OUR GOAL - A POLLUTION-FREE ENVIRONMENT

Highly recommended for gas nitriding / nitrocarburizing furnaces, the Nitrex line of high temperature neutralizers is designed to eliminate residual ammonia and/or other pollutant gases and minimize NO_X emissions.

Nitrex Neutralizing System offers

- High efficiency
- Low operating costs
- Low NO_X
- Compliance with environmental regulations
- Improved furnace and process reliability
- Connectivity to furnace controls

Neutralizer model IN-150

DESIGN & OPERATION

The pollution control equipment is comprised of a neutralization chamber, burner, fuel gas train, air blower, and adaptive control system.

As effluent gases enter into the neutralizing chamber, the burner injects a metered mixture of natural gas and air and initiates combustion. The optimum temperature necessary to neutralize emitted gases is maintained automatically by the control system.

Depending on the composition of the effluent gas, the reaction may be either endothermic or exothermic. When the content of exothermally reacting gases (e.g. H_2) in the effluent atmosphere is low (e.g. in nitriding atmospheres diluted by N_2), a fuel gas is added to help maintain the adequate reaction temperature, typically in the 1652-2012 °F range (900-1100 °C) .

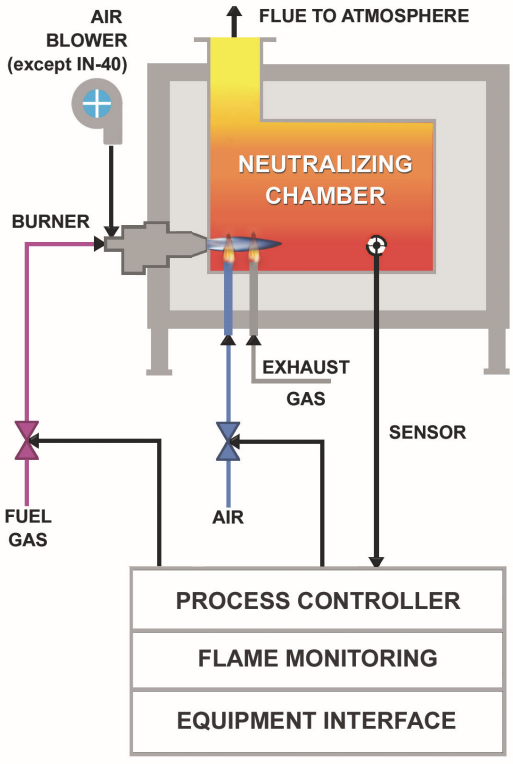
In the case of effluent gases containing a higher amount of H_2, the temperature of combustion rises. This reaction produces harmful NO_X. The unique advantage of Nitrex neutralizers is the adaptive control system which automatically adjusts the amount of air and fuel gas to the type of effluent gas, and thus prevents excessive NO_X emissions.

The control system is also equipped with an automatic flame monitoring system. Any malfunction of the neutralizer, like overheating or extinguishing of flame, automatically triggers an alarm signal which is relayed to the control system of the furnace equipment generating the effluent gases.

DIFFERENT SIZES FOR DIFFERENT FLOWS

Neutralizers are available in seven sizes (tied to nominal effluent atmosphere flows): 40, 75, 150, 300, 500, 750 and 1000 l/min.

The equipment can handle a wide range of atmospheres of diverse chemical compositions. For example, in a nitriding furnace, this would mean from lean (low ammonia) mixtures to 100% NH_3 at nominal flows of up to 1000 l/min.



Schematic of the neutralizing system

MODELS & SPECIFICATIONS

Green Solutions

Nitrex's line of gas neutralizers for eliminating pollutant effluent gases promotes environmental friendliness and is highly recommended for gas nitriding and nitrocarburizing furnaces using ammonia gas. These neutralizers can be coupled to any other equipment which emits polluting gases that crack at elevated temperatures. The line of gas neutralizers is available in the following sizes:

OPERATING CHARACTERISTICS*	IN-40	IN-75	IN-150	IN-300
Maximum process gas flow	40 l/min	75 l/min	150 l/min	300 l/min
Maximum thermal output	14 kW	22 kW	45 kW	82 kW
Fuel gas rated input	6 kW	16 kW	26 kW	42 kW
- idle input (average)	5 kW	12 kW	16 kW	26 kW
- minimum input	4 kW	4 kW	6 kW	10 kW
Maximum air draw	24 m^3/h	37 m^3/h	72 m^3/h	140 m^3/h
Operating temperature	900-1100 °C	900-1100 °C	900-1100 °C	900-1100 °C
Maximum temperature	1300 °C	1300 °C	1300 °C	1300 °C
Control voltage/frequency (VAC/50Hz)	110/220	110/220	110/220	110/220
Control power	500 VA	500 VA	500 VA	750 VA
Overall dimension (L x H x W) [mm]	893 x 1022 x 459	1740 x 1527 x 865	2027 x 1527 x 865	2086 x 1877 x 980

OPERATING CHARACTERISTICS*	IN-500	IN-750	IN-1000
Maximum process gas flow	500 l/min	750 l/min	1000 l/min
Maximum thermal output	132 kW	198 kW	264 kW
Fuel gas rated input	50 kW	85 kW	110 kW
- idle input (average)	30 kW	50 kW	65 kW
- minimum input	12 kW	18 kW	24 kW
Maximum air draw	245 m^3/h	365 m^3/h	500 m^3/h
Operating temperature	900-1100 °C	900-1100 °C	900-1100 °C
Maximum temperature	1300 °C	1300 °C	1300 °C
Control voltage/frequency (VAC/50Hz)	110/220	110/220	110/220
Control power	750 VA	1000 VA	1000 VA
Overall dimension (L x H x W) [mm]	2032 x 1632 x 1052	2180 x 1842 x 1052	2470 x 1842 x 1152

EMISSION	NH_3	NOx
Maximum	< 35 ppm	< 200 ppm

* Data for information purposes and subject to change.

SETTING THE STANDARD IN NITRIDING SINCE 1984

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