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## Category: Circulating Fans

### Subcategory: Circulating Fans

#### **Tip: Circulating Fan Basics**

You have plenty of circulator fan options, and different ones will fill different needs. Before buying a circulator fan, know the basics: Circulating fans make people feel more comfortable in hot rooms. Thermostats can be set four degrees higher when fan cooling is used (that gives a 6 to 9 percent energy savings). Get the right fan size for your application. Fans are sized according to square-footage and blade span. Measure your space before you buy. In large open spaces, more than one fan or a combination of different types of fans can help cool efficiently. If you're using a home ceiling fan with reversible blades, set fan blades to rotate counter-clockwise to cool in warm rooms. In winter, set fan blades to turn clockwise to circulate warm air. A high velocity fan is constructed of metal and is much more powerful than a standard floor fan.

#### **Tip: How Industrial Air Fans Improve Productivity and Profits**

An industrial air fan doesn't just cool the air, it can boost your bottom line as well. Industrial air fans improve productivity and profits in a number of ways: Heat and humidity can cause people to feel sluggish and irritable. The right sized fan creates a wind-chill effect that cools the air. Workers who stay cool during hot weather feel alert and focused. Alert, focused workers make fewer mistakes and suffer fewer on-the-job injuries. Fans offer an affordable alternative to expensive A/C systems and energy costs. Fans can be used with A/C to lower energy costs. Cooling with fans can help operators stay in compliance with local, state, and federal guidelines for environmental and employee safety. Lower production costs, higher production rates, lower worker's compensation claims, and fewer injuries equal higher profits.

## Category: Commercial HVAC Systems

### Subcategory: Commercial HVAC Systems

#### **Tip: Green Design Reduces Demands on HVAC Systems**

Keep your company out of the red with high energy costs by investing in green products and green design. Green design is used in new construction to reduce demands on commercial HVAC systems that often run continuously. To lower cooling costs in new buildings, architects can face a building away from direct sunlight. Green products include windows that optimize sunlight and reduce the need for artificial lights that strain cooling systems. Companies should consider investing in HVAC systems that use non-polluting refrigerants -- a green product that won't harm the environment. The EPA

is phasing out ozone-damaging refrigerants for a family of refrigerants that don't contain chlorine.

### **Tip: Tools and Books Offer Advice on HVAC Systems**

Get advice and help when investing in a commercial HVAC system. Learn about new technologies that allow companies to save thousands of dollars in energy costs. Here are some publications and software tools for assisting businesses in choosing the best HVAC systems for their needs: \* ASHRAE is the American Society of Heating, Refrigeration, and Air-Conditioning Engineers. The association publishes four handbooks on HVAC systems. \* APACHE is a program that analyzes buildings' energy loads and uses. The Applications Program for Air-Conditioning and Heating Engineers also provides simulations of HVAC systems. \* BTU Analysis Plus is a program that calculates heat loads and does heat load studies of commercial buildings. \* Energy Trainer for Energy Managers HVAC Module offers four hours of training on improving energy efficiency with commercial HVAC systems.

## Category: Do It Yourself Heating Tips

Subcategory: Do It Yourself Heating Tips

### **Tip: DIY Project Keeps Sludge From Heating Systems**

Here's a simple home DIY project that will help stop corrosion in your central heating system: Did you know that oxygen in your heating system leads to corrosion and the buildup of sludge? You should bleed radiators each winter to remove air from heating systems. Then add a corrosion inhibitor, if sludge buildup persists. Read the manufacturer's instructions for recommended amounts. Add a liquid inhibitor to the feed and expansion cistern of an open vent system. For a sealed system, buy a cartridge that injects the inhibitor through the air bleed valve on the radiator. Follow the manufacturer's instructions meticulously, and if you're in doubt it's always a good idea to call in a service contractor.

### **Tip: DIY Tips for Heating With Woodstoves**

Many Americans who heat homes with furnaces also enjoy the warmth of a woodstove in a great room or kitchen. When heating with a woodstove, keep soot and harmful emissions from indoor air. Here are some DIY heating tips for the safe use of woodstoves: 1.) Make sure the doors fit tightly on your woodstove. If you have an older woodstove, the gaskets on the doors may contain asbestos. If you think they do, check the EPA web site for safe handling of asbestos, or contact a service professional. 2.) Use aged or dried wood in your woodstove. Don't use wood that is chemically treated or pressure-treated. 3.) Follow your owner's manual when starting, stoking and

extinguishing the woodstove fire.

**Tip: Fix Leaks in Heating System's Pipework**

Oftentimes, homeowners can fix simple leaks in heating systems without calling a service professional. -Soldered joints that have sprung a leak will need to be replaced. But first drain the system. -Compression joint leaks sometimes can be fixed by tightening the nut by a quarter turn. Keep the other nut in place with a wrench, so the joint is not pulled from the pipe. In most cases, a service professional is a wise choice and you should contact your retailer or manufacturer for help.

**Tip: Furnaces and Flues Can Emit Harmful Gases**

The indoor air flowing through your house may be the source of harmful pollution, if you do not do regular maintenance of heating equipment. Furnaces, flues and chimneys can emit harmful, even deadly, gases and toxins. Here are some tips to follow for keeping the air you breathe inside your home fresh: - Follow instructions from the owner's manual for changing and cleaning air filters. If you do not have the owner's manual, change filters monthly, or at least twice each winter. - Vent furnaces to the outdoors. If you have concerns, check with the Indoor Air Quality INFO Clearinghouse on the EPA's web site. It offers helpful advice for maintaining home heating equipment. - Contact a service professional if you cannot do your own maintenance or have concerns about your heating system.

**Tip: Keep Harmful Gases From Indoor Air**

Carbon monoxide is an invisible, unscented and at high levels can be a deadly gas. Lower concentrations of carbon monoxide can cause headaches, lightheadedness and fatigue. Winter months may pose health and safety risks with heating systems. Poorly maintained chimneys and flues may release carbon monoxide and other harmful gases into the air. Fireplaces and woodstoves that do not have ample outdoor air supply can pour carbon monoxide and other pollutants into living spaces. Here are some DIY home heating projects that will help keep the air clean, and keep you and your family safe: - When using a space heater, allow some air flow in the room. Open a door in the room where the space heater is located. It's a good idea to crack a window as well. - When using an un-vented kerosene or gas space heater, follow the manufacturer's instructions for fuel use and maintenance. A yellow-tipped flame is an indication of harmful gases. The flame tip should be blue. - Don't use a gas stove to heat your home. - Keep the flue open when the fireplace is in use. - When purchasing a new woodstove, make sure it is sized properly for your home and meets EPA standards.

**Tip: No Heat or Hot Water? Check Power, Energy Supplies**

If you have no heat or hot water, do a quick inspection of your heating system: First,

check to make sure the power supply is on. Has a fuse blown? Is the gas turned on? Is your oil storage tank empty? If you cannot find any problems with power or energy supplies, make sure the system is on and the thermostat is set high enough. Next, check the pilot light. If it is not lit, you'll need to re-ignite by following the instructions in your owners manual. If you still have not isolated the problem, check the pump to make sure it runs. An inoperable pump requires the services of a contractor. You also will have to contact a service contractor if you have sealed heating system.

## Category: Energy Star

Subcategory: Energy Star

### **Tip: Program ENERGY STAR Thermostat to Meet Comfort Needs**

Programmable ENERGY STAR thermostats serve homeowners on the go. Just program the thermostat to fit your schedule. The thermostat keeps rooms comfortable when you are home and adjusts to energy-saving levels when you are away. Increase the efficiency of your ENERGY STAR thermostat by setting it at energy-saving temperatures for long periods of time. This may be when you are at work or asleep at night. Do not override the pre-programmed settings. This reduces your energy savings. Make sure you have your new thermostat installed on an interior wall that is away from drafts, heat sources and direct sunlight.

## Category: Evaporative Cooling Fans

Subcategory: Evaporative Cooling Fans

### **Tip: How to Maximize Your Evaporative Cooler**

Here are some ideas on how you can maximize the benefits of your evaporative air cooler (swamp cooler): First, read the manufacturer's instructions on setup, use, and care of your cooler. Use evaporative coolers in arid environments. Open a window. Closing up your home or building will create excess humidity, making your cooling system less efficient. Operate your system during the hottest part of the day. Swamp coolers work best when the air is dry. The relative humidity should be less than 30 percent. Keep the filter clean. Evaporative cooler filters absorb impurities, and you'll need to keep them clean in order for the system to work.

### **Tip: Swamp Coolers and Water Consumption**

An evaporative cooler (or swamp cooler) cools by forcing fresh outdoor air through moist pads. The air is cooled by water evaporation, then circulated by a blower through

a building or house. Using a swamp cooler can lower indoor temperatures by up to 30 degrees. Swamp coolers offer an environmentally friendly, inexpensive, Freon-free method of cooling. They use only 25 percent of the energy required to run central air conditioning, and they're inexpensive to maintain. One of the biggest advantages is that they allow building occupants to breathe fresh outdoor air. Though evaporative coolers offer an inexpensive, environmentally friendly form of cooling, they require large amounts of water to operate. On average, a standard household-size swamp cooler can use between 15 and 66 gallons of water each day, depending on the size of the unit and the heat. Systems with bleed valves and sump dumps use the most water. In areas where water supply is short, thermostats and timers can be used to regulate how often a cooler runs, saving water and energy. Set thermostats at the lower-end of the cooling range and use a timer to run the cooler only when you are home.

### **Tip: The Advantages of Evaporative Cooling**

Evaporative cooling systems can be a great option for your space. The advantages of evaporative cooling systems (swamp coolers) include: Swamp coolers are a low-tech way to cool a space or building. Evaporative coolers use fresh, un-recycled outdoor air to cool a space. They work best during the hottest part of the day. As temperatures climb and humidity drops, swamp coolers work better. Evaporative cooling units cost 75 percent less to run than A/C. Most swamp coolers can run on 120 volts. A/C requires higher amperage. Some units can now be run on solar energy. Swamp coolers can be used without the need for A/C in arid environments. Evaporative cooling systems are inexpensive compared to A/C installation.

## Category: Exhaust Fans

Subcategory: Exhaust Fans

### **Tip: Bathroom Ventilation Guidelines**

Bathrooms are prone to moisture problems due to high levels of heat and humidity from showers and bathtubs. Heat and moisture accumulates on walls, ceilings, and woodwork. The remedy is ventilation. According to the Home Ventilation Institute (HVI), bathrooms should be intermittently or continuously ventilated with an exhaust ventilation fan at a rate of one cubic foot per minute (CFM). Here are some measurements: An 8x5 bathroom requires exhaust at 40 CFM. Bathrooms over 100 square feet can be ventilated according to fixture count (50 CFM for each fixture. A tub, shower, and toilet require 150 CFM). Jetted tubs need an additional 100 CFM. Use a high-capacity fan, or install more than one fan in strategic locations. Consider using an in-line fan system to run fans at each port. For the most efficient ventilation, buy fans with the right CFM rating for your room size and number of fixtures. Make sure to look for an industrial exhaust fan for commercial use. Failure to exhaust hot and humid bathroom air can lead

to mold and mildew, and it can damage the structural integrity of a building or home.

### **Tip: Clean Air and Exhaust**

Indoor air is five times more polluted than outdoor air. To clean the air, there are several methods of ventilation that can be employed. One of the best ways to be sure you're breathing clean air is to install exhaust fan ventilation in key locations: bathrooms, kitchens, and areas that generate excess heat and moisture. Here are some types of exhaust fans: *Ceiling mounted exhaust fans* are installed directly in the ceiling to remove warm or polluted air through ducts, to an external vent. *Combination exhaust fans* are wall or ceiling mounted and combine with a light fixture and/or heater. *Intermittent fans* work when turned on and off, rather than continuously. *Kitchen exhaust fans* or *range hood exhaust fans* are installed to vent smoke, heat, chemicals, and odors from a cooking surface. *Bathroom exhaust fans* are used in restrooms, bath/shower rooms, and spas to vent heat, moisture, and odors. *Inline exhaust fans* are mounted along ductwork to save space and/or reduce fan noise. *Exterior remote mounted exhaust fans* operate by pulling air outside the home.

## Category: Explosion Proof Fans

Subcategory: Explosion Proof Fans

### **Tip: The AMCA and Explosion Proof Fans**

The Air Movement and Control Association International (AMCA) is a not-for-profit association of air system equipment manufacturers. The AMCA works to promote the air movement and control industry by providing ratings and status through the AMCA International Seal. One way the AMCA helps the HVAC industry is by developing guidelines on the construction, selection, and use of explosion proof fans. Fans are tested by the AMCA to assure product performance (as stipulated by the manufacturer) and are then given a rating. The AMCA is a reliable source of information concerning the HVAC industry and recommends using explosion proof fans for environments in which the following materials are handled: Flammable and explosive chemicals Glues Paints Explosive fumes According to the AMCA, it's important that explosion proof fans be used in such environments in order to avoid the ignition of contaminants that come in contact with the metal components of a regular axial fan. The non-ferrous metals used to manufacture explosion proof fans help to contain combustion within the fan unit. For liability reasons, most manufacturers and fan companies will not recommend fans for volatile environments. It is up to the operator or business owner to find out which type of fan is best, or hire a consultant. Look for more information from the AMCA website, or ask the professionals at [www.industrialfansdirect.com](http://www.industrialfansdirect.com) about axial fans that are safe for your application.

## Category: Furnaces

### Subcategory: Furnaces

#### **Tip: Do Your Homework Before Buying a New Furnace**

A furnace is not the sexiest purchase you will ever make, but it is key to your comfort and your family's comfort. Instead of just calling your neighborhood fuel dealer to ask for help with a replacement, do some research and shopping on your own. The extra time you put into buying a new furnace may save you thousands over the service life of your furnace. \* Compare the performance of different brands and models. Read the product literature, something most American consumers don't bother to do. \* Ask questions when you talk to dealers. How energy efficient is the new furnace? How much does the appliance cost to operate? A more efficient appliance costs less to run. \* Check guides like Consumer Reports to find out how models and brands compare for energy savings and repair histories. Read EnergyGuide labels and the manufacturers' fact sheets. \* Ask yourself how the purchase will fit into your budget. Sometimes it makes sense to pay more upfront for a high-efficiency furnace when you figure the energy savings over the service life of the product.

#### **Tip: Gas Furnaces: Cleaner and Cheaper to Run Than Electric**

Natural gas or oil? It's hard to know which type of energy fuel is better for home heating. Homeowners are familiar with the up-and-down cycle of natural gas prices. Before choosing the fuel type for a new heating system, weigh the advantages and disadvantages. Even with seasonal increases, high-efficiency gas furnaces cost less to operate than electric furnaces. Natural gas is always available, while the oil market is unstable from the war in the Middle East. You also do not have the hassle of refilling and maintaining storage tanks, like you do with oil. Natural gas requires no large storage tanks in your basement. It also is less polluting, producing almost no emissions.

#### **Tip: Invest in Furnaces with High AFUE Ratings**

When choosing a new furnace, find out its "AFUE" - annual fuel utilization efficiency. It's a term for describing a furnace's seasonal energy performance. Why should you care about the AFUE? Given the rise in energy prices and uncertainty about future energy sources, your priority should be lower energy bills. High-efficiency appliances use less energy, lowering your costs. By federal standards, new furnaces must have an AFUE rating of 78 percent.

#### **Tip: Save on Electric Costs When Running Your Furnace**

If you live in a cold climate, you may feel like you cannot do little about heating costs,

other than locking in early on fuel prices with local dealers. But there is another way to save money and improve heating efficiency: Consider installing a variable speed fan, which is more efficient than a single-speed fan. Furnaces use a lot of electricity to power the fan motor that circulates air through your house. If you run the furnace fan continuously, a variable speed fan can save hundreds of dollars in utility charges a year.

## Category: Home Climate Control

Subcategory: Home Climate Control

### **Tip: Customize Home Comfort With Climate Control, Efficiency**

Check out home heating and cooling systems that put the focus on choosing your comfort. Dealers can customize systems to fit your home and your family's needs.

### **Tip: Efficiency and Energy Savings Key to Home Heating**

New home heating systems offer efficiency ratings that top 90 percent, saving homeowners hundreds of dollars each year in energy bills. Look for home heating products with the ENERGY STAR label, the industry's gold standard for energy efficiency.

### **Tip: Innovative Features Offer Cooling Efficiency**

There is science and engineering behind modern home cooling systems to deliver efficient and affordable comfort. If you are buying a cooling system, or upgrading your current system, make sure you purchase a model that offers comfort, convenience and savings.

## Category: HVAC - Air Conditioning

Subcategory: HVAC - Air Conditioning

### **Tip: Operating, Installation Costs Vary**

Invest in a central air conditioner that uses nonpolluting R410A refrigerant. The new refrigerant replaces chlorine-based Freon that the EPA is phasing out, because it depletes the earth's ozone. Buying an AC that handles the EPA-approved refrigerant will save you on operating costs down the road when chlorine-based refrigerants are pulled off the market.

**Tip: Two-Stage Cooling Offers Setting for Milder Days**

Do you need to wear a sweater in your air-conditioned home? The central air conditioner may feel great on very hot days, but chilly and uncomfortable on mild days. An innovation in central air conditioning alleviates the problem. Two-stage cooling provides two levels of output for better temperature control and indoor air quality. The outdoor unit, or compressor, handles the two-stage cooling, running at a low setting most of the time, which should be enough to meet routine household demands.

**Tip: Where to Locate Your Central Air Conditioner**

You are buying a central air conditioner to stay cool. The air conditioner unit also needs to stay cool to function properly. - Make sure your contractor installs the outside compressor in a shaded area, away from direct sunlight. - Keep the outdoor unit away from shrubs, so that it can emit "waste" heat. If anything blocks the unit, it cannot dissipate heat effectively, forcing the unit to work harder. - The outdoor unit makes noise when it runs, so place it away from bedroom windows and away from neighboring homes, where its operating sounds can't be heard.

**Tip: Where to Locate Your Central Air Conditioner**

Where you install the outdoor unit of your cooling system is important for energy savings and efficiency. If you are replacing an old outdoor unit, chances are the indoor unit is just as dated and may need to be updated.

## Category: HVAC - Heating

Subcategory: HVAC - Heating

**Tip: Clean, Maintain Heating and Cooling System**

Plan to do cooling and heating system maintenance four times a year -- twice each winter and twice each summer. Keep this checklist handy for your routine maintenance: \* Inspect belts and blowers. Change worn-out belts. Oil blower bearings. \* Clean or replace filters. Some filters need to be cleaned monthly. Check your owner's manual for guidance. \* Clean and clear drains, traps and drip pans. \* Clean outdoor and indoor coils.

**Tip: Control Heating System's AirFlow and Costs**

Consider variable speed heating for continuous flow of warm air. It keeps humidity levels down, making your house feel more comfortable. Furnaces that use a two-stage, variable speed operation run at the lower speed most of the time. Your heating system does not need to cycle on and off as frequently, and your home does not experience

significant drops and increases in temperature.

**Tip: EnergyGuide Label Informs Consumers**

A new heating system must meet minimum energy efficiency standards set by the Department of Energy. There are many products available that exceed the minimum for energy savings. Look for EnergyGuide labels and fact sheets to show how new heating systems performed in efficiency tests.

**Tip: Hearth Heating Without the Matches, Soot or Smoke**

If you have a traditional masonry fireplace but lack the time or desire to build a fire, consider the alternatives. Go faux with a 3-D simulated fireplace, complete with HDFV -- high-definition fireplace vision -- and a space heater to provide warmth. The exciting choices today in hearth heating take the quaint charm of traditional fireplaces and add a modern twist. They include the Reflections-brand simulated fireplace that uses a DVD player and a digital audio system to create the real look, feel and sound of a crackling home fire. Another popular option are gas fireplace inserts installed in traditional masonry fireplaces. There is no wood, fire-starting, smoke or ashes involved. Some even come with remote controls to turn the flame up or down. A thermal blower provides the warmth. A lot of homeowners add gas fireplace inserts to complement existing furnace heating in their home.

**Tip: Indoor Air Quality Creates a Better Shopping Environment**

Whether your business is a restaurant or retail shop, the cooling and heating system has an immediate effect on customers. Customer comfort can determine how long consumers stay in your shop, whether they return, and if they choose to make a purchase.

## Category: HVAC - Ventilation

Subcategory: HVAC - Ventilation

**Tip: Bathroom, Clothes Dryer Need Proper Ventilation**

Make your home more comfortable and energy-efficient by improving ventilation. Here are few "around the house" tips to boost ventilation: \* Vent moisture to the outside from the bathroom and laundry room. The bathroom produces more moisture than any other room in your house. \* If you cannot vent the bathroom to the outside, install a vent through the attic and down through a soffit vent. But do not vent directly into the attic, which can lead to ice buildup in the winter and mold during warmer months. \* Vent the clothes dryer to the outside with a short metal duct. Clean the duct regularly to prevent

house fires. Do not vent the dryer directly into the laundry room. \* Install a vent hood with an exhaust fan over your kitchen stove. \* Improve ventilation and air flow in your home with ceiling fans. If you run the ceiling fan in reverse, it will better distribute warm air in the winter. \* Do not block vents for heating and cooling systems, which can run up energy costs and damage equipment.

**Tip: Office Air Pollution Can Cause Health Problems**

Offices can have significant problems with indoor air pollution. They may have poor ventilation from commercial air quality systems that don't run properly. Here are some steps to take to ensure the quality of air in your office: - If you are concerned about indoor air pollution in your workplace, talk with other employees about their experiences and observations. - Ask management to keep a record of your complaint and the complaints of other workers. - Talk with your physician. If your company has a physician, make an appointment. - Ask company management to contact the Environmental Protection Agency for guidance. The EPA publishes "IAQ Building Education and Assessment Model (I-BEAM)," which offers tips for managing issues related to indoor air quality, or IAQ. The primary causes of bad indoor air quality usually are the presence of polluting substances; problems with heating and cooling systems; and improper use of a building. The EPA reports an increase in the number of indoor air quality complaints since the 1990s. The increase coincides with a better awareness by the public of health risks associated with poor indoor air quality.

## Category: HVAC Contractors

Subcategory: HVAC Contractors

**Tip: Humidity May Result From Problems with Air Quality System**

If your office building or retail store is too humid, the problem may be the commercial HVAC system. - Is the system well-maintained? Clean dirty coils, which reduce cooling and dehumidification. Clogged pans may hold standing water. Leaks in the mechanical system let moisture enter the building. - Is the indoor air quality system being operated properly? Make sure the cooling fans run at a moderate speed. Sometimes air velocity is set too high, because spaces are not adequately cooled. But the result can be higher humidity levels in a building.

## Category: HVAC Dealers

Subcategory: HVAC Dealers

**Tip: Building Design, Insulation Determine HVAC Size**

Buy an HVAC unit that matches the cooling and heating capacity of your home or building. Here are some tips to follow when buying a new HVAC unit: - Make sure the size of your HVAC system is not based solely on your building or home's square footage. Structure design and efficiency also need to be evaluated. - Replacing an old heating and cooling system requires new sizing calculations. Homes may have new additions or better insulation. Office buildings may have imposed better efficiency measures that reduce cooling needs. - Expect the contractor to follow industry standards for calculating heating and cooling loads.

**Tip: Choose the Right Size for a New HVAC Unit**

Ask your HVAC dealer for help choosing a system that meets the heating and cooling demands of your home or building. Don't expect to replace an old heating and cooling system with a new one the same size. Systems often were oversized in older homes and buildings. Better technology shows that oversized systems don't work as well. They are inefficient, wasting money and energy. Undersized systems work too hard to heat and cool rooms. Either way, poorly sized HVAC units will have more problems and a shorter service life.

**Tip: Choosing the Best HVAC Dealer**

Find a heating and cooling dealer who offers comfort solutions that are customized to meet your home, lifestyle and budget needs.

**Tip: HVAC Newsletters Keep Consumers Informed**

Newsletters are a new way for HVAC dealers to stay in touch with customers. The newsletters offer consumer advice and promote new products and services that companies offer. HVAC dealers like the newsletters for moving products and increasing sales, and consumers find them helpful with tips and advice on maintaining and upgrading heating and cooling services. HVAC companies use the newsletters for seasonal advice on cleaning and maintaining air conditioners and heaters. Homeowners shopping for parts and appliances can scan the newsletters for special offers and sales. In times of rising energy costs, the newsletters alert consumers to new money-saving advances in products and services.

**Tip: Shop for Competitive Financing Plans**

Your HVAC dealer should be able to offer you a competitive financing plan when you purchase a heating and cooling system. But shop around and see who has better offers. Even if you have found the product line and company you trust, perhaps you can negotiate a better financing deal if you present quotes from other companies. Here are features to look for in financing offers: 1.) Competitive interest rates; 2.) Low monthly

payments that fit your budget; 3.) No penalties for paying off your debt early; 4.) Small or no downpayment; 5.) No annual fees.

## Category: HVAC Technology

Subcategory: HVAC Technology

### **Tip: 'Smart' Technology Manages Large HVAC Systems**

Control HVAC functions with computerized controls. These high tech systems allow for high-efficiency comfort, reduce service and operating costs, and are easy to use. The single-source system lets you monitor heating and cooling, lights, and fans.

### **Tip: Noise Control Adds Comfort to HVAC Systems**

A new focus in HVAC technology is noise control. Now when the heat or air conditioner runs, you don't hear the unit drone. The environment feels more natural. Look for heating and cooling makers that use technology and insulation to reduce operating noise. Our sponsor offers central air conditioners that are 20 times quieter than conventional units. Ask to see product literature on decibel levels of heating and cooling systems.

### **Tip: Two-Stage Cooling Offers Efficiency, Extra Comfort**

If you are looking for energy efficiency and extra comfort in air conditioning, try a system with two-stage cooling. Two-stage cooling allows the air-conditioner's compressor to run at high or low levels. High is the blast of cold air you need on very hot days. Low works fine for milder days. Your AC likely will run on the low setting most days, saving energy and yielding greater savings than standard compressors. As more Americans move to year-round central air, two-stage cooling offers choice in comfort.

### **Tip: Zone Rooms with Different Temperature Settings**

There is no one-size-fits-all with air conditioning comfort. Some people like the AC extra cold, while others prefer milder temperatures. The problem is easily solved when you install a zoning system, which let you vary temperature settings throughout the house. You can divide your home into two or four zoning areas, depending on the system you purchase. You no longer need to heat or cool unoccupied rooms, or change the setting to suit the needs of one family member.

## Category: HVAC Training and Employment

Subcategory: HVAC Training and Employment

**Tip: Skilled HVAC Technicians Can Earn \$50,000**

Prepare to work your way up to the top of the salary ladder as an HVAC technician. Here's what to expect in earnings, depending on where you are in your career: \* With classroom training, an apprentice may start at \$25,000 a year. \* Skills and certification determine advancement and wage levels. \* An experienced certified technician can expect to earn \$50,000 a year.

## Category: Whole House Fans

Subcategory: Whole House Fans

**Tip: Attic Fans vs. Whole House Fans**

An *attic roof fan* is not the same thing as a *whole house fan*. Whole house fans have large blades and are located in the highest ceiling or wall of a home or building. They work by blowing large amounts of air into a ceiling space. Whole house fans move thousands of cubic feet of air each minute, pulling air through a house and exhausting stale air through the attic to the outside. These fans can be used to cool a house if the weather is below 85 degrees and not too humid.

Whole house attic fans move attic air hundreds of cubic feet per minute. They work to cool the hot air inside the attic so the rest of the house can be cooler. Hot attics can increase the workload of a central air conditioning unit, so attic fans help take some of the stress off by exhausting heat. Attic fans and whole house fans can be used together but need to exhaust air through roof ventilation. Install plenty of exhaust and intake air vents. If there's not enough air intake, fan blades can create a partial vacuum. Failure to provide enough exhaust ports will cause fan blades to spin, but not move air efficiently.

**Tip: Whole House Fan Noise**

Whole house fans are great energy savers when used alone or with air conditioning. They can be used at night when air conditioning is turned off, or they can be used alone when temperatures are below 85 degrees F. Some say that whole house fans are effective but noisy. Here is some information about whole house fans and noise: Quality whole house fans are built to run quietly. A small, fast-spinning fan will make more noise than a large fan that runs at a lower speed. A belt-driven blade fan absorbs motor vibration that can be transferred to the fan blade. They cost more because of the extra workmanship, but they are much quieter than direct-drive blade fans. They are more powerful, they last longer, and maintenance is easier. Install your fan with rubber

mounting or foam strips to keep it from clanging inside the walls. Buy high-quality shutters. They're heavier to prevent vanes from opening and closing over and over again. A heavy fan will stay in place by the force of its weight. Before buying a whole house fan, be sure to get the right fit: Buy the right to suit the size of your home or building. The ventilation pressure from a whole house fan is discharged through the attic. There has to be enough attic ventilation to handle the amount of exhaust generated.

### **Tip: Whole House Fan Operation**

Here are some whole house fan basics: Whole house fans work efficiently in temperatures of 85 degrees F or lower and when indoor temperatures are higher than outdoor temperatures. Run your fan at night and in the morning to take advantage of cooler outdoor air. If temperatures reach 86 degrees F or more, turn on the A/C during the day and use the whole house fan at night and in the early mornings. You will need to keep some windows and/or doors open to allow ventilation. If there are rooms you don't want to cool, close them off to promote airflow to the rest of the house. Use ceiling fans or pedestal fans with a whole house exhaust fan to keep the house cooler during the day.

### **Tip: Whole House Fans to Save Money**

Using a whole house fan, or air movement fan, is a simple, inexpensive, and efficient way to cool a house or building. Whole house fans draw cool air inside and exhaust hot air outdoors through attic fan vents. A whole house fan can provide excellent ventilation and evaporative cooling to the entire house, with or without central air conditioning. A two-ton central air conditioner costs about 20 cents per hour to run; it costs 17 cents to run window units. Whole house fans cost *only five cents per hour* to run. Consider installing one to save on energy costs. At night, when outdoor air is cool, turn off the A/C, open some windows, and run the fan. A whole house fan can take the place of air conditioning in spring and early fall. Take advantage of fresh, outdoor ventilation for a healthier and less expensive way to cool.