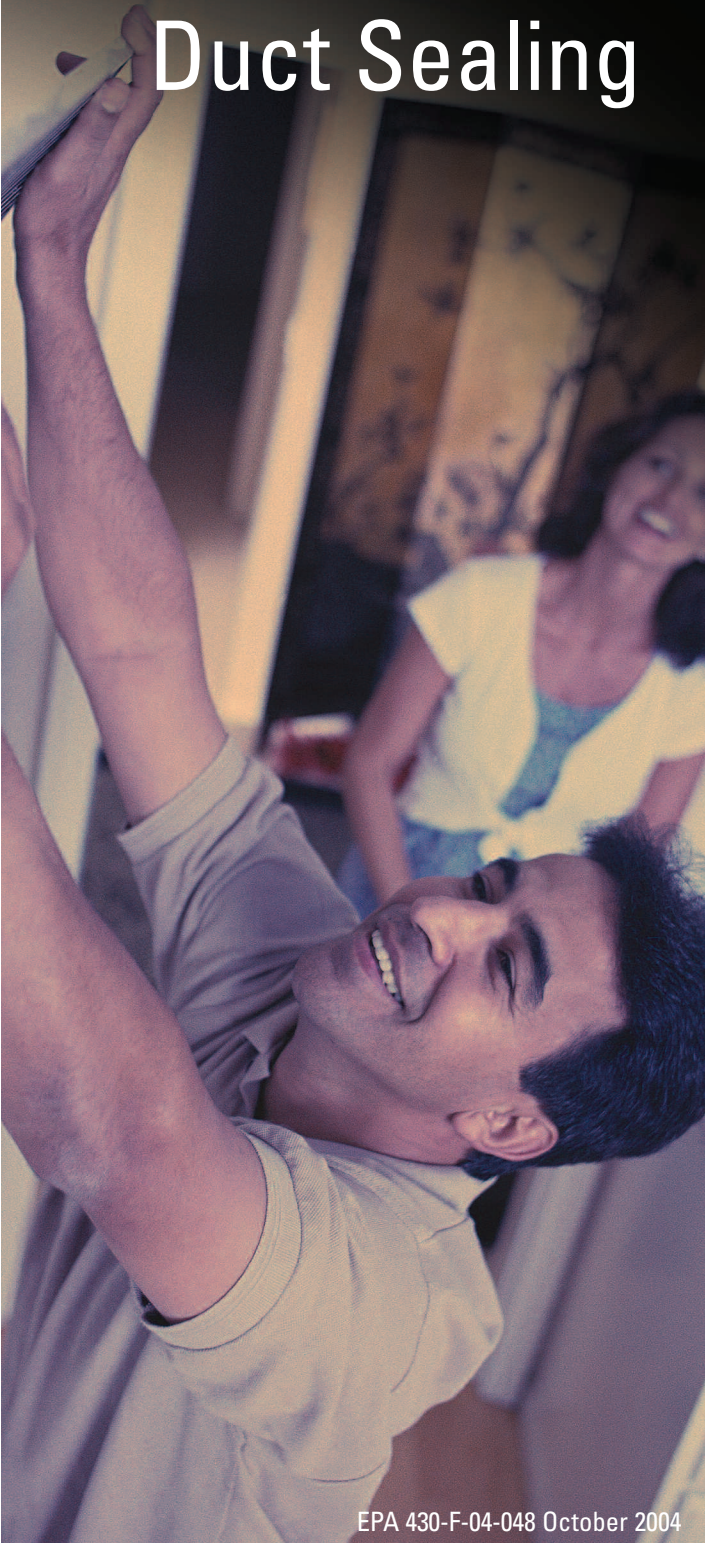




CHANGE FOR THE
BETTER WITH
ENERGY STAR

U.S. Environmental
Protection Agency

Duct Sealing



EPA 430-F-04-048 October 2004



HIGH UTILITY BILLS? STUFFY ROOMS? DUSTY HOUSE? IT COULD BE YOUR DUCTS.

A duct system that is well-designed and properly sealed can make your home more comfortable, energy efficient, and safer. Here are some reasons why duct improvements can be a wise investment:

Comfort

Sealing and insulating ducts can help with common comfort problems, such as rooms that are too hot in the summer or too cold in the winter.

Indoor Air Quality

Fumes from household and garden chemicals, insulation particles, and dust can enter your duct system, aggravating asthma and allergy problems. Sealing ducts can help improve indoor air quality by reducing the risk of pollutants entering ducts and circulating through your home.

Safety

During normal operation, gas appliances such as water heaters, clothes dryers, and furnaces release combustion gases (like carbon monoxide) through their ventilation systems. Leaky ductwork in your heating and cooling system may cause “backdrafting,” where these gases are drawn back into the living space, rather than expelled to the outdoors. Sealing leaks can minimize this risk.

Save Money

Leaky ducts can reduce heating and cooling system efficiency by as much as 20 percent. Sealing and insulating ducts increases efficiency, lowers your energy bills, and can often pay for itself in energy savings. Plus, if you’re planning to install new heating and cooling equipment, a well-designed and sealed duct system may allow you to downsize to a smaller, less costly heating and cooling system that will provide better dehumidification.

Protect the Environment

Energy used in our homes often comes from the burning of fossil fuels at power plants, which contributes to smog, acid rain, and global warming. Simply put, the less energy we use in our homes, the less air pollution we generate. By sealing your ducts and reducing the amount of energy necessary to comfortably heat or cool your home, you can reduce the amount of air pollution generated.

WHAT IS ENERGY STAR®?

ENERGY STAR is the government-backed program that helps us all to save money and protect our environment with energy-efficient products and practices. Whether you are looking to replace old appliances, remodel your home, or buy a new house, ENERGY STAR can help.

More than 40 kinds of products, including lighting, appliances, televisions, computers, heating and cooling equipment, and even new homes, can earn the government's ENERGY STAR label. ENERGY STAR also offers best practice solutions, like home sealing and duct sealing, that can make your home more comfortable and reduce your energy costs.



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For more information on duct sealing,
visit www.energystar.gov
or call
1-888-STAR-YES (1-888-782-7937)

KNOW YOUR DUCTS

In houses with forced-air heating and cooling systems, ducts are used to distribute conditioned air throughout the house. In a typical house, however, about 20% of the air that moves through the duct system is lost due to leaks, holes, and poorly connected ducts. The result is higher utility bills and difficulty keeping the house comfortable, no matter how the thermostat is set.

How do you know that your home has poorly performing ducts? You may have duct problems if:

- you have high summer and winter utility bills;
- you have rooms that are difficult to heat and cool;
- you have stuffy rooms that never seem to feel comfortable;
- your ducts are located in an attic, crawlspace, or the garage;
- you find tangled or kinked flexible ducts in your system.

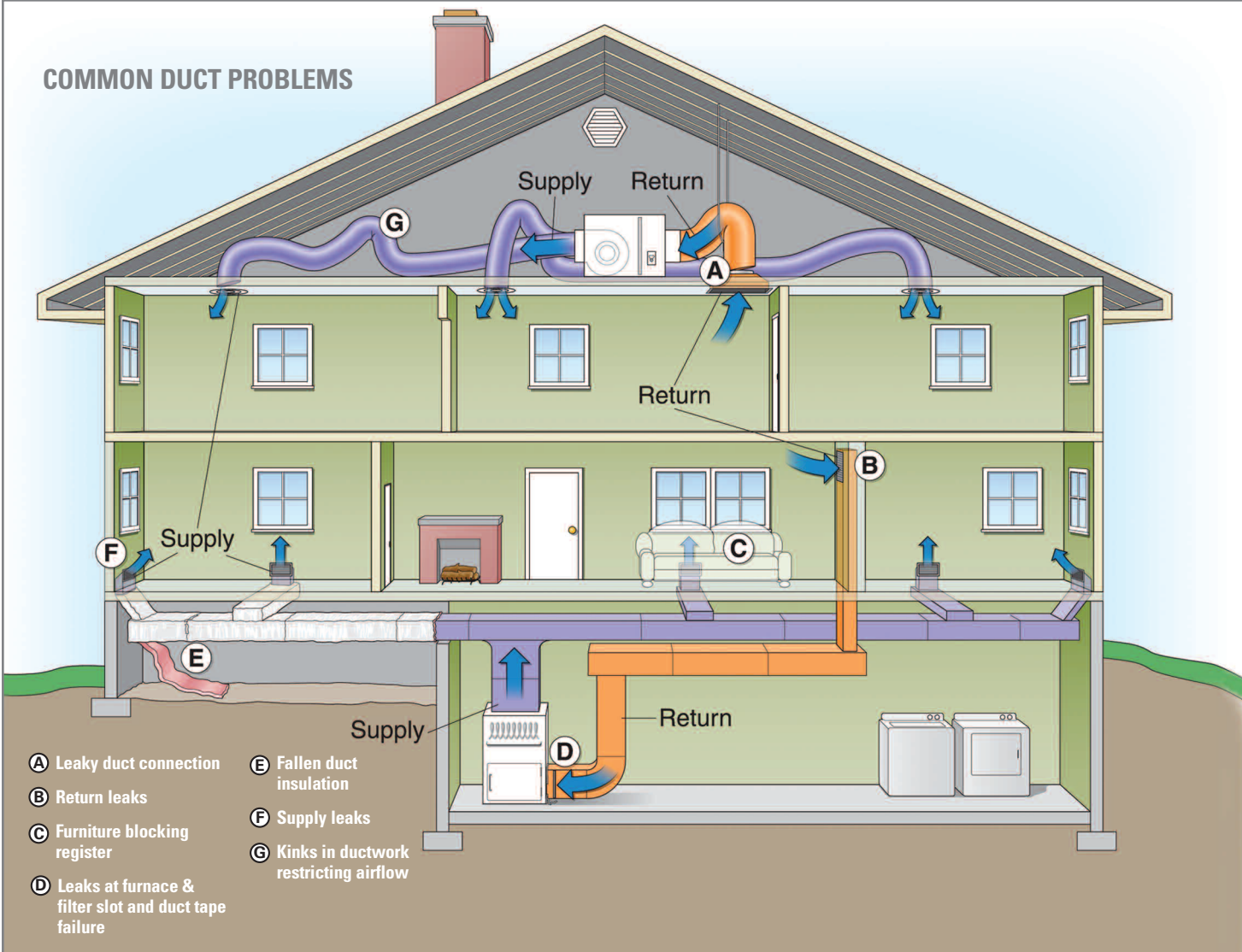
SIMPLE STEPS TO IMPROVING DUCT PERFORMANCE

Because ducts are often concealed in walls, ceiling, attics, and basements, repairing them can be difficult. But there are things that you can do to improve duct performance in your house.

Start by sealing air leaks using mastic sealant or metal tape and insulating all the ducts that you can access (such as those in attics, crawlspaces, unfinished basements, and garages). Never use duct tape, as it is not long-lasting.

Also, make sure that the connections at vents and registers are well-sealed where they meet the floors, walls, and ceiling. These are common locations to find leaks and disconnected ductwork.

COMMON DUCT PROBLEMS



WORKING WITH A CONTRACTOR

Many homeowners choose to hire a professional contractor for duct improvement projects. Most heating and cooling equipment contractors also repair ductwork. Look for a contractor that will:

Inspect the whole duct system, including attic and crawlspaces.

Evaluate the system's supply and return air balance. Many systems have air return ducts that are too small.

Repair damaged and disconnected ducts and straighten out flexible ducts that are tangled or crushed.

Seal all leaks and connections with mastic, metal tape, or an aerosol-based sealant.

Seal all registers and grills tightly to the ducts.

Insulate ducts in unconditioned areas (like attics, crawlspaces, and garages) with duct insulation that carries an R-value of 6 or higher.

Include a new filter as part of any duct system improvement. The contractor should evaluate air flow after repairs are completed.

Ensure there is no backdrafting of gas or oil-burning appliances, and conduct a combustion safety test after ducts are sealed.