

**Full-heat Fresh Air Ventilator**  
**Installation and Operation Manual**

Please keep this manual properly.  
Please read this manual carefully before use.

## Applicable models:

QR-X02D	QR-X13D	QR-X60DS
QR-X03D	QR-X15DS	QR-X70DS
QR-X04D	QR-X20DS	QR-X80DS
QR-X05D	QR-X25DS	QR-X90DS
QR-X06D	QR-X30DS	QR-X100DS
QR-X08D	QR-X40DS	
QR-X10D	QR-X50DS	

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Dear users:

Thank you for using our company's products.

The products you use need regular cleaning and maintenance. If your equipment cannot be properly cleaned and maintained, the failure rate will be increased and the service life will be greatly shortened. Meanwhile, thorough cleaning, you can remove the accumulated dust inside the equipment, effectively improve the performance and reduce the power consumption of the equipment.

If you have any problems in the use of the equipment, please contact our company's sales and service outlets nearby. We will try our best to meet your normal and reasonable requirements.

## 7. Test Run

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### 7-1 Precautions before test run

- (1) Whether the equipment has been correctly installed.
- (2) Whether the piping and wiring are correct.
- (3) Whether the water supply is smooth.
- (4) Whether the thermal insulation has been perfected.
- (5) Whether the grounding wire has been correctly connected.
- (6) Whether the power supply voltage is equal to the rated voltage of the full heat fresh air ventilator.
- (7) Whether there are obstacles in the air inlet and outlet of the full heat fresh air ventilator.

### 7-2 Test run

Use the control panel to control the operation of the full-heat fresh air ventilator and follow the operation manual of the control panel.

- (1) Whether the control panel switch is normal;
- (2) Whether the function keys of the control panel are normal;
- (3) Whether the room temperature regulation is normal;
- (4) Whether the indicator light is illuminated normally
- (5) Whether the manual operation button is normal;
- (6) Whether there are vibration and abnormal sounds during operation.

## 8. Repair and maintenance

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### 8-1 Repair and maintenance

8-1-1 During the initial operation of the new unit, the operation of the fan should be regularly checked.

8-1-2 After the new unit runs for one month, check whether the fan is firmly fixed.

8-1-3 The cleaning cycle of the air filter screen depends on the local environment. Vacuum cleaners or water can be used to clean the air filter screen. If the air filter screen is very dirty, neutral detergent can be used to clean it. After cleaning, shake it dry and dry it in a cool place for 20 to 30 minutes. After it is completely dried, put it back in place.

8-1-4 Clean the core at least once every two years. Use a vacuum cleaner to remove dust and foreign matters from the heat ventilator components. Do not use a vacuum cleaner to forcibly touch and wash the core with water so as not to cause damage to the core.

8-1-5 Inspect and maintain the fan every 6 months to ensure its good balance and check whether the bearing is loose.

## 6. Use of full heat ventilator

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### 6-1 Working principles

QR series all-heat fresh air ventilator adopts advanced technology and process, and is made of special paper through chemical processing. It has the best effect on temperature, humidity, cold and heat energy recovery, and its use effect exceeds that of imported products of the same kind. The high-efficiency heat exchange core generates heat transfer due to the temperature difference between the air flows on both sides of the flat partition plate when the indoor air conditioner exhaust air and outdoor fresh air flow through the heat exchange core respectively in a cross mode. During summer operation, the fresh air obtains cold energy from the air conditioner exhaust air to lower the temperature. During winter operation, the fresh air obtains heat energy from the air conditioner exhaust air to raise the temperature, so that the fresh air recovers energy from the air conditioner exhaust air through the heat exchange process of the heat exchange core.

### 6-2 Precautions before use

1. Before starting the fan, must remove all sundries in the air duct, and check whether the air valve devices and other equipment are normal.
2. When starting the unit, pay attention to regulating the air valve in the system so that the working current of the motor in the unit during operation is limited to the rated current value of the motor.
3. After the power supply of the three-phase motor is turned on, start the fan first to see if its rotation direction is correct. In case of reverse rotation, stop the machine immediately and adjust the phase sequence of the power supply.
4. The three-phase model has no bypass function, and the fan may have a 30 second delay in use.

### 6-3 Instructions for use

Power on/power off: press the "⏻" key once to power on and press again to power off. Power on, then equipment runs; power off, then the equipment stops, and the settings before the equipment power off will be saved.

Control of three-speed fan: press the "🌀" key to select the fan speed. High speed is "🌀", medium speed is "🌀", and low speed is "🌀".

Mode selection: press the "🌀" key to switch the mode of operation of the model when the machine is powered on. Normal ventilation: press the "🌀" key until the "🌀" symbol flashes, and confirm automatically after 6 seconds. Energy recovery: press the "🌀" key until the "🌀" symbol flashes, and confirm automatically after 6 seconds.

Control of bypass motor: there are two kinds of situations: 1. No bypass above 1000 air volume; 2. Functions are optional below 1000 air volume (including 1000 air volume). When there is a bypass, in the process of switch between normal ventilation and energy recovery through the "🌀" key on the control panel, the bypass motor receives electricity to drive the baffle to move, and the "🌀" symbol is displayed on the controller liquid crystal screen. The bypass motor is de-energized after the baffle has moved to position ( approximately 12 seconds ).

Temperature calibration: (only when the temperature is not accurate can the following operations be carried out ) in the power off state, press the keys " ▲ " and " ▼ " at the same time and hold them for three seconds, displaying " xx " ( "RT" symbol does not display ), press the key " ▲ " or " ▼ " to adjust to the correct temperature value, and confirm automatically after six seconds.

The three-phase motor only has "on / off" control.

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# 1. Safety precautions

## Warning

- Ask the distributor or professional qualified personnel to carry out the installation.
- Improper installation will cause electric leakage, electric shock, fire and other accidents.
- The installation must be carried out in accordance with the installation instructions. Do not modify the unit by yourself.
- Install the machine in a place sufficient to bear the weight of the machine.
- Failure to bear enough strength or improper installation can cause the unit to fall and cause personal injury.
- Prevent exhaust gas from entering the outside air intake, which will cause indoor air pollution and endanger health.
- Determine the position of the external air suction port away from the position where combustible gas exists.
- Incorrect installation may cause loss of indoor oxygen and lead to serious consequences.
- Confirm that there is a separate power supply circuit for fresh air units, and that all electrical work shall be carried out by professionals in accordance with local regulations and installation instructions
- Insufficient power or incorrect electrical construction may lead to electric shock or fire.
- Grounding
- Do not connect the grounding wire to the gas or tap water pipe, as well as to the grounding wire of the lightning rod or telephone. If the grounding is incorrect, it will cause electric shock.
- Make sure that all wires are insulated, that special wires have been used, and that no external force acts on the connecting terminals and wires. Improper connection or installation may cause overheating or fire.
- When connecting the power supply, control panel and transmission lines, make sure that the wiring makes the electric cabinet cover firmly installed. Improper connection may lead to electric shock, fire or overheating of the wiring terminals.

## Notice

- The leakage power-off protectors must be installed.
- If you do not install a leakage power-off protector, you may cause an electric shock accident.
- The slope of outdoor air duct must be guaranteed to prevent rainwater from entering the machine.
- If the installation is incorrect, water may enter the building, destroy furniture and cause electric shock and fire.
- Wrap outdoor pipelines and gas supply pipelines with heat insulation materials to prevent condensation of dew.
- If the operation is improper, water may enter the building to destroy furniture.
- When the metal air duct passes through the metal lining of the metal grid, wire grid or wood wall structure, electrical insulation protection shall be provided to the air duct and wall surface. Incorrect air duct construction may cause electric shock or short circuit.
- Confirm that the temperature and humidity of the unit and intake/outlet compartment are within the defined scope of the service conditions.
- Confirm the implementation of snow protection. If there is no snow protection, snow will enter the outdoor air duct and cause damage to furniture, electric shock and fire.

# 5. Detailed parameters

Model	Power	Dimension (mm)	Weight (kg)	Static pressure (Pa)	Rated air volume (m <sup>3</sup> /h)
QR-X02D	220V 50Hz	666×580×264	25	75	200
QR-X03D		744×599×270	27	75	300
QR-X04D		744×804×270	30	80	400
QR-X05D		824×904×270	41	80	500
QR-X06D		824×904×270	42	90	600
QR-X08D		1116×884×388	68	100	800
QR-X10D		1116×1134×388	82	150	1000
QR-X13D		1116×1134×388	85	150	1300
QR-X15DS		380V 50Hz	1600×1200×540	151	160
QR-X20DS	1650×1400×540		172	170	2000
QR-X25DS	1430×1610×600		185	180	2500
QR-X30DS	1600×1700×640		222	200	3000
QR-X40DS	1725×1330×1050		312	220	4000
QR-X50DS	1660×1820×1050		321	240	5000
QR-X60DS	1660×1820×1050		360	290	6000
QR-X70DS	2060×1660×1168		460	310	7000
QR-X80DS	2060×1660×1168		460	320	8000
QR-X90DS	2310×1900×1200		500	340	9000
QR-X100DS	2310×1900×1200		500	400	10000

Model	Refrigeration		Heating		Input power (W)	Running current(A)	Rated noise dB(A)
	Temperature efficiency	Enthalpy efficiency	Temperature efficiency	Enthalpy efficiency			
QR-X02D	60	50	65	55	65	0.5	30
QR-X03D	60	50	65	55	130	1.1	33
QR-X04D	60	50	65	55	200	1.6	35
QR-X05D	60	50	65	55	220	1.8	38
QR-X06D	60	50	65	55	242	1.9	39
QR-X08D	60	50	65	55	410	3.3	42
QR-X10D	60	50	65	55	510	4.1	43
QR-X13D	60	50	65	55	1000	4.3	45
QR-X15DS	60	50	65	55	1000	1.9	51
QR-X20DS	60	50	65	55	1200	2.3	53
QR-X25DS	60	50	65	55	2000	3.8	55
QR-X30DS	60	50	65	55	2100	4.0	57
QR-X40DS	60	50	65	55	2400	4.6	60
QR-X50DS	60	50	65	55	3000	5.7	61
QR-X60DS	60	50	65	55	3000	5.7	70
QR-X70DS	60	50	65	55	4200	8.0	73
QR-X80DS	60	50	65	55	6000	11.4	74
QR-X90DS	60	50	65	55	7500	14.2	77
QR-X100DS	60	50	65	55	8000	15.2	78

## 4. Electrical connection

### 4-2 Unit wiring diagram

Wiring diagram of single phase electrical circuit

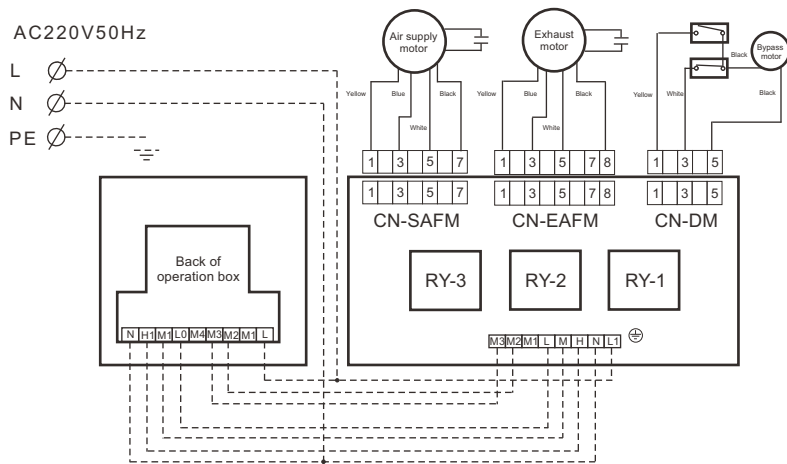
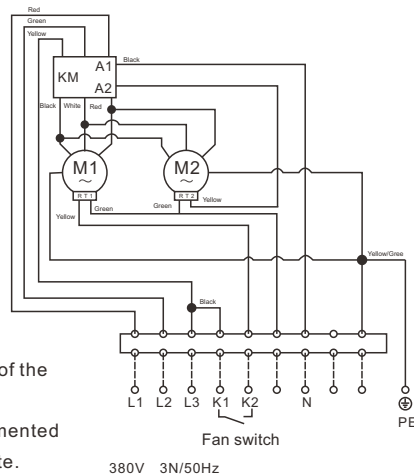


Figure 4.1

Wiring diagram of three-phase electrical circuit

AC380V50Hz



Description:

The wiring of the broken line part of the KM contactor RT motor overheating protection contact shall be implemented by the construction party at the site.

Figure 4.2

## 2. Precautions before installation

### 2-1 Preparation before installation

#### Warning

- Accessories needed for the installation must be kept until the installation is completed. Never discard them!

2-1-1 Decide the transportation route

2-1-2 Before reaching the installation site, the fresh air unit shall be placed in the packing box. When the packing box must be opened, please use soft material ropes and protective supports to lift it together so as to avoid scratching or damaging the machine.

When opening the box to move the unit, use the hook bracket to fix the unit and do not fix it in other places for lifting (especially at the air duct connection)

#### Notice

- It is important to instruct the customer how to correctly operate the unit (especially the maintenance and operation procedures of the air filter) with the help of the instruction manual.

### 2-2 Select installation site

#### Notice

- When handling or unpacking the machine, please grasp the lifting hook for handling and do not apply force to other parts, especially the connecting flange.

2-2-1 Select the installation site according to the installation conditions and customer conditions.

- full-heat fresh air ventilator must be installed in a place that is away from office and rest (installed in a special machine room, bathroom, etc.).
- installed in places with sufficient strength and stability (beams, ceilings and other places sufficient to support the weight of the machine), insufficient strength is dangerous, which may cause abnormal operating noise of vibration.
- Do not install the machine directly on the ceiling and wall (if the machine touches the ceiling and wall, it may cause vibration).
- installed in that can be easily cleaned and maintained.

#### Notice

- Keep the machine, power cord and connecting wire at least 1m away from the TV and radio to prevent interference and noise. (Depending on the length of the electromagnetic wave, a distance of 1 meter may not be sufficient to eliminate electromagnetic noise)
- Bellows may not be used in some places. (Please consult the local government and fire department for details).
- When ordinary air ducts are used for exhaust, if the building requires the use of fireproof materials, please install a support to fix the air ducts.

## 2. Precautions before installation

### ! Notice

It cannot be installed in the following places:

1. The installation location is close to high temperature places or open flames, which may cause fire or overheating.
2. The installation location contains toxic gases or corrosive substances (acid and alkali solvents and paints), such as mechanical and chemical factories, and the places where combustible gases leak.
3. The installation location is wet, such as bathroom, which may leak electricity or cause an electric shock and other problems.
4. The installation position is close to the machine that emits electromagnetic waves, which may interfere with the operation of the control system and cause equipment failure.

2-2-2 Install the machine with suspension bolts, check whether the ceiling is strong enough to bear, and reinforce the ceiling before installation.

### 2-3 Preparation before installation

- (1) Determine the mutual position between the machine and the hoisting bolt. Set aside maintenance space, including maintenance ports (make a hole on the side of the ceiling electrical component box to facilitate inspection and maintenance of air filters, heat exchange elements, fans, etc.).
- (2) Ensure that the external static pressure does not exceed the scope.
- (3) Open the installation opening (ceiling). After opening the installation opening on the ceiling, pass the power cord and control panel wire through the wire holes on the machine. After opening the installation opening, try to ensure the ceiling is level and reinforce the ceiling to prevent vibration, if necessary.
- (4) Install lifting bolts (use M10 to M14 lifting bolts).

## 4. Electrical connection

### ! Warning

Please disconnect all power supply lines before approaching the terminal

### 4-1 Precautions for power supply wiring

Circuit breakers capable of shutting down the entire system power supply must be installed. A switch that can switch the power supply must be installed, and the branch switch and branch electrical circuit switch must be carefully selected. When wiring power supplies, circuit breakers or leakage circuit breakers shall be installed. Ensure that the grounding resistance does not exceed 100Ω. When the leakage circuit breaker is used, the grounding resistance can exceed 500Ω because the earth resistance can be used.

Please make sure to connect the grounding wire. Do not connect the grounding wire to the gas pipe, water pipe, lightning rod or telephone grounding wire.

- Gas pipe: gas leakage will cause fire.
- Water pipe: if the material of water pipe is hard polyethylene pipe, it will not be able to play a grounding role.
- Telephone lines and lightning rods: when struck by lightning, the ground potential will be very high.

Please cut off the power supply before doing any work.

Tightening torque of terminal screws.

- Tighten the terminal screw with a suitable screwdriver. If the screwdriver bit is too small, the screw head may be damaged and the screw cannot be tightened.
- If the terminal screws are excessively tightened, the screws may be damaged.

### 3. Installation

QR-X15DS QR-X100DS

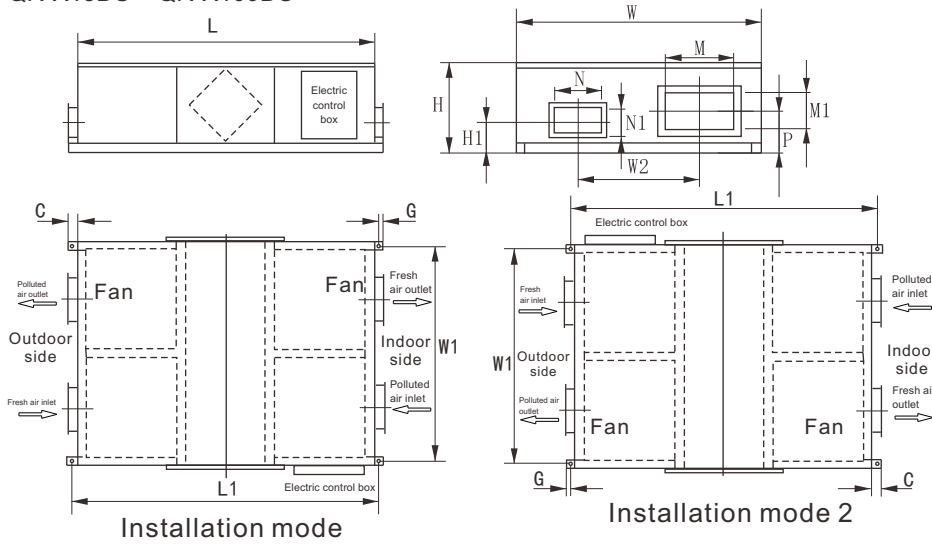


Figure 3.5

Table 3.2

Model	L	L1	W	W1	W2	H	H1	C	G	N	N1	M	M1	P
QR-X15DS	1500	1550	1200	1170	600	540	250	50	25	320	300	320	300	250
QR-X20DS	1550	1600	1400	1370	700	540	250	50	25	320	300	320	300	250
QR-X25DS	1610	1580	1330	1400	655	600	270	50	15	365	275	500	350	300
QR-X30DS	1700	1670	1500	1570	750	640	270	50	15	365	275	500	350	309
QR-X40DS	1625	1675	1330	1300	650	1050	510	50	25	370	330	500	690	475
QR-X50DS	1720	1770	1660	1630	810	1050	560	50	25	455	360	670	690	510
QR-X60DS	1720	1770	1660	1630	810	1050	560	50	25	455	360	670	690	510
QR-X70DS	1960	2009	1660	1630	810	1168	608	50	25	422	472	670	800	540
QR-X80DS	1960	2009	1660	1630	810	1168	608	50	25	422	472	670	800	540
QR-X90DS	2210	2260	1900	1870	945	1200	580	50	25	660	685	710	800	630
QR-X100DS	2210	2260	1900	1870	945	1200	580	50	25	660	685	710	800	630

### 3. Installation

#### 3-1 Structure diagram of full heat fresh air ventilator

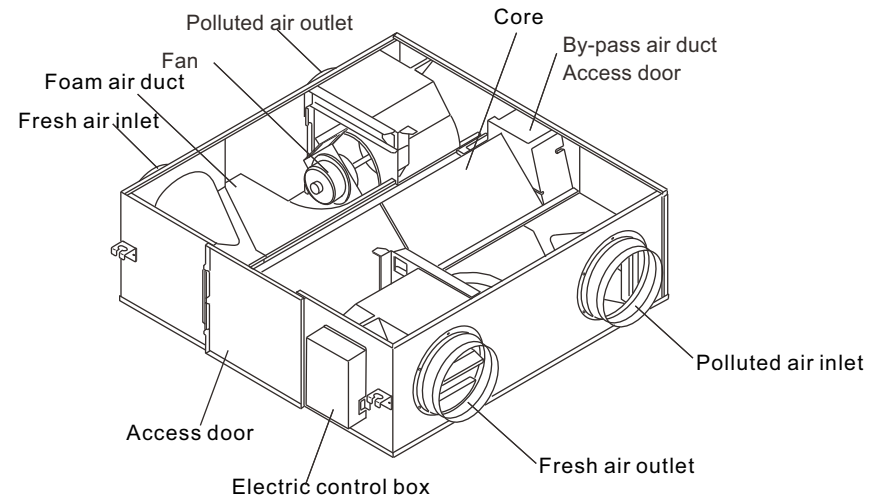


Figure 3.1 Internal structure diagram of full heat fresh air ventilator

### 3. Installation

#### 3-2 Installation

3-2-1 Before installation, first check whether the outside of the unit is intact, then open the panel, turn the fan manually, and listen carefully for any metal friction sound inside. If there is any noise, adjust the wheel part so that it does not touch the casing.

3-2-2 There should be sufficient space around the unit, especially at the junction box and the water-containing side, for connection and maintenance. In addition, it is necessary to ensure the removal space of the filter screen.

3-2-3 The unit must be installed smoothly and must not bear the weight of condensate pipes and air ducts. The air inlet and outlet of the unit and the return air duct must be connected flexibly.

3-2-4 The unit adopts 220V/50HZ or 380V/50HZ AC power supply, should have reliable grounding measures and reliable wiring. Separate power supply, disconnection and protection devices shall be provided for each unit.

3-2-5 Installation size and maintenance space of the unit.

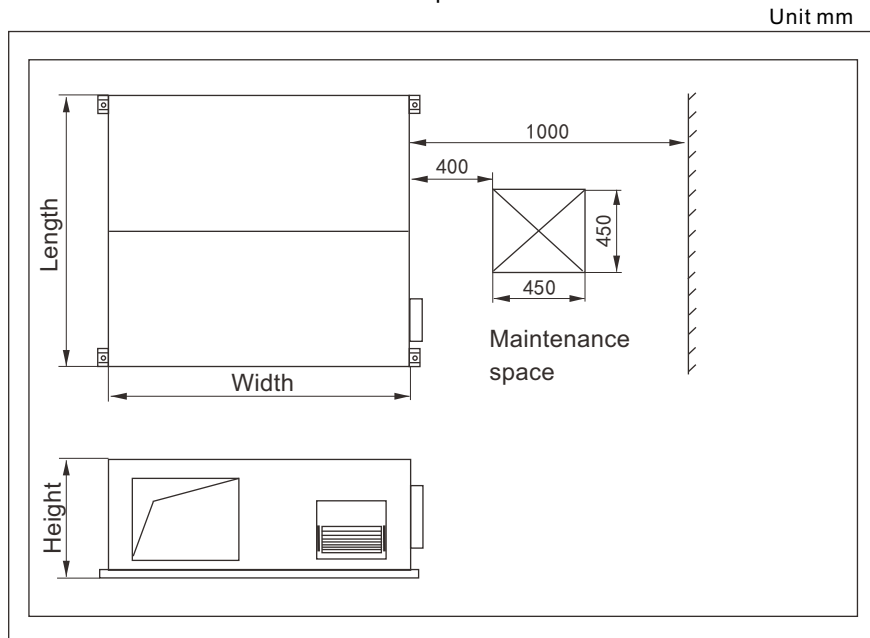


Figure 3.2 Installation dimension and maintenance space diagram

### 3. Installation

#### 3-3 Product dimension and air port

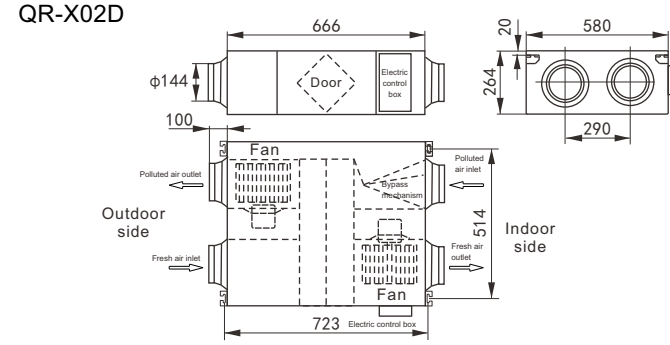


Figure 3.3

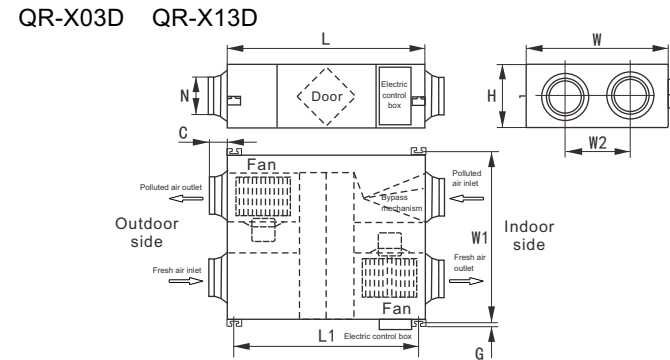


Figure 3.4

Table 3.1

Model	L	L1	W	W1	W2	H	C	G	N
QR-X03D	744	678	599	657	315	270	100	19	φ 144
QR-X04D	744	678	804	862	480	270	100	19	φ 144
QR-X05D	824	756	904	960	500	270	107	19	φ 194
QR-X06D	824	756	904	960	500	270	107	19	φ 194
QR-X08D	1116	1045	884	940	428	388	85	19	φ 242
QR-X10D	1116	1050	1134	1190	678	388	85	19	φ 242
QR-X13D	1116	1050	1134	1190	678	388	85	19	φ 242