Specification Data
Panasonic Ventilation Fan

**Description**
Ventilating fan shall be Low Noise ceiling mount type rated for continuous run. Fan shall be ENERGY STAR rated and certified by the Home Ventilation Institute (HVI). Evaluated by Underwriters Laboratories and conform to both UL and cUL safety standards.

**Motor/Blower:**
- Four-pole totally enclosed condenser motor rated for continuous run.
- Power Rating shall be 120 volts and 60 Hz.
- Fan shall be UL and cUL listed for tub/shower enclosure
  - when used with a GFCI branch circuit wiring.
- Motor equipped with thermal-cutoff fuse.
- Removable with permanently lubricated plug-in motor.

**Housing:**
- Rust proof paint, galvanized steel body.
- 4" round compatible, oval duct.
- Built in backdraft damper.
- Double hanger bar system allowing for ideal positioning.

**Grille:**
- Attractive design using PP material.
- Attaches directly to housing with torsion springs.

**Warranty:**
- The factory warranty shall be a minimum of 3 years limited warranty on parts.

**Typical Specifications:**
Ventilating fan and light shall be of the ceiling or wall mount, ENERGY STAR rated type, with no less than 100 CFM and no more than 1.5 sones as certified by the Home Ventilation Institute (HVI) at 0.1 static pressure in inches water gauge. Fan power consumption shall be no greater than 36.4 watts and ENERGY STAR rated with efficiency rating of no less than 2.9 CFM/watt. The motor shall be totally enclosed, four pole condenser type engineered to run continuously. Power rating shall be 120v/60Hz. Oval duct diameter shall be no less than 4-5/8" and 4" round duct compatible. Fan shall be UL and cUL listed for wall installation and tub/shower enclosure when used with GFCI branch circuit wiring. Fan shall be California Title-24 compliant.

**Specifications:**

<table>
<thead>
<tr>
<th>Fan Model</th>
<th>Static Pressure (inches w.g.)</th>
<th>Air Volume (CFM)</th>
<th>Noise (sones)</th>
<th>Power Consumption (Watts)</th>
<th>Energy Efficiency (CFM/Watts)</th>
<th>Speed (RPM)</th>
<th>Current (amps)</th>
<th>Power Rating (V/Hz)</th>
<th>California Title-24 Compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>FV-10VS1</td>
<td>0.1 0.25</td>
<td>100 90</td>
<td>1.5 NA</td>
<td>36.4 36.1</td>
<td>2.9 2.7</td>
<td>840 979</td>
<td>0.30 0.30</td>
<td>120/60</td>
<td>Yes</td>
</tr>
</tbody>
</table>

As of 07/09

For Complete Installation Instructions Visit www.panasonic.com/building
Ventilating Fan

INSTALLATION INSTRUCTIONS

Model No.

FV-13VKM3  FV-13VKS3  FV-13VK3
FV-08VKM3  FV-08VKS3  FV-08VK3
FV-05VK3

READ AND SAVE THESE INSTRUCTIONS

Thank you very much for having purchased our Ventilating Fan. 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.

Table of Contents

Please Read Prior To Installing This Fan ................................................. 2
Unpacking ......................................................... 3
Supplied Accessories ......................................................... 3
Description ......................................................... 3
General Safety Information ......................................................... 4
Dimensions ......................................................... 5
Wiring Diagram ......................................................... 5
Switch Indication ......................................................... 6
Operation ......................................................... 6
Installation I (Joist Mounting - I) ......................................................... 7-9
Installation II (Suspension Brackets Mounting) ......................................................... 10
Installation III (Joist Mounting - II) ......................................................... 11
Maintenance (Cleaning) ......................................................... 11
Practical Guide To Installation ......................................................... Backcover
Specifications ......................................................... Backcover
Product Service ......................................................... Backcover
The WhisperGreen line of ventilating fans employs state of the art technology providing a number of unique features that lead to improved indoor air quality. These features need to be fully understood prior to installation to fully realize the benefits fans offer.

Spot and Continuous Ventilation: These fans are designed to run continuously ensuring a healthy environment at low CFM levels 24 hours a day. By utilizing CustomVent Variable Speed Control the fans are built to run continuously at a pre-set lower level (FV-13VKM3 and FV-13VKS3: 0.50, 70, 90, 110 CFM; FV-08VKM3 and FV-08VKS3: 0, 30, 40, 50, 60, 70 CFM). The setting is dependent on the size of the room and the individual wishes of the homeowner. It is crucial that the installer pre-set the lower setting during the installation. Please refer to the chart below and page 5 of the installation instructions.

<table>
<thead>
<tr>
<th>(sq.feet)</th>
<th>Two Bedrooms</th>
<th>Three Bedrooms</th>
<th>Four Bedrooms</th>
<th>Five Bedrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1,000</td>
<td>33</td>
<td>40</td>
<td>48</td>
<td>55</td>
</tr>
<tr>
<td>1,500</td>
<td>38</td>
<td>45</td>
<td>53</td>
<td>60</td>
</tr>
<tr>
<td>2,000</td>
<td>43</td>
<td>50</td>
<td>58</td>
<td>65</td>
</tr>
<tr>
<td>2,500</td>
<td>48</td>
<td>55</td>
<td>63</td>
<td>70</td>
</tr>
<tr>
<td>3,000</td>
<td>53</td>
<td>60</td>
<td>68</td>
<td>75</td>
</tr>
<tr>
<td>3,500</td>
<td>58</td>
<td>65</td>
<td>73</td>
<td>80</td>
</tr>
<tr>
<td>4,000</td>
<td>63</td>
<td>70</td>
<td>78</td>
<td>85</td>
</tr>
<tr>
<td>4,500</td>
<td>68</td>
<td>75</td>
<td>83</td>
<td>90</td>
</tr>
<tr>
<td>5,000</td>
<td>73</td>
<td>80</td>
<td>88</td>
<td>95</td>
</tr>
<tr>
<td>5,500</td>
<td>78</td>
<td>85</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
<td>6,000</td>
<td>83</td>
<td>90</td>
<td>98</td>
<td>105</td>
</tr>
<tr>
<td>6,500</td>
<td>88</td>
<td>95</td>
<td>103</td>
<td>110</td>
</tr>
<tr>
<td>7,000</td>
<td>93</td>
<td>100</td>
<td>108</td>
<td>-</td>
</tr>
</tbody>
</table>

These fans are also built to take care of the homeowner's spot ventilation needs when the room is occupied. This models kick-up to a maximum level of 130 CFM for the FV-13VKM3 and FV-13VKS3 and 80 CFM for the FV-08VKM3 and FV-08VKS3 either when the switch is turned on (available with FV-13VKS3 and FV-08VKS3) or activated by the SmartAction Motion Sensor (available with FV-13VKM3 and FV-08VKM3).

A High / Low Delay Timer, located inside the fan unit, is utilized to return the fan back to the pre-set Continuous ventilation mode. The installer needs to consult with the homeowner for the desired setting on the timer (0.5 - 60 minutes) and make the adjustments during the installation.

Optimum Ventilation Performance: Generally duct length, elbows and other factors increase static pressure hindering the performance of most ventilation fans. This fan utilizes SmartFlow microchip technology that monitors the static pressure in the system and speeds up or slows down the rpm of the fan depending on the amount of resistance. This allows the fan to perform as rated, whether facing 0.1, 0.2 or even 0.25 inches water gauge. The bottom line is that it makes for easier installation. The installer no longer has to worry about compromising the fan’s performance.

Outstanding Energy Savings: These fans are the very first to be built using DC motor technology. The new DC motor is 30% - 70% more energy efficient than the minimum ENERGY STAR requirements.
UNPACKING

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

SUPPLIED ACCESSORIES

<table>
<thead>
<tr>
<th>Part name</th>
<th>Appearance</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grille</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>For models of:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FV-13VKM3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FV-08VKM3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For models of:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FV-13VK53</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FV-08VK53</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FV-13VK3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FV-08VK3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FV-05VK3</td>
<td></td>
</tr>
<tr>
<td>Suspension bracket I</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Suspension bracket II</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Suspension bracket III</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Suspension bracket IV</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Screw I (ST4.2X6)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Screw II (ST4.2X14)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Long screw (ST4.2X20)</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Installation instructions</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Warranty sheet</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

DESCRIPTION

These Panasonic ventilating fan models are listed by UL under UL file No. E78414.
These Panasonic ventilating fan models use 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 with saving energy. The grille covering the fan body is a spring-loaded, quick remove type. A damper for preventing air counter flow is provided.
The blower uses a high-capacity sirocco fan developed to reduce the noise level.
Panasonic ventilating fan models FV-13VKM3 and FV-08VKM3 are equipped with a motion sensor that shifts the fan to high flow automatically when motion is detected. It is user-adjustable to operate 0.5~60 minutes after motion is no longer detected.
GENERAL SAFETY INFORMATION

1. Do not install this ventilating fan where interior room temperature may exceed 104°F (40°C).
2. Make sure that the electric service supply voltage is AC 120V, 60Hz.
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, light fixture 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 make up air for proper ventilation.

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.

WARNING:
To reduce the risk of fire, electric shock or injury to persons, observe the following:
1. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
2. 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.
3. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
4. 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 of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Circuit Interrupter)-protected branch circuit.
8. These models are UL listed for tub and shower enclosures.
9. Not to be installed in a ceiling thermally insulated to a value greater than R40. (This is required for installation in Canada only)
10. Do not use this fan with any solid-state speed control device. Solid state controls may cause harmonic distortion which can cause motor humming noise.
11. A statement to the effect that when the product is to no longer be used, it must not be left in place but removed, to prevent it from possibly falling.
DIMENSIONS

The dimensions in square brackets refer to 13 models which are different from 08 and 05 models.

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>No.</th>
<th>Part name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blade</td>
<td>6</td>
<td>Switch unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(FV-13VKM3, FV-08VKM3)</td>
</tr>
<tr>
<td>2</td>
<td>Grille</td>
<td>7</td>
<td>Fan body</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>Damper</td>
</tr>
<tr>
<td>3</td>
<td>Sensor unit</td>
<td>9</td>
<td>Suspension bracket</td>
</tr>
<tr>
<td></td>
<td>(FV-13VKM3, FV-08VKM3 only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Junction box</td>
<td>10</td>
<td>Bracket cover</td>
</tr>
<tr>
<td>5</td>
<td>Adaptor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WIRING DIAGRAM

FV-13VKM3 FV-08VKM3

Fan body  Junction box

- Main control circuit
- DC Motor
- Sensor
- Air volume
- Delay time
- Adjustment switch

- White
- Black
- Red
- Green

- Neutral
- Live
- Neutral
- Live

FV-13VK3 FV-08VK3 FV-05VK3

Fan body  Junction box

- Main control circuit
- DC Motor
- Sensor
- Air volume
- Delay time
- Adjustment switch

- White
- Black
- Red
- Green

- Neutral
- Live
- Neutral
- Live

FV-13VK53 FV-13VK3 FV-08VK3

Fan body  Junction box

- Main control circuit
- DC Motor
- Sensor
- Air volume
- Delay time
- Adjustment switch

- White
- Black
- Red
- Green

- Neutral
- Live
- Neutral
- Live

FV-08VK3 FV-05VK3

Fan body  Junction box

- Main control circuit
- DC Motor
- Sensor
- Air volume
- Delay time
- Adjustment switch

- White
- Black
- Red
- Green

- Neutral
- Live
- Neutral
- Live
**SWITCH INDICATION**

**Low speed air-volume preset switch positions**

<table>
<thead>
<tr>
<th>Air volume [CFM]</th>
<th>0</th>
<th>50</th>
<th>70</th>
<th>90</th>
<th>110</th>
</tr>
</thead>
<tbody>
<tr>
<td>FV-13VKM3/FV-13VK53</td>
<td>0</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>FV-08VKM3/FV-08VK53</td>
<td>0</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
</tr>
</tbody>
</table>

- **Factory setting**: FV-13VKM3/FV-13VK53: 70CFM; FV-08VKM3/FV-08VK53: 50CFM.
- **Position “O”**: Fan stop.
- **Position “▲”**: use for factory test only.

**High/Low delay time preset switch positions**

<table>
<thead>
<tr>
<th>Delay Time [min]</th>
<th>0.5</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>5</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>60</th>
</tr>
</thead>
</table>

- **Factory setting**: 20 minutes.
- **Position “▲”**: use for factory test only.

(Models of FV-13VK3 and FV-08VK3 and FV-05VK3 have only one steady air volume.)

**OPERATION**

- **Sensor detectible range** (For models of FV-13VKM3 and FV-08VKM3 only)

  The distance that motion can be detected is limited to 10 feet (3m).
  The field of view of the sensor is 90°.
  (Room temperature is 25°C)

- **Motion**

  - The low speed is determined by air volume preset switch.
  - The delay time is determined by High/Low delay time preset switch.
  - The unit maintains the higher speed for an adjustable duration of 0.5 to 60 minutes, after motion is no longer detected.

  (Models of FV-13VK3 and FV-08VK3 and FV-05VK3 have only one steady air volume, when the power switch is closed, FV-13VK3 works steadily at 130CFM and FV-08VK3 works steadily at 80CFM and FV-05VK3 works at 50 CFM, when the power switch is opened, it will stop running.)

PDF created with pdfFactory Pro trial version www.pdffactory.com
INSTALLATION I (JOIST MOUNTING - I)

Joist situation:
Spacing A is 16 inches (406 mm) to 24 inches (609 mm) on center joists

1. If the spacing A is 16 inches (406 mm) to 24 inches (609 mm) on center joists, please follow the installation step as below.

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

2. Insert the suspension bracket I and II into the fan body. (Select the suspension bracket connection holes as shown below) (Fig.1)

Suspension bracket connect method:
Suspension bracket I and II connect with screw I as shown below:

<table>
<thead>
<tr>
<th>Unit: inches (mm)</th>
<th>13 1/4 - 15 1/2 (336 - 394)</th>
<th>16 1/2 - 18 3/4 (419 - 480)</th>
<th>21 1/4 - 23 1/2 (540 - 597)</th>
</tr>
</thead>
</table>

3. Install the suspension bracket and the flange of fan body to joists by using long screws (ST4.2X20) and secure it to the fan body by using screw II (ST4.2X14). (Fig.2)
4. Install a circular duct and secure it with clamps or wire ties and seal it with mastic or approved duct tape. (Fig.3)

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

6. Refer to wiring diagram below. Follow all the local electrical safety codes as well as the National Electrical Code (NEC). Using UL approved wire nuts, connect house power wires to ventilating fan wires. (Fig.4-1, Fig.4-2)

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

**Note:**
Wiring detail please refer to the wiring diagram on page 5.
7. Finish ceiling work. Ceiling hole should be aligned with the inside edges of the flange. (Fig.5)

**IMPORTANT:**
Remove the tapes from louver and springs before installation. As shown below:

![Tapes](image1)

8. Insert the sensor unit into slot of the grille; Fix the lead wire of sensor unit into the clasps (3 positions). (FV-13VKM3 and FV-08VKM3). (Fig.6)

9. Adjust high / low delay time preset switch and low speed air volume preset switch (Fig.7). Refer to switch indication on page 5. (FV-13VKM3, FV-08VKM3, FV-13VK3 and FV-08VK3)

**CAUTION:**
Mount grille carefully so that lead wire of sensor unit is not pinched.

10. Insert the mounting springs into the slot as shown and mount grille to fan body. (Fig.8)
INSTALLATION II (SUSPENSION BRACKETS MOUNTING)

Joist situation:
Spacing A is 16 inches (406 mm) to 24 inches (609 mm) on center joists

1. If the spacing A is 16 inches (406 mm) to 24 inches (609 mm) on center joists, please follow the installation step as below.

2. Insert the suspension bracket I and II into the fan body and suspension bracket III or IV into the adaptor. (Select the suspension bracket connection holes as shown below) (Fig. 9, Fig. 10)

Suspension bracket connect method:
Suspension bracket I and II connect with screw I as shown below:

<table>
<thead>
<tr>
<th>Unit: inches (mm)</th>
<th>13 1/4 - 15 1/2 (336 - 394)</th>
<th>16 1/2 - 18 3/4 (419 - 480)</th>
<th>21 1/4 - 23 1/2 (540 - 597)</th>
</tr>
</thead>
</table>

3. Install the suspension bracket to joists by using long screws (ST4.2X20) (Fig. 10) and secure it to the fan body by using screw II (ST4.2X14). (Fig. 11)

4. Follow steps 4 to 10 of installation I (page 8 and page 9) to complete the installation work.
INSTALLATION III (JOIST MOUNTING - II)

Joist situation:
Spacing B is
10 1/2 inches (266 mm) to
11 1/2 inches (292 mm)
on joists

1. If the spacing B is 10 1/2 inches (266 mm) to 11 1/2 inches (292 mm) on joists, please follow the installation step as below.

2. Secure 4 long screws (ST 4.2X20) at flange of frame. (Fig.12)

3. Follow steps 4 to 10 of installation I (page 8 and page 9) to complete the installation work.

MAINTENANCE (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 such chemicals for cleaning the ventilating fan.
2. Do not immerse motor in water when cleaning.
3. Do not soak resin parts in water over 140°F (60°C).

1. Remove grille pull down one mounting spring (no sensor lead passed). Remove sensor unit then pull down the other mounting spring. (Squeeze mounting spring and pull down carefully). (Fig.13, Fig.14)

2. Clean grille. (Don't put into hot water. Use non-abrasive kitchen detergent, wipe dry with clean cloth) (Fig. 15)

3. The grille should be dry after cleaning.

4. Remove dust and dirt from fan body using a vacuum cleaner. (Fig. 16)

5. Using a cloth dampened with kitchen detergent, remove any dirt from fan body. Wipe dry with clean cloth. (Fig. 17)

6. Replace grille.
PRACTICAL GUIDE TO INSTALLATION

Properly insulate the area around the fan to minimize building heat loss and gain. (Fig. 18)

Loose fill or batt insulation can be placed directly over the fan housing in the attic. Panasonic fans and fan/light combination units do not create excessive heat that is a common problem with recessed light fixtures or some competitors' fan/light combinations. Our efficient, cool-running motors and our fluorescent lamp do not create enough ambient heat to be subjected to these limitations.

SPECIFICATIONS

Model No. | Air direction | Voltage (V) | Frequency (Hz) | Duct diameter (inches) | Noise (sones) | Power consumption (W) | Speed (rpm) | Air volume at 0.1"WG (CFM) | Weight lb. (kg)
---|---|---|---|---|---|---|---|---|---
FV-13VKM3 | Exhaust | 120 | 60 | 6 | <0.3 | 12 | 657 | 130 | 10.6 (4.8)
FV-13VKS3 | Exhaust | 120 | 60 | 6 | <0.3 | 12 | 657 | 130 | 10.6 (4.8)
FV-13VK3 | Exhaust | 120 | 60 | 6 | <0.3 | 12 | 657 | 130 | 10.6 (4.8)
FV-08VKM3 | Exhaust | 120 | 60 | 4 | <0.3 | 7 | 816 | 80 | 10.2 (4.6)
FV-08VKS3 | Exhaust | 120 | 60 | 4 | <0.3 | 7 | 816 | 80 | 10.2 (4.6)
FV-08VK3 | Exhaust | 120 | 60 | 4 | <0.3 | 4.5 | 754 | 50 | 10.2 (4.6)

HVI Certified performance based on HVI Procedures 915, 916, and 920.

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 1-866-292-7292 (USA)
or 1-800-669-5155 (Canada).

Panasonic Corporation of North America
One Panasonic Way, Secaucus, New Jersey 07094
www.panasonic.com

Panasonic Canada Inc.
5770 Ambler Drive, Mississauga, Ontario L4W 2T3
www.panasonic.ca

PDF created with pdfFactory Pro trial version www.pdffactory.com