UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE

ENERGY E-TIPS

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Air Conditioner Tune-Up

Taking care of your air conditioner can reduce your electric bill and help prevent system breakdown and the need for emergency service. According to the Energy Information Administration, average electricity usage in the southern U.S. for air conditioning is 3350 kWh per year. An unmaintained air conditioner will generally lose 5% of its original efficiency, making electricity use go up.

You should consider conducting an air conditioning tune-up before the summer heat rolls into our state. This edition of ENERGY E-TIPS covers why tune-ups are important and provides a checklist of items to clean and check.

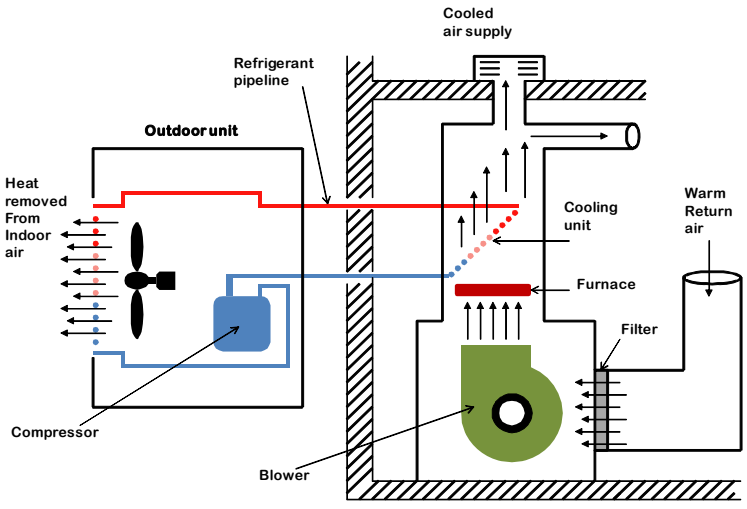
Why get a tune up?

Preventative maintenance is the least expensive type of air conditioning work. Avoiding the cost and discomfort of a failing air conditioner in July is a good incentive to have it checked out now. An unmaintained air conditioner can cost you over $280 in electricity over a 5 year period, not to mention potential repairs that might be needed, most likely during a heat wave.

Much of the air conditioning maintenance can be performed by the homeowner. See the checklist and descriptions below.

Tune-up Checklist

- □ Check air flow through outside condenser
- □ Clean coils
- □ Straighten coil fins
- □ Remove obstructions
- □ Check air flow through inside evaporator coil
- □ Change filters regularly
- □ Stop duct leaks
- □ Clean blower wheel
- □ Tighten belt
- □ Check refrigerante level (By certified technician only)
- □ Check control system



Central air conditioning and heating system

Regular Maintenance

Follow manufacturer's instructions: Always be sure to follow the manufacturer's instructions and guidelines for regular maintenance and operation. An operation manual for your system can usually be found on the manufacturer's website, or call them to request a copy. Each model is different.

Air conditioning filters: Replacing a dirty air conditioner filter is a simple and effective. It keeps dirt, pet hair, and dust out of the unit and preserves the volume of airflow intended by the system designer. Clean or replace your filter every month or two during the summer, depending on the level of dust in your local environment.

Air conditioning coils: While the filter will help keep dirt from getting to the internal components of your system, the internal coils will still become dirty over time. On an evaporative coil, dirt decreases airflow and insulates the coil, reducing its ability to absorb heat.

Check the evaporator coil each year and clean according to manufacturer's instructions. On outdoor condenser coils, dirt, leaves, debris and overgrown foliage can block airflow across the coil. Clean the area around the coil, remove any debris, and trim foliage back at least two feet around the condenser.

Coil fins: Coil fins are part of system design that promotes good heat transfer. They are easily bent and closed off which renders them ineffective. A "fin comb" can be purchased to put these fins back into nearly original condition with open parallel spaces between them.

Duct leaks, blower wheel, and belt tightening: Between 10% to 30% of air can potentially escape from ducts through leaks. This large waste causes the air conditioner to work harder and consume more electricity than it should. It's a good investment to hire a professional technician to detect and fix duct leaks in the home.

The blower wheel should also be cleaned from time to time, but consider using a professional since the wheel is located inside the system, and permanent damage can be made to this system's electrical and mechanical systems if the maintenance is not done properly. The belt should also be tightened by a professional to eliminate unnecessary slippage and reduced airflow.

Refrigerant level: The refrigerant in an air conditiner unit is the medium that transfers heat from the inside air and rejects it to outside air. It's important to keep track of the amount of refrigerant in the system, but refrigerant can only by added by a certified professional.

Here are two ways to check if the refrigerant is low in your system. First, if central air conditioner lines are equipped with a sight glass, check the refrigerant level to see that no bubbles are present. If a sight glass is not installed, check the low pressure refrigerant line for frost which is a sign of restriction and means the refrigerant is low.

If you still can't determine if the refrigerant level is adequate, ask the cooling contractor to show you how to check for low refrigerant levels. If the refrigerant is low, have a professional check for leaks and repair the system, and then replace the refrigerant.

Control system: Keep dust and dirt away from the thermostat, and make sure it's located away from extreme temperatures, such as right by an entryway or next to the furnace or stove. The control system should also be checked annually for performance and correct temperature readouts on the display.

Use a professional: While you can do part of the tune-up can be done by yourself, having a certified HVACR professional performing your maintenance is advised. You can change your filters and clean the coils on the unit yourself, but its best to let a professional add additional refrigerant and monitor the control system.

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