Still one step ahead, ANTONINI elevates its avant-garde technologies

Thanks to long-term experience and high level know-how, Antonini can now realise any kind of development and installation of its solutions - leveraging excellent references while continuously investing in bettering its offer to clients as it commits to guaranteeing maximum performance.

The company's work and effort have always been defined by four key factors:

- Flexibility
- Customer focus
- State of the art design
- High-level equipment

As such, it's has been able to reach the following targets:

- Tailor made design
- Optimal energy efficiency
- Proper manufacture
- Reliability

With the last three decades seeing ANTONINI consistently integrate tradition and innovation, the Tuscany-based company has become a world leader in annealing, decorating and tempering lehrs ever since its establishment in the 1940s – making it synonymous today with quality, reliability and sustainability.

TUNNEL MODULES

Going into more depth about the technological aspects, one might say Antonini has consistently set itself apart from competitors regarding the quality of its manufactured goods - especially tunnel modules. These are categorised by the following trio of labels: Heating, Mix (Heating and Cooling) and Cooling. Each one's made of three main components, namely an interior tunnel module made mostly of stainless steel, an insulating material made of rock wool and an external metallic structure.

HEATING MODULES

Every heating module includes an air recirculation system (top ventilators) to ensure homogeneous, stable temperatures within the tunnel. Antonini's heating modules, such as its gas burners or electrical heaters, all excel thanks to their superb performance at every level of power. Here heating power is split appropriately along all heated zones of the tunnel - thereby allowing for a balanced distribution of temperatures during the processes of annealing, decoration or tempering.

MIX MODULES

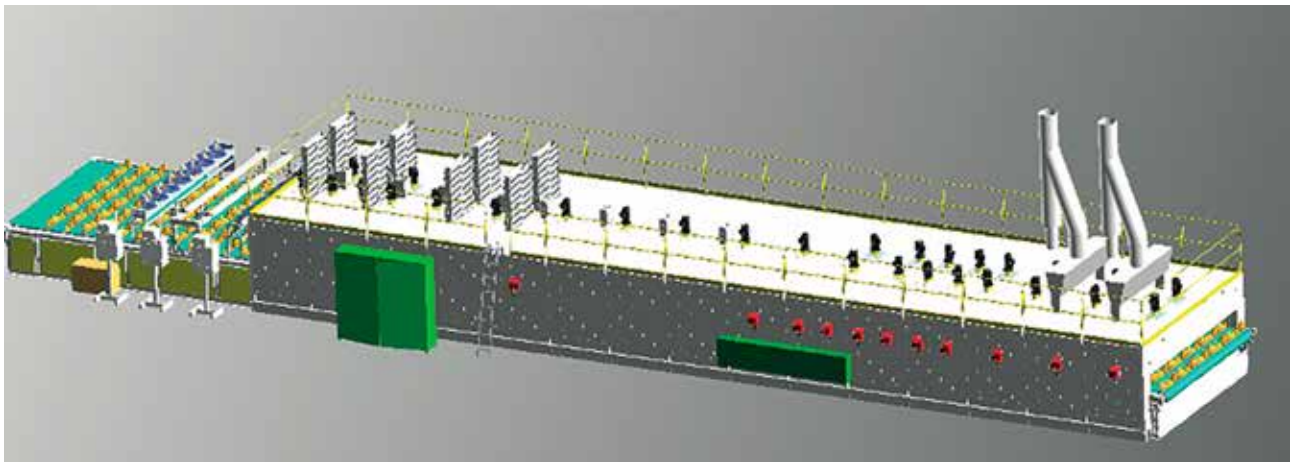
The mix-modules are well-equipped with the means of both heating and cooling. Proportional control valves allow for an external air inlet to the recirculation system. This, in turn, permits air in the tunnel to mix with the external fresh air without interfering with the temperature of the glassware.

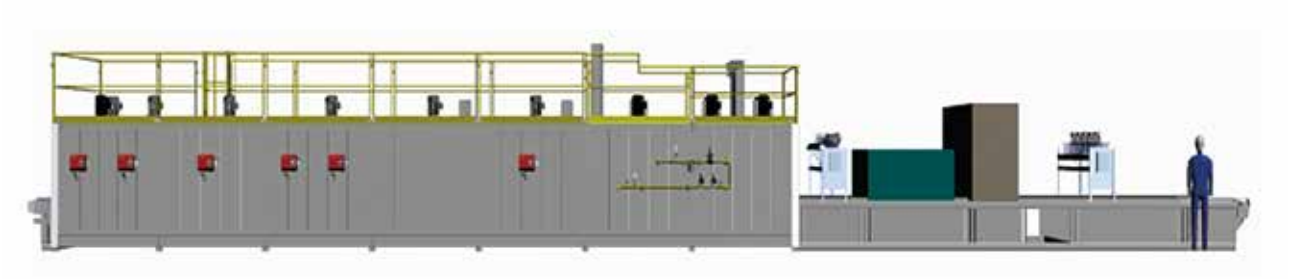
COOLING MODULES

In the last modules of the tunnel (the cooling area), a specialised chimney discharges any overpressure from hot air. Each module of the tunnel has its own air rebalancing 'air-drift control' system which assures independent, extended control of temperatures in all areas of the tunnel. This then guarantees constant set point temperature values throughout the manufacturing process.

Antonini's flexibility has allowed the company to develop specialised solutions that are aimed at reducing energy consumption by:

- Employing the most efficient electrical motors on the market;
- Introducing a smart management system applied to the motor of the top ventilator as well as all other motors installed on a lehr with a specific software interface to ensure intelligent energy usage;
- Substantial reduction of the power needed for air circulation systems to reduce shadow areas and increase production capacity;
- A reengineered top ventilator unit, which eliminates all unnecessary energy consumption caused by superfluous compo-





nents - a must now for all lehr supply;

- Reduction of energy waste due to localised overheating by employing multistage burners. This is achieved thanks to an array of burner heads - each of which functions with maximum energy efficiency;
- Electric power saving by using burners without a dedicated air-blower - all thanks to the use of gas pressure that will suck the necessary combustion air;
- A reduced component count that guarantees safety of the instalment and so minimises energy waste;
- Energy dispersion reduction given that specially-designed structures are employed that avoid energy loss of the glass containers while entering the lehr (less heat dispersion = less gas or electricity consumption).

As for the study of new product development, the latest 3D-modelling technology has been deployed for the design of highly-customised solutions. The company has also focused on planning and building 'dual fuel' or HYBRID lehrs over the past few years. This ensures greater flexibility, energy consumption optimization and use of the most local available fuel - allowing for individual fuel choices for value specific areas of the lehrs. Over these past three years, Antonini has manufactured and installed 330 Lehrs worldwide. Today the company is present in 94 countries - having already supplied over 2200 lehrs. ■