INSTALLATION, OPERATION, MAINTENANCE

Kobalto

Espresso

120V - 60 Hz
UL - NSF

EN English

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Targhetta di identificazione
Identification label

DICHIARAZIONE DI CONFORMITA'
DECLARATION OF CONFORMITY
DÉCLARATION DE CONFORMITÉ
KONFORMITÄTSERKLÄRUNG
DECLARACIÓN DE CONFORMIDAD
DECLARAÇÃO DE CONFORMIDADE
VERKLARING VAN OVEREENSTEMMING

Italiano Si dichiara che la macchina, descritta nella targhetta di identificazione, è conforme alle disposizioni legislative delle Direttive Europee elencate a lato e successive modifiche ed integrazioni

English The machine described in the identification plate conforms to the legislative directions of the European directives listed at side and further amendments and integrations

Français La machine décrite sur la plaquette d'identification est conforme aux dispositions légales des directives européennes énoncées ci-contre et modifications et intégrations successives

Deutsch Das auf dem Typenschild beschriebene Gerät entspricht den rechts aufgeführten gesetzlichen Europäischen Richtlinien, sowie anschließenden Änderungen und Ergänzungen

Español Se declara que la máquina, descripta en la etiqueta de identificación, cumple con las disposiciones legislativas de las Directrices Europeas listadas al margen y de sus sucesivas modificaciones e integraciones

Português Declara-se que a máquina, descrita na placa de identificação está conforme as disposições legislativas das Diretrizes Européias elencadas aqui ao lado e sucessivas modificações e integrações

Nederlands De machine beschreven op het identificatieplaatje is conform de wetsbepalingen van de Europese Richtlijnen die hiernaast vermeld worden en latere amendementen en aanvullingen

Direttive europee **European directives**	**Sostituita da** **Repealed by**
98/37/EC	
73/23/EC + 93/68/CE	2006/95/CE
89/336/EC + 92/31/CE + 93/68/CE	2004/108/EC
90/128/EC	2002/72/CE
80/590/EEC and 89/109/EEC	EC 1935/2004

Italiano Le norme armonizzate o le specifiche tecniche (designazioni) che sono state applicate in accordo con le regole della buona arte in materia di sicurezza in vigore nella UE sono:

English The harmonised standards or technical specifications (designations) which comply with good engineering practice in safety matters in force within the EU have been applied are:

Français Les normes harmonisées ou les spécifications techniques (désignations) qui ont été appliquées conformément aux règles de la bonne pratique en matière de sécurité en vigueur dans l'UE sont :

Deutsch Die harmonisierten Standards oder technischen Spezifikationen (Bestimmungen), die den Regeln der Kunst hinsichtlich den in der EU geltenden Sicherheitsnormen entsprechen, sind:

Español Las normas armonizadas o las especificaciones técnicas (designaciones) que han sido aplicadas de acuerdo con las reglas de la buena práctica en materia de seguridad vigentes en la UE son:

Português As normas harmonizadas ou as especificações técnicas (designações) que foram aplicadas de acordo com boas regras de engenharia em matéria de segurança em vigor na UE são:

Nederlands De geharmoniseerde normen of technische specificaties (aanwijzingen) die toegepast werden volgens de in de EU van kracht zijnde eisen van goed vakmanschap inzake veiligheid zijn de volgende:

Norme armonizzate / Specifiche tecniche **Harmonised standards Technical specifications**
CEI EN 60335-1 : 2002 + A11:20005 +A1:2005 + A12:2006 + A2:2006
CEI EN 60335-2-75 : 2004 + A1:2005 + A11:2006
EN 50366:2003 + A1:2006
EN ISO 11201 and EN ISO 3744
EN 55014-1 + A1+ A2
EN 55022 + A1 + A2
EN 55014-2 + A1
EN 61000-3-2
EN 61000-3-3 + A1
EN 61000-4-2 + A1 + A2
EN 61000-4-3 + A1 + A2
EN 61000-4-4 + A1
EN 61000-4-5 + A1
EN 61000-4-6 + A1
EN 61000-4-11 + A1

ANTONIO CAVO

C.E.O.

Declaration of conformity

The declaration of conformity with the European Directives and Standards provided for by the laws in force is supplied by the first page of this manual, which is an integral part of the machine.

CE It is declared that the machine described by the identification plate is in compliance with the provisions of the European Directives, its subsequent amendments and integrations as well as with the harmonised standards or technical specifications (designations) applied in compliance with the safety rules of good practice enforced in the EU and listed on the same page.

Warnings

FOR USE

The machine can be used by children and by people having reduced physical, sensorial or mental skills under the supervision of people responsible for their safety or specifically trained on the use of the machine. Children shall be prevented from playing with the machine by the people in charge of their supervision.

FOR SCRAPPING

The symbol shows that the machine can not be disposed of as common waste, but it must be disposed of as it is established by the 2002/96/CE (Waste Electrical and Electronics Equipments - WEEE) European Directive and by the national laws arising out of it in order to prevent any negative consequence for environment and human health.
The differentiated collection of the machine at the end of its life is organised and managed by the manufacturer.
For the correct disposal of the machine contact the sales point where you have purchased the machine or our after-sales service.
The unlawful disposal of the machine implies the application of the administrative sanctions provided for by the rules in force.

Attention!

If the machine is equipped with a cooling system, the cooling unit contains HFC-R134a fluoridised greenhouse effect gas ruled by the Kyoto protocol, the total heating potential of which is equal to 1300.

English

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INTRODUCTION

The technical documentation supplied is an integral part of the equipment and should be kept with the unit at all times for future reference.

Before starting to install and use the machine, it is necessary to carefully read and understand the content of the documentation since it can supply important information on installation safety, utilization rules and maintenance operations.

The manual is divided into three chapters.

The **first** chapter is intended to describe the ordinary filling and cleaning operations that shall be carried out in areas of the machine that can be accessed with the simple use of the door key, without using any other tool.
The **second** chapter contains the instructions for correct installation as well as the information necessary for optimal utilization of the machine performance.
The **third** chapter is intended to describe the maintenance operations involving the use of tools for access to potentially dangerous areas.

The operations described in the second and third chapter must be carried out only by the personnel who have a specific knowledge of the machine operation from the point of view of electric safety and health rules.

IDENTIFICATION OF THE MACHINE AND ITS FEATURES

Every single machine is identified by a specific serial number that can be found on the rating plate arranged inside on the right side.
The plate (see figure) is the only one recognized by the manufacturer and it contains all the data that enable the manufacturer to supply technical information of any kind in a quick and safe manner and to facilitate the management of spare parts.

IN CASE OF FAILURE

In most cases, any technical problem can be solved by carrying out minor operations. As a consequence, we suggest carefully reading this manual before contacting the manufacturer.
In case of failures or malfunctions that can not be solved, please apply to:

N&W GLOBAL VENDING SpA
Via Roma 24
24030 Valbrembo - BG
Italy - Tel. +39 - 035606111

TRANSPORT AND STORAGE

To avoid damaging the machine, loading and unloading operations shall be performed with great care. It is possible to lift the machine by means of a motor-driven or manual lift truck by positioning the forks beneath the machine.
Please avoid:
- overturning the vending machine;
- dragging the vending machine by means of ropes or alike;
- lifting the vending machine by its sides;
- lifting the vending machine by means of slings or ropes
- shaking the vending machine and/or the package.

For storage it is necessary to keep the room dry at a temperature between 0 and 40 °C.
You can stack up max. 2 machines, if originally packed.
Never forget to keep the vertical position specified by the arrows on the package.

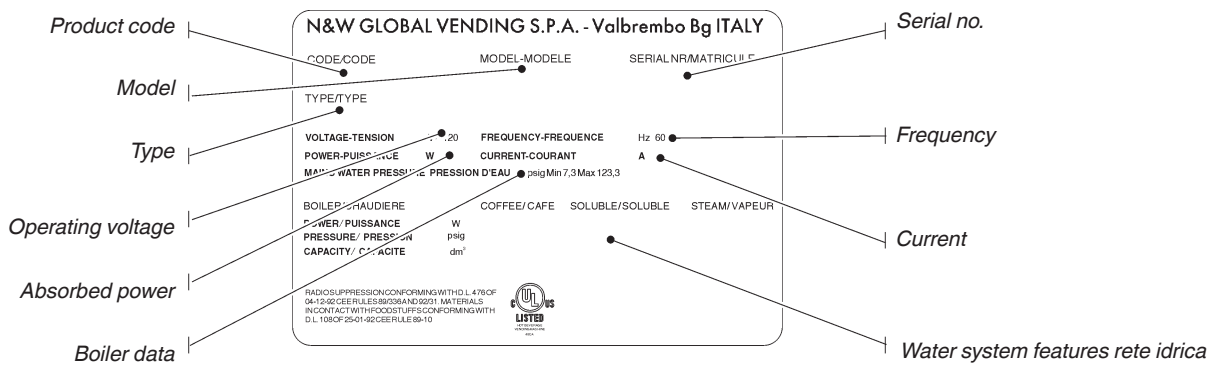


Fig. 1

POSITIONING THE VENDING MACHINE

The machine is of a professional type and it must be installed in places where the access for operation and maintenance is reserved to qualified personnel.
If installed for public use, it must be supervised by qualified personnel.
The machine is not suitable for installation outdoors. It must be installed in a dry room at a temperature ranging from 35.6°F to 89.6°F. It can not be installed in a room where water jets are used for cleaning (e.g. large kitchens, etc.).
The machine can be installed near a wall, but in such a way that the back is a minimum of 2 inches far from the wall in order to provide for regular ventilation. It shall never be covered by a piece of cloth or alike.
The machine shall be arranged on a leveled surface or on any other support that is a minimum of 32 inches high.
Important!!
The machine is accessed from the rear side and on both sides in case of extraordinary maintenance and/or repair. As a consequence, it is necessary to enable the machine to rotate around itself in order to disassemble the back and the sides.

The feet are not dimensioned to support any impact. As a consequence, they must be disassembled if you wish to move the machine later on.

WARNING

FOR INSTALLATION

The installation and any subsequent maintenance operation shall be carried out by the personnel skilled and trained on the utilization of the machine according to the rules in force.

The machine is sold without any payment system. As a consequence, only the installer will be liable for any damage that may be caused to the machine or to things and persons by an incorrect installation of the payment system.

The intactness of the machine and its compliance with the standards of relevant installations must be checked by skilled personnel at least once a year.

The disposal of package materials shall occur in full observance of environmental rules.

FOR UTILIZATION

Some tricks will help you to protect the environment:
- use biodegradable products to clean the machine;
- properly dispose of all the packages of the products used to fill and clean the machine;
- power off the equipment when it is not in use to provide for considerable energy saving.

FOR DISPOSAL

The symbol shows that the machine can not be disposed of as common waste, but it must be disposed of as it is established by the 2002/96/CE (Waste Electrical and Electronics Equipments - WEEE) European Directive and by the national laws arising out of it in order to prevent any negative consequence for environment and human health.

The differentiated collection of the machine at the end of its life is organized and managed by the manufacturer.
For the correct disposal of the machine contact the sales point where you have purchased the machine or our after-sales service.
The illicit disposal of the machine by its holder involves the application of the administrative sanctions provided for by the rules in force.

TECHNICAL FEATURES

Dimensions

Height	inches	31.30
Height with container	inches	38.00
Width	inches	18.50
Depth	inches	22.76
Max. open door overall dimensions	inches	37.50
Max height with top panel lifted	inches	41.02
Weight	inches	41.02

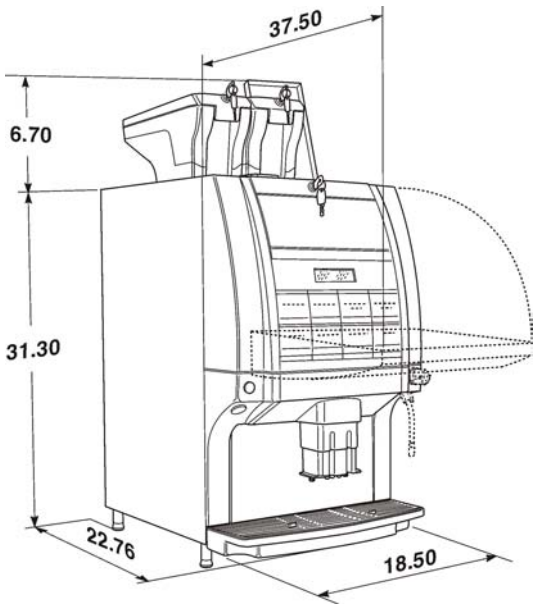


Fig. 2

Electrical connection

Supply voltage (2 phases)	Vac	120
Frequency	Hz	60
Absorbed power	W	3,050
Maximum current	A	13.7

Boilers

Coffee: 20.29 oz capacity with a 1,100 W heater.
Steam: 50.72 oz capacity with a 1,650 W heater.

Payment system

The machine can use special kits to mount payment systems with an Executive, MDB or BDV protocol.
The validator and payment systems shall be arranged inside the side module (optional).

Sales prices

You can set up a programmable different price for every single selection.
A sales price that is the same for all selections is available for the standard setup.

Water supply

Supplied by the location water supply at a pressure between 7.3 and 123.3 psig (0.5 - 8.5 Bar).
The machine can be equipped with water supply tanks of various capacities.

Possible adjustments

Ground coffee granulometry.
Espresso coffee dose in grams.
Volumetric water doses.
Instant product doses in grams.
Water temperature adjustable via software.

Controls

- water presence
- coffee presence
- operating temperature reached
- solid waste tray available
- dispensing compartment back available

SAFETY DEVICES

- door switch
- top panel closing switch
- dispensing compartment back switch
- boiler safety thermostat manually reset
- air-break float jam (only if supplied by the water mains)
- anti-flood solenoid valve (only if supplied by the network)
- steam boiler safety thermofuse;

. minimum water level probe in steam boiler.

- time-based protection for:
  - pump
  - coffee unit ratio-motor
  - grinder
- thermal overloads protection for:
  - ingredient motors
  - coffee unit ratio-motor
  - electromagnets
  - pump
  - whipper motors
  - grinder motor
- protection with fuse
  - main electric circuit
  - board supply transformer

CONTAINER CAPACITY

Beaned coffee containers have a capacity of about 2.65 lbs.
Containers with a different capacity can be mounted for instant products, according to the models.
The indicative product quantity is summed up by the following table:

Container oz	**4.4**	**5.5**	**6.6**	**9.9**
Instant coffee lbs	1.1	1.4	1.7	2.6
Milk lbs	1.2	1.05	1.9	2.9
Chocolate lbs	3.3	4.1	5.0	7.4
Sugar lbs	3.8	4.8	6.1	9.2

ELECTRIC ENERGY CONSUMPTION

The electric energy consumption of the machine will depend upon many factors such as the temperature and ventilation of the room where the machine is installed, the inlet water temperature, the boiler temperature, etc.
The following energy consumption values have been measured at a room temperature of 71.6° F

Temperature reached Wh

24-h stand-by Wh

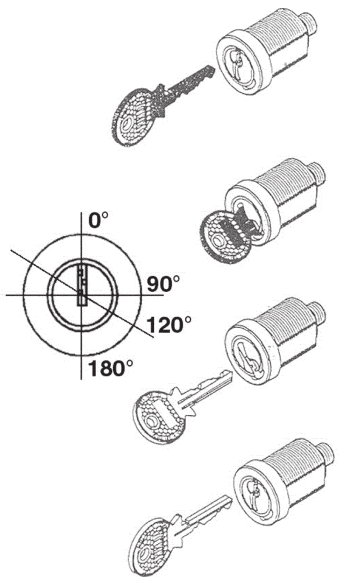
The energy consumption calculated on the average values above shall be understood as merely indicative.

VARIABLE COMBINATION LOCK

Some models are supplied with a variable combination lock.
The lock is complete with a silver key with a standard combination for normal opening and closing operations.
It is possible to customise the locks by using a kit made available as an accessory and intended to change the lock combination.
The kit is composed by a change key (black) of the standard combination as well as by change (gold) and use (silver) keys of the new combination.
Sets of change and use keys with other combinations can be supplied upon request.
Moreover, further sets of use keys (silver) may be requested by specifying the combination stamped on the keys.
Generally, only the use key (silver) shall be used whereas the combination change keys (gold) can be kept as spare keys.

Do not use the change key for usual opening operations since this may damage the lock.

Fig. 3



To change the combination:

- open the machine door to avoid having to force the rotation;
- slightly lubricate by using a spray inside the lock;
- insert the current change key (black) and turn it until you reach the change position (reference notch at 120°);
- remove the current change key and insert the change key (gold) with the new combination;
- turn it until you reach the close position (0°) and remove the change key.

The lock has now assumed the new combination.

The keys of the old combination can be no longer used for the new combination.

ACCESSORIES

A wide range of accessories can be mounted on the machine to vary its performances:
The assembly kits are supplied with mounting and testing instructions that shall be strictly followed to preserve the machine safety.

Important!!

The utilisation of kits that are not type-approved by the manufacturer can not provide for the observance of safety standards, in particular for live parts.
The manufacturer will disclaim all responsibility for the use of non type-approved components.

Assembly and any subsequent testing operation must be carried out by qualified personnel who have a specific knowledge of the machine operation from the point of view of electric safety and health rules.

Chapter 1
FILLING AND CLEANING

MAINS SWITCHES

Door

Whenever you open the door, a special switch will power off the electric installation of the equipment to allow the user to carry out the ordinary filling and cleaning operations described here below in totally safe conditions.

The line cable terminal board, the fuses, the interference suppressor and the power relays remain anyway live.

Top panel

Whenever you open the top panel, a switch will provide for disconnection and enable the user to fill the machine on safe conditions.

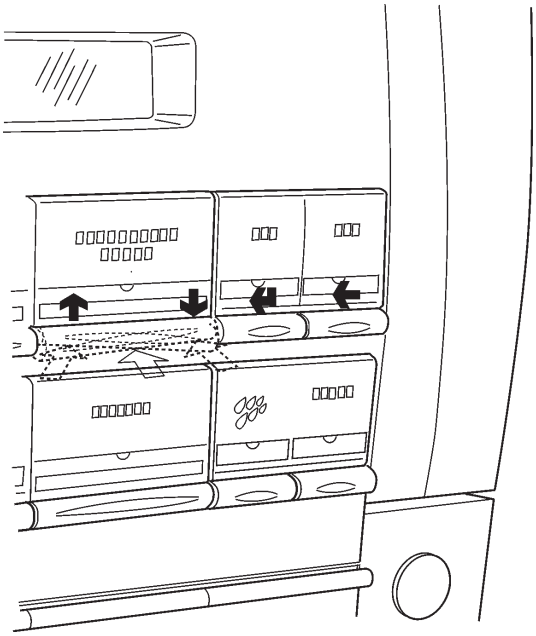


Fig. 4

1- Folding door
2- Liquid waste tray
3- Dispending compartment back
4- Solid waste tray
5- Coffee unit
6- Door switch
7- Coffee slide
8- Decaff flap
9- Coffee containers with lock
10- Top panel
11- Top panel switch
12- Instant containers
13- Instant mixers
14- Card cover
15- Service buttons

Dispensing compartment

If you remove the dispensing compartment back, a double switch will signal to the control electronics of the machine that the compartment is lacking and it will also power off power circuits. The heating elements will remain on.

All the operations requiring the machine to be directly connected to a source of electricity must be ONLY carried out by the personnel qualified and informed on the specific risks involved.

SANITATION AND CLEANING

The operator of an automatic coffee machine is responsible for the hygiene of the materials in contact with foodstuffs on the basis of the health and safety rules in force. As a consequence, it shall maintain the machine so as to prevent the build-up of bacteria.
At the time of the installation, it is necessary to completely sanitise the water circuits and the parts in contact with foodstuffs in order to remove any bacterium that may have built up during storage.
The machine is not suitable for outdoor installation. It must be installed in dry rooms at a temperature between 35.6°F ed i 89.6°F
It is recommended to use sanitising products also in order to clean the surfaces (e.g. covers of grinders and boards) not directly in contact with foodstuffs. Only use pieces of cloth that are slightly damp.
Some parts of the machine can be damaged by corrosive detergents.
The manufacturer will disclaim all responsibility for any damage caused by the non-observance of the above or by the utilization of corrosive or toxic chemical agents.

Never forget to power off the machine before carrying out any maintenance operation that may require the disassembly of components.

It is absolutely forbidden to use water jets to clean the machine.

USING THE DISPENSERS OF HOT DRINKS IN OPEN CONTAINERS

(E.g. plastic cups, pottery cups, jugs)

The dispensers of drinks in open containers may be only used for selling and dispensing drinks obtained by:
- brewing coffee
- reconstituting instant or soluable preparations.

The manufacturer must declare these products "suitable for automatic vending" in open containers.

Dispensed products shall be consumed immediately. Under no circumstance shall they be preserved and/or packed for later consumption.

Any other use shall be considered as improper and therefore potentially dangerous.

CONTROLS AND INFORMATION

The machine shall work at a room temperature between 35.6°F ed i 89.6°F.
The plates with the menu and the instructions are supplied with the machine to be inserted at the time of the installation with reference to the selection dose table.

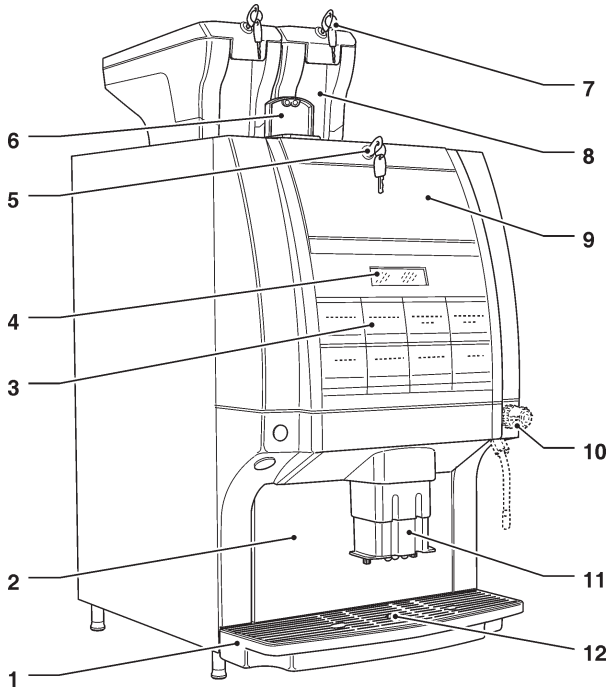


Fig. 5

1- Liquid waste tray
2- Dispensing compartment back
3- Selection menu plates
4- Alphanumeric display
5- Lock
6- Decaff flap
7- Coffee container lock
8- Coffee container
9- Customisable panel
10- Steam lock
11- Telescopic dispensing nozzles
12- Red drip tray full indicator

The controls and information for the user are arranged on the external side of the door (see fig. 5).
The service buttons are arranged on the internal side of the door, such as the Programming button, which gives access to the functions of the machine and the mixer washing button.
Press the programming button to access the Filler menu. Now, use the selection keys to move within the menus.

NOISE LEVEL

The continuous, equivalent, weighted sound pressure level is below 70 dB.

LOADING BEAN COFFEE

Open the container cover by using the corresponding key. Fill in the container by making sure that the shutter is completely open (see fig. 6).
If necessary, rotate the pin intended to operate the gate until it is completely open.

It is recommended to use quality coffee to avoid any malfunction of the device due to the presence of impurities.

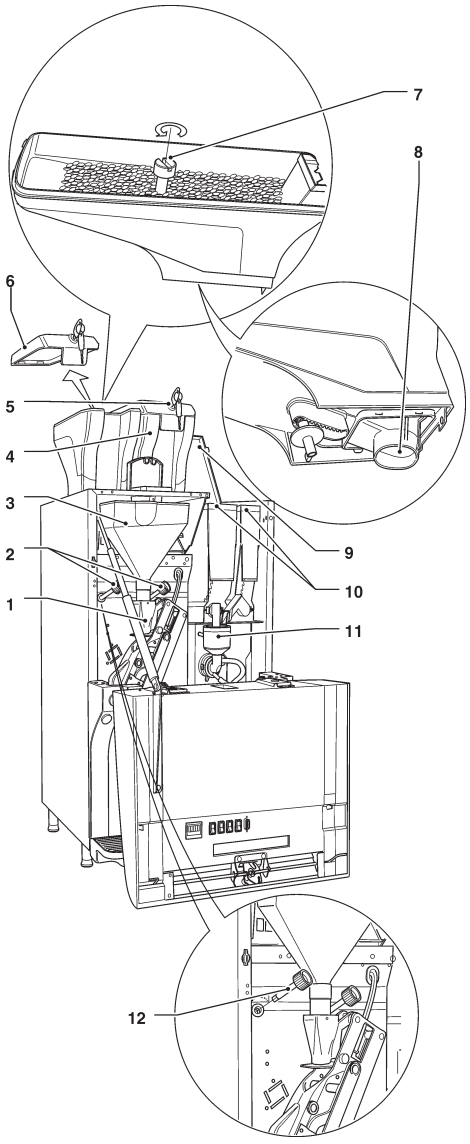


Fig. 6

1- Coffee funnel
2- Grinding adjustment knobs
3- Coffee slide
4- Coffee container
5- Coffee container lock
6- Coffee container cover
7- Container / shutter closure unlock device
8- Coffee container shutter
9- Openable top panel
10- Instant container covers
11- Powder collection boxes
12- Removable grinding knobs

LOADING INSTANT PRODUCTS

Open the door and the top panel of the machine. Lift the container cover. Pour the products to be dispensed into every single container. Please avoid compressing them to prevent packing. Make sure that the products are not lumpy. Close the cover carefully and make sure it is coupled.

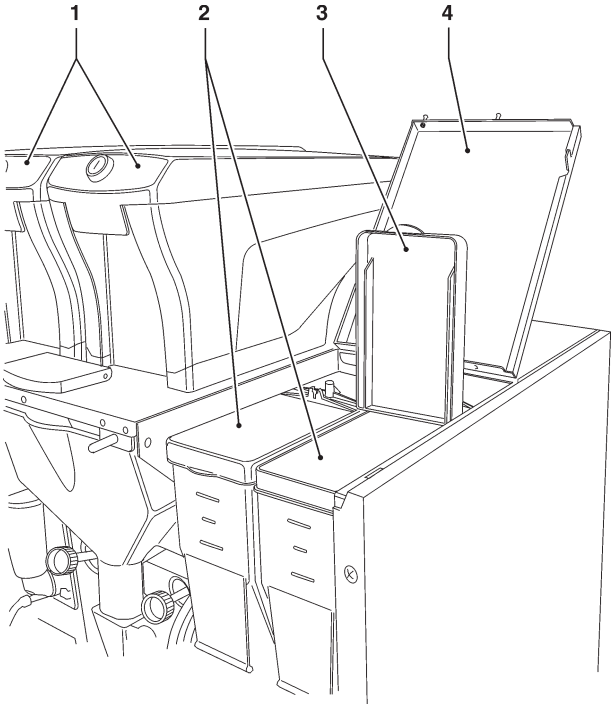


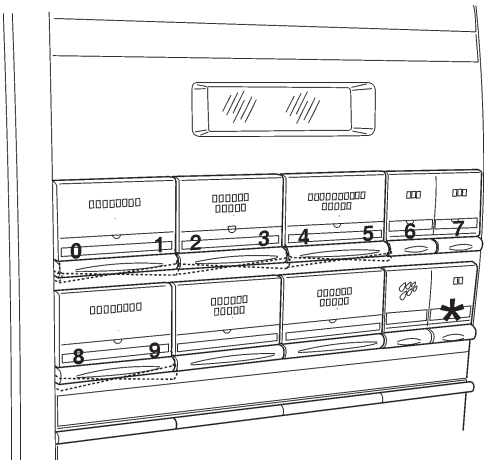
Fig. 7

1- Coffee containers
2- Instant containers
3- Container cover
4- Top panel of the machine

SERVICE FUNCTIONS

If enabled in the programming menu, some operations can be directly carried out when the door is closed by entering a password (5 keys pressed in sequence) after having pressed the washing key (or the ✱ key if is not available) for two seconds.

Fig. 8



Possible operations are listed here below:

- consecutive dispensing of several selections in a jug (jug facilities);
- free dispensing of one selection;
- lock-unlock of the keyboard operation. If the lock is active, “INTERRUPTED SERVICE” is displayed.”
- wash mixers. The operation shall be carried out every day and whenever you refill the machine to prevent accidental clogging of the mixer.
- test selections
- water filter counter reset. It will reset the (programmable) counter to display the “Replace the water filter” message as soon as you access the “filler” mode
- coffee container reset. It will reset the counter intended to lock the machine after a defined number of dispensing cycles
- coffee grounds reset. It will reset the counter intended to control the number of coffee doses used in the tray.

CLEANING THE WASTE TRAYS

The waste trays can be easily extracted even if the door is closed (see fig. 9) to enable the user to empty and clean them quickly.
The coffee container capacity is higher than the waste tray capacity (if no support cabinet is used).
The control software of the machine will signal that the maximum number of dispensing cycles has been reached by displaying the “Empty tray” message. The machine will be locked.
The waste trays shall be emptied without powering off the machine (the door shall be closed) to enable the software to recognize the operation.
It is also possible to reset the counter by typing a password.

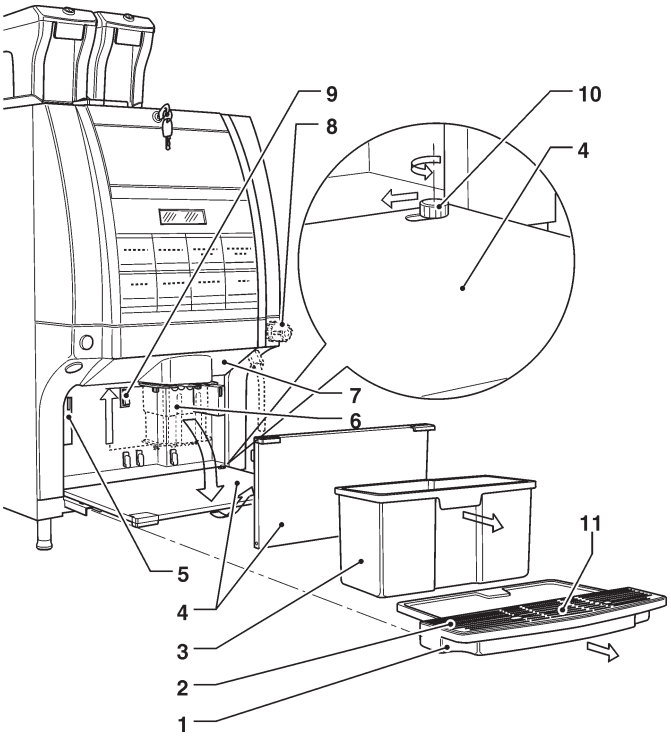


Fig. 9

1- Liquid waste tray
2- Removable grill
3- Dispensing compartment back
4- Telescopic nozzles
5- Solid waste tray presence switch
6- Telescopic nozzles
7- Steam nozzle
8- Steam cock (supplied)
9- Dispensing compartment presence switch
10- Dispensing compartment lock knurl
11- Overturning grill
12- Red drip tray full indicator

If there is no solid waste tray, the machine is ready to dispense instant drinks. The “Insert the tray” message will appear on the display.
To remove the solid waste trays, lift the telescopic nozzles completely and lower down the dispensing compartment cover by turning it downwards.

DISASSEMBLING AND CLEANING MIXERS

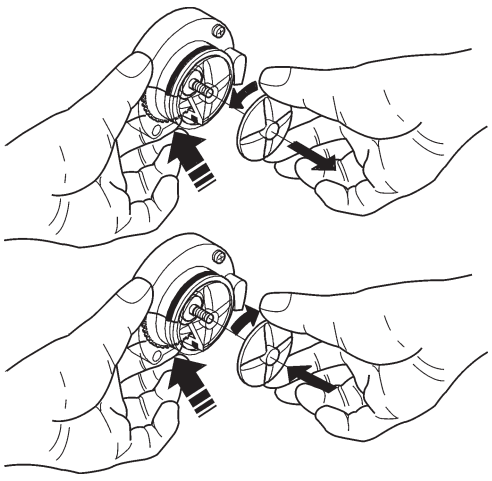
The mixers and the hoses intended to dispense instant drinks and dispensing nozzles shall be carefully cleaned and sanitized at the time of the installation and at least once a week or more frequently, according to the use of the machine and the quality of inlet water in order to guarantee the compliance of dispensed products with sanitary rules.
The parts to be cleaned are listed here below:

- dispensing nozzles, dividing nozzle and telescopic nozzle cover;
- powder deposit drawers, mixers and the hoses intended to dispense instant drinks.

To disassemble the parts, act as follows:

- remove the powder funnels, the water funnels, the collection boxes, the powder deposit drawers and the whipper motor impellers from the mixers (see fig. 9);
- - unscrew the knurls at the bottom of the telescopic nozzles
- press the clip at the back of the section at the bottom of the nozzle cover and extract it downwards
- extract the tubes from the nozzles and from the dividing nozzle
- remove the nozzles from the small support plate
- remove the dividing nozzle by pressing the clip at the bottom of the small plate
- to disassemble the water funnel, turn the green ring nut counterclockwise;
  pay special attention on reassembling it: it shall be completely closed;
- -to disassemble the impellers, use a finger to lock the disk mounted on the whipper motor shaft (see fig. 10). Then turn the impeller to unscrew it.

Fig. 10



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- **Wash all the components by using detergents. Make sure that all visible residuals and films are mechanically removed. If necessary, use a brush**

Sanitize by making use of sanitizing agents.

- dip the components into a container of sanitizing solution you have prepared before for about 20 min;
- reassemble the collection boxes and the water funnels;
- reassemble the powder deposit drawers and the powder funnels after having carefully dried them.
- **After having mounted the parts, it is anyway necessary to act as follows:**
- pour some drops of the sanitizing solution into the mixer;
- rinse the parts in question abundantly to remove any residual of the solution you have used. Use the mixer washing function when the door is closed.

DISASSEMBLING AND CLEANING THE MILKER

The device intended to dispense hot milk (**milker**) shall be carefully cleaned and sanitized at the time of the installation of the machine and at least once a week or more frequently, according to the use of the machine and the type of milk in use in order to guarantee the compliance of dispensed products with sanitary rules.
The parts to be cleaned are listed here below:

- milker intended to dispense milk, to be disassembled in all its parts;

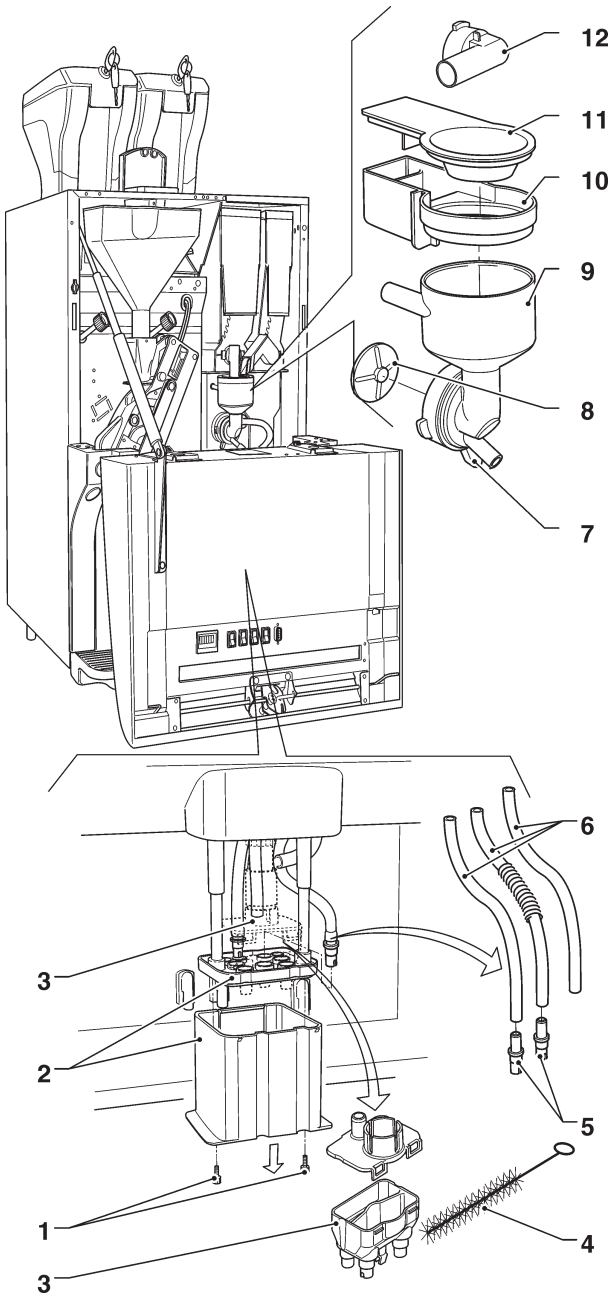


Fig. 11

1- Knurls for fastening the telescopic cover
2- Nozzle support
3- Dividing nozzle
4- Brush for cleaning tubes
5- Dispensing nozzles
6- Tubes for dispensing instant products
7- Funnel fastening ring nut
8- Mixer impeller
9- Water funnel
10- Powder deposit drawer
11- Product funnel
12- Product collection box

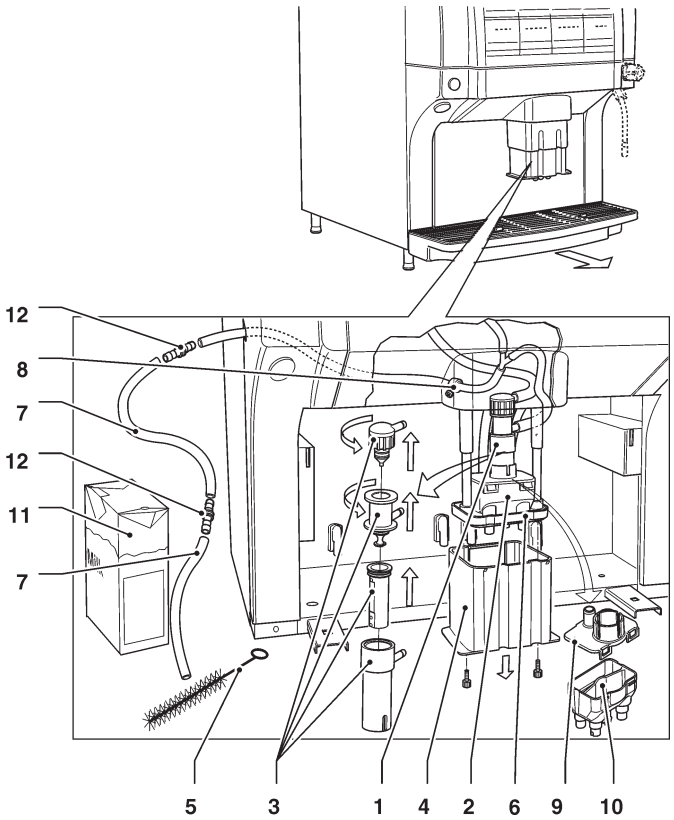


Fig. 12

1- Milker
2- Dividing nozzles (coffee + milk)
3- Milker components
4- Nozzle telescopic cover
5- Brush
6- Nozzle support
7- Milk suction tube
8- Flow rate regulator
9- Dividing nozzle cover
10- Dividing nozzle body
11- Milk container
12- Tube disconnection rubber-holder

- dividing nozzle and telescopic nozzle cover;
- milk suction tube composed by several pieces to enable the user to clean by means of pigs.

To disassemble the parts, act as follows:

- unscrew the knurls at the bottom of the telescopic nozzles
- press the hook at the back of the section at the bottom of the nozzle cover and extract it downwards
- extract the milk dispensing nozzle (milker) from the dividing nozzle and disassemble it in all its parts
- remove the dividing nozzle by pressing the clip at the bottom of the small plate.

Wash all the components by using detergents. Make sure that all visible residuals and films are mechanically removed. In particular, use a brush for milk suction tubes.

Sanitize by making use of sanitizing agents.

- dip the components into a container with the sanitizing solution you have prepared before for about 20 min;
- reassemble the milker and the dividing nozzle after having carefully dried them.

After having assembled the parts, perform an automatic washing cycle.

CLEANING THE COFFEE UNIT

It is recommended to remove any powder residual from the external parts of the coffee unit, in particular in the coffee funnel area, whenever you fill the machine or at least every week (see fig. 6) by using a brush or a small vacuum cleaner.
To clean shutters, never use any piece of cloth soaked in water if you have not wrung it out well before.

SWITCH FOR SERVICE INTERRUPTION

If you open the door by means of the corresponding key, a switch will power off the equipment, thus enabling the user to access the area including the product containers and the parts that shall be cleaned on safe conditions.
The machine has a switch (see fig. 4) that will enable the user to disconnect the pushbutton panel while leaving the heating device on.

IMPORTANT!!

The switch for service interruption will NOT power off the machine.
All the operations requiring the user to leave the machine on and to remove protection covers must be performed by skilled personnel who are trained on the use of the machine and well-aware of the specific risks involved.

SERVICE INTERRUPTION

If the machine should be off for any reason whatsoever for a period longer than the pull dates of products, it is necessary to act as follows:
- empty the containers completely and wash them carefully by using the sanitizing agents.
- empty the grinder completely by dispensing coffee until emptiness is signalled.
- empty the water circuit completely.

Chapter 2
INSTALLATION

Installation and any subsequent maintenance operation must be carried out when the **machine is live** and, therefore, by the personnel skilled and trained on the use of the machine as well as aware of the specific risks such a condition may involve.
The machine is not suitable for outdoor installation. It must be installed in dry rooms at a temperature between 35.6°F ed i 89.6°F..
The machine can not be installed in a room where water jets are used for cleaning.
The machine can be arranged near a wall, but in such a way that the back is at least 2 inches from the wall for regular ventilation. Never cover it with cloths or alike.
The machine shall be placed on a levelled surface, at least mm. 32 inches
At the time of the installation, it is necessary to completely sanitize the water circuits and the parts in contact with foodstuffs in order to remove any bacteria build-up.

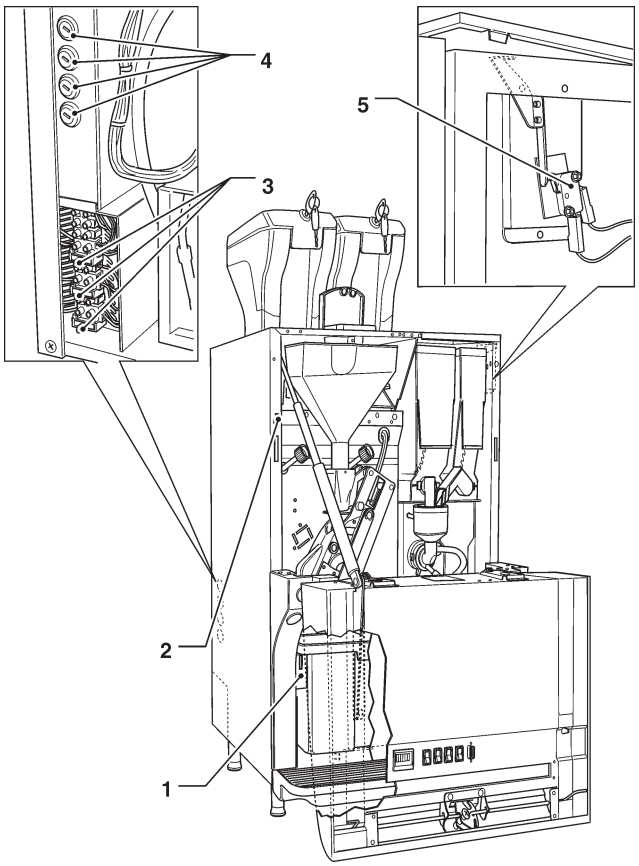


Fig. 13

1- Dispensing compartment switch
2- Door switch
3- Transformer fuses
4- Mains fuses
5- Top panel switch

MAINS SWITCHES

Door

Whenever you open the door, a special switch will power off the electric installation of the equipment to allow the user to carry out the ordinary filling and cleaning operations described here below in totally safe conditions.

The line cable terminal board, the fuses, the interference suppressor and the power relays remain anyway live.

Top panel

Whenever you open the top panel of the machine, a switch will provide for disconnection and enable the user to fill the machine on safe conditions.

Dispensing compartment

If you remove the dispensing compartment back, a double switch will signal to the control electronics of the machine that the compartment is lacking and it will also power off the power circuits. The heating elements will remain on.

The power on key shall not be left inside the machine. It shall be kept by the personnel qualified and trained on the use of the machine.

When the door is open, you are not allowed to access any live part. Only the parts protected by covers and marked by the plate "power off before removing the cover" will remain live inside the machine.

Before removing these covers, it is necessary to detach the power supply cable from the mains.

You can close the door completely and power on the dispenser only after having removed the key from the door switch, closed the top panel of the machine and placed the back of the dispensing compartment.

UNPACKING THE VENDING MACHINE

After having unpacked the machine, make sure that the equipment is intact.
In case of doubt never use the equipment.
Tighten the feet on the machine after having removed the package support.

Important!!

The machine must be positioned on a levelled surface in such a way that the maximum inclination will not exceed 2°.

No packing material (plastic bags, foam polystyrene, nails, etc.) should be left within the reach of children since they are potential sources of danger.

Packing materials shall be disposed of in authorised dump sites and recyclable ones collected by specialised companies.

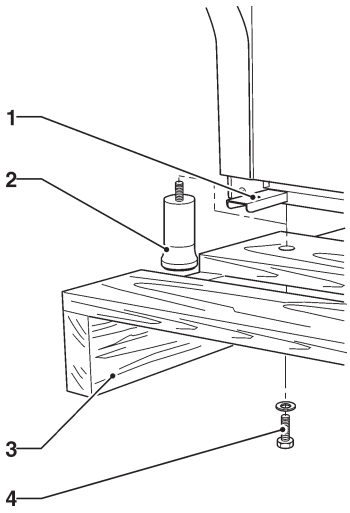


Fig. 14

1- Support for liquid waste tray
2- Foot
3- Pallet (remove)
4- Pallet fastening screws (remove)

CONNECTION WITH THE LOCATION WATER NETWORK

The coffee machine shall be connected with the drinkable locations water supply in compliance with the rules in force in the country where the equipment is installed.
The mains pressure must range from 7.3 to 123.3 psig (0.5 - 8.5 bar).
It is recommended to discharge 5 gallons of water from the supply line or until the water is clear before connecting it to the machine.
Connect the supply line with the 3/4" hose bibb connection on water inlet solenoid valve by means of a tube (also available as a kit) that can support the supply the pressure and of a type suitable for foodstuffs (min. inner diameter 1/4".) (see fig. 15).

Install a shut off valve near the machine that is easily accessible.work outside the machine in an accessible position.

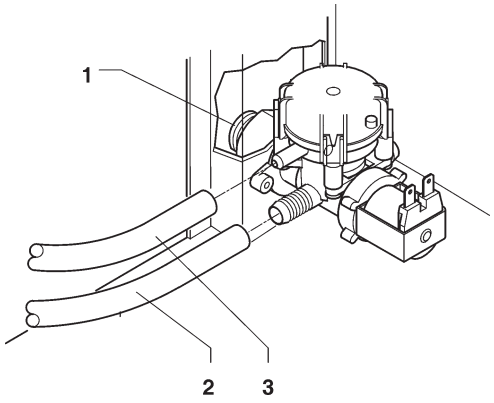


Fig. 15

1- 3/4" gas inlet union
2- Delivery tube
3- Overflow tube

ANTIFLOOD DEVICE

The water inlet solenoid valve (see fig. 15) is complete with an antiflood device that can mechanically lock the water inlet as a result of a malfunction of the solenoid valve or the water level control gear in the boiler.
To restore the normal operation, act as follows:
- discharge water in the overflow tube;
- close the water shut off valve outside the machine;
- loosen the union intended to fasten the supply tube of the solenoid valve to discharge the residual supply line pressure and tighten it again (see fig. 15);
- open the valve and power on the machine.

WATER DISCHARGE

Where possible, it is recommended to connect the liquid waste tray with a bucket or better with a fixed drain by using the drain union supplied with the machine (also available as a kit).
To fasten the union, make a 0.354 inch. hole into the tray. If it is not possible, it is necessary to make full use of the 50.72 oz capacity of the tray that shall be emptied at regular intervals.

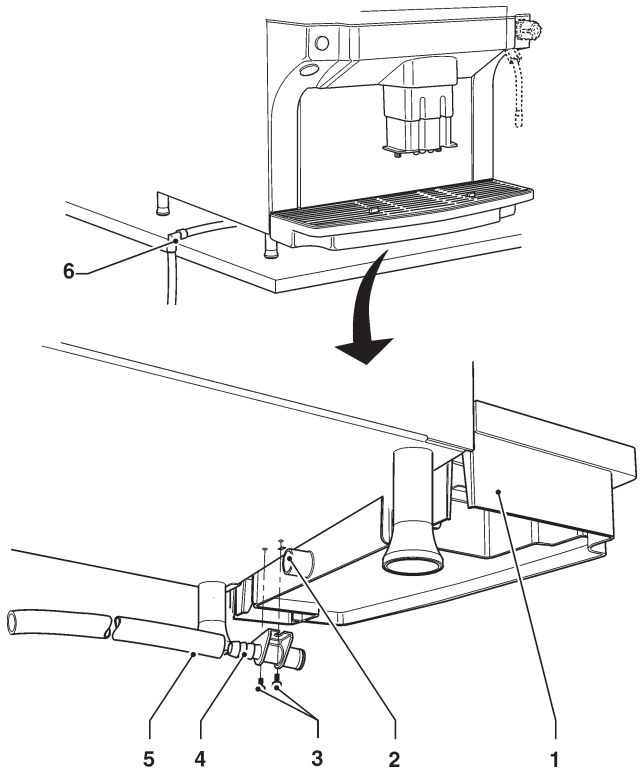


Fig. 16

1- Liquid waste tray
2- Coupling to be drilled
3- Rubber-holder fastening screws
4- Rubber-holder for discharge
5- Drain tube
6- Elbow union

ELECTRICAL CONNECTION

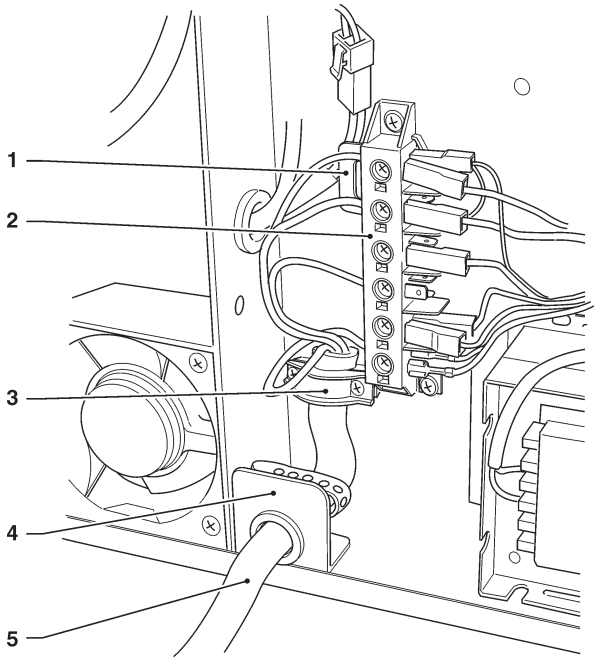
The machine is arranged for electrical operation at a 120 Vac two-phase voltage and it is protected by 15 A fuses on every single phase and on the neutral.

The machine is supplied with a line cable of the SJTO 4xAWG14 105° type with yellow green, complete with a L14-20P HBL 2411 two-pole plug.
For the connection make sure that the rating will comply with the mains data. In particular, make sure that the supply voltage value lies within the limits recommended for the connection points.
It is compulsory to use a main switch arranged in an accessible position, the features of which shall be able to support the maximum load required and to ensure omnipolar disconnection from the mains with an opening gap of the contacts with a minimum of .118 inches.
The switch, the socket and the plug shall be placed in an accessible position.

It is forbidden to use adapters, multiple sockets and/or extensions.

Fig. 17

1- Connection terminal board
2- Link
3- Cable clamp
4- Cable support
5- Mains cable



The electrical safety of the machine is only ensured when the machine is correctly and efficiently grounded according to the safety standards in force.

It is necessary to check this fundamental safety requirement and, in case of doubt, to require professionally qualified personnel to check the installation carefully.

THE MANUFACTURER WILL DISCLAIM ALL RESPONSIBILITY FOR ANY DAMAGE CAUSED BY THE NON-OBSERVANCE OF THE PRECAUTIONS MENTIONED ABOVE.

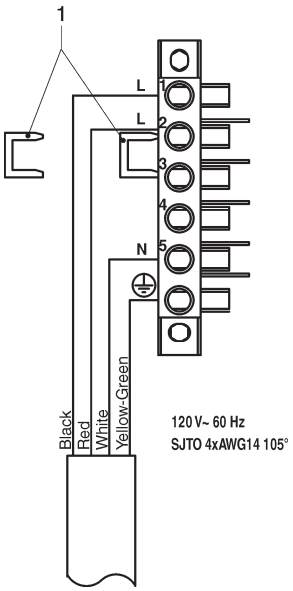


Fig. 18

1- Link

REPLACING THE LINE CABLE

The connection cable shall be replaced by qualified personnel only by using only cables of the SJTO 4xAWG14 105° type with yellow green, complete with a L14-20P HBL 2411 two-pole plug.
To replace the cable, detach it from the mains, open the line cable box and connect the new cable according to the wiring diagram above by using the links as brackets.

PLATE INSERTION

The plates with the menu and the instructions are supplied with the machine and they shall be inserted at the time of the installation, according to the layout and language you may have selected (see the “selection dose” table).
Some types of preselection, such as half a jug, jug, decaffeinated, can be enabled or not according to the layouts. Some service buttons, such as mixer washing “” and “STOP” (selection interruption) can be enabled or not.
These functions can be associated to different keys. On mounting the plates, please take these associations into account.
Disassemble the display glass, just as it is shown by fig. 19. Exert a light pressure on the short side and unhook the 4 clips.
Insert the plates into the display glass and reassemble by pressing it down.

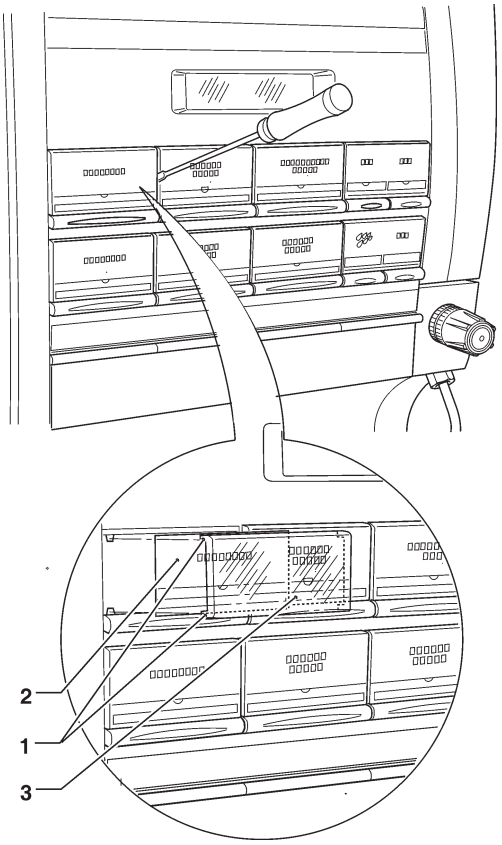


Fig. 19

1- Display glass fastening fins
2- Product plate
3- Plate display glass

WATER SOFTENER

The machine is supplied without a decalcifier.
If it is connected with a system, the water of which is very hard, you can mount a decalcifier.
Decalcifiers, available as an accessory, shall be regenerated according to the manufacturer’s instructions at regular intervals.
Use decalcifiers, the capacity of which is adequate for the actual use of the machine.
If the machine is supplied from the tank, you can use the corresponding cartridge water filters.

POWER ON

Before powering on the machine, make sure that all components and covers are properly positioned.
If the machine is powered on for the first time or after having initialized the CPU board, a message will flash on and off on the display requiring you to specify the type of power supply you have selected:
The type of power supply you have confirmed will remain stored.

Kobalto Two-phase

When you power on for the first time, you will be required to select the type of water supply, i.e. whether from the tank (Tank ON) or from the mains.

Tank OFF

The following message will appear:

POWER ON Do you confirm?

- You can confirm the operation by pressing the ↵ key or cancel it by pressing another key. All the next operations will require the operator to act manually and they shall be confirmed. They are listed here below in sequence:

- Add some detergent;

- Detergent cycle;

- Pour some water;

After having completed the power on cycle, the software release number will appear on the display.

Kobalto Es REV 1.0

You can program the machine to display the number of dispensing cycles you have performed for some seconds.
A check is performed on espresso boilers.

BOILER CHECK

A cycle intended to rinse the circuit is started.

CLEAN CYCLE Do you confirm?

If the machine is complete with a device intended to dispense fresh milk (**milker**), the milker cleaning sequence will appear on the display whenever you power on the machine.
All the next operations will require the operator to act manually and they shall be confirmed. by pressing the ↵ key.
They are listed here below in sequence:

REMOVE MILK Do you confirm?

extract the suction tube from the container;

ADD DETERGENT Do you confirm?

insert the suction tube in a container with a detergent solution;

DETERGENT CYCLE Do you confirm?

The delivery micro-pump is operated for a pre-defined period of time to enable the detergent solution to flow through the circuit. The device will stop

REMOVE DETER. Do you confirm?

to enable the user to extract the suction tube from the detergent container and to insert it into a clean water container.

POUR WATER Do you confirm?

At the end

POUR MILK Do you confirm?

to re-position the suction tube into the milk container.

- Clean Cycle.

The following message will appear on the display after some seconds:

Running SELECT A DRINK

INITIALIZATION

The machine is supplied after the settings and the arrangement of the most widespread components (**layout**) have been defined.
You can change these settings from the “Technician Menu” “Initialization”.
When the “Initialization” function appears on the display, you can initialize the machine by restoring all default data and/or change the settings available.
All statistical data are reset.
Press the Enter key ↵ to display the request for confirmation “Do you confirm?”. Press the Enter key ↵ once again to display the first one of variable parameters in order to define the machine configuration.
Press ↓ and ↑ to scroll possible options (flashing on and off). Press the ↵ key to confirm your choice and to move to the next parameter. Press the ↵ key after the last parameter to display the “Execution” message for some seconds and to initialize the machine.
The parameters you can manage are listed here below:

“Country”	Type of doses in use for selections
“Lay out”	Arrangement of containers and selection menu among those available
“Steam boiler”	ON/OFF

Please Note: As soon as you power on the new machine for the first time or, any way, after the initialization, the type of (two-phase default / single-phase) power supply in use will be proposed.
Press ↓ and ↑ to scroll the options and press the ↵ key to confirm the choice.
If you fail to initialize the machine, the request will be no longer made.
However, you can change it by holding the CPU board button down (see fig. 40) whenever you power on the machine.

ENERGY SAVING

Where possible, to reduce the electric energy consumption, it is recommended to use the “energy saving” function that will enable the user to program the power on and off of the machine according to its actual use.
Power on the machine two hours before its actual use to ensure its operation at a steady temperature.

FILLING THE WATER CIRCUIT

Before powering on the machine, make sure that the water location supply line is properly connected and that the valve is open.
If the air-break should signal no water for over 10 sec. as soon as you power on the machine, the machine will automatically perform an installation cycle that will vary according to the number of boilers arranged on the machine, i.e.:
- the display will show “Installation” for the whole duration of the cycle;
- the network solenoid valve is opened;
- the air-break is filled;
- the solenoid valve intended to dispense instant products is opened to bleed the air from the espresso boiler and to let about. 27 oz water in.
- the steam boiler is filled; air will escape from the vacuum valve. As soon as the level is reached, the steam boiler will start heating and the vacuum valve will close, thus pressurising the boiler.

Please Note: If there is no water during the installation cycle, the machine will stop till the water flow is restored or the machine is powered off.

The coffee boiler shall be filled in manually by using the special function “installation” of the Technician menu as a result of maintenance operations requiring the user to empty the boiler, but not the air-break.

FUNCTION BUTTONS

The function buttons are arranged on the external keyboard. They enable the user to perform specific functions or to preselect different product doses.
The buttons may change their position or be unavailable according to the models, the arrangement of the keys and the products in use (l**ay out**).
At the time of the installation refer to the selection dose table to insert the plates correctly.
The keys are listed here below:

Mixer washing: if you hold it down for over two seconds, you will be required to enter a pass word.

STOP Stop: press it to stop the selection in progress.

Small: if you press it before pressing a selec tion button, you can dispense a smaller product dose.

Large: if you press it before pressing a selec tion button, you can dispense a larger product dose.

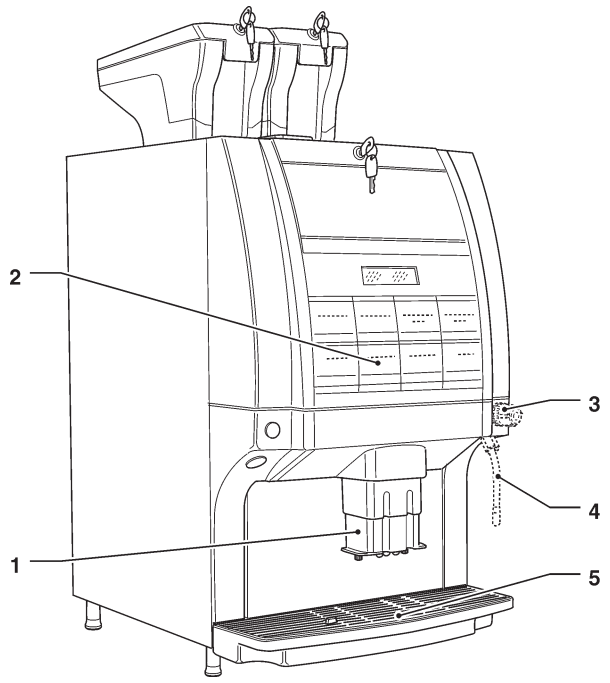


Fig. 20

1- Telescopic dispensing nozzles
2- Menu of available selections
3- Steam knod (supplied)
4- Steam nozzle
5- Liquid waste tray

INSTANT DISPENSING CYCLES

According to the type of dispensed product, the dispensing cycles of the various selections are studied to achieve the best result in terms of performance and drink quality.
Powder is dispensed intermittently for chocolate-based selections. It is dispensed before water for instant coffee-based selections.
Powder is always dispensed intermittently for the selections with a dose for jugs. This means that the water-powder proportion is preserved even if you press the

STOP key to stop the dispensing cycle.

MIXER WASHING CYCLES

You can enable a washing cycle to clean the mixers by pressing the button on the internal side of the door and, if enabled, the button on the external pushbutton panel (**for qualified personnel only**).
To prevent the user from acting on the washing button

unintentionally, it is necessary to hold it down for about two seconds and, then, to enter a 5-number programmable password.
Washing consists in operating all whipper motors and solenoid valves.
If a milker is available, the “milk removal” cycle is proposed, just as it is described by the “power on” paragraph.

The and STOP buttons may be unavailable or change their position, according to the models/versions (**layouts**).

DISPENSING FRESH MILK FOR CAPPUCCINO

The machine can be equipped with a device intended to dispense fresh milk automatically (milker) in alternative to steam.
The draft tube of fresh milk can be mounted in alternative on the right side or on the left side of the machine.

Important!

The milk container shall not be arranged on a surface lower than the machine.

The suction tube shall be tensioned as tightly as possible to avoid the build-up of any loop.

If you open the steam solenoid valve for a programmable time interval (cc dose), vacuum is created in the milker and fresh milk is aspirated. On some models you can use an air regulator to define the quantity of milk froth and a flow regulator to adjust the milk temperature.
The milk dose can be set up from the menu.

DISPENSING STEAM

The machine can be equipped with a cock intended to dispense steam (to be mounted at the time of the installation), in alternative to the device intended to dispense fresh milk (milker)
Open the valve (see fig. 20) on the front panel manually.
The dispensing time and flow rate are adjusted manually.
The water level in the steam boiler is controlled by a level probe intended to operate filling pumps.

DISPENSING HOT WATER

Press the selection button to enable the machine to dispense a programmable dose of hot water.
However, the dispensing cycle is automatically stopped with reference to the dose you have programmed.
The outlet water temperature depends upon the temperature of the instant boiler and it can not be programmed.

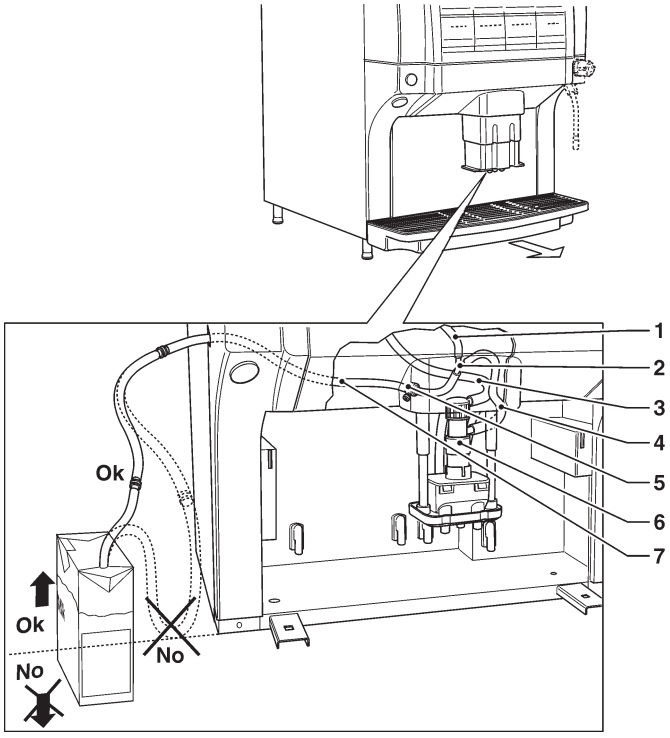


Fig. 21

1- Steam inlet
2- Washing water inlet
3- Y-connection
4- Flow regulator (temperature)
5- Fresh milk suction tube
6- Milk inlet
7- Milk dispensing nozzle (milker)

VARIABLE CHAMBER COFFEE UNIT

COFFEE DISPENSING CYCLE

After having powered on the machine, the coffee unit will perform two complete rotations at the first selection before performing a normal cycle in order to make sure that the device is put into the initial position.
If you request for a coffee-based selection, the grinder will work for the time required to fill in the brewing chamber with the coffee dose set up via software.
After having reached the dose of ground products, the ratio-motor engaged on the crank (11) of the unit will turn by 180°, thus causing the brewing chamber (8) to swing (see fig. 22).

The pump is started. As a result of the water pressure, the upper piston (5) will move down just as required to close the brewing chamber and to compress ground coffee slightly. You can avoid compressing coffee mechanically on the selections using high coffee doses. The pre-brewing cycle (water delivery and wait time) is started with programmable values.
The dispensing valve will open to enable the pump to force the boiler water onto the coffee for the brewing cycle.
A brewing valve is mounted at the outlet of the chamber to guarantee a minimum pressure in the brewing chamber. It enables the drink to come out whenever the working pressure is exceeded.

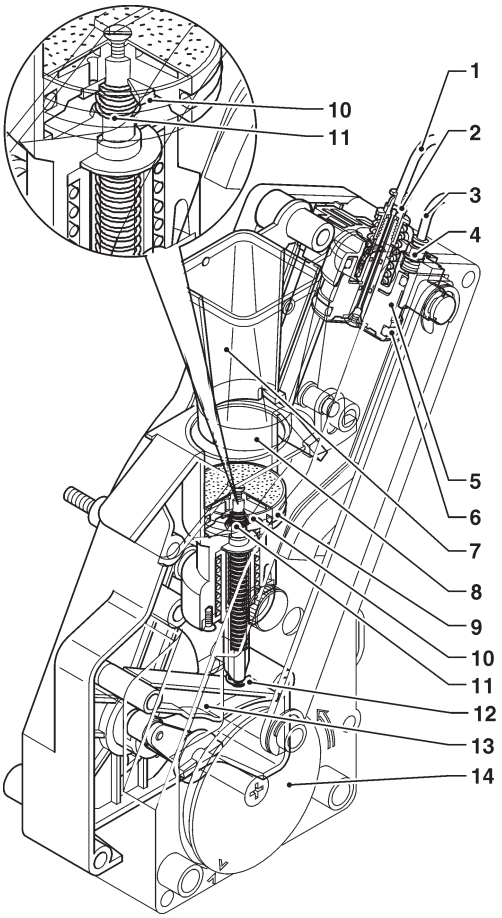


Fig. 22

1- Boiler connection tube
2- Central quick coupler
3- Upper piston pressurisation tube
4- Lateral quick coupler
5- Upper piston
6- Upper piston gasket
7- Coffee funnel
8- Brewing chamber
9- Lower piston
10- Brewing valve
11- Spring for valve
12- Lock ring
13- Rocking lever
14- Crank

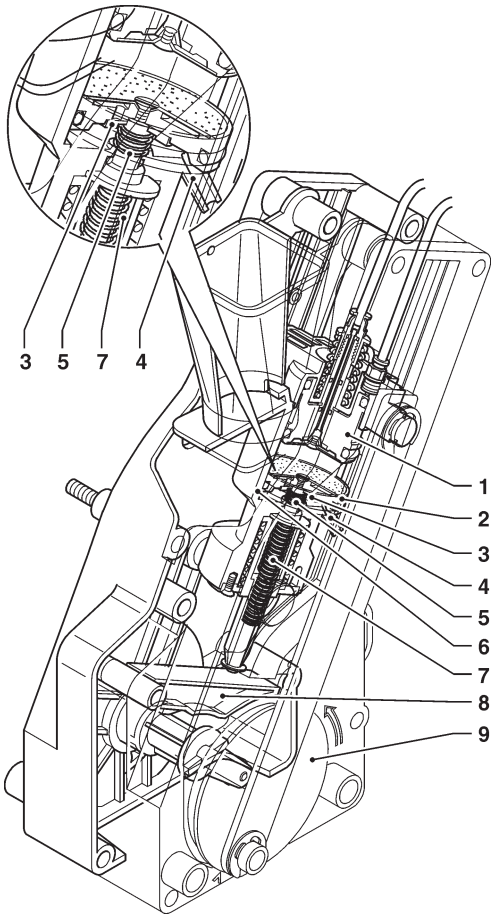


Fig. 23

1- Upper piston
2- Lower piston
3- Brewing valve
4- Drink dispensing channel
5- Spring for brewing valve
6- Brewing chamber
7- Piston return spring
8- Rocking lever
9- Crank

At the end of the dispensing cycle, the purge valve will open and the coffee dose is slightly compressed to discharge residual water through the 3rd way of the dispensing solenoid valve. The purge solenoid valve will open to depressurise the upper piston.
As soon as the rotation of the ratio-motor is completed (see fig. 23), this will cause the rocking lever (5) to lift up the pistons and the dose.
While the brewing chamber is returning to the vertical position, the scraper on the coffee funnel will prevent the used dose from moving and cause it to fall down.
The lower piston will return to the top dead centre.

DECAFFEINATED DISPENSING CYCLE

When the machine is supplied, the ground coffee flap is locked.
As required by the location, you may decide to unlock the door in order to be able to pour decaffeinated coffee or alike manually.
It is necessary to avoid pouring any other type of products.
A magnet arranged on the door will signal to the machine that the door has been opened. Signalling will occur through a sensor arranged on the door
The “decaffeinated reset” button shall be arranged on the keyboard to enable the user to manage the decaffeinated cycle.
The following message will flash on and off on the display:

Decaffeinated

The selections based on decaffeinated coffee are dispensed without operating the grinder.
The dispensing cycle is the same as the one for espresso coffee.
If you press the “decaffeinated reset” key before dispensing, you will cancel the “decaffeinated” preselection.
The machine will rotate the brewing unit and restore its normal operation.

CHECKING AND REGULATING THE SETUPS

To achieve the best results with reference to the product in use, it is recommended to check:

The used coffee dose must be slightly compressed and moistened.

The granulometry of the ground coffee.

The dose of products.

The temperature of drinks

The water dose.

If it is necessary to vary the setup, act as it is specified by the following paragraphs.
The dose of products, the water dose and the temperature are directly checked from the microprocessor.
To vary them, please follow the programming procedures.

STANDARD SETUPS

When supplied, the vending machine is set up as follows:

- coffee temperature (at the nozzle) about 158-176°F

- instant temperature (at the nozzle) about 158-176°F

The standard setup of the vending machine will match all selections to the same price specified by the selection dose table.

WATER TEMPERATURE ADJUSTEMENT

The temperature of coffee and instant boilers is controlled by the software and it can be directly adjusted from the menu.

STEAM BOILER TEMPERATURE

The water and steam temperature in the boiler is indirectly established by the pressure switch controlling the boiler pressure.
A temperature of 255-260°F corresponds to a pressure of 18.8 - 21.7 psig (1.3 - 1.5 bar).

GRINDING DEGREE REGULATION

If it is necessary to change the grinding degree, act on the corresponding coffee-grinder knob (see fig. 24) and more precisely::

- turn counterclockwise to obtain a coarser grinding degree;

- turn clockwise to obtain a finer grinding degree.

It is recommended to vary the grinding degree during the operation of the coffee-grinder motor.

Please Note: after having changed the grinding degree, make at least 3 selections to check the new granulometry of ground products more carefully:

he finer the grinding degree, the longer the time required to dispense the coffee drink and viceversa.
After the regulation, please check the quantity of ground coffee that may slightly vary.
The regulation knob can be easily removed from the grinder to avoid unintentionally varying the grinding degree.
The knob shall be kept in the proximity of the machine for any subsequent operation.

COFFEE DOSE REGULATION

A sensor is arranged on the grinder to count the rotations of the grinding wheels.
This will enable the software intended to control the machine to establish the number of turns and, therefore, the number of coffee grams associated with every single selection.
Follow the programming procedures to establish how many grams of ground product shall be associated with every single selection.
Please Note: before programming coffee doses, use the doser setup function to define the flow rate in gr/s.
To take the dose, just remove the coffee unit and select the corresponding item from “Special functions” of the “Technician” menu (see the relative paragraph).

Important!!!

To reassemble the coffee unit, pay great attention when positioning the piston.

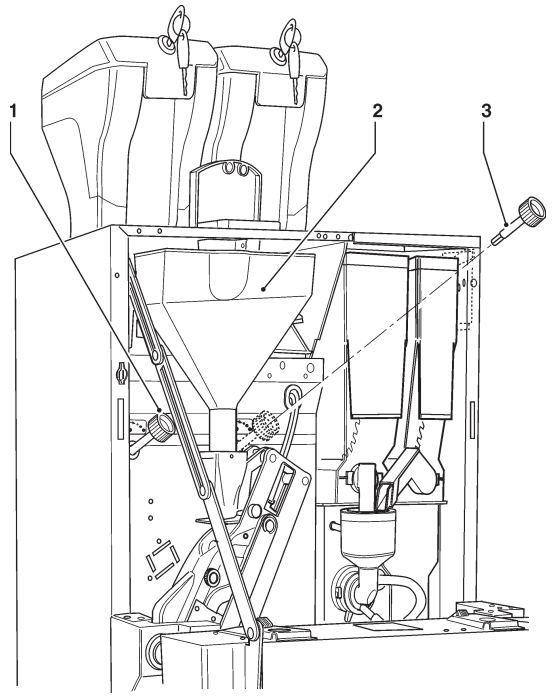


Fig. 24

1- Grinding degree plate
2- Coffee slide
3- Extractable knob for the regulation of grinding

Programming notes

The electronics intended to control the machine will enable the operator to use many functions or not.
The machine programme is intended to describe all available functions, including those that are not used due to the specific configuration of the model (**layout**).
A dose table is supplied with the machine. It is intended to describe the various functions and layouts made available for the specific model and the flow chart of the programming menu.
The main functions required to manage the machine operation as well as possible are briefly explained here below, not necessarily in the order they are displayed in the menus.
The software release can be updated by using proper systems (PC, Flash, Upkey etc.)
The messages intended to display the operation in progress are fixed whereas the action the user is required to perform is flashing on and off.
The machine can work in three different operation states.
The keyboard buttons may assume different functions, according to its operation state.

NORMAL OPERATION MODE

- The machine is powered on (the door is closed) and all checks are performed.
- Operations that can be carried out when the door is closed.
- The selection is dispensed and messages are displayed for the user.

FILLER MENU

- Statistical findings and execution of simple checks on the operation and on dispensing cycles.

TECHNICIAN MENU

- The setups and the performances of the machine are programmed.
- The operations you can perform with this menu can modify operation cycles. Therefore, they must be carried out by people having a specific knowledge of the machine in terms of electrical safety and sanitary rules.

NAVIGATION

The interaction between the system and the operator occurs through the following components:

- Liquid crystal display (LCD) 2 lines per 16 characters.
- External direct-selection pushbutton panel that will assume the following functions in the “Filler” and “Technician” mode (see fig. 25):

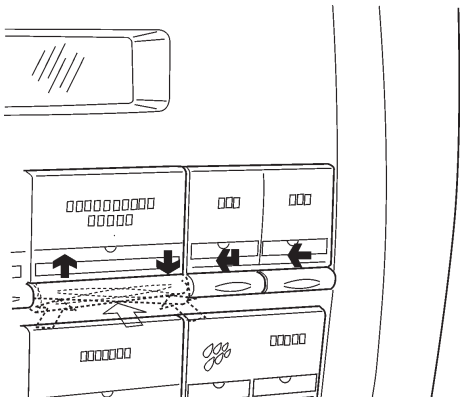


Fig. 25

Scrolling keys ↓ and ↑ :

used to move to the previous or next menu option and to change the values (plus and minus).

Enter key ↵:

used to move from a menu to a sub-menu or to confirm the data item on the display.

Exit key ←:

used to go back from a sub-menu to a higher level menu or not to confirm the data item that is currently active.
It is also used to move from the “Technician” mode to the “Filler” mode and vice versa.
The active menu function is displayed after the number, on the first line of the display.

POWER ON

Before powering on the machine, make sure that all components and covers are properly positioned.
If the machine is powered on for the first time or after having initialized the CPU board, a message will flash on and off on the display requiring you to specify the type of power supply you have selected:
The type of power supply you have confirmed will remain stored.

Kobalto Two-phase

When you power on for the first time, you will be required to select the type of water supply, i.e. whether from the tank (Tank ON) or from the mains.

Tank ON/OFF

The following message will appear:

POWER ON Do you confirm?

- You can confirm the operation by pressing the ↵ key or cancel it by pressing another key. All the next operations will require the operator to act manually and they shall be confirmed. They are listed here below in sequence:

- Pour some detergent;

- Detergent cycle;

- Pour some water;

After having completed the power on cycle, the software release number will appear on the display.

Kobalto Es REV 1.0

You can program the machine to display the number of dispensing cycles you have performed for some seconds.
A check is performed on espresso boilers.

BOILER CHECK

A cycle intended to rinse the circuit is started.

CLEAN CYCLE Do you confirm?

If the machine is complete with a device intended to dispense fresh milk (**milker**), the milker cleaning sequence will appear on the display whenever you power on the machine.
All the next operations will require the operator to act manually and they shall be confirmed. by pressing the ↵ key.
They are listed here below in sequence:

REMOVE MILK Do you confirm?

extract the suction tube from the container;

POUR DETERGENT Do you confirm?

insert the suction tube in a container with a detergent solution;

DETERGENT CYCLE Do you confirm?

The delivery micro-pump is operated for a pre-defined period of time to enable the detergent solution to flow through the circuit. The device will stop

REMOVE DETER. Do you confirm?

to enable the user to extract the suction tube from the detergent container and to insert it into a clean water container.

POUR WATER Do you confirm?

At the end

POUR MILK Do you confirm?

to re-position the suction tube into the milk container.

- Clean Cycle.

The following message will appear on the display after some seconds:

Running SELECT A DRINK

NORMAL OPERATION MODE

The message requiring the user to select a drink will appear on the display during the normal operation.

The key function will vary according to the layout and the choices you have made during programming.

```
SELECT A DRINK
```

If you insert some coins or a payment system, the credit still available will appear on the display.

```
SELECT A DRINK
Credit=        0.50
```

A status bar indicating the drink preparation level is also displayed on dispensing.

```
SELECTED DRINK
▒▒▒▒▒▒▒▒▒
```

If the control system should find out a failure, an error message will appear and specify the type of problem:

```
SELECTION NOT AVAILABLE
"Failure name"
```

At the end of the dispensing cycle, the message requiring the user to take the drink will appear on the display for some seconds and the machine will get ready for another delivery.

```
DRINK READY
SERVE YOURSELF
```

OPEN DOOR OPERATIONS

To prevent you from accidentally operating the machine and from performing test operations when the door is open, the operation you have to carry out is paused and the display will show the message "Conf./Start?".
To carry out the operation, press the Enter key or the failure reset button.

OPERATIONS WHEN THE DOOR IS CLOSED

To operate when the door is closed and to prevent the operator from running any risk, some functions can be enabled from the technician menu and activated by entering a password.
Enter the password (press 5 keys in a sequence) after having pressed the washing key [ ] (or the ✱ key if [ ] is not available) for over two seconds.
The functions that can be enabled are described by the technician menu.

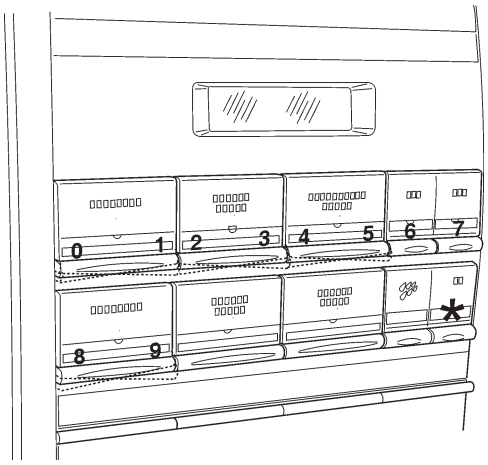


Fig. 26

FILLER MENU

Press the programming button on the inner side of the door once to set the machine to the “filler menu” mode. The display will show the first “filler” menu item and a

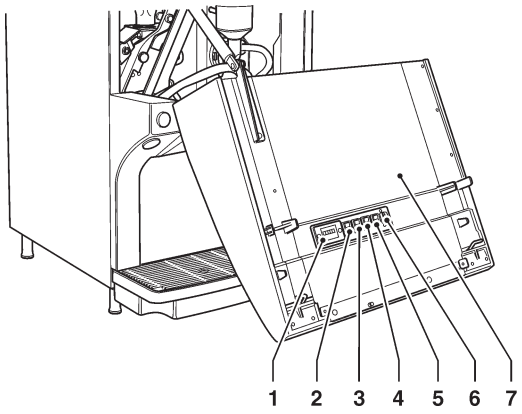


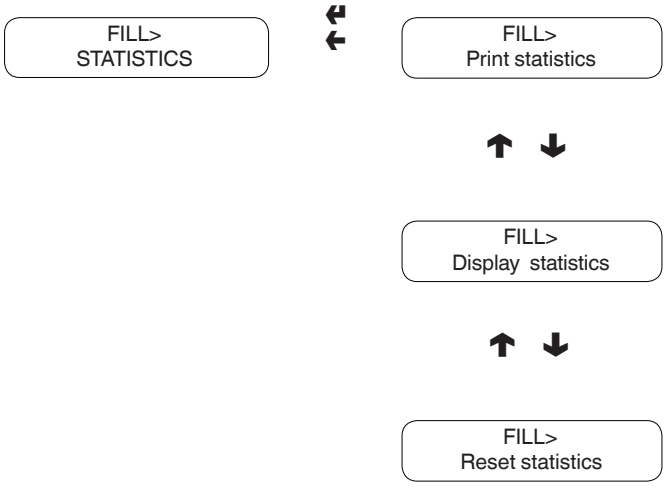
Fig. 27

1- Mechanical counter
2- Switch for service interruption
3- Failure reset button
4- Programming button
5- Washing button
6- RS232 serial port
7- Board cover

series of numbers that will enable the user to find out the current menu level.
Press the Enter key ↵ to access the menu.
Press the Exit key ← to go back to the previous menu

STATISTICS

All the data relative to the sales and the operation of the machine are stored in total and relative counters that can be reset without losing total data.



Print

Connect an RS232 serial printer having 9600 baud rate, 8 data bits, no parity, 1 stop bit with the serial port on the button board in order to print all statistics.

The machine information as well as the software date and release are also printed.
To connect the printer, act as follows:

- press the Enter key ↵ to display the request for confirmation “Do you confirm?”;
- connect the printer before confirming;
- press the Enter key ↵ to start printing

Display

Press the Enter key ↵ to sequence-display the same data you can obtain for total and relative counters by printing statistics.

Delete

Statistics can be reset for relative counters in a global (all types of data) or selective way, i.e. for::

- selections
- failures
- coin mechanism data

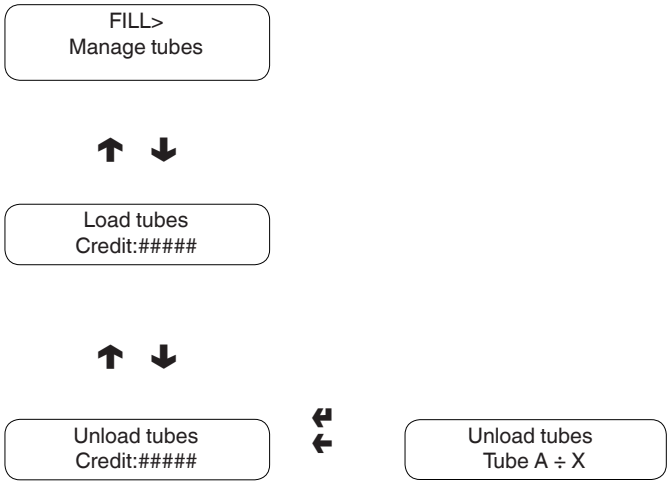
Press the Enter key ↵ to display the request for confirmation “Do you confirm?” flashing on and off.
Press the Enter key to display the “Execution” message for some seconds and to reset statistics:

SELECTION PRICES

Use this function to vary the sales price for every single selection and for every time band you may have set.

Management of change tubes

Access the function “Manage tubes” to load or empty the change tubes manually.
If you confirm loading, “Credit : ——” will appear on the display. This is the value of the money made available in the tubes for the change. If you insert a coin into the validator, the display will increase the value of the money made available in the tubes for the change.
If you confirm unloading, you can establish the tube on which you wish to act. Whenever you press the Enter key ↵, a coin is ejected by the active tube.

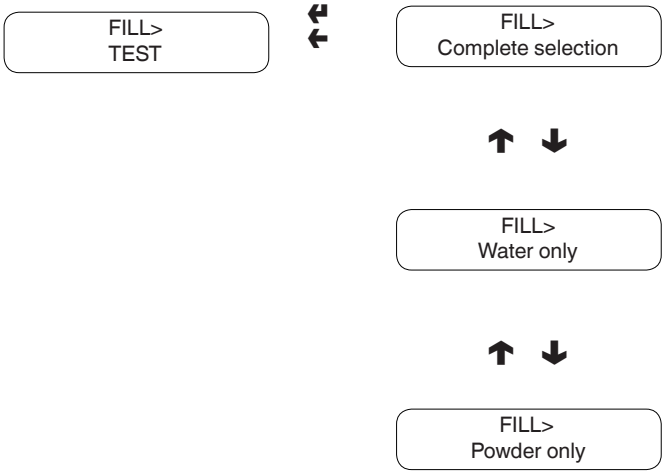


Temperature display

Use this function to read the boiler temperature directly expressed in °C.

Test dispensing

Every single button (or combination of keys according to the models) will operate the relative selection for complete or partial test dispensing (water, powder, water, only and without accessories) (see the selection dose table).



Please Note: For espresso coffee based selections, only additions are dispensed with partial powder and water deliveries. If no addition is provided for by the selection, the display will show “Disabled Sel.”

GSM Prealarms

The control software can send an “ending product” signal via GSM modem when a well-defined (programmable) number of pieces or grams of powder of a given product is lacking. Use this function to reset the counters intended to manage prealarms.

EVADTS transfer

If you activate this function, the machine will be waiting for connection with a device for the purpose of acquiring EVADTS statistic.

Filler menu masking

The functions described by this chapter can be selectively disabled by the “technician menu”.

TECHNICIAN MENU

The main functions required to manage the machine operation as well as possible are briefly explained here below. They are grouped by logic of utilization and not necessarily in the order they are displayed in the menus. The software release can be updated by using proper systems (PC, Flash, Upkey etc.). As a consequence, the content of this chapter shall be understood as merely indicative.
For more information and explanations in details refer to the selection dose table supplied with the machine. Please make reference to the revision number appearing on the display as soon as you power on the machine. Press the programming button on the coin mechanism compartment once to set the machine to the “filler menu” mode.
Press key ← in the “Filler” mode to set the machine to the “Technician menu” mode.

Note:

press key ← in the “Technician” mode” to restore the “Filler menu” mode for the machine.
The display will show the first programming menu item intended to fulfil the following functions:

FAILURES

The machine is equipped with several sensors intended to control the various functional units.

TECH> FAILURES	↵ ←	LIST OF FAILURES Failure End

Several functional units of the same type may be arranged on a machine.
As soon as a malfunction is found out, a failure is “declared” and displayed before the number of the unit. The machine (or part of it) is set out of order.
The failure is stored in special counters. The failures controlled by the software can be related to functional units not available on a specific model. However, they are listed on scrolling the menu.
Expected failures are highlit in the following cases:

No water

If the float should remain closed for one minute, the water inlet solenoid valve will remain energized while waiting for the water flow to come back.
If the kit for water supply from internal tank is mounted on the machine, the pump is powered off.

Solid waste container full

The machine is intended to disable coffee-based selections after having reached the number of selections you have established.

Air - break

The machine stops after 10 selections if the float has never signalled any lack of water.

Volumetric counter 1 - 2

The volumetric counter is not counting within a max. interval of time.

Instant boiler

The machine stops if the instant boiler has not reached the temperature after having heated for 20 minutes since you powered on the machine or last made a selection.

Machine board

No communication between the C.P.U. board and the machine board.

CAN-BUS board

No communication between the C.P.U. board and the canbus board (FB unit management, some models only).

Coin mechanism

The machine stops if it should receive an over 2-sec. pulse on a validator line or if the communication with the serial coin mechanism is not longer than 30 (Executive protocol) or 75 (BDV protocol) seconds.

Machine lock

The machine stops if it has reached the number of selections you have set up by means of the “selection counter” function.

Coffee dispenser 1 - 3

Coffee-based selections are disabled if the doser microswitch should signal the presence of coffee in the doser chamber after having dispensed the dose of ground products.

Espresso unit 1 - 3

It is due to a mechanical lock of the unit. The machine is not locked, but coffee-based selections are disabled.

Empty coffee 1 - 3

If the function is enabled from the programming menu, the “Pour coffee” message will appear on the display if the grinder should exceed the grinding speed for over 5 seconds.

Grinder lock 1 - 3

If the grinder is not rotating or it is rotating too slowly, the relative espresso coffee selections are disabled. The selections based on decaffeinated coffee will remain available.

RAM data

One or more than one area of the RAM memory contain altered data that have been corrected by default values. The machine will continue to work, but it is recommended to initialise as soon as possible.

Espresso boiler 1 - 2

The machine stops if the coffee boiler has not reached the temperature after having heated for 10 minutes since you powered on the machine or last made a selection.

Fresh brew piston 1- 2

It is due to a positioning error of the unit (piston opening time > 8 seconds). The machine is not locked, but the selections based on fresh product are disabled.

Fresh brew scraper 1 - 2

It is due to a positioning error of the scraper (movement time > 6 seconds).
The machine is not locked, but the selections based on fresh product are disabled.

Espresso Lock

The machine stops if the number of coffee selections you have separately set by means of the “selection counter” function is reached.

Instant Lock

The machine stops if the number of instant selections you have separately set by means of the “selection counter” function is reached.

Empty steam boiler

The machine will not dispense the selections based on milk or hot water if the presence of water is not signalled in the steam boiler. The boiler heating is disabled.
If the steam boiler should fail to reach the temperature 30 minutes after the power on or 10 minutes after the last selection, milk-based selections will be locked.

Steam pressure switch

The machine will dispense no milk-based selection if no pressure is signalled in the steam boiler.

Water failure

The machine will stop if the air-break microswitch is closed for 10 seconds.
As soon as you press a selection key, the water inlet solenoid valve will be energized to check whether the water flow is restored or not.
If the failure is not automatically reset, restart the machine to reset the failure by pressing the selection key once again.

Current failure readout

When the “Failures” function is displayed, press the Enter key to display the current failures.
If there is no failure at the moment, press the Enter key to display the “Failure end” message.

Reset

Confirm the function to reset all current failures, if any.

External lighting

You can define whether to power on or off the lamps intended to illuminate the external panels (optional) when the machine is out of order or in case of “service interruption”.

PROGRAMMING PARAMETERS

CASH

This group of functions is intended to manage all the parameters relative to the payment systems and sales prices.

SELECTION PRICES

For every single selection it is possible to set 5 different prices, the operation of which will vary according to the 4 time bands, if enabled.
Prices can be programmed (from 0 to 65,535) globally (the same price for all selections) or on a selection basis.
Since most products shall be sold at the same price, it is advisable to program the price globally and to change the price of the selections having a different sales price.

TIME BANDS

Four time bands can be programmed for the sale of products at different prices.
Time bands can be programmed by hour (from 00 to 23) and by minute (from 00 to 59) at the start and at the end.
If the start-of-band and end-of-band values are equal to 00.00, the band is disabled.
The time of reference is represented by an internal clock that can be programmed by:
day/month/year week-day 1-7
and then by
hour/minutes/seconds.

COIN MECHANISMS

It is possible to decide which protocol you wish to enable for the payment system and which functions you wish to manage.
The following payment systems are available:

- MDB

If you choose one of the systems, you can manage its functions.

EXECUTIVE

The following payment systems are arranged for the Executive system:

- Standard
- Price Holding
- Coges
- U-Key
- Sida

VALIDATORS

Whenever the display shows the “Validat. Lines” function (line programming) of the “programming” menu, you can change the value of the 6 validator coin lines from A to F.

BDV

The BDV protocol menus will enable the user to define the following functions.

Type of sale
Change refused
Maximum credit
Maximum change
Coins accepted
Coins not accepted
Dispensing buttons
“exact amount value”
C.P.C. peripheral unit
Minimum tube level

MDB

The MDB protocol menus will enable the user to define the following functions.

Type of sale
Change refused
Maximum credit
Maximum change
Coins accepted
Coins returned
Banknotes accepted
Minimum tube level
Coins accepted with “exact amount”

Functions shared by all systems

Immediate change

The amount relative to a selection is generally cashed after the machine has sent the “Successful selection”signal.
If you enable this function, which is disabled by default, the cash signal is sent at the start of the dispensing cycle.

Decimal point

Press the Enter key ↵ to display the position of the decimal point, i.e:

0	decimal point disabled
1	XXX.X
2	XX.XX
3	X.XXX

If you press the Enter key ↵, these values will flash on and off and they can be modified.

Selections

The selection menu is composed by various sub-menus that enable the user to set the various parameters relative to the composition of selections and their association to keys.

TECH> SET PARAMETERS	↵ ←	TECH> SELECTIONS

Water dose

For every single selection key you can set the water dose (expressed in cc - FB - IN or “wheel strokes” ES according to models) for every single product composing the selection.

Management of mixers

For every single selection key you can set the duration of the mixing cycle for every single water dose composing the selection.
The duration can be set in two different modes:

absolute

i.e. not depending upon the opening time of the solenoid valve. The duration of the mixing cycle is set in tenths of a second for instant models and in volumetric counter pulses for espresso models.

relative

i.e. by way of difference, either in excess or in default, compared to the closing time of the solenoid valve.
The duration of the mixing cycle is always expressed in tenths of a second.

Solenoid valve setup

You can set (IN - FB - Milker - not used on this model) the flow rate value of every single solenoid valve in cc/s (the cc/s value set by default is supplied by the selection dose table) to enable the user to calculate the cc that shall be dispensed.

Dripping time

It is intended to define the interval of time between the end of the dispensing cycle and the sound signal.

Step water

It is intended to set up a step water dispensing cycle to adjust to the times and to the flow rate of solenoid valves on instant models. Intermittence is programmable on a percentage basis with reference to every single dispensing second.

Prebrewing Z3000

This function intended to manage the parameters relative to the espresso brewing unit, associated with every single selection, i.e:

Pre-brewing Time

This function is intended to set up the prebrewing time for every single selection (programmable from 0 to 30 tenths of a second, 12 by default).

Pre-brewing Dose

This function is intended to set up the water quantity to be dispensed for prebrewing for every single espresso coffee based selection (programmable from 0 to 20 cdv: pulses of the volumetric counter, 20 by default).

Pressurization

This function is intended to set up for every single espresso coffee based selection whether to provide for pressurization or not, i.e. the hydraulic pressure of the upper piston on the coffee dose during the brewing cycle.
It is recommended to disable this function in case of fine grinding on double espresso coffee selections.

Nozzle hot water

The management of the hot water dispensing button from the external nozzle has got two functions.

Hot water dose

It is intended to set up the time required to dispense hot water from the corresponding nozzle.

Mixing percentage

This function is intended to modify the outlet water temperature (maximum about 208°F) by acting on the flow rate of the cold water that has been added.
Use the scrolling buttons to move the cursor on the display to a higher flow rate (colder water) or to a lower flow rate (hotter water).

Powder dose

For every single selection key you can set the powder dose expressed in grams for every single product composing the selection.
For coffee-based selections you can define which of the two ground doses to match with the selection.

Powder cycles

Use this function to set up the number of steps or the decaffeinated cycle necessary to dispense powder for every single instant selection in order to improve the drink presentation.

Doser setup

For the correct conversion of the product dose values, you can set the flow rate value of every single doser in gr/s to enable the user to calculate the grams that shall be dispensed.

Global powder doses

Use this function to vary a well-defined powder dose on all the selections it is associated with.

Selection status

For every single selection key you can define whether to enable it or not.

Selection key

It is intended to associate a selection number - as it appears in the selection dose table - with a key of the pushbutton panel.

Double key

You can combine two keys with one single selection, according to the model and the external pushbutton panel.

Selection no. check

You can check the selection number associated with a key or a couple of keys.

Product code

It is intended to associate a 4-character code with every single selection for the purpose of managing statistics.

Vending machine parameters

This group of functions is intended to control all the parameters relative to the machine operation.

TECH>
SET PARAMETERS

TECH>
MACHINE PARAM.

Boiler temperature

Use this function to set the operating temperature, expressed in °C, of the boilers actually available on the machine.
Press the Enter key ↵ after having selected the boiler on which you wish to act. The temperature value will flash on and off and it can be modified.

Tank

The unit can be supplied with water from the mains or from an internal tank (tank ON /OFF).

It is defined at the time of the first power-on and it is impossible to access this menu position:

Washing key enable

Use this function to enable the operation of the button intended to wash the mixer.
The key is generally disabled.

Rapid cycles

It is of no influence on these models and it is impossible to access it:

Water filter counter setup

You can display the “Replace the water filter” message after a programmable number of dispensing cycles. If it is set up in the programming menu, you can reset the message by entering a password after having replaced the filter when the door is closed.

Automatic washing

You can set the time at which you wish to wash the mixers automatically.
If you set the time to 12.00 p.m., the function is disabled (default).

Energy saving

Function used to power off the heating of boilers and/ or the lights for external lighting in order to save electric energy whenever the machine is not used.
2 power-off time bands can be programmed on a weekly basis. The days of the week are identified by a progressive number (1= Monday, 2= Tuesday, etc.).
The same time band can not include days of different weeks.
If you should mistakenly set up overlapping time bands, the machine will remain on for the shortest period.
For example, if you wish to set up the energy saving time bands to operate the machine from 07.00 a.m. to 10.00 p.m. during the days of the week and to let it off on Saturdays and on Sundays, you shall set up the time bands according to the following table by using the corresponding menu.

Day		1	2	3	4	5	6	7
Band 1	start	00.00	00.00	00.00	00.00	00.00	00.00	00.00
	end	07.00	07.00	07.00	07.00	07.00	23.59	23.59
Band 2	start	22.00	22.00	22.00	22.00	22.00	00.00	00.00
	end	23.59	23.59	23.59	23.59	23.59	00.00	00.00

Decaffeinated cycle

Enable this function to dispense the soluble coffee powder (if available) in two cycles in order to improve the drink presentation.

Equipped cabinet

Enable this function to manage the water level signaller as unavailable and to disable the coffee grounds counter.
The float and the coffee grounds collection functions are performed by the devices in the cabinet.

Pre-grinding

This function is intended to enable or to disable the grinding cycle of the coffee dose for the next selection. This means reducing the dispensing time of a coffee selection. The function is disabled by default.

Selection counter

Use this function to lock the machine after a programmable number of coffee dispensing cycles and after a programmable number of soluble dispensing cycles. As an alternative, you can lock the machine after a programmable number of dispensing cycles.
Since it is a control device that can be used by the Manager only, enter a 5-digit password to have access to it.
After having entered the password, you can set the number of dispensing cycles, after the performance of which the machine is locked, read the number of dispensing cycles you have already performed and reset the lock counters.
Please Note: Counters are set to zero by default;
If the counters are set to zero, this function is not active.

Brewing unit heating

After having enabled this function, you will be required to perform a cycle by dispensing a small quantity of hot water if a coffee unit has not been working for 20 min = . The display will show a message requesting for confirmation “YES<----II---->NO” and the cycle can be either performed or cancelled by using the most external keys on the pushbutton panel.

Empty coffee enable

Use this function to signal which coffee grinder is empty by displaying the message “Pour coffee”
“M1 ○ M2● M3●”.
○ means that the grinder is empty.

Enable dispensing **STOP.**

It enables the function intended to stop dispensing by pressing the selection key once again.

Display

This group of functions is intended to control all the parameters relative to the display.

Language

Use this function to select the language you wish to use to display the messages among those made available by the software.

Second language setup

Use this function to decide whether to display or not the messages and in which language among those available. Messages will be displayed alternately to those in the main language.

Promotional message

You can define whether to display the message or not.
The 2-line message can be composed by using the keys ↑ and ↓ to scroll all available characters.
If you press the Enter key ↵, the first character you can modify will flash on and off.
Press the key ← to store the message

LCD contrast regulation

Use this function to regulate the display contrast from min. 5% to max. 99%.

PRESELECTIONS

Use this function to act on the selection-associated preselections available on a specific model and layout.

For every single preselection you can decide whether to enable it or not, the key for association, the change in the selection price and the change percentage of the product dose.

MISCELLANEOUS

This menu is gathering some less-frequently-used functions relative to the parameters of the machine.

Fresh brew unit data

You can set up the brewing time, the drying time of the used dose and the extraction pressure for the Fresh Brew unit.

Programming password

It is a 5-digit numeric code required to access the programming mode.
This code is set to 00000 by default.

Password enable

Used to enable or disable the function requiring the user to enter the password for access to the programming mode. The password request is disabled by default.

Counter reset password

Function used to set the password you shall type in the normal operation mode (door closed) to reset the selection counters.
If the password is set to zero, this function is not active.

Jug Facilities Password

Enter a password to activate the function necessary to obtain a number (programmable from 1 to 9.5 by default) of selections in order to fill in a jug.

Multiple dispensing password

Function used to set the password you shall type in the normal operation mode (door closed) to dispense several selections in consecutive mode (jug facilities).
The function is disabled at the end of the selection.
If the password is set to zero, this function is not active.

Free sale password

Function used to set the password you shall type in the normal operation mode (door closed) to activate the Free-Vend function.
The function is disabled at the end of the selection.

Key lock password

You can set up the password that shall be typed in normal use (when the door is closed) to activate/deactivate the keyboard lock.
“SERVICE INTERRUPTION” will appear on the display during the lock.
This function is not active if the password is set to zero.

Washing password

Function used to set the password you shall type in the normal operation mode (door closed) to wash the mixer.

Test selection password

You can set up the password that shall be typed in normal use (when the door is closed) to access the maintenance/programming mode and to perform test selections.
To go back to normal use, switch from the FILL to the TECH area and vice versa for three times.

Filter reset password

Use this function to set up the password necessary to reset the “Replace the water filter” message when the door is closed and to reset the corresponding counter after having replaced the filter.

Waste counter reset password

Use this function to set up the password necessary to reset the selection counters for the “Empty the waste tray” lock.

Filler menu enable

Function used to establish which options of the filler menu shall be enabled and which of them shall be disabled.
The reference numbers of the menus do not change even if some of them are disabled.

Automatic Espresso washing

This function is intended to set up the automatic daily washing cycle of the espresso unit by setting the time you wish.
If you set the time to 00:00, the function is disabled.

STATISTICS

The operation data of the machine are stored in general and relative counters that can be reset without losing total data.

Electronic counter

An electronic counter is intended to store all the dispensing cycles you have performed since you last reset it in an aggregated manner.

General display

Press the Enter key to display the data you have stored in sequence, i.e:

1 - counter by single selection;

2 - counter by band;

3 - discount counter;

4 - failure counter;

5 - coin mechanism data.

General reset

Statistics can be reset either globally (all types of data) or selectively, i.e. by:
- selections
- discounts-overprices
- failures
- coin mechanism data

Press the Enter key ↵ to display the request for confirmation “Do you confirm?” ↵ flashing on and off.
Press the Enter key to display the “Execution” message for some seconds and to reset statistics.

Relative display

Press the Enter key ↵ to display the data you have stored in sequence, subdivided just as general statistics.

Relative reset

Statistics can be reset either globally (all types of data) or selectively, just as general statistics.

Enabling the electronic counter at startup

Function used to enable or disable the display of the total number of dispensing cycles that have been sold since you last reset, while you are powering on the machine.

Print

Connect an RS232 serial printer having 9600 baud rate, 8 data bits, no parity, 1 stop bit with the serial port on the button board in order to print all the statistics described by the “statistics display” paragraph.The machine data as well as the software date and release are also printed.
Statistics can be printed either partially or totally.
To connect the printer, act as follows.
- press the Enter key ↵ to display the request for confirmation “Do you confirm?”;
- connect the printer before confirming;
- press the Enter key ↵ to start printing.

TEST

Use this group of functions to perform some checks on the machine

Test dispensing

Function used to dispense the following for every single selection when the door is open and without inserting the amount required:

- complete selection

- water only

- powder only

Special functions

Access the function to act as follows:

Unit turn

- operate the brewing units (espresso) you have actually mounted;

Dose dispenser

- dispense a ground coffee dose; press the keys ↑ and ↓ to choose the grinder on which to act; press the enter key ↵ and the keys ↑ and ↓ to select the (low or high) dose that will be released by pressing ↵;

Boiler discharge

- discharge water from the air break and open a solenoid valve to let air flow in if boilers are emptied for maintenance purposes;

Manual installation

- manual installation of boilers (the water circuit is filled in);

AUTOTEST

Function used to check the operation of the main components of the machine half-automatically.
Press the key ↵ to display the “AUTOTEST” message flashing on and off.
Press the key ← to stop the operation. Press the key ↵ to start the autotest cycle.
Some checks occur automatically, others require the manual operation of the checked component.

MISCELLANEOUS

This menu includes some less-frequently-used submenus enabling the user to manage the functions described here below.

TECH> MISCELLANEOUS ↵ ← TECH> “list of functions”

MACHINE INFORMATION

INSTALLATION DATE

Function used to store the current system date as the installation date.
The date is printed at the time of rolling out statistics.

PROGRAMMING THE MACHINE CODE

After having displayed the “Machine Code” function, you can change the 8-digit numeric code identifying the machine (0 by default).

PROGRAMMING THE MANAGER CODE

After having displayed the “Manager Code” function, you can change the 6-digit numeric code identifying groups of machines (0 by default).

INITIALIZATION

After having displayed the “Initialization” function, you can initialize the machine by restoring all default data. This function shall be used in case of a memory data error or if the software is replaced.
All statistic data are reset, except for the general electronic counter.
Press the Enter key ↵ to display the request for confirmation “Do you confirm?”. If you press the Enter key ↵ once again, you will be required to enter some parameters, i.e.:

“country”

understood as type of basic doses for the various selections
(eg. IT coffee = 45 cc - FR coffee = 80 cc).
Foreseen “countries” vary according to the models.

“lay out”

a well-defined number of Button-Selection combinations is arranged for every single model and type of dose (the combinations arranged for every single layout are included in the selection dose table supplied with the machine).
Confirm the options to display the “Execution” message for some seconds.

“Steam Boiler” ON/OFF

“Confirm the options to display the “Execution” message for some seconds”.

“Steam Boiler” ON/OFF

Confirm the options to display the “Execution” message for some seconds.
Please Note: As soon as you power on the new machine for the first time or anyway after its initialization, you have to choose the type of power supply (three-phase / single-phase) to use.
Press ↓ and ↑ to scroll the options and press the ↵ key to confirm the choice.
If you fail to initialize the machine, the request will be no longer made.
However, you can change it by holding the CPU board button down (see fig. 40) whenever you power on the machine.

EVADTS CODES

Two codes are used to identify the machine and recognise the data transfer terminal according to the EVADTS (European Vending Association Data Transfer System) communication protocol:

PASS CODE

It is a 4-digit alphanumeric code (0-9; A-F) that must be the same as the one of the data transfer terminal for identification purposes.
Press the Enter key to display the code as “0000”, not depending upon the actual value. If you press the modification key the first digit will flash on and off.
Press the scrolling keys to modify its value (the value is visible while you are modifying it).
If you press the Enter key, the next digit will flash on and off.
If you press the Enter key after having modified the fourth digit, the value is stored and the display will show “0000” once again.

SECURITY CODE

It is a further alphanumeric code for mutual recognition between the machine and the EVADTS terminal.
Programming is operating just as for the “Pass” code.
Connection
Function used to enable the machine to wait for connection in order to recall data.

EVADTS CONNECTION

If you activate this function, the machine will be waiting for connection with a device in order to acquire EVADTS statistics.

UP KEY MANAGEMENT

SETUP

UP KEY -> VENDING MACHINE

Confirm this function after having inserted the Up key into the plug on the C.P.U. board to select the setup file from the list on the display by means of the scrolling keys. Press the Enter key to load the setup you have selected on the vending machine.

VENDING MACHINE -> UP KEY

Confirm this function after having inserted the Up key into the plug on the C.P.U. board to save on the up key the setup file with the same configuration currently available on the vending machine. Please specify the name you wish to assign to the file (e.g.:Max000.STP).

DELETE

Use this function to delete one or more than one setup file on the up key you have inserted.

DELETE ALL

Use this function to delete all the setup files on the up key you have inserted.

STATISTICS

VENDING MACHINE -> UP KEY

Confirm this function after having inserted the Up key into the plug on the C.P.U. board to save on the up key the statistics file with all the statistical data currently available on the vending machine. Please specify the name you wish to assign to the file (e.g.:Max000.STA).

DELETE

Use this function to delete one or more than one statistics file on the up key you have inserted.

DELETE ALL

Use this function to delete all the statistics files on the up key you have inserted.

Chapter 3
Maintenance

Important!!

The machine is accessed at the back and on both sides in case of extraordinary maintenance and/or repair.
As a consequence, it shall be possible to rotate the machine around itself in order to disassemble the back and the side panels.

The intactness of the machine and its compliance with the rules of the relative installations shall be checked by skilled personnel at least once a year.

If you open the machine door, the terminal board intended to connect **the line cable, the fuses and the interference suppressor remain live**.

Disconnect the machine from the electric supplay before performing any maintenance operation that may require the disassembly of components.

The operations described here below may be only performed by the personnel who have a specific knowledge of the machine operation from the viewpoint of electric safety and health rules.

GENERAL INTRODUCTION

To ensure the correct operation of the machine, the equipment must be serviced at regular intervals.
All necessary operations and the relative deadlines are listed here below. Obviously, they are merely indicative since they depend upon operating conditions (e.g. water hardness, humidity and room temperature, type of product in use, etc.).
The operations described in this chapter are not a complete list of all maintenance operations.
The most complex operations (e.g. boiler descaling) must be carried out by a technician having a specific knowledge of the vending machine.
In order to avoid any risk of oxidation or chemical corrosion in general, keep stainless steel surfaces well cleaned and painted by using neutral detergents (please avoid any solvent).

Under no circumstance is it allowed to use water jets in order to wash the machine.

VARIABLE CHAMBER BREWING UNIT MAINTENANCE

The brewing unit must be serviced, every 10,000 dispensing cycles or every 6 months.
To provide for maintenance, act as follows:

- detach the teflon tube connecting the boiler from the upper piston and the tube for hydraulic operation of the piston by acting on coloured rings (see fig. 28);
- unscrew the knob fastening the unit to the shutter and extract the coffee unit by detaching the dispensing tube.

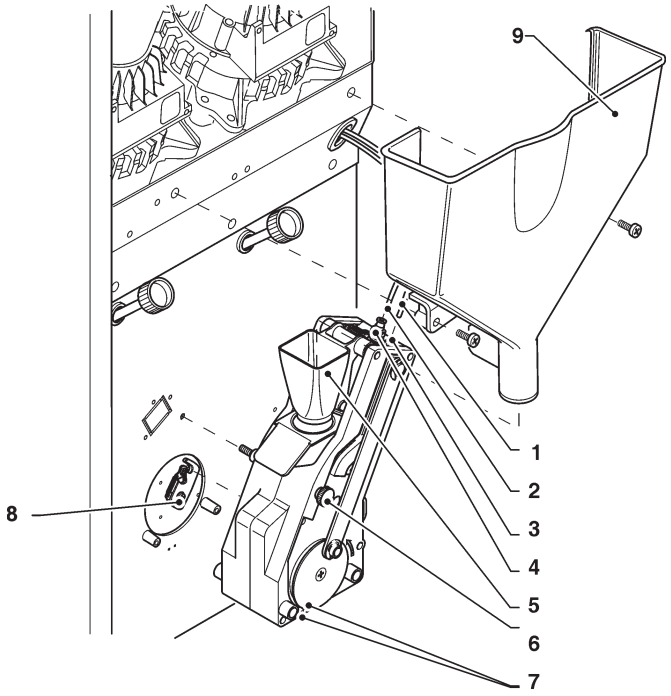


Fig. 28

1- Boiler connection tube
2- Upper piston operation tube
3- Lateral quick coupler
4- Central quick coupler
5- Coffee funnel
6- Fastening knob
7- Reference notches
8- Ratio-motor crank
9- Coffee slide

-Disassembling the upper filter

- Unscrew the central quick coupler;
- Extract the piston from the crosspiece;
- Remove the filter and the gasket from the piston.

-Disassembling the lower filter

- Disassemble the coffee funnel (see fig. 28);
- Remove the snap ring intended to fasten the lower piston;
- Remove the piston from the brewing chamber and disassemble the filter.

Dip the components you have disassembled into a hot water and detergent solution for coffee machines for 20 minutes.

Rinse thoroughly , let everything dry and reassemble by following the reverse order. Check the integrity of gaskets. Lubricate them by using food fat.

WASHING THE MILKER

The washing cycle shall be performed at least at the end of every single working day and/or according to the utilization of the system.
If the machine is complete with a device intended to dispense milk (milker), a guided washing sequence is proposed as soon as you power on the machine. Press the ← key to cancel it.
All operations are indicated through specific messages on the display.
Press the ↵ key to confirm any message on the display.
The operations that shall be carried out are listed here below:

- "Pour some detergent"
  Insert the suction tube into a container with some thinned detergent according to the manufacturer's instructions and confirm by pressing the ↵ key.
- "Detergent cycle"
  Confirm by pressing the ↵ key. The machine will dispense the quantity of detergent solution that is enough to wash the relative water circuit.
  Confirm by pressing the ↵ key.
- "Pour some water"
  Insert the suction tube into a container with some lukewarm water and confirm by pressing the ↵ key.
- "Clean cycle"
  Confirm by pressing the ↵ key. The machine will dispense the quantity of water that is enough to rinse the water circuit.
  Confirm by pressing the ↵ key.

Please Note. To be sure that the circuit is completely filled with milk, it is necessary to perform at least two test cappuccino selections.
The milker shall be sanitized at regular intervals.

DISASSEMBLING AND CLEANING MIXERS

The mixers and the hoses intended to dispense instant drinks and dispensing nozzles shall be carefully cleaned and sanitized at the time of the installation and at least once a week or more frequently, according to the use of the machine and the quality of inlet water in order to guarantee the compliance of dispensed products with sanitary rules.
The parts to be cleaned are listed here below:

- dispensing nozzles, dividing nozzle and telescopic nozzle cover;
- powder deposit drawers, mixers and the hose intended to dispense instant drinks.

To disassemble the parts, act as follows:

- remove the powder funnels, the water funnels, the collection boxes, the powder deposit drawers and the whipper motor impellers from the mixers (see fig. 9);
- unscrew the knurls at the bottom of the telescopic nozzles

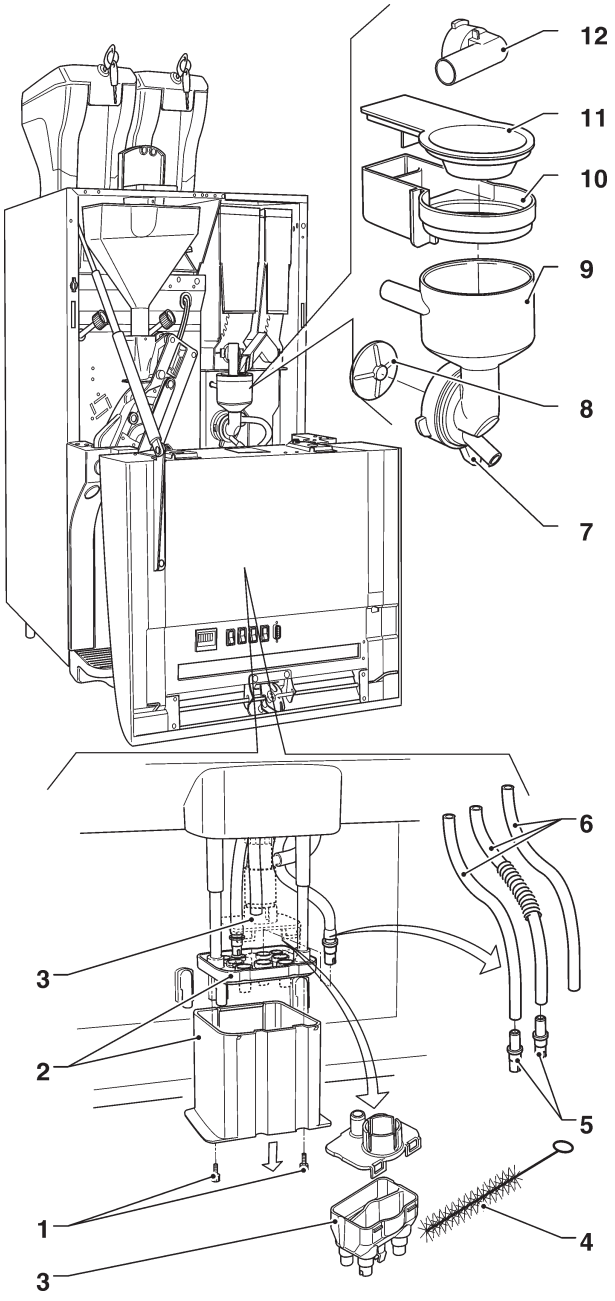


Fig. 29

1- Knurls for fastening the telescopic cover
2- Nozzle support
3- Dividing nozzle
4- Brush for cleaning tubes
5- Dispensing nozzles
6- Tubes for dispensing instant products
7- Funnel fastening ring nut
8- Mixer impeller
9- Water funnel
10- Powder deposit drawer
11- Product funnel
12- Product collection box

- press the clip at the back of the section at the bottom of the nozzle cover and extract it downwards
- extract the tubes from the nozzles and from the dividing nozzle
- remove the nozzles from the small support plate
- remove the dividing nozzle by pressing the clip at the bottom of the small plate .

- to disassemble the water funnel, turn the green ring nut counterclockwise;
pay special attention on reassembling it: it shall be completely closed;

- - to disassemble the impellers, use a finger to lock the disk mounted on the whipper motor shaft (see fig. 10). Then turn the impeller to unscrew it.

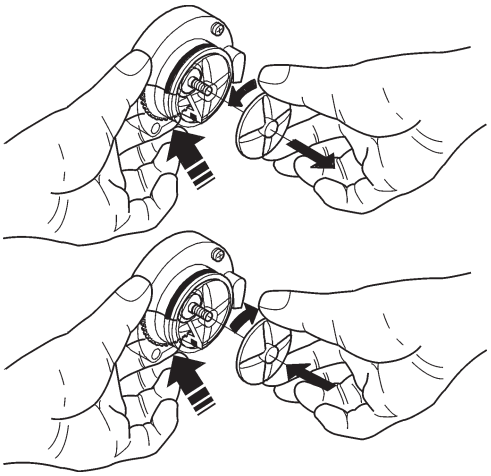


Fig. 30

- **Wash all the components by using detergents. Make sure that all visible residuals and films are mechanically removed. If necessary, use a brush;** Sanitize by making use of sanitizing agents.

- dip the components into a container with the sanitizing solution you have prepared before for about 20 min;

- reassemble the collection boxes and the water funnels;

- reassemble the powder deposit drawers and the powder funnels after having carefully dried them.

- **After having mounted the parts, it is anyway necessary to act as follows:**

- pour some drops of the sanitizing solution into the mixer;

- rinse the parts in question abundantly to remove any residual of the solution you have used. Use the mixer washing function when the door is closed.

DISASSEMBLING AND CLEANING THE MILKER

The device intended to dispense hot milk (**milker**) shall be carefully cleaned and sanitized at the time of the installation of the machine and at least once a week or more frequently, according to the use of the machine and the type of milk in use in order to guarantee the compliance of dispensed products with sanitary rules.
The parts to be cleaned are listed here below:

- milker intended to dispense milk, to be disassembled in all its parts;

- dividing nozzle and telescopic nozzle cover;

- milk suction tube composed by several pieces to enable the user to clean by means of pigs.

To disassemble the parts, act as follows:

- unscrew the knurls at the bottom of the telescopic nozzles

- press the hook at the back of the section at the bottom of the nozzle cover and extract it downwards

-

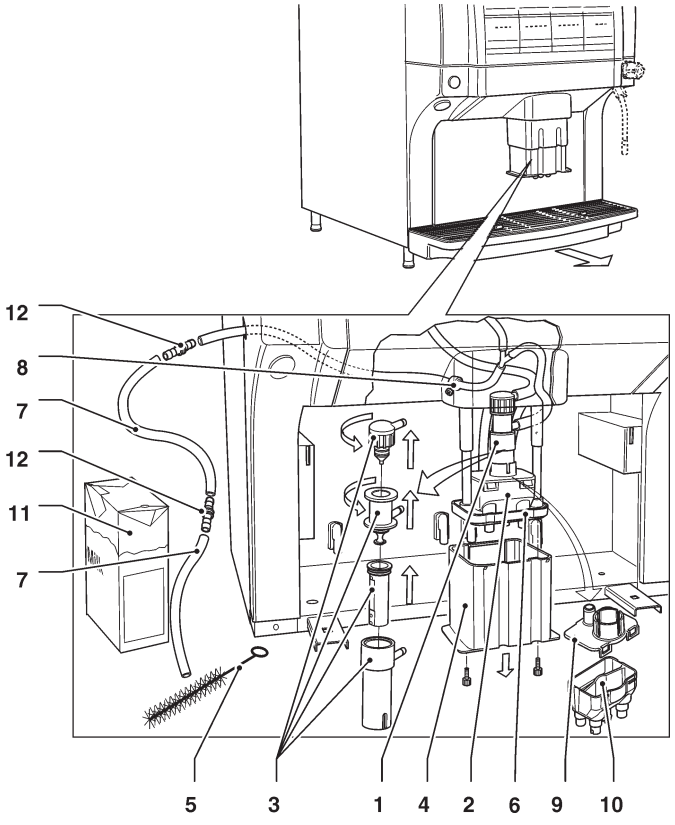


Fig. 31

1- Milker
2- Dividing nozzles (coffee + milk)
3- Milker components
4- Nozzle telescopic cover
5- Pig
6- Nozzle support
7- Milk suction tube
8- Flow rate regulator
9- Dividing nozzle cover
10- Dividing nozzle body
11- Milk container
12- Tube disconnection rubber-holder

- extract the milk dispensing nozzle (milker) from the dividing nozzle and disassemble it in all its parts

- remove the dividing nozzle by pressing the clip at the bottom of the small plate.

Wash all the components by using detergents. Make sure that all visible residuals and films are mechanically removed. In particular, use a brush for milk suction tubes.

Sanitize by making use of sanitizing agents.

- dip the components into a container with the sanitizing solution you have prepared before for about 20 min;

- reassemble the milker and the dividing nozzle after having carefully dried them.

- **After having assembled the parts, perform an automatic washing cycle.**

- unscrew the knurls at the bottom of the telescopic nozzles

- press the hook at the back of the section at the bottom of the nozzle cover and extract it downwards

extract the tubes from the nozzles and from the dividing nozzle

- remove the nozzles from the small support plate

- remove the dividing nozzle by pressing the clip at the bottom of the small plate.

to disassemble the water funnel, turn the green ring nut counterclockwise;
pay special attention on reassembling it: it shall be completely closed;

- to disassemble the impellers, use a finger to lock the disk mounted on the whipper motor shaft (see fig. 10). Then turn the impeller to unscrew it.

- Wash all the components by using detergents. Make sure that all visible residuals and films are mechanically removed. If necessary, use pigs and brushes;

Sanitize by making use of sanitizing agents.

- dip the components into a container with the sanitizing solution you have prepared before for about 20 min;

- reassemble the collection boxes and the water funnels;

- reassemble the powder deposit drawers and the powder funnels after having carefully dried them.

- **After having mounted the parts, it is necessary to act as follows:**

- pour some drops of the sanitizing solution into the mixer;

- rinse the parts in question abundantly to remove any residual of the solution you have used. Use the mixer washing function when the door is closed.

CLEANING AT REGULAR INTERVALS

Clean and sanitize the whole food circuit at least once a year or more frequently, according to the use of the machine and the inlet water quality. To do this, act as described here below.

Sanitizing

- all the components in contact with food, including tubes, shall be removed from the machine and disassembled completely;

- all visible residues and films shall be mechanically removed by using, if necessary, brushes and scrapers;

- the components shall be immersed into a sanitizing solution for at least 20 minutes;

- the surfaces inside the machine shall be cleaned by using the same sanitizing solution;

- rinse abundantly and reassemble the various parts

Before putting the machine back in operation, sanitize as it is described by chapter "Sanitising mixers and food circuits".

Cleaning coffee containers

- Close the shutter by turning the knob to the right completely;

- after having opened the door, remove the containers from the machine;

- disassemble the protection inside the grinder entrance of the container by unscrewing the two fastening screws completely;

- remove the gasket from the grinder entrance;

- clean all the parts by using a hot water solution and sanitizing products and let them dry carefully.

- reassemble everything in the reverse order.

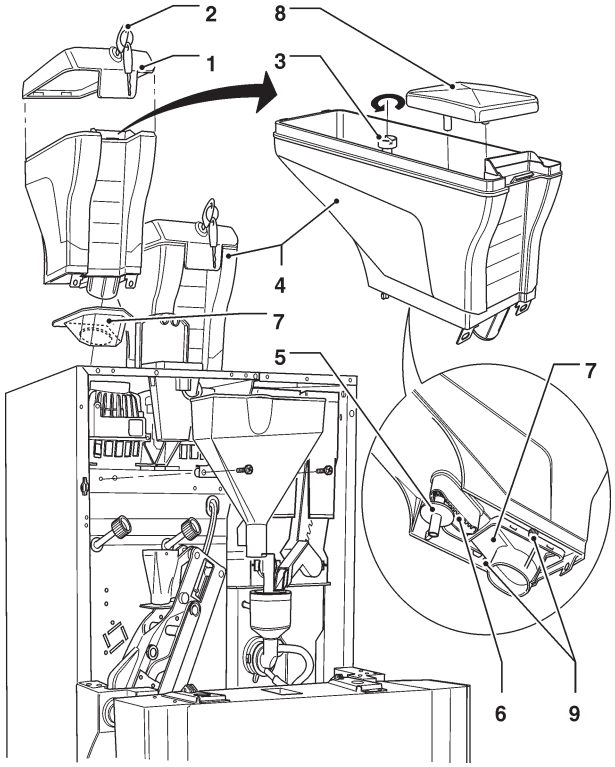


Fig. 32

1- Container cover
2- Container lock
3- Shutter operating knob
4- Container
5- Hopper lock gasket
6- Shutter gear
7- Container shutter
8- Container entrance protection
9- Protection fastening screws
10- Seal for grinder

CLEANING INSTANT PRODUCT CONTAINERS

- Remove the containers from the machine;
- disassemble the product outlet ports and extract the Augers from the rear side of the container;
- clean all the pieces with a solution of hot water and sanitising products and dry them carefully.

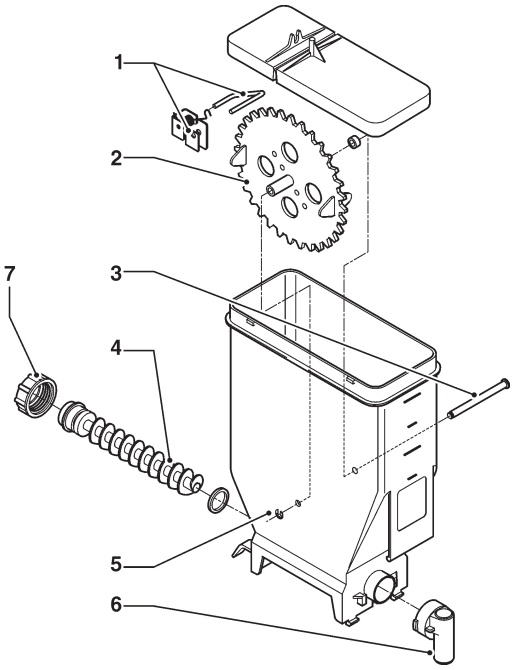


Fig. 33

1- Beater for wheel
2- Wheel
3- Wheel pin
4- Auger
5- Pin fastening clip
6- Powder outlet port
7- Auger fastening ring nut

CLEANING THE STEAM SUCTION CHANNEL

To access the steam suction channel, remove the right side of the machine by removing the fastening screws. Remove the fastening knurl and extract the suction channel by releasing it from the flexible pipe.
After having washed and dried it carefully, reassemble it in the reverse order.

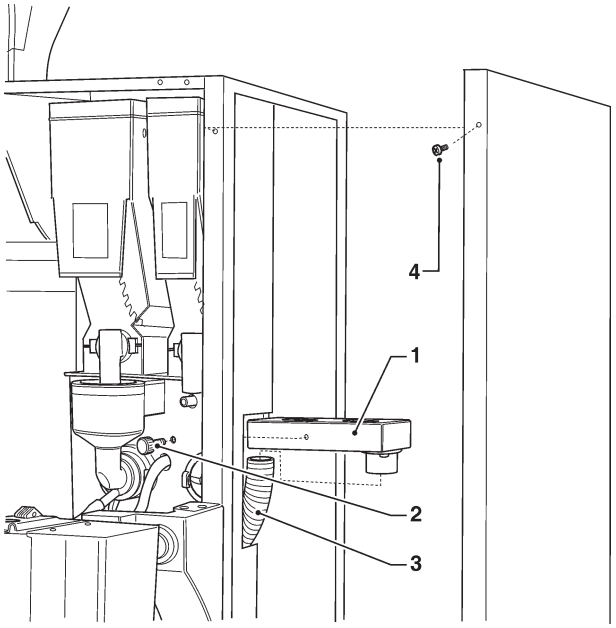


Fig. 34

1- Suction channel
2- Fastening knurl
3- Flexible pipe
4- Side panel fastening screws

BOARD FUNCTION AND LIGHT SIGNALS

ELECTRONIC BOARD CONFIGURATION

The electronic boards are designed to be used on several equipment models.
If replaced or to change the machine performance, check the configuration of the boards and upload the corresponding software.

SOFTWARE UPDATE

The machine is equipped with Flash EPROM's that can be electrically rewritten.
Use a proper program and system (personal Computer, Up Keys or alike) to rewrite the machine management software without replacing the EPROM's.

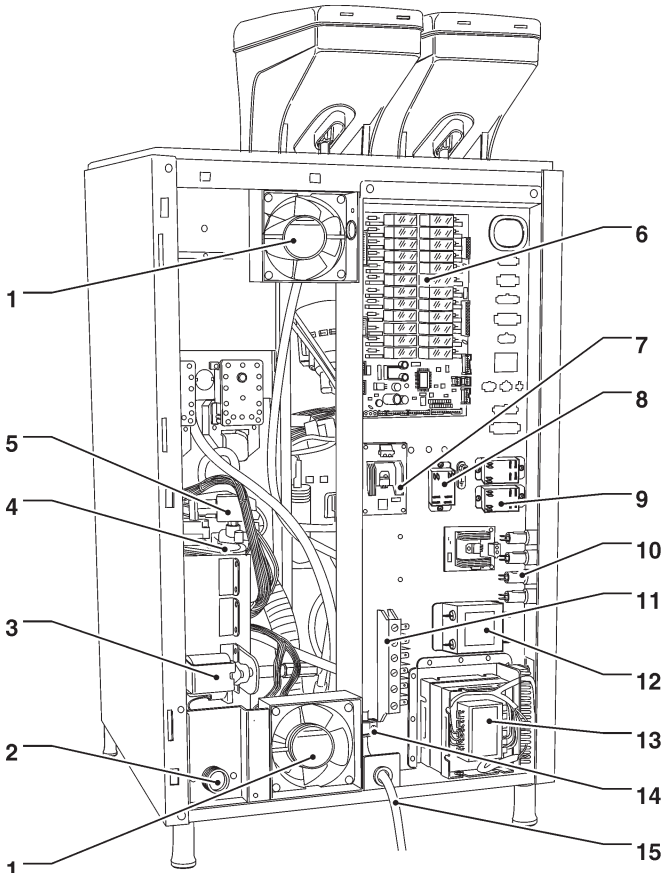


Fig. 35

1- Fan
2- Water inlet
3- Steam boiler charge pumps
4- Steam boiler
5- Steam boiler valve
6- Actuation board
7- Coffee boiler management board
8- Grinder relay
9- Steam and/or instant boiler relay
10- Mains fuses
11- Line cable terminal board
12- Interference suppressor filter
13- Transformer
14- Cable clamps
15- Line cable

ACTUATION BOARD

This board (see fig. 36) is intended to activate the 120 V~ users through relays. Moreover, it can manage the signals from the cams and/or microswitches on the various users and control the boiler board.
The board is supplied at 24Vac.
The software intended to manage the board is directly loaded onto the microprocessor (by means of RS232 or UpKey onto the CPU).

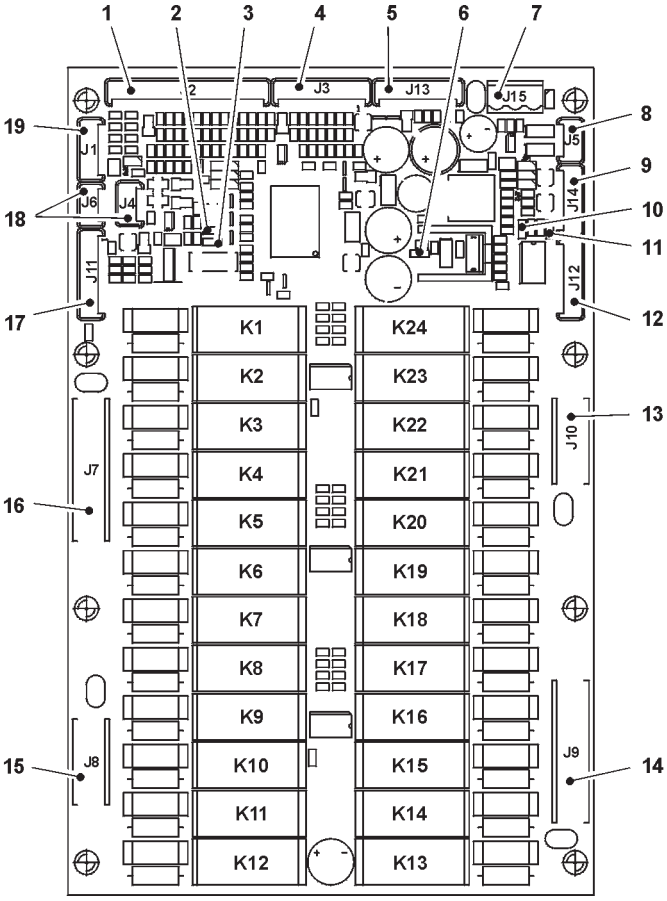


Fig. 36

1- Input signals
2- Green LED
3- Red LED
4- Input signals
5- Board programming connector (RS232)
6- Yellow LED
7- Board supply (24 Vac)
8- Not used
9- Boiler / relay probe and control
10- Coffee boiler heating element red LED (some models)
11- Red LED (not used) (some models)
12- Expansion board connection
13- 120 Vac users
14- 120 Vac users
15- 120 Vac users
16- 120 Vac users
17- Expansion board connection
18- "Can Bus" connection
19- Expansion board connection

- the green LED (2) is flashing on and off during the normal operation of the board;
- the yellow LED (6) is signalling that 5 Vdc is applied.
- the red LED (3) is on during the reset of the board
- the red LED (10) is signalling the operation status of the boiler heating element (some models).

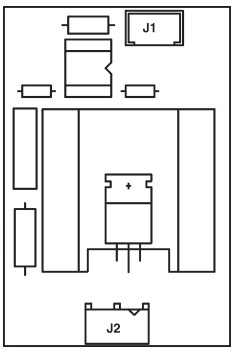
RELAY FUNCTION (see the wiring diagram)

		Espresso
K1	=	PMH2O
K2	=	ESC
K3	=	ESC1
K4	=	LF
K5	=	VENT
K6	=	Not used
K7	=	Not used
K8	=	PM
K9	=	ESP1
K1	=	ER
K11	=	Not used
K12	=	Not used
K13	=	M
K14	=	EVAP
K15	=	ELAV
K16	=	EEA
K17	=	EH2O
K18	=	E2
K19	=	E1
K20	=	PMV
K21	=	MD2
K22	=	MD1
K23	=	MF2
K24	=	MF1

COFFEE BOILER CONTROL BOARD

This board (see fig. 37) is intended to control the coffee boiler heating element.

Fig. 37



BUTTON BOARDS

These boards support the selection buttons and the corresponding leds (see fig. 38).
Button boards are connected with the C.P.U. board.

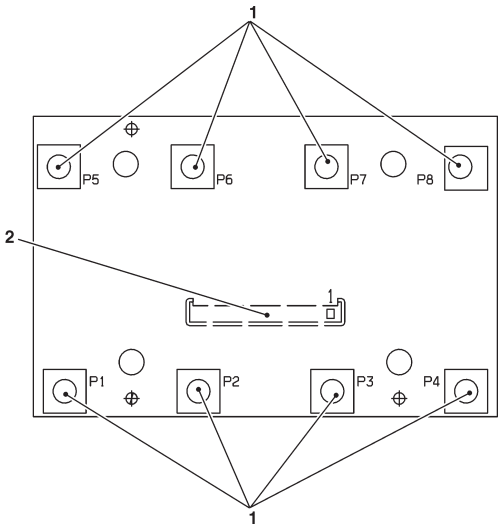


Fig. 38

1- Selection buttons
2- CPU connector

C.P.U. BOARD

The C.P.U. (Central Process Unit) board can manage all the users arranged for the maximum configuration as well as the signals coming from the keyboard and the payment system.
It can also manage actuation boards and displays.
The LEDs can supply the following information during the operation:

- the green LED (3) is flashing on and off during the normal operation of the C.P.U. board;
- the yellow LED (4) will turn on when 5 Vdc is applied;
- the red LED (7) will turn on if the software is reset for any reason whatsoever.

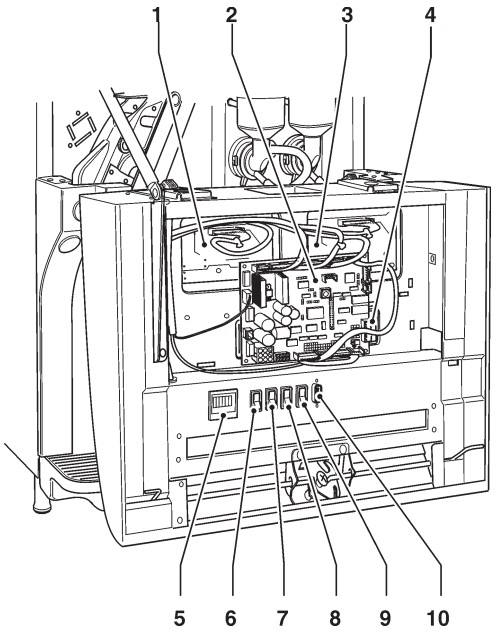


Fig. 39

1- Button board
2- CPU board
3- Button board
4- Display board
5- Mechanical counter
6- Switch for service interruption
7- Failure reset button
8- Programming button
9- Washing button
10- RS232 serial port

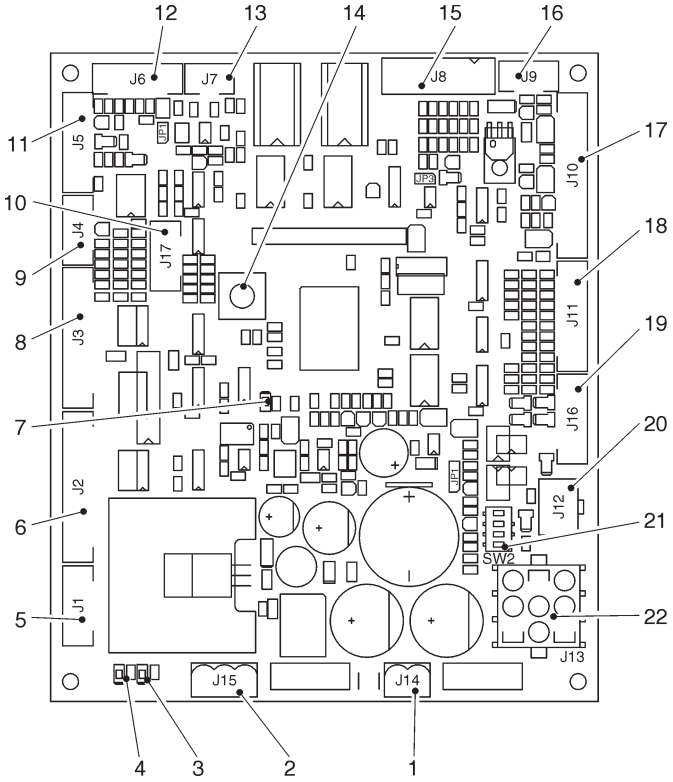


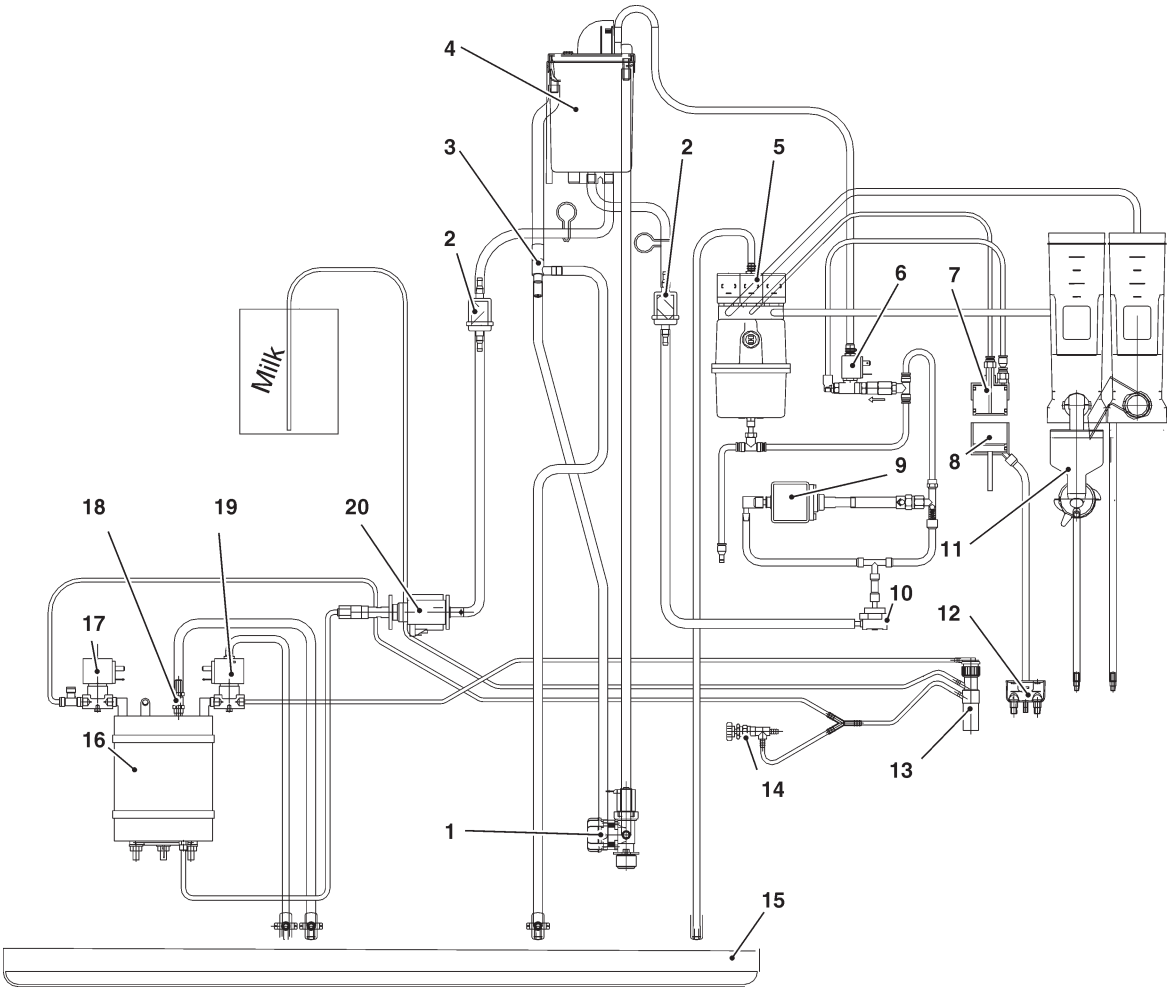
Fig. 40

1- J14 MDB and BDV coin mechanism supply
2- J15 board supply (24Vac)
3- Run green LED (DL2)
4- 5 Vdc yellow LED (DL1)
5- To the button boards and leds
6- To the button boards, leds, counter
7- CPU reset red LED (DL3)
8- J3 input/output and led and button boards
9- J4 not used
10- J17 Up Key connector
11- J5 RS232 wiring
12- J6 not used
13- J7 can bus
14- Power supply setup button
15- J8 validators
16- J9 not used
17- J10 LCD liquid crystal display
18- J11 button boards
19- J16 button boards
20- J12 MDB coin mechanism
21- Coin mechanism setup minidip (SW2)
22- J13 BDV/EXE expansion

FLUORESCENT LAMP MAINTENANCE

Fluorescent lamps are installed on the machine. Their life depends upon the number of ignitions as well as upon their use.
The lamps tend to be exhausted with the passing of time, thus reducing their luminous efficiency.
It is recommended to replace exhausted fluorescent lamps at regular intervals or, anyway, to remove them from the machines.
It is also recommended to replace starters at the time of the replacement of already or almost exhausted fluorescent lamps.
Before replacing a fluorescent lamp or any other device relevant to the lighting system, disconnect the power supply cable.
Exhausted fluorescent lamps contain harmful gases. Provide for the proper disposal of lamps to avoid any negative effect on the environment or human health.

WATER CIRCUIT



1- Water inlet soleinoid valve
2- Mechanical filter
3- Condense recovery tee
4- Air break
5- Dispensing solenoid valve
6- Purge solenoid valve
7- Upper piston
8- Lower piston
9- Coffee brewing vibration pump
10- Volumetric counter
11- Instant mixer
12- Dividing nozzle
13- Milk dispensing nozzle (milker)
14- Froth regulation cocks
15- Waste tray
16- Steam boiler
17- Dispensing solenoid valves
18- Safety valve
19- Steam cock
20- Hot water solenoid valve()
21- Steam nozzle

MENU SUMMARY

The machine can work in 3 different operation states:

- **NORMAL OPERATION MODE;**
- **FILLER MENU;**
- **TECHNICIAN MENU.**

NORMAL OPERATION MODE

If enabled in the programming menu, some operations can be directly performed when the door is closed by entering a password (5 keys are pressed in sequence) after having pressed the washing key [ ] for over two seconds (or the ✱ key if [ ] is not available).

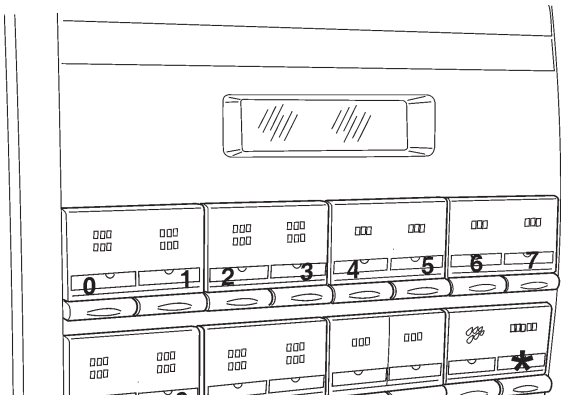


Fig. 41

1- Programming button

NAVIGATION

To be able to access the programming menu, press the programming button on the inner side of the door..

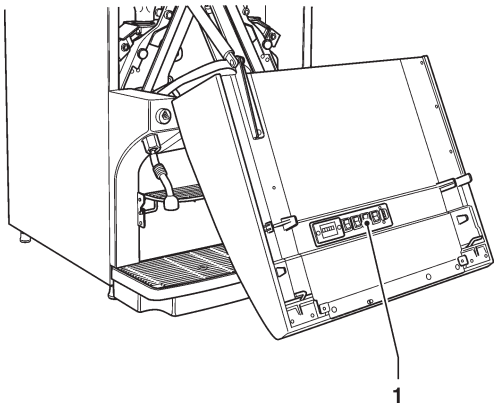


Fig. 43

1- Programming button

Now, the machine is set to the Filler Menu mode.
Press the key ← to move from the Technician Menu to the Filler Menu and vice versa.
To move inside the menus, use the keys shown by the figure:

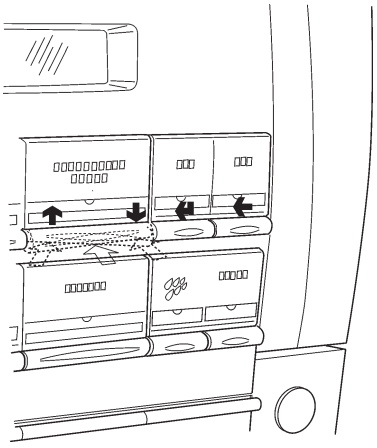


Fig. 42

SCROLLING KEYS ↑ AND ↓

Press the ↑ and ↓ scrolling keys to move from one item to the other one of the programming menus on the same level and to change the enable status and the numeric value of the functions.

CONFIRMATION / ENTER KEY ↵

Press the confirmation / Enter key to move to the lower level or to confirm a data item you have just entered or modified.

EXIT KEY ←

Press the Exit key to move back to the upper level or to quit a field intended to modify a function. After having reached the highest Menu level, press this key once again to move from the Technician Menu to the Filler menu and viceversa.

“FILLER” MENU SUMMARY

1 - STATISTICS

1.1 - STATIS. PRINTING

1.1.1 - PARTIAL PRINTING

1.1.1.1 - SEL. CNT. PRINT.

1.1.1.2 - PRINT BAND CNT

1.1.1.3 - DISC. CNT.PRINT.

1.1.1.4 - FAIL. CNT.PRINT.

1.1.1.5 - COIN MECH. PRINT

1.1.2 - TOTAL PRINTING

1.2 - PRINT REL. STAT.

1.2.1 - PARTIAL PRINTING

1.2.1.1 - SEL. CNT. PRINT.

1.2.1.2 - PRINT BAND CNT

1.2.1.3 - DISC. CNT.PRINT.

1.2.1.4 - FAIL. CNT.PRINT.

1.2.1.5 - COIN MECH. PRINT

1.2.2 - TOTAL PRINTING

1.3 - STATIST. DISPLAY

1.3.1 - SEL. CNT. DISP.

1.3.1.1 - CNT DIS. X S.SEL

1.3.1.2 - TOT CNT DISPLAY

1.3.1.3 - SEL.NO.CNT. DIS.

1.3.2 - DISPLAY BAND CNT

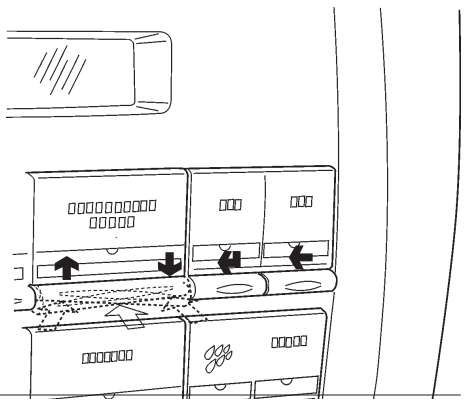
1.3.3 - DISC. CNT. DISP.

1.3.4 - FAIL. CNT. DISP.

1.3.5 - COIN MECH. DISP.

1.3.5.1 - AUDIT DATA DISP.

1.3.5.2 - CASH COUNT. DIS.



PREVIOUS FUNCTION/ DECREASE VALUE (-1)

NEXT FUNCTION/ INCREASE VALUE (+1)

CONFIRM VALUES/ CONFIRM FUNCTION

DELETE VALUES/ QUIT FUNCTIO

“FILLER” MENU SUMMARY

1.4 - DISP. REL. STAT.

1.4.1 - SEL. CNT. DISP.

1.4.1.1 - CNT DIS. X S.SEL

1.4.1.2 - TOT CNT DISPLAY

1.4.1.3 - SEL.NO.CNT. DIS.

1.4.2 - DISPLAY BAND CNT

1.4.3 - DISC. CNT. DISP.

1.4.4 - FAIL. CNT. DISP.

1.4.5 - COIN MECH. DISP.

1.4.5.1 - AUDIT DATA DISP.

1.4.5.2 - CASH COUNT. DIS.

1.5 - DELETE REL.STAT.

1.5.1 - PARTIAL RESET

1.5.1.1 - SEL. CNT. RESET

1.5.1.2 - DISC. CNT. RESET

1.5.1.3 - FAIL. CNT. RESET

1.5.1.4 - COIN MECH. RESET

1.5.2 - TOTAL RESET

2 - SET INDIV. PRICE

2.1 - PRICE BAND 0

2.2 - PRICE BAND 1

2.3 - PRICE BAND 2

2.4 - PRICE BAND 3

2.5 - PRICE BAND 4

3 - TUBE CONTROL

3.1 - FILLING TUBE

3.2 - TUBE EMPTYING

4 - BOILERS TEMPER.

5 - TEST

5.1 - COMP. DISPENSING

5.2 - WATER ONLY

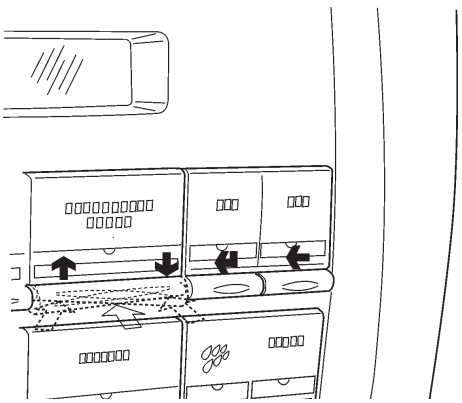
5.3 - POWDER ONLY

6 - GSM

6.1 - RES PRE-ALM CNT.

7 - EVADTS

7.1 - CONNECTION



PREVIOUS FUNCTION/ DECREASE VALUE (-1)

NEXT FUNCTION/ INCREASE VALUE (+1)

CONFIRM VALUES/ CONFIRM FUNCTION

DELETE VALUES/ QUIT FUNCTIO

TECHNICIAN MENU SUMMARY

1 - FAILURES

1.1 - FAILURE READING

1.2 - FAILURE RESET

1.3 - V.M.NEON O.OF S.

2 - SET PARAMETERS

2.1 - CASH

2.1.1 - PRICES

2.1.1.1 - SET INDIV. PRICE

2.1.1.1.1 - PRICE BAND 0

2.1.1.1.2 - PRICE BAND 1

2.1.1.1.3 - PRICE BAND 2

2.1.1.1.4 - PRICE BAND 3

2.1.1.1.5 - PRICE BAND 4

2.1.1.2 - SET GLOB. PRICES

2.1.1.2.1 - PRICE BAND 0

2.1.1.2.2 - PRICE BAND 1

2.1.1.2.3 - PRICE BAND 2

2.1.1.2.4 - PRICE BAND 3

2.1.1.2.5 - PRICE BAND 4

2.1.1.3 - TIME SCHEDULE

2.1.1.3.1 - SET DATE & TIME

2.1.1.3.2 - TIME BAND 1

2.1.1.3.3 - TIME BAND 2

2.1.1.3.4 - TIME BAND 3

2.1.1.3.5 - TIME BAND 4

2.1.2 - COIN MECHANISM

2.1.2.1 - COIN MECH. SET.

2.1.2.2 - IMMEDIATE CHANGE

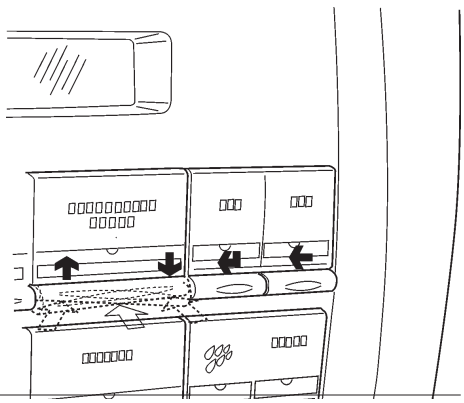
2.1.3 - DECIMAL POINT

PREVIOUS FUNCTION/
DECREASE VALUE (-1)

NEXT FUNCTION/
INCREASE VALUE (+1)

CONFIRM VALUES/
CONFIRM FUNCTION

DELETE VALUES/
QUIT FUNCTIO



2.2 - SELECTIONS

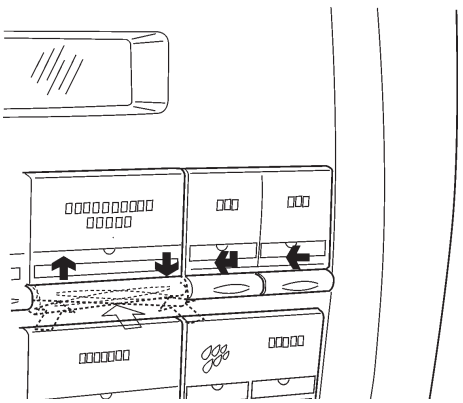
- 2.2.1 - SET WATER
  - 2.2.1.1 - WATER DOSES
  - 2.2.1.2 - SET WHIP DOSES
    - 2.2.1.2.1 - SET WHIP DOSES
    - 2.2.1.2.2 - SET MODALITY
    - 2.2.1.2.3 - SET VELOC. FRUL.
  - 2.2.1.3 - EL.VALVE SETTING
  - 2.2.1.4 - SET DRIPPING
  - 2.2.1.5 - S. WATER BY STEP
  - 2.2.1.6 - PREBREW - Z3000V
    - 2.2.1.6.1 - PREBREWING TIME
    - 2.2.1.6.2 - PREBREWING VALUE
    - 2.2.1.6.3 - PISTON PRESSURE
  - 2.2.1.7 - NOZZLE HOT WATER
    - 2.2.1.7.1 - HOT WATER DOSE
    - 2.2.1.7.2 - PERC. MISCELAZ.
- 2.2.2 - SET POWDER
  - 2.2.2.1 - POWDER DOSES
  - 2.2.2.2 - SET POWD. CYCLES
  - 2.2.2.3 - DOSER SETTING
  - 2.2.2.4 - GL. POWDER DOSES
- 2.2.3 - SELECTION STATUS
- 2.2.4 - SEL. <-> BUTTON
- 2.2.5 - 2 x BUTTON
- 2.2.6 - CHECK NO. SELEC.
- 2.2.7 - SET PROD. CODE

PREVIOUS FUNCTION/ DECREASE VALUE (-1)

NEXT FUNCTION/ INCREASE VALUE (+1)

CONFIRM VALUES/ CONFIRM FUNCTION

DELETE VALUES/ QUIT FUNCTIO



2.3 - MACHINE PARAM.

2.3.1 - BOILERS TEMPER.

2.3.2 - TANK

2.3.3 - ENAB.WASH BUTTON

2.3.4 - FAST CYCLES

2.3.5 - WATER FILTER

2.3.6 - ENAB.AUTOM. WASH

2.3.7 - ENERGY SAVING

2.3.7.1 - SET ENERGY SAV.

2.3.7.2 - ENERGY SAV. PAR.

2.3.8 - DEC. CYCLE

2.3.9 - EQ. CABINET

2.3.A - PREGRINDING

2.3.B - MAX COUNTER NUM.

2.3.C - EN. HEATING ES

2.3.D - EN. EMPTY COFFEE

2.3.E - AB.STOP ER.TASTO

2.3.F - TIME LATTE MACCH

2.4 - DISPLAY

2.4.1 - LANGUAGE

2.4.1.1 - FIRST LANGUAGE

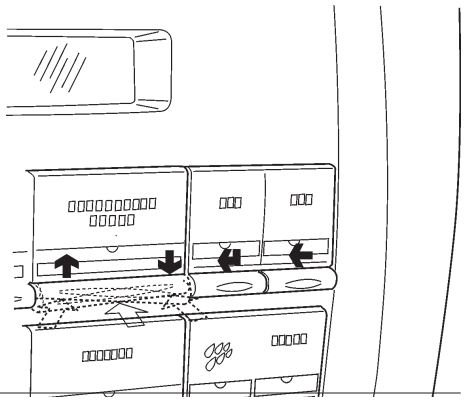
2.4.1.2 - SECOND LANGUAGE

2.4.2 - PROMO. ADVERT.

2.4.2.1 - ENABLE PR. ADV.

2.4.2.2 - SET PROMO. ADV.

2.4.3 - CONTRAST CONTROL



PREVIOUS FUNCTION/ DECREASE VALUE (-1)

NEXT FUNCTION/ INCREASE VALUE (+1)

CONFIRM VALUES/ CONFIRM FUNCTION

DELETE VALUES/ QUIT FUNCTIO

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2.5 - PRE-SELECTIONS

2.5.1 - HALF JUG

2.5.1.1 - SELECTION ENABL.

2.5.1.2 - DOSE VARIATION

2.5.1.3 - PRICE VARIATION

2.5.2 - JUG

2.5.3 - EXTRA SUGAR

2.5.4 - SUGAR -

2.5.5 - SUGAR +

2.5.6 - WATER +

2.5.7 - WATER -

2.5.8 - STRONG

2.5.9 - LIGHT

2.5.A - Coffee 2

2.5.B - EXTRA MILK

2.5.C - MOKKA

2.5.D - SUGAR +/-

2.5.E - WATER +/-

2.5.F - POWDER +/-

2.6 - MISCELLANEOUS

2.6.1 - FB DATA

2.6.1.1 - FR. BREW 1 UNIT

2.6.1.2 - FR. BREW 2 UNIT

2.6.2 - JUG FACILITIES

2.6.3 - PASSWORD

2.6.3.1 - SET PASSWORD

2.6.3.2 - ENABLE PASSWORD

2.6.3.3 - PWD RESET COUNT.

2.6.3.4 - PWD JUG FACILITY

2.6.3.5 - PWD FREE VENDING

2.6.3.6 - PWD BLOCK BUTTON

2.6.3.7 - PWD RINSING

2.6.3.8 - PWD DISPENS.TEST

2.6.3.9 - PWD RESET FILTER

2.6.3.A - PWD RESET WASTES

2.6.4 - ENABLE FILL MENU

2.6.5 - STR_MENU_SET_GRUPPO_ES

2.6.6 - STR_MENU_AB_LAVGRPAUTO

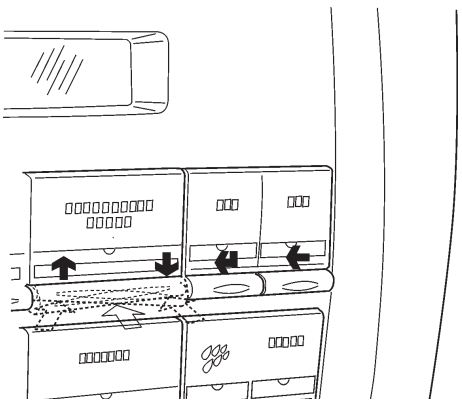
2.6.7 - T. 1COFFEE HEAT.

↑ PREVIOUS FUNCTION/ DECREASE VALUE (-1)

↓ NEXT FUNCTION/ INCREASE VALUE (+1)

↵ CONFIRM VALUES/ CONFIRM FUNCTION

← DELETE VALUES/ QUIT FUNCTIO



3 - STATISTICS

3.1 - ELECTR. COUNTER

3.1.1 - DISPLAY COUNTERS

3.1.2 - RESET COUNTER

3.2 - STATIST. DISPLAY

3.2.1 - SEL. CNT. DISP.

3.2.1.1 - CNT DIS. X S.SEL

3.2.1.2 - TOT CNT DISPLAY

3.2.1.3 - SEL.NO.CNT. DIS.

3.2.2 - DISPLAY BAND CNT

3.2.3 - DISC. CNT. DISP.

3.2.4 - FAIL. CNT. DISP.

3.2.5 - COIN MECH. DISP.

3.2.5.1 - AUDIT DATA DISP.

3.2.5.2 - CASH COUNT. DIS.

3.3 - STATISTICS RESET

3.3.1 - PARTIAL RESET

3.3.1.1 - SEL. CNT. RESET

3.3.1.2 - DISC. CNT. RESET

3.3.1.3 - FAIL. CNT. RESET

3.3.1.4 - COIN MECH. RESET

3.3.2 - TOTAL RESET

3.4 - DISP. REL. STAT.

3.4.1 - SEL. CNT. DISP.

3.4.1.1 - CNT DIS. X S.SEL

3.4.1.2 - TOT CNT DISPLAY

3.4.1.3 - SEL.NO.CNT. DIS.

3.4.2 - DISPLAY BAND CNT

3.4.3 - DISC. CNT. DISP.

3.4.4 - FAIL. CNT. DISP.

3.4.5 - COIN MECH. DISP.

3.4.5.1 - AUDIT DATA DISP.

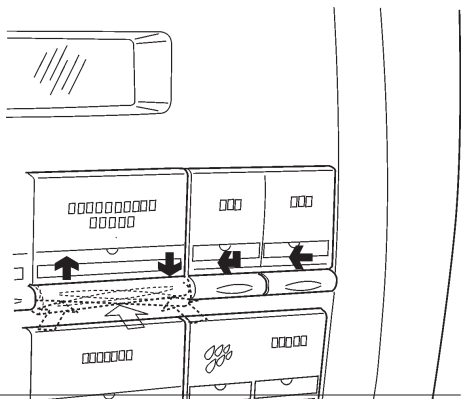
3.4.5.2 - CASH COUNT. DIS.

PREVIOUS FUNCTION/ DECREASE VALUE (-1)

NEXT FUNCTION/ INCREASE VALUE (+1)

CONFIRM VALUES/ CONFIRM FUNCTION

DELETE VALUES/ QUIT FUNCTIO



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3.5 - DELETE REL.STAT.

3.5.1 - PARTIAL RESET

3.5.1.1 - SEL. CNT. RESET

3.5.1.2 - DISC. CNT. RESET

3.5.1.3 - FAIL. CNT. RESET

3.5.1.4 - COIN MECH. RESET

3.5.2 - TOTAL RESET

3.6 - EN. CNT AT START

3.7 - STATIS. PRINTING

3.7.1 - PARTIAL PRINTING

3.7.1.1 - SEL. CNT. PRINT.

3.7.1.2 - PRINT BAND CNT

3.7.1.3 - DISC. CNT.PRINT.

3.7.1.4 - FAIL. CNT.PRINT.

3.7.1.5 - COIN MECH. PRINT

3.7.2 - TOTAL PRINTING

3.8 - PRINT REL. STAT.

3.8.1 - PARTIAL PRINTING

3.8.1.1 - SEL. CNT. PRINT.

3.8.1.2 - PRINT BAND CNT

3.8.1.3 - DISC. CNT.PRINT.

3.8.1.4 - FAIL. CNT.PRINT.

3.8.1.5 - COIN MECH. PRINT

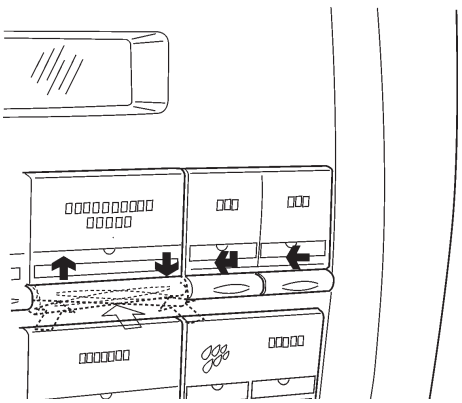
3.8.2 - TOTAL PRINTING

PREVIOUS FUNCTION/ DECREASE VALUE (-1)

NEXT FUNCTION/ INCREASE VALUE (+1)

CONFIRM VALUES/ CONFIRM FUNCTION

DELETE VALUES/ QUIT FUNCTIO



TECHNICIAN MENU SUMMARY

4 - TEST

4.1 - TEST DISPENSING

4.1.1 - COMP. DISPENSING

4.1.2 - WATER ONLY

4.1.3 - POWDER ONLY

4.2 - SPECIAL FUNCT.

4.2.1 - ESPR.UNIT ROTAT.

4.2.2 - RELEASE DOSE

4.2.3 - EMPTY ES. BOILER

4.2.4 - MANUAL INSTALL.

4.3 - AUTOTEST

5 - MISCELLANEOUS

5.1 - D.A. REGISTRY

5.1.1 - INSTALL. DATE

5.1.2 - PR. MACHINE CODE

5.1.3 - OPER. CODE ENTRY

5.2 - INITIALISING DB

5.3 - EVADTS

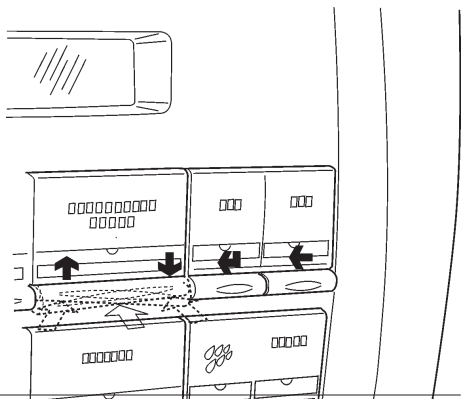
5.3.1 - CONNECTION

PREVIOUS FUNCTION/
DECREASE VALUE (-1)

NEXT FUNCTION/
INCREASE VALUE (+1)

CONFIRM VALUES/
CONFIRM FUNCTION

DELETE VALUES/
QUIT FUNCTIO



5.4 - UPKEY

5.4.1 - SETUP MANAGEMENT

5.4.1.1 - UPKEY -> MACHINE

5.4.1.2 - MACHINE -> UPKEY

5.4.1.3 - DELETE

5.4.1.4 - DELETE ALL

5.4.2 - AUDIT MANAGEMENT

5.4.2.1 - MACHINE -> UPKEY

5.4.2.2 - DELETE

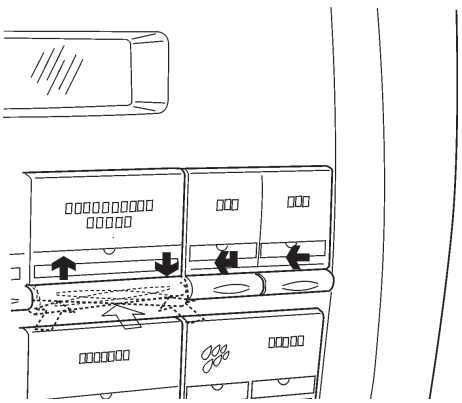
5.4.2.3 - DELETE ALL

PREVIOUS FUNCTION/ DECREASE VALUE (-1)

NEXT FUNCTION/ INCREASE VALUE (+1)

CONFIRM VALUES/ CONFIRM FUNCTION

DELETE VALUES/ QUIT FUNCTIO



WIRING DIAGRAM LEGEND

INITIALS	DESCRIPTION	INITIALS	DESCRIPTION
BDV	BDV COIN MECH CONNECTOR	MDB	MDB COIN MECHANI CONNECTOR
C	CONDENSER	MDFB	FRESH BREW INGREDIENT MOTOR
CCG	GENERAL COUNTER	MF1-..	INSTANT WHIPPER MOTOR
CM1	COFFEE UNIT MOTOR CAM	MFB	FRESH-BREW MOTOR
CV	VOLUMETRIC COUNTER	MMA	GRINDING WHEEL REGULATION MOTOR
E1-...	INSTANT SOLENOID VALVE	MPF	FRESH BREW PISTON MOTOR
EEA	WATER INLET SOLENOID VALVE	MRS1-.	DISK START ACK MICRO
EH2O	HOT WATER SOLENOID VALVE	MVT	FAN
ELAV	MILKER WASHING SOLENOID VALVE	NTC	TEMPERATURE PROBE
ER	COFFEE DISPENSER SOLENOID VALVE	PH2O	HOT WATER BUTTON
ESP1-.	DRAINING SOLENOID VALVE	PIP	PROGRAMMING BUTTON
EVAP	STEAM SOLENOID VALVE	PL	WASH CYCLE BUTTON
EX	EXECUTIVE COIN MECH CONNECTORS	PM	PUMP
FA	RADIO INTERFERENCE SUPPRESSOR	PMV	STEAM BOILER PUMP
FREE	FREE VENDING SWITCH	PRC	STEAM BOILER PRESSURE SWITCH
ID	COFFEE DOSE SWITCH	PRG	FAILURE RESET BUTTON
ID1-..	COFFEE DOSE SWITCH	PTS	BUTTON SERVICE INTERRUPTION
IDEC	DECAFFEINATED DOOR SWITCH	RCC	COFFEE BOILER HEATING ELEMENT
IP	DOOR SWITCH	RCS	INSTANT BOILER HEATING ELEMENT
IPF1-.	WASTE CONTAINER FULL SWITCHES	RCV	STEAM BOILER HEATING ELEMENT
IPI	DISPENSING COMPARTMENT SWITCH	REL1-.	RELAY
IPS	TOP PANEL SWITCH	RG	UNIT HEATING ELEMENT
IVA	EMPTY WATER SWITCH	RL30	BOILER LEVEL SIGNALLER
JUG	JUG FACILITIES SWITCH	RS232	SERIAL PORT
KC1-..	COFFEE BOILER CUTOUT	RT	BALLAST
KS	BOILER CUTOUT SWITCH	SM1	CONTROL BOARD
KS1-..	SAFETY CUTOUT	SM2	EXPANSION BOARD
LCD	LIQUID CRYSTAL DISPLAY	SP	BUTTON BOARD
LF	LAMP	ST	STARTER
M	COFFEE UNIT MOTOR	STRC	BOILER HEATING TRIAC BOARD
MAC	GRINDER	SUC	C.P.U. BOARD
MAX	WATER LEVEL PROBE	TR	TRANSFORMER
MD1-..	INSTANT INGREDIENT MOTOR	TX....	DELAYED FUSE (X=CURRENT)

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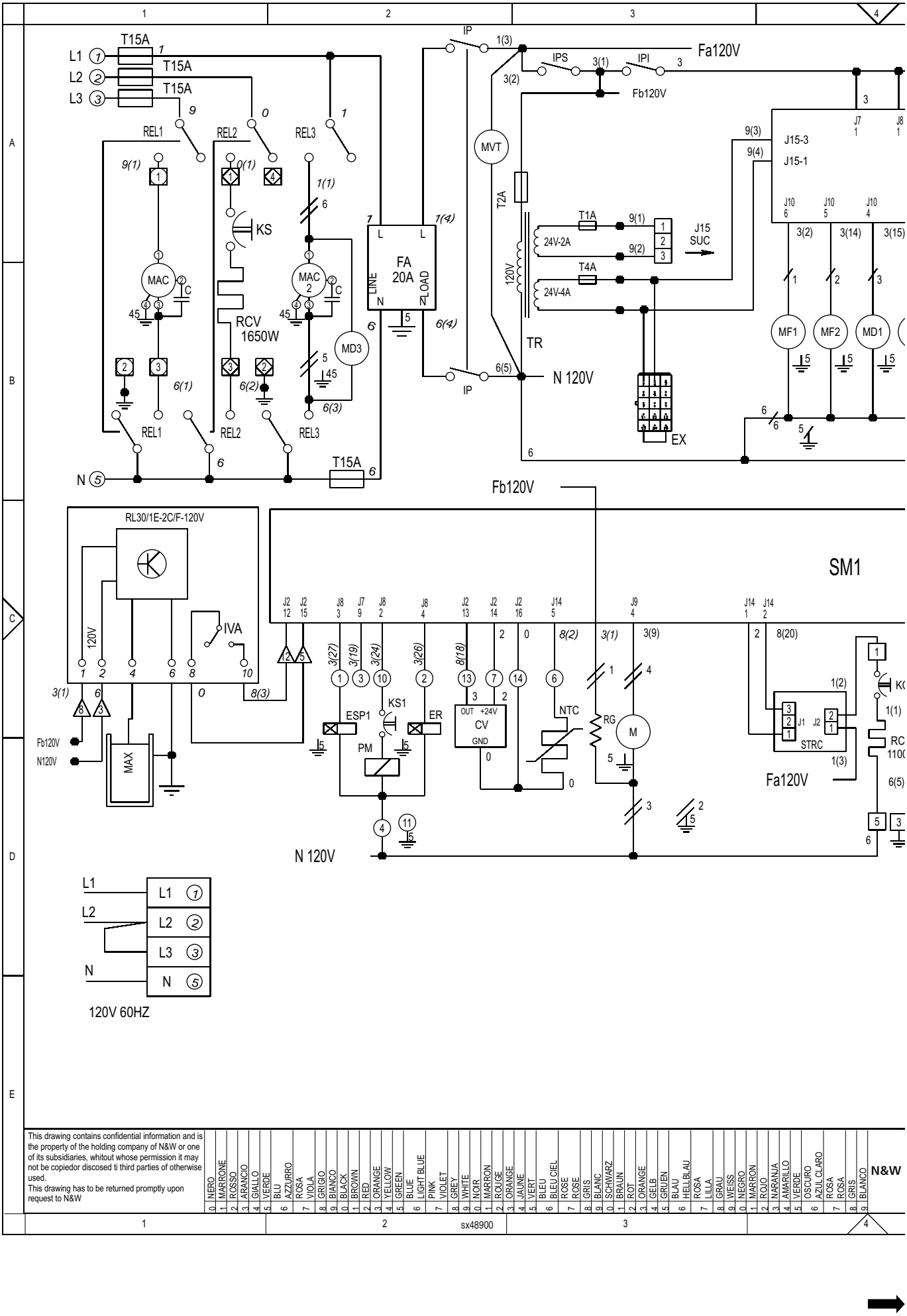

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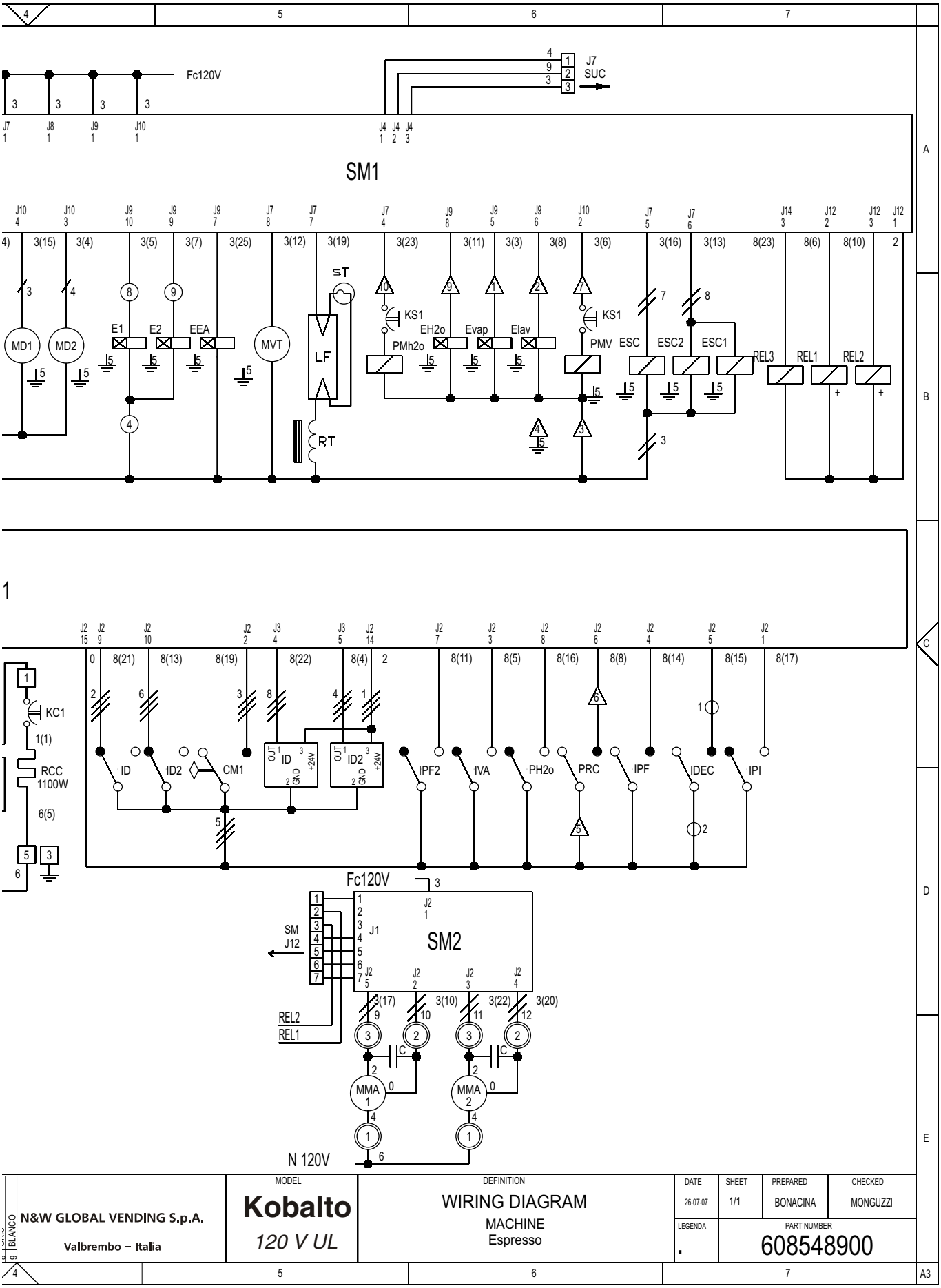
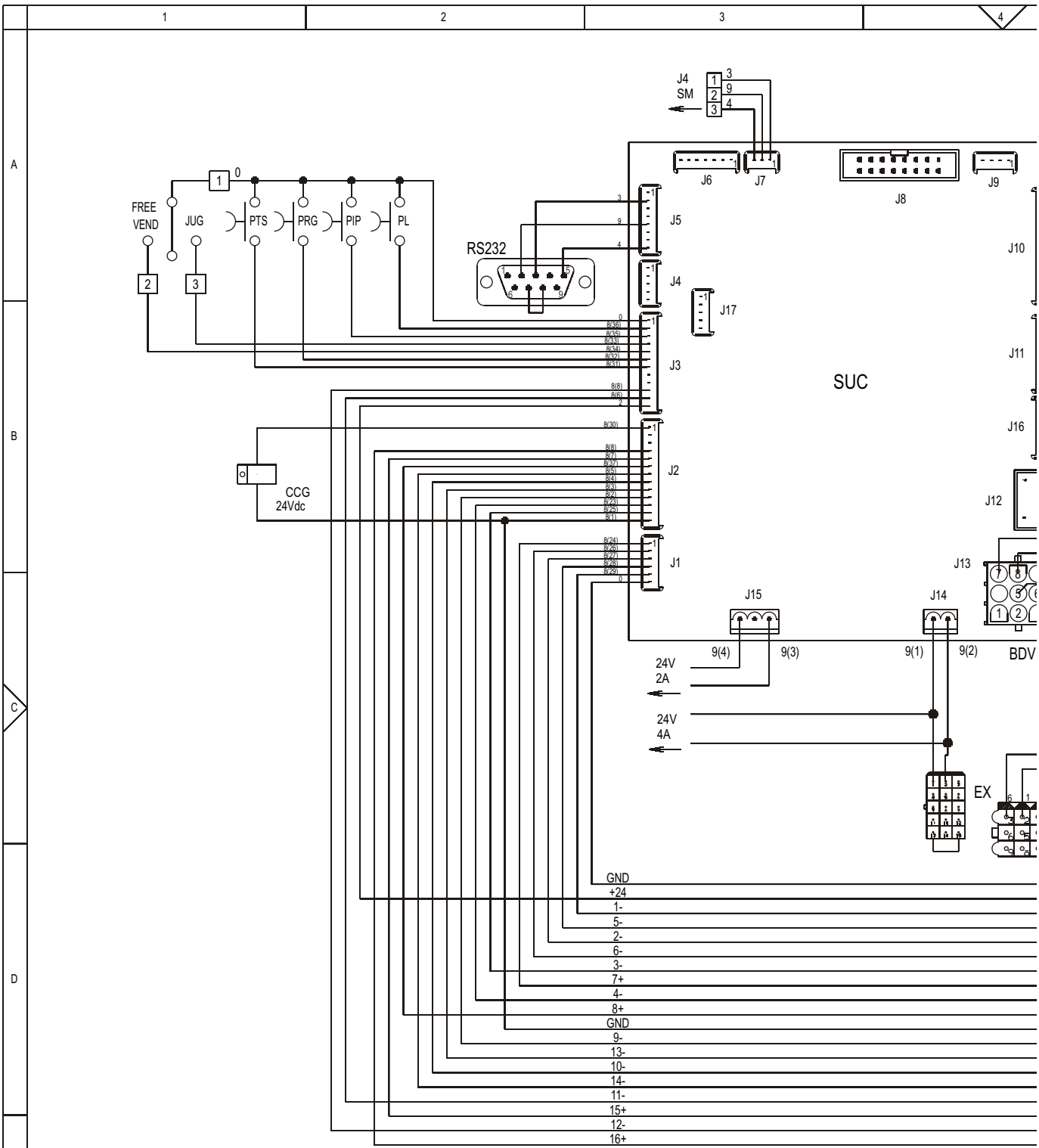

Fc120V
J7 SUC
SM1
MD1
MD2
E1
E2
EEA
MVT
LF
RT
KS1
PMh2o
EH2o
Evap
Elav
PMV
ESC
ESC2
ESC1
REL3
REL1
REL2
KC1
RCC 1100W
ID
ID2
CM1
IPF2
IVA
PH2o
PRC
IPF
IDEC
IPI
Fc120V
SM J12
J1
SM2
REL2
REL1
MMA 1
MMA 2
N 120V
N&W GLOBAL VENDING S.p.A.
Valbrembo – Italia
MODEL
Kobalto
120 V UL
DEFINITION
WIRING DIAGRAM
MACHINE
Espresso
DATE 26-07-07
SHEET 1/1
PREPARED BONACINA
CHECKED MONGUZZI
LEGENDA .
PART NUMBER 608548900



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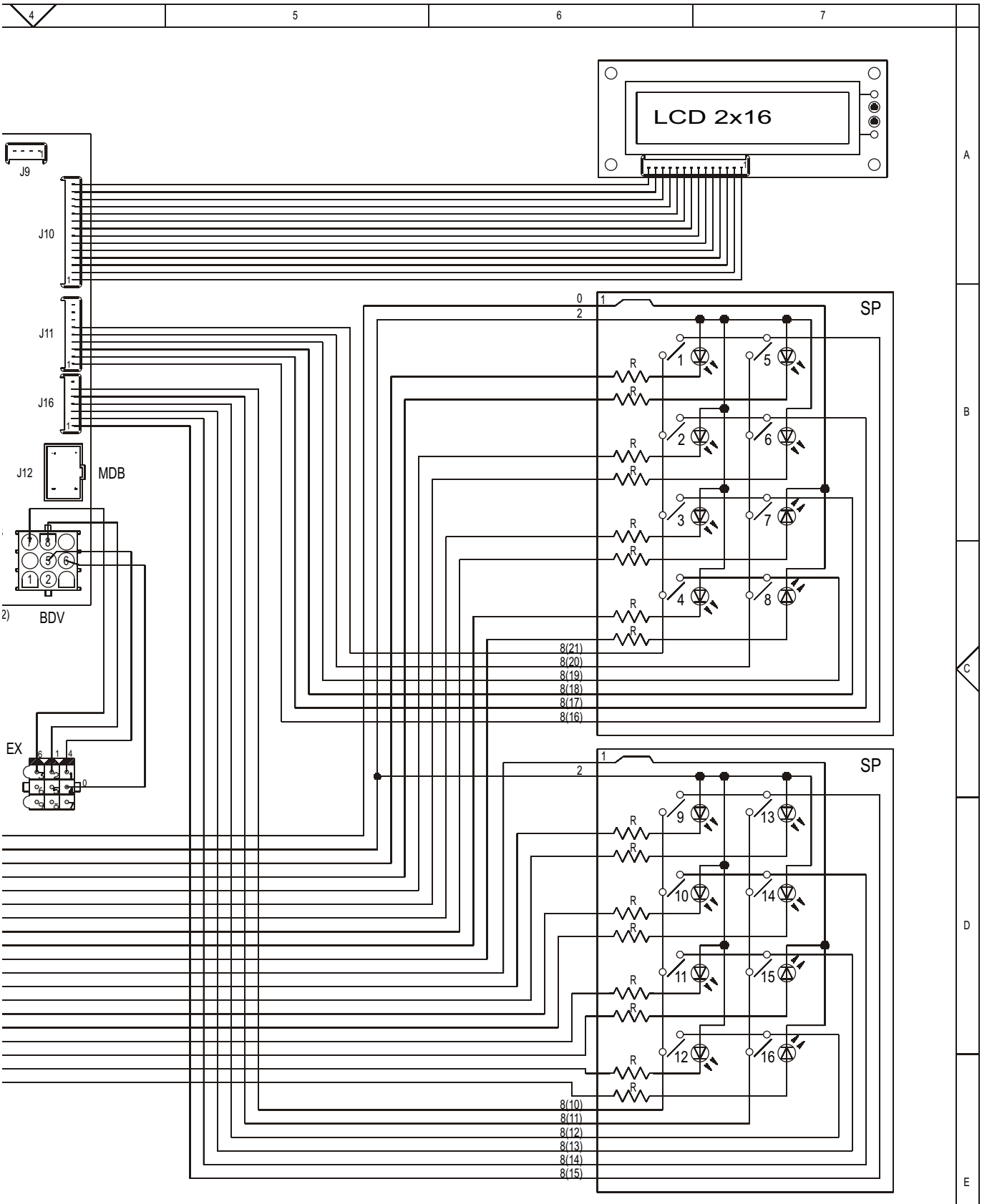

N&W GLOBAL VENDING S.p.A. Valbrembo – Italia	MODEL: **Kobalto** *120V UL*	DEFINITION: WIRING DIAGRAM DOOR	DATE: 18-09-06	SHEET: 1/1	PREPARED: BONACINA	CHECKED: MONGUZZI
			LEGENDA: .	PART NUMBER: 608549000		

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