MBF

TECNOLOGIE PER L'IMBOTTIGLIAMENTO

WENTE BROS. WINERY
5565 TESLA ROAD
LIVERMORE, CA
(USA)

Herewith attached we deliver to you :

1) The original EC declaration of conformity (EC00000571)

2) N°1 copy of the handbook of use and maintenance for the automatic machine :
FILLMATIC 1200.30LV (serial number MA000024LV)

$ 26,600

Date 2-05
INSTALLED

Signature for acceptance
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1 GENERAL INFORMATION

1.1 INTRODUCTION

This manual contains all the information necessary for correct machine installation plus operating and maintenance instructions.

We recommend that you read the manual with care before proceeding with any work on or with the machine.

Machine operating safety is first of all entrusted to specialists who must have an in-depth understanding of the machine.

"Specialists" are understood to be persons with professional experience and training who have been specifically authorized by the "Safety Manager" to manage the machine during its various life stages.

WARNING

Read and comprehend all the information contained in this manual.

Store the manual in a dry site where it is protected from heat. Do not tear out, remove or damage parts or all of the manual for any reason for at least 10 years from time of delivery.

Transfer the manual to any other user or subsequent legitimate owner of the machine.

Immediately inquire of our Technical Service Division for any malfunctions not described in the present manual.

The manufacturer declines all responsibility for harm arising from incorrect machine installation, erroneous machine use, poor maintenance and/or failure to comply with the provisions presented in this manual.

It is necessary, in order for the guarantee to be valid and to prevent cancellation of guarantee coverage, that:

- machines be correctly installed;
- only original spare parts be used;
- all the operating and maintenance procedures described in this manual be correctly and promptly performed;

The technical data and illustrations in the present document are not binding.

MBF S.p.A. reserves the right to bring, at any time, all those modifications it holds to be opportune for improving its products.

All the technical information contained in the present manual is the exclusive property of MBF S.p.A. and must be considered to be confidential.

As a consequence even partial reproduction or transmission is prohibited without written authorization from the Manufacturer.

1.2 IDENTIFICATION PLATE

Each machine is identified by its own name-plate that carries **(fig.1)**:

A: Identification of the Manufacturer;

B: CE conformity brand;

C: Serial number;

D: Model;

E: Year of manufacture;

F: Machine weight (Kg.);

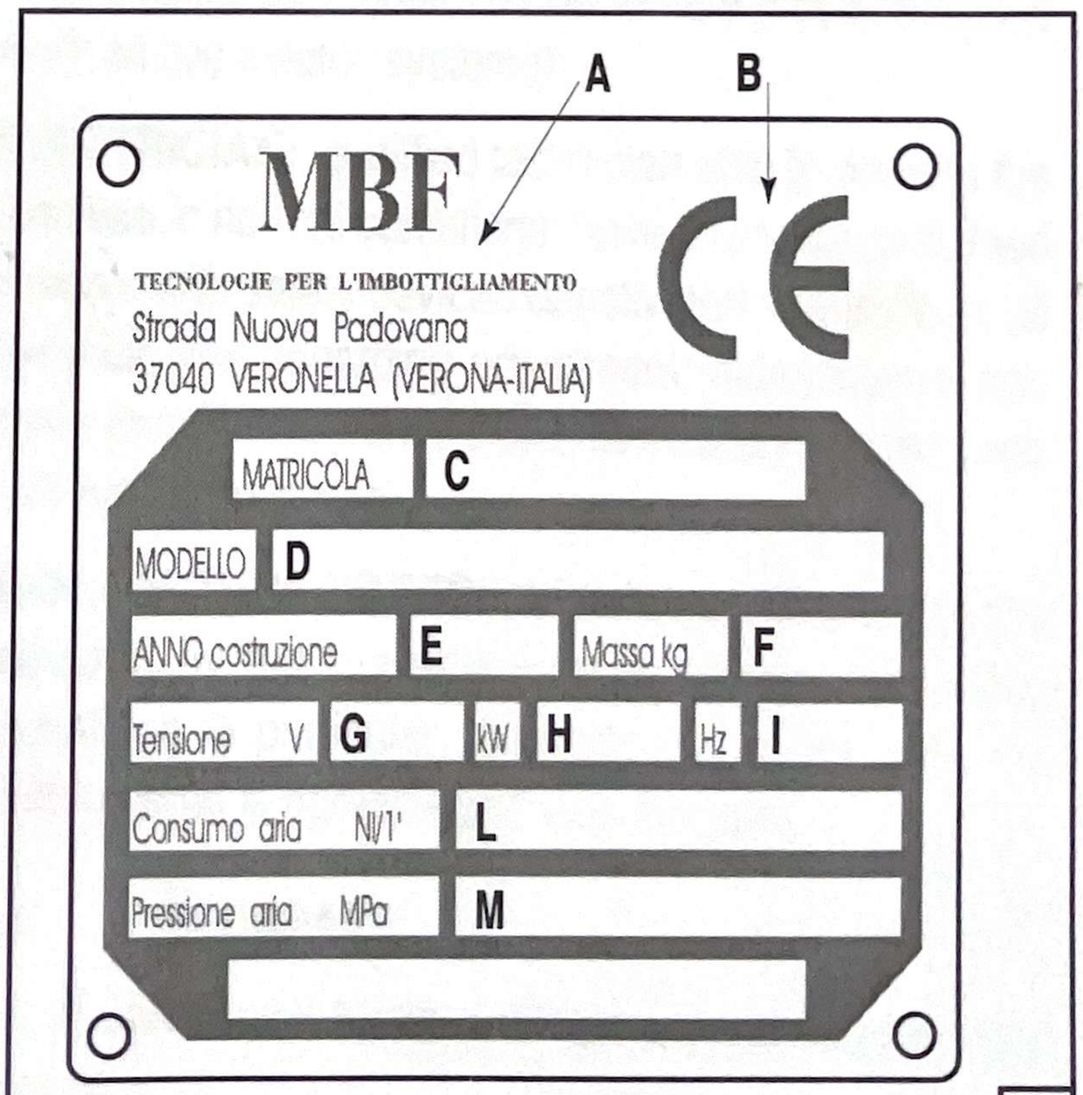
G: Mains voltage (Voltage);

H: Installed power (kW);

I: Frequency (Hz);

L: Compressed air consumption (Nl/min.);

M: Compressed air pressure (Mpa).



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1.3 HOW TO CONSULT THE MANUAL

The operating and maintenance manual is essentially made up of and divided into:

- Identification page carrying the type/model of machine, the manufacturer's Company Name, the release and date of printing of the manual.
- A table of contents that gives chapter and page references for individual subjects.
- Machine instructions divided into chapters.
- Attachments, where specific descriptions may be found for your machine, the turrets in your possession (chapters are preceded by a letter of the alphabet), further technical information concerning client specifications, such as the lifting diagram and technical data, the wiring diagram and the manuals for the commercial apparatus the machine is equipped with.
- Spare parts list that clearly indicates the main components of the machine.

Text of particular importance is brought to the reader's attention by being in boldface type and preceded by symbols defined as follows:

INFORMATION

Evidencing information contained in the document that does not require particular caution or attention.

WARNING

Comply with the information in order to prevent possible damage to property, the machine or harm to persons.

ATTENTION

Underlines particular situations to comply with to prevent damage to persons, property or the environment.

DANGER

Situations of extreme danger for the health and safety of persons.

1.4 UP-DATING OF THE MANUAL

The manual is structured in independent chapters. This makes it easy to consult and understand and permits flexible up-dating of different sectors depending on the job being done.

Complete and up-dated copies of the manual will be delivered when substantial modifications and/or additional requirements are brought to the machine. The user is requested to eliminate preceding manuals.

WARNING

MBF S.p.A. will not be responsible for any error or damage caused by failure to up-date the manual in the user's possession or due to omission of parts of the manual issued subsequent to delivery of the machine.

1.5 DESCRIPTION OF OPERATOR QUALIFICATIONS

Minimum personnel expertise levels are required, depending on the different phases of machine life, to ensure correct and safe performance of all man/machine interactions.

To this end we herein list the various operator qualifications and tasks which shall be repeated, with the relative requirements, in the various chapters of the manual.

Unqualified personnel

MACHINE OPERATOR: without specific skills, qualified only to perform simple tasks such as operation of the machine using the controls on its push-button board and procedures for loading and unloading materials used during the production process with guards installed and active (not qualified to use the machine with manual feed controls and guards open).

Qualified personnel

MACHINE OPERATOR / MAINTENANCE MECHANIC: qualified technician able to run the machine in normal conditions, have it function with feed controls with safety devices deactivated (JOG mode) and to intervene on machine parts to make all the adjustments and any maintenance and repairs as necessary (not qualified to work on live electric systems).

ELECTRICIAN: qualified technician able to operate the machine in normal conditions, have it function with feed controls with safety devices deactivated and perform all electrical jobs regarding adjustment, maintenance and repair (qualified to work inside boards and junction boxes with live components).

MANUFACTURER'S TECHNICIAN: qualified technician provided by the manufacturer to perform complex operations in particular situations or, in any case, to perform what is agreed-upon with the user.

1.6 GLOSSARY

List of uncommon terms and conventions used by the manual:

Accessories: equipment, normally made of plastic, necessary to guide the bottles.

Attachments: these refer to the structure of the manual and regard technical/commercial documents. They make specific references to the turret in the owner's possession. To help find attachments each single chapter starts with a letter of the alphabet.

Autoclaves: pressurized tank, usually present in the product supply line, which is not a component of the machine.

Outside ring: largest outside diameter of the top part of the bottle neck;

Inside ring: inside diameter of the bottle neck;

Arm (lever): component of the rinsing turret - mobile part carrying the bottle grasping clamp pad.

Chap.: abbreviation of the term Chapter, referring to the structure of the manual (part of the subdivision of manual sections).

Screw: rotary cylindrical component with helical spiral to transport bottles.

Stud: component of the rinsing turret - cylindrical part that supports format parts.

Conveyor: fixed element necessary to guide the bottles from the spider to the cylinder plates and vice-versa.

Primitive diameter (ØP): diameter on which the bottles rest, described from the center of the cylinder plates and the cock.

Limit switch/ microswitch: mechanical position and/or protection switch to stop the machine or a device.

Photocell: optical object detection sensor

Carousel (rotating plate): component of the rinsing turret - flat central part (rotating plate) that supports and rotates the clamps.

Lay-out: placement drawing for the machine and/or complete production line personalized depending on connections to process flow and to specific customer requirements.

JOG mode: machine movement with mobile jog push-button board and safety guards open.

Enbloc unit: assembly of several turrets mounted on a single frame.

Operator panel: interface between machine operator and PLC for machine operation control.

Pitch: measurement, in millimeters, of the circumference arc between the center of two cocks.

Work surface: surface on which the bottles slide, normally driven by the chain.

Clamp: component of the rinsing turret - element that grasps the neck of the bottle to turn it over and process it.

PLC: programmable logic controller. Receives signals from the sensors present on the machine and consequently activates outputs according to a previously programmed internal logic.

Machine production: machine rotation speed measured in bottles per hour (b/h).

Waste fluids: drain liquids or water coming from the rinsing turret during operation.

Rinser: machine designed to work in the agro-alimentary sector. Generally upstream from the filler and designed to clean bottles using sterilizing fluids.

Sensor: inductive detection sensor for metal objects.

Siderail: guide for bottles made of plastic and opposite the screw.

Spider: rotary element with compartments for holding the bottles, used to transfer bottles to the work surface.

Pad: component of the machine - rubber clamp element for contact with the neck of the bottle.

Dwg.: abbreviation of the term drawing and referred to the structure of the manual (graphic illustration with references to descriptions and codes).

Turret: machine component that rotates above the frame. Does not include drive components and gears, adjustment devices, safety devices, control push-buttons and selectors.

Twist: component of the rinsing turret - helical guide where the bottle grasping components slide: used to turn the bottles upside down.

Nozzle: machine component - duct for delivery of fluid.

2 TECHNICAL CHARACTERISTICS

2.1 MACHINE DESCRIPTION

FILLMATIC LV machines are automatic filling machines that can work by gravity flow or with a light vacuum inside the tank. They are designed to fill non-carbonated products such as water, wine, spirits, liqueurs and juices.

It can fill containers made of glass or PET with dimensions determined contracting stages and can fill fluids that are hot or are at room temperature.

The light vacuum is obtained by a large capacity low-head side-channel pump. The light vacuum functions to clean the spout and prevent drippage.

On request the product is protected by an inert gas while it is in the main tank. Air contained in the bottle is carried directly to the pump during the filling procedure. It does not pass through the main tank and does not flow up against the product.

The machine is made according to Machine Directive 89/392 and carries the CE brand.

"FILLTRONIC" versions have the following characteristics:

- Inert gas injection parameters can be varied as desired depending on the type of bottle, capacity, hourly output, desired degree of oxygen protection. Parameters will remain unvaried in all machine operating conditions (speed changes, etc.).
- Air aspiration through the cock (and through the wine tank) is automatically stopped when no bottles are present and always between entry and exit spiders. The system also controls automatic sanitizing of the "Vacuum" circuit.
- The system monitors and controls individual cock opening during drainage, CIP procedures, etc. (Cocks all open, Cocks all closed, Cocks open/closed intermittently, Cocks open when above basin - sector, etc.).
- The system permits customizing and storing work parameters for all types of wine and bottles.

The system is composed of:

- Machine control PLC + touch screen.
- Bank of solenoid valves (controlled by the PLC).
- Pneumatic actuators for all functions.

Pneumatic actuators are very simple components. They are made entirely out of stainless steel, they are all identical for all types of functions, they use an inner diaphragm made of a "DU PONT" elastomer approved for contact with "foodstuffs" and resisting constant steam at 120°C.

2.1.1 Machine name

The name of the machine varies according to the turrets present on the frame and to their pitch diameters.

Here is an example of a machine name:

FILLMATIC 1440.36 LV;

where **1440** is the primitive diameter, **36** is the number of filling cocks, **LV** is the light vacuum version.

2.2 MAIN COMPONENTS

Legend (fig.1)

A: Turret support frame.
B: Bottle lift cylinders.
C: Electro-pneumatic cock.
D: Ring tank for filling liquid.
E: Pneumatic actuators
F: Upper ring tanks for blowing gas.
G: Bank of solenoid valves.
H: Electric rotating commutator.
I: Anti-rotation beam.
L: Vacuum hose.

2.2.1 Modular support frame

Machine frame made entirely out of stainless steel, composite welded structure with fine sandblasted outer surface, great strength and sturdiness.
The outer table is steeply sloped for total liquid drainage and easy cleaning.

The base is made by combining the modular elements for each station/turret (permitting one or more stations to be replaced or added in the future).
When machine sizes are greater than 1800 mm pitch diameters the frame is divided into two parts: the front part has a rectangular shape with inclined table where the spider support and belt support columns are present; the rear part has a ring shape to support the rotary table and the turret.
Both parts are made entirely out of stainless steel and with sandblasted outer surface.

Electric motor and machine drive components are installed below the structure, totally covered and protected.

2.2.2 Safety guards

Safety guards are installed around the perimeter of the machine and rest on the floor. Doors are made of panes of thick tempered glass with adhesive safety film on both sides. Each guard column is secured to the frame by anchor brackets. Each mobile guard is equipped with safety microswitches.

As an option these safety guards can be made to open upwards on high density polyethylene guides fastened to the machine's casing columns. These have electric motors to lift them, safety devices protecting against accidental closure, worker safety devices that comply with EC 89/392 standards.

2.2.3 Electric board

The operator's electric control board is external to the machine. It is made of stainless steel and has a fixed support arm. It includes electro-mechanical selectors and push-buttons and a multi-function push-button panel with digital display to show machine data and functions;

The system also includes an electric power cabinet with IP54 degree of protection that contains the PLC, inverter, electro-mechanical components and comes with ventilation system.

2.2.4 Bottle lifts

Bottle lifts (cylinders) with mechanical spring operation, made entirely out of AISI 304 stainless steel.
Cylinder extension is powered by the inner spring.
Cylinder retraction is powered by a stainless steel cam.

2.2.5 Tank

The ring-shaped tank is made internally, on request, out of AISI 304 or AISI 316 stainless steel. The tank has a solid cross section in sizes with 720 and 960 primitive diameters. All tank surfaces are machined and all parts on contact with the product are polished.

The bottom of the tank is inclined so that all fluid drains out at the end of the bottling process and/or during sanification.

Height movement, with manual or electric power, permits adjustment for the various bottle formats. Product level is detected and regulated by a conductive probe. The level of product is visible through the tempered glass windows placed on the outer wall of the tank.

2.2.6 Cock

Three versions are available, made entirely out of AISI 316 stainless steel that is totally precision machined for controlled flow and high performance.

MBF cock

Permits a 40 mm bottle level adjustment (60 mm optional). A valve is present on the air return tube that intercepts air aspiration when no bottle is present. Complete with central fluid closure valve, rods and centering cone.
The central body of the cock also has a plastic membrane for safer and more reliable sanification.

MBF + injection cock

Permits a 40 mm bottle level adjustment (60 mm optional). A valve is present on the air return tube that intercepts air aspiration when no bottle is present. Complete with central fluid closure valve, rods and centering cone.
The central body of the cock also has a plastic membrane for safer and more reliable sanification. Equipped with a separate channel for blowing inert gas into the bottle before starting the filling process.
This is recommended for delicate products to reduce oxygen absorption to a minimum.

2.2.7 Electric rotary commutator

The electric rotary commutator can be present or absent depending on the characteristics of the machine. This device, located at the top center of the machine, functions to transmit electric signals between the rotating part and the fixed part of the machine.

2.4.6 C.I.P. (Cleaning In Place) sanifying

The machine must be equipped with an automatic device for pneumatic opening of filling valves in sectors. Filling valves must also be equipped with air return valves. Delivery includes the sanifying basin which is inserted below filling valves **A (fig.2)** and which recovers residual product inside the filling valves as well as recovery and recirculation of the sanifying product. The outsides of the filling valves are also sprayed by sanifying product, again with recovery. Sanifying is done without dummy bottles.
The sanifying product is fed through the product entry tube and returns through the vacuum tube with total filling of the tank.

2.4.7 Sterile Cabin

The sterile cabin providing complete coverage of the area above the machine is made up of AISI 304 stainless steel sheet metal, with a plexiglas inspection window and filters for the generation of a differentiated sterile air flow **(fig.3).**

The filter system consists of a series of laminar flow hoods. The hoods are made of AISI 304 stainless steel containers and, in their complete versions, include pre-filter, total filter and exhaust fans.

Pre-filter

Soft fabric made of non-woven cotton and synthetic fibers, complete with electric welded wire support mesh glued to the filter element.
Filtration class: G4

CAUTION

The pre-filter cannot be regenerated.

Total filter

Ultra-high efficiency MACROPUR-F filter composed of an extremely fine glass fiber paper folded with synthetic spacer thread for proper air distribution and excellent rigidity of the filter element. Aluminum retaining frame and protective mesh made of AISI 304 stainless steel.
Filtration class: H13

CAUTION

The filter cannot be regenerated.

Fans: silenced operation, with integrated motors and double suction.

Standard supply includes an electric control board with two selectors.

Fume suction selector:

Pos. 0 : fume aspirator off.

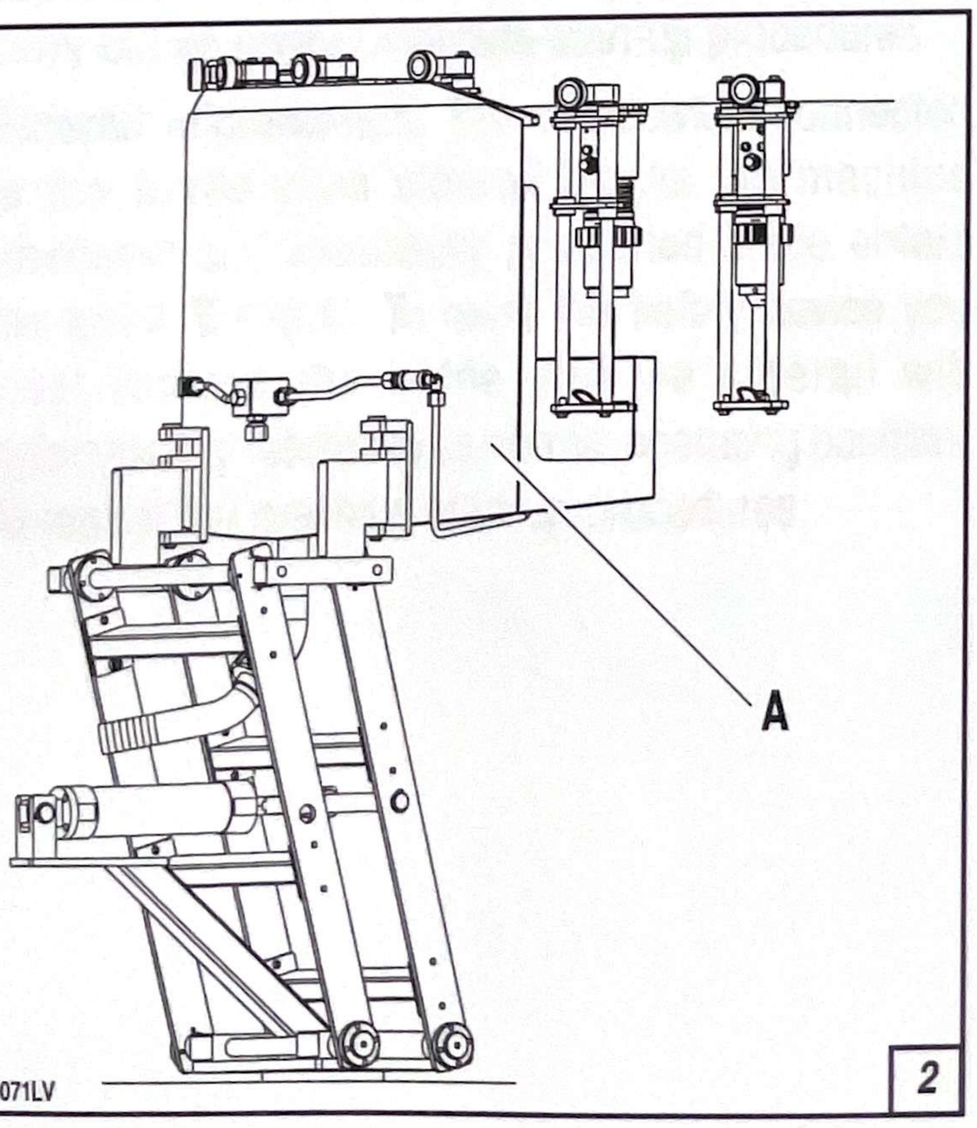
Pos. I : fume aspirator on.

Illumination selector:

Pos. 0 : internal illumination off.

Pos. I : internal illumination on.

Fan speed may be varied with the related adjustment controls located on the electric control board. For further information consult the attached wiring diagram.



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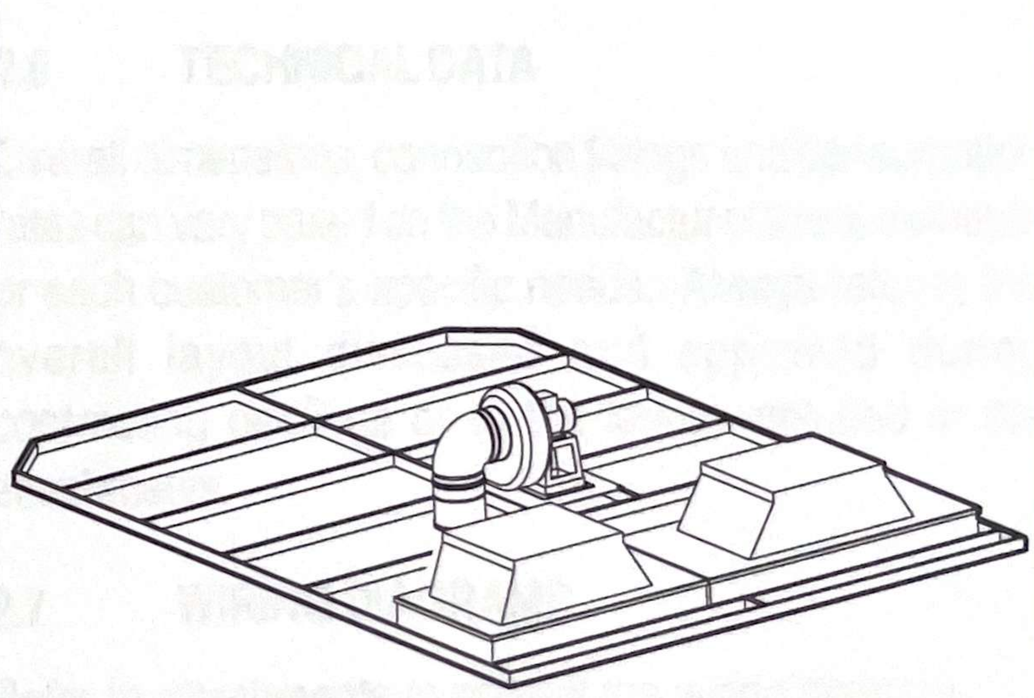

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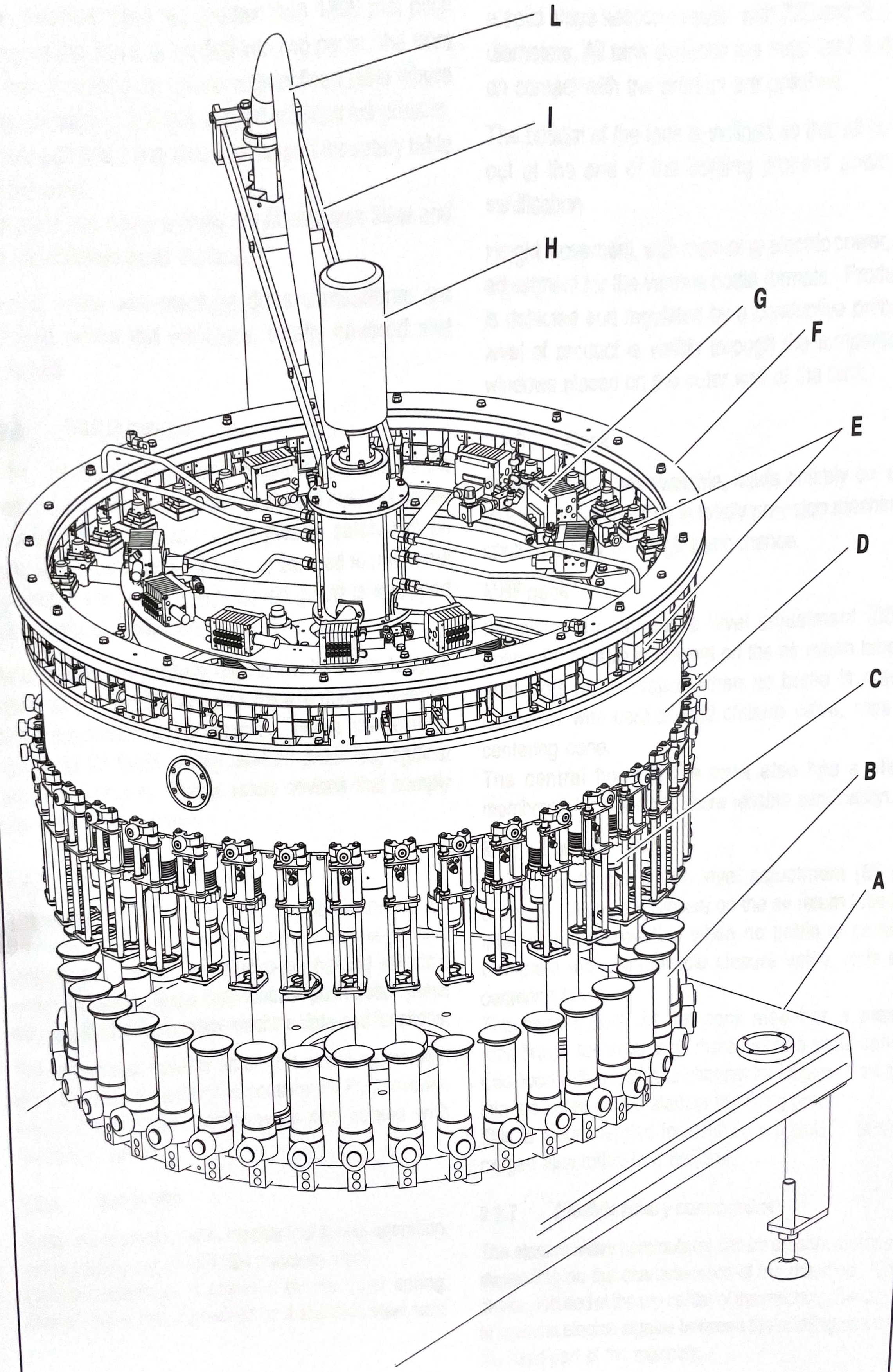

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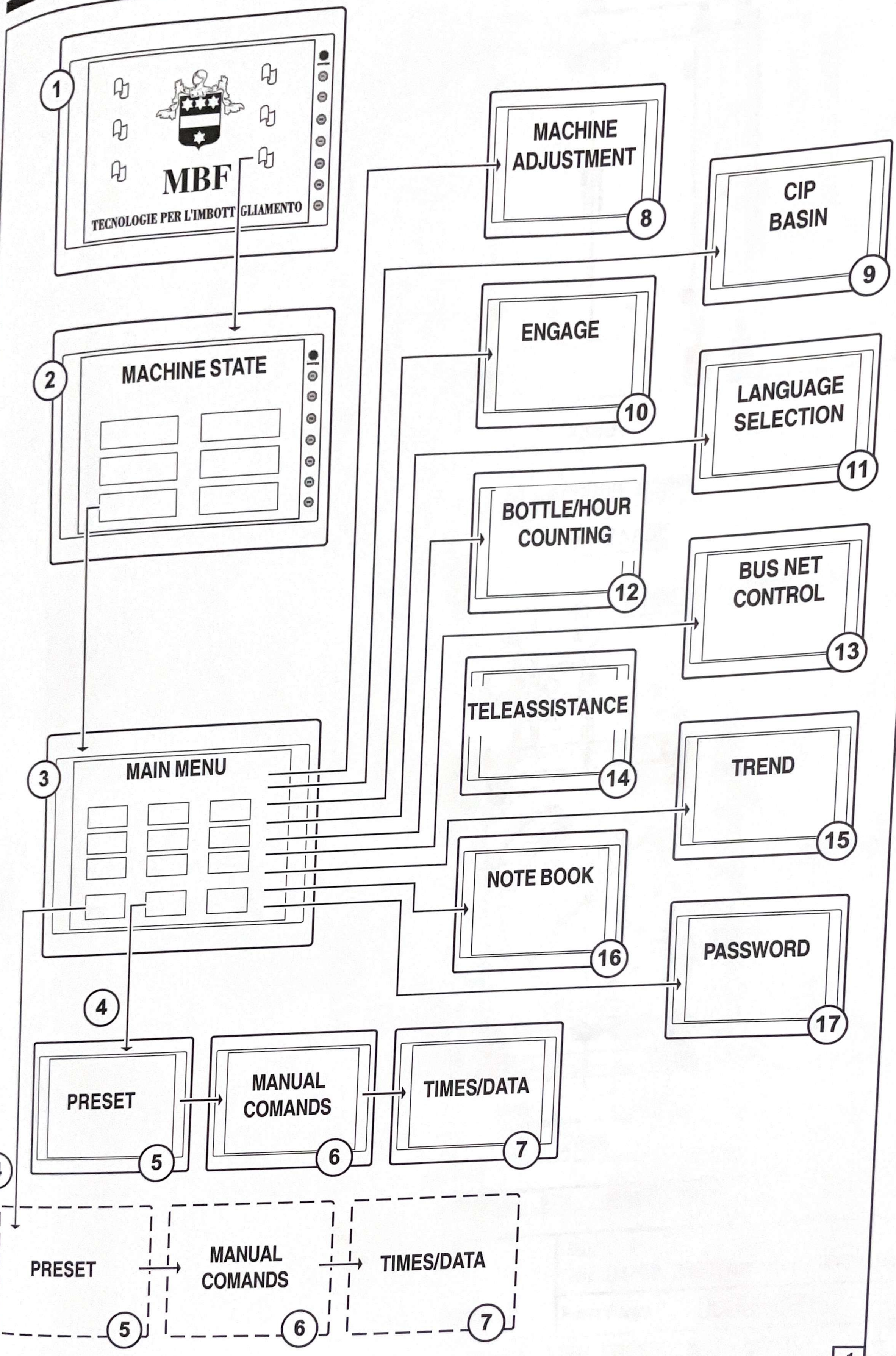
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