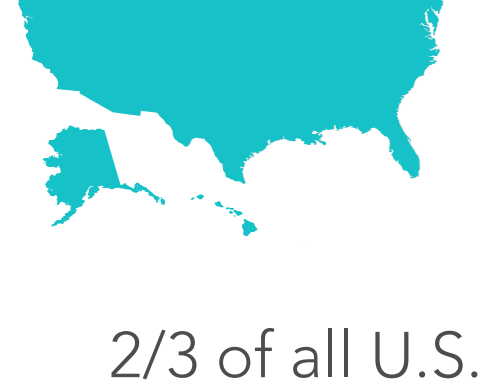




# Home Cooling

6%

The percentage of the average household's energy use that goes to space cooling.

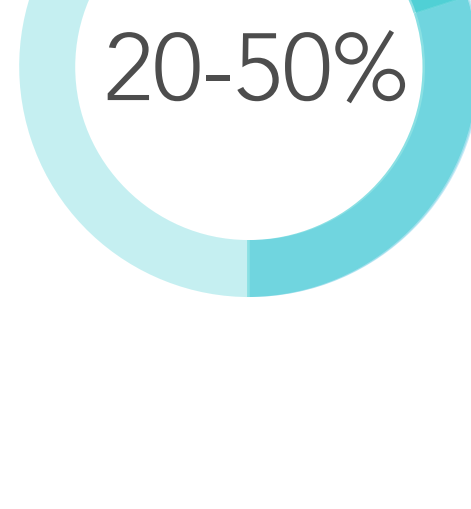


2/3 of all U.S. homes have air conditioners.

\$11B

The amount it costs homeowners every year to power their air conditioners.

## #DidYouKnow:



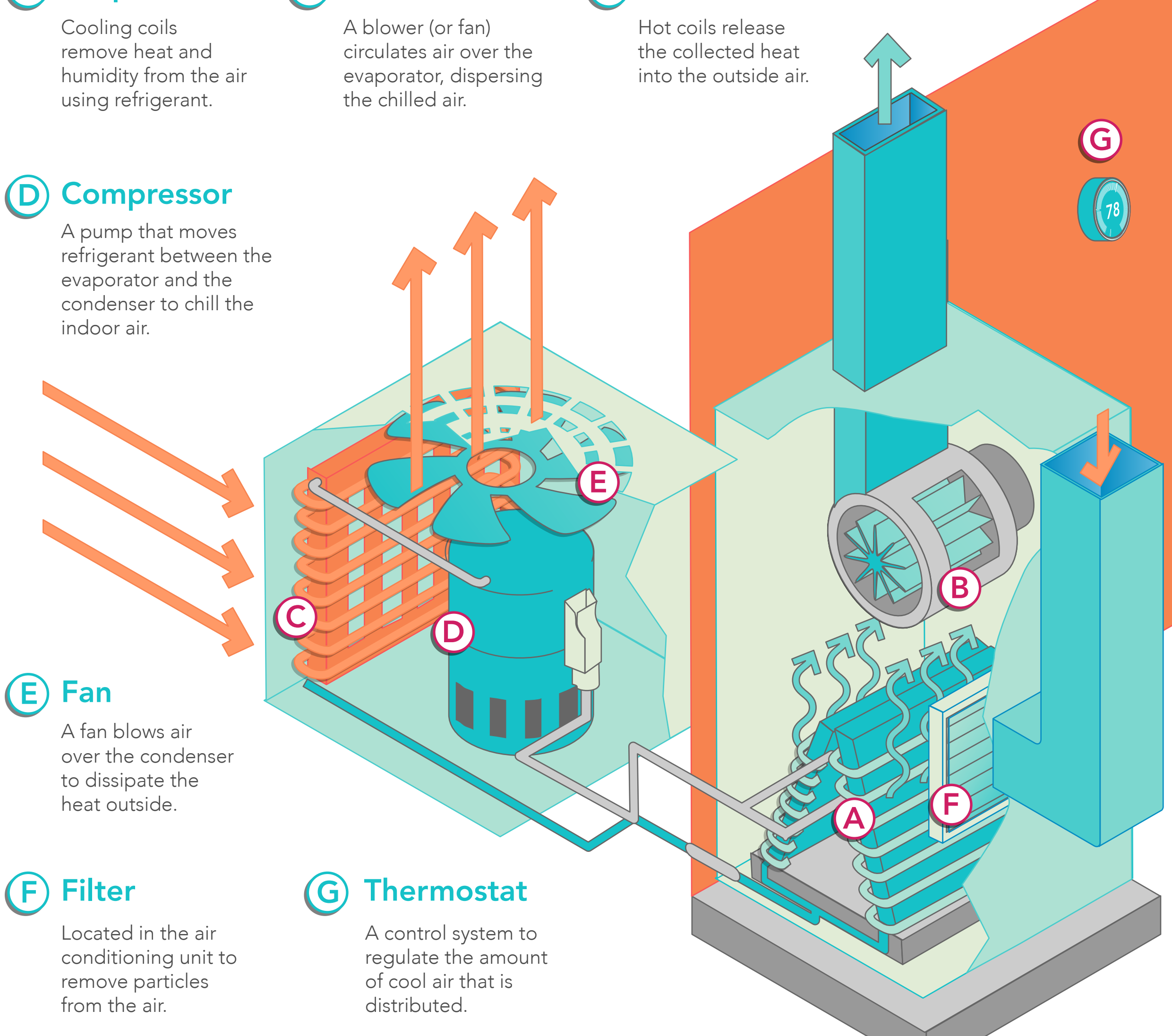
You can reduce air conditioning energy use by 20-50 percent by switching to **high-efficiency air conditioners** and taking other actions to lower your home cooling costs.

### ENERGY-SAVING TIP:

The quickest way to save energy on home cooling is to regularly clean and replace your cooling unit's filters.

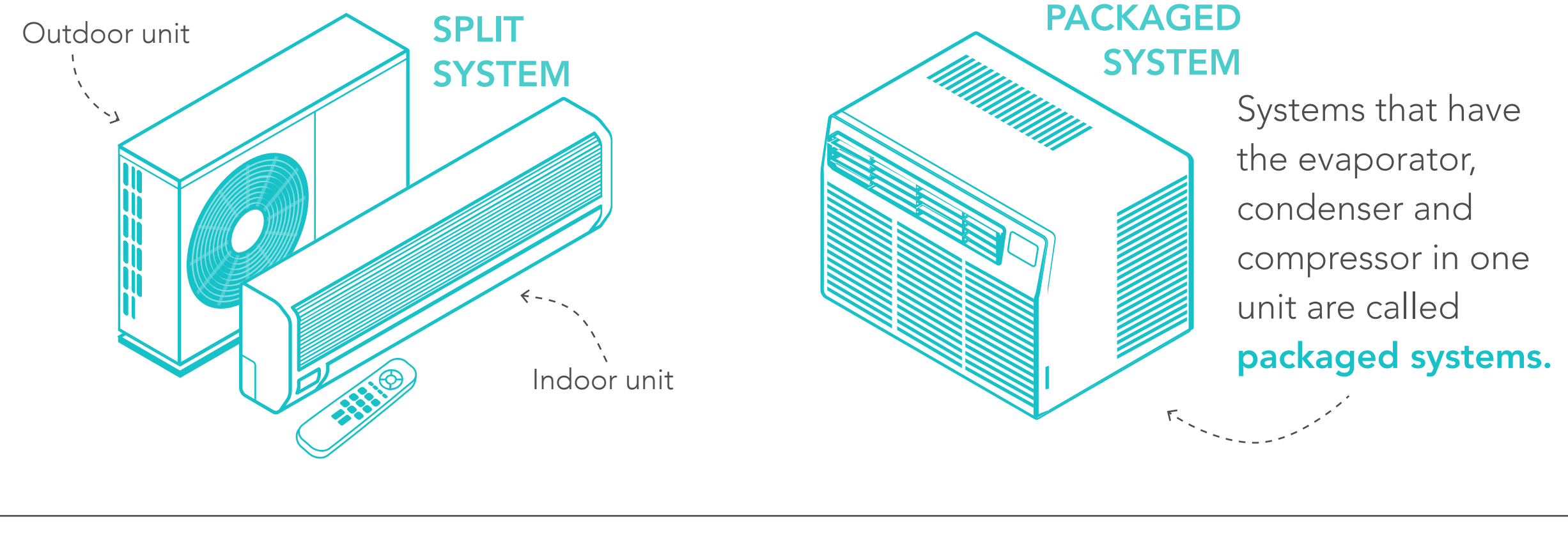
## How an Air Conditioner Works:

Similar to how a refrigerator works, air conditioners transfer heat from a home's interior to the warm outside environment.



## What is a split system?

Many types of air conditioning systems are called split systems because they are made up of an **outdoor unit**, which contains the condenser and compressor, and an **indoor unit**, which is often connected to a furnace or heat pump.



## Types of Air Conditioners

	<b>CENTRAL</b> A central air conditioner circulates cool air through a home using a system of ducts and registers. <b>LIFE SPAN:</b> 15-20 years	<b>COST</b> \$\$\$\$	<b>CHOOSING YOUR A/C</b> A central A/C system will provide the most even cooling throughout the home. If already you have ductwork, it can be a cost-effective option.	<b>PRO</b> Quiet, convenient to operate and more efficient than window units.	<b>CON</b> Can be expensive to install if you don't have ductwork already.	<b>TIP</b> Make sure your ductwork is properly sealed and connected without sags or excessive bends.
	<b>ROOM</b> The most popular cooling system, a room air conditioner provides spot cooling and can be either a window unit or a portable air conditioner. <b>LIFE SPAN:</b> 10-15 years	<b>COST</b> \$	<b>CHOOSING YOUR A/C</b> If you don't currently have an air conditioner, a room unit can provide cooling to select spaces at an affordable cost.	<b>PRO</b> Inexpensive way to cool a room or an addition to your home.	<b>CON</b> Improper installation can result in significant air leakage -- increasing it by as much as 10 percent.	<b>TIP</b> Install rigid foam panels in between the window frame and unit and secure with duct tape instead of the accordion panels to reduce air leakage.
	<b>DUCTLESS, MINI-SPLIT</b> Mounted on a wall, a ductless, mini-split air conditioner provides zoned cooling without the ductwork. <b>LIFE SPAN:</b> 12-15 years	<b>COST</b> \$\$\$\$	<b>CHOOSING YOUR A/C</b> Ductless mini-splits can provide cooling as well as heating. They are highly efficient, work in all climate zones and can be an affordable alternative to installing a ducted system.	<b>PRO</b> Easy to install and avoids energy loss associated with ductwork.	<b>CON</b> Is expensive -- in homes with existing ductwork, a mini-split can cost 30 percent more than adding an air conditioner unit to the existing system.	<b>TIP</b> Keep the compressor (the part of the unit outside) clean to prevent overheating.
	<b>EVAPORATIVE COOLER</b> An evaporative cooler (also called a swamp cooler) cools outdoor air using evaporated water and circulates it throughout the house. <b>LIFE SPAN:</b> 15-20 years	<b>COST</b> \$\$	<b>CHOOSING YOUR A/C</b> If you live in an arid climate, an evaporative cooler can be a cost-effective cooling option. In addition to cooling the air, they add moisture, which can improve comfort.	<b>PRO</b> Costs about 1/2 as much to install and uses about 1/4 of the energy of a central air conditioner.	<b>CON</b> Requires more frequent maintenance and is only suitable for areas with low humidity.	<b>TIP</b> Regularly clean and drain your evaporative cooler to ensure it operates as efficiently as possible.

## #DidYouKnow:

When there is excess humidity in the air, our body's ability to cool itself through perspiration is inhibited. **One way an air conditioner makes us feel cooler is by reducing the amount of moisture in the air.**

## Ventilation

Ventilation is the least expensive and most energy-efficient way to cool a home.

**NATURAL VENTILATION**

Natural ventilation relies on the wind to create a "chimney effect" to cool a home. A simple natural ventilation strategy is **opening windows to create a cross-wise breeze.**

**ENERGY-SAVING TIP:**  
If you live in a cooler climate, take advantage of the wind to naturally cool your home.

**FANS**

Fans circulate air in a room, creating a **wind chill effect** that makes occupants more comfortable. Fans for cooling come in a variety of options, including ceiling, table, floor and wall-mounted.

**ENERGY-SAVING TIP:**  
Turn off your fans when you leave the room -- fans cool people, not rooms.

**WHOLE HOUSE FANS**

Whole house fans pull air in through **windows** and exhaust it through a home's attic and roof. To ensure proper sizing and safety, professionals should install whole house fans.

**ENERGY-SAVING TIP:**  
In many climates, a whole house fan can provide cooling needs even on the hottest days.

## Maintaining Your Air Conditioner

**Annual maintenance can help improve your comfort and the efficiency of your air conditioner while prolonging the life of your unit.**

Routinely replace or clean your air filters -- it can lower your air conditioner's energy consumption by 5-15 percent.

Check your air conditioner's evaporator coil every year and clean it as necessary.

If your coil fins are bent, use a "fin comb" to straighten them.

If you have a split system, be sure to clean debris and leaves from the fan, compressor and condenser.

Occasionally pass a stiff wire through your unit's drain channels to prevent clogs.

For window air conditioners, inspect the window seals to keep cool air from escaping.

Hire a certified professional when your unit needs more than basic maintenance.

## Common Air Conditioner Problems

### Your unit isn't cooling properly

**Refrigerant**

Your refrigerant could be low or leaking. Call a trained technician to repair the leak and recharge the system.

**Sensor Problems**

If you have a window unit, the thermostat sensor could be knocked out of position. Carefully bend the wire holding it in place to properly position it.

**Thermostat Issues**

Check your thermostat to make sure it is set properly and it is reading the correct temperature.

**Drainage Problems**

Check your unit's drain to make sure it isn't clogged.

**Dirty Filter**

A clogged filter restricts airflow through the unit, decreasing its efficiency and reducing its ability to effectively cool the air.

### Your unit isn't turning on

**Electric Control Failure**

Your compressor and fan controls could be worn out from having your system turn off and on too frequently. Contact a professional to check your unit's electrical connections.

**Thermostat**

Make sure your thermostat is working -- it might need new batteries or might need to be replaced entirely.

### Limited airflow

**Ductwork Problems**

Your ducts could be clogged or constricted. Work with a professional to clean and air seal your ducts.

**Dirty Filter**

A clogged filter restricts airflow through the unit, decreasing its efficiency and reducing its ability to effectively cool the air.

## Tips for Lowering Your Cooling Costs

Install and set a programmable thermostat -- it could help you save up to 10 percent on heating and cooling costs a year.

Use a fan. Ceiling fans will allow you to raise the thermostat setting about 4 degrees without impacting your comfort.

Insulate your attic and walls, and seal cracks and openings to prevent warm air from leaking into your home.

Insulate and seal ducts -- air loss through ducts accounts for about 30 percent of a cooling system's energy consumption.

Don't heat your home with appliances. On hot days, consider using an outdoor grill instead of your oven.

Install energy-efficient window coverings that let natural light in and prevent solar heat gain.

Buy an ENERGY STAR-qualified AC unit -- on average, they're up to 15 percent more efficient than standard models.

Use the bathroom fan when taking a shower or bath and a range hood when cooking -- this helps remove heat and humidity from your home.





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