



Oxi.X RV flameless RTO

Effective VOC control

UNIQUE REGENERATIVE HEAT EXCHANGE PRINCIPLE

The Dürr Oxi.X RV flameless regenerative thermal oxidizer (RTO) features an innovative, patented design that meets most environmental regulations with remarkable energy efficiency and design simplicity. The oxidation reactions, which purify the process exhaust, occur entirely within the heat exchange media. There is no open flame and therefore none of the unwanted by-products of flame combustion.

RTO PERFORMANCE

The system combines effective VOC control with exceptional energy efficiency as high as 98%. Even at very low VOC concentrations, the latent energy in the solvent is enough to sustain thorough oxidation. The absence of a burner and a classical combustion chamber, combined with its modular design, reduce capital and installation costs. In addition, the low-maintenance design provides years of trouble-free operation.

HIGHLIGHTS



[High VOC destruction](#)

[Thermal efficiencies of 95-98%](#)

[Modular design](#)

[Low maintenance & costs](#)

[Programmable logic control system monitoring](#)

Unique flameless operating principle

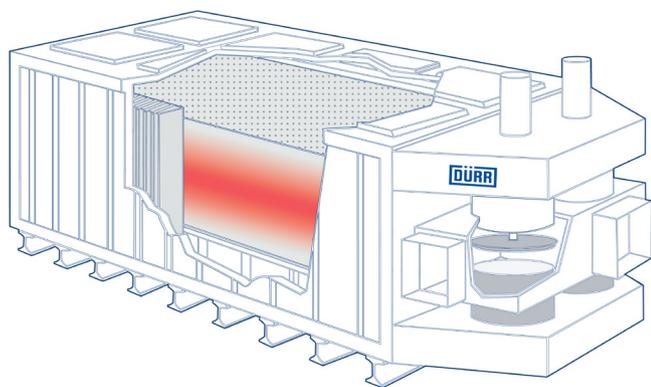
With no thermal NO_x and negligible CO generation

OPERATING PRINCIPLE

The unit consists of a single heat-transfer bed filled with ceramic media. Plenums are located above and below the bed and serve route for process or cleaned air. Pneumatically operated valves control the airflow direction from the forced draft fan. The dampers periodically switch position to reverse airflow and allow thermal regeneration of the bed. The VOC-laden process air passes through the porous ceramic heat-exchange media. As the solvents move through the inlet side of the bed, they get hot enough to undergo thorough oxidation to water vapor and carbon dioxide. The ceramic media on the outlet side of the bed recovers the energy cleaned air stream, which includes the thermal energy released during solvent oxidation. The Oxi.X RV is ideal for multiple-source installations with low- to mid-level solvent concentrations, such as package printing, coating, and odor destruction as well as in automotive industry.

REVERSED BED DIRECTION

Airflow direction through the media bed is periodically reversed (typically 180-300 seconds) to maintain the high heat exchanger efficiency of >98%. The system is so effective, it recovers almost all the heat required to sustain the temperature of the bed. The exhaust temperature is typically only 20 K-50 K (68°F to 122°F) higher than the incoming process air. Destruction efficiency can be increased with an optional residual air cleaner, which treats the brief emission peaks during valve movement, when the outlet direction is reversed.



Sectional view of Oxi.X RV



Flexible design of Oxi.X RV for different exhaust air flows

DEPENDABLE PERFORMANCE AND HIGH VOC DESTRUCTION

A programmable logic control (PLC) system regulates operation, ensuring dependable performance and easy operation while maximizing energy efficiency. The system achieves high VOC destruction rates with none of the by-products commonly associated with flame oxidation.

LOW INSTALLATION AND OPERATING COSTS

The compact modular design and high degree of pre-assembly minimize installation time and costs. After reaching initial operating conditions, the system requires almost no additional fuel to maintain oxidation temperatures. Heat recovery is a further possibility to reduce total plant energy costs.

LONG LIFE AND LOW MAINTENANCE

The Dürr Oxi.X RV requires little maintenance because it has few moving parts, and is manufactured with durable materials.