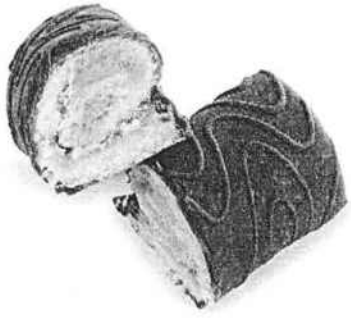
N° 01 LINE TO PRODUCE FILLED SPONGE CAKE
TO BE CONNECTED TO N° 01 OVEN 16 m LONG AND 600 mm WIDE

Layer cake (*)

Swiss Rolls (*)



Mini Rolls (*)

(*) The pictures are only to show the product typology and never could be claimed as part of the contract for shape and looking.

N° 01 LINE TO PRODUCE FILLED SPONGE CAKE
TO BE CONNECTED TO N° 01 OVEN 16 m LONG AND 600 mm WIDE

Products:	**Layer cake**	Indicative Dimensions: 38x80xH25 mm Indicative Capacity: 14.000 pieces/hour.
	Mini roll	Indicative Dimensions: mm Ø30÷35x80 mm Indicative Capacity: 9.600 pieces/hour
	Swiss roll	Indicative Dimensions: mm Ø65÷35x70x160 mm Indicative Capacity: 2.000 pieces/hour

Indicative production of finished product: 500 Kg/h

The line is composed as follows:

1. SPONGE CAKE PREPARATION AREA COMPOSED AS FOLLOWS:

1.1 N° 01 COMPACT TURBOMIXER® & PREMIXER IN A SINGLE STRUCTURE MOD.GMG500 MADE OF STAINLESS STEEL AISI 304

Our mixing assembly Mod. GMG500 is composed as follows:

- Premixer.
- Storage Tank.
- Turbomixer.

Technical features:

- Structure made of stainless steel AISI 304 and assembled on castors. It is equipped with removable panels and adjustable feet to fix the machine to the floor.

1. Premixer

- Jacketed tank made of stainless steel AISI 304 (capacity: 100 litres) with hemispheric bottom. It is equipped with connections to allow the circulation of liquids for thermal exchange.
- Horizontal axis mixing shovels which are shaped to optimize the ingredients amalgam. The shovels are moved by a 2,2 kW gearmotor controlled by inverter.
- Ball exhaust valve made of stainless steel. It is pneumatically operated.
- Volumetric pump made of stainless steel to transfer the product. The speed of pump motorisation is fixed.

2. Storage tank.

- Jacketed storage tank made of stainless steel AISI304 (capacity: 150 litres). It is designed to allow the circulation of liquids for thermal exchange.
- Product stirrer to maintain the dough homogeneous.
- Volumetric pump made of stainless steel AISI 304 with motorisation controlled by frequency converter.

3. Turbomixer.

- Head made of stainless steel AISI 304 with "Vertimix®" technology. It is jacketed to allow the circulation of liquids for thermal exchange. A 4 kW motorisation is controlled by a frequency converter.
- Product filter lodged at the entry of the head.
- Counter pressure device. It is pneumatically operated.
- Exhaust piping made of stainless steel DN50, equipped with the followings: N° 01 valve to take small quantity of product, N° 01 manual butterfly valve and N° 01 thermometer.
- Pneumatic unit to be connected to the compressed air line. It is composed as follows: purifying filters with activated carbons to inject the purified air inside the head; fluxmeter to manually adjust the capacity.
- Electric board lodged inside the machine and equipped with stainless steel control panel.

1.2 N° 01 CHILLER

Chiller for water cooling for storage tank and head cooling. It is equipped with automatic by-pass valve and connecting piping.

1.3 N° 01 SPONGE-CAKE ROLLER EXTRUDER MOD.ERG600

Technical features:

- Stainless steel structure prearranged to be installed (for bridge installation) above the inlet belt of the oven. The fixing plates will be made on the base of the oven type, and it is possible to adjust the height of the machine with respect to the oven band by manually adjustable bars.
- Hopper with stainless steel walls integrated in the structure. Possibility to adjust the extrusion thickness through an hand-wheel with position digital indicator.
- Roller made of rectified stainless steel with adjustable speed by inverter and turns digital display.
- Scraper for the dough's detachment. It is easily extractable in order to facilitate the cleaning.
- Extrusion width manually adjustable through mobile barriers made of plastic material.
- Distribution system of the batter inside the hopper by pneumatic device with discharge manifold at double exit, to optimize the batter distribution inside the hopper.
- Photocell for the control of the maximum level in the hopper.
- Electric and control cabinet made of stainless steel installed on the oven inlet bench.

2. SPONGE CAKE BAKING AND COOLING AREA COMPOSED AS FOLLOWS:

2.1 N° 01 CYCLOTHERMIC TUNNEL OVEN 16 m x 0,6 m Mod. SILVER TC, AT 2 ZONES BRAND MECATEK

Technical features:
Oven type: SILVER TC
Baking time: from 4 to 16 minutes
Baking Surface: 9.6 m^2
Conveyor width: 600 mm
Useful baking width: 520 mm
Baking chamber length: 16 m
Infeed extension: 3 m
Outfeed extension: 3 m
Number of baking zones: 2 (10m; 10 m)
Useful chamber height: 200 mm
Control panel : left/right (at your choice)
Conveyor type: steel band
Return of conveyor: outside baking chamber
Conveyor tensioning: mechanical
Type of motion: continuous, variable speed
Type of drive: adjustable speed

Materials : Frame: galvanized/painted steel
Belt conveyor: steel band
Combustion chamber: steel, suitable for high temperatures
Baking chamber: corten steel
Loading/unloading hoods: stainless steel AISI 304
Thermal insulation: rock wool
Panels: stainless steel AISI 430

2.2 N° 01 WIRE-MESH COOLING CONVEYOR, MADE OF STAINLESS STEEL MOD.NRG600 LENGTH: 24 Mt.

Technical features:

- AISI 304 stainless steel scaffolding including sliding guides made of plastic material assembled and opportunely arranged in order to guarantee a suitable support to the wire-mesh.
- The sponge cake is detached from the oven belt and carried on a wire-mesh conveyor. The conveyor has a **useful width of 600 mm**.; the motorization has an adjustable speed controlled by a frequency converter, by a signal arriving from the main oven frequency converter one can adjust the speed in automatic in accordance with the belt oven speed.
- The scaffolding and the wire mash are made of AISI 304 stainless steel, under the conveyor are lodged several removable vats made of stainless steel to collect eventual crumbs that fall down from the wire-mesh to preserve the hygiene and quality of the finished product.
- A large diameter drum is placed at the end of the conveyor to overturn the sponge cake strain avoiding creaking on the surfaces.
- A motorized plastic conveyor follows the sponge cake overturning with the same speed of the wire-mesh.

3. AFTER BAKING AREA COMPOSED AS FOLLOWS:

3.1 N° 01 WORKING BENCH WITH POLYURETHANE BELT MOD. BLPG600 LENGTH: 16 Mt.

Conveyor belt of for sponge cake's processing. It is equipped with a structure of lateral support useful to lodge the different working stations, according to the product to manufacture.

Technical features:

- Carrying structure composed by AISI 304 stainless steel pipes. The structure is assembled on adjustable feet.
- Stainless steel roller for belt supporting Ø200 covered with rubber, which has been vulcanised.
- Motorization at electronically adjustable speed. This last one is adjustable through inverter.
- Stainless steel roller of return Ø200 including tensioning through sliding supports.
- Polyurethane belt with vulcanised central profile in order to maintain the product centred in comparison with the equipment.
- Scraping device to scrape properly the belt in continuous during production.

3.2 N° 01 ACCELERATION BELT MOD. NAG600

The acceleration wire-mesh conveyor, made of Stainless Steel AISI 304 spaces up the layer-cakes and it allows to joint the working bench to the following belts.

Technical features:

- Aluminium structure.
- Stainless steel net belt.
- Independent motorization controlled by a frequency converter.

3.3 N° 01 LONGITUDINAL CUT MOD. TLG600

Technical features:

- Structure in AISI 304 stainless steel piping arranged for the assembly on the working bench.
- The structure includes protections with safety micro.
- N°2 idler rollers in plastic material assembled, and adjustable in height. The two rollers keep the sponge cake before the cutting.
- Bar holder blades, motorised at adjustable speed through inverter and easily interchangeable.
- Grooved contrast-blade in correspondence to the blades and arranged for different formats.
- Stainless steel lateral guides useful to collect the scrap and convey it into the recovery belt through two chutes.
- Scraps recovery belt with its own motorization. It is assembled in order to convey the scraps over the belt to be collected into a suitable container.

3.4 N° 01 SYRUP DEPOSITOR MOD. DIBG600

The group of syrup dripping distribution is composed by two parts: pump and manifold distributor, a gears pump conveys the syrup to a manifold, this one drip the syrup directly on the sponge cake carpet with possibility to adjust the quantity that is necessary to distribute.
The pump frame is assembled on wheels and it's made of stainless steel AISI 304, the syrup holding hopper has a capacity of about 50 litres.
Stainless steel gear pump with motorization controlled by inverter.
Stainless steel piping for syrup delivery and return.
Stainless steel manifold with needle taps for the adjustment of the liquid fall.
The syrup dropping manifold it's equipped with a gear motor for the zig-zag movement , trough a cam is possible to adjust the zig-zag width and speed.

3.5 N° 01 JAM PUMP MOD. PMG600

Technical features:

- Pump with stainless steel structure and assembled on wheels.
- Stainless steel mono-screw pump with motorization controlled by inverter.
- Stainless steel piping of delivery.

3.6 N° 01 JAM EXTRUDER MOD.EMG600

Technical features:

- Stainless steel support with adjustable height and slope.
- Stainless steel manifold with stainless steel needle taps and adjustable openings of extrusion.
- Manifold easily interchangeable.

3.7 N° 01 OVERLAPPING GROUP MOD. GVG600

A ploughshares group, a guides group and a pressure roller compose the overlapping group of the sponge cake stripes.
Technical features:

- PLOUGHSHARES GROUP
  Stainless steel support structure with bar holder ploughshares.
  The bar holder ploughshares is vertically liftable through a pneumatic device including a lever control.
  Stainless steel polished ploughshares with independent support, which is vertically and transversally adjustable.
- GUIDES GROUP
  Stainless steel support structure with bar holder guides.
  The bar holder guides is vertically liftable through a pneumatic device with lever control.
  Stainless steel polished guides with independent support, which is transversally adjustable.
- PRESSURE ROLL
  Stainless steel support adjustable in height.
  Idler roller in plastic material assembled. It can be disassembled easily.

3.8 N° 01 EQUIPMENT TO PRODUCE MINIROLLS AT 4 ROWS

It is composed of:

- N° 01 CUTTING BAR FOR LONGITUDINAL CUT.
- N° 01 MANIFOLD FOR JAM EXTRUDER.
- N° 01 MANIFOLD FOR CREAM EXTRUDER.
- N° 01 ROLLING DEVICE FOR MINI ROLLS AT 4 ROWS MOD. AMRG04

  Rolling device for Mini-rolls composed by two blocks; each of them is formed by N° 2 groups of spirals. Each of these groups is independently adjustable, but it is moved by a single motorization which is controlled by inverter.

  Technical features:

  Stainless steel support structure of the spirals including an independent pneumatic lifting system for each group of spirals.

  Structure of motorization's support. This aluminium structure includes a transmission through toothed belt.

  The connection between the drive shafts and the spirals is carried out through double universal joints.

  Conical rolling spirals which are in alimentary plastic material assembled, with independent adjustment of slope and height.

  Each group is equipped with a ploughshare of beginning folding, a rolls-guide useful for the lateral support as well as rollers of containment at the device's exit.

  Accident prevention protections.

3.9 N° 01 EQUIPMENT TO PRODUCE SWISS ROLLS AT 02 ROWS, MOD. ASRG02

It is composed of:

- N° 01 CUTTING BAR FOR LONGITUDINAL CUT
- N° 01 JAM MANIFOLD WITH 02 NOZLES
- N° 01 CREAM MANIFOLD WITH 02 NOZZLES
- N° 01 ROLLING DEVICE FOR SWISS ROLLS AT 02 ROWS MOD. ASRG02

  Technical features:

  Rolling device for Swiss rolls, composed by one block equipped with n. 2 rolling spirals each one.

  Each group of spirals is independently adjustable in height and is moved by a single motorization controlled by inverter.

  Stainless steel support structure of the spirals including an independent pneumatic lifting system for each group of spiral.

  Structure of motorization's support. This aluminium structure includes a transmission through toothed belt.

  The connection between the drive shafts and the spirals is carried out through double universal joints.

  Conical rolling spirals which are in alimentary plastic material assembled, with independent adjustment of slope and height.

  Each group is equipped with a ploughshare of beginning folding, a rolls-guide useful for the lateral support as well as rollers of containment at the device's exit.

  Accident prevention protections.

  Electric and control board.

3.10 N° 01 TRANSVERSAL GUILLOTINE CUTTER WITH VIBRATING DOUBLE BLADE MOD.TGVG600 Basic Series

Technical features:

- Aluminum structure bridge assembled on the conveyor of the working bench.
- Stainless steel panels and wide protection carters which could be opened in order to simplify the cleaning.
- Flanged encoder to the haulage roller of the working bench in order to synchronize the length of the cut on the basis of the product run speed.
- Trolley's movement through eccentric controlled by gearmotor with speed adjustment by inverter.
- Cutting group composed by two vibrating blades at quick speed and covered by TEFLON. The blades are fixed to a bar vertically moved by a pneumatic cylinder. The two blades can be easily opened and disassembled for the inspection and cleaning. Stainless steel counterblade with micrometric adjustment.
- Double scraper made of stainless steel with final part made of auto lubricating plastic material.
- Electric system integrated in the main board of the working bench.

3.11 N° 01 180° CURVE

Technical features:

- Structure, which is composed by stainless steel pipings and assembled on adjustable feet.
- Polyurethane belt suitable to alimentary use. It includes a pen in entrance and exit.
- Motorization at electronically adjustable speed through inverter.

3.12 N° 01 GENERAL ELECTRICAL BOARD WITH CONTROL PUSH-BUTTON PANEL

Stainless steel cabinet.

4. CREAMS PREPARATION GROUP COMPOSED AS FOLLOWS:

4.1 N° 01 TURBOMIXER® & PREMIXER IN A SINGLE STRUCTURE MOD. GMG300 STANDARD VERSION MADE OF STAINLESS STEEL AISI 304

Our mixing assembly Mod. GMG100 is composed as follows:

1. Premixer.
2. Storage Tank.
3. Turbomixer.

Technical features:

- Structure made of stainless steel AISI 304 and assembled on castors. It is equipped with removable panels and adjustable feet to fix the machine to the floor.

1. Premixer

- Jacketed tank made of stainless steel AISI 304 (capacity: 60 litres) with hemispheric bottom. It is equipped with connections to allow the circulation of liquids for thermal exchange.
- Horizontal axis mixing shovels which are shaped to optimize the ingredients amalgam. The shovels are moved by a 2,2 kW gearmotor.
- Ball exhaust valve made of stainless steel. It is pneumatically operated.
- Volumetric pump made of stainless steel to transfer the product. The speed of pump motorisation is fixed.

2. Storage tank.

- Jacketed storage tank made of stainless steel AISI304. It is designed to allow the circulation of liquids for thermal exchange.
- Product stirrer to maintain the dough homogeneous.
- Volumetric pump made of stainless steel AISI 304 with motorisation controlled by frequency converter.

3. Turbomixer.

- Head made of stainless steel AISI 304 with "Vertimix®" technology. It is jacketed to allow the circulation of liquids for thermal exchange. A 2.2 Kw motorisation is controlled by a frequency converter.
- Product filter lodged at the entry of the head.
- Counter pressure device. It is pneumatically operated.
- Exhaust piping made of stainless steel DN50, equipped with the followings: N° 01 valve to take small quantity of product, N° 01 manual butterfly valve and N° 01 thermometer.
- Pneumatic unit to be connected to the compressed air line. It is composed as follows: purifying filters with activated carbons to inject the purified air inside the head; fluxmeter to manually adjust the capacity.
- Electric board lodged inside the machine with stainless steel control panel equipped with electromechanical components.

4.2 N° 01 WATER CHILLER UNIT AND HEATER WITH CONNECTING PIPING AND BY-PASS.

The chiller unit is a device allowing the regulation of temperature into the mixing head, and the extraction of heating generated during the working phase.

4.3 N° 01 CREAM EXTRUDER MOD.ECG600

Technical features:

- Manifold in stainless steel with extrusion opening adjustable with spherical taps.
- Supporting adjustable in height.
- Extruder interchangeable.

5. ENROBING LINE COMPOSED AS FOLLOWS:

5.1 N° 01 CHOCOLATE TANK (Capacity 1000 Kg)

Technical features:

- Tank body made of stainless steel AISI 304 electrically welded with internal plating, reinforced and bound bottom, double welding where it is possible (in particular, all the sheets in contact with the product). Chinese hat bottom. Pivot wheels with brake for moving. Rock wool insulation on the walls. External walls made of stainless steel AISI 304 fully removable. Agitator made of stainless steel AISI 304 with adjustable scrapers on the walls and on the bottom. Worm gearmotor.
- Heating by nr. 2 resistances, 900 Watt each one. Nr.1 hinged door in stainless steel sheet with opening handle and protected by safety microswitches.
- Thermoregulated ball valve for the manual unloading. Nr. 2 lateral couplings for possible pump. Nr. 1 Coupling for water loading – unloading. Nr. 1 Overflow with free outlet into the double wall.
  N.W.: the double wall should not be subjected to pressure, therefore it must be free discharge.
- The tank is also complete with gear pump and double wall heated filter.
- Electric and control board made of stainless steel equipped with digital thermoregulator to manage the water temperature and with product digital thermometer.

5.2 N° 01 ENROBING MACHINE MOD. ENROBMATIC600

Technical features:

- Stainless steel structure assembled on adjustable feet.
- Lateral protection made of polycarbonate.
- Heating of the working chamber by radiation ceramic plates and internal neon light.
- Entry belt made of stainless steel wire mesh with independent motorization controlled by inverter.
- Main belt made of stainless steel wire mesh with motorization controlled by inverter and equipped with heated detachment roller which is motorized at adjustable speed.
- Storage tank at double wall with agitator. It is assembled on a trolley for the lateral extraction in order to facilitate the its cleaning and the one of the wire mesh conveyors. (N.W.: the tank is not completely extractable but only partially , so the electric cables and the pipes for the water circulation remain connected.
- Level control of the chocolate inside the tank by electronic sensor which can be programmed.
- Control of the chocolate temperature inside both the tank and feeding pipe, in order to keep the chocolate temperature stable.
- Filling system of the vat under the chocolate fall, in order to make also the bottom in the same time of the enrobing.

- The heating boiler is integrated in the tank, the circuit functioning is pressurized in order to optimize the water circulation in all points of the machine.
- Feeding lobes pump with double wall chamber for its heating, and basket filter in the exit. All piping for chocolate circulation are at double wall.
- Lobes pump for the return of the chocolate in the storage tank for the use of pure chocolate.
- Vibrating system at pneumatic control for lower part dripping.
- The tank to deposit the chocolate on the product is equipped with double falls with independent thickness adjustment. A multi exits manifold keeps the level constant inside the tank.
- Hot air blow by manifold adjustable in height , inclination and intensity. The flow is obtained by a centrifuge blower placed above the working chamber.
- Electric board placed in the upper part of the machine equipped with Touch Screen control panel

5.3 N° 01 COOLING TUNNEL MOD. THERMOMATIC600 (20 m long)

With the new series of THERMOMATIC cooling tunnels, Gorreri wanted to give a special importance to the energy saving and clean design, and we put cables and piping inside the structure.

The special design of the support profile of the tunnel hoods allows both a perfect seal without thermal bridges and easy intervention, since the hoods can be opened from both sides. All hoods can be lifted and disassembled without the use of tools.

Combining temperature and air speed in a specific way, you can obtain an optimum cooling. The THERMOMATIC tunnel is able to obtain all this thanks to a performing refrigerant circuit, large radial fans and air duct calculated to maintain a constant temperature in the complete width.

Technical features:

- Stainless steel structure assembled on adjustable feet, with assembling modular system.
- Conveyor length: 22.000 mm
- Tunnel length: 20.000 mm
- Belt width: 600 mm
- Covers made of rigid polyurethane at low density, 35 mm thickness for a perfect insulation and contact gasket integrated in the cover allow excellent performance.
- The system of lateral support of the covers is made in order to annul the temperature losses, to obtain an easy cleaning and maintenance of the tunnel, and it allows the fast and easy lifting of the covers from both sides.
- Conveyor belt made of blue polyurethane equipped with automatic centering device of the two heads with control photocells and pneumatic drive on both sides , avoiding even the slightest lateral movement of the belt and thus keeping the products positioning and a longer duration of the belt itself. The haulage is obtained by a main roller (Ø of 400 mm) covered with rubber, and by a mechanical tensioning system with two big stainless steel counter rollers in order to reduce the tension on the belt at minimum. The speed is adjustable by inverter. Belt with roller ends.
- The central area of the tunnel is totally insulated in order to allow the maximum performance of the cooling system. Two vaporizing batteries are positioned in the lower part; two fans with external rotor grant silence and high performance for air capacity. The fans are assembled on the hinges to allow a better access.
- The lateral ducts for air delivery and return are made of stainless steel, equipped with 30 mm of external insulator. Fast unhook for easy cleaning and maintenance.

- For the easy transport of the tunnel, the compressor group is placed on the frame of the central area together with the electric and control board.
- Pistons compressor brand Frascold, with automatic system of the pressure control of the gas circuit.
- Electric board made of stainless steel with Touch Screen interface and double check of the temperatures, both of delivery and return.

IN CONFORMITY WITH THE MACHINERIES INSTRUCTIONS 2006/42/CE.

CE Technology &Design MADE IN ITALY

UTILITIES CONDITIONS FOR THE GOOD USE OF THE MACHINERIES

Electrical supply:
Our machineries are built to accept the following voltages: 220 Volts one phase 50 Hz +/- 6%, and 380 Volts 3 phases 50Hz +/- 1%, with earth connection and neutral.
The customer is responsible for providing the machine with a good quality noise-free earth supply, with sufficient low earth loop impedance; failure to provide such a supply may render the machine unable to comply with the requirements of the Electromagnetic Compatibility Regulations 1992 (SI 1992/2372) of the Council Directive relating to electromagnetic compatibility (2004/108/CE as amended)

Compressed air supply:
Our machineries are built to accept micro-filtrated compressed air at 20 µm, dry and oil free, with minimum pressure of 6 bar.

Environmental range:
+5 degrees to +32 degrees Celsius (the electrical cabinet must be with force air circulation – at GORRERI charge) over +32 degrees Celsius (the electrical cabinet must be conditioned – extra, at customer charge) humidity 30%-70% non condensing, max altitude 2.000 m.s.l.

TECHNICAL SPECIFICATIONS

MECHANICAL MATERIALS

Description	Brand	Notes
Sidings bearings and sleeves	SKF, INA	
Plastic sliding bushes and sleeves	igus	
Linear guides	INA, HIWIN, THK	
Reducers	MOTOVARIO, BONFIGLIOLI RIDUTTORI	
Electric Motors	ABB, motive, SIEMENS	
Cast iron support	KOYO, NSK	
Thermoplastic supports	MARBETT	
Chain	REGINA CHAIN, WIPPERMANN	
Chain of metal transport	MAGRIS	
Conveyor in plastic materials	REXNORD	
Pulley and toothed belt	CHIARAVALLI	
Conveyor belts	Ammeraal Beltech	
Handwheels	ELESA, FIAMA	
Gaskets	UNIVERSALFLEX, Angst + Pfister	
Screw jack	UNIMEC	
Alimentary analogue thermometers	AERTECNICA	
Alimentary manostats and pressure gauges	AERTECNICA	

PNEUMATIC MATERIALS

Description	Brand	Notes
Rotating actuators	METAL WORK PNEUMATIC	
Cylinders	METAL WORK PNEUMATIC	
Solenoid valves	METAL WORK PNEUMATIC	
Micro switch	METAL WORK PNEUMATIC	
Pressure gauge	WIKA	

ELECTRONIC MATERIALS

Description	Brand	Notes
Magnetic flow meters	ROSEMOUNT - EMERSON	
Mass flow meter for liquids	MICRO MOTION - EMERSON	
Mass flow meter for gas	M+W INSTRUMENTS	

ELECTRIC MATERIALS

Description	Brand	Notes
Feeders switching	OMRON	
Feeders DC	OMRON	
Brushless motors and driving gears	OMRON	
Connectors	ILME, HIRSCHMANN	
Encoder	OMRON	
Micro switch	OMRON	
Photocell	OMRON	
Sheath	RTA	
Auxiliary automatic switch	SIEMENS	
Overload cutout automatic switch	SIEMENS	
General switch	BRETER	
Inverter	OMRON	
Magneto-thermics	SIEMENS	
Emergency module	OMRON	
Safety and modules sensors	OMRON	
Terminals	WAGO	

PLC	OMRON	
Control panel	OMRON	
Seat of fuses	ITALWEBWER	
Push button board	MOLLER	
Relay	OMRON	
Quantity sensors	OMRON	
Inductive sensors	OMRON	
Remote control switch	SIEMENS	
Timer	OMRON	
Transformer	LEGRAND	