
INSTALLATION, OPERATION, MAINTENANCE

Canto

Plus
Espresso

EN English



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ad unico socio

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Reg. Produttori A.E.E.: IT08020000001054

Valbrembo, 01/01/2012

**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, descrita 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 Europeias 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

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:

**Targhetta di identificazione
Identification label**

Direttive europee European directives	Sostituita da Repealed by
2006/42/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
EC 10/2011	
2002/96/EC	

Norme armonizzate / Specifiche tecniche	Harmonised standards Technical specifications
EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006 + A2:2006+ A13:2008	
EN 60335-2-75:2004 + A1:2005 + A11:2006 + A2:2008 + A12:2010	
EN 62233:2008	
EN 55014-1: 2006 + A1: 2009	
EN 55014-2: 1997 + A1: 2001 + A2: 2008	
EN 61000-3-2: 2006 + A1: 2009 + A2: 2009	
EN 61000-3-3: 2008	
EN 61000-4-2: 2009	
EN 61000-4-3: 2006 + A1: 2008	
EN 61000-4-4: 2004	
EN 61000-4-5: 2006	
EN 61000-4-6: 2009	
EN 61000-4-11: 2004	

Il fascicolo tecnico è costituito presso:

The technical file is compiled at:

N&W GLOBAL VENDING S.p.A.

ANDREA ZOCCHI

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 INSTALLATION

The installation and any subsequent maintenance operation shall be carried out by the personnel skilled and trained on the utilisation 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.

Package materials must be disposed of in observance of the environment.

Important!

The machine is equipped with an automatic washing system for the mixers with the relative water circuit and the brewing unit.

If the machine is not used for some time (weekends, etc.) even for pauses longer than two days, it is recommended to enable the automatic washing functions (e.g. before starting to use the VM).

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 THE ENVIRONMENT

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 machine during inactivity for energy saving.

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.



THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and its partner

CISQ/IMQ-CSQ
hereby certify that the organization

N&W GLOBAL VENDING SPA

VIA ROMA 24 - 24030 VALBREMBO (BG)

VIA DEL CHIOSO 13 - 24030 MOZZO (BG)

for the following field of activities

Design and manufacturing of electronical and electromechanical vending machines

Refer to quality manual for details of applications to ISO 9001:2008 requirements

has implemented and maintains a

Quality Management System

which fulfills the requirements of the following standard

ISO 9001:2008

Issued on: 2009 - 05 - 25

Registration Number:

IT - 12979



René Wasmer

President of IQNET



Gianrenzo Prati

President of CISQ

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VIA ROMA 24 - 24030 VALBREMBO (BG)

VIA DEL CHIOSO 13 - 24030 MOZZO (BG)

for the following field of activities

Design, production and sales of vending machine

has implemented and maintains a

Environmental Management System

which fulfills the requirements of the following standard

ISO 14001:2004

Issued on: 2007 - 07 - 05

Registration Number:

IT - 8753



René Wasmer

President of IQNET



Gianrenzo Prati

President of CISQ

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English

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Introduction

The technical documentation supplied is an integral part of the equipment and it must therefore accompany the equipment whenever it is either moved or transferred to enable the various operators to consult it.

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, utilisation 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 utilisation 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 recognised 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
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 and on the side clearly stated by the symbol on the cardboard package.

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.

Never stack several machines and never forget to keep the vertical position specified by the arrows on the package.

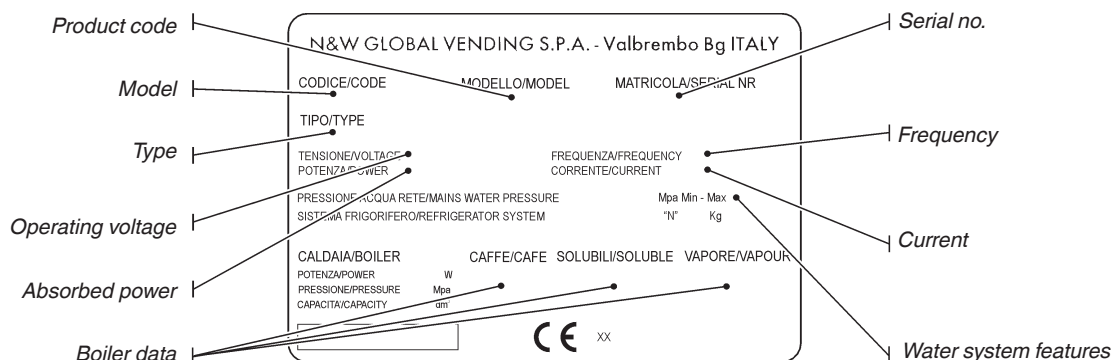


Fig. 1

POSITIONING THE VENDING MACHINE

The machine is not suitable for installation outdoors. It must be installed in a dry room at a temperature ranging from 2°C to 32°C. It can not be installed in a room where water jets are used for cleaning (e.g. large kitchens, etc.). The machine must be installed near a wall, but in such a way that the back is min. 4 cm. far from the wall in order to provide for regular ventilation. It shall never be covered with pieces of cloth or alike.

The machine shall be arranged to prevent maximum inclination from exceeding 2°.

If necessary, level it by using the adjustable feet (see fig. 16) supplied with the machine.

TECHNICAL FEATURES

Height	mm.	1830
Width	mm.	650
Depth	mm.	760
Overall dim. with open door	mm.	1320
Weight	Kg	170

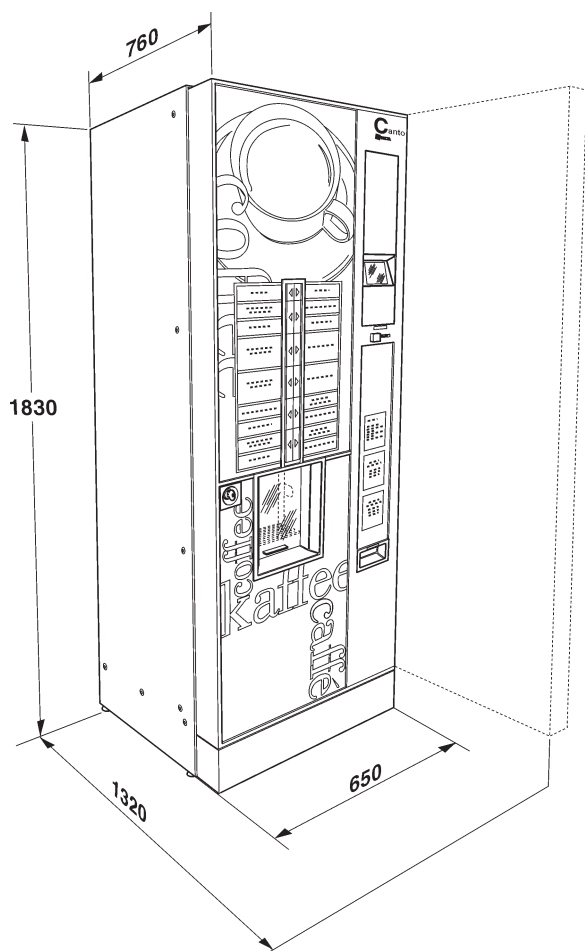


Fig. 2

Power supply voltage	V~	230
Power supply frequency	Hz	50
Installed power	W	2500

CUP DISPENSER

The diameter of the upper edge is 70-71 mm. or self-contained for about 650 cups.

PAYMENT SYSTEM

The machine is electrically pre-arranged for systems with an Executive, MDB or BDV protocol and for the assembly of 24 Vdc validators.

The space is not only arranged to accommodate the coin mechanism, but also to assemble the most widespread payment systems (optionals).

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.

EXTERNAL LIGHTING

By means of class-1 LEDs.

LEDs are generally protected by transparent panels. If you remove panels for any reason, the light of the LEDs may be dangerous if you directly look at it.

ENERGY SAVING

You can set up the power off of LEDs and/or boilers to save electric energy during non-use periods.

JUG FACILITIES AND FREE VEND (OPTIONAL)

Use a special key to get up to 9 fresh brew selections without dispensing a cup to fill in a jug or to get a free delivery of normal selections.

COIN BOX

Made of galvanised sheet iron. Cover and lock available as accessories.

WATER SUPPLY

Supplied by the network, the water pressure of which lies between 0.05 and 0.85 MPa (0.5 and 8.5 bar)

The machine software can manage the water supply from an internal tank (optional kit).

POSSIBLE ADJUSTMENTS

Espresso: grinding manual

(optional) self-regulating

volumetric coffee and water dose.

Instant: Time-based coffee, instant and water doses.

Temperature: Adjustable via software.

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 22°C:

Temperature reached	W/h	442
For 24h stand-by	W/h	3,257

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

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.

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.

VARIABLE COMBINATION LOCK

Some models are supplied with a variable combination lock.

The lock is complete with a silver key 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 current 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.

To change the combination:

- Open the machine door to avoid forcing 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);
- 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.

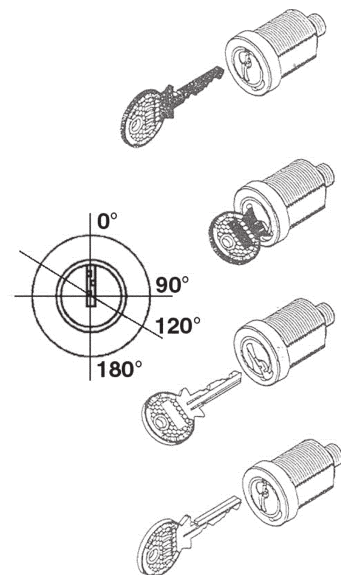


Fig. 4

Chapter 1

Filling and cleaning

The machine is not suitable for installation outdoors. It must be installed in a dry room at a temperature ranging from 2°C to 32°C. It can not be installed in a room where water jets are used for cleaning (e.g. large kitchens, etc.).

DOOR SWITCH

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.

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

HYGIENE AND CLEANING

The operator of an automatic vending 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.

It is recommended to use sanitising products also in order to clean the surfaces not directly in contact with foodstuffs.

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 utilisation 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.

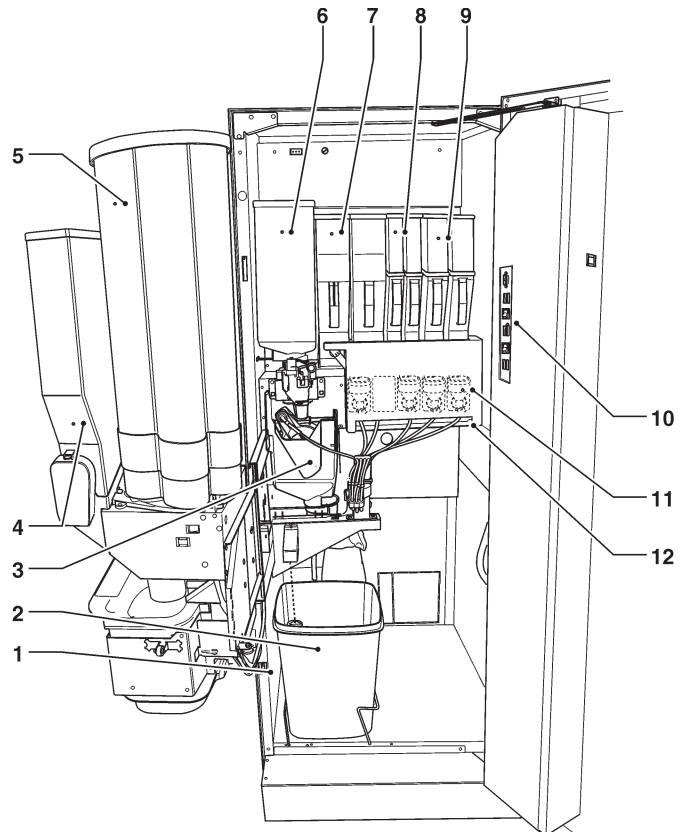


Fig. 5

- 1- Door switch
- 2- Liquid waste bucket
- 3- Espresso unit cover
- 4- Sugar container
- 5- Cup stacker
- 6- Beaned coffee container
- 7- 6 l instant powder container
- 8- 2.5 l instant powder container
- 9- 4.5 l instant powder container
- 10- Service buttons
- 11- Mixer
- 12- Boiler tray

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 of products such as coffee and tea;
 - Reconstituting soluble or freeze-dry packed products;
- These products shall be declared as "suitable for automatic dispensing" in open containers by the manufacturer.

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 2 and 32 °C.

The controls and information for the user are arranged outside the door (see fig. 6).

The plates including the menu and the instructions are supplied with the machine and they shall be inserted at the time of the installation.

The programming button giving access to the functions of the machine, the mixer washing button and the connector for the RS232 serial port are arranged inside the machine, on the cover of the coin mechanism compartment.

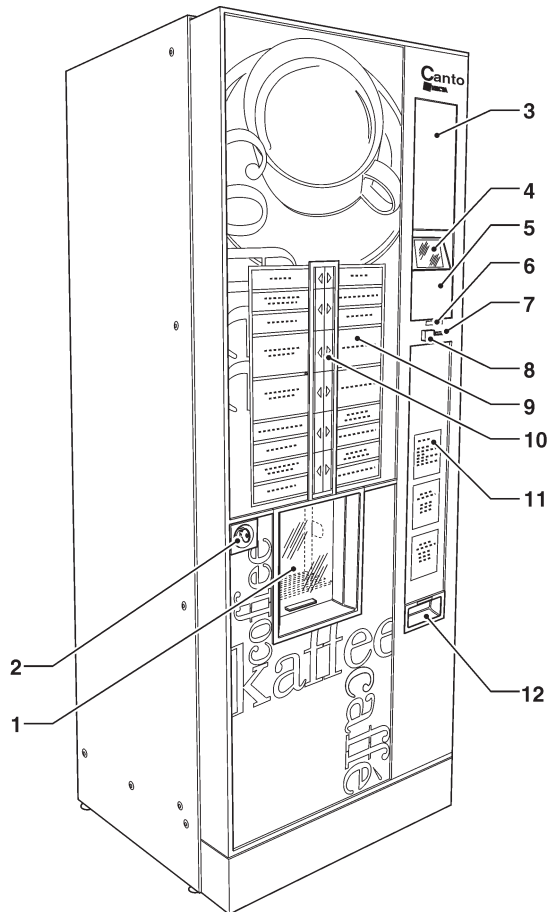


Fig. 6

- 1- Dispensing compartment
- 2- Lock
- 3- Space for payment systems
- 4- Graphical display
- 5- Free vend / Jug key (optional)
- 6- Coin insert LEDs
- 7- Coin insert / return
- 8- Coin return button
- 9- Menu plates
- 10- Selection keyboard
- 11- Information spaces for the user
- 12- Coin return flap

NOISE LEVEL

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

LOADING

CUPS

The cup dispenser shelf has got a double articulated joint intended to improve the accessibility to the cup dispenser, in particular when the machine is bank-installed. To load the column, act as follows:

- Open the machine door.
- Pull the shelf to release the dispensing compartment.
- Turn the shelf to the outside
- Remove the cover from the cup stacker;
- Load the cups.

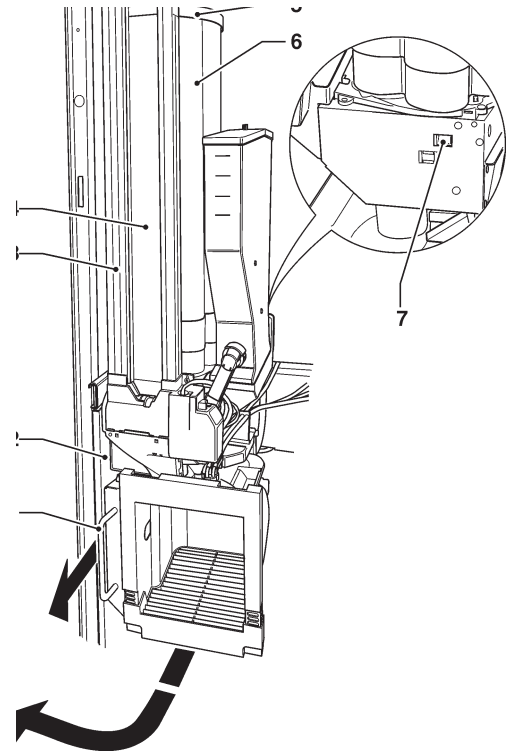


Fig. 7

- 1- Shelf extraction knob
- 2- Articulated shelf
- 3- Adjustable stirrer guide (if available)
- 4- Stirrer stacker (if available)
- 5- Cover
- 6- Cup stacker
- 7- Cup release button

STACKER COMPLETELY EMPTY

- Fill in the columns with cups, **excluding** the one relative to the dispensing hole;
- Close the machine door and wait for the first full column to reach the dispensing hole;
- Open the machine door once again and load the column that has remained empty;

To close, act in the reverse order. Make sure that the shelf has completely moved backwards. Forcing is slightly required to close completely.

SUGAR AND INSTANT PRODUCTS

A self-adhesive plate intended to specify the product is arranged on every single container.

After having lifted the cover, pour the products that shall be dispensed into every single container. Avoid compressing and packing them. Make sure that the products are not lumpy..

BEANED COFFEE

Lift the cover and fill in the coffee container. Make sure that the shutter is completely open (see fig. 8).

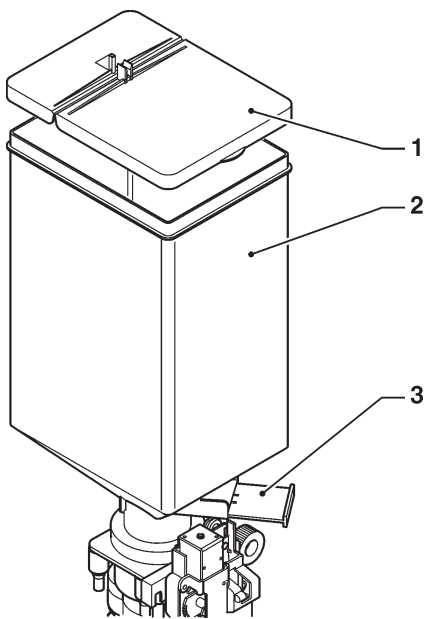


Fig. 8

- 1- Cover
- 2- Coffee container
- 3- Shutter

STIRRERS

To load the double stirrer stacker correctly, act as follows:

- remove the external and internal weights for stirrers by extracting them from the top (see fig. 9);
- load the stirrers alternatively in the two stackers to equal the level of the two columns
- reposition the weights and make sure that the worked side is inserted into the slot.

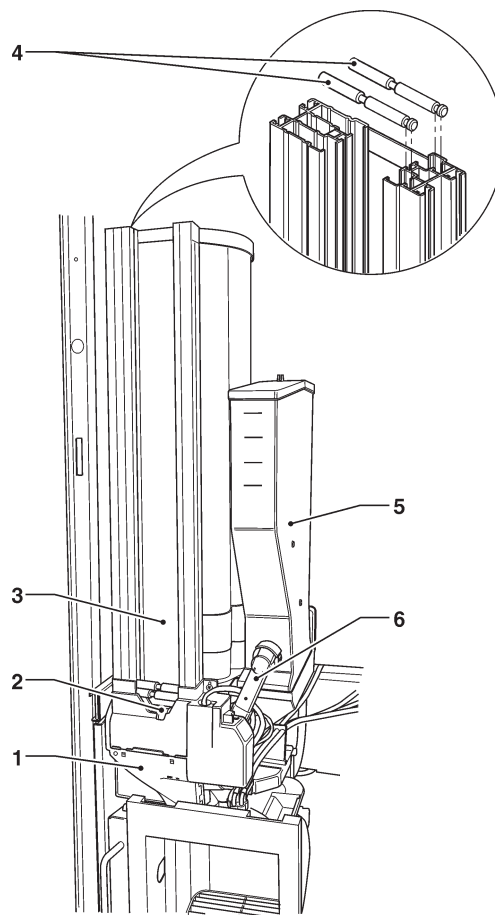


Fig. 9

- 1- Sugar collection box
- 2- Stirrer slide
- 3- Ejector
- 4- Stacker
- 5- Sugar container

CLEANING

SANITISING MIXERS AND FOOD CIRCUITS

The mixers and the conduits for dispensing instant drinks shall be carefully sanitised 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 inlet water quality in order to provide for hygiene on dispensing products.

It is absolutely forbidden to use water jets for cleaning.

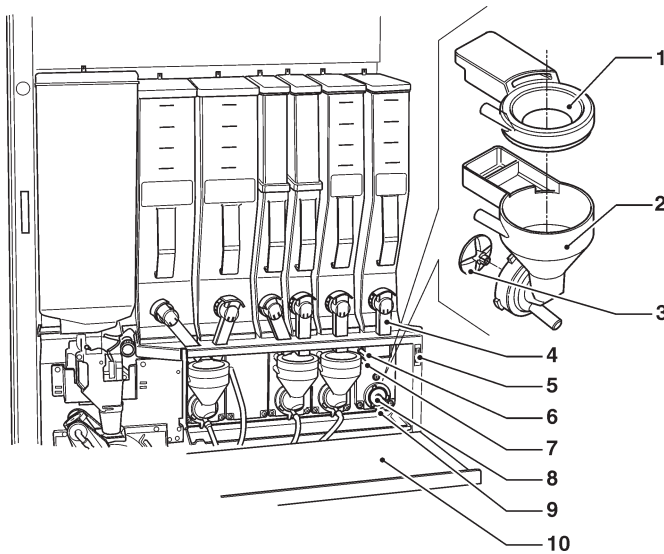


Fig. 10

- 1- Powder funnel
- 2- Water conveyor
- 3- Whipper impeller
- 4- Powder outlet port
- 5- Compartment closing magnet
- 6- Upper water inlet nozzle
- 7- Lower water inlet nozzle
- 8- Stuffing gasket
- 9- Mixer fastening flange
- 10- Flange fastening ring nut
- 11- Dispensing box cover

The parts to be cleaned are listed here below:

- powder funnels, mixers and the conduit intended to dispense soluble drinks;
- dispensing tubes and nozzles;
- dispensing compartment.
- Open the cover of the mixer dispensing box and lift the powder outlet ports as far as the locking hook;
- remove (see fig. 10) the powder funnels, the water collection boxes, the powder deposit funnels and the impellers of whipper motors from the mixers;

- to disassemble the impellers, pull slightly to release them (fig. 11);

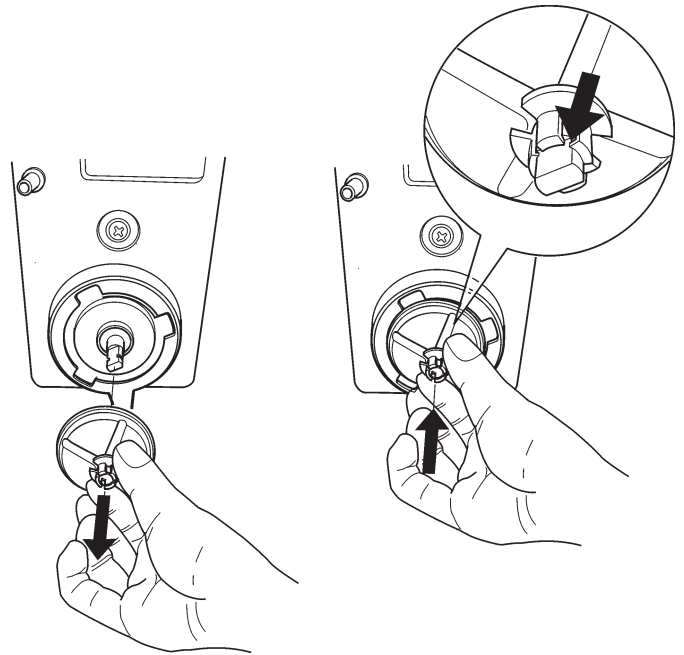


Fig. 11

- wash all the components by using sanitising products (observe the dosage recommended by the producer). Make sure that all visible residuals and films are mechanically removed. Use pigs and scrapers, if necessary;

Sanitise by making use of sanitising products.

- dip the components into a container with the sanitising solution you have prepared before for about 20';
- reassemble the collection boxes and the water funnels;
- reassemble the powder deposit drawers and the powder funnels after having carefully rinsed and dried them up.

Before closing the dispensing box, lower down all powder outlet ports.

After having assembled the parts, act as follows, any way:

- access the "Filler" mode to wash the mixer (see the relative paragraph) and add some drops of the sanitising solution into the various funnels.
- after having sanitised, rinse the parts abundantly to remove any residue of the solution in use.

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.

ESPRESSO UNIT

Whenever you load or at least once a week, it is recommended to remove any powder residue from the outside of the coffee unit, in particular in the area of the coffee funnel, the filters and the scrapers.

It is recommended to disassemble the brewing unit cover and the coffee funnel at regular intervals (see fig. 12).

Wash and dry all disassembled parts carefully.

Attention!

It is absolutely necessary to reassemble the cover before setting the machine at work (see figure 12).

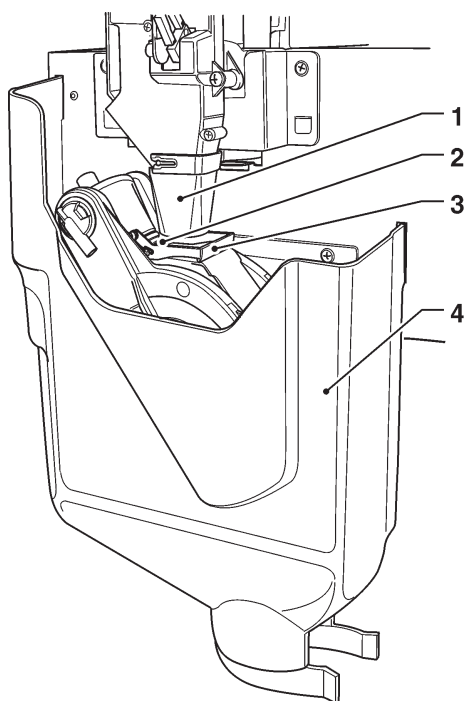


Fig. 12

- 1- Coffee funnel
- 2- Filters
- 3- Scrapers
- 4- Unit covering case

SUGAR RELEASE

It is recommended to clean the sugar dispenser by using hot water at regular intervals on the models intended to dispense sugar directly in the cup. To do this, act as follows:

- lift the flexible lever to release the nozzle
- extract the dispensing nozzle
- extract the sugar slide
- wash and dry carefully
- after cleaning, reassemble everything in the reverse order.

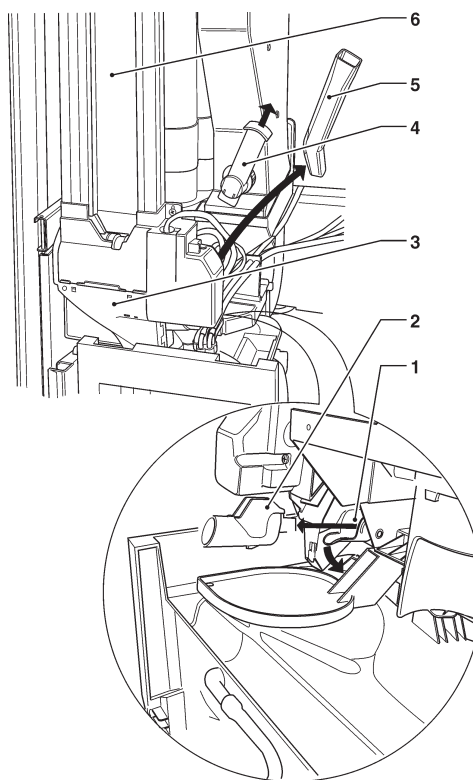


Fig. 13

- 1- Flexible lever
- 2- Sugar dispensing nozzle
- 3- Stirrer slide
- 4- Sugar collection box
- 5- Sugar slide
- 6- Stirrer stacker

DISPENSING COMPARTMENT AND VANDAL-PROOF DEVICE

To disassemble the dispensing compartment, unscrew the knurls to release the compartment and let it slide on the guide. The doors intended to protect the openings for dispensing drinks and cups require no special maintenance. Normal cleaning is enough.

If necessary, the knurl will help you disassemble the nozzle support arm.

On reassembling, pay attention to the position of the cup shift arm, the position of the compartment on the guide and the correct coupling of the three fastening points.

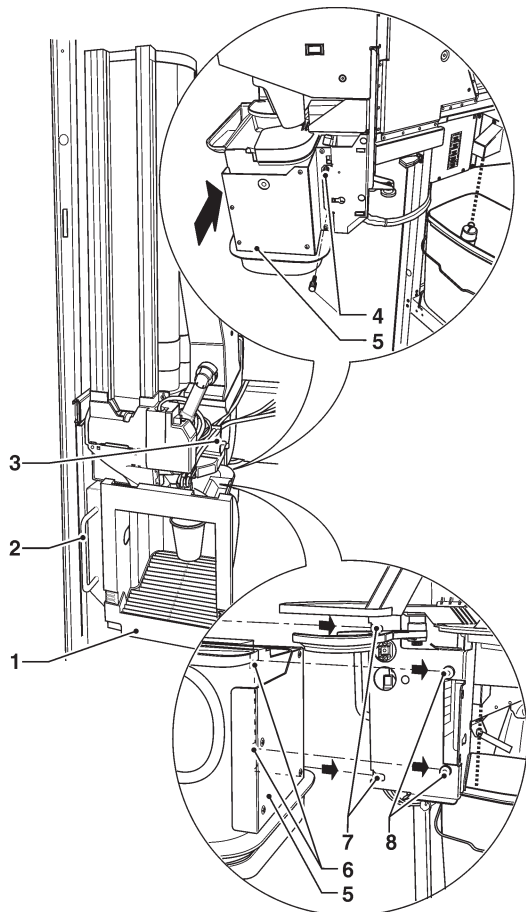


Fig. 14

- 1- Dispensing compartment
- 2- Compartment guides
- 3- Support of dispensing tubes
- 4- Compartment fastening knurls
- 5- Drink dispensing support
- 6- Mobile cup dispensing cover
- 7- Fastening for guide
- 8- Guide stopper

MIXER CHANNELS

Use a small vacuum-cleaner or a brush to clean the funnel area and the container support surface by removing any powder residue at regular intervals.

Surfaces can be cleaned by using a wet piece of cloth.

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 grinder-dosers completely by dispensing coffee until an empty message is displayed
- empty the containers completely and wash them carefully by using the sanitising products used for the mixers
- empty the water circuit completely

Before restarting operation, clean and sanitise.

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 must be installed in a dry room, at a temperature between 2° and 32°C and it can not be installed in a room where water jets are used for cleaning (e.g. large kitchens, etc.).

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.

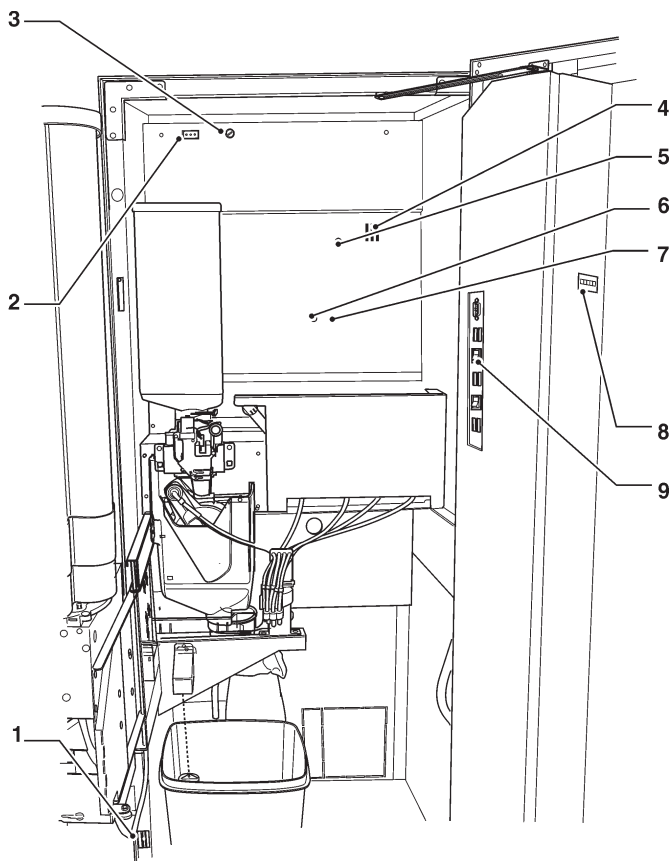


Fig. 15

- 1- Door switch
- 2- Permanently live socket (230V~ 2 A max)
- 3- Mains fuse
- 4- Card led
- 5- Mechanical counter
- 6- Open door signalling switch
- 7- Service buttons

DOOR SWITCH

Whenever you open the door, a special switch will power off the electric installation of the equipment.

To power on the machine when the door is open, just insert the key into the slot (see fig. 15).

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 only after having removed the key from the door switch.

UNPACKING THE VENDING MACHINE

After having unpacked the machine, make sure that the equipment is intact.

In case of doubt never use the equipment.

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.

Important!!

The machine shall be arranged to prevent maximum inclination from exceeding 2°.

If necessary, level it by using the adjustable feet (see fig. 16) supplied with the machine.

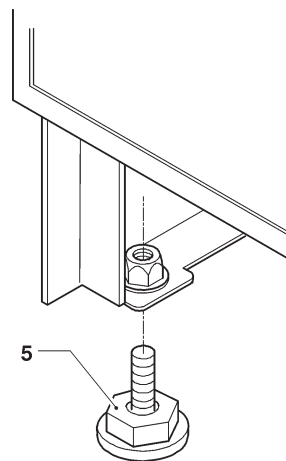


Fig. 16

- 1- Adjustable foot

LABELS INSERTION

To insert the selection labels, disassemble the plate supports after having removed the three fastening screws by acting on fixing clips (see fig. 17).

Insert the plates into the slots alternatively opening on the right and left side.

Some buttons may not be used according to the models (see the selection dose table).

The self-adhesive plates also supplied shall be applied to the product containers according to the arrangement (see the selection dose table).

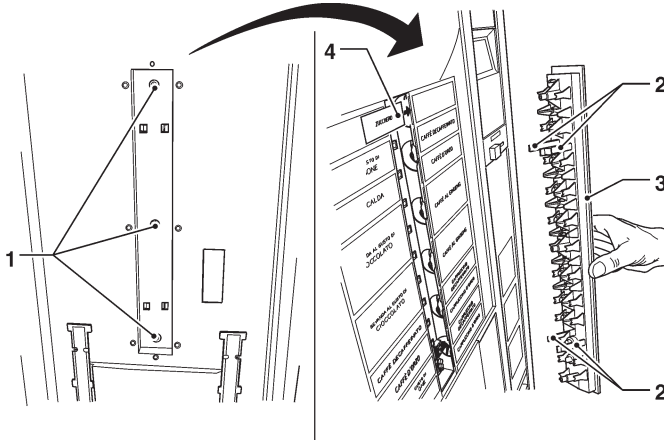


Fig. 17

- 1- Fastening screws
- 2- Fixing clips
- 3- Plate support
- 4- Selection labels

WATER SYSTEM CONNECTION

The vending machine must be connected with the drinkable water system according to the provisions in force in the place of installation of the equipment.

The mains pressure must range from 0.05 to 0.85 Mpa (0.5 - 8.5 bar).

Let water come out of the water network until it is limpid and free of any trace of dirt.

Connect the water network with the 3/4" gas union of the water inlet solenoid valve by means of a tube that can support the network pressure and of a type suitable for foodstuffs (min. inner diameter 6 mm.) (see fig. 18).

It is recommended to apply a cock on the water network outside the machine in an accessible position.

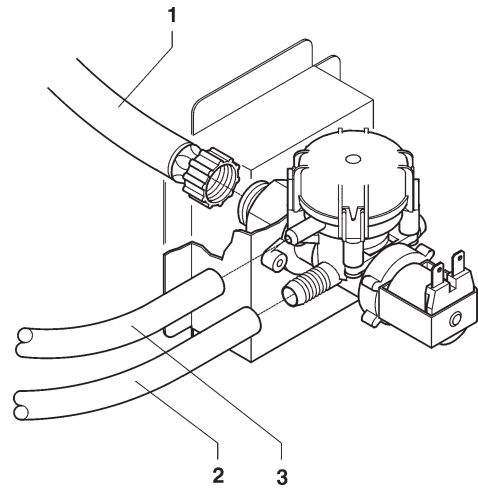


Fig. 18

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

ANTIFLOOD DEVICE

The water inlet solenoid valve (see fig. 18) 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:

- power off the machine;
- discharge water in the overflow tube;
- close the water network cock outside the machine;
- loosen the union intended to fasten the supply tube of the solenoid valve to discharge the residual network pressure and tighten it again;
- open the cock and power on the machine (see fig. 18).

DECALCIFIER

The machine is supplied without a decalcifier.

If water 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

ELECTRIC CONNECTION

The machine is arranged for electrical operation at a 230 V~ single-phase voltage and it is protected by a 15A fuse.

For connection make sure that the rating will comply with the mains data, in particular:

- the supply voltage value shall lie within the limits recommended for the connection points;
- the main switch shall be featured in such a way that it can support the maximum load required and to ensure omnipolar disconnection from the mains with an opening gap of the contacts of min. 3 mm.

The switch, the power socket and the corresponding plug shall be located in an accessible position.

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 supply cable is of the type with a fixed plug. If necessary, the connection cable (see fig. 19) shall be replaced by qualified personnel by using only cables of the HO5 RN - F or HO5 V V-F or H07 RN-F type, 3x1-1.5 mm² in cross-section.

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

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

PAYMENT SYSTEM ASSEMBLY

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.

Mount the payment system you have selected by following the instructions and make sure that:

- you have programmed the parameters correctly;
- regulate the reject lever in order to open the selector completely;
- regulate the coin slide according to the coin mechanism you have assembled.

BANK INSTALLATION

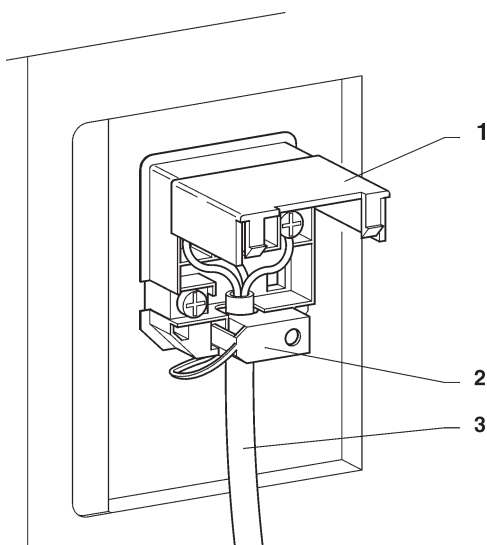
The control system of the machine is arranged for the bank installation with other automatic dispensers by using special kits.

This will enable the operator to use one single payment and remote connection system (GSM) for several machines.

In case of a bank installation, the machine can be configured as a "master", i.e. as a machine controlling the second one, or as a "slave", i.e. as a machine controlled by the second one.

Fig. 19

- 1- Small lift cover
- 2- Cable clamp
- 3- Mains cable



FILLING THE WATER CIRCUIT

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, i.e.:

- the display will show the message "INSTALLATION" during the whole cycle
- the air-break and the instant boiler are filled in;
- the coffee solenoid valve is opened to bleed the air in the boiler and let 600 cc water in.

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

The operation shall be carried out manually by using the special function of the "test" menu in the "Technician" mode if the **(optional) water supply kit from internal tank** is mounted or as a result of any **maintenance operation** requiring the operator to empty the boiler and not the air-break.

SANITISING MIXERS AND FOOD CIRCUITS

FOR THE FIRST TIME

As soon as you install the machine, carefully disinfect the mixers, the tubes intended to dispense instant drinks in order to guarantee the hygiene of dispensed products.

It is absolutely forbidden to use water jets for cleaning.

Disinfection is carried out by means of sanitising products.

Wash the mixers and add some drops of a sanitising solution.

After having completed disinfection, rinse the mixers abundantly to remove any residue of the solution in use. To dispense water in the mixers, use the "mixer washing" button. If necessary, enable it from the menu. (see the relative chapter)

OPERATION

COMPARTMENT COVER

The machine is complete with a cup shift arm that can keep the dispensing nozzles very close to the drink, thus improving its quality and reducing to a minimum the possibility of making the dispensing area dirty. The system is also complete with a shutter closing the cup passage to provide for separation from the outside.

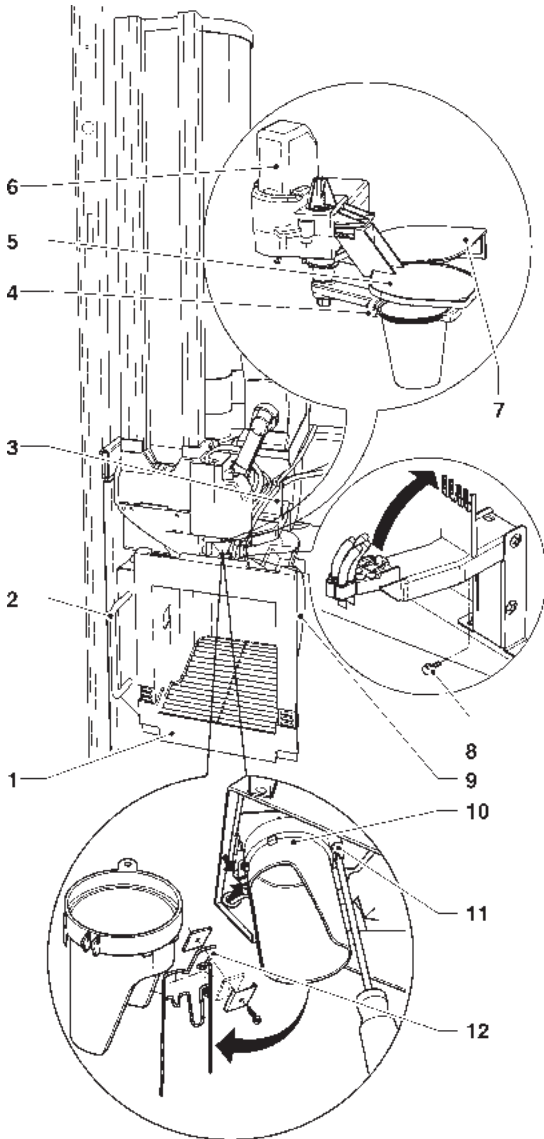


Fig. 20

- 1- Dispensing compartment
- 2- Extraction handle
- 3- Dispensing tube support
- 4- Cup shift arm
- 5- Mobile drink dispensing cover
- 6- Lever drive ratio-motor
- 7- Mobile cup dispensing cover
- 8- Nozzle fastening knurl
- 9- Compartment retainer knurls
- 10- Conveying ring
- 11- Ring fastening screw
- 12- Cup guide

For instant drinks you can set up a wait time (from zero to 2000 c/s) after the end of delivery, at the expiry of which the shutter will close. The end-of-delivery sound signal is supplied.

A microswitch signals the machine the position of the cup shift arm

CUP GUIDING DEVICE

A cup guiding device is supplied with the machine. It shall be mounted only if the type of cup in use is not regularly falling into the shift arm.

To mount the device, just extract the conveying ring secured by means of a screw and mount the device onto the ring, just as it is shown by fig. 20.

CUP SENSOR

Some models are equipped with a cup sensor intended to detect the presence of any object that may be placed between the reflex reflector and the sensor itself.

The sensor is provided with two LEDs intended to signal the state:

- The green LED on indicates that the sensor is supplied
- The orange LED on indicates that sensor is detecting an object

For a correct operation it is necessary to keep the emitter and the reflex reflector in front of it clean.

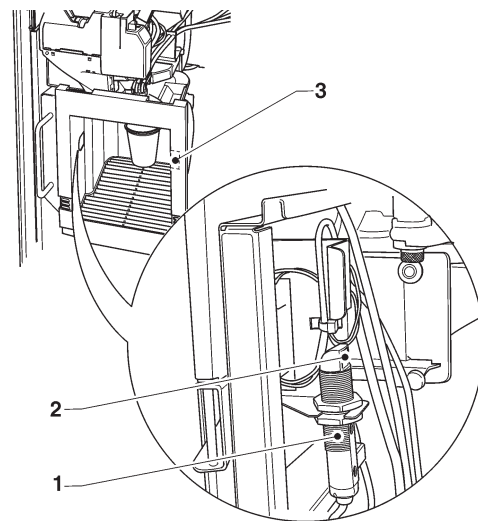


Fig. 21

- 1- Cup sensor
- 2- Emitter
- 3- Reflex reflector

STIRRER SUGAR DISPENSER

The dispenser is driven by a bidirectional motor that will alternatively release a stirrer from the external stacker and a stirrer from the internal one.

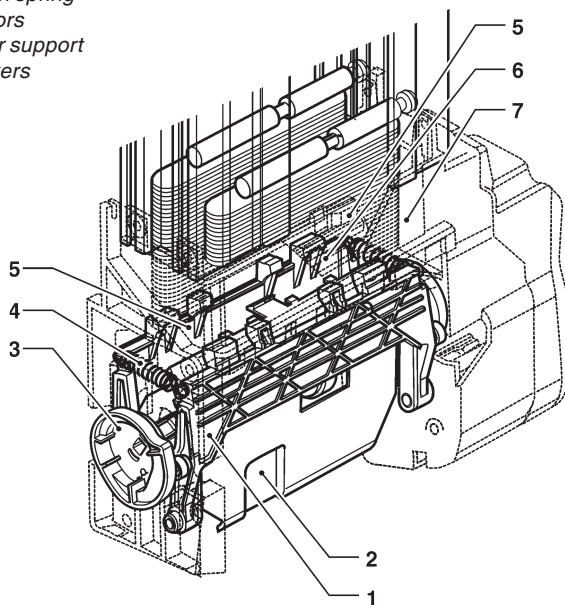
The special profile of the cam driving the device will move the mobile stirrer support and accommodate a stirrer in the ejection area.

As soon as the cam re-enters, the return spring will dispense the stirrer.

If the machine is also required to dispense sugar, the motor will rotate longer and operate the mechanism intended to tilt the dispensing nozzle.

Fig. 22

- 1- Mobile stirrer supports
- 2- Main body
- 3- Support operation cam
- 4- Return spring
- 5- Ejectors
- 6- Stirrer support
- 7- Stackers



ESPRESSO UNIT

Whenever you power on the machine, the coffee unit will make a complete rotation before performing the normal cycle to make sure that the device will occupy the initial position.

COFFEE DISPENSING CYCLE

Whenever you require a coffee-based selection, the grinder will operate to fill the coffee doser chamber. When the doser is full, the ground dose is dispensed into the brewing chamber vertically arranged inside the coffee unit (see fig. 23-1).

The ratio-motor engaged onto the pinion (6) will rotate the cranks (5) that will cause the brewing chamber (1) to rotate by 30°.

The upper piston (4) will align with the brewing chamber (24-7) and move down inside it. The stop position of the piston for brewing will depend upon the quantity of ground product in the chamber.

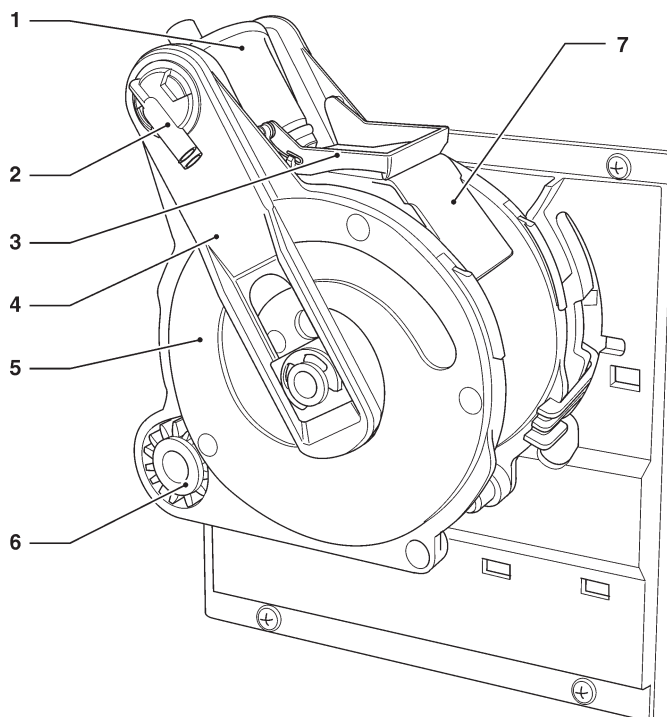


Fig. 23

- 1- Upper piston
- 2- Coffee outlet nozzle
- 3- Scraper
- 4- Connecting rods
- 5- Cranks
- 6- Pinion
- 7- Waste coffee slide

At the end of the coffee dispensing cycle, the upper piston will move down to mechanically compress the used coffee dose, thus helping water in excess to come out of the 3rd way of the dispensing solenoid valve.

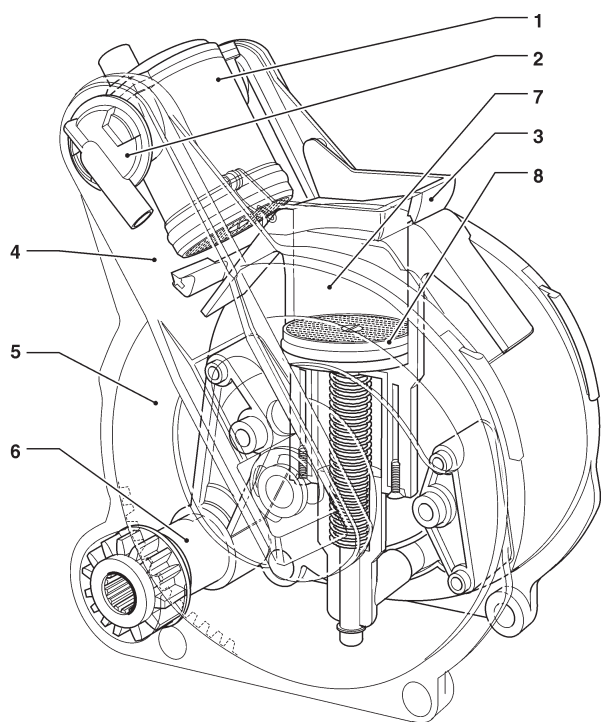
At the end of the cycle, the ratio-motor is driven in the opposite direction, thus lifting the upper piston and rotating the brewing chamber to the unload side, opposite the dispensing side; the lower piston (8) will move up. After having reached the unload position, the ratio-motor will reverse the direction of rotation once again, thus moving the brewing chamber back into its standby position.

The scraper (3) will retain and drop the coffee dose whereas the lower piston (8) will move back into its standby position.

On the models complete with two dosers, the chamber will slightly move before dispensing to help ground products move properly; the movement is programmable by using the corresponding function.

Fig. 24

- 1- Upper piston
- 2- Coffee outlet nozzle
- 3- Scraper
- 4- Connecting rods
- 5- Cranks
- 6- Pinion
- 7- Brewing chamber
- 8- Lower piston



SETTING CONTROL AND REGULATION

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

- The used coffee dose shall be slightly compressed and moistened.
- The granulometry of the ground coffee.
- The ground coffee dose.
- The dispensing temperature.
- The water dose.

BREWING CHAMBER VOLUME

The coffee unit can work with coffee doses between 5.5 and 8.5 gr.

The upper piston will automatically position.

COFFEE DOSE REGULATION

The lever for dose regulation can be arranged in one of the 10 reference notches. Please keep the following in mind:

- if you lift the lever, the dose will increase:
 - if you lower the lever, the dose will decrease:
 - every single notch will vary the dose by ca. 0.35 gr.
- To take the dose, just remove the coffee unit and use the corresponding function of the "test" menu in the "Technician" mode (see the relative paragraph).).

Important!!!

The dose you can achieve will indicatively range between 6 and 9.5 gr; if you vary the grinding degree, the dose will also slightly change.

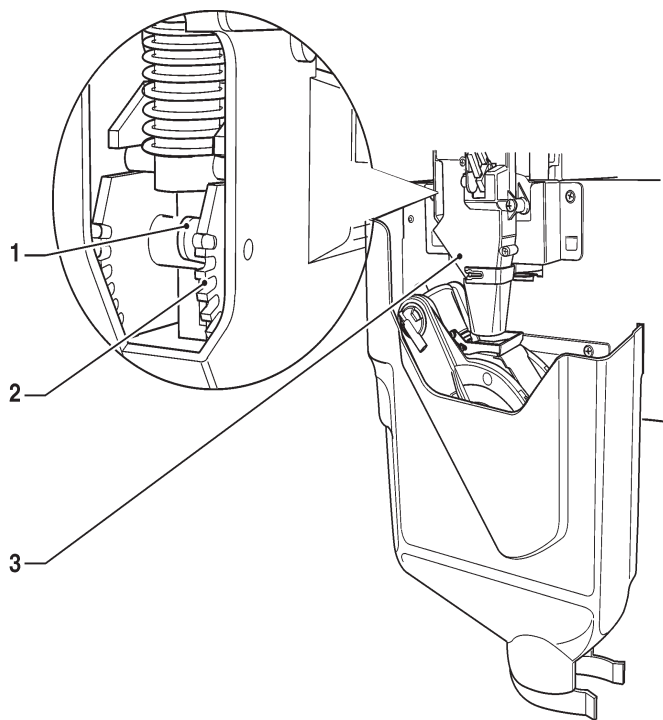


Fig. 25

- 1- Dose regulation lever
- 2- Reference notches
- 3- Coffee doser

MANUAL GRINDING REGULATION

If it is necessary to change the grinding degree, act on the corresponding coffee-grinder knob (fig. 26 B) properly 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 2 selections to check the new granulometry of ground products carefully:

The finer the grinding degree, the longer the time required to dispense the coffee drink and viceversa.

SELF ADJUSTING GRINDING

A device intended to regulate the distance between the grinding wheels automatically and therefore the grinding degree can be mounted on the grinder, either as a standard or as an optional.

The automatic regulation device of the grinding wheels (fig. 28 A) will keep the dispensed drink quality constant all over the time by balancing any variation due to the product, the environment and the wear of the grinding wheels.

SELECTION OF REFERENCE

To monitor the automatic grinding regulation parameters (grinding time and brewing time) properly, the machine will assume a selection as a reference for the operation of automatic devices.

The device will make sure that the brewing time (programmable via software) required to dispense a water quantity corresponding to a (fixed) number of pulses of the volumetric counter (cdv) is actually reached. Otherwise, it will vary the grinding degree by acting on the bidirectional motor controlling the distance between the grinding wheels.

When you decide to act on the grinder-doser from the programming menu, the led of the selection used as a reference will turn on.

The brewing time and the grinding time of coffee dose will be measured on this selection and on those with similar doses. Any subsequent measurement will be therefore made on this selection.

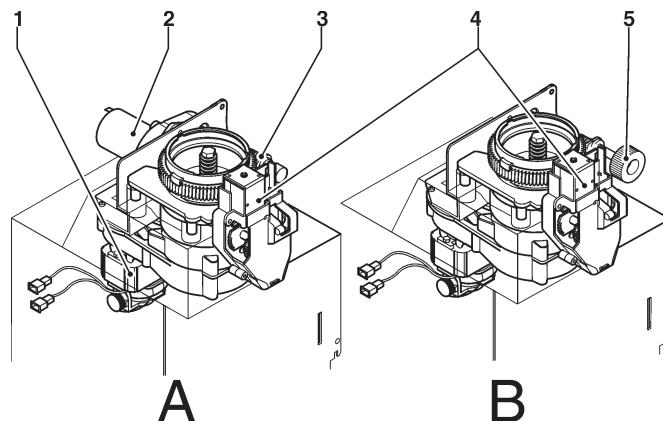


Fig. 26

- 1- Grinder motor
- 2- Self-regulating grinding motor
- 3- Grinding wheel movement screw
- 4- Doser electromagnets
- 5- Manual regulation knob

The change in the grinding degree is a result of a change in the brewing time required; grinding wheels will gradually approach (finer granulometry) to avoid compressing coffee.

Please Note: To check the new brewing time carefully, keep in mind that the effect of any automatic change in the grinding degree is perceived after some selections.

After the regulation has become stable, please also check the ground coffee quantity that can slightly change.

AUTOMATIC REGULATION LOCK

You can stop the operation of the automatic regulation, for whatever reason it might be necessary. The grinding wheels remain at the distance reached at the time when you stop the operation of the automatic regulator.

CHECKING THE WEAR OF GRINDING WHEELS

The function intended to check the grinding wheels will display the warning message "Grinding wheels worn out" as soon as you power on the machine when the grinding time is increasing too much compared to the grinding time stored with the new grinding wheels.

When you replace the grinding wheels, please reset the average grinding time you have stored by means of the corresponding menu.

SOFTWARE REGULATION OF THE GRINDING CYCLE

If you should change the distance to a considerable extent for any reason whatsoever, e.g. in order to service the grinding machines, you can act manually by setting the change you wish via software.

This value is expressed in 1/6 of a turn of the grinding wheel ring nut.

- to increase granulometry (coarser grinding), the automatic regulation occurs in one single operation;
- to decrease granulometry (finer grinding), the automatic regulation occurs when the coffee grinder motor is operating.

Attention! In case of a change to a large extent, the doser chamber is filled, coffee is released and it is recommended to pick it up to avoid clogging the brewing unit.

SET UP

SELECTION OF REFERENCE

The led of the reference selection will turn on when you select the grinder-doser on which you wish to act. The selection is established by default and **it can not be changed.**

COFFEE DOSE

The maximum coffee dose the brewing unit can use is 9 grams.

The dose shall be regulated first by manually acting on the coffee doser lever.

WATER DOSE

The water quantity to be dispensed, expressed in volumetric counter pulses (cdv), is established according to the type of selection. After having set the water value on the reference selection, the machine will require the user to enter the brewing time.

BREWING TIME

The coffee dose and water quantity being the same, the grinding degree will directly affect the brewing time.

If you change this value, the automatic grinding regulation system will act to align the actual time with the one required.

During the normal operation of the machine, you can keep the optimal regulation of the grinding degree by constantly monitoring this time.

OTHER SELECTIONS

The pre-selected layout will define the dose of a well-defined selection. For any non-reference selection, the brewing time is a value that can not be modified and it is associated with the reference selection.

WATER DOSE

You can define the water quantity (expressed in cdv) to be dispensed on this selection via software. The coffee dose and the brewing time will remain those defined for the reference selection..

INSTANT DISPENSING

Every single instant mixer is supplied by a direct current pump on the boiler.

The pump rotation speed and flow rate are controlled electronically to guarantee the best dose constancy and accuracy.

The water dose for every single selection is established on a time basis.

Every single mixer can use single or double nozzles, the cross section of which will vary according to the water dose required; nozzles are identified by different colours according to the flow rate you can reach.

The upper nozzle is conceived in such a way that it can provide for a high flow rate. The lower nozzle can guarantee the flow necessary to wash the mixer optimally. The dose table is intended to specify factory settings (water and powder doses) and the type of nozzle (colour / single or double) used for every single pump.

In case of disassembly of the instant shelf, pay attention to the position of the nozzles assembled on every single mixer.

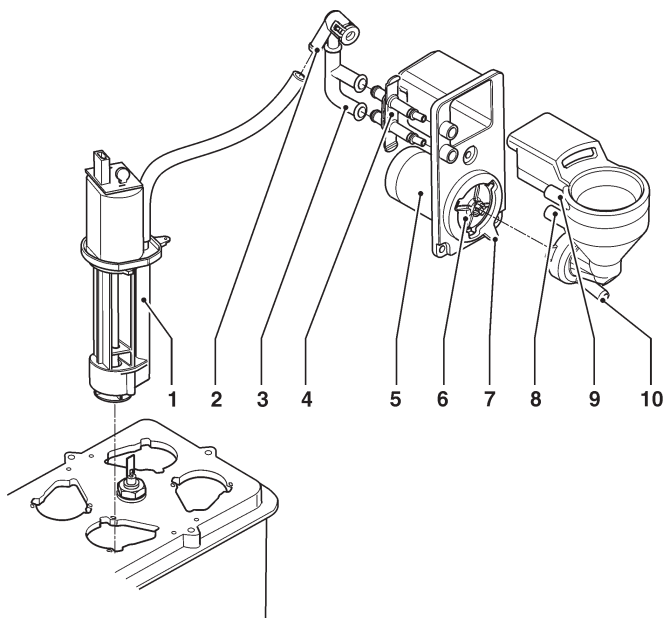


Fig. 27

- 1- Pump
- 2- Anti backflow valve
- 3- Water inlet connection
- 4- Small nozzle plate (double or single)
- 5- Whipper motor
- 6- Impeller
- 7- Mixer fastening ring nut
- 8- Lower water coupling
- 9- Upper water coupling
- 10- Drink outlet nozzle

PRESELECTIONS

Preselections will vary according to the layout you may have set up on the machine. The preselections arranged for every single layout are specified by the selection dose table (selection layout) supplied with the machine.

STANDARD SETUPS

The vending machine is supplied set up as follows:

- brewing temperature (to the nozzle) about 85-89°;
- instant temperature (to the nozzle) about 75°;

PUMP CALIBRATION

The speed and flow rate of direct current pumps can be controlled electronically.

To adjust the control device to the actual flow rate, calibrate the pumps, i.e. measure the actual flow rate at a given speed.

The operation is performed at the factory to find out optimal performances for a correct drink preparation cycle. You may have to repeat it for many reasons.

After having found out the mixer where to act, act as follows through the corresponding menu:

- Confirm the type of nozzle in use (single-double, colour). The nozzle / pump match is established by the manufacturer.

- Confirm the water dispensing cycle to initialise the pump and the water circuit.
- Confirm the execution of the setup procedure. The pump is operated at two different speed rates for a well-defined time interval.
- Store the water quantities you have achieved.

CUSTOMISING DRINKS

If you customise drinks by considerably changing the water dose, check the water flow rate in the mixer. If necessary, replace the nozzle with a more suitable one. Calibrate the pump again and at the end of the procedure test all selections using that mixer to be sure that the drink dispensing cycle is correct.

Attention !!!

Make sure that the mixer is properly rinsed without leaving any powder residue.

INGREDIENT MOTOR CALIBRATION

To convert the product dose values properly, set up the flow rate value of every single ingredient motor in gr/s to calculate the grams to be dispensed.

WATER TEMPERATURE REGULATION

The boiler temperature is controlled by the software:

-95° C for the espresso boiler

-85° C for the instant boiler

and they can be directly regulated from the menu.

CHANGES IN THE SETUP OF INSTANT PRODUCTS

The coffee dose of instant products, the water dose and temperature are directly controlled by the microprocessor.

To change them, follow programming procedures.

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**). The following is supplied with the machine:

- Selection layout including the selections arranged for the specific model
- Flow chart of programming menus.

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, Giga, 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 modes.

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 performed 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 on two levels:

REDUCED

To manage the parameters and doses of selections.

COMPLETE

The operations you can perform 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::

DISPLAY

10-line graphical display intended to display the user messages or the menu functions.



If required, the menu title is highlighted on the first line.

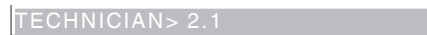


followed by all available options.

The line, on which the cursor is active, is highlighted.



The last line specifies the menu, in which we are acting (Filler or Technician), followed by the numeric position of the function (e.g. 2.1).



KEYBOARD

According to models, the external keyboard may be by way of direct selection or, as an alternative, with numeric keys.

If the machine is set to the Filler or Technician mode, the keys of the selection pushbutton panel will assume the functions shown by the figure and the corresponding leds will turn on:

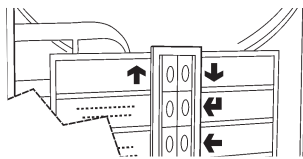
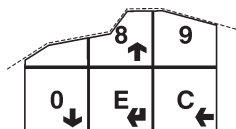


Fig. 28



SCROLLING KEYS ↓ AND ↑ :

used to move to the previous menu option or to the next one and to modify the values (plus and less).

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.

To access the programming menus, power on the machine when the door is open by acting on the door switch and by pressing the programming button.

POWER ON

Whenever you power on the machine, the display will show the software release number.

```

CANTO
software rev. x.x
machine board rev. x.x

TOTAL VENDS: xxxxxx
    
```

If the grinder is complete with an automatic regulation device and an operation failure is found out, the following messages can be displayed as soon as you power on the machine:

```

Wear grinding wheels 1
    
```

if the average grinding time should exceed the average time of the first grinding cycles by 50% or:

```

Check grinding wheels 1
    
```

if 40 selections have been performed, but the machine has not become stable yet. The automatic regulation is no longer performed.

If no failure is found out or the grinder is manually regulated, no message is displayed.

You can programme the machine to display the number of dispensing cycles you have performed for some seconds.

A check is performed on espresso boilers.

```

Heating
    
```

After having completed the power-on cycle, the display will show the following message after some seconds:

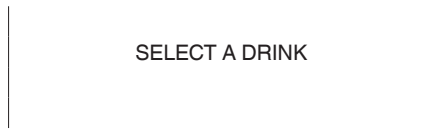
```

Running
SELECT A DRINK
    
```

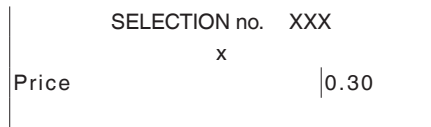
NORMAL OPERATION MODE

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

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

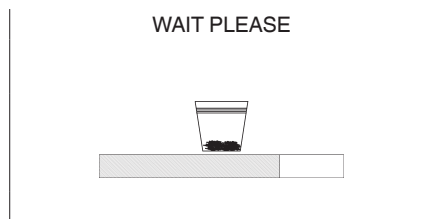


If you insert some coins into a payment system, the credit still available will appear on the display.

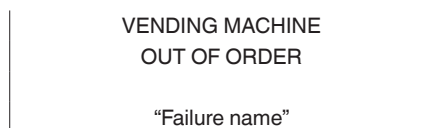


Whenever you request for a selection, if the credit is not enough, the display will show the selection price, the credit available and the residual amount you have to insert in sequence.

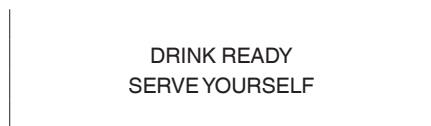
A status bar is displayed during the dispensing cycle. It will show the drink preparation level.



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



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




FILLER MENU

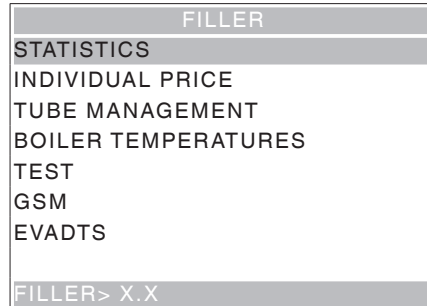
Press the programming button on the machine door once to set the machine to the "filler menu" mode. The first item of the "filler" menu appears on the display with a series of available operations.

The last line shows the menu and number showing the level you are in.

Press the Enter key  to access the menu.

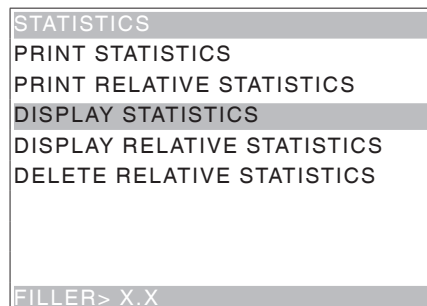
Press the Exit key  to go back to the previous menu..

Press the keys  and  to scroll the menu items:



STATISTICS

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



PRINT

This function is intended to print the data that have been stored for the machine operation.

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, i.e:

TOTAL

- 1 - counter by selection;
- 2 - counter for bands,
- 3 - discount counter;
- 4 - failure counter;
- 5 - coin mechanism data.

RELATIVE

- 1 - counter by selection;
- 2 - counter for bands,
- 3 - discount counter;
- 4 - failure counter;
- 5 - coin mechanism data.

The machine code, the date and the software release will be also printed.

To print, act as follows:

- from the print function press key **↵** to display “Do you confirm?”;
- connect the printer;
- press the Enter key **↵** to start printing

DISPLAY

The function is intended to sequence-display the same data you can obtain by printing statistics. Press the Enter key **↵** to sequence-display the following data:

total counters

- 1 - counter by selection;
- 2 - counter for bands,
- 3 - discount counter;
- 4 - failure counter;
- 5 - coin mechanism data

relative counters

- 1 - counter by selection;
- 2 - counter for bands,
- 3 - discount counter;
- 4 - failure counter;
- 5 - coin mechanism data

DELETE

Statistics can be reset for relative counters either globally (all types of data) or selectively for:

- selections
- discounts
- failures
- coin mechanism data

Press the Enter key **↵** to display the blinking message: “Do you confirm?”

Press the Enter key **↵** to reset the statistics. The display will show the “Running” message during the operation to reset the statistics.

INDIVIDUAL PRICE

The machine can manage up to 4 different prices per selection, which can be active according to the time band you have set (standard or promotional) and/or the payment system in use.

Use this function to vary the sales price for every single selection by selecting among the price ranges available.

MANAGEMENT OF CHANGE TUBES

This function is active only if the payment system you have set up can perform this operation.

Access the function to load or empty the change tubes manually.

If you confirm load, “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 unload, 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 coffee and instant boiler temperatures 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 (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.”

Possible test dispensing cycles are listed here below::

- Complete dispensing cycle
- Water-only dispensing cycle
- Powder-only dispensing cycle
- No-accessory dispensing cycle (no cup, stirrer and sugar)
- Accessory-only dispensing cycle (only cup, stirrer and sugar)

GSM PREALARMS

This function is active only if the vending machine is properly set up and connected with a GSM data transmission device.

The control software can send an “ending product” signal via GSM modem when a well-defined (programmable) number of pieces or powder grams 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 statistics.

TECHNICIAN MENU

The main software functions required to manage the machine operation as well as possible are briefly explained here below. They are grouped by logic of utilisation and not necessarily in the order they are displayed in the menus.

The software release can be updated by using proper systems (PC, Giga, Upkey etc.).

For more information and details refer to the dose table supplied with the machine. Please make reference to the machine software release.

Press key **←** from the "Filler" mode to set the machine to the "Technician menu" mode.

Notes:

Press key **←** in the technician menu to restore the filler mode for the machine.

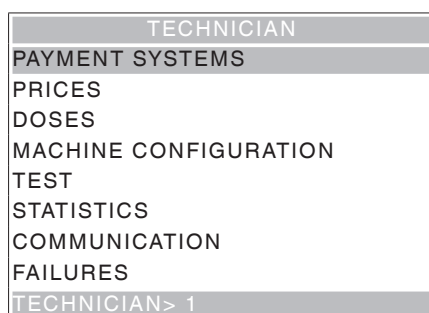
The display shows the first "Technician" menu item with the series of operations made available.

The last line shows the menu and the number enabling the operator to find out the level you are in.

Press the Enter key **↵** to access the menu.

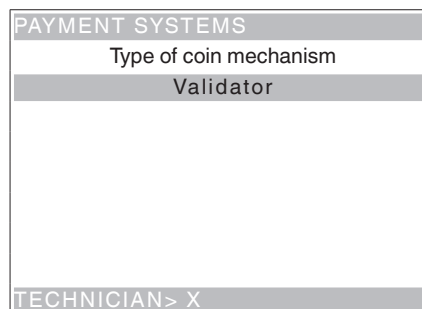
Press the Exit key **←** to go back to the previous menu.

Press key **↑** and **↓** to scroll the menu items.



PAYMENT SYSTEMS

You can decide which protocols to enable for the payment systems available and manage the relative functions.



The communication protocols for the payment systems available are listed here below:

- Validator
- Executive
- BDV
- MDB

Use key **↑** and **↓** to scroll the protocols available.

Some parameters shared by several payment systems keep the set point even if you change the type of system. If necessary, they can be modified by the menus of the various payment systems.

VALIDATOR

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.

The setup of this parameter is compulsory.

LINE / VALUE ASSOCIATION

When the display is positioned on the "LINE-VALUE ASSOC." function (line programming) of the "programming" menu, you can vary the value of the 6 coin lines of the validator from A to F.

DECIMAL POINT

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

- 0 decimal point disabled
- 1 XXX.X (one decimal digit after the point)
- 2 XX.XX (two decimal digits after the point)
- 3 X.XXX (three decimal digits after the point)

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

OVERPAY

You can decide whether to cash or leave the credit exceeding the selection amount at the user's disposal.

EXECUTIVE

VERSION

You have to choose among the following payment systems for the Executive system:

- Standard
- Price holding
- UKEY (Price holding price display)

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.

The setup of this parameter is compulsory.

BDV

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

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.

The setup of this parameter is compulsory.

TYPE OF SALE

Used to set the operation mode by multiple or single dispensing. In case of multiple dispensing, the change is not automatically given at the end of a successful delivery, but the credit will remain available for further dispensing. If you press the coin return button, the remaining credit will be returned if its value is lower than the maximum change value.

CHANGE REFUSED

Used to enable/disable the credit return (escrow) if no dispensing has been performed.

If enabled, this function will provide for the return of the coins even if the first dispensing cycle has not occurred. If a delivery has failed for any reason whatsoever, the change will be paid upon request.

MAXIMUM CREDIT

Function used to define the maximum accepted credit for inserted coins.

MAXIMUM CHANGE

You can set a limit on the total amount of the change the coin mechanism will pay as soon as you press the change button or after one single dispensing.

The credit exceeding the amount you have programmed by this function will be cashed.

COINS ACCEPTED

Used to define which coins shall be accepted among those recognised by the validator.

For the coin/value correspondence check the label showing the position of the coins on the coin mechanism.

COINS NOT ACCEPTED

Used to program the refusal of a coin in case of "exact amount".

For the coin/value correspondence check the label showing the position of the coins on the coin mechanism.

“EXACT AMOUNT” VALUE”

Used to define the combination of empty tubes intended to set the coin mechanism to the “exact amount” mode. All possible combinations of empty tubes are listed here below.

For reasons of simplicity, the combination is described with reference to tubes A, B and C, where tube A will receive the lowest-value coins and tube C the highest-value coins.

0	=	A or (B and C)
1	=	A and B and C
2	=	A and B only
3	=	A and (B or C)
4	=	A only
5	=	A or B only (default)
6	=	A or B or C
7	=	A or C only
8	=	A or B only
9	=	B and C only
10	=	B only
11	=	B or C only
12	=	C only

DISPENSING BUTTONS

Function used to enable or disable the buttons arranged on the coin mechanism in order to discharge the coins in the change tubes.

C.P.C. PERIPHERAL UNIT

It is intended to inform the coin mechanism whether some peripheral units have been installed or removed from the serial connection (peripheral units of the C.P.C type - the default control unit is always enabled).

MINIMUM TUBE LEVEL

Used to warn the user in advance to “Insert exact amount” by adding a number of coins between 0 and 15 to the number of coins that has been programmed to establish the status of full change tubes.

VMC FREE SALE

Most of the payment systems complete with a BDV protocol is intended to manage the free sale function. However, there are some payment systems not having this function.

In this case, it is necessary to enable the VMC (vending machine control, disabled by default) free sale and to set the price of selections to zero if some selections are dispensed on a free basis.

MDB

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


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.

The setup of this parameter is compulsory.

DECIMAL POINT

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

0	decimal point disabled
1	XXX.X (one decimal digit after the point)
2	XX.XX (two decimal digits after the point)
3	X.XXX (three decimal digits after the point)

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

The setup of this parameter is compulsory.

TYPE OF DISPENSING CYCLE

Used to set the operation mode by multiple or single dispensing. In case of multiple dispensing, the change is not automatically given at the end of a successful delivery, but the credit will remain available for further dispensing. If you press the coin return button (if the function is enabled), the remaining credit will be returned up to the maximum change value.

OBLIGATION TO BUY

To enable/disable the operation of the coin return button before dispensing a product.

- ON: the change is returned after having selected a product

- OFF: the change is returned just after having pressed the coin return key (the machine is acting as a coin changer)

MAXIMUM CREDIT

Function used to define the maximum accepted credit for inserted coins.

MAXIMUM CHANGE

You can set a limit on the total amount of the change the coin mechanism will pay as soon as you press the change button or after one single dispensing.

The credit exceeding the amount you have programmed by this function will be cashed.

COINS ACCEPTED

Used to define which coins shall be accepted among those recognised by the validator when the change tubes are full.

For the coin/value correspondence check the coin mechanism configuration

COINS RETURNED

Used to define which coins shall be used to give the change among those available in the tubes. This parameter is active only with the coin mechanisms not intended to manage the choice of the tube in use automatically (Auto changer payout).

For the coin/value correspondence check the coin mechanism configuration.

BANKNOTES ACCEPTED

Used to define which banknotes shall be accepted among those recognised by the reader.

For the banknote/value correspondence check the reader configuration.

BELOW-THE-LEVEL ACCEPTANCE

Used to define which coins shall be accepted among those recognised by the validator when the machine is in the "exact amount" mode.

For the coin/value correspondence check the coin mechanism configuration.

BELOW-THE-LEVEL BANKNOTE ACCEPTANCE

Used to define which banknotes shall be accepted among those recognised by the reader when the machine is in the "exact amount" mode.

For the banknote/value correspondence check the reader configuration.

CASHLESS PRIVATE

To protect the users' privacy, this function is intended to display the string "-----" in the place of the credit on the cashless system.

OVERPAY

You can decide whether to cash or leave the credit exceeding the selection amount at the user's disposal.

CASH-SALE MANAGEMENT

Used to give evidence that cash transactions have occurred by means of a cashless system.

The values available are listed here below:

- **0** standard operation: cash transactions are recorded as such
- **1** forced sending to cashless 1: cash transactions are recorded as transactions performed by the first cashless system
- **2** forced sending to cashless 2: cash transactions are recorded as transactions performed by the second cashless system.

PARALLEL MACHINE

Function used to enable the presence of a validator or parallel bill reader to recharge the keys.

EXACT CHANGE EQUATION

To choose among 15 different algorithms to enable the machine to give the change at the end of the selection. Every single algorithm checks a series of requirements, such as the amount of coins in the tubes or the (empty or full) state of the tubes the coin mechanism will use to give the change.

If one of these requirements is not fulfilled, the machine can supply no change. In this case, the display will show the "No change" message.

MAXIMUM CASHLESS CREDIT

Function used to set up the maximum credit a cashless key/card may have to be accepted by the system. If the key has got a higher value, it will be rejected.

The setup value shall always be higher than or equal to the value set for the "Maximum cash revalue" function. If modified and lower, it will be automatically set to the same value as the "Maximum cash revalue".

MAXIMUM CASHLESS RECHARGE

Used to set up the maximum credit you can charge on a key or card system.

MINIMUM TUBE LEVEL

Used to set a number of coins between 0 and 15 in order to establish the status of full change tubes and to warn the user to "insert the exact amount".

BILL READER FUNCTION (BILL REVALUE)

Used to enable the bill reader only to recharge the credit on the cashless system (key or card).

INDEFINITE CREDIT ACCEPTANCE

This function is intended to accept cashless payment systems (key or card) or not if the cashless system credit is not defined.

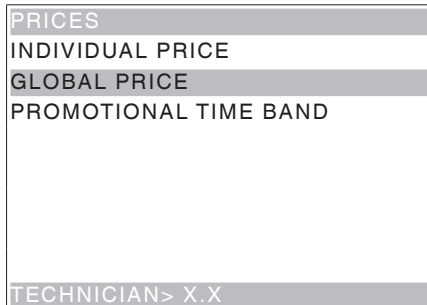
GROUPS OF USERS

The function is intended to associate a price list (list 1, list 2 and list 3) to the groups of users (from 1 to 5). All groups of users are associated to list 1 by default.

PRICES

From this menu you can set up prices individually (for every single selection) or globally (the same price for all selections) and define the ranges of the promotional time band.

The machine can manage up to 4 different prices for every single selection, which may be active according to the time band you have set up (either standard or promotional) and/or the payment system in use.



Prices are grouped into 4 lists and they can be programmed (from 0 to 65,535) for each one of the 4 lists either globally (the same price for all selections) and for every single selection.

The price of one single selection can be directly varied from the keyboard too.

If you have to sell most products at the same price, it will be advisable to programme the price globally and to change the price of the selections having a different sales price.

BDV, EXECUTIVE, VALIDATORS

These systems enable you to manage not only the standard price list, but also a promotional price list if the time band is enabled by the corresponding function. Selections will be dispensed at the price of the promotional list during the time intervals you have programmed.

MDB

These systems are intended to establish whether to use the 4 price lists at the same time or to use two alternative ranges according to the time band you have set up.

If you do not use the time band, you can manage not only the standard price list, but also three further price lists according to the type of cashless support in use (key 1-3).

If you use a time band, selections will be dispensed at a price other than the standard one for the cashless system. During the time intervals you may have programmed, selections will be dispensed at two different promotional prices for the standard list and the cashless system.

PROMOTIONAL TIME BAND

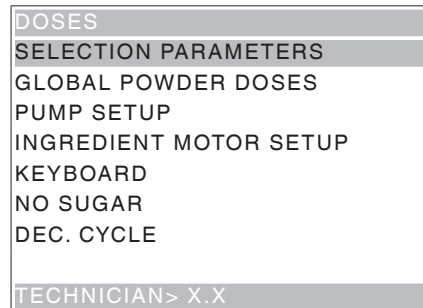
4 time ranges programmable for the sale at different prices.

Ranges can be set up by hour (from 00 to 23) and by minute (from 00 to 59).

The time of reference is supplied by an internal clock.

DOSES

This group of functions is intended to define all variables contributing to the drink build-up.



SELECTION PARAMETERS

Confirm this function to access the sub-menus to manage the parameters. The first option consists in choosing the selection you wish to act on.

Press one key of the external keyboard to display the relative parameters, according to whether the key is a selection or a preselection.

DOSE COMPOSITION

Use this group of functions to modify the doses and parameters relative to the waters and powders of the drink you have selected.

Confirm this function to display the list of the ingredients (powder/s and water) composing the drink, in the order the water dose is dispensed (see the dose table).

A drink can be composed by max. 4 ingredients (powder/s and water).

Every single water dose can be associated with several powders.

To dispense water, act on the following parameters:

MIXER

MIXING MODE

For every single selection 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 start time of the pump.

The duration of the mixing cycle is set in tenths of a second and it is calculated from the time the pump is started up

relative

i.e. by way of difference, either in excess or in default, compared to the stop time of the pump.

E.g.: if the value is 0, mixing will stop as soon as the pump stops.

The duration of the mixing cycle is always expressed in tenths of a second.

MIXING SPEED (LOW / MEDIUM / HIGH)

You can define the mixing speed according to the product quality you wish.

MIXING TIME

You can define how long the mixer shall be active after the pump stop within one single product.

BREWING PARAMETERS (FB ONLY)

Parameters not available

WATER DOSES

To dispense water, act on the following parameters:

EVENT START (0 - 3)

Set this value to dispense the water of the relative ingredient after the water with the lowest value.

In doing so, you can vary the sequence of the various ingredients to get the best product quality.

DELAY VALUE

You can set up the mixer delay (in hundredths of a second) with respect to the pump start (event start)

DOSE IN CC

You can directly set up the water quantity you wish for every single event start in cc.

DOSE IN CDV (FOR ESPRESSO DRINKS ONLY)

You can directly set up the water quantity you wish for the event start relative to an espresso drink in cdv (strokes).

FLOW RATE IN CC/SEC.

You can set up the working speed of instant water pumps to define the flow rate in cc/sec.

This value is used to calculate the time necessary to dispense the dose in cc.

BREWING TIME

You can set the brewing time just for the selection of reference of automatic grinding.

POWDER DOSES

To dispense powders, act on the following parameters:

DOSE IN GRAMS

You can directly set up the powder quantity you wish for every single ingredient composing the drink in grams.

FLOW RATE IN GR/SEC.

You can set up the working speed of ingredient motors to define the flow rate in gr/sec.

This value is used to calculate the time necessary to dispense the dose in gr.

DECAFF CYCLE OR STEP DISPENSING

Use this function to establish for every single instant coffee selection whether powder shall be dispensed according to a decaff cycle or on a step basis, compared to "global" setting.

- DECAFF CYCLE: use this parameter to dispense powder before water to improve the drink quality (recommended for instant coffee).

- STEP: use this parameter to dispense powder at intervals (you can set up from 1 to 5) at the same time as water.

DRIPPING

You can define the wait time (you can programme it from 0 to 2000 hundredths of a second) from the end of delivery to the closure of the shift arm for every single selection to leave the tubes enough time to get empty.

SELECTION STATUS

You can define for every single selection key whether to enable it or not.

ACCESSORIES

For every single accessory:

- | | |
|--------------------|---------------|
| - sugar | on/off |
| - stirrer | on/off |
| - cup | on/off |
| - sugar in the cup | (dose in gr.) |
- you can decide whether to add it to a selection or not.

COMPLETE SELECTION TEST

Use this function to dispense the following for every single selection when the door is open and without inserting the required amount:

- complete selection
- water only
- powder only
- no accessory (cup, sugar and stirrer)
- accessories only

PRODUCT CODE

Use this function to assign a 16-alphanumeric character identification code to every single selection for the purpose of processing statistics.

GLOBAL POWDER DOSES

Use this function to regulate the powder dose of every single ingredient motor relative to several selections at the same time (function still to be implemented).

PUMP CALIBRATION

The speed and flow rate of direct current pumps can be controlled electronically.

To adjust the control device to the actual flow rate, calibrate the pumps, i.e. measure the actual flow rate at a given speed.

The operation is performed at the factory, but you may have to repeat it for various reasons.

After having found out the mixer where to act and confirmed the type of nozzles in use, the pump is operated for a well-defined time at the minimum and maximum speed by means of the corresponding menu. The system can optimise the dispensing speed by storing the water quantities you get.

INGREDIENT MOTOR CALIBRATION

To convert the product dose values properly, set up the flow rate value of every single ingredient motor in gr/s to calculate the grams to be dispensed.

KEYBOARD

KEY <---> SEL

Use this function to vary the order of the selections associated with the keyboard and defined by the layout you have set up.

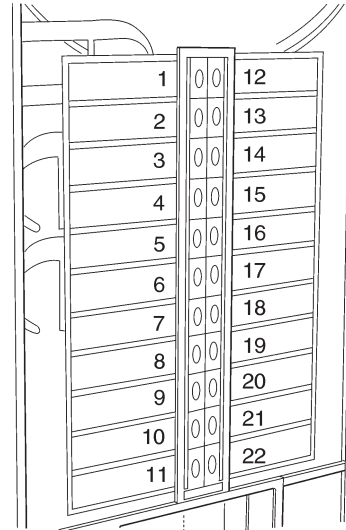


Fig. 29

The display shows the list of available selections in sequence. Press the destination key to store the association.

DOUBLE KEY

Use this function to join 2 keys arranged one next to the other one vertically into one single key to use a double-size key for one single selection.

SELECTION NO. CHECK

You can check the selection number associated with a key.

NO SUGAR

Use this function to set up all sugarless selections made available by default (ON).

Function valid on some models only.

DECAFF CYCLE

This function acts on instant coffee-based selections. Selections are identified in the layout and their identification can not be changed.

If you enable this function in all coffee-based selections (if made available), powder dispensing occurs before water dispensing.

However, you can change this parameter one by one, for every single instant coffee-based selection.

MACHINE CONFIGURATION

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

MACHINE CONFIGURATION
SET DATE TIME
BOILER TEMPERATURE
DB MANAGEMENT
DISPLAY
MENU MANAGEMENT
ESPRESSO UNIT
FRESH-BREW UNIT
WASHING SECTION
TECHNICIAN> X.X

DATE AND TIME SET

Function used to set up the current date and time. The value is used to manage the time band and statistics.

BOILER TEMPERATURE

Use this function to set the operating temperature, expressed in °C, of the boilers actually available on the machine.

If you press the Enter key **↵** after having selected the boiler where to act, the temperature value will flash on and off and it can be modified.

DB MANAGEMENT

This group of functions is intended to manage the basic data of the machine operation.

INITIALISATION

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.

When the display is set to the "Initialisation" function, you can initialise the machine by restoring all default data.

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 the type of basic doses for the various selections (e.g. IT coffee = 60 cc - FR coffee = 106 cc). The "countries" made available according to models.

"LAY OUT"

a well-defined number of Button-Selection combinations is available for selection for every single model and type of doses (the combinations available for every single layout are supplied by the selection dose table supplied with the machine).

"TANK"

Used to define whether water supply occurs:

0 - from the network

1 - with an internal tank

2 - with two internal tanks on management.

Confirm the options to display the message "Execution" for some seconds.

SAVE CUSTOM DB

To save the current configuration of the machine on an external memory. This function is of use if you customise (e.g. the parameters of selections) with respect to factory settings.

RESTORE CUSTOM DB

To restore the machine configuration you have customised and saved before by means of the "Save modified DB" function.

To restore factory settings, initialise the machine.

DISPLAY

This group of functions controls all display parameters.

LANGUAGE

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

SECONDARY LANGUAGE

To select a second language to display the messages in the “normal operation mode”.

SETTING UP THE PROMOTIONAL MESSAGE

The 5-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.

PROMOTIONAL IMAGE

To enable/disable the promotional image on the display in the normal operation mode:

- ON: the message “Select a product” and the promotional image are alternated every 3 seconds in the normal operation mode
- OFF: only the message “Select a product” is displayed in the normal operation mode.

SAVER SCREEN TIME

Use this function to set the screen saver after a programmable (in minutes) shutdown time of the vending machine (default = 10 min.)

Set the value to 0 to deactivate the screen-saver.

LCD CONTRAST REGULATION

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

MENU MANAGEMENT

PASSWORD

It is a 5-digit numeric code you are required to enter to display all menu functions (advanced).

The value of this code is set to 00000 by default.

REDUCED / COMPLETE MENU ENABLE

To enable the request for password function in order to display all “advanced” functions of the Technician Menu as soon as you access the programming mode. The request for password is disabled by default.

ESPRESSO UNIT

PRE-GRINDING

Use this function to enable or disable the grinding cycle of a coffee dose for the next selection.

This will enable the user to reduce the time required to dispense a coffee selection. The function is disabled by default.

WATER BOOST

Enable this function to heat the water circuit and the espresso unit before brewing espresso coffee.

If no espresso coffee based selection is performed for a long time, a small hot water quantity is dispensed before releasing a coffee dose.

ESPRESSO UNIT POSITION

Function active on double espresso models only.

Use this function to set up the position of the unit while dispensing the ground coffee dose. Regulation occurs through scrolling keys **↑** and **↓**

FRESH BREW UNIT (IF THE FB UNIT IS AVAILABLE)

You can set up the parameters relative to the fresh brew unit (if available) in this group of functions.

PRE-BREWING TIME

Use this function to establish the pause time of the brewing unit in tenths of a second before brewing (default 100 d/sec.).

DRYING TIME

Use this function to establish the pause time of the brewing unit in tenths of a second after brewing and before ejecting the used dose (default 100 d/sec.).

EXTRACTION PRESSURE

Use this function to regulate the piston speed and the pressure exerted on the dose in the brewing chamber (default 5).

Act on this parameter to modify the drink aspect and quality.

PROFILE MANAGEMENT

Use this function to choose among the 5 profiles available for selections based on fresh brew coffee or tea.

For coffee:

- Standard Profile
- Low Pressure
- High Pressure

For tea:

- Standard Profile
- High Pressure

WASHING

ENABLE THE WASHING KEY

Use this function to enable the operation of the button intended to wash mixers.

The key is generally disabled.

AUTOMATIC MIXER 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).

ES UNIT WASHING

Use this function to set up the daily automatic washing cycle of the espresso unit at the time you wish. If you set the time to 00:00, the function is disabled.

MIXER HEATING

If the function is enabled and no dispensing has occurred in the milk or instant coffee mixers in the past 3 minutes, a small hot water quantity is dispensed before any selection of strong instant coffee, instant coffee with a drop of milk and espresso coffee with a drop of milk.

MIXER COOLING (IF THE COLD UNIT IS AVAILABLE)

If the machine is equipped with a cooling unit, the function is enabled. If no dispensing has occurred in the mixers of cold drinks in the past 3 minutes, a small cold water quantity is dispensed before any syrup-based selection.

ACCESSORIES

TANK

Use this function to define whether the vending machine is supplied by the network or by internal tanks:

0 - water supply from the network;

1 - an internal tank managed individually;

2 - two internal tanks managed to load water alternatively from the two tanks.

PHOTOCELL

On the models equipped with a "cup sensor" composed by a photocell detecting the presence of an object in the dispensing compartment.

If the function is enabled and an object is detected in the dispensing compartment, the cup is not released and the "No cup" message will appear on the display.

Moreover, you can define whether the failure shall lock the machine or let it run for use with a pottery cup after two attempts at releasing a cup without the photocell detecting any object in the dispensing compartment.

The lamp intended to illuminate the dispensing compartment is controlled by the cup sensor.

If the cup remains in, the "remove the cup" message will appear upon request for another selection.

FLAP

Function not active on this model.

JUG FACILITIES

On some models complete with a special key you can obtain a number (programmable from 1 to 9.5 by default) of cup-free selections in order to fill in a jug.

STIRRER

Use this function to dispense the stirrers of the front column (single column) only or alternatively from the front and rear column (double column).

CUP SHIFT TIME

Use this function to increase the time the shift arm will remain in the cup collection position (in d/s) to help cups properly drop before the shift arm itself takes the cup to the dispensing area.

CUP TURRET TIME

Use this function to determine the rotation stop delay time of the cup stacker to balance any inertia due to the type of cup. Use this function to increase the time the shift arm will remain in the cup collection position (in d/s) to help cups properly drop before the shift arm itself takes the cup to the dispensing area.

ENERGY SAVING

Choose among the following energy saving options to save electric energy whenever the machine is not used:

Energy Saving:

use this option to interrupt the vending machine service and power off the boiler/s at the time intervals set up by the “Energy Saving Parameters” function. Selections are not available for the whole duration for the Energy Saving period.

Sleep Energy Saving:

use this option to power off the lighting LEDs of the front panel after a 15-minute inactivity of the vending machine and to lower down the boiler temperature to 70°C. Press any selection button to restore the normal operation of the machine. Selections are made available once again as soon as you reach the operating temperature.

Soft Energy Saving:

use this option to power off the lighting LEDs of the front panel at the time intervals set up by the “Energy Saving Parameters” function whereas the boiler/s will continue to operate normally. Press any selection button to turn on the LEDs and to restore the normal operation of the machine.

ENERGY SAVING PARAMETERS

Use this function to set up to 4 time bands in which to activate energy saving profiles (Energy Saving and Soft Energy Saving).

OUT OF SERVICE PANEL BACKLIGHTING

You can define whether to turn on or not the LEDs intended to light the panels when the machine is out of order or the “Service interruption” range has tripped.

COLD UNIT ID SETUP

Function active if the cold unit is available.

MASTER SLAVE

The control system of the machine is arranged for bank connection with other automatic vending machines (Samba, Samba Top and Diesis)

SETUP

Use this function to set up the hierarchies of the master / slave1 / slave2 relations between connected vending machines.

This machine can be configured as “Master”, i.e. controlling the second machine, or as “Slave”, i.e. controlled by the other one.

Moreover, set the two-digit (XX) or three-digit (0XX; 9XX) numbering of selections.

The master/slave function is not enabled by default.

SLAVE PRICE HOLDING (EXECUTIVE PROT.)

If the Executive payment system is set in the “Price Holding” mode, use this function to set the same mode in the slave machine software too.

VIRTUAL PRICE RETURN (EXE / BDV PROT.)

If selections are either combined or virtual (the menus of which are available on slave machines), use this function to establish whether to withhold (OFF) or not (ON) the partial amount if the second selection / delivery should fail.

MINISLAVE RESET

Use this function to reset all settings relative to the master/slave function on the slave machine.

MONITOR SLAVE

Use this function to scroll all the information relative to a slave that may be connected.

If you power on the slave machine after having displayed this function, the following slave information will appear in sequence:

- software release
- type of slave (XX, 0XX, 9XX)
- presence of photocells intended to detect dispensing
- number of trays and drawers
- presence of a device intended to lock the opening of the dispensing compartment
- temperature measured by the internal probe.

To quit the function, power off the master machine.

SLAVE INFORMATION DISPLAY

Function not active on this model.

Use this function to display the instantaneous temperature of the “slave” machine you may have connected.

MACHINE SERIAL NUMBER

Use this function to change the eight-digit numeric code intended to identify the vending machine (default set to 0).

PROGRAMMING THE OPERATOR CODE

When the display is set to the "Operator Code" function, you can change the 6-digit numeric code identifying groups of machines (default to 0).

LOCATION CODE

When the display is set to the "Location Code" function, you can change the 8-digit numeric code identifying the place of installation of the machine (default to 0).

INSTALLATION DATE

Use this function 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

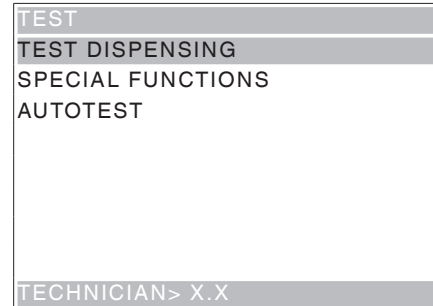
When the display is set to the "Machine Code" function, you can change the 8-digit numeric code identifying the machine (default to 0).

ASPIRATOR MANAGEMENT

Use this function to set the continuous operation of the suction fan wheel of instant products:

- ON fan wheel always on;
- OFF fan wheel on only during the dispensing cycle and for the next 30 seconds.

TEST



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
- no accessories (cup, sugar and stirrer)
- accessories only

SPECIAL FUNCTIONS

If you access the function, you can:

- operate the brewing unit (if available)
- release a coffee dose (if available)
- open a solenoid valve to let air in if the boiler is emptied for maintenance purposes (ES only)
- install the boiler manually
- operate the mechanism intended to dispense a stirrer: press key **↑** and **↓** to release the stirrers from the 2 (front and back) columns
- operate fresh brew 1 and 2 brewing units (if available)
- regulate grinding wheels (models, the grinding wheels of which are automatically regulated)

REGULATION OF GRINDING WHEELS

Use this group of functions to check the parameters intended to regulate the distance between grinding wheels automatically and to enable or disable the function on the grinders complete with an automatic regulation device.

In particular, you can choose on which grinder - identified by a number - to act. After you have made your choice, the leds of the selection of reference corresponding to that grinder will turn on.

AUTOMATIC REGULATION ENABLE

For each grinder you can decide whether to let the automatic regulation device work or not.

AUTOMATIC REGULATION PARAMETERS

For each selection of reference, please program:

- The water dose (expressed in volumetric counter pulses -cdv-)
- The brewing time (expressed in sec.)
- The manual regulation of the distance of grinding wheels; any variation will correspond to about 1/6 of a turn of the regulation ring nut. Positive values reduce granulometry (finer grinding), negative values increase it (coarser grinding).

NEW GRINDING WHEELS

This function is intended to reset the times stored with reference to the grinding wheel wear; in particular, the average initial grinding time stored during the first selections and used to establish when grinding wheels are worn (the grinding time is over 50% longer than the initial time).

GRINDING WHEEL TEST

Use this function after having replaced the grinding wheels or the grinder.

The test shall be carried out without coffee.

- If you confirm the test, grinding wheels rotate and come close to each other to touch;
- the machine will stop, waiting for confirmation;
- if you confirm once again, grinding wheels depart and rotate the grinding wheel ring nut by some turns;
- the machine will stop, waiting for confirmation;
- if you pour coffee and dispense some selections of reference, grinding will automatically become stable

AUTOTEST

Function used to check the operation of the main components of the machine semiautomatically. Press the Enter key to display the "AUTOTEST" message flashing on and off.

You can renounce any operation and move to the next one by pressing the exit key. If you confirm by pressing the enter key, you will start the autotest cycle. Some controls occur automatically. Others require the manual operation of the component under control.

In sequence:

- operating ingredient motors for 2 seconds
- operating whipper motors for 2 seconds at the various speeds
- dispensing a cup
- dispensing a stirrer
- rotating the brewing unit (if available)
- checking the washing button
- liquid waste container full; the machine will remain in stand-by mode until you operate the liquid waste container full microswitch manually
- LED test; checking the backlighting operation of front panels and areas relative to the lighted path for the user (coin insert, cup ready and change ready)
- power-on of the dispensing compartment lamp (if mounted)
- checking the keyboard; the machine will display the number of the button you shall press, turn on the relative led and wait for its operation before moving to the next key
- checking the operation of the boiler temperature probe
- checking the operation of the sound signaller (buzzer)
- checking the operation of the coin mechanism
- checking the grinding wheels (only grinding with automatic regulation); the machine tightens the grinding wheels to build up a pack up to the maximum closing point and opens them by 5 turns upon confirmation
- aspirator management; the machine powers on and off the powder suction fan wheel
- checking the "open door micro" operation: the machine will remain in standby mode until you operate the "open door micro".
Operate the "open door micro" by turning the lock key.
- display control; the machine powers on all display bits to check the operation visually.

STATISTICS

ELECTRONIC COUNTER

TO DISPLAY THE 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.

TO RESET THE ELECTRONIC COUNTER

You can reset the electronic counter.

TO DISPLAY THE ELECTRONIC COUNTER AT THE START-UP

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

EVA-DTS

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:

```
STATISTICS
EVA-DTS
      DEX - UCS
      DDCMP ENHANCED
TECHNICIAN> X.X
```

COMMUNICATION PROTOCOL

Use this function to decide which communication protocol to use for the communication of the data acquisition device.

Available communication protocols are listed here below:

DDCMP ENHANCED

the following parameters can be configured:

- **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.
Set to 0000 by default.
- **Security code:** it is an alphanumeric code for mutual recognition between the machine and the EVADTS terminal.
Set to 0000 by default.
- **End of transmission:** if enabled, it can recognise the end-of-transmission signal sent to the latest package and interrupt data transmission.

DEX/UCS

no parameter can be configured for this protocol:

DATA TRANSMISSION

Function used to select which communication interface to use for the data transfer. The following interfaces are made available:

- "RS232" and "IrDA": to dialogue with data acquisition devices
- "ALWAYS EVADTS": to dialogue with data acquisition and transmission devices (telemetry)

TRANSMISSION SPEED (BAUDRATE)


To set up the transmission speed in use for communication (2400, 4800, 9600, 19200 bps).

Set to 2400 bps by default.

CONNECTION

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

DISPLAY GENERAL

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.

RESET GENERAL


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.

DISPLAY RELATIVE



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.

RESET RELATIVE

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.

BDV PROTOCOL AUDIT

The coin mechanism data are intended to supply the following information in real currency:

Aud.1 Money in the tubes

Money currently available in the change tubes

Aud 2 Money to the tubes

Money conveyed to the change tubes

Aud 3 Money to the coin box

Money conveyed to the coin box

Aud 4 Change returned

Total amount of the money that has been returned

Aud 5 Money dispensed

Total amount of the money that has been manually dispensed

Aud 6 Surplus

Surplus money. Amounts paid by the customer in excess and not returned (in case no money is available for change)

Aud 7 Total sales

Total sales value

Aud 8 Exact change

Sales value on the "Insert exact amount" condition

Aud 9 Mixed dispensing

Total dispensing value paid in a different way, e.g. also other types of payment (C.P.C., coin)

Aud 10 Manual load

Money inserted into the coin mechanism by means of the manual loading function.

MDB PROTOCOL AUDIT

Aud.1 Money in the tubes

Money currently available in the change tubes

Aud 2 Money to the tubes

Money conveyed to the change tubes

Aud 3 Money to the coin box

Money conveyed to the coin box

Aud 4 Change returned

Total amount of the money that has been returned

Aud 5 Surplus

Surplus money. Amounts paid by the customer in excess and not returned (in case no money is available for change)

Aud 6 Unloading of tubes

Value of the coins dispensed by means of the "Manage tubes" function

Aud 7 Loading of tubes

Value of the coins cashed by means of the manual loading function.

Aud 8 Cash sales

Value of the total sales made cash (coins + banknotes)

Aud 9 Banknotes cashed

Value of the banknotes that have been cashed

Aud 10 Charge key

Value of the money that has been recharged on the key

Aud 11 Key sale

Value of the money that has been cashed through key-dispensing



Aud 12 Money dispensed manually

Value of the coins that have been manually dispensed through the dispensing buttons on the coin mechanism.

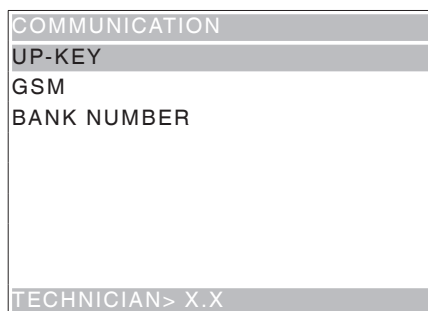
PRINT

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 "general statistics display" as well as the "relative statistics display" paragraphs. The machine code as well as the software date and release are also printed. Statistics can be printed in the either relative or total mode.

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.

COMMUNICATION



UP-KEY

SETUP MANAGEMENT

UPKEY -> VENDING MACHINE

After having inserted the Up key into the plug on the C.P.U. board, this function is used to select the setup file from the list on the display. Press the Enter key to load the setup file you have selected on the machine.

VENDING MACHINE ->UPKEY

After having inserted the Up key into the plug on the C.P.U. board, this function is used to save on the Up key a setup file with the same configuration currently available on the machine.

Please specify the name you wish to assign to the file (e.g.: CANTO000.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.

UPKEY STATISTICS MANAGEMENT

VENDING MACHINE ->UPKEY

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.: CANTO000.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.

GSM

(Global System for Mobile communications)

The control software can send a signal of faulty machine, "prealarms" or "ending product" via GSM modem after a (programmable) well-defined number of dispensing cycles of a given product.

PIN CODE

Function used to programme the identification code that will be sent to the GSM modem (optional) as soon as the machine is powered on.

THRESHOLD SETUP

Function used to define the number of pieces or grams of powder of a well-defined product, after which to signal an "ending product" prealarm via modem.

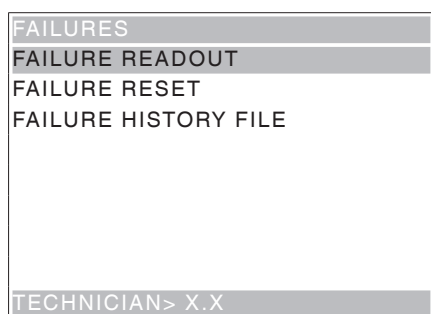
COUNTER RESET

Function used to reset the counters intended to manage pre-alarms.

BANK NUMBER

The bank number (from 1 to 7) is intended to univocally define the machines acting as a "GSM slave", i.e. sending the data by means of the "master" machine modem. 0 is intended to identify the machine directly connected with the modem, i.e. the "GSM master", in a bank.

FAILURES



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

As soon as a malfunction is found out, the type of failure is displayed and the machine (or part of it) is set out of order.

The failures are 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.

READING CURRENT FAILURES

When the display is set to the "Failure" function, 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.

Expected failures are highlighted in the following cases:

No water

If the air-break microswitch 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 water supply kit from internal tank is mounted on the machine, the pump is powered off.

Waste container full

Espresso coffee based selections are disabled as soon as you reach the number of used doses the solid waste tray can contain.

Air-break

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

No cups

As soon as the no cups microswitch is opened, the cup stake shift motor is actuated. The machine is put out of order if the microswitch has not closed after a complete rotation.

If the machine is complete with an (optional) cup sensor, the machine will display the "No cups" message.

Use the corresponding function to define whether the failure shall lock the machine or let it ready for a cup sale.

Cup shift arm

The machine stops if the cup shift arm should fail to reach 1 of the 2 microswitches within the pre-established time of 15 sec.

Volumetric counter (impeller)

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

Instant boiler

The machine stops if the instant boiler water 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.

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 seconds (Executive protocol) or 75 seconds (BDV protocol).

Coffee dispenser

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

Coffee unit

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

Empty coffee

If the grinder speed should exceed 1200 rev/minute for over 5 seconds, the “empty coffee” failure is recorded. You can enable this type of signalling and disable coffee-based selections after having accessed the “Empty coffee enable” function of the Technician Menu.

Grinder lock

If the grinder is not rotating or it is rotating too slowly, the espresso coffee-based 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

The machine is locked if the espresso boiler water has failed to reach the temperature after 10-minute heating, starting from the power on or the latest selection.

Cup dispenser

If the cup sensor photocell is mounted, the “No cup” message will appear on the display after having failed to dispense a cup for three times. Use the corresponding function to define whether the failure shall lock the machine or let it ready for sale with a pottery cup.

FB 1 - 2 piston

It is due to a positioning error of the unit. The machine is not locked, but the selections based on fresh product are disabled.

FB 1 - 2 brush

It is due to a positioning error of the scraper. The machine is not locked, but the selections based on fresh product are disabled.

Door motor

The machine stops if the opening - closing of the door lock motor control switch is not read (on models complete with a motor-driven door only).

Doser 1 - 9 Fault

If the current input of the ingredient motor should fall outside the range of default values, all the selections involving that doser will be disabled.

Whipper 1-6 Fault

If the current input of the whipper motor should fall outside the range of default values, all the selections involving that whipper will be disabled.

Pump 1 - 7 Fault

If the current input of a pump should fall outside the range of default values, all the selections involving that pump will be disabled.

Short Circuit Mosfet

The machine fails if a device intended to control direct current motors on the actuation board (mosfet) remains active.

Short Circuit

This failure is displayed if the software should detect a short-circuit on one of the direct current motors connected with the actuation board. A failure may be simultaneously detected on one of the direct current motors.

Sugar / Stirrer fault

If the current input of the direct current motor should fall outside the range of default values, this failure is displayed. Sugarless drinks can be dispensed.

Water Failure

The water failure is declared during the v.m. standby if the water inlet solenoid valve is operated for over 20". If a water failure is available, you can manually restore the service by pressing a key of the pushbutton panel. The water inlet solenoid valve is supplied for max. 20"; if the level is not reached, the solenoid valve is closed and the water failure is signalled once again. Wait 30 minutes before making another 2 attempts to restore. At the 4th attempt, the solenoid valve is permanently inhibited (now, power off / on the machine to be able to make another 3 attempts or to reset the failure from the programming menu).

RESET

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

FAILURE HISTORY FILE

You can display the latest 16 failures, from the most recent to the most remote one, by pressing scroll key **↑** and **↓**. Moreover, the display will show the tripping date and time and whether the failure is still active or not (ON / OFF/), similarly to the data in the EVADTS data audit.

Chapter 3 Maintenance

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.

Never forget to power off the machine 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 view-point of electric safety and health rules.

GENERAL INTRODUCTION

To ensure the correct operation all over the time, 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 by this chapter are not intended to exhaust 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.

BREWING UNIT MAINTENANCE

The coffee unit must be serviced, even if slightly, every 10,000 dispensing cycles or, any way, every 6 months to optimise its operation all over the time.

To provide for maintenance, remove the unit and act as follows:

- Detach the coffee outlet nozzle (2) from the unit by rotating it by 90° with respect to the connecting rod (4) and by pulling it to the outside.
- Operate the lever (8) intended to lock the unit by rotating it to reach the horizontal position.
- Extract the coffee unit.

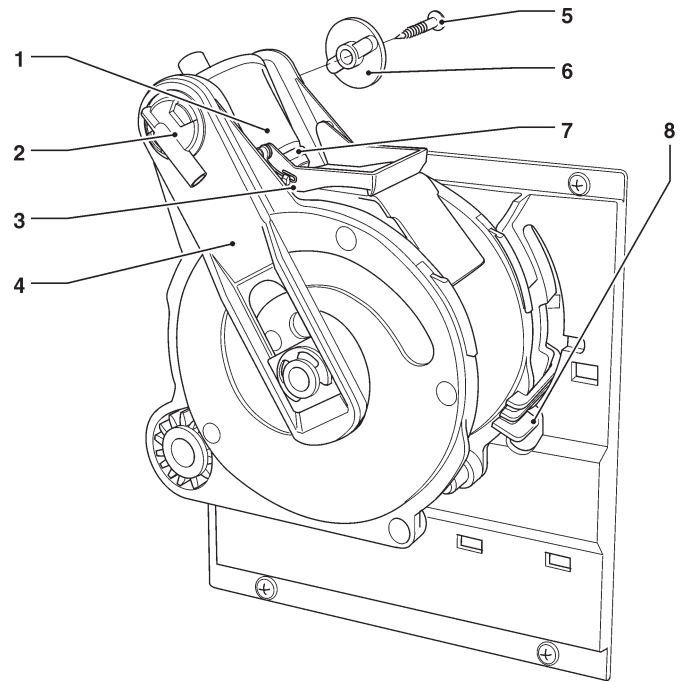
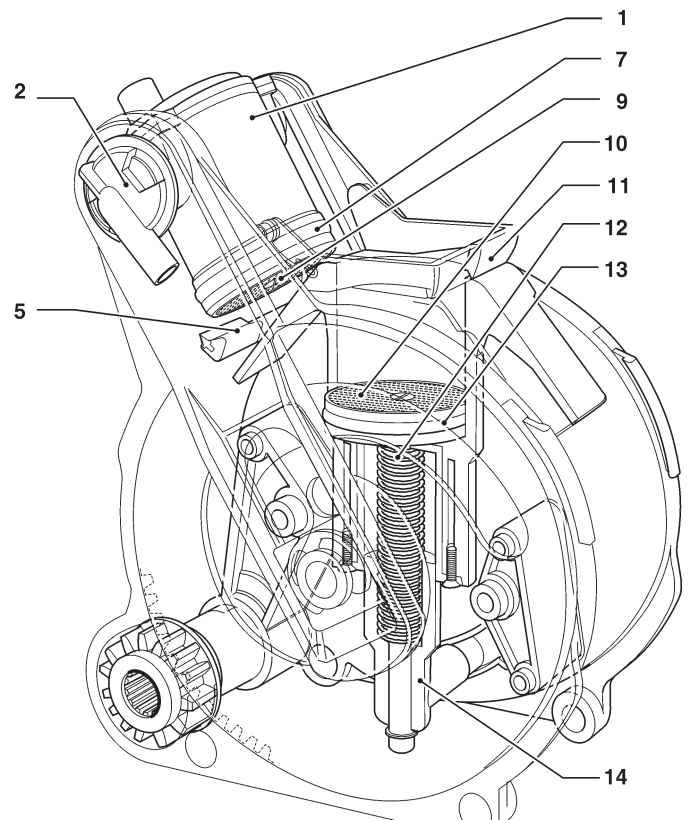


Fig. 30

- 1- Upper piston
- 2- Coffee outlet nozzle
- 3- Lower scraper
- 4- Connecting rod
- 5- Side screw
- 6- Key
- 7- Upper gasket
- 8- Unit locking lever
- 9- Upper filter
- 10- Lower filter
- 11- Lower scraper
- 12- Lower piston
- 13- Lower gasket
- 14- Piston rod guide
- 15- Upper scraper



Disassembling / replacing the upper filter and gasket

To disassemble or replace the upper filter and gasket, act as follows:

- Unscrew the side screw (6) intended to fasten the key (5) of the upper piston.
- Rotate the upper piston (1) upwards.
- Remove and replace the upper gasket (7).
- Unscrew the upper filter (9) to remove and replace it.

Disassembling / replacing the lower filter and gasket

To disassemble or replace the lower filter and gasket, act as follows:

- Manually bring the unit into the unload position with the lower piston (12).
- Unscrew the central fastening screw to remove the filter (10).
- Press on the end of the piston rod guide (14) to get an extra-travel of the lower piston (12).
- Use a small screwdriver to extract the lower piston (12) from the piston rod (14). Pay special attention to avoid damaging the piston or the sealing elements.
- Remove and replace the lower gasket (13).

PERIODICAL OPERATIONS

Clean and disinfect the whole circuit and the parts in contact with the foodstuffs at least every year or more frequently, according to the utilisation of the machine or the inlet water quality.

SANITISING

- remove all the components in contact with the foodstuffs, including tubes, from the machine and disassemble them in all their parts;
- remove all visible residues and films mechanically by using pigs and scrapers, if necessary;
- the components shall be immersed into a sanitising solution for at least 20 minutes;
- the internal surfaces of the equipment shall be cleaned by using the same sanitising solution;
- rinse abundantly and reassemble the various parts.

Before setting the machine at work once again, sanitise the machine after having assembled all the components, as it is described by chapter "Sanitising mixers and food circuits"

CHANNELS AND MIXERS

At regular intervals, it is necessary not only to remove any powder residue from the parts outside mixing units, in particular in the funnel area, but also to sanitise the parts in contact with the mixer drink.

It is absolutely forbidden to use water jets for cleaning.

The parts to be cleaned are listed here below:

- powder funnels, mixers and the conduit intended to dispense instant drinks;
- dispensing tubes and nozzles;
- dispensing compartment.
- Open the cover of the mixer dispensing box and lift the powder outlet ports as far as the locking hook;
- remove the powder funnels, the water collection boxes, the powder deposit funnels and the impellers of whipper motors from the mixers (see fig. 31);

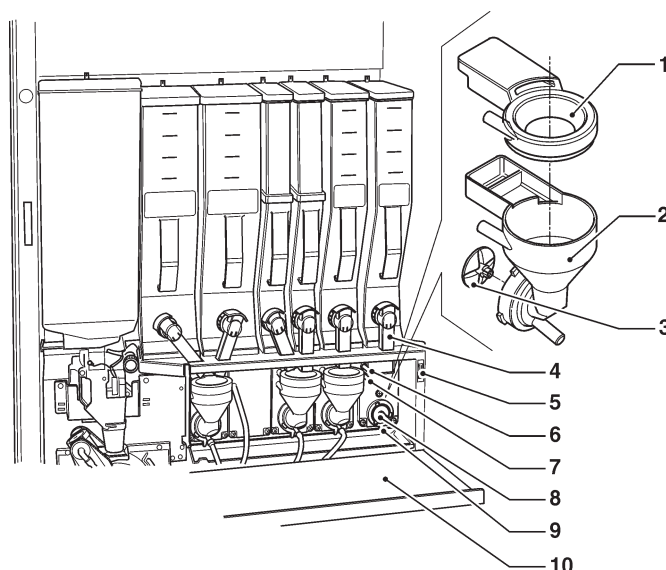


Fig. 31

- 1- Powder funnel
- 2- Powder conveyor
- 3- Whipper impeller
- 4- Powder outlet port
- 5- Compartment closing magnet
- 6- Upper water inlet nozzle
- 7- Lower water inlet nozzle
- 8- Stuffing gasket
- 9- Mixer fastening flange
- 10- Dispensing box cover

- to disassemble the impellers, just lock and pull slightly to release them (fig. 32);

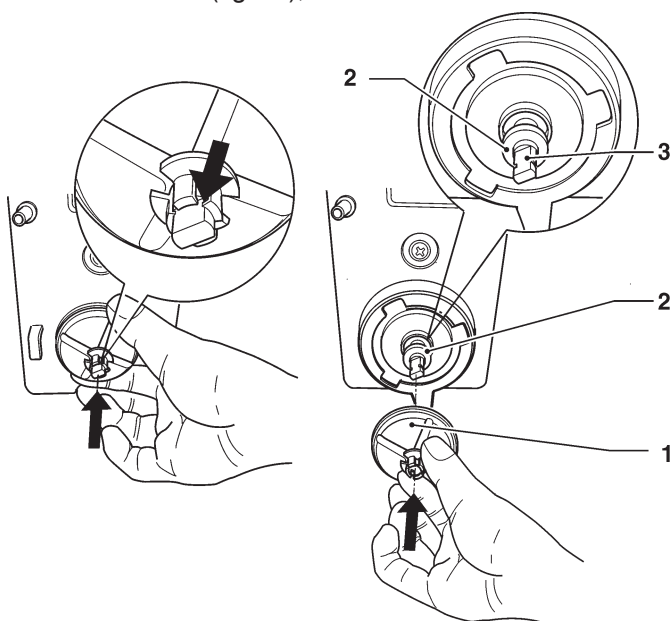


Fig. 32

- 1- Impeller
- 2- Stuffing box gasket
- 3- Shaft undercut

- make sure that the lip seal of the stuffing box gasket is not torn and that it has not lost its elasticity; to insert it, arrange the gasket just beyond the shaft undercut. Insert the impeller to the bottom to enable the stuffing box gasket to assume the correct position (see fig. 38).

- wash all the components by using sanitising products (observe the dosage recommended by the producer). Make sure that all visible residuals and films are mechanically removed. Use pigs and scrapers, if necessary;

Sanitise by making use of sanitising products.

- dip the components into a container with the sanitising solution you have prepared before for about 20';
- reassemble the collection boxes and the water funnels,
- reassemble the powder deposit drawers and the powder funnels after having carefully rinsed and dried them up
- on reassembling the impellers, make sure that you will insert them as far as the bottom, until you hear them click.

- **Before closing the mixer compartment, lower down all powder outlet ports.**

After having assembled the parts, act as follows, any way:

- access the "Filler" mode to wash the mixer (see the relative paragraph) and add some drops of the sanitising solution into the various funnels.
- after having sanitised, rinse the parts abundantly to remove any residue of the solution in use.

MIXER NOZZLES

If it had been necessary to disassemble the instant shelf, pay attention to the nozzle/pump combination in use before during the reassembly phase.

Assemble 1-hole nozzles in such a way that the water inlet into the mixer will occur from the lower coupling. Any considerable variation in the doses of a drink may require the replacement of the corresponding nozzle to keep a correct flow rate.

Nozzles having a different flow rate are identified by the colour and number of holes:

Nozzle	Flow rate
Magenta (1 hole)	9 - 11 cc
Orange (1 hole)	11 - 13 cc
Magenta (2 holes)	19 - 22 cc
Orange (2 holes)	22 - 25 cc
White (1 hole)	22 - 25 cc

If you change the nozzle, you shall set up the type of nozzle in the software of the machine (in the pump setup function from the technician menu).

The white nozzle is used to dispense hot water only.

At the end of the procedure, test the selections using that mixer to be sure that the dispensing cycle of drinks is correct.

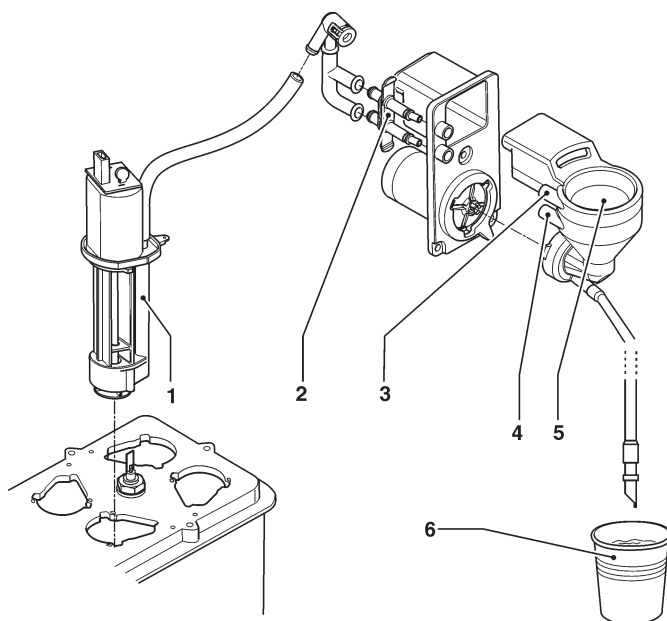


Fig. 30

- 1- Pump
- 2- (single or double) nozzles
- 3- Upper coupling
- 4- Lower coupling
- 5- Mixer
- 6- Dispensed drink

CUP DISPENSER

The cup dispenser is conceived in such a way that it can be easily disassembled for maintenance operations. It is possible to disassemble every single column of the cup stacker and the cup release ring without making use of any tool.

The cup release ring shall not be opened for normal cleaning.

If you are required to act, please follow the instructions here below at the time of reassembly:

- align the notch on the toothwheel microswitch activator gear with the scroll support arrow.
- observe the orientation of scrolls as it is represented by the figure.

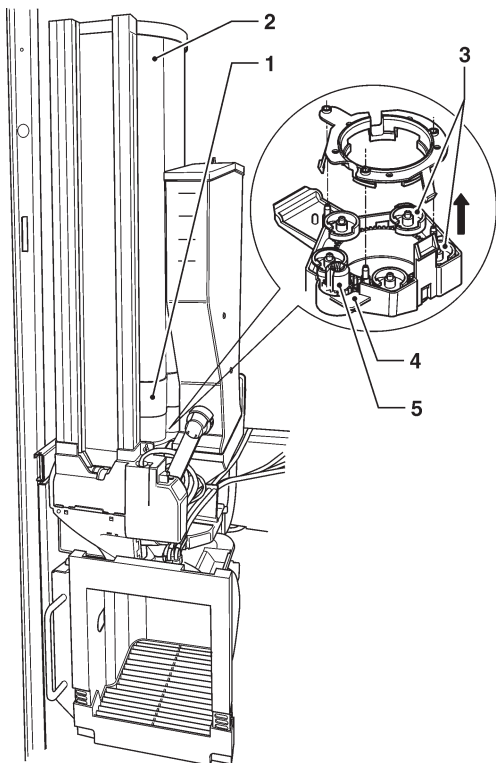
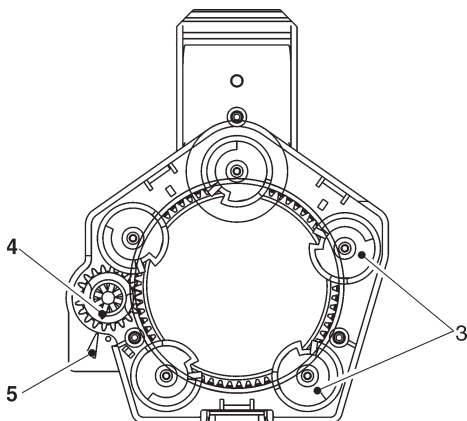


Fig. 34

- 1- Cup stacker
- 2- Extractable column
- 3- Cup release scrolls
- 4- Toothwheel microswitch activator
- 5- Reference notch



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 parts by using a solution of hot water and sanitising products and dry them carefully.

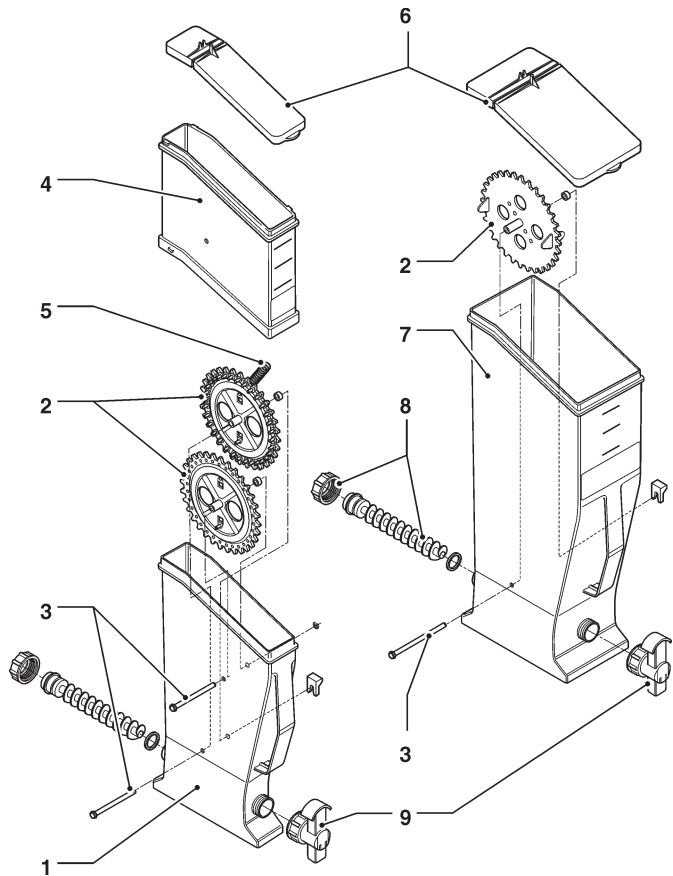


Fig. 35

- 1- 2 l container base
- 2- Gear wheels
- 3- Pins for wheel
- 4- 2 l container
- 5- Beater spring
- 6- Container covers
- 7- 4 l container
- 8- Auger
- 9- Powder outlet port

BOILER MAINTENANCE

Descal the boiler at regular intervals, according to the hardness of the mains water and the number of selections you have performed.

This operation must be carried out by qualified technical personnel only.

To descale, remove the boiler from the machine.

To descale, use biodegradable, atoxic and non-aggressive products only.

Rinse abundantly before re-assembling the parts.

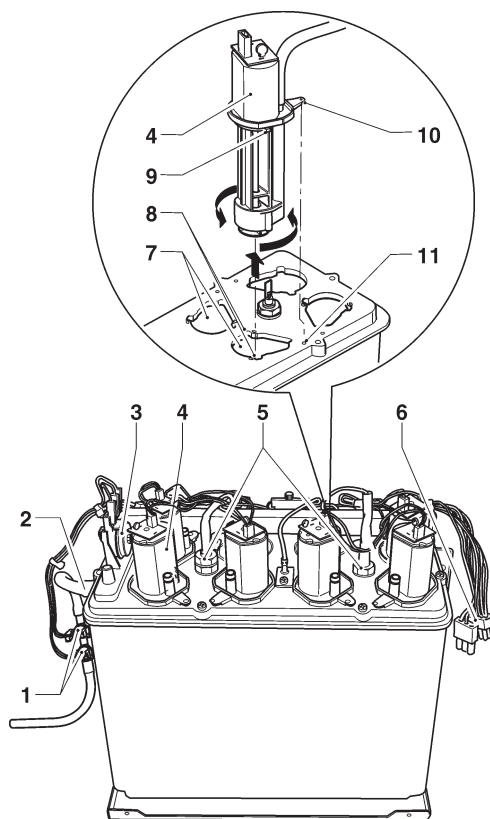


Fig. 36

- 1- Anti-boil thermostats (manually reset)
- 2- Overflow tube
- 3- Safety thermostat (manually reset)
- 4- Water dispensing pumps
- 5- Heating element terminals
- 6- Boiler connectors
- 7- Bayonet connection
- 8- Guide for coupling (right-left)
- 9- Pump guides
- 10- Locking lever
- 11- Locking indentation

On reassembling, make sure that:

- Electrical contacts (terminals, faston, etc.) are perfectly dried and well-tightened;
- Safety and anti-boil thermostats are properly positioned and connected;
- Water connections are correct.

Important!!!

If the boiler heating system should work without water for any reason whatsoever, check the proper operation of the boiler temperature probe before setting the machine at work.

If dry heating should continue until the safety thermostat trips (see the water circuit), the boiler temperature probe will be irreversibly damaged and must be necessarily replaced.

DISASSEMBLING PUMPS

Pumps are secured to the cover by means of a bayonet connection.

To disassemble them:

- Detach the connector
- Turn the pump for forcing slightly to overcome the snap lock.

The direction of rotation is alternatively clockwise and counterclockwise.

HEAT PROTECTION OF BOILERS

In case of action check and remove the cause of the failure before restoring the thermostats manually.

INSTANT BOILER

Anti-boil thermostats (manually resettable) will deactivate the boiler heating element as a result of a failure of the control system.

Anti-boil thermostats will become active as soon as steam is condensed in the overflow tube by way of boiling. Thermostats are set to act as soon as the temperature is above 80°C.

The safety thermostat (manually resettable) will deactivate the boiler heating element as a result of a breakdown in the temperature control system and the failure to act of anti-boil thermostats.

The safety thermostat will act (at a temperature above 105°C) to prevent the boiler from dry-heating.

ESPRESSO BOILER

The espresso boiler has a contact safety thermostat intended to deactivate the boiler heating element if the boiler temperature should exceed 125°C.

To reset the safety thermostat, press the button on the thermostat.

Important!!!

If one of the safety thermostats should act, the boiler temperature probe will be irreparably damaged and you must necessarily provide for its replacement.

REPLACEMENT OF GRINDING WHEELS

(ONLY MODELS WITH AUTOMATIC GRINDING REGULATION)

The function intended to control grinding wheels will display a "Grinding wheel wear" message as soon as you power on the machine if the grinding time should exceed the grinding time stored when grinding wheels were new by over 50%.

After having replaced the grinding wheels and reassembled the grinding wheel ring nut, use the function "New grinding wheels". It is intended to reset the times you have stored and to store the new average initial grinding time you have measured during the first selections.

After having replaced the grinding wheels or the grinder, use the function "Grinding wheel test" before pouring coffee.

- If you confirm the test, grinding wheels come close to each other to touch;
- the machine will stop, waiting for confirmation;
- if you confirm once again, grinding wheels depart and rotate the grinding wheel ring nut by some turns;
- if you pour coffee and dispense some selections of reference, grinding will automatically become stable.

BOARD FUNCTION

CONFIGURATION OF ELECTRONIC BOARDS

The electronic boards are designed to be used on several equipment models.

If replaced or in order to change the machine performance, it will be necessary to check the configuration of the boards and to download the corresponding software.

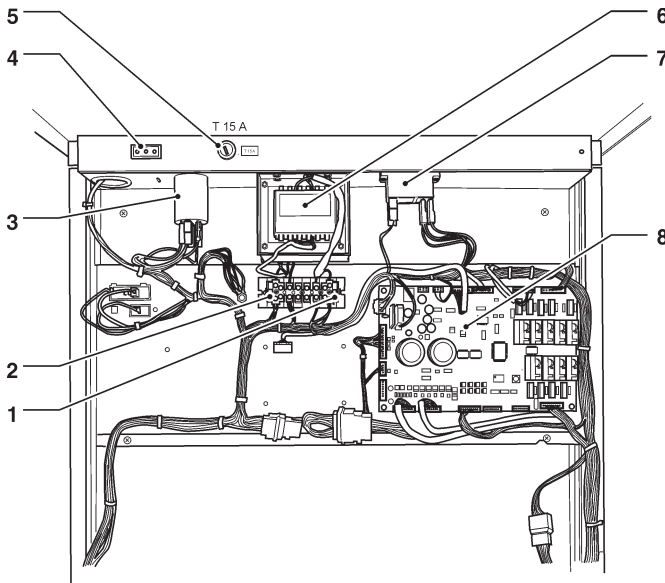


Fig. 37

- 1- Transformer primary fuses
- 2- Transformer secondary fuses
- 3- Radio interference suppressor
- 4- Socket always live
- 5- Mains fuse
- 6- Transformer
- 7- Instant boiler heating activation relay
- 8- Actuation board

SOFTWARE UPDATE

The machine is equipped with Flash EPROM's that can be electrically rewritten.

Use a proper program and system (personal computer or hand-held computer) to rewrite the machine management software without replacing the EPROM's.

PRE-PROGRAMMING

After having loaded the software, use the new board to define which type of keyboard to use before initialising or programming the various parameters.

To access the pre-programming function (keyboard choice), hold down the pre-programming button (see fig. 39 - 9) while powering on the machine.

The display will show the "pre-programming" message flashing on and off. Press button (9) quickly to scroll the list of all available keyboards (Canto numerical - Canto classic - etc.).

Hold down button (9) until you hear a sound signal. The keyboard on the display will be stored and you can start initialising.

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 the actuation board.

- The LEDs can supply the following information during the operation:
- The green LED (26) is flashing on and off during the normal operation of the C.P.U. board;
- The yellow LED (28) will turn on when 5 Vdc is applied;
- The red LED (27) will turn on if the software is reset for any reason whatsoever.

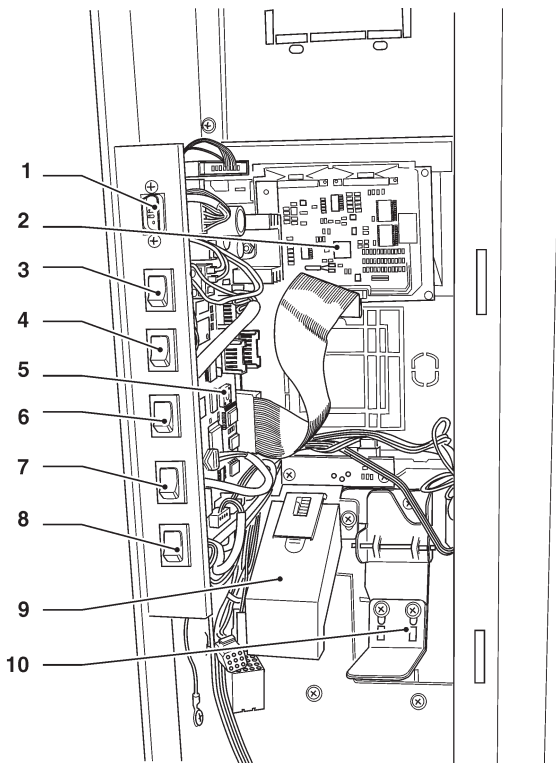


Fig. 38

- 1- RS232 serial port
- 2- Display board
- 3- "Statistics" button
- 4- "Washing" button
- 5- C.P.U. board
- 6- "Cup catcher" button
- 7- "Programming" button
- 8- "Ingredient priming" button
- 9- Coin chute
- 10- Coin return lever

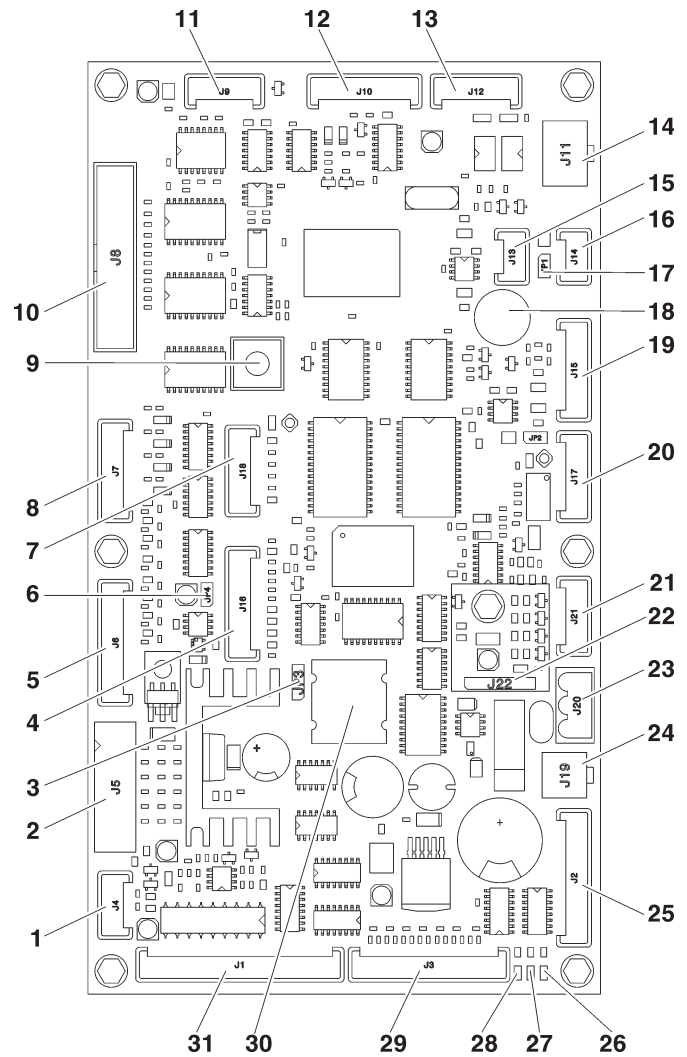


Fig. 39

- 1- Door micro (optional)
- 2- Validators
- 3- Battery jumper (2-3)
- 4- To the button/LED board
- 5- Not used
- 6- JP4 WDI jumper (closed)
- 7- Up-key
- 8- Numeric selection keyboard (optional)
- 9- Programming button
- 10- Graphical display
- 11- not used
- 12- RS232 serial port
- 13- EXE/BDV payments
- 14- MDB payments
- 15- Can-Bus
- 16- Can-Bus
- 17- JP1 Can-Bus jumper (closed)
- 18- Buzzer
- 19- Not used
- 20- Not used
- 21- Not used
- 22- RAM data expansion (optional)
- 23- 34Vdc power supply
- 24- Door lighting connection
- 25- Lighted path and mechanical counter
- 26- Green led DL3 "RUN"
- 27- Red led DL2 "RESET"
- 28- Yellow led DL1 "+5V"
- 29- To the external programming and washing button
- 30- Battery
- 31- Not used

ACTUATION BOARD

This board (see fig. 39) is intended to activate the 230 V~ users through relays and the direct current motors directly. Moreover, it can manage the signals from the cams and/or microswitches on the various users. Moreover, it can control the instant boiler relay. The board is supplied at 24Vac.

The software intended to manage the board is directly loaded onto the microprocessor (by means of RS232).

- the green LED 3 (27) is flashing on and off during the normal operation of the board
- the green LED 6 (33) is signalling that 5 Vdc is applied
- the red LED 4 (19) is on during the reset of the board
- the red LED 2 (8) is signalling the operation status of the espresso boiler heating element
- the red LED 1 (9) is signalling the operation status of the instant boiler heating element
- the green LED 8 (29) shows the volumetric counter pulses (if mounted)
- the green LED 5 (5) is signalling that 34 Vdc is applied
- the green LED 7 (24) is signalling that 34 Vdc is regulated and applied.

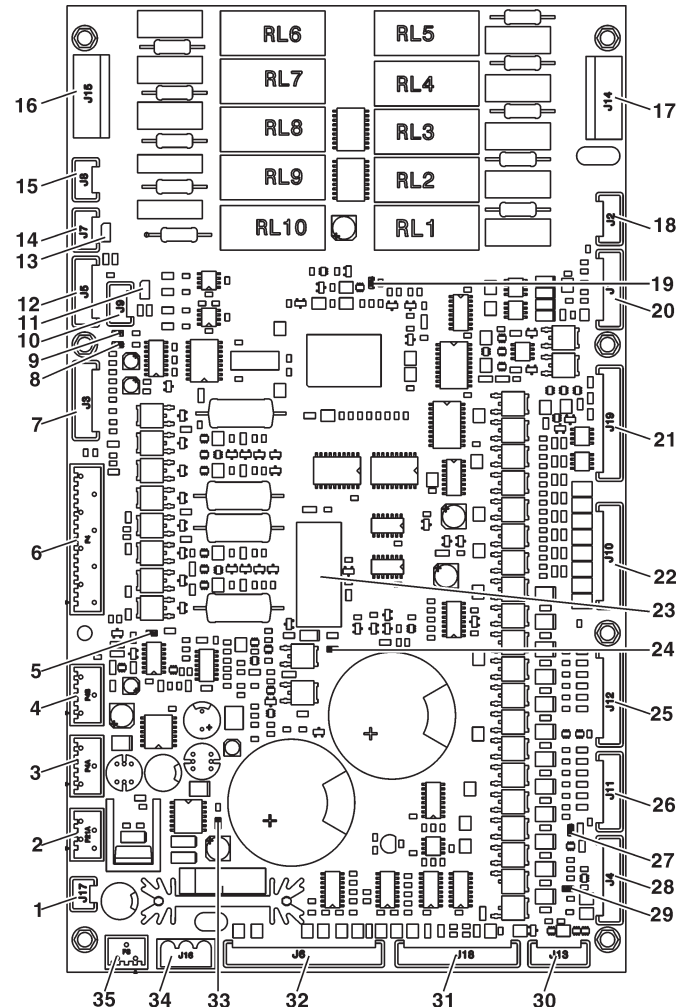


Fig. 40

- 1- Steam suction
- 2- 34 Vdc safety relay coil and door input
- 3- 34 Vdc power supply to the CPU
- 4- 34 Vdc power supply to the CPU
- 5- LEDs
- 6- Z4000 unit
- 7- To the relay expansion board (optional)
- 8- LED 2
- 9- LED 1
- 10- Not used
- 11- Not used
- 12- Probe and instant boiler relay / probe and boiler and espresso Triac board
- 13- JP1 can bus jumper (closed)
- 14- CAN bus
- 15- CAN bus
- 16- 230 V users
- 17- 230 V users
- 18- Not used
- 19- LED 4
- 20- Not used
- 21- 24 V input and output
- 22- MD
- 23- 34 Vdc safety relay
- 24- LED 7
- 25- MF
- 26- PM
- 27- LED 3
- 28- Board programming connector (RS232)
- 29- LED 8
- 30- Not used
- 31- Input
- 32- Input
- 33- LED 6
- 34- 24 Vac power supply
- 35- Not used

RELAY FUNCTION (see the wiring diagram)

- | | |
|------|------------|
| RL1 | = PM |
| RL2 | = MAC 2 |
| RL3 | = ESC 2 |
| RL4 | = ESC |
| RL5 | = ER |
| RL6 | = MAC |
| RL7 | = EEA |
| RL8 | = Not used |
| RL9 | = MSB |
| RL10 | = MSCB |

INSTANT BOILER CONTROL RELAY

this relay is intended to control the trip of the instant boiler heating element

ESPRESSO BOILER CONTROL BOARD

The board will control the action of the espresso boiler heating element.

The board is arranged on the espresso shelf.

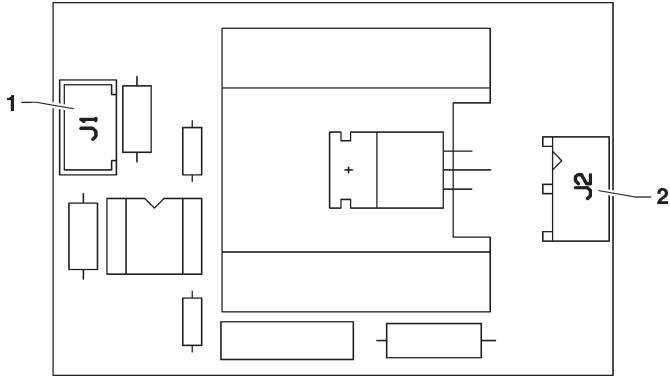


Fig. 41

- 1- To the actuation board
- 2- Connector with the boiler heating element

CURRENT REGULATOR BOARD

The current regulator board will supply lighting LEDs by means of direct current.

The board will provide for the constant brightness of aesthetic panels.

The board is arranged at the bottom of the coin mechanism compartment.

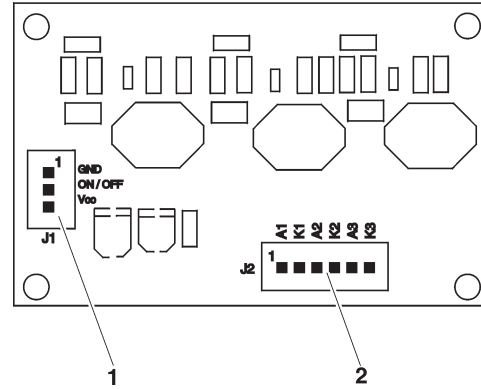
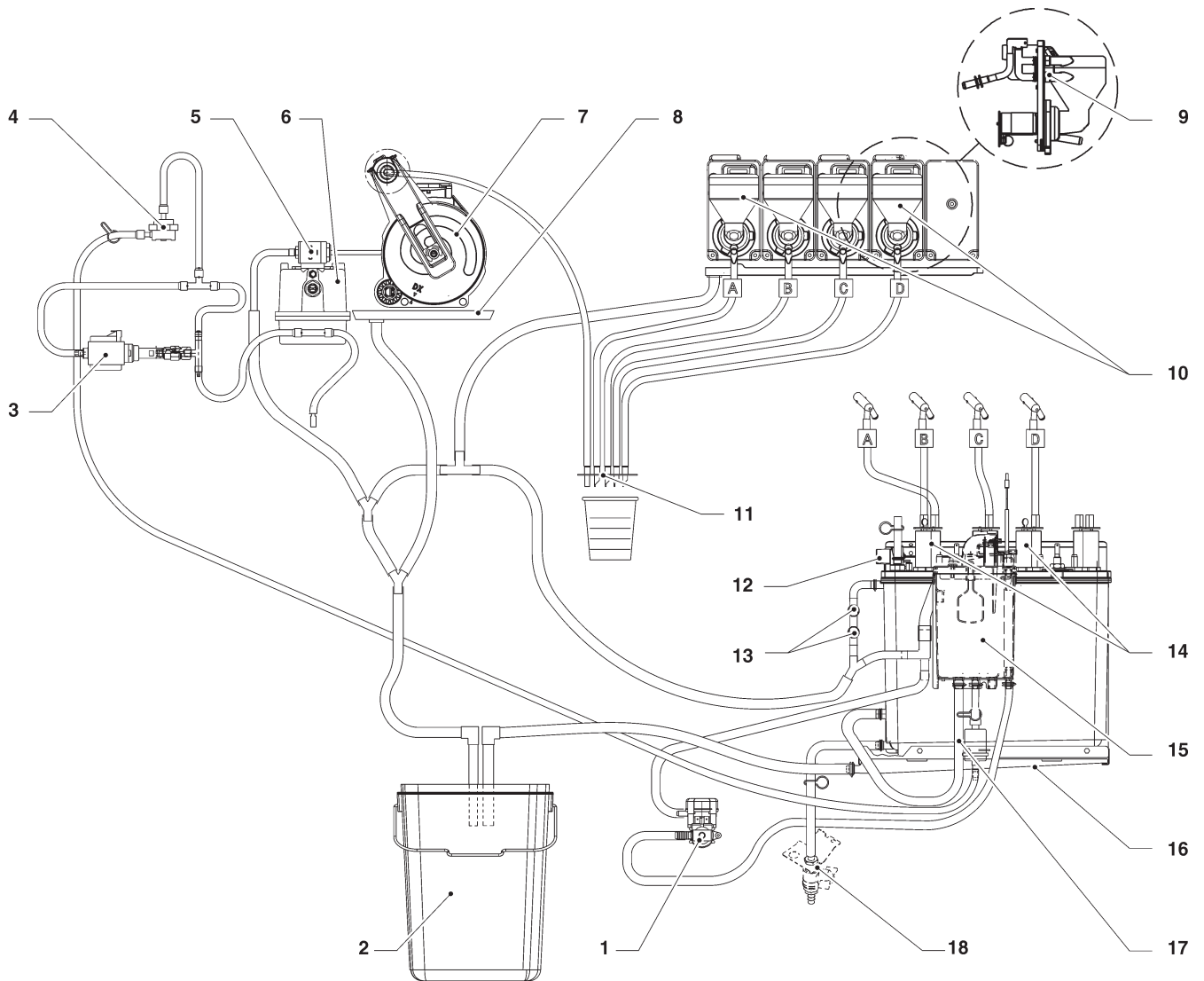


Fig. 42

- 1- To the CPU board
- 2- To the lighting LEDs

ESPRESSO WATER CIRCUIT



- 1- Water inlet solenoid valve
- 2- Liquid waste bucket
- 3- Vibration pump
- 4- Volumetric counter
- 5- Espresso solenoid valve
- 6- Coffee boiler
- 7- Espresso unit
- 8- Espresso tray
- 9- Small nozzle plate

- 10- Mixers
- 11- Dispensing nozzles
- 12- Safety thermostat
- 13- Anti-boil thermostat
- 14- Rotation instant pumps
- 15- Air-break
- 16- Instant boiler tray
- 17- Mechanical filter
- 18- Hot water cock (optional)

PROGRAMMING SUMMARY

The machine can work in 3 different operation states:

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

To be able to access the programming menus, press the programming button **↑** (see fig. 41):

Now, the machine is set to the Filler Menu mode.

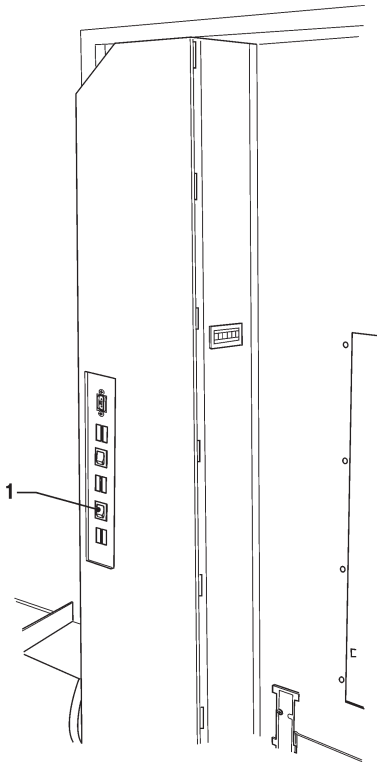


Fig. 41

1- Programming button

Press the key **←** to move from the "Technician Menu" to the "Filler Menu" and vice versa.

SURFING MODE

To move inside the menus, use the keys shown by the figure:

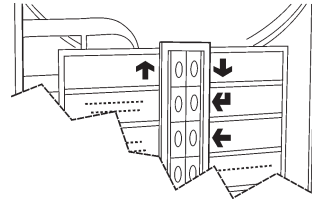
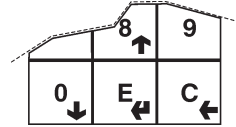


Fig. 42



SCROLLING KEYS UP **↑** AND DOWN **↓**

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.

ENTERING ALPHANUMERIC VALUES

When the management software requires the operator to enter alphanumeric characters, keys assume the following functions:

- The Enter key **↵** will enable the operator to modify / enter the first character, to confirm it and to move to the next one.
- The keys **↑** and **↓** will enable the operator to scroll all available values.

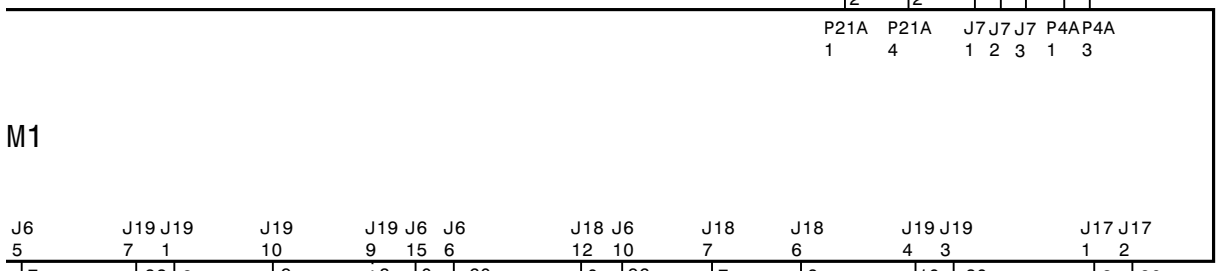
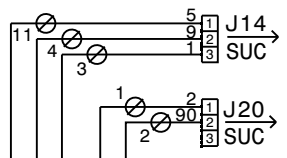
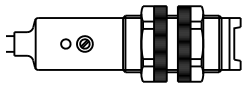
APPENDIX

WIRING DIAGRAMS

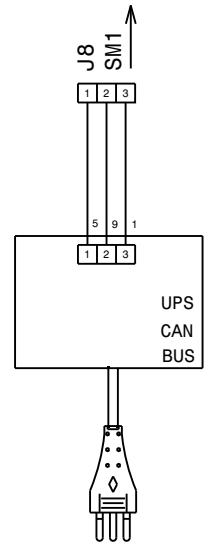
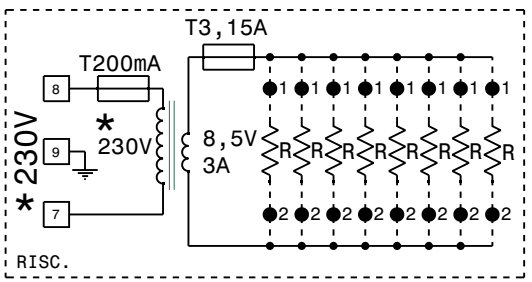
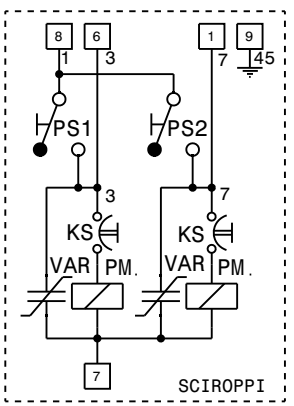
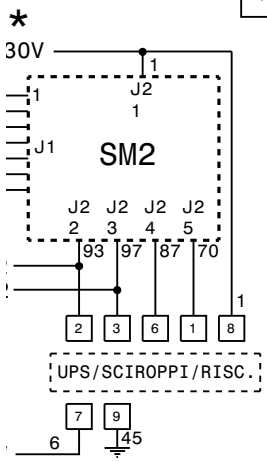
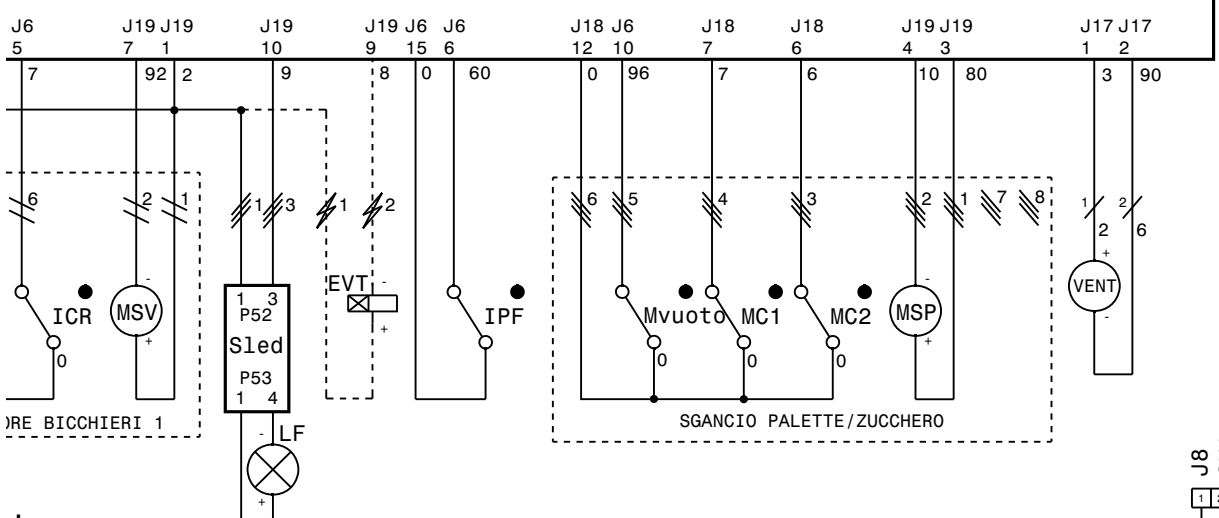
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FOR AUSTRALIA 230-240V 50-60Hz
FOR BRASIL AND KOREA 220-230V 60Hz

TZ



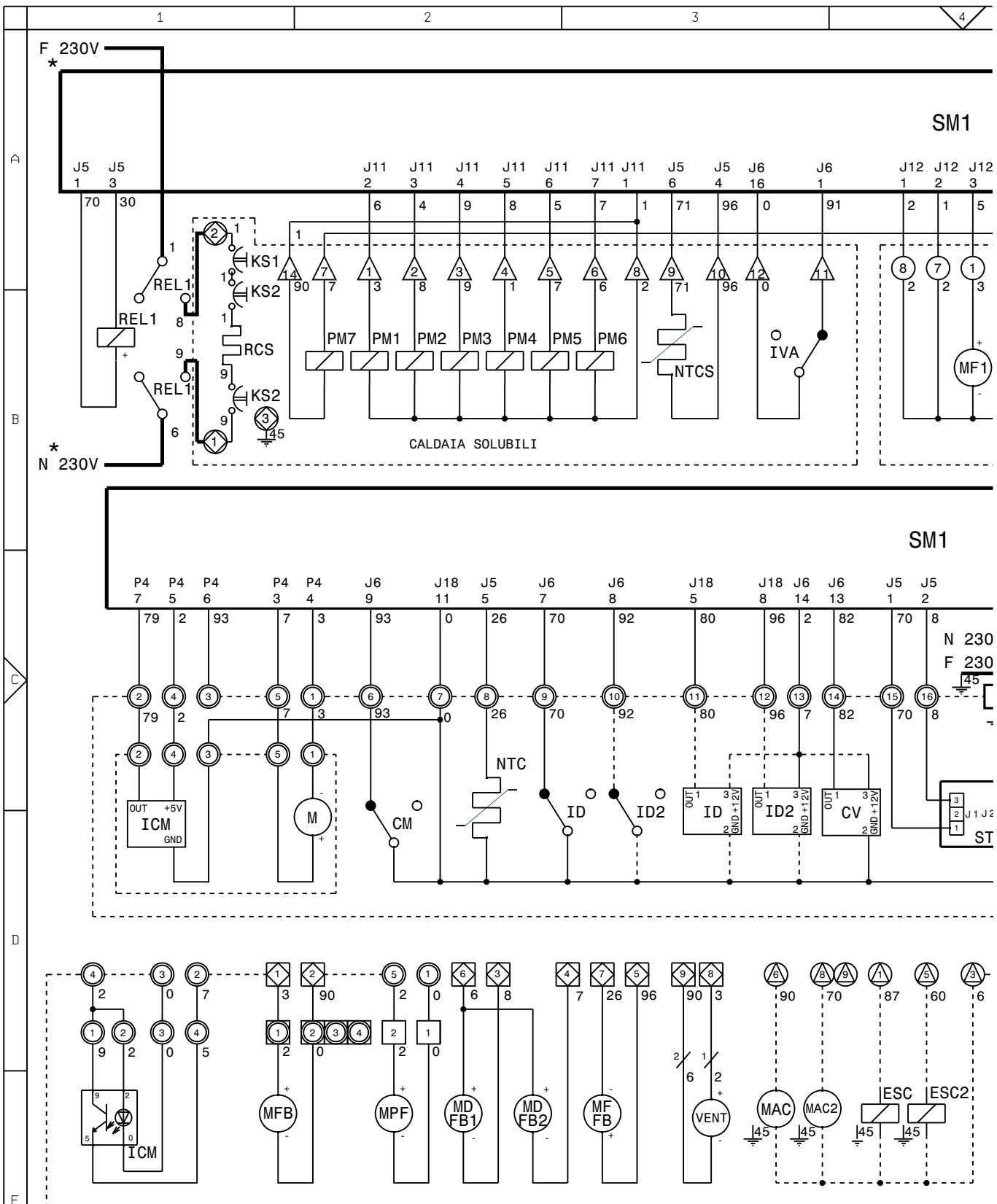
M1



ROSA 8 GRIS 9 BLANCO	N&W GLOBAL VENDING S.p.A. Valbrembo - Italia	MODEL Canto -	DEFINITION SCHEMA ELETTRICO - WIRING DIAGRAM ALIMENTAZIONE - POWER SUPPLY	DATE 03/06/2008	SHEET 1/1	PREPARED BREMBILLA	CHECKED MONGUZZI	
					LEGENDA -	PART NUMBER 608548502		VERSION A

- MSCB CUP COLUMN SHIFT MOTOR
- MSP STIRRER RELEASE MOTOR
- MSV TRAY SHIFT MOTOR
- MVUOTO EMPTY STIRRER MICRO
- PB POWER SUPPLY SOCKET
- PM PUMP
- PS1-.. SYRUP BUTTON
- PSB CUP RELEASE BUTTON

- R HEATING ELEMENT
- SLED LED BOARD
- SM1 CONTROL BOARD
- SM2 EXPANSION BOARD
- TZ CUP SENSOR
- UPS COLD UNIT BOARD
- VAR VARISTOR
- VENT FAN

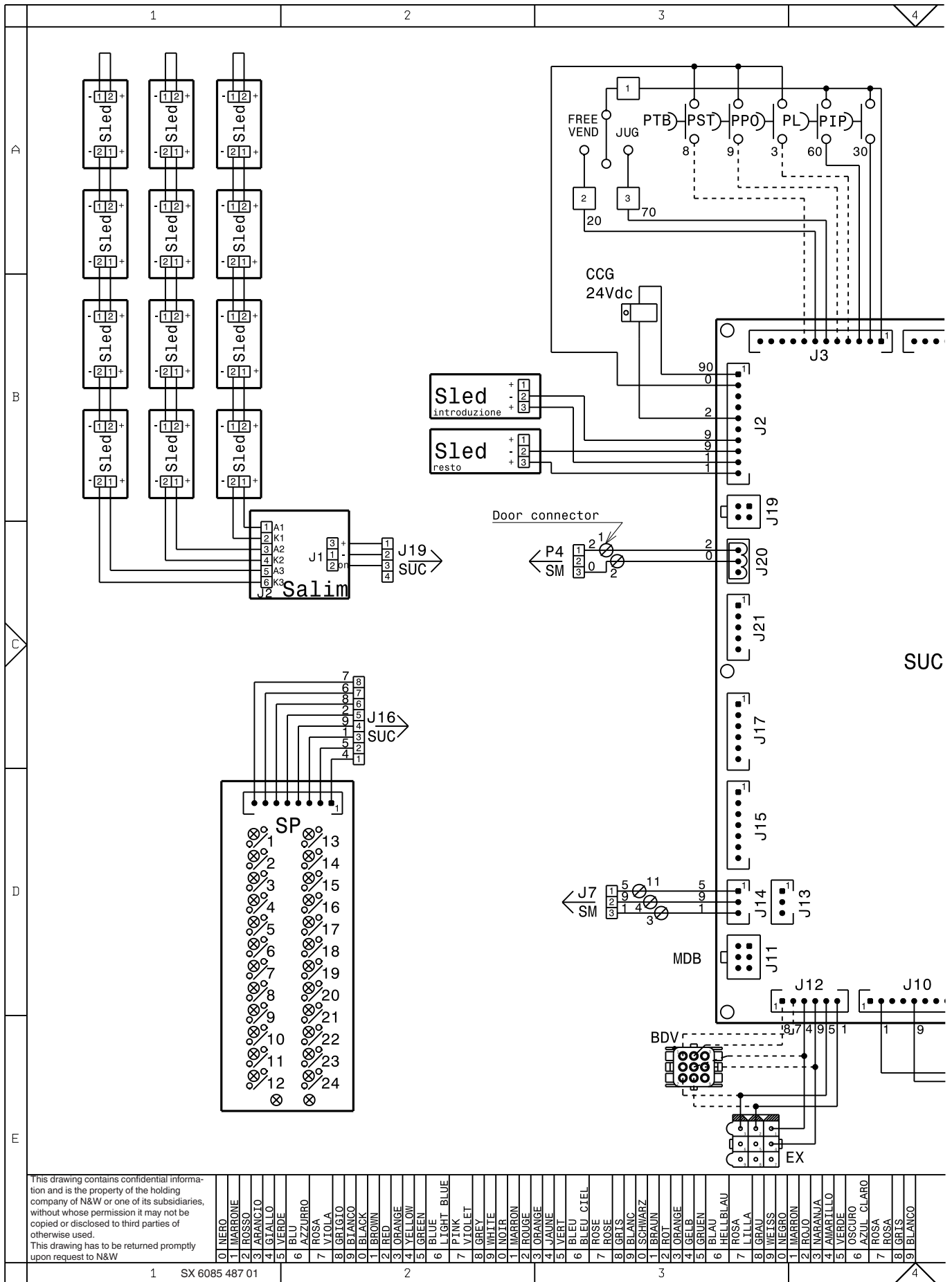


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01	NERO	01	NERO	01	NERO	01	NERO
02	MARRONE	02	ROSSO	02	ROSSO	02	ROSSO
03	ARANCIO	03	ARANCIO	03	ARANCIO	03	ARANCIO
04	GIALLO	04	GIALLO	04	GIALLO	04	GIALLO
05	VERDE	05	VERDE	05	VERDE	05	VERDE
06	BLU	06	BLU	06	BLU	06	BLU
07	AZZURRO	07	ROSA	07	ROSA	07	ROSA
08	GRIGIO	08	VIOLA	08	VIOLA	08	VIOLA
09	BIANCO	09	BIANCO	09	BIANCO	09	BIANCO
10	BLACK	10	BLACK	10	BLACK	10	BLACK
11	BROWN	11	BROWN	11	BROWN	11	BROWN
12	RED	12	RED	12	RED	12	RED
13	ORANGE	13	ORANGE	13	ORANGE	13	ORANGE
14	YELLOW	14	YELLOW	14	YELLOW	14	YELLOW
15	GREEN	15	GREEN	15	GREEN	15	GREEN
16	BLUE	16	BLUE	16	BLUE	16	BLUE
17	LIGHT BLUE	17	LIGHT BLUE	17	LIGHT BLUE	17	LIGHT BLUE
18	PINK	18	PINK	18	PINK	18	PINK
19	GREY	19	GREY	19	GREY	19	GREY
20	WHITE	20	WHITE	20	WHITE	20	WHITE
21	NOLR	21	NOLR	21	NOLR	21	NOLR
22	ROUGE	22	ROUGE	22	ROUGE	22	ROUGE
23	ORANGE	23	ORANGE	23	ORANGE	23	ORANGE
24	JAUNE	24	JAUNE	24	JAUNE	24	JAUNE
25	VERT	25	VERT	25	VERT	25	VERT
26	BLEU CIEL	26	BLEU CIEL	26	BLEU CIEL	26	BLEU CIEL
27	ROSE	27	ROSE	27	ROSE	27	ROSE
28	ROSE	28	ROSE	28	ROSE	28	ROSE
29	GRIS	29	GRIS	29	GRIS	29	GRIS
30	BLANC	30	BLANC	30	BLANC	30	BLANC
31	SCHWARZ	31	SCHWARZ	31	SCHWARZ	31	SCHWARZ
32	ROT	32	ROT	32	ROT	32	ROT
33	ORANGE	33	ORANGE	33	ORANGE	33	ORANGE
34	GELB	34	GELB	34	GELB	34	GELB
35	GRUEN	35	GRUEN	35	GRUEN	35	GRUEN
36	BLAU	36	HELLBLAU	36	HELLBLAU	36	HELLBLAU
37	ROSA	37	ROSA	37	ROSA	37	ROSA
38	GRAU	38	GRAU	38	GRAU	38	GRAU
39	WEISS	39	WEISS	39	WEISS	39	WEISS
40	NEGRO	40	NEGRO	40	NEGRO	40	NEGRO
41	MARRON	41	MARRON	41	MARRON	41	MARRON
42	ROJO	42	ROJO	42	ROJO	42	ROJO
43	MARANJA	43	MARANJA	43	MARANJA	43	MARANJA
44	AMARILLO	44	AMARILLO	44	AMARILLO	44	AMARILLO
45	VERDE	45	VERDE	45	VERDE	45	VERDE
46	OSCURO	46	OSCURO	46	OSCURO	46	OSCURO
47	AZUL CLARO	47	AZUL CLARO	47	AZUL CLARO	47	AZUL CLARO
48	ROSA	48	ROSA	48	ROSA	48	ROSA
49	GRIS	49	GRIS	49	GRIS	49	GRIS
50	BLANCO	50	BLANCO	50	BLANCO	50	BLANCO

CM MOTOR CAM
 CV VOLUMETRIC COUNTER
 ER COFFEE DISPENSING SOLENOID VALVE
 ESC1- COFFEE RELEASE ELECTROMAGNET
 ICM MOTOR CONTROL SWITCH
 ID1-.. COFFEE DOSE SWITCH
 IVA EMPTY WATER SWITCH

KC1-.. COFFEE BOILER CUTOUT
 KS1-2 SAFETY CUTOUT
 M COFFEE UNIT MOTOR
 MAC1- COFFEE GRINDER
 MD1-.. INGREDIENT MOTORS
 MDZ SUGAR INGREDIENT MOTOR
 MF1-.. WHIPPER MOTORS

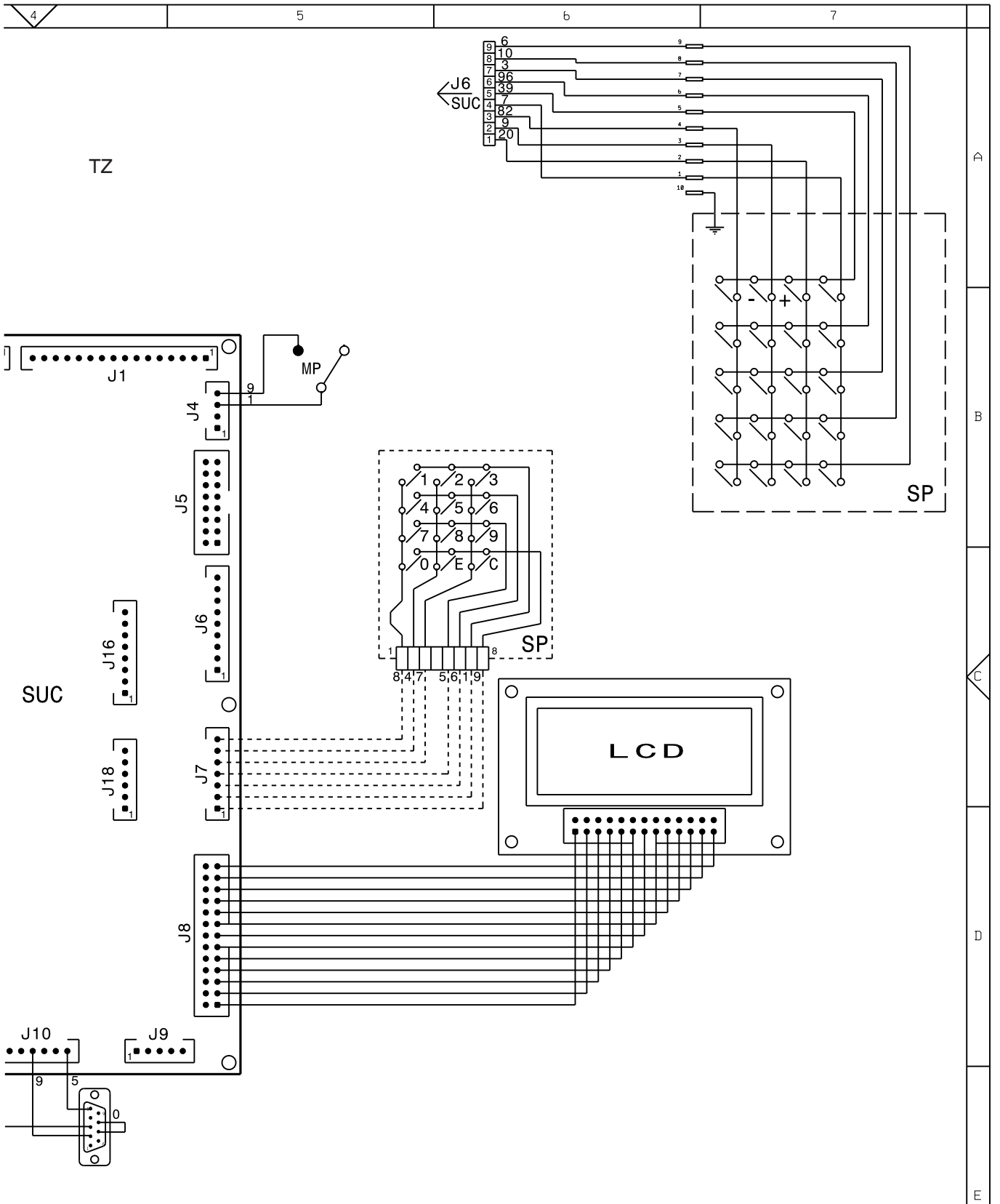


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14	RED
15	ORANGE
16	YELLOW
17	GREEN
18	BLUE
19	LIGHT BLUE
20	PINK
21	VIOLET
22	WHITE
23	GREY
24	NOIR
25	MARRON
26	ROUGE
27	ORANGE
28	JAUNE
29	VERT
30	BLEU
31	BLEU CIEL
32	ROSE
33	ROSE
34	GRIS
35	BLANC
36	SCHWARZ
37	BRUN
38	ROT
39	ORANGE
40	GELB
41	GRUEN
42	BLAU
43	HELLBLAU
44	FOSA
45	LILLA
46	WEISS
47	NEGRO
48	MARRON
49	ROJO
50	MARANJA
51	AMARILLO
52	VERDE
53	OSCURO
54	AZUL CLARO
55	FOSA
56	GRIS
57	BLANCO

BDV BDV COIN MECH CONNECTOR
 CCG GENERAL COUNTER
 DOOR DOOR CONNECTOR
 EX EXECUTIVE COIN MECH CONNECTORS
 FREE FREE VEND SWITCH

JUG JUG FACILITIES SWITCH
 LCD LIQUID CRYSTAL DISPLAY
 MDB MDB COIN MECH CONNECTOR
 MP OPEN DOOR SIGNALLING MICRO
 PIP PROGRAMMING BUTTON



L. GRIS 9. BLANCO	N&W GLOBAL VENDING S.p.A.	MODEL	DEFINITION	DATE	SHEET	PREPARED	CHECKED
	Valbrembo - Italia	Canto	SCHEMA ELETTRICO - WIRING DIAGRAM	03/06/2008	1 / 1	BREMBILLA	MONGUZZI
			Porta - Door	LEGENDA	PART NUMBER		VERSION
				-	608548701		

PL WASHING BUTTON
 PPO "PRIMING" BUTTON
 PST STATISTICS BUTTON
 PTB CUPS SHIFTER BUTTON

RS232 SERIAL PORT
 SALIM POWER SUPPLY UNIT BOARD
 SLED LED BOARD
 SUC C.P.U. BOARD

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