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thermal technologies



MULTIFUNCTIONAL COOKING/COOLING SYSTEM

THE BOWL IS STEAM JACKETED WHICH ALLOWS SAUCES OR PASTRY TO BE COOKED AND THEN COOLED IN THE SAME BOWL VIA WATER CHILLED BOWLS AND VACUUM. THE TEMPERATURE IS CONTROLLED VIA THE PLC, WHICH CONTROLS THE STEAM VALVES WHILST A TEMPERATURE PROBE READS THE TEMPERATURE IN THE CENTRE OF THE BOWL. THE BIG ADVANTAGE OF THIS SYSTEM IS TIME SAVINGS AND PRODUCT CONSISTENCY. MOREOVER, THIS SYSTEM ALLOWS TO ACRATE THE BATTER WITH PURIFIED AIR UNDER PRESSURE AND TO EMPLOY NEW COOLING TECHNOLOGIES - CO₂, LIQUID NITROGEN, GLYCOL FOR THE FOOD INDUSTRY - AND THE HARD VACUUM FOR CONCENTRATING. THE EXTREME FLEXIBILITY ALLOWS THE MULTIFUNCTIONAL MIXER TO REALIZE A GREAT VARIETY OF PRODUCTS, SUCH AS PÂTE À CHOU, MARZIPAN, DULCIE DE LECHE, WAFER, CACAMS, SAUCES, RAGOUT GRAVY, JAM, ETC.



HARD VACUUM UNIT

SPEEDS UP CONCENTRATION AND/OR COOLING PROCESSES WHILE SAFEGUARDING THE ORGANOLEPTIC PROPERTIES OF THE PRODUCT



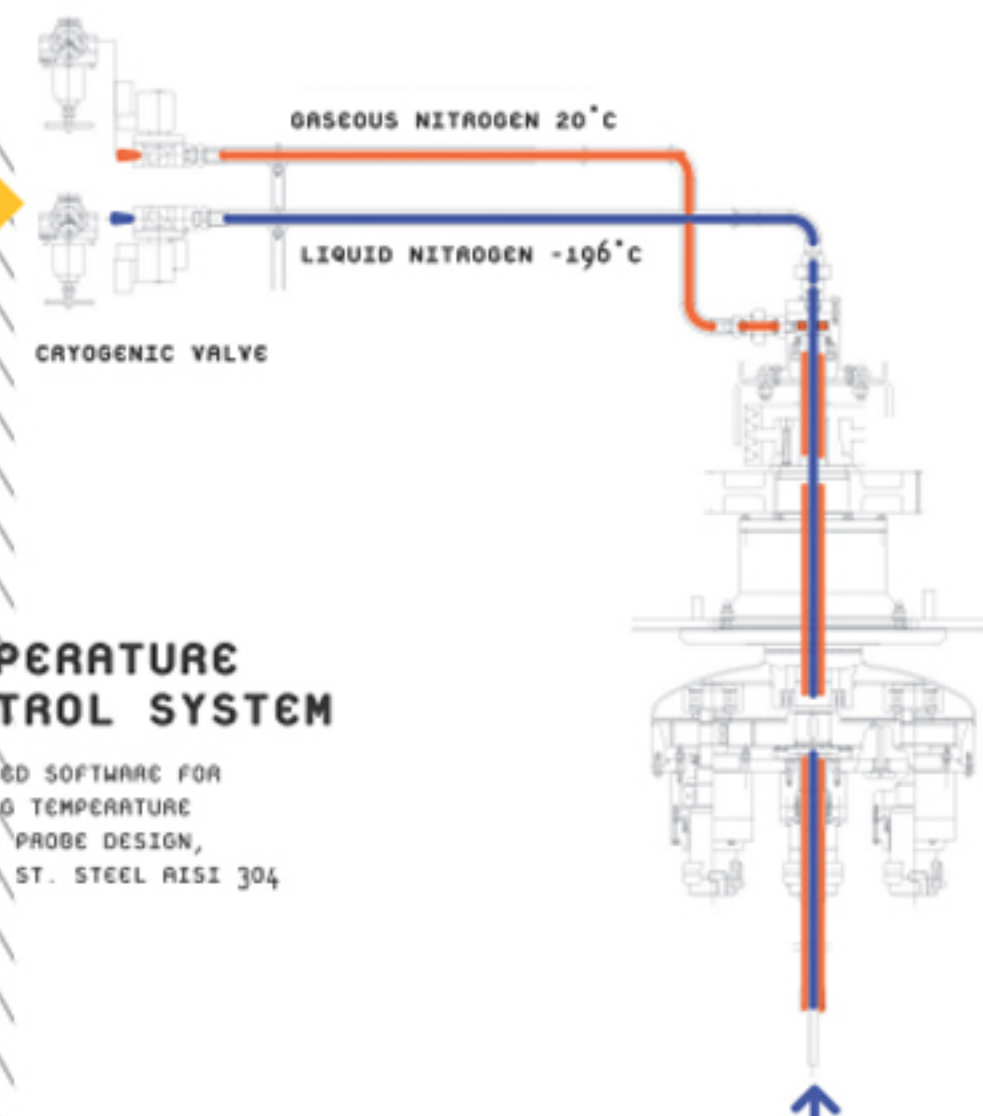
AUTOMATIC PRODUCT DISCHARGE



WASHING AND SANITIZATION

COOLING WITH LIQUID NITROGEN (TONELLI PATENT)

COMBINED OR ALTERNATIVELY TO THE USE OF HARD VACUUM, THIS TONELLI PATENT ALLOWS A VERY LOW TEMPERATURE COOLING, INTRODUCING LIQUID NITROGEN DIRECTLY INTO THE MIXING, IN A VERY SHORT TIME.



TEMPERATURE CONTROL SYSTEM

DEDICATED SOFTWARE FOR MANAGING TEMPERATURE
SPECIAL PROBE DESIGN,
MADE IN ST. STEEL AISI 304

ONLY A FEW APPLICATIONS



COMBITHERMIX®

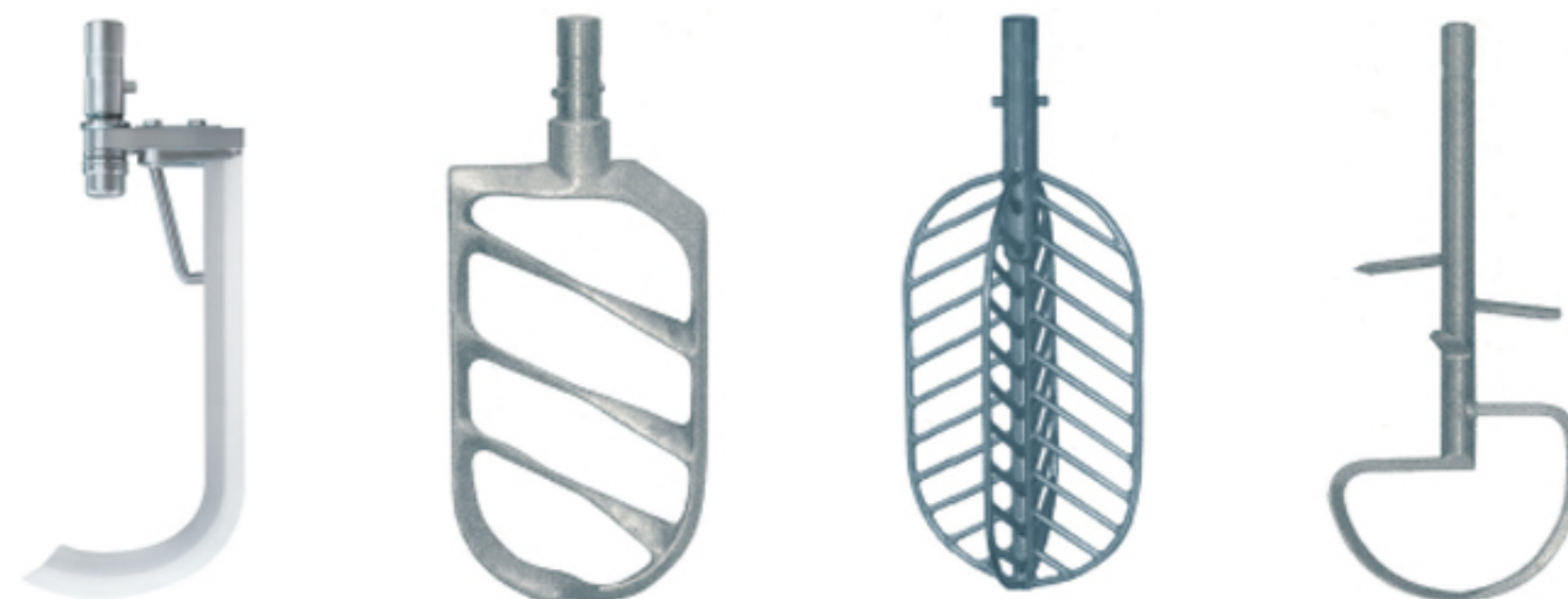
IT IS THE NEW EVOLUTION OF TONELLI'S ENGINEERING FOR ASEPTIC PRODUCTION TECHNOLOGIES, FOR BOTH BAKERY AND GASTRONOMY. THIS MACHINE COMBINES SEVERAL MIXING SYSTEMS AND THERMAL TREATMENTS, SO THAT IT IS EXTREMELY VERSATILE FOR A WIDE RANGE OF APPLICATIONS.

TONELLI
PATENTED



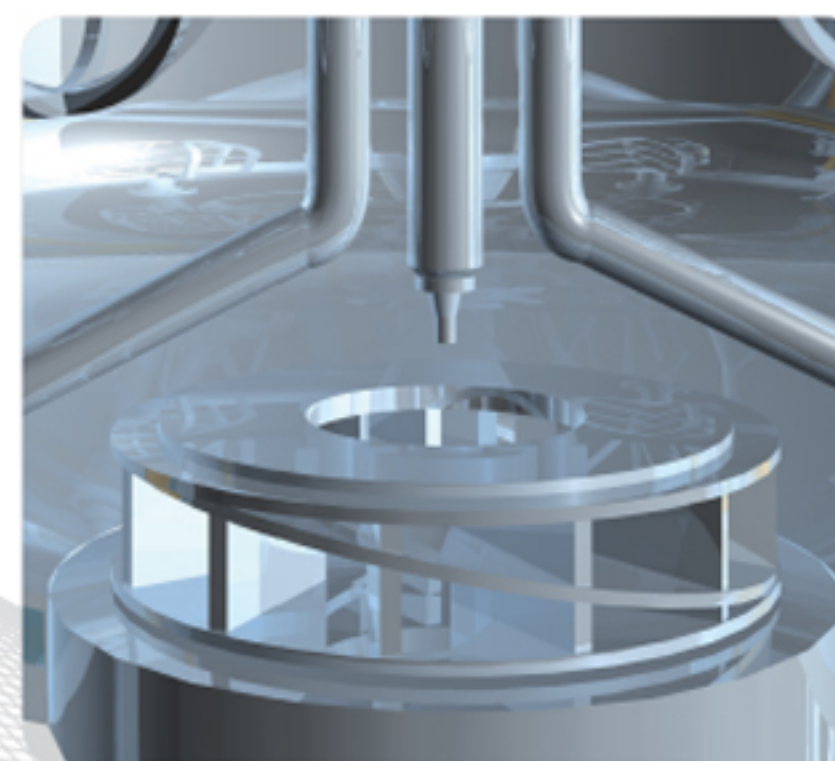
FEATURES

- COOKING VIA SATURATED STEAM;
- COOLING VIA ICY WATER;
- HARD VACUUM TREATMENT;
- COOLING VIA LIQUID NITROGEN;
- INTERCHANGEABLE MIXING TOOLS;
- INTEGRAL SCRAPERS;
- HOMOGENIZING HEAD;
- ASEPTIC PRODUCT DISCHARGE VALVE.



INTERCHANGEABLE TOOLS

DIFFERENT TOOLS FOR DIFFERENT PRODUCTS, THIS IS TONELLI VERSATILITY.



CENTRIFUGAL HOMOGENIZER

3 DIFFERENT TYPES OF ROTATING IMPELLER ARE AVAILABLE, ACCORDING TO THE PRODUCT TO BE OBTAINED.

ONLY A FEW APPLICATIONS



AN EXCHANGER FOR EACH PRODUCT



IN LINE PASTEURIZATION AND COOLING PLANT

- SCRAPED SURFACE HEAT EXCHANGER FOR CONTINUOUS HEATING/PASTEURIZING VIA SATURATED STEAM AND COOLING OF LIQUID PRODUCTS;
- ROTOR AISI 316 WITH SYNTHETIC RESIN SCRAPERS BACTERIOLOGICALLY INERT;
- STATOR AISI 316 WITH HIGH SECTION JACKET FOR SATURATED STEAM INJECTION;
- HYGIENIC DESIGN FRAME.



WIDE SCRAPED SURFACE HORIZONTAL HEAT EXCHANGER

- FOR HARD PRODUCTS;
- MAXIMUM OPERATING PRESSURE 21 BAR;
- ROTOR AISI 316 WITH SYNTHETIC RESIN SCRAPERS BACTERIOLOGICALLY INERT;
- STATOR AISI 316 WITH HIGH SECTION JACKET FOR SATURATED STEAM INJECTION;
- HYGIENIC DESIGN;
- INTEGRATED SYSTEM FOR RAPID ROTOR ASSEMBLY AND DISASSEMBLY BY MEANS OF ROTATING BEARINGS.

DOUBLE SCRAPED SURFACE HEAT EXCHANGER

- "SANITARY DESIGN" HEAT EXCHANGER FOR CONTINUOUS COOLING OF EVERY KIND OF FOOD PRODUCTS;
- BEATER TEETH IN STAINLESS STEEL AISI 316 TO OPTIMIZE THE AIR INCORPORATION;
- DOUBLE STATOR (INNER-OUTER) WITH SPIRAL FOR REFRIGERATING OR HEATING FLUID CIRCULATION;
- SYNTHETIC RESIN SCRAPERS, HIGH QUALITY, INNODOROUS, NON-TOXIC, BACTERIOLOGICALLY INERT;
- PRODUCT AERATION VIA AIR/GASEOUS NITROGEN INJECTION THROUGH AUTOMATIC FLOWMETER.



SCRAPED SURFACE ROTARY HEAT EXCHANGER

- "SANITARY DESIGN" HEAT EXCHANGER FOR AERATION AND SLOW CRYSTALLIZATION OF PRODUCTS AT MEDIUM/HIGH VISCOSITY AND WITH HIGH FAT;
- COOLING SECTION IN A HIGH THICKNESS GEAR INCLUDED BETWEEN TWO STATORS IN WHICH RUNS ICY/GLYCOLWATER;
- AERATING SECTION VIA TOOTHED HEAD WITH INDEPENDENT MOVEMENT;
- SYNTHETIC RESIN SCRAPERS, HIGH QUALITY, INNODOROUS, NON-TOXIC, BACTERIOLOGICALLY INERT.

COMBIAERATOR EXCHANGER (PATENTED)

- EXCHANGER/REFINER/HOMOGENIZER FOR TECHNOLOGICAL NEEDS OF FAST CRYSTALLIZATION AND HIGH AERATION;
- THE NUMBER OF ITEMS MOUNTED ON THE HYGIENIC DESIGN FRAME, IS SET ACCORDING TO THE PRODUCT'S TECHNOLOGICAL NEEDS;
- PATENTED GEOMETRY WITH COMBS AND TEETH, INCREASING THE THERMAL EXCHANGE, THE HOMOGENIZATION AND THE INCORPORATION OF AIR INSUFFLATED INTO THE PRODUCT;
- SMALL CHAMBER OF CRYSTALLIZATION.

