

GRANMATTINO ESPRESSO

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DICHIARAZIONE DI CONFORMITA' - DECLARATION OF CONFORMITY
DÉCLARATION DE CONFORMITÉ - KONFORMITÄTSEKTLÄRUNG
DECLARACIÓN DE CONFORMIDAD - DECLARAÇÃO DE CONFORMIDADE -
VERKLARING VAN OVEREENSTEMMING - INTYG OM ÖVERENSSTÄMMELSE
OVERENSSTEMMELSESERKLÆRING

ELECTROLUX ZANUSSI VENDING S.P.A.
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Dichiara che la macchina descritta nella targhetta di identificazione, è conforme alle disposizioni legislative delle direttive: **89/392, 89/336, 73/23 CEE** e successive modifiche ed integrazioni.

Declares that the machine described in the identification plate conforms to the legislative directions of the directives: **89/392, 89/336, 73/23 EEC** and further amendments and integrations.

Déclare que l'appareil décrit dans la plaque signalétique satisfait aux prescriptions des directives: **89/392, 89/336, 73/23 CEE** et modifications/intégrations suivantes.

Erklärt, daß das im Typenschild beschriebene Gerät den **EWG** Richtlinien **89/392, 89/336, 73/23** sowie den folgenden Änderungen/Ergänzungen entspricht.

Declara que la máquina descrita en la placa de identificación, resulta conforme a las disposiciones legislativas de las directivas: **89/392, 89/336, 73/23 CEE** y modificaciones y integraciones sucesivas.

Declara que o distribuidor descrita na chapa de identificação é conforme às disposições legislativas das directivas **CEE 89/392, 89/336 e 73/23** e sucessivas modificações e integrações.

Verklaart dat de op de identificatieplaat beschreven machine overeenstemt met de bepalingen van de **EEG** richtlijnen **89/392, 89/336** en **73/23** en de daaropvolgende wijzigingen en aanvullingen.

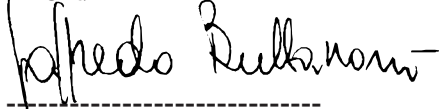
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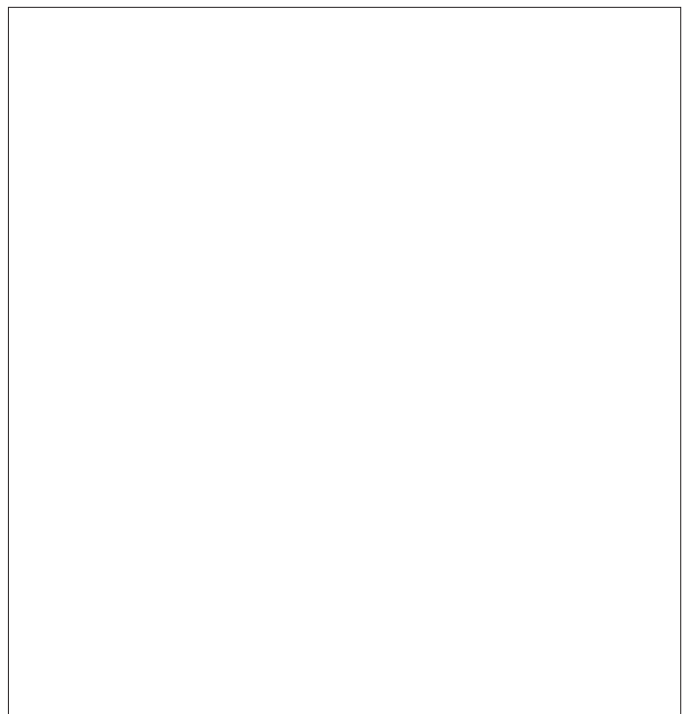
Valbrembo, 04/04/96

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Directeur General
Generaldirektor
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Verkställande direktor
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FIRMA-SIGNATURE-UNTERSCHRIFT-
ASSINATURA-HANDTEKENING-
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THE EUROPEAN NETWORK FOR QUALITY SYSTEM ASSESSMENT AND CERTIFICATION

This is to state that

ZAMUSSI VENDING S.p.A.
Via Roma, 24 - 24030 VALEREMBO (BG)

holds the Quality System Certificate

CISQ/CISQ 9130-ZA18

*for the standard from the
ISO 9000 / EN 29000
series, and the scope as specified therein*

Signed for and on behalf of EQNet member

Dr. Ing. 
Federazione CISQ
IL PRESIDENTE

DATE

June 1st, 1994

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CERTIFICAZIONE ITALIANA DEI SISTEMI
QUALITA' AZIENDALI
ITALIAN CERTIFICATION OF COMPANIES
QUALITY SYSTEMS



CERTIFICATO n.
CERTIFICATE No. 9130-ZA18

SI CERTIFICA CHE IL SISTEMA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY SYSTEM OPERATED BY

ZAMUSSI VENDING S.p.A.

Via Roma, 24 - 24030 VALEREMBO (BG)

UNITA' OPERATIVA
OPERATIVE UNIT

Via Roma, 24 - 24030 VALEREMBO (BG)

E' CONFORME ALLA NORMA
IS IN COMPLIANCE WITH THE STANDARD UNI-EN 29001-ISO 9001

PER I SEGUENTI TIPI DI PRODOTTI - PROCESSI - SERVIZI
CONCERNING THE FOLLOWING KINDS OF PRODUCTS - PROCESSES - SERVICES

Progettazione, produzione e commercializzazione di
apparecchiature elettromeccaniche/elettroniche per
la distribuzione automatica e la ristorazione
*design, manufacturing and sale of
electromechanical/electromechanical vending machines*

IL PRESENTE CERTIFICATO E' SOGGETTO AL RISPETTO DEL REGOLAMENTO
DELL'IMQ PER LA CERTIFICAZIONE DEI SISTEMI QUALITA' DELLE AZIENDE
THIS CERTIFICATE SHALL SATISFY THE REQUIREMENTS ESTABLISHED BY IMQ
FOR THE CERTIFICATION OF SUPPLIERS' QUALITY SYSTEMS

25 Luglio 1994

DATA DI RILASCIO
ISSUED ON


IMQ

Il presente certificato annulla e sostituisce il precedente 9130.ZA18 del 01.06.94
This certificate supersedes the previous one 9130.ZA18 issued on 01.06.94

CISQ è un sistema internazionale di
certificazione indipendente del Siste-
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coordinato da organismi di certifi-
cazione referenziali.

The CISQ is an international system of
independently certification of suppliers'
Quality Systems, which is coordinated
by several certification bodies.

IMQ 373-379-500-694

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INTRODUCTION

This technical documentation is part and parcel of the vending machine and must always follow the machine in case it is moved or transfer of ownership, so as to allow consultation by different operators.

Before starting installation and using the machine, it is first necessary to carefully read and understand the instructions contained in this manual, as they offer important hints on installation, operating and maintenance safety.

This manual is divided into three sections.

The first section describes the loading and routine maintenance operations which are carried out in areas of the machine accessible with simple use of the door key, without using any other tools.

The second section contains the instructions for correct installation and all information necessary for optimum use of the machine.

The third section describes maintenance operations which involve the use of tools to access potentially dangerous areas.

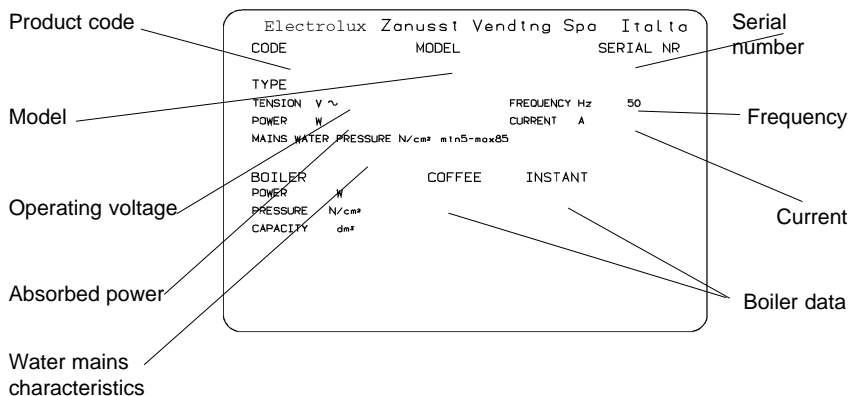
The operations described in the second and third sections must be carried out only by personnel who have the specific knowledge of the machine functioning from a point of view of electrical safety and health regulations.

IDENTIFICATION OF THE VENDING MACHINE AND ITS CHARACTERISTICS

Every machine is identified by its own serial number, indicated on the rating plate placed internally on the right side.

This plate (see figure below) is the only one acknowledged by the manufacturer as the identification of the apparatus, and carries all the data which readily and safely give technical information supplied by the manufacturer. It also assists in the spare parts management.

It is therefore recommended that this plate be neither damaged nor removed.



IN CASE OF FAILURE

In most cases, any technical problems are corrected by small repair operations; however, before contacting the manufacturer we recommend that this manual be read carefully.

Should there be serious failures or malfunctions, then contact the following:

ELECTROLUX ZANUSSI VENDING S.p.A.
Via Roma 24
24030 Valbrembo
Italy
Tel. +39 - 035606111

TRANSPORT AND STORAGE

To prevent any damage, special care should be taken when loading or unloading the vending machine.

The machine can be lifted by a motorised or manual fork lift truck, and the forks are to be placed underneath the machine from the side clearly indicated by the symbol on the cardboard package.

Do not:

- overturn the vending machine;
- drag the vending machine with ropes or similar;
- lift the vending machine by its sides;
- lift the vending machine with slings or ropes;
- shake or jolt the vending machine and its packing.

The machine should be stored in a dry room where the temperature remains between 0°C and 40°C.

Avoid stacking machines one on top of the other and always keep it upright as indicated by the arrows on the packing.

USING THE VENDING MACHINES OF HOT DRINKS IN OPEN CONTAINERS (Ex.: plastic cups, ceramic cups, jugs)

The vending machines of drinks in open containers should only be used to sell and dispense drinks obtained by:

- brewing products like coffee and tea;
- reconstituting instant and lyophilized products;

These products should be declared by the manufacturer as "suitable for automatic vending" in food-safe open containers.

The dispensed products should be consumed immediately. They should never be preserved and/or packed for later consumption.

Any other use is unsuitable and thus potentially dangerous.

POSITIONING THE VENDING MACHINE

The vending machine is not suitable for outdoor installation. It must be installed in a dry room where the temperature is between 0°C and 32°C, and not where water jets are used for cleaning (e.g. in large kitchens, etc.).

The machine should be placed close to a wall, so that the back panel is at a minimum distance of 8 cm from it and correct ventilation may be ensured.

The machine should never be covered with cloth or the like.

The machine should be positioned with a maximum inclination of 2°.

If necessary provide proper levelling by way of the adjustable feet included.

The feet are not sized for withstanding impacts. Therefore they should be removed prior to moving the machine to another location.

Important notice!!

Access to the machine interior for maintenance and/or repairs is via the back panel.

Therefore the machine is designed to be rotated, thus allowing removal of the back panel.

CABINET INSTALLATION

The machine can be installed on a table or on any other suitable stand (recommended height is 820 mm).

If possible, it is advisable to use the special cabinet, which can house the liquid waste tray.

WARNING FOR INSTALLATION

The machine installation and the following maintenance operations should be carried out by qualified personnel only, who are trained in the correct use of the machine according to the standards in force.

The machine is sold without payment system, therefore the installer of such a system has sole responsibility for any damage to the machine or to things and persons caused by faulty installation.

The integrity of the vending machine and its conformity with the rules and regulations in force for its relevant systems must be checked by qualified personnel at least once a year.

WARNING FOR USING THE MACHINE

The following precautions will assist in protecting the environment:

- use biodegradable products only to clean the machine;
- adequately dispose of all containers of the products used for loading and cleaning the machine;
- turn the machine off during periods of inactivity, thus achieving considerable energy savings.

WARNING FOR DEMOLITION

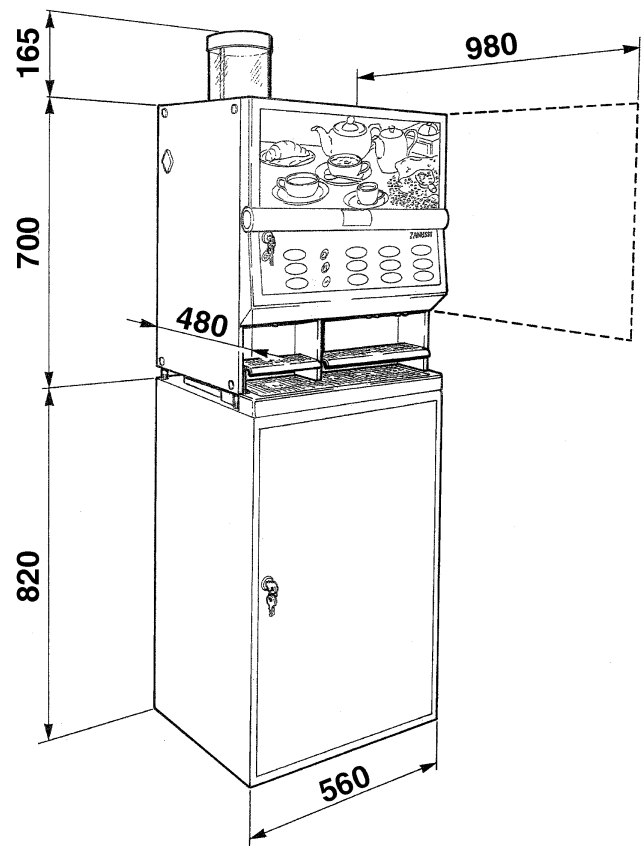
Whenever the machine is to be demolished, the laws in force regarding environment protection should be strictly observed. In particular:

- ferrous and plastic materials and the like are to be disposed of in authorized areas only;
- insulating materials should be recovered by qualified companies.

TECHNICAL DATA

Height	(base)	700 + 165 mm
	(90 mm height ext. kit)	790 + 165 mm
Width		560 mm
Depth		480 mm
Weight	(without packing)	65 Kg

DIMENSIONS



RATINGS

According to the type of power connection, the relevant data contained in the following table will apply:

Ratings	Type of connection		
	Three-phase+N (recommended)	Single-phase (full power)	Single-phase
Power supply voltage	400 V ~	230 V ~	230 V ~
Frequency	50 Hz	50 Hz	50 Hz
Max. absorbed power	7400 W	7400 W	3150 W
Max. absorbed current	11.8 A	32 A	13 A
Heating elements power	6950 W	6950 W	2700/1550 W

BOILERS

Instant products: 7.2 litre capacity with two 2700 W armored-type heating elements;

Coffee: 0.6 litre capacity with one 1550 W armored-type heating element.

WATER SUPPLY

From the mains, with a pressure of 0.05 to 0.85 MPa (0.5 to 8.5 bar).

AUTONOMY OF OPERATION

Coffee beans	1.2 Kg
Instant coffee	0.6 Kg
Granulated milk	2.0 Kg
Sweetened chocolate	1.5 Kg
Hot water output per hour	60 l/h
Liquid waste tray	1.5 l

Coffee grounds tray - selections 130

It is possible that following extended and continuous milk dispensing into jugs, the "milk jug" selection is locked out by the machine control software for 10 minutes, after which full machine function is resumed.

During this period of time, message "motor cooling" is displayed when selecting milk jugs.

PROGRAMMABLE DOSES

The machine is supplied with a "Hotellerie" configuration, i.e. dispensing more products at the same time.

However, it is also possible to configure the machine for the self-service version. In this case it is possible to dispense one cup of product in a single point only; the products cannot be dispensed at the same time.

ACCESSORIES

Besides the cabinet, the following is also available:

- 90 mm height extension kit, permitting the use of jugs instead of cups;
- illuminated front panel;
- application of a front coin validator directly into the machine;
- external programmer, permitting transfer of programming routines to other machines.

The various kits are supplied with their own installation instructions, which must be strictly observed to ensure the machine's safety.

Installation and the following testing operations, must be carried out only by qualified personnel who have the specific knowledge of the machine functioning from a point of view of both electrical safety and health regulations.

POWER CONSUMPTION

The machine power consumption depends on many factors, such as the temperature and ventilation of the room where it is installed, the inlet water and boiler temperature, etc.

Under average conditions, and namely:

- Ambient temperature:	20°	C
- Instant product boiler temperature	94°	C
- Coffee boiler temperature	98°	C
- Inlet water temperature	20°	C
- Water (average) for instant products	135	cc
- Water (average) for coffee	40	cc

the following power consumption levels resulted:

- To reach operating temperature	725	Wh
- Hourly stand-by power consumption	136	Wh
- Average consumption for instant products	9.3	Wh
- Average consumption for coffee	6.9	Wh

The above power consumption calculated from average data should only be taken as an indication.

LOADING AND CLEANING

PUSH-BUTTON PANEL SWITCH

When opening the door using the special key, a switch disconnects the electricity from the machine, allowing access to the area where the product containers and the parts to be cleaned are housed.

The machine is equipped with a switch (see Figure 1) which disconnects the push-button panel, leaving the heating unit switched on.

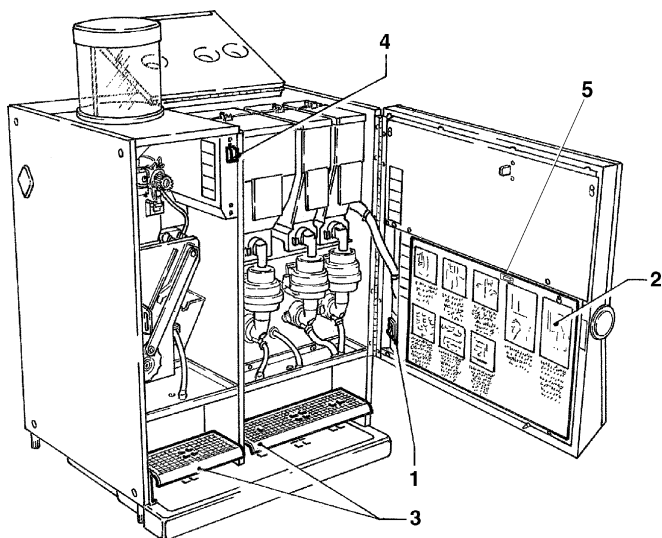
IMPORTANT NOTICE!!

The push-button panel switch DOES NOT turn the power off.

All operations requiring the machine with the power on and without the protective covers must be carried out by qualified personnel, trained to use the machine and aware of the specific risks of such operations.

Fig. 1

- 1 - Push-button panel switch
- 2 - Washing and cleaning instructions plate
- 3 - Tilting cup support
- 4 - Door switch
- 5 - RS232 serial port

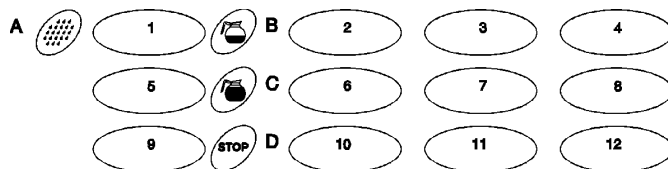


CONTROLS AND INFORMATION

All user controls are located on the external side of the door (see Figure 2); the machine condition information and the operating instructions are shown on the Liquid-Crystal Display (LCD).

According to the unit configuration (either Self-service or Hotellerie) the push-button may be assigned the functions listed in Figure 2. The identification plates shall be inserted accordingly.

Fig. 2



VERSION

Self - service		Hotellerie (as standard)
1 - Espresso coffee		Espresso coffee
2 - Coffee with milk		Milk
3 - Chocolate		Chocolate
4 - Instant coffee		Instant coffee
5 - Double espresso		Double espresso
6 - Cappuccino		Disabled
7 - Strong chocolate		Strong chocolate
8 - Weak instant coffee		Weak instant coffee
9 - Weak espresso coffee		Weak espresso coffee
10 - Cappuccino with chocolate		Disabled
11 - Chocolate with milk		Disabled
12 - Hot water		Hot water
A - Cleaning/programming		Cleaning/programming
B - Disabled		Half jug
C - Disabled		Full jug
D - Stop cleaning		Stop jug dispensing/cleaning

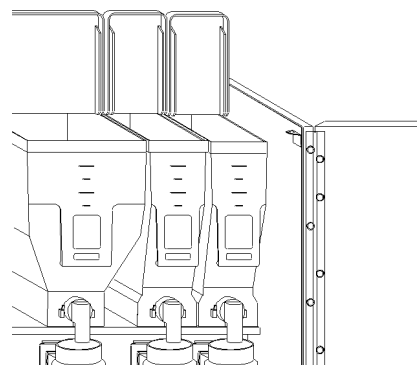
The cleaning/programming push-button can either be enabled or disabled; in any case a password is required for cleaning and another one to access programming. Buttons B and C, when pressed before a selection push-button, among only the ones marked with ☕ in the above table, allow a choice of dispensing dose; if such buttons are not pressed a normal dose will be dispensed.

LOADING INSTANT PRODUCTS

Before filling the product containers, following the indications of the instructions plate (Figure 1), check that:

- the type of product is suitable for automatic dispensing;
- the package is intact and the product is not past the expiry date;
- the product does not contain any clots.

Fig. 3



It is advisable to load only the product amount sufficient for the expected use, so that excessive exposure to the environment is avoided.

Do not press the product in the container.

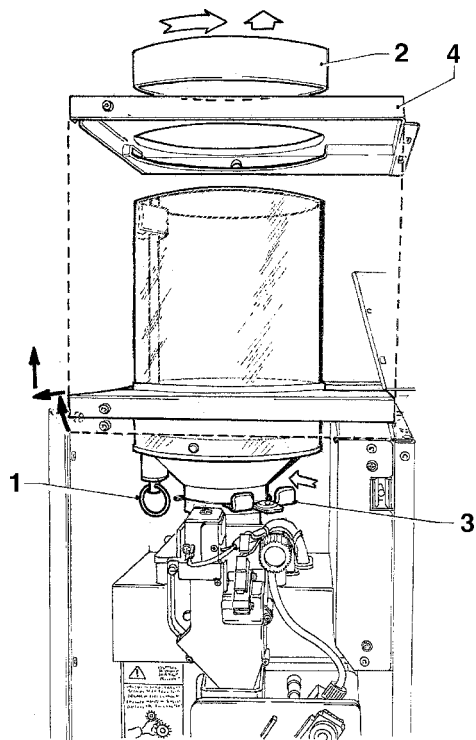
LOADING COFFEE BEANS

Pull the release ring downwards and rotate the container lid at the same time.

Fill the container and replace the lid, ensuring that the shutter is completely open.

Fig. 4

- 1 - Lid release ring
- 2 - Coffee container lid
- 3 - Shutter
- 4 - Top panel of machine



Each time the machine is filled with coffee, the coffee grounds container must be emptied and cleaned as indicated on the internal plate, or the bag inside the cabinet must be replaced (if used).

To remove the container for weekly cleaning do as follows:

- close the shutter;
- remove the lid from the container;
- lift the front edge of the top panel of the machine and slightly pull it outwards, then extract it from the container;
- remove the container from the grinder.

Proceed in the inverse order when replacing the container.

HYGIENE AND DISINFECTION

According to current health regulations, the operator of an automatic vending machine is responsible for the hygiene of the foodstuff circuits, to prevent formation of bacteria.

The hydraulic circuits and the parts in contact with foodstuff should be fully sanitised by qualified personnel to remove any bacteria which might have formed during storage.

It is advisable that specific sanitising agents (such as chlorine-based detergents or similar) are used also for cleaning the surfaces which are not directly in contact with foodstuff.

Some parts of the machine can be damaged by strong detergents.

The manufacturer declines all responsibility for any damage caused by the use of strong or toxic chemicals.

PERIODICAL CLEANING

To ensure perfect operation for a long period, the machine must be subjected to some regular maintenance as indicated on the internal plate.

In order to reduce maintenance time, spare items of all mixer components which must be cleaned regularly are supplied and stored inside the cabinet.

Before disinfection, all solid residue and product films must be mechanically removed from the mixer components, using a brush or similar implements, if necessary.

Turn the unit off with the main external switch before any maintenance operations which require removal of components.

SUSPENDING FROM USE

Should the machine be out of use for a period of time exceeding the product expiry dates, the following will be necessary:

- Turn off the main switch and disconnect the electrical plug;
- Completely empty the containers and thoroughly wash them with the chlorine-based detergents used for cleaning the mixers;
- Completely drain the water from the boiler by loosening the special clamp (refer to the hydraulic system).

INSTALLATION

The machine installation and the following maintenance operations should be carried out by qualified personnel only, who are trained in the correct use of the machine and are aware of the specific risks of such operations.

The machine must be installed in a dry room with temperature between 0°C and 32° C.

At installation the hydraulic circuits and the parts in contact with foodstuff should be fully sanitised to remove any bacteria which might have formed during storage.

UNPACKING THE VENDING MACHINE

After unpacking, ensure that the machine is intact. If in doubt, do not use it.

No packing elements (i.e. plastic bags, polystyrene foam, nails, etc.) should be left within the reach of children, as they are potentially dangerous.

The holes for the anchoring bracket securing the machine to the pallets must be closed with the plastic plugs provided.

Packing materials must be disposed of in authorised areas and all recyclable ones must be recovered by qualified companies.

INSERTING THE PRODUCT LABELS

The labels indicating the available product selections in the current language shall be inserted into the special slots following the procedure shown in Figure 2.

INSTALLING THE TILTING GRATINGS

Tilting stainless steel gratings are supplied, used to support cups in alternative to jugs.

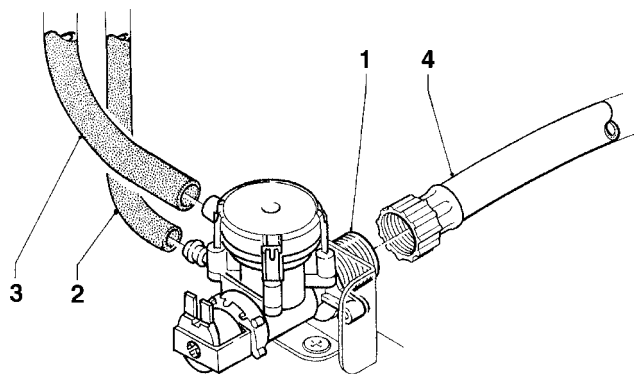
To facilitate positioning of the cups by the user, plastic made, red colour markers are also supplied, to be inserted in the gratings.

SANITISING

Before installing the machine the same procedure planned for the annual sanitising should be carried out (see relevant section) to eliminate any bacteria which may have formed during storage.

CONNECTING THE MACHINE TO THE WATER MAINS

The machine must be connected to the drinking water mains. The water pressure must be 0,05 to 0,85 MPa (0,5-8,5 bar).



1 - 3/4" gas-type water inlet union
2 - Supply hose
3 - Overflow pipe
4 - Inlet hose union

Fig. 5

N.B.: On the long run the water characteristics considerably affect the correct operation of the machine and increase the need of maintenance, particularly regarding the boiler and the dispensing solenoid set.

Run water from the mains until it is clear and without any traces of impurities.

Use a hose capable of withstanding the water mains pressure and suitable for use with foodstuffs (minimum inside diameter of 8 mm) to connect the water supply to the 3/4" gas-type union of the water inlet solenoid valve.

As an optional, a "water supply hose kit", composed of a 1.5 m hose and all necessary fittings, is available.

It is good practice to install a suitable cutoff valve on the water supply outside the machine in an easily accessible position.

OVERFLOW DEVICE

The water inlet solenoid valve (see Fig. 5) is fitted with an overflow device which mechanically stops the water flow when there is a malfunction to the valve or to the boiler water level control device.

To restore normal operations, proceed as follows:

- Turn off the external main switch and disconnect the electrical plug;
- Drain the water contained in the overflow pipe;
- Shut off the water supply valve outside the machine;
- Loosen the nut which secures the solenoid valve supply hose to relieve the water mains residual pressure and then tighten it again;
- Open the valve and switch on the machine.

CONNECTING THE POWER SUPPLY

The machine is designed to operate under single-phase 230 V~ voltage and is protected by 15 A fuses on each phase and on neutral.

Considering the power absorbed by the machine, it is advisable to connect it to a three-phase 400 V 3N line; a line with the following characteristics can be used for the power connection:

- Three-phase + N 400 V~ 50 Hz (recommended)
(see Fig. 6)
- Single-phase 230 V~ 50 Hz (see Fig. 6 and 7)

The machine is supplied without power cable; for connection to the power grid use only cables type H05 VV-F or H05 VV H2-F with adequate section. Before making the connection ensure that the ratings correspond to those of the power grid, and more specifically that the supply voltage rating is within the range recommended for the connection points

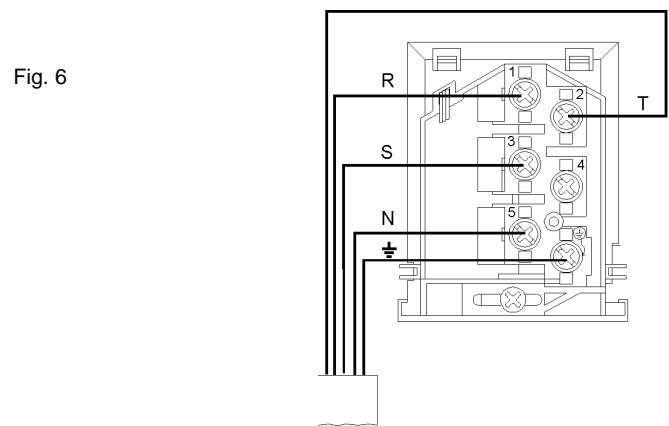
A main switch, suitable for withstanding the required peak load required, must be located within easy reach, and at the same time must ensure proper omnipolar disconnection from the power grid with the opening gap of the contacts of at least 3 mm.

The machine electrical connections must be permanent. Do not use adapters, multiple sockets and/or extensions.

The electrical safety of the machine is ensured only when it is correctly earthed according to the safety regulations in force.

This fundamental safety requirement must be duly verified, and if in doubt the system must be carefully tested by qualified technicians.

The power cable must be connected to the specific terminal box located on the back panel of the machine, ensuring correct position of the phases as indicated in the diagrams.



Three-phase + N connection

400 V*3N~ 50 Hz 11.8 A 7400 W
5 x 1,5 mm² cable

If a three-phase line is not available, the machine may be connected to a 230 V~ single-phase line, only after it is checked by qualified technicians to ensure that it is adequately sized for withstanding the required load of 7400 W.

The electrical connection, as indicated in the diagram of Fig. 7, is made using the special plates housed in the terminal box as jumpers.

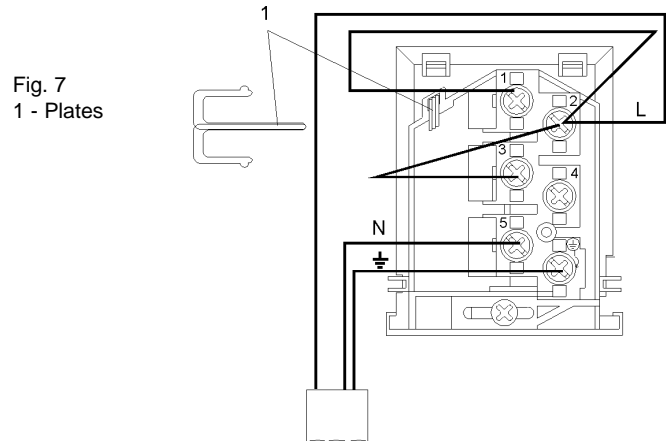


Fig. 7
1 - Plates

Single-phase connection

230 V~ 50 Hz 32 A 7400 W
3 x 4 mm² cable

If the line is not suitable for withstanding a load of 7400 W, it is possible to reduce the absorbed power to 3150 W, by excluding one of the two heating elements in the instant product boiler when making the electrical connection. In this case the performance of the machine regarding hot water output will be halved.

The electrical connection, as indicated in the diagram of Fig. 8, is made using the special plate housed in the terminal box as jumper.

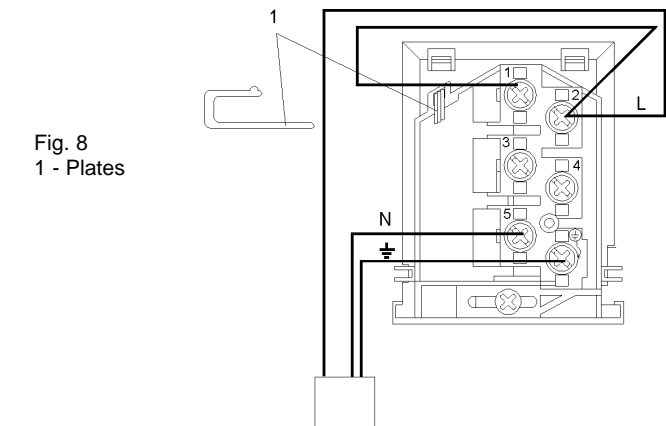


Fig. 8
1 - Plates

Single-phase connection

230 V~ 50 Hz 13 A 3150 W
3 x 1,5 mm² cable

The electrical connection must be made ensuring correct position of the phases as indicated in the diagram; the machine may not function with a different connection.

Setting the power supply minidip

Minidip 2 on the control board defines the control settings for the boiler heating elements according to the available power; if the electrical connection is as indicated in figure 6 or 7, the minidip must be set to OFF allowing simultaneous operation of the boilers (maximum output).

If the electrical connection is as indicated in figure 8, the minidip must be set to ON, and the boilers will operate in alternation, with priority given to the ESPRESSO coffee boiler.

To carry out the machine setting and configuration operations it is sufficient to insert the special key into the slot (see Fig. 1).

The door can be closed only after removing the key from door switch.

THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR ANY DAMAGE CAUSED BY THE NON-COMPLIANCE WITH THE ABOVE MENTIONED PRECAUTIONS.

FILLING THE WATER SYSTEM

Before switching the machine on, ensure that it is correctly connected to the water mains and that the check valve is open.

If the air-break device indicates a water failure for more than 10 seconds after switching the machine on, an installation cycle will start automatically, and namely:

- the message "Installation" will be shown on the display for the entire duration of the cycle;
- the water mains solenoid valve will be opened;
- the air-break will be filled;
- the coffee dispenser solenoid valve is opened to bleed the air from the boiler allowing it to be filled with 600 cc. of water.

N.B.: If there is no water flow from the mains during the installation cycle, the machine will stop until water is resumed or the machine is switched off.

This operation must be carried out manually after any maintenance requiring the boiler to be emptied but not the air-break, using key 1.

CONFIGURING THE MACHINE

The vending machine is supplied as "hotellerie" version, i.e. preset for dispensing more products in variable doses at the same time (see Figure 9-A).

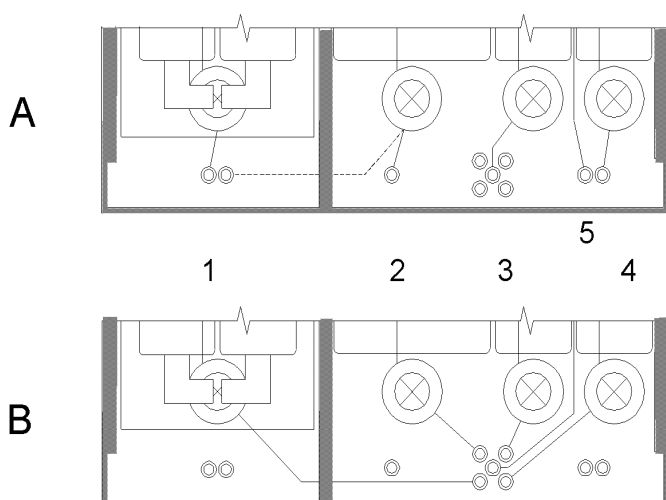


Fig. 9

- 1 - coffee
- 2 - milk
- 3 - chocolate
- 4 - instant coffee
- 5 - hot water

However, it is possible to make simple changes to the preset machine configuration by appropriately rearranging the piping and setting the minidip switches on the CPU card differently (see the selection dose table), thus obtaining the "self service" version, i.e. preset for dispensing drinks into cups from one single point (refer to Figure 9-B) and with the pre-selection buttons disabled (see Figure 2). The different options of each configuration can be modified in the programming mode (refer to relevant section). Also the disabled keys can be activated, regardless of the selected configuration.

Great care should be taken for the compatibility between the selection push-button configuration and the piping layout.

For example, with the "hotellerie" configuration, the white coffee selection can be enabled only if the whitener and coffee pipes are fitted in the same position (Figure 9-A).

INSTANT PRODUCT DISPENSING CYCLES

According to the type of product the dispensing cycles of the different selections are designed to obtain the best possible results concerning drink quality and output .

With the cup selection, the powder for chocolate-based drinks is dispensed intermittently, whereas for instant coffee-based drinks the powder is dispensed before the water.

On the other hand, with the jug selection the powder is dispensed intermittently for all types of drink; the correct water/powder proportion is always maintained, even in the case of dispensing interruption with the "STOP" button. Intermittence times and number of operations are fixed.

It is therefore important not to alter the flow rate of the solenoid valves which is factory preset.

Only in the case of replacement or accidental tampering with the solenoid valves, the flow regulators should be adjusted to dispense 25 cc/sec for chocolate and coffee, 20 cc/sec for milk, and 30 cc/sec for water.

CLEANING CYCLES

A mixer cleaning cycle can be started either with the special button on the push-button card (**for qualified personnel only**), or with button "A" on the external panel, if enabled (see Figure 2). To prevent any unintentional operations of the external cleaning button, this must be pressed twice in a short sequence and then a programmable 5-digit password should be entered. The default password is "55555".

During the cleaning cycle all mixers are operated at the same time, and all solenoid valves are actuated intermittently. Such intermittent operation ensures easier removal of the scaling.

The cleaning cycle can be interrupted with the "STOP" button.

COFFEE DISPENSING CYCLE

When selecting coffee, the grinder is started and will continue until the coffee dosing unit chamber is full (see Figure 13).

When the dosing unit is full, the ground coffee dose is released into the coffee unit.

The coffee is dropped into the vertical brew chamber (1) (see Figure 10).

- 1 - Brew chamber
- 2 - External disk
- 3 - Upper piston
- 4 - Lower piston
- 5 - Pre-brewing spring
- 6 - Swinging lever

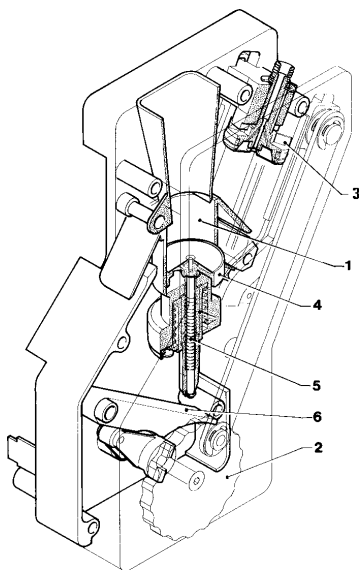
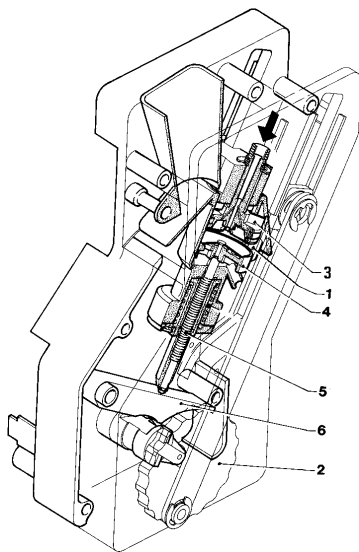


Fig. 10

The gearmotor handle engaged with the disk (2) located outside the assembly rotates by 180°, swinging the brew chamber and lowering the upper piston (3) (see Figure 11).

Fig. 11

- 1 - Brew chamber
- 2 - External disk
- 3 - Upper piston
- 4 - Lower piston
- 5 - Pre-brewing spring
- 6 - Swinging lever



Due to the water pressure, the pre-brewing spring (5) sinks and the lower piston (4) is lowered 4 mm, thus forming a water cushion which allows an even use of the coffee dose. At the end of the dispensing cycle and during a pause of 3 seconds, the pre-brewing spring (5) will discharge the water through the third way of the dispensing valve, lightly pressing the used coffee dose.

By completing its rotation, the gearmotor causes the swinging lever (6) to lift the pistons and the coffee dose. At the same time, when the brew chamber returns to its vertical position, the scraper on the coffee hopper holds the used coffee dose and drops it. The lower piston then returns to the bottom dead centre.

CHECKING AND ADJUSTING THE MACHINE SETTINGS

To get the best results from the product used, the following should be checked:

for coffee

That the used coffee dose is lightly compressed and damp.

The grade of the ground coffee.

The weight of the ground coffee.

The dispensing temperature.

The water dose.

for instant products

The weight of the instant products.

The drink temperature.

The water dose.

Should the standard settings be varied, proceed as indicated in the next paragraphs of this manual.

The weight of the instant products, the water dose and temperature are directly controlled by the microprocessor. To change them it is therefore necessary to follow the programming procedures.

STANDARD SETTINGS

The vending machine is supplied with the following standard settings:

- coffee temperature (at the spout) approx. 85-89°C;

- instant product temperature (at the spout) approx. 75°C.

The standard setting of the machine assigns the same price, expressed in number of basic coins, to all selections.

ADJUSTING THE SETTING OF THE COFFEE UNIT PISTON STROKE

When the upper piston is correctly positioned, the coffee unit can operate with coffee doses of 5.5 to 7.5 g.

To change the piston position (see Figure 12):

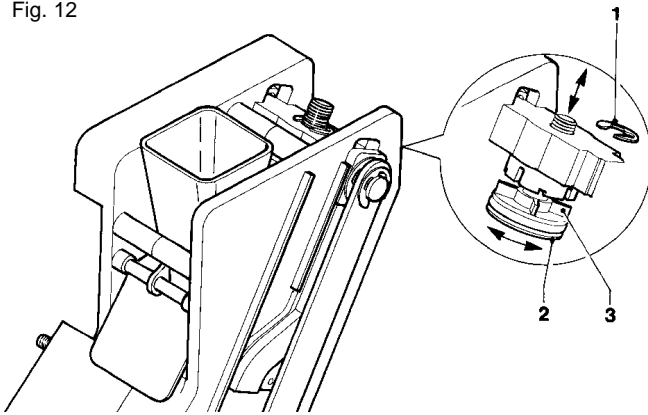
- remove the snap ring from its seat;

- place the piston in the proper adjusting notches:

.less deep notches for 5.5 to 6.5 g. doses;

.deeper notches for 6.5 to 7.5 g. doses.

Fig. 12



- 1 - Snap ring
- 2 - Upper piston
- 3 - Reference fins

ADJUSTING THE GRADE OF GRINDING

When a variation in the grade of grinding is necessary, turn the relevant adjusting knob on the grinder (see Figure 13) as follows:

- turn the knob anticlockwise for coarser grinding;
- turn the knob clockwise for finer grinding.

For optimum results, it is good practice to vary the grade of grinding with the coffee grinder motor running.

N.B.: After adjusting the grade of grinding, at least 2 test selections must be made to check the new granulometry of the ground coffee:

the finer the grade of grinding the longer the time necessary for dispensing the coffee and vice versa.

ADJUSTING THE COFFEE DOSE

The dose adjusting lever can be positioned in one of the 6 reference notches, bearing in mind that:

- the dose is increased by lifting the lever;
- the dose is reduced by lowering the lever;
- every notch changes the dose by approx. 0.25 g.

In addition, when the lever is fully rotated upwards, the ratchet can be released from the dose regulator groove (see Figure 13) and replaced into a different groove to change the average dose setting to:

- low 6 g. ± 0.5
- medium 7 g. ± 0.5
- high 8 g. ± 0.5

To take the dose simply remove the coffee unit and press key "2" from the "maintenance" menu (see relevant section).

Important notice!!!

To refit the coffee unit, pay special attention to the piston position. Reference notches on the external disk and on the unit case must match (see Figure 17).

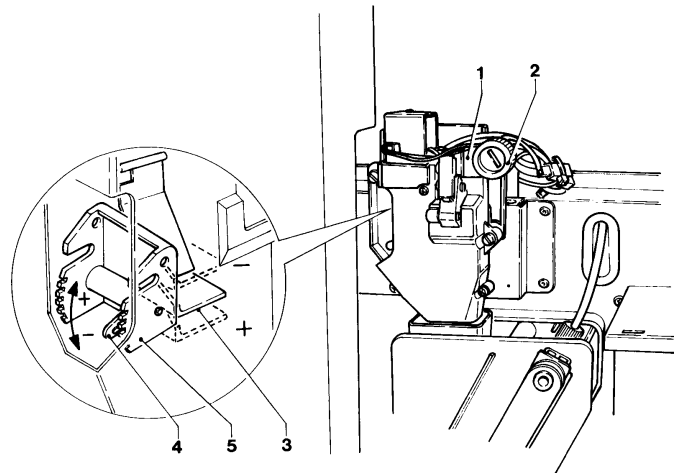


Fig. 13

- 1 - Coffee grinder
- 2 - Grinding adjusting knob
- 3 - Dose regulator
- 4 - Dose adjusting lever
- 5 - Reference notches

COFFEE TEMPERATURE CONTROL

If the temperature needs to be changed, adjust the special trimmer (see figure 21), keeping in mind that:

- tightening increases the temperature;
- loosening reduces the temperature;
- every 2 turns the temperature varies by approx. 1°C.

INSTANT PRODUCT TEMPERATURE CONTROL

The machine is supplied with a preset boiler temperature of 86°C. Water temperature adjustments can be made by qualified technicians by turning the thermostat screw by hand (see Figure 14).

However, temperature should never exceed 90°, to prevent water from boiling.

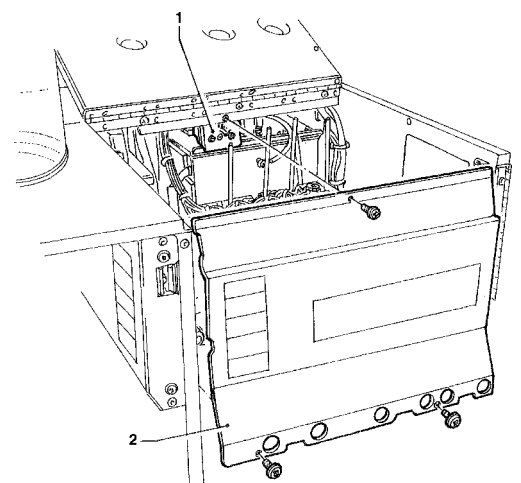


Fig. 14

- 1 - Instant products thermostat
- 2 - Protective panel

OPERATING MODES

The machine has three different operating modes where the buttons will have different functions.

The available operating modes are as follows:

- normal operating mode, in this case the machine will display "Working".
- temporarily out of service for heating, boiler filling or cleaning.
- out of service due to a lockout failure or with the push-button panel disabled through the special switch (Figure 1)

NORMAL OPERATING MODE

After switching on the machine, the message "Starting" is displayed for a few seconds, after which the machine goes into normal operating mode.

The messages displayed according to the operation being carried out can be the following:

DISPLAY	FUNCTION
"Ready for use"	Machine ready.
"Out of service"	Machine out of service
"Drink in process"	Preparation of the drink
"Temperature"	Wait time before reaching operating temperature
"Filling"	Boiler filling
"Sel. not avail."	Selection disabled
"Suspended serv."	Selection buttons disabled
"Coffee out of S."	Only for espresso models Coffee unit out of service

When pressing a jug pre-selection button the message "half jug" or "jug" will be displayed for a few seconds.

PROGRAMMING MODE

The programming mode can be accessed either with the special button located on the push-button card (**for qualified technicians only**) or with button "A" on the external push-button panel, if enabled (see Figure 2).

To prevent any unintentional operations of the external button, this must be pressed twice in a short sequence and then a programmable 5-digit password should be entered. The default password is "11111".

The machine displays a menu which gives the option of either maintenance mode or programming.

When in programming mode, the keys of the external push-button panel are assigned different functions (see Figure 14), used for moving inside the menu and namely:

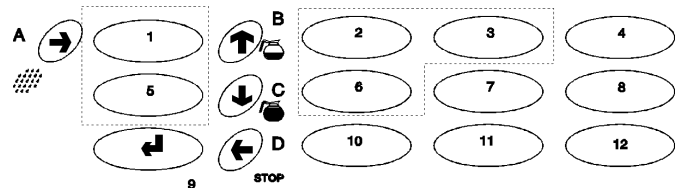


Fig. 14

- ↑ previous function or increase data (+1)
- ↓ next function or decrease data (-1)
- ← delete data or exit function
- change data
- ↩ confirm data or confirm function

In programming mode, the keys shown within the dotted line (Figure 14) are assigned direct functions and namely:

- 1 - coffee boiler installation
- 2 - reset failures
- 3 - reset statistics
- 5 - display statistics
- 6 - printing statistics

MAINTENANCE MODE

When selecting the maintenance functions from the main menu, the "maintenance" menu will be displayed, enabling the following functions:

"Complete Sel."	Complete test dispensing
"Powder only"	Dispensing powder only
"Water only"	Dispensing water only
"Set Jug"	Dispensing the doses for the jug selections
"Contr. Units"	selection 1 controls the coffee unit, if connected to the wiring, it releases a coffee dose, if the unit is disconnected

At this point, keys 1 and 5 (Figure 15) are used to set the program for dispensing the "half jug" and "jug" doses for all selections covered by this function.

Button "STOP" switches off the pre-selection and sets the program for dispensing the "cup" doses.

Key "A" starts a cleaning cycle.

Moving inside the menu and confirming of operations are as for the programming mode.

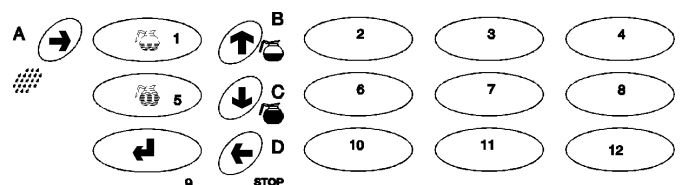


Fig. 15

PROGRAMMING

When selecting the programming functions from the main menu, the machine goes into "Programming" mode and the keys on the panel are assigned the functions shown in Figure 14.

The "programming" menu will be displayed, enabling the following functions:

"Powder dose"	powder dose setting
"Water dose"	water dose setting
"Buttons"	enabling/disabling of one selection, pre-selection, cleaning
"Curr. failure"	current failure reading
"Initialise"	RAM initialising
"Machine code"	machine code setting
"M. Lock Count."	sets the number of selections after which the machine is stopped.
"Password"	new password entry

If the machine is equipped with a system of payment, available as an option, the following functions are activated:

"Price sett."	price setting
"Set Prices/Sel."	assignment of prices/selections
"Basic coin / DP"	setting the basic coin value and the decimal point position
"Validat. lines"	setting the validator line value

In addition, the following direct operations are provided (Figure 14):

- failure reset;
- display of statistics;
- printing of statistics;
- statistics reset.

PROGRAMMING THE WATER AND POWDER DOSES

When either the "Water dose" or the "Powder dose" functions from the "programming" menu are displayed, the corresponding doses can be changed.

The doses are identified by a code, which is different for "cup", "half jug" and "full jug", and is displayed each time.

The dose code identifies the water and powder doses for a certain selection; changing the dose of one selection also affects the compound selections for which the dose code is used.

The dose codes are summarised in the "selection doses" tables supplied together with the machine.

The displayed doses are expressed in tenths of second. Press the confirm key "↵" to access the dose code list, which can be scrolled up and down with keys "↓" and "↑". Press the correction key "→" to display this value blinking, and which can be modified as necessary (see the summary table).

ENABLING THE PUSH-BUTTONS

When the "Buttons" function from the "programming" menu is displayed, the status of a push-button can be changed (enabled/disabled).

Press the confirm key "↵" to access the push-button list, which can be scrolled with keys "↓" and "↑".

The selection keys are identified by a number (see Figure 2) while the others are identified by the following strings:

"Clean. Butt. = #"	Cleaning button Programming
"Half Jug = #"	Dose pre-selection button Half jug
"Jug = #"	Dose pre-selection button Full jug

The button "STOP" is activated with the "half jug", "jug" and "washing" keys.

When pressing the correction key "→" the status of the button blinks.

The status of the button can be changed from (enabled) to (disabled) with keys "↓" and "↑".

Press the confirm key "↵" again to store the current status present on the display (see the summary table).

CURRENT FAILURE DISPLAY

When the "Curr. failure" function from the "programming" menu is displayed (see the summary table), press the confirm key "↵" to display the list of current failures; press key "↓" to display the next failure (if present).

If no failure is present, when pressing the confirm key "↵" the message "No Failure" is displayed.

The possible failures are highlighted in the following cases:

AIR-BREAK FAILURE:

The machine will stop if, after 40 seconds of dispensing water, no lowering of the water level in the air-break is detected.

FAILURE OF INSTANT PRODUCT BOILER

The machine will stop if there is no temperature variation in the boiler for more than 120 minutes.

FAILURE OF ESPRESSO BOILER

The machine will stop if there is no temperature variation in the boiler for more than 10 minutes.

COIN MECHANISM FAILURE (if installed)

The machine will stop if it receives an impulse longer than 2 seconds on a validator line or there is communication with the serial coin mechanism for more than 30 seconds.

RAM DATA FAILURE

The data contained in the EEprom (i.e. the chip that stores the setting variations) are wrong and must be retrieved from the Eprom, losing all statistics information.

WATER FAILURE

The water inlet solenoid valve remains energized for more than 30 seconds (or 4 minutes if the machine has just been started) without reaching the minimum level in the boiler.

LIQUID WASTE CONTAINER FAILURE

This occurs after the float in the liquid waste container is triggered.

ROTOR FAILURE

Failed computation of the volumetric counter within a max. set time.

COFFEE UNIT FAILURE

This failure is due to a mechanical lock of the unit or when the unit is not present. The machine is not locked, but all coffee-based selections are disabled.

COFFEE FAILURE

If after a period of 15 seconds of grinding coffee a full dose is not obtained, all coffee-based selections are disabled.

COFFEE RELEASE FAILURE

If after releasing the ground coffee dose the micro-switch of the coffee dosing unit indicates the presence of coffee in the dosing unit chamber, all coffee-based selections are disabled.

INITIALISING

When the "Initialise" function is displayed the vending machine can be initialized, restoring all default data.

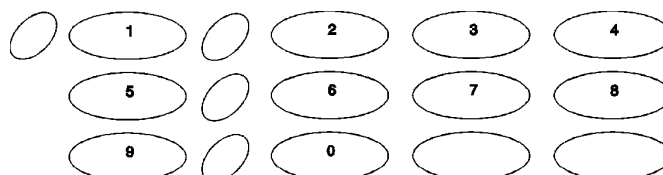
This function should be used in the case of memory data error or when the EPROM is replaced. All statistics information will be reset. Press the confirm key "↵" and the message "Confirm?" will be displayed. Press key "↵" a second time and the message "In process" will be displayed for a few seconds.

PROGRAMMING THE MACHINE CODE

When the "Machine code" function is displayed the identification code number of the machine can be changed (from the default 0000 to 9999). Press the confirm key "↵" and the current code number is displayed; then using the correction key "→" and the first digit will blink. The keys have now numeric values (see Figure 16). Press a key to assign its value to the blinking digit and the next digit will start blinking.

Press the confirm key "↵" after setting the last digit and the new code will be stored.

Fig. 16



OPERATION COUNTER

This function causes the machine to stop after a preset number of selections.

A non-programmable 4-digit password (4231) is required to have access to the counter.

After entering the password, it will be possible to enter the number of selections; upon reaching such number, the machine stops, reads the number of selections made and resets the counter (refer to related table).

WARNING: The counter default setting is zero;

With the counter set to zero this function is disabled.

PROGRAMMING THE PASSWORD

When the "Password" function is displayed it will be possible to change the passwords which are used to access the cleaning and programming procedures through the external push-button.

Press keys "↓" and "↑" to alternate between the password requests for cleaning and for programming.

Press the confirm key "↵" and enter the current password, at this point the push-button panel will have numeric values Figure 16), the first digit will blink and can be modified. Pressing any of the keys, causes the blinking digit to take its value and the next digit starts blinking.

LANGUAGE SELECTION

With this function is possible to select the language used for the messages on the LCD display.

PROGRAMMING THE PAYMENT SYSTEMS

If a payment system is installed, also the related functions are available for programming.

PROGRAMMING THE PRICES

When the "Price sett." (price programming) function from the "programming" menu is displayed, the 12 sales prices memorised can be varied.

The prices are indicated in number of basic coins.

Press the confirm key "↵" from the "programming" menu to access the price list, which can be scrolled up and down with keys "↑" and "↓".

Press again the confirm key "↵" and the price value is displayed.

When pressing the correction key "→", this value is displayed blinking and can be modified as necessary (see the summary table).

PROGRAMMING THE SELECTION PRICES

When the "Set Prices/Sel." (price assignment) function from the "programming" menu is displayed, the combination of each selection to one of the memorised prices can be changed.

Press the confirm key "↵" from the "programming" menu to access the selection/price list, which can be scrolled up and down with keys "↓" and "↑".

When pressing the correction key "→", the price number is displayed blinking and can be modified as necessary (see the summary table).

N.B.: The residual credit is controlled by the minidips located on the CPU card. Refer to the "selection doses" table for settings.

PROGRAMMING THE BASIC COIN AND THE DECIMAL POINT

When the "Basic coin / DP" (basic coin value) function from the "programming" menu is displayed, the value of the basic coin and the position of the decimal point can be modified.

Press the confirm key "↵" from the "programming" menu to display the current value of the basic coin.

Press keys "↓" and "↑" to alternate between the value of the basic coin and the number of the decimal point position "dP", i.e.:

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

When pressing the correction key "→", these values are displayed blinking and can be modified as necessary (see the summary table).

PROGRAMMING THE VALIDATOR LINES

When the "Validat. lines" (lines programming) function from the "programming" menu is displayed, the value of the 6 coin lines of the validator can be changed.

The values of the lines are indicated as number of basic coins. Press the confirm key "↵" from the "programming" menu to access the line list, which can be scrolled up and down with keys "↓" and "↑".

When pressing the correction key "→", this value is displayed blinking and can be modified as necessary (see the summary table).

RESETTING FAILURES

When pressing the failure reset key "2" the message "In process" is displayed for a few seconds and any present failures are reset.

DISPLAYING THE STATISTICS

When pressing the statistics display key "5" the stored data are sequentially displayed, with a time interval of 1 second if no other key is pressed (see the summary table), and namely:

1 - selection counters in normal operating mode, including:

- single selection
- total selections
- total half jugs
- total jugs

2 - counter for each price;

3 - counter for type of coin cashed;

4 - total cash counter;

5 - failure counter.

PRINTING THE STATISTICS

Connect an RS-232 serial printer with a Baud rate of 9600, 8 data bit, no parity, 1 stop bit (the CITIZEN-DP 3110-24RF 230A p/n 9210219 printer is recommended) to the serial port located on the push button board, to print all the statistics described in section "displaying the statistics". The hardcopy printout will also contain the machine code number and the printout progressive number.

The progressive hardcopy printout number can be reset only by initializing the machine.

To connect the printer do the following:

- Press the statistics hardcopy printout key "6" and the request message "Confirm?" will be displayed;

- before confirming connect the printer;

- press the confirm key "↵" to start printing.

RESETTING THE STATISTICS

When pressing the statistics reset key "3" the request message "Confirm?" will be displayed blinking.

When pressing the confirm key "↵" the message "In process" is displayed for a few seconds and the statistics are reset.

MAINTENANCE

Important notice!!

Access to the machine interior for maintenance and/or repairs is via the back panel.

Therefore the machine is designed to be rotated, thus allowing removal of the back panel.

The integrity of the vending machine and its conformity with the rules and regulations in force for its relevant systems must be checked by qualified personnel at least once a year.

Turn the unit off before any maintenance operations which require removal of components.

The following operations must be carried out only by personnel who have the specific knowledge of the machine functioning from a point of view of electrical safety and health regulations.

INTRODUCTION

To ensure perfect operation for a long period, the machine must be subjected to regular maintenance.

The following sections contain the procedures and the maintenance schedule, which are only a general indication, as they greatly depend on the operating conditions (e.g. water hardness, environmental humidity and temperature, type of product used, etc.).

The procedures described in this chapter are not exhaustive of all maintenance operations to be carried out.

More complex operations (e.g. boiler descaling) should be carried out by qualified technicians only having specific knowledge of the machine.

To prevent oxidation or the action of chemical agents, the stainless steel and varnished surfaces should be kept clean by using mild detergents (solvents must not be used).

Never use water jets to clean the machine.

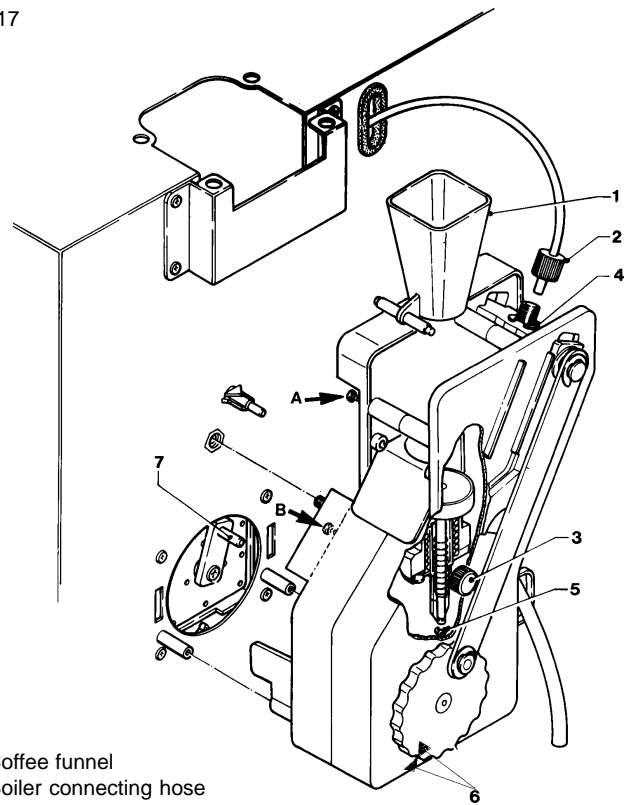
MAINTENANCE OF THE COFFEE UNIT

Every 10,000 coffee selections, or every 6 months, some maintenance of the coffee unit must be carried out.

Maintenance is carried out as follows:

- remove the teflon hose connection of the boiler from the upper piston, paying attention not to lose the seal (see Figure 17);
- undo the knob securing the unit to the bracket;
- remove the coffee unit;

Fig. 17



- 1 - Coffee funnel
- 2 - Boiler connecting hose
- 3 - Unit securing knob
- 4 - Upper piston snap ring
- 5 - Lower piston snap ring
- 6 - Reference notches
- 7 - Gearmotor handle pin

Removing the upper filter

- Take the snap ring out of its seat;
- remove the piston from the crosspiece;
- remove the filter and the piston gasket.

Removing the lower filter

- Loosen screws A and B enough to release the coffee funnel (see Figure 17);
- remove the lower piston snap ring;
- take the piston from out of brew chamber and remove the filter.

Soak all components removed from the unit in a solution of boiling hot water and coffee machine detergent for approx. 20 minutes.

Thoroughly rinse and dry all parts, then reinstall them in the reverse order of disassembly, taking particular care that:

- the piston is positioned in the correct notch for the coffee dose used (see relevant section);
- the two reference notches match and that the coffee unit is inserted.

Important notice!!!

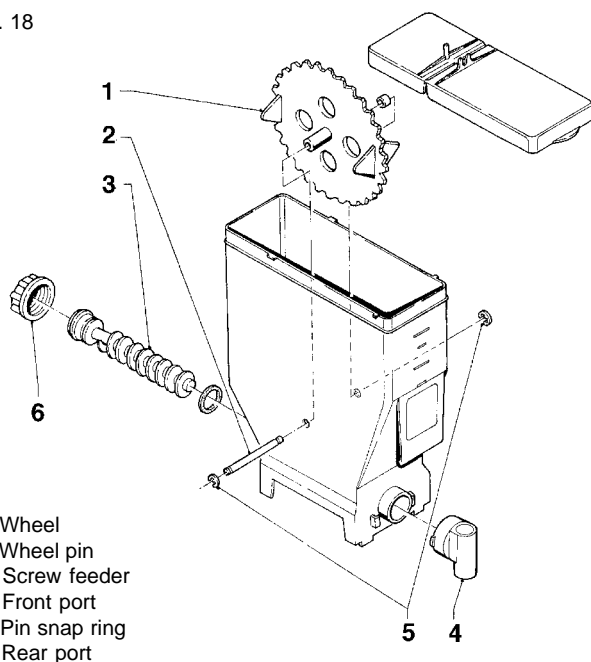
Check that the handle pin of the gearmotor is correctly engaged in its seat.

PERIODICAL CLEANING

CLEANING THE PRODUCT CONTAINERS

- Remove the product containers from the machine;
- after unscrewing the rear forks (left-handed thread), undo the product ports and slide out the screw feeders;
- clean all parts in a solution of hot water and chlorine-based detergents and thoroughly dry before reassembling.
- the container for coffee beans can be cleaned the same way as all the other containers but without needing to be removed.

Fig. 18



- 1 - Wheel
- 2 - Wheel pin
- 3 - Screw feeder
- 4 - Front port
- 5 - Pin snap ring
- 6 - Rear port

SANITISING

At least once a year, or more frequently according to the use of the machine and the quality of the inlet water, the entire foodstuff circuit system must be sanitised (cleaned and disinfected) in the following way:

- all components in contact with food, including piping, must be removed from the unit and fully disassembled;
- all components must be washed with detergent, ensuring that all visible residue and product films are mechanically removed using a brush or similar implements, if necessary;
- all components must be soaked in the previously prepared chlorine-based detergent solution for at least 20 minutes;
- the unit internal surfaces must be cleaned with the same sanitising solution;

- after disinfection, thoroughly rinse all parts to remove all possible residue of the sanitising solution;

- reinstall all parts.

Before restarting the machine, the sanitising procedure described on the maintenance plate (see Figure 1) must be carried out with all parts reinstalled.

MAINTENANCE OF INSTANT PRODUCT BOILER

According to the hardness of the water and the number of selections made, a periodic descaling of the boiler is necessary.

This operation should be carried out by qualified technicians only.

To descale the boiler, it is necessary to remove it from the machine.

For descaling use only biodegradable, nontoxic and mild products.

Thoroughly rinse all parts before reassembling.

When reassembling make sure that:

- the electrical contacts (terminals, fastons etc.) are thoroughly dry and correctly connected;
- the safety and anti-boiling thermostats are suitably positioned and fastened;
- the hydraulic connections are correctly made.

IMPORTANT NOTICE!!!

If for any reasons the heating system of the boiler is operating without water, check the correct functioning of the boiler temperature sensor before restarting the machine.

If the dry heating continues until the safety thermostat is activated (see hydraulic system) the boiler temperature sensor will be

PERMANENTLY DAMAGED AND MUST BE REPLACED.

PRINTED BOARD FUNCTIONS AND INDICATOR LIGHTS

CONTROL BOARD

This board (see Fig. 19 and 22) processes the information from the push-buttons and from the payment system, it also controls the actuations and the push-button board.

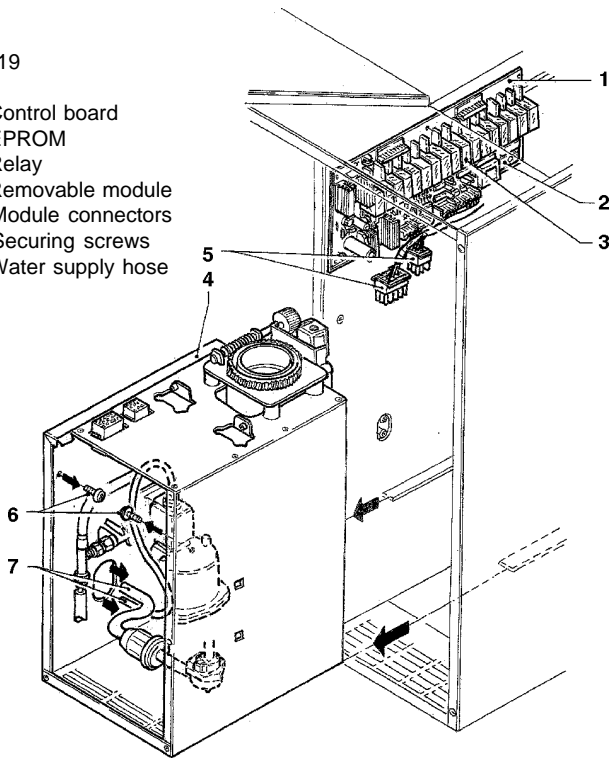
The 15 V AC voltage required for board operation is supplied by a transformer which is protected by a 125 mA T fuse on the primary and by a 1.25 AT fuse on the secondary winding. The voltage supply is rectified and stabilised directly by the board.

The board also houses the EPROM chip.

- the yellow LED indicates the presence of 12 V DC;
- the green LED, when blinking indicates that the micro-processor is working correctly;
- the red LED indicates heating of the coffee boiler.

Fig. 19

- 1 - Control board
- 2 - EPROM
- 3 - Relay
- 4 - Removable module
- 5 - Module connectors
- 6 - Securing screws
- 7 - Water supply hose



REPLACING THE CONTROL BOARD

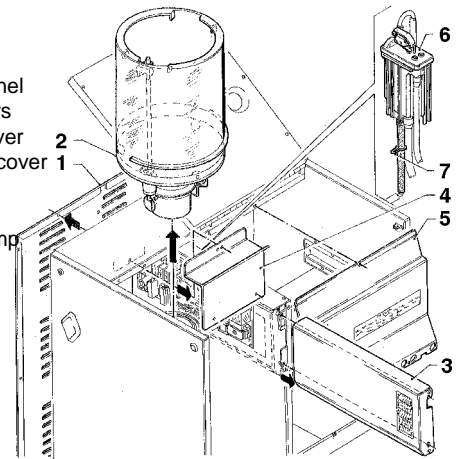
Should for any reason the control board of Espresso models need replacing, it would be advisable to remove the coffee dispensing module proceeding as follows:

- turn off the main external switch;
- remove the machine back panel;
- remove the coffee and instant product containers;
- after undoing the two securing screws, extract the control board cover;
- remove the connectors box cover;
- remove the protective panel to access the air-break.
- close the water supply hose to the Espresso coffee unit;

- disconnect the coffee dispensing spout;
- disconnect the water supply hose from the coffee module;

Fig. 20

- 1 - Machine back panel
- 2 - product containers
- 3 - Control board cover
- 4 - Connectors box cover
- 5 - Protective panel
- 6 - Air break
- 7 - Hose closing clamp



- disconnect the electrical connectors from the coffee module;
 - after undoing the two securing screws, remove the coffee module.
 - disconnect and remove the control board.
- Proceed in the reverse order to reinstall the board.

PUSH-BUTTON BOARD

This board controls the alphanumeric display, the selection keys and the service buttons. It supports the coin mechanism connectors as well as the printer port.

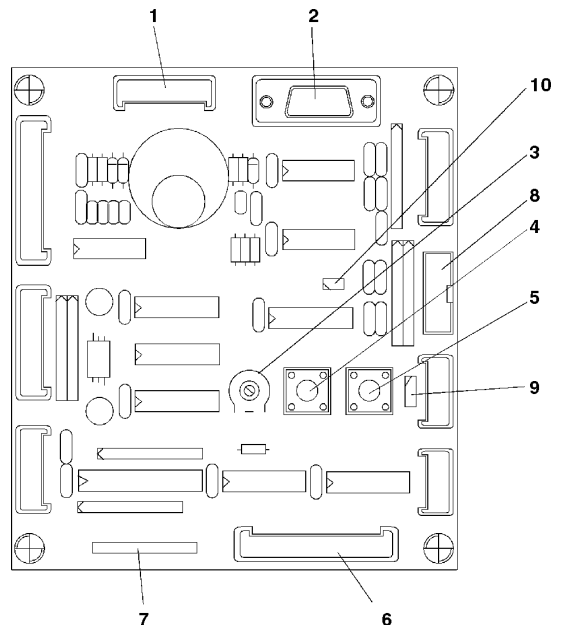


Fig.21

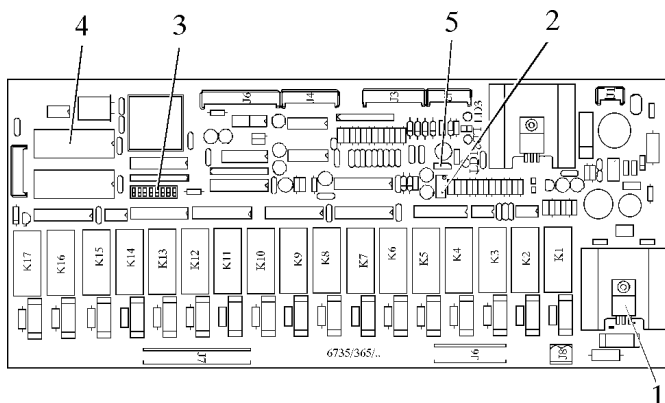
- 1 - To the programmer
- 2 - Serial port RS232
- 3 - LCD display contrast adjusting trimmer
- 4 - Programming key
- 5 - Mixer cleaning button
- 6 - To the LCD display
- 7 - To push-button panel
- 8 - To the front validator
- 9 - Jp2 =
- 10 - Jp1 =

CONFIGURING THE ELECTRONIC CONTROL BOARDS

The electronic boards are designed to be used in many machine models.

In case of replacement, or when wishing to change the unit performance, the configuration of the boards needs to be checked.

Jumper 5 must be set with 1-2 closed.



- 1 - Triac of boiler heating element
- 2 - Boiler temperature adjusting trimmer
- 3 - Configuration minidips
- 4 - EPROM
- 5 - Jumper: fixed to 1-2

Fig. 15

RELAY FUNCTION (see wiring diagram)

	ESPRESSO	INSTANT	FRES-BREW
K1 =	ER	EV5	EV5
K2 =	ESC	MD5	MD4
K3 =	MAC	MF4	MPF
K4 =	PM	- - -	- - -
K5 =	M	MD4	MFB
K6 =	MF1	MF1	MF1
K7 =	MF2	MF2	MF2
K8 =	EV4	EV4	EV4
K9 =	EV2	EV2	EV2
K10 =	MD3	MD3	MD3
K11 =	MD2	MD2	MD2
K12 =	MD1	MD1	MD1
K13 =	EV1	EV1	EV1
K14 =	EV3	EV3	EV3
K15 =	TEL	TEL	TEL
K16 =	EIA	EIA	EIA
K17 =	MF3	MF3	MF3

A row of minidips is located at the centre of the control board (see Figure 15), which are used to configure the board for use with the various unit versions.

To correctly configure the boards, refer to the "selection doses" table supplied with the machine.

CONFIGURING THE DISPENSING SYSTEM

Minidip 1 controls the option of dispensing more than one selection simultaneously, according to the type of configuration. When set to ON (self-service) simultaneous dispensing of more than one product is disabled.

CONFIGURING THE POWER SUPPLY

Minidip 2 defines the control settings for the boiler heating elements according to the available power; if the electrical connection is as indicated in Figure 6 or 7, the minidip must be set to OFF allowing simultaneous operation of the boilers (maximum output).

If the electrical connection is as indicated in Figure 8, the minidip must be set to ON and the boilers will operate in alternation, with priority given to the ESPRESSO coffee boiler.

CONFIGURING THE MODEL

According to the model minidips 3 and 4 must be set as follows:

	Model		
	Espresso	Instant	Fresh-brew
Minidip 3	ON	OFF	OFF
Minidip 4	OFF	OFF	ON

CONFIGURING THE PAYMENT SYSTEM

The combination of minidips 6, 7 and 8 defines the type of payment system adopted:

Payment system	Minidip 6	Minidip 7	Minidip 8
None	OFF	OFF	OFF
Validators	ON	OFF	OFF
Validators with credit	OFF	ON	OFF

Minidip 5 is not used and must be set to OFF.

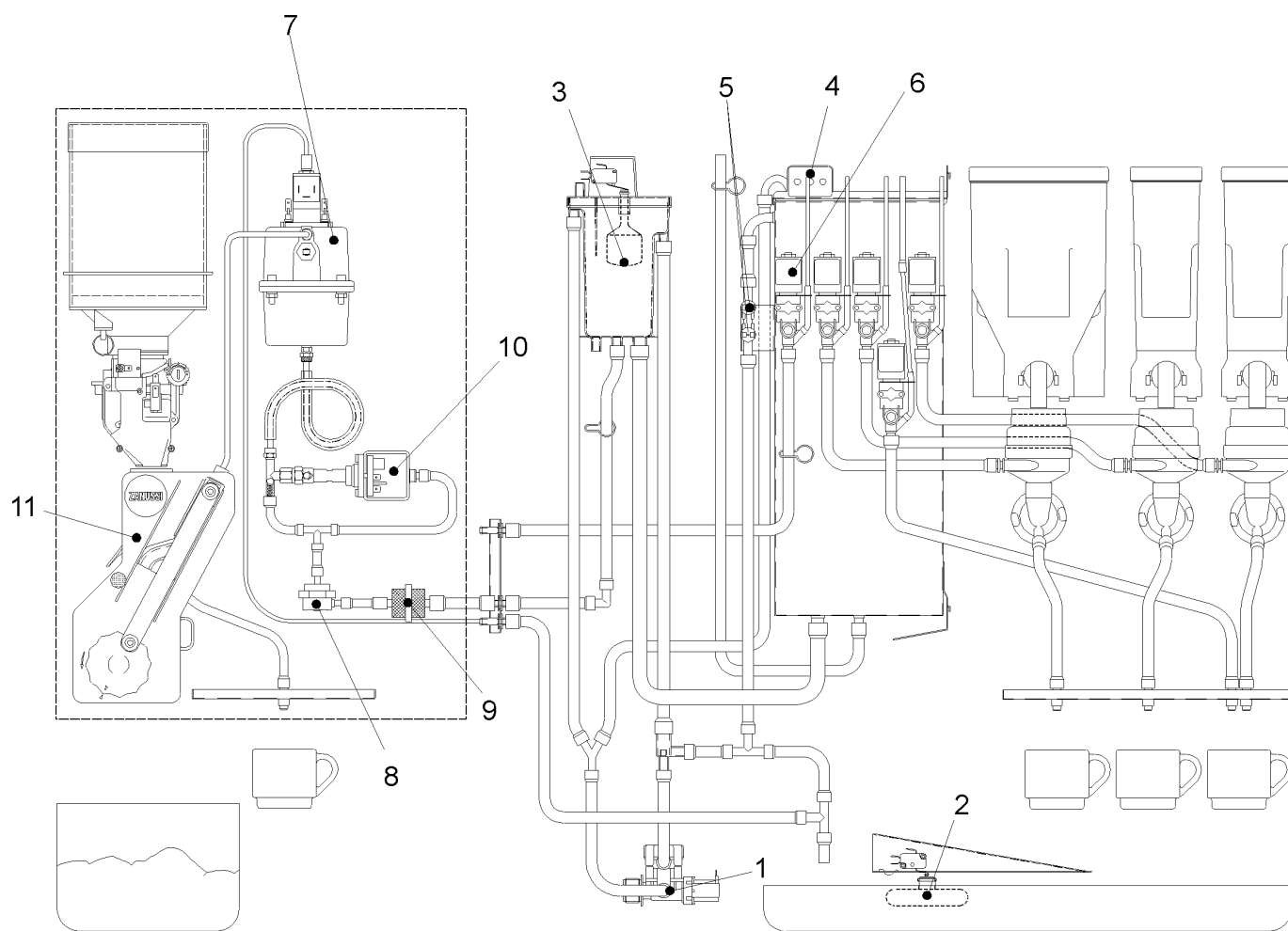
Important notice!!!

If the configuration of minidips 1, 3 or 4 is changed, the machine must be initialised.

In this condition initialising can be accessed only with the programming key on the push-panel board (Fig 14).

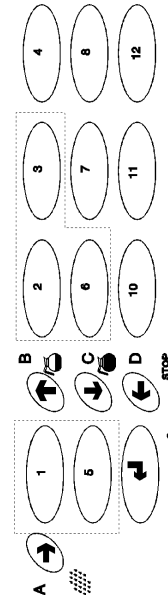
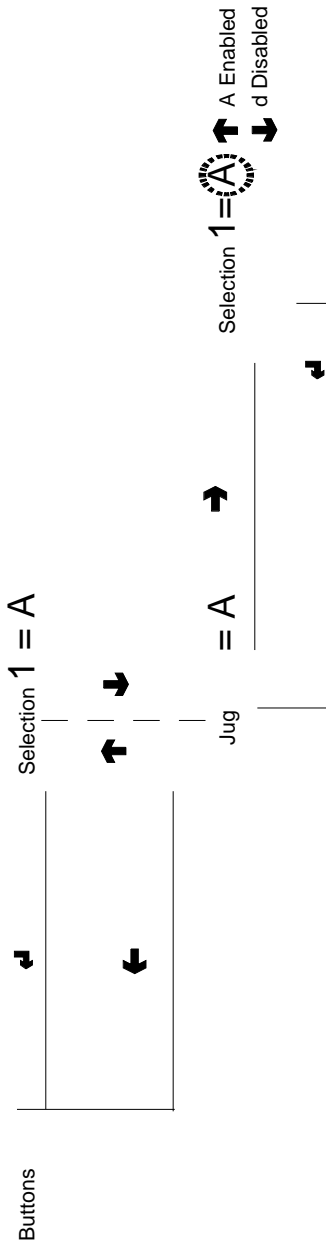
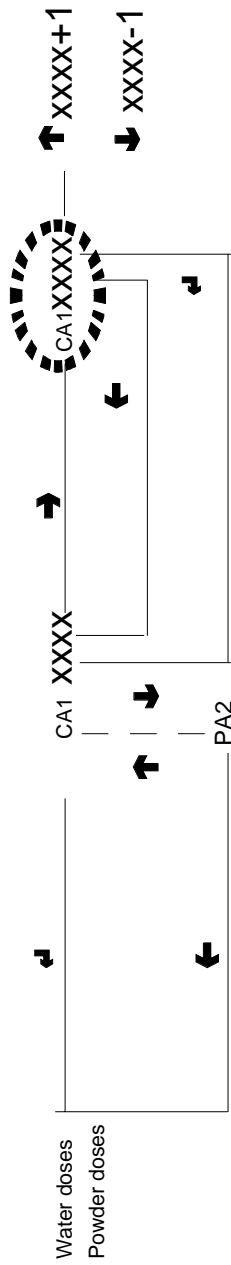
HYDRAULIC SYSTEM

ESPRESSO MODELS



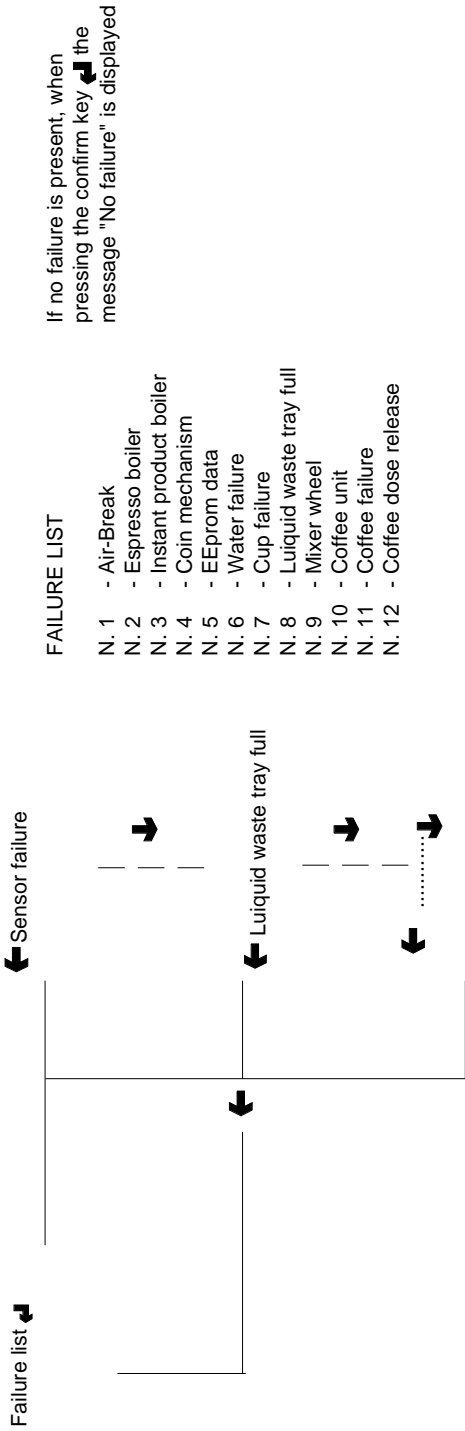
- 1 - Water inlet solenoid valve
- 2 - Liquid waste container float
- 3 - Air-break
- 4 - Boiler temperature thermostat
- 5 - Anti-boiling thermostats
- 6 - Solenoid valve for fresh brew module setting
- 7 - Coffee boiler
- 8 - Volumetric counter
- 9 - Mechanical filter
- 10 - Vibration pump
- 11 - Coffee unit

Programming table I

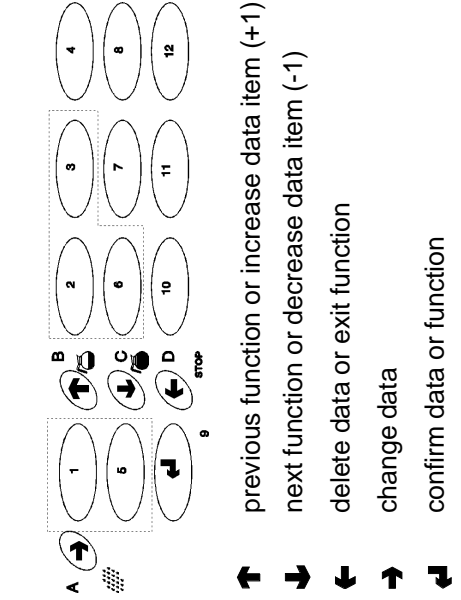


- previous function or increase data item (+1)
- next function or decrease data item (-1)
- delete data or exit function
- change data
- confirm data or function

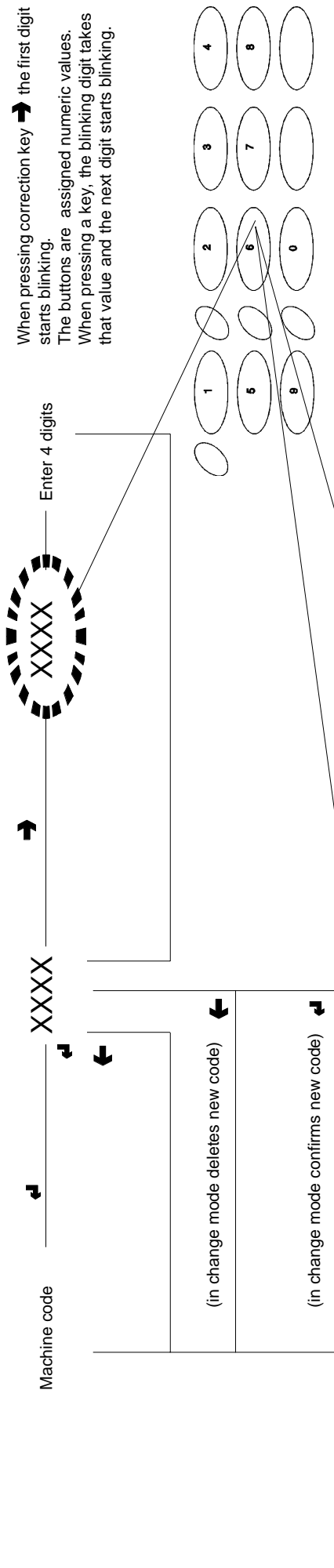
Programming table II



Initialising  Confirm ?  Processing



Programming table III



M. lock count. ← Password ####

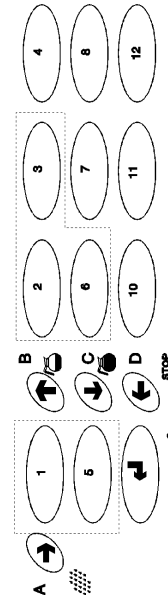
Confirm? ← P=nnnn:A=nnnn

Deletions ← P=nnnn:A=nnnn

Total counter reset ← P=nnnn:A=nnnn

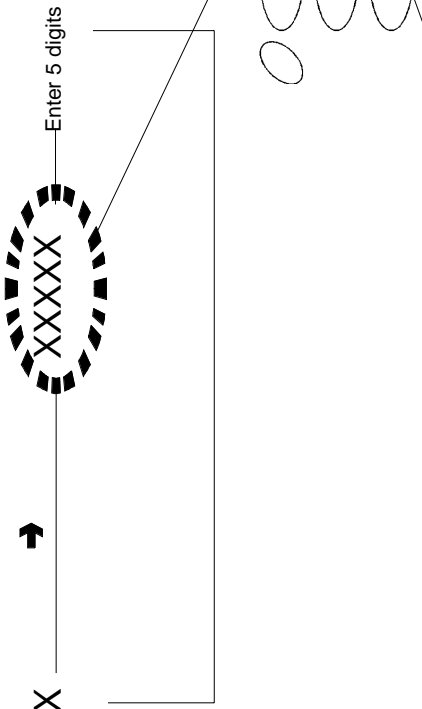
P = No. of programmed selections
 A = No. of performed selections

Total counter reset



Programming table IV

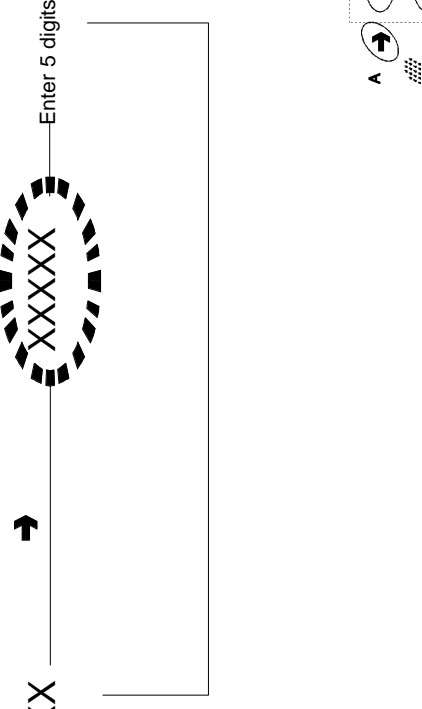
When pressing correction key \rightarrow the first digit starts blinking.
 The buttons are assigned numeric values.
 When pressing a key, the blinking digit takes that value and the next digit starts blinking



Passw. Cleaning

\leftarrow Password XXXXXX
 \leftarrow
 \leftarrow
 (in change mode deletes new password)
 \leftarrow
 (in change mode confirms new password)

When pressing correction key \rightarrow the first digit starts blinking.
 The buttons are assigned numeric values.
 When pressing a key, the blinking digit takes that value and the next digit starts blinking

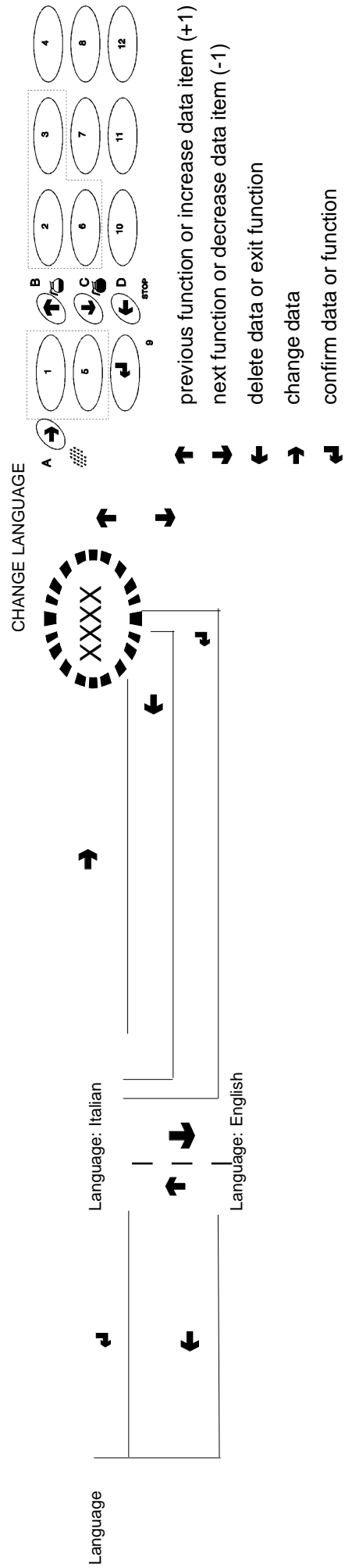
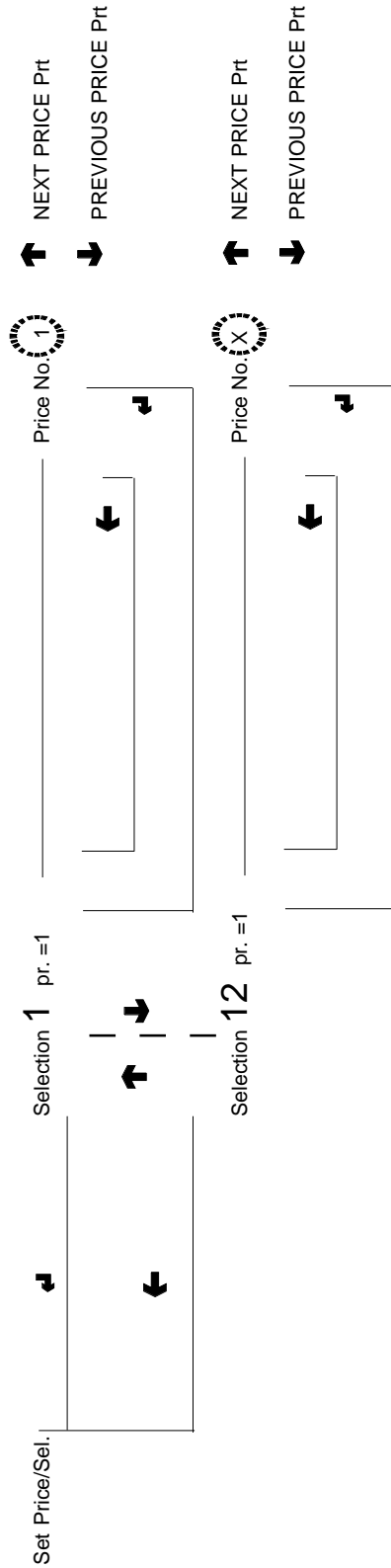
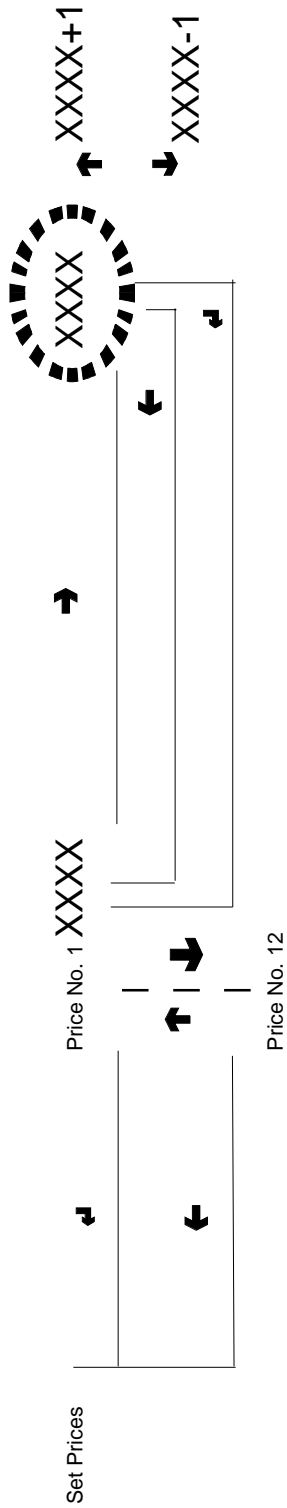


Passw. Progr

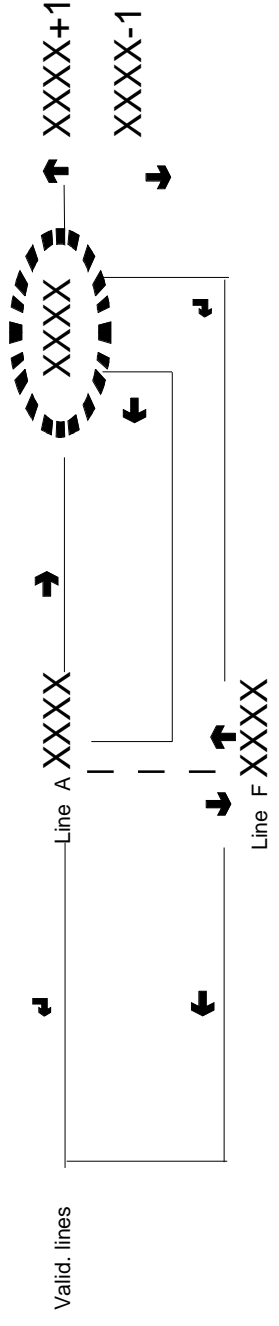
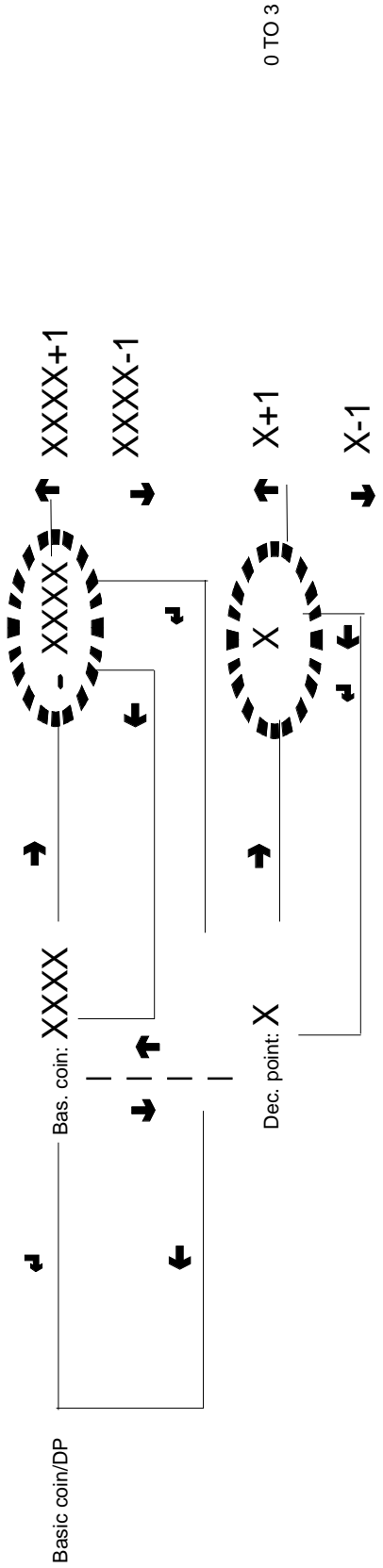
\leftarrow Password XXXXXX
 \leftarrow
 \leftarrow
 (in change mode deletes new password)
 \leftarrow
 (in change mode confirms new password)

- \uparrow previous function or increase data item (+1)
- \downarrow next function or decrease data item (-1)
- \leftarrow delete data or exit function
- \rightarrow change data
- \leftarrow confirm data or function

Programming table V



Programming table VI



A

B

C

D

1 2 3 4

5 6 7 8

9 10 11 12

- previous function or increase data item (+1)
- next function or decrease data item (-1)
- delete data or exit function
- change data
- confirm data or function

Statistics table VII

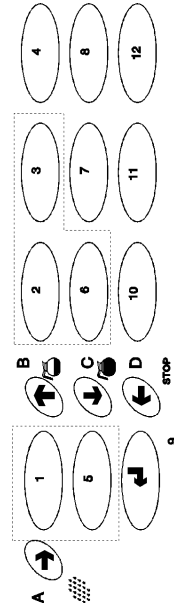
After pressing the statistics display key

t = 1 sec. waiting time

Dispensing by selection	Statistic No. 1	t	←	Sel. No. 1	P=XXXX	t	→
			←				
			←	Sel. No. 1	G=XXXX	t	→
			←	Sel. No. 1	T=XXXX	t	→
			←	Sel. No. 12	P=XXXX	t	→
			←	Sel. No. 12	G=XXXX	t	→
			←	Sel. No. 12	T=XXXX	t	→
			←	TOT. OPERATIONS =XXXX		t	→
			←	TOT HALF JUG 1.=XXXX		t	→
			←	TOT HALF JUG 5.=XXXX		t	→
			←	TOT. JUG 1 =XXXX		t	→
			←	TOT. JUG 5 =XXXX		t	→
Statistic No. 2							

TO TABLE VIII

5 = Statistics display

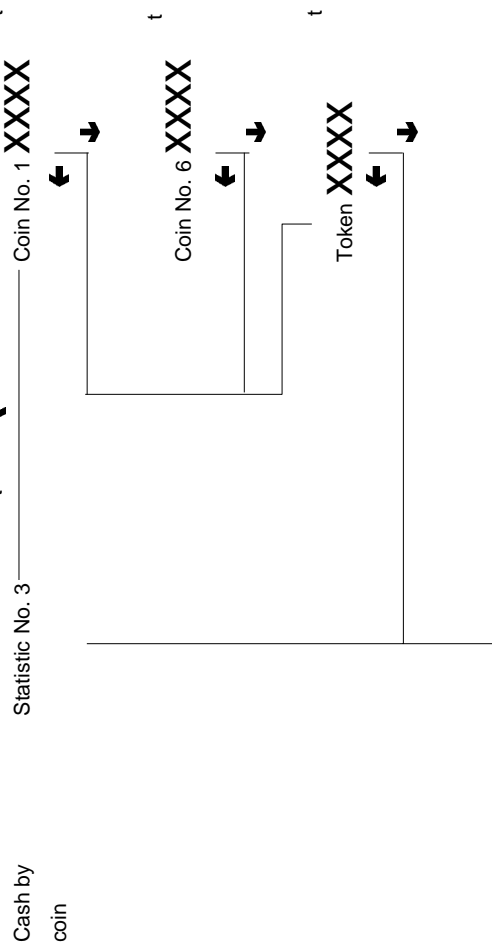
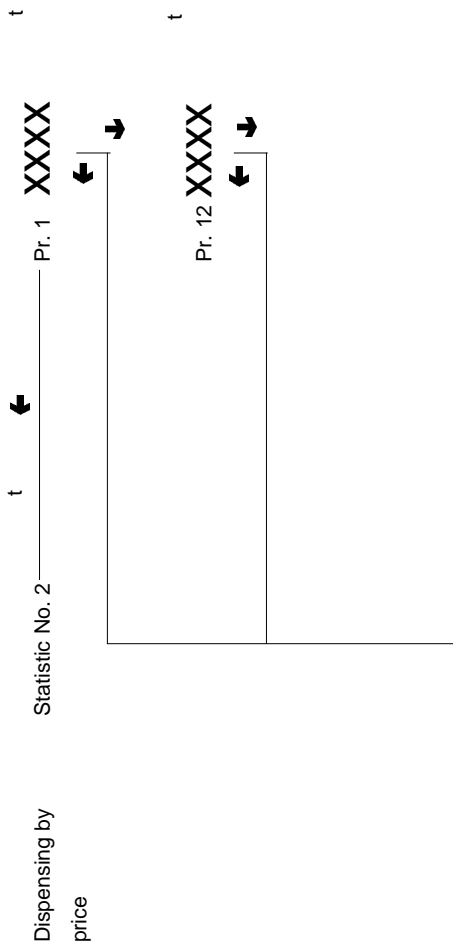


- ↑ previous function or increase data (+1)
- ↓ next function or decrease data (-1)
- ← delete data or exit function
- change data
- ↵ confirm data or function

Statistics table VIII

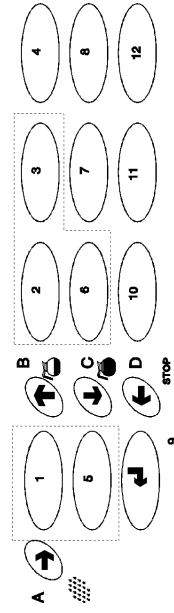
FROM TABLE VII

t = 1 second waiting time



TO TABLE IX

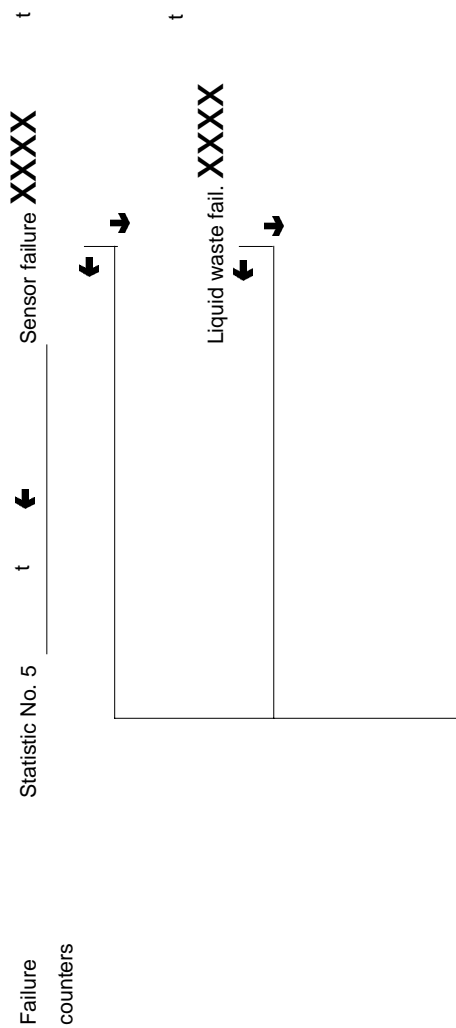
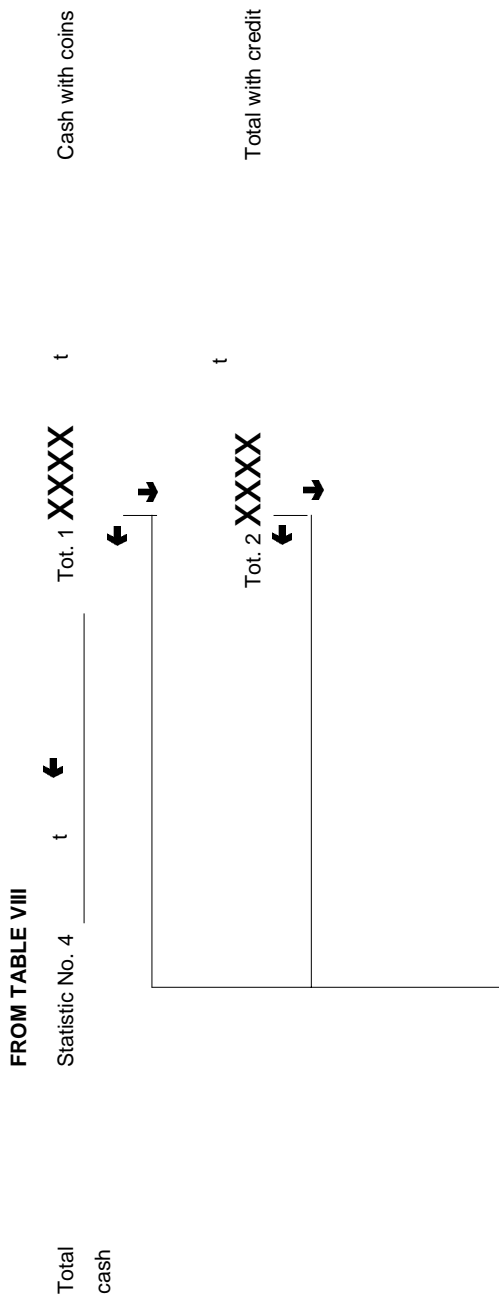
5 = Statistics display



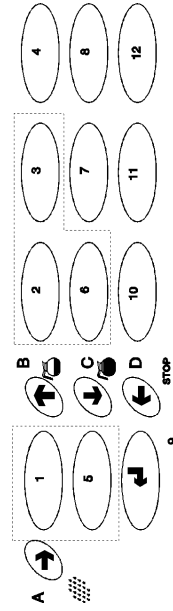
- previous function or increase data (+1)
- next function or decrease data (-1)
- delete data or exit function
- change data
- confirm data or function

Statistics table IX

t = Attesa di 1 secondo



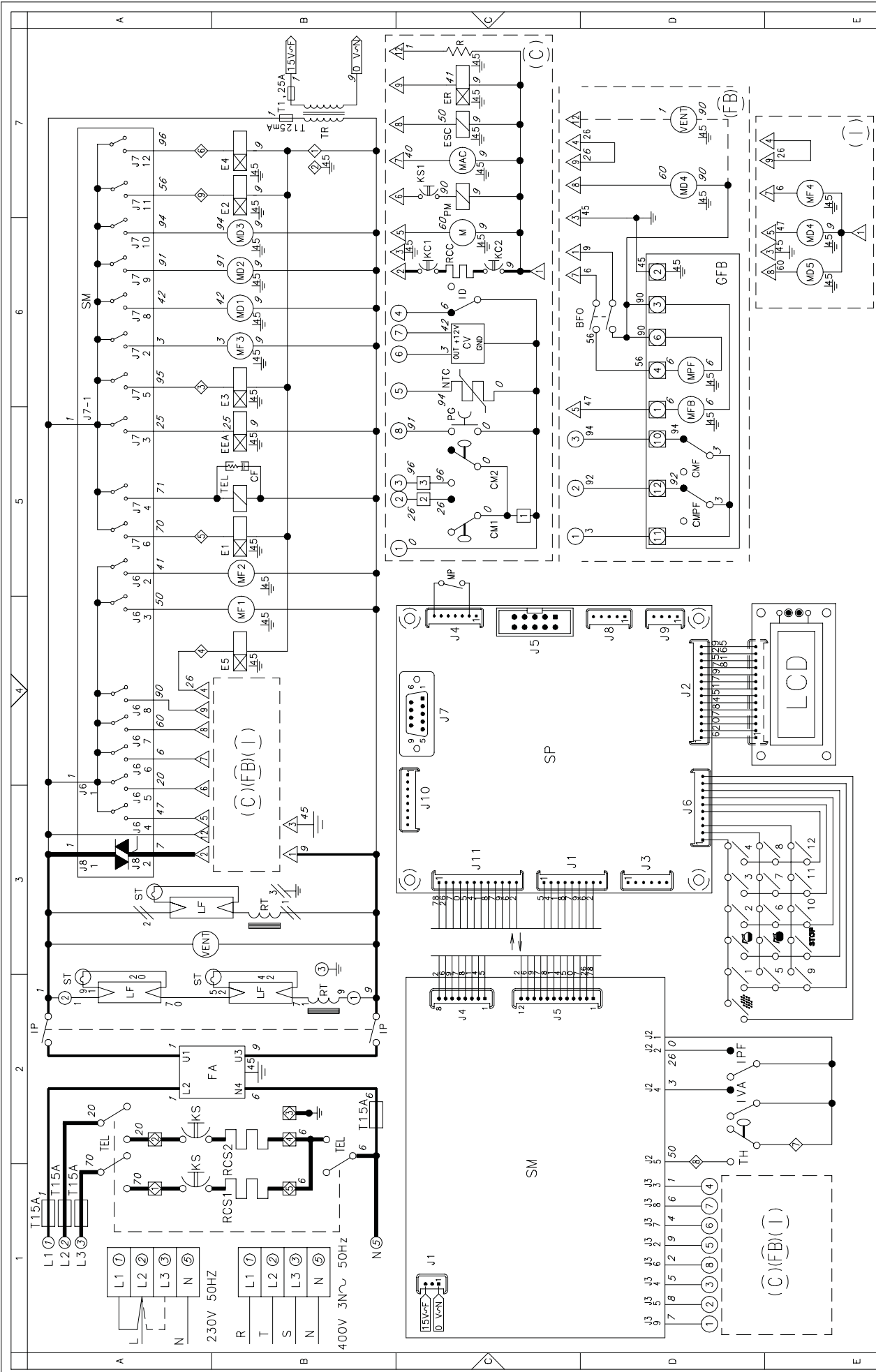
5 = Statistics display



- previous function or increase data (+1)
- next function or decrease data (-1)
- delete data or exit function
- change data
- confirm data or function

WIRING DIAGRAM LEGEND

INITIALS	DESCRIPTION	INITIALS	DESCRIPTION
BFO	WASTE CONTAINER	M	COFFEE UNIT MOTOR
CF	FILTER CONDENSER	MAC	GRINDER
CM1	COFFEE UNIT MOTOR CAM	MAX	WATER LEVEL SENSOR
CM2	COFFEE DISPENSING POSITION CAM	MD1-..	MOTOR DOSE DEVICE - INSTANT
CMF	FRESH BREW MOTOR CAM	MF1-..	MOTOR MIXERS - INSTANT
CMPF	FRESH BREW UNIT PISTON MICROSWITCH	MFB	FRESH-BREW MOTOR
CV	VOLUMETRIC COUNTER	MP	PROGRAMMING MICROSWITCH
E1-...	INSTANT BOILER SOLENOID VALVE	MPF	FRESH BREW PISTON MOTOR
EEA	WATER INLET SOLENOID VALVE	NTC1-	TEMPERATURE PROBE
ER	COFFEE DISPENSER SOLENOID VALVE	PG	COIN MECHANISM BUTTON
ESC	COFFEE RELEASE MAGNET	PM	PUMP
EX	EXECUTIVE COIN MECH CONNECTORS	RCC	COFFEE BOILER HEATING ELEMENT
FA	RADIO INTERFERENCE SUPPRESSOR	RCS	INSTANT BOILER HEATING ELEMENT
GFB	FRESH-BREW ASSEMBLY	RT	BALLAST
ID	COFFEE DOSE SWITCH	SM	CONTROL BOARD
IP	DOOR SWITCH	SP	PUSH-BUTTON BOARD
IPF	WASTE CONTAINER OVERFLOW SWITCH	ST	STARTER
IVA	EMPTY BOILER MICRO-SWITCH	TEL	REMOTE CONTROL SWITCH
KC1-..	COFFEE BOILER CUTOUT	TH	THERMOSTAT
KS	BOILER CUTOUT SWITCH	TR	TRANSFORMER
KS1-..	SAFETY CUTOUT	TX....	SLOW BLOW FUSE (X=COURRENT)
LCD	LIQUID CRYSTAL DISPLAY	VENT	FAN
LF	LAMP		



ELECTROLUX ZANUSSI VENDING S.P.A. SI RISERVA I TERMINI DI LEGGE LA PROPRIETA' DEL PRESENTE RIPRODOTTO O INVIATO SENZA SUA PREVIA AUTORIZZAZIONE		MODELLO		GRUPPO		DATA FOLGEDI SEGNAIO CON ROLLATO	
GRANMATTINO		SCHEMA ELETTRICO FUNZIONALE		20-11-98		1/1 BONCINA	
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5		6		7		8	
9		10		11		12	

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FOR APPROVAL

The Manager

A handwritten signature in black ink, appearing to read "Augusto Garlini". The signature is written in a cursive style with a large, stylized initial 'A'.

ZANUSSI

V E N D I N G

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