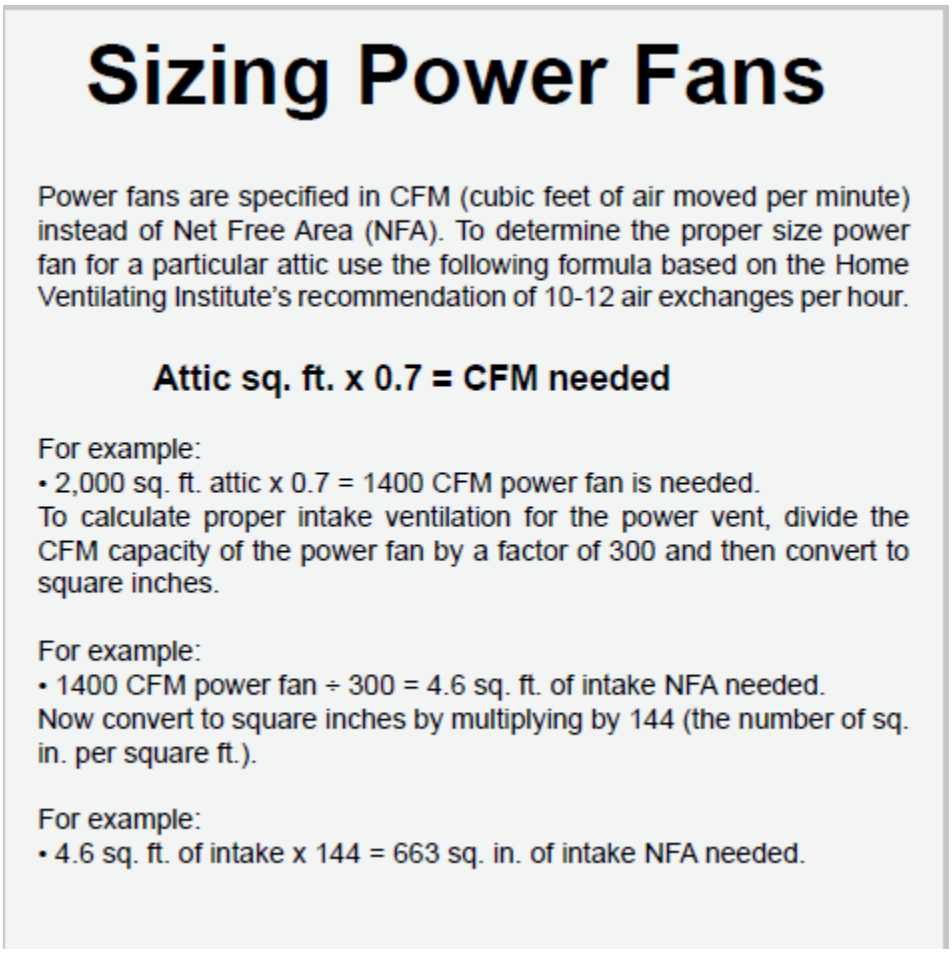
Sizing Power Exhaust Fans for dehumidifying attics & Net Free Area of vents

Two (2) Methods



Sizing Power Fans

Power fans are specified in CFM (cubic feet of air moved per minute) instead of Net Free Area (NFA). To determine the proper size power fan for a particular attic use the following formula based on the Home Ventilating Institute's recommendation of 10-12 air exchanges per hour.

Attic sq. ft. x 0.7 = CFM needed

For example:
• 2,000 sq. ft. attic x 0.7 = 1400 CFM power fan is needed.
To calculate proper intake ventilation for the power vent, divide the CFM capacity of the power fan by a factor of 300 and then convert to square inches.

For example:
• 1400 CFM power fan ÷ 300 = 4.6 sq. ft. of intake NFA needed.
Now convert to square inches by multiplying by 144 (the number of sq. in. per square ft.).

For example:
• 4.6 sq. ft. of intake x 144 = 663 sq. in. of intake NFA needed.

Second Method is to calculate the volume of the attic and get 10 ACHs

Say a flat roof is 3,000 s.f. and the drop ceiling is 4 ft below ceiling deck.

3,000 s.f. x 4 ft cavity = 12,000 cubic feet

12,000 c.f. x 10 AC/Hr = 120,000 cf/hr or 2,000 cfm

Use the same method of determining Net Free Area above.

Divide the cfm / 300 to Net Free Area in s.f. then multiply by 144 to sq inches.