Cruise Control—An easy way to think about variable speed compressor technology

Everyone understands how cruise control works, and that it saves gas. Set your desired speed and your engine works as hard as necessary to maintain that speed. A variable speed compressor functions similarly. You set the temperature you want and the inverter compressor uses the necessary amount of energy to maintain that temperature. Variable motor speeds and variable refrigerant flow are the secrets to the compressor's success.

Are we clear about SEER?

Seasonal Energy-Efficiency Ratio, as defined by the Air Conditioning, Heating and Refrigeration Institute, is the industry standard measure of air conditioners cooling efficiency. A higher SEER rating means greater energy efficiency. As technology continues to evolve, minimum SEER ratings increase. High-efficiency Amana® brand air conditioners currently offer SEER performance ratings up to 24.5 SEER.

High-tech controls require high-efficiency air conditioners

Want to control your indoor comfort system remotely using your smart phone or other wireless device? That advanced functionality requires one of the many sophisticated thermostat controls the Amana brand offers. It demands at least a requisite two-speed, high-efficiency air conditioner and is not applicable for base systems.

Creature comforts you and your family deserve.

Whether it's time to replace a component in an existing central HVAC system, or to install a totally new system, Amana® brand products can provide dependable comfort and efficiency for your family – for every season.

For more on Amana brand's high-efficiency air conditioner options and which might be right for your home, contact your local Amana brand dealer of visit www.amana-hac.com

Additional information

Before purchasing this appliance, read important information about its estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.

www.amana-hac.com

Heating & Air Conditioning Amana

Indoor Home Comfort Handbook

CB-FINHCHB-A 9-15

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Premium Amana® Brand Quality / High-Efficiency Performance

How high-efficiency air conditioners can help raise your indoor comfort level while lowering energy consumption:

Getting comfortable with your AC

Most homeowners aren't all that knowledgeable about the inner workings of their central air conditioning system. It's either cooling, or it isn't. The energy bill was high this month, or it went down a little. I need a new one? Just replace it! That's about as much as any of us think about one of the largest investments we make in our homes and our indoor quality of life. Yet, by simply absorbing some basic information about the improvements in today's air conditioners, you can be empowered to make a more informed decision about your next cooling unit. The result could be greater indoor comfort and reduced utility bills over the life of your new, energy efficient system.

Saying "No" to the status quo

When faced with a purchase decision, a minimum or standard efficiency cooling system is often the primrose path of least resistance. It's usually the least expensive option, initially. Given the real possibility of increases in minimum efficiency ratings, the new base-efficiency system's rating is likely the same or greater than that of your old system. It's easy to rationalize this default decision. But, with the insight we're about to provide, it will be just as easy to see the wisdom of upgrading to a high-efficiency cooling system.

Let's start by considering the three basic goals of a central air conditioner:

- Consistent cooling
- humidity control
- cost-efficient operation

These objectives are interrelated and best achieved by a high-efficiency cooling system. However, most current minimum-efficiency air conditioners just don't have the upgraded key components to make that happen.

High Gear—Two components that distinguish a high-efficiency air conditioner and what you need to know about each:

❶ **Condenser Fan Motor** – The condenser fan is designed to cool pressurized refrigerant gas to the point it "condenses" back to its liquid form inside the condenser coil. The type of motor powering the fan is a one of the key differentiators between lower efficiency air conditioners and higher efficiency air conditioners. There are typically three types of condenser fan motors:

Single-Speed – A single-speed motor runs at top speed until it satisfies your temperature setting and then shuts off. They're generally louder at start-up, consume more energy than alternative motor types and can cause more stress on mechanical parts.

Two-Speed – The base required for a high-efficiency air conditioner, two-speed motors cycle on in low gear and attempts to satisfy the cooling load for the home, shifting to high gear if necessary. Once it reaches the desired temperature, it cycles back down to low before shutting off. With just two speeds, it reduces start-up noise, operates with greater energy efficiency and causes less stress on mechanical parts compared to single-speed motors.

Multi- or Variable-Speed – Ideal for high-efficiency air conditioners, a variable-speed motor functions much like a two-speed, only with several speeds of operation. When compared with single- or two-speed motors, it facilitates smoother cycling and more precise performance control, as well as the most quiet operation, highest energy efficiency and least stress on mechanical parts.

❷ **Compressor** – Converting low-pressure, gaseous refrigerant into a high-temperature gas before it enters the condenser, the compressor plays a critical role in the cooling of your home. The type of compressor is another chief determining factor of a lower or higher efficiency air conditioner. Here are the three most common types of AC compressors:

Reciprocating – Generally found in lower efficiency central air conditioners, reciprocating compressors are generally fixed speed, less expensive and not as durable as alternative compressor types.

Scroll – Used in both lower and higher efficiency air conditioners, scroll compressors are popular because they feature fewer moving parts than reciprocating compressors. This translates to more efficient operation, higher tolerance to liquid refrigerant, less mechanical failure and smoother, quieter operation.

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