Regenerative Thermal Oxidizer (RTO)

The Regenerative Thermal Oxidizer (RTO) destroys Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs) and odorous emissions that are often discharged from industrial or manufacturing processes. Anguil RTOs achieve emission destruction through the process of high temperature thermal oxidation, using the proper mix of temperature, residence time, turbulence and oxygen to convert pollutants into carbon dioxide and water vapor.

What makes the RTO the most widely used emission abatement technology is its ability to repurpose the thermal energy generated during operation to reduce operating costs and energy consumption of the system itself.

How the RTO Works

VOC and HAP laden process gas is either pushed or pulled into the inlet manifold of the oxidizer via a system fan. Flow control or poppet valves then direct this gas into energy recovery chambers where it is preheated. The process gas and contaminants are progressively heated in the ceramic media beds as they move toward the combustion chamber.

Once oxidized in the combustion chamber, the hot purified air releases thermal energy as it passes through the media bed in the outlet flow direction. The outlet bed is heated and the gas is cooled so that the outlet gas temperature is only slightly higher than the process inlet temperature. Poppet valves alternate the airflow direction into the media beds to maximize energy recovery within the oxidizer. The high energy recovery within these oxidizers reduces the auxiliary fuel requirement and saves operating cost. The Anguil oxidizer achieves high destruction efficiency and self-sustaining operation with no auxiliary fuel usage at low concentrations.

Features:

- Completely shop assembled, pre-wired and tested prior to shipment
- Skid mounted designs available for airflows up to 30,000 SCFM (47,313 Nm3/hr) and single unit systems up to 75,000 SCFM (118,283 Nm3/hr)
- Up to 25% Lower Explosive Limits (LEL) RTO operation while self-sustaining as low as 3% LEL, reducing the need for auxiliary fuel
- Low NOX burner designed to maintain temperature during full flow, no VOC process conditions
- Programmable Logic Controller (PLC) based controls with digital data recorder and remote telemetry
- Variable Frequency Drive (VFD) allows for high volumetric turn-down during idle or low process conditions
- Bake-out feature to remove organic particulate build up
- Hinged access doors for ease of maintenance
- Gas trains are designed to meet FM Global or any international certifications such as CSA, EN,
Available Options:

- Complete "turnkey" packages
- Two chamber and multi-bed configurations
- Forced or induced draft fan arrangements
- Supplemental Fuel Injection (SFI) for increased fuel efficiency, flameless thermal oxidation and ultra low NOx emissions
- Hot Side Bypass for high loading conditions
- Diverse material of construction options for high temperature or corrosive applications such as halogenated compounds
- Skid or remote mounted panels and enclosure rooms available for system controls
- Acid gasscrubber module with a completely integrated control system
- Alternative to add catalyst-Regenerative Catalytic Oxidizer (RCO)
- Primary or secondary heat and Energy Recovery Solutions
- Custom oxidizer design options to meet space restrictions

The Anguil RTO Advantage:

- Zero leakage, dual-disk Poppet valve design achieves 99+% destruction efficiency without a puff chamber or reliability concerns
- Regulatory Compliance Guaranteed
- System flexibility addresses a wide range of process conditions and easily controls multiple sources
- Customized ceramic media with true thermal energy recovery up to 97%
- Low system pressure drop reduces electrical consumption
- Competitive capital equipment cost
- Rapid installation time on most systems
- Small equipment footprint

Anguil's Cost Effective Design:

The RTO is designed as part of Anguil's broad line of technologically advanced, yet user-friendly, air pollution control products. Anguil's experience includes over 35 years of Regenerative, Recuperative, Catalytic and Direct-Fired oxidizer manufacturing, ranging in size from 100 to 500,000 SCFM (150-800,000 Nm3/hr). These vapor combustion technologies are used in conjunction with Emission Concentrator Systems, Scrubbers, Soil Remediation Equipment and Ceramic Filter Systems for industrial processes. Each product line represents value-engineered systems with emphasis on cost minimization. All systems are designed for seamless integration into the process, optimal performance and trouble-free operation.

Operating Cost Reduction Strategies:

- Primary or secondary heat and Energy Recovery Solutions
- Recirculation Systems
Oxidizer Service and Preventive Maintenance Evaluations (PME)
Recirculation Systems

The Anguil philosophy is to provide innovative air pollution control technologies including engineering, equipment manufacturing, installation, startup and post-sale service. Other benefits to working with Anguil:

24 Hour customer service and support
Multiple technology offerings ensure unbiased recommendations
Complete aftermarket sales department
Over 35 years of oxidizer manufacturing experience

Do you have a project where we can be of assistance? Contact Anguil or complete our Oxidizer Application Data Sheet for equipment recommendations, pricing and availability

8855 North 55th Street
Milwaukee, Wisconsin 53223
United States of America
Phone: 414-365-6400
Fax: 414-365-6410
www.anguil.com