

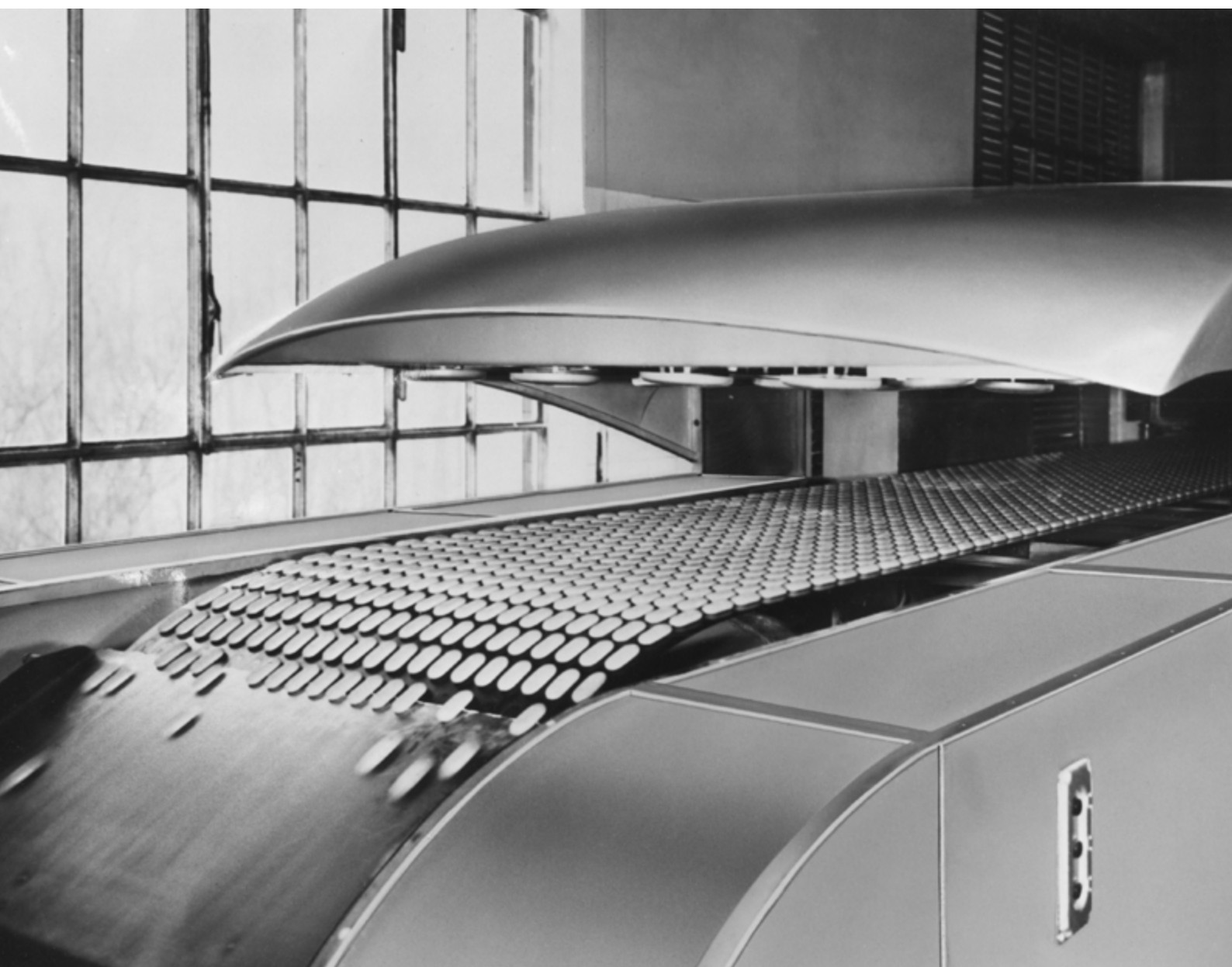


SHEETING LINE



CRACKER AND
HARD BISCUITS

POLIN SINCE 1929





FROM THE BEGINNING OF OUR LONG HISTORY, HIGH QUALITY PRODUCTS AND CONTINUOUS TECHNOLOGICAL INNOVATION HAVE ALWAYS DRIVEN OUR GROWTH AND MOTIVATED OUR EXPANSION.

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.

CRACKER AND HARD BISCUITS

Polin designs and manufactures tailored lines to produce crackers and hard biscuits of all kinds. A team of expert engineers will give all the necessary support to develop the line with the aim to maximize production efficiency.



AND MORE...

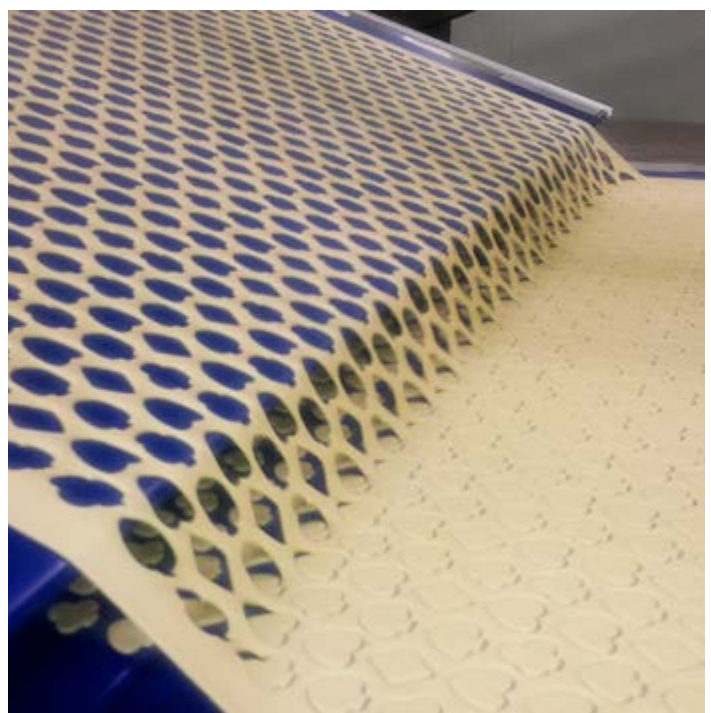


HARD BISCUIT LINE





Line suitable to produce hard sweet biscuits, like Marie, Rich Tea and Petit Beurre.

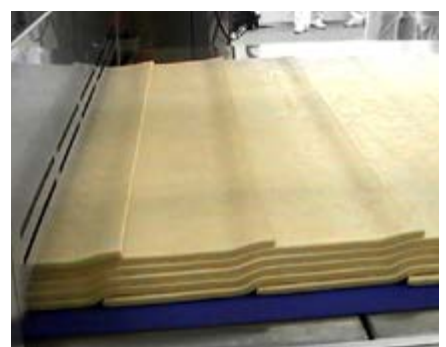


CRACKER LINE





Line suitable to produce snack and savoury crackers or laminated crackers by adding a cut-sheet laminator.



A NEW SMART DESIGN CONCEPT

UTMOST ATTENTION TO HYGIENE

Surfaces and connection crossbeams are manufactured to keep optimal hygiene conditions. Each machine part requiring routine cleaning is easily demountable.

USER FRIENDLY

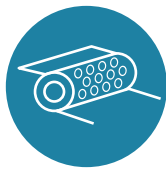
The control software is so intuitive that it makes the start-up phase quick and permits to have a complete control of the machine.

UNIQUE CHANGEOVER

Roller quick replacement system and innovative, tool-free belt changeover system with no need to remove the roller, the gearmotor and the moulds.



HYGIENIC
DESIGN



EASY
MOULDING
ROLLER
CHANGEOVER



BELT
CHANGEOVER



FAST



TOOL FREE



FEATURES AND BENEFITS



Our range of sheeting and forming equipment includes the latest product development where top quality, high performance, flexibility and attention to hygiene issues take centre stage.

Flexible design – easy to clean and easy access for maintenance and inspection purposes.

All equipment manufactured to the highest standard using the latest technology.



LINE

- 1 MIXER
- 2 DOUGH FEEDER
- 3 METAL DETECTOR
- 4 FOUR OR THREE ROLL SHEETER
- 5 GAUGE ROLL
- 6 CUT-SHEET LAMINATOR
- 7 DUST DISPENSER
- 8 SET OF GAUGE ROLLS
- 9 FINAL GAUGE ROLL
- 10 RELAXING CONVEYOR
- 11 ROTARY CUTTER
- 12 SCRAP RETURN CONVEYOR
- 13 SALT SPRINKLER
- 14 SWIVEL PANNER
- 15 OVEN
- 16 TAKE-OFF CONVEYOR
- 17 OIL SPRAYING MACHINE
- 18 OIL DRAINING CONVEYOR
- 19 COOLING CONVEYOR
- 20 STACKER
- 21 PACKAGING CONVEYOR

MIXING UNITS

Mixing of biscuits are made normally in Horizontal high speed mixers while crackers are normally mixed in Vertical spindle mixers. The Horizontal mixers are fast kneading machine with tilting bowl and fixed cover; this one is equipped with proper flanged couplings of various diameter for the automatic feeding of the ingredients. Bowl and mixing arm are made of stainless steel. The bowl is jacketed, fit for cold or hot water circulation.

The Vertical mixers have been specifically designed for the production of soda crackers, cream crackers, two phases fermented dough and delicate dough. The mixing process of high capacity is carried out in wheeled tubs where 2 or 3 vertical mixing arms achieve a complete and even kneading of all ingredients.



DOUGH FEEDERS

Unit arranged in different configurations as an automatic buffer for the feeding of discrete portions of dough coming from the mixer to the downstream machines.



SHEETING UNIT

This unit, with 3 or 4 rolls, allows constant dough feeding and scrap integration to form a consolidated dough sheet of even volume prior to the first gauge roll section of the down stream forming equipment. Two or three passages of the dough between rollers, reducing the stress as low as possible; in this way the dough sheet is ready to go through successive and progressive thickness reduction required by the process.



CUT-SHEET LAMINATOR

After its thickness reduction by one or two gauge rolls, in cracker production, the dough sheet is conveyed to the Cut-sheet laminator, servo driven and operating at high production rates, where the dough sheet is precisely cut into sheets and layered before passing on to the forming and cutting equipment. Possibility of adding the fat dispenser and flour duster to suit the cream cracker production.



GAUGE ROLLS

The Gauge rolls reduce the thickness of the continuous dough sheet, after sheeting or laminating. The last Gauge roll, as calibration unit, has larger diameter rolls. They can be completed with the dough sheet feeding control (overfeeding or underfeeding) with feedback, while all conveyors are operating in full speed cascade.



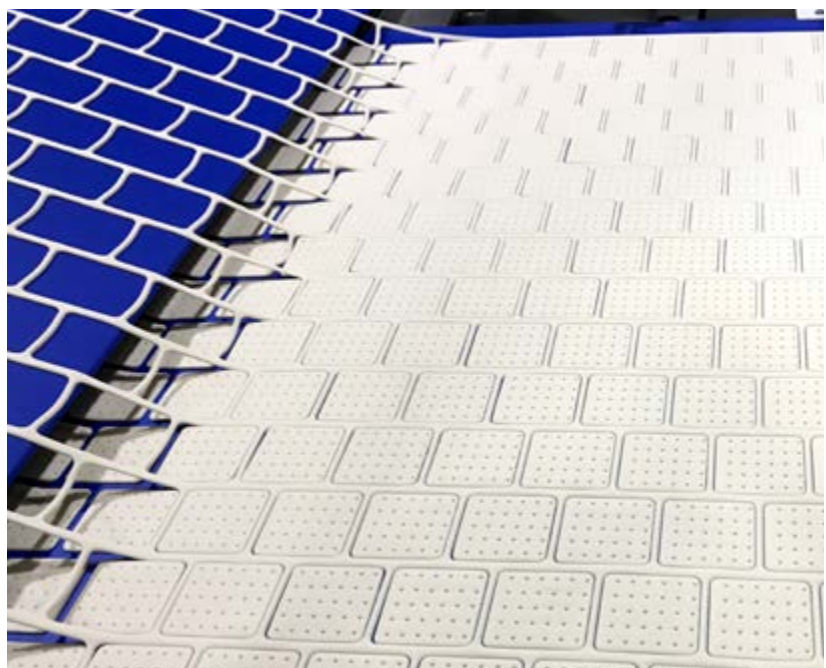
DOUGH RELAXATION

To reduce the stresses built up in the dough, prior to cutting the dough sheet is conveyed to a dough relaxation conveyor which receives the continuous dough sheet from the gauge rolls and by forming a wave in the sheet allows the the dough to rest before cutting. This important function assists in normalising the internal stresses which are build up in the dough.



ROTARY CUTTING

The continuous dough sheet passes through the Rotary cutter by means of where, using a single combined embossing/cutting roller or separate embossing and cutting rollers, the biscuit or cracker shape is cut into the dough sheet. To press the continuous dough sheet into the embossing and cutting rollers, anvil rollers are mounted in a pneumatically operated carriage, automatically raising or lowering to get a perfect cutting running of products.

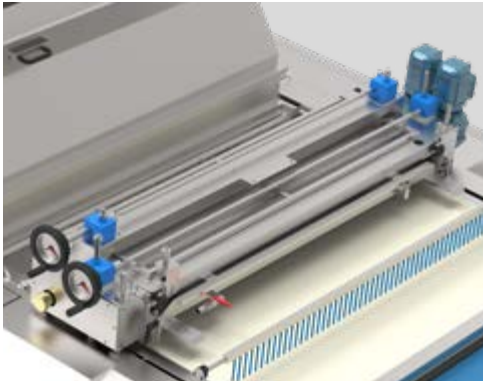


SCRAP PICKUP AND RETURN SYSTEM

After cutting, the combined scrap pickup and return system collects the scrap lattice from the cutting unit by separating the cut biscuit and cracker shape and scrap lattice by means of separate conveyors. The scrap pickup conveyor transfers the scrap lattice onto a cross conveyor before transferring it onto an inclined side scrap return conveyor, before going back into the hopper of the sheeter.



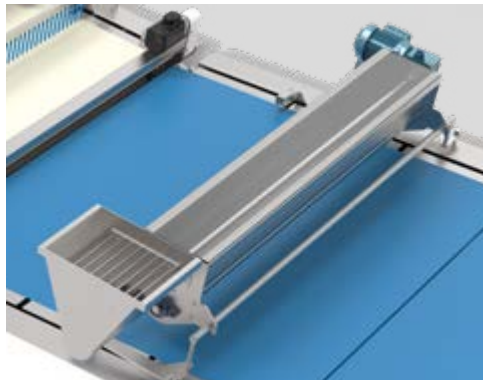
ANCILLARY EQUIPMENT



WASHING UNIT

For particular hard biscuits the unit is arranged to cover the top surface of the biscuits with a liquid solution film. The operation is carried out by an interchangeable rotary device, smooth roller or brush, depending on the product characteristics; the roller distributes the solution on the protruding parts, the brush distributes it over the entire surface.

Rotation speed and direction are adjustable, according to the needs.



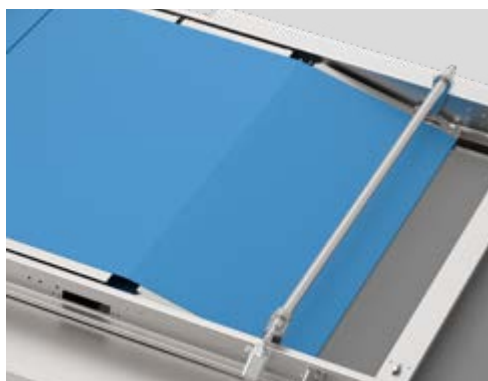
SALT/SUGAR SPRINKLER

Special unit with salt/sugar screw for feeding and special adjustable distribution device for an even sprinkling on top of the product.



RECOVERY SYSTEM

Automatic recovery system by vacuum that collects excess sugar / salt not received by the product and recovered for future reuse.



SWIVEL PANNER

A swivel panner is installed to provide the final transfer of biscuits from the upstream machine accurately onto the oven band. Activated by band follower rollers, the unit follows the tracking of the oven band, ensuring accurate centralized positioning of the product before baking.

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.

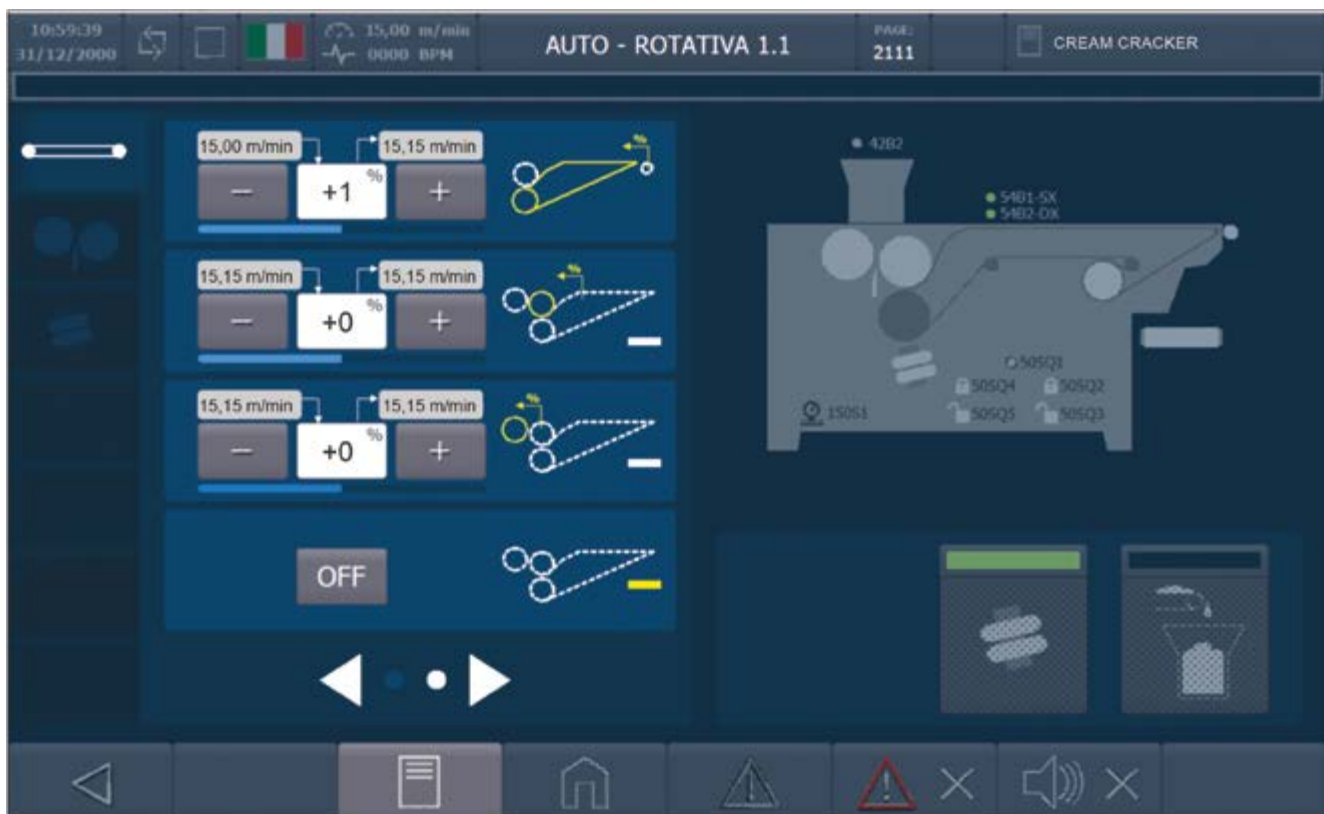
Recipe-driven set-up and clear alarm messages reduce changeover time, downtime and waste.

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 package to suit all customers request, with different level of management and supervisory access, passing from Baking chamber temperature control to Exhaust temperature control.

Store and management of any number of recipes.



MAIN FEATURES

- 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

SUPERVISORY PAGES

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

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

OPTIONS

- Oven humidity sensors inside bake chamber
- Temperature data logged
- Colour trend control



Technology on demand for pastry, biscuit and bread industry

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