Exhaust and Inlet Requirements

After selecting the proper fan size, verify that you have an adequate amount of net free vent area (NFVA) in your attic to allow the fan to work at peak efficiency. Use the NFVA figures recommended by the fan manufacturer, or make sure you have one square foot of NFVA per 750 cfm fan capacity, as shown in table to the left of the example.

After determining the minimum NFVA needed for your Whole House Fan, the existing vents in your attic will need to be measured to verify you have enough venting. Count and measure each type of attic vent and multiply by the reduction factor in the lower table. This will determine the actual NFVA needed in your attic.

Fan Capacity	Minimum Attic NFVA
3,000 cfm	4.0 sq ft
3,600 cfm	4.8 sq ft
4,200 cfm	5.6 sq ft
4,800 cfm	6.4 sq ft
5,400 cfm	7.2 sq ft
6,000 cfm	8.0 sq ft
6,600 cfm	8.8 sq ft
7,200 cfm	9.6 sq ft

* Values are calculated using the formula:
Fan Capacity (cfm) ÷ 750 = Minimum NFVA

Example

Your attic has 2 metal louvered gable vents with 1/4" screen, each measuring 18" x 24"

18" x 24" = $\frac{432 \text{ sq. in. X } 1 \text{ ft.}}{144 \text{ sq. in.}}$ = **3 sq ft**

x by 2 vents

6 sq ft

Use the .75 reduction factor for metal louvers with 1/4" screen, so 6 sq ft x .75 = **4.5 sq ft**

In this example, there is a total of 4.5 sq ft of NFVA in the attic

If the 4.5 sq ft meets the minimum NFVA needed for the size fan being installed, no extra venting is required. If it does not, extra attic vents will need to be installed.

SUGGESTED SCREEN AND LOUVER REDUCTION FACTORS FOR AIR VENTS

1/4" Screen (Hardware Cloth)	1/4" Screen with Metal Louvers	1/4" Screen with Wood Louvers	Insect Screen (Mesh under 1/4")	Insect Screen with Metal Louvers	Insect Screen with Wood Louvers
0.90 (90%)	0.75 (75%)	0.25 (25%)	0.50 (50%)	0.50 (50%)	0.25 (25%)

Placement and Installation

The Whole House Fan should be placed as near the center of the home as possible. This will allow the fan to pull air equally from all intake locations (open doors and windows) around the house.

Typically, Whole House Fans are installed in a hallway ceiling (over the top of the ceiling joist) in a horizontal position to expel hot air from the house into the attic and out the attic vents. If the configuration of the house does not allow for horizontal placement, vertically installed fans with mechanically operable louvers are available.

Always follow the manufacturer's suggested methods when installing a Whole House Fan. The following are some additional points to consider:

- Most Whole House Fans mount over the ceiling joist, and blocking is placed to create a frame support for the fan. Be careful, **do not** cut into any truss members! Engineered trusses are an integral component of your roof structure, and may not be altered in any way without additional engineering.
- Wall-mounted controls should be placed higher than regular light switches to prevent inadvertent operation of the fan.
- All electrical work must meet the California Electrical Code (CEC).
- During operation, Whole House Fans pressurize the attic, so care must be taken to seal cracks or gaps in the ceiling. This will prevent the hot air in the attic from being pushed back into the living space.
- If you have loose fill insulation in the attic, push back and block with flexible batt insulation to create a perimeter area of at least 141/2 inches surrounding the fan box.

Safety

A Whole House Fan is capable of pulling large quantities of air in the home. If not enough windows are open, the fan could backdraft a combustion appliance—such as a gas water heater located inside a louvered closet door—pulling dangerous carbon monoxide gases into the living space.

In addition, please adhere to the following safety precautions:

- **Do not** install a Whole House Fan in an attic containing a gas water heater, or a gas furnace with a standing pilot. Installation of a Whole House Fan **may be** possible if the attic furnace is a closed combustion unit with an electronic ignition. However, **do not** run the Whole House Fan and the furnace at the same time.
- When installing a belt drive unit, a manual on/off switch should be wired into the fan circuit so the unit can be disabled during maintenance. The manual on/off switch should be installed in the attic near the fan.
- **Don't** use the fireplace while the Whole House Fan is in use, and close the fireplace damper to avoid blowing ashes.

For More Information

Visit www.pge.com/foryourhome or call PG&E's Smarter Energy Line at 1.800.933.9555.

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