

TECHNICAL OFFER: Cake Production Line

Rectangular cakes made from sponge cake (in layers), filled with cream;

- Cake composition: rigid support base / sponge cake layer / syrup, cream / sponge cake layer / pressing / syrup / cream / sponge cake layer / pressing / syrup / cream, cocoa powder, granulated sugar, walnuts or hazelnuts.

- Capacity: 240 cakes/h

B. AUTOMATIC PRODUCTION LINE FOR SPONGE CAKES (IN LAYERS)

FILLED WITH CREAM:

A. a. Rectangular cakes made from sponge cake (in layers), filled with cream

- Cake composition: rigid support base / sponge cake layer / syrup, cream / sponge cake layer / pressing / syrup / cream / sponge cake layer / pressing / syrup / cream, cocoa powder, granulated sugar, walnuts or hazelnuts.
- Capacity: 240 cakes/h, with a width of 400

MACHINE DESCRIPTION:

ARTICLE 1

1 pc. Belt conveying device for feeding the cakes to the various work units:

- stainless steel support structure, with height-adjustable support legs;
 - intermittent movement via an inverter-controlled motor;
 - set of belts, fitted with stops, for feeding the cakes;
 - indication of the length and position of the tray under the operating units, controlled by an encoder;
 - mechanical device to adjust the distance of the centering stops of the conveyor belts.
- m Section in linear meters for the belt conveyor.
- m Section in linear meters for the adjustable side guides.

ARTICLE 2

1 Available space on the conveyor belt, for manual loading of the sponge cake base.

ARTICLE 3

1 Syrup feed tank, equipped with:

- hopper and base made of stainless steel, mounted on wheels;
 - sensor for minimum product level;
 - pump for transferring the product to the syrup depositing system.
- 2 Pump for the syrup depositing system, driven by an inverter, complete with connection pipe.

ARTICLE 4

1 Syrup dosing system consisting of:

- support frame for the spray ramp, fixed to the conveyor belt;
- syrup spray ramp, with spray nozzles.

ARTICLE 5

1 Cylinder depositor, model DRT, for depositing homogeneous creams or jams, dosable at room temperature:

- "C"-shaped support frame for the depositing head, made of stainless steel, mounted on wheels;
- electro-mechanical cam device to ensure vertical movement of the depositing head;
- stainless steel depositing assembly with 2 detachable cylinders;
- stainless steel hopper with 2 detachable cylinders, for transporting the product to the depositing assembly;
- photocell to detect the product level in the hopper;
- handle for adjusting the height of the depositing assembly.

Items for product "A":

- Interchangeable dosing plate with adjustable opening.

ARTICLE 6

- 1 Available space on the conveyor belt, for manual operation.

ARTICLE 7

- 1 Product pressing system, equipped with:
 - support frame fixed to the conveyor belt;
 - handle for height adjustment;
 - support device with vertical, pneumatic movement.

Items for product "A":

- Interchangeable pressing device.

ARTICLE 8

- 1 Syrup dosing system, consisting of:
 - support frame for the spray ramp, fixed to the conveyor belt;
 - syrup spray ramp, with spray nozzles.

ARTICLE 9

- 1 Cylinder depositor, model DRT, for depositing homogeneous creams or jams, dosable at room temperature:
 - "C"-shaped support frame for the depositing head, made of stainless steel, mounted on wheels;
 - electro-mechanical cam device to ensure vertical movement of the depositing head;
 - stainless steel depositing assembly with 2 detachable cylinders;
 - stainless steel hopper with 2 detachable cylinders, for transporting the product to the depositing assembly;
 - photocell to detect the product level in the hopper;
 - handle for adjusting the height of the depositing assembly.

Items for product "A":

- Interchangeable dosing plate with adjustable opening.

ARTICLE 10

- 1 Space on the conveyor belt for manual loading of the sponge cake base by the operator.

ARTICLE 11

- 1 Product pressing system, equipped with:
 - support frame fixed to the conveyor belt;
 - handle for height adjustment;
 - support device with vertical, pneumatic movement.

Items for product "A":

- Interchangeable pressing device.

ARTICLE 12

- 1 Syrup dosing system, for rectangular cakes, consisting of:
 - support frame for the spray ramp, fixed to the conveyor belt;
 - syrup spray ramp, with spray nozzles.

ARTICLE 13

1 Cylinder depositor, model DRT, for depositing homogeneous creams or jams, dosable at room temperature:

- "C"-shaped support frame for the depositing head, made of stainless steel, mounted on wheels;
- electro-mechanical cam device to ensure vertical movement of the depositing head;
- stainless steel depositing assembly with 2 detachable cylinders;
- stainless steel hopper with 2 detachable cylinders, for transporting the product to the depositing assembly;
- photocell to detect the product level in the hopper;
- handle for adjusting the height of the depositing assembly.

Items for product "A":

- Interchangeable dosing plate with adjustable opening.

ARTICLE 14

1 Space on the conveyor for manual operation.

ARTICLE 15

1 Fine dust filtering unit, consisting of:

- 4 stainless steel support legs;
- stainless steel hopper;
- detachable fine filter;
- internal scraper with electro-mechanical movement.

Items for product "A":

- Product limiting mask.

ARTICLE 16

1 Vibrating depositor for depositing dry granular products:

- 4 stainless steel support legs;
- stainless steel product hopper;
- depositing unit consisting of a vibrating base;
- timer for adjusting the deposit;
- potentiometer for adjusting the product quantity;
- electric and control panel.

ARTICLE 17

Conveyor belt to be positioned after the ULTRA-SOUND cutting device, for receiving and manually handling the pre-cut cakes

1 FDA polyurethane conveyor belt, with:

- stainless steel support structure with height-adjustable legs;
- movement driven by an inverter-controlled motor;
- belt scraper with collection tray;
- quick-release belt device for cleaning operations;
- m. right-hand section of the conveyor belt.

ARTICLE 18

1 Electrical installation and control panel with PLC.

C. CUTTING ROBOT

Automatic ultrasonic blade cutting system.

The ultrasonic blades are moved by 1 robot (6 axes), and cut the product as it is moved by a conveyor. See the specifications contained in this document for the requested details.

1. Data:

PARAMETERS	DESCRIPTION
Possible cutting types	X - Y
Number of robots	1
Number of blades per robot arm	2
Standard blade dimension	Length: 305x2=610 mm Maximum cutting depth: 50 mm
Product	Cake layer - room temperature dim. 600x400 mm - h < 50 mm placed on a plastic sheet Guided along the side
Speed	About 1 cut/second
Series cutting	Available
Available marking	CE, CSA, UL
Standard power supply	400 V ac, 3 phases + ground + common
Maximum load current	27 A
Other power supply	To be evaluated on request
Compressed air supply	4 bar minimum (1)

(1) The safe use of compressed air is to cool the blade; NI/min is the maximum flow rate allowed by each of the two installed solenoid valves; downstream of the valve there is a regulator that reduces the flow rate, and the actual flow rate will be adjusted according to various factors (room temperature, product temperature, etc.). Normally, we consider 50% of the maximum value.

2. Standard machine:

- Stainless steel base frame
- Safety/acoustic guards, made of an aluminum frame and Lexan panels, doors fitted with electronic interlock switches.
- Standard conveyor belt, with an inverter-driven motor, length 4000 mm, width 700 mm, drum diameter 100 mm; side guides at the infeed, sensors for product verification.
- 1 robot, 6 axes, payload capacity 70 kg (the robot frame is painted; stainless steel not available);
- N°2 ultrasonic systems, including generators, cables, converter, horn, blade.
- Pneumatic equipment with the air treatment unit and solenoid valves installed in the area, not inside the enclosure.
- The electrical installation includes a cabinet with a Siemens PLC and control panel. On the control panel it is possible to select: cutting dimensions; cutting speed (to optimize the cutting result for different products).

- Remote assistance system included via eWon router (if internet connection is available at the customer's site).

3. Machine work cycle:

The same robot will perform both the X and Y cuts.

4. Standards

Components:

- Robot: Fanuc
- PLC: Siemens
- Pneumatics: SMC or FESTO
- Induction motor: SEW