

# EC FANS ADVANTAGES



Energy efficiency regulations and directives are increasingly exposing inefficiencies in HVAC systems. In many applications, the use of centrifugal and axial fans driven by standard AC motors could be coming to an end. This is due in large part to the comparatively low total efficiencies of these large fans, which can easily account for 40-50% of the total energy consumption within typical building HVAC systems. On the other hand, EC fans are inherently very efficient, with improved and simple controllability.

They can also be much quieter across the entire speed range. Extremely efficient in converting electrical energy into air power, EC fans can consume up to 70% less energy than a standard AC fan. EC technology, increasingly available and accepted within the HVAC industry, promises efficiency gains, and cost reductions that will soon become a market standard.

## **Benefits of Switching to Rosenberg EC Fans:**

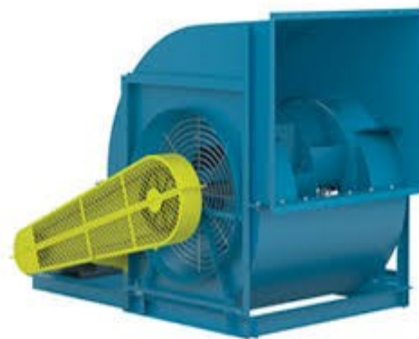
1. For most businesses, a 20% reduction in energy costs can represent similar bottom line benefits as a 5% increase in sales. HVAC equipment usually accounts for the single largest proportion (37%) of energy consumption in a commercial building.
2. EC fans offer the same air volume output as AC fans but using significantly less electrical power input. This is because EC motors are extremely efficient in converting electrical input into air power. As a result, EC fans can consume up to 70% less energy compared to standard AC technology. It has been shown that payback periods can be as little as 1-1/2 to 2 years.
3. AC fans are designed to operate at a certain point on their performance curve which coincides with their peak efficiency. On either side of this operating point, the efficiency can drop off considerably. EC Fans on the other hand have an almost flat efficiency curve,

which varies relatively little across the speed range. This makes the EC fan able to adjust to the level of cooling needed at the time, thereby cutting down energy wastage from fans running faster than necessary.

4. EC fans offer maintenance-free operation. Firstly, EC technology uses electronically commutated permanent magnet brushless DC motors which are inherently very efficient and maintenance-free. Secondly, an EC fan's high-efficiency rating means low motor temperature, dramatically reducing the amount of waste heat produced. Low motor temperature also improves the life of highly loaded motor parts like windings and bearings. And thirdly, adjustable start-up speeds (soft start) on EC fans reduce stress on mounting hardware and therefore reduce wear and tear on fan components and structures.
5. With speed-controlled AC fans, noise levels spike in line with the voltage frequency. In contrast, EC fans offer quiet operation even at a low rotational speed. This is especially relevant for noise-sensitive applications such as supermarkets located in residential areas, where the use of EC fans can negate the additional requirement and cost of acoustic enclosures.
6. EC fans utilize compact external rotor motors and are fully interchangeable with AC products for retrofit applications. EC fans require little configuration and no complicated wiring or set-up. With a potential payback period of two years or less, and a simple upgrade procedure resulting in minimal disruption to a facility, retro-fitting using EC fans is one of the easiest and most effective ways for you to cut your HVAC energy costs.



*Rosenberg EC Fan Assembly*



*Typical AC Fan*

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