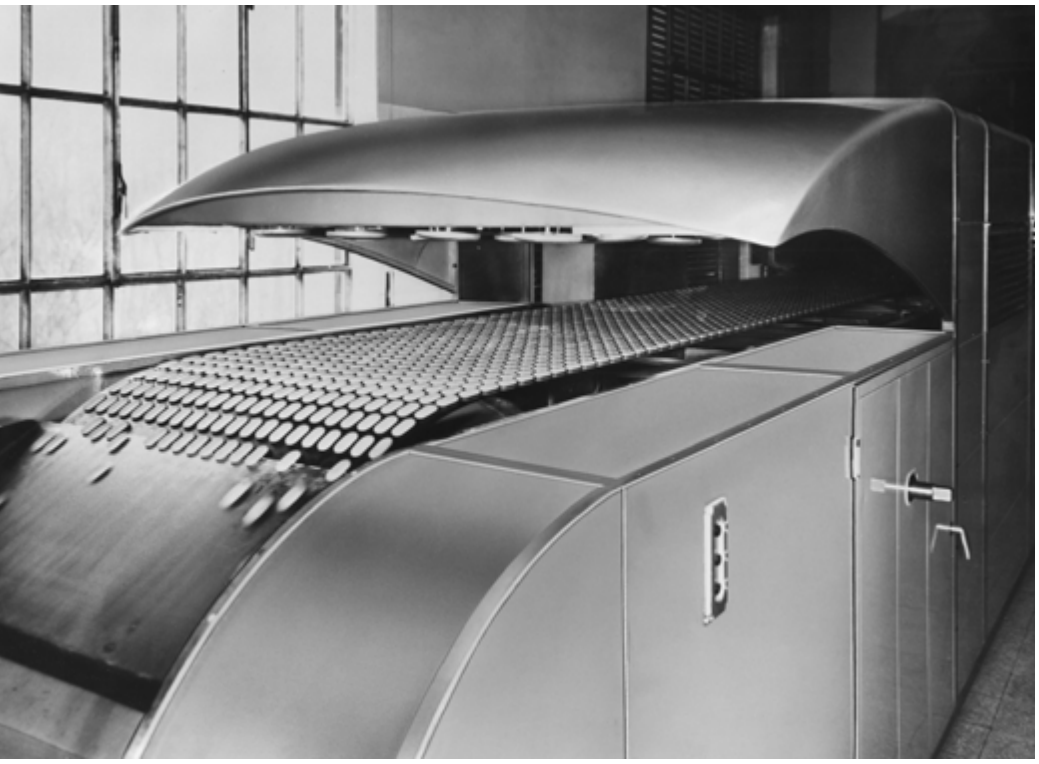
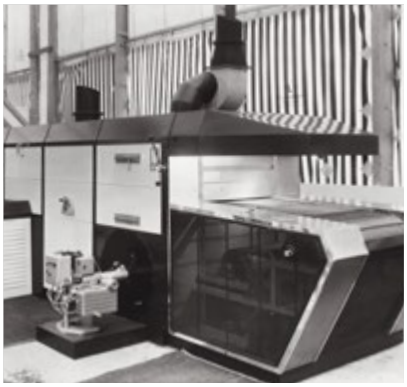
INDUSTRIAL OVENS

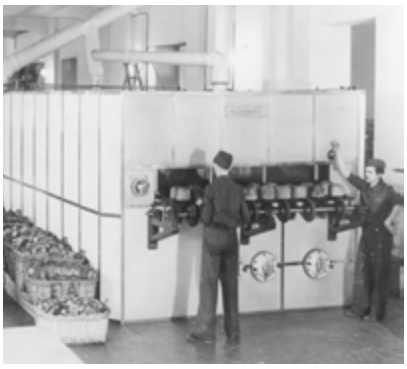
BISCUITS, CRACKERS AND SPONGE CAKES

POLIN
INDUSTRIAL LINE

POLIN SINCE 1929







OUR NAME WORLDWIDE

OUR LONG HISTORY BEGINS IN 1929. SINCE THEN INTRODUCING GREAT QUALITY PRODUCTS AND CONTINUOUS TECHNOLOGICAL INNOVATION HAVE DRIVEN OUR GROWTH AND MOTIVATED OUR EXPANSION.

Today our peculiarity is to propose solutions and to implement medium and large industrial systems for confectionery and bread. We design each stage of a production line: dough mixing, make-up, cooling, packaging and of course baking. We bring around the world the quality and the great performance of our technology with the goal of always assure maximum benefits to our Customer, matching its each special requirement in terms of production, timing and cost effective.

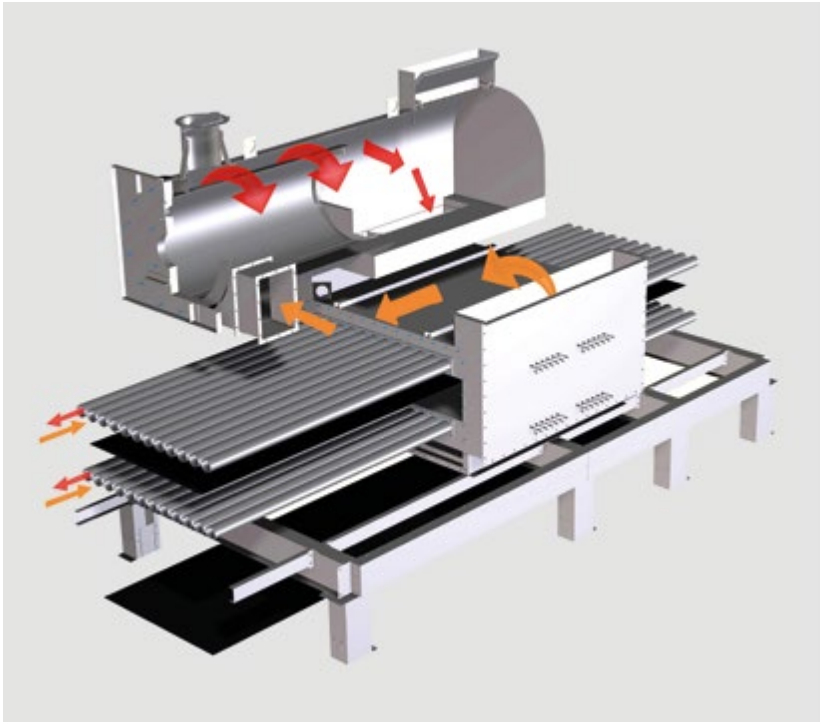
TUNNEL OVENS

MORE THAN 1,000 OVENS IN MORE THAN 100 COUNTRIES WORKING WIDTH'S FROM 600mm TO 1800mm

We have designed, manufactured and installed more than 1,000 continuous tunnel ovens of different type all around the world. Our plants are present in over 100 countries, baking crackers, biscuits and cookies, muffins, croissants, bread, pizza and other yeast products, such as "Pandoro", "Panettone".
Our deep experience of tunnel ovens of different type, allows us to design and implement optimum baking systems for each group of products.
Solutions we offer to our Customers foresee different heating systems: Cyclothermic, Convection, Direct Gas Fired, Electric, Hybrid.
Biscuit oven width can match Customer's needs, ranging between 600 and 1800 mm.

CYCLOTHERMIC

It is one of the most common ovens. The heating system is indirect, due to the tube bundles inside baking chamber (top & bottom) where combustion flue gases circulate. It can reach temperatures up to 280 °C, so it is suitable for baking any kind of biscuits and sponge dough also.
Cross temperature profile and vapours quantity inside baking chamber can be adjusted and managed.



FEATURES

BAKING CHAMBER

- Baking chamber divided into zones with independent temperature adjustment
- Independent adjustment of each radiant tube (heat flow control across the baking chamber)
- Top and bottom heat adjustment
- Vapour exhausting ducts with adjustable dampers and forced exhausting fans at automatic variable speed
- Stainless steel suction hoods on the two oven ends, with independent vapour extraction ventilator in the delivery end

CONSTRUCTION MATERIALS

- Baking chamber of alumined carbon steel
- High temperature resistant fans for fume flow
- High quality insulation materials for best reducing heat losses

FUNCTIONALITY

- Baking conveyor mechanical or pneumatic tensioning system to compensate thermal and mechanical expansion
- Baking conveyor automatic tracking system
- Baking chamber provided with inspection windows on the control side and cleaning hatches on opposite side (both sides on demand)
- Belt cleaning brushes / scrapers
- Emergency discharge device

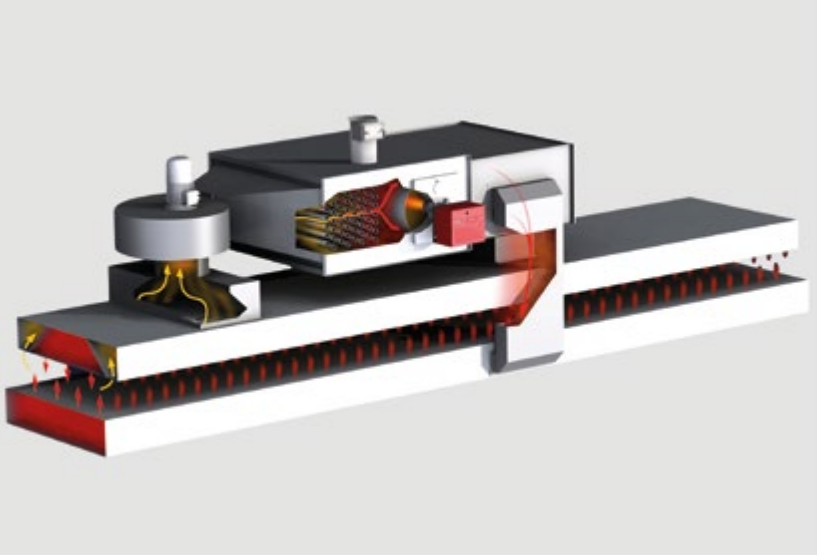
TOUCH SCREEN OPERATOR PANEL

ON DEMAND

- Double radiant tubes in vertical to increase heat exchange
- Turbulence units to increase thermal exchange and to grant uniform baking conditions, improving bake time and efficiency
- Stainless steel cladding
- Support of conveyor belt in baking chamber by rollers with outside bearing (always present on longer oven of 30m)
- Steel belt greasing unit and graphiting unit
- Motorized oven regulation damper

CONVECTION

This oven blows directly on the product “clean” air, just heated through by a flue gas/air heat exchanger. Suitable for baking any kind of biscuits, mainly in the last stage (drying), due to its levelling effect on product boundary conditions all across the section, in particular of the moisture content and of surface colouring.



FEATURES

BAKING CHAMBER

- Baking chamber divided into zones with independent temperature adjustment
- Top and bottom air flow
- Stainless steel suction hoods on the two oven ends, with independent vapour extraction ventilator in the delivery end
- Dumper for new dry air balance and humid air evacuation

CONSTRUCTION MATERIALS

- Baking chamber of alumined carbon steel
- Heat exchanger made of heat resistant stainless steel
- High temperature resistant fans
- High quality insulation materials for best reducing heat loss

FUNCTIONALITY

- Adjustable heated air flow rate by inverter
- Baking conveyor mechanical or pneumatic tensioning system to compensate thermal and mechanical expansion
- Baking conveyor automatic tracking system
- Baking chamber provided with inspection windows on the control side and cleaning hatches on opposite side (both sides on demand)
- Belt cleaning brushes / scrapers
- Emergency discharge device

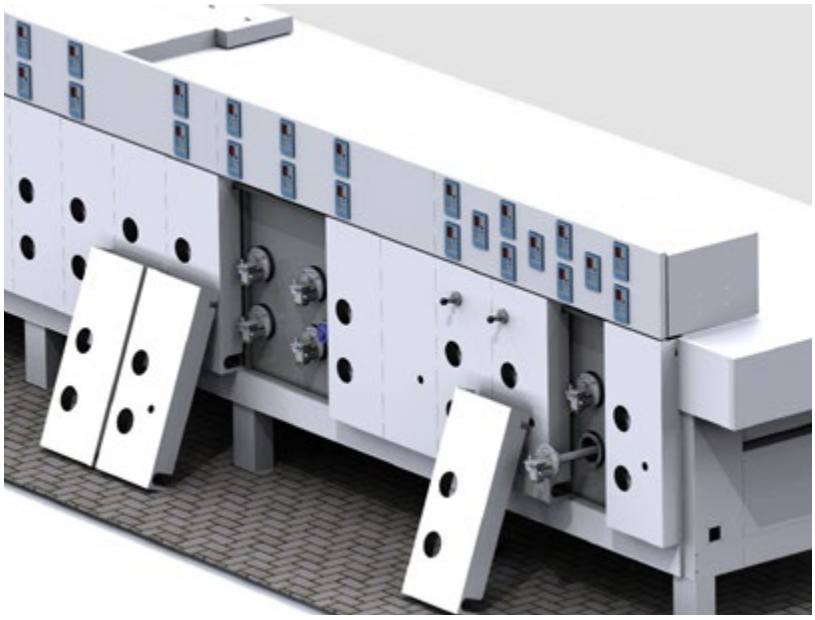
TOUCH SCREEN OPERATOR PANEL

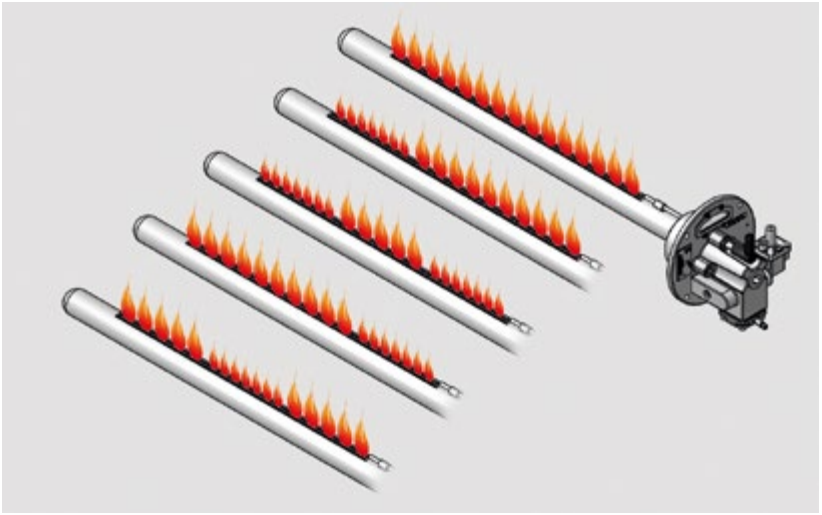
ON DEMAND

- Stainless steel cladding
- Support of conveyor belt in baking chamber by rollers with outside bearing (always present on longer oven of 30m)
- Steel belt greasing unit and graphiting unit
- Motorized oven regulation dampers

DIRECT GAS FIRED

The direct gas fired oven can reach temperatures of 350 °C and more, so it is especially suitable for baking crackers and special products.
The ribbon burners inside the baking chamber and their freely distribution all along the zone allow better management of the lengthwise baking profile.





FEATURES

BAKING CHAMBER

- Baking chamber divided into zones with independent temperature adjustment
- Electronic control of each burner by dedicated single microprocessor units
- Top and bottom heat adjustment
- Zero gas pressure burner system connected to a self-modulating flow and pressure of the air from the combustion air fan stations placed along the oven
- Stainless steel suction hoods on the two oven ends, with independent vapour extraction ventilator in the delivery end
- Vapour exhausting ducts with adjustable dampers and forced exhausting fans at automatic variable speed

CONSTRUCTION MATERIALS

- Baking chamber of alumined carbon steel
- High quality insulation materials for best reducing heat loss

FUNCTIONALITY

- Baking conveyor mechanical or pneumatic tensioning system to compensate thermal and mechanical expansion
- Baking conveyor automatic tracking system
- Baking chamber provided with inspection windows on the control side and cleaning hatches on opposite side (both sides on demand)
- Belt cleaning brushes / scrapers
- Emergency discharge device

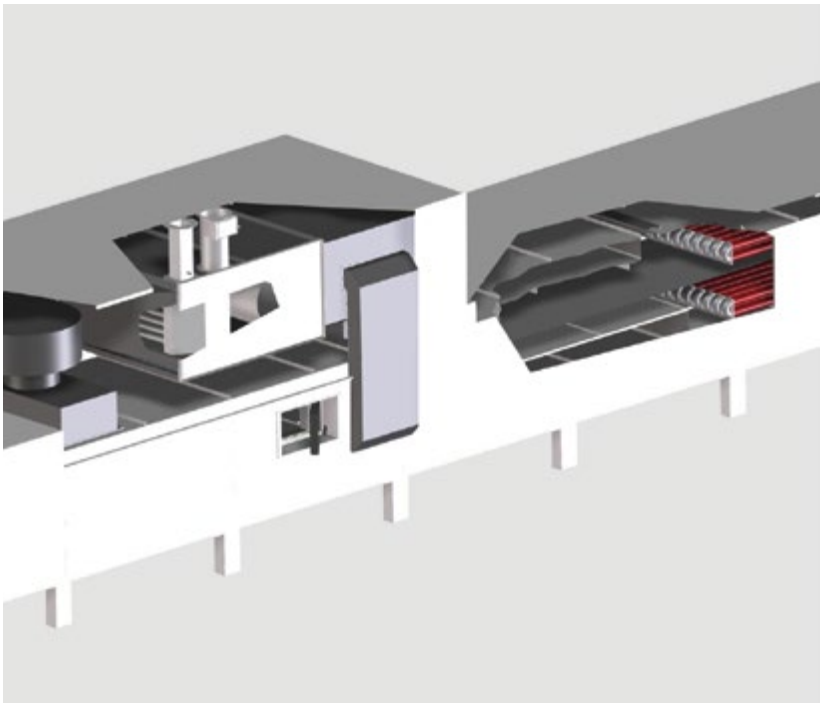
TOUCH SCREEN OPERATOR PANEL

ON DEMAND

- Baking chamber of stainless steel for special products
- Stainless steel cladding
- Support of conveyor belt in baking chamber by rollers with outside bearing (always present on longer oven of 30m)
- Steel belt greasing unit and graphiting unit
- Conveyor preheating
- Motorized oven regulation dampers

HYBRID

The hybrid oven put one after another different oven sections; most common are “direct gas fired plus convection”, direct gas fired plus cyclothermic”, “cyclothermic plus convection”. Such a configuration combines the peculiar characteristics of each oven type, and allows an adequate approximation of optimal baking parameters for each product, so all the chemical/physical transformations will occur at the moment and at the conditions as better as possible.



FEATURES

BAKING CHAMBER

- Baking chamber divided into zones with independent temperature adjustment
- Top and bottom heat adjustment
- Stainless steel suction hoods on the two oven ends, with independent vapour extraction ventilator in the delivery end
- Vapour exhausting ducts with adjustable dampers and forced exhausting fans at automatic variable speed

CONSTRUCTION MATERIALS

- Combustion chamber in special steel, high temperature resistant, with safety hatches
- Backing chambers of alumined carbon steel
- High temperature resistant fan for fume flow
- High quality insulation materials for best reducing heat loss

FUNCTIONALITY

- Baking conveyor mechanical or pneumatic tensioning system to compensate thermal and mechanical expansion
- Baking conveyor automatic tracking system
- Baking chamber provided with inspection windows on the control side and cleaning hatches on opposite side (both sides on demand)
- Emergency discharge device

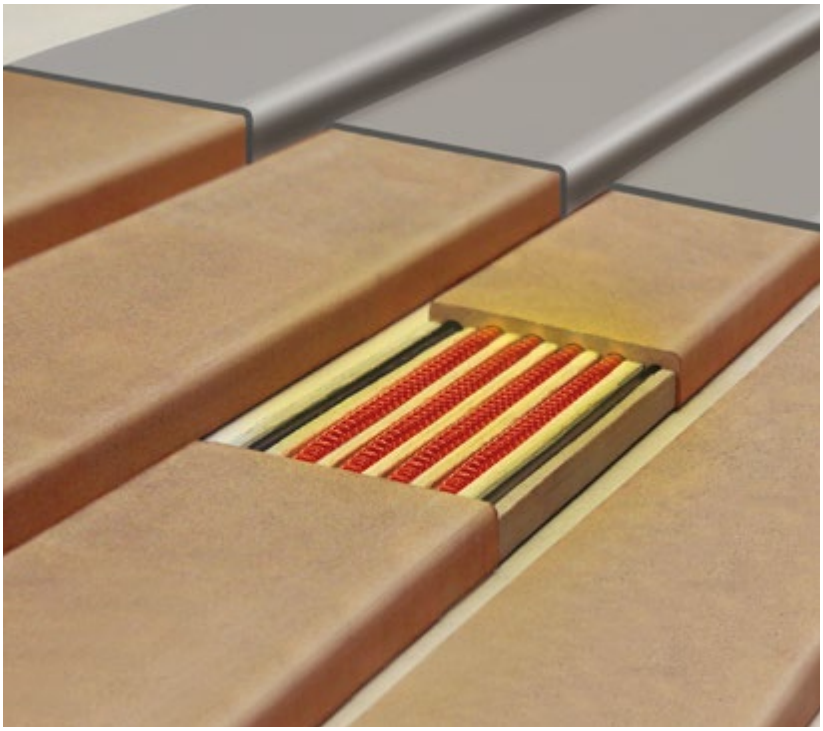
TOUCH SCREEN OPERATOR PANEL

ON DEMAND

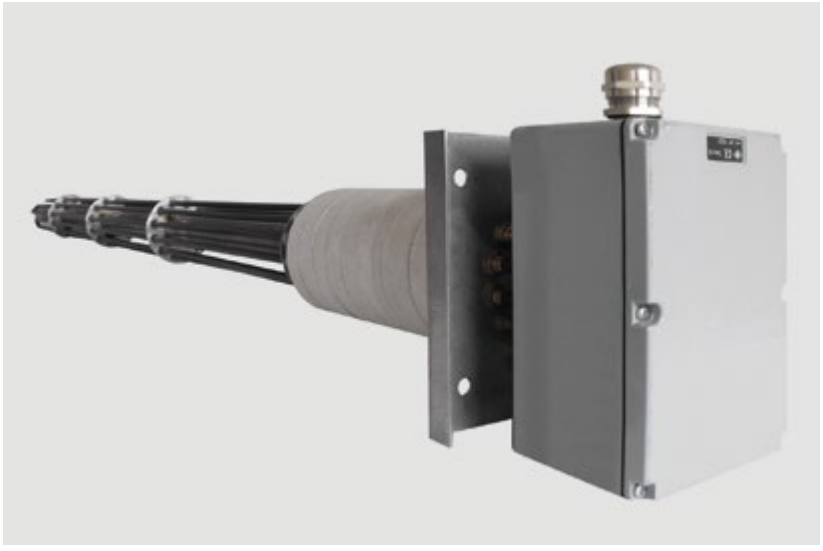
- Baking chamber of stainless steel for special products
- Stainless steel cladding
- Support of conveyor belt in baking chamber by rollers with outside bearing (always present on longer oven of 30m)
- Steel belt greasing unit and graphiting unit
- Conveyor belt preheating
- Motorized oven regulation dampers

ELECTRIC

This kind of oven offers all advantages of the direct gas fired oven, giving in addition the possibility to manage the vapours presence and quantity inside the baking chamber, like in the cyclothermic oven.



Flat ceramic heaters



Ribbon heaters

FEATURES

BAKING CHAMBER

- Baking chamber divided into zones with independent temperature adjustment
- Top and bottom heat adjustment
- Stainless steel suction hoods on the two oven ends, with independent vapour extraction ventilator in the delivery end
- Vapour exhausting ducts with adjustable dampers and forced exhausting fans at automatic variable speed

CONSTRUCTION MATERIALS

- Baking chamber of alumined carbon steel
- Baking chamber of stainless steel for special products
- High quality insulation materials for best reducing heat loss

FUNCTIONALITY

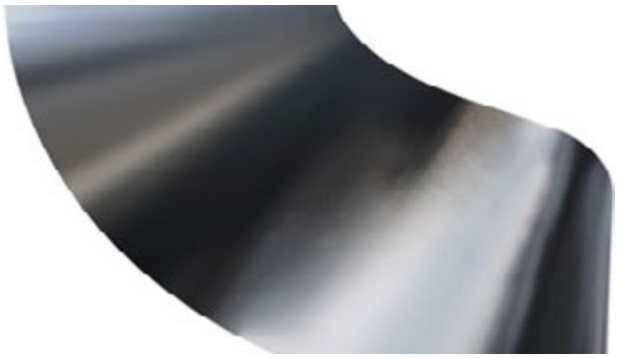
- Baking conveyor mechanical or pneumatic tensioning system to compensate thermal and mechanical expansion
- Baking conveyor automatic tracking system
- Baking chamber provided with inspection windows on the control side and cleaning hatches on opposite side (both sides on demand)
- Belt cleaning brushes / scrapers
- Emergency discharge device

TOUCH SCREEN OPERATOR PANEL

ON DEMAND

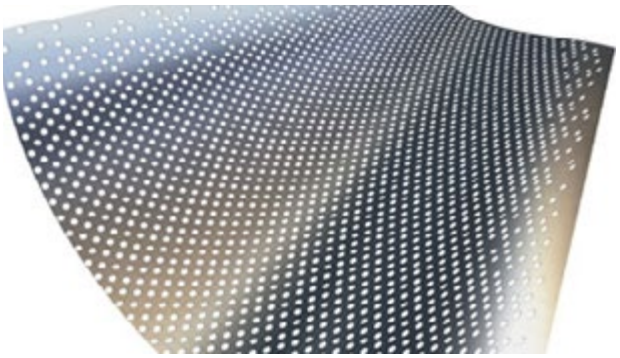
- Conveyor band preheating
- Turbulence units to increase thermal exchange and to grant uniform baking conditions, improving bake time and effciency
- Stainless steel cladding
- Support of conveyor belt in baking chamber by rollers with outside bearing (always present on longer oven of 30m)
- Steel belt greasing unit and graphiting unit
- Motorized oven regulation damper

BAKING CONVEYORS



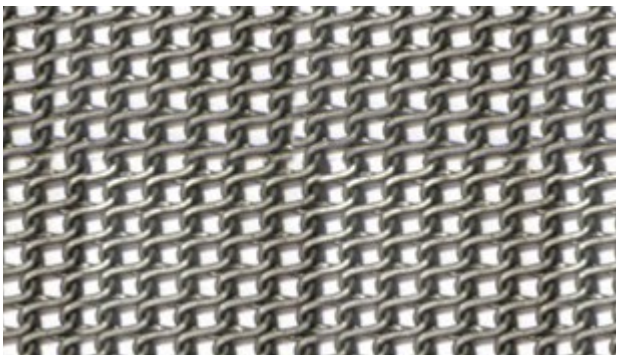
SOLID STEEL BELT

For rotary moulded soft biscuits and deposited wire-cut cookies, layer cakes. Up to 1.500 mm width.



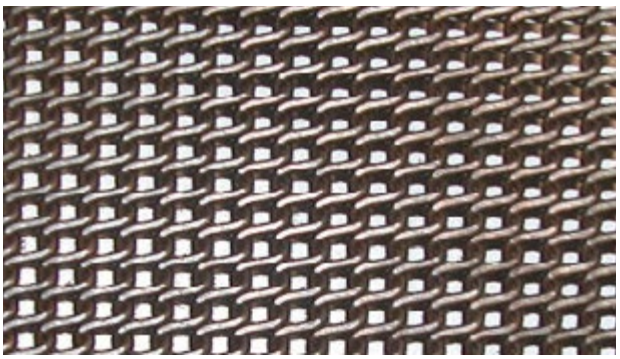
PERFORATED STEEL BELT

For rotary moulded soft biscuits and deposited wire-cut cookies, layer cakes. Up to 1.500 mm width.



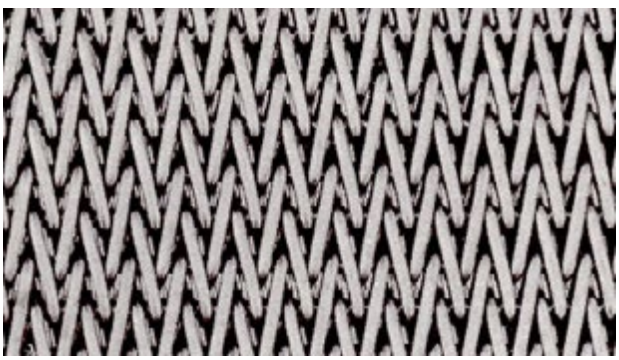
LIGHT WIRE-MESH

For soft and hard sweet biscuit. Up to 1.800 mm width.



MEDIUM WIRE-MESH FOR BISCUITS

For soft and hard sweet biscuit and for particular snack crackers. Up to 1.800 mm width.



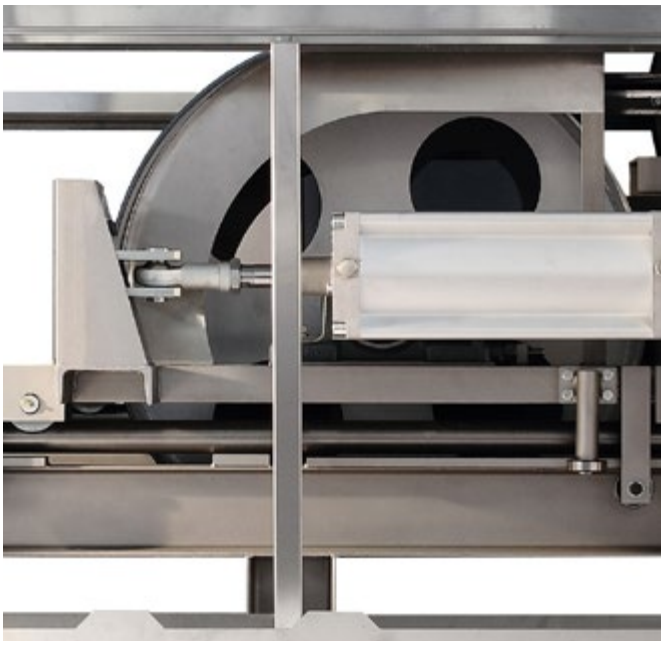
MEDIUM WIRE-MESH

For soft and hard sweet biscuits and snack cracker. Up to 1.800 mm width.

HEAVY WIRE-MESH

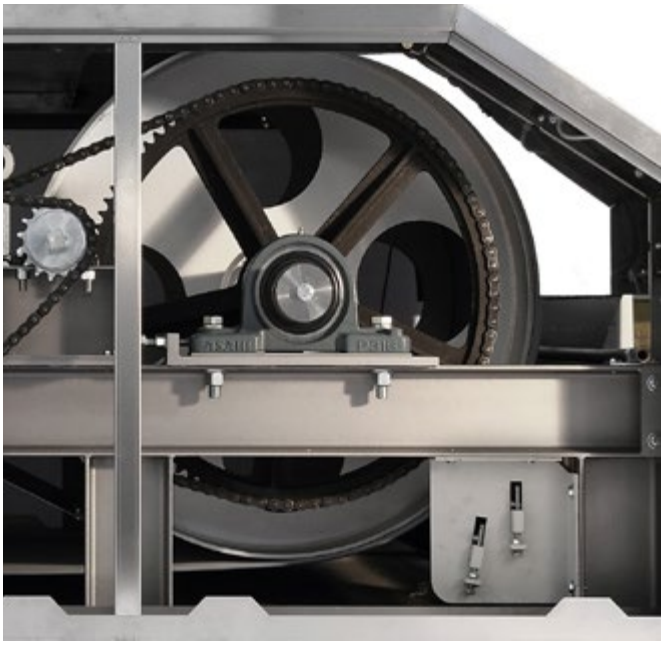
For cream crackers and soda crackers. Up to 1.800 mm width.

TERMINALS



FEED END

Tensioning station, that provides an even tension to the baking band and ensures troublefree function of the band under varying temperature conditions.
Oven band tension is applied by a couple of pneumatic cylinders or by a set of springs (for oven less than 30 m long) that moves the driven drum on a gear-rack system on both sides, assuring the perfect perpendicularity of the drum axis in respect of the oven axis.
In case of malfunction there is an acoustic alarm and the operator panel will display it.
Driven drum of 1.000 mm diameter for any oven.
Equipped with an automatic built-in greasing system for steel belts.



DELIVERY END

Drive station by means of a frequency-controlled infinitely variable gear motor, with a special driving architecture by direct gear-boxes and chains to achieve a smooth run of the conveyor band in any condition.
Equipped with manual discharge device to move out the product from the baking chamber in case of power failure.
Products are released from the baking band by a scraper and are fed to the Take-off conveyor, that has a reject point of the product not to be processed over, equipped with a container undereath or an orthogonal conveyor to collect the scraps.
Drive drum of 1.000 mm diameter for any oven, to achieve a perfect running of the conveyor bands.

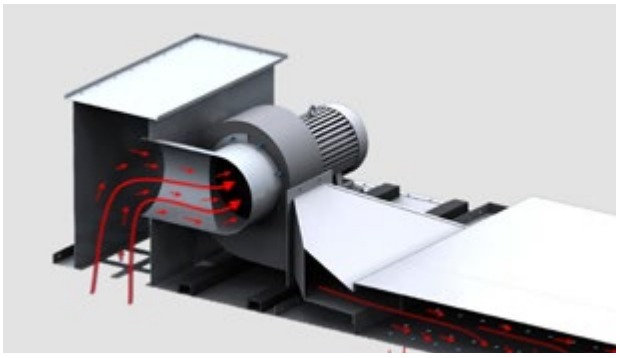
GENERAL COMPONENTS

HATCHES FOR CLEANING AND MANTEINANCE

Along the oven at the opposite of control side, for cleaning and maintenance purposes.

INSPECTION WINDOW

Along the oven at the control side, for checking the baking progress.
Provided with mobile lamp for inspection.

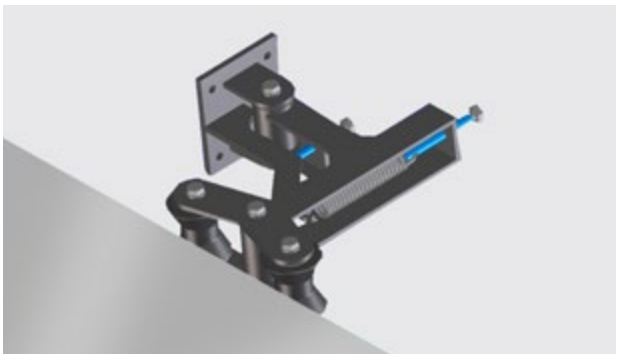


TURBULENCE UNIT

To be used in Cyclothermic and Electric ovens, when a better heating distribution
is requested to improve power and product moisture/colour control.

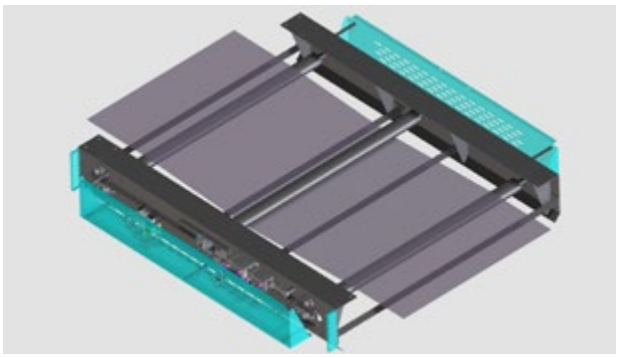
CLEANING BRUSHES

For cleaning of conveyor wire-meshes by means of single or double brush unit provided of relevant debris recovery drawer.



BAND GUIDES

Spring loaded rolls for safety of wire-mesh and steel belts, inside the baking chamber and in conveyor return.



TRACKING UNITS

Three rolls unit to control automatically the centering of steel belts and wire-meshes. Single or double units in accordance to the length of the ovens.

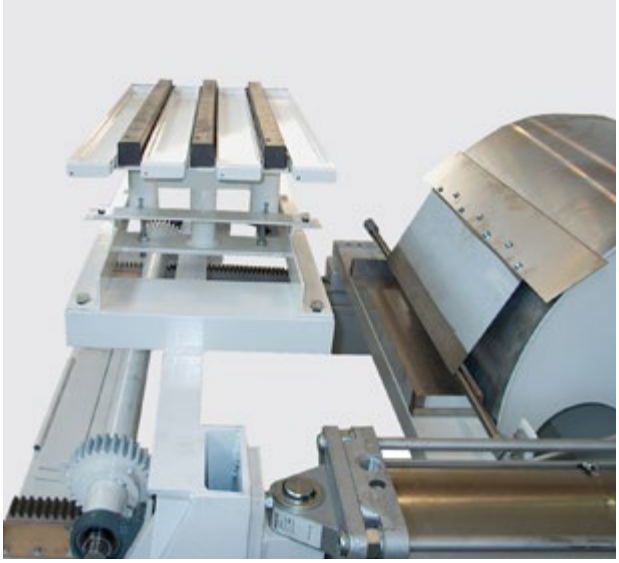
STEEL BELT OVEN EQUIPMENT

BELT GREASER

For a continuous distribution of heated oil on the steel belt by a rotating brush at variable speed and an alternating felt for even application.

BELT SCRAPER UNIT

On mobile trolley for continuous cleaning of steel belts with vertical scapers underneath on return of belt.



GRAPHITING UNIT

To keep a continuous graphite film on the lower surface of the steel belt.

CONTROL SYSTEM

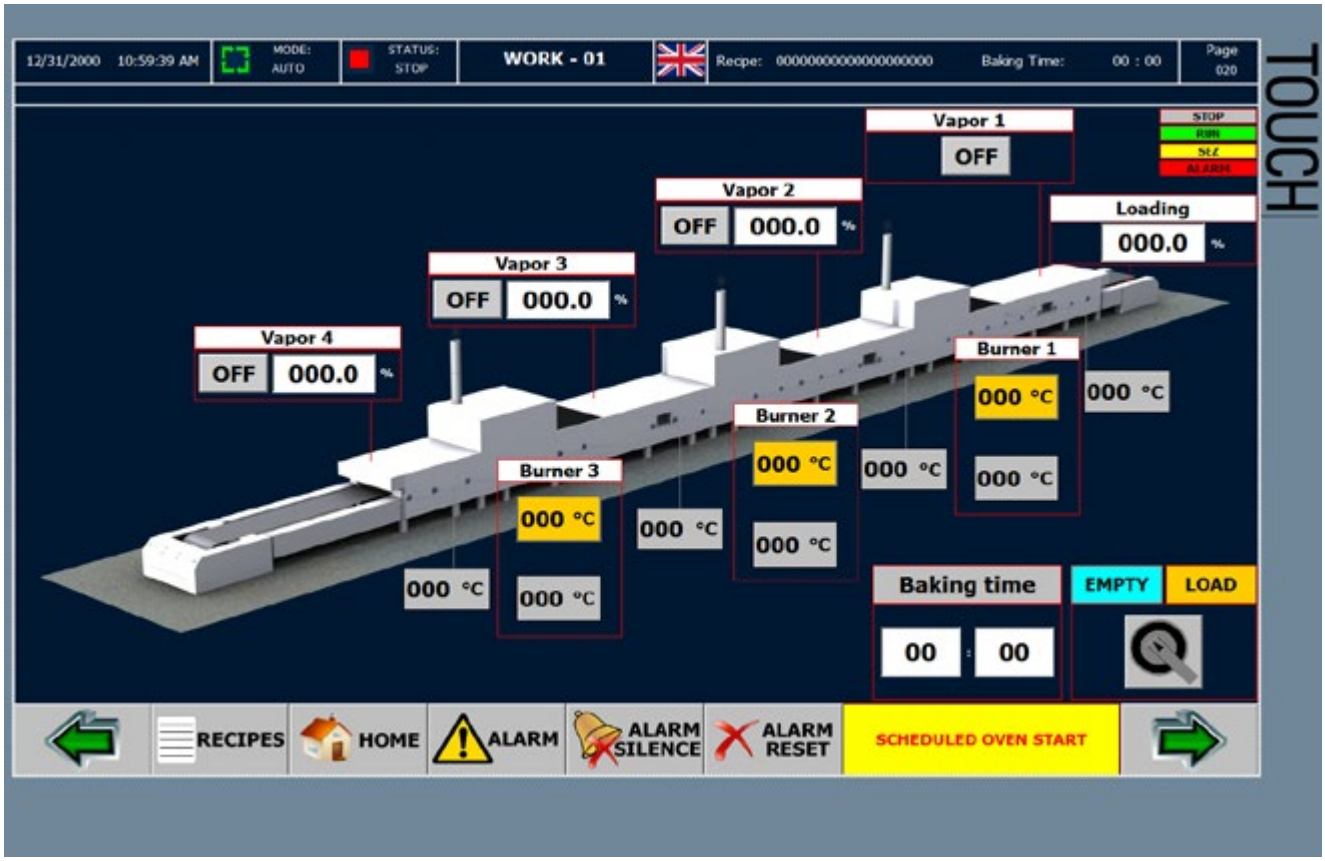
CONTROL SYSTEM

Polin provides a range of Control Systems for complete Biscuit, Crackers and Layer cake lines, or individuals units of machinery.
Whether it is semi or fully automatic recipe control, or higher level with SCADA (Supervisory Control and Data Acquisition) coupled to the ERP and MES of the Clients, Polin's control system has a clear, simple "Touch Screen" Operator Panel or PC screen as HMI (Human Machine Interface), to allow the operators to keep quality and easy to operate handling, by visualizing all the oven settings in a single location.
Recipe-driven set-up and clear alarm messages reduce changeover time, downtime and waste.
Full knowledge of internationally recognized propriety PLC, such as Siemens, Allen-Bradley, Omron, Telemecanique, just to mention a few, but in any case at disposal of Clients for any brand request.

OPERATOR INTERFACES

Colour "Touch screen" Operator panels or industrial PC. The HMI display panels set new standards for functionality, open systems and design. Their outstanding features include: state-of-the-art processor technology for maximum data security and handling really complex applications, high-resolution, new ergonomic design, comprehensive communications support and extremely easy connectivity with a full range of interfaces and ports.

Software packaged to suit all customers request, with different level of management and supervisory access, passing from Baking chamber temperature control to Exaust temperature control.
Store and management of any number of recipes.



MAIN FEATURES

- Functioning tests, trials and simulation at our Test bakeries
- Control and Structured Software Systems
- Full Recipe Handling and Management as standard
- Performance historic trends
- Alarm monitoring and handling
- Predictive and routine maintenance management
- Different level of controls to suit clients requirements
- All international brand components
- Control system easy to operate
- Up-to-date links for Teleservice, as remote control, provided via Internet as VPN, direct dial-up pr GMS modem to get immediate access and assist with problem solving

OVEN CONTROL AND MONITORING

- Automatic start-up and shut-off
- Purge cycles
- Burners ignition and control
- Zone top / bottom control
- Product idle and bake mode setting
- Automatic vapour and exhaust damper position
- Automatic tracking system of oven bands

SUPERVISORY PAGES

- General synoptic of the ovens
- Zone pages
- Recipe managing
- Oven running
- Active alarms
- Previously occurred alarms
- Oven parameters
- Oven variables

OPTIONS

- Oven humidity sensors inside bake chambers
- Temperature data logger
- Colour trend control

99999800025

Technology on demand for pastry, biscuit and bread industry

Since 1929 our philosophy has been innovation and creation of quality.
Today our peculiarity is the design and creation of medium to large scale industrial systems for pastry, biscuits and bread industry;
our goal is providing our customers with both products and service.
We wish to take our talented technology all over the world.

POLIN GROUP

Ing. Polin e C. S.p.A.
Viale dell'Industria, 9 - 37135 Verona - Italy - Tel. +39 045 8289111 - Fax +39 045 8289122 - polin@polin.it
www.polin.it

POLIN OSTALI RAM MIXER BARTOM POLIN-RC UNIPRO