

The Tri-Stack® System: Mission Critical High Plume, High Dilution Lab Exhaust System

Strobic Air Technologies' Tri-Stack exhaust system is a practical, cost-effective and energy-efficient solution for your **critical exhaust needs**, including pollution abatement, re-entrainment or odor control. Its modular construction allows for easy installation and low system pressures to provide a fast payback when compared to traditional centrifugal stack exhaust designs. Operating at thousands of facilities as direct replacements for tall, unsightly conventional centrifugal exhaust fans, the Tri-Stack system is an **industry leader** with many advantages.

Advantages:

Prevent Re-entrainment

The Tri-Stack system **prevents re-entrainment of contaminated air** back into the laboratory building or neighboring buildings fresh air intakes making the environment safer.

Safe, Low Maintenance Operation

The unique design of the Tri-Stack system only requires **greasing once every 18 months**, or approximately 7 times in 10 years. This is compared to an industry average of every 3-6 weeks. There is also a L-10 rating of **150,000 hours or greater** on all motor bearings.

Low Vibration, Quieter Operation

The Tri-Stack system combines mixed flow impeller technology and a true direct design to offer industry leading **low vibration levels**. With less vibration comes quieter operation. If attenuation is needed, the Strobic Air **patented silencer nozzle** allows a fan to be attenuated by 10 db or better without adding height to the fan system.

Attractive, Low-Profile Design

While safety is our highest priority, the Tri-Stack system was designed with **aesthetics and architecture in mind**. Our application engineering team can help you create a design that is safe, effective and meets local architecture and sound ordinances.

Durability and Low Cost of Ownership

The Tri-stack system was designed with **superior materials and coatings** so that we can offer you a product that can last 18-25 years in most environments with minimal maintenance. Because of this, we offer an industry leading **7-year warranty**. An extended warranty and preventative maintenance package upgrade is also available.

Ability to Retrofit on Almost Any Footprint

When it comes to **replacing older systems**, our application engineering team can help you find a solution to fit just about any footprint.

Applications:

The Tri-Stack system is ideal for use in **hospitals, biomedical facilities** and **research laboratories** at universities, as well as private **pharmaceutical, chemical** and **petrochemical** organizations. Specialty applications from **diesel generator exhaust** to **emergency ammonia fume extraction** are also common and can be custom designed for your needs.

The Tri-Stack system is an industry leader wherever issues of **exhaust pollution, odor control, re-entrainment, aesthetics** or **energy-savings** are a priority and can be designed for retrofit and new construction.



Tri-Stack Exhaust System

Mixed Flow Impeller Technology:

The Tri-Stack System provides significant performance, reliability and cost advantages over conventional centrifugal exhaust fans. Strobic Air has **refined mixed flow technology fans** for decades, and has pioneered many aerodynamic concepts with the technology. Mixed flow fans provide optimum performance in virtually all configurations of low pressure/high flow and high pressure/low flow. They offer **substantial advantages over centrifugal-type fans** such as higher efficiency performance for lower horsepower requirements for comparable pressures and flows. The constant acceleration ratio of mixed flow fan blades permits **both the leading and trailing edges** to perform equal work, maximizing efficiency and providing a stable performance curve without stall or un-stall sections.

On a direct operating cost basis, use of the Tri-Stack system mixed flow fan technology **reduces energy consumption**. With the combination of both energy recovery and the S.A.F.E. Controller, the Tri-Stack system solution dramatically **lowers overall energy cost**.

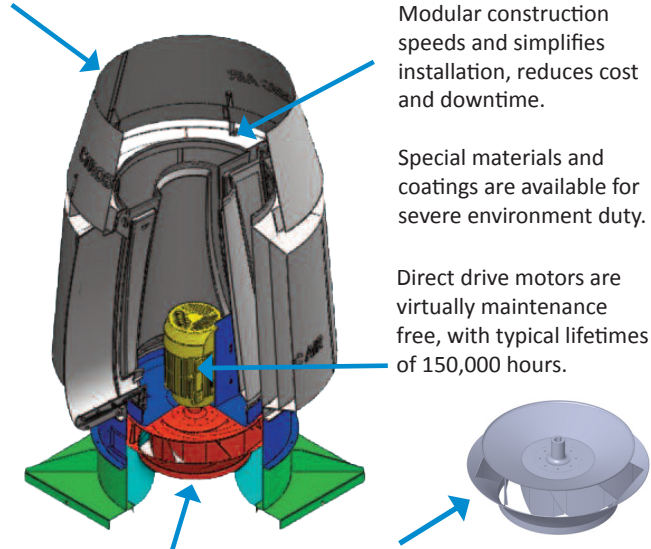
Wind band entrains outside air above motor to enhance discharge volume and effective stack height. Up to 170% of free outside air introduced into the airstream prevents odor and re-entrainment.

Modular construction speeds and simplifies installation, reduces cost and downtime.

Special materials and coatings are available for severe environment duty.

Direct drive motors are virtually maintenance free, with typical lifetimes of 150,000 hours.

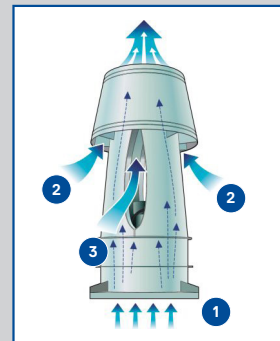
Specially designed, mixed flow impellers provide high pressure and volume at low RPM and mount directly to motor shaft without belts or pulleys.



Strobic Air's Tri-Stack System: Three Stacks in One Fan

There exists a common misconception that "TRI" in Tri-Stack equates to three fans. However, in truth, "TRI" refers to the unique ability of each individual fan in the Tri-Stack system to incorporate **three stacks** (or streams) of air into a **single plume**, which is composed of the following:

- 1** The first stack comes from the building source itself.
- 2** The second stack is induced through the wind band. This stack allows the nozzle plume to develop fully before exiting the top of the wind band and helps shield it from cross-winds.
- 3** The third stack is entrained through the teardrop shaped motor cut-outs of the unique nozzle design. The nozzle design allows the motor to remain outside of the hazardous exhaust stream, therefore allowing for easier maintenance and long-life cycle. This stack adds air volume to the center of the stack, as well as allows ambient air for cooling of the motor.



The Tri-Stack System Meets AMCA 210/260/300 and All Applicable Ventilation Standards

SPX ENGINEERED AIR MOVEMENT

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