



THERMAL AND  
CATALYTIC OXIDIZERS  
GAS AND ELECTRIC FIRED SYSTEMS



**8,000 SCFM Catalytic Oxidizer with Preheat Exchanger**

**Hitemp Technology Corp**

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## Who came to their rescue?

- When Precision Castparts needed a 10,000 scfm catalytic oxidizer system operating in 5 weeks?
- When Il Stanley needed a 25,000 scfm catox system with preheat in 8 weeks?
- When a customer in Texas needed a 500 lb/hr rotary kiln operating in 8 weeks?
- When a coffee roaster need odor control for a roaster in 4 days?
- When lightning struck the control system at GAF Roofing Systems, stopping production, who replaced and reprogrammed the PLC and had them back in operation in 24 hrs?
- When Honeywell was losing 5% of their production time due to faulty pollution control equipment problems?

Hitemp Technology  
Because can we deliver

## Who offers a 5 year warrantee on HTT high efficiency thermal and low-temp catalytic oxidizer systems in a hurry?

With our 5 year warrantee, they will have no worries about dependability. We offer 100 to 50,000 scfm systems with destruction efficiencies of up to 99%+. Our proprietary low-temp catalyst is able to operate at 400-500 f. At this temperature, the operating costs are lower than RTO systems. And with our much lower initial costs, and faster delivery, we offer a much more attractive solution to your environmental problems. If you have a voc problem, we can help you solve it in the most economical way possible.

## Why call **HITEMP TECHNOLOGY**?

Free AAA priority delivery available  
Free on-site process evaluation  
Free permit application assistance  
Free on-site installation assistance  
Free on-site start-up  
Free training of operating personnel  
Free 5 year warranty

Hitemp technology exclusive design features:

All 0.25" steel plate design, not thin sheet metal.  
Easy access to all major components for repair and inspection  
Both horizontal and vertical orientations available  
Two-pass design for maximum turbulence and residence time  
All 2200 f ceramic fiber insulation (not oven insulation)  
70% efficient heat exchangers (by Exothermics Eclipse and Des Champs Labs)  
PLC controls will interface with plant systems  
5 year warrantee on HTT manufactured components

# HITEMP TECHNOLOGY

## TYPICAL HTT THERMAL AND CATALYTIC OXIDIZER SYSTEMS

HTT custom designs and builds both Thermal and Catox Incineration System. The systems shall raise the temperature of the exhaust gases to the required operating temperature using a preheat section combined with a gas or electric heating system. This will assure maximum destruction of the VOC in the exhaust gas. The system shall be packaged complete with natural gas burner, refractory lined chamber, and the required optional components as described below:

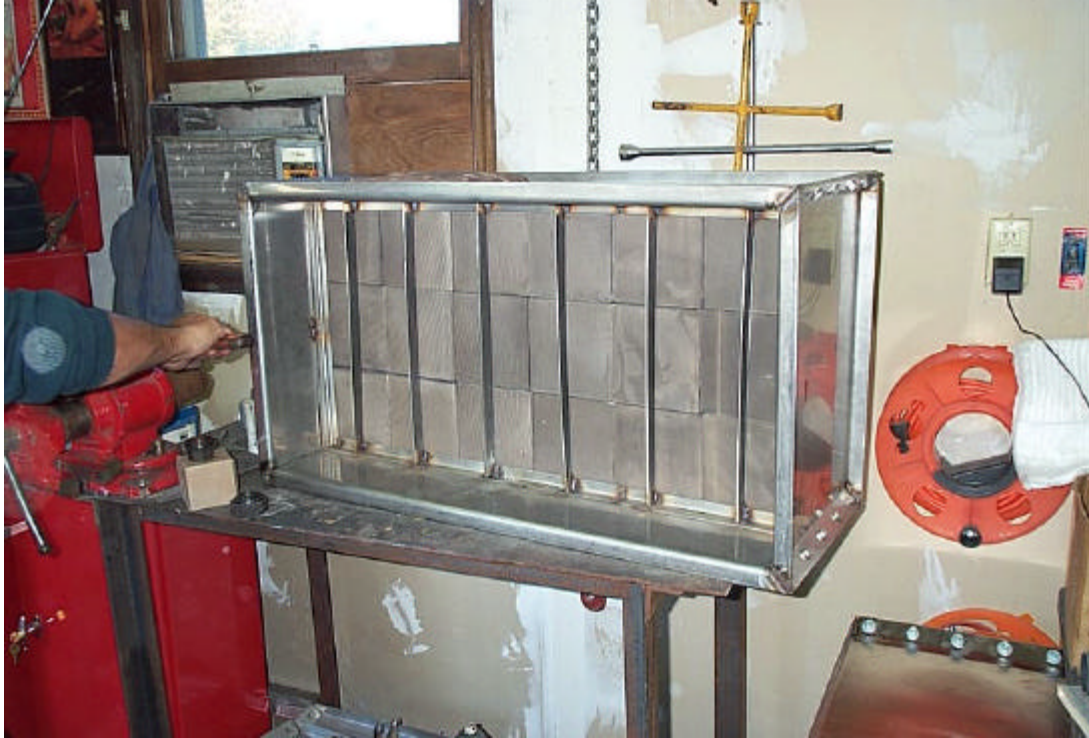


**10,000 SCFM Catalytic Oxidizer with Preheat Exchanger (5 Weeks Deliv.)**

## REFRACTORY CHAMBER

The chamber shall be constructed of carbon steel and lined with a combination of Ceramic Fiber and high temperature insulating materials. The refractory shall be installed with SS anchors to maintain integrity. Chamber shall be coated with an acid resistant epoxy coating.

The chamber shall be mounted on a channel steel skid with suitable cross bracing. Chamber shall include sight ports, thermal wells, and access door. Surfaces shall be solvent washed brushed and painted with one coat of a high temperature gray primer. Extra paint will be supplied for customers future touchup.



**3,000 SCFM Catalyst Module**

#### **CATALYST BED (CAT Option)**

Catalyst shall be supplied in modular sections in separate frames. The frames will be complete with mounting flanges and gaskets. The frames will bolt directly to a SS support grid inside the chamber of the retention zone. The EZ-Bole Catalyst modules may be installed externally for ease of removal and maintenance.

#### **PREHEAT EXCHANGER (HR Option)**

The system shall include an integral preheat exchanger for raising the temperature of the exhaust gases prior to entering the firing chamber. The exchanger shall be a plate type unit as manufactured by DES CHAMPS LABORATORIES, INC. Exchanger shall be complete with Computer runs shall be supplied.

#### **NATURAL GAS BURNER (G Option)**

The system shall include one (1) packaged gas fired burner, with secondary air combustion blower as described below, for raising the temperature of the gases to operating temperature as required. System shall be complete with flame safety, controls and safeties. A motorized modulating gas valve will regulate the burner output using digital controllers. Burner train components are supplied loose for field installation. Customer shall supply natural gas regulator.

#### **COMBUSTION AIR BLOWER (CAB Option)**

The system shall include one (1) dilution air blower for maintaining minimal air ratio and for controlling chamber temperature. The blower shall include a control damper and modulating actuator.



**2,000 SCFM Catalytic Oxidizer with Preheat Exchanger**

### **CONTROL OPERATION**

The operator shall start and stop the system from the main panel or from remote inputs. Startup shall prove the blower, start burner, prove set temperature, and signal to start fume injection. Blower pressure and the customer safety limits must be proven prior to burner ignition. Component failures will shut down system and alert the operator. Indicator lights will display fault.



**Typical HTT Control Panel**

The system shall be designed to operate with a variable waste gas input. Natural gas will be controlled to maintain a preset temperature. The system will be able to self regulate the fuel input to both maintain temperature and adjust conditions to match the flow and VOC concentration of the waste gas stream.



**25,000 SCFM Catalytic Oxidizer with preheat exchanger (8 Weeks Deliv.)**

### **CONTROLS**

The package shall include one (1) Hoffman Nema 4 control panel, for remote control and monitoring. The system shall maintain a preset temperature utilizing a type K T/C and 4-20 ma digital controllers. The system shall be monitored with Honeywell DC-3000 temperature controllers for system operation located in the main panel. All controls and safeties are operated from this panel. The controller will modulate the gas to maintain temperature. Contacts will be provided for remote start and stop, pressure limit switch, and for motor starter coil.

HTT personnel provide off site technical assistance for control changes at no charge during the life of the equipment. Travel and living expenses not included.



1000 SCFM THERMAL OXIDIZER – TRAILER MOUNTED

**GAS FIRED FM-G THERMAL OXIDIZER SYSTEM DESIGN DATA**

Flow Rate:	100	300	500	1000	1500	2000	3000	4000	SCFM
Inlet Temp:	70	70	70	70	70	70	70	70	F
Outlet Temp:	1400	1400	1400	1400	1400	1400	1400	1400	F
Max Burner Input:	1.0	1.0	1.0	2.0	3.0	4.0	6.0	8.0	MM Btu
Gas Press:	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	PSI
Refractory Lining:	6	6	6	6	6	6	6	6	In
Chamber Size:	6	20	30	60	90	120	180	240	Cu Ft
Residence Time:	1	1	1	1	1	1	1	1	Second
Destruction Eff.:	99	99	99	99	99	99	99	99	%
SHELL DIM. (OD)									
(Add 18" for panel)	36	36	36	48	48	48	60	60	Width
	42	42	42	54	54	66	72	72	Height
(Add 24" for burner)	48	60	120	96	120	120	120	144	Length
WEIGHT:	600	1000	1500	2000	2800	3400	5,000	8,000	LBS.



15,000 SCFM @ 2200F Thermal Oxidizer

## ENCLOSED FLARES AND THERMAL OXIDIZER SYSTEMS

### GAS FIRED FM-G THERMAL OXIDIZER SYSTEM DESIGN DATA

	5,000	10,000	15,000	20,000	SCFM
Flow Rate:	5,000	10,000	15,000	20,000	SCFM
Inlet Temp:	70	70	70	70	F
Outlet Temp:	1400	1400	1400	1400	F
Max Burner Input:	10.0	20.0	30.0	40.0	MM Btu
Gas Press:	0.5	0.5	0.5	0.5	PSI
Refractory Lining:		6	6	6	6 In
Chamber Size:	300	600	900	1,200	Cu Ft
Residence Time:	1	1	1	1	Second
Destruction Eff.:	99	99	99	99	%
SHELL DIM. (OD)	72	84	96	96	DIA.
	180	264	300	420	Length



**3000 SCFM EZ-Bolt CATALYTIC OXIDIZER SYSTEM**

**FM-CAT-G CATALYTIC OXYDIZER SYSTEM DESIGN DATA**

Flow Rate :	1000	1500	2000	3000	4000	5000	SCFM
Inlet Temp:	70	70	70	70	70	70	F
Stack Outlet Temp:	550+	550+	550+	550+	550+	550+	F
Catalyst Inlet Temp:	550	550	550	550	550	550	F
Catalyst (95%):	1	1.5	2	3	4	5	Cu. ft.
Catalyst (98%):	2	3	4	6	8	10	Cu. ft.
Destruction Eff.:	95	95	95	95	95	95	% Catalytic
Destruction Eff.:	98	98	98	98	98	98	% Catalytic

Burner Input:							
@0.0 PPM	0.6	0.9	1.08	1.65	2.16	3.3	MM Btu/Hr
@1000 PPM	0.6	0.9	1.08	1.65	2.16	3.3	MM Btu/Hr
Gas Press:	0.5	0.5	0.5	0.5	0.5	0.5	PSI
Refractory Lining:	6	6	6	6	6	6	In

<b>SHELL DIM. (OD)</b>							
(Add 18" for panel)	24	24	36	36	60	72	Width
	48	60	60	72	72	72	Height
	60	72	84	96	96	96	Length
<b>WEIGHT:</b>	600	1000	1500	2500	4000	5,000	LBS.



### 2000 SCFM System

#### FM-CAT-HR-G CATALYTIC SYSTEM DESIGN DATA

Flow Rate :	1000	1500	2000	3000	4000	5000	SCFM
Inlet Temp:	70	70	70	70	70	70	F
Stack Outlet Temp:	270	270	270	270	270	270	F
Catalyst Inlet Temp:	550	550	550	550	550	550	F
Catalyst (95%):	1	1.5	2	3	4	5	Cu. ft.
Catalyst (98%):	2	3	4	6	8	10	Cu. ft.
Destruction Eff.:	95	95	95	95	95	95	% Catalytic
Destruction Eff.:	98	98	98	98	98	98	% Catalytic

Burner Input:							
@0.0 PPM	0.6	0.9	1.08	1.65	2.16	3.3	MM Btu/Hr
@1000 PPM	0.0	0.0	0.0	0.0	0.0	0.0	MM Btu/Hr
Gas Press:	0.5	0.5	0.5	0.5	0.5	0.5	PSI
Refractory Lining:	6	6	6	6	6	6	In

#### SHELL DIM. (OD)

(Add 18" for panel)	36	36	48	48	60	72	Width
	48	60	60	72	72	72	Height
	96	96	120	120	120	120	Length
WEIGHT:	1000	1200	1800	2500	5000	7000	LBS.

## **TYPICAL HTT ELECTRIC CATALYTIC OXIDIZERS SYSTEMS**

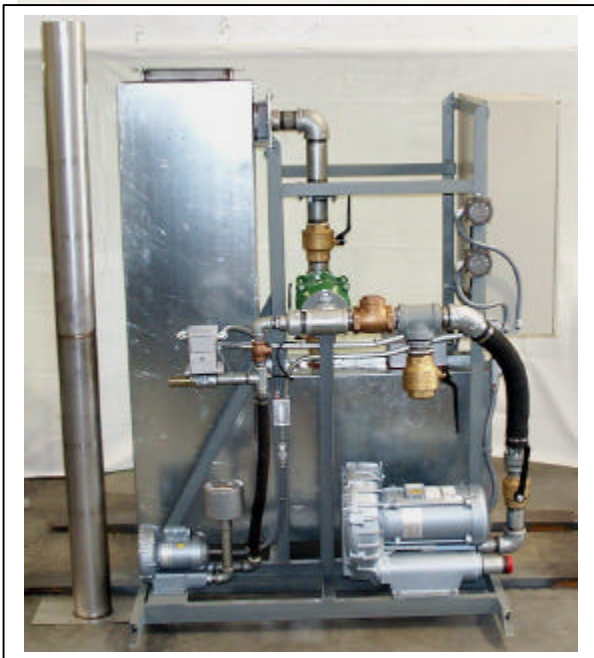
The HTT Electric Catalytic Oxidizer System shall raise the temperature of the exhaust gases to the required operating temperature for destruction in the catalyst module. This will assure maximum destruction of the VOC in the exhaust gas. The system shall be packaged complete with the required control components as described above and the additional components as described below:

### **STAINLESS CHAMBER**

The chamber shall be constructed of 304 SS steel and insulated with a combination of Ceramic Fiber and high temperature insulating materials. The chamber shall be mounted on a channel steel skid with suitable cross bracing. Chamber shall include thermal wells, and access panels.

### **PREHEAT EXCHANGER (HR)**

The system shall include an integral preheat exchanger for raising the temperature of the exhaust gases prior to entering the firing chamber. The exchanger shall be a plate type unit as manufactured by DES CHAMPS LABORATORIES, INC. Exchanger Computer runs shall be supplied.



## ELECTRIC CATALYTIC SYSTEM DESIGN DATA

Flow Rate:	100	200	300	600	SCFM
Waste Gas Temp:	100	100	100	100	F
Preheat Temp:	550	550	550	550	F
Catalyst inlet Temp:	550	550	550	550	F
Temp rise from Elec:	0	0	0	0	F
Temp rise from VOC:	200	200	200	200	F @ 8% LEL
Catalyst outlet Temp:	700	700	700	700	F
Est. Stack Temp:	250	250	250	250	F
Calc. Heat Input:					
0% LEL	3.3	6.6	9.9	20	KW
3% LEL	1.7	3.3	5.0	10	KW
6% LEL	0	0	0	0	KW
Destruction Eff:	98	98	98	98	%
Preheat Eff:	75	75	70	70	%
Catalyst Volume:	0.2	0.4	0.6	1.2	Cu. Ft.

**DELIVERY:** Shall be 8 weeks after the receipt of a valid purchase order, progress payments, and all required approvals.

**TERMS:** 33.3% with order, 33.3% when fabrication period is half way, 33.3% when fabrication is completed prior to shipment.

**Note:** Costs of any and all emissions testing are extra. Any additional equipment or controls required above those stated herein shall be provided at extra charge.

**INSTALLATION:** Installation will require running gas and utilities to unit from source. We suggest the gas train, supply duct, and main panel are located indoors, we will provide these components loose prior to shipment of the main unit to be installed prior to delivery of main units.

## TYPICAL HTT SOURCES OF SUPPLY

1. Refractory Materials
  - AP GREEN
  - CARBORUNDUM
  
2. System Controls
  - PLC - Allen-Bradley
  - SWITCHES - Square D, Allen-Bradley
  - RELAYS - Square D, 3PDT W\Neon indication
  - PANELS - Hoffman, NEMA 4
  - CONTROLLERS - Honeywell, UDC-3000
  
3. Heat Exchanger
  - DES CHAMPS LABORATORIES, INC. - 540-291-1111 - Mike Herwald
  
4. Catalyst Bed
  - METPRO CORP 215-723-6751 Tom Parvesee
  
5. Fabrication
  - Rose Corporation 610-376-5004
  - Dyna Steel 901-358-6231

Warranty: HTT shall warrant that the system described shall meet all pertinent emissions codes per the submitted documentation. HTT shall warrant that the equipment furnished shall be free of defects in materials and workmanship. This warranty shall cover parts manufactured by HTT for a period of FIVE YEARS. HTT shall limit warranties for parts not manufactured by HTT to those offered by the respective manufacturer. Defective components shall be repaired or replaced per the manufacturer's warranty to be installed by customers personnel.

Documentation: HTT shall provide operating and maintenance manuals that include operating instructions, component data, and drawings.

### \*SPECIAL NOTE

1. Customer shall be responsible for all emission testing, and site modifications, field ducting, piping and wiring, mounting and wiring of remote panels, monitoring equipment, and all starters, VFD, and 3 phase electrical work. No platform is provided for stack gas sampling.
2. HTT shall assist in the design and layout and also provide the time of an on site technician as required during system installation at no charge.
3. Unit is shipped Freight Allowed.
4. Customer shall be responsible for providing, duct and final connections, electric and the gas to the burner train, and plant air regulated as required. Remote panel will be provided for installation by others.

## HTT PARTIAL CUSTOMER REFERENCE

**TEXTILES COATED INTERNATIONAL**, Mr. John Tippet, Amherst, NH 03031, (603) 883-9932 [jtippet@textilescoated.com](mailto:jtippet@textilescoated.com). 2,500 SCFM FM-CAT system for process dryer oven system.

**Geneva Pharmaceuticals Technology Corporation**, Miss Dhrudi Thaker, Dayton, NJ 08810, 732-274-2400, [dhrudithaker@gx.novartids.com](mailto:dhrudithaker@gx.novartids.com), 5,000 FM-CAT-HR for process dryer oven system.

**OMEGA ENVIRONMENTAL**, Dallas, TX, Mr. Rockford Hill, 214-632-9238, Various thermal, catalytic, gas and electric oxidizers for soil and groundwater remediation projects.

**VANGUARD RESEARCH**, South Plainfield, NJ, Paul Schroek, 908-753-2770, 1000 lb./hr solid waste incinerator designed for hospital type waste with a high percentage of plastics. System includes batch type processing chamber, with moving hearth, lined SS stack, quencher, packed tower scrubber, ID blower, and computer controls.

**ABB LUMMUS GLOBAL**, Bloomfield, NJ 07003 Mr. Marvin Greene, 973-893-2747/2000 fax, 1000 SCFM thermal oxidizer with direct chemical vapor injection burner system.

**SPECIFIED FUELS & CHEMICALS**, Channelview, TX 77530-0421 281-457-2768/1469 fax, Jeff Gamez, 1500 SCFM catalytic oxidizer for specialty fuel and chemical plant.

**PRECISION CASTPARTS CORPORATION**, Portland, OR, 503-777-8173, Jim Allison, 10,000 SCFM VOC Catalytic Oxidizer for removal of VOC vapors generated in the ceramic casting dept, with 70% preheat exchanger, precious metal low-temp catalyst, 95% efficient. Delivery 5 weeks.

**CROLL REYNOLDS**, Fairfield, NJ, 908-232-4200, Phil Reynolds, 4 thermal oxidizers for VOC exhaust from carbon absorption system.

**JENSEN INDUSTRIES**, N. Haven, CT 06473, 203-239-2090, Mr. John Jacobs, 50 #/hr solid waste incineration system with afterburner.

**JOHNSON & JOHNSON**, E. Windsor, NJ, 609- 448-1697, Mr. Steve Breitkopf, (2) 500 SCFM thermal fume incineration systems for process exhaust.

**CARIBBEAN COFFEE COMPANY**, Santa Barbara, CA., 805-962-3201, John or Randy, 1000 SCFM Thermal Oxidizer system operating at 1200 F on coffee roaster.

**NEW HARMONY**, Philadelphia, PA, 215-925-6770, Mickey Simmons, 250 SCFM thermal Oxidizer system operating at 1200F on coffee roaster. Delivery 1 week.