

FANNING OUT.

WE THREW OUT THE GEARBOX AND MOVED INTO THE FUTURE

Other companies imitate. At MacroAir, we innovate. We not only invented the entire HVLS category in 1998, we're constantly reinventing it. And we do it based on one simple principle — form must follow function. So, we're continually reimagining the art of airflow and developing groundbreaking engineering solutions that often require us to go beyond the boundaries of conventional thinking. We're not afraid to say farewell to old ideas.

In 2011, we set out to design the quietest, lightest, most reliable fan on the market. That led to the invention of our cutting-edge, gearless motor. In fact, we've entirely cut out the fan's gearbox. In doing so, we've also gotten rid of the mess, mass, and maintenance costs associated with gear-driven fan motors.

Leaks, grinding noise, and failure within the gear mechanism — as well as issues with the variable frequency drive — are the most common fan repair issues and we've eliminated them. Our gearless motor offers efficient climate control with more power, less noise, and longer life than any other HVLS fan on the market.

Unlike a traditional DC motor where copper wire is wrapped around the motor poles, our gearless motor coil is made up of a simple copper ring with ultra-low resistance. It delivers a 40 percent improvement in efficiency over conventional motor designs. And we use 60 percent less copper than traditional, gear-driven motors. Our motors also have three to four times the number of poles over competitors' models, drastically increasing the amount of torque produced by our fans. The end result is that our gearless motor produces 50 percent more continuous horsepower over conventional fan designs.

And we do it in a smaller footprint. To drive a 24-foot blade fan, a conventional DC motor would have to be three times the size of our gearless system.

We've also drastically increased the life and reliability of our fans. Traditional fan drive systems have up to 30ish moving parts. That's 30ish potential problems that can break, malfunction, and require costly repairs. Our gearless system has just two moving parts. Fewer moving parts result in a lower failure rate and a more maintenance-free fan, providing years of worry-free operation.

Let AirVolution-D be your silent partner

Since we've eliminated the gearbox and the associated mechanical parts, we've drastically reduced the sound signature of our fans. There is no gear or friction noise, making our fans the quietest HVLS fans on the market. Our fans can drive blades as big as a car while being whisper quiet. Even when running at the maximum RPM, they produce no more noise than the sound of the breeze itself. That's significant because in the workplace every decibel matters.

According to the Occupational Safety & Health Administration, each year 30 million workers in the U.S. are exposed to hazardous noise while working. And noise-related hearing loss has been listed as one of the most commonly reported occupational health issues for more than 25 years. Since 2004, the Bureau of Labor Statistics (BLS) has reported that nearly 125,000 workers have suffered significant, permanent hearing loss due to exposure to excessive noise at work. In 2009 alone, BLS reported more than 21,000 hearing loss cases.¹

We can also help your employees to be more productive. Efficient temperature controls are directly related to how employees perform in the workplace. When employees work outside of ideal temperature ranges, they're distracted and they make more mistakes.²

According to a meta-analysis of studies on temperature and productivity, employee performance increases with temperatures up to 69-71°F (21-22°C), and performance decreases with temperatures above 73-76°F (23-24°C). Performance dips to 91.1 percent of the maximum at 86°F (30°C). The results clearly show that improvements in temperature not only lead to more comfortable employees, but also more effective workers.³

The airflow from our fans lowers effective temperature to make your HVAC system much more efficient. When run in reverse, they redistribute overhead heated air and mix it to eliminate the hot and cold spots. The AirVolution-D isn't just an investment in temperature control — it's insurance for the well-being and productivity of your business.

AirVolution-D reinvents fan design

Incorporating our gearless motor, the AirVolution-D fan is the most advanced HVLS fan ever created, producing 50 percent more wind power and operating 76 percent more efficiently than our leading competitor's 24-foot, gear-driven fan. And we did it while reducing the weight of the unit by up to 150 pounds. With no guy wires and a simplified mounting system, the AirVolution-D makes installation safer, easier and faster.

We've rethought HVLS fans from the ground up, and have developed a product that significantly reduces installation, operation, and maintenance costs. And we've made great strides in increasing the reliability of HVLS fans. We're so confident in our breakthrough technology that the AirVolution-D comes with a 50,000 hour warranty, a first in the industry.

Apart from being an engineering feat worthy of our reputation as the engineers of air, our gearless design isn't just a technical accomplishment — it also saves you money, both directly and indirectly. From installation to efficient, reliable, and worry-free operation, our new gearless motor sets a new standard for the industry.

Simply put — our gearless system is the future of heating and cooling technology.

1 "Occupational Noise Exposure." Occupational Safety & Health Administration. Accessed February 1, 2015. <https://www.osha.gov/SLTC/noisehearingconservation/>.

2 "Productivity Gains from Energy Efficiency." Institute for Building Efficiency. Accessed February 1, 2015. <http://www.institutebe.com/Building-Performance-Management/Productivity-Gains-from-Energy-Efficiency.aspx>.

3 Seppanen, O. et al. "Effect of Temperature on Task Performance in an Office Environment". Lawrence Berkley National Laboratory, Helsinki University of Technology. July 2006.