

# MILLENNIUM® Regenerative Thermal Oxidizer



*A Major Innovation in Low-Flow Regenerative Thermal Oxidation*



**R**egenerative Thermal Oxidizers (RTOs) offer distinct operating cost and performance advantages over other VOC control technologies in high flow process applications. The MILLENNIUM RTO redefines the economics of clean air compliance in low-flow applications. This unique, compact system can meet the needs of a wide variety of industrial applications at flows extending to 15,000 SCFM. The MILLENNIUM provides the efficiency, effectiveness and reliability of RTOs at very affordable capital, installation and operating costs.

*The bottom line is process knowledge*

# MILLENNIUM<sup>®</sup>

## Regenerative Thermal Oxidizer



*Preassembly and pretesting at the factory reduce the MILLENNIUM's installation and start-up times to a minimum*



*All units ship on commercial trucks*



*Installation and startup time is minimal. Turnkey installation available*

### Performance Benefits

- Energy efficient variable frequency drive (VFD)
- Low pressure drop ceramic media
- Simple, touch-screen controls
- Modem support
- Purge/idle makeup air damper

### Optional Equipment

- Recirculation systems
- Hot-side bypass
- Secondary heat recovery

### Compact, Cost-Effective Design

The system's integrated ductwork, individual poppet valves and unique, single-box configuration save on both capital and installation costs. The compact, space-saving unit offers considerable installation flexibility. Systems for either indoor or outdoor placement are available. The MILLENNIUM's relatively light weight easily permits rooftop placement.

### Money-Saving Media

The MILLENNIUM uses a cost-effective and robust ceramic heat exchange media. The media's exceptionally low resistance minimizes pressure drop. That means smooth operation and reduced electrical operating costs.

### Exceptional Fuel Efficiency

The system delivers thermal efficiencies of 95%. Even at relatively low solvent concentrations, the system can sustain thermal conditions with the heat released during VOC oxidation-requiring no additional fuel.

### Regulatory Compliance

The MILLENNIUM's small entrained volume holds VOC puffs to a minimum. The standard system can achieve 98% VOC destruction, easily meeting most clean air requirements. For higher cleanup rates, a VOC Capture System is available. This option can be ordered as original equipment, or field-installed at a later date.

### Fast, Simple Installation

The system is preassembled, prewired, prepiped and pretested at the factory. All units ship on commercial trucks. Installation and start-up time is kept to a minimum, typically requiring less than one week. Turnkey installations are available.

### Operating Reliability

The MILLENNIUM practically operates by itself. In standard configuration, the only moving parts are two reinforced poppet-style valves. An advanced electronic control system automatically tunes the system for high VOC destruction rates with maximum fuel efficiency. The system's simple design offers low maintenance costs.

### Advanced Telemetry

Each MILLENNIUM comes equipped with a modem for trending, monitoring and remote diagnostics. A wealth of data is available to the operator for analysis, troubleshooting and fuel optimization.

### Long-Lasting Performance

The system's rugged construction and reinforced body ensure years of reliable service. Special alloys provide superior resistance to embrittlement and cracking. Extra insulation helps control thermal stress while minimizing radiant heat loss.



*The MILLENNIUM's low capital, operating and maintenance costs provide economic advantage*



*The MILLENNIUM's small footprint allows the unit to be installed in tight spaces*



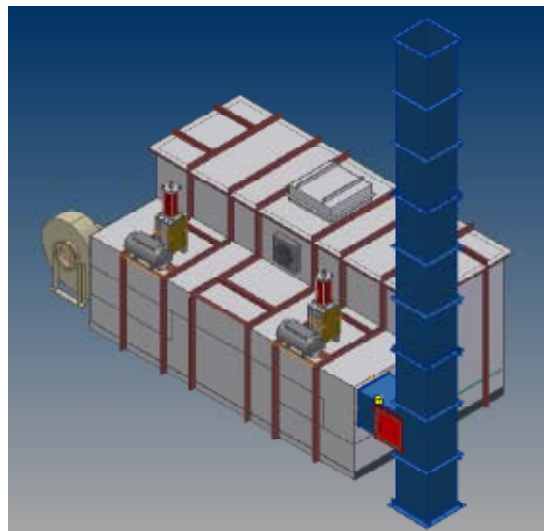
*Secondary heat recovery system returns energy to process or other plant energy requirements*

## Secondary Heat Recovery

MEGTEC offers secondary heat recovery for applications where higher solvent loading yields more heat than is needed to sustain oxidation. The recovered energy can be returned to process applications or used to reduce other plant energy requirements.

*The MILLENNIUM...  
the economic advantages of regenerative thermal oxidation for low-flow installations.*

## Other Options



Operating Specifications	
Flow capacity	up to 15,000 SCFM (23,700 Nm <sup>3</sup> /hr)
VOC Destruction	98-99%
Thermal Efficiency	95%
System Fan	Forced draft w/VFD
Optional Secondary Heat Recovery	Yes
Heat exchange media	Ceramic

*Six Sigma Quality...  
MEGTEC Systems uses DFSS  
(Design for Six Sigma) methodology  
to ensure the quality of our  
equipment and services*

# MILLENNIUM®

## Regenerative Thermal Oxidizer

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**www.megtec.com**  
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## MEGTEC Equipment Offerings



*Dryers and Ovens*

### DRYING & CONDITIONING

- Air flotation dryers
- Roll support dryers
- Thru-air dryers
- Catenary dryers
- Web cooling and conditioning systems
- Silicone Coaters



*Match Speed and Zero Speed Splicers/Pasters*

### ROLL & WEB HANDLING

- Match speed splicers/pasters
- Zero speed splicers/pasters
- Infeeds
- Roll handling systems
- Web guides



*Regenerative Thermal Oxidizer*

### VOC Abatement

- Integrated/separate oxidizers
- Regenerative thermal oxidizers (RTOs)
- Recuperative catalytic oxidizers
- Recuperative thermal oxidizers
- Biological treatment systems
- Solvent recovery & distillation systems

## MEGTEC Services

### EQUIPMENT REBUILDS/ OPTIMIZATION

- Dryer rebuilds
  - Controls upgrades
  - Burner/plenum retrofits
  - Air bar/nozzle upgrades
- Oxidizer rebuilds
  - Heat exchanger repair
  - Media replacement
  - Controls upgrades
- Splicer rebuilds
- Engineering studies
  - Mechanical/Electrical
  - CFD modeling
- In-house pilot line testing
- Equipment relocation

### CUSTOMER CARE SUPPORT

- 24/7 TeleCare hotline
- Customized customer care programs
- Customized training programs
- Regional service support

### ENERGY MANAGEMENT

- Energy audits and optimization
- Secondary and tertiary heat recovery
- Process & plant heating/cooling
- Air, water, steam, thermal oil



*Customer Care*

### REPLACEMENT PARTS/ UPGRADE KITS

- Dryers, oxidizers, splicers
- Replacement parts for equipment:
  - MEGTEC, TEC, Enkel/Amal, MEG, Wolverine, Thermo Wisconsin and others

### PREVENTIVE MAINTENANCE

- Equipment upgrades
- Thermocouples/instrumentation calibration
- Summary report
- Component photo library
- Thermal imaging

### INSTALLATION SERVICES

- Contractor supervision
- Turnkey installations
- Ductwork and equipment platforms
- Project management



*Engineered Aftermarket Solutions*

### CATALYST SALES & TESTING

- Bead and monolith retrofits to any catalytic oxidizer
- Complete analyses by in-house laboratory
- Periodic testing as required by MACT standards
- Disposal services

### ENVIRONMENTAL

#### COMPLIANCE & TESTING

- VOC air compliance
- assistance/FID testing
- EnviroMonitor® monitoring and reporting system

### THERMAL AIR MANAGEMENT

- Air flow dampers
- Burners and burner management systems
- Custom industrial air handling equipment