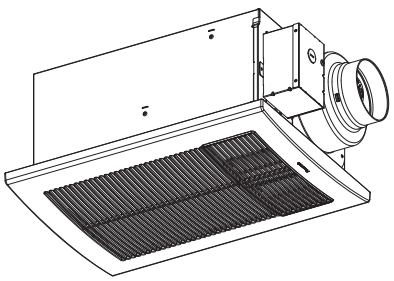
Panasonic

OPERATING AND INSTALLATION INSTRUCTIONS

Fan Heater

Model No. FV-0511VH1
FV-0511VHL1



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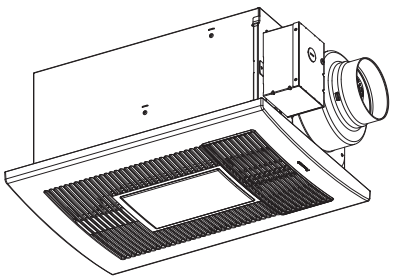

FV-0511VHL1

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READ AND SAVE THESE INSTRUCTIONS

Thank you for purchasing this Panasonic product.
Please read these instructions carefully before attempting to install, operate or service the Panasonic product. Please carefully read the “IMPORTANT INSTRUCTIONS”.
Failure to comply with instructions could result in personal injury or property damage.
Please explain to users how to operate and maintain the product after installation, and this booklet should be presented to users.
Please retain this booklet for future reference.

5 1 V H L 1 4 2 1 A

IMPORTANT INSTRUCTIONS

Read all instructions before installing or using this fan heater.

For Your Safety

To reduce the risk of injury, loss of life, electric shock, fire, malfunction, and damage to equipment or property, always observe the following safety precautions.

Explanation of symbol word panels

The following symbol word panels are used to classify and describe the level of hazard, injury, and property damage caused when the denotation is disregarded and improper use is performed.

⚠ WARNING	Denotes a potential hazard that could result in death or serious injury.
⚠ CAUTION	Denotes a hazard that could result in minor or moderate injury.
NOTICE	Denotes a hazard that could result in property damage.

The following symbols are used to classify and describe the type of instructions to be observed.

	This symbol is used to alert users to a specific operating procedure that must be followed in order to operate the unit safely.
	This symbol is used to alert users to a specific operating procedure that must not be performed.
	This symbol is used to alert users not to disassemble the equipment.
	This symbol is used to alert users to make sure of grounding when using the equipment with the grounding terminal.

⚠ WARNING

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

- Use this fan heater only in the manner intended by the manufacturer.
  If you have any questions, contact the manufacturer. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
- Before servicing or cleaning unit, switch power off at servicing panel and lock servicing panel 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.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
  Neither unauthorized modification, repair nor disassembly is allowed.
- Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting.
  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.

IMPORTANT INSTRUCTIONS CONTINUED

Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational safety and Health Act.

Use only on 20 ampere branch circuit.

This fan heater must be properly grounded.

Ceiling joist must be able to withstand a static load more than five times the weight of the fan heater.

Any special-purpose or dedicated parts, such as mounting fixtures, must be used if such parts are provided.

Ducted fan must always be vented to the outdoors.

Protect the supply wiring from sharp edges, oil, grease, hot surfaces, chemicals or other objects.

Always disconnect the power source before working on or near the fan, motor, heater or junction box.

Extreme caution is necessary when any fan heater is used by or near children or persons with disabilities and whenever the fan heater is left operating and unattended.

Remove the fan heater when it is no longer to be used to prevent failure.

Do not install this fan heater over a bathtub or shower enclosure.

Do not install with a method which is not approved in the instructions.

Do not install in places other than the ceiling.

Not to be installed in a ceiling thermally insulated to a value greater than R60.

Do not use outdoors.

When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

Do not kink the supply wiring.

Do not use this fan heater with any solid-state control device. Solid state controls may cause fan heater failure.

The fan heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.

Do not disassemble the fan heater for reconstruction. It may cause fire or electric shock.

Do not disassemble the fan heater for maintenance with a method which is not in the instructions. Any maintenance other than user maintenance should be performed by specialized serviceman.

IMPORTANT INSTRUCTIONS CONTINUED

- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the fan heater.
- This fan heater is hot when in use. To avoid burns, do not let bare skin touch the hot surfaces of the fan heater. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, curtains, etc. at least 3 feet(0.9m) away from the fan heater.
- To prevent a possible fire, do not block air intakes or exhaust in any manner.
- Do not tamper with the fan heater.
- Never use gasoline, benzene, paint thinner or any other such chemicals for cleaning the fan heater.
- If the fan heater malfunctions, do not continue to use it. Disconnect power at service panel and have fan heater inspected by a reputable electrician before using it again.

⚠ CAUTION

- Make sure that the electric service supply voltage is AC 120 V, 60 Hz.
- To disconnect fan heater, turn all switches to off, and shut off power to the circuit.
- Do not install this fan heater where interior room temperature may exceed 104 ˚F (40 ˚C).
- Not for use in cooking area. (Fig.A)
- Use the ventilating mode for general ventilation only. Do not use the fan heater to exhaust hazardous or explosive materials and vapors.

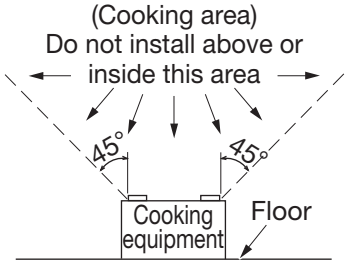
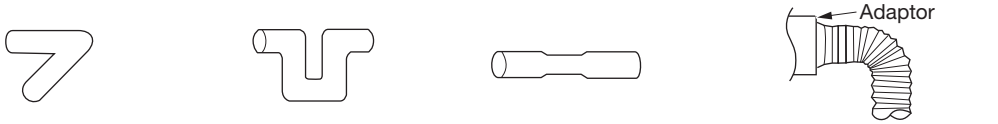


Fig.A

NOTICE

- When one switch is connected with two or more products in parallel, the fan heater may not function. Therefore, parallel connection should not be allowed.
- Provide make up air for proper ventilation.
- Do not install the fan heater where ducts are configured as shown below.



Excessive bending | Successive bending | Squeezed duct | Bend close to duct adaptor

SAVE THESE INSTRUCTIONS

DESCRIPTION

The Panasonic fan heater uses a sirocco fan driven by a DC motor powered by an integral transformer. The motor is designed to have long operating life, high dynamic response, higher speed ranges and energy efficiency. The grille covering the fan heater body is attached with the mounting springs for quick removal. A shutter driven by a stepper motor is designed to shift the airflow between the heating and ventilating functions. A damper for preventing counter-flow is provided. The blower uses a high-capacity sirocco fan developed to reduce noise level. The heater for this fan heater is a 1600W PTC heater. A thermostat and thermal cut-off switch have been added for safety in case of an abnormal temperature rise.
The lighting unit has a 10W LED light and produces almost the same illumination as that of a standard 40W incandescent light. The night light consumes around 0.1 to 0.4W.
This product is Type IC-inherently Protected. (FV-0511VHL1 only)

(FV-0511VHL1 only)
FCC Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning this product on and off, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect equipment to an outlet on a different circuit from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: This equipment must be installed by qualified person in accordance with the provided installation instructions; and all applicable codes and standards. Also, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

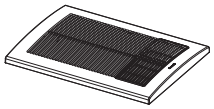
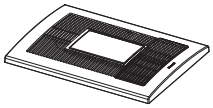
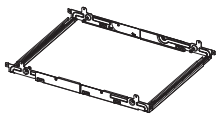
SDoC Responsible Party:	Panasonic Corporation of North America Two Riverfront Plaza, Newark, NJ 07102
Customer Call Center:	1-866-292-7299

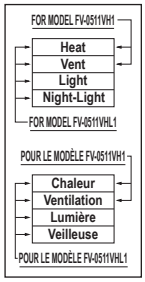
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

UNPACKING

Unpack and carefully remove the fan heater from the packaging.
Refer to the Supplied Accessories list to verify that all parts are present.

SUPPLIED ACCESSORIES

Part name	Appearance	Quantity
Grille	 FV-0511VH1	1
	 FV-0511VHL1	1
Flex-Z Fast™ bracket (with 4 tapping screws -ST4.2X20)		1
Self-drilling screw		4

Part name	Appearance	Quantity
Warranty sheet		1
Operating and Installation instructions		1
Switch label		1

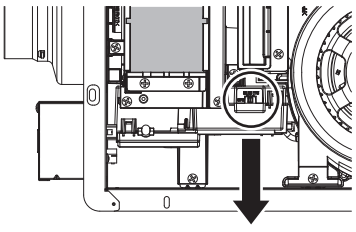
FEATURES

Heater Performance:

This fan heater, WhisperWarm® uses a PTC (Positive Temperature Coefficient) heater. This is a quick and efficient means to warm up a bathroom.

Optimum Ventilation Performance:

Duct length, elbows and other factors increase static pressure which can hinder the performance of most ventilation fans. WhisperWarm® fan heaters utilize Smart Flow microchip technology that monitors the static pressure in the system and speeds up or slows down the rpm of the fan depending upon the amount of resistance within the ducts. This feature allows the fan to perform as rated and avoid potential installation issues.



Pick-A-Flow™ switch

Outstanding Energy Savings:

WhisperWarm® fan heaters are built using DC motor technology. The DC motor for ventilating is 30 % - 70 % more energy efficient than a traditional AC motor.

Pick-A-Flow™ Feature (Ventilating mode only)

WhisperWarm® fan heaters come with Pick-A-Flow™ speed options. The Pick-A-Flow™ switch on the face of WhisperWarm® fan allows the option to choose 50 – 80 – 110 CFM, and WhisperWarm® fan heaters run constantly at the chosen air volume.
(Factory setting is 80 CFM)

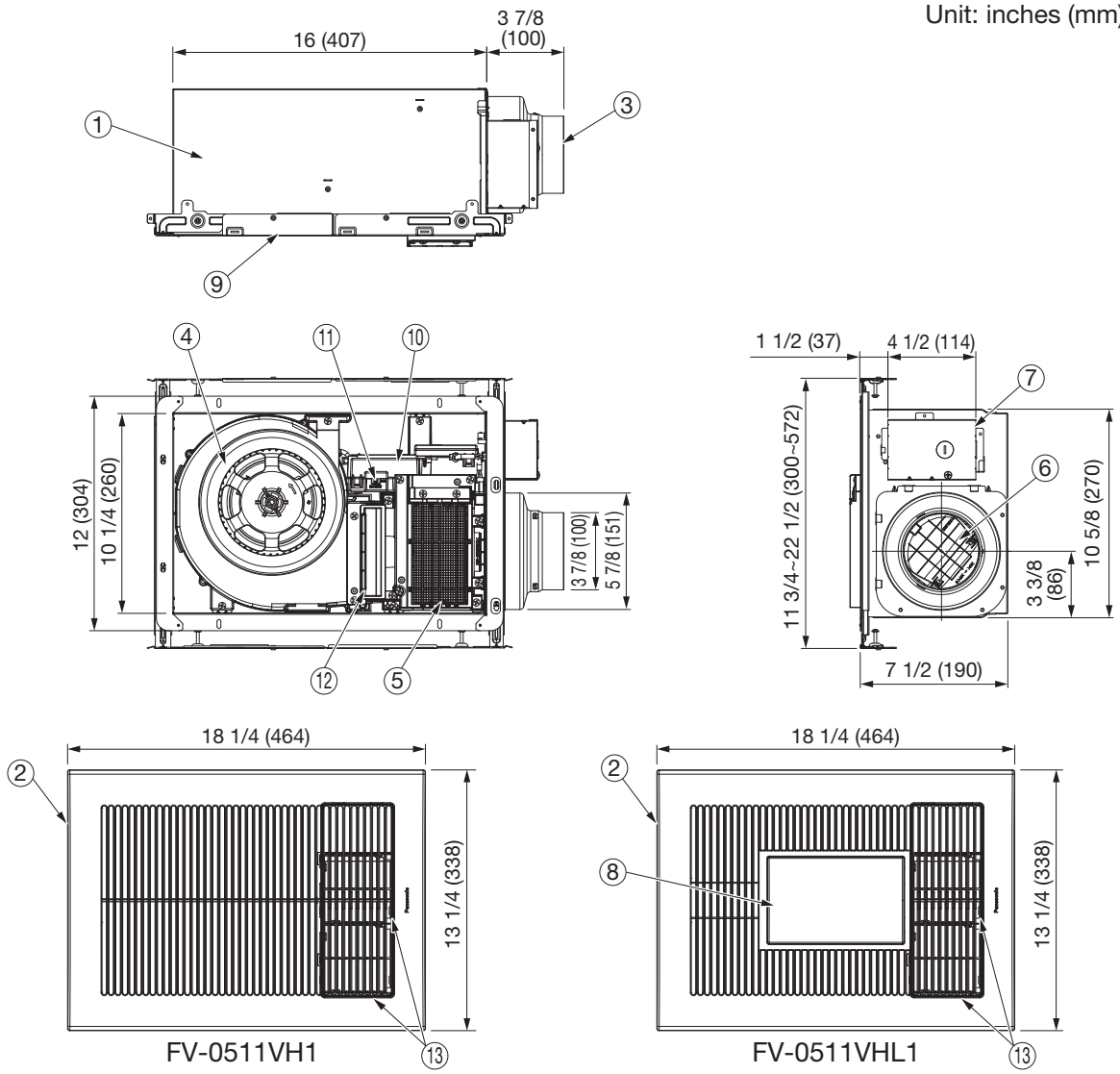
FEATURES CONTINUED

Timer function:

A timer function is available in the "heating" and "heating and ventilating" modes of WhisperWarm® fan heaters to reduce power consumption in case a user forgets to turn off the switch.
(See "OPERATING INSTRUCTIONS" on page 13 for more details.)

DIMENSIONS

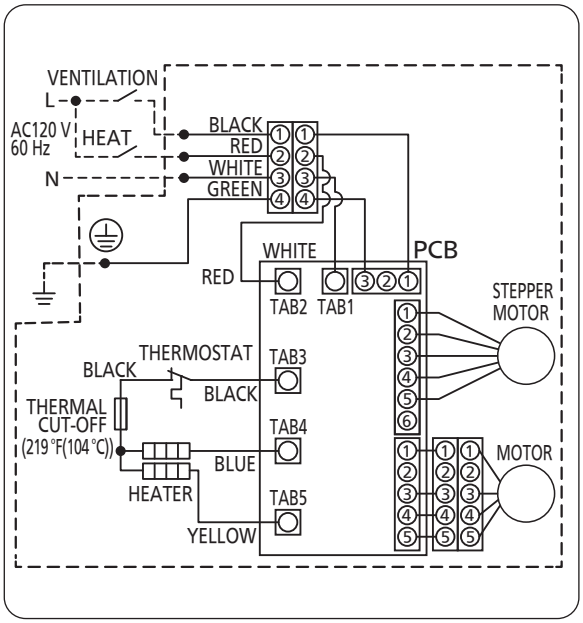
Unit: inches (mm)



No.	Part name	No.	Part name
①	Fan body	⑧	Lighting unit
②	Grille	⑨	Flex-Z Fast™ bracket
③	Adaptor	⑩	PCB box
④	Blade	⑪	Pick-A-Flow™ switch
⑤	Heater	⑫	Filter
⑥	Damper	⑬	Grille blade
⑦	Junction box		

INSTALLATION (WIRING DIAGRAM)

FV-0511VH1



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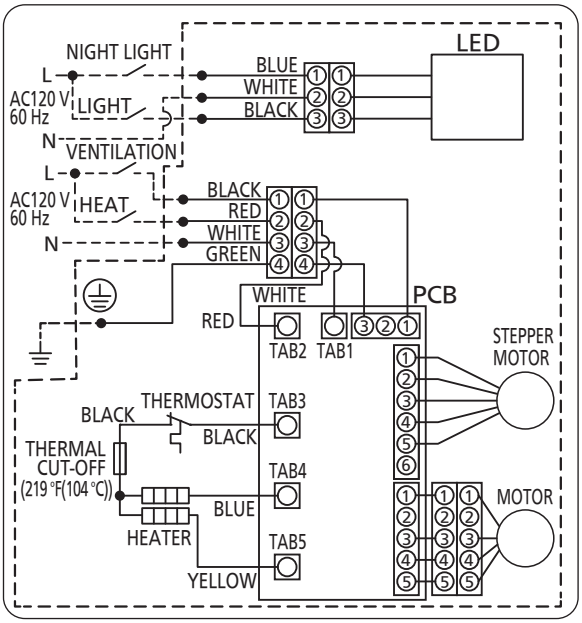


INSTALLATION (NEW CONSTRUCTION)

The fan heater can be adjusted to be installed between joists of any pitch between 16" and 24" on center.

⚠ WARNING

- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction. Neither unauthorized modification, repair nor disassembly is allowed.
- Disconnect power source before working on the fan heater.
- To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the fan heater.

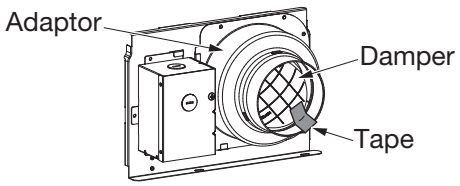
⚠ CAUTION

- Please wear gloves during the following installation procedure.

STEP 1

Disconnect plug connector from receptacle and remove adaptor from fan body by removing the machine screw (M4X8) before installation. (Fig.1)

IMPORTANT:
Remove the tape from damper and adaptor before installation. As shown below:



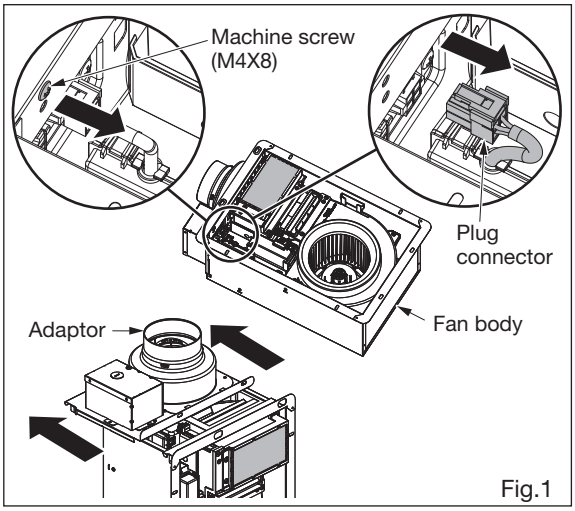


Fig.1

INSTALLATION (NEW CONSTRUCTION) CONTINUED

STEP 2

Bend down 4 tabs for positioning, install the Flex-Z Fast™ bracket to joists by drilling 2 tapping screws (pre-fixed on the Flex-Z Fast™ bracket). (Fig.2)

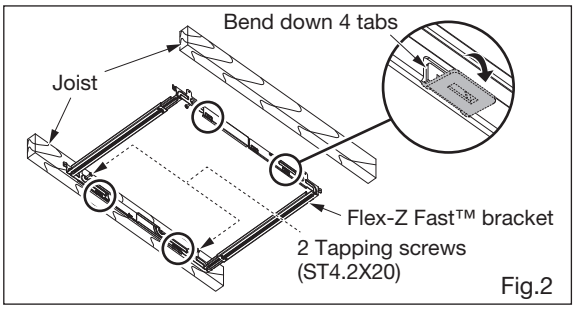


Fig.2

STEP 3

Adjust the length of the Flex-Z Fast™ bracket to the spacing between joists, and install to joists with the other 2 tapping screws (pre-fixed on the Flex-Z Fast™ bracket). (Fig.3)

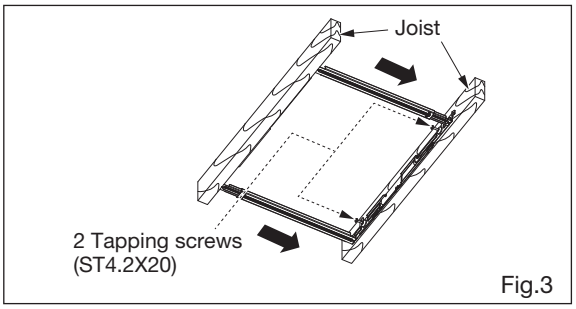


Fig.3

STEP 4

Remove junction box cover and secure conduit or stress relief to junction box knock-out hole. (Fig.4)

STEP 5

Install a duct and secure it with clamps or ties. Seal it with mastic or approved foil tape.
A 4 or 6 inch circular duct is needed to connect to relevant part of adaptor. (Fig.4)

STEP 6

Install the adaptor to the Flex-Z Fast™ bracket by using 2 self-drilling screws. (Fig.4)

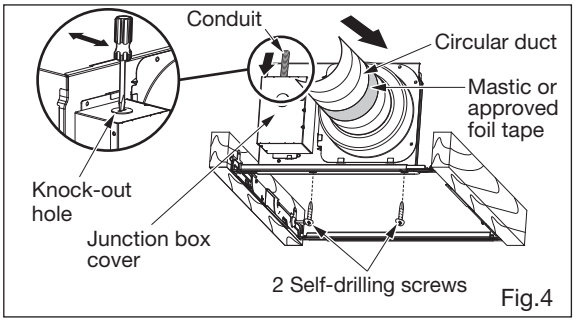


Fig.4

STEP 7

⚠ WARNING

- Use only on 20 ampere branch circuit.
- This fan heater must be properly grounded.
- For Live (Heat) and Neutral (Common for Heat and Vent), AWG 14 or more must be used when wiring.

⚠ CAUTION

- Wiring procedures and connections shall be in accordance with the national and local codes having jurisdiction.
- Mount junction box cover carefully so that lead wires are not pinched.
- When making wiring connections take care to prevent excessive slack in the wiring since a large of current is drawn through the heater electrical wire.

Refer to WIRING DIAGRAM (See page 8).
Follow all local electrical safety codes as well as the National Electrical Code (NEC). Using UL approved wire nuts, connect house power wires to fan heater wires. (Fig.5)

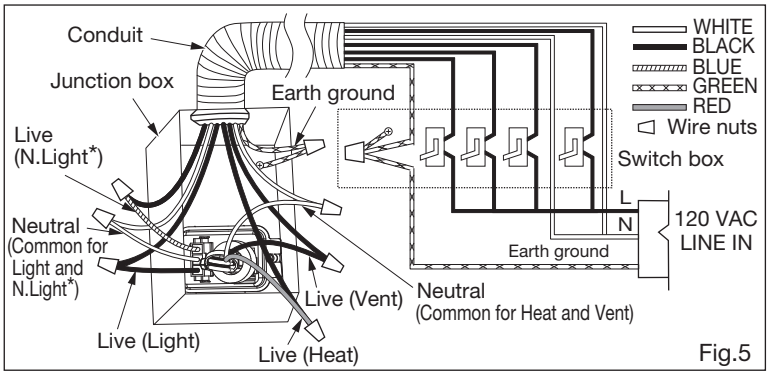


Fig.5

*Night Light

STEP 8

⚠ WARNING

- Secure the machine screw (M4X8) to the suitable hole tightly without interfering the Flex-Z Fast™ bracket for ground continuity. Take care to avoid crossing or stripping the threads.

Carefully insert the fan body into the adaptor, so that the body is all the way seated, and align the flange of the body with the Flex-Z Fast™ bracket.
Secure fan body to Flex-Z Fast™ bracket using 2 self-drilling screws, plug connector to receptacle and secure fan body to adaptor with the machine screw (M4X8). (Fig.6)

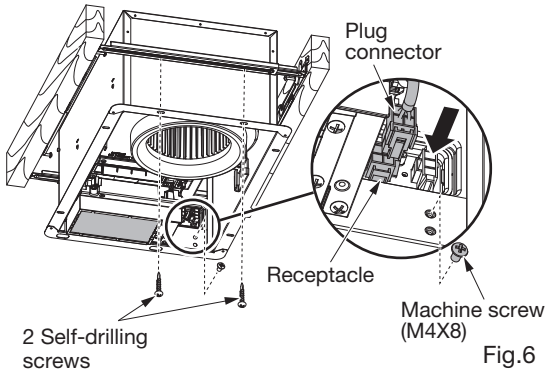
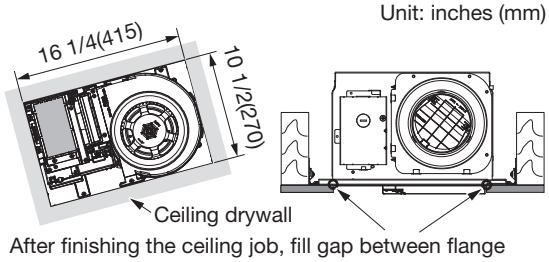


Fig.6

STEP 9

Finish ceiling work. Ceiling hole should be aligned with the inside edge of the flange. (Fig.7)

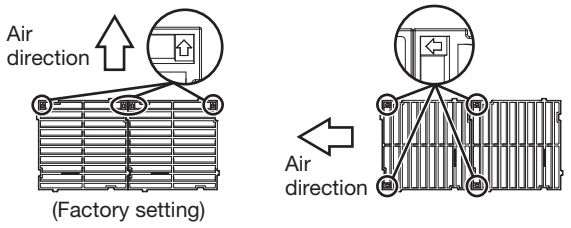


After finishing the ceiling job, fill gap between flange and ceiling with caulk or other sealant to prevent air leakage.
Fig.7

STEP 10 (Perform as needed)

Remove the grille blade holder to adjust orientation of the grille blades to adjust the direction of warm air flow. (Fig. 8)

IMPORTANT:
Align the arrow marks on the grille blades with the desired air direction. (The warm air flow comes out in the direction of the arrow marks.)



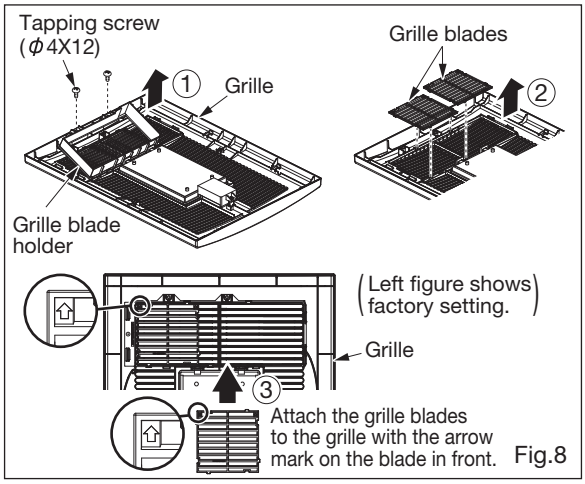


Fig.8

STEP 11

Reinstall the grille blade after adjusting the grille blades.

STEP 12

CAUTION

- Before turning on the light, ensure that the connector is in the correct position.
- The connector must snap completely into place.
- Mount grille carefully so that lead wire is not pinched.

NOTICE

- Pay attention to the orientation of the grille and the mounting springs. The grille will only fit to the ceiling in the proper orientation. (Fig.9)

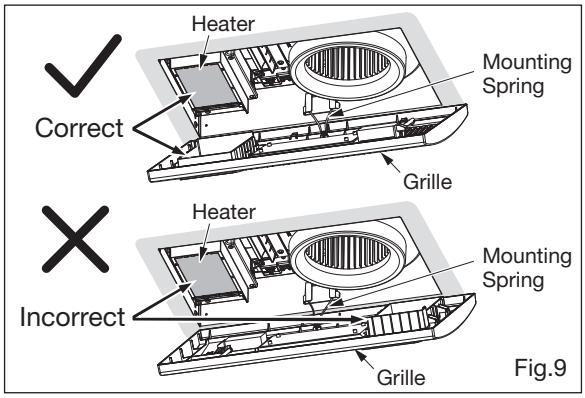


Fig.9

On the side with the wiring, insert the mounting spring into the respective slot and connect the plug to the housing of the lighting unit*. (Fig.10)

*FV-0511VHL1 only

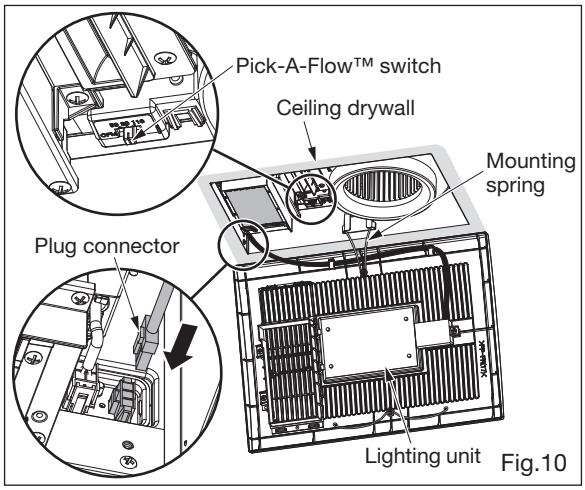


Fig.10

STEP 13

Adjust Pick-A-Flow™ switch. Refer to FEATURES on page 6. (Fig.10)

STEP 14

Insert the other mounting spring into the respective slot as shown and mount the grille to the fan body. (Fig.11)

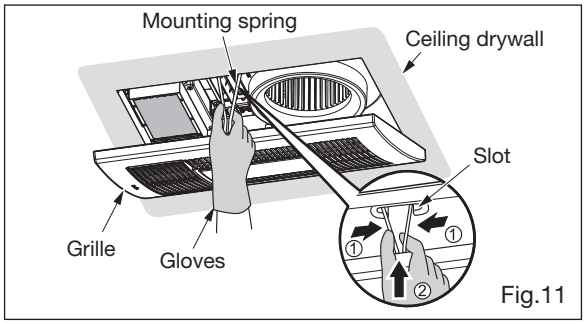


Fig.11

INSTALLATION (RETROFIT)

STEP 1

⚠ WARNING

- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction. Neither unauthorized modification, repair nor disassembly is allowed.
- Disconnect power source before working on the fan heater.
- To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the fan heater.

⚠ CAUTION

- Please wear gloves during the following installation procedure.

Remove the existing equipment and cut ceiling opening*.
*Ceiling opening size: 10 7/8 inch(275 mm) X 16 5/8 inch(422 mm)

STEP 2

Secure the Flex-Z Fast™ bracket to joists with the 4 tapping screws(ST4.2x20) which have been pre-set in the Flex-Z Fast™ bracket. Existing ductwork and wiring should be left in place. (Fig.13)

STEP 3

Follow steps 1 , 4 , 5 , 7 of INSTALLATION (NEW CONSTRUCTION) on pages 8-10. (Before connecting the circular duct to the adaptor, the duct should be pulled down.)

STEP 4

Install the adaptor to the Flex-Z Fast™ bracket using 2 self-drilling screws. (Fig.14)

STEP 5

⚠ WARNING

- Secure the machine screw (M4X8) to the suitable hole tightly without interfering the Flex-Z Fast™ bracket for ground continuity. Take care to avoid crossing or stripping the threads.

Secure the fan body to Flex-Z Fast™ bracket with 2 self-drilling screws, plug connector to receptacle and secure the fan body to the adaptor with the machine screw (M4X8). (Fig.15)

STEP 6

Follow steps 10 to 14 of INSTALLATION (NEW CONSTRUCTION) on page 11.

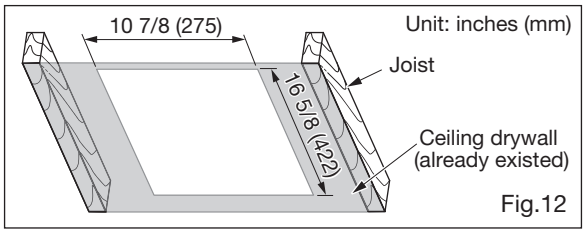


Fig.12

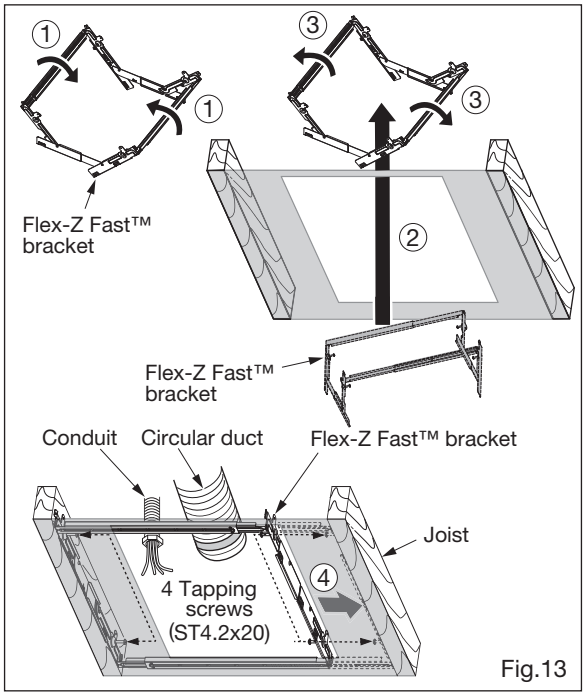


Fig.13

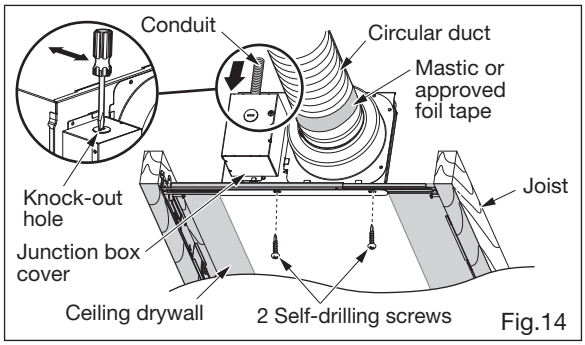


Fig.14

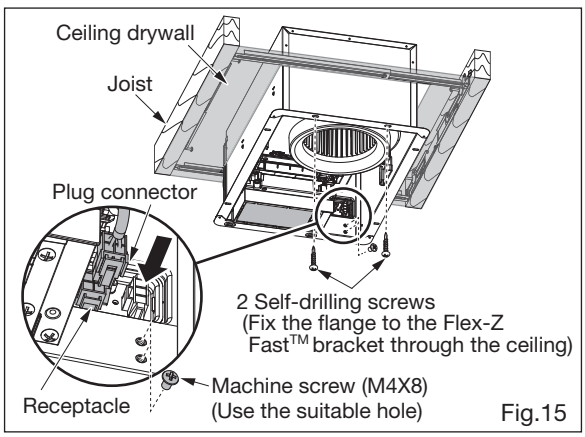


Fig.15

OPERATION

⚠ WARNING

- Use this fan heater only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
- See “MAINTENANCE” on pages 14-15 for user maintenance.
- Do not attempt to use the fan heater before it is completely and properly installed.
- Do not disassemble the the fan heater for maintenance with a method which is not in the instructions. Any maintenance other than user maintenance should be performed by specialized serviceman.
- Do not tamper with the fan heater.

■ OPERATING INSTRUCTIONS

Please operate as shown in the following after installation. (Fig.16)

Switch	Mode	Function
“Heat”	Heating	Heating the bathroom
“Vent”	Ventilating	Ventilating the bathroom
Both of “Heat” and “Vent”	Heating and Ventilating	Exhausting moisture while keeping the bathroom warm
“Light”	Light	Turns on the main light
“Night-Light”	Night-Light	Turns on the night light

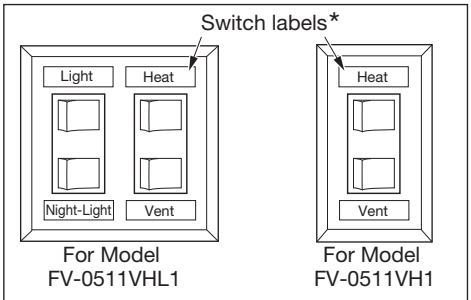


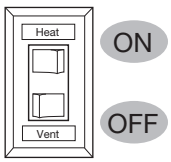
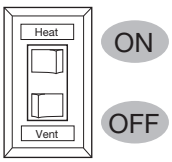
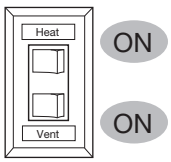
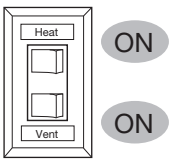
Fig.16

*Attach switch labels to the wall switch as shown above. (Fig.16)

- Switching operating modes requires a slight delay to change the internal shutter positions. (The light mode and night light mode excluded.)
- Pick-A-Flow™ switch is not available to set ventilation air volume while operating in the heating and ventilating mode. (Adequate ventilation air volume is provided to reduce heat loss in a bathroom)

Timer function

The heat switch circuit will turn off in 2 hours if a user forgets to turn off the switch. If this happens, move the “Heat” or “Vent” switch back to the “OFF” position to reset the timer function and resume operation according to the switch status.

	Example 1			Example 2		
Switch		**2 hours later** →			**2 hours later** →	
Mode	Heating	→	Power off	Heating and Ventilating	→	Ventilating

MAINTENANCE

⚠ WARNING

- Disconnect power source before working on the fan heater.
- Before cleaning, make sure the power has been turned off at the circuit breaker panel and that the heating elements of the fan heater and lighting unit are cool.
- Never use gasoline, benzene, paint thinner or any other such chemicals for cleaning the fan heater.
- Do not insert fingers or foreign objects into the heating elements as this may cause electric shock, injury or fire.
- Do not disassemble the fan heater for maintenance with a method which is not in the instructions. Any maintenance other than user maintenance should be performed by specialized serviceman.

⚠ CAUTION

- Wear gloves when cleaning the fan heater.
- Do not use cleaning sprays, solvents, or water on or near the heating elements.
- Do not immerse motor or heater in water when cleaning. Do not soak resin parts in water over 140 ˚F (60 ˚C).

■ FILTER MAINTENANCE INSTRUCTIONS

STEP 1

⚠ CAUTION

- The filter must be maintained every three months.

Squeeze the mounting spring and pull down carefully and remove specified side of the grille. (Fig.17)

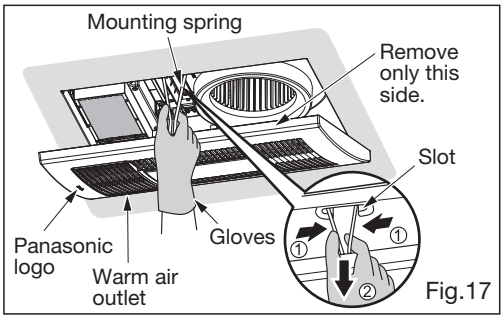


Fig.17

STEP 2

Remove the filter. (Fig.18)

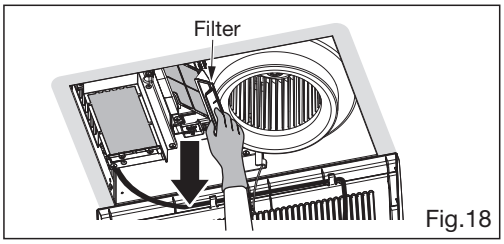


Fig.18

STEP 3

Remove dust and dirt from the filter using a vacuum cleaner after removing the filter from the fan body. (Fig.19)

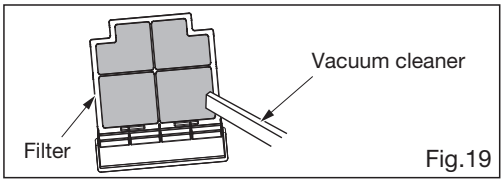


Fig.19

STEP 4

Insert the filter until it clicks and reinstall the grille. (Fig.20)

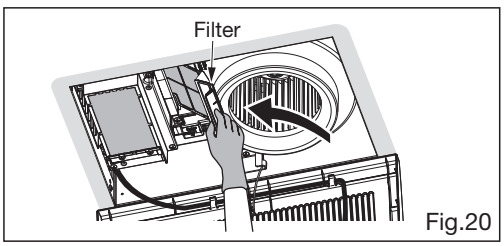


Fig.20

■ GRILLE AND FAN BODY MAINTENANCE INSTRUCTIONS

STEP 1

CAUTION

The grille and the fan body must be maintained every year.

Clean the grille. Do not submerge in water. Use non-abrasive kitchen neutral detergent, wipe dry with a clean cloth. (Fig.21)

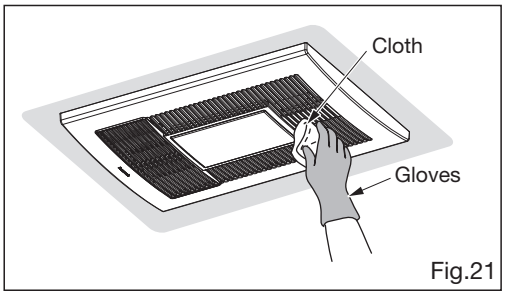


Fig.21

STEP 2

The grille should be dry after cleaning.

STEP 3

Squeeze the mounting spring and pull down carefully and remove specified side of the grille. (Fig.22)

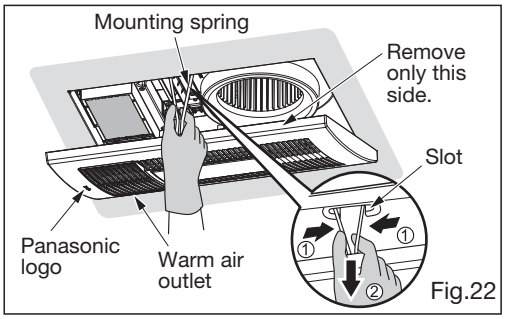


Fig.22

STEP 4

Remove dust and dirt from the fan body using a vacuum cleaner. (Fig.23)

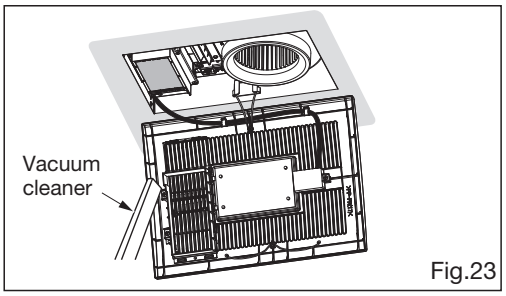


Fig.23

STEP 5

Using a cloth dampened with non-abrasive kitchen neutral detergent, remove any dirt from the fan body. Wipe dry with a clean cloth. (Fig.24)

STEP 6

Reinstall the grille.

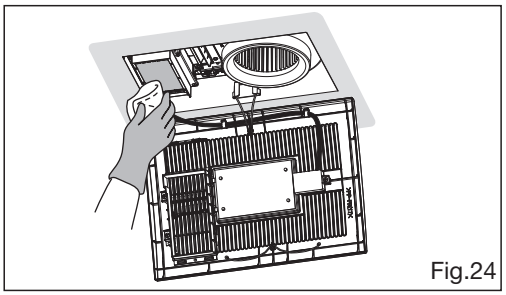


Fig.24

PRACTICAL GUIDE TO INSTALLATION

Properly insulate the area around the fan to minimize building heat loss and gain. (Fig.25) Loose fill or batt insulation can be placed directly over the fan housing in the attic.
Panasonic fan and fan/light combination units do not create the excessive heat that is a common problem with recessed light fixtures or some other fan/light combinations.
Our efficient, cool-running motors do not create enough ambient heat to be subjected to these limitations.
The ducting from this fan heater to the outside of the building has a strong effect on the air flow, noise and energy use of the fan.
Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated air flow.

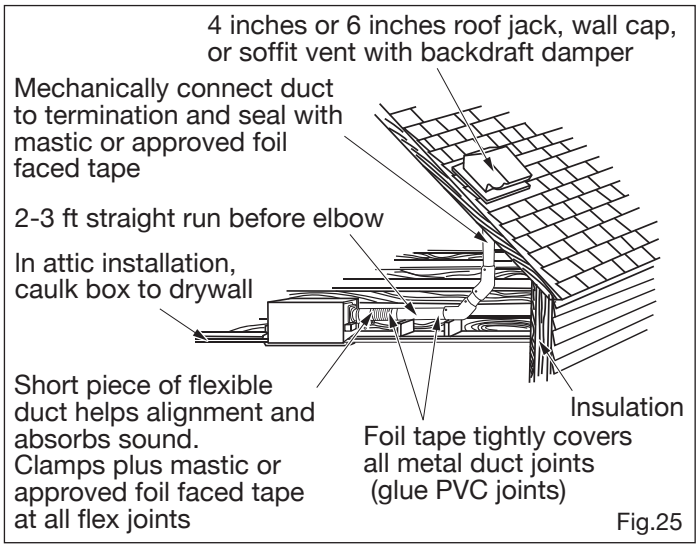


Fig.25

SPECIFICATIONS

Model No.	Air direction	Voltage [V]	Frequency [Hz]	Air volume at 0.1″WG [CFM]	Noise [sone]	Power [W]			Weight [lb. (kg)]
				Vent	Vent	Heat	Vent	Light	
FV-0511VH1	Exhaust & Circulation	120	60	50	<0.3	1480 (25 °C) 1680 (0 °C)	4.7	—	14.3 (6.5)
				80	<0.3		7.7		
				110	0.7		12.0		
FV-0511VHL1	Exhaust & Circulation	120	60	50	<0.3	1480 (25 °C) 1680 (0 °C)	4.7	10	15.1 (6.9)
				80	<0.3		7.4		
				110	0.7		12.4		

HVI Certified performance based on HVI Procedures 915, 916, and 920. (Ventilating mode only)

PRODUCT SERVICE

Warning Concerning Removal of Covers.
The unit should be serviced by qualified technicians only.
Your product is designed and manufactured to ensure a minimum of maintenance.
Should your unit require service or parts, call Panasonic Call Center at 1-800-669-5165.

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