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INSTALLATION, USE, MAINTENANCE

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**Solista**

**Espresso**

**EN**

English



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**N&W GLOBAL VENDING S.p.A.**  
ad unico socio

Sede legale: Via Roma 24  
24030 Valbrembo (BG) Italia

Telefono +39 035 606111  
Fax +39 035 606463  
www.nwglobalvending.com

Cap. Soc. € 41.138.297,00 i.v.  
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Reg. Produttori A.E.E.: IT08020000001054

Valbrembo, 01/11/2014

**DICHIARAZIONE DI CONFORMITA'  
DECLARATION OF CONFORMITY  
DECLARATION DE CONFORMITÉ  
KONFORMITÄTSEKTLÄRUNG  
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+ 2008/39/CE
80/590/EEC and 89/109/EEC	EC 1935/2004
EC 10/2011	
2002/95/EC	2011/65/EC
2002/96/CE	2012/19/UE

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

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## **N&W GLOBAL VENDING SPA**

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VIA DEL CHIOSO 13 - 24030 MOZZO (BG)

VIA DELEDDA 16 - 24030 MAPELLO (BG)

VIA SALVO D'ACQUISTO 7/9 - 24050 GRASSOBBIO (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: 2010 - 04 - 27

*Registration Number:*

**IT - 12979**



*René Wasmer*

*President of IQNET*



*Gianrenzo Prati*

*President of CISQ*

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VIA GRAZIA DELEDDA 18/20 - 24030 MAPELLO (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: 2011 - 06 - 27

Expiry date: 2013 - 05 - 14

*Registration Number:*

**IT - 8753**



Michael Drechsel

*President of IQNET*



Gianrenzo Prati

*President of CISQ*

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# English

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## Foreword

**The technical documentation forms an integral part of the equipment and must therefore accompany any movement or transfer of ownership in order to allow further consultations by the operators.**

Before installing and using the equipment you need to scrupulously read and understand the contents of the documentation, as it provides important information related to installation safety, to the utilisation standards and to the maintenance operations.

**The manual is divided into three chapters.**

The **first chapter** describes the loading and ordinary cleaning operations to be performed in the areas of the machine which can be accessed through just the use of the door opening key, without the need of using other tools.

The **second chapter** contains the instructions related to a correct installation and the information required to make the best use of the machine.

The **third chapter** describes the maintenance operations which require the use of tools for accessing potentially dangerous areas.

**The operations described in the second and third chapter shall be carried out only by personnel with specific knowledge of the operation of the machine both from the point of view of electrical safety and of hygiene.**

## IDENTIFYING THE MACHINE AND THE CHARACTERISTICS

Each machine is identified by means of a specific serial number which can be read from the plate placed inside the machine on the right side.

The plate is the only one to be recognised by the manufacturer as identification for the machine and it sets out all the data which enables the manufacturer to provide, promptly and safely, technical information of any kind and facilitate the management of spare parts.

## IN CASE OF FAILURE

In most of the cases technical problems can be solved by means of small interventions; we therefore suggest to read this manual carefully before contacting the manufacturer.

In case of anomalies or malfunctioning which cannot be solved, please contact:

N&W GLOBAL VENDING S. p. A.  
Via Roma 24  
24030 Valbrembo  
Italy - Tel. +39 035606111

## TRANSPORT AND STORAGE

In order to avoid causing damage to the machine, the loading and unloading manoeuvres must be performed with particular care.

It is possible to lift the machine with a motorised or manual forklift, by positioning the fork underneath the machine and on the side which is clearly indicated by the sign on the cardboard packaging.

**Instead, the following should be avoided:**

- Overturning the vending machine;
- Dragging the vending machine with ropes or similar;
- Lifting the vending machine with lateral grips;
- Lifting the vending machine with straps or ropes
- Shaking the vending machine and/or the packaging.

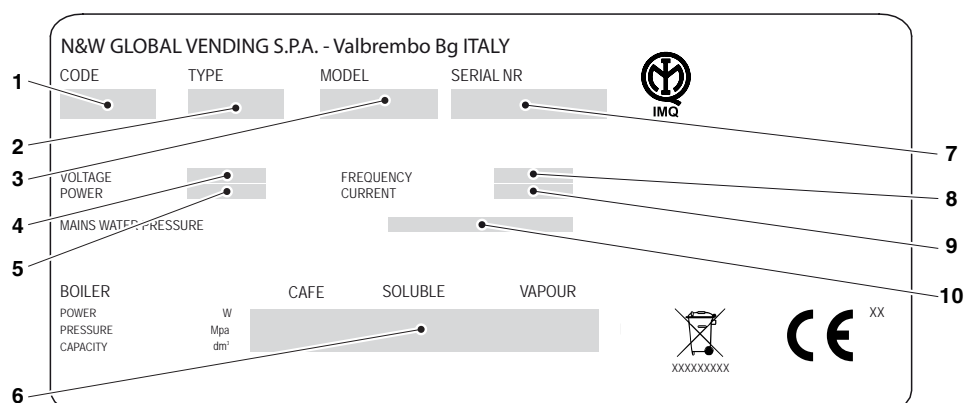
The storage environment needs to be dry and of a temperature between 0 and 40 °C.

If the original packaging is used, it is possible, if necessary, to overlay 2 machines

It is important to keep the machine in the vertical position indicated by the arrows on the packaging.

Fig. 1

- 1- Product code
- 2- Type
- 3- Model
- 4- Work voltage
- 5- Power absorbed
- 6- Boilers data
- 7- Serial No.
- 8- Frequency
- 9- Current
- 10- Characteristics of the water mains





## POSITIONING OF THE VENDING MACHINE

The machine is not suitable for outside installations, it needs to be installed inside dry premises, with temperature between 2° C and 32° C and it cannot be installed in environments in which jets of water are used for cleaning (i.e.: large kitchens, etc.).

The machine shall be positioned next to a wall and in such a way that the back of it is at a minimum distance of 4 cm from the wall in order to allow regular ventilation.

The machine shall not be covered with cloths or similar.

The machine shall be positioned so that the maximum inclination does not exceed 2°.

If needed, level it out using the appropriate adjustable feet provided with the machine.

### Important!!

In the event of unscheduled maintenance interventions and/or repairs, the vending machine can be accessed from the back.

The possibility should therefore be envisaged of rotating the machine so that the back panel can be removed.

### Positioning over cabinet

The machine can be positioned over a table or another suitable support (suggested height 800 mm).

We suggest using, where possible, the appropriate cabinet, where you can place the waste container, the water supply tank and, in the event of very hard water, the descaler.

### Combined with MiniSnakky

The machine can also be used in series, being capable of managing the "master/slave" function.

By using the numerical keyboard supplied with the slave machine, it is possible to also control the selections of the MiniSnakky machine.

If you intend to use the back module for the water supply tank, a minimum distance of 450 mm is required on the opening side of the module.

## TECHNICAL CHARACTERISTICS

Height	mm	650
Height with coffee container	mm	750
Dimensions with open top	mm	1,000
Width	mm	410
Depth	mm	564
Dimensions with open door	mm	855
Weight	Kg	42
Power supply voltage	V~	230-240
Power supply frequency	Hz	50
Installed power	W	1449

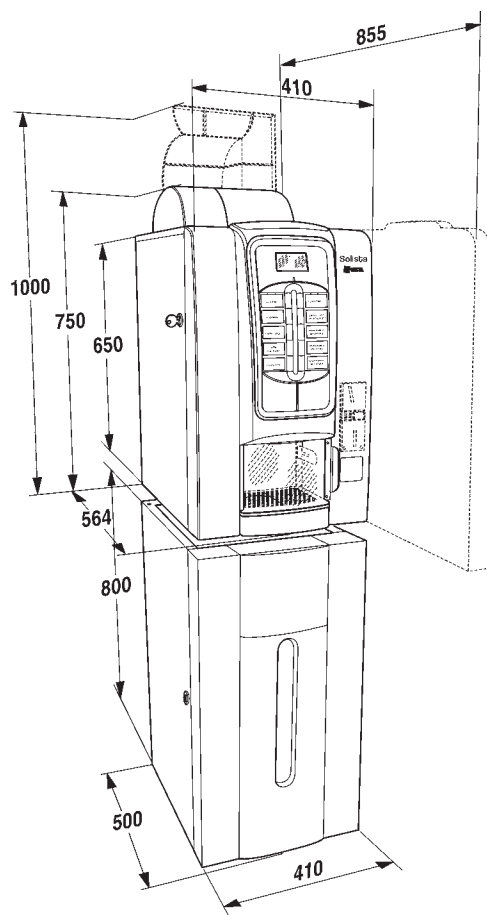


Fig. 2

### CUP DISPENSER

With a diameter of the upper border of 70-7+1 mm with a capacity of approx. 200 cups and 180 stirrers.

### PAYMENT SYSTEM

The machine is supplied with electrical arrangement for systems with protocol Executive, BDV, MDB and for monitoring 24 Vdc validators.

Apart from the coin mech housing, there is space for the optional installation of the most common payment systems.

### SALES PRICES

A different price can be programmed for each selection; The standard setting foresees the same sales price for all selections.

### CASH TILL FOR COINS

In plastic. Cover and lock available as accessories.

### WATER SUPPLY

Water supply from mains with water pressure between 0.05 and 0.85 Mpa (0.5 and 8.5 Bar).

The machine's software is arranged for controlling the water supply from an internal tank (optional kit which can be placed in the service cabinet).

## POSSIBLE SETTINGS

**Espresso:** granulometry; coffee dose and water volumetric

**Instant:** coffee doses, timed instant and water

**Temperature:** can be adjusted via software.

### ENABLE SIGNALS

- Presence of cups
- Presence of water
- Presence of coffee
- Position of the coffee unit
- Liquid waste container
- The operating temperature is reached

### SAFETIES

- door switch
- boiler safety thermostat with manual reset
- air-break float jamming
- anti-flooding solenoid valve
- full liquid waste container float
- time protection of:
  - Pump
  - Coffee unit gear motor
  - Coffee dispensing
  - Grinder
  - Column shift motor
- thermal protection of:
  - Ingredient motors
  - Coffee unit gear motor
  - Coffee release electromagnet
  - Pump
  - Whipper motors
  - Grinder motor
- protection with fuse
  - Board and coin mech power supply transformer (Primary and secondary)

## CONTAINERS CAPACITY

The machine can be fitted with different combinations of containers of a different type for dispensing different types of products.

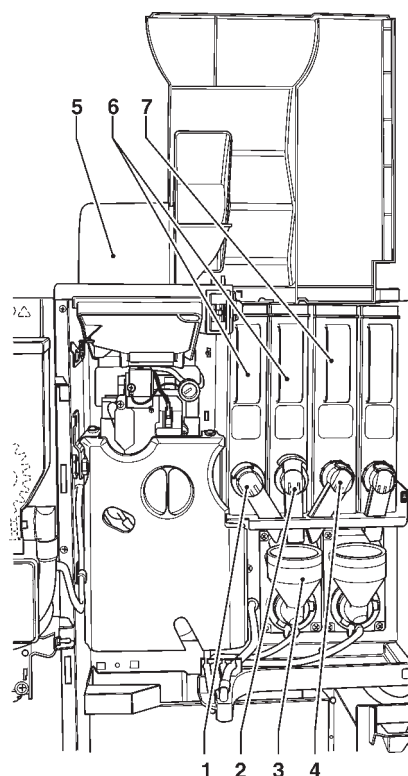


Fig. 3

- 1- Right nozzle
- 2- Central nozzle
- 3- Mixer
- 4- Left nozzle
- 5- Container for coffee beans
- 6- Container 1 l
- 7- Container 2 l

The container for coffee beans has a capacity of approx. 1.2 Kg.

For the instant products, depending on the models, the machine can be fitted with containers with a capacity from 1.0 to 2.0 l.

The indicative product quantity is summarised in the following table

Container dimension	1.0 l	2.0 l
Instant coffee Kg	0.3	0.55
Chocolate Kg	0.85	1.5
Milk Kg	0.37	1.5
Lemon tea Kg	1.1	1.65

The real quantity can differ from the one indicated because of the different specific weight of the various products.

## POWER CONSUMPTION

The power consumption of the machine depends on many factors, amongst which are the temperature and the ventilation of the environment where the machine is located, the temperature of the inlet water, the temperature in the boiler, etc.

A measurement at a room temperature of 22 °C was carried out and the following power consumption was detected:

Reaching the temperature 32,9 Wh

24h stand by: 1.110,0 Wh

The power consumption calculated on the above-mentioned average data shall be deemed as purely indicative.

## ACCESSORIES

The machine can be fitted with a wide range of accessories in order to vary its performances:

The installation kits are supplied with installation and test instructions, which shall be scrupulously followed in order to maintain the safety of the machine.

**The installation and the subsequent test operations shall be performed by qualified personnel, with specific knowledge of the operation of the machine both from the point of view of electrical safety and of hygiene.**

## VARIABLE COMBINATION LOCKS

Some models are supplied with variable combination locks.

The lock has a key of silver colour, with the standard combination, to be used for the normal use of opening and closing.

It is possible to customise the locks using a kit, available as an accessory, which allows the lock combination to be changed.

The kit is composed of a change key (black) for changing the standard combination and of change keys (gold) and use keys (silver) for changing and using the new combinations.

Change and use key packs with other combinations can be supplied on request.

Furthermore, other use key (silver) packs can be requested specifying the combination printed on the keys. Usually the use key (silver) is the only one used, whereas the combination change keys (gold) may be kept as spare keys.

**Avoid using the change keys for normal opening as this could damage the lock.**

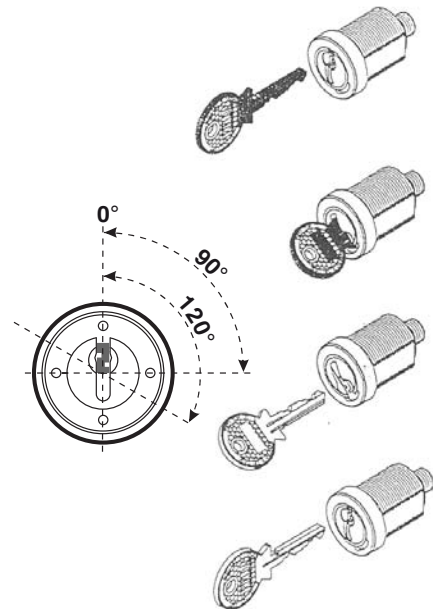


Fig. 4

### To change the combination:

- Open the door of the machine to avoid forcing rotation;
- Lightly lubricate using a spray inside the lock;
- Insert the current change key (black) and turn it to the change position (reference notch at 120°);
- Extract the current change key and insert the change key (gold) with the new combination;
- Turn to the closing position (0°) and extract the change key.

The lock has now assumed the new combination.

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

## Chapter 1

# Cleaning and loading

The machine is not suitable for outside installations, it needs to be installed inside dry premises, with temperature between 2° and 32° C and it cannot be installed in environments in which jets of water are used for cleaning (i.e.: large kitchens, etc.).

### DOOR SWITCH

When the door is opened, a switch removes the voltage from the electrical system of the machine to allow the operations, described below, of loading and ordinary cleaning, to be carried out in full safety.

**All the operations which require voltage with the door open shall be EXCLUSIVELY performed by qualified personnel who has been informed of the specific risks deriving from such a situation.**

### CLEANING AND STERILISATION

In accordance with the current health and safety regulations, the operator of a vending machine is responsible for the hygiene of the materials which are in contact with food products; the operator shall therefore carry out maintenance interventions to the machine so to prevent the formation of bacteria.

**When the machine is installed, the hydraulic circuits and the parts in contact with the food products need to be sterilised in order to eliminate any bacteria which could have formed during storage.**

It is recommended that sterilising products are also used for cleaning the surfaces which are not directly in contact with the food products. Some parts of the machine can be damaged by aggressive detergents.

The manufacturer shall not be held responsible for any damage caused by the non-observance of the above or by the use of aggressive or toxic chemical products.

**Always switch off the machine before starting maintenance operations which require disassembling components.**

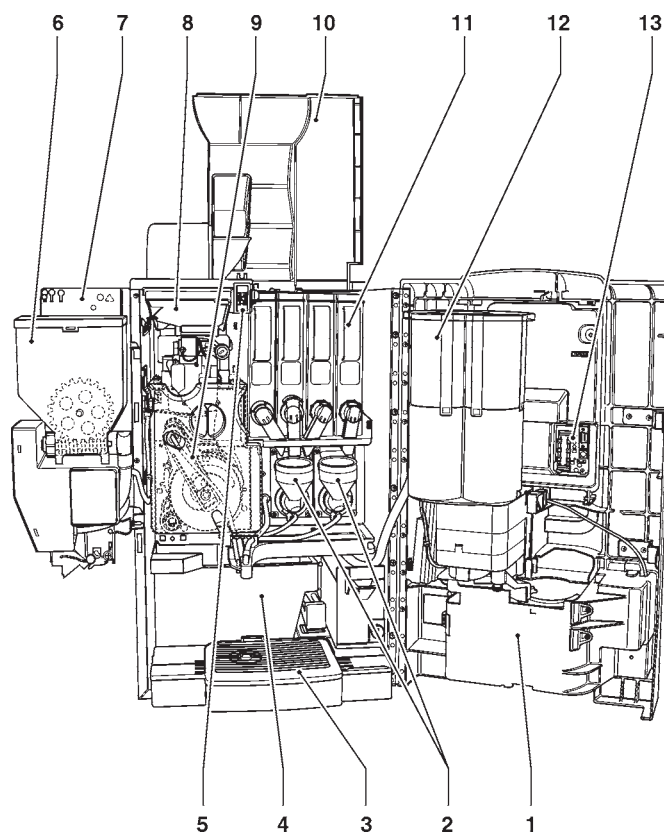


Fig. 5

- 1- Dispensing unit
- 2- Mixer
- 3- Liquid waste container
- 4- Solid waste container
- 5- Door switch
- 6- Sugar container
- 7- Stirrer dispenser
- 8- Container for coffee beans
- 9- Infuser unit
- 10- Upper panel
- 11- Instant powder containers
- 12- Cup dispenser
- 13- Service buttons

### USE OF HOT DRINKS VENDING MACHINES IN OPEN CONTAINERS

(i.e. Plastic cups, ceramic cups, mugs)

The vending machines in open containers shall be used exclusively for the sale and distribution of drinks which are produced by:

- Infusion of products such as coffee and tea;
- Reconstitution of soluble or freeze dried products;

These products shall be declared by the producer as "suitable for vending machines" in open containers.

**The products dispensed need to be consumed immediately. The products can in no case be kept and/or packaged for subsequent consumption.**

Any other use is considered improper and therefore potentially dangerous.

## CONTROLS AND INFORMATION

The controls and the information to the user are on the external side of the door (see Fig. 6).

The plates with the menu and the instructions are supplied together with the machine and they shall be inserted when the machine is installed.

Inside the machine, on the right of the coin mech unit, are the Programming button, which provides access to the functions of the machine, and the service buttons.

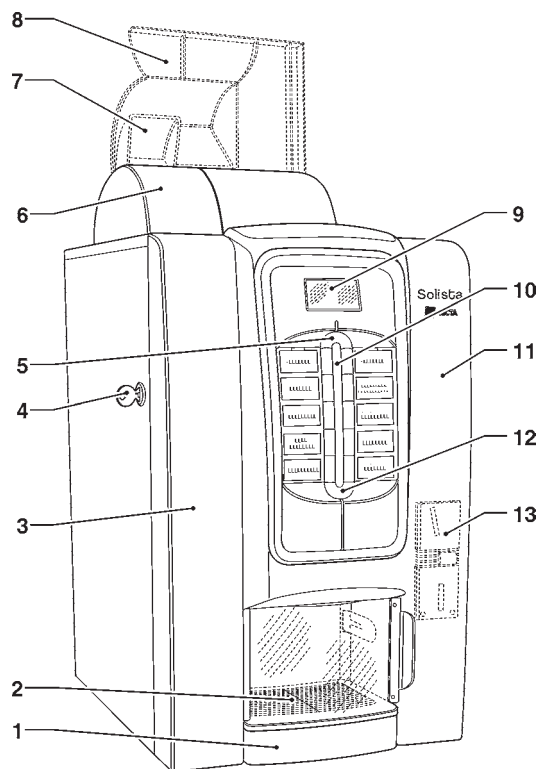


Fig. 6

- 1- Liquid waste container
- 2- Dispensing unit (optional door)
- 3- Customizable time band
- 4- Door lock
- 5- Upper light guide
- 6- Container for coffee beans
- 7- Coffee container cover
- 8- Openeable upper panel
- 9- Display
- 10- Selections menu
- 11- Customizable time band
- 12- Lower light guide
- 13- Arrangement of payment systems or instructions plate

## LEVEL OF NOISE

The level of continuous, equivalent, weighted acoustic pressure is less than 70 dB.

## LOADING

### CUPS

To load the cups, operate as follows:

- open the door;
- lightly lift the cup dispenser and recline it (see Fig. 7);
- avoid rotating the columns during the loading operations;
- **insert the cups in the columns being careful not to exceed the height;**

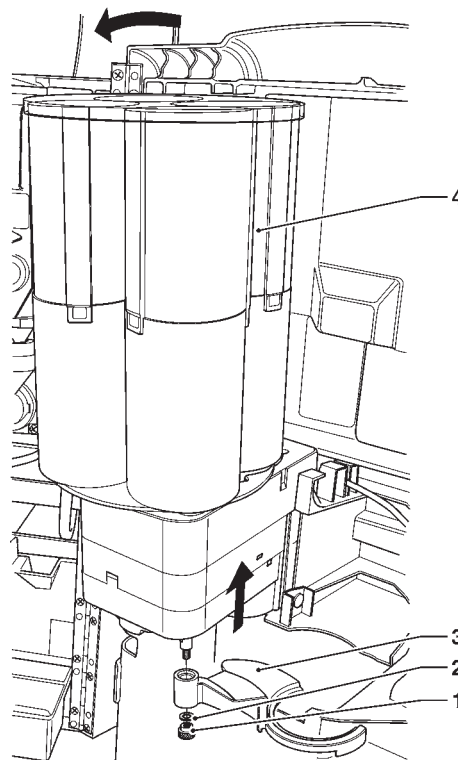


Fig. 7

- 1- Saw tooth screw
- 2- Space washer
- 3- Cup shifting arm
- 4- Cup container

- re-fasten the cup dispenser;
- close the machine and carry out a test selection.

### COMPLETELY EMPTY DISPENSER

- Load the columns with cups, **excluding** the one related to the dispensing hole;
- Close the door of the machine, wait that the first loaded column moves over the distribution hole;
- Warning!**  
**Do not force the column rotation in any case.**
- Open the door of the machine again and load the empty column.

## STIRRERS

Open the door of the machine and rotate the shelf of the sugar container by acting on the end stop lever (see Fig. 8). Remove the weight from the stirrer dispenser and insert the stirrers.

Slide out the paper strip being careful to ensure that all the stirrers remain horizontal.

The dispenser can contain approx. 180 stirrers.

The lateral guide of the dispenser can be positioned to adjust itself to stirrers of different length (90, 105, 120 mm).

Reposition the stirrers weight.

**The stirrers shall be smooth and not curved**

## COFFEE BEANS

Lift the machine upper panel.

Fill it in with coffee beans (1.2 kg max) checking that the damper is completely open (see Fig. 8).

## SUGAR AND INSTANT PRODUCTS

Each container has an adhesive label which specifies the type of product.

After lifting the corresponding cover, introduce the products to be dispensed into the containers being careful not to compress them.

Make sure that the products do not contain lumps.

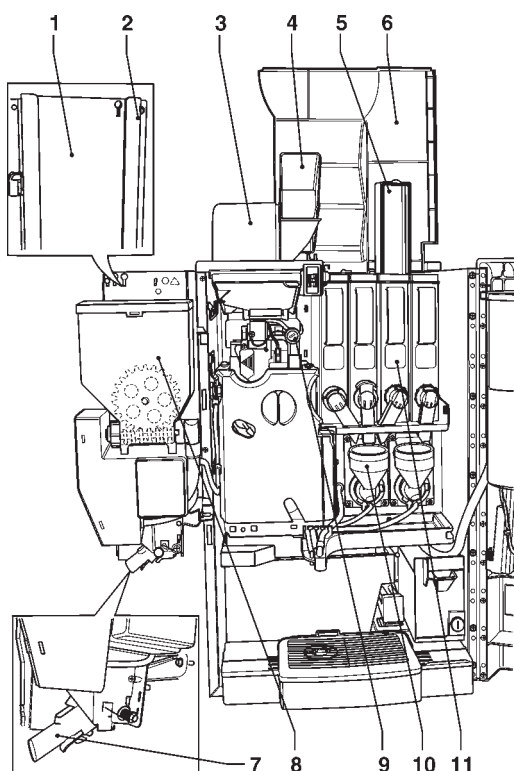


Fig. 8

- 1- Stirrer dispenser
- 2- Adjustable stirrer guide
- 3- Coffee container
- 4- Coffee container cover
- 5- Instant container cover
- 6- Upper openable panel
- 7- Sugar dispensing nozzle
- 8- Sugar container
- 9- Grinding adjustment knob
- 10- Mixer
- 11- Instant containers



## CLEANING

### COLOURS CODE

In order to facilitate the cleaning operations, the parts that need to be regularly cleaned and sterilised are identified in blue.

Use the parts in green to disassemble the parts in blue and perform the cleaning and sterilisation operations. Only some of the parts related to the espresso infuser unit do not follow this rule as they are made of a specific material.

### STERILISATION OF THE MIXERS AND OF THE FOOD PRODUCTS CIRCUITS

When the machine is installed and at least on a weekly basis, or more frequently depending on the use of the machine and of the quality of the inlet water, it is necessary to carry out an accurate sterilisation of the mixers and of the instant drinks dispensing pipes in order to ensure the hygiene of the distributed products.

**Jets of water are to be absolutely avoided for cleaning.**

The parts that need to be cleaned are:

- Powder funnels, mixers and instant drinks dispensing pipes;
- Pipes and dispensing nozzles;
- Dispensing unit.

Open the cover of the mixer dispensing cell and lift the powder nozzles up to the end stop;

- Remove (see Fig. 9) the powder funnels, the water conveyors, the powder deposit funnels and the impellers from the mixers;

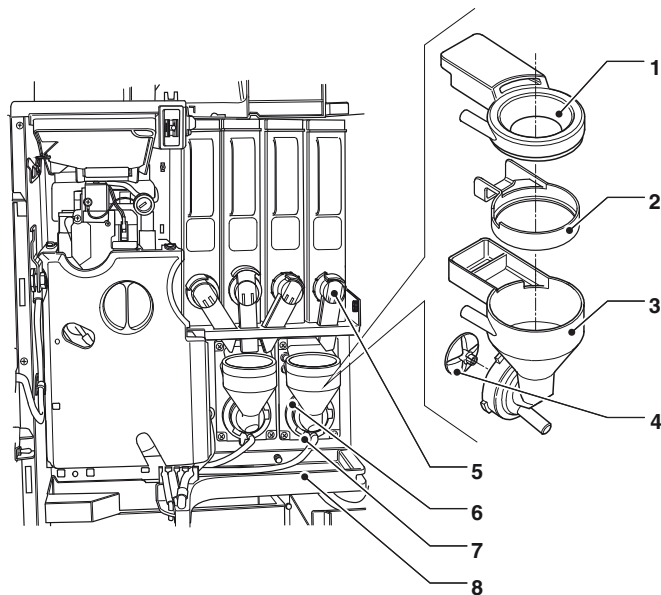


Fig. 9

- 1- Powder funnel
- 2- Splashguard ring
- 3- Water conveyor
- 4- Impeller
- 5- Powder nozzle
- 6- Mixer fixing flange
- 7- Flange fixing nut
- 8- Mixer container

- The impellers can be removed by simply applying a light traction to let them free (see Fig. 10);

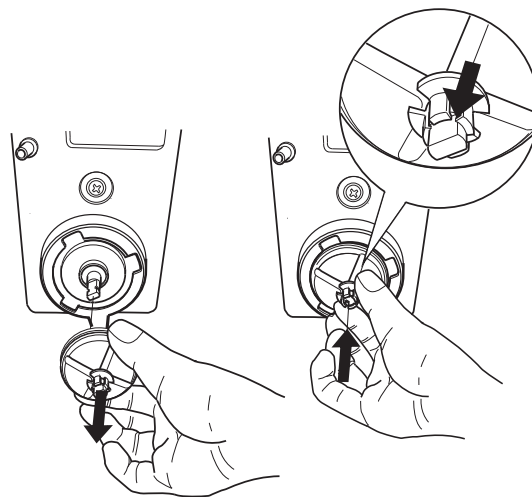


Fig. 10

- Wash all the components with sterilising products (follow the dosage indicated by the manufacturer), being careful to mechanically remove the visible residues using brushes if necessary;

The sterilisation is performed by means of sterilising products.

- Dip the parts for approx. 20 minutes in a recipient containing the previously prepared sterilising solution;
- Reinstall the conveyors and the water funnels;
- Reinstall the powder deposit drawers and the powder funnels after having carefully rinsed and dried them.

**Following the installation of the components it is however necessary to:**

- Wash the mixer and add a few drops of the sterilising solution into the various funnels.
- Once the sterilisation has been performed, rinse the components well to remove any possible residue of the solution used.

**All the operations which require the machine to be under voltage shall ONLY be performed by qualified personnel who has been informed of the specific risks deriving from such a situation.**



## WASTE CONTAINERS

The waste containers can be easily extracted so that they can be quickly emptied and cleaned. For safety reasons, the containers shall be handled **after removing the voltage** from the machine.

### LIQUID WASTE

If the signal float is present (optional), when the container is full, the display of the machine shows the following message:



and it is necessary to empty the liquid waste container. If the float is not installed, the container needs to be emptied before the red indicator is completely visible. For removing the liquid waste container, operate as follows:

- Grab the liquid waste container by the side, lift slightly and pull towards you.
- Empty the container and wash it with a solution of neutral detergent

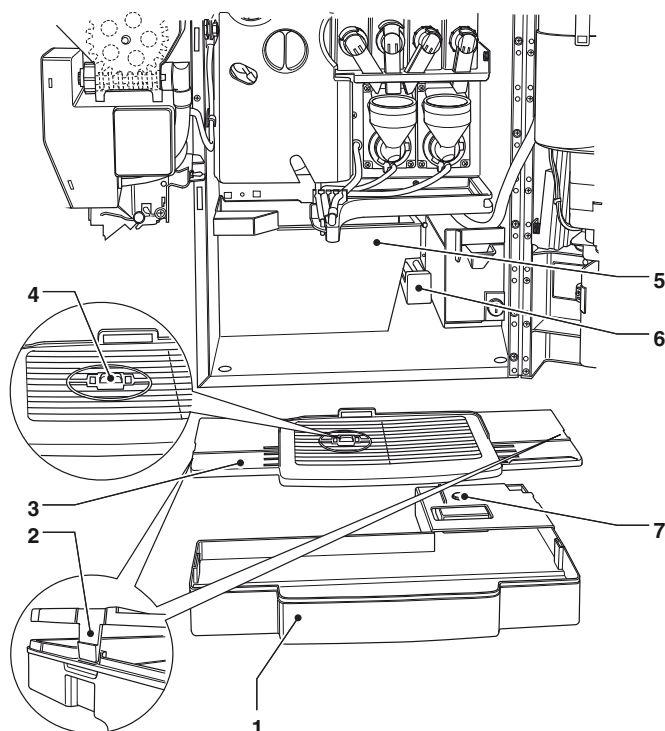


Fig. 11

- 1- Container for gathering liquid waste
- 2- Cover fixing hooks
- 3- Container Cover
- 4- Full container red indicator
- 5- Solid waste container
- 6- Full waste float switch
- 7- Full waste float

## WASTE

The capacity of the coffee beans container, if the support cabinet is not used, is greater than the capacity of the waste container.

Stored into the machine is the number of selections (programmable. Default 150 selections of 7 g each) corresponding to the capacity of the container; once this value is reached, the machine will stop working, asking for the solid waste container to be emptied by showing the message



The machine will still work for dispensing instant drinks.

### WASTE RESET PASSWORD

In order to reset the selections counter, it is necessary to insert a password;

With the closed door, proceed as follows:

- Press and hold key no. 9 for two seconds
- The management software will ask for the input of a password (5 digits) and the keyboard adopts the numerical values shown in the figure below.

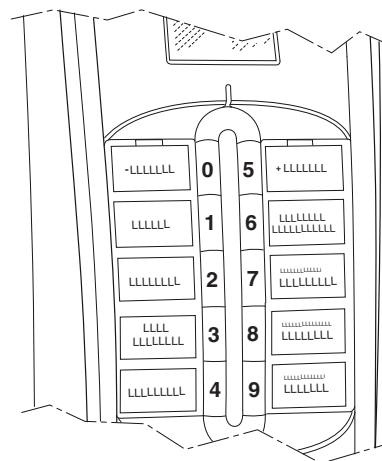


Fig. 12

Buttons numeric value

## DISPENSING UNIT

When cleaning the dispensing unit, it is recommended to remove it from the machine.

- Remove the saw tooth screws which block the unit;
- Unfasten the unit by acting on the fixing fins;
- Wash with a solution of neutral detergent being particularly careful with the covers of the cup sensor and of the unit lighting LEDs.

### **Important!**

**Avoid wetting the sensor and the led board.**

- Dry carefully and reassemble following the reverse order

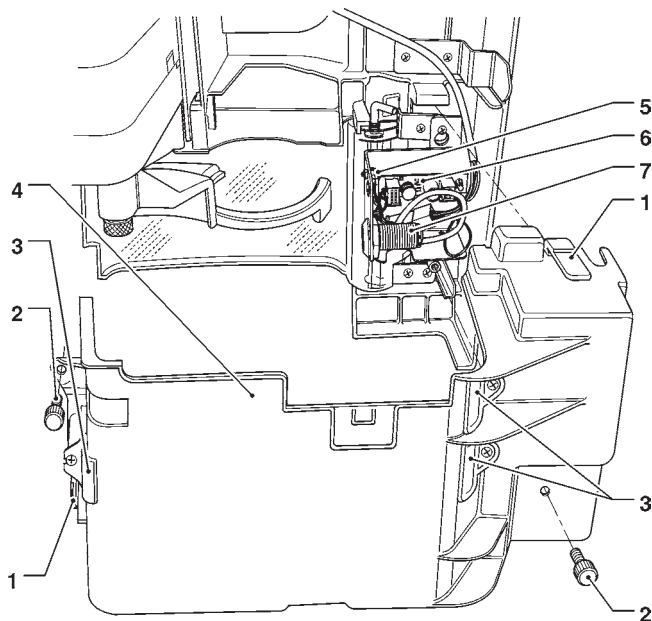


Fig. 13

- 1- Fixing fins
- 2- Saw tooth screws
- 3- Sensors
- 4- Dispensing unit
- 5- Unit lighting LED
- 6- LED power supply board
- 7- Cup sensor

## CUP SHIFTING ARM

It is necessary to periodically clean the shifting arm by removing it from the machine.

For removing the shifting arm, it is preferable to disassemble the dispensing unit as described above. For disassembling, fully unscrew the saw tooth screw (see Fig. 14).

When reassembling, be careful to reposition the space washer correctly.

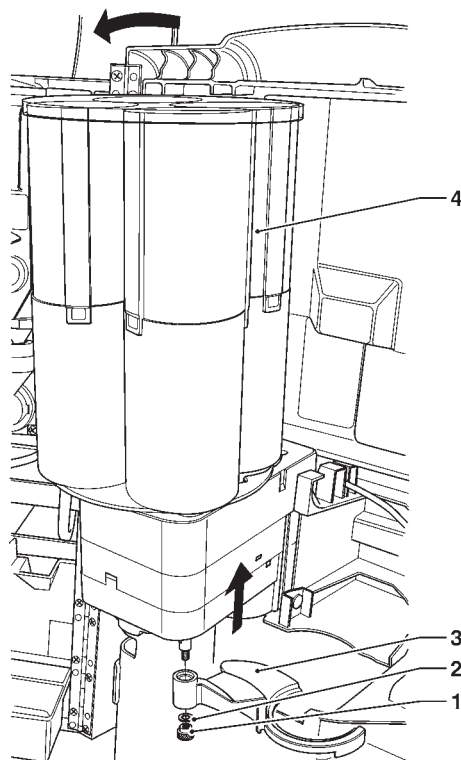


Fig. 14

- 1- Space washer
- 2- Saw tooth screw
- 3- Cup shifting arm
- 4- Cup container

## SUGAR RELEASE

For the models of vending machine which dispense the sugar directly into the cup, it is necessary to periodically clean the release device with hot water (see Fig. 15) operating as follows:

- Lower the sugar dispensing nozzle
- Unfasten from the fastening support
- Slide out the dispensing nozzle;
- After cleaning, carefully dry the parts and reassemble everything following the reverse order.

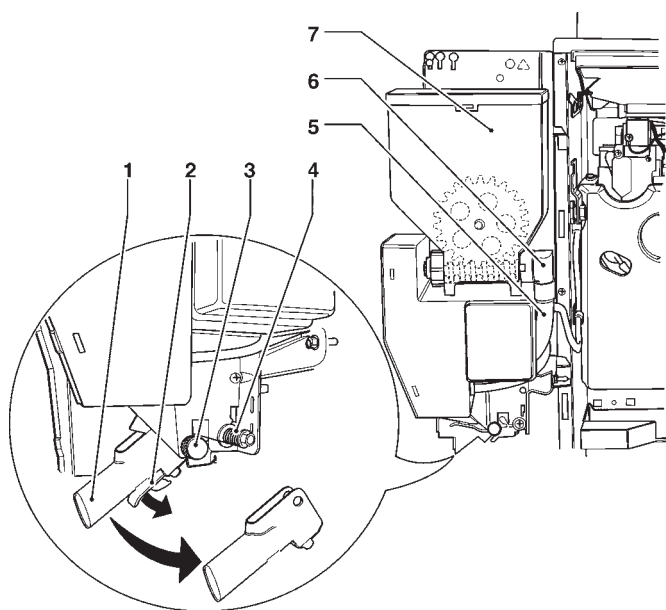


Fig. 15

- 1- Sugar dispensing nozzle
- 2- Fastening support
- 3- Pin
- 4- Return spring
- 5- Sugar conveying tube
- 6- Sugar container nozzle
- 7- Sugar container

## PERIODICAL CLEANING OF THE COFFEE UNIT

Each time the vending machine is loaded, or at least every week, it is good practice to clean the external parts of the coffee unit from any coffee residue and particularly in the areas of the coffee funnel, of the filters and of the scrapers

It is good practice to periodically remove the cover of the infuser unit and the coffee funnel. Slide the funnel towards the right for unfastening it from the doser (see Fig. 16).

Wash and carefully dry the disassembled parts; the coffee funnel can be removed by sliding it towards the right so that it can be unfastened from the dosers.

### Warning!

**It is essential to reinstall the cover before restarting the machine (see Fig. 16).**

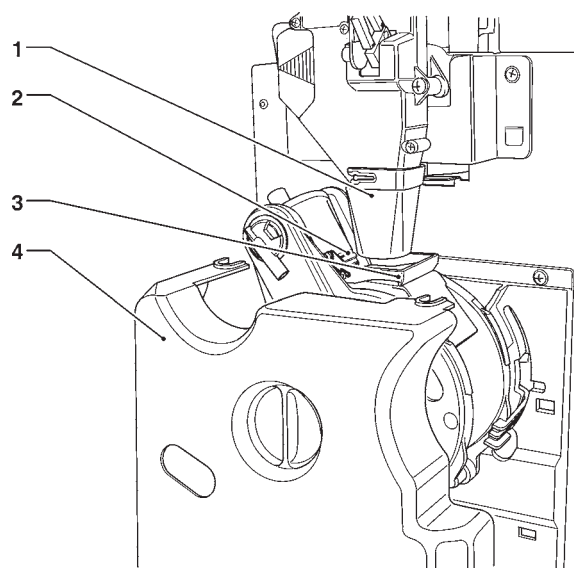


Fig. 16

- 1- Coffee funnel
- 2- Filters
- 3- Scrapers
- 4- Unit cover

## CLEANING OF THE WATER SUPPLY TANK (Optional)

For the machines which use the water tank, it is necessary to carry out, at least on a weekly basis, the sterilisation of the tank by using the sterilising products used for the mixers.

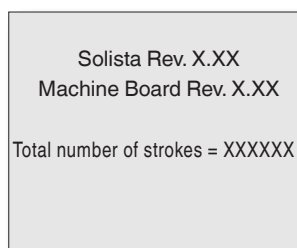
## START-UP

Everytime the machine is connected to the power supply, the display will show the image

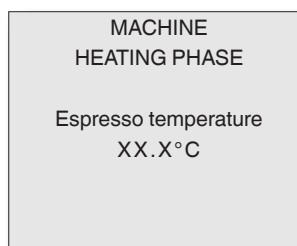


after that, the vending machine software version number is displayed together with the software review of the machine board.

It is possible to programme the machine for displaying, for a few seconds, the number of dispensed items (total number of strokes)



After that, the boiler is checked and the heating cycle is started



At the end of the heating cycle, after a few seconds, the display shows the message with the invitation to select the drink and the lighting of the machine is activated.



## PASSWORD INSERTION WITH CLOSED DOOR

In order to be able to perform some of the cleaning operations which require the machine to be switched on, in fully safe conditions, it is possible to use the selection keys in sequence (password).

The password insertion with closed door allows the performance of the operation associated with the inserted password, which means:

- Wash the mixer
- Wash the infuser unit
- Reset the waste counter

For inserting the password with closed door, proceed as follows:

- Press and hold key number 9 (see Fig. 12) for two seconds.
- The management software asks for the input of a password and the keyboard adopts the numerical values shown in the figure below.

The machine remains in standby for a few seconds for the insertion of the password (5 digits) which allows the performance of the operation associated with the inserted password.

It is possible to define these passwords inside the Engineer's Menu.

As a default condition all the passwords are disabled.

## SERVICE SUSPENSION

In the event that, for any reason, the vending machine remains off for a period longer than the expiry dates of the products, it is necessary to:

- Completely empty the containers and wash them carefully with the sterilising products used for the mixers.
- Completely empty the grinder-doser by dispensing coffee until the notification that the machine is empty.
- Completely empty the boiler and the air-break by loosening the screw on the corresponding pipe.

## Chapter 2 Installation

The installation and the subsequent maintenance operations shall be carried out with the **machine connected to the power supply** and therefore by specialised personnel, trained for the use of the machine who has been informed of the specific risks deriving from such a situation.

When the door is open, voltage is given to the machine by inserting the appropriate key (see Fig. 17).

The door can be closed only after extracting the yellow key from the door switch and the top of the machine has been lowered.

**The machine shall be installed in dry premises, with a temperature between 2° and 32° C.**

**When the machine is installed, the hydraulic circuits and the parts in contact with the food products need to be sterilised in order to eliminate any bacteria which could have formed during storage.**

### DOOR SWITCH

When the door is opened, a microswitch removes the voltage from the electrical system of the machine.

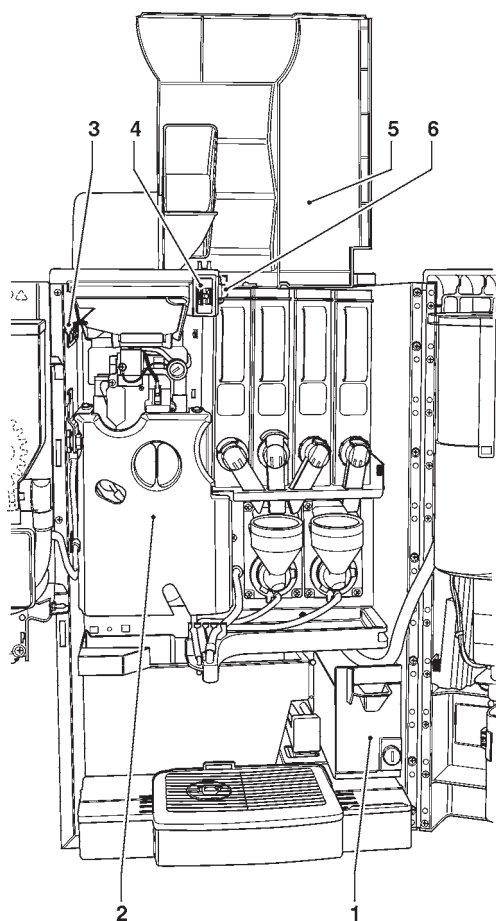


Fig. 17

- 1- Cash till for coins
- 2- Coffee unit cover
- 3- Upper panel closure control device
- 4- Door switch
- 5- Openable upper panel
- 6- Coffee container closure control device

When the door is open, voltage is given to the machine by inserting the appropriate key (see Fig. 17).

**With the door open, there is no access to live-parts. Inside the machine, only those parts which are protected by covers and which are highlighted with a label "disconnect voltage before removing the cover" remain live.**

**Before removing these covers it is necessary to disconnect the power supply cable from the mains.**

The door can be closed only after removing the key from the door switch, lowering the upper panel of the machine and closing the opening of the coffee container so that the closure control devices are enabled.

## ASSEMBLY

### UNPACKING THE VENDING MACHINE

After removing the packaging, verify the integrity of the machine.

In case of doubt, do not use the machine.

**The packaging materials (plastic bags, expanded polystyrene, nails, etc.) shall be kept out of the reach of children as they are a potential source of danger.**

The packaging materials need to be disposed of in authorised places. Recycling materials shall be given to specialised recycling companies.

### Important!!

The machine shall be positioned so that the maximum inclination does not exceed 2°.

If needed, level it out using the appropriate adjustable feet (see Fig. 18) provided with the machine.

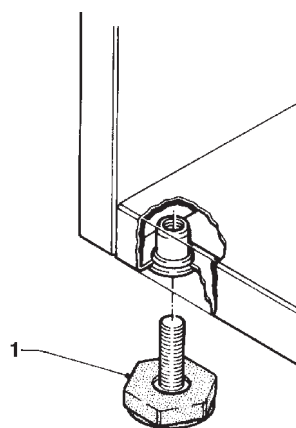


Fig. 18

- 1- Adjustable foot

## INSERTING THE PLATES

Remove the fixing screw and remove the cover.  
The plates need to be inserted into the appropriate slots (see Fig. 19).

Based on the models, some buttons could be disabled (see doses-selections table).

The machine is supplied with self-adhesive plates which shall be attached to the products containers based on layout (see doses-selections table)

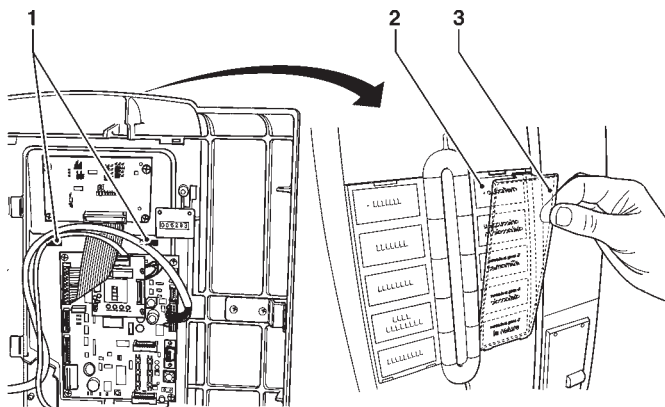


Fig. 19

- 1- Fixing fins
- 2- Plates support
- 3- Selections plates

## PAYMENT SYSTEM

**The machine is sold without a payment system, therefore whoever performs the installation of it bears the responsibility for any damage to the machine or to objects and people deriving from the wrong installation of the payment system.**

The validator can be installed directly into the machine. Ensure that the programming of the related parameters is correct.

The “cashless” systems can be placed into the machine; other payment systems such as “change giver” shall be physically placed inside the support cabinet or in the lateral module (optional).

The use of payment systems such as “change givers” and/or “cashless” is possible only using the appropriate connection kits.

## STIRRERS LENGTH

Based upon the length of the stirrers to be used, verification is required that the stirrers mobile guide is installed in the correct position (see Fig.) on the stirrer dispenser.

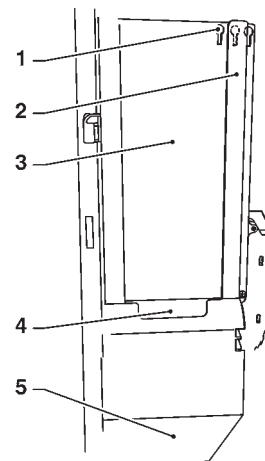


Fig. 20

- 1- Adjustment holes
- 2- Stirrers mobile guide
- 3- Dispenser
- 4- Stirrers dispenser
- 5- Stirrers slide

## WATER SUPPLY

The water used by the vending machine is drinking water, taking into account the regulations in force where the machine is installed.

### WATER SUPPLY FROM TANK

For the machines which use a tank, this shall be sterilised and filled in with drinking water.

### WATER SUPPLY FROM MAINS

For the machines which use water supply from mains, the machine shall be connected to the drinking water mains with water pressure between 0.05 and 0.85 MPa (0.5-8.5 bar).

Let the water come out from the mains until it is clear and free from dirt.

Connect the water mains to the 3/4" connection of the water inlet solenoid valve (see Fig. 21) with a pipe of minimum internal diameter of 6 mm (also available as a kit), suitable for supporting the mains pressure and of a type suitable for food products.

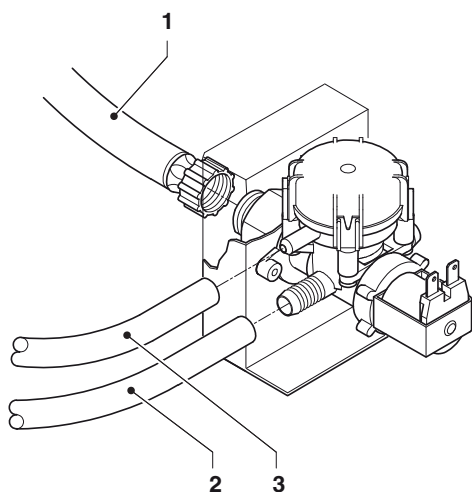


Fig. 21

- 1- 3/4" inlet tube
- 2- Inlet tube
- 3- Too full tube

**Installing a tap on the water system outside the machine, in an accessible position, is recommended.**

### ANTI-FLOODING DEVICE

The water inlet solenoid valve (see Fig. 21) is equipped with an anti-flooding device which allows the mechanical blocking of the input of water following a malfunction of the solenoid valve or of the control system of the level of water in the boiler.

For restoring the normal operations, do as follows:

- empty the water contained in the anti-flooding pipe;
- close the water mains tap outside the machine;
- loosen the connection which fixes the input pipe of the solenoid valve for lowering the residual water pressure and tighten it again (see Fig. 21);
- open the tap and apply voltage to the machine.

### DESCALER

The machine is supplied without descaler.

In the event that the machine is connected to very hard water, it is necessary to install a descaler.

Use descalers with a capacity which is adequate to the actual use of the machine.

In case the machine uses a water tank, it is possible to use appropriate filtering cartridges.

The cartridges will need to be replaced periodically depending on the water quality and the indications given by the manufacturer.

The descalers, also available as an accessory, need to be periodically regenerated or replaced according to the indications given by the manufacturer.



## ELECTRICAL CONNECTION

The machine requires a single phase voltage of 230-240 V~ and it is protected by a 15 A fuse.

For the connection, make sure that the plates data correspond to the mains data, and in particular:

- The value of the voltage shall be within the recommended limits;
- The general switch shall have suitable characteristics for supporting the maximum load requested and it shall ensure an omnipolar switch-off with a switch-contact gap of at least 3 mm.

**The switch, the socket and the plug shall be placed in an accessible position.**

The electrical safety of the machine is ensured only when the machine is correctly connected to an efficient earthing system, as foreseen by the current safety regulations.

**It is necessary to verify this fundamental safety requirement and, in case of doubt, request an accurate check of the system by qualified personnel.**

The power supply cable has a non-separable plug. The replacement of the connection cable (see Fig. 22) shall be carried out only by qualified personnel and using only cables HO5 RN - F or HO5 V V-F or H07 RN-F 3x1-1.5 mm<sup>2</sup> cross section.

**The use of adapters, multiple plugs and/or extension cables is forbidden.**

**THE MANUFACTURER SHALL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE CAUSED BY THE NON-OBSERVANCE OF THE ABOVE-MENTIONED PRECAUTIONS.**

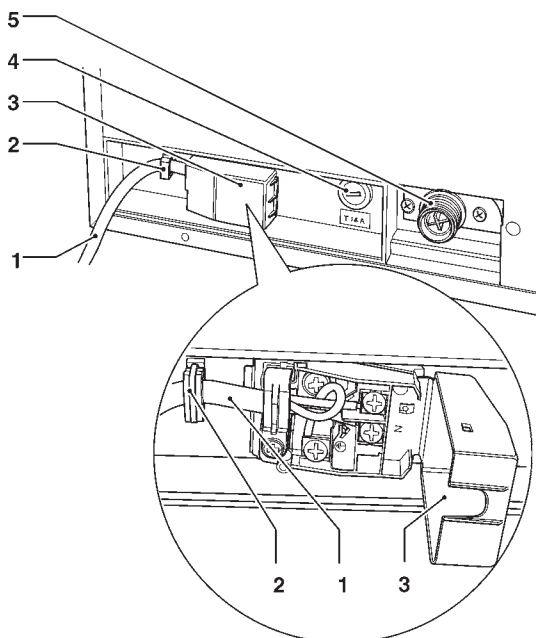


Fig. 22

- 1- Mains lead
- 2- Lead fixing terminal
- 3- Flip cover
- 4- Mains fuse
- 5- Water inlet

## INSTALLATION IN SERIES

The machine control system is arranged for connection in series with another vending machine, by using appropriate kits.

This connection permits the use of one payment and remote connection system only (GSM) for several machines.

In case of installation in series, the machine can be configured as "Master", therefore assuming control of the second machine, or as "Slave", therefore leaving the control to the other machine.

For the utilisation as master, a numerical keyboard shall be used, which is not supplied with the machine.

The compatible numerical keyboard shall be supplied together with the slave machine.

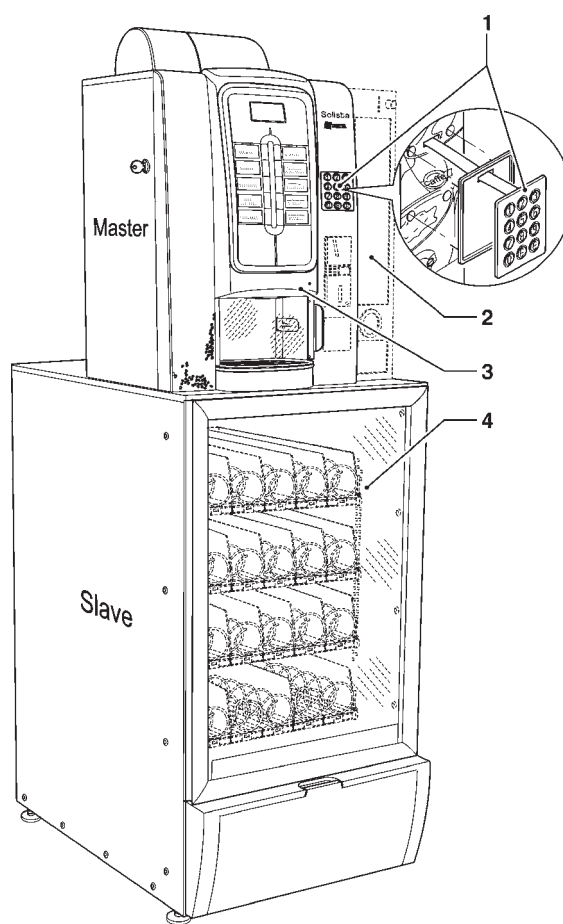
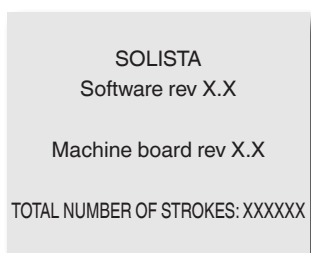


Fig. 23

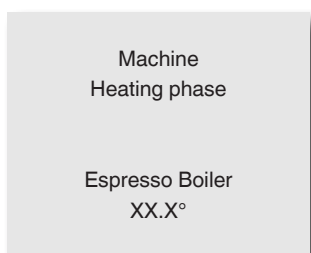
- 1- Numeric keyboard
- 2- Payment system module (optional)
- 3- Master machine
- 4- Slave machine

## FIRST START-UP

On first start-up, the machine requests to fill in the hydraulic circuit (see next chapter); after filling in the hydraulic circuit, the display will show the message:



It is possible to programme the machine for displaying, for a few seconds, the number of dispensed items.



At the end of the start-up cycle, after a few seconds, the display shows the message with the invitation to select the drink and the lighting of the keyboard is activated.

## FILLING IN THE HYDRAULIC CIRCUIT

### FOR THE MODELS WITH INTERNAL TANK

- On start-up; the water pump is activated for 10 seconds  
The display shows the message "water empty"
- Enter the programming mode, "engineer", and use the special function "manual installation" of the "test" menu.  
The machine performs an installation cycle
- When the installation cycle terminates, reset the fault message "empty water"

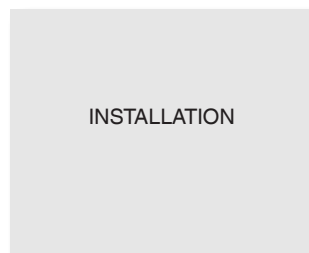
### FOR THE MODELS WITH WATER SUPPLY FROM THE MAINS

On start-up, the installation cycle is performed automatically.

## INSTALLATION CYCLE

- Filling the air-break
- Opening of an instant drinks solenoid valve for releasing the air from the boiler and letting the water in of a quantity greater than the boiler capacity

During the whole installation cycle, the display will show:



**N.B.: In case of a lack of water during the installation cycle, the machine will stop to wait for water.**

Following maintenance interventions which involve emptying the boiler and not the air-break, the hydraulic circuit shall be filled in manually with the special function of the "test" menu in "engineer" mode.

## FIRST STERILISATION OF THE MIXERS AND OF THE FOOD PRODUCT CIRCUITS

When the machine is installed it is necessary to carry out an accurate sterilisation of the mixers, of the instant drinks dispensing pipes and of the internal tank in order to ensure the hygiene of the distributed products.

**Jets of water are to be absolutely avoided for cleaning.**

The sterilisation is performed by means of sterilising products.

Wash the mixers and add a few drops of sterilising solution

Once the sterilisation has been performed, rinse the mixers well for removing any possible residue of the solution used.

For letting water inside the mixers, use the button "mixer wash"; if necessary, enable it from the menu. (see the paragraph related to the vending machine parameters)

# OPERATION

## CUP SHIFTING SYSTEM

The machine is equipped with a cup shifting system which allows the dispensing nozzles to be kept very close to the drink, in order to improve the appearance and to reduce the possibility of dirtying the dispensing area to a minimum.

An appropriate microswitch notifies the position of the cup shifting system to the machine

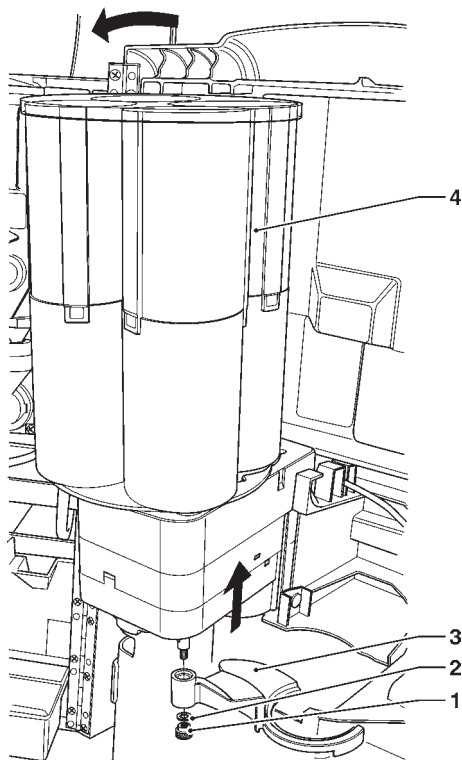


Fig. 24

- 1- space washer
- 2- saw tooth screw
- 3- cup shifting arm
- 4- cup container

## CUP SENSOR

Some of the models are equipped with a cup sensor which detects the presence of objects between the reflector and the sensor.

In order for the sensor to work correctly, the beamer and the reflector in front of it need to be kept clean.

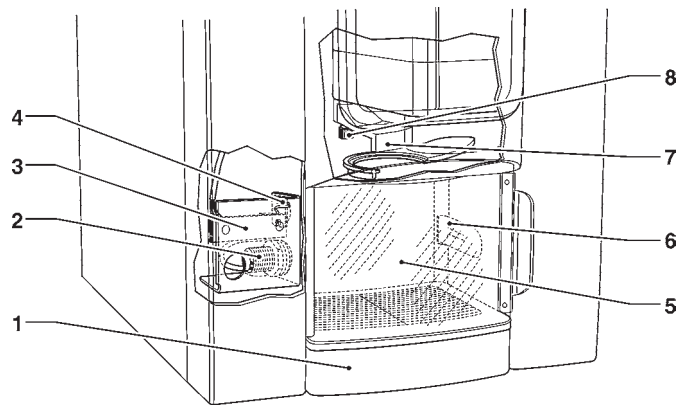


Fig. 25

- 1- Dispensing unit container
- 2- Cup sensor
- 3- Board
- 4- Unit lighting LED
- 5- Dispensing unit door
- 6- Glass cover for reflector
- 7- Cup shifting arm
- 8- Cup shifting arm saw tooth screw

## DISPENSING UNIT LIGHTING

Some of the models are equipped with LEDs for the dispensing unit lighting.

The LEDs switch on when the drink is being dispensed and remain on for a few seconds after the end of the dispensing.

## LEDs BUTTONS

The selections menu has variable colour LEDs.

During the heating or energy saving phases the LEDs are off.

During the normal operation of the machine, the LEDs are on; the colour can be chosen through the appropriate function of the engineer menu.

## ESPRESSO UNIT

After each start-up of the machine, the coffee unit performs a full rotation, before performing the normal cycle, for ensuring the positioning of the device in the initial position.

### COFFEE DISPENSING CYCLE

If a coffee-based selection is requested, the grinder is activated until the coffee doser chamber is full.

When the doser is full, the coffee dose is released into the infusion chamber which is located vertically inside the coffee unit (see Fig. 26-1).

The gear motor engaged on the pinion (6) lets the cranks rotate (5) which cause the rotation of the infusion chamber (1) by 30°.

The upper piston (4) aligns itself with the infusion chamber (27 -7) and goes down inside it. The position where the piston stops for the infusion will depend on the quantity of coffee inside the chamber.

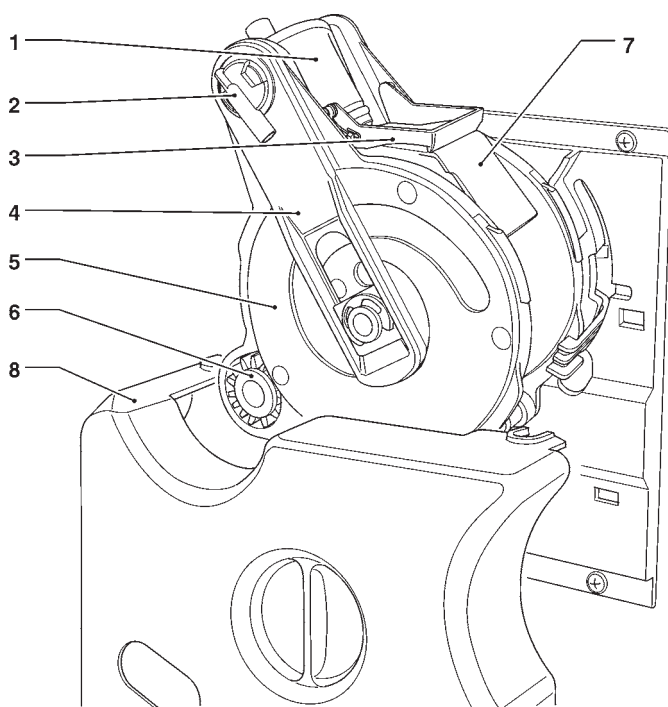
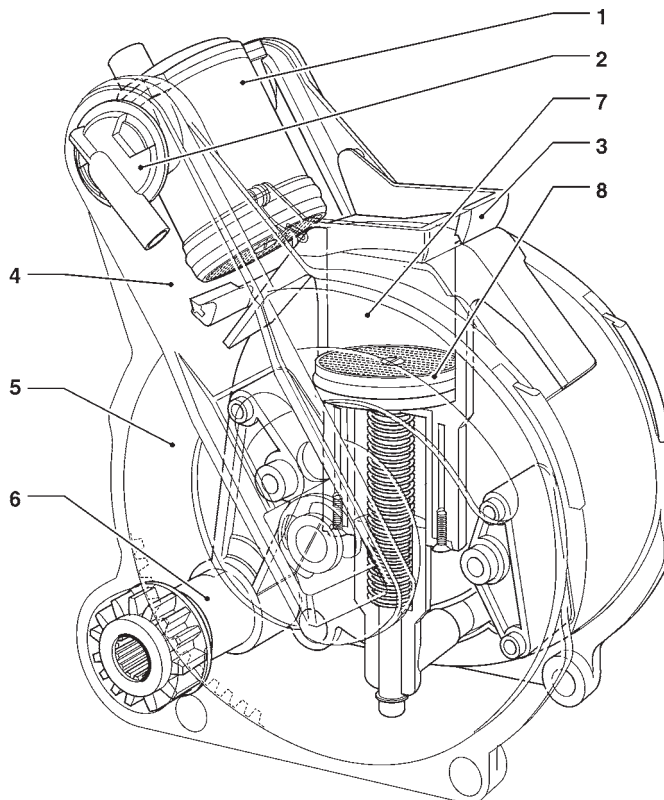


Fig. 26

- 1- Upper piston
- 2- Coffee exit nozzle
- 3- Scraper
- 4- Rods
- 5- Cranks
- 6- Pinion
- 7- Used coffee slide
- 8- Unit covers

Fig. 27

- 1- Upper piston
- 2- Coffee exit nozzle
- 3- Scraper
- 4- Rods
- 5- Cranks
- 6- Pinion
- 7- Infusion chamber
- 8- Lower piston



At the end of the coffee dispensing phase, the upper piston goes down in order to mechanically squeeze the coffee pod, facilitating the expulsion of excess water through the 3<sup>rd</sup> route of the dispensing solenoid valve. At the end of the cycle the gear motor is activated in the opposite direction, lifting the upper piston and rotating the infusion chamber towards the emptying side, on the opposite side of the dispensing side; the lower piston (8) rises.

Once the emptying position is reached, the gear motor inverts its rotation direction again, bringing the infusion chamber back to the idle position.

The scraper (3) holds the coffee pod and lets it fall, whilst the lower piston (8) returns to the idle position.

## CHECKS AND SETTINGS

To obtain the best results for each product used, we recommend the following checks:

- The coffee pod shall be slightly compressed and moist.
- Granulometry of ground coffee.  
Grammage of ground coffee.
- Dispensing temperature.
- Dose of water.

## VOLUME OF THE INFUSION CHAMBER

The coffee unit can operate with coffee doses between 5.5 and 8.5 g.

The upper piston positions itself automatically.

## GRINDER-DOSER

### GRINDING SETTING

In case the grinding grade needs to be changed, act appropriately on the relevant knob of the grinder (see Fig. 28), and more precisely:

- rotate anti-clockwise for obtaining a larger grinding;
- rotate clockwise for obtaining a smaller grinding;

It is good practice to change the grinding grade when the coffee grinding motor is working.

**NB: after varying the grinding grade, it is necessary to carry out at least 2 selections for checking the new ground coffee granulometry:**

The finer the grinding grade, the longer the dispensing time will be and vice versa.

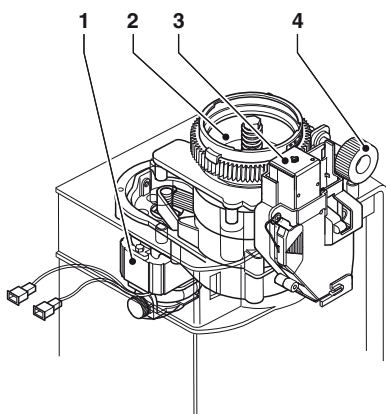


Fig. 28

- 1- Grinder motor
- 2- Grinder
- 3- Coffee release electromagnet
- 4- Temperature adjustment knob

## COFFEE DOSE ADJUSTMENT

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.

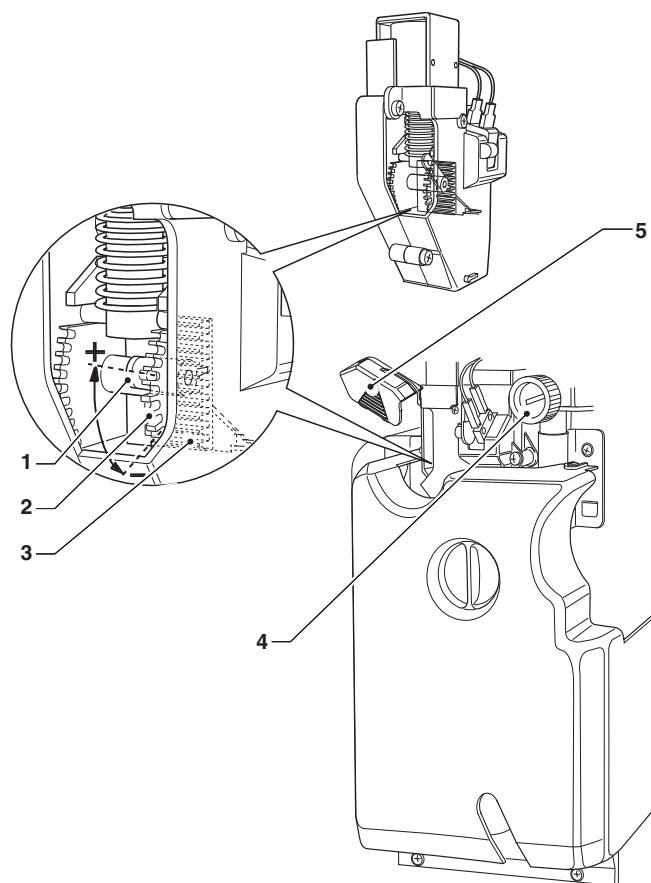


Fig. 29

- 1- Dose adjustment lever
- 2- Reference notches
- 3- Dose adjustment
- 4- Grinding adjustment knob
- 5- Coffee dose adjustment cover

## INSTANT DRINKS DISPENSING

The dispensing cycles of the various selections are studied for obtaining the best result in terms of productivity and quality of the drinks.

The powder for the selections based on chocolate is dispensed intermittently; the powder for the selections based on coffee is dispensed before the water.

### **Warning !!!**

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

### **PRESELECTIONS**

Based on the layout that has been set on the machine, it is possible to have different preselections; the preselections foreseen for each layout are described in the doses-selections table (layout selections) supplied with the machine.

## DOSERS CALIBRATION

For the correct conversion of the amounts of the product dose it is possible to set the value of the rate of each of the dosers in g/sec for calculating the grams to be dispensed.

### **ADJUSTMENT OF THE WATER TEMPERATURE**

The temperature of the boiler is controlled by the software:

Default condition:

-99.6° C for the espresso boiler

and it can be adjusted directly from the menu.

### **VARIATION OF THE SETTING FOR INSTANT PRODUCTS**

The grammage of the instant products, the dose of water and the temperature are controlled directly by the micro-processor.

The variation of these values is therefore performed through the programming procedures.

## Notes on Programming

The electronic control unit of the machine controls the use of many functions.

The programme of the machine contains a description of all the foreseen functions, including those which, for the specific configuration of the model (layout), are not used. The machine is supplied together with:

- Selections layout, which contains the selections foreseen for the specific model
- Flow chart of the programming menu.

Described below is a summary of the main functions which are useful for managing the operation of the machine, not necessarily in the order in which they are displayed in the menu.

The software version can be updated using the appropriate systems (PC, Giga, UpKey, etc.)

The messages of the display which show the operation being performed are fixed, whilst any action requested of the user flashes.

The status of the machine can be in three different modes.

Depending on the status in which the machine is, the buttons of the keyboard assume different functions.

### **NORMAL USER**

- Machine start-up (door closure) with the execution of the foreseen checks.
- Operations that can be done with the door closed.
- Dispensing selection and messages to the user.

### **LOADER MENU**

- Detection of statistical data and execution of simple checks on the operation and on the dispensed items.

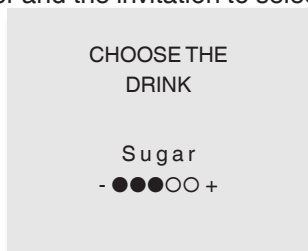
### **TECHNICAL MENU**

- Programming of the settings and of the performances of the machine.



## OPERATION IN NORMAL USER STATUS

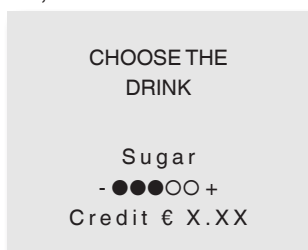
During the normal operation, the display shows the message to the user and the invitation to select the drink.



The preselection (for example Sugar) can be different depending on the layout and on the choices made during programming.

Use, for example, the keys "Sugar -" and "Sugar +" for adjusting the quantity of sugar in the drink

If the machine has a payment module, inserting coins or a payment system, the available credit is displayed



When a selection is requested, if the credit is not enough the display will show in sequence the price of the selection, the available credit and the residual amount to be inserted.

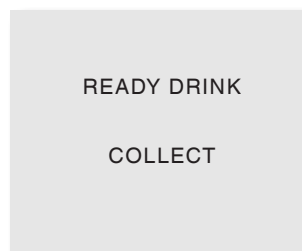
When the drink is being dispensed, an animation is shown which indicates the stage of preparation of the drink and the keyboard lighting flashes.



In the event that an anomaly is detected by the control system, an error message will be given, indicating the type of problem:



At the end of the dispensing phase, the display shows for a few seconds the message:



## NAVIGATION

### ENTERING THE PROGRAMMING MODE

The programming menu can be entered by switching the machine on with the door open, acting on the door switch.

For entering the programming mode press the button “programming access” inside the door of the machine:

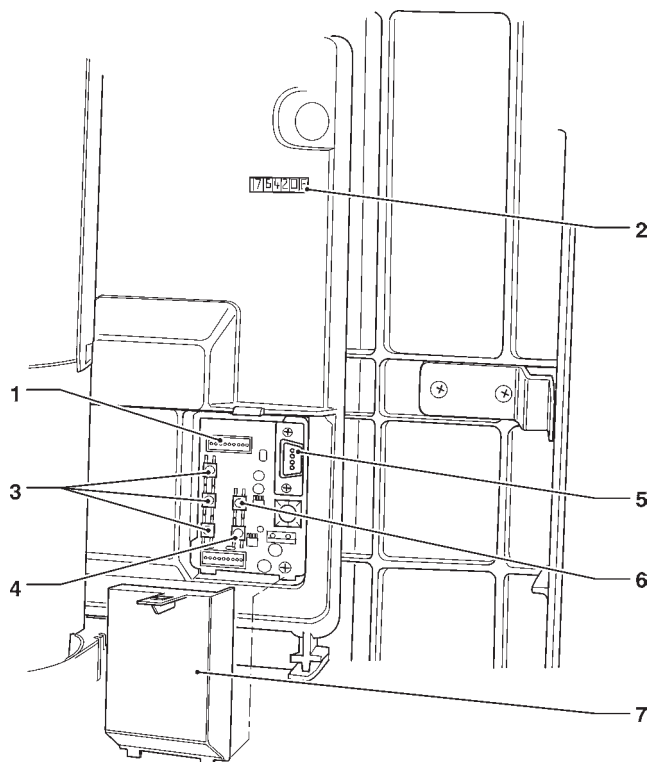



Fig. 30

- 1- UpKey connector
- 2- Mechanical strokes counter
- 3- Buttons with programmable function
- 4- Programming input button
- 5- RS232 serial connector
- 6- Faults reset button
- 7- Buttons cover

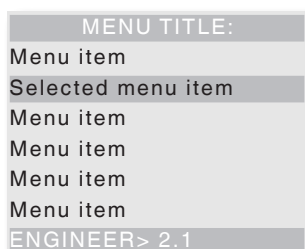
The machine status changes to “loader menu”, use the key  for switching from the “loader menu” to the “engineer menu” and vice versa.

The interaction between system and operator is through:

### DISPLAY

8 rows display which shows the messages to the users or the items of the menu.

The programming menu is represented as follows:



MENU TITLE:

if requested, this is shown on the first row, followed by the available menu items.

Selected menu item

The item of the menu where the cursor is positioned

ENGINEER> 2.1

This shows the current active menu (Loader or Engineer) followed by the numerical position of the function on which the cursor is positioned (i.e. 2.1)

### KEYBOARD

With the machine in “Loader” or “Engineer” mode, the selection keyboard assumes the functions:

NAVIGATION KEYS  AND  :

These keys allow you to navigate between the items of the menu (functions).

Within a function, they allow you to vary, where requested, the logical status of data (ON/OFF), or insert/modify alphanumeric values.

CONFIRMATION KEY  :

This allows you to switch from a menu to a submenu or to confirm the data shown on display.

EXIT KEY  :

This allows you to return from a submenu to the menu of higher level, or to cancel the function.

It also allows you to switch from the “Engineer” to the “Loader” mode and vice versa.

KEYS FOR NUMERIC VALUES

When the control software requests the insertion of a password, the keyboard assumes the numeric values shown in the figure.

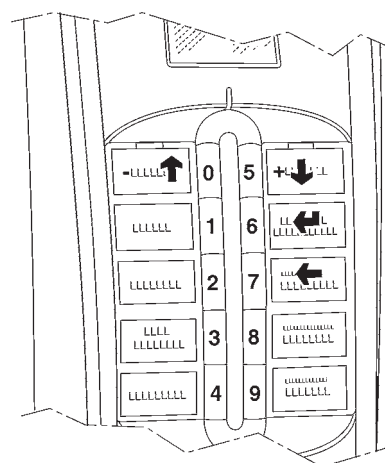





Fig. 31

## LOADER MENU

By pressing once the programming button located inside the door, the machine goes into "loader menu" mode. The display shows the first item of the "Loader" menu with the available operations.

The last row of the display contains the menu and the number, which allow you to identify the current level. By pressing the confirmation key  you can access the menu.

By pressing the exit key  you go back to the previous menu.

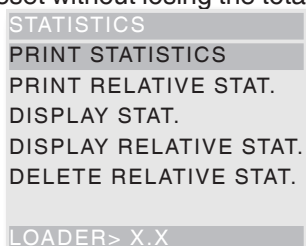
The keys  and  allow you to navigate through the items of the menu:

---

## STATISTICS

---

All the data related to the operation of the machine is stored both in total counters and in relative counters, which can be reset without losing the total data.



STATISTICS  
PRINT STATISTICS  
PRINT RELATIVE STAT.  
DISPLAY STAT.  
DISPLAY RELATIVE STAT.  
DELETE RELATIVE STAT.  
LOADER> X.X

### PRINTING

This function allows you to print the stored data related to the operation of the machine

By connecting a RS232 serial printer with Baud rate 9600, 8 bit of data, no parity, 1 bit of stop to the serial port on the button board it is possible to print all the statistics, and in particular:

#### TOTAL



- 1 - selections counter;
- 2 - bands counter;
- 3 - discounts counter;
- 4 - faults counter;
- 5 - coin mech data.

#### RELATIVE

- 1 - selections counter;
- 2 - bands counter;
- 3 - discounts counter;
- 4 - faults counter;
- 5 - coin mech data.

The printout also shows the code of the machine, the date and the software version.

The printout can be obtained as follows:

- From the printing function press the key  the display shows "Confirm?";
- connect the printer;
- press the confirmation key  for printing

### DISPLAY

This function allows you to display in a sequence the same statistics data that can be obtained with the print-out.

Press the confirmation key  for displaying the data in a sequence of the:

#### TOTAL COUNTERS

- 1 - selections counter;
- 2 - bands counter;
- 3 - discounts counter;
- 4 - faults counter;
- 5 - coin mech data.


#### RELATIVE COUNTERS


- 1 - selections counter;
- 2 - bands counter;
- 3 - discounts counter;
- 4 - faults counter;
- 5 - coin mech data

### CANCELLATION

The statistics can be reset, for the relative counters, in a global mode (all types of data) or in a selective mode, for:

- selections
- discounts
- faults
- coin mech data

By pressing the confirmation key  the display will show the flashing message: "Confirm?"

Press the confirmation key  for resetting the statistics, during the operation the display shows the message "Execution" and the statistics are reset.

---

## INDIVIDUAL PRICE

---

The machine can manage up to 4 different prices for each selection, which can be active depending on the time band that has been set (standard or promotional) and/or on the payment system used.

Through this function it is possible to vary the sales price for each selection, selecting amongst the available price bands.

---


## MANAGEMENT OF THE COIN MECH TUBES

---

**This function is active only if the payment system that has been set allows you to perform this operation.**

By entering into this function it is possible to manually load or empty the coin mech tubes.

By confirming the loading operation, the display shows "Credit : —" which is the amount of money in the tubes available for being returned; if you introduce the coin in the validator, the display will increase the amount of money in the tubes which is available for being returned.

By confirming the emptying operation, it is possible to establish on which of the pipes to intervene. Everytime the confirmation key is pressed , a coin is ejected from the active pipe.

---

## BOILER TEMPERATURE

---

By means of this function it is possible to read, directly in °C, the temperature detected in the boiler.

---

## TEST

---

For complete or partial dispensing tests, each button (or combination of keys, depending on the models) activates the corresponding selection (see doses-selections table).

**N.B. For the espresso-based selections, with the partial dispensing of powder and water only the additions are dispensed; if the selection does not foresee additions, the display will show "Selection Disabled"**

The possible test dispensing are:

- Complete dispensing
- Dispensing of only water
- Dispensing of only powder
- Dispensing without accessories (without cup, stirrer and sugar)
- Dispensing of only accessories (only cup, stirrer and sugar)

---

## EVA DTS


---

EVA DTS communication protocol (European Vending Associations Data Transfer System) allows the communication with statistics acquisition devices.


### CONNECTION

By activating this function, the machine waits for the connection with a statistics activation device EVA DTS.

### ALERT COUNTERS RESET

This function is used to reset all the counters which manage the alerts related to "product running-out". Press the key  for resetting.

### PARTIAL RESET


This function allows you to reset the counter which manages the alert "product running-out" of a single product. Press the key  to reset.

## ENGINEER MENU

Below is an explanation of the main software functions which manage the operation of the machine, grouped by logic of use and not necessarily in the order in which they are displayed in the menu.

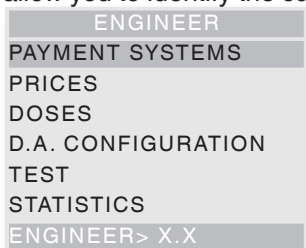
The software version can be updated using the appropriate systems (PC, Giga, UpKey, etc.)





For more information and details please refer to the doses table supplied with the machine, taking into account the software version of the machine.

By pressing the key  from the "Loader" mode, the machine goes into "Engineer menu" mode.


The display shows the first item of the "Engineer" menu with the available operations.

The last row of the display contains the menu and the number, which allow you to identify the current level.



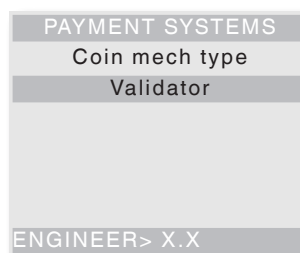
- By pressing the confirmation key  you can access the menu.
- By pressing the exit key  you go back to the previous menu.
- The keys  and  allow you to navigate through the items of the menu:

### Notes:

If you want to go back to the Loader mode, press the key  from any first level function.

## PAYMENT SYSTEMS

It is possible to decide which of the protocols for the expected payment systems to enable and manage the related functions.



The communication protocols for the expected payment systems are:

- Validators
- Executive
- BDV
- MDB

Some of the parameters, which are common amongst several payment systems, keep the set value even if the system type is changed.

If necessary, they can be modified from the menus of the payment systems.


### VALIDATOR

#### IMMEDIATE CHANGE


Usually the amount related to a selection is cashed in after the machine sends the signal "Selection made". By enabling this function, which is disabled by default, the payment signal is sent at the beginning of the dispensing.

Setting this parameter is compulsory.

#### DECIMAL POINT

By pressing the confirmation key  the position of the decimal point is displayed, which means:

- 0 decimal point disabled
- 1 XXX.X (one decimal point)
- 2 XX.XX (two decimal points)
- 3 X.XXX (three decimal points)

By pressing the confirmation key , these values flash and they can be modified.

#### ASSOCIATION LINE/VALUE

When the display is showing the function "ASSOC. LINEA-VALORE" (programming of lines) of the "programming" menu, it is possible to vary the value of the 6 coins lines, from A to F, of the validator.

#### OVERPAY

It is possible to decide whether to cash in or leave the user any credit exceeding the amount of the selection.

## EXECUTIVE

### VERSION

For the Executive system it is necessary to choose amongst the following payment systems:

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

### IMMEDIATE CHANGE

Usually the amount related to a selection is cashed in after the machine sends the signal "Selection made". By enabling this function, which is disabled by default, the payment signal is sent at the beginning of the dispensing.

Setting this parameter is compulsory.

### BDV

The BDV protocol menus allow you to define the following functions.

### IMMEDIATE CHANGE

Usually the amount related to a selection is cashed in after the machine sends the signal "Selection made". By enabling this function, which is disabled by default, the payment signal is sent at the beginning of the dispensing.

Setting this parameter is compulsory.

### TYPE OF SALE

This allows you to set the operating mode for multiple or single dispensing. With multiple dispensing, the change is not automatically returned at the end of one dispensing, but it remains available for further dispensing. By pressing the coins return button, the remaining credit will be returned if its value is lower than the value of the maximum change.

### CHANGE REFUSAL

This allows the enabling/disabling of the return of the credit (escrow) if no dispensing was made. If enabled, this function allows the coins to be returned even if the first dispensing has not occurred. But if a dispensing failed for any reason, if requested, the change will be returned.

### MAXIMUM CREDIT

This function allows you to define the maximum credit for the introduced coins which is accepted.

### MAXIMUM CHANGE

It is possible to set a limit to the total amount of change that the coin mech will pay when the change return button is pressed or after a single dispensing. Any credit exceeding the programmed amount with this function will be cashed in.

## ACCEPTED COINS

It is possible to define which amongst the coins recognised by the validator shall be accepted.

In relation to the coin/value correspondence, the label on the coin mech shall be checked, which shows the position of the coins.

### REFUSED COINS

This allows you to program the refusal of coins if the condition "exact amount" is met.

In relation to the coin/value correspondence, the label on the coin mech shall be checked, which shows the position of the coins.

### "EXACT AMOUNT" VALUE

This data defines the combination of empty tubes which puts the coin mech in the condition of "exact amount". The possible combinations of empty tubes are shown below.

For simplicity reasons the combination is described with reference to the tubes A, B and C, where tube A receives the lower value coins and tube C the higher value coins.

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

### DISPENSING BUTTONS

This function allows you to enable or not the buttons on the coin mech for removing the coins from the coin mech tubes.

### C.P.C. PERIPHERAL

It communicates to the coin mech if some peripherals have been installed or removed from the serial connection (C.P.C. type peripherals - the default verification unit is always enabled).

### TUBES MINIMUM LEVEL

This allows the user to be notified with the message "Insert exact amount", adding a number of coins between 0 and 15 to the programmed number of coins for determining the full status of the tubes.

### VMC FREE SALE

Most of the payment systems with BDV protocol manage the free sale function.

Nevertheless, there are payment systems which do not have this function.

In this case, having to dispense some selections free of charge, it is necessary to enable the VMC free sale (vending machine control, enabled by default) and set the price of these selections to zero.

## **MDB**


The MDB protocol menus allow you to define the following functions.

### **IMMEDIATE CHANGE**


Usually the amount related to a selection is cashed in after the machine sends the signal "Selection made". By enabling this function, which is disabled by default, the payment signal is sent at the beginning of the dispensing.

Setting this parameter is compulsory.

### **DECIMAL POINT**

By pressing the confirmation key  the position of the decimal point is displayed, which means:

- 0 decimal point disabled
- 1 XXX.X (one decimal point)
- 2 XX.XX (two decimal points)
- 3 X.XXX (three decimal points)

By pressing the confirmation key , these values flash and they can be modified.

Setting this parameter is compulsory.

### **TYPE OF DISPENSING**

This allows you to set the operating mode for multiple or single dispensing. With multiple dispensing, the change is not automatically returned at the end of one dispensing, but it remains available for further dispensing. By pressing the coins return button (if the function is enabled), the remaining credit will be returned up to the value of the maximum change.

### **OBLIGATION TO BUY**

This allows the enabling/disabling of the coins return button before dispensing a product.

- ON: the change is returned after a product has been selected
- OFF: the change is returned immediately when the coins return key is pressed (the machine works as change machine)

### **MAXIMUM CREDIT**

This function allows you to define the maximum credit for the introduced coins which is accepted.

## **MAXIMUM CHANGE**

It is possible to set a limit to the total amount of the change that the coin mech will pay when the change return button is pressed or after a single dispensing. Any credit exceeding the programmed amount with this function will be cashed in.

### **Accepted coins**

It is possible to define which amongst the coins recognised by the validator shall be accepted when the coins return tubes are full.

In relation to the coin/value correspondence, the configuration of the coin mech needs to be checked

### **ACCEPTED COINS**

It is possible to define which amongst the coins recognised by the validator shall be accepted when the coins return tubes are full.

In relation to the coin/value correspondence, the configuration of the coin mech needs to be checked

### **COINS RETURNED**

It is possible to define which amongst the coins available in the tubes shall be used for giving the change. This parameter is only active with coin mechs which do not automatically manage the choice of the tube to be used (Auto changer payout).

In relation to the coin/value correspondence, the configuration of the coin mech needs to be checked

### **ACCEPTED BANKNOTES**

It is possible to define which amongst the banknotes recognised by the reader shall be accepted.

In relation to the banknote/value correspondence, the configuration of the reader needs to be checked



## **ACCEPTANCE BELOW LEVEL**

It is possible to define which amongst the coins recognised by the validator shall be accepted when the machine is in "exact amount" condition.  
In relation to the coin/value correspondence, the configuration of the coin mech needs to be checked

## **BANKNOTES ACCEPTANCE BELOW LEVEL**

It is possible to define which amongst the banknotes recognised by the reader shall be accepted when the machine is in "exact amount" condition.  
In relation to the banknote/value correspondence, the configuration of the reader needs to be checked

## **CASHLESS PRIVATE**

For safeguarding the users privacy this function allows the display of the string "-----" instead of the credit of the cashless system.

## **OVERPAY**

It is possible to decide whether to cash in or leave the user any credit exceeding the amount of the selection.

## **CASH-SALE MANAGEMENT**

This function allows the recording of the cash transactions as if they were made through a cashless system. The available values are:

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

## **PARALLEL DEVICE**

This function allows you to enable the presence of a parallel validator or banknotes reader which is used to recharge the keys.

## **EXACT CHANGE EQUATION**

This allows the choice amongst 12 different control algorithms in order to let the machine be capable of returning the change at the end of a selection.

Each algorithm verifies a set of conditions, such as for example the amount of coins in the tubes or the status (empty or full) of the tubes which will be used by the coin mech to return the change.

If one of these conditions is not satisfied, the machine will not be capable of giving the change: in this case the display will show the message "No change given"

## **CASHLESS MAXIMUM CREDIT**

This function allows you to set the maximum credit that a key/cashless card can have in order to be accepted by the system. If the key has a greater value, it will be refused.

The value that has been set shall always be greater than or equal to the value set under the function "Revalue Maximum cash"; in case it is modified and is lower, it will automatically be set to the same value of the "Revalue Maximum cash".

Cashless maximum recharge

The function allows you to set the maximum credit that can be charged on a key or card system.

## **CASHLESS MAXIMUM RECHARGE**

The function allows you to set the maximum credit that can be charged on a key or card system.

## **TUBES MINIMUM LEVEL**

This allows you to set the number of coins between 0 and 15 for determining the full status of the tubes and the notification to the user "insert exact amount"

## **BANKNOTES READER FUNCTION (BILL REVALUE)**

This function allows you to enable the banknotes reader exclusively for recharging the credit on the cashless system (key or card)

## **ACCEPTANCE OF INDEFINITE CREDIT**

This function allows you to accept or not the cashless payment systems (key or card) in case the credit of the cashless system is not defined.

## **USER GROUPS**

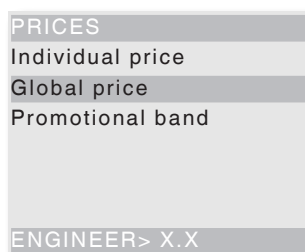
This function allows you to associate a price list (list 1, list 2 and list 3) to user groups (from 1 to 5).

As a default condition all the user groups are associated to list 1.

## PRICES

From this menu it is possible to set the prices individually (for each selection) or globally (the same price for all the selections) and define the intervals of the promotional band.

The machine can manage up to 4 different prices for each selection, which can be active depending on the time band that has been set (standard or promotional) and/or on the payment system used.



The prices are grouped in 4 lists and they can be programmed (from 0 to 65,535), for each of the 4 lists, both globally (the same price for all the selections) and for each selection.

The price of each selection can be varied also directly from the keyboard.

In the event that most of the products are sold at the same price it is more convenient to program the price globally and then change the price of the selections which have a different sales price.

### BDV, EXECUTIVE, VALIDATORS

With these systems, apart from the standard price list, it is possible to manage a promotional price list if the time band is enabled by means of the appropriate function. The selections will be dispensed at the price of the promotional list, during the programmed time intervals.

### MDB

With these systems it is possible to establish whether to use the 4 price lists at the same time or to use two bands alternatively depending on the time band that has been set.

If the time band is not used, apart from the standard price list it is possible to manage three further price lists depending on the type of cashless support used (key 1-3).

If the time band is used, the selections will be dispensed, for the cashless system, at a price which is different from the standard price; during the time intervals which have been programmed, the selections will be dispensed with two different promotional prices for the standard list and for the cashless system.

### PROMOTIONAL TIME BAND

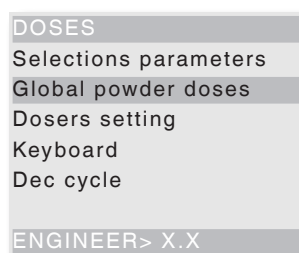
4 programmable time intervals for sales at different prices.

The intervals can be adjusted by the hour (from 00 to 23) and by the minute (from 00 to 59).

The reference time is given by an internal clock which can be adjusted from the configuration menu of the machine (see paragraph "DA Configuration").

## DOSES

This group of functions allows you to define all the variables which contribute to the preparation of the drink



### SELECTION PARAMETERS

By confirming this function, you can access the submenus for managing the parameters; the first option is the choice of the selection which you would like to change. By pressing a key on the keyboard, the corresponding parameters will be displayed, which will be different if the key is a selection or a preselection.

### SET COMPOSITION

This group of functions allows you to modify the doses and the parameters in relation to water and powder of the chosen drink.

By confirming this function, the list of ingredients (powder/s and water) of the drink is shown, listed in the order in which the water dose is dispensed (see doses table).

A drink can be composed of a maximum of 4 ingredients (powder/s and water).

Each dose of water can be matched to more than one powder.

The dispensing of water can be controlled through the following parameters:

## MIXER

### Mixing mode

It is possible, for each selection, to set the mixing duration of each dose of water which forms the selection. The duration can be set in two different modes:

#### - absolute

which means independent from the solenoid valve opening time.

The value of the mixing duration is set in terms of volumetric counter pulses (CDV)

#### - relative

which means based on difference, positive or negative, compared to the time of closure of the solenoid valve.

I.e.: if the value is 0, mixing will stop exactly at the time of closure of the solenoid valve.

The value of the duration of the mixing is always stated in tenths of second.

### MIXING SPEED (LOW / MEDIUM / HIGH)

The mixing speed can be defined as a function of the desired presentation of the product.

### MIXING TIME

It is possible to define, within a single product, for how long the mixer shall be active after the closure of the solenoid valve.

## WATER DOSES

The dispensing of water can be controlled through the following parameters:

### EVENT START (0 - 3)

By setting this value, the water of the corresponding ingredient will be dispensed after the other quantities of water with a lower value.

In this way it is possible to vary the sequence of the various ingredients for obtaining a better presentation of the product.

### DELAY

It is possible to set (in hundredths of second) the delay of the water with respect to the previous event.

### DOSE IN CC

It is possible to set, directly in cc, the quantity of desired water for each event start.

### DOSE IN CDV

It is possible to set, directly in cdv (fan pulses), the quantity of desired water for the event start related to a drink.

## POWDER DOSES

The dispensing of powders can be controlled through the following parameters:

### DOSE IN GRAMS

It is possible to set, directly in grams, the quantity of desired powder for each ingredient of which the drink is composed.

### RATE IN G/SEC.

It is possible to set the working speed of the ingredient motors for defining the rate in g/sec.

This value is used for calculating the time required for dispensing the dose in g.

### DECAFFEINATED CYCLE OR STEPPED DISPENSING

With this function it is possible to decide, for each selection based on instant coffee in relation to the "global" setting, whether the powder shall be dispensed with the decaffeinated cycle or in steps.

- DECAFFEINATED CYCLE: with this parameter, the powder is dispensed (suggested for instant coffee) before the water, for improving the presentation of the drink:

- IN STEPS: with this parameter the powder is dispensed in steps (which can be set from 1 to 5) at the same time of the water.

## DRIP

For each selection it is possible to define the waiting time (programmable from 0 to 2000 hundredths of second) from the end of dispensing to the closure of the shifting system in order to give the tubes time to discharge.

## STATUS OF SELECTION

For each selection key it is possible to define whether it shall be enabled or not.

## ACCESSORIES

For each of the accessories:

- sugar	ON/OFF
- stirrer	ON/OFF
- cup	ON/OFF
- sugar in the cup	(amount in g.)
it is possible to decide whether it has to be added or not to a selection.	

## COMPLETE SELECTION TEST

With this function it is possible to obtain for each selection, with the door open and without inserting the amount, the dispensing of:

- complete selection
- only water
- only powder
- without accessories (cup, sugar and stirrer)
- only accessories

## PRODUCT CODE

With this function it is possible to assign an identification code of 16 alphanumeric characters to each selection, for elaborating statistics

## GLOBAL POWDER DOSES

With this function it is possible to adjust at the same time the powder dose of each ingredient motor related to several selections.

Use the keys **↑** and **↓** to scroll all the powders, press the confirmation key **↵** for setting the grams of chosen powder.

## DOSERS SETTING

For the correct conversion of the amounts of the product dose it is possible to set the value of the rate of each of the dosers in g/sec for calculating the grams to be dispensed.

## KEYBOARD

### KEY <---> SELECTION

With this function it is possible to vary the order of the selections associated with the keyboard defined by the layout that has been set.

The display will show, in a sequence, the list of the foreseen selections and by pressing the destination key, the match is stored.

## VERIFICATION NO. OF SELECTION

This allows you to verify the selection number matched to a key.

## WITHOUT SUGAR

With this function it is possible to set all the selections as "without sugar".

## DECAFFEINATED CYCLE

This function acts on the selections based on instant coffee. The selections are identified in the layout as unmodifiable.

By enabling this function in all the selections based on instant coffee (if present) the powder is dispensed before the water

For each selection based on instant coffee it is however possible to change this parameter individually.

## DA CONFIGURATION

This group of functions controls all the parameters related to the operation of the machine.

### DATE AND TIME SETTING

This function allows you to set the current date and time. The data is used by the machine for managing the time band and the statistics.

In the absence of power supply the machine maintains the set date and time by means of a buffer battery.

### BOILER TEMPERATURE

This function allows you to set the working temperature, in °C, of the boiler.

From this function, press the confirmation key **↵**, the temperature value flashes and it can be modified with the keys **↑** and **↓**

### DB MANAGEMENT

This group of functions allows you to manage the operational database of the machine

### INITIALIZATION

This function shall be used in case of error of the data in the memory or if the software is replaced.

All the statistical data, with the exception of the general electronic counter, will be reset.

When the display is in the "Initialization" function, it is possible to initialize the machine by resetting all the default data.

By pressing the confirmation key **↵** the display will show the message "Confirm?". By pressing again the confirmation key **↵** some parameters will be requested, such as:

- **COUNTRY:** it being understood as type of basic doses for the various selections (i.e. IT coffee = 60 cc - FR coffee = 106 cc).

The "countries" vary depending on the models.

- **LAY OUT:** for each model and type of doses, there are a certain number of Buttons-Selections combinations amongst which it is possible to choose (the combinations for each layout are indicated in the doses-selections table supplied with the machine).

- **TANK:** it defines whether the water supply is:  
0 - from the mains  
1 - from an internal tank

By confirming the options, the message "Execution" is displayed for a few seconds.

## **SAVE DB CUSTOM**

This allows you to save the current configuration of the machine on an external memory; this function is useful in case of customization (for example to the parameters of the selections) as compared to the factory settings.

## **RESTORE DB CUSTOM**

This allows you to restore the customized configuration of the machine which was previously saved with the function "Save modified DB".

In case the factory settings need to be restored, it is necessary to initialize the machine.



## **DISPLAY**


This group of functions controls all the parameters related to the display.


## **LANGUAGE**

It is possible to choose in which language, amongst those foreseen by the software, the messages are shown on the display.

## **SETTING OF PROMOTIONAL MESSAGE**

The message of 5 rows of 16 characters can be composed by using the keys  and  for scrolling the available characters.

By pressing the confirmation key  the first character that can be modified flashes.

The message is stored by pressing the key .

## **PROMOTIONAL IMAGE**

This allows you to enable/disable the promotional image shown on the display in normal user mode:

- **ON:** in normal user mode the message "Select drink" is alternated, every 3 seconds, with the promotional image

- **OFF:** in normal user mode, only the message "Select drink" is shown

## **CONTRAST SETTING**

This function allows you to adjust the contrast of the display from a minimum of 5% to a maximum of 99% (default).

## **COLOUR OF STANDBY LIGHTS**

This function allows you to choose whether to leave the keyboard lights:

- **OFF**

- **ON,** choosing the colour amongst the available ones, when the machine is on standby.

## **MONEY SYMBOL**

This function allows you to enable, when the credit is displayed, the symbol of the currency that has been set (€, \$ or £)

## **MENU MANAGEMENT**




### **PASSWORD**

This is a 5 digit numerical code which is requested for displaying all the functions of the menu (advanced). As a default condition, the value of this code is set to 00000

From this group of functions it is possible to enable and set the password.

### **ENABLING THE LOADER MENU**

With this function it is possible to make visible or not the loader first level menu.

By using the keys  and  you can scroll the items of the loader first level menu; the key  can be used to modify the status of the chosen menu (ON/OFF).

### **STANDBY DIRECT KEYS**

This function allows you to enable the keys (up to 6) located inside the door

Each enabled key can be associated to a direct function. (see direct keys functions)

### **DIRECT KEYS FUNCTIONS**

This function allows you to associate the following functions to the 6 keys located inside the door:

- **OFF** (no function associated to the chosen key)

- Faults reset

- Mixer wash

- Infuser unit wash

- Display number of strokes

- EVADTS connection

- Loading the tubes of a coin mech

- Unloading the tubes of a coin mech

## ESPRESSO UNIT

### PRE-GRINDING

This function allows you to enable or disable the grinding of the coffee dose for the subsequent selection. This allows you to decrease the preparation time of a coffee solution.

As a default condition, this function is disabled.

### ESPRESSO BOOST

By enabling this function it is possible to heat the hydraulic circuit and the espresso unit before an infusion of espresso.



In the event that no espresso-based selections are made for a long time, a small quantity of warm water is dispensed before the release of the coffee dose.

### COFFEE WASTE

The function allows you to set the maximum number of espresso-based items dispensed.

Once the number of selection that has been set is reached, the machine shows the request to empty the waste container.

### RESET OF COFFEE WASTE COUNTER AT START-UP

This function allows you to enable the request to reset the coffee waste counters when the machine is started. Press the key  to reset or  to cancel the resetting.

## WASH

### AUTOMATIC MIXER WASH

It is possible to set the time for the automatic wash of the mixers installed.

By setting the time at 00:00, the function is disabled (default condition).

### AUTOMATIC UNIT WASH

This function allows you to set the daily automatic wash (rotation and dispensing of water) of the espresso unit by setting the time when to perform the wash.

By setting the time at 00:00, the function is disabled (default condition).

### INSTANT BOOST

If this function is enabled and no dispensing was made in the last 3 minutes in the milk or instant coffee mixers, a small quantity of hot water is dispensed before the short instant coffee, macchiato instant coffee and espresso macchiato selections.

### MIXER COOLING

If the machine is equipped with a cold unit, the function is enabled. If no dispensing was made within the last 3 minutes in the mixers of the cold drinks, a small quantity of cold water is dispensed before the syrup-based selections.

### WASH PASSWORD

From this group of functions it is possible to set the

#### - Mixer wash password

Password to be inputted in normal user mode (with the door closed) for washing the mixers.

The keyboard assumes the corresponding numerical values shown in the figure at the beginning of the chapter.

#### - Group wash password

Password to be inputted in normal user mode (with the door closed) for washing the espresso unit.

The keyboard assumes the corresponding numerical values shown in the figure at the beginning of the chapter.



## ACCESSORIES

### TANK

This function allows you to define whether the vending machine water supply is through the mains or internal tanks:

- 0: water supply from the mains;
- 1: internal tank;

### PHOTOCELL

For the models equipped with “cup sensor” composed of a photocell which detects the presence of an object in the dispensing unit.

With the function enabled, if an object is detected in the dispensing area, the cup is not released and the display will show the message “Without cup”.

It is furthermore possible to define whether, after two attempts for releasing a cup without a detection of objects by the photocell in the dispensing area, the fault shall block the machine or shall leave it operational for the use with cup.

The lamp of the dispensing area is controlled by the cup sensor. If the cup remains inserted, when the next selection request is made, the message “remove the cup” will be shown.

### JUG FACILITIES

Some of the models, equipped with an appropriate key, can dispense a number (programmable from 1 to 9, 5 as default) of selections without cup to fill in a jug.

### WASTE RESET PASSWORD

The function allows you to set the password (to be inserted with the door closed) to reset the counter which manages the coffee waste container.

### “FREE-VEND” PASSWORD

The function allows you to set the password (to be inserted with the door closed) to enable the free of charge dispensing of the drinks (free vend).

### “JUG FACILITY” PASSWORD

The function allows you to set the password (to be inserted with the door closed) to enable the multiple dispensing of a selection for filling a jug.

## CUP ADJUSTMENT TIME

This function allows you to determine the time of delay of the rotation stop of the cup dispenser for compensating the possible inertia due to the type of cup.

## ENERGY SAVING

In order to save energy when the machine is not used, it is possible to choose amongst the following energy saving options:

### ENERGY SAVING:

with this option it is possible, in the time intervals which are set with the function “Energy Saving Parameters”, to suspend the service of the vending machine and switch off or not the boiler.

The selections are not available for the whole duration of the Energy Saving period.

- **Sleep Energy Saving:** with this option, after 15 minutes of inactivity of the vending machine, the LEDs of the door switch off and the temperature of the boiler decreases to approx. 70 °C. When any selection button is pressed, the machine restarts the normal operations and as soon as the operational temperature is reached, the selections become available again.

- **Soft Energy Saving:** with this option it is possible to switch off the lighting LEDs of the keyboard during the time intervals set by the function “Energy Saving Parameters” while the boiler continues to work normally. When any selection button is pressed, the lighting of the keyboard is reactivated and the machine immediately restarts the normal operations.

### ENERGY SAVING PARAMETERS

With this function it is possible to set up to 4 time bands during which the energy saving profiles will switch on (Energy Saving and Soft Energy Saving).

## **LED D.A. OUT OF SERVICE**

It is possible to define whether the lighting LEDs shall be switched on or not (red) when the machine is out of service and the “Energy saving” mode is on .

## **SET DISPENSING MAINTENANCE**

With this function it is possible to establish how many dispensing tests can be made at each door opening. As a default condition the value is set to 0 and there are no limitations to the dispensing tests.

## **COLD UNIT ID SETTING**

This function is active if the cold unit is present. It allows you to assign an identification number to the cold unit (from 0 to 9) connected to the vending machine. If there are several machines connected in series, the ID numbers of the cooling unit shall be different.

## **MASTER SLAVE**

The machine control system is arranged for the connection in series with other vending machines.

## **SETTINGS**

This function allows you to set the hierarchies of the master / slave1 / slave2 relationships between the connected machines.

This machine can be configured as “Master”, therefore assuming control of the second machine or as “Slave”, therefore leaving the control to the other machine.

Furthermore, the numbers of the selections will be set, with two digits (XX) or three digits (0XX; 9XX)

As a default condition, the master/slave function is not enabled.

## **SLAVE PRICE HOLDING**

In case the Executive payment system is set in “Price Holding” mode, with this function it is possible to set the same mode also in the software of the slave machine.

## **RETURN VIRTUAL PRICE**

If the payment system is set with BDV and/or Executive protocol and for combined or virtual selections (whose relative menus are on the slave machines), with this option it is possible to establish whether to keep (OFF) or not (ON) the partial amount, in case the second selection/dispensing should fail.

## **RESET MINISLAVE**

With this function it is possible to reset all the settings related to the master/slave function on the slave machine.

## **MONITOR SLAVE**

With this function it is possible to scroll all the information related to a possibly connected slave machine. By switching on the “slave” machine with the display on this function, the display will show in sequence the information of the slave related to:

- Software version
- Type of slave (XX, 0XX, 9XX)
- Presence of the photocells for dispensing detection
- Number of trays and drawers
- Presence of a device blocking the opening of the collection area
- Temperature detected by the internal probe.

To exit the function it is necessary to switch off the “master” machine.

## **DISPLAY SLAVE INFORMATION**

This function is not active on this model.

With this function it is possible to display the instant temperature of the possibly connected “slave” machine.

## **DA SERIAL NUMBER**

With this function it is possible to vary the eight digits numerical code which identifies the vending machine (0 as default).

## **PROGRAMMING OF THE OPERATOR CODE**

With the function “Operator code” it is possible to vary the six digits numerical code which identifies groups of machines (0 as default).

## **LOCATION CODE**

With the function “Location code” it is possible to vary the eight digits numerical code which identifies the place where the machine is located (0 as default)

## **INSTALLATION DATE**

With this function the current date of the system is set as installation date.

The date is printed when the statistics are extracted.

## MANAGEMENT OF THE EXTRACTOR

With this function it is possible to enable or not the continuous operation of the fan extracting instant powder residue and/or steam during the preparation of the drink.

- ON extractor fan in continuous operation
- OFF extractor fan in operation only during the preparation of the drink and for the 30 subsequent seconds.

## MAXIMUM NUMBER OF COUNTERS

With this function it is possible to set the maximum number of selections to be reached for blocking the machine.

it is possible to set the counters for the selections:

- Espresso
- Instant drinks
- Espresso + instant drinks

By setting the counter to a new value, the previous count is cancelled.

This function is active if the password to reset the counters has previously been set.

## PASSWORD TO RESET THE COUNTERS

This function allows you to set the password to be inputted in normal user mode (with the door closed) for resetting the counters of the selections.

If the password is set to zero, this function is not active.

## ALERTS

This function allows you to manage the counters of the alerts "product running out".

### ALERTS THRESHOLDS

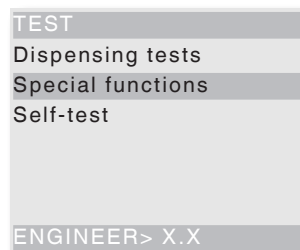
This function allows you to set the alerts thresholds "product running out".

### RESETTING ALERTS COUNTERS

This function allows you to reset the counters which manage the alerts thresholds "product running out".

## TEST

This group of functions allows you to perform tests on the main components of the machine.



### DISPENSING TESTS

With this function it is possible to obtain for each selection, with the door open and without inserting the amount, the dispensing of:

- complete selection (cup, drink, stirrer and sugar)
- only water
- only powder
- without accessories (cup, sugar and stirrer)
- only accessories

### SPECIAL FUNCTIONS

Inside this function it is possible to:

- Release a coffee dose
- Open a solenoid valve for letting the air enter in case the boiler is emptied for maintenance
- Perform the filling of the hydraulic circuit (installation)
- Perform the movement (rotation) of the espresso unit
- Perform the movement (rotation) of the espresso unit whilst the piston is pressing down.
- Wash the infuser unit.

## AUTOTEST

This function allows you to verify, in semi-automatic mode, the operation of the main components of the machine. By pressing the confirmation key, the flashing message "AUTOTEST" will be displayed.

It is possible to abandon each operation and go to the next one by pressing the exit key; instead, by confirming with the confirmation key, the autotest cycle starts. Some of the controls are automatic, whilst others require the controlled component to be manually operated.

In sequence:

- Activation of ingredient motors for 2 seconds
- Activation of whipper motors for 2 seconds at different speeds
- Release of a cup
- Release of a stirrer
- Rotation of the infuser unit
- Control of the washing button
- Full liquid waste; the machine remains in standby until the full liquid waste microswitch is operated manually
- Door lighting test; check that the keyboard lighting is working
- Switch on the dispensing area lighting (if present)
- Keyboard check; the machine displays the number of the button that shall be pushed and it indicates the latter also by switching on the corresponding LED and it remains in standby for the actuation before switching to the next key
- Check that the boiler temperature probe is working
- Check that the buzzer is working
- Check that the coin mech (if present) is working

## STATISTICS

The data related to the operation of the machine are stored both in total counters and in relative counters, which can be reset without losing the total data.

### ELECTRONIC COUNTER

#### DISPLAY ELECTRONIC COUNTER

An electronic counter memorizes in an aggregate mode all the items dispensed from the last reset.

#### RESET ELECTRONIC COUNTER

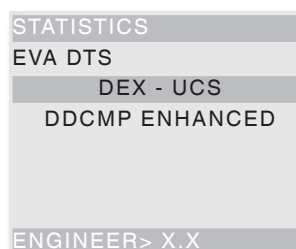
The electronic counter can be reset.

#### DISPLAY NUMBER OF STROKES AT START-UP

With this function it is possible to enable or disable the display of the total number of items dispensed from the last reset of statistics, during the machine start-up phase.

### EVA DTS

EVA DTS communication protocol (European Vending Associations Data Transfer System) foresees two codes for identifying the machine and recognising the data transfer terminal:



### COMMUNICATION PROTOCOL

From this function it is possible to decide which communication protocol to use for the communication with the data acquisition device.

The available communication protocols are:

#### DDCMP ENHANCED

with the following configurable parameters:

- **Pass code:** it is an alphanumeric code (0-9; A-F) of four digits which shall be equal to the one of the data transfer terminal for permitting its identification.  
Default setting: 0000
- **Secutiry code:** it is an alphanumeric code for the mutual recognition between machine and EVA DTS terminal.  
Default setting: 0000
- **End of transmission:** if enabled, it is capable of recognising the end of transmission signal which is sent with the last packet and of interrupting the data transmission.

## DEX/UCS

for this protocol there are no configurable parameters:

### DATA TRANSMISSION

This function allows you to select which communication interface to use for data transmission. The available interfaces are:

- "RS232" and "IrDA": for the communication with serial or infrared data acquisition devices.
- "ALWAYS EVA DTS" for communications with data acquisition and transmission devices (telemetry).

### BAUDRATE (TRANSMISSION SPEED)


This allows you to choose the communication speed of transmissions (only if "EVA DTS type" is set with "fixed"). Default setting: 2400bps.


### CONNECTION

By activating this function, the machine waits for the connection with a data acquisition device EVA DTS.


### ERASING DATA

The statistics can be reset in a global mode (all types of data) or in a selective mode, for:

- selections
- discounts-overpays
- faults
- coin mech data
- By pressing the confirmation key  the flashing confirmation message "Confirm?" is displayed

By pressing the confirmation key  the message "Execution" is displayed for a few seconds and the statistics are reset.


### DISPLAY OF GENERAL STATISTICS


By pressing the confirmation key  the stored data is displayed in sequence:

- 1 - single selection counter;
- 2 - bands counter;
- 3 - discounts counter;
- 4 - faults counter;
- 5 - coin mech data.


### RESETTING OF GENERAL STATISTICS

The statistics can be reset in a global mode (all types of data) or in a selective mode, for:

- selections
- discounts-overpays
- faults
- coin mech data
- By pressing the confirmation key  the flashing confirmation request "Confirm?" is displayed.

By pressing the confirmation key  the message "Execution" is displayed for a few seconds and the statistics are reset.

### DISPLAY OF RELATIVE DATA


By pressing the confirmation key  the stored data is displayed in sequence:


- 1 - single selection counter;
- 2 - bands counter;
- 3 - discounts counter;
- 4 - faults counter;
- 5 - coin mech data.

### RESETTING OF RELATIVE DATA RELATIVE

The statistics can be reset, for the relative counters, in a global mode (all types of data) or in a selective mode, for:

- selections
- discounts-overpays
- faults
- coin mech data

By pressing the confirmation key  the flashing confirmation request "Confirm?" is displayed.

By pressing the confirmation key  the message "Execution" is displayed for a few seconds and the statistics are reset.

## **BDV AUDIT PROTOCOL**

The data related to the coin mech are the indication in real value of:

- **Aud 1 Money in the tubes**  
money which is in the coin mech tubes at that point in time
- **Aud 2 Money to the tubes**  
Money sent towards the coin mech tubes
- **Aud 3 Money in the cash till**  
Money sent to the cash till for coins
- **Aud 4 Return of change**  
Total of money returned
- **Aud 5 Money distributed**  
Total of money which is manually distributed
- **Aud 6 Surplus**  
Money in surplus. Amounts overpaid by the client, which have not been returned (in the event that there is no availability of money for the change)
- **Aud 7 Total sales**  
Total value of sales
- **Aud 8 Exact change**  
Value of sales in “no change given” condition
- **Aud 9 Mixed dispensing**  
Total value of the dispensed items which were paid for in a different way, for example also through other types of payment (C.P.C., token)
- **Aud 10 Manual load**  
money inserted in the coin mech through the manual loading function.

## **MDB AUDIT PROTOCOL**



- **Aud 1 Money in the tubes**  
money which is in the coin mech tubes at that point in time
- **Aud 2 Money to the tubes**  
Money sent towards the coin mech tubes
- **Aud 3 Money in the cash till**  
Money sent to the cash till for coins
- **Aud 4 Return of change**  
Total of money returned
- **Aud 5 Surplus**  
Money in surplus. Amounts overpaid by the client, which have not been returned (in the event that there is no availability of money for the change)
- **Aud 6 Emptying the tubes**  
Value of the coins returned in the “tubes management” function
- **Aud 7 Loading the tubes**  
Value of the coins cashed in the manual loading function.
- **Aud 8 Cash sales**  
Value of total sales made in cash (coins + banknotes)
- **Aud 9 Banknotes collected**  
Value of the banknotes that have been collected
- **Aud 10 Recharge key**  
Value of the money charged on the key
- **Aud 11 Key sales**  
Value of the money collected through dispensed items paid by key
- **Aud 12 Money dispensed manually**  
Value of the coins dispensed manually through the distribution button on the coin mech.

## **PRINTING**

By connecting a RS232 serial printer with Baud rate 9600, 8 bit of data, no parity, 1 bit of stop to the serial connector on the button board it is possible to print all the statistics described at paragraph “display general statistics” and “display relative statistics”; the printout also shows the code of the machine, the date and the software version.

Printing the statistics can be performed in a relative or total mode.

To connect the printer follow these steps:

- press the printing confirmation key  the confirmation request “Confirm?” is displayed;
- connect the printer before confirming;
- by pressing the confirmation key  printing will start.



## COMMUNICATION

This menu contains the communication functions of the machine through UpKey and GSM (Global system for mobile communications).



### UP-KEY

#### SETUP MANAGEMENT

##### UPKEY -> DISPENSER

This function, after having inserted the upkey in the appropriate slot on the CPU card, allows you to select the setup file of the list which will appear on the display; if you then press the confirmation key, the chosen setup file will be loaded into the machine.

##### DISPENSER ->UPKEY

This function, after having inserted the upkey in the appropriate slot on the CPU card, allows you to save on the Upkey a setup file with the configuration present at that point in time on the machine.

It is necessary to specify the name that you want to give to the file (i.e. SOLIS000.STP)

##### DELETE

With this function it is possible to delete one by one the setup files from the inserted Upkey

##### DELETE ALL

With this function it is possible to delete all the setup files from the inserted Upkey.

#### UPKEY STATISTICS MANAGEMENT

##### DISPENSER ->UPKEY

By confirming this function after having inserted the Upkey in the appropriate slot on the CPU card, you can save a statistics file on the Upkey with all the statistical data which are stored in the machine, specifying the name you want to give to the file (i.e. SOLIS000.STA)

##### DELETE

With this function it is possible to delete one by one the statistics files from the upkey

##### DELETE ALL

With this function it is possible to delete all the statistics files from the inserted Upkey

## GSM

### (Global System for Mobile communications)

The control software is capable of sending, via GSM modem, a notification of faulty machine or “alerts” of “product running out”, after a certain number (programmable) of dispensed items of a product.

### PIN CODE

With this function you can programme the identification code which will be sent to the GSM modem (optional) at the start-up of the machine.

### THRESHOLDS SETTING

This function allows you to define the number of pieces or grams of powder of a certain product which will be the threshold for notifying, via modem, an alert of “product running out”.

### COUNTERS RESET

This function allows you to reset the counters which manage the alerts.

### NUMBER IN THE INSTALLATION IN SERIES

The number in the installation in series (from 1 to 7) univocally identifies the machines which have the “slave GSM” function and which, therefore, send the data through the modem of the “master” machine.

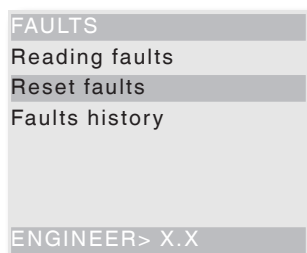
The number 0 identifies the machine connected directly to the modem, in other words the “master GSM”.

## FAULTS

The machine has a number of sensors for keeping the various functional groups under control.

When an anomaly is detected, the display of the machine will show the type of fault and the machine (or part of it) is put out of service.

The detected faults are memorized in appropriate counters; the faults managed by the software can be in relation to functional groups which are not present on the specific model; they are however listed when the menu is scrolled.



### READING EXISTING FAULTS

With this function it is possible to display the existing faults

Press the confirmation key **↵** to display the existing faults.

If there are no existing faults, by pressing the confirmation key **↵** the message “End of faults” will be displayed. The foreseen faults are:

### EMPTY WATER

The machine will stop working if the microswitch of the air-break notifies the lack of water following the opening of the water inlet solenoid valve.

It is possible to try to restore the service of the machine by requesting a drink for a maximum of 3 attempts.

If the internal tank water supply system is installed in the machine, the pump will switch off.

### FULL WASTE

The espresso-based selections are disabled when the number of used pods set in the menu is reached . The solid waste container can contain up to a maximum of 150 used pods.

### AIR-BREAK

The machine will stop working if, after 10 selections, the microswitch has never notified the lack of water.

### EMPTY CUP

When the empty cup microswitch opens, the column shift motor is activated; if after a full rotation the microswitch does not close, the machine is put out of service. If the machine is equipped with a cup sensor (optional), the machine displays the message “without cup”. By means of the appropriate function it is possible to define whether the fault shall block the machine or leave it available for sale with mug.

### CUP SHIFTING SYSTEM

The machine will stop working if the cup shifting system does not reach 1 of the 2 present microswitches in the preset time of 15 sec.

### VOLUMETRIC COUNTER (FAN)

No counting of the volumetric counter (fan) within a maximum time.

### MACHINE BOARD

Lack of communication between CPU card and machine board.

### COIN MECH

The machine will stop working if it receives a pulse longer than 2 sec. on a validator line or if the communication with the serial coin mech does not occur for longer than 30 (Executive protocol) or 75 (BDV protocol) seconds.

### COFFEE RELEASE

If after releasing the dose of ground coffee the microswitch of the doser detects presence of coffee in the doser chamber, the coffee-based selections are disabled.

### COFFEE UNIT -UNIT FAULT MICROSWITCH-

All the faults related to the coffee unit are controlled by a “unit position” control microswitch.

The control microswitch is activated by the coffee unit gear motor cam.

This fault signals that during the movement of the infuser unit the control microswitch is not activated within a set time limit.

It is possible that this fault is combined with another positioning fault of the coffee unit

#### **COFFEE UNIT -UNIT FAULT START-**

The gear motor is not capable of bringing the coffee unit from the idle position to the infusion position.

#### **COFFEE UNIT -UNIT FAULT INFUSER-**

The control microswitch indicates that the coffee unit is not in the infusion position

#### **COFFEE UNIT -UNIT FAULT DISPENSING-**

During the infusion phase, the control microswitch indicates the movement of the espresso unit.

#### **COFFEE UNIT -UNIT FAULT DISCHARGE-**

At the end of the infusion the control microswitch indicates that the coffee unit is not in the “used pod discharge” position.

#### **COFFEE UNIT -UNIT FAULT IDLE-**

The control microswitch indicates that the infuser unit did not go back to the idle position at the end of the discharge of the pod.

#### **EMPTY COFFEE**

If the dose of ground coffee in the doser is not reached within 15 seconds, the fault “empty coffee” is recorded.

#### **RAM DATA**

One or more areas of the RAM memory contain altered data which was corrected with the default values. The machine continues to work, but it is preferable to proceed with the initialization as soon as possible.

#### **ESPRESSO BOILER**

The machine will stop working if after 10 minutes of heating from start-up or from last selection the water in the boiler has not reached the temperature.

#### **CUP RELEASE**

If the cup sensor photocell is installed, after three unsuccessful attempts to release a cup the display will show the message “Without cup”. By means of the appropriate function it is possible to define whether the fault shall block the machine or leave it available for sale with mug.

#### **FAULTY DOSER (DOSER 1 - 9 FAULT)**

If the current absorption of an ingredient motor is not between the range of default values, all the selections in which the doser is involved are disabled.

#### **FAULTY MIXER (WHIPPER 1 - 6 FAULT)**

If the current absorption of a whipper motor is not between the range of default values, all the selections in which the whipper motor is involved are disabled.

#### **SHORT CIRCUIT MOSFET**

If a control device for the DC motors on the activations board (mosfet) remains active, the machine will signal a fault.

#### **SHORT CIRCUIT**

If the software detects a short circuit in one of the DC motors connected to the activations board, this fault will be displayed. It is possible that at the same time of this, a fault is also detected on one of the DC motors.

#### **SUGAR/STIRRERS FAULT**

If the current absorption of the DC motor is not in the default range, this fault is displayed. It is possible to dispense drinks without sugar.

#### **WATER FAULT**

The water fault is declared during the standby mode of the D.A. if the water inlet solenoid valve is activated for a total time longer than 20 sec.

If there is a water fault it is possible to manually restore the service by pressing a key on the control panel. The water inlet solenoid valve is powered for a maximum time of 20 sec.; if the level is not reached the solenoid valve closes and the water fault is signalled again. It is necessary to wait 30 minutes before performing 2 further restore attempts.

At the 4th attempt, the solenoid valve is disabled permanently (at this point it is necessary to switch off/on the d.a. for obtaining 3 further attempts or resetting the fault from the programming menu).

#### **COLD UNIT PRESSURE SWITCH**

Only for models with cold unit.

The cold selections are disabled if the pressure switch at the input of the circuit detects empty water.

#### **COLD UNIT COMPRESSOR**

Only for models with cold unit.

This indicates that the cold unit compressor is not working properly

#### **EMPTY SYRUP 1 AND 2**

Only for models with cold unit.

The syrup used in the selections is finished.

The selections based on the finished syrup are disabled.

#### **EMPTY CARBONATOR**

Only for models with cold unit.

The level control device detects that the carbonator is empty: the cold selections are set out of service.

#### **COLD UNIT BOARD**

Only for models with cold unit.

This signals the malfunctioning of the cold unit control board.

#### **RESETTING**

By confirming this function all the faults are reset.

#### **FAULTS HISTORY**

It is possible to display the last 16 faults, from the most recent one to the oldest one, scrolling with the keys **↑** and **↓**; the corresponding date and time of intervention are also displayed and whether the fault is still active or not (ON / OFF), similar to the data contained in the data audit EVA DTS.

## Chapter 3 Maintenance

The integrity of the machine and compliance of the corresponding systems with the regulations shall be verified, at least once a year, by qualified personnel.

Always switch off the machine before starting maintenance operations which require the disassembling of components.

The operations described below shall be carried out only by personnel with specific knowledge of the operation of the machine both from the point of view of electrical safety and of hygiene.

### GENERALITIES

In order to ensure its correct operation, the machine shall be subject to periodical maintenance.

Listed below are the operations to be carried out and the related expiry dates; they are, obviously, indicative because they depend on the conditions of use (i.e. water hardness, environment humidity and temperature, type of product used, etc.).

The operations described in this chapter do not include all the maintenance interventions.

More complex interventions (i.e. descaling of the boiler) shall be carried out by an engineer with specific knowledge of the vending machine.

In order to avoid risks of oxidation or of chemical aggressions in general, the painted surfaces and the surfaces in stainless steel need to be kept cleaned by using neutral detergents (avoid solvents).

**Jets of water are to be absolutely avoided for washing the machine.**

### ESPRESSO UNIT MAINTENANCE

Every 10,000 dispensed items or, however, every 6 months, a small maintenance intervention on the coffee unit is required for optimising its operation.

For performing the maintenance operations it is necessary to remove the unit by following these steps:

- Disconnect the coffee exit nozzle (2) from the unit by rotating it by 90° from the rod (4) and pulling it outside.
- Act the unit end stop lever (8) rotating it until the horizontal position.
- Extract the coffee unit.

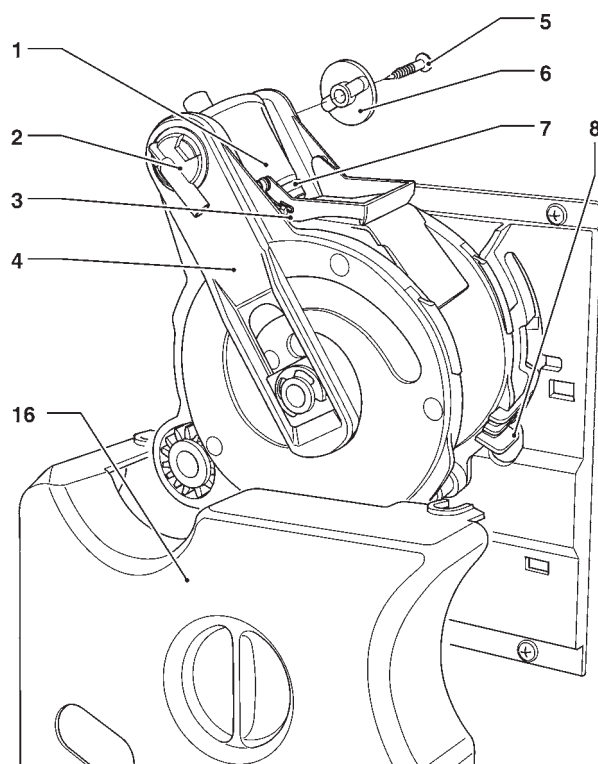
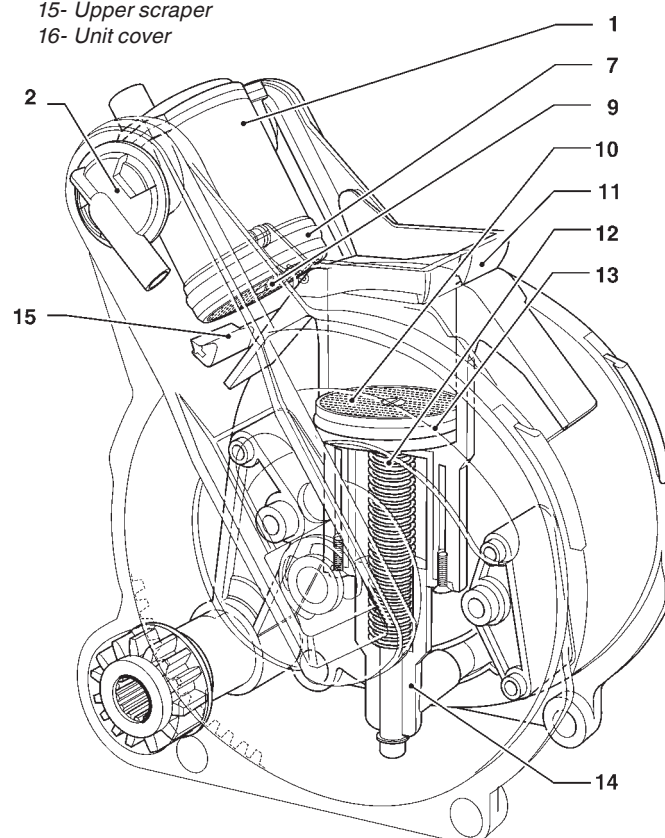


Fig. 32

- 1- Upper piston
- 2- Coffee exit nozzle
- 3- Lower scraper
- 4- Rod
- 5- Lateral screw
- 6- Key
- 7- Upper seal
- 8- Unit end stop lever
- 9- Upper filter
- 10- Lower filter
- 11- Lower scraper
- 12- Lower piston
- 13- Lower seal
- 14- Piston stem guide
- 15- Upper scraper
- 16- Unit cover



### **Disassemble/replacement of the filter and upper seal**

In order to disassemble or replace the filter and the upper seal, follow these steps:

- Unscrew the key (5) fixing lateral screw (6) of the upper piston.
- Rotate the upper piston (1) upwards.
- Remove and replace the upper seal (7).
- Unscrew the upper filter (9) so that it can be removed and replaced.

### **Disassembling/replacement of the filter and lower seal**

In order to disassemble or replace the filter and the lower seal, follow these steps:

- Manually bring the unit to the discharge position with the lower piston (12).
- Unscrew the central fixing screw for removing the filter (10).
- Press on the end of the piston stem guide (14) for obtaining an extra run of the lower piston (12).
- Pull with a small screwdriver for sliding the lower piston (12) out from the piston stem (14) being careful not to damage the piston or the sealing elements
- Remove and replace the lower seal (13).

## PERIODICAL OPERATIONS

At least every year or more frequently depending on the utilisation of the machine and on the quality of the water used, it is necessary to clean and sterilise the entire circuit and the parts which are in contact with the food products

### STERILISATION

- all the components which are in contact with the food products, including the tubes, shall be removed from the machine and disassembled in all their parts;
- all the residues and visible films shall be mechanically removed using brushes if necessary;
- the components shall be kept into a sterilising solution for at least 20 minutes;

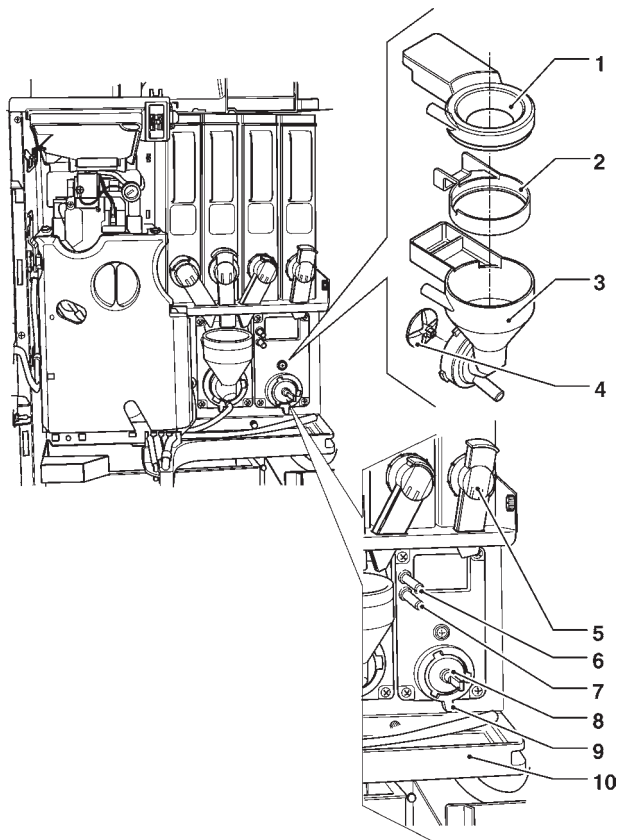


Fig. 33

- 1- Powder funnel
- 2- Splashguard ring
- 3- Water conveyor
- 4- Mixer fan
- 5- Powder nozzle
- 6- Upper water inlet nozzle
- 7- Lower water inlet nozzle
- 8- Stuffing box seal
- 9- Mixer fixing flange
- 10- Drops collection container

- the internal surfaces of the machine need to be cleaned with the same sterilising solution;
- rinse well and reassemble the components.

**Before restarting the machine, the sterilising operations need to be carried out again, with the components installed, as described in the chapter “Sterilisation of the mixers and of the food products circuits”**

### CONDUITS AND MIXERS

Periodically, apart from the external parts of the mixers, which need to be cleaned from any residue of powder, in particular in the funnel area, the parts of the mixer which are in contact with the drink shall also be sterilised.

**Jets of water are to be absolutely avoided for cleaning.**

The parts that need to be cleaned are:

- Powder funnels, mixers and instant drinks dispensing pipes;
- Pipes and dispensing nozzles;
- Dispensing unit.

Open the cover of the mixer dispensing cell and lift the powder nozzles up to the end stop;

- Remove (see Fig. 33) the powder funnels, the water conveyors, the powder deposit funnels and the mixer fans from the mixers;
- the fans can be removed by simply applying a light traction to let them free (see Fig. 34);

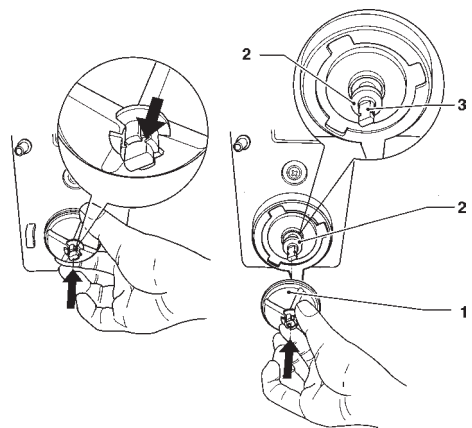


Fig. 34

- 1- Fan
- 2- Stuffing box seal
- 3- Shaft discharge



- Verify that the stuffing box lip seal is not broken and has not lost elasticity; for inserting it, place the seal just beyond the shaft discharge.  
By inserting the fan deeply, the stuffing box seal will assume the correct position (see Fig. 34).
- Wash all the components with sterilising products (follow the dosage indicated by the manufacturer), being careful to mechanically remove the visible residues using brushes if necessary.

The sterilisation is performed by means of sterilising products.

- Dip the parts for approx. 20 minutes in a recipient containing the previously prepared sterilising solution.
- Reinstall the conveyors and the water funnels.
- Reinstall the powder deposit drawers and the powder funnels after having carefully rinsed and dried them.
- When reassembling the fans make sure to insert them deeply until they click.

**After installing the components it is however necessary:**

- To wash the mixer and add a few drops of the sterilising solution into the various funnels.
- Once the sterilisation has been performed, rinse the components well in order to remove any possible residue of the solution used.

## CUP DISPENSER

The cup dispenser is designed in such a way so that it can be easily disassembled for maintenance operations. It is possible to disassemble each column of the cup dispenser and the release ring without using any tool.

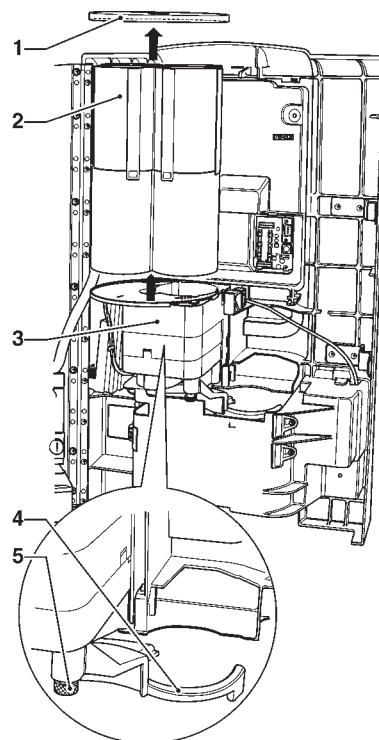


Fig. 35

- 1- Dispenser cover
- 2- Cup dispenser
- 3- Support for scrolls
- 4- Cup shifting arm
- 5- Saw tooth screw

## PRODUCTS CONTAINERS

- Remove the containers from the machine;
- remove the product exit nozzles and take the augers off from the back of the container;
- clean all the components with a solution of hot water and sterilising products and dry them carefully.

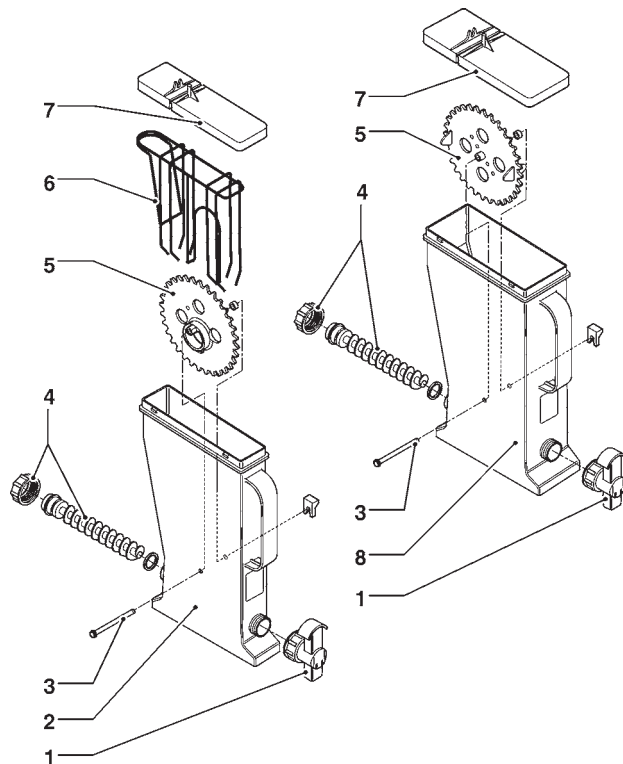


Fig. 36

- 1- Powder nozzle
- 2- Container 2 l
- 3- Pin for wheel
- 4- Auger
- 5- Sprocket
- 6- Scraper
- 7- Container covers
- 8- Container 4 l

## BOILER MAINTENANCE

Depending on the mains water hardness and on the number of selections made, a descaling of the boiler could be required.

This operation needs to be carried out exclusively by qualified technical personnel.

For descaling the boiler, it is necessary to remove the boiler from the machine.

For descaling only use non-toxic and non-aggressive biodegradable products.

Rinse well before reassembling the components.

When reassembling, make sure that:

- the electrical connections (terminals, faston, etc...) are perfectly dry and well connected
- the safety thermostats are correctly positioned and connected
- the hydraulic connections are correct.

### ESPRESSO BOILER THERMAL PROTECTION

The espresso boiler has a contact safety thermostat (klixon), which deactivates the boiler resistance in case the temperature in the boiler exceeds the safety temperature (125°C).

In case of intervention of the klixon, the system shall be restored manually with the button placed over the klixon, after having verified and eliminated the cause of the fault.

#### Important!!!

In case of intervention of one of the safety thermostats, the boiler temperature probe will be damaged and it will be necessary to replace it.

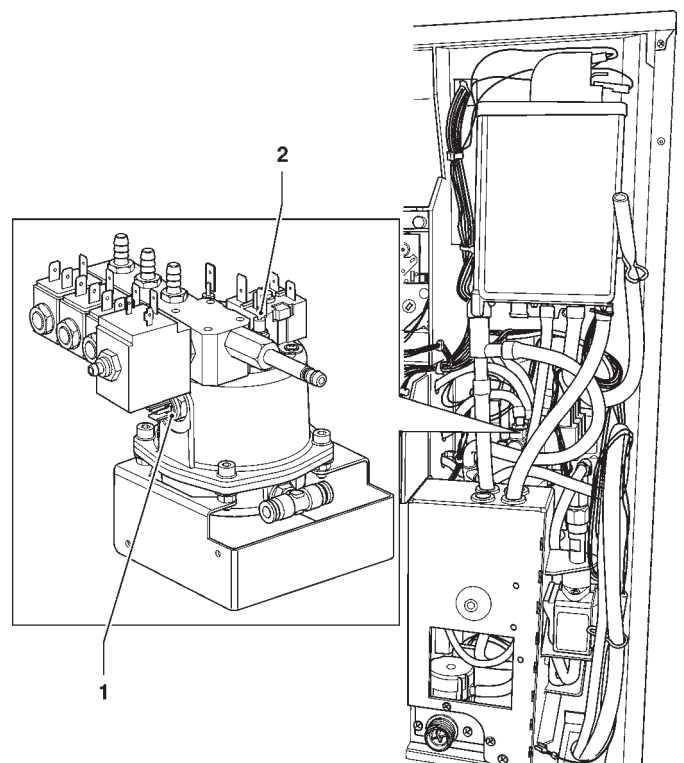


Fig. 37

- 1- Temperature probe
- 2- Safety thermostat

# BOARDS FUNCTION

## CONFIGURATION OF ELECTRONIC BOARDS

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

In case of replacement, or in order to change the performance of the machine, it will be necessary to verify the configuration of the boards and load the adequate software.

The boards can be accessed by removing the back of

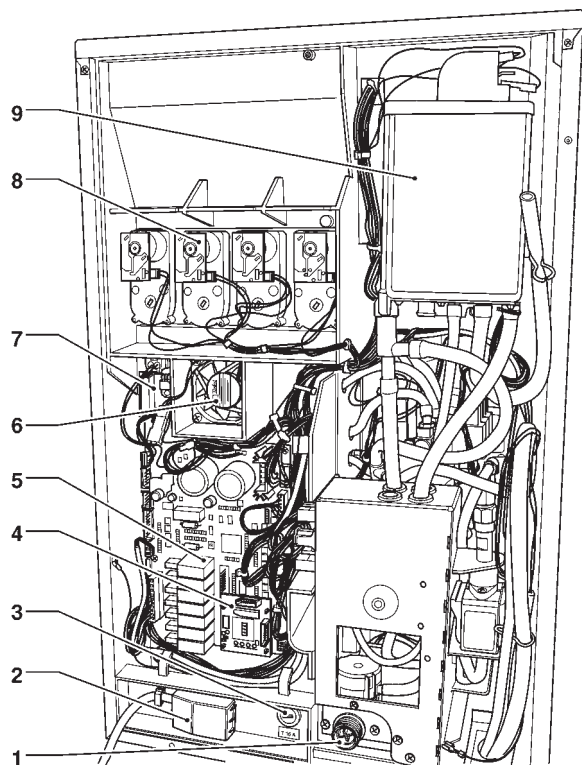


Fig. 38

- 1- Water connection 3/4" gas
- 2- Line lead terminal
- 3- Mains fuse
- 4- Expansion board for payment systems (optional)
- 5- Activations board
- 6- Fan
- 7- Boiler control board
- 8- Ingredient motors
- 9- Air break

the machine or the cover of the door.

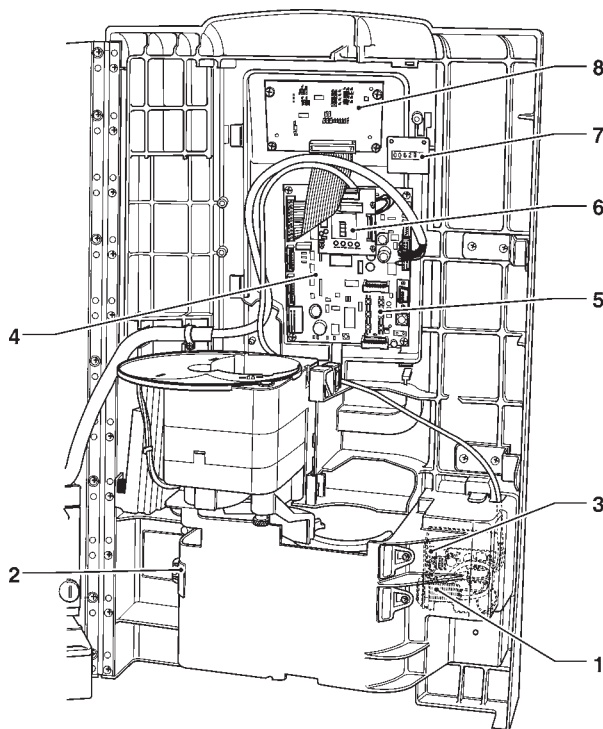


Fig. 39

- 1- Cup sensor (optional)
- 2- Reflector
- 3- Unit lighting LED board (optional)
- 4- CPU board
- 5- Service buttons
- 6- Coin mech interface board (optional)
- 7- Mechanical strokes counter
- 8- Graphic display board

## SOFTWARE UPDATE

The machine is equipped with Flash EPROM which can be rewritten.

By means of an appropriate programme and a suitable system (PC or PDA) it is possible to rewrite the management software of the machine without replacing the EPROMs.

## ACTIVATIONS BOARD

This board (see Fig. 40) activates, through relays, the equipment working with 230 V~ and, directly, the DC motors. It manages the signals originating from the cams and/or microswitches on the various equipment. Furthermore, it controls the boiler management board. The board works with 24 Vac for the electronic parts and the payment systems.

The board management software is loaded directly, (through RS232) on the microprocessor.

- The green LED 2 (23) flashes during the normal operation of the board;
- The yellow LED 7 (25) indicates the presence of 5 Vcc.
- The red LED 8 (12) is on during the board reset
- The red LED 4 (17) indicates the operating status of the espresso boiler resistance.
- The red LED 5 (18) **not used** on these models, indicates the operating status of the instant drinks boiler resistance.
- The green LED 1 (26) indicates the pulses of the volumetric counter.
- The green LED 2 (1) indicates the presence of 34Vdc.
- The green LED 3 (4) indicates the presence of regulated 34Vdc.

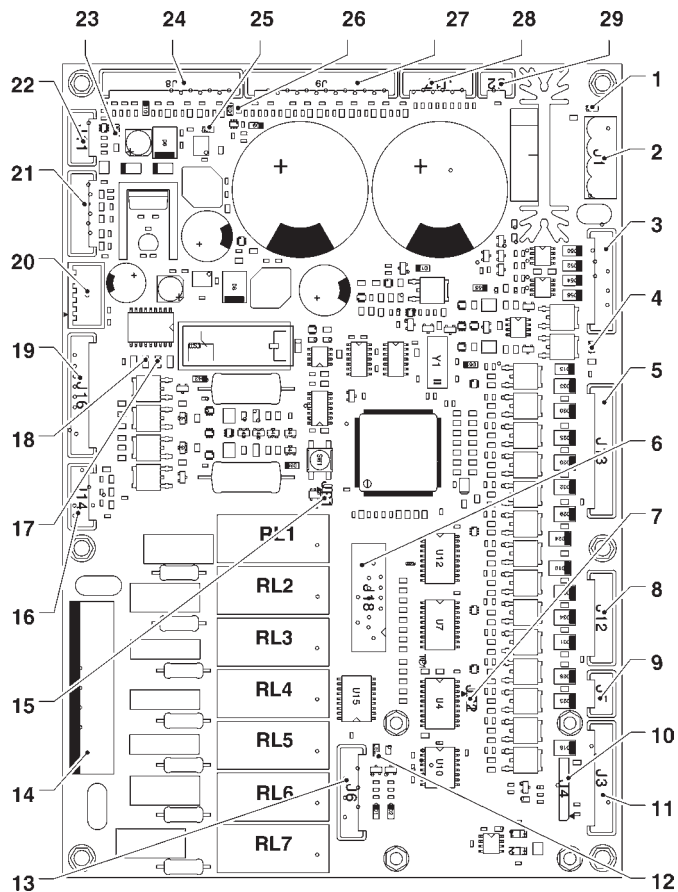


Fig. 40

- 1- LED 2
- 2- Power supply 24 Vac - 24 Vac
- 3- Actuators in DC
- 4- LED 3
- 5- Solenoid valve - whipper motors (EV-MF)
- 6- Not installed
- 7- JP2 Closed Jumper CAN
- 8- Ingredient motors MD
- 9- CAN BUS
- 10- Connector for expansion board for payment systems (optional)
- 11- To the CPU board
- 12- LED 8
- 13- Board programming
- 14- Actuators 230V
- 15- JP1 closed
- 16- Motor Z4000
- 17- LED 4
- 18- LED 5
- 19- Actuators in DC
- 20- Not used
- 21- Not used
- 22- Safety microswitch
- 23- LED 6
- 24- Input
- 25- LED 7
- 26- LED 1
- 27- Input
- 28- Probe and activation of boiler board
- 29- Not used

RELAY FUNCTION (see the electric diagram)

RELAY		ESPRESSO
RL1	=	EEA
RL2	=	MAC
RL3	=	MSB
RL4	=	MSCB
RL5	=	Not used
RL6	=	PM
RL7	=	ESC

## CPU BOARD

The CPU (Central Process Unit) board controls the management of all the equipment and signals of the port. The LEDs, during the operation, give the following indications:

- the green LED 3 (6) flashes during the normal operation of the CPU board;
- the yellow LED 1 (17) is on in the presence of 5 Vdc;
- the red LED 2 (15) is on when there is, for any reason, a reset of the software.

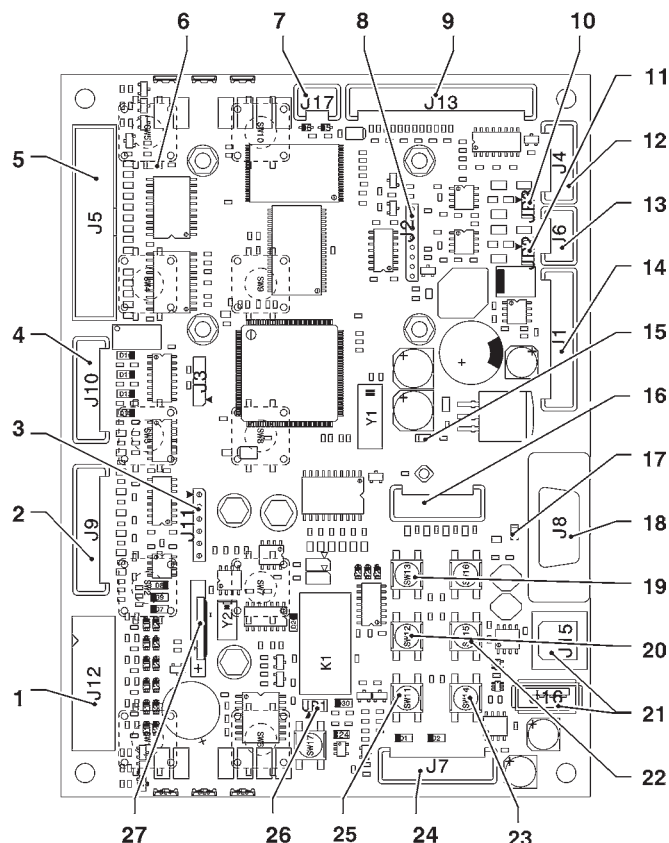


Fig. 41

- 1- Validators
- 2- Not used
- 3- RAM data expansion (optional)
- 4- Numeric selection keyboard (optional)
- 5- Graphic display
- 6- LED 3 "RUN"
- 7- Strokes counter
- 8- Expansion connector for serial payment systems
- 9- Photocell and area light
- 10- JP3 not used
- 11- Jumper CAN BUS JP2 (closed)
- 12- not used
- 13- not used
- 14- To the activations board
- 15- LED 2 "RESET"
- 16- Connector for UpKey
- 17- LED 1 "+5V"
- 18- Serial RS232
- 19- Programmable button
- 20- Programmable button
- 21- not installed
- 22- Programmable button
- 23- Programmable button
- 24- Programming connector
- 25- Programming input button
- 26- Jumper JP1 WDI (Closed)
- 27- Battery

## BOILER CONTROL BOARD

The board controls the intervention of the espresso boiler resistance.

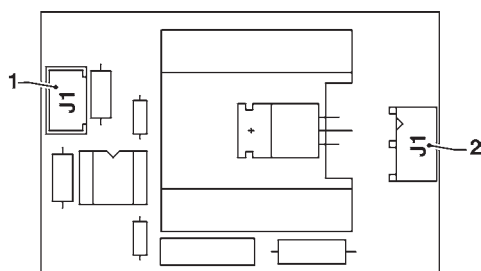


Fig. 42

- 1- J1 To the activations board
- 2- J2 To the boiler resistance

## EXPANSION BOARD FOR PAYMENT SYSTEMS

This board is supplied together with the connection kit for the serial payment systems (optional). By following the instructions included in the kit, install the board on the CPU board in case of payment systems fitted on the port (see Fig. 39-41). In case of payment systems installed in the cabinet, this card is installed on the activations board (see Fig. 38-40).

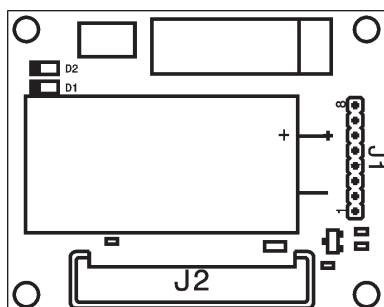


Fig. 43

- 1- J1 To the activations board or CPU
- 2- J2 To the payment system

## POWER SUPPLY AND FUSES

The fuse on the power supply network is accessible from the back of the machine, without removing the cover (see Fig. 38). The transformer which provides voltage to the boards and the corresponding protection fuses are accessible by removing the cash till for coins and the related support (see Fig. 44).

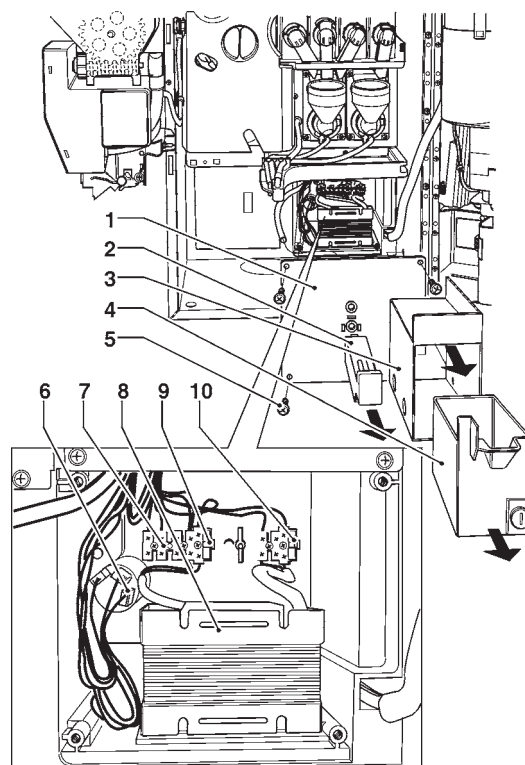


Fig. 44

- 1- Electrical panel cover
- 2- Full liquid waste sensor
- 3- Support -cash till for coins
- 4- Cash till for coins
- 5- Fixing screws
- 6- Anti-noise filter
- 7- Terminal block
- 8- Transformer
- 9- Transformer primary fuse
- 10- Transformer secondary fuse

## Important!!!

**The covers need to be removed after disconnecting the machine from the power supply.**



## Appendix

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**NAVIGATION MENU**

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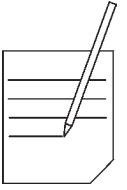
**ELECTRIC DIAGRAM**

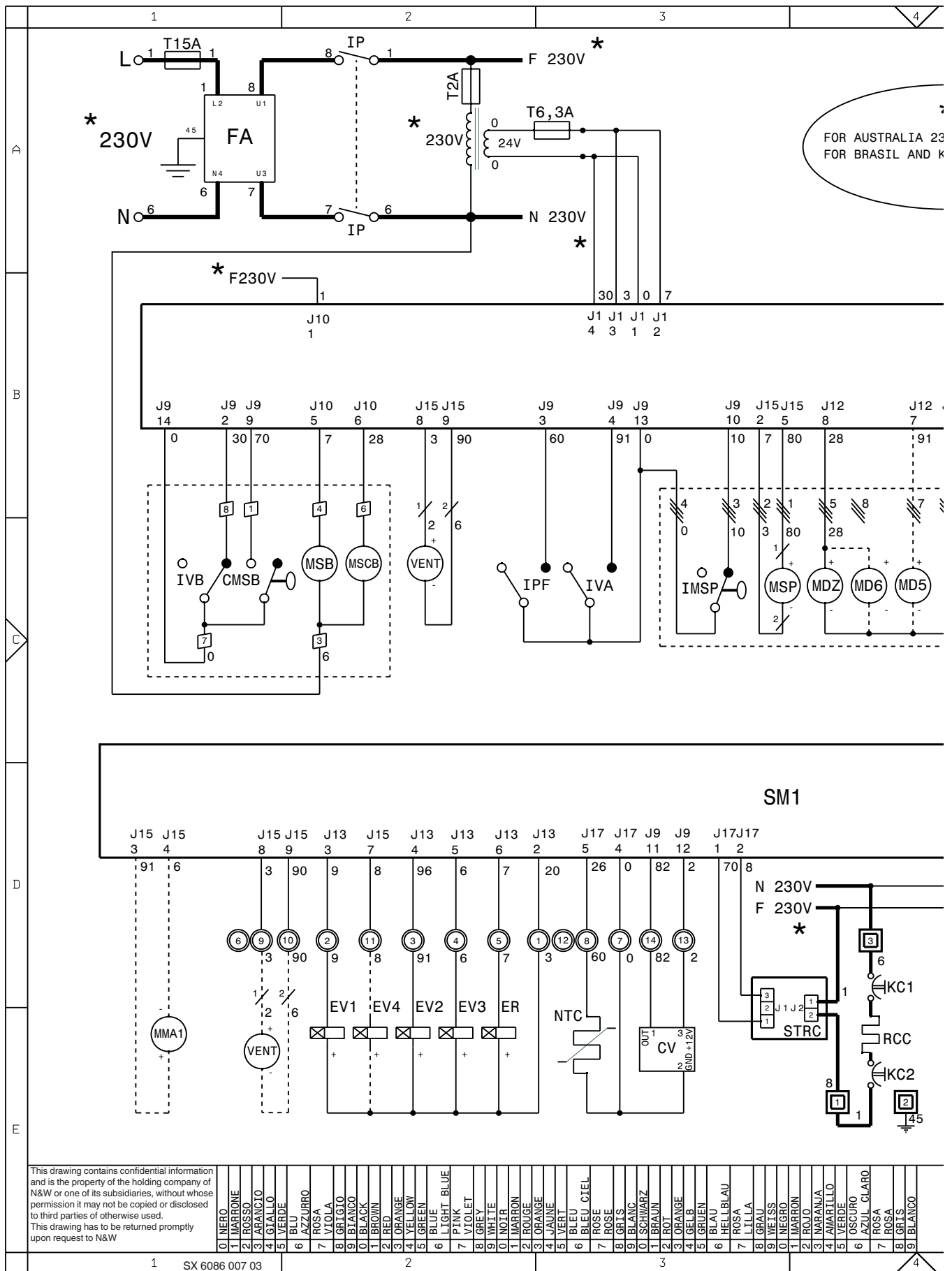
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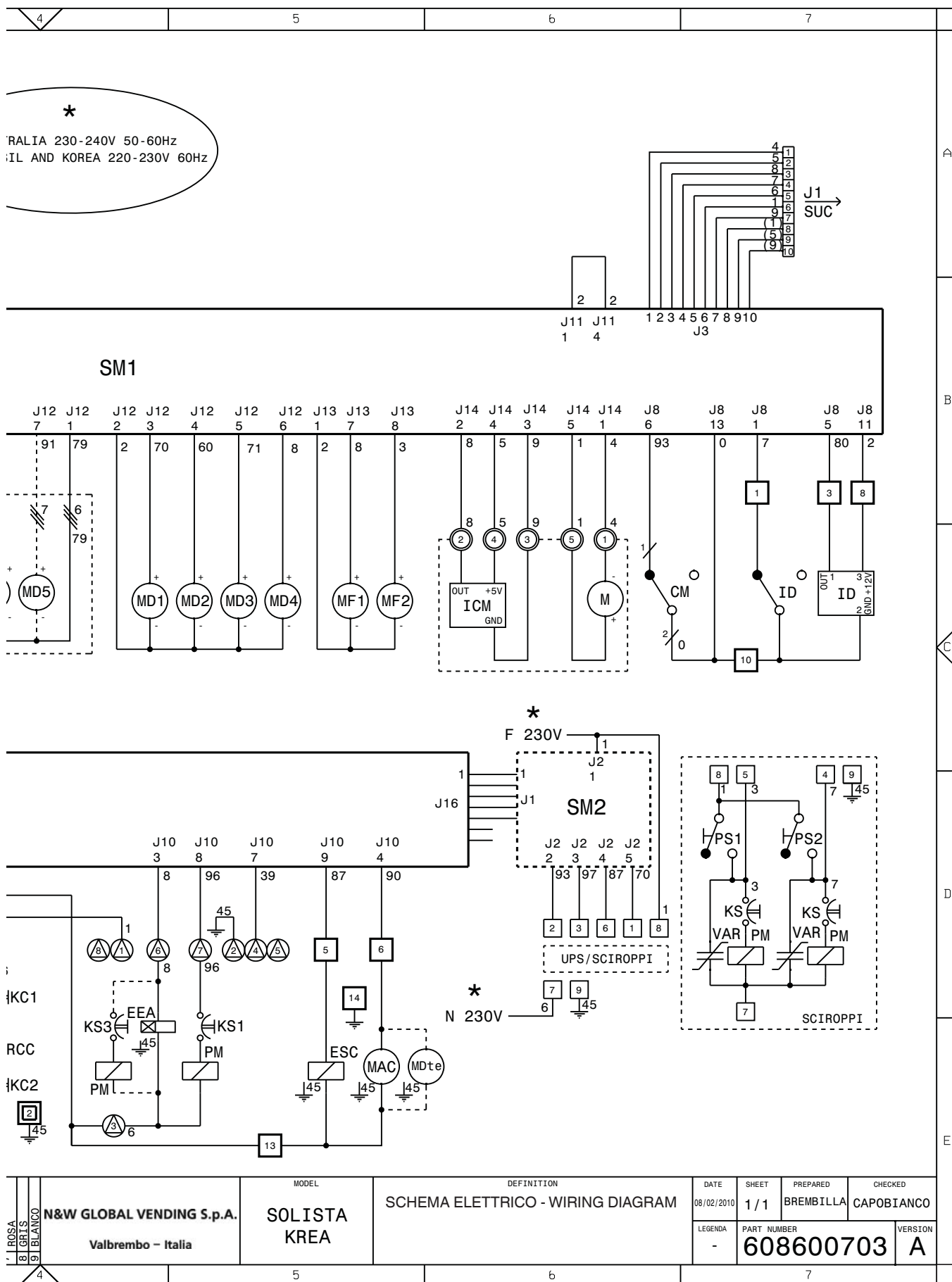
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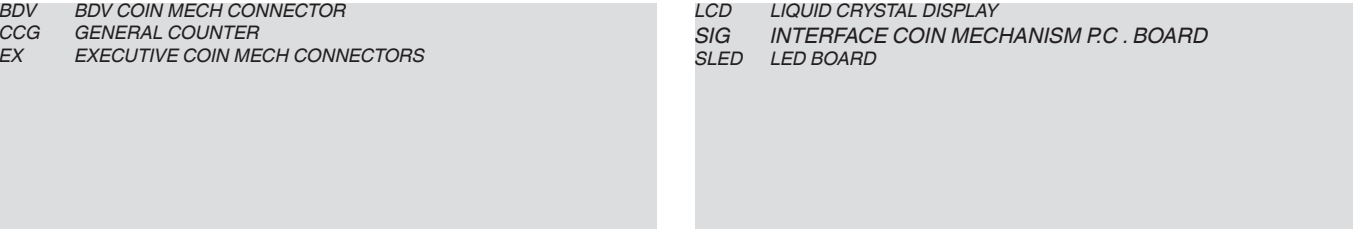
**HYDRAULIC CIRCUIT**

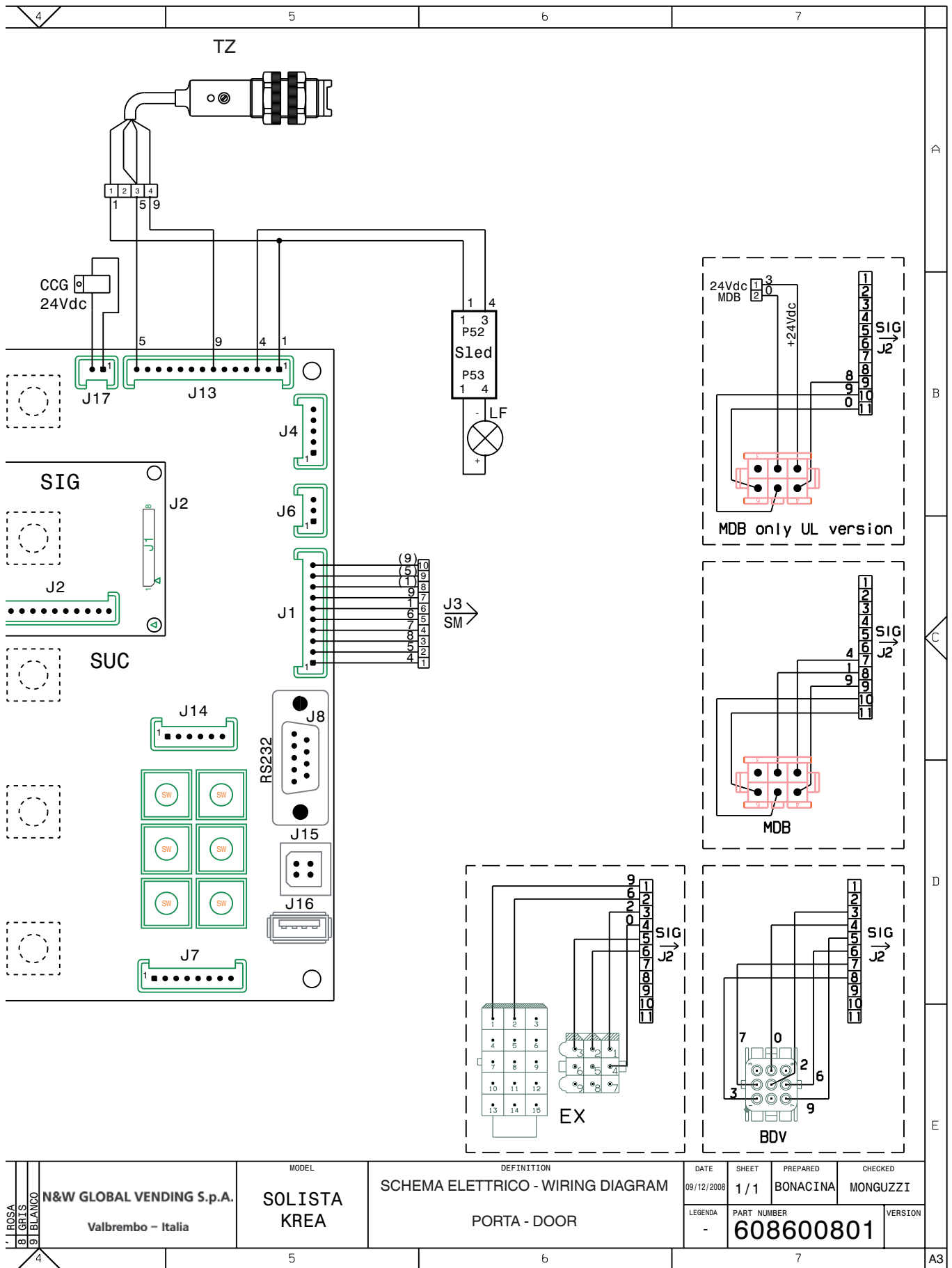
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SM CONTROL BOARD  
SP BUTTON BOARD

SUC C.P.U. BOARD  
TZ CUP SENSOR

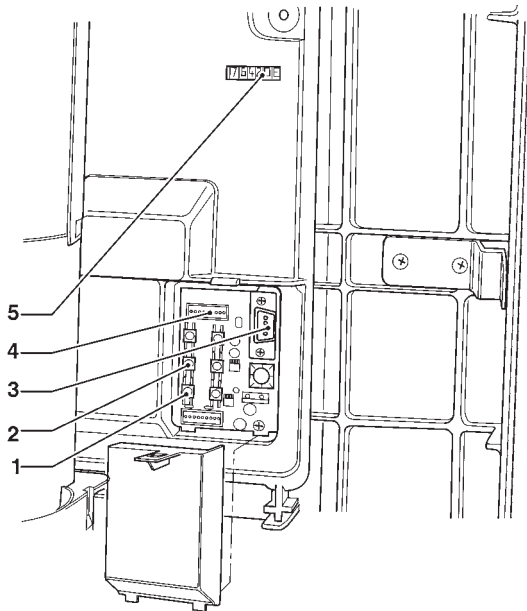


## SUMMARY OF PROGRAMMING

The machine can work in 3 different operating modes:

- **Normal user;**
- **Loader menu;**
- **Engineer menu.**

For entering the programming menu you need to press the programming button.



- 1- Programming input button
- 2- Faults reset button
- 3- RS232 serial connector
- 4- UpKey connector
- 5- Mechanical strokes counter

The machine goes into Loader Menu mode.  
By pressing the key you can switch from the "Loader Menu" to the "Engineer Menu" and vice versa.

## SUMMARY OF THE NAVIGATION MODE

If you want to move inside the menus use the keys shown in the figure:

### NAVIGATION KEYS UP AND DOWN

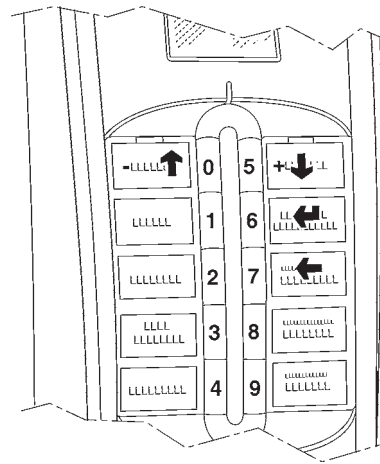
Through the navigation keys and it is possible to move from one item of the programming menus to the next which are at the same level and modify the status (ON/OFF) or the alphanumeric values of the functions

### CONFIRMATION KEY / SEND

Through the confirmation/send key it is possible to switch to the immediately lower menu or to confirm a data which has just been inserted or modified.

### EXIT KEY

By pressing the exit key it is possible to go back to the upper level or exit from a function modification field.  
When you have reached the highest level of the Menu, by pressing this key again you can switch from the Engineer Menu to the Loader Menu and vice versa.



## INSERTING THE ALPHANUMERIC VALUES

When the management software requests the insertion of alphanumeric characters, the keys assume the following functions:

- The confirmation key allows you to modify / insert the first character, confirm it and then go to the next one.
- the keys and allow you to scroll the available characters.

## PASSWORD INSERTION WITH CLOSED DOOR

The password insertion with closed door allows to perform the operation associated with the inserted password.

By means of the password insertion with closed door it is possible to:

- Wash the mixer
- Wash the infuser unit
- Reset the waste counter

For inserting the password with closed door, proceed as follows:

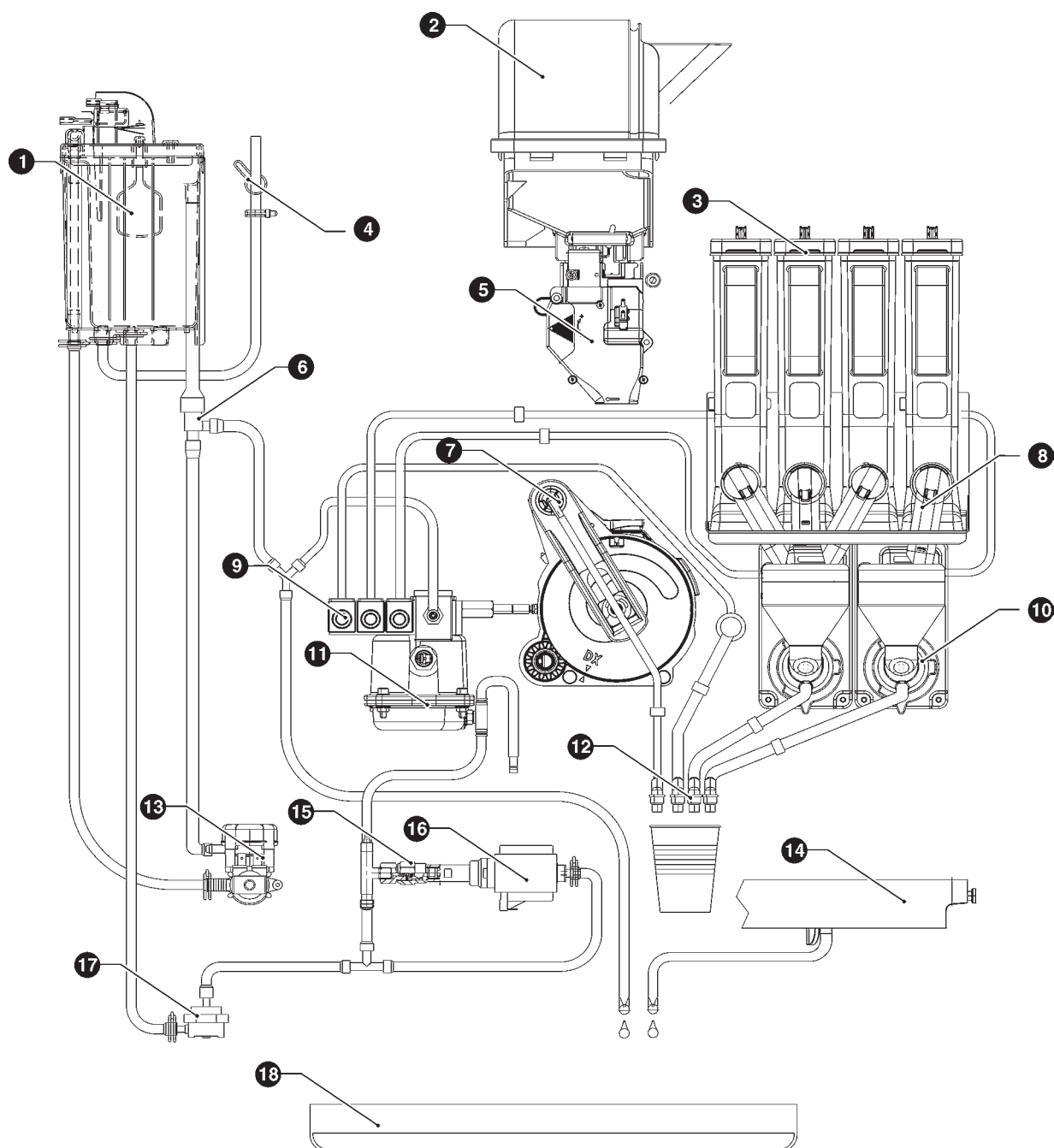
- Press and hold key no. 4 for two seconds.
- The management software asks for the input of a password and the keyboard adopts the numerical values shown in the figure below.  
The machine remains in standby for a few seconds for the insertion of the password (5 digits) which allows you to perform the operation associated with the inserted password.

It is possible to define these passwords inside the Engineer's Menu.

As a default condition all the passwords are disabled.

# HYDRAULIC CIRCUIT

(Power supply from the mains)



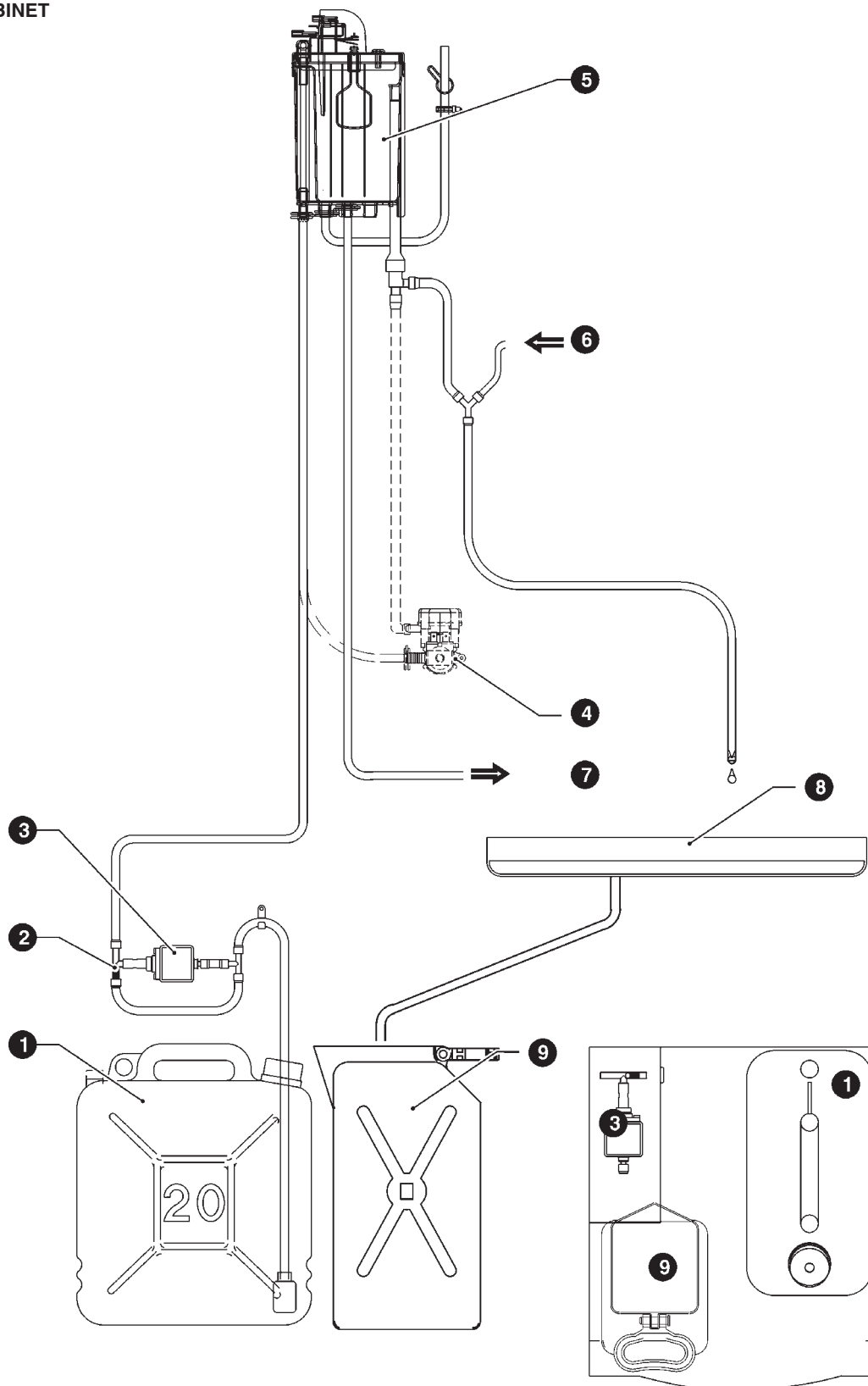
- 1- Air-break
- 2- Coffee container
- 3- Instant coffee containers
- 4- Air break empty tube
- 5- Coffee doser
- 6- Condensation recovery conduit
- 7- Coffee unit
- 8- Powder exit nozzles
- 9- Dispensing solenoid valves

- 10- Instant drinks mixers
- 11- Espresso boiler
- 12- Dispensing nozzles
- 13- Water inlet solenoid valve
- 14- Mixers container
- 15- By-pass
- 16- Pump
- 17- Volumetric counter
- 18- Liquid residue container

## HYDRAULIC CIRCUIT

(tank for water supply)

## FITTED CABINET



- 1- Water tank
- 2- By-pass
- 3- Fishing pump
- 4- Power supply solenoid valve (AC)
- 5- Air break

- 6- From the machine
- 7- To the machine
- 8- Drain collection container
- 9- Liquid waste container

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