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processing technologies

**TONELLI**  
food technologies

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## MULTIFUNCTIONAL MIXER

- COOKING
- HARD VACUUM
- COOLING WITH GLYCOLWATER
- GASEOUS NITROGEN
- ASEPTIC PRODUCT TRANSFER



## SCRAPED SURFACE COOLING EXCHANGERS



COOKING MIXER BY STEAM AND VACUUM

ASEPTIC HOMOGENIZER + ASEPTIC BUFFER TANK

SCRAPED SURFACE COOLING EXCHANGERS

ONLY A FEW APPLICATIONS



## ASEPTIC HOMOGENIZER & ASEPTIC BUFFER TANK

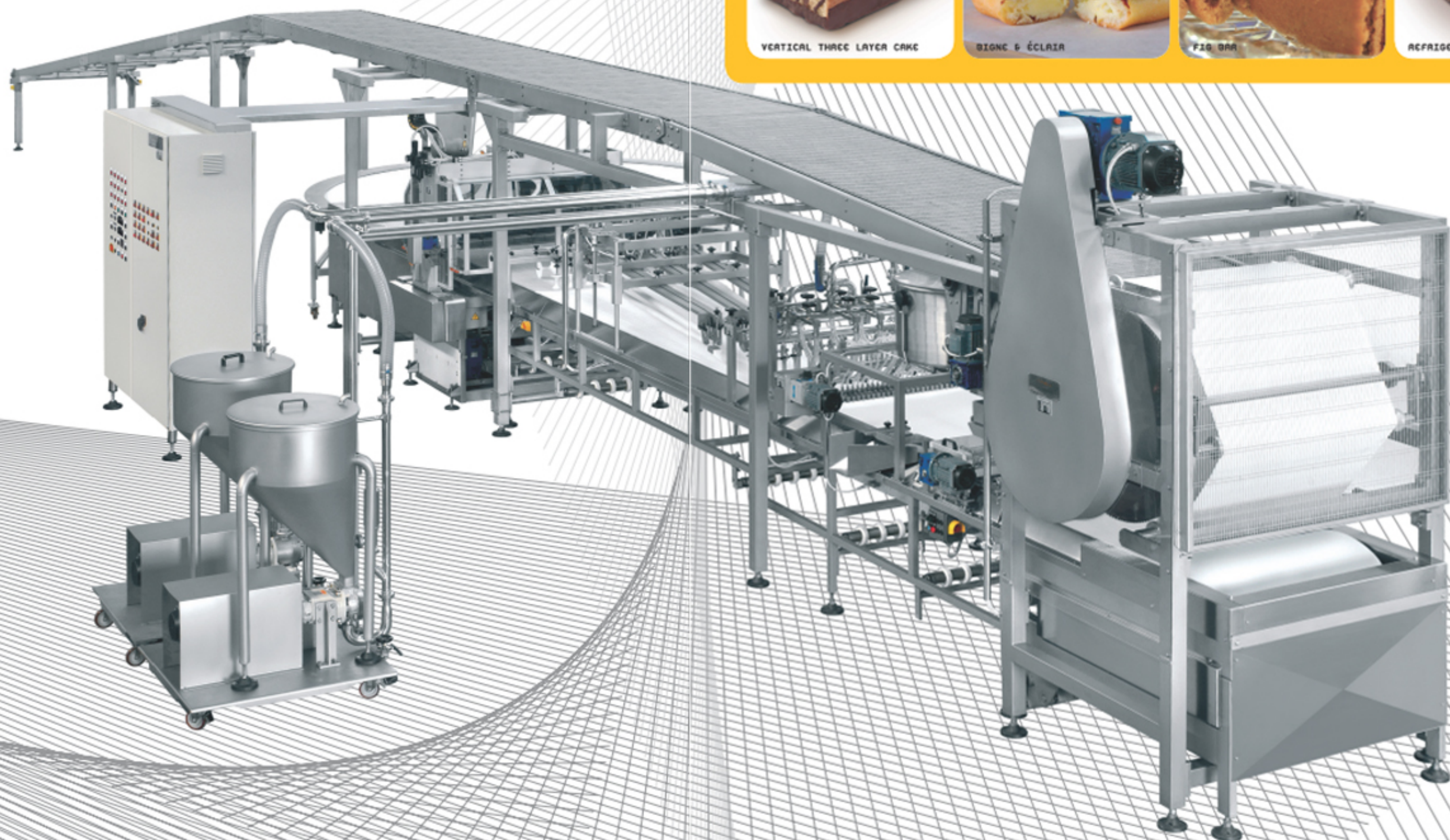
PRODUCT TRANSFER IN CONTROLLED ENVIRONMENT





## MULTIPRODUCT SPONGE CAKE LINES

COMPLETE LINES AND WORKTABLES FOR LAYER-CAKES, MINI-ROLLS, SWISS-ROLLS AND FAMILY CAKES, AND MANY MORE, FROM 250 TO 1600 KG/HOUR. THESE TURN KEY LINES ARE FULLY AUTOMATED, FROM THE INGREDIENTS' MIXING TO PACKAGING.



## ONLY A FEW APPLICATIONS



SWISS ROLLS



LAYER CAKES



FAMILY SIZE



SLICED SWISS ROLLS



VERTICAL THREE LAYER CAKE



BIGNE & ÉCLAIR



FIG BAR



REFRIGERATED MILK SNACK



# TURN KEY LINE

## BATTER PREPARATION

### PER BATCH



PLANETARY MIXER



LIFTER WITH OVER-HOPPER



### CONTINUOUS



PPM



BATTER PLATFORM



### CONTINUOUS SPECIAL BATTER



PPM



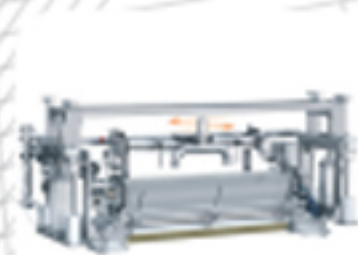
PPM



CONVEYOR



CONVEYOR



DECORATING



DECORATING



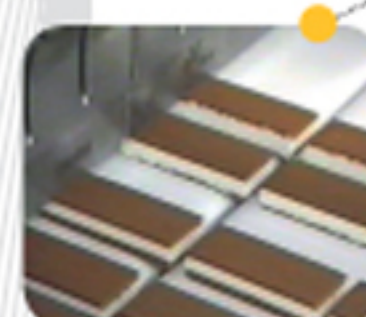
TWO COLOUR/PARTICLES



OVERHEAD COOLING CONVEYOR



PACKAGING



TRANSVERSAL CUTTING



ROLLING



OVERLAPPING



CREAM DISTRIBUTION



SYRUP DISTRIBUTION



LONGITUDINAL CUTTER

## CREAM PREPARATION

### PER BATCH



PLANETARY MIXER



PNEUMATIC UNIT OR PUMP

### CONTINUOUS



PPM



CREAM PLATFORM

### PASTEURIZED OR COOKED CREAMS



PPM



PPM



CONVEYOR



SLICED SWISS ROLL UNIT



VERTICAL THREE LAYER CAKE UNIT



## FAT'S PLATICIZATION

TONELLI GROUP HAS BEEN URGED BY ITS MAJOR CUSTOMERS TO STUDY AND DEVELOP SYSTEMS CAPABLE TO PLASTICIZE FATS, WHILE MAKING THE MIXING OF FAT MATTER EASIER, QUICKER AND MORE EFFECTIVE. WITH THIS IN-BAKERY PROCESS, THE PLASTICIZATION CAN BE MADE STRAIGHT IN THE PRODUCTION SITE AND THE PLASTICIZED QUANTITIES CAN BE ADAPTED TO THE SPECIFIC NEEDS OF EACH PRODUCTION LINE. THE TONELLI'S HIGH SKILL IN FAT PLASTICIZATION COMES FROM COUNTLESS TESTS PERFORMED IN ITS OWN UP-TO-DATE LABORATORY, USING THE MOST DIVERSIFIED TYPES OF FAT MATTERS. THE PLANT PERFORMS THE PROCESS DURING THE FOLLOWING STEPS:



### EMULSION

THE CENTRIFUGAL MIXER CREATES A STABLE EMULSION OIL/WATER VERY QUICKLY

### FIRST BUFFERING

THE BUFFER TANK KEEPS THE OIL/WATER EMULSION AT THE RIGHT CONDITIONS OF TEMPERATURE AND HOMOGENEITY FOR THE PLASTICIZATION PHASE

### PLASTICIZATION

THE EMULSION'S PLASTICIZATION IS PERFORMED BY THE HEAT EXCHANGER, WHICH ACHIEVES A FINE CRYSTALLIZATION, A LOW VISCOSITY AND A HIGH STABILITY

### FINAL BUFFERING

THE PLASTICIZED FAT IS KEPT FLUID AND HOMOGENEOUS INTO THE MATURING TANK, UNTIL THE NEXT USE



### END PRODUCT

THE FAT, AFTER THIS PROCESS, IS EASY TO TRANSFER BECAUSE OF ITS FLUIDITY AND IT IS ALSO EASIER TO PROCESS WITH REMARKABLE ADVANTAGES FOR USERS.