

# Green Machine™ Solar Powered Roof Vent Installation Instructions

## Safety Considerations and Warnings

1. Use appropriate safety glasses, gloves, hard hats, restraints, and other equipment to avoid injury.
2. Wear durable work gloves while handling the unit during installation. This product has sharp edges that can cause injury.
3. Observe all applicable building codes in your area.
4. Do not damage electrical wiring or other hidden utilities when cutting or drilling.
5. Before servicing the unit, disconnect power leads from solar panel to prevent accidental operation.

6. Make sure blade is on tight and ensure the set screw is securely tightened.

7. Use this unit only in the manner intended by GAF. If you have any questions, please contact Master Flow® Technical Service at 1-800-211-9612.

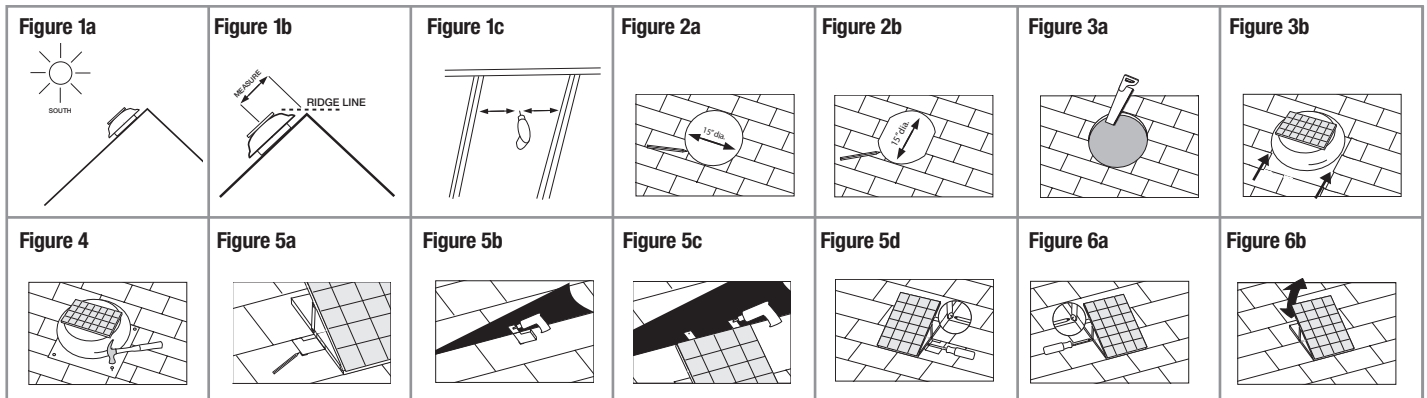
8. Ducted fans must always be vented to the outdoors.

**CAUTION: FOR GENERAL VENTILATING USE ONLY. THIS FAN HAS AN UNGUARDED IMPELLER. DO NOT USE IN LOCATIONS READILY ACCESSIBLE TO PEOPLE OR ANIMALS. DO NOT USE TO EXHAUST HAZARDOUS OR EXPLOSIVE MATERIALS OR VAPORS.**

**Important:** Your solar panel configuration may differ from the one shown in the illustrations. The performance of all configurations is the same.

## Tools Required

- Drill • 1/8" (.3cm) Drill Bit • Extension Cord • Utility Knife
- Power Saber or Jig Saw and/or Hand Saw • Safety Eyewear
- Galvanized Roofing Nails • Caulking Gun • Gloves • Ladder
- Claw Hammer • Screwdriver • Pencil or Marker • Silicone
- Pliers • Roofing Cement • Nut Driver



## 1. Determine Location

Place vent as close to the peak of the roof as possible but below the ridge line. Be sure the unit faces to the south for optimal power. Make sure the location is not be shaded by trees or other nearby structures during the day (**Figure 1a**).

Measure from the peak of the roof to the midpoint of the solar power vent (**Figure 1b**). Transfer this measurement into the attic and mark the location inside the attic, centered between two rafters, and drill a hole (**Figure 1c**). Put an object, such a pencil or nail, through the hole to mark it on the outside. **Note:** Single units should be centered. If multiple units are used, space evenly over the length of the ridge.

## 2. Mark Opening

Cut out the 15" (38.1cm) template located on the French language panel of the solar power vent carton. Place center of template over hole marked in roof, in step one. Use correctly positioned template to mark a circle. For rafters 24" (61cm) on center, mark the cut-out as shown in (**Figure 2a**). For rafters 16" (40.6cm) on center, proceed with marking as shown (**Figure 2b**).

## 3. Cut Out Opening And Test Position

Roll back and separate all shingles 7" (17.8cm) from the top and sides of the cut-out area. Be sure that all roofing nails have been removed. Using a saber saw, jig saw or hand saw, cut and remove all roof shingles and deck inside the 15" (38.1cm) diameter circle (**Figure 3a**). **Do not** cut any rafters. Test the final position by inserting the top half of the unit flashing under the rolled shingles. Trim shingles as necessary (**Figure 3b**).

## 4. Secure And Seal Unit

Remove the unit from the test position and liberally apply roof cement to the bottom side of the flashing. Align the unit and slide it under the shingle corners. Be sure that the arrow marked in the flashing points up to the roof peak. Secure the unit into place with galvanized roofing nails at all four corners and approximately every 4" (10.2cm) along the sides of the flashing (**Figure 4**). Finish by using roof cement to seal all flashing and shingle edges, as well as nail heads and stack vertical seam. Press all raised shingle edges back into position. **Warning:** Using excess roof cement may cause blistering in the roofing shingles.

**5. Mount Solar Panel** (Use only if mounting Solar panel on roof deck) Remove the included solar panel mounting kit from the carton. The kit contains deck screws, (2) 1/4-20 bolts, (2) nylock nuts, and (2) "L"-shaped wings.

**A. Mark "L"-shaped brackets & top rail mounting holes...** Place the solar panel at least 1.5" (3.8 cm) above shingle overlaps. Attach the "L"-shaped wings, making sure that each bolt is in the center of the slot in the rail (**Figure 5a**).

Use a grease pencil or chalk to trace the outline of the "L"-shaped wings on the shingles and also to mark both top rail mounting holes.

**Note:** To avoid possible weather infiltration, do not place the "L"-shaped wings or the top rails on the vertical spaces between the shingles tabs.

**B. Attach "L"-shaped brackets to roof...** Once you have marked the "L"-shaped wings and top rail mounting holes, remove the "L"-shaped wings from the solar panel frame and lay the panel aside. At the locations previously traced, carefully pry the shingles and slide each "L" shaped wing under the shingles. Align both wings with the visible portion of your traced outline. While lifting the shingles, attach both "L" wings to the roof deck with a provided deck screw (**Figure 5b**). Press the shingle back down into place. Apply roofing cement under the shingles to seal them to the roof.

**C. Attach top rail bracket...** Carefully lift up the shingles where the top rail mounting holes were previously marked. Now, align the panel frame between the installed "L"-shaped wings. Center the slots in the rails with the mounting holes on the wings. Slide the top rails under the raised shingles and attach each rail to the the roof deck with a provided deck screw (**Figure 5c**). Press the shingles back down into place.

**Note:** You may have to tilt the panel to access the top rail mounting holes.

**Note:** Apply roofing cement under the shingles to seal them to the roof. Finally, re-attach the "L"-shaped wings to the rails with the provided bolts and nuts and fasten them securely (**Figure 5d**).

**CAUTION:** THIS UNIT IS WIRED AT THE FACTORY AND IS READY TO RUN. THIS FAN AUTOMATICALLY STARTS WHENEVER THE SOLAR PANEL IS EXPOSED TO A LIGHT SOURCE. ALWAYS EXERCISE CAUTION WHEN IN THE VICINITY OF THE FAN.

## 6. Adjust Solar Panel

When adjusting the solar panel, be sure to tilt or rotate the panel to maximize direct exposure to the sun. To tilt the solar panel, loosen the two screw/nuts (**Figure 6a**) on the rail mount/linkage connection. Then raise the panel to the desired location and re-tighten (**Figure 6b**).

To rotate the solar panel (for hood mount installations only), loosen four wingnuts, rotate panel to desired position and tighten securely.

**Note:** The optimum angle can be calculated by using the approximate latitude of the house plus 20 degrees. The solar panel should face south, when possible.

**Notice:** If parts and/or accessories are missing, or this product does not operate correctly, contact Master Flow® Technical Services. Do not return to retailers or distributors.



# LIMITED WARRANTY

## MASTER FLOW® POWERED VENTILATION PRODUCTS

### Limited Warranty

GAF Materials Corporation (GAFMC) warrants to you, the original owner of the Master Flow® Powered Ventilation Products listed below, that GAFMC will reimburse you in accordance with this warranty if your Master Flow® Powered Ventilation Products do not perform properly as a result of a manufacturing defect.

Product	Warranty Term (yrs)	Labor Protection Plus (yrs)
<b>Powered Roof Ventilators</b>		
PR1D, CPR1D	5	2
PR2D, CPR2D, PRD2H	5	3
PRSOLAR1, PRSOLINT1	5	5
PR3XD, PR3DHT	10	5
<b>Powered Gable Ventilators</b>		
CPG2, PG2	5	3
PGSOLAR1	5	2
PG3X, PG3HT	10	5
<b>Whole House Fans</b>		
WHFTAN1	5	2
30BWHFS, WHFS24M, WHFS30M	10	5

The warranty period listed above starts at the completion of installation of your Master Flow® Powered Ventilation Products and terminates if either your Master Flow® Powered Ventilation Products are replaced or if the building is sold or transferred (subject to the limited transferability provision below).

### Exclusive Remedies

For any Master Flow® Powered Ventilation Product that does not perform properly as a result of a manufacturing defect, GAFMC will provide you with replacement product. If your claim arises during the Labor Protection Plus period, GAFMC will also reimburse you for the reasonable costs to remove and reinstall the defective product (excluding labor and any costs involved with repairing or replacing other roofing or building materials) but not to exceed the original retail price of the product. Decisions as to the extent of repair or replacement required will be made solely by GAFMC. The remedy under this warranty is available only for those Master Flow® Powered Ventilation Products exhibiting defects at the time of settlement. The replacement Products as well as any remaining original Master Flow® Powered Ventilation Products will be warranted only for the original warranty period.

### Limitations on Coverage

Even if your Master Flow® Powered Ventilation Products were not properly installed according to GAFMC's application instructions, this limited warranty remains in effect if your Master Flow® Powered Ventilation Products fail to perform as a result of manufacturing defects. However, GAFMC will NOT compensate you for:

1. Damage to your roof or your building or resulting from anything other than an inherent manufacturing defect in your Master Flow® Powered Ventilation Products, such as:

a) Improper installation of your Master Flow® Powered Ventilation Products, faulty application or application not in strict accordance with GAFMC's application instructions.

b) Settlement, movement or defects in the building, walls, foundation, roof deck, or materials adjacent to or over which Master Flow® Powered Ventilation Products were installed.

2. Damage to your Master Flow® Powered Ventilation Products or leaking into your building resulting from factors beyond GAFMC's control, including, but not limited to:

a) Acts of nature, such as hail, storms, or winds.  
b) Improper storage or handling of your Master Flow® Powered Ventilation Products.

3. Damage resulting from the application of overlying or adjacent roofing materials.

4. Damage resulting from mold growth or condensation.

5. Chipping, fading or peeling paint on your Master Flow® Powered Ventilation Products.

6. Labor costs for removing or replacing your Master Flow® Powered Ventilation Products except as specifically provided for above or for any other roofing or building materials.

### Transferability; Remedy for New Owner

This Limited Warranty may not be transferred or assigned, directly or indirectly, except for one transfer as follows:

1. Coverage will be automatically extended to only the second owner of the property.

2. If the transfer takes place within the first two years, the second owner shall be entitled to all benefits contained in this warranty.

3. If the transfer takes place after the first two years, the length of this warranty shall be reduced to the one-year period after ownership changes (but in no event longer than the original warranty term).

### What You Must Do

To file a claim under this Warranty, you must send a notice of claim in writing describing your complaint, together with proof of purchase to establish that you are the original or second owner and proof of application date, and photographs of the affected products (if possible) to: LL Building Products Inc., a subsidiary of GAFMC, 295 McKoy Rd., Burgaw, NC 28425, within 30 days after your discovery of a potential manufacturing defect. **NOTE:** Notice to your contractor or dealer is NOT notice to GAFMC. Within a reasonable time after proper notification, GAFMC will evaluate your claim and resolve it in accordance with the terms of this Warranty. You should have this warranty certificate signed and dated by your contractor or dealer to help establish proof of purchase and related information. You should retain this certificate for your records in the event you need to file a claim.

### Sole and Exclusive Warranty

THIS WARRANTY IS EXCLUSIVE AND REPLACES ALL OTHER WARRANTIES, CONDITIONS, REPRESENTATIONS AND GUARANTEES, WHETHER EXPRESS OR IMPLIED, WHETHER BY STATUTE, AT LAW OR IN EQUITY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. This written warranty is your exclusive warranty from GAF Materials

Corporation and represents the SOLE REMEDY available to any owner of GAFMC's Powered Master Flow® Ventilation Products. GAFMC makes NO OTHER REPRESENTATIONS, CONDITION, GUARANTY OR WARRANTY of any kind other than that stated herein. GAFMC WILL NOT BE LIABLE IN ANY EVENT FOR CONSEQUENTIAL, punitive, special, INCIDENTAL or similar DAMAGES OF ANY KIND, including DAMAGE TO THE INTERIOR OR EXTERIOR OF ANY BUILDING, whether for breach of this warranty, negligence, strict liability in tort, or for any other cause.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages so the above exclusions or limitations may not apply to you.

### Modification of Warranty

This Limited Warranty may not be changed or modified except in writing signed by an officer of GAFMC. No one, including any representative or employee of GAFMC, has authority to assume any additional liability or responsibility for GAFMC in connection with your Master Flow® Powered Ventilation Products except as described in this Warranty. This Warranty gives you specific legal rights, and you may have other rights, which vary from jurisdiction to jurisdiction.

### Effective Date

This Limited Warranty is effective for Master Flow® Powered Ventilation Products installed within the continental United States, Hawaii and Canada after May 1, 2005.