



Service Manual

B Series Energy Recovery Ventilation System (ERV)



Contents

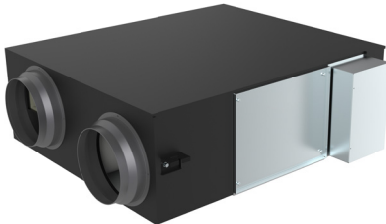

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Product

PRODUCT

1 Models

1.1 Lineup

Model	Air flow (m ³ /h)	Power supply	Appearance
FHBQG-D3.5B-K	350	220V~ 50Hz	
FHBQG-D5B-K	500		
FHBQG-D6.5B-K	650		
FHBQG-D8B-K	800		
FHBQG-D10B-K	1000		
FHBQG-D13B-K	1300		
FHBQG-D15B-K	1500		
FHBQG-D20B-K	2000		
FHBQG-D25B-M	2500	380V 3N~ 50Hz	
FHBQG-D30B-M	3000		
FHBQG-D40B-M	4000		
FHBQG-D50B-M	5000		
FHBQG-D60B-M	6000		

1.2 Nomenclature

FH	B	Q	G	-	D	10	B
1	2	3	4		5	6	7

No.	Description	Options
1	Unit code	FH: energy recovery unit
2	Type of heat exchangers	B: plate type
3	Heat characteristic	Q: total heat
4	Filtration	G: filter screen
5	Installation type	D: ceiling mounted type
6	Nominal air flow volume	3.5: 350m ³ /h; 5: 500 m ³ /h; ... 30: 3000 m ³ /h
7	The phase of power supply	K: single-phase M: three-phase

2 Major features

The energy recovery ventilation system (ERV) achieves air-to-air heat transfer. In winter, the outdoor temperature and humidity are low while the indoor ones are high. Usually, the humidifier of an air conditioner should treat fresh air before it is taken in. But if the ERV is equipped, it can ensure the exchange of temperature and humidity between fresh air and indoor stale air. When they flow across the heat exchange core of the ERV, they are reheated and humidified, which reduces energy consumption and workloads of air conditioners. This way of treating the air also works in summers. Gree ERV helps reduce health risks of air conditioning and harmful gases of decoration materials. The unit is widely used in residential buildings, meeting rooms, offices, etc.

(1) Stable supply of fresh air

It removes the indoor stagnant air and takes in fresh air with independent flow passages to prevent cross pollution.

(2) Effective heat exchange

The heat exchange materials are greatly capable of absorbing moisture and humidifying the air, taking a lead in the industry with a high energy transfer rate. The inside is a cross-flow structure to realise a complete energy transfer process. The heat exchange core is proof against microorganisms.

(3) Evident energy saving

The fresh air is preheated before it is taken in until it is at the room temperature, so it could moderate the impact on the indoor ambient working condition. Users do not feel uncomfortable because of large temperature difference, and the air conditioner's workloads can be reduced.

(4) Multiple options of air supply

The air flow range of 350 to 6000 cubic metres per hour is provided to meet the needs of different spaces, thus lessens energy consumption.

(5) Flexible control modes

Gree wired controller for the ERV offers heat exchange or air supply options. And it can be connected with remote monitoring devices. Note that it does not work on FHBQG-D25B-M, FHBQG-D30B-M, FHBQG-D40B-M, FHBQG-D50B-M and FHBQG-D60B-M as wired controllers are not available for these models.

(6) Reliability and maintainability

No moving components except fans constitute the ERV. And the filter screens and heat exchange core can be pulled out through the access door. So it will not cause much trouble to maintain the unit.

(7) Easy installation

The ERV is mounted above the ceiling without taking up the indoor space.

3 Technical data

Model		FHBQG-D_B-K								FHBQG-D_B-M					
		3.5	5	6.5	8	10	13	15	20	25	30	40	50	60	
Rated voltage (V)		220								380					
Rated frequency (Hz)		50													
Rated current (A)		0.38	0.61	0.8	1	1	1.3	1.5	2.8	3.3	6	8	12	14	
Air flow (m ³ /h)	High	350	500	650	800	1000	1300	1500	2000	2500	3000	4000	5000	6000	
	Medium	280	400	520	650	800	1050	1200	1600						
	Low	210	300	480	500	600	800	900	1200						
External residual pressure (Pa)	High	100	100	100	100	100	150	150	150	200	220	240	240	300	
	Medium	80	80	80	80	80	120	120	120						
	Low	60	60	60	60	60	100	100	100						
Temperature exchange efficiency (%)	High	75													
	Medium														
	Low														
Enthalpy exchange efficiency (%)	Heating	High	70								70				
		Medium	71												
		Low	72												
	Cooling	High	60								60				
		Medium	62												
		Low	65												
Recommended Power supply lines	mm ² ×Qty.	1.5×3								2.5×5					
Electrocution resistance	-	I													
Power input	W	160	270	350	480	575	700	830	1300	2600	2800	3400	5600	6300	
Sound level	dB(A)	37	38	41	42	43	46	47	54	59	60	60	62	64	
Dimensions (mm)	Height	300	300	380	380	380	485	485	530	600	684	780	825	1200	
	Width	920	920	1146	1146	1146	1375	1375	1375	1750	2000	2100	2300	2000	
	Depth	730	800	832	832	983	1210	1210	1328	1362	1490	1642	1792	1500	
Weight (kg)		39	45.5	61.5	65	71.5	102	110	131	210	240	290	350	430	

Notes:

- The design of the ERV is subject to GB/T 21087-2020.
- The models running at 220V provide three speed options, and the models at 380V one speed option.
- The temperature exchange efficiency and enthalpy exchange efficiency are tested under these testing conditions as below:
 - Cooling efficiency—indoor ambient temperature: 27°C DB, 19.5°C WB, outdoor ambient temperature: 35°C DB, 28°C WB
 - Heating efficiency—indoor ambient temperature: 21°C DB, 13°C WB
- The sound level is tested at dedicated sound testing laboratory the actual value will change under different conditions.
- Operation condition—ambient temperature: -10°C~48°C, relative humidity: less than 80%

4 Electric data

Model	Power supply	Air switch capacity (A)	Min. sectional area of power supply lines (mm ²)
FHBQG-D3.5B-K	220V~ 50Hz	6	1
FHBQG-D5B-K			
FHBQG-D6.5B-K			
FHBQG-D8B-K			
FHBQG-D10B-K			
FHBQG-D13B-K			
FHBQG-D15B-K			
FHBQG-D20B-K			
FHBQG-D25B-M	380V 3N~ 50Hz	16	2.5
FHBQG-D30B-M			
FHBQG-D40B-M			
FHBQG-D50B-M			
FHBQG-D60B-M			

Notes:

- (a) The power supply lines for this product must be copper-cored cable, and working temperature cannot exceed the specified value.
- (b) When the power supply lines exceeds 15 metres, please enlarge its sectional area to avoid incidents caused by overloading.

Unit Installation

INSTALLATION

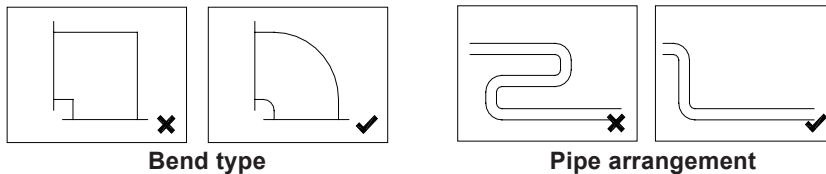
1 Engineering regulation compliance

The user should entrust HVAC engineers for equipment selection and design and invite the qualified construction organization for on-site construction. Both design and construction should comply with your state or local regulations and codes. When the unit fails to operate normally owing to improper installation, service charge will be required.

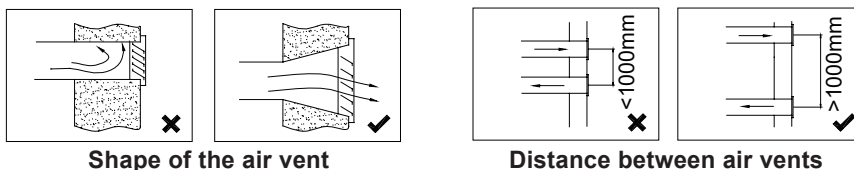
2 Engineering design

The unit inside has two air passages through ducts that help air-to-air exchange. One passage allows the fresh air outside to enter the room, and the other allows the polluted air (return air) inside the room to leave. There is resistance to air streams passing through the ducts. Larger resistance reduces the airflow. Duct lengths should be fit for the rated static pressure to prevent abnormal sound or damage to motors. Besides, duct sizes and bends also affect the airflow. Therefore, follow the instructions below to avoid troubles.

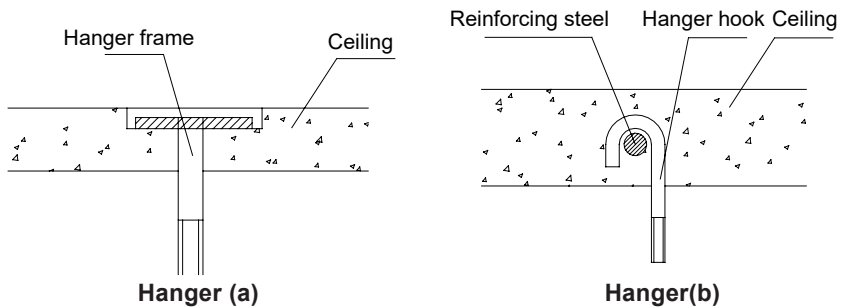
- (1) In general, each passage does not exceed 15 meters or up to 30 meters. The internal sectional area depends on the inside air speed (8m/s for the main duct, 5m/s for the branch). If rectangle ducts are used, the proportion of two neighboring sides will not exceed 4. Air ducts should be nonflammable.
- (2) The bends should be kept as few as possible and do not exceed 3 for each passage. The curving part of the bends should be round-arc, and the straight angle should be avoided, as shown in the figures below. Note that installation should be based on the field-supplied equipment.



- (3) The duct wall should be smooth, dustless and pucker-free.
- (4) Resistance to the air vents of the room should be kept as less as possible. It is suggested to install indoor rectangular aluminum alloy diffusers or dual-layer grilles (no less than 200×200mm in size). If a water-proof grille is used for outdoor air vents, its size should be 3 to 4 times the sectional area of a connected duct, and the blade shape of the grille should facilitate the air flow. See figure 4 to select diffusers and grilles.
- (5) In order to prevent discharged air returning back, at least 1000mm should be kept between two air vents at the outer wall, as shown in the figures below. Note that installation should be based on the field-supplied equipment.

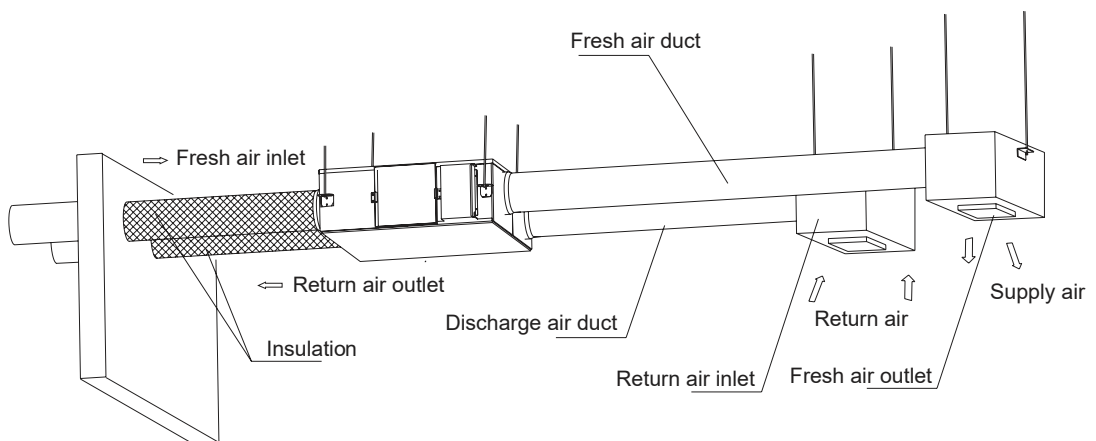


- (6) When it is expected to minimize indoor noise, it is suggested to install a muffler inside the air passages. Please contact a specialist to select a muffler. Generally, the muffler can reduce the sound level at vents by 4dB to 6dB.
- (7) When an electric heater is installed, it should be interlocked with the ventilator. That is, the electric heater will work only when the ventilator has been started. Ducts within a distance of 800mm with the electric heater and ducts which go through a room where there is a fire source, they should be made of non-inflammable materials.
- (8) The filtering element should be replaced periodically. Therefore, a certain distance should be kept at one side for maintenance.
- (9) A steel hanger frame should be pre-embedded before installation. Its type and specification depends on the weight of the ERV to ensure stability. For the retrofitting project, drill holes at a ceiling for the hanger frame, as shown in the figure (a). When hole drilling is unavailable, locate the reinforcing steel inside a concrete ceiling and take it as the hanger frame, as shown in figure (b). Note that installation should be based on the field-supplied equipment.



- (10) When the ceiling is damaged during installation, it should be repaired before completion of this project.

3 Installation diagram

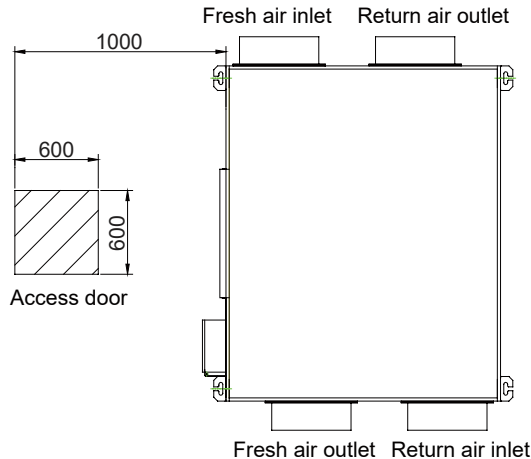


Note: the installation arrangement is based on the actual structures and unit design.

NOTE

Outdoor ducts connected with the fresh air inlet and polluted air (return air) outlet should be insulated, so do indoor ducts when temperature and humidity is quite high inside the ceiling. Besides, the indoor ducts should keep a certain gradient (1/50~1/30) to prevent water entering inside.

Keep adequate service clearances for convenient maintenance of the filter and heat exchanger.

**Service clearances**

Note: Service clearances are based on the actual structures and unit design.

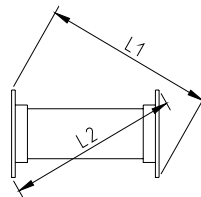
4 Air ducts and flanges

- (1) All sheet and sectional materials should be with certificates of qualification.
- (2) Thickness of the steel should comply with requirements on the drawing.
- (3) There should be no cracks, scars and watermarks on the galvanized steel but crystal pattern.
- (4) Size of the duct should comply with design requirements.
- (5) Joint of the duct should be airtight, even and have no faults.
- (6) For the duct, angles should be straight, round arcs should be even and unevenness should be within 5mm.
- (7) Connection between the duct and the flange should be fastened and flanging width should be no less than 6mm. Holes spacing of flanges should meet design requirements and construction regulations.
- (8) The surface of carbon steel flanges should be applied with red anti-rust paint and coating should be even and closely-packed.
- (9) See the table below for allowances for ducts and flanges.

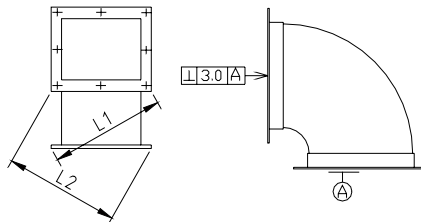
Allowances for ducts and flanges

No.	Item	Allowance (mm)	Inspection method	
1	OD of the round duct	$\phi \leq 300\text{mm}$	0 -1	Measurement by the ruler
		$\phi > 300\text{mm}$	0 -2	
2	Long side of the rectangular duct	$\leq 300\text{mm}$	0 -1	Measurement by the ruler
		$> 300\text{mm}$	0 -2	
3	Diameter of the round flange	+2 0	Measurement by the ruler	
4	Longer side of the rectangular duct	+2 0	Measurement by the ruler	
5	Differential of diagonals	3	Measurement by the ruler	
6	Evenness	2	Measurement by the feeler	
7	Smoothness of welding joints	1		

(10) The absolute value of differentials of diagonals of the rectangular duct should be $|L1-L2| \leq 3$.



(11) For flanges at two ends of the bend of the rectangular duct, the squareness tolerance should be 3.0 (90°), as shown in figure 10.

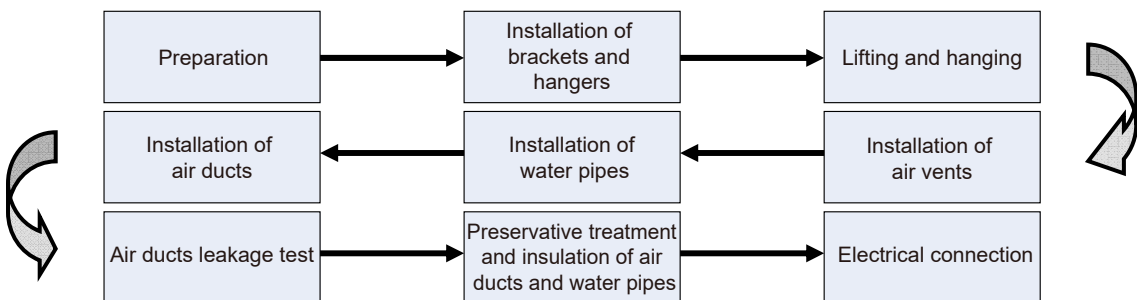


Note: Installation should be based on the field-supplied equipment.

5 On-site construction requirements

- (1) Never lay wires, cables and pipes with toxic, inflammable or explosive gas or liquid in the duct.
- (2) The dismantlable ports and adjustable parts of duct and fittings cannot be installed in the wall or ceiling.
- (3) Foreign matters 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 stains 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 hangers are applicable for ducts with diameters or lengths of sides less than 400mm.
 - Arm bracket or inclined bracket is applicable for vertical 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 intact and smooth. Either threaded connection or welding is suitable for joints 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 latter 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) Holes on the bracket and hanger should be drilled mechanically and never by gas cutting.
 - 5) For the rectangular duct, clamps for the rectangular should contact the duct tightly, angle should be straight, and space for the screw at the joint should be reserved. For the round duct, clamps should be arranged evenly and its inner diameter should be the same with the outer diameter of the duct so as to contact the duct tightly.
 - (5) The bracket and hanger cannot be set at air vent, valve or service door. The hanger cannot be directly fixed at flange. The distance between horizontal duct bracket and hanger cannot exceed 4 meters. 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 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 ducts and connections should be secure. The frame and decorative surface should be solid, external surface should be level and in-deformable and adjustment should be flexible.

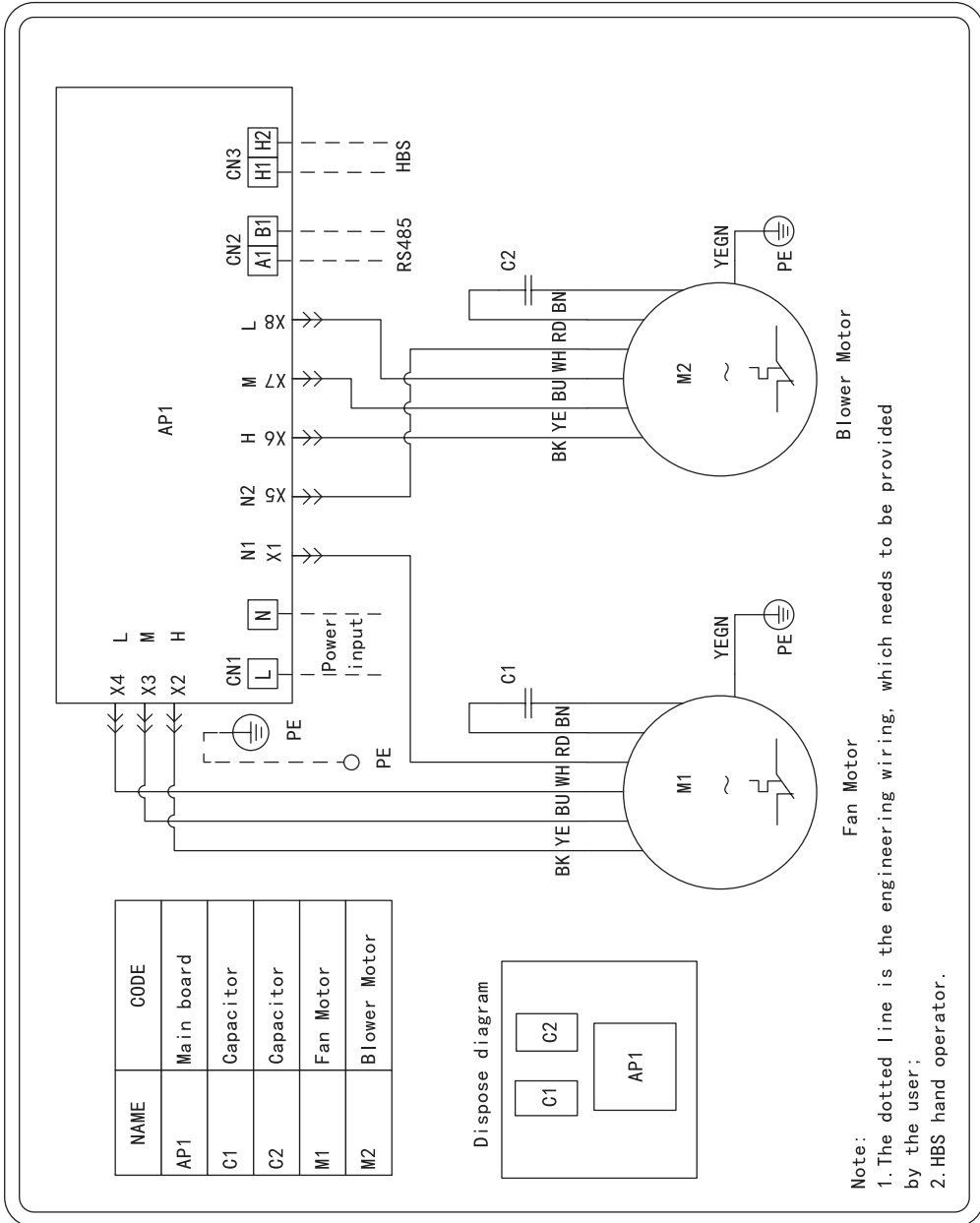


6 Electrical connection

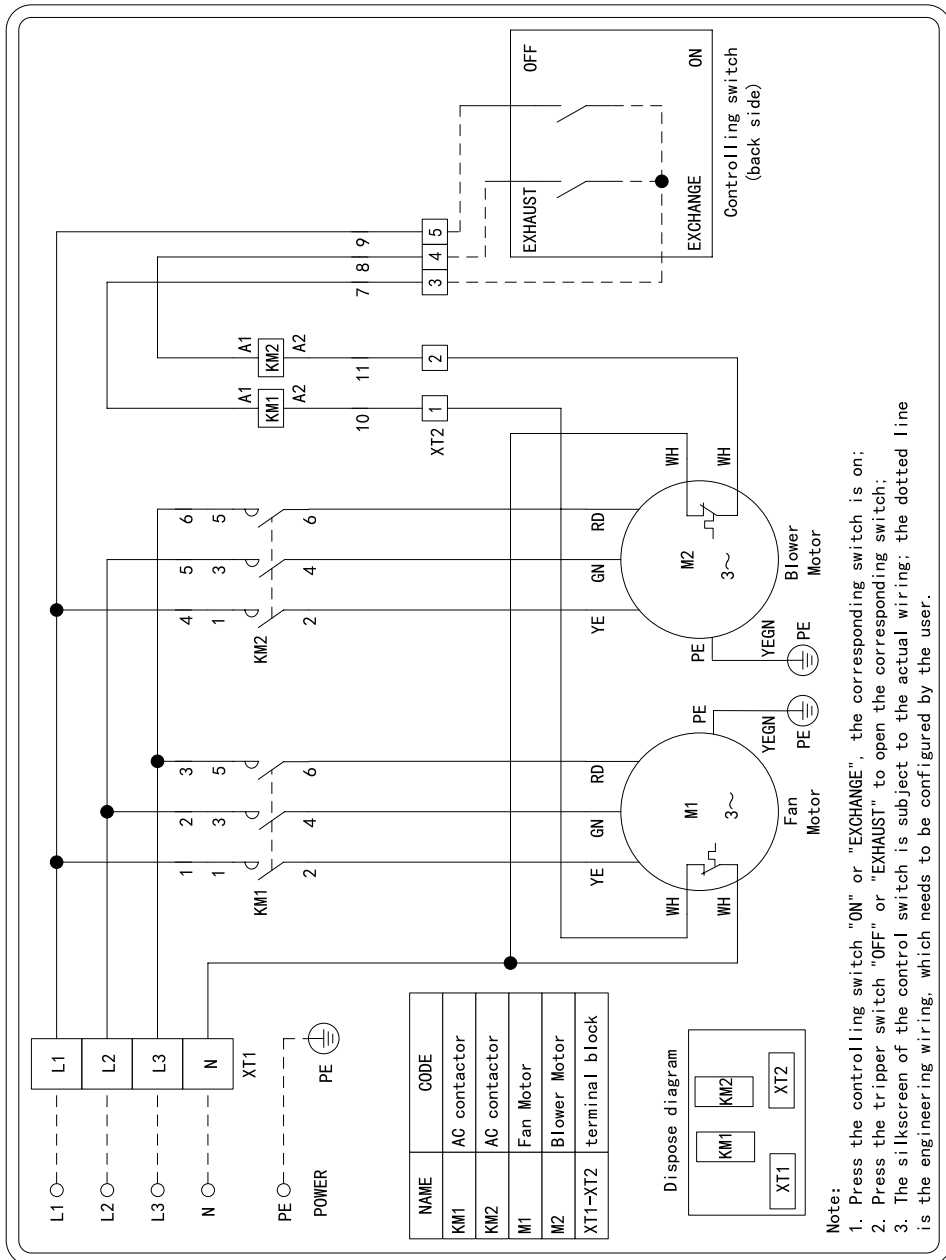
6.1 Wiring diagram

The electric wiring diagram attached to the electric box always prevails.

(1) Applicable models: FHBQG-D3.5B-K, FHBQG-D5B-K, FHBQG-D6.5B-K, FHBQG-D8B-K, FHBQG-D10B-K, FHBQG-D13B-K, FHBQG-D15B-K, FHBQG-D20B-K



(2) Applicable models: FHBQG-D25B-M, FHBQG-D30B-M, FHBQG-D40B-M, FHBQG-D50B-M, FHBQG-D60B-M



Note: Press "ON" or "EXCHANGE" to switch on "L" and "L1" and cut off "L" and "L2". Press "OFF" or "EXCHANGE" to switch on "L" and "L2" and cut off "L" and "L1".

6.2 Wiring requirements

- (1) All of the electric installation must be performed by qualified technicians according to local laws and regulations and instructions.
- (2) The power supply must be under rated voltage and used especially for this product.
- (3) The power supply should be reliable to prevent terminals from being stressed. Never pull the power cord forcibly.

- (4) Size of the power supply lines must be large enough. The broken power line should be replaced with the dedicated line.
- (5) Earth wires should be reliably connected with dedicated earthing devices.
- (6) Air switch and leakage switch which can cut off the general power supply should be installed.
- (7) The air switch should integrate the functions of magnetic release and hot release to protect it for short circuit or overload.
- (8) The field wiring should be subject to circuit diagram attached on the unit.

Applied models	Power supply	Capacity of air switch (A)	Min. sectional area of power supply line (mm ²)
FHBQG-D3.5B-K	220V ~ 50Hz	6	1.0
FHBQG-D5B-K	220V ~ 50Hz	6	1.0
FHBQG-D6.5B-K	220V ~ 50Hz	6	1.0
FHBQG-D8B-K	220V ~ 50Hz	6	1.0
FHBQG-D10B-K	220V ~ 50Hz	6	1.0
FHBQG-D13B-K	220V ~ 50Hz	6	1.0
FHBQG-D15B-K	220V ~ 50Hz	6	1.0
FHBQG-D20B-K	220V ~ 50Hz	6	1.0
FHBQG-D25B-M	380V ~ 50Hz	16	2.5
FHBQG-D30B-M	380V ~ 50Hz	16	2.5
FHBQG-D40B-M	380V ~ 50Hz	16	2.5
FHBQG-D50B-M	380V ~ 50Hz	16	2.5
FHBQG-D60B-M	380V ~ 50Hz	16	2.5

△NOTE

- The power supply lines for this product must be copper cored cable, and working temperature cannot exceed the specified value.
- When the power supply lines exceeds 15 meters, please enlarge its sectional area to avoid incidents caused by overloading.

6.3 Earthing

- (1) The yellow and green earthing line can never be cut off and fixed with tapping screws so as to avoid electrocution.
- (2) The earthing resistance should comply with your state or local regulations.
- (3) Power supply must be reliably earthed. The earth wire cannot connect to tap water pipe, gas pipe, drain pipes and other unsecure positions.

△WARNING

Cut off the power supply before installation and maintenance to avoid electrocution. Electric wiring must comply with your state or local electrical codes.

△NOTE

GREE is not responsible for adverse results caused by modification of the electric control system by users themselves without consent of GREE.

Troubleshooting and Maintenance

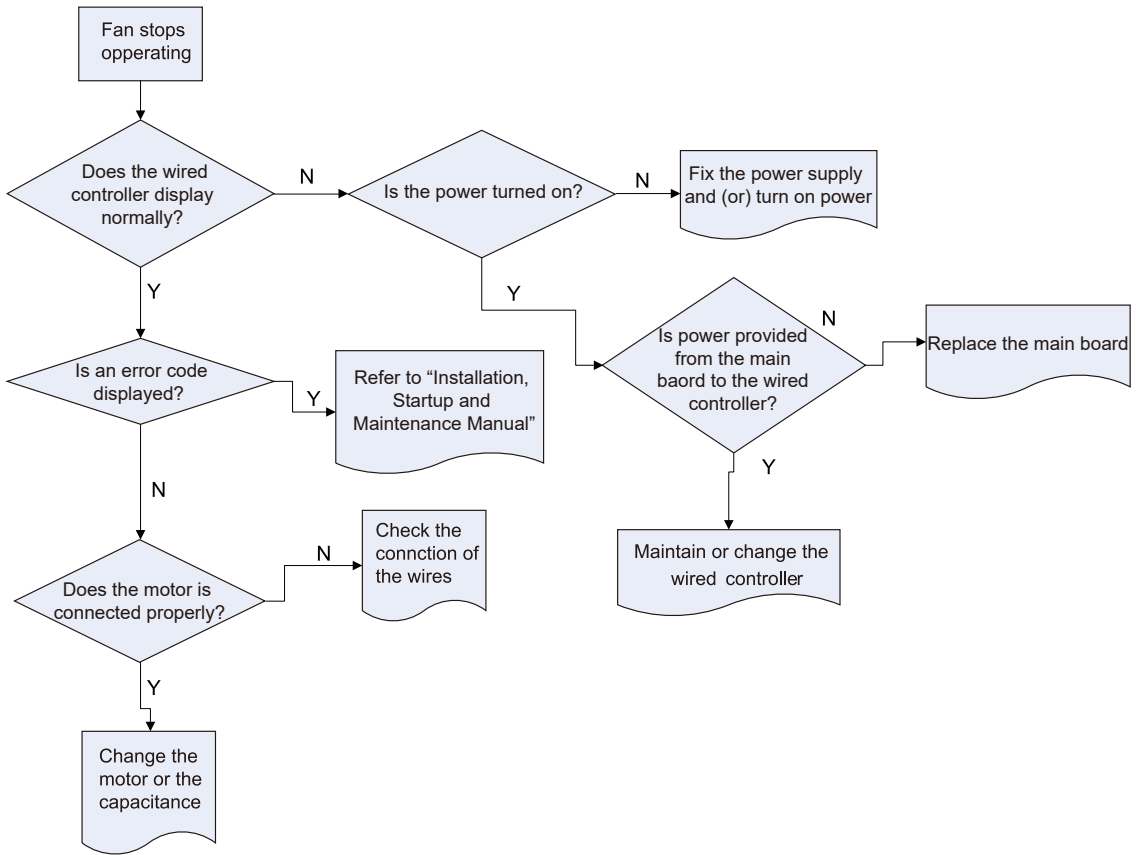
TROUBLESHOOTING AND MAINTENANCE

1 Diagnostics

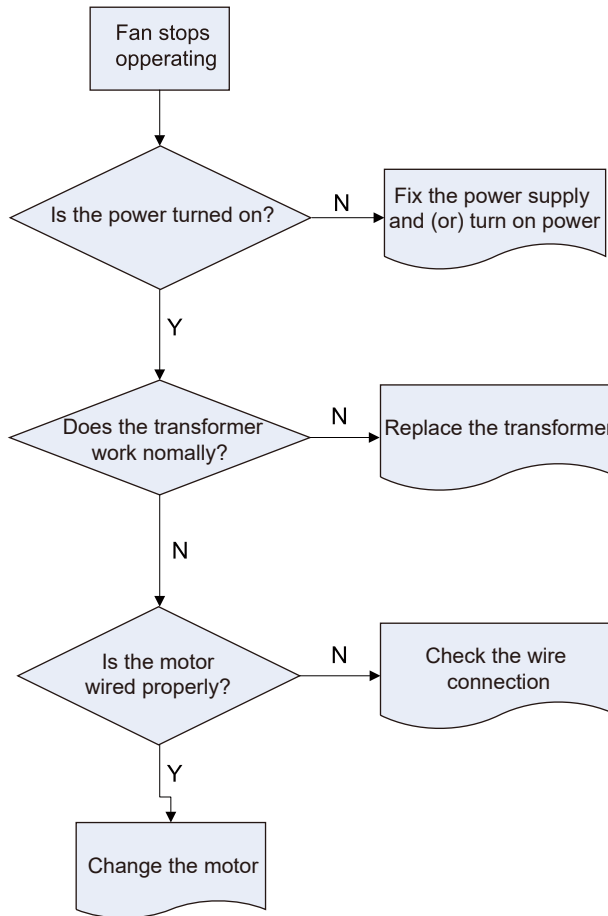
After commissioning and trial run, the unit can be normally used by the user. If any fault occurs, remove it firstly by yourself according to the following table before you contact us.

No.	Phenomenon	Possible causes	Recommended action
1	Airflow volume at air outlet/inlet is obviously decreased after a period of time.	Too much dust gathers on the air filter	Replace or clean air filters.
2	Noise occurs at air vents.	Loose air vents	Secure the connectors of air vents.
3	The system can not be started.	<ul style="list-style-type: none"> • No power supply or improper connection of power supply lines • Loose terminals of the main board transformer s • Communication error (E6). • Faults of air dampers and relevant fittings (L0). • Disconnected centralised controller of the main board of the air valve (L0). 	<ul style="list-style-type: none"> • Fix the power source and check power cord in accordance with the circuit diagrams on the unit. • Re-insert and connect transformer terminals. • Check the connecting wires between the wired controller and the main board. • Check and secure by-pass door and driving structures of the unit. • Connect CONTROL port of the main board with the live line or pinboard of air dampers.

(1) Diagnostic guide for models: FHBQG-D3.5B-K, FHBQG-D5B-K, FHBQG-D6.5B-K, FHBQG-D8B-K, FHBQG-D10B-K, FHBQG-D15B-K, FHBQG-D20B-K

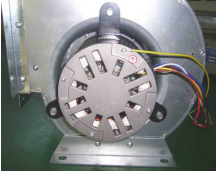



(2) Diagnostic guide for models: FHBQG-D25B-M, FHBQG-D30B-M, FHBQG-D40B-M, FHBQG-D50B-M, FHBQG-D60B-M



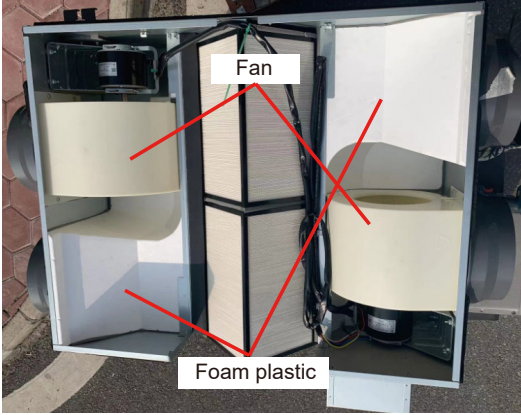

2 Disassembly

2.1 Key components

Appearance	Name	Function
	Centrifugal fan assembly	Produce air flow.
	Heat exchange core	Achieve heat transfer between the fresh air and return air.

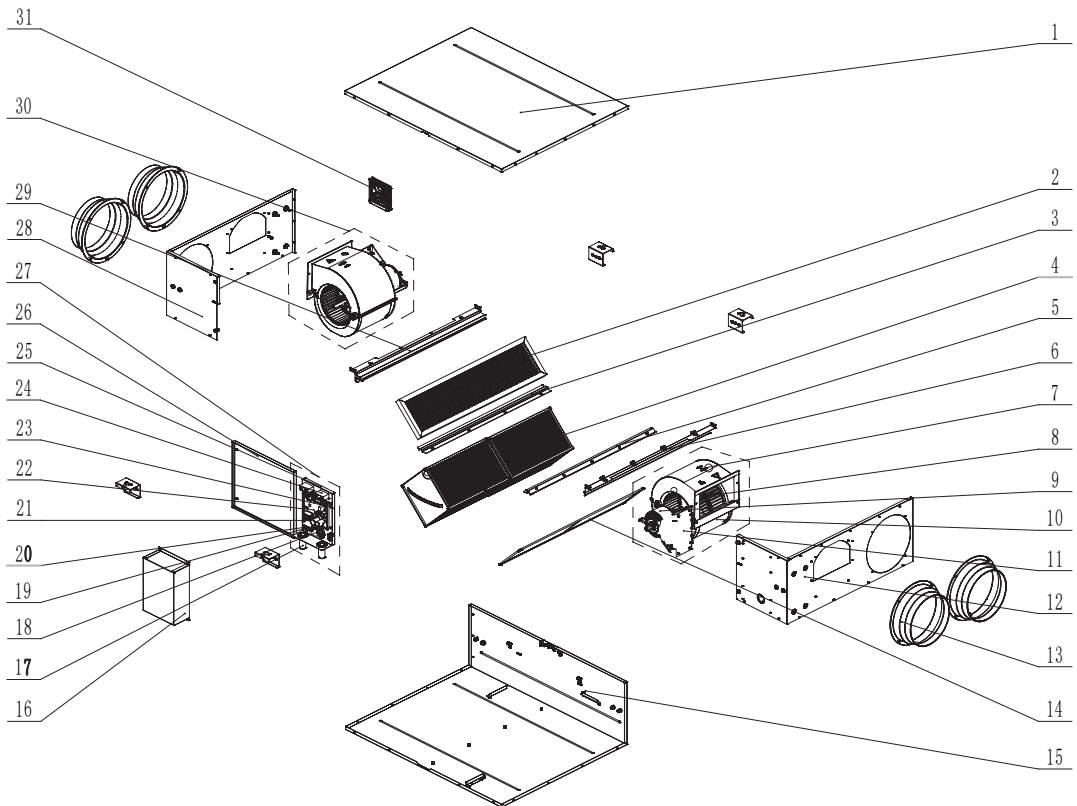
2.2 Disassembly guide

Access door	Illustration
<p>Take off 4 screws from the access door.</p>	
Electric box	Illustration
<ul style="list-style-type: none"> • Take off 4 screws from the electric box and unscrew the capacitor. Remove the wires. • Note that capacitors are not mounted in models including FHBQG-D25B-M, FHBQG-D30B-M, FHBQG-D40B-M, FHBQG-D50B-M and FHBQG-D60B-M. 	
Heat exchange core and air filter	Illustration
<ul style="list-style-type: none"> • When the access door is removed, the exchange core and air filter can be taken out to get cleaned or replaced. • Air filters for models including FHBQG-D25B-M, FHBQG-D30B-M, FHBQG-D40B-M, FHBQG-D50B-M and FHBQG-D60B-M are pulled out from the units' bottom service accesses. • The exchange core should be cleaned by vacuum cleaners or dedicated devices instead of water. • After that, clean or replacement components should be fit in place. 	

Fan assembly	Illustration
<p>Find out the screws below the sponge and take them off to open the cover panel. The heat exchange core and air filters are dispatched from the service access.</p>	
<p>Unscrew motor brackets, volute housings. For some models, side panels, clamps and blade housing.</p>	

3 Explosive views and parts lists

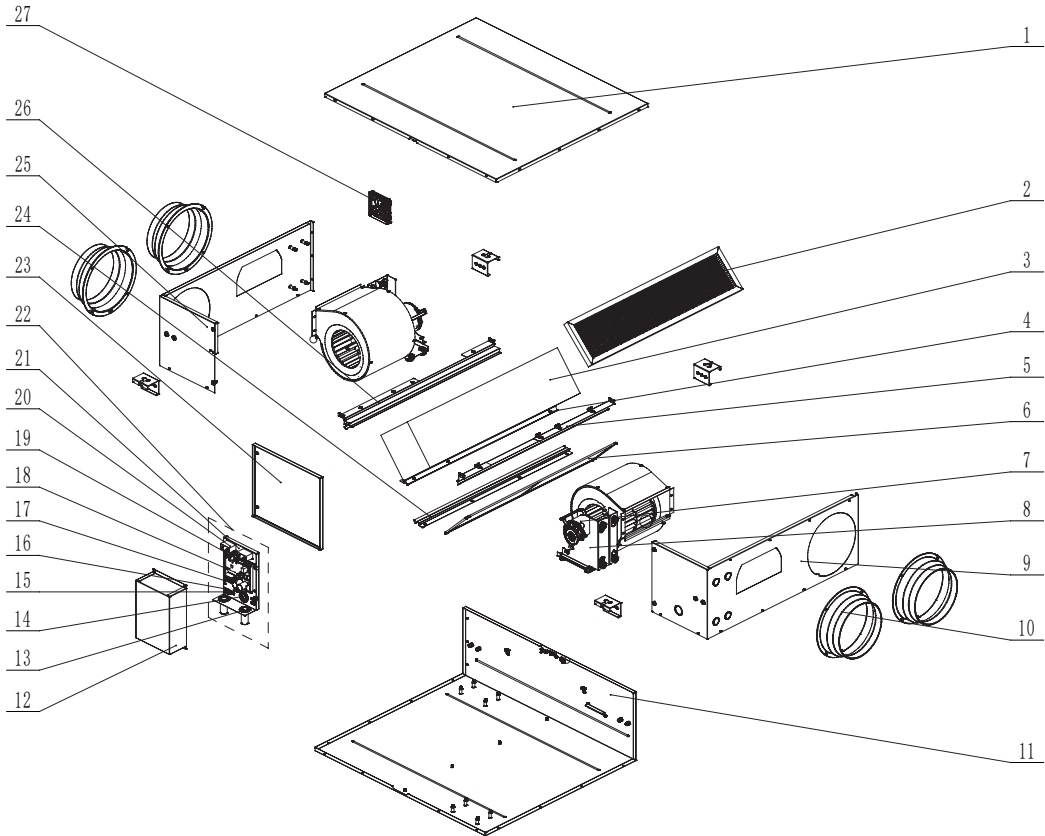
(1) Applicable model: FHBQG-D3.5B-K



Test Operation, Troubleshooting and Maintenance

No.	Name	Quantity
1	Cover Plate Sub-Assy	1
2	Middle Efficient Filter	1
3	Slide Slot	1
4	Total Heat Exchange Core Assy	2
5	Slide Slot Assy	1
6	Slide Slot Assy	1
7	Volute Casing	2
8	Centrifugal Air	2
9	Motor	2
10	Volute Casing	2
11	Motor Support	2
12	End Wall Assy	1
13	Air Inlet	4
14	Filter Assy	1
15	Base Deck Assy	1
16	Electric Box Cover	1
17	Rubber Ring	2
18	Wire Gasket Ring	1
19	Wire Clamp	1
20	Insulated Gasket	1
21	Pressing Plate	1
22	Main Board	1
23	Fixing Plate	1
24	Capacitance	2
25	Mounting Plate Assy	1
26	Access Door	1
27	Electric Box Part	1
28	End Wall Assy	1
29	Slide Slot Assy	1
30	Centrifugal Fan Assy	2
31	Display Panel	1

(2) Applicable model: FHBQG-D5B-K

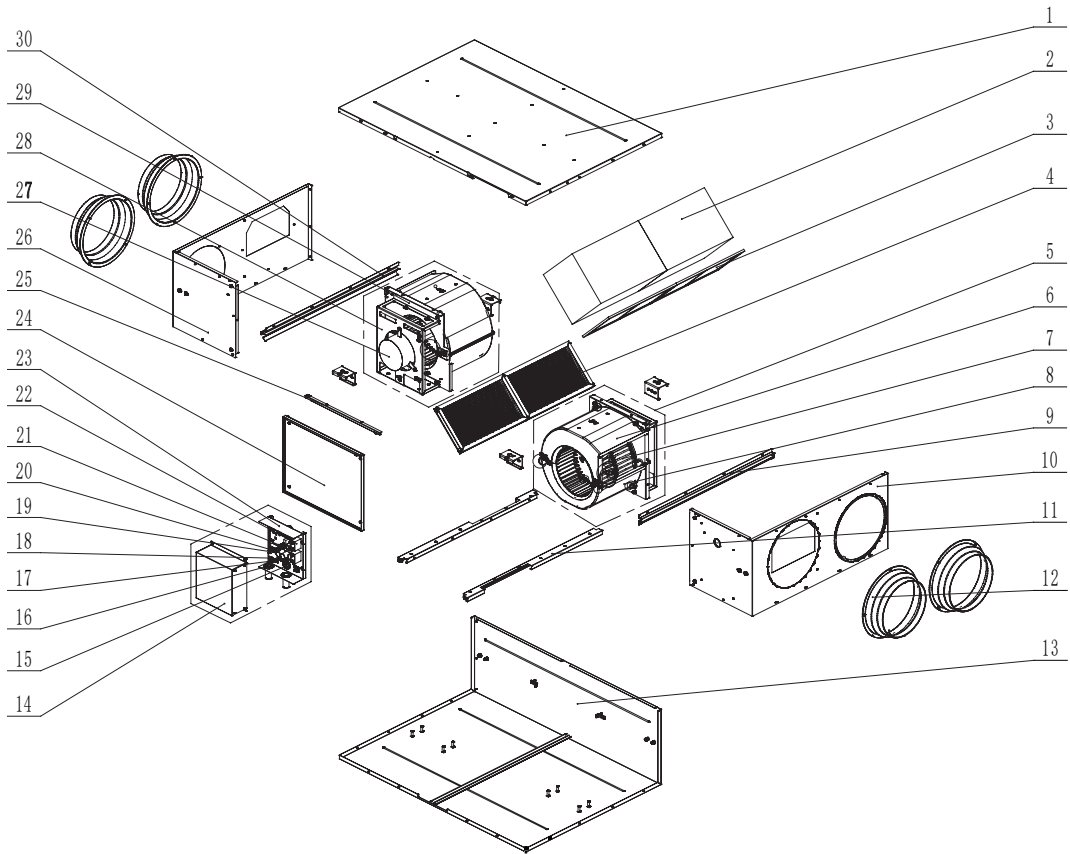


No.	Name	Quantity
1	Cover Plate Sub-Assy	1
2	Middle Efficient Filter	1
3	Total Heat Exchange Core Assy	1
4	Slide Slot Assy	1
5	Slide Slot Assy	1
6	Filter Assy	1
7	Motor	2
8	Motor Support Assy	2
9	End Wall Assy	1
10	Air Inlet	4
11	Base Deck Assy	1
12	Electric Box Cover	1
13	Rubber Ring	2
14	Wire Gasket Ring	1
15	Wire Clamp	1
16	Insulated Gasket	1
17	Pressing Plate	1
18	Main Board	1

Unit Control

No.	Name	Quantity
19	Fixing Plate	1
20	Capacitance	2
21	Mounting Plate Assy	1
22	Electric Box Part	1
23	Access Door	1
24	Slide Slot	1
25	End Wall Assy	1
26	Slide Slot Assy	1
27	Display Panel	1

(3) Applicable models: FHBQG-D6.5B-K, FHBQG-D8B-K, FHBQG-D10B-K



1) FHBQG-D6.5B-K parts list

No.	Name	Quantity
1	Cover Plate Sub-Assy	1
2	Total Heat Exchange Core Assy	2
3	Filter Assy	2
4	Middle Efficient Filter	2
5	Centrifugal Fan Part	2
6	Propeller Housing Cover	2
7	Centrifugal Wind Leaf	2
8	Propeller Housing	2

Unit Control

No.	Name	Quantity
9	Slide Slot	1
10	Right Side Plate Assy	1
11	Pressing Plate	2
12	Air Inlet	4
13	Base Deck Assy	1
14	Electric Box Cover	1
15	Cable cross loop	2
16	Rubber Ring	2
17	Wire Clamp	1
18	Insulated Gasket	1
19	Pressing Plate	1
20	PCB Fixed plat	1
21	Main Board	1
22	Capacitance	2
23	Mounting Plate Assy Of Electric Elements	1
24	Access Door	1
25	Slide Slot	1
26	Forward Side Plate Assy	1
27	Motor	2
28	Motor Bracket Assembly	2
29	Fixed plate sub-assy	2
30	Slide Slot	1

2) FHBQG-D8B-K parts list

No.	Name	Quantity
1	Cover Plate Sub-Assy	1
2	Total Heat Exchange Core Assy	2
3	Filter Assy	2
4	Middle Efficient Filter	2
5	Centrifugal Fan Part	2
6	Propeller Housing Cover	2
7	Centrifugal Wind Leaf	2
8	Propeller Housing	2
9	Slide Slot	1
10	Right Side Plate Assy	1
11	Pressing Plate	2
12	Air Inlet	4
13	Base Deck Assy	1
14	Electric Box Cover	1
15	Cable cross loop	2
16	Rubber Ring	2
17	Wire Clamp	1
18	Insulated Gasket	1
19	Pressing Plate	1

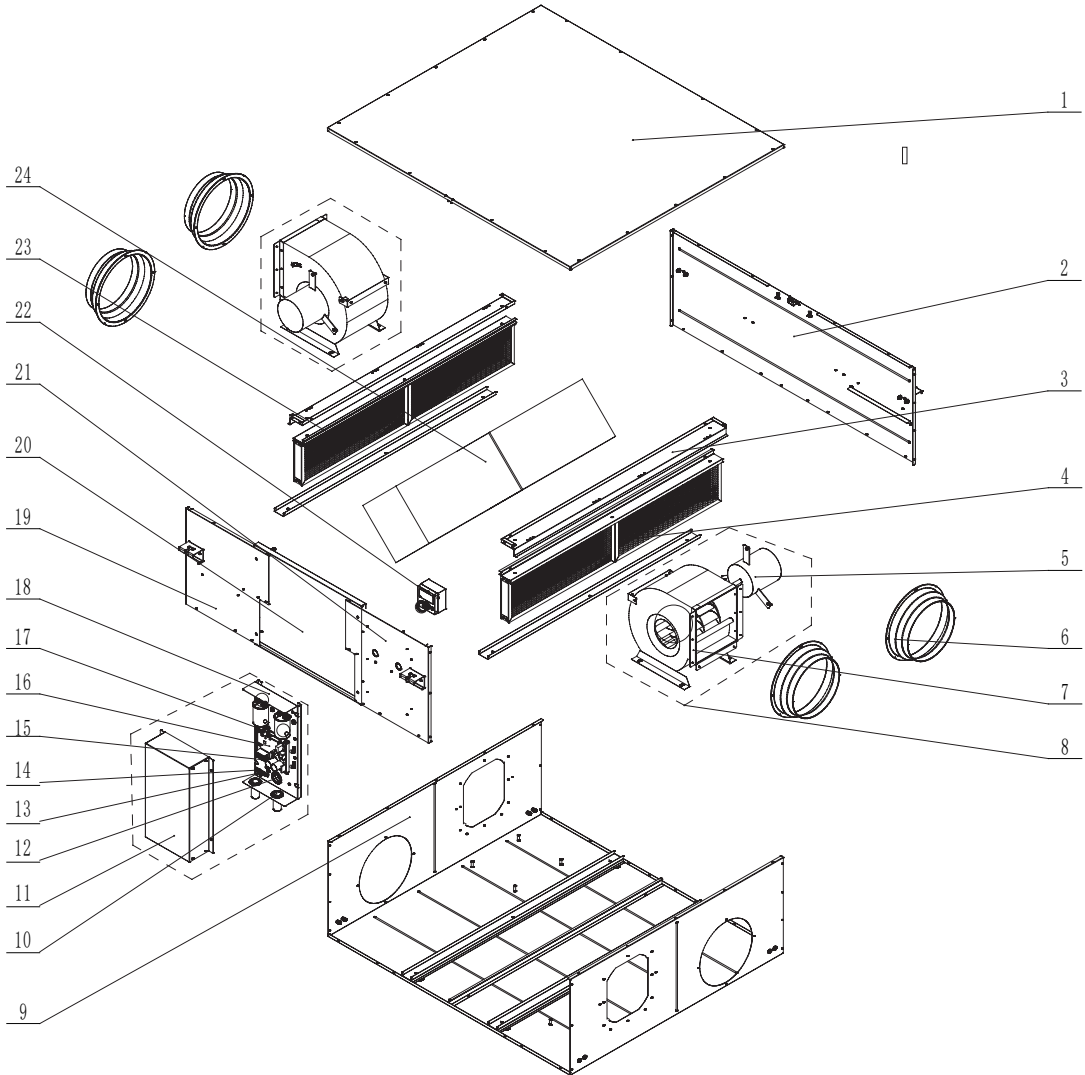
Unit Control

No.	Name	Quantity
20	PCB Fixed plat	1
21	Main Board	1
22	Capacitance	2
23	Mounting Plate Assy Of Electric Elements	1
24	Access Door	1
25	Slide Slot	1
26	Forward Side Plate Assy	1
27	Motor	1
28	Motor Bracket Assembly	2
29	Fixed plate sub-assy	2
30	Slide Slot	1

3) FHBQG-D10B-K parts list

No.	Name	Quantity
1	Cover Plate Sub-Assy	1
2	Total Heat Exchange Core Assy	2
3	Filter Assy	2
4	Middle Efficient Filter	2
5	Centrifugal Fan Part	2
6	Propeller Housing Cover	2
7	Centrifugal Wind Leaf	2
8	Propeller Housing	2
9	Slide Slot	1
10	Right Side Plate Assy	1
11	Pressing Plate	2
12	Air Inlet	4
13	Base Deck Assy	1
14	Electric Box Cover	1
15	Cable cross loop	2
16	Rubber Ring	2
17	Wire Clamp	1
18	Insulated Gasket	1
19	Pressing Plate	1
20	PCB Fixed plat	1
21	Main Board	1
22	Capacitance	2
23	Mounting Plate Assy Of Electric Elements	1
24	Access Door	1
25	Slide Slot	1
26	Left Side Plate Assy	1
27	Motor	1
28	Motor Bracket Assembly	2
29	Fixed plate sub-assy	2
30	Slide Slot	1

(4) Applicable models: FHBQG-D13B-K, FHBQG-D15B-K



1) FHBQG-D13B-K parts list

No.	Name	Quantity
1	Cover Plate Sub-Assy	1
2	Backward Side Plate Assy	1
3	Slide Slot Assy	2
4	Filter Assy	2
5	Motor	2
6	Air Inlet	4
7	Flange	2
8	Centrifugal Fan	2
9	Base Deck Assy	1
10	Electric Box Cover	1
11	Rubber Ring	2
12	Cable cross loop	1
13	Wire Clamp	1

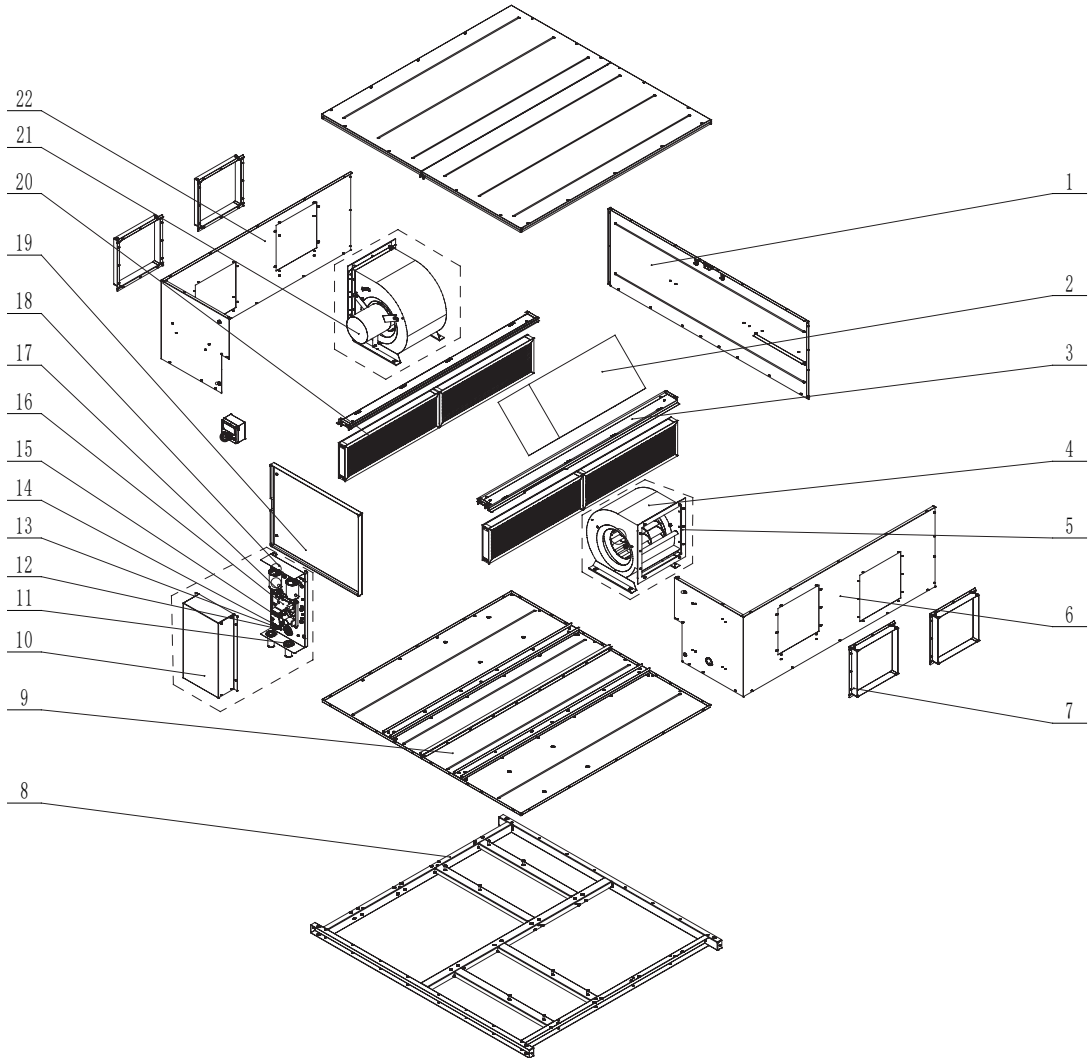
Test Operation, Troubleshooting and Maintenance

No.	Name	Quantity
14	Insulated Gasket	1
15	Pressing Plate	1
16	Main Board	1
17	Fixed Plate	1
18	Mounting Plate Assy Of Electric Elements	1
19	Forward Side Plate Assy	1
20	Access Door	1
21	Right Side Plate Assy	1
22	Display Panel	1
23	Middle Efficient Filter	2
24	Total Heat Exchange Core Assy	1

2) FHBQG-D15B-K parts list

No.	Name	Quantity
1	Cover Plate Sub-Assy	1
2	Backward Side Plate Assy	1
3	Slide Slot Assy	2
4	Filter Assy	2
5	Motor	2
6	Air Inlet	4
7	Flange	2
8	Centrifugal Fan	2
9	Base Deck Assy	1
10	Electric Box Cover	1
11	Rubber Ring	2
12	Cable cross loop	1
13	Wire Clamp	1
14	Insulated Gasket	1
15	Pressing Plate	1
16	Main Board	1
17	Fixed Plate	1
18	Mounting Plate Assy Of Electric Elements	1
19	Forward Side Plate Assy	1
20	Access Door	1
21	Right Side Plate Assy	1
22	Display Panel	1
23	Middle Efficient Filter	2
24	Total Heat Exchange Core Assy	1

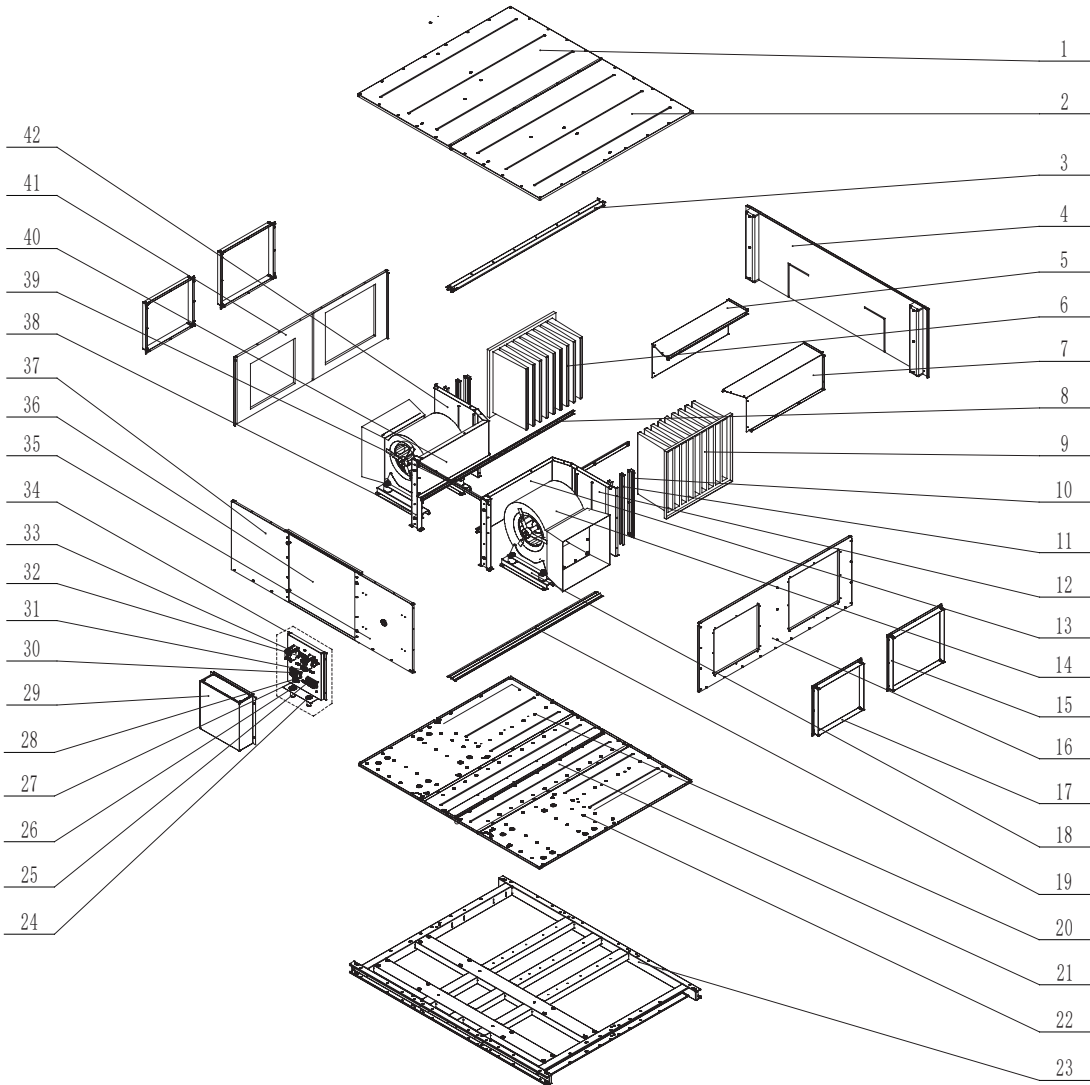
(5) Applicable model: FHBQG-D20B-K



No.	Name	Quantity
1	Backward Side Plate Assy	1
2	Total Heat Exchange Core Assy	1
3	Slide Slot Assy	3
4	Centrifugal Fan	2
5	Flange Assy	2
6	Right Side Plate Assy	1
7	Flange Assy	4
8	Hanger Assy	1
9	Base Deck Assy	2
10	Electric Box Cover	1
11		2
12	Cable cross loop	1
13	Wire Clamp	1
14	Insulated Gasket	1

No.	Name	Quantity
15	Pressing Plate	1
16	Main Board	1
17	Fixed Plate	1
18	Mounting Plate Assy Of Electric Elements	1
19	Access Door	1
20	Middle Efficient Filter	2
21	Motor	2
22	Forward Side Plate Assy	1

(6) Applicable model: FHBQG-D25B-M, FHBQG-D30B-M



1) FHBQG-D25B-M parts list

No.	Name	Quantity
1	Panel Assy	1
2	Panel Assy	1
3	Slide Slot Assy	1

Test Operation, Troubleshooting and Maintenance

No.	Name	Quantity
4	Backward-Panel Assy	1
5	Baffle Plate	1
6	Coarse Efficiency Filte	1
7	Baffle Plate	1
8	Slide Slot	2
9	Middle Efficient Filter	1
10	Slide Slot	2
11	Slide Slot	4
12	Baffle Plate	1
13	Baffle Plate	1
14	Centrifugal Fan Part	2
15	Flange Assy	2
16	Panel Assy	1
17	Flange Assy	2
18	Motor Support	4
19	Slide Slot	1
20	End Wall Part	1
21	End Wall Part	1
22	End Wall Part	1
23	Drop-Hanger Frame	1
24	Rubber Ring	1
25	Terminal Board	1
26	Rubber Ring	1
27	Wire Clamp	1
28	Insulated Gasket	1
29	Electric Box Cover	1
30	Terminal Board	1
31	Rubber Ring	1
32	Rack Rail	1
33	AC Contactor	2
34	Electric Box Part	1
35	Panel Assy	1
36	Panel Assy	1
37	Panel Assy	1
38	Column Assy	2
39	Upper crossbeam	1
40	Baffle Plate	1
41	Panel Assy	1
42	Baffle Plate	1

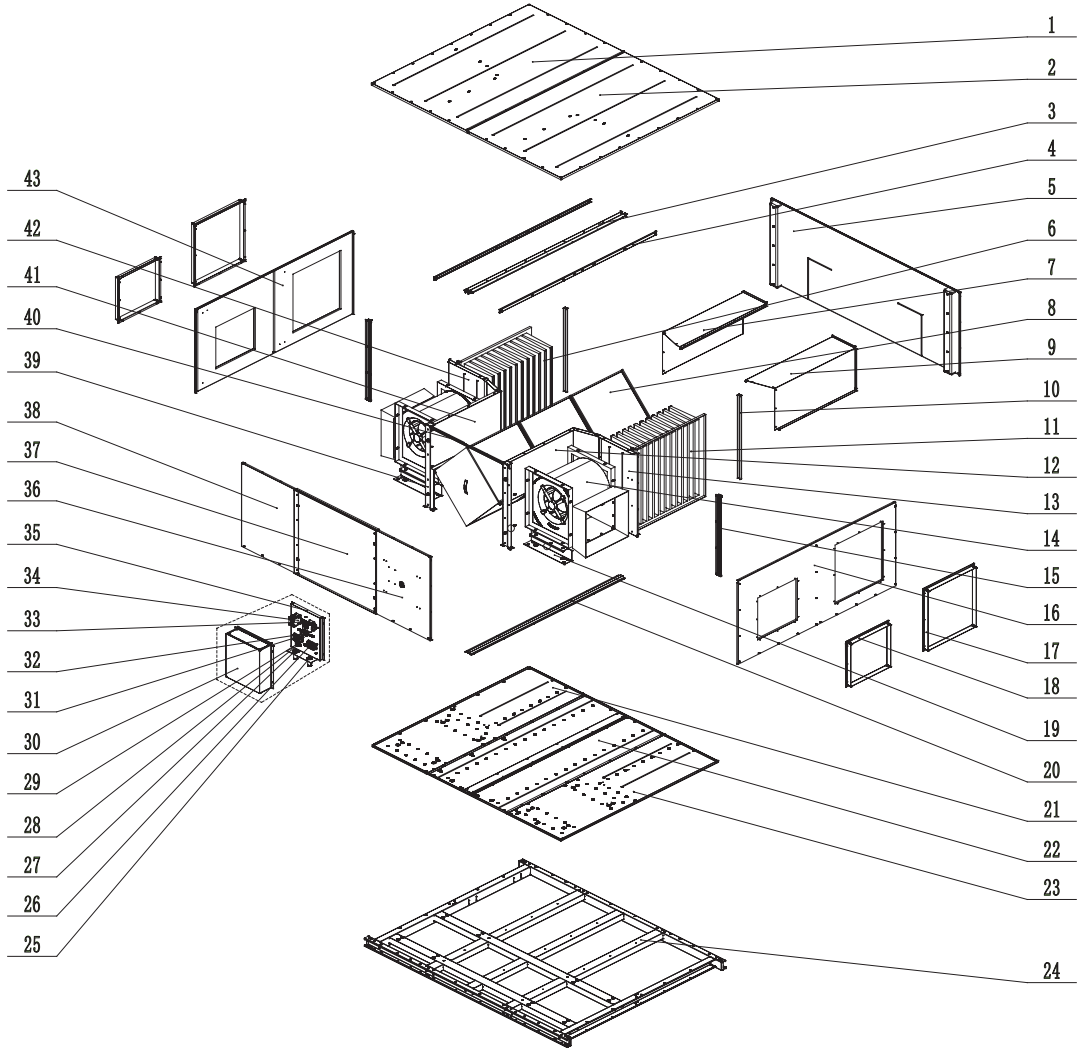
Unit Installation

2) FHBQG-D30B-M parts list

No.	Name	Quantity
1	Panel Assy	1
2	Panel Assy	1
3	Slide Slot Assy	1
4	Slide Slot	2
5	Backward-Panel Assy	1
6	Baffle Plate	1
7	Middle Efficient Filter	1
8	Total Heat Exchange Core Assy	3
9	Baffle Plate	1
10	Slide Slot	4
11	Coarse Efficiency Filte	1
12	Baffle Plate	1
13	Baffle Plate	1
14	Centrifugal Fan Part	1
15	Flange Assy	2
16	Panel Assy	1
17	Flange Assy	2
18	Motor Support	4
19	Slide Slot	1
20	End Wall Part	1
21	End Wall Part	1
22	End Wall Part	1
23	Drop-Hanger Frame	1
24	Rubber Ring	1
25	Terminal Board	1
26	Rubber Ring	1
27	Wire Clamp	1
28	Insulated Gasket	1
29	Electric Box Cover	1
30	Terminal Board	1
31	Rubber Ring	1
32	Rack Rail	1
33	AC Contactor	2
34	Electric Box Part	1
35	Panel Assy	1
36	Panel Assy	1
37	Panel Assy	1
38	Column Assy	2
39	Upper crossbeam	1
40	Baffle Plate	1
41	Baffle Plate	1
42	Panel Assy	1

Unit Installation

(7) Applicable model: FHBQG-D40B-M

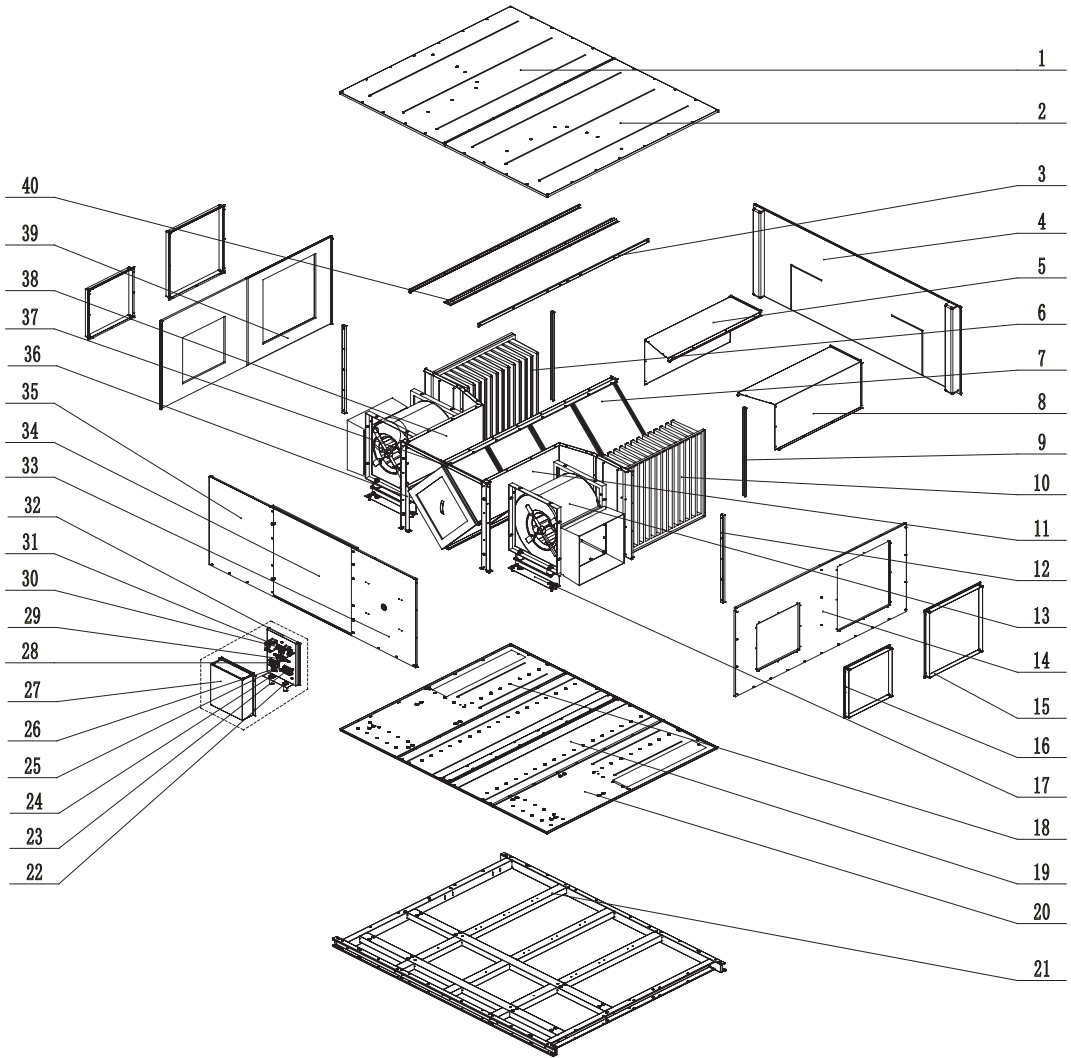


No.	Name	Quantity
1	Panel Assy	1
2	Panel Assy	1
3	Slide Slot Assy	1
4	Slide Slot	2
5	Backward-Panel Assy	1
6	Coarse Efficiency Filte	1
7	Baffle Plate	1
8	Total Heat Exchange Core Assy	4
9	Baffle Plate	1
10	Slide Slot	4
11	Middle Efficient Filter	1
12	Baffle Plate	1
13	Baffle Plate	1
14	Centrifugal Fan Part	2

Unit Installation

No.	Name	Quantity
15	Slide Slot	2
16	Panel Assy	1
17	Flange Assy	2
18	Flange Assy	2
19	Motor Support	4
20	Slide Slot	1
21	End Wall Part	1
22	End Wall Part	1
23	End Wall Part	1
24	Drop-Hanger Frame	1
25	Rubber Ring	1
26	Terminal Board	1
27	Rubber Ring	1
28	Wire Clamp	1
29	Insulated Gasket	1
30	Electric Box Cover	1
31	Terminal Board	1
32	Rubber Ring	1
33	Rack Rail	1
34	AC Contactor	2
35	Electric Box Part	1
36	Panel Assy	1
37	Panel Assy	1
38	Panel Assy	1
39	Column Assy	2
40	Upper crossbeam	1
41	Baffle Plate	1
42	Baffle Plate	1
43	Panel Assy	1

(8) Applicable model: FHBQG-D50B-M

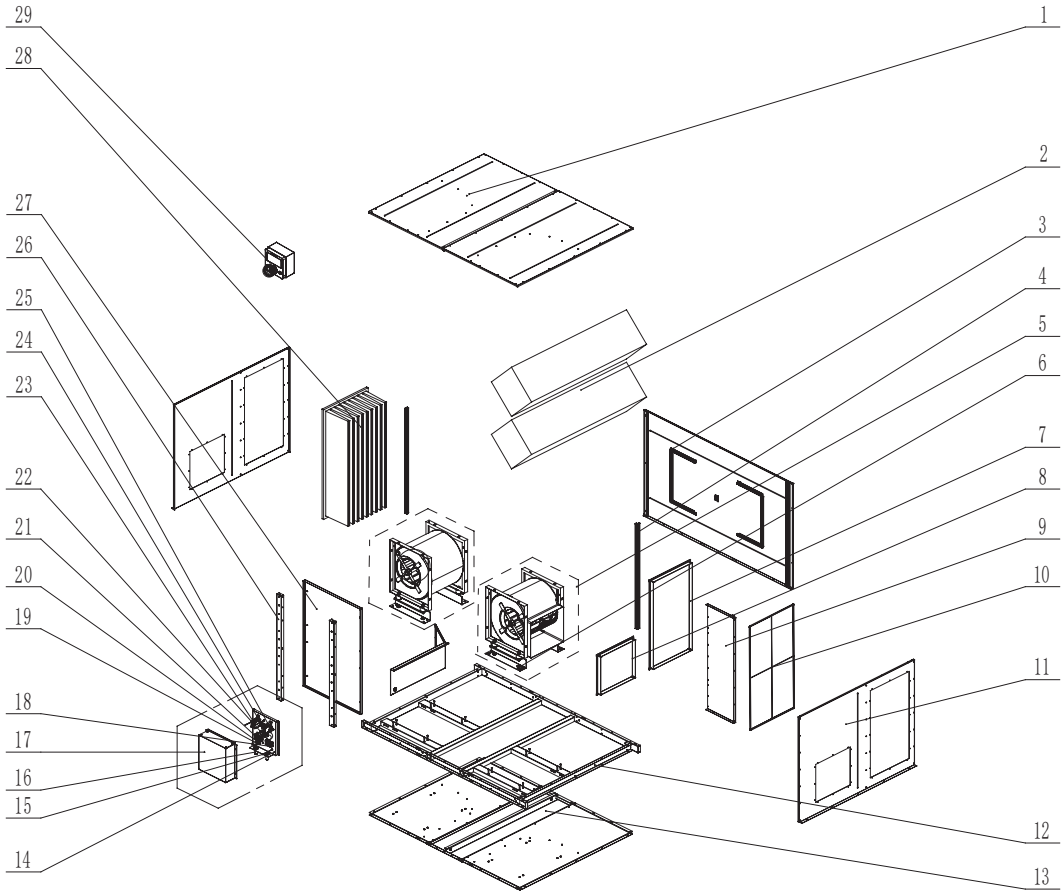


No.	Name	Quantity
1	Panel Assy	1
2	Panel Assy	1
3	Slide Slot	2
4	Backward-Panel Assy	1
5	Baffle Plate	1
6	Middle Efficient Filter	1
7	Total Heat Exchange Core Assy	4
8	Baffle Plate	1
9	Slide Slot	2
10	Coarse Efficiency Filte	1
11	Baffle Plate	1
12	Slide Slot	2
13	Centrifugal Fan Part	1

Unit Installation

No.	Name	Quantity
14	Panel Assy	1
15	Flange Assy	2
16	Flange Assy	2
17	Motor Support	4
18	End Wall Part	1
19	End Wall Part	1
20	End Wall Part	1
21	Drop-Hanger Frame	1
22	Rubber Ring	1
23	Terminal Board	1
24	Rubber Ring	1
25	Wire Clamp	1
26	Insulated Gasket	1
27	Electric Box Cover	1
28	Terminal Board	1
29	Rubber Ring	1
30	Rack Rail	1
31	AC Contactor	2
32	Electric Box Part	1
33	Panel Assy	1
34	Panel Assy	1
35	Panel Assy	1
36	Column Assy	2
37	Upper crossbeam	1
38	Baffle Plate	1
39	Panel Assy	1
40	Slide Slot	1

(9) Applicable model: FHBQG-D60B-M



No.	Name	Quantity
1	Cover Plate Sub-Assy	1
2	Total Heat Exchange Core Assembly	6
3	Rear Side Plate Sub-Assy	1
4	Slide Slot	2
5	Centrifugal Blower sub-assy	2
6	Motor Support	4
7	Flange sub-assy	2
8	Flange sub-assy	2
9	Clapboard Sub-Assy	1
10	Filter Sub-Assy	1
11	Side Plate	1
12	Hange frame sub-assy	1
13	Water Tray Sub-Assy	1
14	Electric Box Assy	1
15	Rubber ring (wire-passing)	1
16	Rubber ring (wire-passing)	1
17	Electric Box Cover	1
18	Terminal Board	1

Unit Installation

No.	Name	Quantity
19	Wire Clamp	1
20	Insulation Gasket	1
21	Terminal Board	1
22	Rubber Band	1
23	AC Contactor	2
24	Guide Strip	0.21(metre)
25	Terminal Baffle	4
26	Support beam sub-assy	1
27	Access Door	1
28	Medium Efficiency Filter	1
29	Display Board	1



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