COMFORT INSTITUTE CONSUMER FACTS

When Replacing your Old Furnace, Heat Pump, or Air Conditioner...

Bigger Is Not Better

Many homeowners hope more powerful equipment will do a better job. Unfortunately, this is a common misconception.

While too small isn't acceptable, too big can be much, much worse. Most homeowners who buy a larger unit regret their decision.

An oversized heating & cooling system leads to:

- Higher Utility Bills
- More Breakdowns & Repair Bills
- Uneven Temperatures
- Uncomfortable Summertime Humidity
- Increased Noise
- Greater Duct Leakage
- Increased Mold, Dust Mites and Allergies

If you were unhappy with your old unit, don't just assume you need a bigger one. It's rare to find a unit that actually is undersized. More often, the real problem is a weak duct system, air leaks, missing insulation, or inadequate maintenance.

Invest the time to uncover and fix the real causes of poor performance. Then, ensure your new equipment is ***sized correctly***. Manufacturers make seven different sizes of air conditioners and furnaces for good reason. This common sense approach will give you the most comfort, the lowest utility and repair bills, and the healthiest indoor air.

Think you Need A Bigger AC Because Of Hot Rooms?

A bigger unit usually makes uneven temperatures **worse**, not better. If it currently gets cool enough where your thermostat is, but not in other areas of your home, your problem isn't a lack of AC. It's that the AC you have isn't getting to where it's needed. The better solutions are to get more cool air to the problem rooms by improving your duct system; or to stop heat from leaking into problem rooms by sealing air leaks & improving insulation.

Did your Old AC Run Non-Stop?

As long as it kept you comfortable, that's great! A properly sized air conditioner is ***supposed*** to run for hours at a time on the hottest afternoons for maximum efficiency, comfort and durability. However, if it didn't keep you comfortable, you *may* need a bigger unit ... but probably not. Have your house and duct system inspected and tested before jumping to conclusions.

Want to Cool your House Faster?

Do you want a bigger AC in order to cool the house back down faster when you get home from work? The negative consequences the rest of the time aren't worth it. A smarter move is to use a programmable or internet enabled thermostat that can start cooling your house down a few hours before you get home.

Continued on Reverse

Why Equipment That's Too Powerful Isn't Better

More Breakdowns & Repair Bills Like any mechanical device, the more often your equipment starts and stops, the more wear and tear it experiences. An oversized unit cycles on & off excessively, causing more frequent breakdowns, higher repair costs, & a shorter life. Your new properly sized unit will be more trouble free and last longer.

Uneven Temperatures Oversizing forced air equipment leads to poor air distribution and uneven temperatures throughout the home. When a system short-cycles, the farthest rooms simply don't get enough cool or warm air. A correctly sized system will mix your air better, provide more uniform temperatures, and reduce hot or cold room problems.

Increased Noise & Duct Leakage The bigger the equipment, the more air it has to move. Your existing ducts are unlikely to be able to handle the increased air flow. Oversized units operate at higher duct pressures, causing the blower motor to use more electricity. You will likely experience short, noisy, intense blasts of excessively cold or hot air. Your ducts will also leak more, wasting energy and making the house dirtier. Your right-sized unit will run quieter, be much less noticeable, help keep your air cleaner, and save money.

Problems Specific to Oversized Air Conditioners

Higher Electric Bills An oversized air conditioner (AC) costs more to buy. It also costs much more to run over its 10-20 year life. Similar to an automobile in stop & go traffic, the efficiency is reduced by excessive cycling. It takes 15 minutes for a modern high efficiency air conditioner to reach its rated performance. Oversized units often cycle off just as they have "gotten up to speed". Homeowners with new oversized high efficiency AC equipment simply don't get the energy savings that they paid for. A properly sized unit running for longer periods actually uses ***less*** total energy.

Higher Summertime Humidity An air conditioner's primary job is to cool the air. But there's more to being comfortable than that. As a side benefit an AC system also dries the air. However, an oversized AC will cool your house too quickly, and then shut off before it has completed the slower work of removing humidity. The result: a cold clammy feeling. Many with oversized equipment and high humidity then have to over-cool their house in an attempt to be comfortable, causing much higher electric bills. Over-sizing a modern high efficiency air conditioner usually causes more humidity problems than over-sizing the older, simpler equipment.

Increased Mold, Dust Mites and Allergy Suffering Most allergy sufferers react badly to mold spores and dust mite droppings. According to the EPA, the American Medical Association and the American Lung Association, to ensure that mold growth and dust mites are kept at bay indoor humidity levels must be kept below 50%. An oversized AC can't meet this standard in humid climates.

The Right Way to Buy a New Comfort System

Slow down, do some research and become an educated consumer.

The **single most important step** is to find a contractor who can follow best industry practices when selecting a new system.

Be wary of contractors who try to sell you a bigger unit just so they can make more profit. Don't hire a contractor who dismisses proper sizing procedures and uses inaccurate rules of thumb, such as "one ton for every 500 ft^2 of floor area".

Instead, find a contractor who can perform a comprehensive ***Home & Duct Performance Assessment:***

- An accurate measurement of your home's dimensions & orientation
- An Infra-Red camera inspection of your home's insulation
- An Infiltrometer blower door test to measure your home's air infiltration
- Air duct leakage, airflow and static pressure tests
- A computerized load calculation and equipment selection conforming to the Air Conditioning Contractors of America Manual J
- A written 100% sizing & satisfaction guarantee

Buying a new comfort system is a very big decision, with long term implications. This engineering process will identify the underlying causes of any existing discomfort or performance issues, and ensure you obtain a correctly sized, trouble-free new system you will enjoy for years to come.

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The Comfort Institute is an independent Washington based comfort research and training organization. CI provides homeowners with unbiased consumer protection information; and provides its member contractors continuing education & technical support.

Visit your CI Member's website to watch a CI Video on why "Bigger Is Not Better"

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HEALTHY, COMFORTABLE & ENERGY EFFICIENT.

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