

HTT CONVERSION OXIDIZERS

Well we have finally done it. We have the first conversion recuperative catalytic oxidizer that can operate with either gas or electric as the heating source. Some of our customers have rental units of both electric and gas fired systems. Would it be great if you could stock the core unit and then mount either a gas burner or an electric heating unit in 30 minutes?

TYPICAL HTT GAS/ELECTRIC CATOX SYSTEM

HTT shall supply one Fume Incineration System. The system shall use a gas burner or electric heaters to raise the temperature of the exhaust gases to the required operating temperature. This will assure maximum destruction of the VOC in the exhaust gas. The system shall be packaged complete with an integral preheat exchanger, Inconel sheath low watt density heating elements or gas burner, precious metal ceramic type catalyst module, refractory lined processing chamber, and the field installed stack.

CATOX SYSTEM CHAMBER

The Catox System shall be constructed of 304 stainless steel (Note: We use 316 L for HCl solvent applications) and insulated with a combination of Ceramic Fiber and high temperature insulating materials. The refractory shall be installed with SS anchors to maintain integrity. The lower chamber shall be constructed of carbon steel and coated with an acid resistant epoxy coating.



150 SCFM Catox Shell with EZ-Bolt Catalyst Module

CATALYST BED

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-Bolt Catalyst modules may be easily accessed for ease of removal and maintenance.



HTT CATALYST MODULE



REFRACTORY BASE

PREHEAT EXCHANGER

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 shell and tube type unit manufactured using easy clean 1 in alloy tubes.



ELECTRIC HEATING SYSTEM (E OPTION)

The system shall include a process air electric heater for raising the temperature of the gases to operating temp as required. System shall be complete with an Incolloy sheathed tubular heater rated at 10-20 watts/sq. in, mounted on a stainless flange with a weather-proof terminal housing, and screw type terminals.

NATURAL GAS BURNER (G Option)

The system is available with a packaged gas fired burner, 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 gas regulator.

HEATING SYSTEM CONVERION

The top of the system contains a 6" ps flanged connection. Select the heat source and bolt either the burner or the electric elements to this flange. Each heat source comes with its own panel which is mounted to the system base. Connect to the panel, you are ready. Removal and reinstallation takes less than 1 hour. It is faster to replace a troublesome component or panel with a new one than to do troubleshoot.

ID BLOWER (IDB 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.

FLAME ARRESTER (FA Option)

The system shall include one (1) flame arrester to prevent the gases and flame from backing up the supply duct.



500 SCFM ELECTRIC CATOX SYSTEM

DATA LOGGING (DL Option)

Package may include an optional Data Logging system as manufactured by HOBO and may be model H12-002 for a single channel type K TC. Other recorders shall be available that will accept T/C, MA, or DC inputs for required sensors.

AIR CONTROL TEE (T Option)

The system shall include one (1) waste gas diverting tee for closing off the stack during operation or for closing off the waste gas to the oxidizer when the system is not operational. Package shall include a spring return actuator that will divert up the stack during a power failure.



300 SCFM ELECTRIC CATOX SYSTEM

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.

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 of the waste gas stream.



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 heat input to maintain temperature. Contacts will be provided for remote start and stop, pressure limit switch, and for motor starter coil. PLC operation is optional.



ELECTRIC SYSTEM CONTROL

GAS FIRED SYSTEM CONTROLS



LOW PROFILE DESIGN



**ID BLOWER WITH DILUTION
FILTER AND
FLAME ARRESTOR**

ELECTRIC CATALYTIC SYSTEM DESIGN DATA

Flow Rate:	100	200	300	500	1000	1500	SCFM
Waste Gas Temp:	100	100	100	100	100	100	F
Preheat Temp:	415	415	415	415	415	415	F
Catalyst inlet Temp:	550	550	550	550	550	550	F
Temp rise from Elec:	135	135	135	135	135	135	F
Temp rise from VOC:	200	200	200	200	200	200	F @ 8% LEL
Catalyst outlet Temp:	700	700	700	700	700	700	F
Est. Stack Temp:	250	250	250	250	250	250	F
Calc. Heat Input:							
0% LEL	7.5	15	24	37.5	75	112	KW
3% LEL	4	8	16	20	40	60	KW
6% LEL	0	0	0	0	0	0	KW
Heating Element Rating	12	24	36	60	120	180	KW
Destruction Eff:	99	99	99	99	99	99	%
Preheat Eff:	70	70	70	70	70	70	%
Catalyst Volume:	0.5	0.5	1.0	1.5	2	3	Cu. Ft.

DELIVERY: Shall be 6-8 weeks after the receipt of a valid purchase order, progress payments, and all required approvals.

INSTALLATION: Installation will require running 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.