







REGENERATIVE THERMAL OXIDIZERS

-  Energy-Efficient
-  Low Total Cost of Ownership
-  Modular configurations
-  Customized designs

PROCESS COMBUSTION CORPORATION

300 Weyman Road, Suite 400 • Pittsburgh, PA 15236 • (412) 655-0955 • pcc@pcc-group.com • www.pcc-group.com

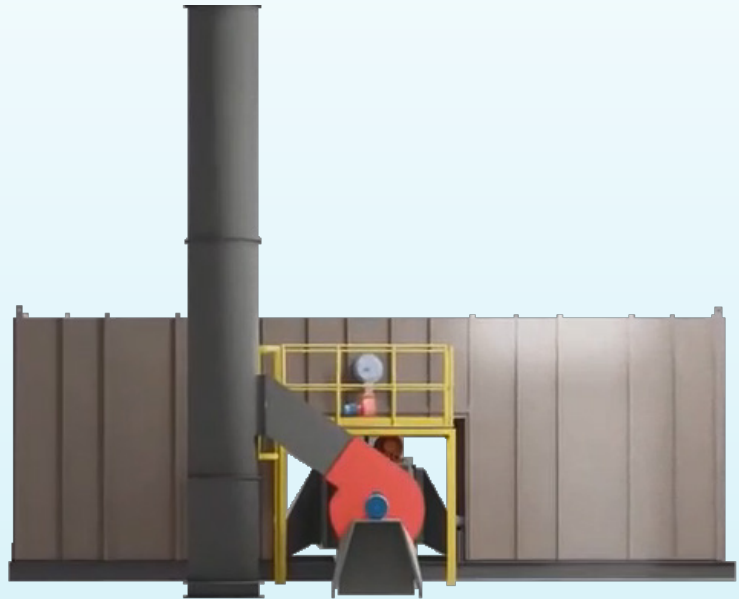
Process Combustion has been engineering and providing the Industrial Sector with Combustion Technologies since 1969. PCC is committed to offering a SOLUTIONS option to meet most air pollution control requirements.






REGENERATIVE THERMAL OXIDIZERS

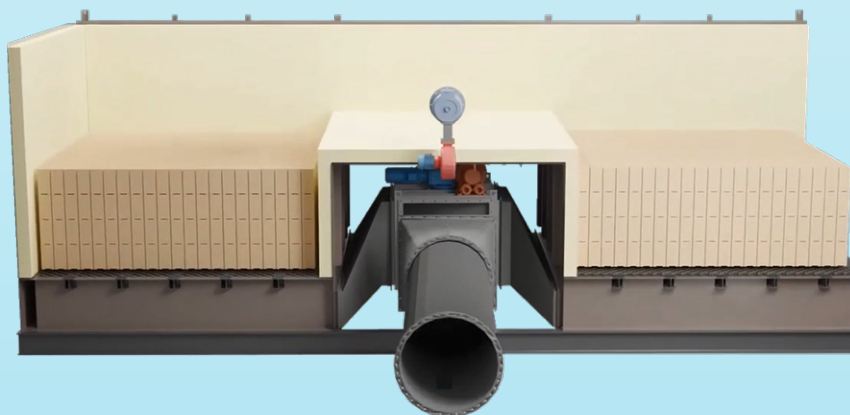
PCC's goal is to assist industrial customers in meeting the toughest control demands faced today. We design solutions for industrial and commercial manufacturing processes designed to minimize waste and remove pollutants.

PCC's RTO ADVANTAGE

PCC offers a range of RTO designs and configurations to meet your needs and provide the best solution for your application.



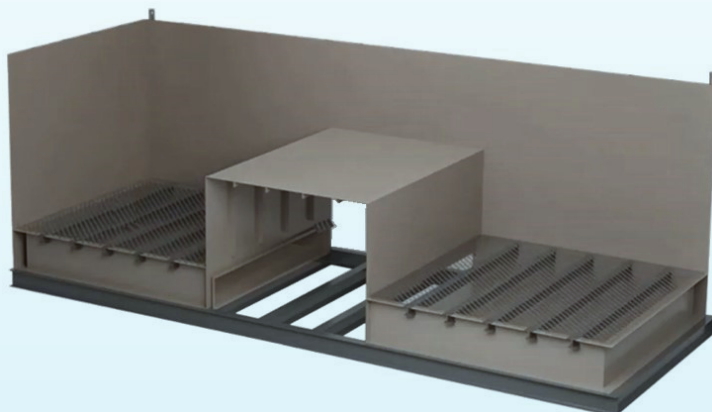
-  Engineered Designs to meet the end user's requirements
 - ✓ Modular configurations for quick installation
 - ✓ Customized designs to meet unique application requirements
-  Proven Rotary Valve
 - ✓ Minimum maintenance, smooth, quiet, zero-leakage operation
 - ✓ Superior reliability of any RTO
-  Low "Total Cost of Ownership"
 - ✓ Energy, Maintenance & Life Cycle Capital Cost
-  Energy-Efficient.
 - ✓ Up to 97% thermal efficiency resulting in low energy expenditures
-  Up to 99% VOC destruction efficiency



PCC's RTO's are designed for low to high volume (1,000 to 300,000 scfm) air flows with high thermal and VOC destruction efficiencies. In many applications, the system will run in a self-sustaining mode whereby no additional fuel is required to destroy VOCs.

THE ENGINEERING BEHIND PCC's RTOs

PCC's systems achieve emission destruction through the process of high temperature thermal oxidation, utilizing the 3 T's of Destruction: Time, Temperature and Turbulence, at the proper oxygen level to convert the pollutants into carbon dioxide and water vapor.



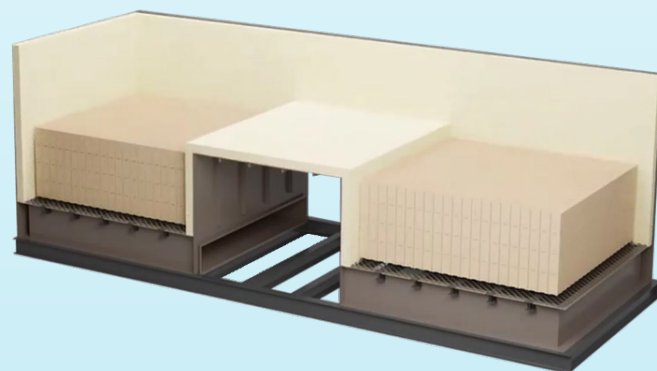
PCC's RTOs are designed to re-purpose the thermal energy generated during operation, reducing the energy consumption and operating costs.

Rigid, steel support beams are used to ensure the system is fully supported and will maintain structural rigidity over many years of service.

The Waste Gas plenums are fabricated from heavy gauge, sheet steel to ensure the integrity of the plenum.

Structural steel cross members are used to provide the foundation for the steel media bed supports. An open grid, bar grating and steel mesh support make up the media support platform. PCC's design facilitates ease of cleaning if the process contains condensables.

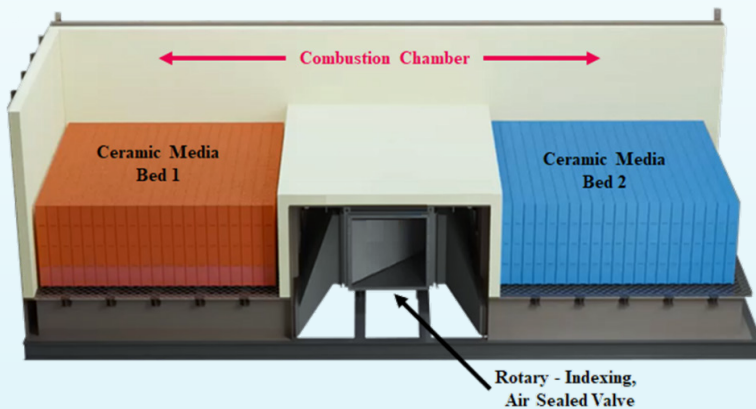
Heat capture and transfer is facilitated via either a Ceramic "Structured" Block Media or a ceramic saddle media. The design of the system, coupled with the media choice, yield up to 97% thermal efficiency at full flow. PCC utilizes a lightweight, ceramic fiber refractory module refractory lining.



PCC's unique Rotary-Indexing Valve is used to control the directional flow of the waste gas stream. The valve is designed utilizing a soft seal design configuration. This eliminates high wear areas while reducing the leakage to zero.

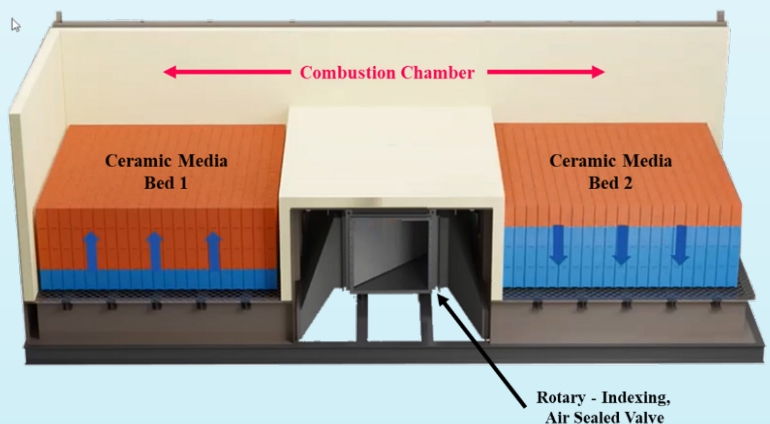
The valve employs an extremely "fast switch" (<0.3 seconds direction flow to directional flow) design that includes a Soft-close software to minimize maintenance requirement while maximizing the performance of the valve. Virtually zero leakage, results in a significant volume reduction associated with "Puff" (untreated air).

How PCC's RTO WORKS

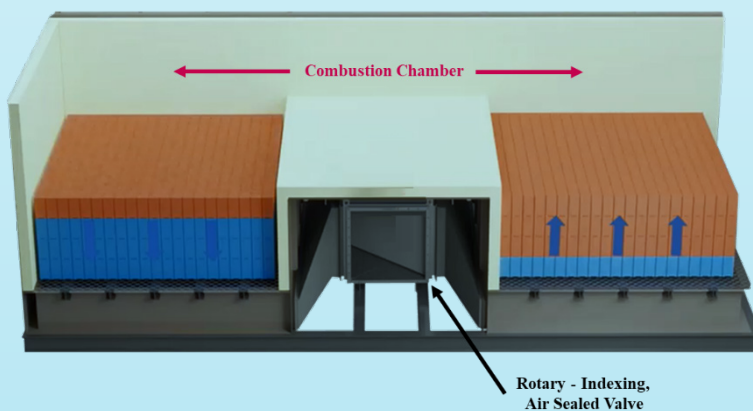


1. The ceramic, heat recovery bed 1 is preheated prior to the introduction of the waste stream into the system.
2. The waste gas enters bed 1, through the plenum located at the bottom of the bed. The waste stream passes "up through bed 1 and is preheated due to the thermal transfer of heat from the bed into the waste gas.

3. The waste stream then passes through the combustion chamber, where it is heated to the appropriate temperature to fully combust and destroy the waste stream compounds and then passes down through the ceramic media bed 2.
4. Heat is then transferred from the waste gas into the ceramic, heat recovery media in bed 2. Bed 2 is then heated to a predetermined temperature. The treated waste gas is then exhausted through the stack to the atmosphere.



5. The Rotary Indexing Valve engages diverting the direction of flow of the untreated waste stream. The waste stream now enters bed 2, is preheated, transfers through the combustion chamber and then exits through ceramic bed 1. Bed 1 is re-heated and the stream is then exhausted to the atmosphere through the stack.



6. The cycle repeats throughout the operation of the system.

For over 50 years, PCC has been providing solutions to our customers.

We put our experience to work for you by thoroughly understanding your process, helping to select the right equipment and optimizing the system's performance to maximize your investment.

With pollution of all types at the forefront of everyone's minds these days, we are more committed than ever to supplying a low emission, simple, reliable, energy-efficient and cost-effective means of cleaning tomorrow's air today.

RTO Benefits

- Global emission regulatory compliance – now and in the future.
- Lowest operating cost and lower CO₂ emissions
- Greatest reliability, lowest maintenance cost of any RTO
- Quick, 3-day installation
- Lowest pressure drop, highest thermal efficiency
- Operator friendly
- Proven leader in pollution equipment technology

RTO Features

- Up to 99% VOC destruction efficiency
- Up to 97% heat transfer efficiency
- PCC's Rotary Valve
- Completely modular
- Exclusive, light weight ceramic media
- State of the art controls



MISSION STATEMENT...PCC's mission is to apply our know-how with confidence to design, supply and service high-tech, energy-efficient, dependable combustion and pollution control systems that provide cost effective environmental solutions for our global customers.

We will work hard together to achieve mutually rewarding, long-term relationships with our clients and suppliers, and we will continuously develop new technologies to meet emerging market needs.

Our Core Values

- **Know-How** - Experienced, Knowledgeable & Competent - PCC's #1 Core Value
- **Hardworking** - Working Hard Together to Get the Job Done
- **Confidence** - Our Confidence in Our Abilities = Customer Confidence
- **Customer Focus** - Custom Design with a Friendly, Willing Spirit
- **Dependable** - Meeting Commitments to Our Customers & Owners

For over 50 years, Process Combustion Corporation (PCC) has designed, supplied & serviced combustion, heat transfer & pollution control systems worldwide. Headquartered in Pittsburgh, PA, USA; with offices in Beijing, China; London, England; and Mumbai, India. PCC is recognized as a global leader in pollution control systems. Our creative designs minimize system costs, especially energy consumption, while meeting environmental regulations. Our capabilities include:

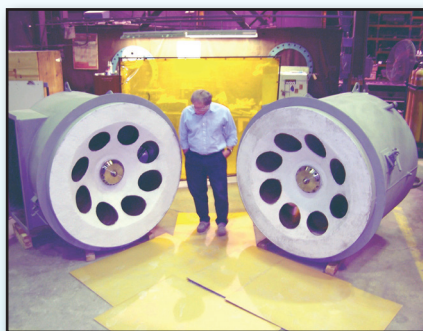


- **Thermal Oxidizer Systems**
- **Regenerative Thermal Oxidizers**
- **Flameless Thermal Oxidizers**
- **Bio-Oxidation Systems**
- **Wet Scrubbers**
- **Activated Carbon Adsorption**
- **Air Heaters**
- **Specialty Burners**
- **Specialized Combustion Systems**
- **Low NOx, SCR/SNCR Systems**
- **Landfill Gas Thermal Oxidizers**
- **Service & Installation**
- **Engineering Studies**
- **Turnkey Projects**



Located in the South Hills of Pittsburgh, PA, PCC's Administration, Sales and Engineering are housed in one location.

PCC has enjoyed successes working with the following companies (partial list) over the years. Our goal is always to be sure our customers are satisfied with quality, custom-designed and engineered, reliable products and services.



3M
Air Products & Chemicals
AK Steel
Albemarle
Albemarle Catalyst
Amsterdam
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AOC
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Omya, Inc.
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Seneca Landfill Gas
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Shanghai SECCO
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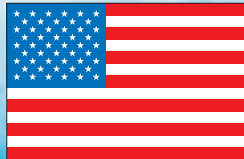
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Waak engineering
Waste
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Weyerhaeuser
Yantai Wanhua
Polyurethanes
Co. Ltd.



CALL US @ 412.655.0955



Representatives are located in major US Cities, Canada, Asia, and selected countries, visit www.pcc-group.com to find your local agent.



U.S. HEADQUARTERS

300 Weyman Road, Suite 400, Pittsburgh, PA 15236

Tel: (412) 655-0955; pcc@pcc-group.com; www.pcc-group.com



UNITED KINGDOM

Brunel Road, Rabans Lane, Aylesbury Bucks HP19 8TD

Tel: +44 (0) 1296 487171; Fax: +44 (0) 1296 43680



PCC ENVIRONMENTAL EQUIPMENT (BEIJING) CO., LTD.

**E-507, E-508, Fuli Morgan Center, No. 6 Taiping Street,
Xicheng District, Beijing, 100031 China**

Tel: +86 010 83131505; www.pccchina.cn



PROCESS COMBUSTION TECHNOLOGIES INDIA PVT LTD.

**Shiva Pharma Building - 7th Floor, Sarabhai Complex
Wadi Wadi, Vadodara, 390007 India**

Tel: +91 99208 08899; ssundaraju@pcc-group.com