

Operation Instruction (Containing the Installation Instruction)

Energy Recovery Ventilator

Model No.

FY-E15DZ1

FY-E25DZ1

FY-E35DZ1

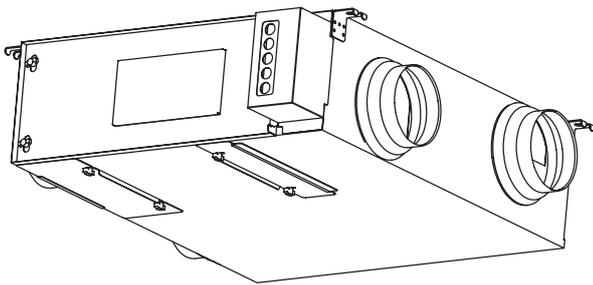
FY-E50DZ1

FY-E15DZ1L

FY-E25DZ1L

FY-E35DZ1L

FY-E50DZ1L



Accessories:

Model label.....1 piece
Operation Instruction.....1 books
(Please be sure to give them to customer)

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Thanks for purchasing Panasonic [Energy Recovery Ventilator] .

- Please read this instruction carefully to understand how to use this product correctly before installation and construction, especially [safety precautions] (page 2~4)、(page 8~9)make sure to use safely. After you've read it, keep it well so that you can easily find it if necessary.
- Please be sure to give this instruction to end user.

SAFETY PRECAUTIONS <must be complied>

In order to prevent the damage to using personnel and other personnel and avoid the loss of property, please be sure to comply with the following cautions.

■ The following marks are used to distinguish the damage from damage degree caused by ignoring the mark or operating by wrong methods.



WARNING:

this mark means the content [consider the situation may cause the death or serious injury] .



CAUTION:

this mark means the content [consider the situation may cause the injury or the loss of property] .

■ The following marks represent the content expected to be complied with (The following mark is an example of mark indication).



The marks represent the content(prohibition).



The marks represent the mandatory content (must be complied).



WARNING



Prohibition

It can't be used for ventilation in locations with open-burning appliances (heater).

It must be adopted with professional ventilation if using the gas or petroleum heating stove in room.



Wet hands prohibition

Don't turn on/off the switch by wet hands.

It may cause electric shock.



Prohibition

It's forbidden to conduct self –transformation, disassemble and repair. Otherwise, it may cause fire, electric shock and injury.If the product is needed to maintain, disassemble and repair,please contact the sale shop or repair shop where you purchased.



Please entrust the sale shop or specialized company to conduct the maintenance except the filter maintenance.

It may cause the fire, electric shock and injury.



Please cut off the breaker in the switch box before maintenance.



It may cause electric shock and injury.



Prohibition

Don't insert fingers or sticks into the unit or air inlet, air outlet.

It may cause the injury because of high speed rotation inside the unit.



It's forbidden to get wet

Don't wash the unit by water.

It may cause short circuit or electric shock (motor, switch and other electric parts).



The appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person who is responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. It may cause the electric shock or injury.



Prohibition

Don't turn on/off the switch when combustible gas leaks.

The sparks of switch may cause the gas explosion.



If the appliance is not used for a long time, in order to prevent it from dropping, it should be removed. Otherwise, it may cause the dropping.



If the power supply cord appears worn, in order to avoid the danger, changing work need to be done by authorized personnel.

Please get the contact with the agent where you purchased.



CAUTION



Confirm if the unit is installed firmly. It may cause injury when dropping.



Firmly fix the parts. Dropping will cause the injury.



The appliance must be stopped immediately, waiting for repair when abnormal operation occurs (such as noise, vibration, burnt smell).

It may cause the unexpected accident.



Prohibition

Don't place the obstacles near the air inlet and return air grill.

It may cause the injury due to the blowing out or sucking in.



Please entrust the professional staff to conduct electric, duct and equipment installation. It may cause unexpected accident when improper installation occurs.



Prohibition

Don't place the burning appliance in location where the unit blows directly.

It may cause the insufficient burning of burning appliance.



Prohibition

Plant and animal cannot be placed in the blowing air outlet.

It may cause the bad effect to animal and plant.



Conduct the routine cleaning to filter.

Owing to lots of dirt and dust attached in the filter, it may cause the lack of oxygen in room.



Please wear the gloves when cleaning the filter.

It may cause the injury.



The appliance is forbidden to operate without filter.

The dirt and dust attached to the heat exchange core will lower its performance, and meanwhile when they go into room, they will enter into eyes.



Because it's aerial work, please fix the ladder when conducting the maintenance.

Dropping may cause injury.



In maintenance (disassembling the maintenance cover), please pay attention to the dropping of dirt and dust and insects. It may enter into eyes.



Prohibition

Don't use the unit near the combustible spray.

It may cause the fire.



Please fully confirm the usage for special purposes.

The appliance is not used under the special condition such as preservation of foods, animals, plants, precision instruments, and artwork. Otherwise, it may cause quality degradation.



Prohibition

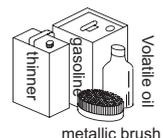
Please don't place the vessel with water on the unit. It will wet inside of unit when the water leaks, which may cause the damage of electric insulation and electric shock.



Prohibition

Don't clean the filter by the volatile oil or metallic brush.

It may damage the filter when the dirt and dust come into room, it will enter into eyes.



When the appliance is not used for a long time, you should cut off the breaker for safety.



Dust accumulation will get the unit heated, which may cause the fire.



Prohibition

Don't incline it when disassembling the unit.

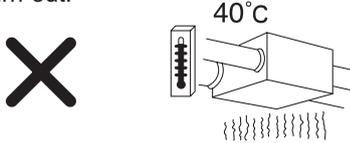
The internal accumulated water will wet the goods in room. Please contact the sale shop or repair shop.

SAFETY PRECAUTIONS <must be complied>

Don't use it in the following locations.

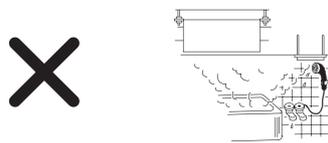
Locations exposed to high temperature or direct flame.

Avoid installing the ERV in locations which reach temperature of 40°C or above. Usage under high temperature conditions may cause distortion of the filter or heat exchange core or motor burn-out.



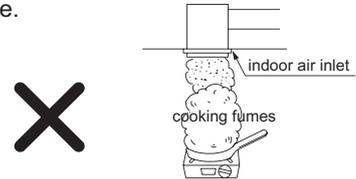
Locations with high humidity.

Do not install in high humidity locations such as bathrooms. Dew occurred in unit may cause electric shock, short circuit, other electric accident and produce the dewing water drops.



Locations with large amounts of cooking fumes.

The unit doesn't work if the filter or heat exchange core become clogged with oil which may cause fire.

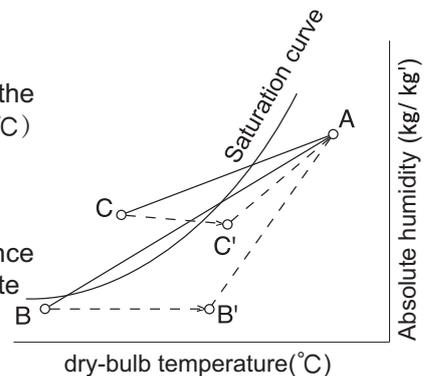


Don't install the unit in locations such as machinery or chemical plants where it will be exposed to noxious gases containing acids, alkali, organic solvents, paint fumes, etc., to gases containing corrosive ingredients, or where dust or oil mist will be produced. (gas poisoning, corrosion and degradation accrued in unit may cause the fire.)

USING CONDITION • CAUTION

Using condition

- Outdoor air condition
Temperature range -10°C ~ 40°C, relative humidity 85% or less (to the slim type added cold proof area BOX, lowest temperature range -20°C)
- Indoor air condition
Temperature range -10°C ~ 40°C, relative humidity 85% or less.
- Installation requirements: same as the indoor air conditions.
Indoor air here means air in air-conditioned living rooms. The appliance usage in refrigerators or other places where temperature can fluctuate greatly is prohibited even if a temperature range is acceptable.



Be careful of frost and dew

As shown in the right figure, it's supposed that a high temperature absorbing air condition A and a low temperature absorbing air condition B are plotted on the air line figure, then a high temperature air A is heat-exchanged by the unit and Point C represent the trend of saturation curve. In this case, it will cause the dew or frost inside the unit. To avoid this, you are required to heat a low temperature air B up to B' so as to get C' below the saturation curve before using the unit.

- The Energy Recovery Ventilator manufactured by our company is conducted the condensation without the water dropping test in the following conditions based on JIS B 8628:2003, if using condition is rougher than the following sheet, it may cause the frost or dew.

JIS B 8628:2003 Energy Recovery Ventilator Appendix F (specification) condensation test method

Classification	Indoor condition			Outdoor condition			Operation status	Measured time (h)
	dry-bulb temperature	wet-bulb temperature	*relative humidity(reference)%	dry-bulb temperature	wet-bulb temperature	*relative humidity(reference)%		
Cooling in summer	22°C	17°C	60	35°C	29°C	65	operate	6 hours
Heating in winter	20°C	14°C	50	-5°C	-	-	operate	6 hours
Heating in winter	20°C	14°C	50	-15°C	-	-	Stop	6 hours

※Relative humidity is calculated according to JIS B 8628:2003.

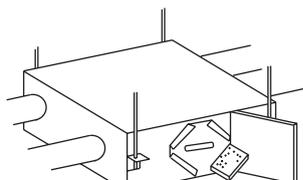
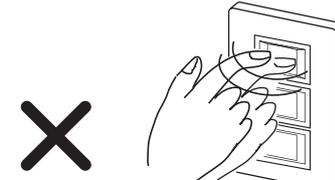
Avoiding the coming of insects

Energy Recovery Ventilator is intended to exchange outdoor air and indoor air. When the outdoor air comes in, maybe bring the insects from outdoor pipe hood to internal unit. As insect occurrence is affected by natural environment, it's recommended to use the pipe hood with fly net when using the unit under the environment of many insects such as near the street light.

FEATURES

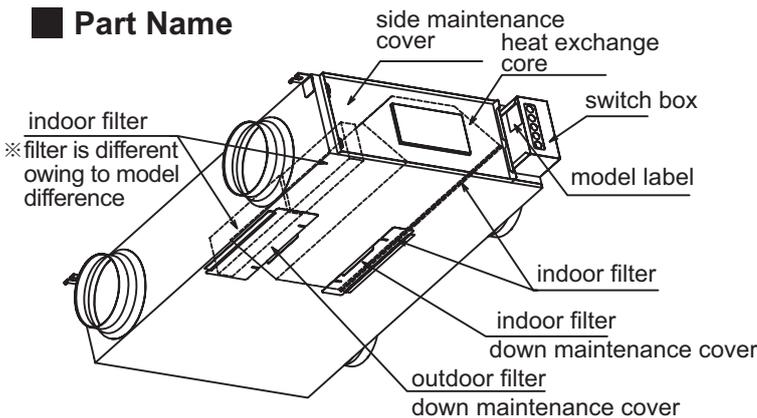
1. Energy saving ventilation Thanks to efficient recovery of the thermal energy lost during ventilation (fresh air load), you can save an air-conditioning fee.
2. Facility saving Thanks to a greatly reduction of fresh air load, part of the thermal energy is recovered so that the air-conditioning can become mini-type properly.
3. Humidity function When cooling, reduce the outdoor air humidity to make the incoming air humidity close to the indoor humidity;
When heating, raise the outdoor air humidity to make the incoming air humidity close to the indoor humidity.
4. Comfortable ventilation Indoor temperature fluctuation is small when ventilating. As the simultaneous performance of exhaust air and supplyair, it can be ventilated in high density space.
5. Sound isolation The air duct and heat exchange core has the effect of sound isolation. It prevents the outdoor noise from coming in, reversely it also works so as to keep a nice office and store environment.

USING CAUTIONS

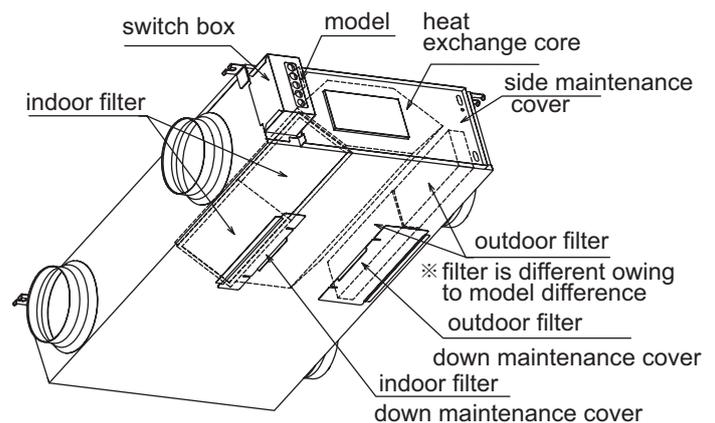
<p>It must operate with filter. If not using the filter, heat exchange core is clogged with dirt and dust, performance will be lowered and even the unit doesn't work.</p> 	<p>Turn on /off the switch correctly. If repeatedly turning on or off the switch not only cause the wrong operation but affects the relay inside and damage it.</p> 	<p>It's forbidden to use the [normal ventilation] for the dew will be produced in unit and indoor air inlet if operating the mode [normal ventilation] when the room is heated in winter.</p> 
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Part name and using methods(model label adhesive location).

Part Name



FY-E**DZ1
(left type)



FY-E**DZ1L
(right type)

※ 1 The amount of indoor filter is different owing to model difference.

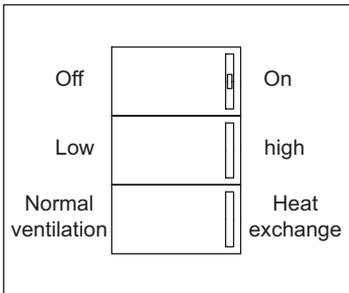
※ 2 left type is symmetric to right type.

Model	Quantity
FY-E50DZ1 FY-E50DZ1L	2
Other model	1

PART NAME AND USING METHODS (model label adhesive location).

Using methods:

Please use the switch installed on the wall (separately sold).



Caution

- Please use the mode [heat exchange] When stopping.
- In winter, please use the mode [heat exchange] .
- In winter, when the room is heated and operation in the mode [normal ventilation] ,condensation produced on the surface of the unit, which will make the ceiling dirty or cause the short circuit or electric leakage.

Heat exchange:to get the temperature and humidity close to indoor,it heat-exchanges the outdoor and indoor air and then bring the outdoor air to indoor.

Normal ventilation: when the indoor air is polluted, it will increase the exhaust air amount.

※Caution: with the exhaust air amount increasing,the negative pressure will be produced in room,the outdoor air comes into the room from the gaps of door>window and etc.so if you don't wish the outdoor air to come into the room, don't use the mode.

HANDLING METHODS ON ABNORMAL OPERATION

If treated as fault:

Please check as the following list, if abnormal operation occurs, you should turn off the switch, cut off the breaker, and get the contact with sale shop or repair shop.

Situation	Solution
<ul style="list-style-type: none"> ● The unit doesn't work when turning on the switch. ● Without air blowing 	<ul style="list-style-type: none"> ● Is the breaker in the mode [off] ? ● Is there a power failure? ● Is the filter clogged with dust (please conduct the maintenance according to the maintenance methods for each model)

The condition is not improved or changed after checking the above-mentioned solution, please get the contact with sale shop where purchasing.

MAINTENANCE METHODS

Maintenance methods for main unit

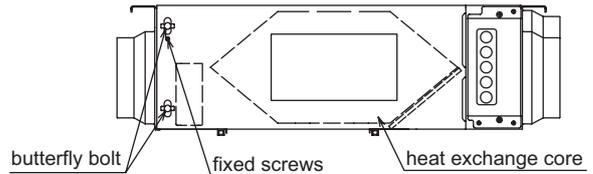
- If using the ERV for a long time, filter will be clogged by dirt and dust which reduces the air volume and ventilation effect, get the noise louder. Please do the routine cleaning as per the dirty degree.
- Rough using condition (large amount of dust location) will cause the reduction of air volume and filter efficiency, to keep the unit perform well, please raise the times of cleaning or replacing the filter properly. If using condition continues to get worse, in order to prevent the polluted air from coming into the room, please adjust to the low mode for reducing the air volume or stop the unit.
- In maintenance, please cut off the breaker before disassembling the maintenance cover.
- Please conduct the cleaning after fixing the ladder and wearing the gloves.
- Please pay attention to the dropping of parts and dirt such as filters or screws, dust and insects.

Side maintenance for filter

1. Opening methods of side maintenance cover

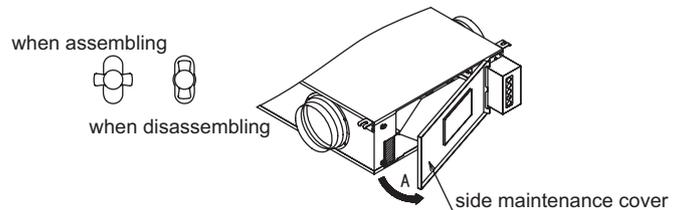
Remove the screws fixed in maintenance cover by screwdriver.

Support the maintenance cover by hand and rotate the two butterfly bolts by 90°, remove the maintenance cover toward the arrow A.



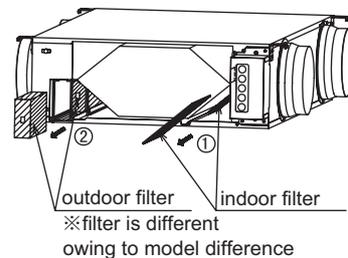
2. Cleaning methods for indoor filter

- 1) Remove the indoor filter horizontally (Circle ①).
- 2) As to model E50DZ1, E50DZ1L please horizontally remove the first heat exchange core, and then horizontally remove the second indoor filter.
- 3) Please clean the dirt and dust attached to indoor filter by vacuum cleaner, using life for indoor filter is a whole period.
- 4) Please conduct indoor filter installation by the reverse order of disassembling steps.



3. Cleaning methods for outdoor filter

- 1) Please horizontally remove the outdoor filter (Circle ②).
- 2) As to model E50DZ1, E50DZ1L please horizontally remove the first heat exchange core, and then horizontally remove the second indoor filter.
- 3) Please clean the dirt and dust attached to outdoor filter by vacuum cleaner. Don't wash the filter by water.
- 4) Note:
Outdoor filter cleaning: once a month, using life is about 12 months.



- 5) Please pay attention to the following caution during the outdoor filter installation, operate by the reverse order of disassembling steps.

Please refer to the installation direction in outdoor filter, align the label and conduct the installation.

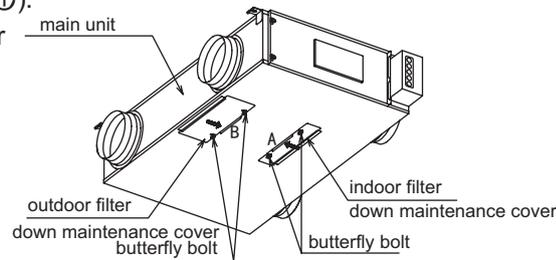
Please firmly fix the screw when installing the maintenance cover, in order to avoid the production of gap between the maintenance cover and main unit.

MAINTENANCE METHODS

Down maintenance for filter (*when setting the down maintenance cover,meanwhile you must reserve the side maintenance cover in advance.)

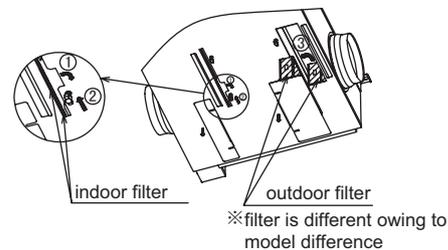
1. Cleaning methods for Indoor filter

- 1) Remove the two screws fixed in the indoor filter and the indoor down maintenance cover toward the arrow A.
- 2) Please remove the indoor filter toward oblique below location (Circle ①).
- 3) As to model E50DZ1, E50DZ1L, slide and remove the second filter toward oblique below direction (Circle ②) .
- 4) Clean the dirt and dust clogged in indoor filter by vacuum cleaner, using life for indoor filter is a whole period.
- 5) Please conduct indoor filter installation by the reverse order of disassembling steps.



2. Cleaning methods for outdoor filter

- 1)Remove the two screws fixed in the outdoor down maintenance cover for outdoor filter toward the arrow B.(note:outdoor filter and down maintenance cover is a whole)
- 2) Horizontally remove the outdoor filter (Circle ④).
- 3)As to model E50DZ1, E50DZ1L, slide and remove the second filter toward oblique below direction (Circle ③).
- 4) Please clean the dirt and dust attached to outdoor filter by vacuum cleaner.



Don't wash them by water.

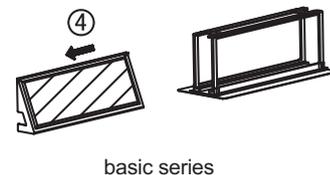
5) Note:

Outdoor filter cleaning:once a month, using life is about 12months.

- 6) Please pay attention to the following caution during the outdoor filter installation, operate by the reverse order of disassembling steps.

Please refer to the installation direction in outdoor filter, align the label and conduct the installation.

Please firmly fix the screw when installing the maintenance cover, in order to avoid the production of gaps between the maintenance cover and main unit.



SAFETY PRECAUTIONS <must be complied>

In order to prevent the damage to using personnel and other personnel and avoid the loss of property, please be sure to comply with the following precautions.

■ The following marks are used to distinguish the damage from damage degree caused by ignoring the mark or operating by wrong methods.

	WARNING: this mark means the content [consider the situation may cause the death or serious injury] .
	CAUTION: this mark means the content [consider the situation may cause the injury or the loss of property] .

■ The following marks represent the content expected to be complied with (The following mark is an example of mark indication)

		The marks represent the [draw your attention] content.	
			The marks represent the content [prohibition] .
		The marks represent the mandatory content [must be complied]	

WARNING

Strictly conduct the installation according to the installation instruction.
Improper installation may cause the electric shock or fire.

Don't use the power besides the alternate current 220V/ 50Hz.
It may cause the fire and electric shock.

Don't conduct the self-transformation.
It may cause the fire, electric shock and injury.
Prohibition

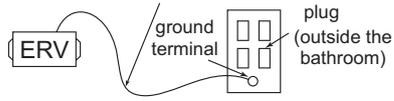
Please cut off the breaker in maintenance, inspection and no use for a long time.
It may cause the electric shock and injury.



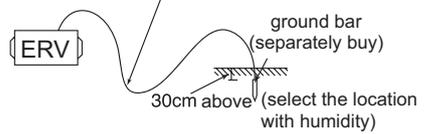
When metallic air duct go through metal mesh used for mortar, wire braid, or wood material adhesive to the metal plate, don't get it in touch with them.
It may cause the fire if electric leaks.

Ground connection construction
Please conduct the ground connection in the following methods.
If employing other methods, it may cause the insufficient ground connection.
Don't connect the ground connection with gas pipeline, water pipeline, lightning rod and phone landline. Wrong ground connection may cause electric shock.

- When connecting lead wire to the ground terminal of outlet.
ground wire(diameter of copper wire is 1.6mm or above.)



- When using the ground bar.
ground wire(diameter of copper wire is 1.6mm or above.)



Fault or electric leakage may cause the electric shock.

Please entrust the sale shop or professional staff where you purchased to conduct the installation.
When you install it by yourself, it may cause the fire, electric shock and injury.

Any exhaust air can't be sucked into outdoor air inlet such as combustible air.
It may cause the serious accident owing to lack of oxygen.

Outdoor air inlet cannot be installed in location where exhaust air may back-blow
It may pollute the indoor air and affect our health.



CAUTION



Prohibition

Please don't set the indoor air inlet in location with high temperature or high humidity.

It may cause the damage inside the unit, which can result in abnormal operation, electric shock and fire.



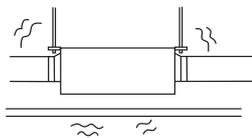
It must use the specified part during the installation (include the accessories)

It may cause the unit dropping, fire and electric shock If not using the specified parts.



Please install it on the ceiling that is enough strong to keep the unit, otherwise the ceiling should be reinforced.

Besides, please install the unit by the specified methods



Dropping may cause the injury.



Please install the anti-bird net or similar thing in air duct.

Please remove the abnormalities such as bird net, otherwise it may cause the lack of oxygen in room.



Please conduct according to the Electrical equipment technology benchmark and indoor lead wire regulation.

Wrong wire connection will cause the electric leakage, electric shock and fire.



prohibited to use in location with water

Please don't install it in the large humidity place such as bathroom.

It may cause the electric shock and abnormal operation.



Contact prohibition

Please don't insert the fingers and sticks into the rotation part during the operation.

It may cause the injury.



Please install the inside of insulated space (the space is insulated from outdoor air).

If installing it outside the insulated space (the space exposed to the outdoor air) the internal unit will be dew in winter, it may cause the electric shock or water dropping.



Owing to the different installation position for special purpose circuit breaker, sometimes it's required to install the anti-creeping circuit breaker.

It may cause the electric leakage if not installing the anti-creeping circuit breaker.



Please install the outdoor air duct inclined to outdoor.

Improper installation will cause the water seepage in room, result in wetting the goods.



To avoid the dew, the outdoor air duct extends to indoor air duct.

Improper installation will cause the water leakage in room, result in damaging the indoor property.



Please install the main unit in location where dust and dirt can't come in.

Large amount of dirt and dust clogged in filter will cause the lack of oxygen in room.



Firmly fix the parts.

Dropping may cause the injury.



Prohibition

Don't install the main unit and indoor air inlet in location with excessive cooking fumes such as kitchen.

It may cause the fire.



Prohibition

Don't install the main unit and indoor air inlet in location with high temperature or directly exposed to heat source.

It may heat or cause the fire.

INSTALLATION PRECAUTIONS <must be complied>

CAUTION

■ Please avoid the following duct installation.

(1) excessive bending



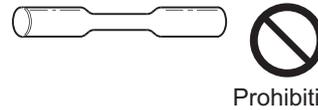
Prohibition

(2) multi-times bending



Prohibition

(3) reduction the diameter of connecting duct



Prohibition

■ It may cause the unexpected accident.



Prohibition

Don't install the unit in locations such as machinery, chemical and research plant where it will be exposed to noxious gases containing acids, alkali, organic solvents, paint fumes, etc., to gases containing corrosive ingredients.

It may cause the gas poison, corrosive damage and deterioration inside the unit, Result in fire.



Prohibition

Do not install in high humidity locations such as bathrooms.

Dewing occurred in unit may cause electric shock, short circuit, other electric accident and dewing water drops.



Prohibition

Don't insert fingers or sticks into the unit or air inlet, air outlet.

It may cause the injury because of high speed rotation inside the unit.



Prohibition

Please don't install the unit in location where indoor temperature is below the outdoor temperature.

It may cause the electric shock or abnormal operation.



Prohibition

Don't install in location where may be exposed to the combustible gas leakage.

In case of gas get together around the unit, it may cause the fire.



Use the specified cord connected the power supply cord and connect wire, terminal in connection is fixed firmly and not affected by cord forces.



Firmly fix the power supply cord and connect wire, close the cover, and don't make the cover tilted.

If the cover is not closed firmly, dust and dirt come in, it may heat the terminal in connection, result in fire or electric shock.



Please take care of it during moving the unit.

Improper hanging and moving may cause the dropping, result in injury.



Prohibition

Don't twist the unit or conduct the overload force to unit in construction.

Dropping may cause the injury.



Please pay attention to the rotation of impeller caused by backward air in air duct.

Although the power is cut off, it may get involved to the rotation part, result in injury.



Please install the ventilation equipment on the ceiling with excessive humidity or high temperature.

It may cause the fire or electric shock.



Prohibition

Please don't face it to the air outlet by eyes (especially when operating)

The dirt may fly into your eyes.



Please fully confirm the usage for special purposes.

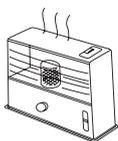


If the product is used for special purposes such as preservation of food, animals, plants, precision instruments and artwork, it may cause the quality declination.



Prohibition

Don't use it in location with opening –burning equipment (heater).



Please use the professional ventilation when the room is heated by gas or oil heating furnace.



Please wear the gloves and other protective tools in construction to avoid the injury.

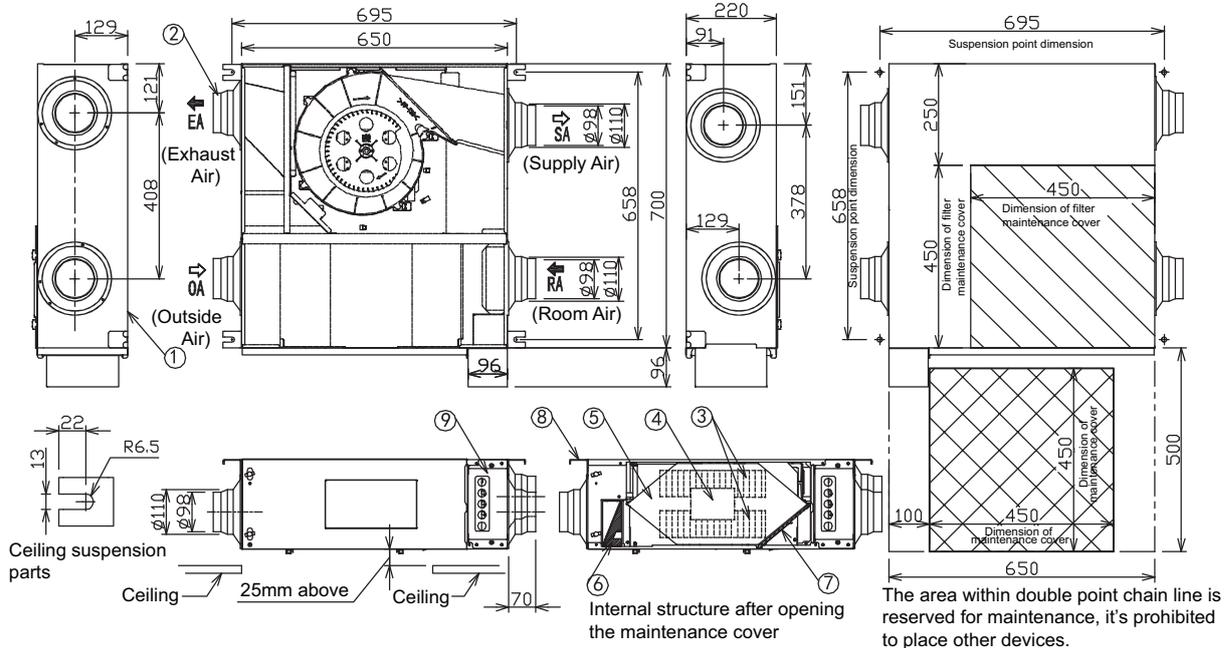
PART NAME AND DIMENSIONS

FY-E15DZ1

■ Cautions for maintenance cover

UNIT: mm

1. Do routine cleaning to heat exchange core and filter, maintenance cover must be set.
 2. It's allowed to only set the side maintenance cover.
 3. Please reserve the side maintenance cover in advance if setting the down maintenance cover.
- * it won't conduct the maintenance without the side maintenance cover.

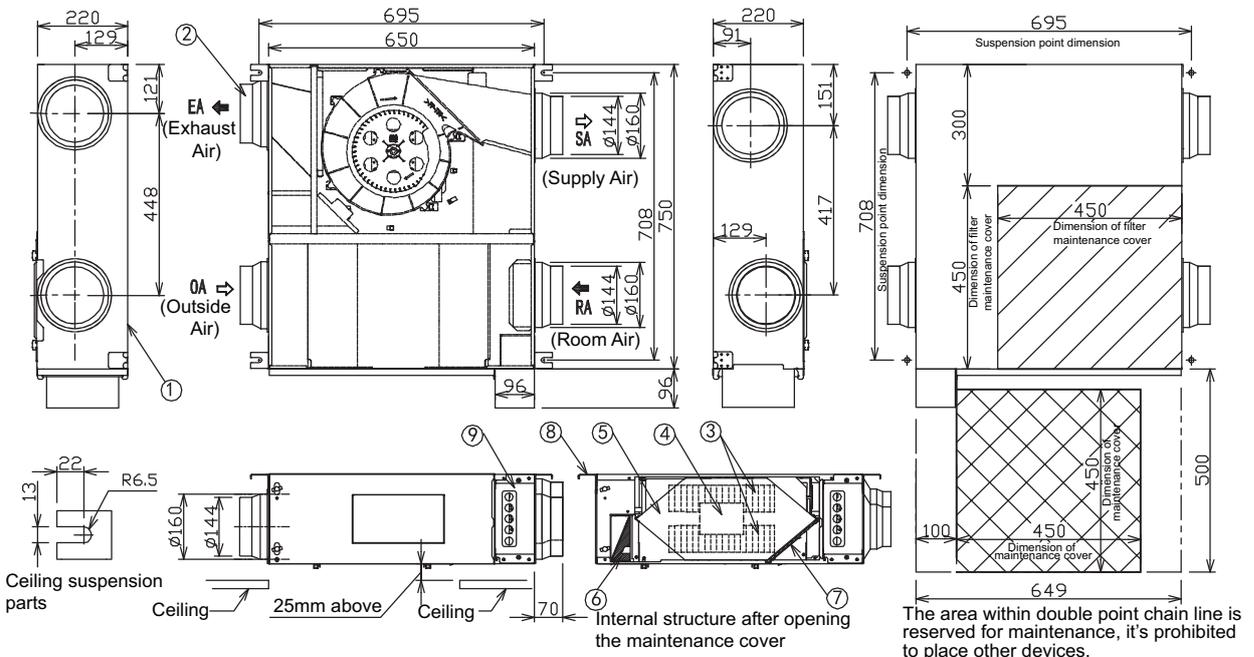


FY-E25DZ1

■ Cautions for maintenance cover

UNIT: mm

1. Do routine cleaning to heat exchange core and filter, maintenance cover must be set.
 2. It's allowed to only set the side maintenance cover.
 3. Please reserve the side maintenance cover in advance if setting the down maintenance cover.
- * it won't conduct the maintenance without the side maintenance cover.



No.	Part name	Quantity	Material	No.	Part name	Quantity	Material
1	Frame	1	Galvanized steel sheet	6	Outdoor filter	1	Nonwoven fabric
2	Adapter	4	ABS	7	Indoor filter	1	
3	Impeller	2	PP	8	Ceiling suspension part	4	Galvanized steel sheet
4	Fan motor	1		9	Switch box	1	Galvanized steel sheet
5	Heat exchange core	1	Special paper+resin				

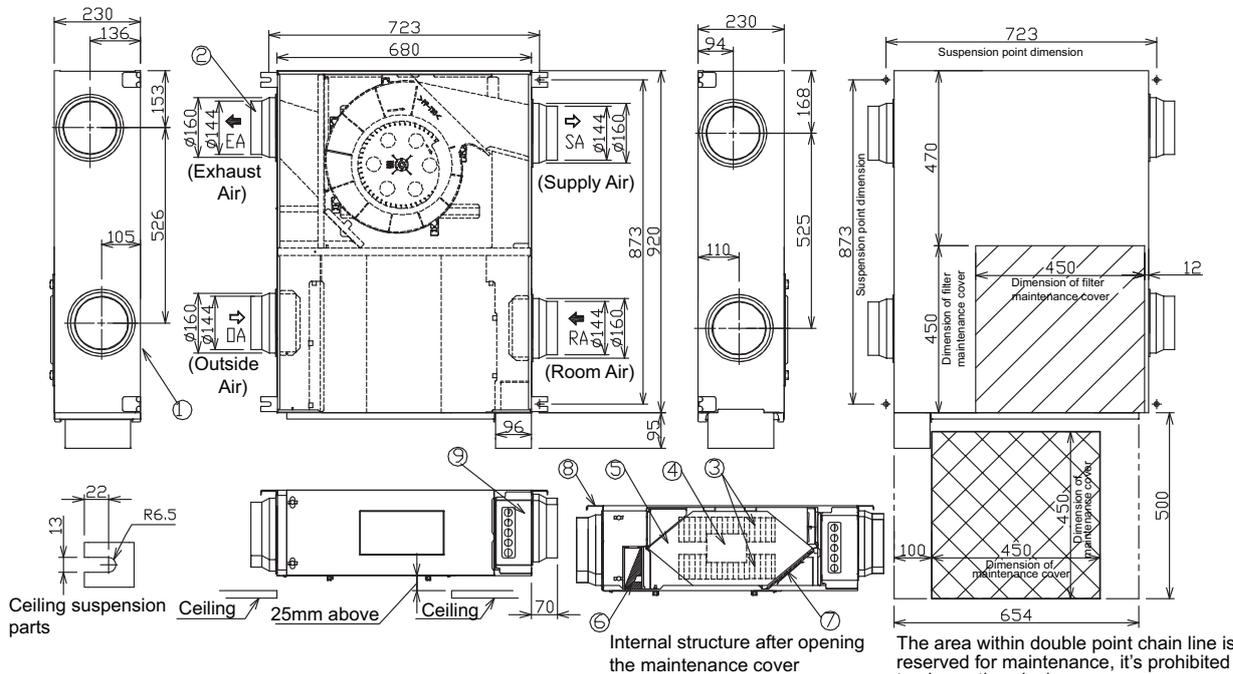
PART NAME AND DIMENSIONS

FY-E35DZ1

■ Cautions for maintenance cover

UNIT: mm

1. Do routine cleaning to heat exchange core and filter, maintenance cover must be set.
 2. It's allowed to only set the side maintenance cover.
 3. Please reserve the side maintenance cover in advance if setting the down maintenance cover.
- * it won't conduct the maintenance without the side maintenance cover.

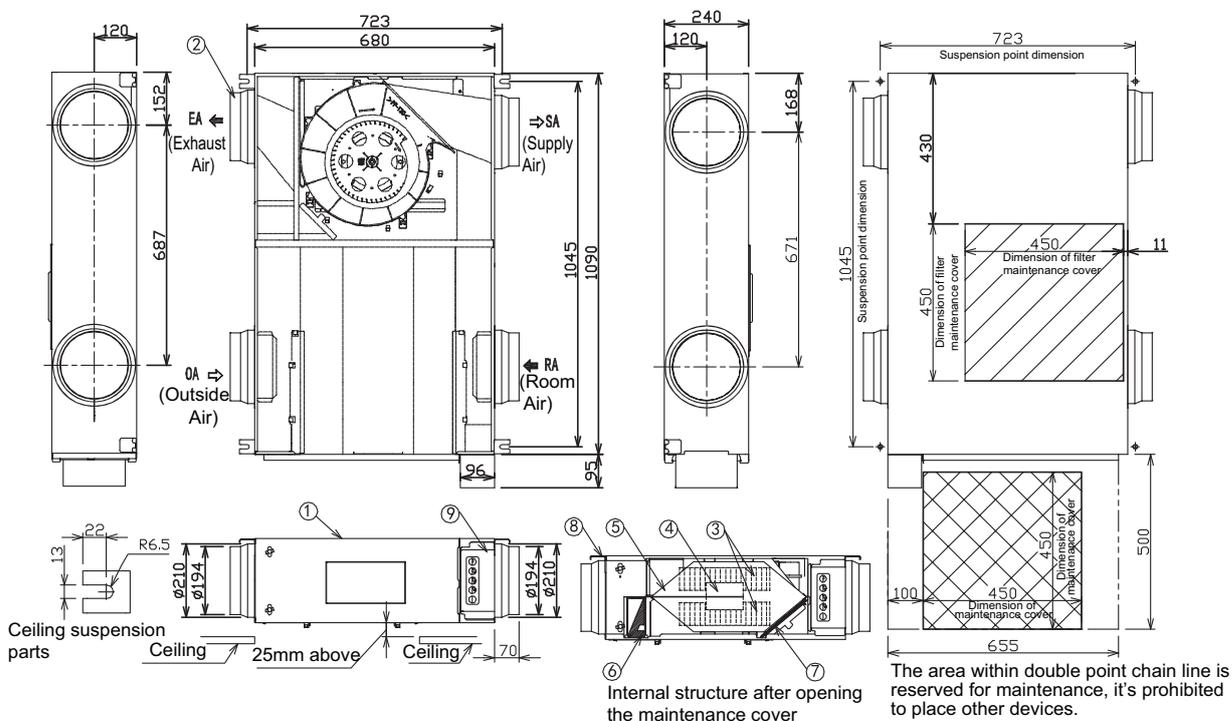


FY-E50DZ1

■ Cautions for maintenance cover

UNIT: mm

1. Do routine cleaning to heat exchange core and filter, maintenance cover must be set.
 2. It's allowed to only set the side maintenance cover.
 3. Please reserve the side maintenance cover in advance if setting the down maintenance cover.
- * it won't conduct the maintenance without the side maintenance cover.



No.	Part name	Quantity	Material	No.	Part name	Quantity	Material
1	Frame	1	Galvanized steel sheet	6	Outdoor filter	1(2)	Nonwoven fabric
2	Adapter	4	ABS	7	Indoor filter	1	
3	Impeller	2	PP	8	Ceiling suspension part	4	Galvanized steel sheet
4	Fan motor	1		9	Switch box	1(2)	Galvanized steel sheet
5	Heat exchange core	1(2)	Special paper+resin				

Installation Instruction

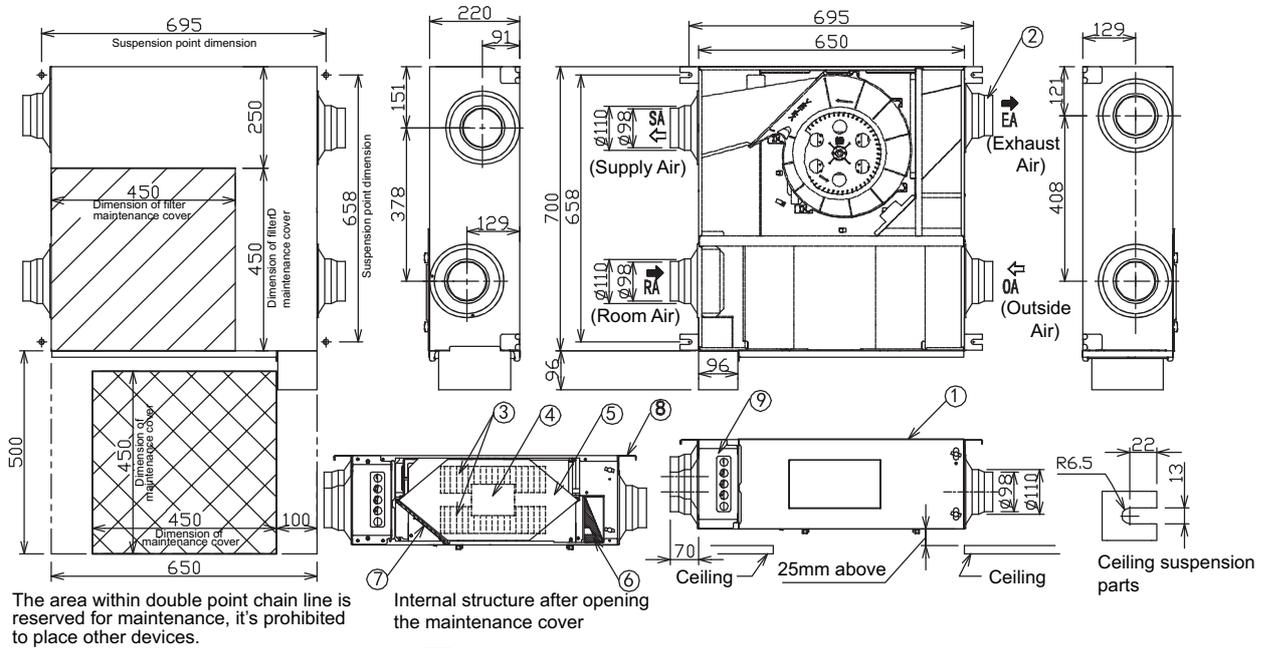
PART NAME AND DIMENSIONS

FY-E15DZ1L

■ Cautions for maintenance cover

UNIT: mm

1. Do routine cleaning to heat exchange core and filter, maintenance cover must be set.
 2. It's allowed to only set the side maintenance cover.
 3. Please reserve the side maintenance cover in advance if setting the down maintenance cover.
- * it won't conduct the maintenance without the side maintenance cover.

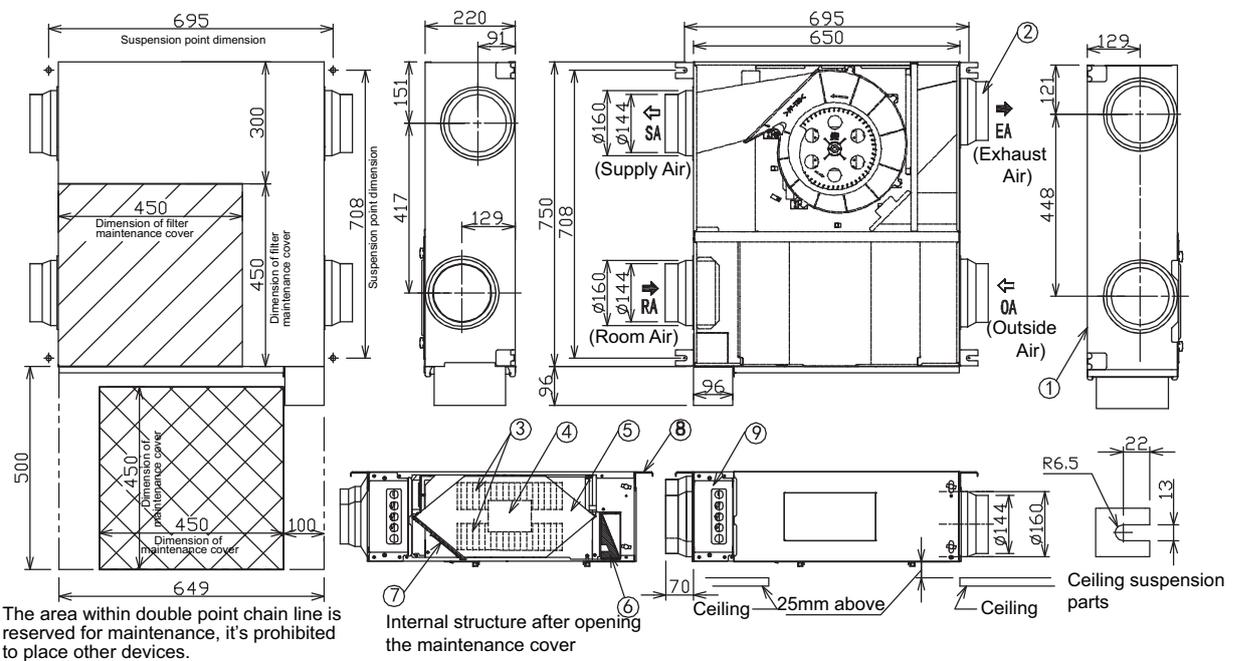


FY-E25DZ1L

■ Cautions for maintenance cover

UNIT: mm

1. Do routine cleaning to heat exchange core and filter, maintenance cover must be set.
 2. It's allowed to only set the side maintenance cover.
 3. Please reserve the side maintenance cover in advance if setting the down maintenance cover.
- * it won't conduct the maintenance without the side maintenance cover.



No.	Part name	Quantity	Material	No.	Part name	Quantity	Material
1	Frame	1	Galvanized steel sheet	6	Outdoor filter	1	Nonwoven fabric
2	Adapter	4	ABS	7	Indoor filter	1	
3	Impeller	2	PP	8	Ceiling suspension part	4	Galvanized steel sheet
4	Fan motor	1		9	Switch box	1	Galvanized steel sheet
5	Heat exchange core	1	Special paper+resin				

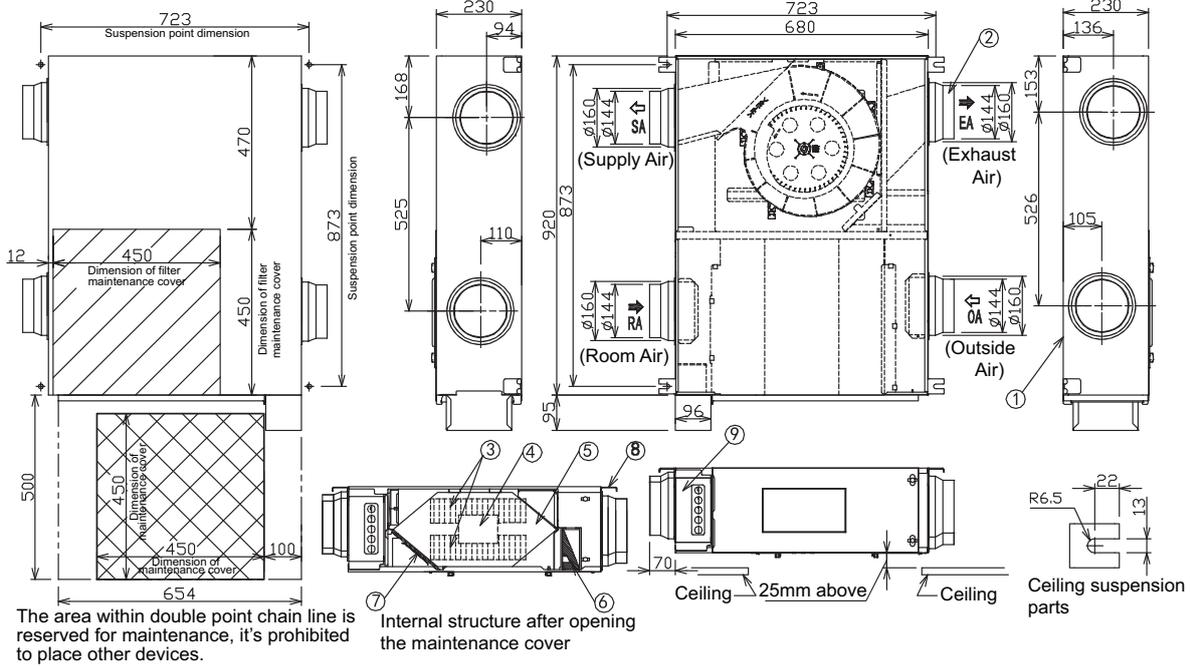
PART NAME AND DIMENSIONS

FY-E35DZ1L

Cautions for maintenance cover

UNIT: mm

1. Do routine cleaning to heat exchange core and filter, maintenance cover must be set.
 2. It's allowed to only set the side maintenance cover.
 3. Please reserve the side maintenance cover in advance if setting the down maintenance cover.
- * it won't conduct the maintenance without the side maintenance cover.

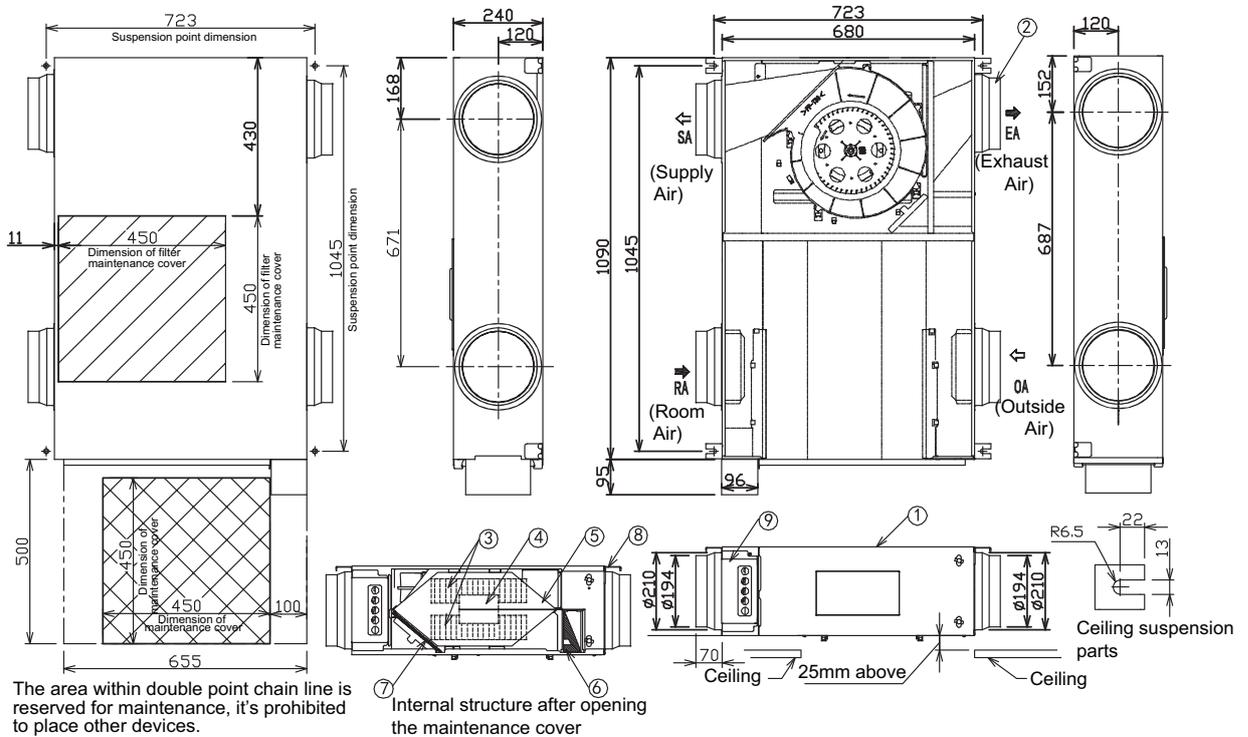


Cautions for maintenance cover

UNIT: mm

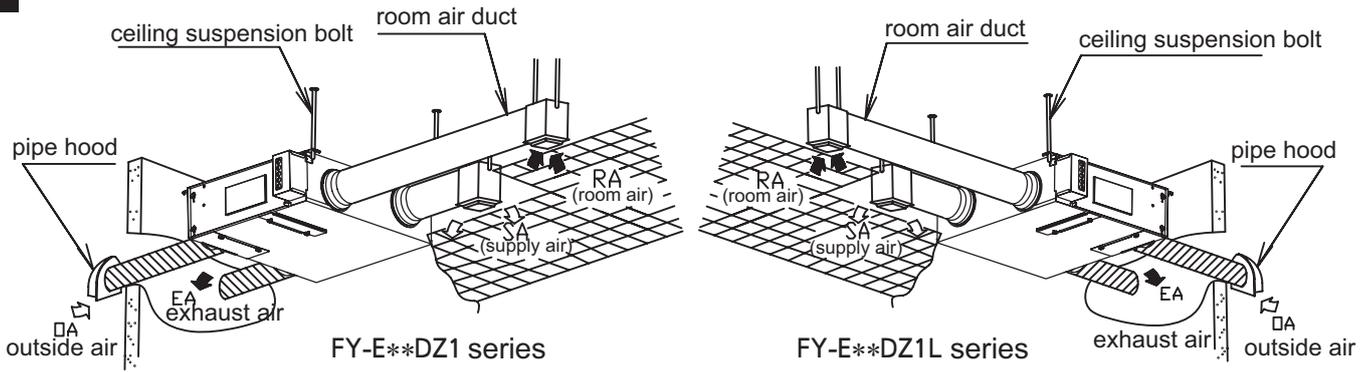
1. Do routine cleaning to heat exchange core and filter, maintenance cover must be set.
 2. It's allowed to only set the side maintenance cover.
 3. Please reserve the side maintenance cover in advance if setting the down maintenance cover.
- * it won't conduct the maintenance without the side maintenance cover.

FY-E50DZ1L



No.	Part name	Quantity	Material	No.	Part name	Quantity	Material
1	Frame	1	Galvanized steel sheet	6	Outdoor filter	1(2)	Nonwoven fabric
2	Adapter	4	ABS	7	Indoor filter	1	
3	Impeller	2	PP	8	Ceiling suspension part	4	Galvanized steel sheet
4	Fan motor	1		9	Switch box	1(2)	Galvanized steel sheet
5	Heat exchange core	1(2)	Special paper+resin				

INSTALLATION DIAGRAM • CONSTRUCTION METHOD

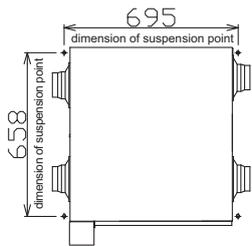


Construction method

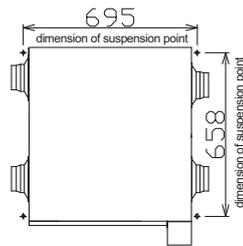
1 Installation of main unit and air duct

- ① Install 4 ceiling suspension bolts (separately buy: M10)
- Please align the suspension angle of main unit with ceiling suspension bolts.

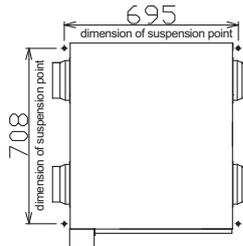
FY-E15DZ1



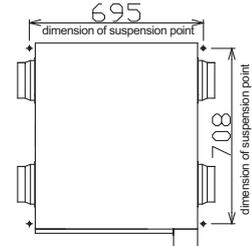
FY-E15DZ1L



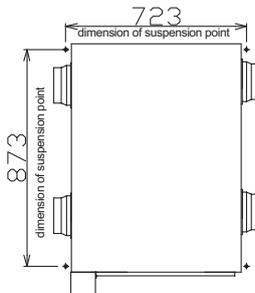
FY-E25DZ1



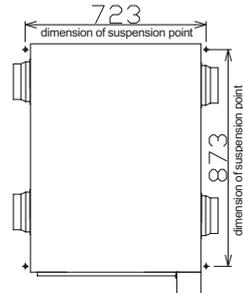
FY-E25DZ1L



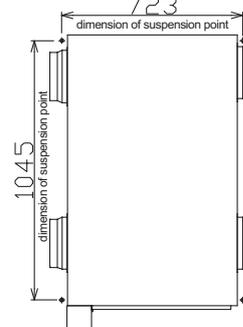
FY-E35DZ1



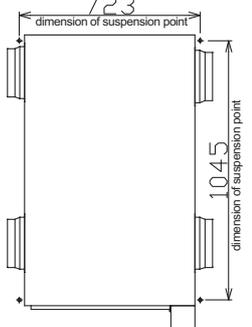
FY-E35DZ1L



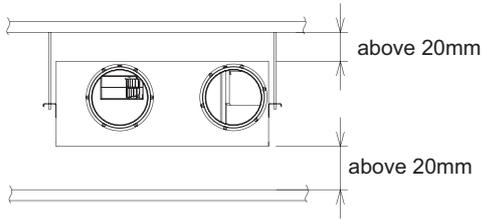
FY-E50DZ1



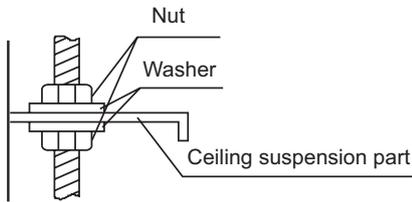
FY-E50DZ1L



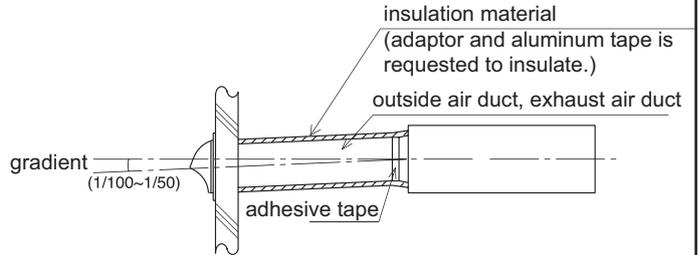
- Please adjust the length of ceiling suspension bolt to ensure the distance between the downside of unit and ceiling is over 25mm, the distance between the upside of unit and the mounting face of ceiling suspension bolts is over 20mm.



- ② Install the ceiling suspension part to its bolts.
- Please correctly install the direction of outside air duct.
- Never fail to install the direction of unit (ensure the ceiling suspension is above)
- Fix the screws and washers (separately buy).
- Install the unit horizontally.

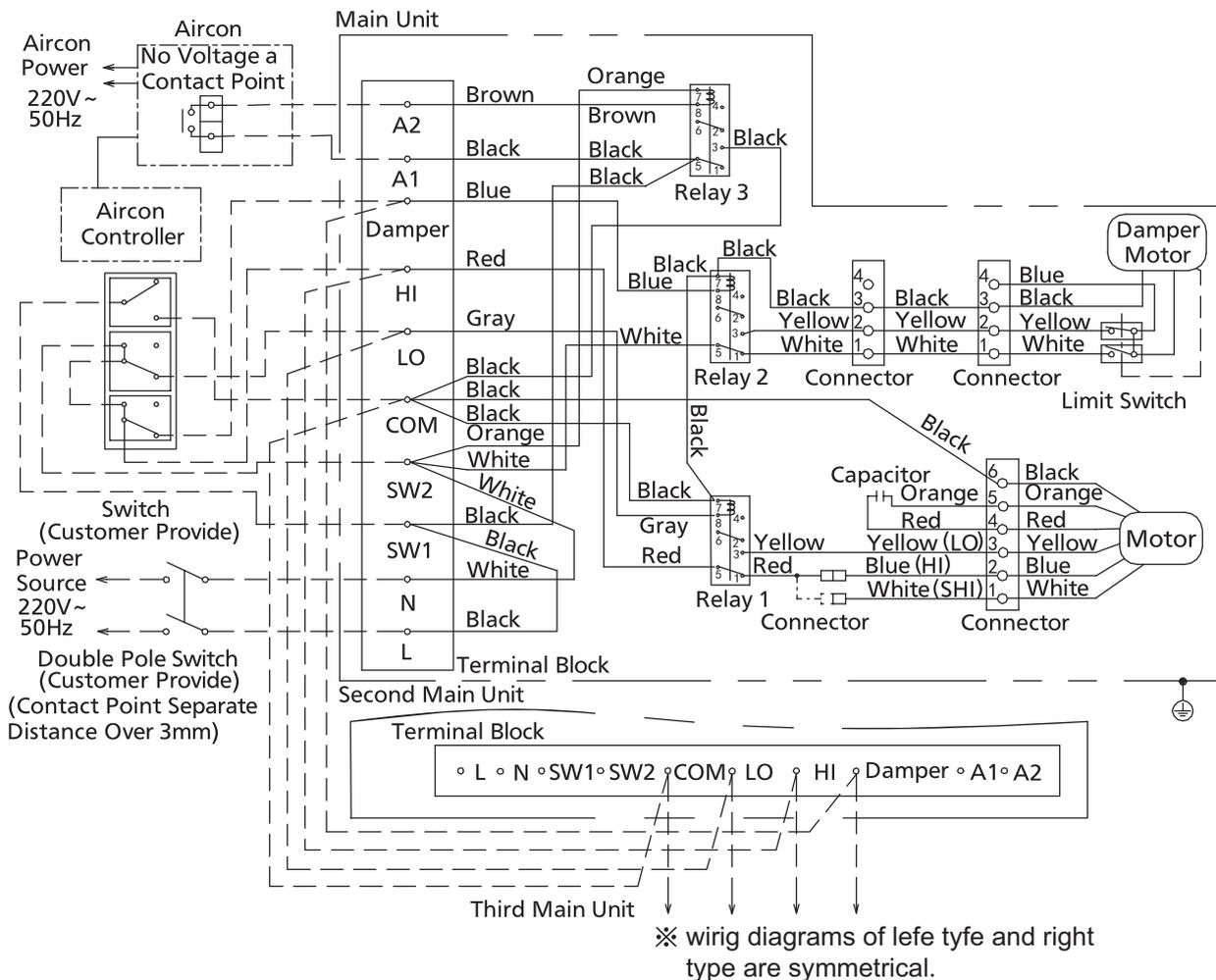


- ③ Seal the junction of an adaptor and a duct by adhesive tape or seal tape (separately buy) to prevent any air leakage.
- Please don't touch the fan motor by hand during the air duct construction.
- Install the ducts (2) connected with outside shall incline to outside. (gradient: 1/100~1/50).



- Conduct the insulation to outside of two ducts connected with outdoor (suggested material :glass wool ,thickness 25mm)

Wire connection diagram



Precaution during the wire connection:

- The dashed line as shown in the figure must be conducted on spot by construction personnel.
- Please use the switch, its contact point separate distance is above 3mm.
- Please use the switch, its rate current is above 10A.
- It's recommended to use the wire for connecting power supply cord and switch, its rate voltage is 300V/500V as stipulation of 60227IEC53 (soft wire).

At this time, please use the three-core wire containing green/yellow wire for power supply cord; besides, use the two-core wire for connecting SW1, SW2 and switch inside the unit; use the two-core wire for Aircon operation (please omit the connection if it's not used the Aircon operation); use the four-core wire for connecting other terminal parts and switch, the nominal cross-section area for above-mentioned wire is 2.5mm². When it's used the remote control for switch, the wire connected with switch, its cross-section area is 1.5mm².

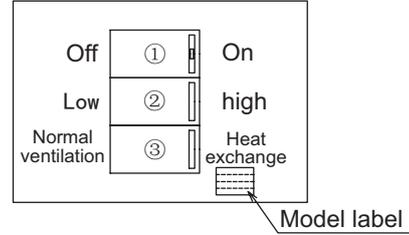
- Please use the torsion below the 1.2N to firmly connect the lead wire and terminal parts, no loosen of connection. Please note the power supply cord in connection is not adhesive with solder.
- Air volume can be adjusted to two modes of high+low and strong+low.

Factory setting is mode of high +low. Please adjust it as customer required if necessary.

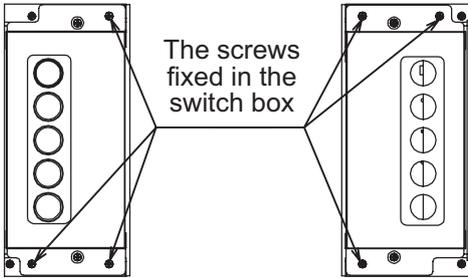
- When adjusting the air volume from high to strong, please separate the connector of the red line and the blue line, and link the connector of red wire and white wire (shown as chain dotted line).
- Several units operate, the total current for all equipment must be less than the half rate current of switch.
- Ground connection is required.
- After completing the wire connection, please fix the cover of switch box by the screws.
- When the power supply cord is damaged, in order to avoid the danger, please entrust the authorized personnel to conduct the changing work, and get the contact with the sale shop and repair shop where you purchased.

● Under the situation of Aircon operation

	Failure	Available operation		
With Aircon	Button ①	Button ②	Button ③	
Without Aircon	—	Button ①	Button ②	Button ③



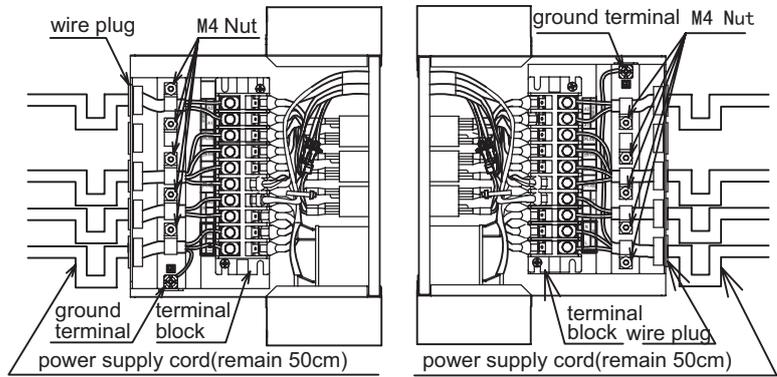
- ① Remove the cover of switch box.
- Remove the three screws fixed in the cover of switch box.



※ R type ※ L type

R type	L type
FY-E**DZ1	FY-E**DZ1L

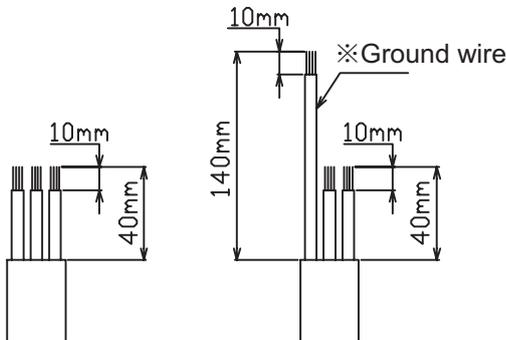
- The power supply cord goes through the wire plug, as required in figure, fix the wire connecting power supply cord and switch in the terminal block, and fix the ground wire in the ground terminal.
- Connection proportion of Lead wire is not forced by strength, fixing the wire connecting the power supply cord and switch.
- In maintenance, in order to avoid pulling the switch box into the unit, please keep enough space for the wire connecting the power supply cord and ground wire. To prevent it from touching the ceiling, please fix it by ceiling suspension bolts.



※R type ※L type

② Wire connection

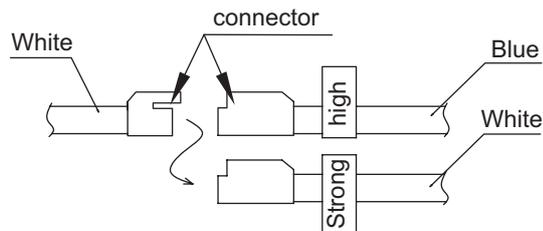
- Peel off the skin of power supply cord by 40mm, and peel off the skin of each core wire by 10mm.
- ※ please pay attention to the length of ground wire for left type and right type.



※Power cord of R type ※Power cord of L type

③ Fix the cover of switch box

After completing the wire connection, fix the cover of switch box by screws. (dust and moisture may cause the electric leakage or fire.)



Trial operation

- After completion, never fail to check the ground wire connection and wiring and conduct the trial operation.
- Check the display of switch and airflow condition with power on after confirmig the wiring connection, power and voltage.

Switch	On /Off	Ventilation/stop
Air volutre	High/low	Confirm the air volume is changed as the power on/off
Heat exchange /Normal ventilation	Damper close/open	Heat exchange (see the damper closed by opening side maintenance opening)
		Normal ventilation (see the damper open by opening side maintenance opening)

- Abnormal operation occurs, cut off the special purpose circuit breaker and confirm the wire connection again.
- Fix the cover of switch box after conducting the trial operation.
- Please stick the model label to the switch or around.
Model label is placed in the plastic bag, don't forget to attach it.

SPECIFICATION

Model	Notch	Input power (W)	Normal ventilation air volume (m ³ /h)	Static pressure (Pa)	Heat exchange efficiency %		Enthalpy exchange efficiency %		Noise (dB(A))	Weight (kg)
					Cooling	Heating	Cooling	Heating		
FY-E15DZ1 FY-E15DZ1L	SH	85	150	100	63	78	66	73	28	27
	H	79	150	55	63	78	66	73	28	
	L	45	100	0	68	80	72	75	22	
FY-E25DZ1 FY-E25DZ1L	SH	125	250	115	58	75	60	67	32	30
	H	113	250	95	58	75	60	67	32	
	L	81	150	0	65	79	70	76	25	
FY-E35DZ1 FY-E35DZ1L	SH	225	350	150	54	75	60	70	36	39
	H	209	350	85	54	75	60	70	36	
	L	150	250	0	54	75	63	70	30	
FY-E50DZ1 FY-E50DZ1L	SH	315	500	120	53	78	60	70	37	45
	H	288	500	85	53	78	60	70	37	
	L	210	360	0	58	78	66	69	31	

Explanation:

- The values shown as instruction are measured in the condition of total pressure when ERV operates.
 - The input power indicated in name plate is the maximum value at the static pressure of 0 Pa.
 - Noise value is measured at the position 1.5m away from the down side of the unit based on standard JIS B 8628:2003 (measured in the complete anechoic room), the value is affected by the echo during the actual installation, more than the indicated value.
 - In the case of other condition is unchanged, noise value is up for 1.5dB(A) measured in the half anechoic room.
- * The above parameters are subject to change with a prior notice.

Insulation Class: B or E
ฉนวน Class: B or E

IP Code: IPX2
รหัส IP : IPX2

Type of insulation: Functional Insulation
ประเภทของฉนวน : ฉนวนตามหน้าที่

Panasonic Corporation

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