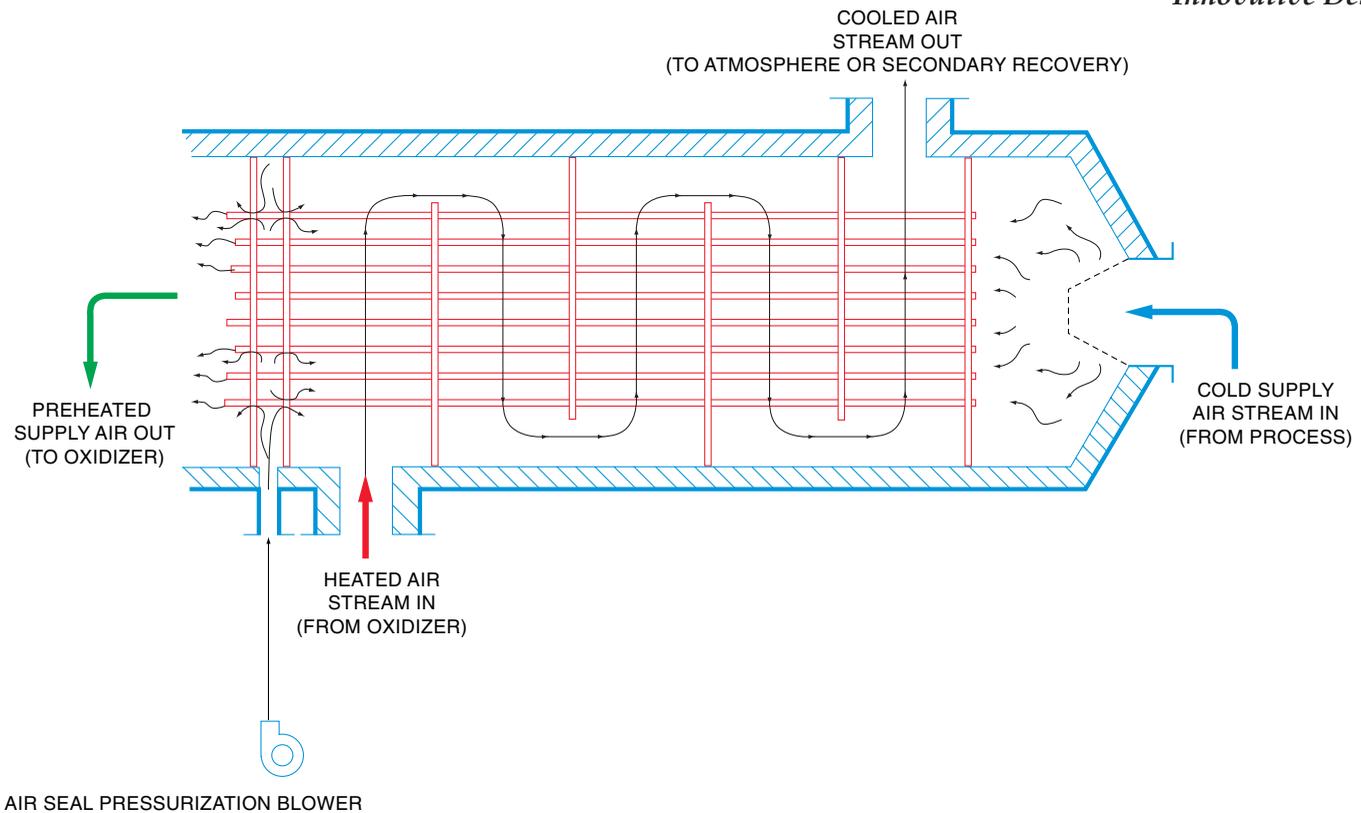




FLOATING TUBE Heat Exchanger

- *Longest Equipment Life*
- *Proven Performance*
- *Innovative Design*



The FLOATING TUBE air-to-air heat exchanger by Catalytic Products International has proven to be an innovative solution to an industry wide problem. As a designer and manufacturer of catalytic and thermal oxidizers for more than 40 years , our focus has always been on the continual development of high quality, long lasting pollution control equipment. Throughout our long history and experience, we have recognized a common problem with much of the industry's oxidation equipment — short equipment life, unreliable systems, and heavy maintenance costs have burdened users for too long.

The Problem

Keeping pace with the needs of an industry is not always an easy task. Catalytic Products International has applied our years of innovative, air pollution control equipment experience in a whole new direction — specifically by revolutionizing air-to-air primary heat exchangers. Traditional shell and tube heat exchangers are very simple devices that transfer heat energy from one air stream to another. Heat exchangers are used for energy conservation in a multitude of applications, the most common being in thermal oxidation systems. Shell and tube primary heat exchangers are commonly made of stainless steel tubes welded to tube sheets and use a series of baffles to direct air over the tubes. The concept is simple, but the physics and engineering for success are complicated. As many suppliers and users have come to realize, controlling the thermal and mechanical stresses in high temperature shell and tube heat exchangers is a difficult task. The traditional heat exchanger typically incorporates an expansion joint to absorb the tremendous thermal growth encountered inside of these systems. Throughout the operation of a heat exchanger, varying temperatures, differential expansion, and thermal cycling will put an incredible amount of stress on these metallic components. This uncontrollable stress is the cause for pre-mature structural failure and unacceptable performance. Heat exchangers using old expansion joint designs will present users with cracked welds, internal leakage, bent baffles and tube sheets, or melted and exploded tubes. These very common problems are the reason that we developed, designed, and refined our FLOATING TUBE shell and tube heat exchanger.

The Solution

FLOATING TUBE heat exchangers offer unheard of resistance to the thermal stress and fatigue common in every other type of shell and tube heat exchanger. This revolutionary solution eliminates heat exchanger failure for industry-leading equipment life without any maintenance. The extremely adaptable design of our FLOATING TUBE heat exchangers allow Catalytic Products International to custom design the heat exchanger around your exact requirements. Whether used for any of our custom air pollution control systems, secondary heat recovery solutions, or OEM energy recovery applications, our FLOATING TUBE heat exchangers provide unmatched performance.

The Design

The heat transfer matrix is made up of all stainless steel designed for the particular air stream. This means the tubes, the tube sheets, and the baffle sheets are all stainless steel. By correctly matching the metallurgy to the characteristics of the application, you can be assured that all of our FLOATING TUBE heat exchangers are designed for long, reliable performance. The propriety design of our FLOATING TUBE heat exchangers relies on a stress-free package that does not hinder tube growth. Every tube is allowed to expand or contract at individual rates. There are no expansion joints or packed seals to break or degrade. This revolutionary design utilizes a system that creates "FREE FLOATING" tubes. The system is insulated with a high quality insulation system that retains heat for the highest performance, while reducing shell temperatures for safety and eliminating shell deformation. Each unit is custom designed for connection to or retrofitting into existing processes or as new equipment in our oxidation and heat recovery systems. The evolution of the FLOATING TUBE heat exchanger means longer equipment life, less maintenance, no downtime from failures, and no leaking expansion joints or packed seals. This all adds up to a greater return on your heat recovery investment.

The Company

Catalytic Products International has been a leader in the design and manufacture of catalytic and thermal oxidizers for over 40 years. Our custom engineered products have paved the way for continuous improvements in the traditional methods of design and manufacture. Throughout our years of experience, we have noticed an increasing market demand for improved heat exchanger designs. Our specialized design/applications team has approached this problem head-on with outstanding results.



Applications for FLOATING TUBE heat exchangers:

- Primary heat recovery supplied on Catalytic Products International oxidation equipment
 - QUADRANT Thermal Oxidizers
 - CONCORD Catalytic Oxidizers
 - CONVERTIBLE Oxidizers
- Secondary heat recovery supplied for:
 - Return heat to ovens, dryers, and kilns
 - Building heating
- Retrofit/Replace/Repair of damaged heat exchangers
- Integrate heat recovery into OEM equipment:
 - Ovens, dryers, kilns, and furnaces
- Customized solutions including:
 - High thermal efficiencies
 - Corrosive air streams
 - Cooling applications
 - High temperatures

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