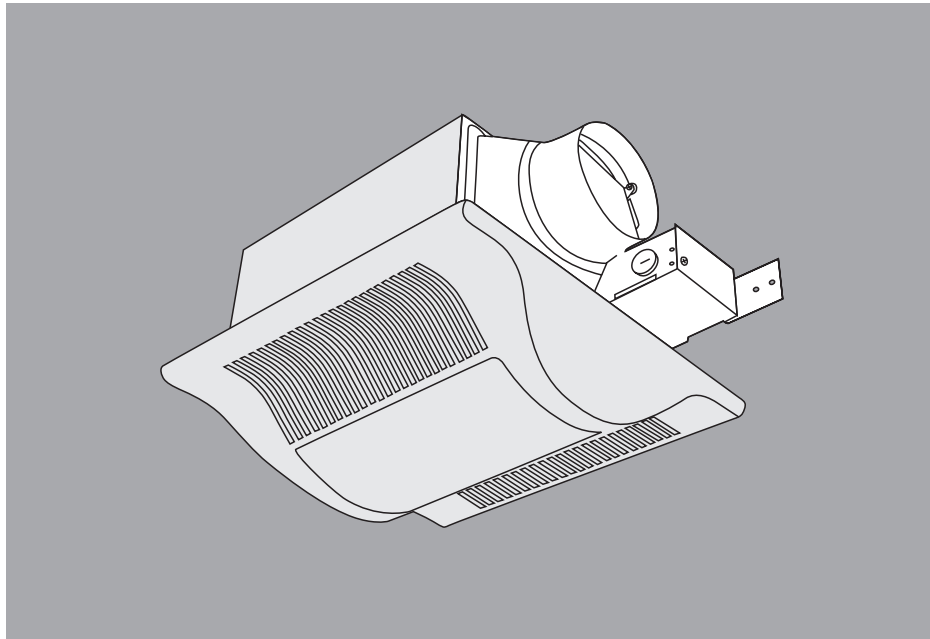


INSTALLATION INSTRUCTIONS

**Ventilating Fan/
Light Combination**

**FV-05VFL1 FV-07VFL1
FV-09VFL1 FV-11VFL1**



Panasonic

READ AND SAVE THESE INSTRUCTIONS.

Please read these instructions carefully before attempting to install, operate or service the Panasonic Ventilating Fan. Failure to comply with instructions could result in personal injury and/or property damage. Please retain this booklet for future reference.

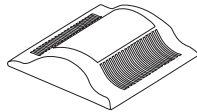

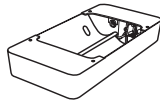
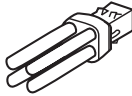

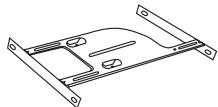

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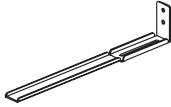







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SUPPLIED ACCESSORIES

FV-05VFL1 FV-07VFL1

FV-09VFL1 FV-11VFL1

Part name	Appearance	Quantity
Grille		1
Lamp cover		1
Light unit		1
13W Fluorescent lamp		2
4W Incandescent lamp		1
Light kit set plate		1
3 inch adaptor connector		1

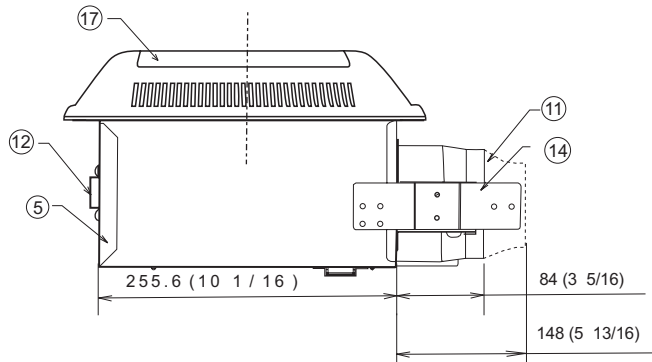
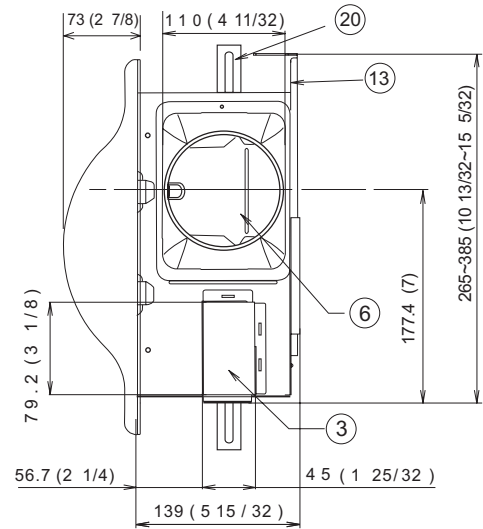
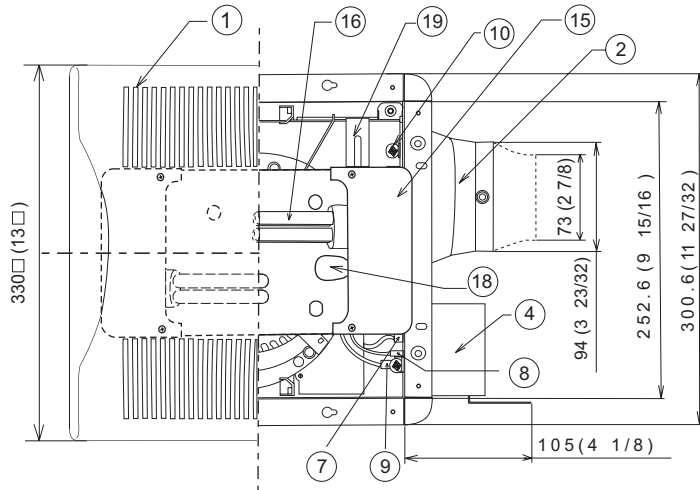
Part name	Appearance	Quantity
Suspension bracket I		1
Suspension bracket II		1
Suspension bracket III		1
Clamp plate		2
Thumb screw		2
Long screws (M4x30)		8
Short screws I (M4x16)		2
Short screw I (M4x8)		1
Short screws I (M4x6)		8

DESCRIPTION

These Panasonic ceiling mount ventilating fan models use a low noise sirocco fan driven by a capacitor motor. The motor is designed to have an extended service life with reduced energy consumption. It also incorporates a thermal-cutoff for safety. The grille covering the main body is a spring-loaded, quick-remove type. A damper for preventing couterflow is provided. The light unit is an energy-saving, lighting device which uses two 13W fluoescent lamps and produces almost the same illumination as a standard 100W incandescent lamp.

DIMENSIONS

FV-05VFL1 FV-07VFL1
FV-09VFL1 FV-11VFL1



Unit: mm(inches)

No.	Part name	No.	Part name
1	Grille	11	3 inch adaptor connector
2	Adaptor	12	Bracket cover
3	Junction box	13	Suspension bracket I
4	Junction box cover	14	Suspension plate
5	Body	15	Light unit
6	Damper	16	Fluorescent lamp (13W x 2)
7	Motor connector	17	Lamp cover
8	Night lamp connector	18	Night lamp (4W x 1)
9	13W lamp connector	19	Light kit set plate
10	Thumb screw	20	Suspension bracket I and II

SPECIFICATIONS

Model No.	Air direction	V	Hz	Duct diameter (inch)	Power consumption (w)			Noise (sone)	Air deliver at 0.1" WG(CFM)	Speed (RPM)	Weight lb. (Kg)
					Fan unit	Light unit					
						Fluorescent lamp	Night lamp				
FV-05VFL1	Exhaust	120	60	3	14.1	26	4	0.6	50	921	
				4	14.1	26	4	0.4	50	822	
FV-07VFL1				3	19.3	26	4	1.2	60	1059	
				4	19.5	26	4	0.9	70	908	
FV-09VFL1				3	22.8	26	4	1.5	70	1175	
				4	23.8	26	4	1.5	90	1018	
FV-11VFL1	3										
	4										

Specification are based on HVI standard.

UNPACKING

Unpack and carefully remove unit from carton.
Refer to the Supplied Accessories list to verify that all parts are present.

GENERAL SAFETY INFORMATION

1. Do not install this ventilating fan where air temperature may exceed 40°C (104°F).
2. Make certain that the electric service supply voltage is 120V, 60 Hz.
3. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupation Safety and Health Act (OSHA).
4. Always disconnect the power source before working on or near the fan, motor or junction box.
5. Protect the power cord from sharp edges, oil, grease, hot surfaces, chemicals or other objects.
6. Do not kink the power cord.
7. Do not install the unit where ducts are configured as shown in Fig. A.
8. Provide suction parts with proper ventilation.
9. This unit is approved for use over a bathtub or shower when installed in a GFCI protected branch circuit.

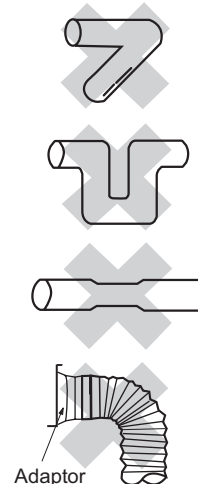


Fig. A

CAUTION:

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. Not for use in cooking area. (Fig .B)
3. This product must be properly grounded.

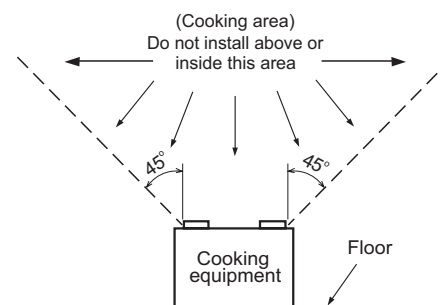


Fig. B

WARNING:

To reduce the risk of fire, electric shock or injury to persons, observe the following;

- A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
- B. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- C. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating Refrigeration and Air Conditioning Engineers (ASHRAE) and the local code authorities.
- D. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
- E. Ducted fans must always be vented to the outdoors.
- F. These models are UL listed for tub and shower enclosures.
- G. Solid state controls may cause harmonic distortion which can cause motor humming noise.
- H. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
- I. NEVER place a switch where it can be reached from a tub or shower.
- J. Not to be installed in a ceiling thermally insulated to a value greater than R40.

INSTALLATION I (JOIST MOUNTING)

1. Disconnect plug connector from receptacle before starting installation.

IMPORTANT:

Remove the tape from damper and adaptor before installation. As shown in Fig.1.

2. Remove adaptor from body and secure to ceiling joists using long screws (M4x30). Make sure the adaptor is level and square (perpendicular) with the joists. (Fig.2)

Keep the distance B (21.6mm, 7/8 inch) for the thickness of ceiling board.

CAUTION:

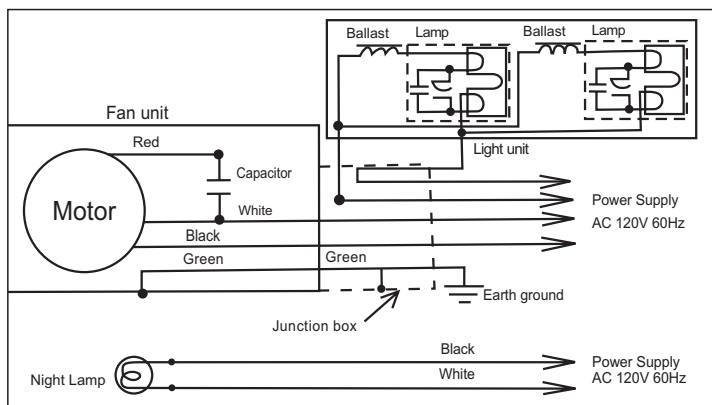
Joist spacing A should be between 380mm (14 31/32inch) and 265mm (10 7/16 inch).

3. Remove junction box cover and secure conduit to junction box knock-out hole. (Fig.3)

4. Refer to wiring diagram below.

Using wire nuts, connect house power wires to ventilating fan wires: black to black; white to white; green to green. Replace the junction box cover.

Wiring diagram



CAUTION:

Mount junction box cover carefully so that lead wires are not pinched.

5. Install circular duct (4 inch) or 3 inch adaptor connector and secure it with duct tape. (Fig.3.1, Fig.3.2)

Connection method for 3 inch adaptor connector

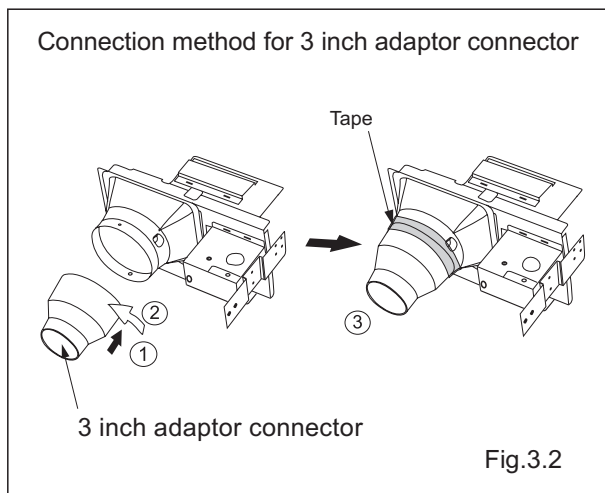


Fig.3.2

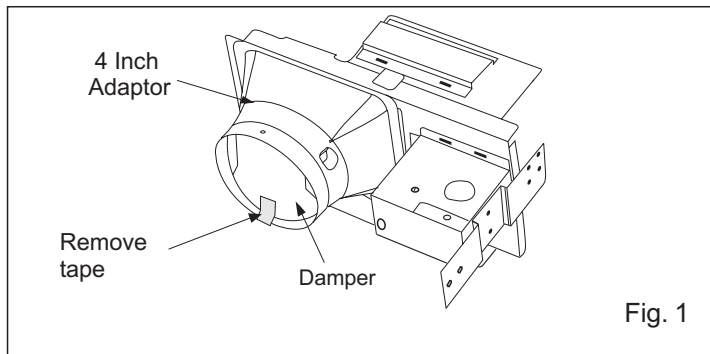


Fig. 1

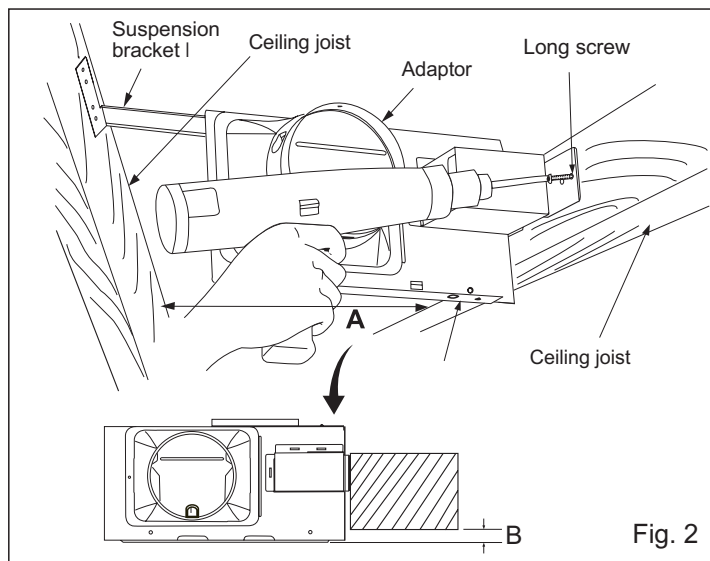


Fig. 2

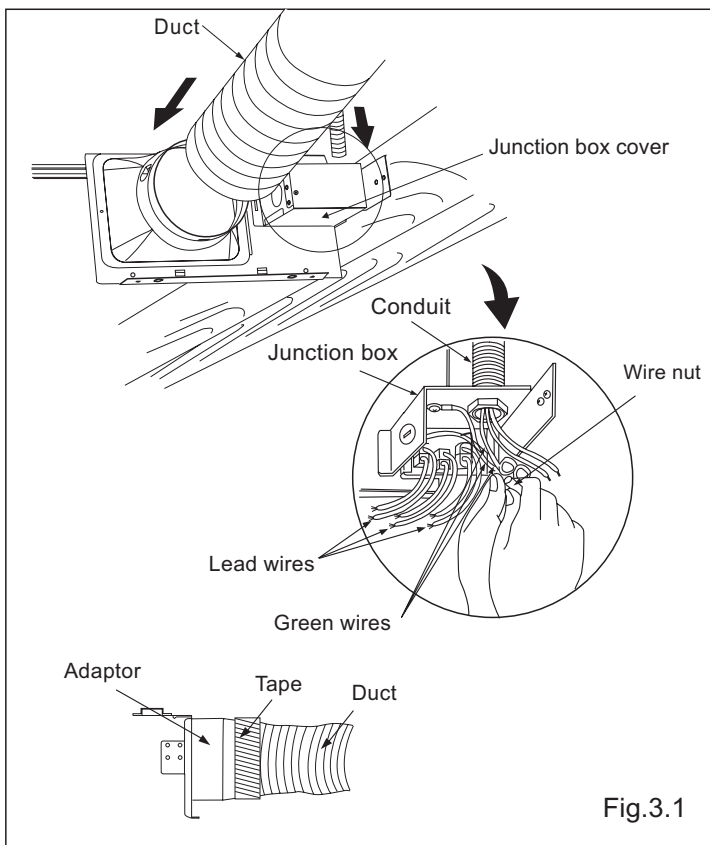


Fig.3.1

INSTALLATION I (JOIST MOUNTING) CONTINUED

6. Remove ceiling section. (Fig.4)

7. Insert fan body into ceiling. (Fig.6)

IMPORTANT:

Make sure that body "Claws" are properly inserted into adaptor slots.

8. Secure fan body to adaptor using two thumb screws.(Fig.7)

9. Connect plug connector I to receptacle I .(Fig.8)

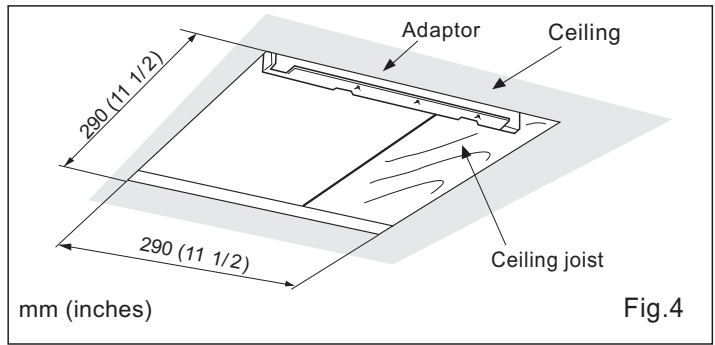


Fig. 4

When mounting body and blower separately

1. Loosen 4 screws (but do not remove them from blower). (Fig.5-1)
2. Remove blower section. (Fig.5-2)
3. Remove adaptor from fan body and secure to ceiling joists as in Fig.2 of page 5.
4. Insert fan body (without blower section) into ceiling. (Fig.6)
5. Secure the adaptor and fan body using one thumb screw as shown in Fig.5-3.
6. Secure the fan body to the ceiling joists as shown in Fig.9 and Fig.10 of page 7.
7. Insert the blower into the fan body. (Fig.5-4)
8. Secure the blower by 4 screws as shown in Fig.5-5.
9. Mount the fan body with thumb screw (on the right side of bottom of the adaptor) as shown in Fig.7.
10. Connect plug connector I to receptacle I. (Fig.8)

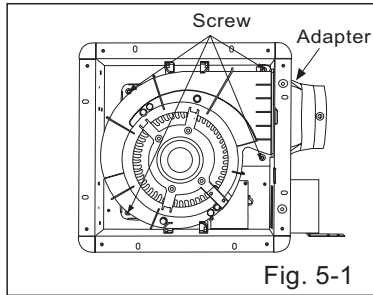


Fig. 5-1

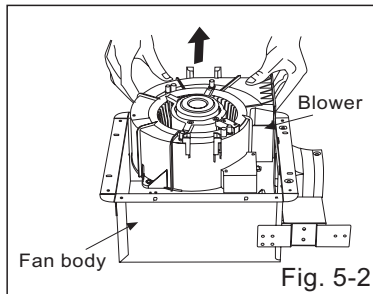


Fig. 5-2

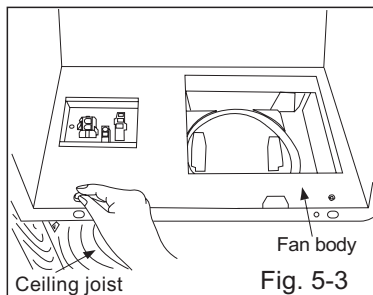


Fig. 5-3

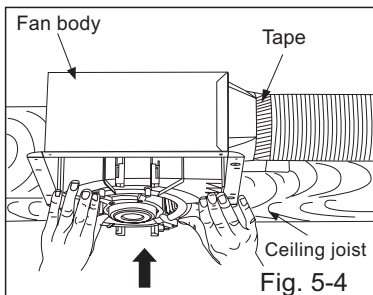


Fig. 5-4

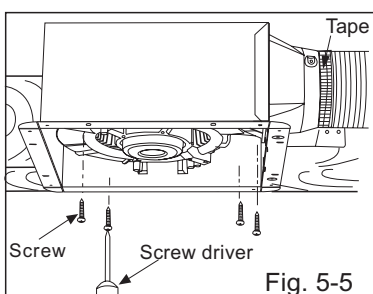


Fig. 5-5

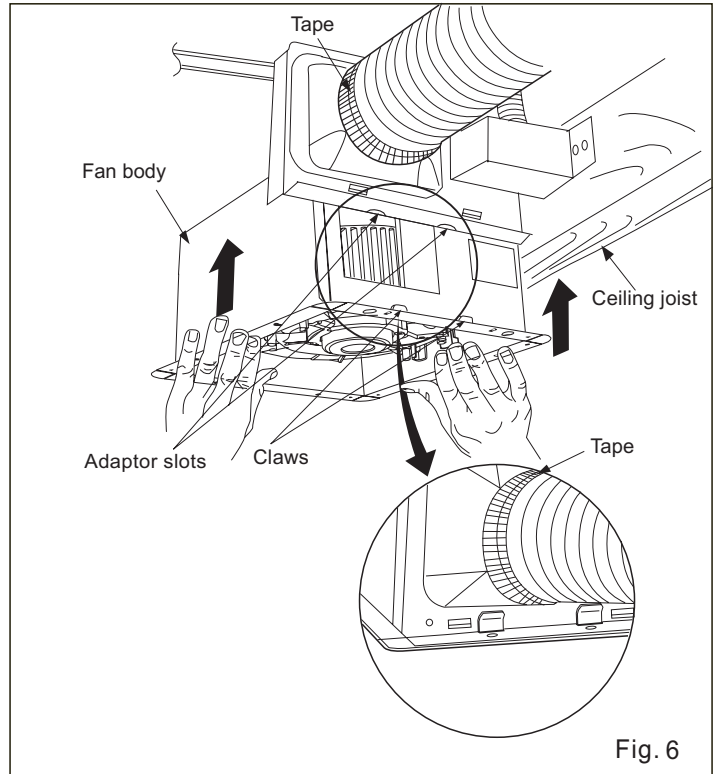


Fig. 6

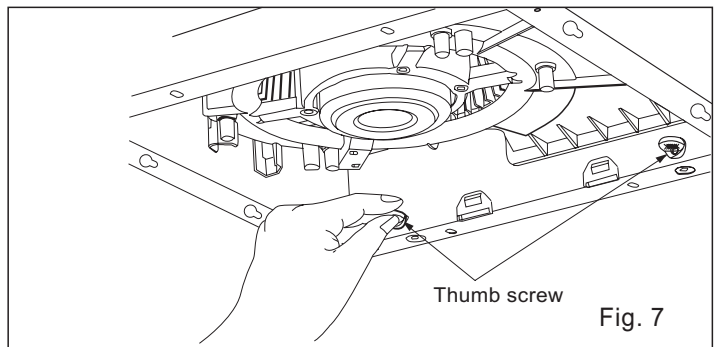


Fig. 7

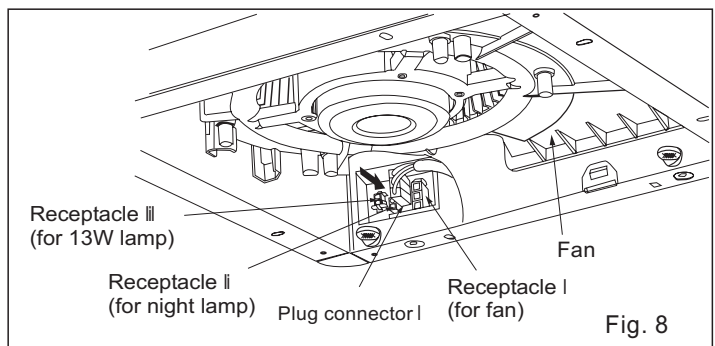


Fig. 8

INSTALLATION I (JOIST MOUNTING) CONTINUED

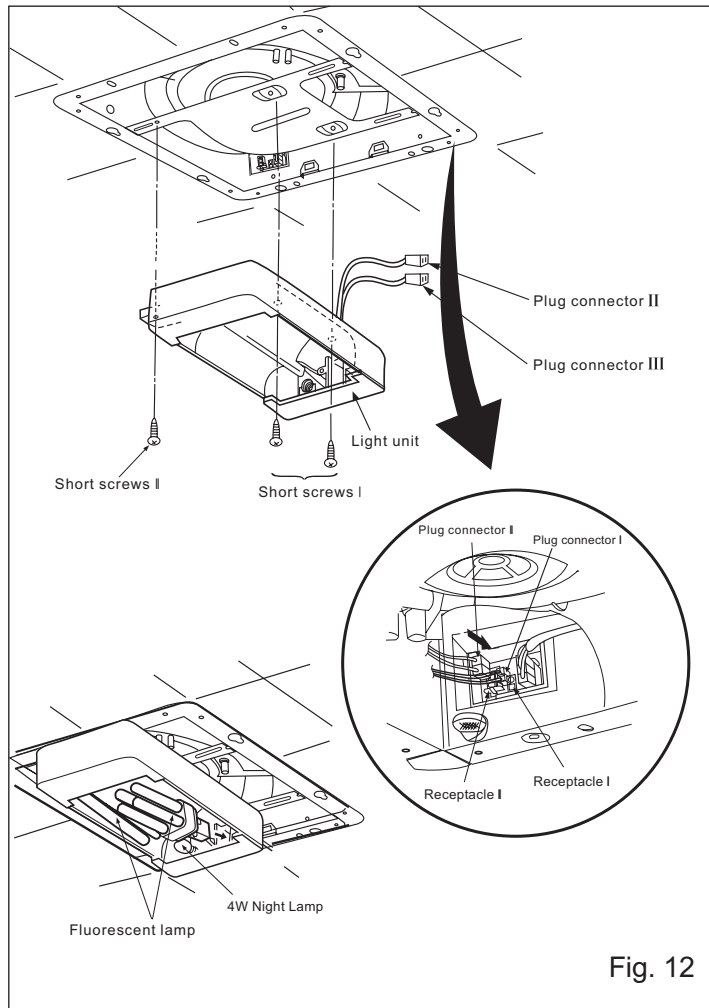
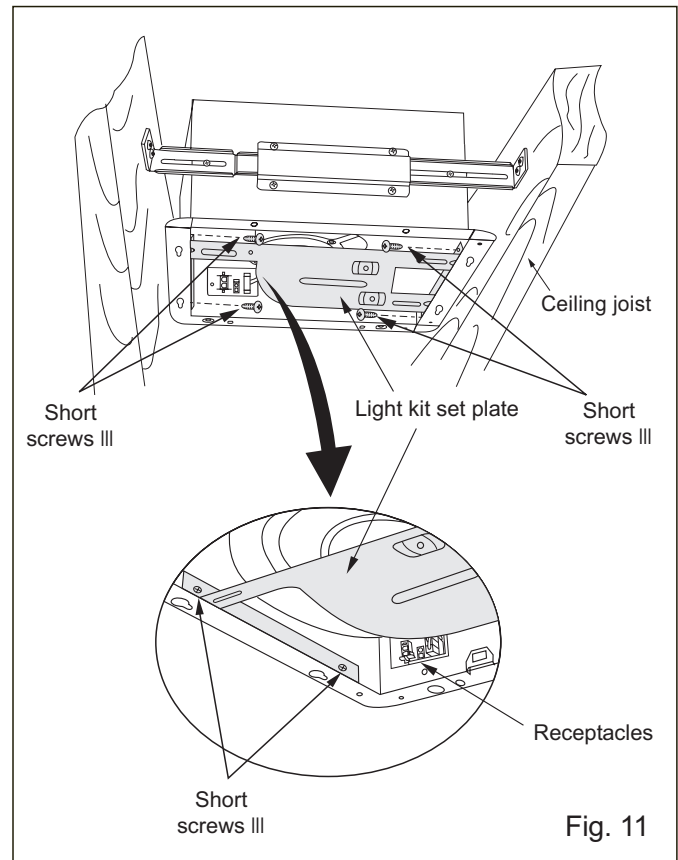
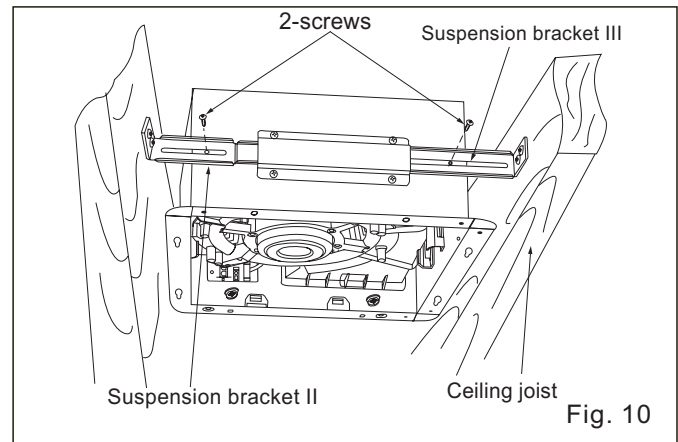
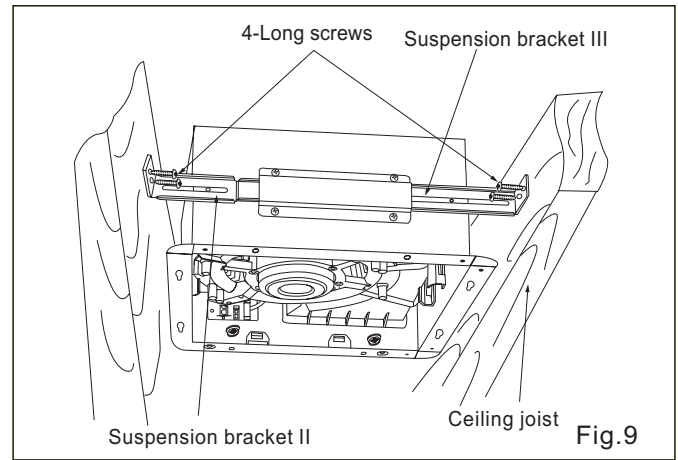
10. Secure fan body to ceiling joists using long screws (M4X30) in horizontal direction with suspension bracket II and III. (Fig. 9)

11. Secure suspension bracket II and III to the fan body using 2 short screws III (M4x6). (Fig.10)

12. Fix the light kit set plate to the frame using 4 short screws III (M4x6). (Fig.11)

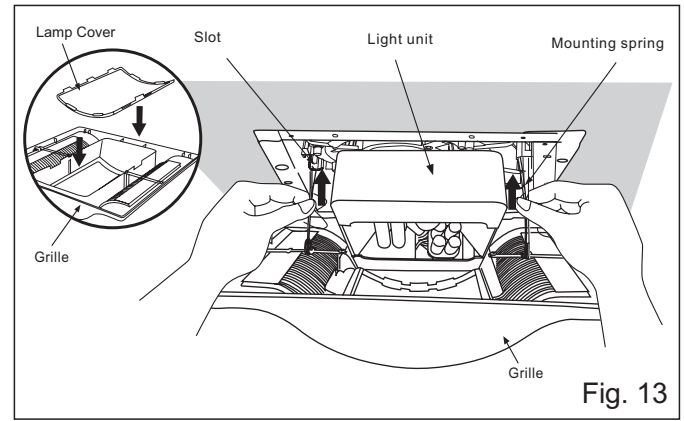
13. Insert the plug connector I and plug connector II into the receptacle I and receptacle II respectively, and attach the light unit to the fan unit with 2 short screws I (M4x16) and 1 short screw II (M4x8). (Fig.12)

14. Insert the fluorescent lamps and screw the night lamp into the light unit. (Fig.12)



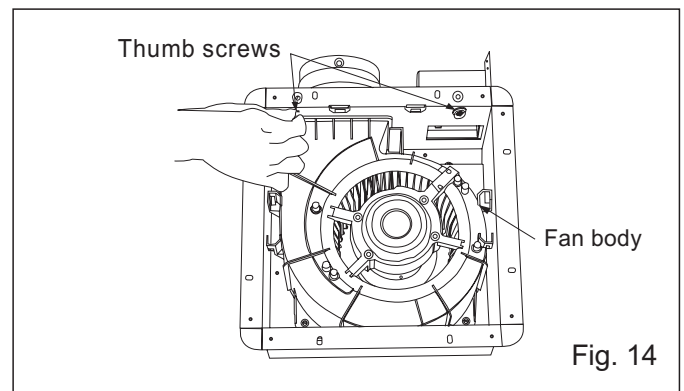
INSTALLATION I (JOIST MOUNTING) CONTINUED

15. Insert the lamp cover to the grille and attach the grille to the fan unit. (Fig.13)

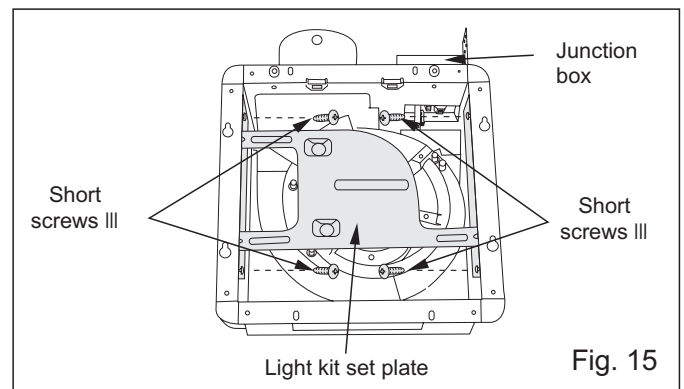


INSTALLATION II (WOODEN HEADER)

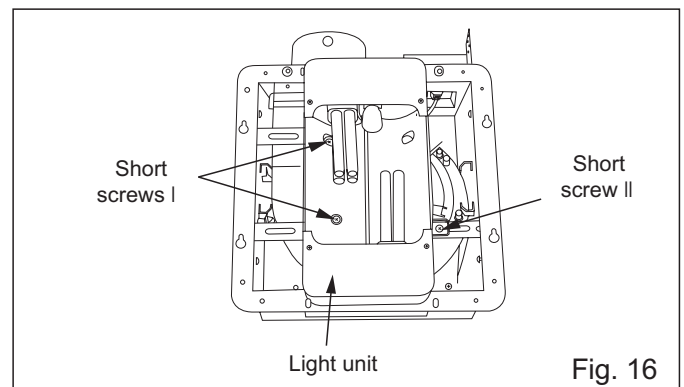
1. Before installation, secure adaptor to fan body using two thumb screws. (Fig.14)



2. Fix the light kit set plate to the frame using 4 short screws III (M4x6). (Fig.15)



3. Insert the plug connector II and plug connector III into the receptacle I and receptacle III respectively, and attach the light unit to the fan unit with 2 short screws I (M4x16) and 1 short screw II (M4 x 8). Insert the fluorescent lamps and screw the night lamp into the light unit. (Fig.12, Fig.16)



INSTALLATION II (WOODEN HEADER) CONTINUED

4. Install header between ceiling joists using nails or screws. (Fig.17)
5. Install the ventilating fan and secure with screws. (Fig.17 and Fig.18)
6. Insert the circular duct to the adaptor and secure with duct tape.
Remove the junction box cover and secure conduit to junction box knockout hole (7/8 inch) (Fig.18)
7. Refer to wiring diagram.
Using wire nuts, connect house power wires to ventilating fan wires: black to black; white to white; green to green.
Replace the junction box cover.

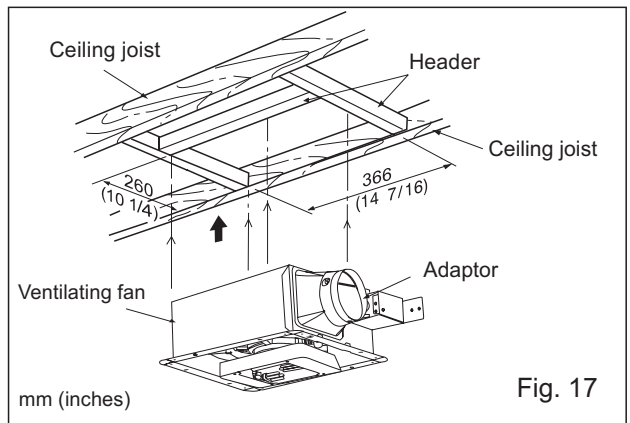


Fig. 17

CAUTION:

Mount junction box cover carefully so that lead wires are not pinched

Wiring diagram

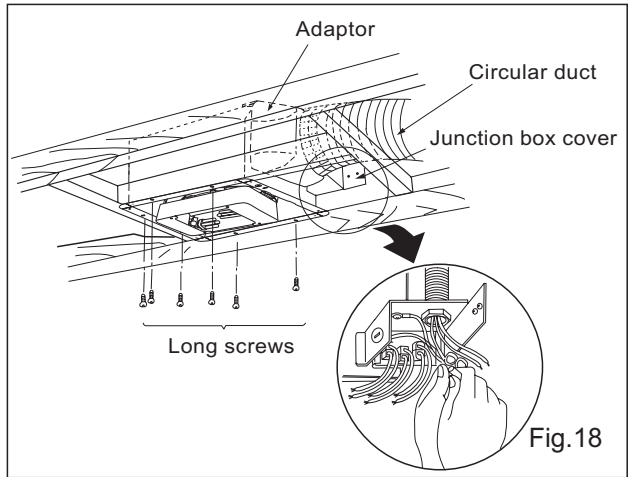
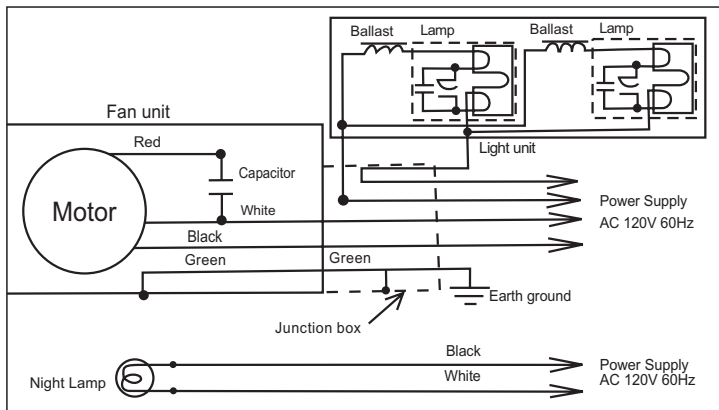


Fig. 18

8. Finish ceiling work. Ceiling hole should be aligned with edge of the flange. (Fig. 19)
9. Mount grille to fan body. (Fig. 13, page 8.)

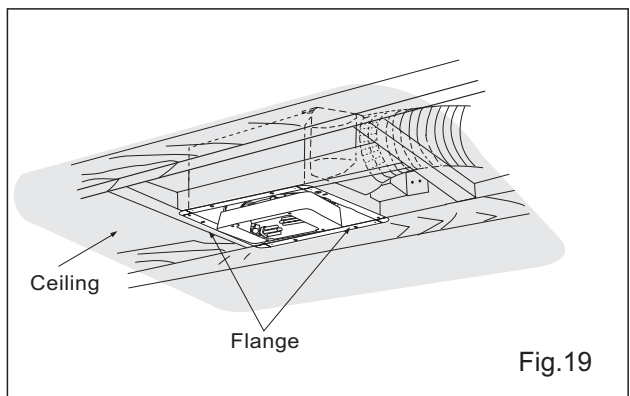


Fig. 19

INSTALLATION III (IN EXISTING CONSTRUCTION)

1. Installation in existing construction.

Installing the ventilating fan in an existing building requires an accessible area (attic or crawl space) above the planned installation location or existing ducting and wiring.

- (1) To install the ventilating fan, follow the procedures described in Installation II. Take the following precautions before installation.

CAUTION:

Check area above planned installation location to be sure that:

1. Duct work can be installed and that area is sufficient for proper ventilation.
2. Wiring can be run to planned location.
3. No wiring or other obstructions will interfere with installation.

- (2) Inspect duct work and wiring before proceeding with installation.

- (3) Plan suitable location for ventilating fan. (next to ceiling joist)

INSTALLATION III (IN EXISTING CONSTRUCTION) CONTINUED

- (4) Before installation, provide inspection and maintenance access at a location that will not interfere with installation work shown in installation I.
 - (5) First, remove ceiling section according to Fig.4 of page 6.
 - (6) Install ventilating fan.
2. Installation from accessible area above fan location.
 - (1) Inspect duct work and wiring before proceeding with installation.
 - (2) Remove ceiling section according to Fig.4 of page 6.
 - (3) Install ventilating fan.
 3. Installation without removing ceiling.

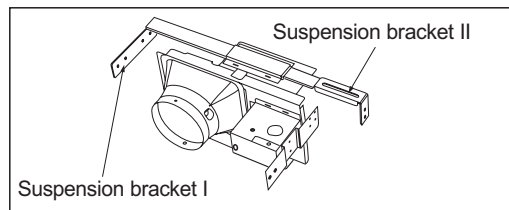
CAUTION:

Check area above planned installation location to be sure that:

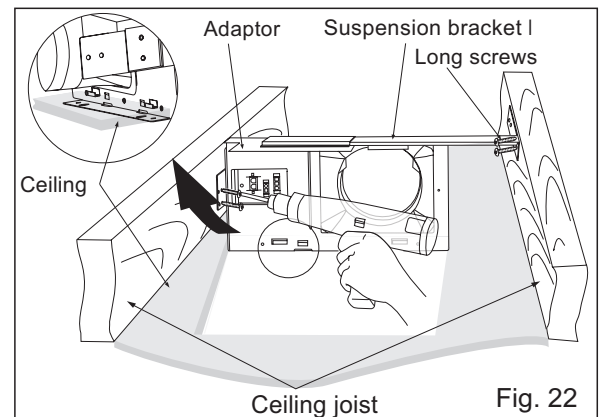
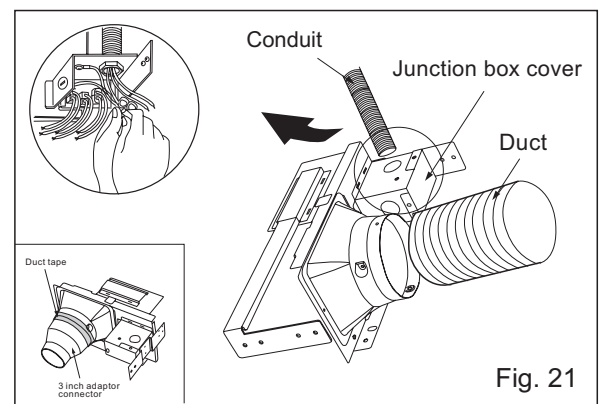
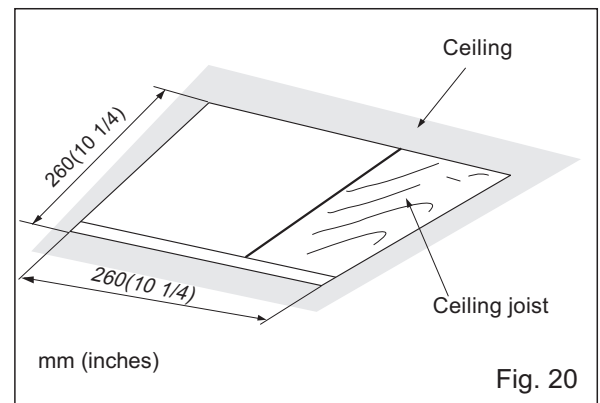
1. Ensure that the square hole size in ceiling should be sufficient according to Fig.20
2. Duct work can be installed and that area is sufficient for proper ventilation.
3. Wiring can be run to planned location.
4. No wiring or other obstructions will interfere with installation.

- (1) Loosen 4 screws (but do not remove them from blower) as shown in Fig.5-1 of page 6.
- (2) Remove blower from fan body as shown in Fig.5-2 of page 6. and then remove adaptor from fan body.
- (3) Remove junction box cover and secure the existing conduit to junction box knockout hole.(Fig21)
- (4) Refer to wiring diagram on page 9.
Using wire nuts, connect house power wires to ventilating fan wires: black to black; white to white; green to green.
Replace the junction box cover.
- (5) Secure adaptor to ceiling joists with 4 long screws (M4X30) inside of the ceiling as shown in Fig.22.

If the location is in the middle between 2 joists, connect suspension bracket I and II as shown below.

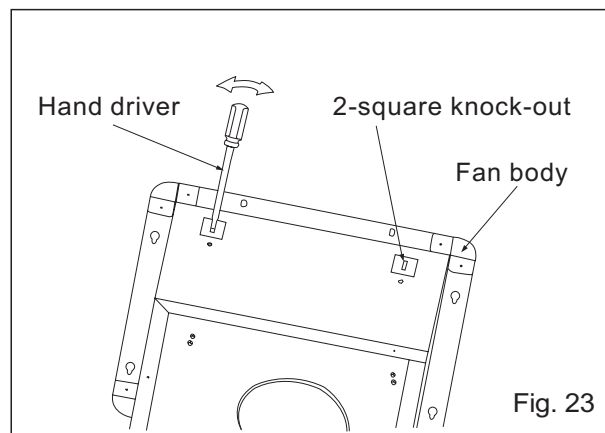


- (6) Install circular duct(4 inch) or optional part (3 inch adaptor connector) and secure it with duct tape as shown in Fig.21.

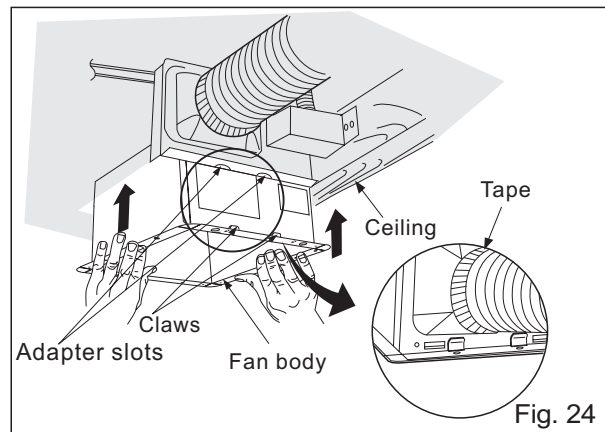


INSTALLATION III (IN EXISTING CONSTRUCTION) CONTINUED

(7) Remove the 2 square knock-out carefully from surface of the frame by screw driver (Fig.23) and remove the bracket cover on the other side of the frame body.

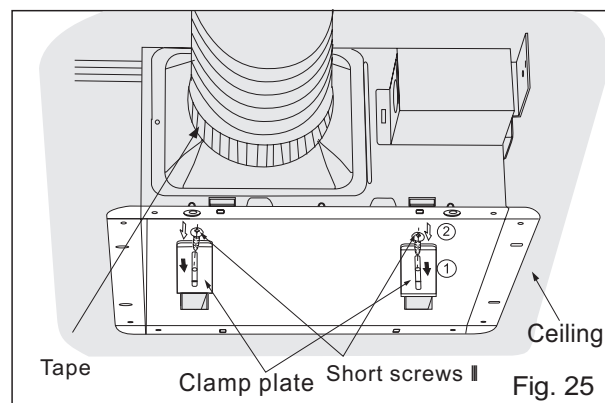


(8) Insert fan body into ceiling as shown in Fig.24.

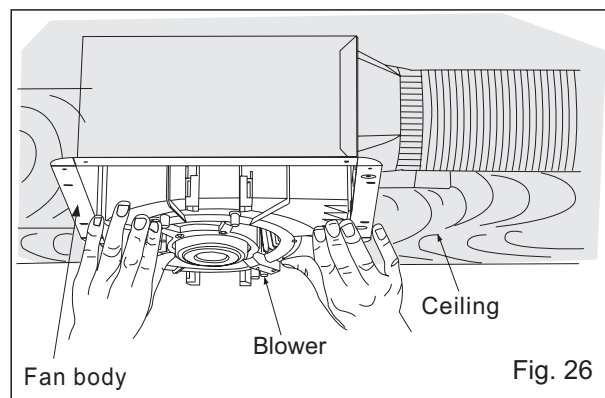


(9) Secure the fan body to the adaptor by using one thumb screw as shown in Fig.5-3 of page 6.

(10) Replace with clamp plates(accessories) and secure the fan body on ceiling board with 2 short screws III (M4 x 6) from inside of the frame. (Fig.25)



(11) Insert the blower into the fan body. (Fig. 26)



INSTALLATION III (IN EXISTING CONSTRUCTION) CONTINUED

(12) Secure blower to fan body with screws that were loosen before. (Fig.27)

(13) Mount the fan body with thumb screw (on the right side of bottom of the adaptor) as shown in Fig.7 of page 6.

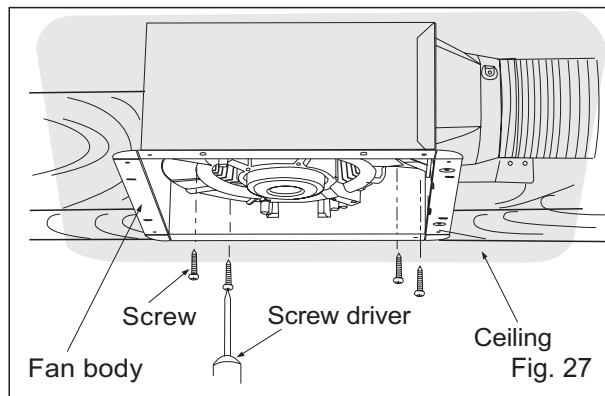
(14) Connect plug connector I to receptacle I. (Fig.8 of page 6.)

(15) Fix the light kit set plate to the frame using 4 short screws I (M4x6) as shown in Fig.11 of page 7.

(16) Insert the plug connector II and plug connector III into the receptacle I and receptacle III respectively, and attach the light unit to the fan unit with 2 short screws I (M4x16) and 1 short screw II (M4x8) as shown in Fig.12 of page 7.

(17) Insert the fluorescent lamps and screw the night lamp into the light unit as shown in Fig.12 of page 7.

(18) Insert the lamp cover to the grille and attach the grille to the fan unit as shown in Fig.13 of page 8.

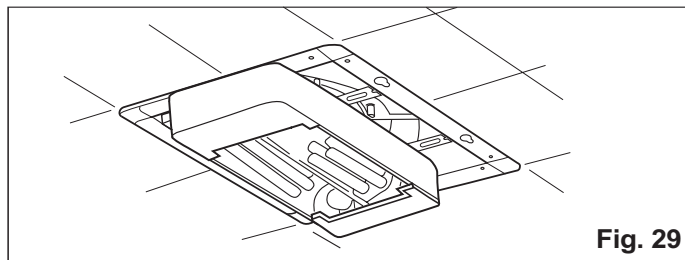


Maintenance I (Replacement of fluorescent lamp of night lamp)

WARNING:

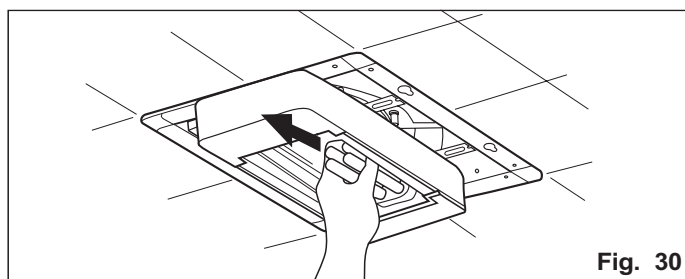
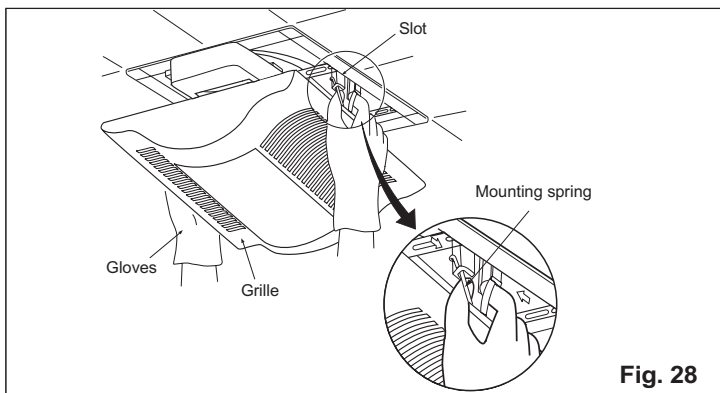
1. Disconnect power source before working on unit.
2. The lamp's glass is fragile. Please handle with care. To remove lamp, grasp at base and move back and forward to loosen. Do not pull hard on the lamp or you may break the glass.
3. 4W night lamp has threaded base. Remove by turning counterclockwise.

2. Disconnect the connector II or connector III of light unit. (Fig. 29)



3. Change the fluorescent bulbs (Panasonic FDS 13E 27. U/2, 13W or FQ13E 41.U/2, 13W or FQ13E 35.U/2, 13W) or the 4W incandescent lamp, connect the connector II or connector III and replace the grille. (Fig. 30)

1. Remove grille.(Squeeze mounting spring and pull down) (Fig. 28)



Maintenance II (Cleaning)

WARNING:

Disconnect power source before working on unit. Routine maintenance must be done every year.

CAUTION:

1. Never use gasoline, benzene, thinner or any other similar chemicals for cleaning the grille and the ventilating fan.
2. Do not allow water to enter motor.
3. Do not expose plastic parts to temperature over 140 °F (60 °C).

1. Remove grille. (Squeeze mounting spring and pull down)

(Fig. 31)

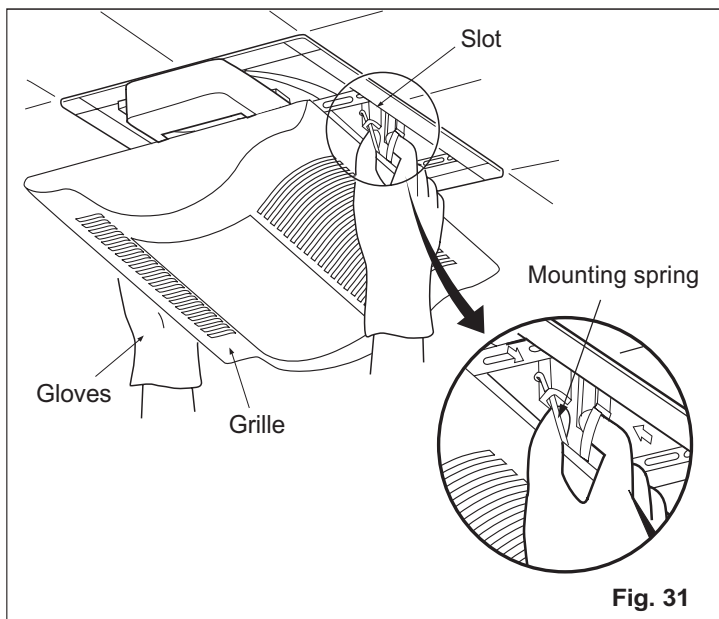


Fig. 31

2. Wash and clean grille. (Use non-abrasive kitchen detergent)

(Fig. 32)

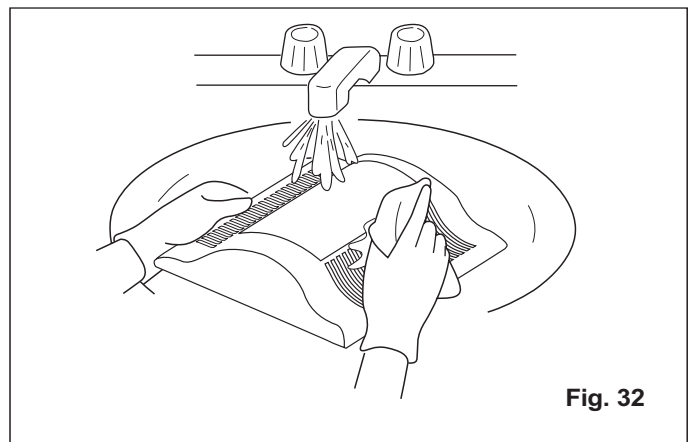


Fig. 32

4. Using a cloth dampened with kitchen detergent, remove any dirt from fan body. Wipe dry with new cloth.

5. Replace bulbs and grille.

(Fig. 12 on page 7 and Fig.13 on page 8)

3. Remove dust and dirt from fan body using a vacuum cleaner. (Remove bulbs if necessary.)

(Fig. 33)

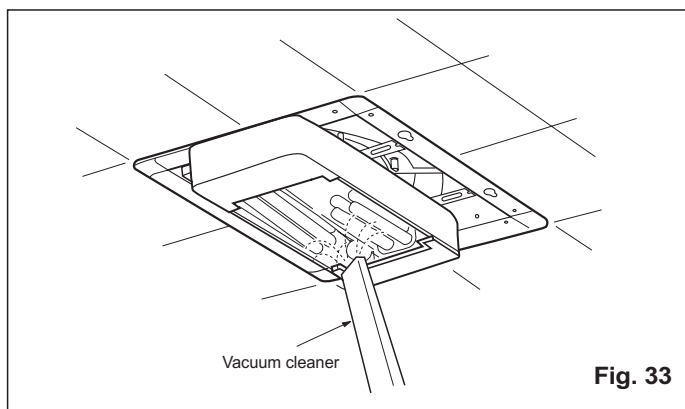


Fig. 33

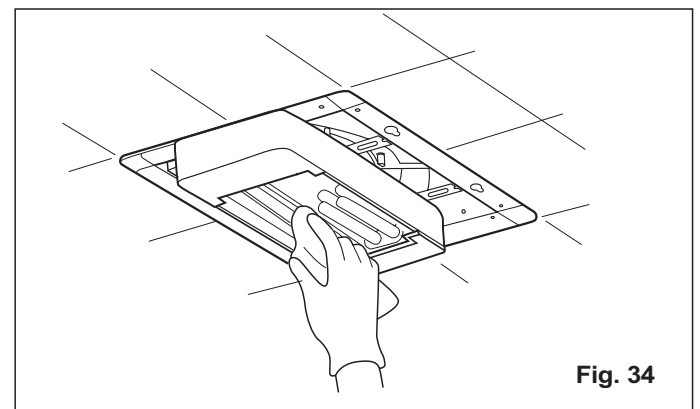


Fig. 34

PRODUCT SERVICE

The unit should be serviced by qualified technicians only. No service information is provided for customers. Your product is designed and manufactured to ensure a minimum of maintenance. However, should your unit ever require service, a nationwide system of factory service centers and AUTHORIZED INDEPENDENT SERVICE CENTER is maintained to support your product's warranty.

(In the U.S.A., call 1-886-292 7292 to locate the Panasonic Authorized Service Center nearest you.)

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