Back side plate assy	1	01318909
15	Top cover plate 1	1	01268906
16	Top cover plate 2	1	01268907
17	Middle clapboard assy 1	1	01248909
18	Clapboard assy 2	1	01248905
19	Connection plate(top cover)	1	01341105
20	Guide groove(top cover)	1	02281115
21	Total heat exchange core assy + sponge	2+2	4901890210+12208933
22	Fan retaining rack Sub-assy	2	01848905
23	Guide groove(filter)	1	02281112

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

Add: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070
Tel: (+86-756) 8522218 Fax: (+86-756) 8669426
E-mail: global@cn.gree.com www.gree.com

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