

# ***BIRO***

## **MODEL F2000/3000/4000/3000HD/B1200 OPERATION & SERVICE MANUAL PARTS LIST GENERAL INSTRUCTIONS**



### **\* IMPORTANT SAFETY NOTICE \***

This Manual contains important safety instructions which must be strictly followed when using this equipment.

Item No.

###6-09-1

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## WARRANTY

The installation, the starting and the functioning of the machine must be effected by skilled personnel only, who knows the machine. The personnel assigned to the assistance and maintenance must always follow the instructions contained in the manual. The patty forming machine must be used by trained personnel only. If necessary provide for the personnel's training, to learn the usual operations in order to assure the correct use of the machine.

ABM disclaims all responsibility in case of:

- Assembly of the components of the machine and the electric connection not effected according to the established rules;
- Improper use of the machine;
- Tampering the controls or the security protection;
- Use of non-original spare parts;

The warranty does not cover the normal use of the parts.

## RELIABILITY

In case of improper use of the machine, it is possible to get injuries and accidents.

The patty forming machine must be used only by the personnel who must know the machine and the content of the manual:

- Make sure that unskilled personnel – and especially children – do not operate the machine;
- Do not modify or remove the safety devices (covers and protections);
- Use the machine with concentration avoiding distractions;
- Before cleaning and maintenance, always disconnect the machine from the supply system;

- Periodically check the main supply wire, in case of breaks or bad functioning, provide for the replacement by skilled personnel.
- Stop the machine whenever it makes strange noises during the functioning;
- Always keep the working area clean and dry;
- Do not deal with the repairs if you are not able to eliminate the possible breakdowns, but contact the technical assistance;
- The machine is made of accessories and parts especially designed in order to reduce the maintenance and minimum.

## GENERAL TECHNICAL FEATURES

### Description

- The ABM Patty Forming machine is characterized by:
- Compactness and small overall measurements and with special features, able to satisfy the producing requirements of both the great and the small distribution;
- Reliability and safety in the operation and the cleaning processes;
- Hygiene of the parts in contact with the product through the use of innovative materials conformed to the current regulations;
- Precision and compactness of the finished product;
- Strength, easy use, controls and working stationing especially designed to optimize ergonomics.

### Main Features

- The castings are made of anticorrodal thermically treated with innovative material for food, while all the other components have been made of stainless steel. These parts are particularly fit to resist the corrosive agents of the products used and are in conformity with the hygienic regulations for food;

- The moving parts are started by an electronic motor and the movement transmission operates through a chain and mechanism;
- The hopper, the paddle, the conveyor belt, the drum and the accessories are easily disassembled to effect a regular cleaning.
- The thickness of the product is adjustable;
- The quantity of the hamburgers produced per hour can be varied on request in the models with current continue motors;
- The hopper and the moving of the product operate in a continuous way and this allows a homogenous dough;
- The controls are easily identifiable and suitable to prevent accidental starting;
- The transmission parts are located inside the crankcase;
- The machine is equipped with a device which allows the cleaning of the roll during functioning (scraper) and permits the separation of the products;
- Different drums are available, suitable o the forming of products with different shapes;
- On request, the machine can be supplied with electrical motors of different tensions.

## Safety Devices

The Patty Forming Machine is equipped with the following protection and safety devices:

- Safety micromagnet on the hopper;
- Plastic cover servo-assisted by a micromagnet;
- Protection and front cover of the removable parts;

- Handle of the paddle optimized to avoid crushing and use of keys or particular tools;
- Starting of the machine through reverser for servo-assisted manual or automatic control;
- Emergency button
- Materials in conformity with the food hygienic regulations and fit to guarantee the good resistance to oxidation.

## Components Description

### CONTENTS

1. Cover
2. Hopper
3. Protection
4. Papering attachment
5. Drum stop ring nut
6. Drum
7. Scraper
8. Leading roll
9. Led roll
10. Conveyor belt
11. Footswitch
12. Speed variator for the mod. with current continuous
13. Manual/automatic switch
14. Stop button
15. Feeding signal light
16. Stop signal light
17. Transmission protection crankcase
18. Base
19. Cover shaft

## Overall Measurements

### F2000/4000

Length (A) 620

Width (B) 500

Height (C) 610

Gross Created Weight – 72 kg.

Net Uncrated Weight – 67 kg.

Hopper capacity – 20 kg.

Optional Conveyor Belt – 1850 x 145

Hopper Power – see identification tag

Motor Power – see identification tag

# INSTALLATION

## Packing Check

- At the receipt of the machine, check the package to verify that the machine has not been damaged.
- The components of the package can be assimilated to the urban solid rubbish.

## Placing the Machine

- It is advisable to place the Patty Forming Machine on a stable working table positioned on a height of about 800mm from the ground.
- The installation area must allow the use of the machine in an optimal and ergonomic way. It is advisable to place it in a dry, breezy place, far from warmth sources; it can be used without any special arrangement of a normal working place.

## Electrical Connections

- The machine is equipped with a feeding wire. Before connecting it to the socket, verify the functioning tension showed on the identification tag.
- In case the details do not correspond, contact the distributor for the assistance service.
- The socket for the connection must correspond to the current rules.

## Control Panel

- Starting switch (automatic/manual) (1)
- Red stop button (2)
- Machine operating signal lamp (3)
- Machine stop signal lamp (4)
- Handle for speed regulation (5) (only for model at variable speed)

Note – in the Model F4000 the regulation of the speed and the quantity of hamburgers is made by rotating the regulating handle with a quantity of products variable from... to a maximum of 4000 pieces per hour.

## Operating Test

- Before controlling the functionment, if you have not already done, you must assemble the hopper, assemble the conveyor belt, close the cover and the front protection.
- Connect the footswitch, inserting the control pipe into the bush on the control panel side.
- Connect the plug to the socket.
- Position the switch handle (1) on automatic.
- Verify the rotation of the drum and the conveyor belt (see the arrow).
- Verify the lighting of the light.
- Push the stop button (2), the machine must stop and the light (3) must light up.
- Position the switch handle (1) on manual.
- Press the footswitch.
- Verify the rotation of the drum and the conveyor belt (see the arrow).
- Verify the lighting of the light.
- Push the stop button (2). The machine must stop and the light (3) must light up.
- During the functionment, when lifting the front plexi protection, the machine must stop.
- To continue, turn the operating switch again.
- During the functionment, when rotating the hopper cover, the machine must stop.
- To continue, turn the operating switch again.

## UTILITY

To obtain good results you must use fitted meats and doughs. Arrange the machine with all the accessories disassembled.

**It is advisable not to use and let the machine function without any product in the hopper.**

### Loading the Automatic Papering Attachment

- Take out the papering attachment by pushing the button (1) and slipping it off from the guide pins.
- Replace the pushing spring.
- Insert the paper block and take away the wrapper.
- Reassemble the papering attachment in the guide pins, until the stop click.
- Release the spring using the button placed under the papering attachment (2).

- Position the papering attachment, freeing the locking lever (3).
- Regulate the center of the paper, turning the centering knob (4).

### Product Thickness Regulation

The machine is regulated in the factory with a medium thickness; to obtain another thickness, follow the instructions indicated below:

- Take out the regulation drum by operating on the ring nut clockwise and taking out the drum.
- Loosen the stop knob of the gauging device (1).
- Turn the gauging device, to regulate the thickness (2).
- Lock the stop knob (1).
- Reassemble the drum, inserting it in the guide shaft, until the stop click.

### Loading the Product and Use

- Open the cover and load the product in the hopper and close the cover again.
- Connect the plug to the socket.
- Start the machine: push the automatic switch (1).
- Regulate the production speed with the regulation handle (2) (only for model with selector).
- During the functionment, operate intermittently, in order to clean the drum from residual product.
- The product will come down on the conveyor belt and will be moved to its end.
- To stop the machine, operate on the stop button (1) or open the protections.
- To continue, release the stop button and turn the start switch again (2).

## CLEANING AND HYGIENE

### Complete Cleaning

- It is advisable to clean the machine daily or if necessary more frequently, in case it was very dirty or after long periods of inactivity.
- The cleaning must be carefully made for the parts in contact with the product.
- Clean the structure of the machine with soft cloths, sponges, and rinse with water frequently. Finally dry with soft and dry cloths.

**Attention:** the machine is not protected against steam throws, high pressure throws or similar systems. In this case there is risk of short circuit or serious damages to the machine.

### Disassembly of the Removable Accessories

- All the cleaning operations of the machine must always be done with the machine not equipped with hopper, taking out the plug from the socket.

### Disassembly of the Paddle

- Hold the handle, turn anti-clockwise and lift.
- To avoid accidents before disassembling, position the paddle away from the hopper pins.

### Disassembly of the Hopper

- Open the cover completely.
- Turn the hopper anti-clockwise, lift it and take it away from the base.

### Disassembly of the Conveyor Belt

- Lift the belt on the side of the return pulley.
- Take off and disassemble the conveyor belt.
- Disassemble the complete conveyor from the guide pin.

### Disassembly of the Regulation Drum

- Turn the stop ring nut anti-clockwise, pull the drum and disassemble it from the control pin.

### Disassembly of the Scraper

- Loosen the stop knob of the scraper shaft.
- Take off the complete scraper.

### Cleaning of the Disassembled Components

- All the disassembled components must be washed with warm water, neutral detergent, rinsed in water and dried.

### Assembly of the Accessories

To effect the reassembly of the accessories, proceed in the inverse way to what previously described in the disassembly. Pay special attention to the assembly of the following accessories:

- **Hopper:** Insert the hopper with the two guides pins in the fusion taking care to position the micromagnet on the side of the cover shaft and turn it until it hooks the pins.
- **Paddle:** position the inserting shaft of the paddle so that the pins in the hopper do not overlap the paddle, then hold the paddle, put it on the shaft, making the shaft plug coincide with the housing in the drum.
- **Drum:** assembly the drum in the guide pin, making the shaft plug coincide with the housing in the drum.

## MAINTENANCE

### Ordinary Maintenance

The machine does not require a special maintenance for the regulations or replacements of parts, but only requires a normal maintenance carried out by the operator which consists of the following operations:

- Verify the functionment of the micro-switches and of the electric buttons.
- Verify the state of use of the feeding wire.

Whenever there was the necessity of repairs or special maintenance, contact the assistance service or a qualified technician.

## SPARE PARTS LIST

### Wiring Diagrams

Models F2000 / F3000 / HD3000

Contents:	TR	= Transformer 0/115/230 – 0/24
	K1	= Motor Contactor
	PE	= Emergency Button
	MS1	= Security Microswitch
	MS2	= Security Microswitch
	MT	= Motor
	LE	= Emergency Signal Lamp
	LT	= Tension Signal Lamp
	TS	= Signal Transection

Selector Functions: S1	Position A = Impulsive Function
	Position Ø = Stopped Machine
	Position B = Retentive Function

### Model F4000

Contents:	TR	= Transformer 0/115/230 – 0/24
	K1	= Motor Contactor
	PE	= Emergency Button
	MS1	= Security Microswitch
	MS2	= Security Microswitch
	MT	= Motor

LE = Emergency Signal Lamp  
LT = Tension Signal Lamp  
TS = Signal Transection

Selector Functions: S1      Position A = Impulsive Function  
                                  Position Ø = Stopped Machine  
                                  Position B = Retentive Function

\*\* Electric Diagram \*\*

L1/MP = Feeding 220 Vac  
T1/T2 = Start/Stop Board  
Ø = Signal Lamps  
1 = Emergency  
3/4 = Security Switches  
5 = Selector  
6 = Automatic  
7 = Foot Switch

Model 2000?  
Electronic Card

(diagram)  
Line 230 Vac L1 - L2  
Motor 230 Vac 60 Hz U – V

Signal lamp  
Start button  
Stop Button  
Security microswitch

K1 = Siemens mod. 3tk2031 Control switch (alternative)?  
K2 = ABB mod. B63001 Control switch  
U – V = Motor 230 Vac 60 Hz  
F1 = Fuse 500 mA  
T1 = Transformer 16Va pri

## **RECOMMENDED SPARE PARTS**

HD3000

(drawing)

(3 pages w/drawings)

## PNEUMATIC SPARE PARTS