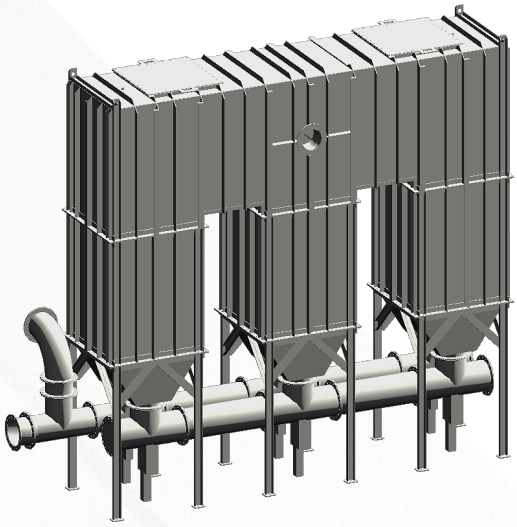
REGENERATIVE THERMAL OXIDIZERS

4700 South Garnett Road | Tulsa, OK 74146 USA | +1 (918) 258 8551 | zeeco.com

EFFICIENT EMISSIONS CONTROL

When compliance matters and efficiency counts, Zeeco's Regenerative Thermal Oxidizers (RTO) deliver. Engineered for industries handling dilute VOC emissions, our RTOs destroy pollutants with exceptional thermal efficiency, all while reducing operating costs and supporting environmental goals.



WHY CHOOSE AN RTO?

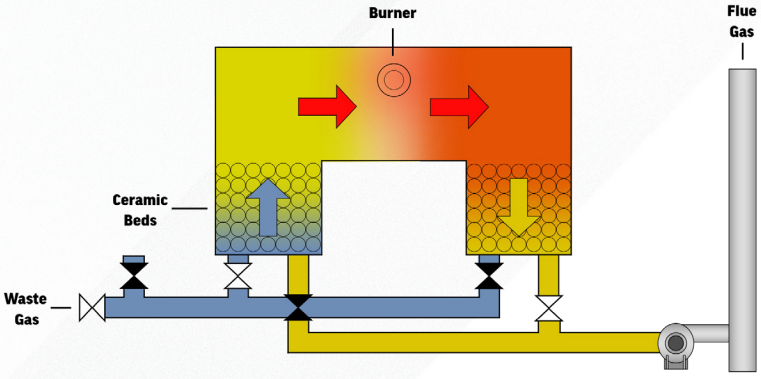
Regenerative Thermal Oxidizers are ideal for handling low-concentration, high-volume air streams where other combustion systems fall short. By capturing and reusing heat, RTOs reduce fuel needs while maintaining destruction removal efficiencies (DRE) of 99% or more.

KEY FEATURES AND BENEFITS:

- >99% Destruction Removal Efficiency
- 97% Thermal Energy Recovery (TER)
- Low NOx and CO Emissions Limits
- Low-Maintenance Design
- Advanced Controls
- Standardized Modular Configurations (1,000 –100,000 Nm^3/hr)
- Multi-chamber Designs
- Custom Configuration

HOW THEY WORK

Regenerative Thermal Oxidizers destroy VOCs by heating waste gases to 850°–1,150°C (1,562°–2,102°F) in a high-temperature combustion chamber. As the gases pass through ceramic beds before and after combustion, heat is absorbed and then transferred to incoming air, significantly reducing fuel use. A valve system periodically reverses the airflow to maintain up to 97% thermal energy recovery. Once stable temperatures are reached, autothermal operation can begin, eliminating the need for continuous fuel when VOC concentrations are above 3.5g/Nm^3, depending on waste gas composition.



INDUSTRIES THAT USE RTOs

- CHEMICAL & PETROCHEMICAL PLANTS
- PAINT, COATING, & PRINTING FACILITIES
- SEMICONDUCTOR & ELECTRONICS MANUFACTURING
- FOOD & BEVERAGE PROCESSSING
- PHARMACEUTICALS & HEALTHCARE PRODUCTION

VOC LOADING CASE STUDY

This table shows three different VOC loading cases using Zeeco's standard RTO system. At 0% methane, the RTO is designed to achieve the maximum TER, while only requiring 0.191 MMBtu/hr of additional heat to maintain operating temperatures. At 0.267% methane, the system is self-sustaining. At 25% LEL, we optimize the system by customizing the media design and utilizing a hot bypass. This allows Zeeco to offer the same size system for all cases.

Case	No VOC	Min. VOC (Autothermal)	Max. VOC
CH_4	0 mol%	0.267 mol%	2.79 mol%
Flowrate	2,200 Nm^3/hr	2,200 Nm^3/hr	2,200 Nm^3/hr
Dilution Air	0 Nm^3/hr	0 Nm^3/hr	2,700 Nm^3/hr
% LEL	0%	5.34%	25%
TER	97%	97%	80%
Hot Bypass	0%	0%	19.95%
Add. Heat Req'd	0.191 MMBtu/hr	0 MMBtu/hr	0 MMBtu/hr

OPTIONAL PACKAGED EQUIPMENT

- Hot Bypass
- System Bypass
- Platforms and Ladders
- Acid Gas Scrubbers
- Particulate Filtration
- Ducting
- Concentator
- Knockout Drum
- Selective Catalytic Reduction

GLOBAL FIELD SERVICES

- Installation
- Start-up and Commission
- Training
- Preventative Maintenance
- Equipment Inspections
- System Tuning and Optimization

PERFECTING RTO DESIGN & PERFORMANCE

Zeeco's Global Technology Center in Broken Arrow, Oklahoma, USA, is home to the world's largest industrial scale combustion and research testing facility. Here, we work directly with clients to perfect equipment designs to achieve or exceed the desired performance needs. Whether you need waste sample test data, stack monitoring, burner performance, equipment training, or something more, Zeeco has the tools and resources to deliver a comprehensive solution.

Zeeco Headquarters
22151 East 91st Street
Broken Arrow, OK 74014

Learn more at zeeco.com

sales@zeeco.com
+1 (918) 258 8551

Visit zeeco.com/contact for additional Global Location contact information

REGISTERED ISO 9001: 2015

Certification applies to Zeeco Headquarters.

GO ZEECO®

Choose to work with our dedicated, flexible, and innovative team, and you won't be disappointed. Call or email us today to request a quote or to learn more about our proprietary combustion systems.