

SDTO Thermal Oxidizer

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SDTO Thermal Oxidizer with Heat Exchanger for Petro-Chemical process

SDTO Thermal Oxidizer is the direct thermal incineration of VOC (Volatile Organic Compound) or combustible gas from various kind of industrial process such as dryer, oven, and petro-chemical process.

As a specialized maker of thermal oxidizer, SEESCO supplies SDTO Thermal Oxidizer together with heat exchanger, burner system and control panel as a complete package.

Experienced engineering and know how applied to design for proper operating temperature, dwell time and turbulent for best performance and compact size of oxidizer and to minimize fuel energy consumption. High destruction efficiency will enough meet local emission requirement not only VOC but also CO.

Special control system and high quality materials will minimize thermal stress for long life and trouble free operation.

Modular designed construction simplifies installation and reducing time and cost of maintenance.

Exhaust energy from thermal oxidizer can be used as heat source of oven or dryer and of waste heat boiler. As a specialized maker of heater unit, SEESCO supplies heater unit together with using of heat exchanger for dry oven or for various process heater to save energy.

Application Industries

- Painting
- Coating
- Printing
- Curing
- Baking / Food process
- Phamaceutical
- Petro chemical process
- Waste treatment



SDTO Thermal Oxidizer with Heat Exchanger for Automobile paint dry oven
2 nd Heat Exchanger for a zone heating of dry oven

Specification

Maximum operating temperature	850 Deg.C
Fuel	LNG or Propane
Dwell time	0.5~1.0 sec
Nominal process stream DP across burner	2" W.C
Min. process stream DP across burner	0.5" W.C
Min. process stream O2 contents	13%
Flame supervision	UV Scanner
Burner turndown	Up to 20 : 1
Process stream turndown	2 : 1 with 2" W.C pressure drop 2.5 : 1 with 3" W.C pressure drop

Thermal Oxidizer Main

VOC Destruction efficiency up to 99%

Operating temperature between 700~815 deg.C depending on VOC or off gas to meet local emission regulation

CO destruction requires higher operating temperature and better mixing than of general VOC

Forced draft system for best destruction efficiency

Special mixing and turbulent of VOC effluent with burner combustion heat

Ceramic fiber internal insulation

Straight or "U" turn design possible depending on plant lay out

Material selection to minimize the effect of thermal stress for longer life

Design to absorb thermal expansion for trouble free operation.

Burner System

SEESCO Incino-Cone burner is specifically fittable for thermal oxidizer which do not require external combustion air. All the oxygen for combustion comes from the oxygen contained in most off gas streams.

Unique mixing cone design of SEESCO Incino-Cone burner mix off gas stream with burner heat very uniformly which shorten dwell time and can design reaction chamber compact.

SEESCO Incino-Cone burner is supplied with an insulated mounting plug that simplifies the installation.

Burner assembly consist of burner body, gas gun, gas pilot with electric spark ignitor and peep sight.

A complete Incino-Cone burner system normally include gas train, gas control valve and burner control panel.



SEESCO Incino-Cone Burner



Low NOx Burner available as OPTION
Official "Low NOx Test Report" on request

Heat Exchanger

Tubular type heat exchanger as standard for longer life.

Higher temperature material selection depending on operating condition such as CO destruction.

Maximize heat recovery efficiency for economic operation of thermal oxidizer.

Special design to absorb thermal expansion for maintenance free operation.



Tubular Type Heat Exchanger for SDTO Thermal Oxidizer

Related Control System

Cold By-Pass System

By-pass VOC flow to heat exchanger to limit inlet temperature to thermal oxidizer.
For variable and high energy VOC control.

Hot By-Pass System

To keep set point temperature at downstream of thermal oxidizer.
For use of thermal oxidizer exhaust energy to other process heating such as dry oven or SCR de-NOx system or waste heat boiler.

By-Pass "T" Damper System

By-pass off gas to atmosphere in case of shut down thermal oxidizer is required.

Idle/Purge Damper System

Start up or stand-by of thermal oxidizer with minimum volume of ambient air.

Capacity SDTO Thermal Oxidizer

SDTO-050	50 Nm3/Min	VOC Flow
SDTO-100	100 Nm3/Min	VOC Flow
SDTO-150	150 Nm3/Min	VOC Flow
SDTO-200	200 Nm3/Min	VOC Flow
SDTO-250	250 Nm3/Min	VOC Flow
SDTO-300	300 Nm3/Min	VOC Flow

Other capacity on request



SDTO Thermal Oxidizer with Heat Exchanger for LCD process

Survey Information

Kind of Process	_____
Off Gas Flow Volume	_____ Nm ³ /Min
Off Gas Temperature	_____ Deg.C
Off gas Energy	_____ Kcal/Hr
Off Gas Composition	_____ Volume %
	_____ Volume %
	_____ Volume %
	_____ Volume %
	_____ 100.0 Total
Oxygen Content in the Off Gas	_____ %
Kind of Fuel	_____ Natural Gas or Propane
Fuel Gas Pressure	_____ mm W.C
Hazadous Area	_____
Electric Power	_____ Volts
Control Power	_____ Volts
Frequency	_____ Hz