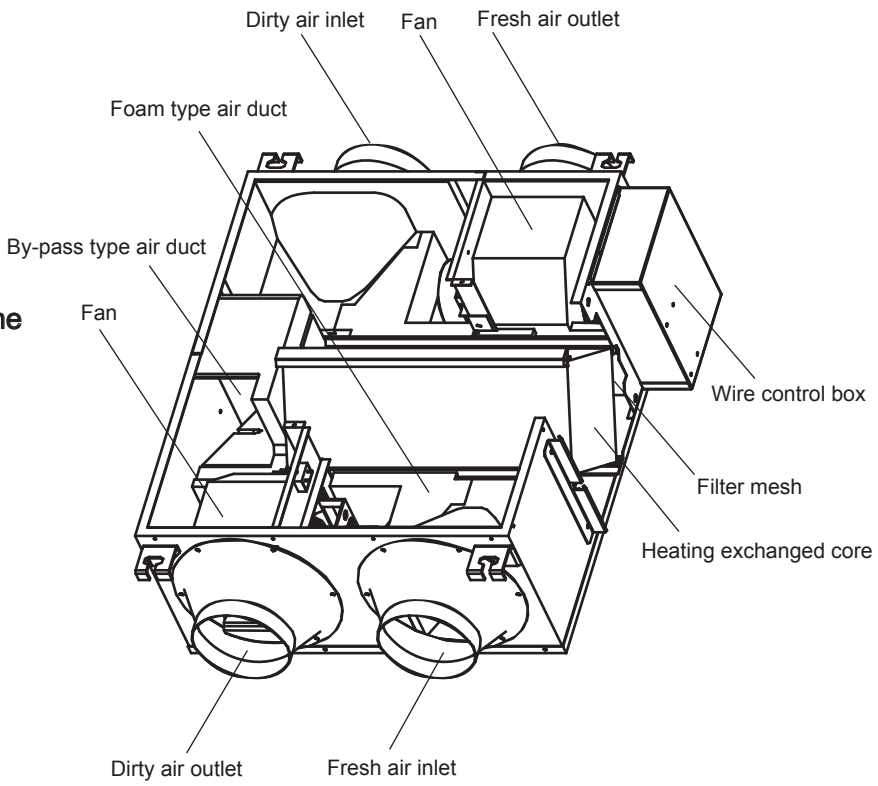
OWNER'S MANUAL
AND INSTALLATION MANUAL

HRV (Heat Recovery Ventilation)

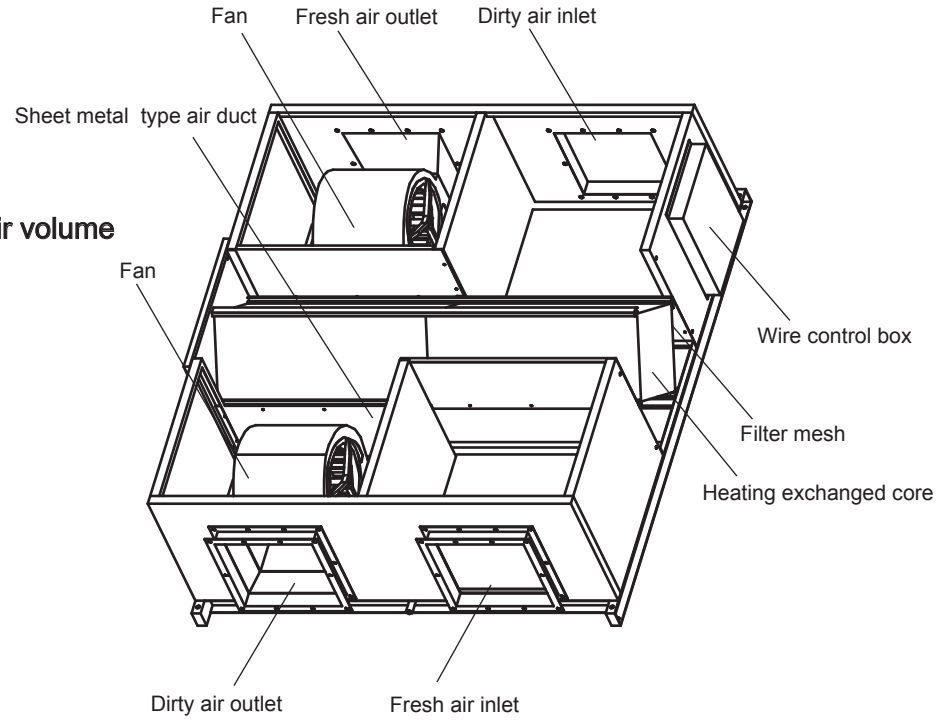
Thank you very much for purchasing our air conditioner,
Before using your air conditioner , please read this manual carefully and keep it for future reference.

MAIN PARTS OF THE UNIT

200-1000 Air volume



1500、2000 Air volume



CONTENTS PAGE

PRECAUTIONS.....1
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1. PRECAUTIONS

To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage. The appliance shall be so installed that it is not possible to be accessed by general public.

The safty precautions listed here are divided into two categories. In either case, important safty information is listed which must be read carefully.

WARNING

Failure to observe a warning may result in electric shock, fire hazard or personal injury

CAUTION

Failure to observe a caution may result injury or damage to the equipment.

WARNING

The appliance should not be used by children without supervision.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capcabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and maintenance shall not be made by children without supervision.

Ask your dealer for installation of the air conditioner.
Incomplete installation performed by yourself may result in a water leakage, electric shock, and fire.

Ask your dealer for improvement, repair, and maintenance.
Incomplete improvement, repair, and maintenance may result in a water leakage, electric shock, and fire.

In order to avoid electric shock, fire or injury, or if you detect any abnormality such as smell of fire, turn off the power supply and call your dealer for instructions.

Never let the indoor unit or the remote controller get wet.
It may cause an electric shock or a fire.

Never press the button of the remote controller with a hard, pointed object.
The remote controller may be damaged.

Never replace a fuse with that of wrong rated current or other wires when a fuse blows out.
Use of wire or copper wire may cause the unit to break down or cause a fire.

It is not good for your health to expose your body to the air flow for a long time.

Never use a flammable spray such as hair spray, lacquer or paint near the unit.
It may cause a fire.

Never touch the air outlet or the horizontal blades while the swing flap is in operation.
Fingers may be caught or the unit may break down.

Never put any objects into the air inlet or outlet.
Objects touching the fan at high speed can be dangerous.

Never inspect or service the unit by yourself.
Ask a qualified service person to perform this work.

Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.



Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.
Contact you local government for information regarding the connection systems available.

If electrical appliances are disposed in landfills or dumps, hazardous substances can leak into the groundeater and get into the food chain, damaging your health and well-being.

To prevent refrigerant leak, contact your dealer.
When the system is installed and runs in a small room, it is required to keep the concentration of the refrigerant, if by any chance coming out, below the limit. Otherwise, oxygen in the room may be affected, resulting in a serious accident.

The refrigerant in the air conditioner is safe and normally does not leak.
If the refrigerant leaks in the room, contact with a fire of a burner, a heater or a cooker may result in a harmful gas.

Turn off any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.
Do not use the air conditioner until a service person confirms that the portion where the refrigerant leaks is repaired.

Be sure only trained and qualified service personnel to install, repair or service the equipment. Installation must be performed in accordance with the requirements of NEC and CEC by authorized personnel only.

Install according to this installation instructions strictly.
If installation is defective, it will cause water leakage, electrical shock fire.

When installing the unit in a small room, take measures against to keep refrigerant concentration from exceeding allowable safety limits in the event of refrigerant leakage.
Contact the place of purchase for more information.
Excessive refrigerant in a closed ambient can lead to oxygen deficiency.

Use the attached accessories parts and specified parts for installation.
Otherwise, it will cause the set to fall, water leakage, electrical shock fire.

Install at a strong and firm location which is able to withstand the set's weight.
If the strength is not enough or installation is not properly done, the set will drop to cause injury.

The appliance must be installed 2.3m above floor.

The appliance shall not be installed in the laundry.

Before obtaining access to terminals, all supply circuits must be disconnected.

The appliance must be positioned so that the plug is accessible.

The enclosure of the appliance shall be marked by word, or by symbols, with the direction of the fluid flow.

For electrical work, follow the local national wiring standard, regulation and this installation instructions. An independent circuit and single outlet must be used.
If electrical circuit capacity is not enough or defect in electrical work, it will cause electrical shock fire.

Use the specified cable and connect tightly and clamp the cable so that no external force will be acted on the terminal.
If connection or fixing is not perfect, it will cause heat-up or fire at the connection.

Wiring routing must be properly arranged so that control board cover is fixed properly.
If control board cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electrical shock.

If the supply cord is damaged, it must be replaced by the manufacture or its service agent or similarly qualified person in order to avoid a hazard.

An all-pole disconnection switch having a contract separation of at least 3mm in a poles should be connected in fixed wiring.

When carrying out piping connection, take care not to let air substances go into refrigeration cycle.
Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosion and injury.

Do not modify the length of the power supply cord or use of extension cord, and do not share the single outlet with other electrical appliances.
Otherwise, it will cause fire or electrical shock.

Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Improper installation work may result in the equipment falling and causing accidents.

If the refrigerant leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into the place contacting with fire.

That precautions must be taken to avoid back-flow of gases into the room from the open flue of gas or other fuel-burning appliances(for duct and partition fans).

CAUTION

The cooling&heating indoor unit is applicable for the cooling&heating and the cooling only outdoor unit;the heating capacity of the indoor unit will be effective only when the indoor unit connect to the cooling&heating outdoor unit.

Do not use the air conditioner for other purposes.
In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.

Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.
Otherwise, an electric shock and injury may result.

In order to avoid electric shock or fire, make sure that an earth leak detector is installed.

Be sure the air conditioner is grounded.
In order to avoid electric shock, make sure that the unit is grounded and that the earth wire is not connected to gas or water pipe, lightning conductor or telephone earth wire.

In order to avoid injury, do not remove the fan guard of the outdoor unit.

Do not operate the air conditioner with a wet hand.
An electric shock may happen.

Do not touch the heat exchanger fins.
These fins are sharp and could result in cutting injuries.

Do not place items which might be damaged by moisture under the indoor unit.
Condensation may form if the humidity is above 80%, the drain outlet is blocked or the filter is polluted.

After a long use, check the unit stand and fitting for damage.
If damaged, the unit may fall and result in injury.

To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the air conditioner.

Arrange the drain hose to ensure smooth drainage.
Incomplete drainage may cause wetting of the building, furniture etc.

Never touch the internal parts of the controller.
Do not remove the front panel. Some parts inside are dangerous to touch, and a machine trouble may happen.

Never expose little children, plants or animals directly to the air flow.
Adverse influence to little children, animals and plants may result.

Do not allow a child to mount on the outdoor unit or avoid placing any object on it.
Falling or tumbling may result in injury.

Do not operate the air conditioner when using a room fumigation - type insecticide.
Failure to observe could cause the chemicals to become deposited in the unit, which could endanger the health of those who are hypersensitive to chemicals.

Do not place appliances which produce open fire in places exposed to the air flow from the unit or under the indoor unit.
It may cause incomplete combustion or deformation of the unit due to the heat.

Do not install the air conditioner at any place where flammable gas may leak out.
If the gas leaks out and stays around the air conditioner, a fire may break out.

The appliance is not intended for use by young children or infirm persons without supervision.

Ground the air conditioner.
Do not connect the ground wire to gas or water pipes, lightning rod or a telephone ground wire.Incomplete grounding may result in electric shocks.

Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks.

Connect the outdoor unit wires , then connect the indoor unit wires.
You are not allow to connect the air conditioner with the power source until wiring and piping the air conditioner is done.

While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation.
Improper drain piping may result in water leakage and property damage.

Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise.
Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.

The appliance is not intended for use by young children or infirm persons without supervision.

Young children should be supervised to ensure that they do not play with the appliance.

2. ACCESSORY

Table 2-1

Name	Qty.	Shape	Purpose
Installation and owner's manual	1	This manual	must be delivered to the customer
Butt-joint wire of wire control display panel (6 meters) (RoHS)	1	——	For connect wire control and display control box
HRV wire controller (RoHS)	1		For controling HRV units

Local procuring assemblies

Table 2-2

Name	Purpose
PVC drain pipe	For connecting unit's drain pipe, which length is selected according to your actual requirement (Model 1500, 2000 are available)
Damper	For vibration damping, when lift the unit.

3. INSTALLSTION

3.1 Installation Preparation

WARNING

The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them.

- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- Hold the unit by the hanger brackets when opening the crate and moving it, and do not lift it holding on to any other part (especially the duct connecting flange).

NOTE

Be sure to instruct customers how to properly operate the unit (especially maintenance of air filter, and operation procedure) by having them carry out operations themselves while looking at the, manual.

3.2 Select The Installation Site

CAUTION

When moving the unit during or after unpacking, make sure to lift it by holding its hanger brackets. Do not exert any pressure on other parts, especially duct connecting flange.

- Select an installation site where the following conditions are fulfilled and meet with your customer's approval.
  - HRV should be installed far away from office, recreation or any other place silent requiring environment (install that in special machine room or wash room is recommended)
  - install in a place which has sufficient strength and stability. (Beam, ceiling and other locations capable of fully supporting the weight of the unit.) Insufficient strength is dangerous. It may also cause vibration and unusual operating noise.
  - Do not install the unit directly against a ceiling or wall. (If the unit is in contact with the ceiling or wall, it can cause vibration.)
  - Where sufficient clearance for maintenance and service can be ensured.

CAUTION

- Install the units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the electric noise.)
- The bellows may not be able to be used in some districts, so exercise caution. (Contact your local government office or fire department for details.)
- When discharging exhaust air to a common duct, the Building Standard Law requires the use of fire proof materials, so attach a 2m copper plate standing duct.

- Do not install the unit in the following locations:
  - Place subjected to high temperature or direct flame. May result in fire or overheating.
  - Place such as machinery plant and chemical plate where gas, which contains noxious gas or corrosive components of materials such as acid, alkali organic solvent and plaint, is generated. Place where combus tible gas leakage is likely.
    Copper piping and brazed joins may corrode, causing refrigerant to leak or poisoning and fore due to leaked gas.
  - Place such as bathroom subjected to moisture.
    Electric leak or electric shocks and other failure can be caused.
  - Near machinery emitting electromagnetic waves.
    Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.

3.3 Preparations Before Installation

- Confirm the positional relationship between the unit and suspension bolts.
  Leave space for servicing the unit and include inspection hatches. (Always open a hole on the side of the electric parts box so that the air filters, heat exchange elements, fans, can easily be inspected and serviced.)
- Make sure the range of the unit's external static pressure is not exceeded.
- Open the installation hole (Pre-setting ceilings)
  Once the installation hole is opened in the ceiling where the unit is to be installed, pass transmission wiring, and remote controller wiring to the unit's wiring holes.
  After opening the ceiling hole, make sure ceiling is level if needed. It might be necessary to reinforce the ceiling frame to prevent shaking.
  Please consult architect or woodworker, if necessary.
- Install the suspension bolts. (Use M10 to M12 suspension bolts.) Use a hole-in anchor, sunken insert anchor for existing ceilings, or other parts to be procures in the field to reinforce the ceiling to bearing the weight of the unit.
- Install vibration damping feet. (For vibration damping)

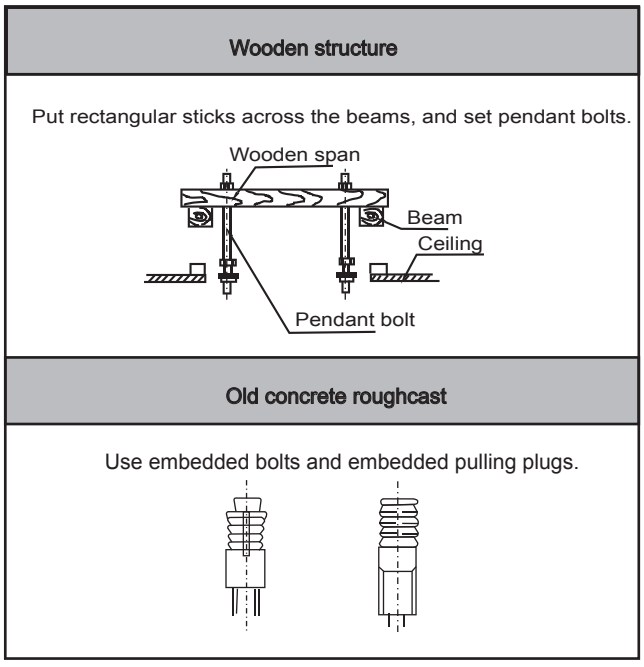


Fig. 3-1

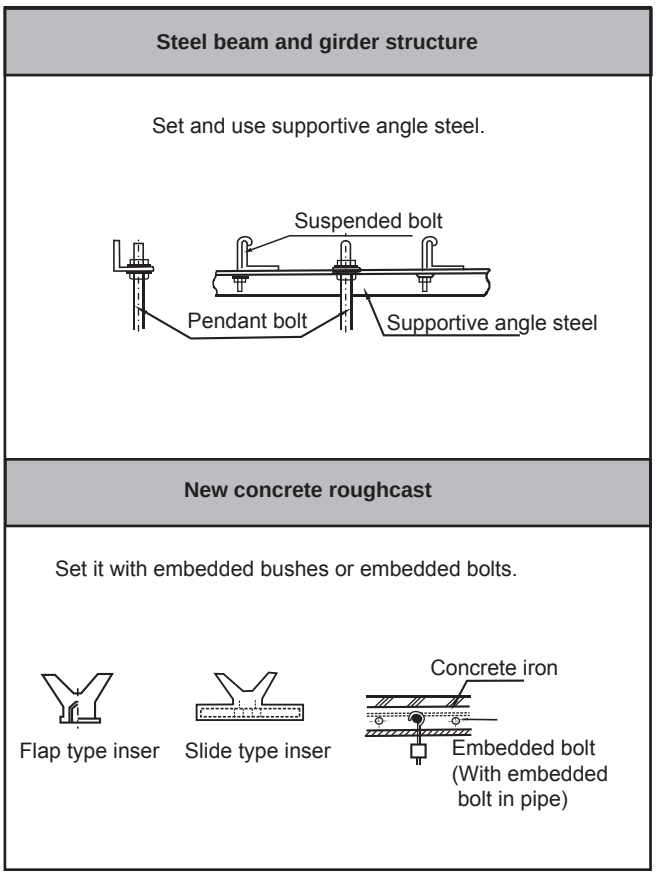


Fig. 3-2

3.4 Installation

- Before installation, please confirm all external parts are stand in their place and without damage.
- The surrounding environment of the unit, especially the sides of wiring cabinet and water collecting side should reserve sufficient wiring and maintenance and space; additionally, one should ensure the removing space for filter griller.
- Unit should mount steadily and without sustain the weight form condensate water pipe and air duct. The vents of air inlet/outlet and return should be connected with flexible tube.
- Unit in AC 220-240V/50Hz、220-240V/60Hz, reliable grounding; each one possesses of independent cut-off and protection device.
- The installation dimension and maintenance space. (See the following attached picture Fig.3-3)
- Operating conditions

For proper performance, run the air conditioner under the following temperature conditions:

OPERATION	Outdoor air TEMP.	-7 ℃~43 ℃
	Room TEMP.	-7 ℃~43 ℃
	Room humidity	Lower than 80% If higher than 80%, the surface of indoor unit may be condensed or the condensate will be blown from air outlet.

Protection device may start if running the unit outside the above condition, which will prevent the unit from operation.

Unit：mm

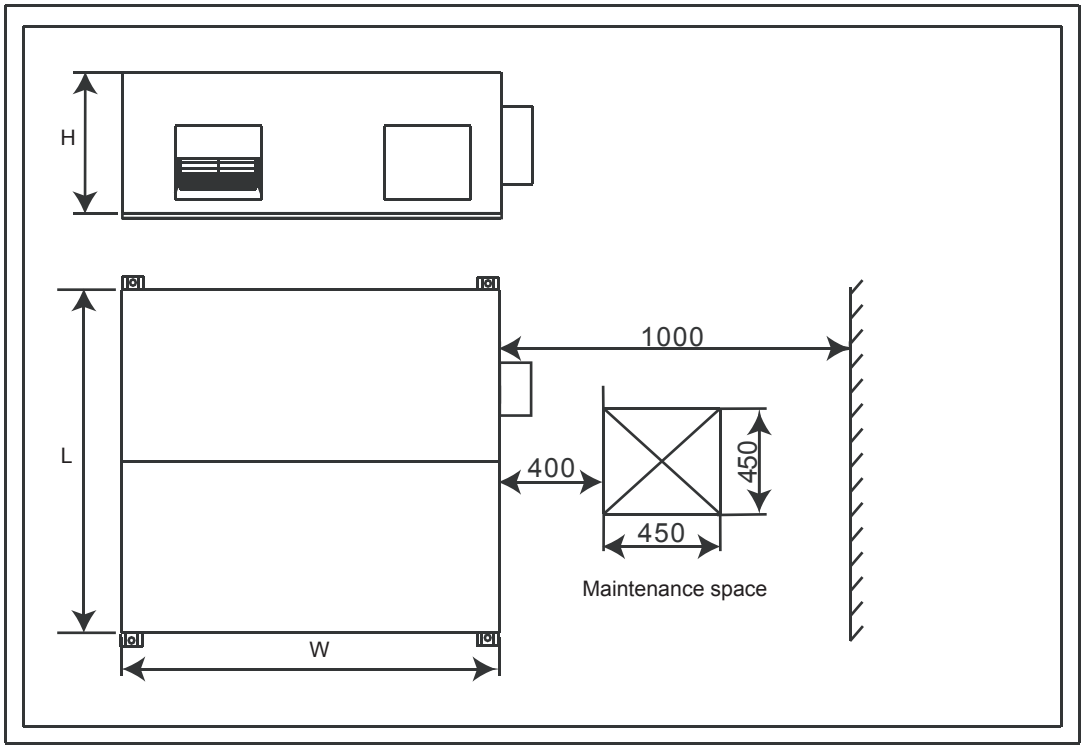


Fig. 3-3 Detail structure specification and maintenance space

- Key dimensions of the unit and air duct installation. (See the following attached picture *Fig.3-4~3.7* & Table 3-1)

HRV-D200

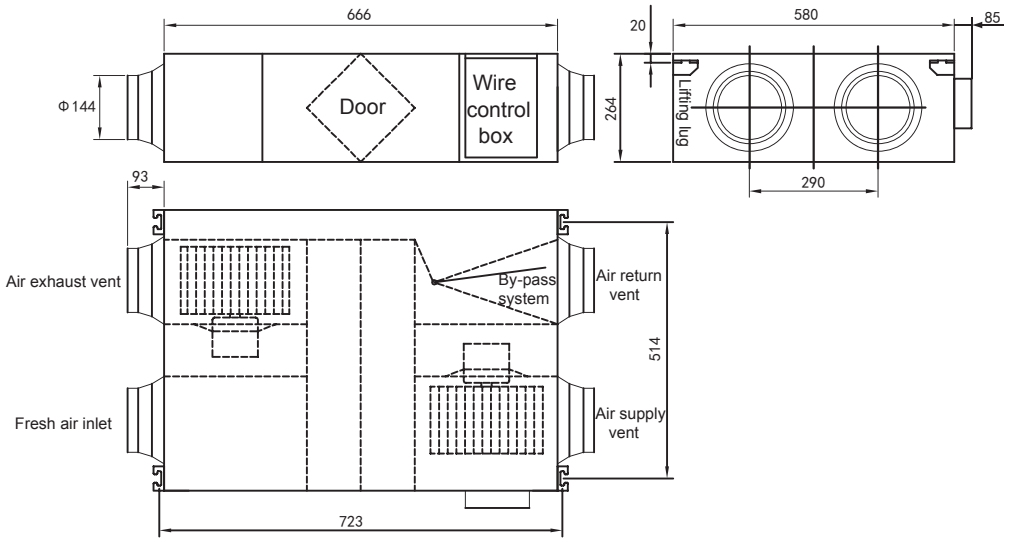


Fig. 3-4

HRV-D300~HRV-D1000

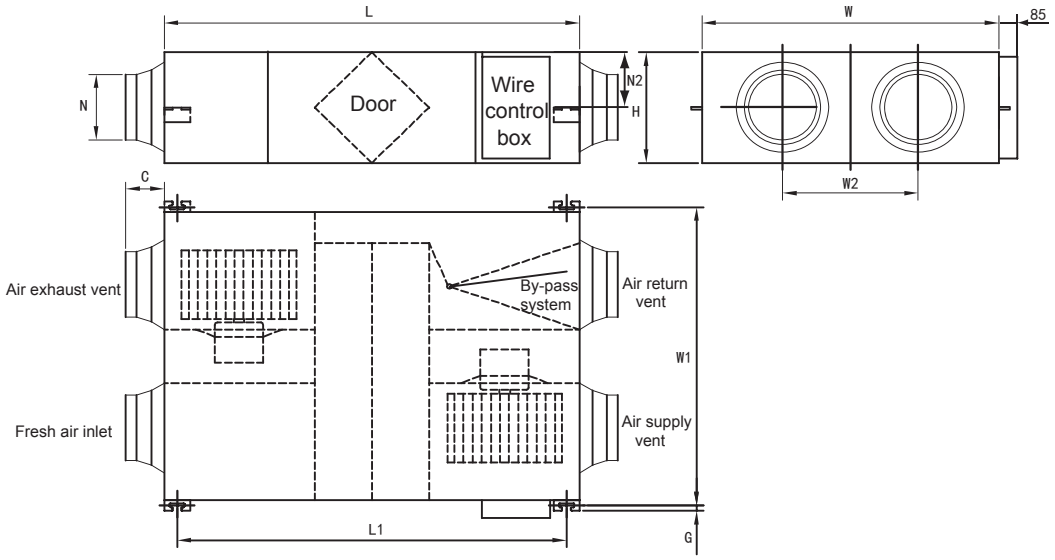


Fig. 3-5

Table 3-1

Model	L	L1	W	W1	W2	H	C	G	N	N2
HRV-D300	744	678	599	656	315	270	92	19	Φ144	111
HRV-D400	744	678	804	861	480	270	92	19	Φ144	111
HRV-D500	824	756	904	961	500	270	98	19	Φ194	111
HRV-D800	1116	1050	884	941	428	388	80	19	Φ242	170
HRV-D1000	1116	1050	1134	1191	678	388	80	19	Φ242	170

HRV-D1500

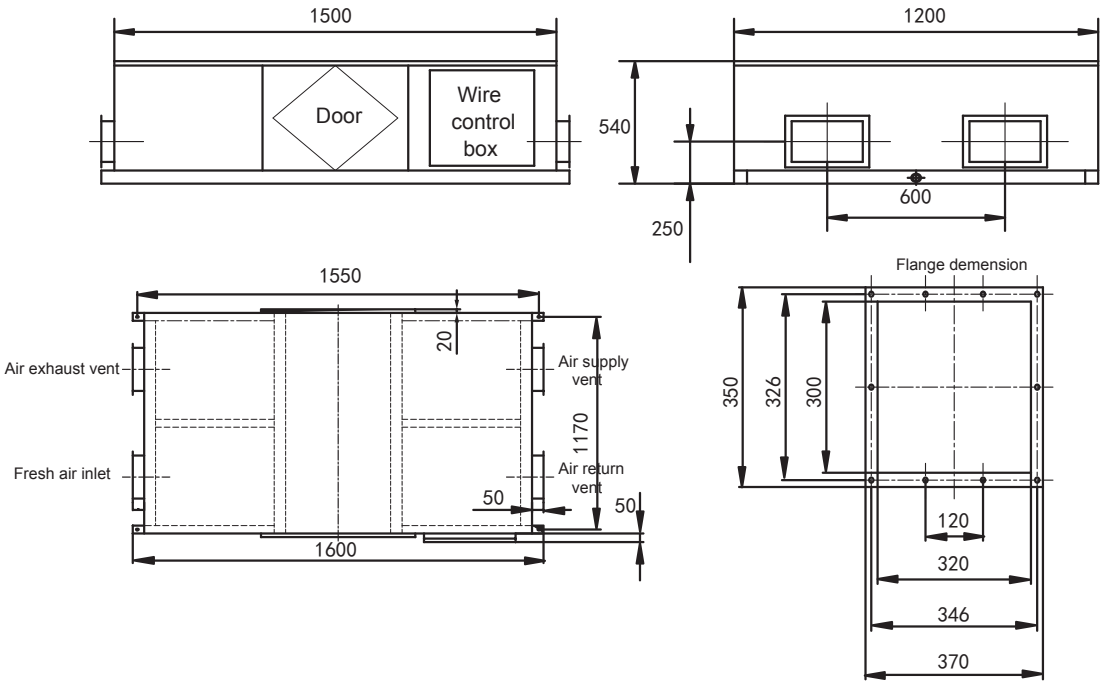


Fig. 3-6

HRV-D2000

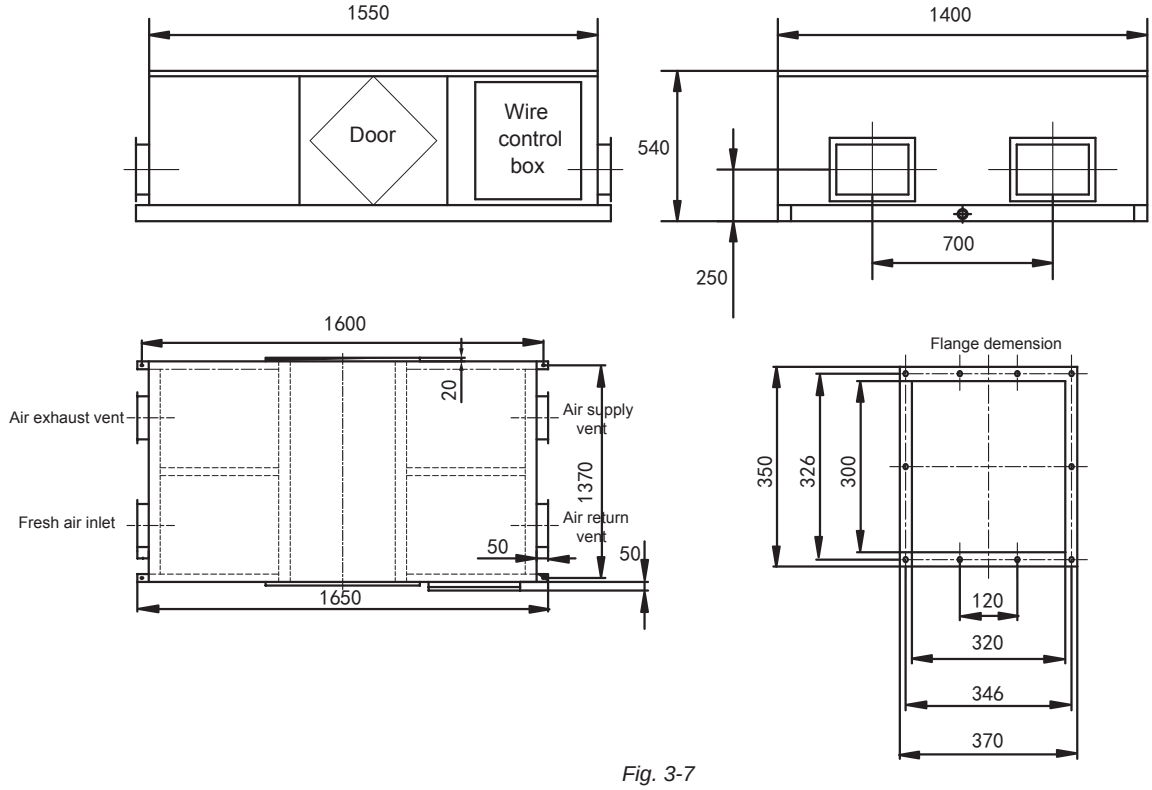


Fig. 3-7

4. WIRING

WARNING

Before obtaining access to terminal device, all power supply circuits must be interrupted.

4.1 Precautions When Laying Power Supply Wiring

A circuit breaker of shutting down power supply to the entire system be installed.

A single switch can be used to supply power to units on the same system. However, branch switches and circuit breakers must be selected carefully.

Fit the power supply wiring of each unit with a switch and fuse as shown in the drawing.

Install a wiring interrupter or ground-fault circuit interrupter for the power wiring.

Make sure the ground resistance is no greater than 100Ω. This value can be as high as 500Ω when using a grounding fault circuit interrupter since the protective ground resistance can be applied.

Be sure to give the electric grounding (earth) connection.

Do not let the grounding wire should come in contact with gas pipes, water pipes, lighting rods, or telephone ground wires.

- Gas pipes: gas leaks can cause explosions and fire. Water pipes: can not be grounded if hard vinyl pipes are used.
- Telephone grounded and lightning rods: the ground potential when struck by lightning gets extremely high.

Do no turn on the power supply (wiring interrupter or ground-fault circuit interrupter) until all other work is done. Tightening torque for the terminal screws.

Use the correct screwdriver for lighting the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the will not be properly tightened.
If the terminal screws are tightened too hard, screws might be damaged.

Refer to the table below for the tightening torque of the terminal screws.

Table 4-1

	Tightening torque (N•m)
Terminal base of remote controller/ Signal transmission wire (X2M)	0.79-0.97
Terminal base of power supply (XIM)	1.18-1.44
Grounding terminal (M4)	1.44-1.94

- After wiring, please confirm all connections are correct, and then power to the unit.
- Pay attention to the power supply wire .

4.2 Power Specification

Table 4-2

Model HRV-		D200, D300, D400, D500, D800, D1000,D1500, D2000
Power supply	Phase	Signal phase
	Frequency /voltage	220-240V~ 50/60Hz
Input current Main switch /fuse(A)		15/15
Power supply wire Dimension	Wire's qty	3 (Yellow/green wire is grounding wire)
	Code wire cross -section (mm^2)	2.5

4.3 System connection diagram

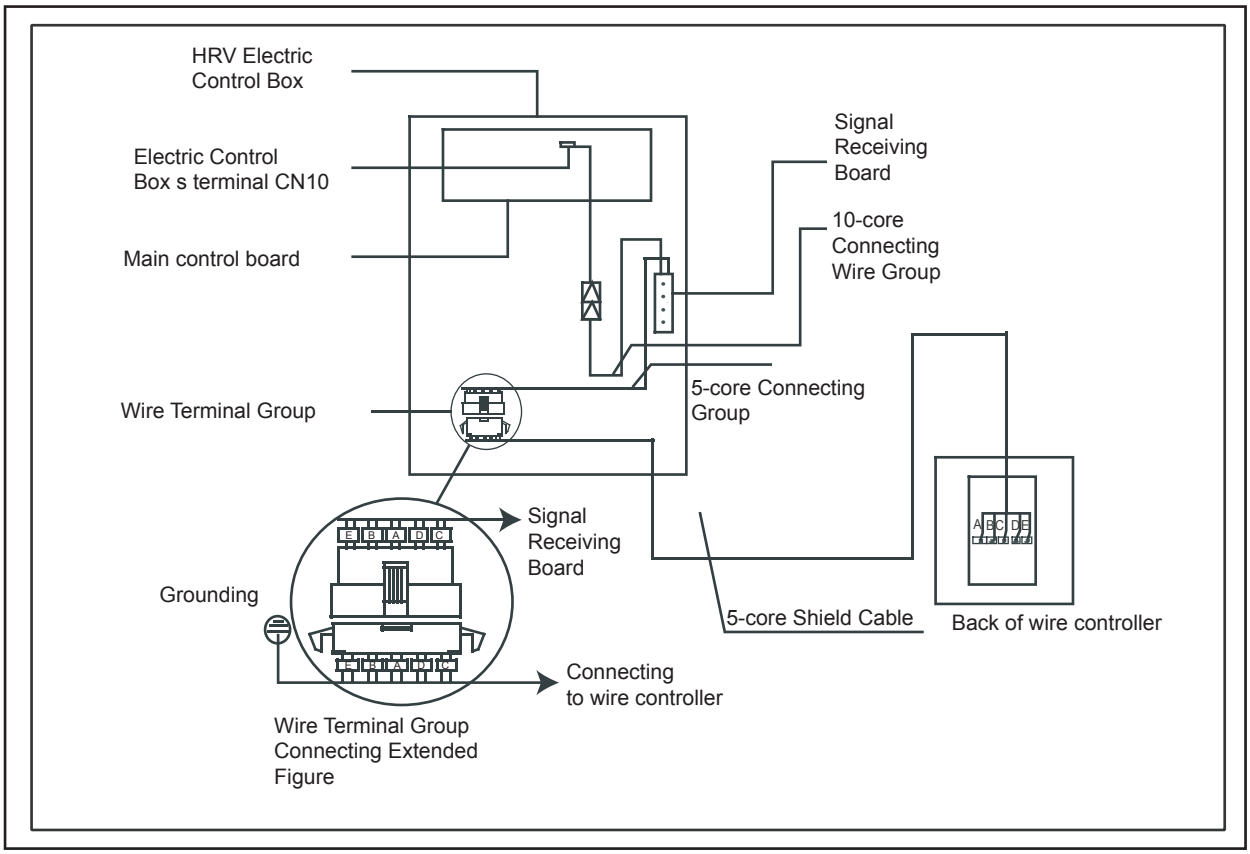


Fig. 4-1

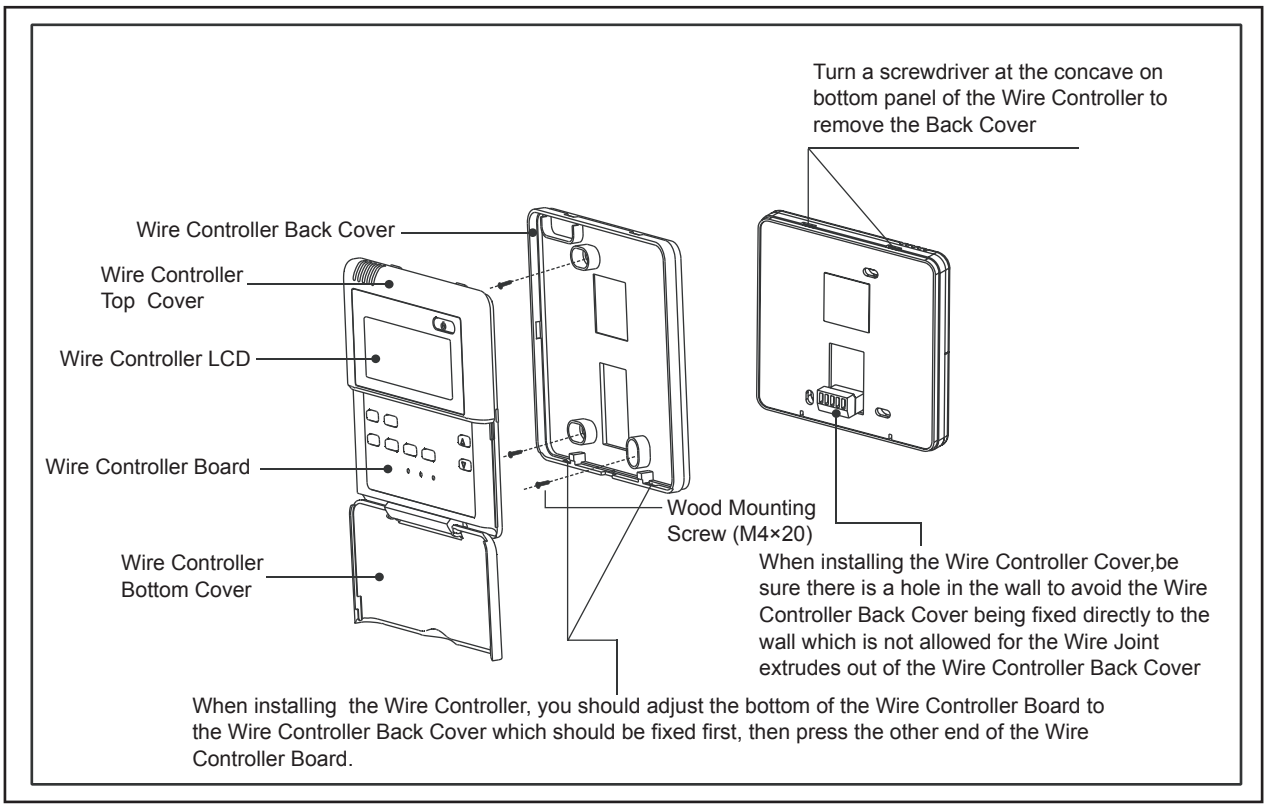


Fig. 4-2

CAUTION

1. Never turn screws too tightly, or else the cover would be dented or the Liquid Crystal breaks.
2. Please leave enough space for maintain and upkeep the wire controller.

4.4 Wiring diagram

HRV-D200、HRV-D300、HRV-D500、HRV-D600、HRV-D800、HRV-D1000

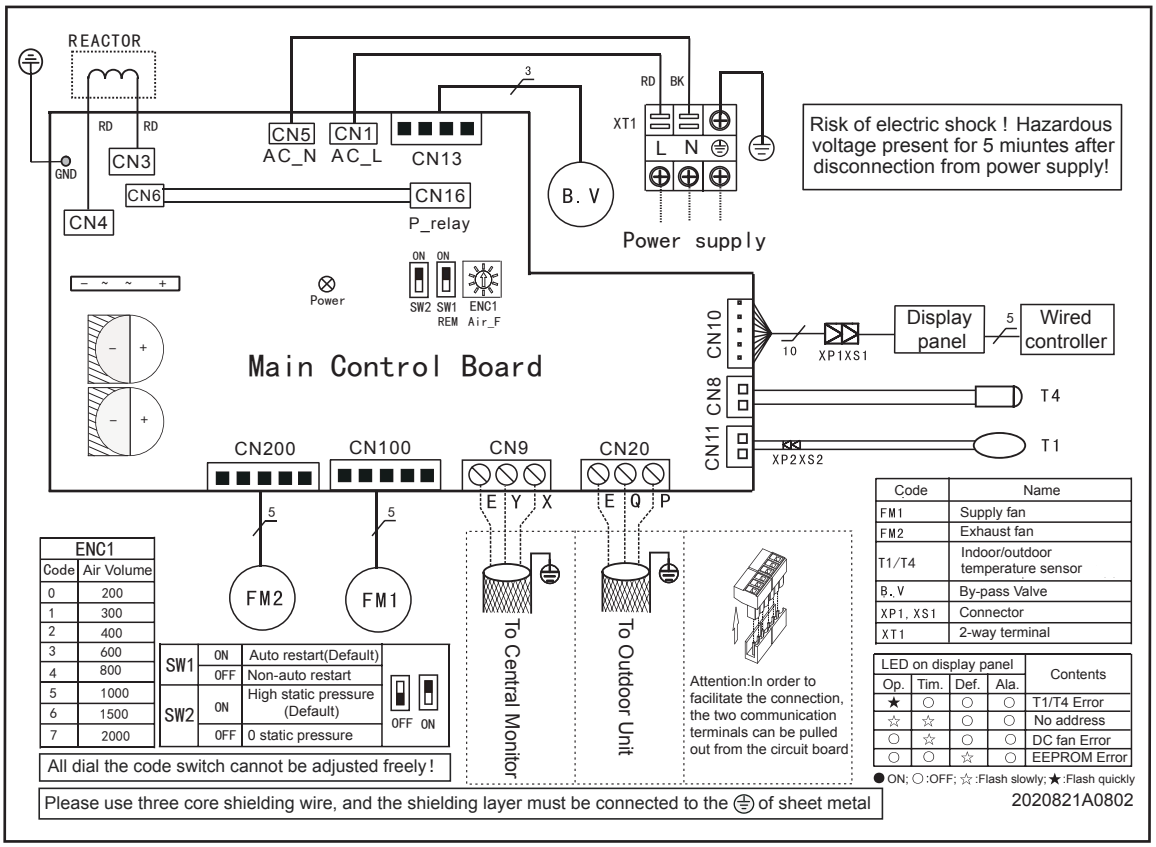


Fig. 4-3

HRV-D1500、HRV-D2000

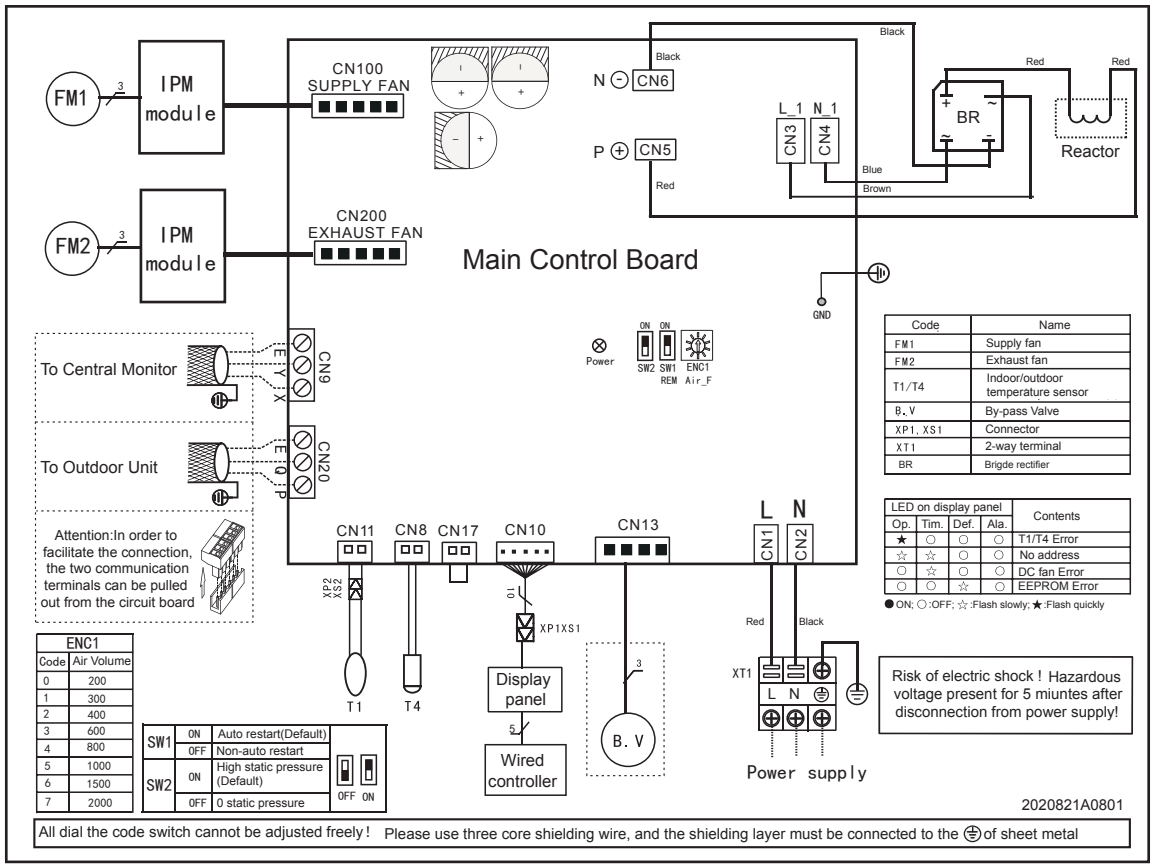


Fig. 4-4

4.5 Error code

Table 4-3

No.	Operation lamp	Timer lamp	Defrosting lamp	Alarm lamp	Explanation
1	★	○	○	○	T1/T4 sensor error
2	☆	☆	○	○	No address
3	○	☆	○	○	DC fan error
4	○	○	☆	○	EEprom error

Note: ● : ON，○: OFF，☆: Flash slowly，★: Flash quickly

5. SPECIFICATION PARAMETER

5.1 Specification Parameter

Table 5-1

Model	Power supply	Outline demension	Air outlet vent's demen-sion (mm)	Weight (kg)	Static pressure (Pa)	Nominal air flow (m^3/h)
HRV-D200	220-240V~ 50/60Hz	852×665×264	Φ144	25	75	200
HRV-D300		928×734×270	Φ144	27	75	300
HRV-D400		928×940×270	Φ144	32	80	400
HRV-D500		1020×1036×270	Φ194	35	80	500
HRV-D800		1276×1020×388	Φ242	58	100	800
HRV-D1000		1276×1269×388	Φ242	69	100	1000
HRV-D1500		1600×1270×540	346×326	151	160	1500
HRV-D2000		1650×1470×540	346×326	165	170	2000

Table 5-2

Model	Cooling		Heating		Input power(W)	Current(A)
	Nominal temp. efficiency	Nominal enthalpy efficiency	Nominal temp. efficiency	Nominal enthalpy efficiency	50/60Hz	50/60Hz
HRV-D200	60	50	65	55	61	0. 72
HRV-D300	60	50	65	55	98	0. 99
HRV-D400	60	50	65	60	109	1. 07
HRV-D500	60	50	70	60	170	1. 56
HRV-D800	60	50	70	60	246	2. 28
HRV-D1000	60	50	70	60	360	3. 10
HRV-D1500	60	50	70	60	725	5. 29
HRV-D2000	60	50	70	60	1340	9. 11

note：

1、For the units model of HRV-*(*=D200～D2000)，there are 3-speed adjustable air-volume （Hi、Med、Low）.

2、For the units model of HRV-*(*=D200～D2000)，all the parameters in the manual is measured at the high speed air-volume.

5.2 Blast Pressure Graphic

Static pressure (Pa)	Air flow (m3/h)	Brake power (W)
75	198	47
60	215	50
40	225	54
20	241	59
0	257	61

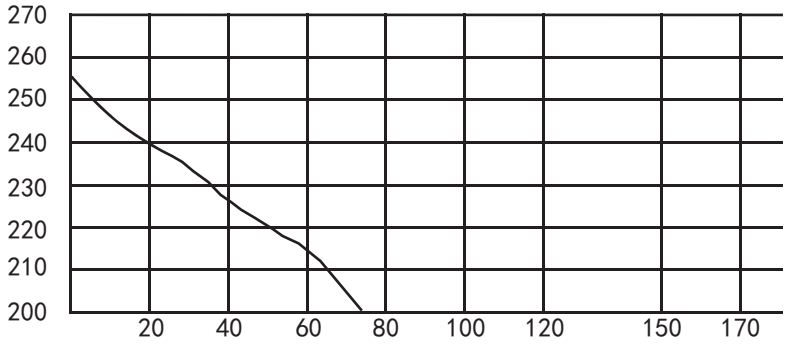


Fig. 5-1

Static pressure (Pa)	Air flow (m3/h)	Brake power (W)
75	297	78
60	309	80
40	331	86
20	361	92
0	395	98

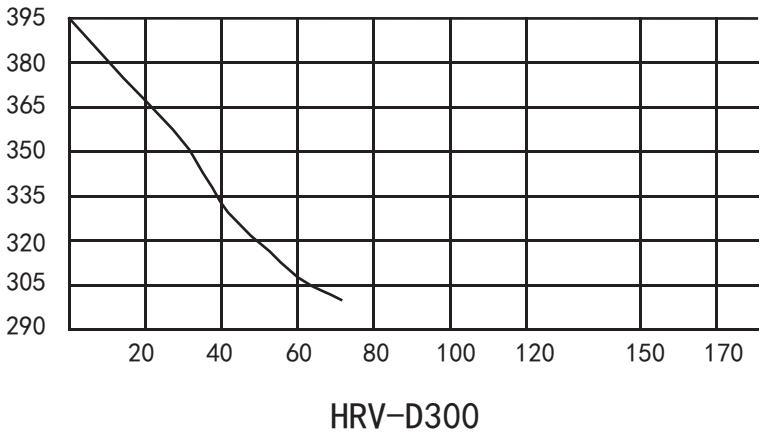
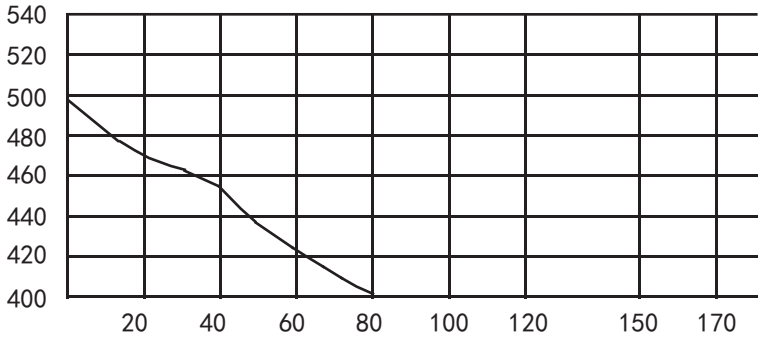


Fig. 5-2

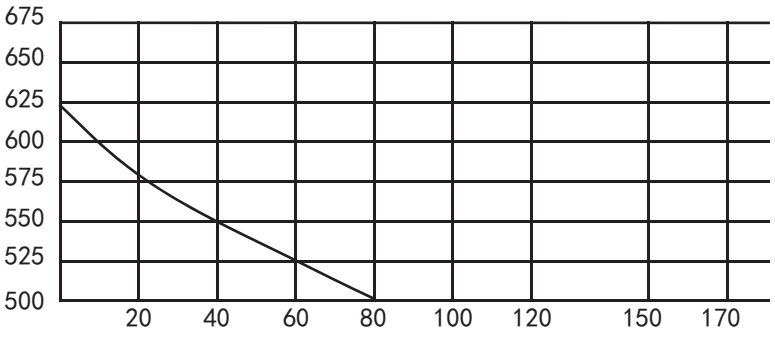
Static pressure (Pa)	Air flow (m3/h)	Brake power (W)
80	407	85
60	424	89
40	455	95
20	470	102
0	496	109



HRV-D400

Fig. 5-3

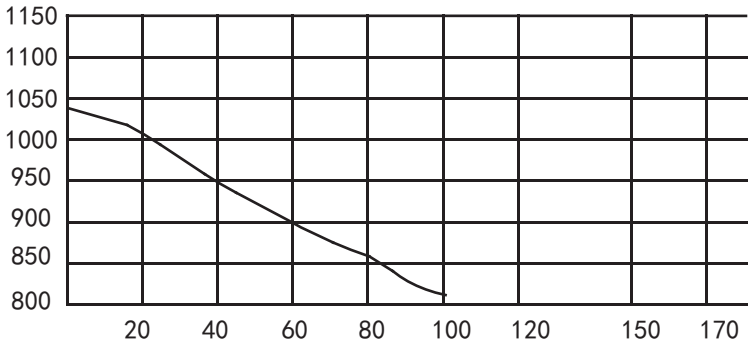
Static pressure (Pa)	Air flow (m3/h)	Brake power (W)
80	507	124
60	527	138
40	560	143
20	580	158
0	620	170



HRV-D500

Fig. 5-4

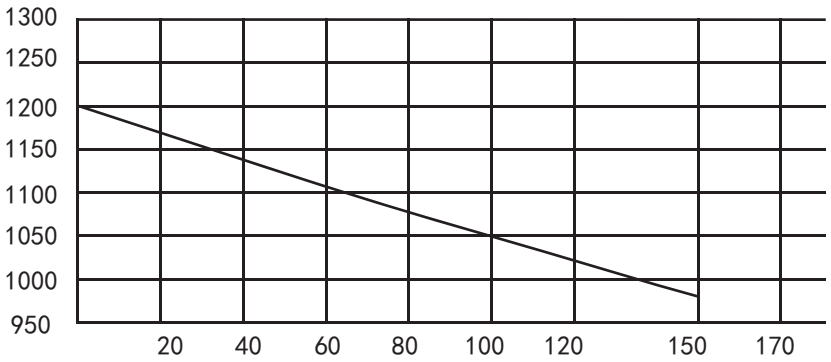
Static pressure (Pa)	Air flow (m3/h)	Brake power (W)
100	829	184
80	862	196
50	923	215
25	966	233
0	1021	246



HRV-D800

Fig. 5-5

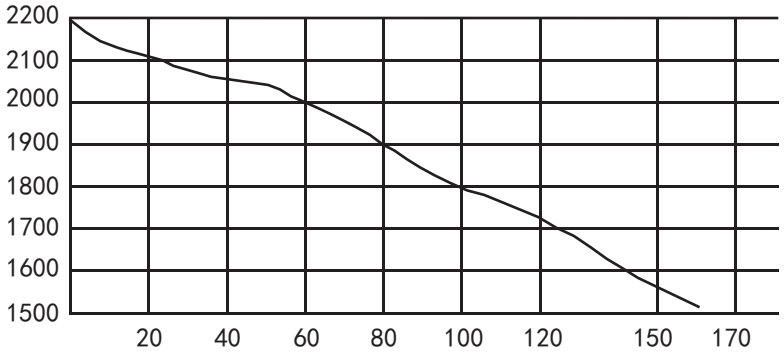
Static pressure (Pa)	Air flow (m3/h)	Brake power (W)
150	980	221
120	1020	256
75	1090	284
40	1140	317
0	1206	360



HRV-D1000

Fig. 5-6

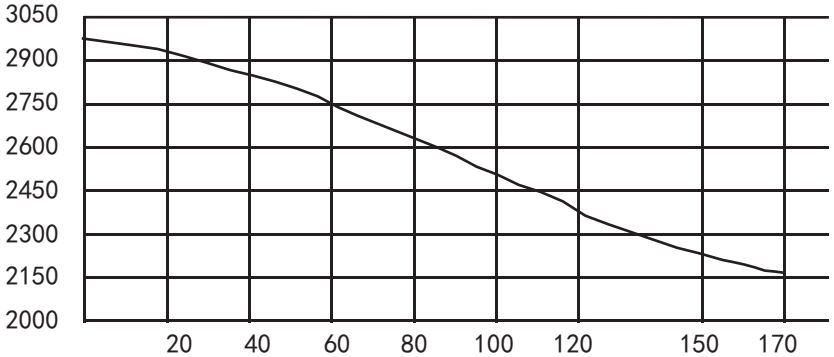
Static pressure (Pa)	Air flow (m3/h)	Brake power (W)
160	1534	550
130	1695	605
90	1869	629
50	2069	662
0	2209	725



HRV-D1500

Fig. 5-7

Static pressure (Pa)	Air flow (m3/h)	Brake power (W)
170	2166	1069
130	2361	1121
90	2582	1186
50	2807	1258
0	2954	1340



HRV-D2000

Fig. 5-8

6. HRV APPLICATION

6.1 Operation Priciple

HRV series——HRV (Heat Recovery Ventilation) employ advanced technique and technics, the heat exchanged core forming by special paper that be processed with chemical treatment, which could create the optimum result in temperature, humidity and cooling recovery.
High efficiency heat exchanged core: When air flow formed by exhaust air and outdoor air through the heat exchanged core in cross way, because of temperature difference in the two sides of flat partition board, the heat transmission is occurred. In summer, outdoor air acquire cooling from air exhaust to decrease environment temperature; In winter, outdoor air acquire heating from air exhaust to increase temperature, that is to say, it realizing the energy recovery during air exhaust process to exchange the heating in heat exchanged core to outdoor air.

6.2 Pay Attention To The Following Item Before Operation

6.2.1. Before drive-up, please clean up the duct and check whether all air valves and devices are normal.

6.2.2. Carefully adjust the system air valves when start-up, control the current of motor in rated range.

6.2.3. Three-phase model without by-pass function, therefore the fan would delay 30 seconds to start up.

6.2.4. Connect the wire controller
Wire controller should install according to HRV wire controller owner's manual, installation manual (Attached in the package box in wire controller).

6.2.5. When connect the HRV to centralized controller,

- LCD display of centralized controller corresponding to HRV mode as following:
- Centralized cooling mode vs. HRV heating recovery mode （HEAT RECOVERY）
- Centralized heating mode vs. HRV heating by-pass mode （BYPASS）
- Centralized air supply mode vs. HRV air supply mode （ SUPPLY）

7 MAINTENANCE AND UPKEEP

7.1 During new use stage, one should check the fan operation regularly.

7.2 The cleaning regulation for filter mesh depend on local environment. It could be clean by vacuum dirt exhauster or water, if heavy dust accumulates, it should use neutral detergent to clean it, and then dry it in shady and cool place for 20 to 30 minutes and replace it.

7.3 Clean the core at least 2 years a time by vacuum dirt exhauster to remove dust and foreign substance in the unit assemblies, do not touch the assemblies by exhauster and flush by water to avoid core damage.

7.4 Check the fan every half a year to maintain the well balance of it and check whether the axletree has loosed.

8. TRIAL RUN

8.1 Please Confirm The Following Points Before The Test Operation:

8.1.1 The unit is installed correctly completed.
8.1.2 Tubing and wiring are correctly completed.
8.1.3 The drainage is unimpeded.
8.1.4 The heating insulation works well.
8.1.5 The ground wiring is connected correctly.
8.1.6 The power voltage fits the rated voltage of HRV.
8.1.7There is no obstacle at the outlet and inlet of HRV.

8.2 Control The HRV By Wire Control, Operate It According To Wire Controller Owner's Manual.

8.2.1 Whether the switch on the remote controller works well.
8.2.2 Whether the room temperature is adjusted well.
8.2.3 Whether the indicator lights normally.
8.2.4 Whether there is vibration or abnormal noise during operation.

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更改记录：

版本A升级至版本B：
1）更改第10页接线铭牌；
2）修改封底图号；