

SCAME GOING GREEN



A SUSTAINABLE SOLUTION FOR THE INNOVATIVE HEAT TREATMENT OF METALS

The environmental impact of using industrial furnaces in controlled atmosphere has always been significant and it is a considerable impact issue caused by:

- CO and CO₂ emissions
- high electrical consumption
- end of the life cycle of used materials.

The GREEN LINE furnaces manufactured by SCAME aim at the following improvements by means of innovative technologies:

- zero CO₂ and CO emissions
- electrical consumption reduced by 20%
- use of materials, 90% of which consists of renewable resources.



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ZERO CO AND CO₂ EMISSIONS

The endogas mixture used in traditional furnaces and produced by the catalysis of CH₄ or C₃H₈, is replaced inside SCAME furnaces by a native mixture (with optimized variable percentages depending on the process) made of Hydrogen and Nitrogen, both gases naturally found in the environment.

The emissions of SCAME therefore contain only H₂, N₂ and H₂O.

The use of electric heating to replace the traditional gas heating leads to an additional decrease of CO and CO₂ emissions, besides guaranteeing:

- a regulation of process temperatures by far more reliable and precise ($\pm 1^{\circ}\text{C}$)
- cost and maintenance's complexity reduction
- a higher intrinsic security condition.

REDUCTION OF ELECTRICAL CONSUMPTION

The reduction of electrical consumptions is achieved thanks:

- the use of systems that manage the electrical heating system, aimed at the highest control precision with consequent optimized consumption reduction
- the accurate and improved design of insulation systems, that ensures minimum dispersions and a temperatures reduction of the order of 97%
- the elimination of consumptions due to external devices like endogas generators
- the use of combined cooling air-liquid systems that ensure consumptions that are 30% lower with equal cooling capacity.

RENEWABLE MATERIALS

The environmental compatibility performance of SCAME furnaces is based on a careful analysis of the Life Cycle Assessment.

We have designed the machineries following this scientific method in order to:

- use of GREEN refractory products and insulation
- cut pollution of refractory products (generated by treated products) by means of muffles, allowing the total recycling as inert materials
- completely eliminate the presence of catalysts
- completely eliminate the presence of refractory fibres
- use only water-based paints on the supplied components.



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