

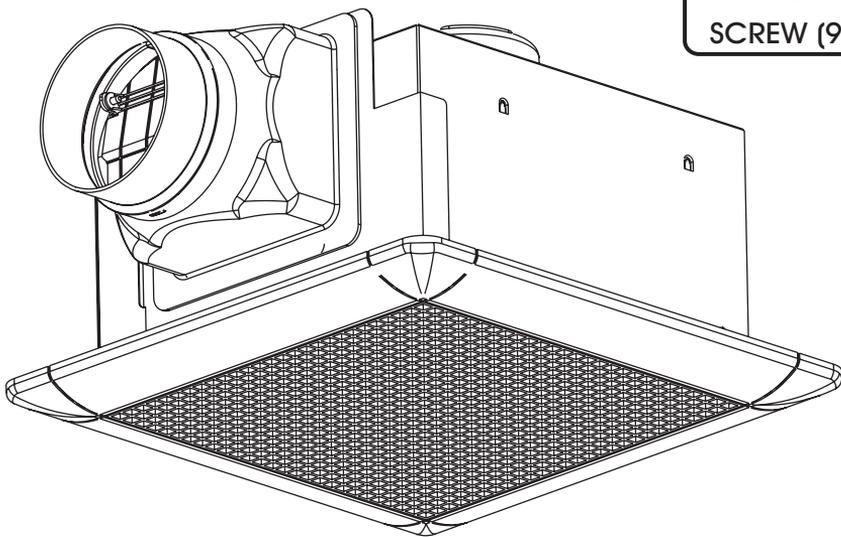
 **mitsubishi electric**

# VENTILATING FAN

**MODEL:** VD-10Z4T□, VD-10Z4T□-C, VD-15Z4T□  
VD-15Z4T□-C, VD-15ZP4T□, VD-18Z4T□  
VD-20Z4T□, VD-20ZP4T□, VD-23Z4T□  
VD-23ZP4T□

## MANUAL AND INSTALLATION PROCEDURE

### PRODUCT APPEARANCE



ADDITIONAL PART



SCREW (9 PCS)

REMARK : □ IS THE ALPHABET OF DEVELOPEMENT NUMBER

**CAREFULLY READ INSTALLATION MANUAL AND THE PRODUCT SHOULD BE INSTALLED BY THE SPECIALIZED TECHNICIAN.**

# ESSENTIAL SAFETY PRECAUTIONS



## WARNING

**FAILURE TO COMPLY DEATH OR BODILY INJURY MAY RESULT.**



**PROHIBITED**

1. Do not use the ventilator when damages found on wire or other components. This may cause fire and electric shock.
2. Do not switch on the ventilator when the assembling is not completed with all components such as airguide and propeller as bodily injury may result.
3. Do not use the ventilator or its electrical components when they are wet as injury from electric shock may result.
4. Do not contact the ventilator or its electrical components when your hands are wet.
5. Do not modify the ventilator as severe injury may result.
6. Be sure to unplug the ventilator from the main supply prior to cleaning or repairing the ventilator.



## CAUTIONS

**FAILURE TO COMPLY BODILY INJURY OR PROPERTY DAMAGE MAY RESULT.**

1. It is dangerous to insert fingers or object into the ventilator propeller or rotating component.
2. Do not use harsh cleaners or solvents on the ventilator as this may cause deforming on plastic components and damaging other components.
3. Do not install the ventilator at the location of heat source such as gas/electric fire nearby; location of high humidity, location of solvent dampness, as fan damage or fire may result.
4. The appliance is not intended for use by young children or infirm persons unless they been adequately supervised by a responsible person to ensure that can use the appliance safety.

# INSTALLATION

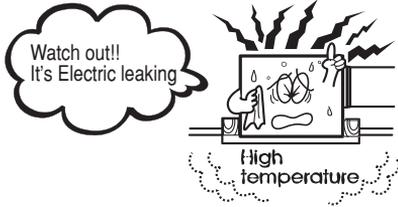


## INSTALLATION CAUTIONS

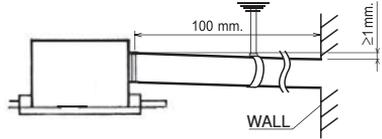
1. Before installation and assembling the Ventilator, please study the manual.
2. The installation might be suggestion from Service Center or Sales Agency.
3. To be install with stable ceiling to bear the weight and vibration of Ventilator.
4. To be installed metal pipe by do not install metal parts contact with conductive material which be coated on the wooden.
5. The Accessory pipe hood more available to protect insect or bird and rains.
6. Do not install the ventilator and control switch in bathroom or high humidity area may cause electric short-circuit.
7. Do not install the fan in:
  - Area containing high amount of oil, chemical, dust.
  - The back-flow of gases into the room the open fuel of gas or other open fire appliances.
8. The Installation area might be stable ceiling to bear the weight of ventilator in each model as;

VD-10Z4T□, VD-10Z4T□-C.....	2.2 Kg	VD-20ZP4T□.....	6.9 Kg
VD-15Z4T□, VD-15Z4T□-C, VD-15ZP4T□.....	3.5 Kg	VD-23Z4T□.....	10.0 Kg
VD-18Z4T□.....	5.7 Kg	VD-23ZP4T□.....	10.3 Kg
VD- 20Z4T□.....	6.5 Kg		

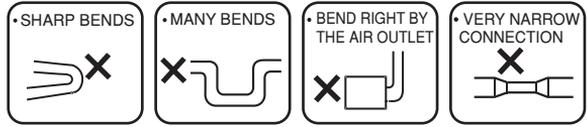
9. In case of installation at high temperature area, the capacity of insulator parts such as motor, capacity might drop and be cause of electric leakage. Moreover, not well-done lubricated shaft might be hotter as well as motor. To protect those conditions do not install the product at the high temperature area.



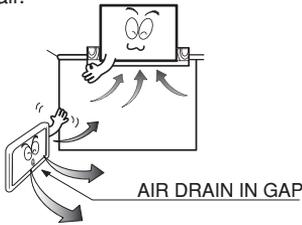
10. Should inclined install smoke pipe by additional duct higher than smoke pipe on the wall 1mm/100mm to protect the rain water.



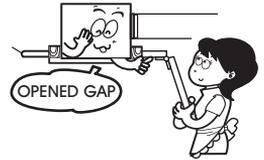
Should avoid pipe bending as follows:



11. In the closed building or unable to exhaust the air area, the hole should be installed to drain the fresh air.



12. The installed ceiling should be easy to check from opened gap.



13. In case of loosen installation, It's might occur vibration or loud noise.



## INSTALLATION

### 1 TO SELECT INSTALLATION AREA AND WALL FOR DRILLING THE AIR-EXHAUSTED HOLE

To Install duct from the air-exhausted hole to additional duct by fixing it with ceiling to protect the overload. Diameter of duct is 100 mm(VD-10/15) or 150 mm (VD-18/20/23) made from vinyl chloride, aluminium, steel. Before Installation Please carefully read Installation of caution.

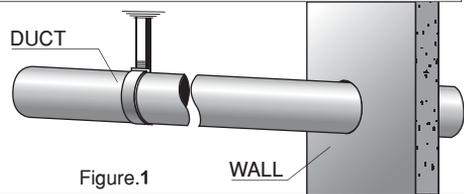


Figure.1

### 2 VENTILATING FAN INSTALLATION

There are two methods to install the product.

- To prevent the contact with the propeller, install the ventilating fan above 2.3 m from the floor.

#### A. Fixed by beam

(A1) To make a frame with beam and sub beam as Figure.2 and dimension in Table 1.

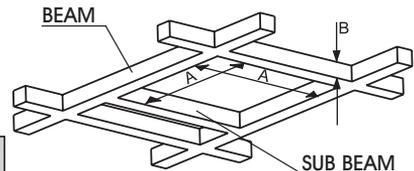


Figure. 2

Table.1

Model	Dimension A	Dimension B	Model	Dimension A	Dimension B
VD-10Z <sub>4T□</sub>	180	25-30	VD-18Z <sub>4T□</sub>	280	40
VD-10Z <sub>4TD-C</sub>			VD-20Z <sub>4T□</sub>	315	45
VD-15Z <sub>4T□</sub>	260	30-40	VD-20ZP <sub>4T□</sub>	395	45
VD-15Z <sub>4TD-C</sub>					
VD-15ZP <sub>4T□</sub>					

Unit : mm.

(A2) To take off additional duct as the arrow direction as Figure.3

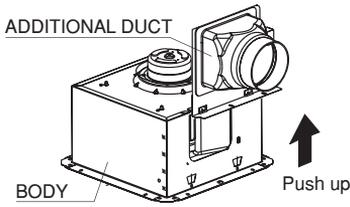


Figure.3

(A4) To install the product with additional duct and push product until lock point of additional duct lock hook of product as Figure.5

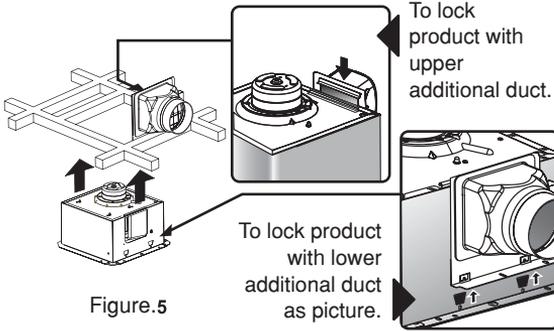


Figure.5

(A3) To install the wing of additional duct under sub beam and fix additional duct with main duct. Then fix additional duct with sub beam at "A" position with screw as Figure.4

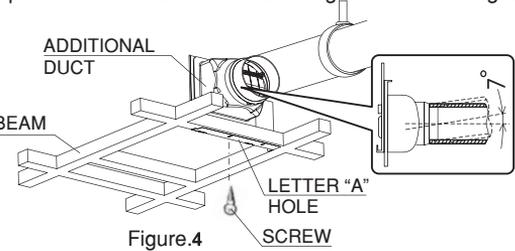


Figure.4

(A5) To check the completeness and install product with beam by screwing with 8 screws as Figure.6

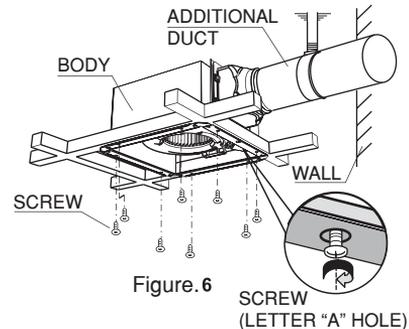


Figure.6

**B. The installation by using hook nut.**

There are two methods, using L fix plate, and sub frame

**(B1) L fix plate method**

(B1.1) To set hook nut with ceiling and install L fix plate with the product as the Figure.7, 8 and 9

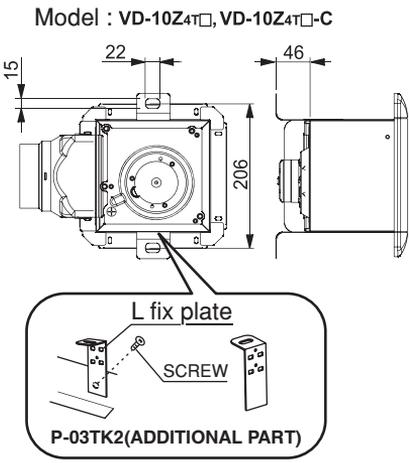


Figure.7

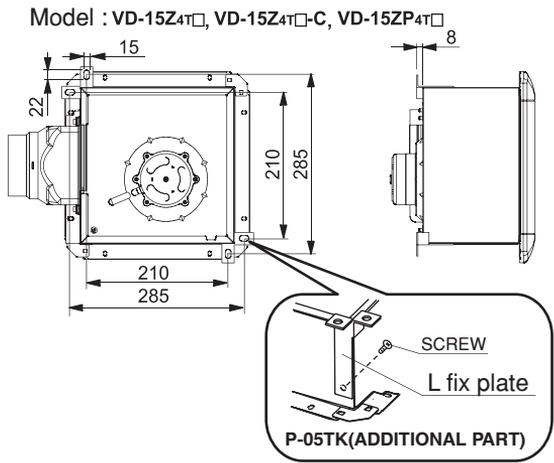


Figure.8

Table shown dimension of position of "L" Fix plate each model as followed

MODEL	Dimension A	Dimension B	Dimension C
VD-18Z4T□	304	100	100
VD-20Z4T□	341	100	100
VD-20ZP4T□			
VD-23Z4T□	418	70	130
VD-23ZP4T□			

Unit:mm.

As shown at Figure.9

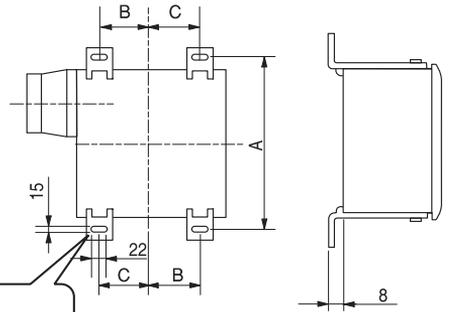
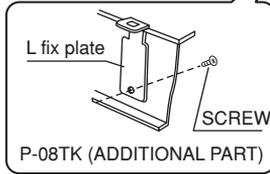


Figure.9

(B1.2) To fix the product with hook nut and horizontal install the product as right picture. as Figure.10

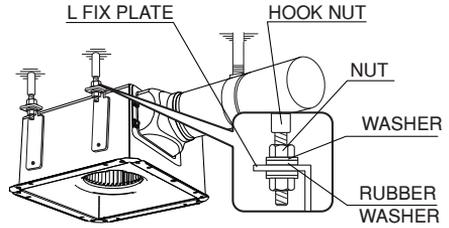


Figure.10

**(B2) To use SUB FRAME**

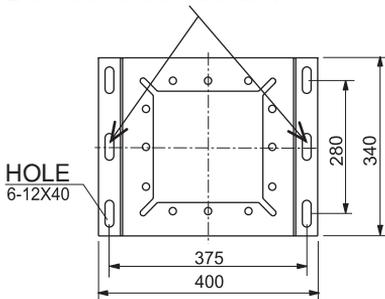
(B2.1) Install HOOK NUT with the ceiling and install sub frame with the Body.

- The sub frame of model VD-10Z4T□, VD-10Z4T□-C, VD-15Z4T□, VD-15Z4T□-C, VD-15ZP4T□ Figure.11

- The sub frame of model VD-18Z4T□, VD-20Z4T□, VD-20ZP4T□, VD-23Z4T□, VD-23ZP4T□ Figure.12

**Caution**

- 2 Central holes to be use.



Unit :mm.

Figure.11

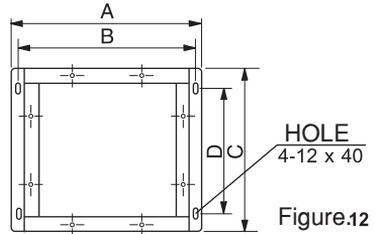


Figure.12

Table shown each SUB FRAME model dimension

MODEL	SUB FRAME	Dimension A	Dimension B	Dimension C	Dimension D
VD-18Z4T□	P-280 TW	415	385	350	300
VD-20Z4T□	P-315 TW	450	420	385	300
VD-20ZP4T□					
VD-23Z4T□	P-395 TW	540	510	475	350
VD-23ZP4T□					

Unit:mm.

(B2.2) To set 2 wooden parts with sub frame by using screws as the Figure.13

**Caution** :Do not obstruct hook nut-hole on sub frame.

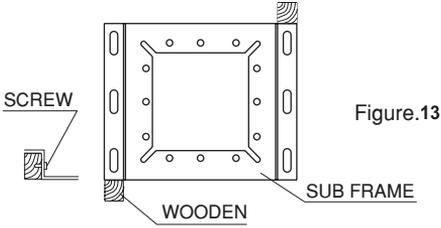


Figure.13

(B2.4) To separate additional duct from the product as Figure.15.

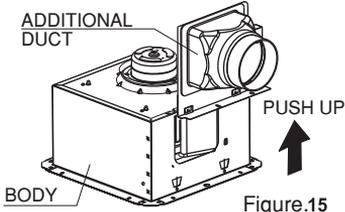


Figure.15

(B2.6) To set the product with additional duct with hook of product and additional duct Figure.17

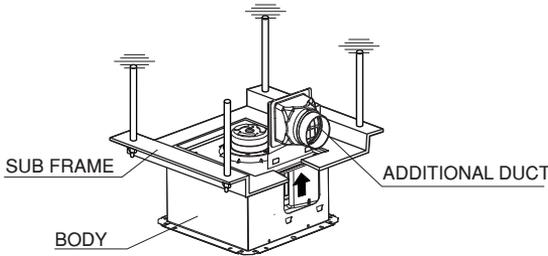


Figure.17

(B2.8) After the product is fixed with sub frame, tape 4 holes on sub frame as Figure.19

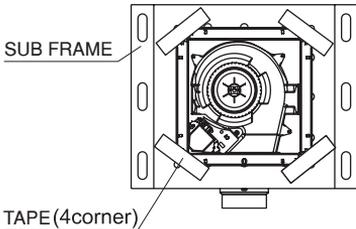


Figure.19

(B2.3) To Install sub frame to ceiling with Hook nut as the Figure.14

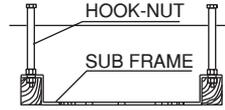


Figure.14

(B2.5) To set the product by turning the front to open air hole to exhaust the air from the wall and fix the additional duct with sub frame by screwing through "A" letter hole as Figure.16

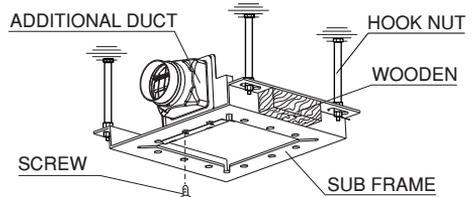


Figure. 16

(B2.7) To install product with additional duct and fix the product with subframe by tightening 8 screws with sub frame as Figure.18

**SUGGESTION**  
The product must be completely assembly with additional duct to protect air leakage.

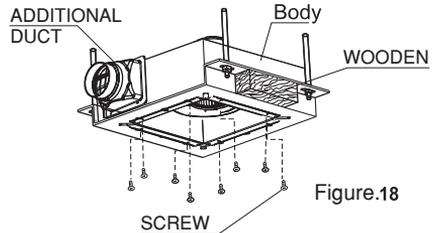


Figure.18

(B2.9) After installed ceiling board, to hammer from the inside for protecting the slide of sub frame and ceiling as Figure.20

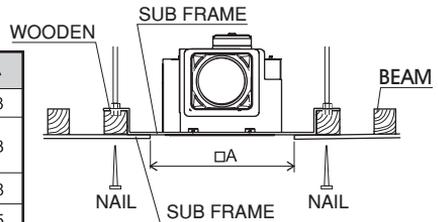


Figure. 20

MODEL NAME	□A
VD-10Z4T□, VD-10Z4T□-C	223
VD-15Z4T□, VD-15Z4T□-C VD-15ZP4T□	303
VD-18Z4T□	308
VD-20Z4T□, VD-20ZP4T□	345
VD-23Z4T2, VD-23ZP4T2	438

Unit:mm.

### 3 TO INSTALL PIPE FROM BODY TO WELL EXHAUST PIPE

To adhere aluminium tape at connecting point between exhaust pipe and additional duct to protect air leakage as Figure.21

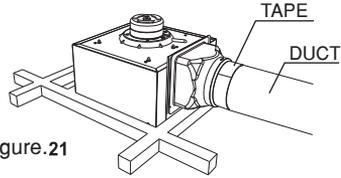


Figure.21

### 4 ADDITIONAL PART(NOT INCLUDE ON PRODUCT)

“L” fix plate, Sub frame, Duct (Iron, plastic, Aluminium, Stainless steel), Hood.

### 5 TO INSTALL LEAD WIRE SHOULD BE DONE AS NECESSARY

#### LEAD WIRE INATALLATION CAUTION

- 1.Fan and lead wire installation should be suggested by service center or specialize technician.
- 2.Before installation and Assembling the fan please read installation manual carefully.
- 3.Installation leadwire carefully, in case missing occure may cause circuit-shorten.
- 4.Installing lead wire in pipe should be use the standard piping accesories (available from hardware store),and then connect to the terminal.

### TERMINAL DIAGRAM AND LEAD WIRE CONNECTION

Separate each model group as followed

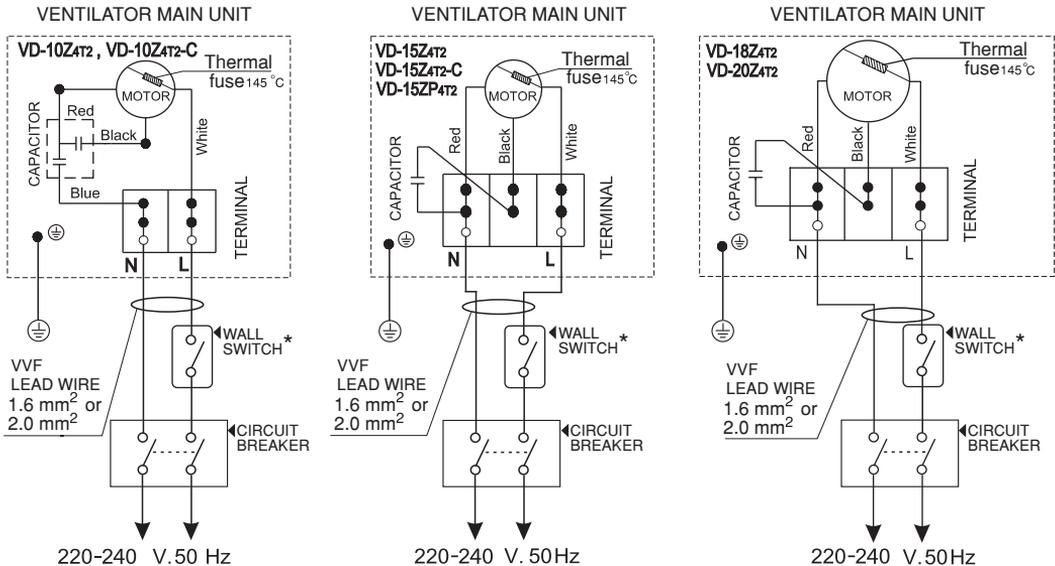


Figure.22

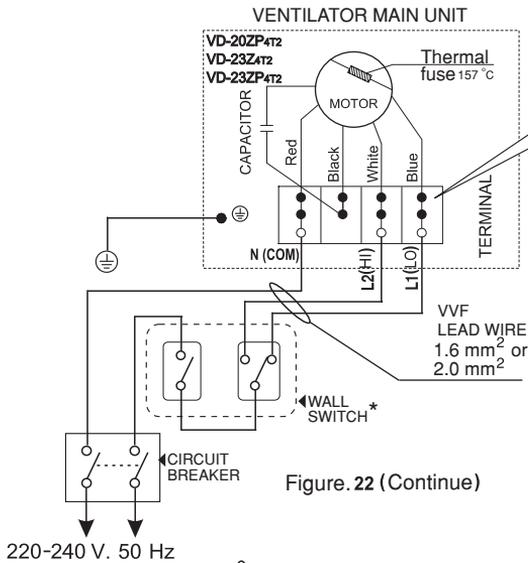


Figure. 22 (Continue)

**CAUTION**  
Pay attention to connect the wire, 1 wire from power supply especially common wire connect with the "N(COM)" terminal.

### Leadwire size for installation

1. Must use indoor wiring VVF cable  $\varnothing 1.6 \text{ mm}^2$  or  $\varnothing 2.0 \text{ mm}^2$
2. In case of install ground wiring must install ground at least  $1.0 \text{ mm}^2$  and must install to Industrial Standard Ground Rod by specialized technician.

### General connector and electric line procedure

- To peel off lead wire 10 mm.
- To pull wiring approx. 150 mm from the product.
- To separate wiring from connecting board, then push red button on connecting board and pull each wiring with Screw Driver.

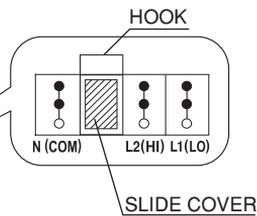
### Lead wire connector method

#### 1. Model : VD-10Z4T□, VD-10Z4T□-C (as Figure. 24)

- (1) Remove screw and unlock cover, weave VVF ( $\varnothing 1.6, \varnothing 2.0$ ) through rubber button until it can be completely passed.
- (2) The product is used in high humidity area, the ground wiring should be installed.
- (3) To lock the cover and fix to screw.

#### 2. Model : VD-15Z4T□, VD-15Z4T□-C, VD-15ZP4T□ (as Figure. 25)

- (1) Remove screw and unlock cover, weave VVF ( $\varnothing 1.6, \varnothing 2.0$ ) through rubber button until it can be completely passed.
- (2) The product is used in high humidity area, the ground wiring should be installed.
- (3) To lock the cover and fix to screw.



\*WALL SWITCH is obtained from hardware store.

#### Remark :

1. Installation location of circuit breaker should be easy to operation and shut off.
2. The circuit breaker shall have a contact separation in all poles and provide full disconnection under overvoltage category III condition in accordance with the wiring rules.

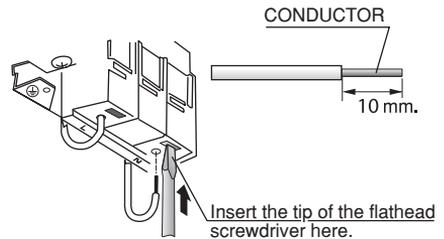


Figure. 23

**CAUTION**  
Do not connect the ground wire to Gas duct, Water pipe Lightning rod or Telephone line because may occur electric shock.

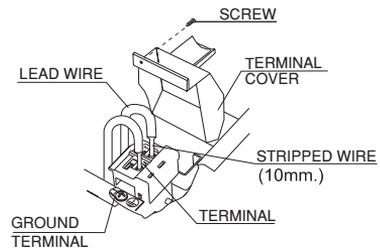


Figure. 24

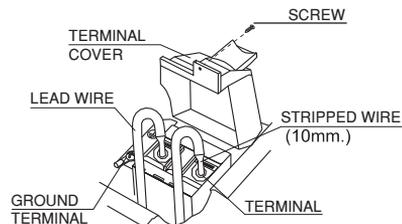


Figure. 25

3. Model: **VD-18Z4T□, VD-20Z4T□** (as Figure. 26)

- (1) Remove screw and unlock cover, weave VVF (Ø1.6, Ø2.0) through rubber button until it can be completely passed.
- (2) The product is used in high humidity area, the ground wiring should be installed.
- (3) To lock the cover and fix to screw.

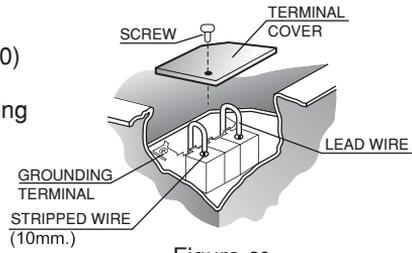


Figure.26

4. Model: **VD-20ZP4T□, VD-23Z4T□, VD-23ZP4T□** (as Figure. 27)

- (1) Remove screw and unlock cover, weave VVF (Ø1.6, Ø2.0) through rubber button until it can be completely passed.
- (2) The product is used in high humidity area, the ground wiring should be installed.
- (3) To lock the cover and fix to screw.

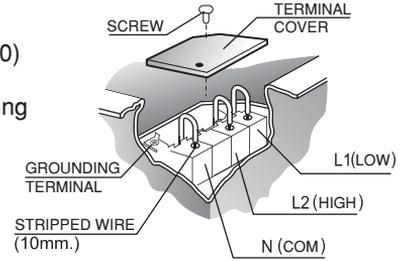


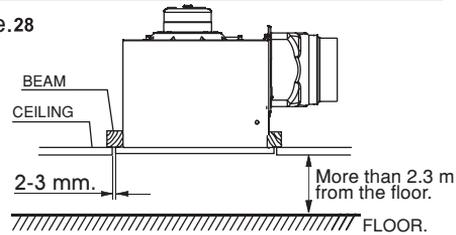
Figure.27

**6** TO INSTALL CEILING BOARD AND CEILING

**Caution**

- To leave a gap between the product and ceiling board approx. 2-3 mm.
- To prevent the contact with the propeller, install the ventilating fan above 2.3 m from the floor.

Figure.28



**7** TO INSTALL GRILLE

To hold grille's spring of both side and insert to elliptical hole of product then, release spring and push cover to fix with the product as Figure.29.

**Remarks:**

Grille of VD-10Z4T□-C, VD-15Z4T□-C, VD-18Z4T□, VD-20Z4T□, VD-20ZP4T□, VD-23Z4T□, VD-23ZP4T□ can be reverse 90° by changing SPRING.

Spring grille assembling

MODEL : VD-10Z4T□, VD-15Z4T□, VD-15Z4T□-C, VD-15ZP4T□

MODEL : VD-10Z4T□-C

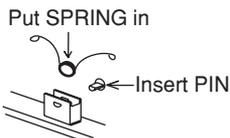


Figure.30

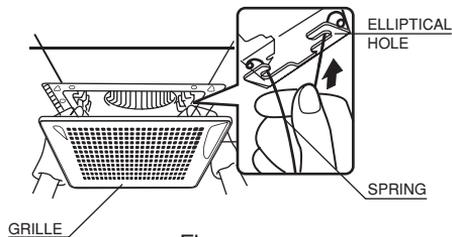
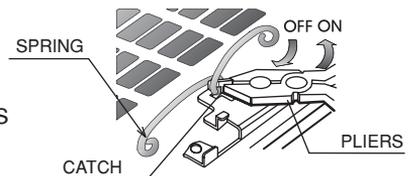


Figure.29

MODEL : VD-18Z4T□, VD-20Z4T□, VD-20ZP4T□, VD-23Z4T□, VD-23ZP4T□



# USAGE

For VD-10Z4T□, VD-10Z4T□-C, VD-15Z4T□, VD-15Z4T□-C, VD-15ZP4T□.

## CAUTION USAGE

- In case of installed in restroom having hot bathtub, after draining the hot water, please cover bathtub to prevent the evaporation of hot steam.
- Various parts are made from plastic material, do not bring flammable objects to be near them that they might possibly be deformed or melted.

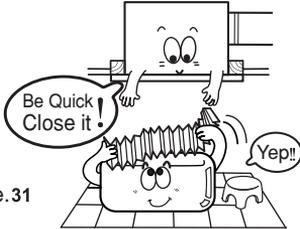


Figure.31

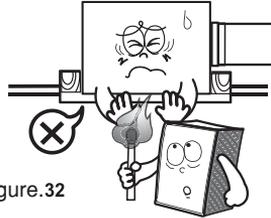


Figure.32

## OPERATING PROCEDURE

- Switch boarded exclude the product, Use switch which be sold generally.

Remark : Installation location of switch should be easy to operate and shut off.

<p>START TO EXHAUST THE AIR Switch on the wall.</p> <p>OFF  ON</p>	<p>STOP TO EXHAUST THE AIR Switch on the wall.</p> <p>OFF  ON</p>
<p>SET THE AIR VOLUME SELECTOR SWITCH TO "HIGH."</p> <p>LOW  HIGH</p>	<p>SET THE AIR VOLUME SELECTOR SWITCH TO "LOW."</p> <p>LOW  HIGH</p>

Air volume selector is available  
Only this followed model  
VD-20ZP4T2, VD23Z4T2, VD-23ZP4T2

# MAINTENANCE

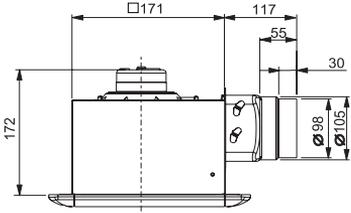
1. Be always turn switch off or pull the circuit breaker down before cleaning and musn't wet the motor or other electrical parts.
2. Cleaning the dirty part with water/neutral detergent damped-cloth to protect water dripping into electrical part, and then wipe with a dry cloth.
3. Do not use any chemical to clean the plastic part it may cuase damage to product.
4. In case of intensive dirt on the grille, the air blow will be less causing loud noise. To protect such condition, should often clean the grille.
5. To remove the grille, pull the grille, then squeeze the spring and take it from the elliptical hole of fix spring as Figure.29 in page 9.
6. Disconnect the power when not in use.

# REPAIRING PRODUCT

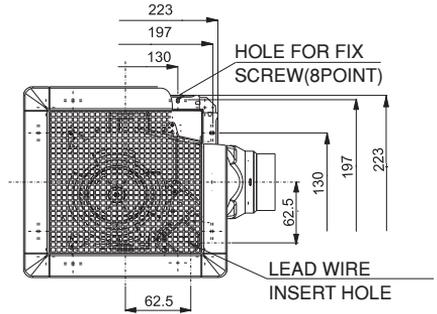
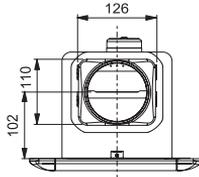
1. This product must not be assembled under any circumstances. Only authorized repair technicians are qualified to conduct disassembly and repairs.  
(Failure to heed this warning may result in fire, electric shock or injury.)
2. Must use genuine spare part from Service center or Sales Agency.
3. Do not modify any electric part, if failure to heed this warning may cause injury.

## DIMENSIONS

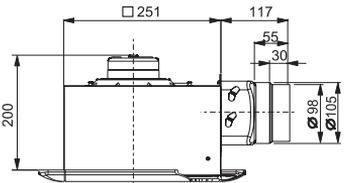
**MODEL : VD-10Z4T□, VD-10Z4T□-C**



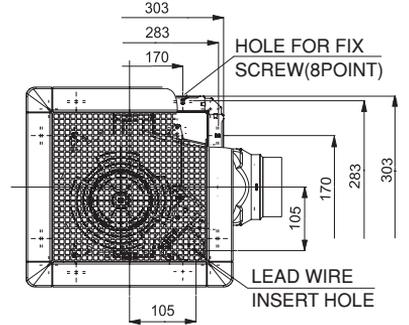
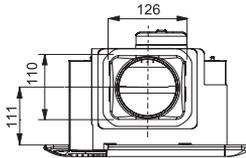
Unit : mm.



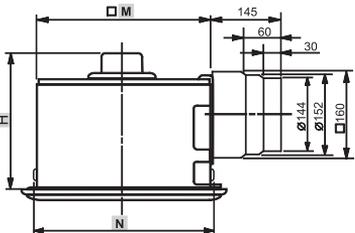
**MODEL : VD-15Z4T□, VD-15Z4T□-C, VD-15ZP4T□**



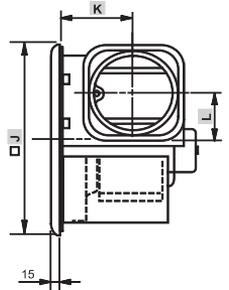
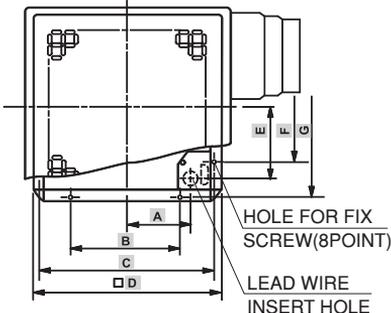
Unit : mm.



**MODEL : VD-18Z4T□, VD-20Z4T□, VD-20ZP4T□, VD-23Z4T□, VD-23ZP4T□**



Unit : mm.

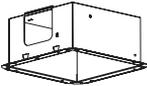
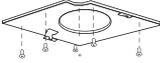


Dimension table was shown at Page.12

**TABLE:** Each part dimension of VD-18Z4□, VD-20Z4□, VD-20ZP4□, VD-23Z4□, VD-23ZP4□

Model	A	B	C	□D	E	F	G	H	□J	K	L	□M	N
VD-18Z4□	99.5	230	292	308	111.5	230	292	243	334	135	67	270	276
VD-20Z4□	118	200	332	345	130	200	332	243	380	135	85.5	307	313
VD-20ZP4□	118	200	332	345	130	200	332	248	380	135	85.5	307	313
VD-23Z4□	157.5	300	410	424	169.5	300	410	232	474	135	110.5	386	392
VD-23ZP4□	157.5	300	410	438	169.5	300	410	278	474	161.5	110.5	386	392

## PART NAME

No.	PART NAME	PICTURE	MODEL	
			PLASTIC	METAL
1	ADDITIONAL DUCT		-----	ALL MODEL
2	BODY		-----	ALL MODEL
3	PROPELLER FAN		VD-10Z4□, VD-10Z4□-C VD-15Z4□, VD-15Z4□-C VD-15ZP4□	VD-18Z4□, VD-20Z4□ VD-20ZP4□, VD-23Z4□ VD-23ZP4□
4	AIR GUIDE		VD-10Z4□, VD-10Z4□-C VD-15Z4□, VD-15Z4□-C VD-15ZP4□	-----
			-----	VD-18Z4□, VD-20Z4□ VD-20ZP4□, VD-23Z4□ VD-23ZP4□
5	ORIFICE		-----	VD-18Z4□, VD-20Z4□ VD-20ZP4□, VD-23Z4□ VD-23ZP4□
6	GRILLE		VD-10Z4□, VD-10Z4□-C VD-15Z4□, VD-15Z4□-C VD-15ZP4□	VD-18Z4□, VD-20Z4□ VD-20ZP4□, VD-23Z4□ VD-23ZP4□

**REMARK :** NOT HAVE ORIFICE (No. 5) IN THIS FOLLOWED MODEL  
VD-10Z4□, VD-10Z4□-C, VD-15Z4□, VD-15Z4□-C, VD-15ZP4□

