Saeco

Vending Machine

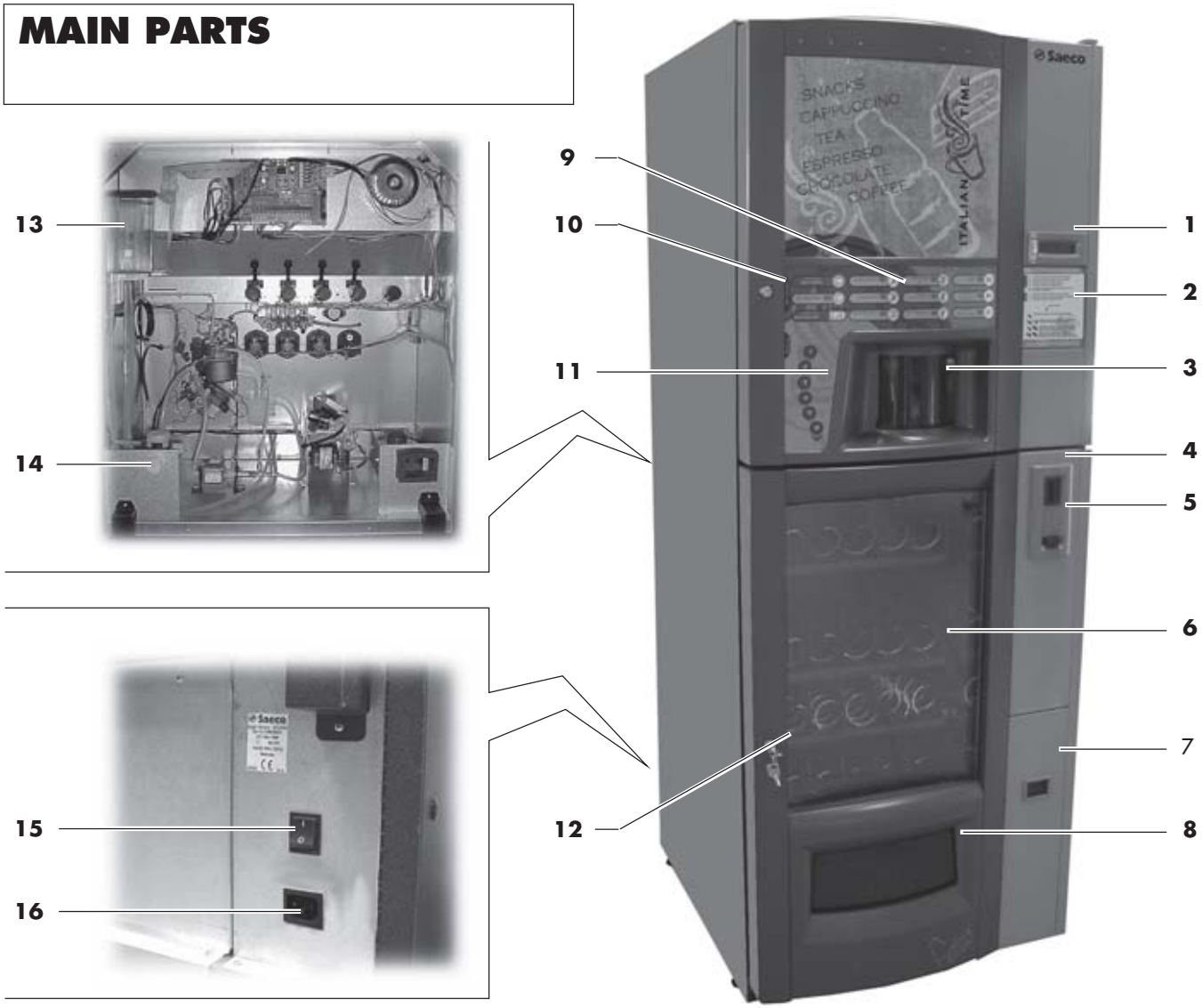
D.A. DIAMANTE

CE

USE AND MAINTENANCE

WARNING: This instruction manual is intended exclusively for specialized personnel.

MAIN PARTS



1 Display
2 Instruction plate
3 Dispensing outlet door (Beverage/ Cup dispensing)
4 Coin slot
5 Change return key
6 Window
7 Change removal outlet
8 Product removal tray
9 HOT DRINKS product keypad
10 HOT DRINKS door lock
11 SNACKS keypad
12 SNACKS door lock
13 Air break device
14 Water connection coupling
15 On/off button
16 Power cord socket
17 Utility power socket
18 Sugar container
19 Container 1 (soluble products)
20 Container 2 (soluble products)
21 Container 3 (soluble products)
22 Container 4 (soluble products)
23 Coffee bean hopper
24 Coffee grinder
25 CPU card
26 Cup dispenser
27 Dispensing outlet
28 Neon light
29 Discharge fluid tank
30 Tray connection
31 Stirrer dispenser
32 Sugar opening
33 Solubles opening
34 Mixer
35 Spiral mixer
36 Sugar supply duct
37 Coffee unit
38 Coffee ground channel
39 Support bracket for soluble product containers
40 Drip Tray
41 Bottle trays
42 Snack tray
43 Snack/cans tray
44 Dispensing spout support
45 Mobile drip tray
46 Anti-overflow valve drain hose
47 Air break device drain hose
48 Drip Tray
49 Payment system cable gasket
50 L shaped spacer
51 Spiral
52 U shaped spacer
53 Spacer
54 Spiral
55 Cans dispensing channel
56 Left spiral (snack tray)
57 Right spiral (snack tray)
58 Right spiral (snack tray)
59 Separator
60 Double spiralled snack conveyor
61 Double motor
62 Single motor
63 Cup bracket

Fig. 1

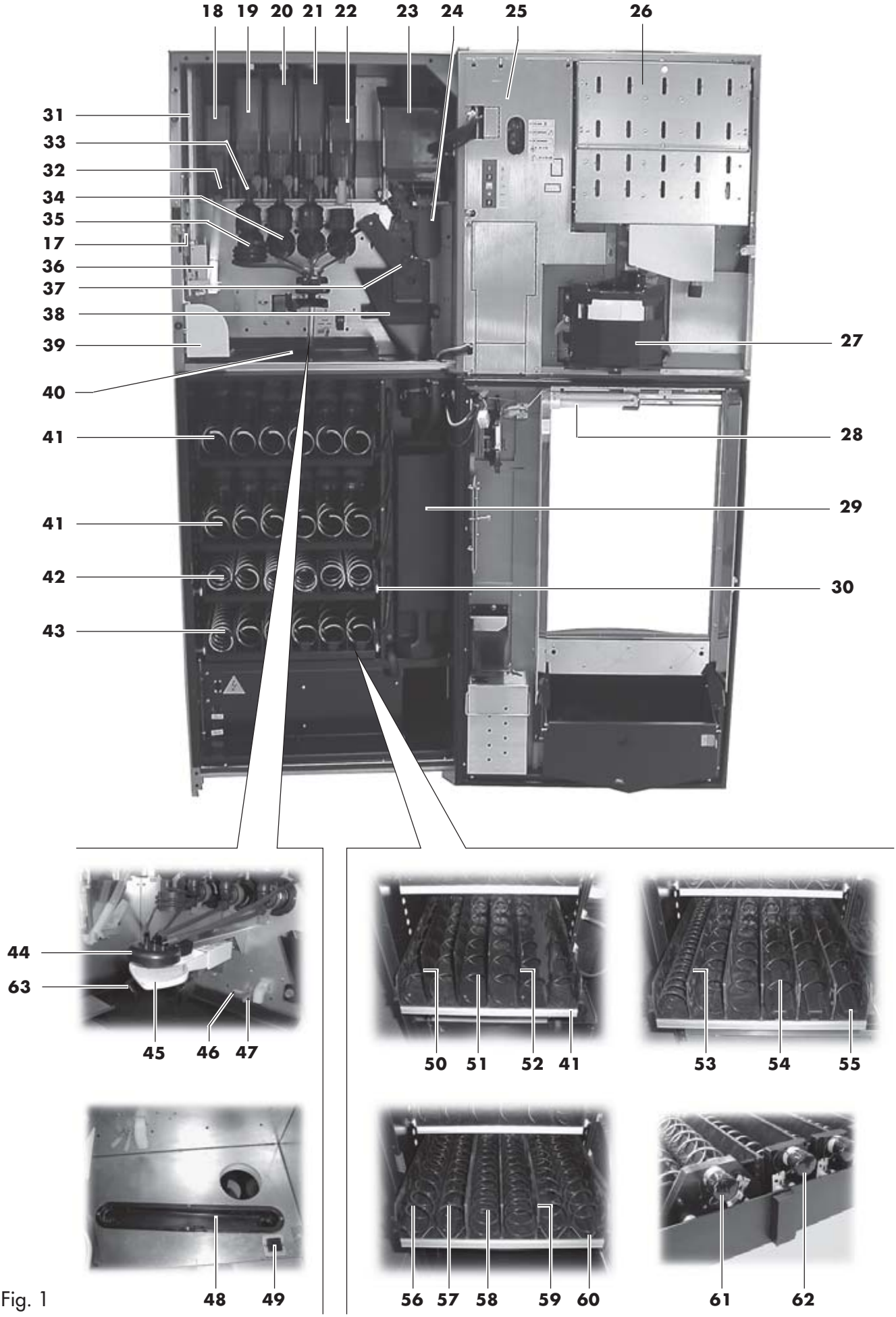

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Fig. 1

CONTENTS

1 INTRODUCTION TO THE MANUAL

1.1 Foreword

Important

This publication is an integral part of the vending machine and must be read carefully for a correct use of the machine. Complying with the safety requirements is also essential.

This manual contains the technical information necessary to carry out the procedures of use, cleaning, installation and maintenance of the vending machine mod. DIAMANTE correctly. Always consult this publication before carrying out any operation.

Manufacturer: **SAECO Vending S.p.A.**
Località Casona, 1066 - 40041 Gaggio Montano
Bologna, Italy

This manual must be preserved with care and must be kept in the machine throughout its operational life, even in case of change of ownership.

If this manual should be lost or worn out, it is possible to require another copy to the Manufacturer or to an Authorized Service Center. In this event, please indicate the data on the plate located on the back of the machine.

1.2 Symbols used

A number of symbols are used in this manual to indicate dangerous situations that require various degrees of expertise.

The symbols include messages to indicate operations that contribute to keeping the machine in good working conditions.

Warning

This symbol indicates dangerous situations for the users, supply operators and maintenance technicians dealing with either the vending machine or the product to be dispensed.

Important

The symbol indicates operations that contribute to keep the machine in good working condition.

Recommended solutions

The symbol indicates the procedures that make the programming and/or maintenance operations quicker.

User

This symbol indicates the user of the vending machine. He is not authorized to carry out any cleaning or maintenance operation.

Supply operator

It is used to indicate operations concerning personnel in charge of the vending machine supply and cleaning only. Maintenance operations that require a specialized technician are not to be performed by the supply operator.

Maintenance technician

It is used to indicate operations to be performed only by skilled maintenance technicians.
He is the only person authorized to keep the KEY TO ACTIVATE THE SAFETY MICROSWITCH which allows disabling the safety system.

2 VENDING MACHINE INFORMATION

2.1 Information for the Maintenance Technician

The vending machine must be installed in a well-lit dry area, away from bad weather and dust, and on a floor able to support its weight.

To guarantee the correct functioning and durability of the appliance, follow the indications below:
- room temperature: from +1°C to +32°C;
- maximum humidity: 90% (without condensation water).

For special installations that are not included in this publication, please contact the dealer or the local importer. In case this is impossible, please contact the Manufacturer directly.

AUTHORIZED CUSTOMER SERVICE CENTERS are available for information and explanations about the machine, and to provide technical assistance and spare parts supplies.

The Maintenance Technician must read carefully and respect the warnings on safety contained in this manual so that every intervention concerning installation, activation, operation and maintenance will be carried out under safe conditions.

It is the Maintenance Technician's absolute responsiblity to give the access keys to the inside of the machine to another operator (Supply Operator). The responsibility of each intervention remains solely with the Maintenance Technician.

This manual is an integral part of the machine and must be read carefully before performing any operation.

2.2 Description and intended use

The upper part of the vending machine, called HOT DRINKS, is intended for automatic distribution of coffee and hot beverages (decaffeinated coffee, cappuccino, chocolate, etc.) and is programmable for every single type of dispensing. The soluble products must be consumed immediately, they cannot be conserved for long.
The lower part of the machine, called SNACKS, is intended for the sale of packed food (biscuits, chocolate, chips, cans, plastic bottles).
The machine has been designed for the sale and distribution of packed products that do not need to be refrigerated for their conservation or maintained at constant temperatures.

Follow the indications on the products for the conservation advice and the expiry date. DIAMANTE is not a refrigerator, but it allows moderate refrigeration of the products that are loaded into the trays.

Any other use is to be considered improper and therefore dangerous.

Do not introduce into the VM any product which may be subject to dangerous changes of temperature.

Important

Improper use of the machine determines the immediate warranty expiration and the Manufacturer declines any responsibility for damages and personal injuries.
Improper use includes:

- using the machine for purposes other than those intended and/or following procedures that are not described in this manual;
- any action on the machine that does not comply with nstructions included in this manual;
- any alteration to components and/or safety devices not previously authorized by the Manufacturer and carried out by staff not authorized for such operations.
- whatever location of the appliance not foreseen in this manual.

2.3 Machine identification

The machine is identified by the model and serial numbers outlined on the specific plate (Fig. 2).

Fig. 2

The plate contains the following data:
- name of Manufacturer;
- Marks of compliance;
- model;
- serial number;
- manufacturing year and month;
- mains voltage (V);
- mains frequency (Hz);
- power consumption (W);
- maximum power of the bulb to be used (W);
- class of the refrigerating unit;
- type and charge of the refrigerating gas used.

Warning

It is absolutely forbidden to tamper with or modify the data plate.

Important

When contacting AUTHORIZED CUSTOMER SERVICE CENTERS always refer to the plate and the specific data it contains.

2.4 Technical specifications

Weight: ..... 240 kg
Overall dimensions: ..... see figure 3

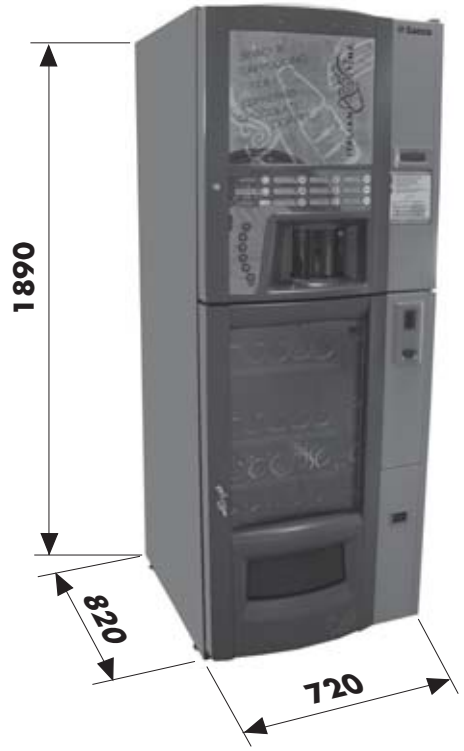


Fig. 3

Power consumption: ..... see data plate
Mains voltage: ..... see data plate
Electric voltage frequency: ..... see data plate
Power cord length: ..... 1600 mm
Water system coupling: ..... 3/4" Gas connection
Water system pressure: ..... see figure 4
A-weighted sound pressur level is ..... below 70 dB

Fig. 4

Capacity of containers (HOT DRINKS)
Coffee beans: ..... 2,7 kg
Decaffeinated coffee: ..... 0,6 kg
Chocolate: ..... 2,9 kg
Milk: ..... 1,6 kg
Lemon tea: ..... 2,2 kg
Sugar: ..... 2 kg
Cups: ..... No. 310
Stirrers: ..... No. 305

Stirrer size

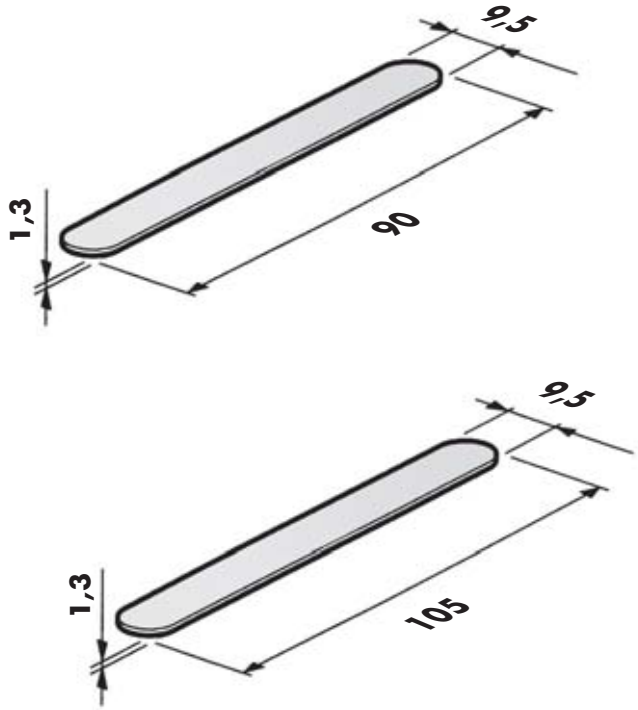


Fig. 5

Capacity of trays (SNACKS)
N° cassetti installati: ..... No. 4
N° spirali per ogni cassetto: ..... No. 6

3 SAFETY

3.1 Foreword

In compliance with the Machine Directive 98/37/EEC, Low Tension Directive 2006/95/EC (which replaces the directive 73/23/EEC and following amendments) and CE Marking Directive 93/68/EEC, the **SAECO VENDING** has drawn up a technical file on **D.A. DIAMANTE** vending machine at its plants, acknowledging the following rules during the design phase:

- EN 55014
- EN 61000-3-3
- EN 61000-4-3
- EN 61000-4-5
- EN 60335-2-75
- EN 6100-3-2
- EN 61000-4-2
- EN 61000-4-4
- EN 61000-4-11
- EN 60335-1

3.2 General safety rules

It is forbidden to:
- Tamper with or deactivate the safety systems installed on the vending machine;
- intervene on the machine for maintenance without first unplugging it;
- install the machine outdoors. It is suitable to place it in dry areas where the temperature never falls beyond 1° C;
- use the machine for different purposes than those indicated in the contract of sale and in this manual;
- connect the appliance using multi-socket or adapters;
- use water jets to clean the machine (Fig. 6).

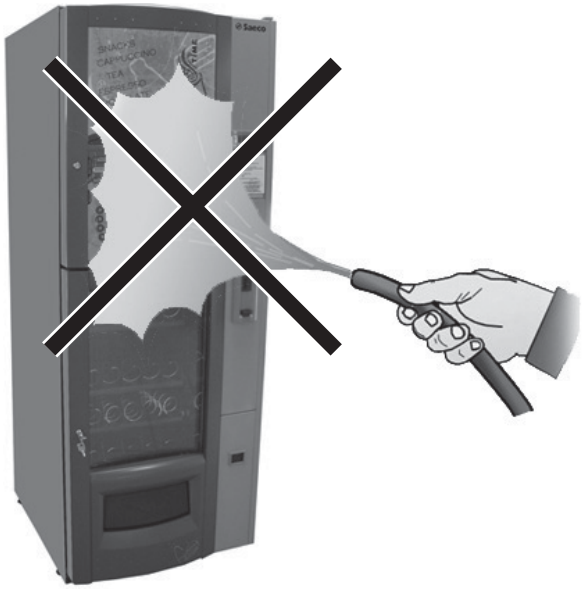


Fig. 6

It is compulsory to:
- check the conformity of the electrical power line;
- use original spare parts;
- read carefully the instructions contained in this manual and in the enclosed documents,
- use the individual protection devices during installation, testing and maintenance operations.

Precautions to prevent errors:
- make the operators conscious of the problems of safety;
- handle the vending machine, packaged and unpackaged, in safety conditions;
- have a thorough knowledge of the installation procedures, its operation and limits;
- disassemble the vending machine in safe conditions respecting the laws in force with regard to safeguarding the health of workers and the environment.

Warning

In case of failure or malfunctioning contact exclusively qualified CUSTOMER SERVICE CENTER repairmen.

Important

The Manufacturer declines any responsibility for possible injury to persons or damage to things as a result of inobservance of the safety rules described here.

3.3 Operators requirements

To guarantee the safety of the machine three operators with different skills are required:

User

Access to the inside of the machine is forbidded to the user.

Supply operator

The safekeeping of the access key to the inside of the machine is entrusted to the Supply operator by the Maintenance Technican. He has the task of supplying the products, external cleaning, activating and stopping the machine.

Warning

The Supply Operator is not authorized to carry out operations that are indicated as competency of the Maintenance technician in this publication.

Maintenance technician

The only person authorized to intervene and start the programming procedures, adjust, set up and upkeep the machine.

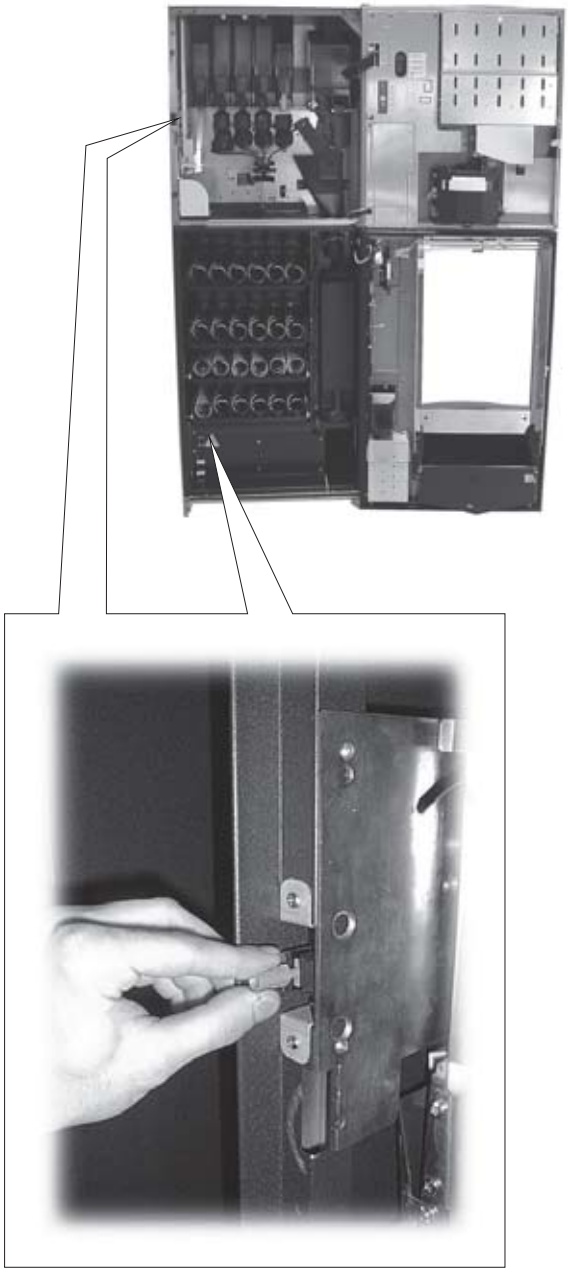


Fig. 7

3.4 Safety devices

The machine is equipped with:

- a safety switch on the HOT DRINKS door which cuts off all the inside components, whenever the door is opened;
- a safety device on the SNACKS door which cuts off all the inside components, whenever the door is opened;
- a safety device on the door of the dispensing outlet, which blocks the cycle of the cup bracket whenever the door is opened.

Maintenance technician

The only authorized person to program or set up the system is the Maintenance technician, who inserts the appropriate key in the safety switch (Fig. 7) and resets the voltage even with the door open.

Warning

This operation, necessary for the activation of the appliance, disables the foreseen safety system.

This operation has to be performed by skilled personnel (Maintenance Technician) aware of risks resulting from the presence of live or moving components.

3.5 Residual risks

The dispensing outlet is protected by the door interlocked by the safety switch.
If it is opened during the brewing cycle, the mechanical movement is blocked, but if brewing has already started, it continues to the end of the cycle.

Warning

Risk of burning your hands if you insert them inside the outlet during brewing.

It is forbidden to open the door and take out the cup or put your hand inside the outlet before the brewing cycle has ended. (Fig. 8).

Before taking out the cup from the outlet wait for the message 'REMOVE CUP' on the display.

Fig. 8

Important

If the door of the outlet is opened during the brewing cycle, the message "CLOSE DOOR" will be displayed.

The cup bracket will stop and will not restart until the door is closed.

It is not possible to brew further beverages, if the previous cup is not taken out, and the cup bracket is not free.

4 HANDLING AND STORAGE

4.1 Unloading and handling

Only skilled personnel shall be entitled to unload and handle the appliance after transportation.
The vending machine is placed on a pallet, protected by a sack, a protective transparent film and four angle bars (Fig. 9).

Fig. 9

Use a fork-lift to unload the machine from the transport vehicle (Fig. 10).

Fig. 10

Warning

The machine must always be kept in the upright position. Avoid (Fig. 11):
- dragging the vending machine;
- tipping over or laying down the vending machine during transport and handlingt;
- shaking the vending machine;
- raising the vending machine with ropes or cranes;
- leaving the vending machine exposed to bad weather or humid areas or near sources of heat.

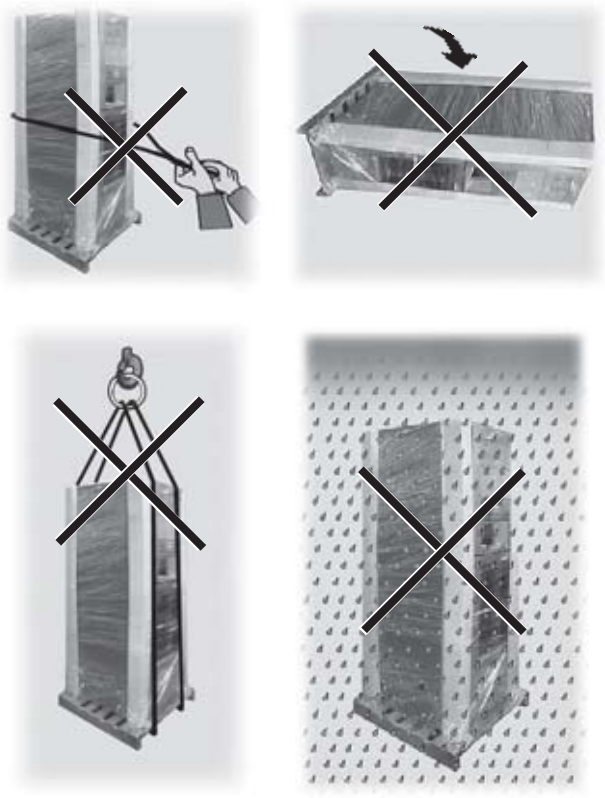


Fig. 11

Warning

In cases of accidental toppling over of the vending machine, wait at least 24 hours before starting it to avoid damaging the refrigerating unit.

4.2 Storage

Where the vending machine is not installed immediately, it should be stored in a sheltered area, conforming to the following dispositions:
- the packaged vending machine must be stored in a closed, dry area at a temperature between 1°C and 40°C;
- do not put appliances or boxes on the vending machine (Fig. 12);
- In any case it is good practice to protect the vending machine from possible deposits of dust or other.

Fig. 12

5 INSTALLATION

5.1 Warnings

Warning

The vending machine cannot be installed in external areas, avoid placing it in areas where the temperature is less than 1°C or more than 32°C and in particularly humid or dusty areas.

Positioning operations require at least 2 operators.

Before unpacking, check that the area of installation complies with the following specifications:

- the power socket must be located in an easily accessible area, not more than 1.5 metres away;

- The socket main voltage must be in compliance with the one indicated on the label:

- the leaning surface or the floor must not have a gradient of more than 2°.

Where the vending machine needs to be positioned near a wall, it is necessary to leave a space of at least 15cm between the back and the wall to leave the air outlet grill free (Fig. 13).

Fig. 13

5.2 Unpacking and positioning

On reciept of the automatic vending machine make sure that it has not suffered damage during transportation or that the packaging has not been tampered with consequent removal of internal parts.

An envelope is supplied with the vending machcine, called "CUSTOMER KIT", containing the objects shown in Fig. 14.

Fig. 14

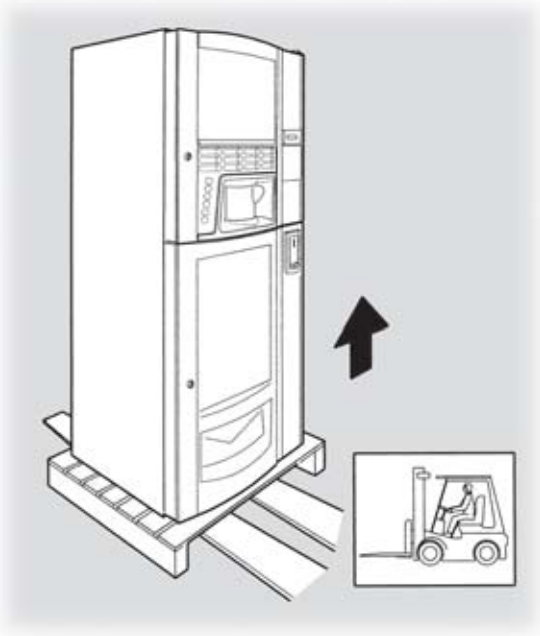
Remove the protective transparent film and the four angle bars (Fig. 15).

Fig. 15

If damage of any kind is found, it is necessary to notify them to the transporter and inform the importer or the seller immediately. In case these are not present in your country, contact the manufacturing company directly.

Remove the envelope containing the following accessories from the tray:
- No. 4 feet;
- No. 20 nails for spirals;
- No. 1 key for the coffee unit

Use a forklift truck (Fig.16) to lift the pallet. In this way the four fixing bolts A can be removed.



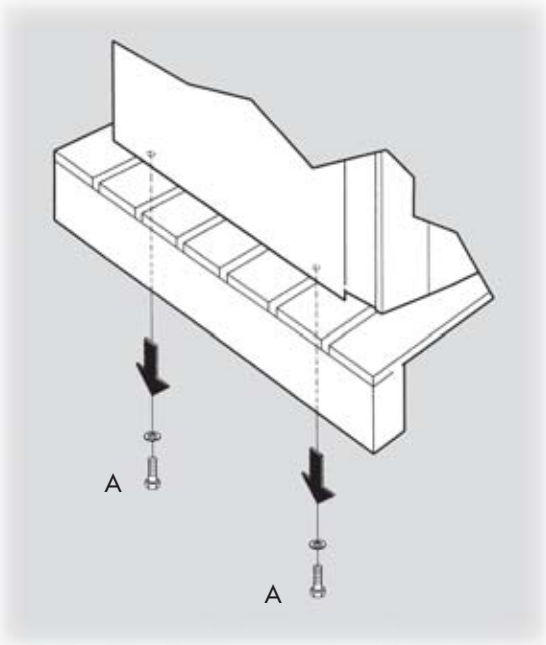


Fig. 16

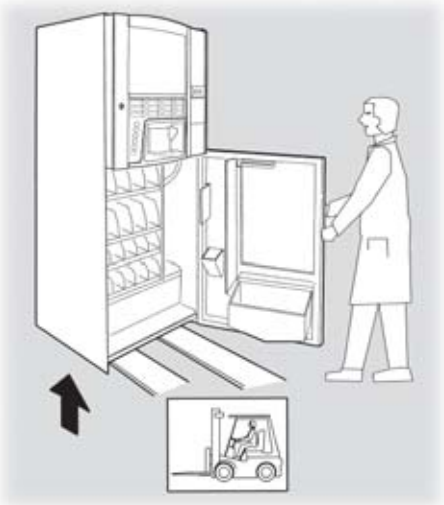
Rest the pallet on ground again, open the lower door and insert the forks of the lift truck under the vending machine base (Fig. 17).

Warning

The introduction of the forks must be done with great care. The back area of the vending machine does not permit the passage of the forks.
Avoid hitting the back violently.

Fig. 17

Raise the vending machine to be able to bolt on the four feet B (Fig. 18). During this operation an operator will hold the lower door.



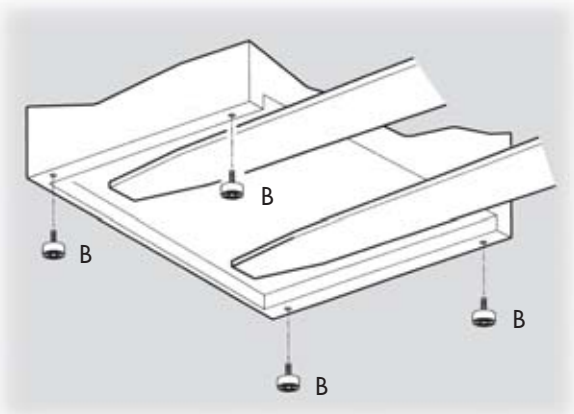


Fig. 18

Important

If the area can only be reached through a transpallet, follow this procedure:

Place two spacers (more than 10 cm in height) under the vending machine feet.
Rest the vending machine on the spacers very carefully (Fig.19).

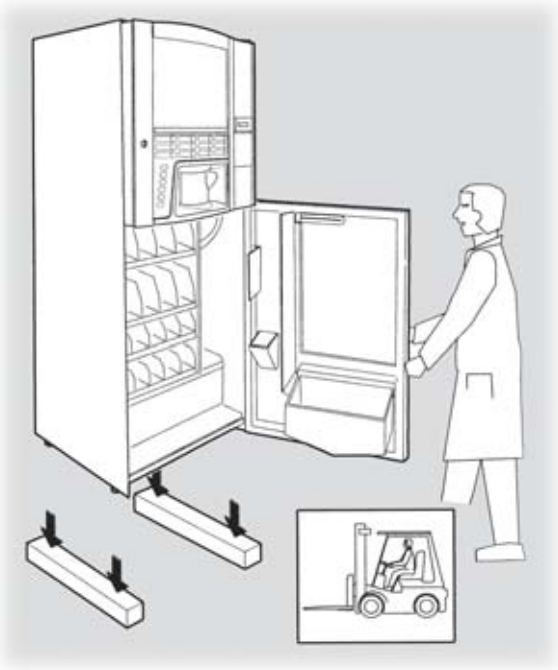


Fig. 19

Use a transpallet to bring the vending machine into the installation area (Fig.20).

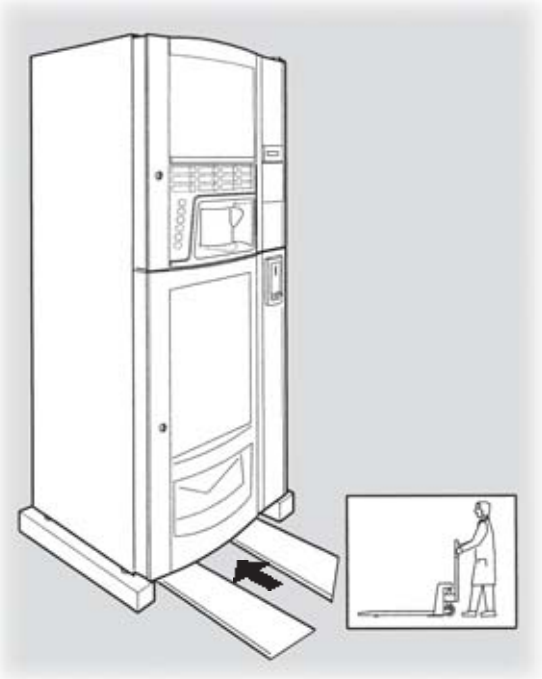


Fig. 20

Lean the vending machine slightly and remove the first spacer (Fig. 21).

Fig. 21

Lean the vending machine slightly on the opposite side and remove the second spacer (Fig. 22).

Fig. 22

Rest the vending machine gently on the floor (Fig. 23).

Fig. 23

Adjust the levelling by means of the relevant feet (Fig. 24).

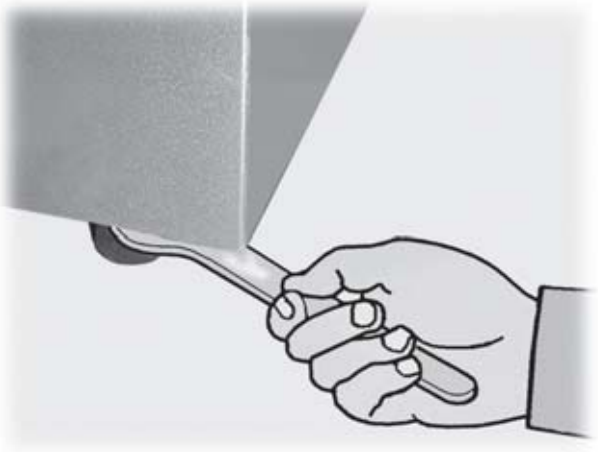


Fig. 24

Take out the keys from the change outlet (Fig. 25).

Fig. 25

Fit the key into the HOT DRINKS lock, turn clockwise and open the door (Fig. 26).

Fig. 26

During transportation and handling remove the sponge spacers that block the product containers (Fig. 27) .

Fig. 27

Fit the key into the SNACKS lock, turn clockwise and open the door (Fig. 28)

Fig. 28

Remove the adhesive tape that fixes the spirals and the dispensing channels (Fig. 29).

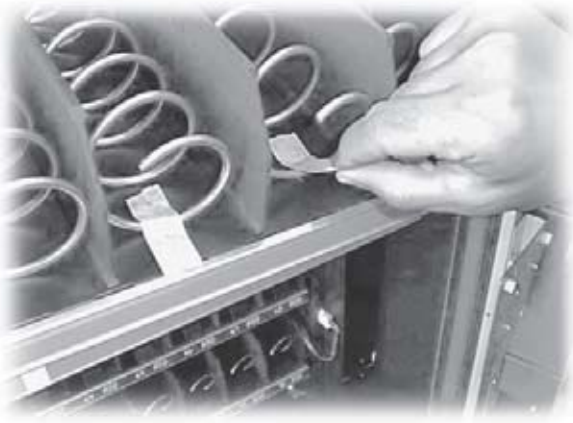


Fig. 29

Remove the polystyrene (Fig. 30).

Fig. 30

5.3 Setting the tray

Figure 31 shows one of the possible tray configurations foreseen by the Manufacturer.

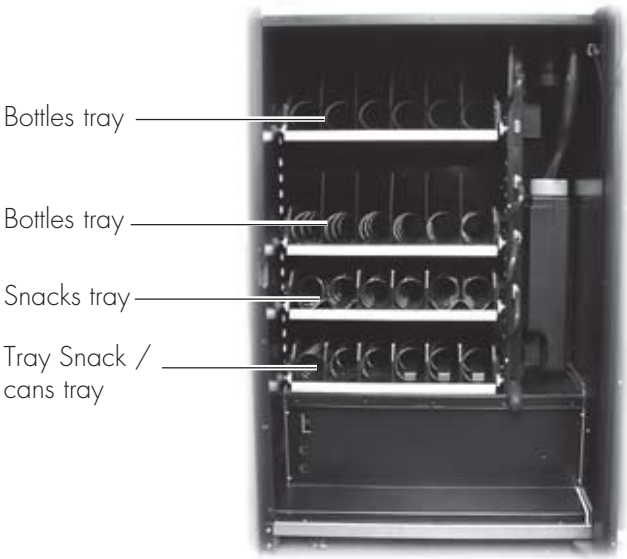


Fig. 31

Important

The lower trays will dispense cans, because they fall from a lower level.

The upper trays will dispense bottles as the refrigeration temperature is higher than in the lower trays.

Dispensing channels are mounted in the cans trays to ease the dispensing (Fig. 32).

Fig. 32

The snacks trays can be composed of single and/or double spirals powered by a single motor (Fig. 33).

Important

In case one motor drives two spirals, these must have the same pitch (one right and one left). To ease product dispensing, a guide channel shall be inserted under each spiral (Fig. 33).

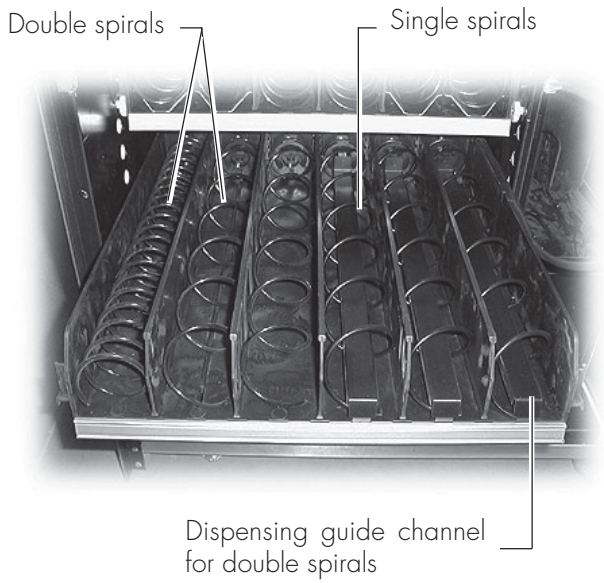


Fig. 33

Important

The composition of the trays and the spirals supplied represents for the Manufacturer the best equipment to load the products.
Nevertheless, other types of spirals are available, on request, which are suitable for any kind of products.

5.4 Connection of trays and spiral motors

On the right side of the trays there are 5 connectors that can be matched to as many trays.
The selection number of the products to be dispensed is set through the insertion of the tray and the fitting to the respective connector.
The drawing in figure 34 shows the subdivision of the vending machine in cells. These cells are defined by the crossing of 5 lines corresponding to 5 connectors with 6 columns corresponding to 6 spirals.

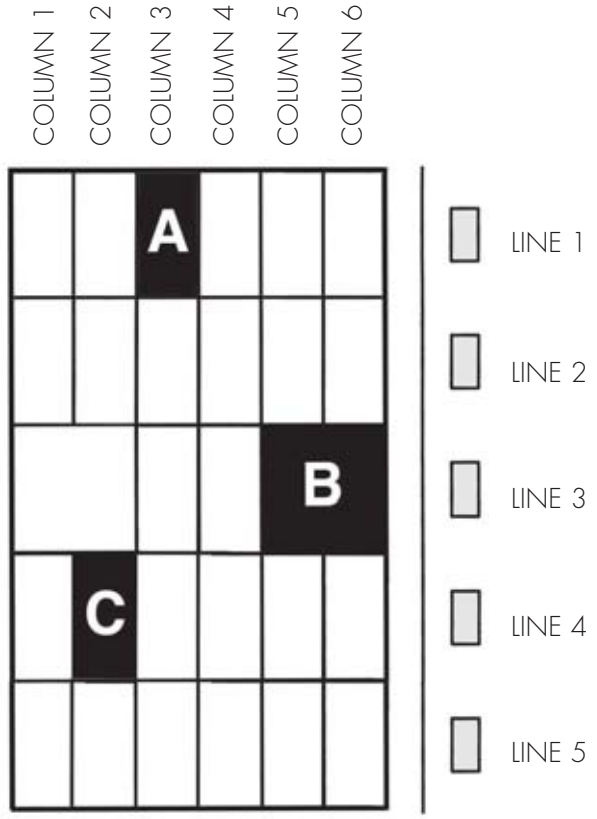


Fig. 34

Esempi di selezione

SELECTION A (ref. fig. 34)
To determine the code corresponding to selection A, first indicate the number of the corresponding line (1) and subsequently the number of the corresponding column (3). The final code will be 13.

SELECTION B (ref. fig. 34)
To determine the code corresponding to selection B, indicate the number of the corresponding line (3) and subsequently the number of the corresponding column (5). The code will be 35.
In this case the tray is composed of 4 spirals (2 double and 2 single ones). In the double spirals, the column number corresponds to the left spiral (in our example 1 and 5). We recommend that this setting be kept to have uniformity among the different machines.

SELECTION C (ref. fig. 34)
To determine the code corresponding to selection C, indicate the number of the corresponding line (4) and subsequently the number of the corresponding column (2). The code will be 42.

Important

When a tray is connected to a different connector, the products will be identified by a new selection number. The vending machine self-configures whenever the vending machine is switched on.

If a tray is linked to a different connector or the products are loaded into a different spiral it is necessary to check the values of the corresponding prices (see point 5.4).

Connect the tray to the fixed connector. When loading the new products, take care that tray shifting is not hindered by the connecting cable and prevent any possible damage of the cable itself.

For this reason it is advisable to connect the tray to the nearest upper connector, as shown in figure 35.

Fig. 35

5.5 Plates and stickers fitting.

Plates and stickers are contained in the CUSTOMER KIT.

Plates with codes and prices of snacks

On the front of the tray there is a compartment where the plate with the code of the selected product and its price are housed (Fig. 36).

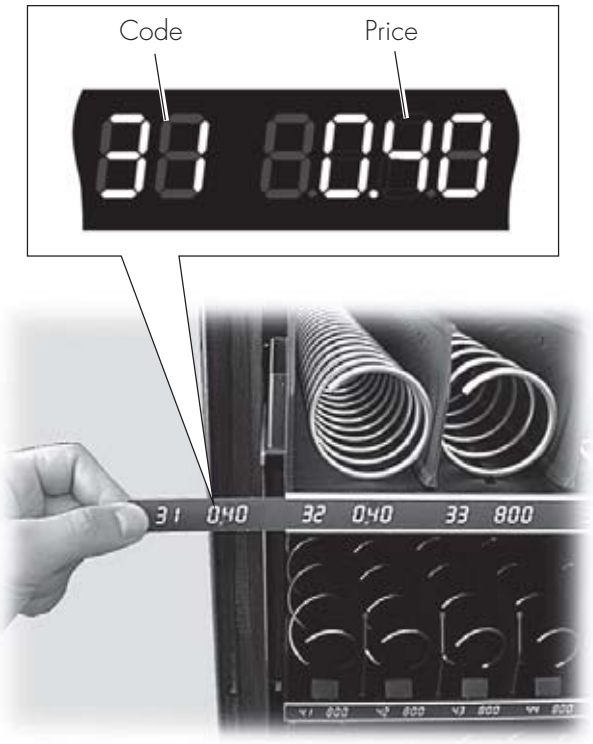


Fig. 36

The plates can be personalized by covering the unnecessary areas with a marker until the desired number appears.

Example
To obtain the code 42 corresponding to Euro 0,40 cross out the sectors as in figure 37.

Fig. 37

Instruction plate

Remove both lower fastening screws of panel (Fig. 38).

Fig. 38

Remove both front fastening screws of panel (Fig. 39).

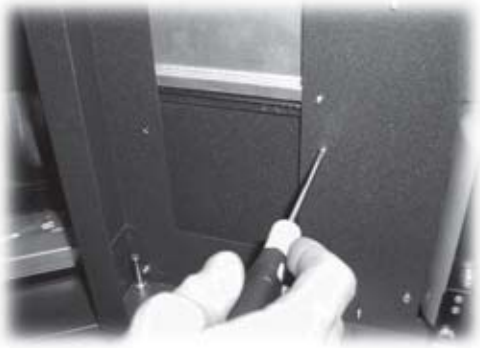


Fig. 39

Remove the panel (Fig. 40).

Fig. 40

Remove the transparent protection cover (Fig. 41).

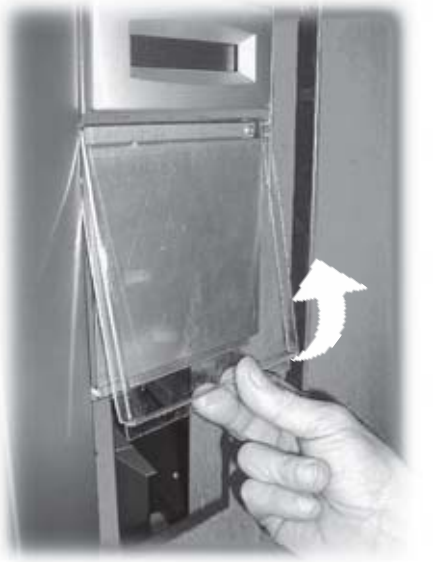


Fig. 41

Insert the plate into the internal part of the transparent protection cover (Fig. 42).

Fig. 42

Reassemble by reversing the same operations.

Labels for accepted coins

Apply the adhesive labels with the description of the products (HOT DRINKS) on the appropriate plates (Fig. 43).

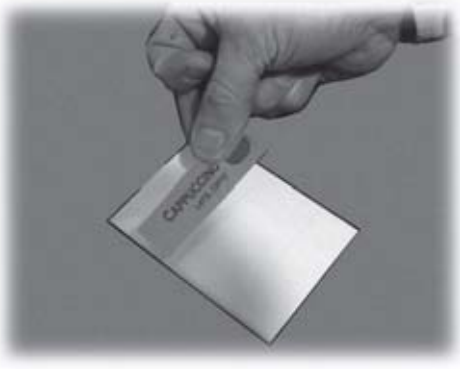


Fig. 43

Apply the adhesive labels of the prices on the appropriate space, next to the corresponding description (Fig. 44).

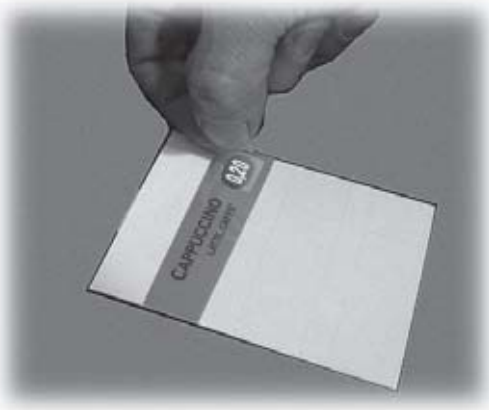


Fig. 44

After applying the labels, put the adhesive protection (Fig. 45).

Fig. 45

Remove the strip first fastening screw (Fig. 46).

Fig. 46

Remove the strip second fastening screw (Fig. 47).

Fig. 47

Remove the strip (Fig. 48).

Fig. 48

Insert the plates into the slot on the keypad panel (Fig. 49).

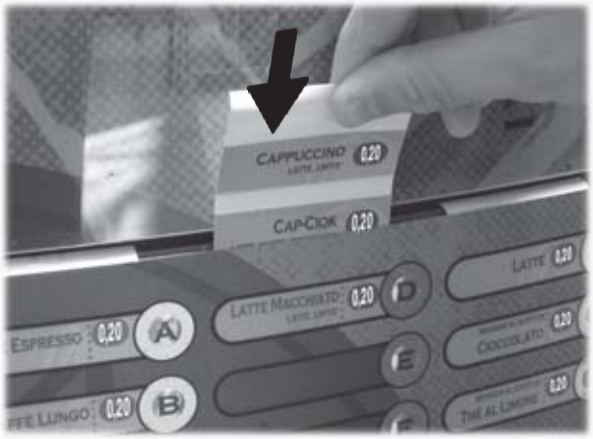


Fig. 49

Check the exact position of the labels with respect to the selection key (example in Fig. 50).

Fig. 50

5.6 Coffee grounds bag fitting

Remove the clip from the grounds discharge pipe (Fig. 51).

Fig. 51

Slip the clip into the coffee grounds bag (capacity of 50 litres) (Fig. 52).

Fig. 52

Place the bag on the pipe (Fig. 53).

Fig. 53

5.7 Connection to the serial port

Through a CPU connector and an interface cable the vending machine can be connected to a Personal Computer or to appliances supplied by AUTHORIZED CUSTOMER SERVICE CENTERS to carry out programming and/or data collection operations.

5.8 Assembly of the payment systems

On the D.A. DIAMANTE vending machine different payment systems can be preset, namely:
- parallel banknote reader 24V DC;
- parallel coiner 24V DC;
- executive systems (also PRICE HOLDING);
- MDB systems;
- BDV systems;
- canceling machine 24V DC;
- parallel banknote reader 12V DC(*)
- parallel coiner 12V DC (*);
- coiner 12V DC (*);
- Saeco card (**);

(*) only with optional feeder
(**) only 1432 and 1471 models that require optional feeder.

Important

The vending machine is supplied with no payment system. The installer will be the person in charge of its assembly.

After the installation of the chosen payment system, the corresponding parameters can be set through the programming menu (see 8.2).

Warning

The Manufacturer declines any responsibility for damages to the vending machine and other objects and for personal injuries caused by an incorrect installation of the payment system. The responsibility falls on the person who installed the system.

5.9 Water system connection

Important

We recommend that the vending machine be supplied with water treated by a descaling device, particularly for water with high content of calcium and magnesium (hard water). Connect the vending machine to a drinking water supply pipe with a pressure ranging between 1.5 and 8 bars (see data plate).

Remove the plug from the coupling placed on the vending back panel (Fig. 54).

Fig. 54

Connect the water supply hose to the vending machine 3/4" Gas connection (Fig. 55).

Fig. 55

5.10 Electric connection

Warning

The Maintenance Technician, who is responsible for the vending machine installation, must ensure that:
- the electric system complies with current regulations on safety;
- the mains voltage corresponds to that indicated on the data plate;

If in doubt, do not proceed to the installation and request a careful check of the system by qualified personnel, able to carry out these tasks.

The vending machine is equipped with a power cord that must be plugged into the appropriate socket on the machine rear panel (Fig. 56).

Fig. 56

Do not use adapters or multi-sockets (Fig. 57).

Fig. 57

6 CONTROLS DESCRIPTION

6.1 Main switch

It is located in the rear side of vending machine, bottom right (Fig.1 – 58).

"I" position: the machine is on.
"0" position: the machine is off.

Fig. 58

6.2 Display

The display (1 - Fig. 1) shows the messages during the standard functioning, programming and maintenance phases.

6.3 Keypad

It is divided into two sections (Fig. 59)
- HOT DRINKS;
- SNACKS.

Important

The function of each key changes according to the vending machine different phases (ordinary dispensing or programming phase).

As a matter of fact, each key has a double function that varies according to the different vending machine phases (ordinary dispensing or programming phase).

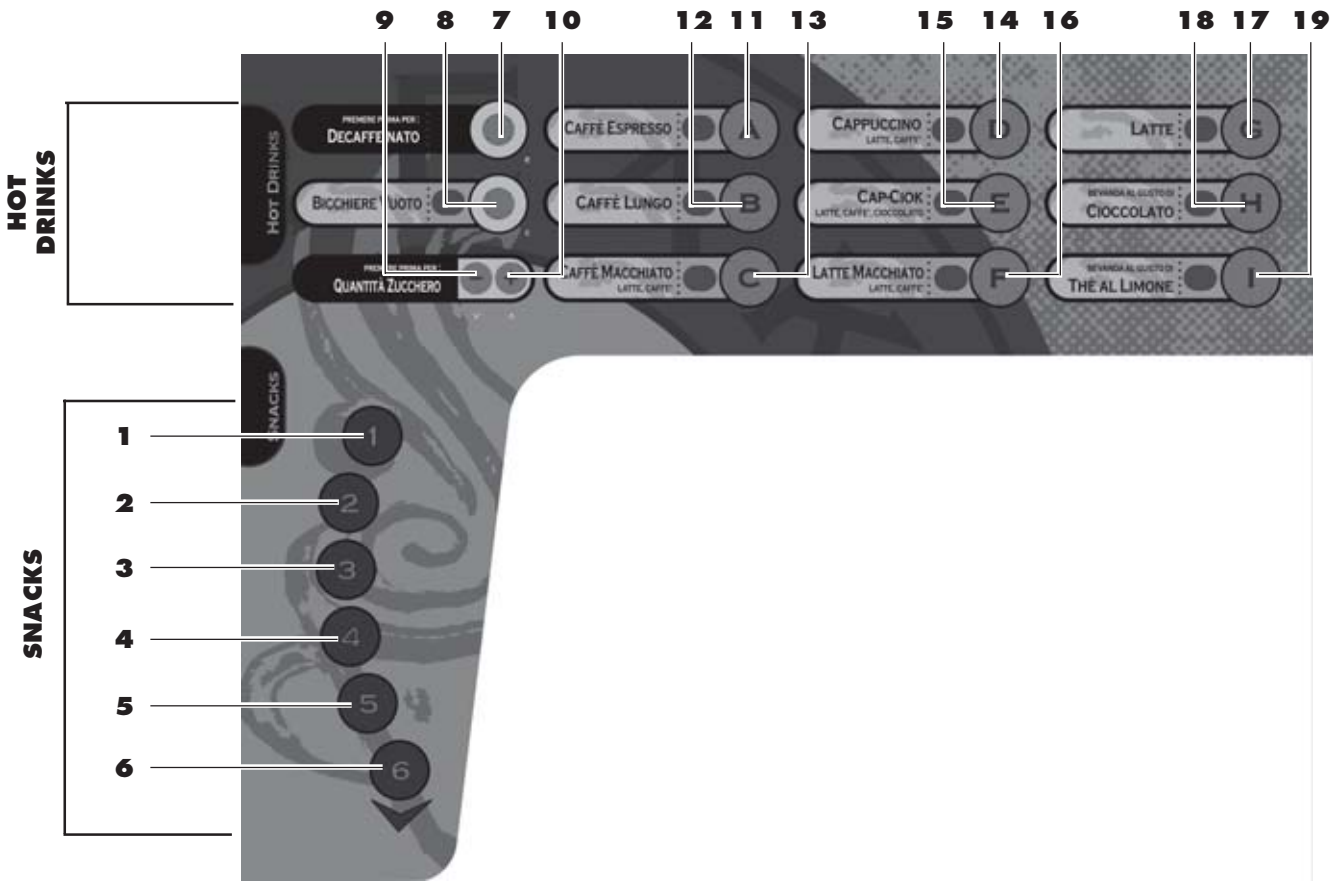


Fig. 59

6.4 Description of keys in ordinary dispensing mode

HOT DRINKS SECTION

Decaffeinated Key (7 – Fig. 59)
This preselection key will be active only if the "DECA PRESELECTION" function is enabled during the programming phase (see 8.2.3).
To brew a beverage with decaffeinated coffee, press first this key and then the desired beverage key (example: to brew a decaffeinated cappuccino, press the Decaffeinated key and then the Cappuccino key).
The pre-selection remains active for 8 seconds.

Cup Selling Key (8 – Fig. 59)
The cup will be dispensed only if the CUP KEY function was enabled during the programming phase (8.2.3).
The pre-selection remains active for 8 seconds.

"-" Key - Sugar quantity (9 - Fig. 59)
Decreases the quantity of sugar into selected beverage. Press the key before selecting the beverage.
The pre-selection remains active for 8 seconds.

"+" Key - Sugar quantity (10 - Fig. 59)
Increases the quantity of sugar into selected beverage. Press the key before selecting the beverage.
The pre-selection remains active for 8 seconds.

A-B-C-D-E-F-G-H-I Keys (11 to 19 - Fig. 59)
Press these keys to brew the programmed beverages.

SNACKS SECTION

1-2-3-4-5-6 Keys (from 1 to 6 - Fig. 59)
Press these keys to select the codes of the products (snacks) to be dispensed.

Important

The functions of the programming keys are described at 8.1 (page 32).

6.5 CPU card keys

The CPU electronic card has three keys that allow the Maintenance Technician to program or upkeep the system (Fig. 60).

Fig. 60

Key 1 (Fig. 60)
Enables to enter the programming menu. To exit the menu, press it again.

Key 2 (Fig. 60)
Enables to enter the maintenance menu. To exit the menu, press it again.

Key 3 (Fig. 60)
If pressed after the vending machine start-up, it allows to bypass HOT DRINKS warming phase and reach directly the '"MACHINE READY" condition.

Pressed, during its ordinary dispensing phase, it allows free dispensing of a product only if the entry "Y" is set in the "FREE KEY" function (see 8.2.3).

Keeping it pressed, in the programming mode, it moves the cup column (rotation of 180°) inside the loader.

7 SUPPLY AND OPERATION

7.1 HOT DRINKS container supply

Important

It is necessary to use soluble products considered suitable for automatic distribution .

During the programming phase, when the display shows: "BEVERAGE PREPARATION" (see 8.2.3), pour lyophilized products into the relevant containers.

7.1.1 Soluble product supply

Rotate the container locking lever clockwise (Fig. 61).

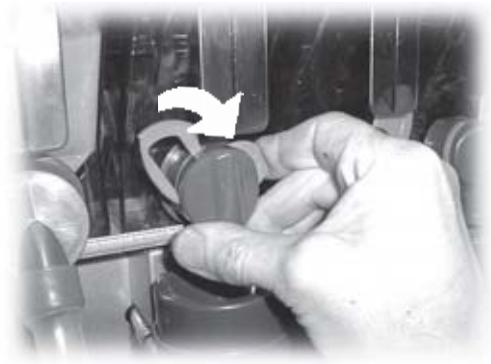


Fig. 61

Remove the container (Fig. 62).

Fig. 62

Move the container to the supporting bracket (Fig. 63).

Fig. 63

Pour the soluble product into the container (Fig. 64) without exceeding 2/3 of the maximum capacity.

Fig. 64

Replace the lid on the container and carry out the inverse procedure.

7.1.2 Sugar supply

Remove the sugar elbow (Fig. 65).

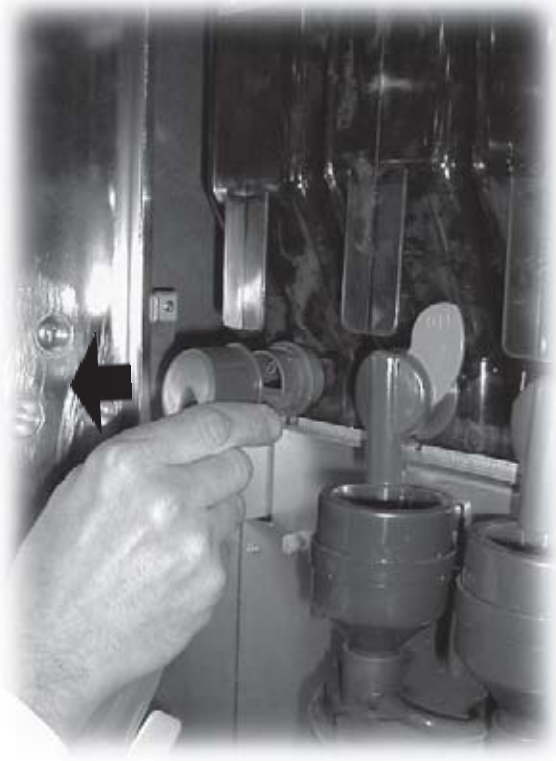


Fig. 65

Remove the container (Fig. 66).

Fig. 66

Move the container to the supporting bracket (Fig. 67).

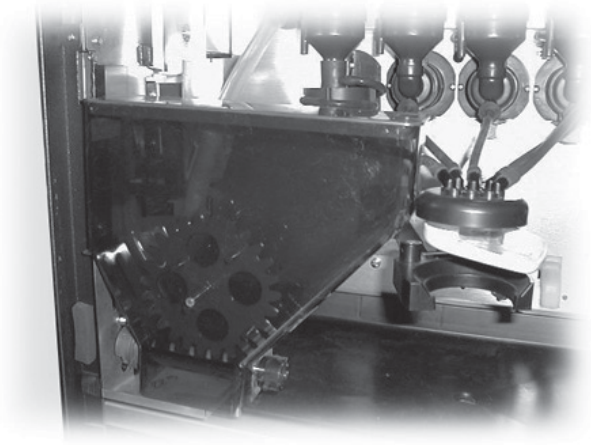


Fig. 67

Pour the sugar inside the container (Fig. 68) without exceeding 2/3 of the maximum capacity.

Fig. 68

Replace the lid of the container and carry out the inverse procedure.

7.1.3 Coffee bean supply

Remove the lid of the container (Fig. 69).

Fig. 69

Use a scoop to pour the coffee beans into the container (Fig. 70) without exceeding 2/3 of the maximum capacity.

Fig. 70

Replace the lid on the container.

Important

If "COFFEE NOT AVAILABLE" is displayed after the supply, you need to:

- press key 2 (Fig. 60) to enter the maintenance menu;
- *press twice e key (7 - Fig. 59) to eliminate the error.*

7.2 Grinding adjustment

Turn the knob until reaching the desired index number (Fig. 71).

The values of reference for correct grinding are:
- Italy:..... 4 - 7
- Spain:..... 5 - 8
- France - Switzerland: ..... 5 - 8
- Germany - Austria:..... 6 - 9
- USA - Canada:..... 6 - 14

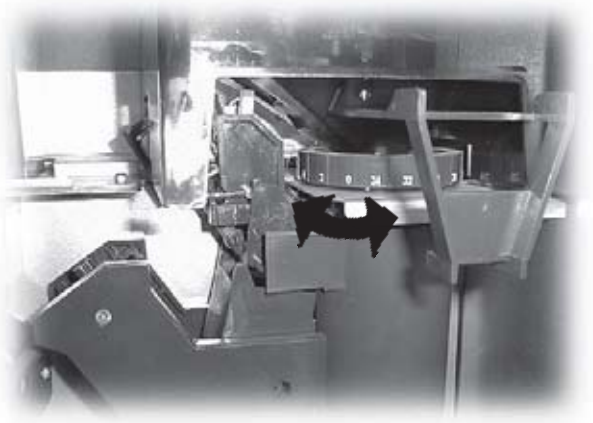


Fig. 71

Important

If during dispensing, coffee comes out too slowly, you need to adjust the grinding on a higher value.
If it comes out too quickly you need to position the index on a lower value.

After modifying the grinding you need to dispense at least two coffee cups to appreciate the variation.

7.3 Stirrer supply

Important

Use stirrers suited to automatic distribution, without imperfections and conforming to the dimensions indicated in sect. 2.4 Technical Data.

Press the locking clip and rotate the stirrer dispenser towards the outside (Fig. 72).

Fig. 72

Remove the counterbalance bar (Fig. 73).

Fig. 73

Insert the packet of stirrers (Fig. 74).

Fig. 74

Remove the strip of paper (Fig. 75).

Fig. 75

Insert the second packet of stirrers and remove the paper.

Insert the counterbalance bar (Fig. 76).

Fig. 76

Bring the stirrer dispenser to the starting position (Fig. 77).

Fig. 77

7.4 Cups supply

Important

This is a very delicate operation. Lack of respect for the instructions provided at this point could cause serious damage to the cup distributor.
The rotation of the cup column must be carried out with the door open to be able to see the operation as it happens.

Open the door of the cup loader (Fig. 78).

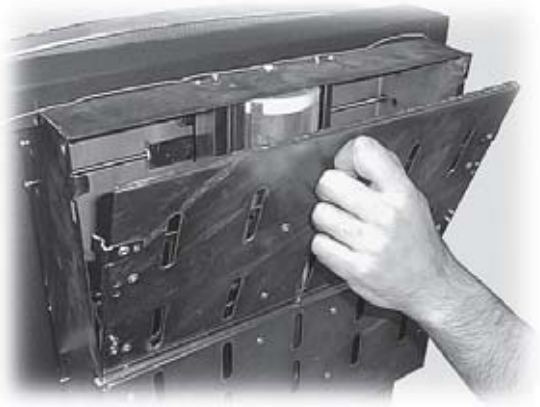


Fig. 78

Press key 1 (Fig. 60) of the CPU card to enter the programming mode.
Keep key 3 (Fig. 60) pressed until the complete rotation (180°) of the cup column (Fig. 79).

Warning

It is forbidden to introduce hands near or inside the cup column during rotation.

Fig. 79

Widen the lateral sides (Fig. 80).

Fig. 80

Insert the cups into the central column, after this fill the lateral compartments (Fig. 81).

Warning

The introduction of too many cups can cause the blockage of the cup distributor.
Respect the Min. and Max. levels shown on the adhesives.

Fig. 81

Close the door and press key 1 (Fig. 60) to exit the programming mode.

7.5 SNACKS supply

Important

It is essential to use cold snack/drinks products that do not require specific temperatures for their preservation.

Open the door and slide the trays towards the outside until they block (see at sect. 5.3 the composition of the trays and the spirals).

Load then the bottles starting from the most internal part (motor sides) until the spaces on each spiral are filled (Fig. 82).

Fig. 82

Load the bags of snacks, positioning them horizontally on the double spiral and in vertical position on the single spiral until the spaces on each spiral are filled (Fig. 83).

Fig. 83

Load the cans on the last tray, until the spaces on each spiral are filled (Fig. 84).

Fig. 84

7.6 First Switching on

Carry out the supply (following the instructions in the preceeding points) and plug in the machine (see 5.10) to the power supply.
Set the main switch (5 - Fig. 1) to the "I" (ON) position.

At this point the message "SAECO DIAMANTE SAECO" will be displayed and the self-configuration that controls all of the settings previously defined begins, i.e.:
- presence and condition of the motors;
- layout of the trays inserted (the Programming and Maintenance menus are adapted to the configuration of the vending machines trays);
- presence of the TIME KEEPER;
- correct positioning of the bracket.

Possible anomalies, found during the self-configuration cycle are stored so that the vending machine, out of the autodiagnostic phase, can show them on the display.

After the vending machine is switched on, the compressor remains inactive for some minutes.

Carry out the grinding adjusment as instructed in 7.2

7.7 Manual filling of the boiler

Druing the first switching on of the vending machine it is good practice to fill the boiler manually.

After switching on the vending machine it is possible to fill the boiler through one of the following procedures:

a)
- press key 2 (Fig. 60) to enter the maintenance menu;
- press key e (7 - Fig. 59) and subsequently the UP key (10 - Fig. 59) to access the WASHING entry;
- press key e (7 - Fig. 59) to carry out the automatic cycle of complete wash.

b)
- press key 2 (Fig. 60) to enter the maintenance menu;
- press key e (7 - Fig. 59) and subsequently the UP key (10 - Fig. 59) to access the WASHING entry;
- press keys A, B, C, etc. (beverage keys) to carry out the washing cycle of each circuit.

c)
- press key 1 (Fig. 60) to enter the programming menu;
- press keys 1 and 2 simultaneously (Fig. 60) on the CPU card to carry out the washing cycle.

Important

The washing operation must be repeated until no water flows out of the dispensing nozzles.

7.8 Use of the machine

Important

The instructions for use are shown on the plate on the front side of the vending machine.

The selection procedures of the drinks and snacks are shown in section 9.

8 PROGRAMMING AND MAINTENANCE MENU

Important

This section illustrates how to set up or modify the machine programming and maintenance parameters.

The section should therefore be read carefully, to fully understand the correct sequence of operations to be performed.

8.1 Description of programming and maintenance phase keys

To surf inside the menu of the vending machine use the keys described below.

key e: ENTER (7 - Fig. 59)
Pressing this key it is possible to access the following level of programming or maintenance. Furthermore it is possible to modify or confirm the values set in the entries of the programming or maintenance menus.

Key c: CANCEL (8 - Fig. 59)
Pressing this key it is possible to go back to the previous level of the programming or maintenance menu. It is also possible to avoid storing the values of the previously required modifcation.

Key V : DOWN (9 - Fig. 59)
Pressing this key it is possible to access the preceding entry inside the same level.
If used after requesting the change of a datum, it decreases the value of the same datum.

Key Λ: UP (10 - Fig. 59)
By pressing this key it is possible to access the following entry inside the same level.
If used after requesting the change of datum, it increases the value of the same datum.

8.2 Programming menu

The structure of the programming menu is shown in 8.2.2. At 8.2.3 all of the entries present in the programming menu are described.

8.2.1 Entering the programming menu

Open the upper door, disable the safety device (see 3.4) and press key 1 (Fig. 85) to access the programming menu.

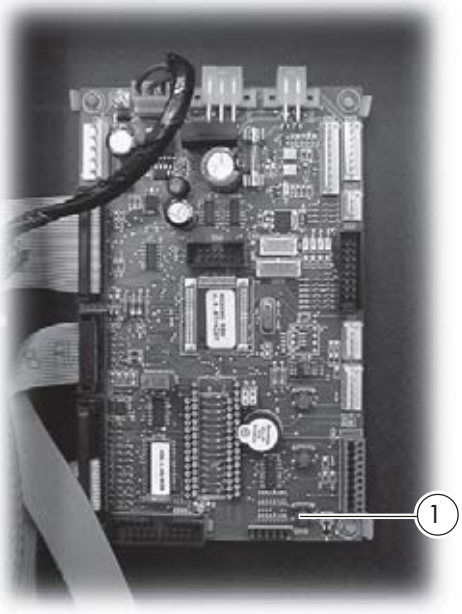


Fig. 85

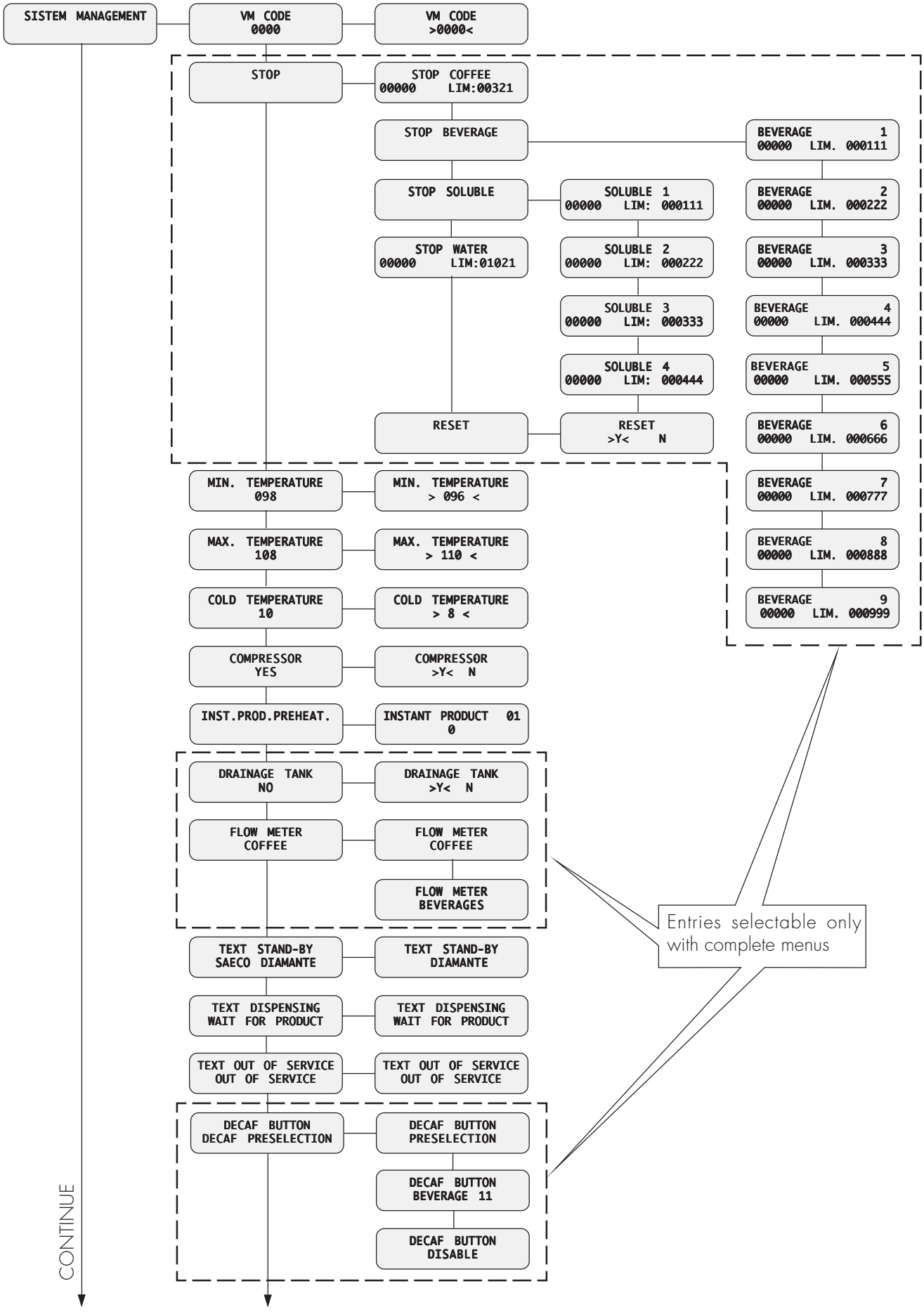
If no password has been assigned you enter the programming menu directly.

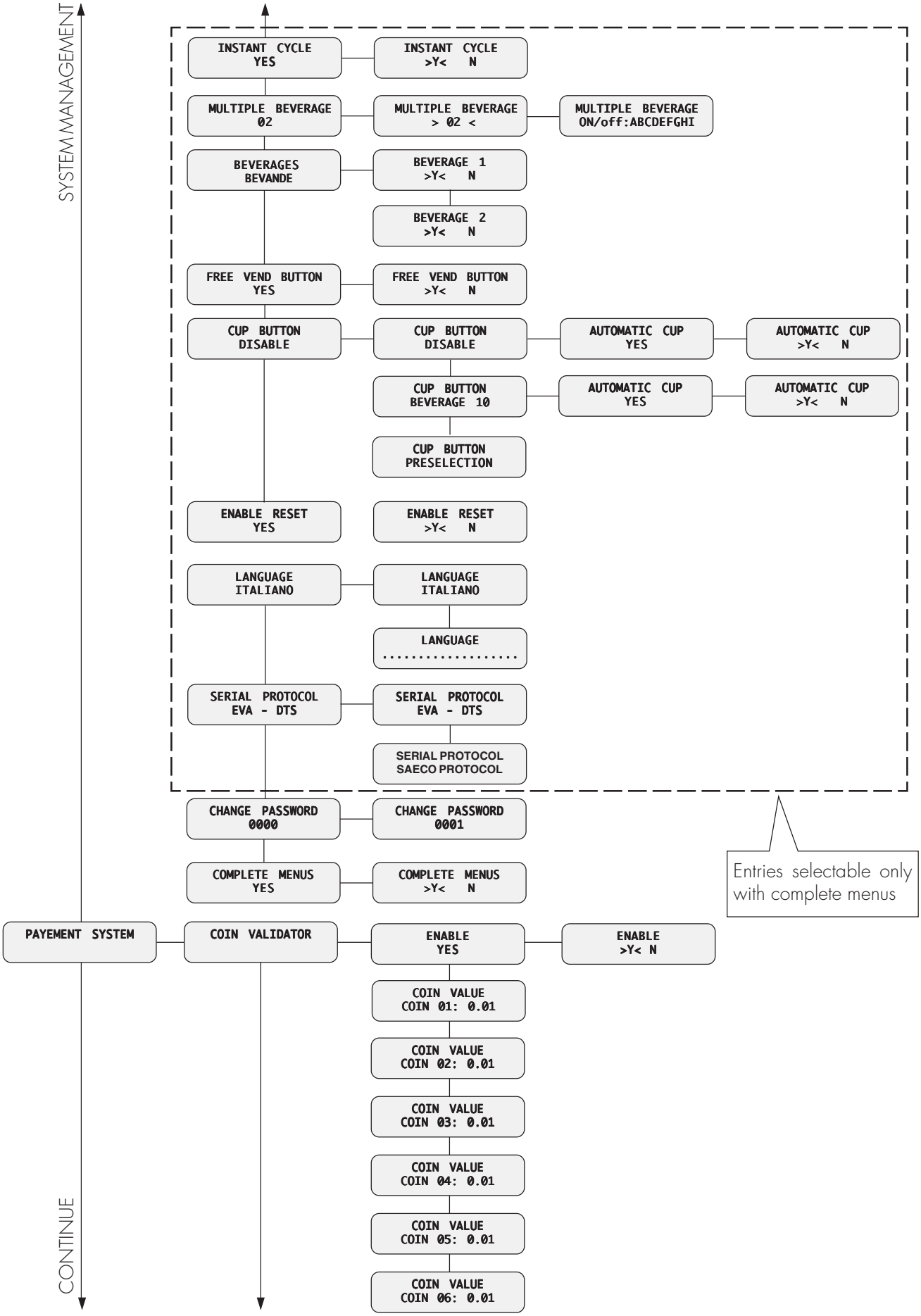
Important

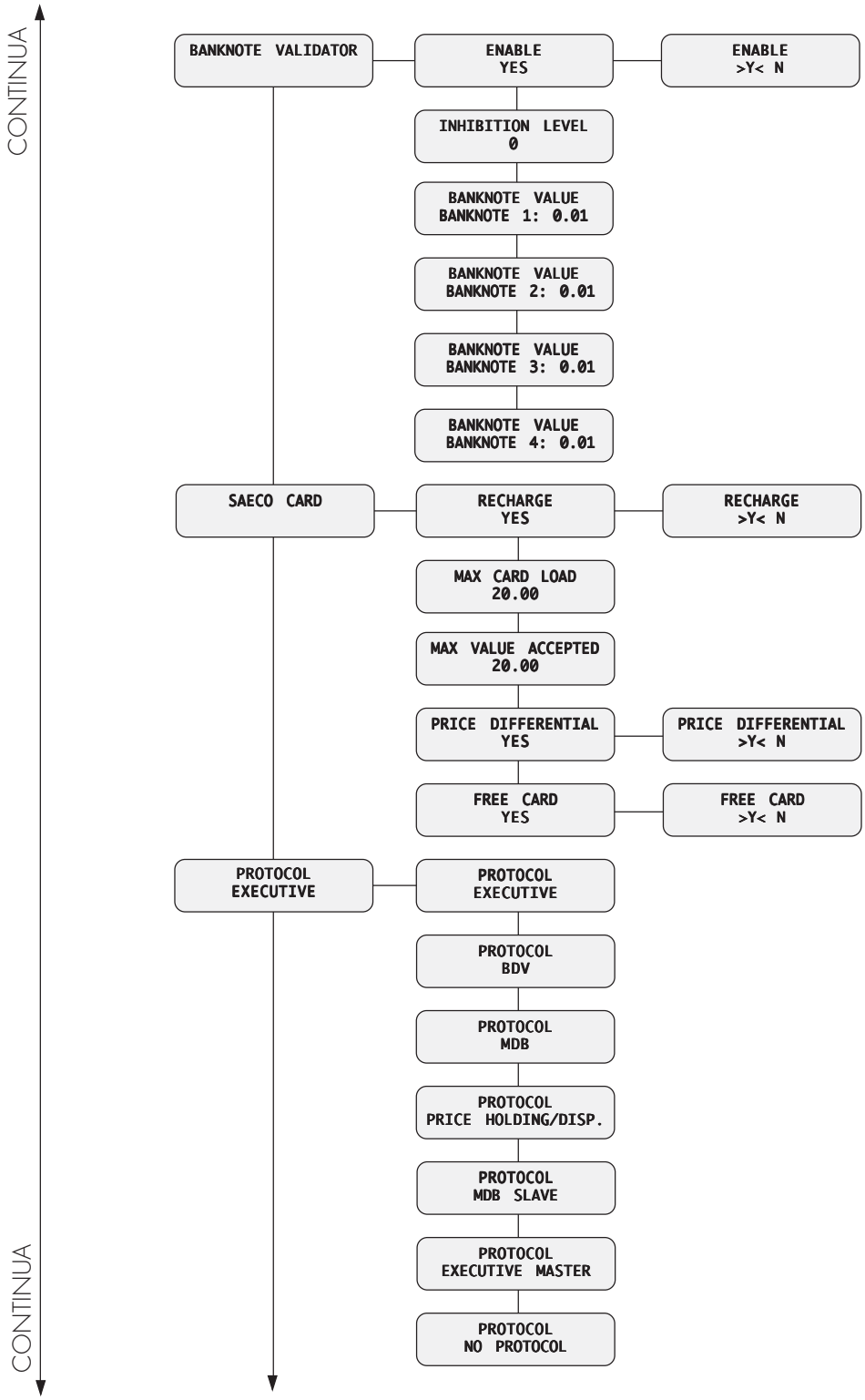
If vending machine was assigned a password to enable the programming menu, "PASSWORD 0000" will appear on display with a flashing cursor on the first digit.
Now enter the password using UP and DOWN keys. Confirm the entered digit by means of ENTER key.

To exit the programming menu and return to the normal operation of the vending machine:
- press key 1 again;
- remove the key from the safety switch, thus switching off the vending machine;
- close the door and wait for the end of the self-configuration process.

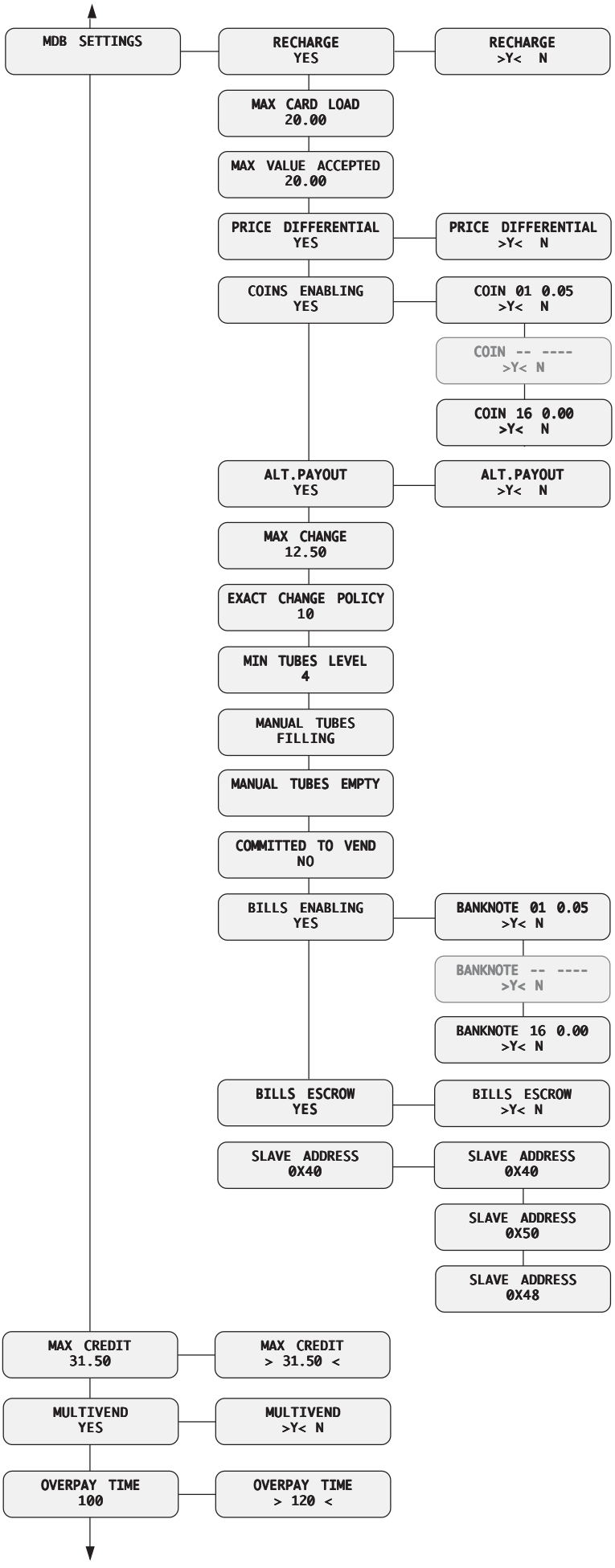
8.2.2 Structure of the programming menu



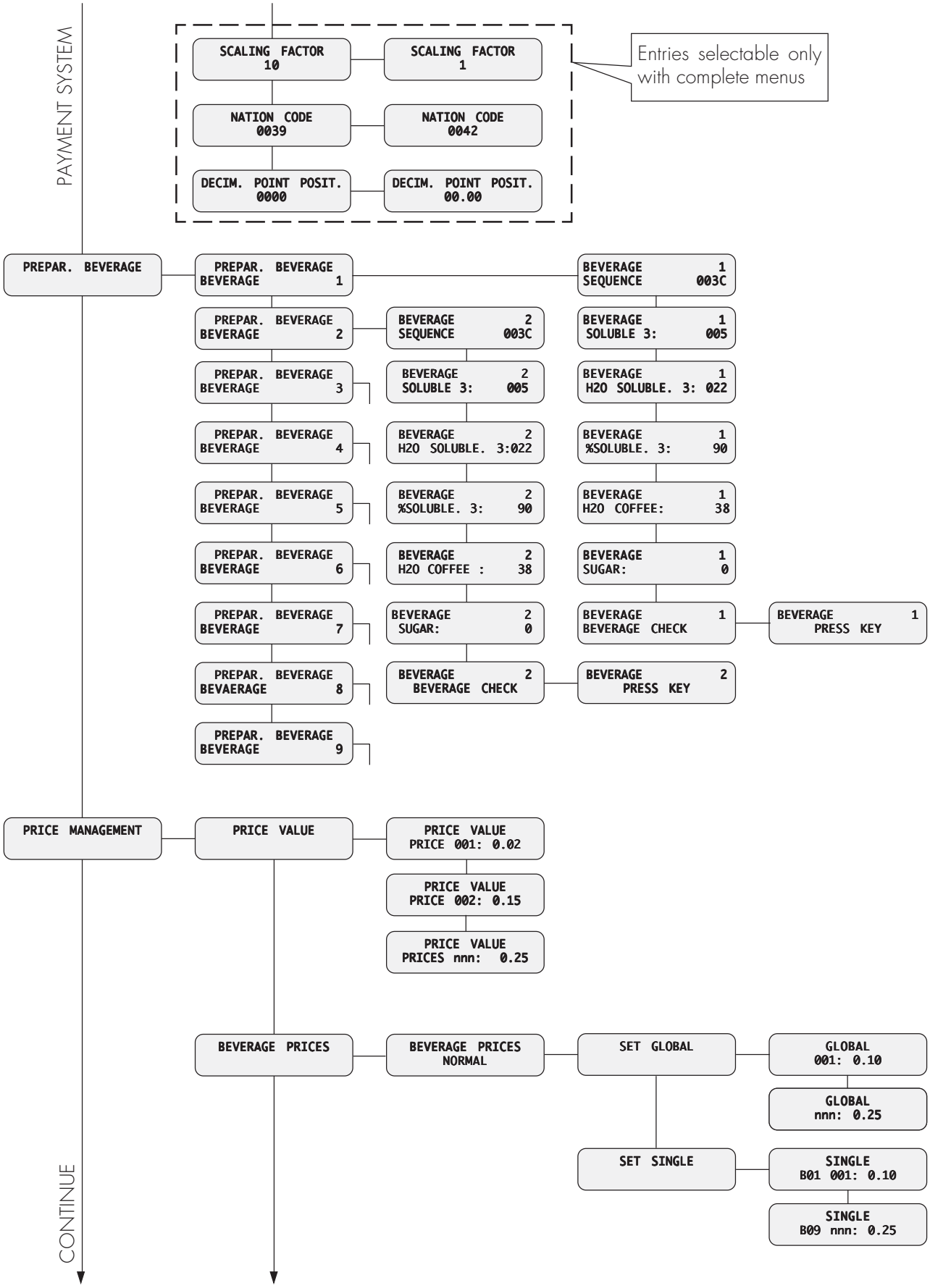

SYSTEM MANAGEMENT
INSTANT CYCLE YES
INSTANT CYCLE >Y< N
MULTIPLE BEVERAGE 02
MULTIPLE BEVERAGE > 02 <
MULTIPLE BEVERAGE ON/off:ABCDEFGHI
BEVERAGES BEVANDE
BEVERAGE 1 >Y< N
BEVERAGE 2 >Y< N
FREE VEND BUTTON YES
FREE VEND BUTTON >Y< N
CUP BUTTON DISABLE
CUP BUTTON DISABLE
AUTOMATIC CUP YES
AUTOMATIC CUP >Y< N
CUP BUTTON BEVERAGE 10
AUTOMATIC CUP YES
AUTOMATIC CUP >Y< N
CUP BUTTON PRESELECTION
ENABLE RESET YES
ENABLE RESET >Y< N
LANGUAGE ITALIANO
LANGUAGE ITALIANO
LANGUAGE .....
SERIAL PROTOCOL EVA - DTS
SERIAL PROTOCOL EVA - DTS
SERIAL PROTOCOL SAECO PROTOCOL
CHANGE PASSWORD 0000
CHANGE PASSWORD 0001
COMPLETE MENUS YES
COMPLETE MENUS >Y< N
Entries selectable only with complete menus
PAYEMENT SYSTEM
COIN VALIDATOR
ENABLE YES
ENABLE >Y< N
COIN VALUE COIN 01: 0.01
COIN VALUE COIN 02: 0.01
COIN VALUE COIN 03: 0.01
COIN VALUE COIN 04: 0.01
COIN VALUE COIN 05: 0.01
COIN VALUE COIN 06: 0.01
CONTINUE

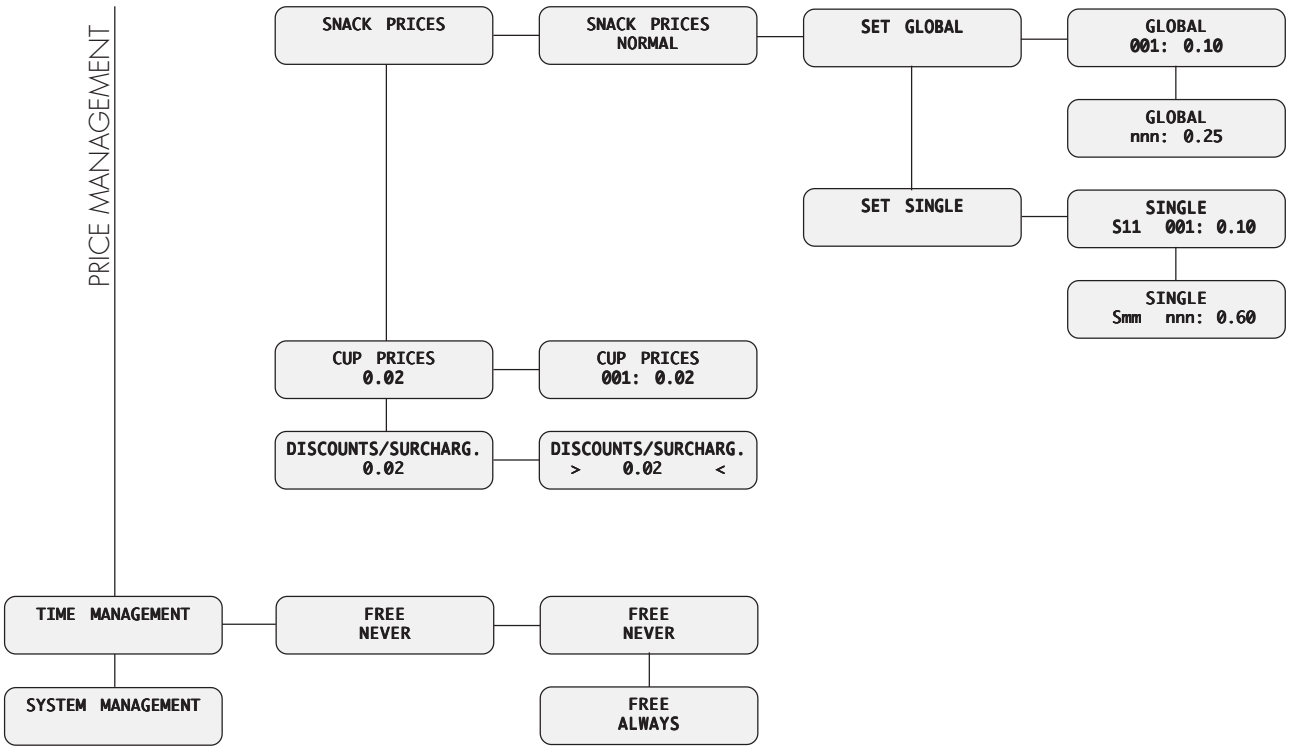

CONTINUA
BANKNOTE VALIDATOR
ENABLE YES
ENABLE >Y< N
INHIBITION LEVEL 0
BANKNOTE VALUE BANKNOTE 1: 0.01
BANKNOTE VALUE BANKNOTE 2: 0.01
BANKNOTE VALUE BANKNOTE 3: 0.01
BANKNOTE VALUE BANKNOTE 4: 0.01
SAECO CARD
RECHARGE YES
RECHARGE >Y< N
MAX CARD LOAD 20.00
MAX VALUE ACCEPTED 20.00
PRICE DIFFERENTIAL YES
PRICE DIFFERENTIAL >Y< N
FREE CARD YES
FREE CARD >Y< N
PROTOCOL EXECUTIVE
PROTOCOL EXECUTIVE
PROTOCOL BDV
PROTOCOL MDB
PROTOCOL PRICE HOLDING/DISP.
PROTOCOL MDB SLAVE
PROTOCOL EXECUTIVE MASTER
PROTOCOL NO PROTOCOL
CONTINUA

CONTINUA

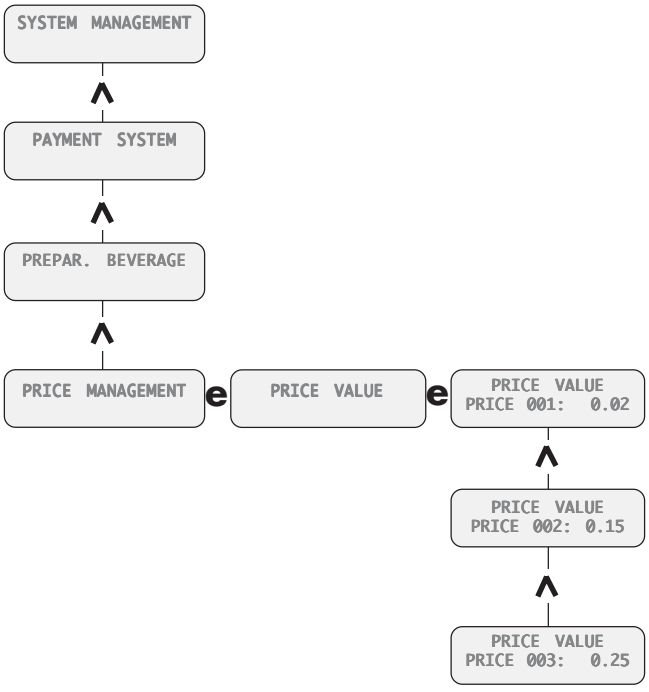


CONTINUA


PAYMENT SYSTEM
SCALING FACTOR 10
SCALING FACTOR 1
NATION CODE 0039
NATION CODE 0042
DECIM. POINT POSIT. 0000
DECIM. POINT POSIT. 00.00
Entries selectable only with complete menus
PREPAR. BEVERAGE
PREPAR. BEVERAGE BEVERAGE 1
BEVERAGE 1 SEQUENCE 003C
PREPAR. BEVERAGE BEVERAGE 2
BEVERAGE 2 SEQUENCE 003C
BEVERAGE 1 SOLUBLE 3: 005
PREPAR. BEVERAGE BEVERAGE 3
BEVERAGE 2 SOLUBLE 3: 005
BEVERAGE 1 H2O SOLUBLE. 3: 022
PREPAR. BEVERAGE BEVERAGE 4
BEVERAGE 2 H2O SOLUBLE. 3:022
BEVERAGE 1 %SOLUBLE. 3: 90
PREPAR. BEVERAGE BEVERAGE 5
BEVERAGE 2 %SOLUBLE. 3: 90
BEVERAGE 1 H2O COFFEE: 38
PREPAR. BEVERAGE BEVERAGE 6
BEVERAGE 2 H2O COFFEE : 38
BEVERAGE 1 SUGAR: 0
PREPAR. BEVERAGE BEVERAGE 7
BEVERAGE 2 SUGAR: 0
BEVERAGE 1 BEVERAGE CHECK
BEVERAGE 1 PRESS KEY
PREPAR. BEVERAGE BEVAERAGE 8
BEVERAGE 2 BEVERAGE CHECK
BEVERAGE 2 PRESS KEY
PREPAR. BEVERAGE BEVERAGE 9
PRICE MANAGEMENT
PRICE VALUE
PRICE VALUE PRICE 001: 0.02
PRICE VALUE PRICE 002: 0.15
PRICE VALUE PRICES nnn: 0.25
BEVERAGE PRICES
BEVERAGE PRICES NORMAL
SET GLOBAL
GLOBAL 001: 0.10
GLOBAL nnn: 0.25
SET SINGLE
SINGLE B01 001: 0.10
SINGLE B09 nnn: 0.25
CONTINUE



Example of parameter setting.



To set the 3 PRICE level at 0.25 Euro:

- access the programming menu as indicated in 8.2., if the password is not requested, the entry "SYSTEM MANAGEMENT" will appear;
- Scroll the menu entries with UP key (10 – Fig. 59) until the message "PRICE MANAGEMENT" is displayed:
- Press ENTER key (7 – Fig. 59) until the following message is displayed:

PRICE VALUE
PRICE 001: 0.02

- Scroll the menu entries with UP key until the following message is displayed:

PRICE VALUE
PRICE 003: 0.25

- press the ENTER key (the cursor on the digit to modify will flash);
- increase or reduce the digit with the UP and/or DOWN keys and to confirm the value desired, press the ENTER key (the cursor disappears).

8.2.3 Description of messages in the programming menu

SYSTEM MANAGEMENT
The entries of the SYSTEM MANAGEMENT ARE:

- **VM Code**
  It allows to assign an identification code for the vending machine.

- **Stops**
  It allows you to set the maximum amount of soluble powder, water, drink or coffee. Once reached the maximum amount, the vending machine stops the dispensing of relevant beverages.
  The first digit on the right ("00000") refers to the quantity of the product dispensed from the last 'RESET' (partial counters).
  The left hand digit, preceded by "LIM", shows the maximum dispensable quantity (changeable value).

  Example:

```
BEVERAGE          4
00000   LIM. 000444
```

- **Stop coffee**
  It allows to set the maximum number of coffee cups to be dispensed before the stop

- **Stop beverage**
  It allows to set the maximum number of individual beverages to be dispensed before the stop

- **Stop soluble**
  It allows to set the maximum quantity of powder for each soluble product to be dispensed before the stop

- **Stop water**
  It allows to set the quantity of water to be dispensed before the stop. Once reached the set quantity, beverage dispensing is stopped.

- **Reset**
  It allows to reset all partial counters of product quantity stopping function.

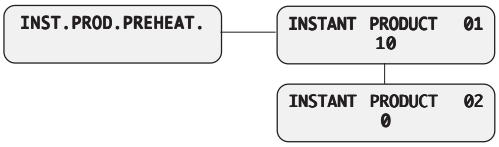
- **Minimum temperature**
  It allows to set the temperature that the vending machine keeps for a few minutes after a beverage has been dispensed. Set value is expressed in centigrade.

- **Maximum temperature**
  It allows to assign the temperature to which the vending machine is brought after a certain time from the last dispensing, so that the natural lowering of the temperature of the hydraulic circuits can be compensated. Set value is expressed in centigrade.

- **Cold temperature**
  It allows you to assign a service temperature of between +6°C and +15°C to the refrigerating compartment.
  Warning: the preset temperature can only be achieved if the room temperature is between 1 and 32° and if humidity is lower than 65% R.H.
  Minimum temperatures apply to the bottommost and topmost trays and not to the central area of the machine where snack products are usually dispensed.

- **Compressor**
  It allows to desactivate or activate the compressor.

- **Instant product preheating**
  Enables selection of the instant products for which the preheating function will be enabled.
  By enabling this function, the vending machine performs a preliminary dispensing of water through the circuit corresponding to the instant product selected. The user can choose for which instant product prerinsing can be enabled, by setting cu cm of water to be used.



  Example: the settings shown in the figure enable preheating for instant product 1 with 10 units of water and do not enable preheating for instant product 2.

  Instant product preheating takes place if:
  - at least 3 minutes have passed since the mixing bowl was last used;
  - the quantity of water for the instant product is < 50 units.

- **Drainage Tank**
  It allows sensor level (optional) reading inside the discharge fluid tank.

- **Coffee/beverage pulse counter**
  The mechanical pulse counter (optional), enables choosing whether to count the coffee or the beverages dispensed.

- **Stand-by Text**
  It allows to enter the text which appears on the display when the vending machine is in normal operating mode.

- **Dispensing Text**
  It allows to enter the text, on display, when the vending machine is dispensing a product.

- **Out of Service Text**
  It allows to enter the text, on the display, when the vending machine stops for trouble

- **Deca key**
  The functions associated with the deca key can be selected from the following:
  A. Preselection
  B. Beverage 11
  C. Disabled

  A - Preselection
  Pressing the DECA key before choosing a beverage allows the brewing of the beverage itself with the coffee beans replaced by instant 4. If decaffeinated coffee is used as instant 4, a decaf beverage is obtained.
  After pushing the preselection key, the user has 8 seconds to select the desired product. After 8 seconds, preselection is cancelled.
  · Price Setting
  Each product dispensed in decaf preselection is linked to the price of the selected drink. However, it is also possible to apply a discount or an increase on these prices. The price difference can be set in PROGRAMMING on the PRICE MANAGEMENT menu under DISC/INCR.
  · Counters and Statistics
  As each product is dispensed in preselection, both the relative beverage counter and cups counter register an increase. The total number of decaf increases/ discounts is displayed under DISC/INCR in MAINTENANCE on the STATISTICS menu.

  B - Beverage 11
  With this function the DECA key becomes a beverage key just like all the other 9 beverage keys. The operator can program the product in exactly the same way as a normal beverage. The DECA key is linked to beverage 11. The default setting for beverage 11 is plain water (this setting may be used only if the water solenoid valve kit is available).
  · Price Setting
  May be set in the PRICE MANAGEMENT menu under BEVERAGE PRICES/BEVERAGE 11.
  · Counters and Statistics
  As each beverage 11 product is dispensed, both the associated beverage counter and cup counter register an increase.

  C - Disabled
  Pressing the key has no effect.

- **Instant Cycle**
  It enables the so-called "instant cycle" mode for soluble 4 brewing.
  Such brewing mode differs from the usual brewing cycle of instant beverages as the powder is dispensed before the water and not simultaneously.
  The instant cycle is used for beverages brewing when all the following conditions are fulfilled:
  · "deca key" option set on PRESELECTION;
  · "instant cycle" option set on YES;
  · The selected soluble is number 4;
  · The required quantity of instant is less than 21 (safety threshold to prevent the mixing bowl from clogging).
  The menu can be viewed only if the "COMPLETE MENUS" option is set on YES.

- **Multiple beverage**
  It allows to set beverage multiple dispensing.
  It allows to select which beverages will be enabled for multiple dispensing and the number of dispensing.
  The upper line will remain unchanged for all the following operations, while the lower one will show the number of consecutive beverages. It is possible to set a value between 2 and 8.

- **Beverages validation**
  It allows to enable or disable the beverage keys.

- **Free vend button**
  It allows to enable key 3 (Fig. 60) of the CPU card, to the free dispensing of a product (beverage/snack) during the normal operating phase.

- **Cup key**
  The functions associated with the cup key can be selected from the following:
  A. Preselection
  B. Beverage 10
  C. Disabled

  A – Preselection
  Pressing the CUP key before choosing a beverage allows dispensing of beverage without a cup, sugar and stirrer.
  After pushing the preselection key, the user has 8 seconds to select the desired product. After 8 seconds, preselection is cancelled.
  · Price Setting
  Cup price can be set only if cup pre-selection is activated. To set, go to CUP PRICE in the PRICE MANAGEMENT menu of PROGRAMMING.
  · Counters and Statistics
  If cup preselection is activated, the VM will calculate the cost of the product based on two components: beverage + cup, therefore the operator will have to set the price of both components. For each product the amount paid by the user is the sum of the price of the beverage plus the price of the cup. Here is a practical example.
  If: price level 1 = 0.50 and price level 2 = 0.05

	Beverage Price	Cup Price	Final Cost	Counters increased
Beverage with cup	Level 1	Level 2	0.55	Beverage counter and cup counter
Beverage without cup	Level 1	Level 2	0.50	Beverage counter

  · Beverage counter
  If the product is dispensed with a cup, the following will be added to the statistics:
  1 stroke for the beverage at price level 1 (0.50), 1 price mark-up based on the price of the cup (0.05) and 1 cup supplied.
  Whereas if the product is dispensed without a cup, the following will be added to the statistics:
  1 stroke for the beverage at price level 1 (0.50) and 1 cup supplied.
  The total amount of cup mark-ups is displayed in MAINTENANCE under CUP in STATISTICS.

B - Beverage 10
With this function the CUP key becomes a beverage key just like all the other 9 beverage keys. The operator can program the product in exactly the same way as a normal beverage. The CUP key is linked to beverage 10. The default setting for beverage 10 is for the cup by itself.
· Price Setting
May be set in the PRICE MANAGEMENT menu under BEVERAGE PRICES/ BEVERAGE 10.
· Counters and Statistics
As each beverage 10 product is dispensed, both the associated beverage counter and cup counter register an increase.

C - Disabled
Pressing the key has no effect.

Important

The cup counter is updated with every single cup dispensed.

- **Reset validation**
It allows to 'RESET' the data in the maintenance menu (STATISTICS).

- **Language**
It allows to select the language to be used by the vending machine. Languages available: Italian, English, French, German, Spanish, Portuguese and Dutch.

- **Serial protocol**
Allows you to select the intended purpose of the serial port on the CPU card. The choices are:

1- Saeco Protocol: The serial port is used to interact with the PC through the Saeco protocol (optional adapter required).

2- EVA-DTS: The serial port is used to communicate the audit data of the VMC by RS232 or infrared ("Infrared EVA DTS Kit" or "EVA DTS Kit with serial port" required). For further information, see the instruction manuals of the above-mentioned kits.

- **Modify password**
It allows to modify or set the password.
The password consists of a number between 0001 and 65536. The 0000 value (default value) means no password.
To set the password, press UP and DOWN keys and confirm using ENTER key.

Recommended solutions

To speed up the input of the password digits, the beverage keys (A, B, C etc.) are combined to the following values:

Key	Value
A	+10
B	- 10
C	+100
D	- 100
E	+1000
F	- 1000

Example: to set the value 12353 it is necessary to press:
- 12 times the E beverage key;
- 3 times the C beverage key;
- 5 times A key;
- 3 times UP key;
- to confirm press ENTER key.

- **Complete menu**
It allows to choose whether the entries of the programming menu should be shown entirely or only partially.
The least frequently used entries are highlighted by a frame outlined at 8.2.2 and can be shown only if in the data "Y" is set in this function.

PAYMENT SYSTEMS
This function allows you to set the following parameters:

- **Coin validator**
  It allows you to enable the parameters of the parallel coiner, of the mechanical coiner, the cancelling machine and the choice of values to assign to the single money channels.
  Entry description:

  Enable: By setting "Y", control of the parallel coiner, the mechanical coiner and the cancelling machine is enabled. By setting "N", a parallel coiner possibly connected to the vending machine is disabled.

  Coin Value: It allows you to set the value of the coins transferred to the vending machine from the parallel coiner, the mechanical coiner and the cancelling machine.
  The following table shows the channel/payment system combinations:

Channel	Payment system
1	Parallel coiner
2	Parallel coiner
3	Parallel coiner
4	Parallel coiner
5	Parallel coiner
6	Parallel coiner/mechanical coiner
7	Cancelling machine/mechanical coiner

- **Banknote validator**
  It enables the parameters of the parallel banknote validator and the choice of values to be assigned to individual note channels.
  Entry description:

  Enable: by setting "Y", management of the parallel reader is enabled. By setting 'N', a parallel reader possibly connected to the vending machine is disabled.

  Inhibition Level: it allows you to set the active level of the banknote reader's inhibition signal.

  Banknote Value: Sets the value of banknotes transferred to the machine from the parallel reader.

- **Saeco Card**
  The Saeco card module (automatically detected by the V.M.) adds the following entries to the PAYMENT SYSTEM programming menu.
  Entry description:

  Recharge: It allows you to disable or enable any saeco card recharge operations. By setting RECHARGE = NO the V.M. will only deduct the cost from saeco cards

  Max Card Load: This function allows you to set the maximum credit level, beyond which all recharge operations (if enabled) are ineffective. By setting MAX CARD LOAD = 20.00, the credit on the V.M. will be transferred to the card if the sum does not exceed 20.00.

  Max. Value Accepted: this function allows you set the maximum credit level, beyond which the card is rejected by the system. By setting MAX VALUE ACCEPTED = 25.00, the V.M. will reject all cards having a credit exceeding this amount. If this card is detected, the display will not read the credit but will show a " ——— " message and will not carry out any dispensing.

  Price differential: This function allows you to apply differentiated prices when the card is used for payment. By setting PRICE DIFFERENTIAL = YES a new menu entry will appear in PRICE MANAGEMENT, which will allow you to set the price level to be applied to the product (beverage or snack) if payment is made by card.

  Free Card: It allows you to enable or disable the use of free service cards. By setting FREE CARD = NO, no free service card will be accepted by the vending machine.

- **Protocol**
  It allows you to choose the protocol used by the vending machine to communicate with the payment system installed on the vending machine:
  - Executive protocol;
  - BDV Protocol;
  - MBD Protocol;
  - PRICE HOLDING/DISP Protocol;
  - MBD SLAVE Protocol;
  - MASTER/SLAVE EXEC. Protocol;
  - NO PROTOCOL (no serial protocol);

  The "NO PROTOCOL" setting shall be used when a payment system operating with one of the protocols provided in the other settings "EXECUTIVE", "PRICE HOLDING", "BDV", "MDB" "MDB SLAVE" or "EXEC MASTER/SLAVE" is not installed on the VM.
  This setting is necessary since the VM continuously checks for dialogue with the provided payment system. IF the VM detects any link absence, it signals the anomaly on the display through the message "NO LINK".
  This signal cannot be considered an error condition.

- **MDB Settings**
  Allows you to access particular functions of the MDB protocol.

  Recharge: It allows you to disable or enable any saeco card recharge operations.
  By setting RECHARGE = NO the V.M. will only deduct the cost from MDB cards

Max Card Load: This function allows you to set the maximum credit level, beyond which all recharge operations (if enabled) are ineffective.
By setting MAX CARD LOAD = 20.00, the credit on the V.M. will be transferred to the card if the sum does not exceed 20.00.

Max. Value Accepted: This function allows you set the maximum credit level, beyond which the card is rejected by the system.
By setting MAX. VALUE ACCEPTED = 25.00, the V.M. will reject all cards having a credit exceeding this amount. If this card is detected, the display will not read the credit but will show a " ——"" message and will not carry out any dispensing.

Price differential: This function allows you to apply differentiated prices when the card is used for payment.
By setting PRICE DIFFERENTIAL = YES a new menu entry will appear in PRICE MANAGEMENT, which will allow you to set the price level to be applied to the product (beverage or snack) if payment is made by MDB cards.

Coins Enabling: It allows you to select which coins will be accepted by the change-giver. A coin is enabled for acceptance by setting "Y". Conversely, the "N" setting prevents the change-giver from accepting a particular coin. Coins beneath the VM's scale factor are always disabled and hence display the "N" setting.

Alt. Payout: Enables or disables use of Alternative Payout for the level 3 MDB change-giver.
By setting "Yes" the change-giver is called on to dispense change. Change is limited to 255 times the scaling factor (typically Euro 12.75 for the Euro area – with scaling factor of 5).
By setting "No" change is given by exploiting the machine's algorithm. Max. change is 60000 units (typically Euro 600 for the Euro area).

Max. change: Allows you to set the maximum amount of change dispensed by the change-giver. Default = 10.00

Tubes Empty Cond.: In MDB change-giving coiners, the no change available option can be selected within the following table:

Legend:
L = channel with the lowest value coin under the minimum level
M = channel with the medium-low value coin under the minimum level
HL = channel with the medium-high value coin under the minimum level
HH = channel with the highest value coin under the minimum level

No.	Description
0	L or M or HL or HH
1	L or M
2	HL or HH
3	L or HH
4	L
5	M
6	HL
7	L and HH
8	HL and HH
9	L and M
10	L and M and HL and HH
11	L and HL or L and HH
12	L or HL and HH
13	HH
14	L and M and HL
15	Never (change always available)

Notes
Even if the no change available signal is displayed, the machine continues to give change while there are coins in the channels. The minimum level (same for all channels) can be set with a special menu item.

Tubes Low Level: allows you to set the minimum number of coins in the channels. Default = 4.

Manual tubes Filling: allows you to fill the change-giver channels manually. Press Esc, to exit the channel loading mode.

Manual tubes Empty: allows you to empty the change giver channels by pressing the beverage selection keys.

Committed to Vend: by setting "N", inserted credit can be returned even if no sale has been made. This function may be useful, for example, for changing banknotes into coins. By setting "Y", inserted credit can only be returned as change after sale has been completed. Default = YES.

Bills Enabling: allows you to select which notes will be accepted by the MDB banknote reader.
A banknote is enabled for acceptance by setting "Y". Conversely, the "N" setting prevents the banknote reader from accepting a particular note. Default = All enabled.

Bills Escrow: With the "Y" setting, an inserted banknote is stored in escrow by the banknote reader, if it supports this function. In this way, if the sale fails or if the card system fails to charge, the banknote will be returned.
With the "N" setting all inserted banknotes go to the stacker in the banknote reader, and notes cannot be returned. Default = No.

Slave Address: When the VM works in Master mode, this menu allows you to set the address of any connected slave machines. If the machine is in Slave mode, it allows you to set the address. Possible addresses are 0x40, 0x48 and 0x50. Default = 0x40.

- **Max. credit**
  This allows the user to set the maximum credit that the vending machine can accept.
  Once this limit has been reached, the payment systems are disabled so that no more credit can be accepted. Default = 20.00

- **Multivend**
  It allows the user to use possible residual credit to purchase other beverages. By setting 'N' (no), the machine will store residual credit.

- **Overpay time**
  It establishes the maximum time (expressed in seconds) after which the machine stores the displayed residual credit. The time is adjustable at intervals of 10 seconds. Setting '000' the function is disabled.

- **Scaling factor**
  It allows you to set the number of fixed zeros in the credit.

- **Nation code**
  It allows you to set the nation code, which corresponds to the international dialling code (E.g. ITALY = 0039).

- **Decimal point posit.**
  It allows you to set the position of the decimal point in the credit.

BEVERAGE PREPARATION
The vending machine is able to dispense 11 beverages. Each beverage can be prepared using coffee beans and/or soluble products. The manager has can choose the desired components (max 4) and the order of use. Each component is identified by a number or a digit (Fig. 86).

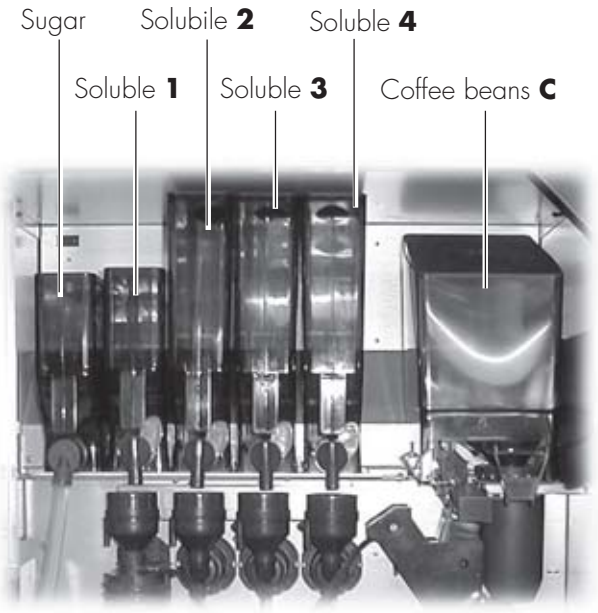
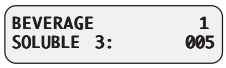


Fig. 86

- **Sequence:**

It defines the order in which the products making up the beverage are dispensed.
No product corresponds to "0", subsequently with the combination of digits "C300" or "C030" or "0C30", product 3 and coffee beans will always be dispensed.
On the basis of the sequence the settings of the parameters relevant to the products that make up the beverage will be requested.

- **Soluble:**



It defines the quantity of the soluble product to be dispensed.
Example: "005" indicates that 5 units of soluble product 3 will be used. The reference unit is preset by the manufacturer.
The quantity of soluble product is adjustable from "0" to "250" in steps of 1. Dispensing of the soluble product does not occur when the parameter is set at "0000" (in this case water is dispensed).

- **Water soluble:**

```
BEVERAGE          1
H2O SOLUBLE. 3: 022
```

It defines the quantity of water to mix with soluble in powder.
Example: "3" indicates that water will be mixed with soluble product 3. "022" indicates that 22 units of water will be dispensed into the soluble product. The reference unit is preset by the manufacturer.
The quantity of water is adjustable from "0" to "500" with steps of 2.

- **% Soluble:**

```
BEVERAGE          1
%SOLUBLE. 3:     90
```

It defines the speed with which the soluble powder and the water are dispensed (see graph – Fig. 87).
Dispensing speed of soluble powder and hot water is adjustable from "10" to "130" with steps of 10.
Setting a value of "10", the pump works at the maximum delivery, while soluble product is dispensed at the minimum capacity with impulses.
Setting "100" both the soluble product and water will be dispensed at the maximum capacity.
Setting "130" the pump works, with impulses, at minimum capacity, while soluble product is dispensed at the maximum capacity.

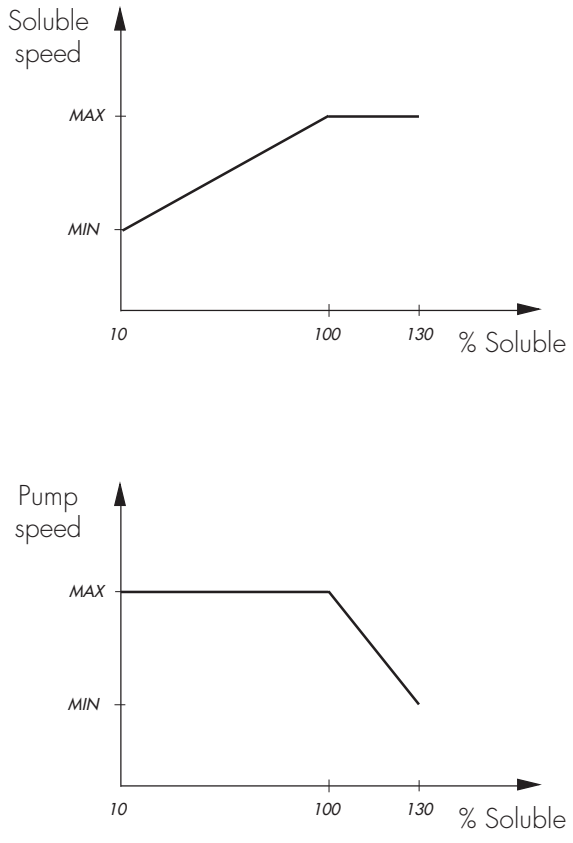


Fig. 87

Important

In case the sequence includes more soluble products, the sequence "SOLUBLE - WATER - % SOLUBLE" will appear again.

If the programming parameter concerning soluble ("SOLUBLE - WATER - % SOLUBLE") is such to extend powder dispensing beyond water dispensing, the vending machine stops delivering powder and emits a beep (insufficient mixer rinsing). Re-check the set parameters to obtain a correct dispensing (powder dispensing must end a few instants before the end of water dispensing to allow a good rinsing of the mixer).

- **Coffee Water:**

```
BEVERAGE          1
H2O COFFEE :     38
```

It defines the quantity of coffee to dispense.
Example: "38" indicates that 38 water units will be dispensed. Reference unit is preset by the manufacturer.
The quantity of coffee is adjustable from "0" to "500" with steps of 2.

- **Sugar:**

```
BEVERAGE          1
SUGAR:            0
```

It defines the quantity of sugar to dispense with the beverage.
The following table shows the different settings.

Settings	Sugar in beverage without preselection	Sugar in beverage with preselection
0	Without	Quantity preselected
1	1	Quantity preselected
2	2	Quantity preselected
3	3	Quantity preselected
4	4	Quantity preselected
NO	Without	Without sugar

- **Beverage check:**

```
BEVERAGE          1
  BEVERAGE CHECK
```

It allows to perform dispensing tests on the beverage just set.
Pressing ENTER, "PRESS KEY" appears, and you can choose the key to press relative to the type of dispensing test:
- A key Full beverage;
- B key Beverage without cup, sugar and stirrer;
- C key Only water;
- D key Only powder.

PRICE MANAGEMENT
The items of the PRICE MANAGEMENT are:

- **Price table:**

99 levels of prices can be set.

- **Beverage prices**
It allows to combine each beverage with one of the price levels set in the PRICE TABLE. The combination can be:
- GLOBAL (all beverages are given the same price level);
- SINGLE (each beverage will be given a special price level).

- **Global setting:**

By pressing UP and DOWN keys and confirming with ENTER, the price level can be combined with all beverages.

- **Single setting:**

It allows you to choose the price level for each beverage. Move to the desired selection with the UP and DOWN keys, press ENTER (the cursor will move from B01 to 001). Choose the price level and confirm with the ENTER key.

- **Price selection**
It allows to combine one of the price levels set in the PRICE TABLE with each snack.
The combination can be:
- GLOBAL (all beverages are given the same price level);
- SINGLE (each beverage will be given a special price level).

- **Global setting:**

By pressing UP and DOWN keys and confirming with ENTER, the price level can be combined with all snacks.

- **Setting single:**

It allows to select the price level to combine with each snack.
Move to the desired selection with the UP and DOWN keys, press ENTER (the cursor will move from S11 to 003). Choose the price level and confirm with the ENTER key.

- **Cup price**
It enables you to choose the price level for the dispensed cup. When the "Cup key = Preselection" option is selected see parag. 8.2.3

- **Price disc./incr.**
It enables setting the value of the discount/increase of the price of the beverages dispensed with the decaffeinated soluble instead of the ground coffee.

TIME MANAGEMENT
The items of the TIME MANAGEMENT are:

- **Never free**
  The supply of products and beverages shall be paid.

- **Always free**
  The supply of products and beverages is free.

Important

When the Time Keeper clock module is present, it is possible to set:
- washing times;
- switching on and off times;
- pregrinding times;
- differentiated pricing times;
- free dispensing times.

8.3 Maintenance menu

The structure of the maintenance menu is shown in 8.3.2. At 8.3.3 all of the entries present in the maintenance menu are described.

8.3.1 Access to the maintenance menu

Open the upper door, disable the safety device (see 3.4) and press key 2 (Fig. 88) to access the maintenance menu.

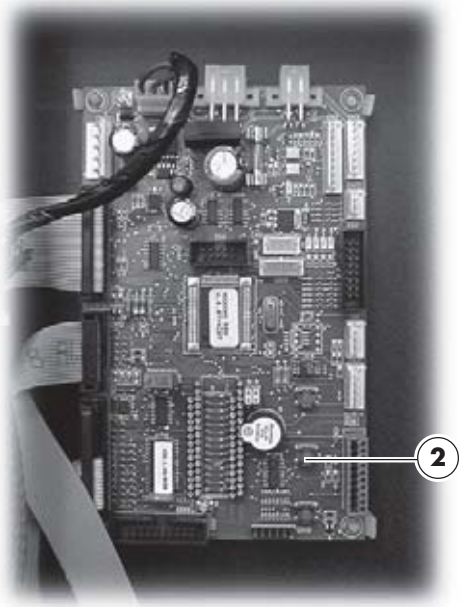


Fig. 88

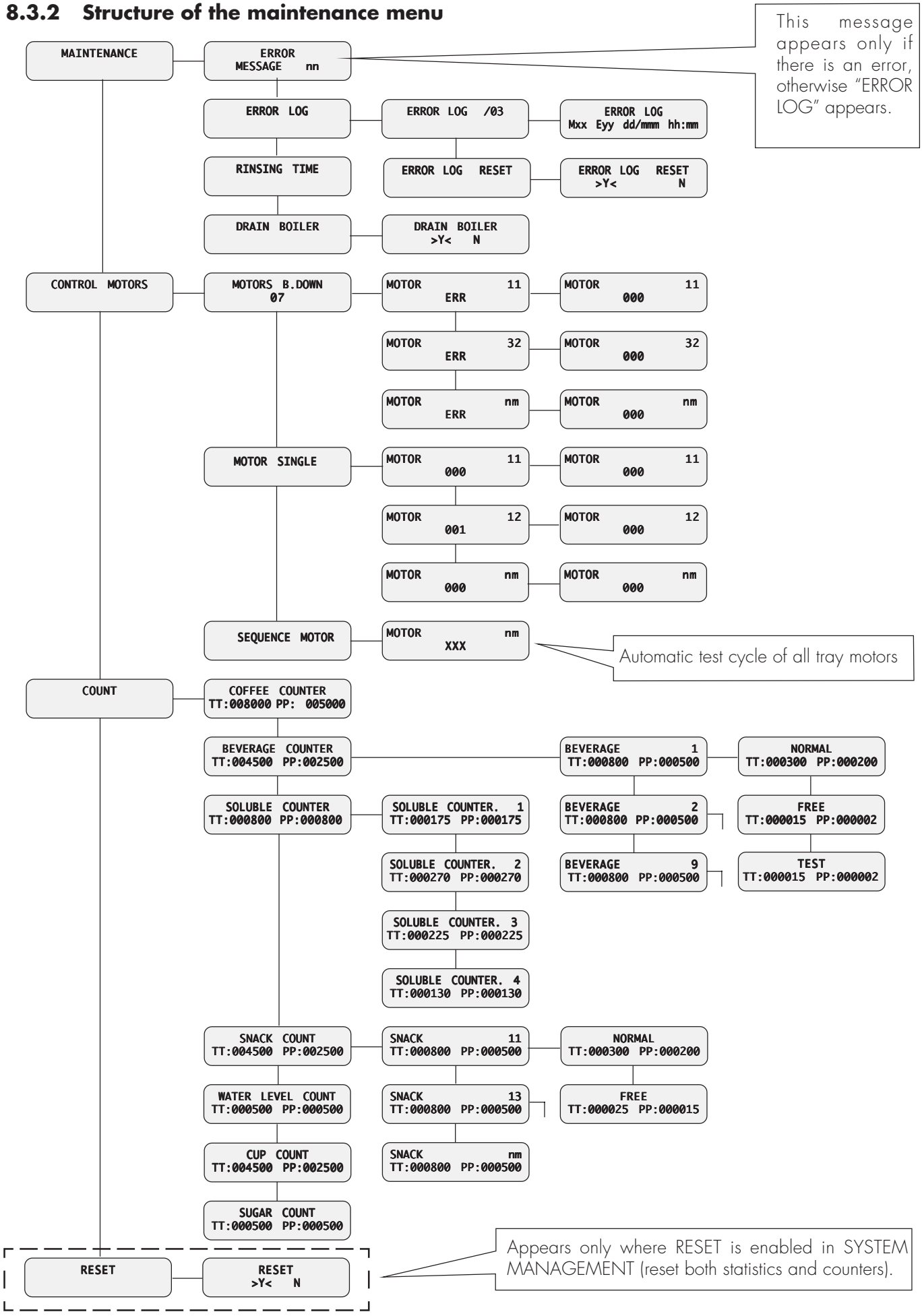
To exit the maintenance menu and return to the standard operation of the vending machine:

- press key 2 again ;

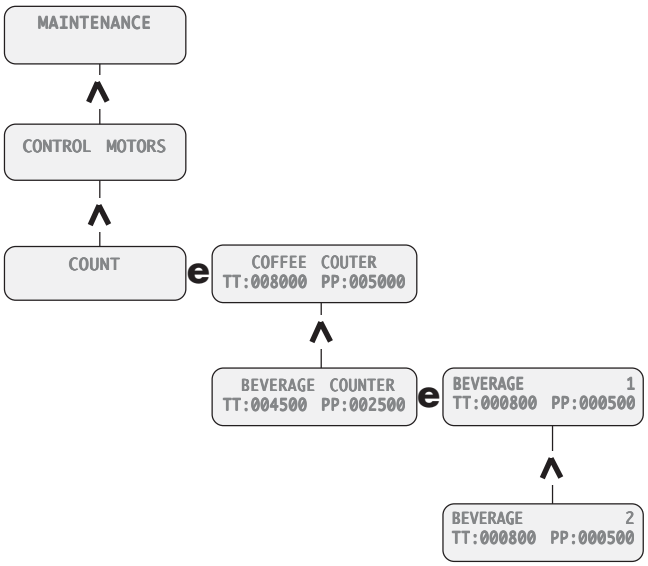
- remove the key from the safety switch to turn off the vending machine;

- close the door and wait for the self-configuration process to end.

8.3.2 Structure of the maintenance menu



Example of verification of a parameter.



To verify the number of beverage B dispensing:

- enter the maintenance menu as indicated at 8.3.1., the entry "MAINTENANCE" appears;
- Scroll the menu entries with UP key until "COUNTER" is displayed:
- press keys ENTER - UP - ENTER – UP in sequence, after the last key the entry "BEVERAGE B / TT: 000800 PP: 000500" appears.

8.3.3 Descripition of message in the maintenance menu

MAINTENANCE
In this function it is possible to show and reset the errors that may be present. It is also possible to upkeep the vending machine.

The error reset can be executed through the maintenance menu or using the so-called Automatic Error Reset mode. The latter, designed to be used by unskilled technical personnel, can be activated without entering the programming/maintenance menu and tries to remove automatically any (non-critical) error conditions that may occur in the V.M., for both the hot beverages and snacks. This mode does not eliminate all error conditions, but only those caused by operational defects.

Errors are divided into two groups (defect and failures) according to their criticality and therefore according to the easiness of removing the causes that determined them. Defects include error conditions automatically recovered when their cause ceases to exist, as well as those conditions requiring an operator's intervention that, consequently, can be removed only upon the operator's request.
Failures, on the contrary, always require a technical intervention of skilled personnel.
The following table shows the error conditions divided into their two categories

Operational defects		**Failures**
Self-reset	**Automatic reset**	**Manual reset**
Cups not available (code 08)	No water (code 01)	Arm blocked (code 06/07)
Drain tank full (code 09)	No coffee (code 02)	Sticks blocked (code 11/12)
No brew group (code 20)	Brew group blocked (code 03/04)	Boiler2 temp. sensor (code 13)
	Flowmeter (code 05)	Boiler1 temp. sensor (code 14)
	Cups blocked (code 10)	Nation key missing (code 15)
	Beverage/s blocked (code 48)	Eeprom memory (code 16)
	Motor switching (code 51)	Cup basket blocked (code 17)
	Motor overcurrent (code 52)	Timekeeper missing (code 25)
	Motor out of control (code 53)	Refrigerator temp. sensor (code 27)
	Motor powerdown (code 54)	Frost sensor (code 29)
	Motor timeout (code 55)	Position of decimal point (code 31)
	Motor position not detected (code 56)	
	Motor position not detected (code 57)	

Recommended solutions

In maintenance mode it is possible to:
- move the gearmotor of the coffee unit by pressing beverage A key;
- move the cup bracket by pressing beverage B key;
- move the cup loading central column by pressing beverage C key.
- to view Total counters for beverages and snacks by pressing beverage key D (for three seconds the display will show three figures: XXXXX YYYYYY ZZZZZ
  XXXXX = total beverage counter
  YYYYYY = total snack counter
  ZZZZZ = sum of both total counter)

- **Error / Message nn**
  Describes the current error (check the cause at 11.2 Error messages). If there are no errors present, this message does not appear.
  After verifying the cause of the error, press ENTER key to reset the vending machine (for the complete list of errors see 11.1).

- **Automatic Error Reset**
  Simplified mode (for technical unskilled personnel) for error reset that, when implemented, tries to remove any non-critical error condition in the VM operation.

  Starting the Error Reset Procedure
  The error-reset procedure is started by pressing both the "1 Programming" and " 2 Maintenance" buttons simultaneously (see Fig.60) for at least 5 seconds.
  A beep signals the procedure start.

  Reset Procedure in Absence of Errors
  If no failure is present, the display shows the message "Ok - 0/0".
  The user can go back to the standard mode by pressing ENTER.
  In this way, a quick system check-up by the operator is also assured.

  Reset Procedure in Presence of Errors
  In presence of errors the procedure consists of two phases:
  1. Error list;
  2. Error removal (attempt to remove).

  Error List
  The VM displays a list of detected errors.
  The first line of the display indicates the total number of errors " ERRORS XX ".
  The second one displays their descriptions on one or more screens.
  - Such list is made according to the following rules:
  The errors relating to spiral motors are grouped, for ex.: "M 22 23 33 42 43" (possibly on more than one screen page) with no regard to the error code.
  - All the remaining errors are displayed on a single screen page containing their descriptions for ex.: "NO WATER 01".
  The user can pass to the following screen page by pressing ENTER.
  By pressing ENTER again after viewing the last screen, the user will remove the errors.

  Error Removal (Attempt to remove)
  The VM tries, in sequential order, to remove automatically the errors. During these attempts the display indicates the error that is being removed (for ex. "Reset M24-E51"; where M24 identifies the motor to which the error refers while E51 is the code of the detected error).
  In the second line of the display there is a "status bar": the bar elements are made by points ".". At the end of each attempt the display shows the message Ok/Fail and then proceeds with the following step.
  If, at the end of the sequence, all the errors have been removed, the reset was successfully carried out; otherwise - if one or more errors could not be removed - it proved to be unsuccessful.

  Successful Reset
  The VM shows the message " Ok - N/N" with a long single beep.
  N indicates the number of removed errors.
  The user can go back to the standard mode by pressing ENTER.

  Unsuccessful Reset
  If, at the end of this procedure, at least one error condition remains unchanged, the display will show the message "Fail X/N" where X is the number of errors that could not be removed and N the total number of detected errors.
  The message is accompanied by some short beeps.
  The user can go back to the standard mode by pressing ENTER.

- **Error Log**
The VM's EPROM records significant incidents occurring in the VMC (for example errors, warning signals etc.)
Storage takes place at the moment of detection of the error and consists of saving the following information:
1- error code (or warning code) given
2- location of the source of the signal (for example, which spiral motor, if the error is due to a spiral motor, or which coffee, or which instant product)
3- day, month, hour and minute of the error detection (this information is given only if the VM is equipped with a timekeeper).
   The information is included in a list that can contain up to 50 elements. After that limit the information is stored starting from position 1 (i.e. previous information will be lost).

Notes
All errors or anomalies are stored, except for blocks (coffee block, instant block, beverage block, and water block)

Example

```
ERROR LOG    ii/NN
Exx aabb ddmmm hh:mm
```

Format of error warning descriptions recorded in LOG

Exx WHAT => error/warning signal with code xx
aabb WHERE=> if Myy = spiral motor yy
aabb WHERE=> if Syy = dispensing of instant product yy
aabb WHERE=> if Lyy = washing instant product yy
aabb WHERE=> if C— = dispensing of coffee
aabb WHERE=> if aabb = hexadecimal codes
ddmmm WHEN => day in figures, month string (3 letters)
hh:mm WHEN => hour:minutes

- **Rinsing time**
  It allows to rinse the dispensing circuits of the soluble products.
  Pressing the ENTER key the automatic cycle starts, thus activating in sequence each soluble circuit.

Recommended solutions

To wash the circuit of a single soluble you need to keep the beverage keys pressed:
- Beverage A key: soluble 1 wash
- Beverage B key: soluble 2 wash
- Beverage C key: soluble 3 wash
- Beverage D key: soluble 4 wash

- **Drain Boiler**
  It enables starting the automatic boiler discharging cycle.

MOTOR CHECK
Through this function a diagnostics is displayed of all active motors. It is then possible to test each or all the motors in sequence.

- **Motor failures:**

```
MOTORI GUASTI
07
```

  The digit shown in the second line (example "07") indicates the number of motor failures in the spirals.
  By pressing ENTER key, you enter the entries identifying both faults and error of motors. (See table on page 49).
  This error can be cancelled by pressing ENTER again within these entries. The vending machine actuates the motor and try to time it. If the operation is successful, the error number is reset. Otherwise, check the cause of the failure on the out-of-service message table (11.2).

- **Single motor**
  Enables scrolling the list of motors to carry out a test on a single motor.
  The second line indicates the condition of the motor.

- **Sequence of motors**
  Allows you to carry out an automatic performance test on all motors. Through this function, the vending machine will actuate in sequence all spiral motors.
  In case a motor should be faulty timed, the v.m. will turn it until it reaches the correct position.

Important

After every fault reset, a check of the motor showing a trouble must be done.

FAILURE	REMEDIES
"**51**" Incorrect microswitch switching times of motor.	Check the motor and eliminate the failure. Reset and check motors. If the problem persists, contact your Authorized Customer Service Center.
"**52**" Motor overvoltage.	Eliminate the failure. Reset and check motors. If the problem persists, contact your Authorized Customer Service Center.
"**53**" Motor running with no control given.	Replace the motor, reset and check the motors.
"**54**" Black-out during the brewing cycle.	Reset and check the motors.
"**55**" No motor detected.	Check the wiring and eliminate the failure. Reset and check the motors.
"**56** e **57**" The position of the motor is not correctly identified.	Check the motor and eliminate the failure. Reset and check motors. If the problem persists, contact your Authorized Customer Service Center.

8.3.4 Vending machine temporarily disabled

By pressing key 3 (see fig. 60 in the manual) of the CPU card for 15 seconds, the VM goes into "out of order" 33 mode and the machine becomes inactive and the payment system blocked.
To restore the vending machine to normal functioning, carry out the manual error reset procedure as described in the MAINTENANCE menu.

9 OPERATION AND USE

9.1 Beverage selection (HOT DRINKS)

The machine can dispense 9 beverages.

A beverage can be selected according to the following conditions:

- the vending machine has reached the set temperature. Otherwise, pressing a beverage key, the display shows the message "PLEASE WAIT".

- the available credit is sufficient or the vending machine has been set in free mode. If this is not the case, the display shows the message "INSERT XXX".

- there is no error condition that prevents beverage dispensing. Otherwise "BEVERAGES XXX OUT OF SERVICE" alternated with "NOT AVAILABLE" messages are displayed;

- the beverage selected has been enabled. If this is not the case, "NOT AVAILABLE" will be displayed;

- the selected beverage is not prevented. Otherwise, before key is pressed, the message 'BEVERAGE XXX' alternated with "NOT AVAILABLE" is displayed. If you press the key, then the display shows "NOT AVAILABLE".

- the dispensing outlet door is closed. If this is not the case, the display shows "CLOSE THE DOOR".

Important

The dispensing cycle cannot be interrupted by opening the door, until cup, sugar and stirrer have been dispensed.
If the door is opened accidentally, it should be reclosed and the beverage dispensing will start again automatically.

During hot beverage brewing:
- the payment systems are disabled;
- it is not possible to have snacks;
- *the first line of the display shows the programmable dispensing message (default "WAIT FOR PRODUCT").*

Beverage selection

If the vending machine has not been programmed to dispense beverages for free, insert requested credit.

Press the key corresponding to requested beverage.

After beverage dispensing, the message "REMOVE CUP" is displayed. Take the beverage from the dispensing outlet.

After closing the door the display will show the message "THANK YOU" and after a few seconds "SAECO DIAMANTE SAECO" (vending machine is awaiting selection).

Warning

Not to burn your hands, wait for the signal to say that the dispensing is over - "REMOVE CUP"- before introducing it into the outlet.
Do not open the brewing door while the v.m. is brewing beverages.

In case of failures or product missing during the brewing phase, the display indicates the causes.
Messages and special warnings are listed in section 11.

9.2 Selection of products (SNACKS)

The vending machine is able to manage up to 5 trays of 6 spirals each. Each spiral is identified by a tray and a spiral code (see 5.4).
Pressing a numeric key (corresponding to the tray) the first line of the display shows the message "SELECTION XX". The user has 8 seconds to input the second digit. If this time expires, even first digit will be cancelled.

The requirements to obtain a snack are:

- the available credit is sufficient or the vending machine has been set for free operation. If this is not the case, the display shows the message "INSERT XXX";

- no error conditions prevent the operation. On the contrary the display shows the error message "SNACK XXX OUT OF SERVICE" alternated with "NOT AVAILABLE";

- the chosen spiral is present. Otherwise the display shows the message "NOT AVAILABLE";

- no error condition for the requested spiral is present. If this is not the case, the display shows the message "NOT AVAILABLE".

Important

During dispensing:
- payment systems are disabled;
- it is not possible to dispense hot beverages;
- the first line on the display shows the programmable dispensing message (default 'WAIT FOR PRODUCT').

Selection of the snack product

There is a label inserted into the lower part of each tray which shows the code of the product and the corresponding price.

Insert the amount required.

Select the product via the keys from 1 to 6 and enter the desired code (23, 42 etc).

After beverage dispensing, the message "THANK YOU" will appear. Remove the product from the tray. After a few seconds the message "SAECO DIAMANTE SAECO" (vending machine awaiting selection) will appear.

Warning

In case of failures or product missing during the brewing phase, the display indicates the causes.
Messages and special warnings are listed in section 11.

Important

The instructions for use are shown on the plate on the front side of the vending machine.

10 CLEANING AND MAINTENANCE

Warning

Before performing any maintenance and/or cleaning procedures, set the main switch on "0" to disconnect the power supply.

It is forbidden to clean or upkeep the machine with the safety microswitch disabling key inserted.

The manufacturer declines any responsibility for possible damages or malfunctioning caused by wrong or poor maintenance.

Important

During the loading operations do not touch any of the electric parts and do not clean them with wet clothes

10.1 General notes for good operation

The machine and its fixed components must be cleaned using non-abrasive sponges or wet clothes.

Do not direct water jets on the components and or the vending machine.

At each supply, check the correct beverage dispensing. If need be, adjust the grinding.

At each supply, check the correct sliding of snacks on trays.

Leave enough space between trays.

Whenever possible, avoid placing bags side by side, because their folds can get caught while sliding.

Load the cans in the lowest tray.

Load 25 cl cans, if possible.

Place the bigger bags in the central positions.

To guarantee the correct operation of the vending machine it is advisable to keep to the instructions and times indicated in the MAINTENANCE SCHEDULE (see 10.2.1).

10.2 Cleaning and routine maintenance

Warning

Every component part has to be rinsed exclusively with warm water without using any detergent or solvent that could modify its shape or performance.
Do not wash removable components in the dishwasher.
During the cleaning and maintenance operations do not touch the following electrical parts; CPU card; starter door; interconnection door. Do not clean these electrical parts with wet clothes and or degreasing detergents. Remove the residue of dust with a jet of dried compressed air or an antistatic cloth.

Important

Inside the vending machine there is a bipolar 230 Volt service socket (17 - Fig. 1). Only the maintenance technician shall use them to connect working or cleaning equipment.

10.2.1 Maintenance schedule

Every day
Dampen a cloth with detergents suitable for contact with foods and clean:
- the window (6 - Fig.1);
- the product dipensing tray (8 - Fig. 1);
- the display (1 - Fig. 1);
- the 'instructions for use' plate (2 - Fig. 1);
- the beverage dispensing outlet (3 - Fig. 1);
- the keyboard.

Weekly
- Clean the drip tray (see 10.2.2).
- Replace the coffee grounds bag (see 10.2.3).
- Empty the discharge fluid tank and wash it (see 10.2.4).
- Clean the stirrer channel (see 10.2.5).
- Clean the coffee bean hopper and the coffee ground channel (see 10.2.6).
- Clean the mixer and dispenser of the soluble products (see 10.2.7).
- Clean the dispensing outlet without disassembling it (see 10.2.8).

Each supply
- If necessary, clean the coffee bean hopper, the soluble product and sugar containers (see 10.2.9).

Monthly
- Disassemble the components of the dispensing outlet and wash them carefully (see 10.2.8)
- Clean the dispensing arm (see 10.2.10).
- Clean the cup bracket (see 10.2.11).
- Clean the refrigerating unit with the aid of a hoover (see 10.2.12).
- Clean the coffee grinder (see 10.2.13).

10.2.2 Drip tray cleaning

Remove the tray and clean it carefully (Fig. 89).

Fig. 89

Use a hoover to eliminate the dirt inside the soluble products outlet, after plugging it to the service socket 17 (Fig. 1). In particular clean and dry the tray indicated in figure 90.

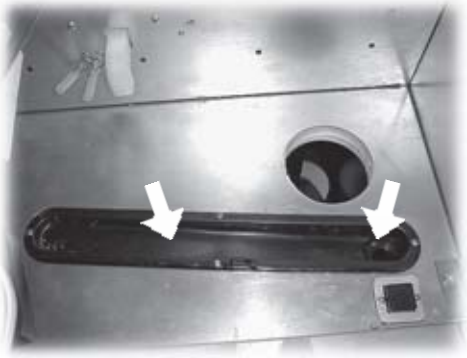


Fig. 90

10.2.3 Coffee grounds bag replacement

Tighten the clip, extract the full bag and replace it with a new one (Fig. 91).

Fig. 91

10.2.4 Emptying the discharge fluid tank

Remove the tank from the vending machine (Fig. 92).

Fig. 92

Remove the hose from the tank (Fig. 93).

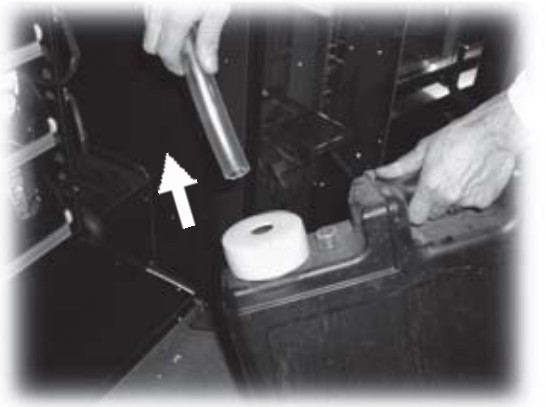


Fig. 93

Remove the cap (Fig. 94) and empty the fluid tank.

Fig. 94

Wash the tank, refit the cap and the drain hose again, replace the tank inside the appliance.

10.2.5 Stirrer channel cleaning

Clean the stirrer channel carefully (Fig. 95).

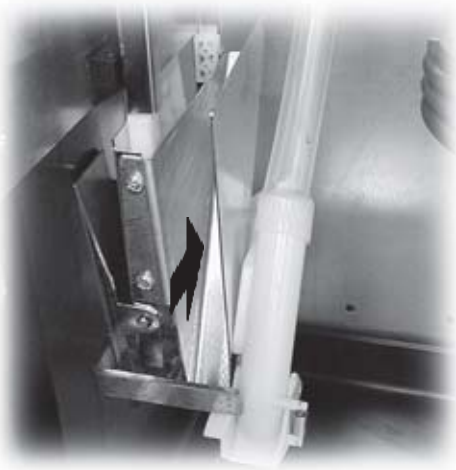


Fig. 95

10.2.6 Coffee brewing unit cleaning

Disconnect the tube of the dispensing arm (Fig. 96).

Fig. 96

Remove the coffee brewing unit keeping the lever in position 3 (Fig. 97).

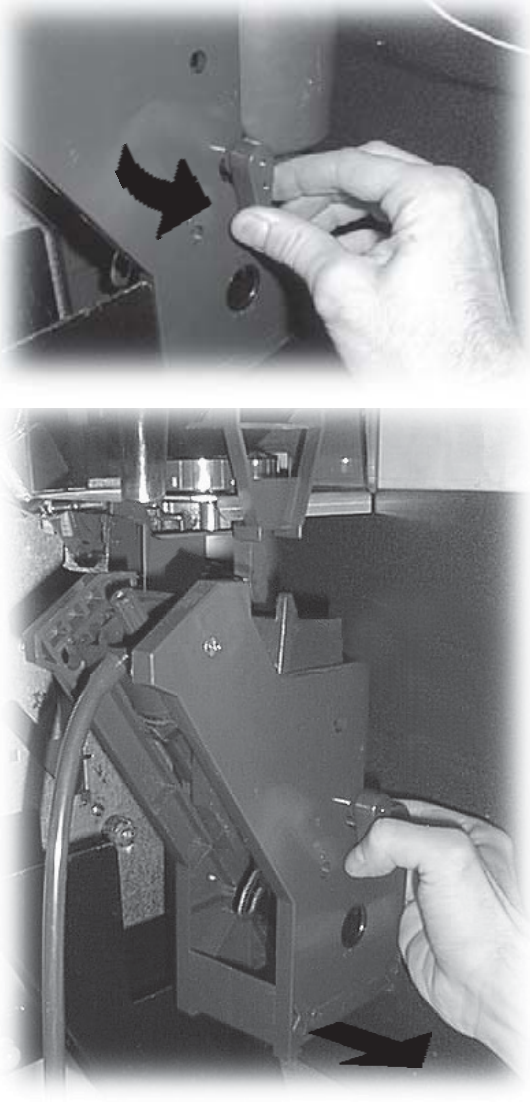


Fig. 97

Wash the unit with lukewarm water. Clean specially the upper filter (Fig. 98).

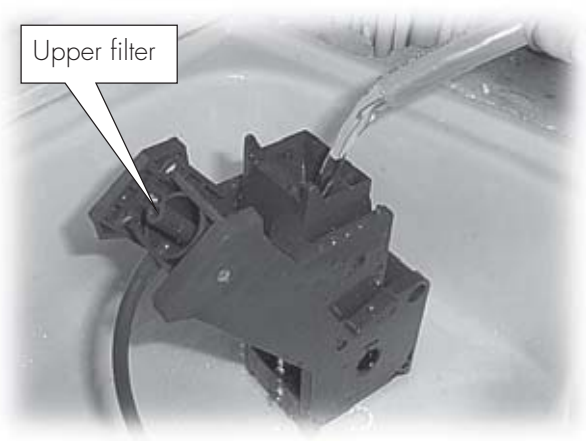


Fig. 98

Important

While inserting the unit make sure that reference arrows are aligned. Otherwise, align them using the provided key.

Loosen the fastening screws (Fig 99), remove the coffee ground channel and wash it with lukewarm water.

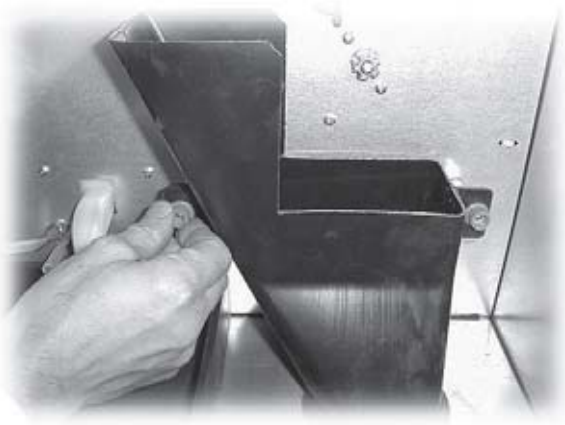


Fig. 99

10.2.7 Soluble product dispenser and mixer cleaning

Disconnect the dispensing hose from the nozzle and the dispensing arm (Fig. 100).

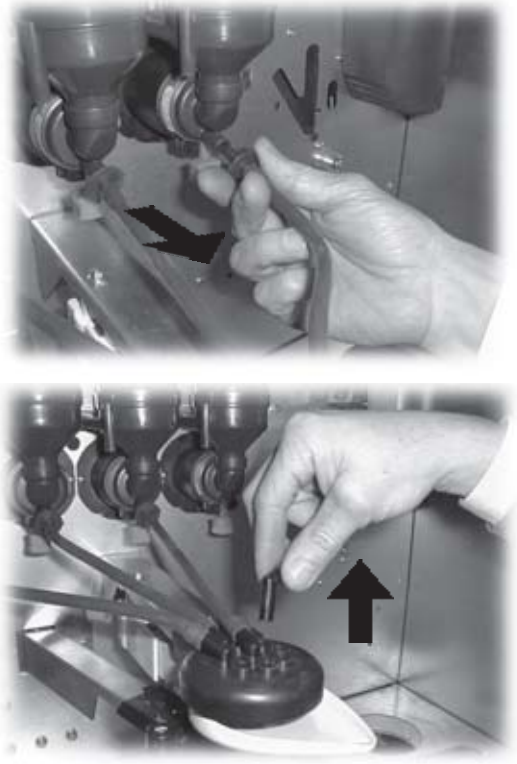


Fig. 100

Remove the instant product funnel along with the funnel cover (Fig. 101).

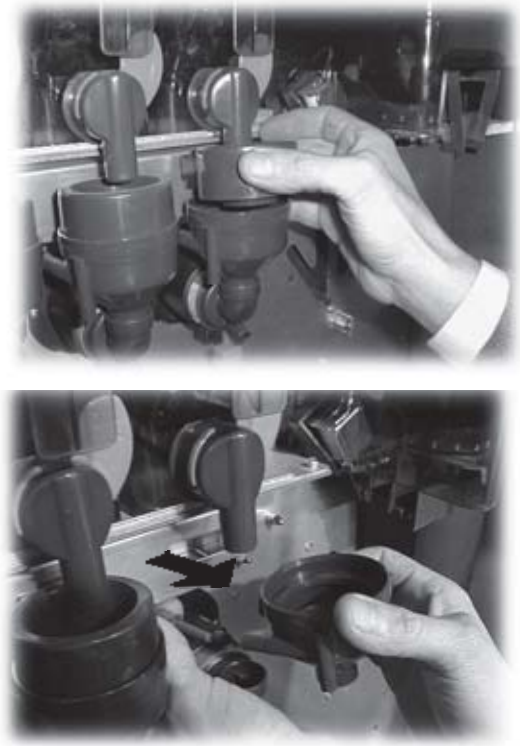


Fig. 101

Screw the blocking ring clockwise (Fig. 102) and remove the mixer case.

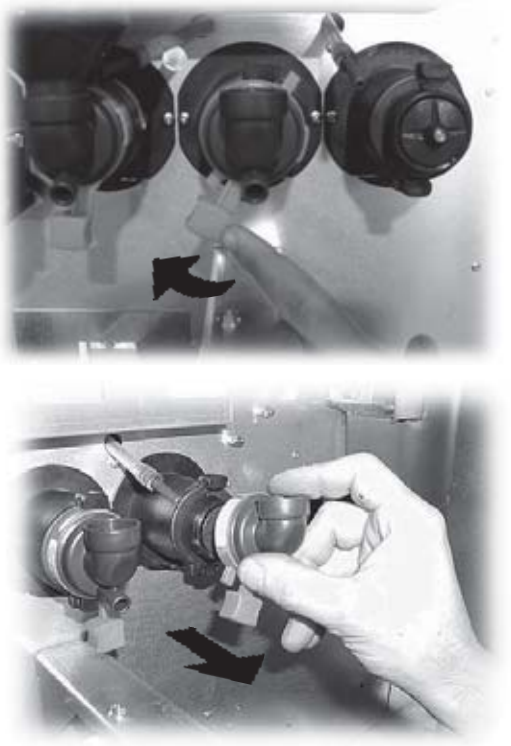


Fig. 102

With a flat screwdriver, levering carefully, remove the fan (Fig. 103).

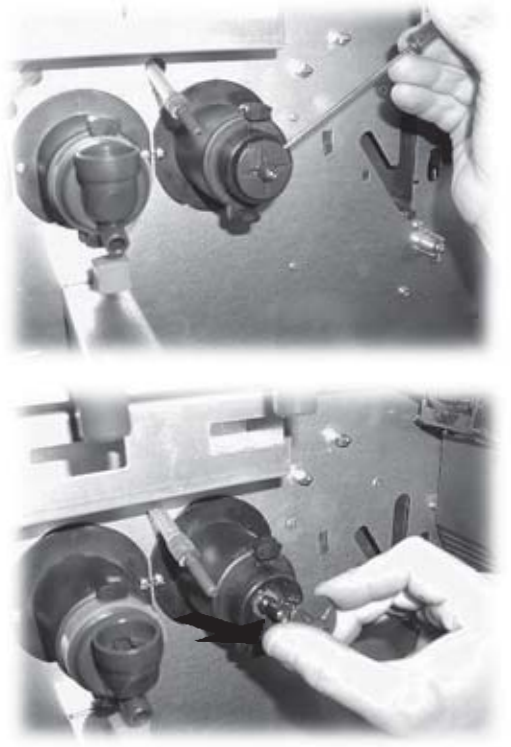


Fig. 103

Wash all the components with lukewarm water and pay particular attention not to damage the fan. Carry out the inverse procedure to assemble the components and connect the dispensing hose correctly.

10.2.8 Dispensing out let cleaning

By shifting the locking levers remove the dispensing outlet. (Fig. 104).

Fig. 104

Remove the lower plate (Fig. 105).

Fig. 105

Wash the dispensing outlet and the lower plate in lukewarm water (Fig. 106).

Fig. 106

Only after having dried them well, assemble the lower plate onto the dispensing outlet.

Assemble the dispensing outlet into the vending machine and check that the upper pin is not between the door wall and the microswitch tongue (Fig. 107).

Fig. 107

Every month, all component parts must be disassembled and cleaned carefully.

After removing the outlet (Fig. 104 and 105), remove the spring (Fig. 108).

Fig. 108

Remove the ring protective flange (Fig. 109).

Fig. 109

Rotate the upper ring anticlockwise and remove it from the outlet (Fig. 110).

Fig. 110

Press carefully on the sides and slide out the dispensing outlet door (Fig. 111).

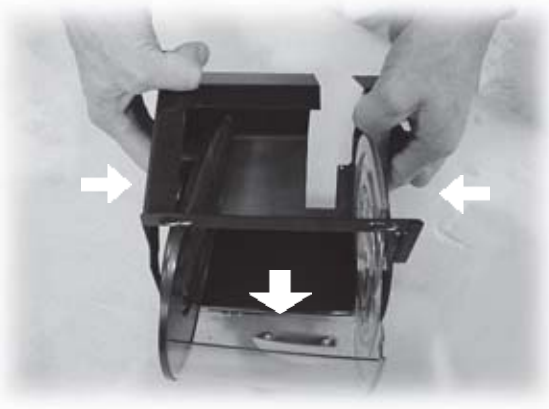


Fig. 111

After sliding out the door (Fig. 112), wash all components in lukewarm water.

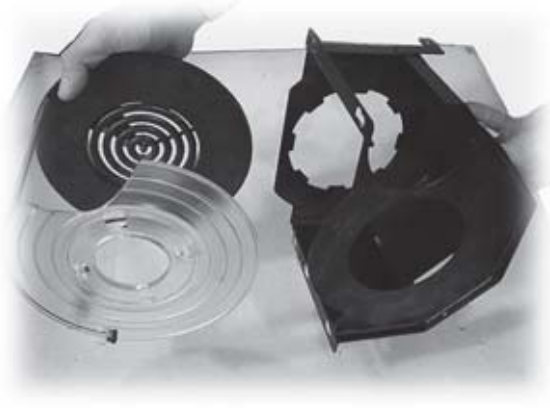


Fig. 112

Carry out the inverse procedure to assemble the components.

10.2.9 Tanks and containers cleaning

To clean the coffee bean hopper you need to:
- pull outwards the moving panel (Fig. 113);
- Dispense some coffee cups in order to empty the coffee grinder from coffee beans.
- slide the container upwards and remove the residues of beans using a hoover;
- wash the container inside and dry it carefully before reassembling it.

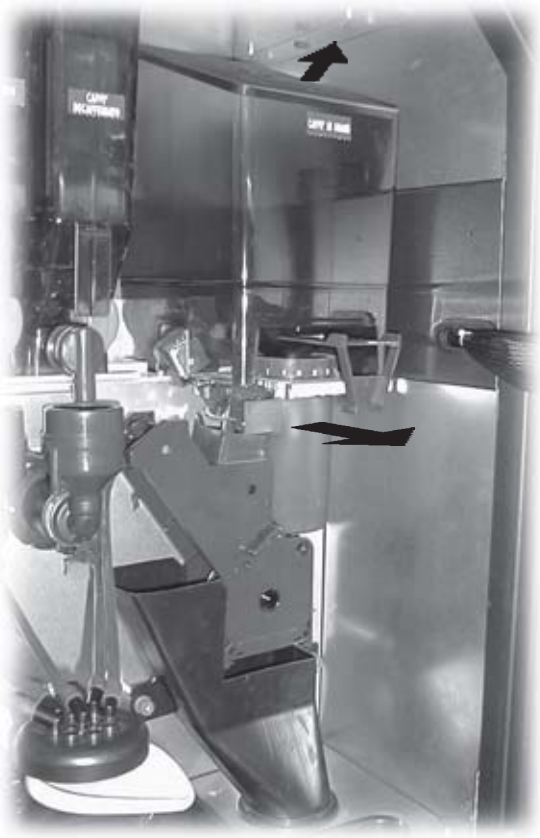


Fig. 113

To clean the container of the soluble products you need to:
- turn clockwise the locking lever of container (Fig. 114);

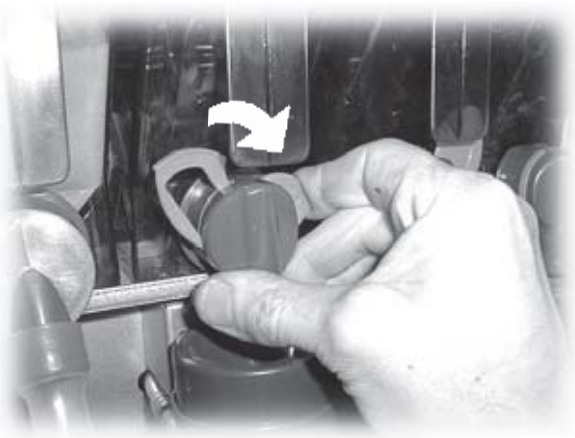


Fig. 114

- remove the container (Fig. 115).

Fig. 115

- wash the inside of the container and dry it carefully before reassembling it.

To clean the sugar container you need to:
- remove the elbow of sugar (Fig. 116).

Fig. 116

- remove the container (Fig. 117).

Fig. 117

- wash the container and dry it carefully before reassembling it.

- Empty the sugar feeding duct from the lower opening (Fig. 118) and clean it from any residue.

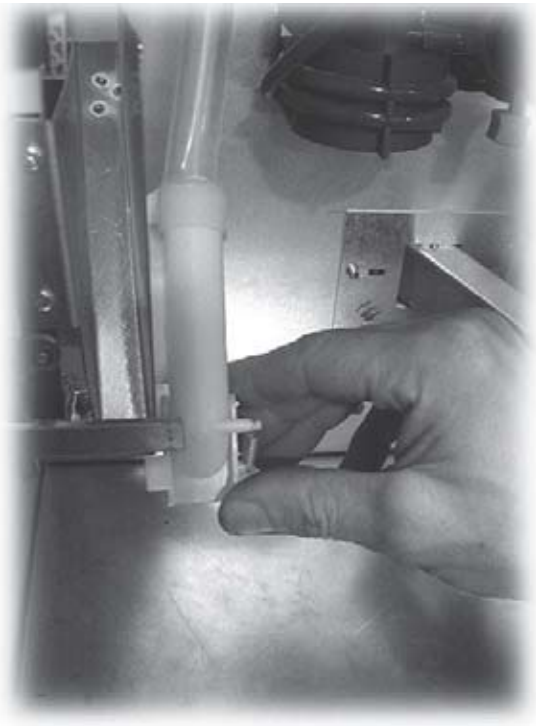


Fig. 118

10.2.10 Dispensing arm cleaning

Disconnect the hoses from the dispensing arm (Fig. 119).

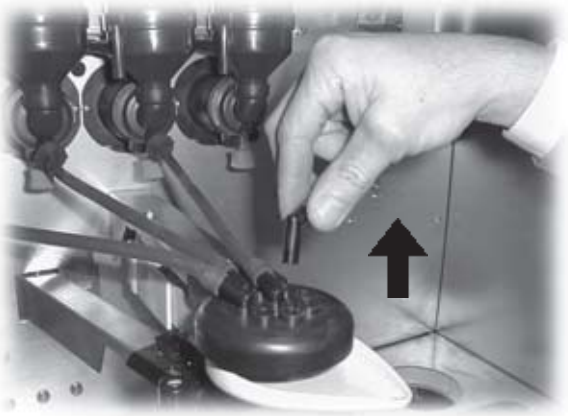


Fig. 119

Disassemble the dispensing unit (Fig. 120).

Fig. 120

Lift the locking lever and remove the mobile drip tray. (Fig. 121).

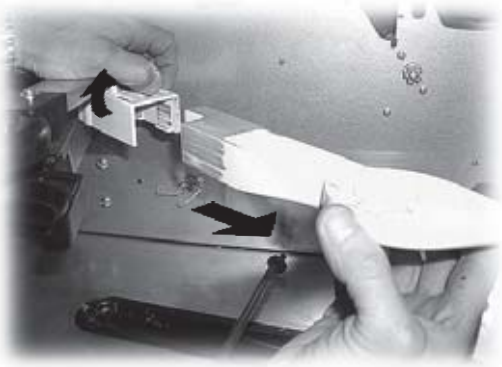


Fig. 121

Wash all components with lukewarm water and reassemble it proceeding in reverse order.

10.2.11 Cup bracket cleaning

Lift the locking lever and remove the cup holder (Fig. 122).

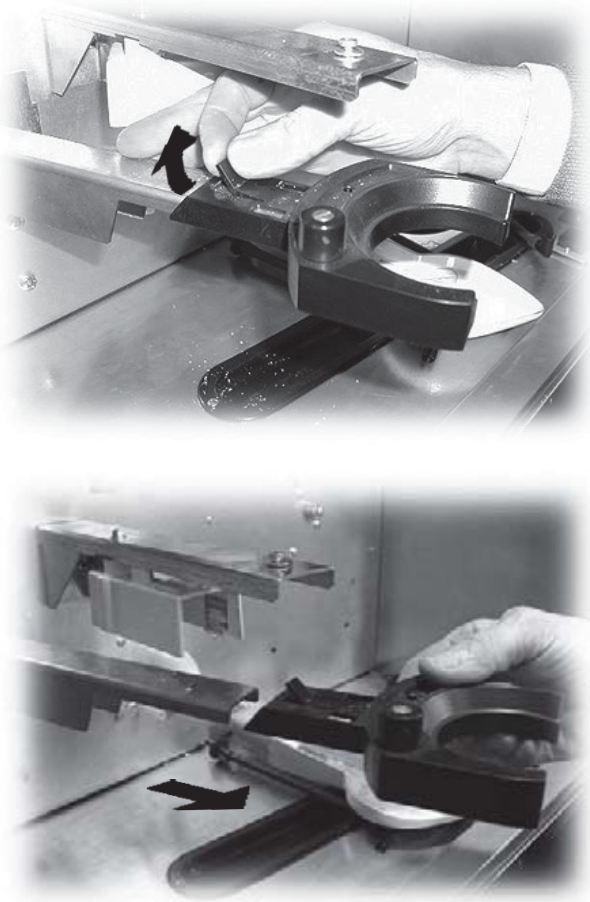


Fig. 122

Wash the components in lukewarm water and carry out the inverse procedure to assemble it.

10.2.12 Refrigerating unit cleaning

Remove the lower covering (Fig. 123).

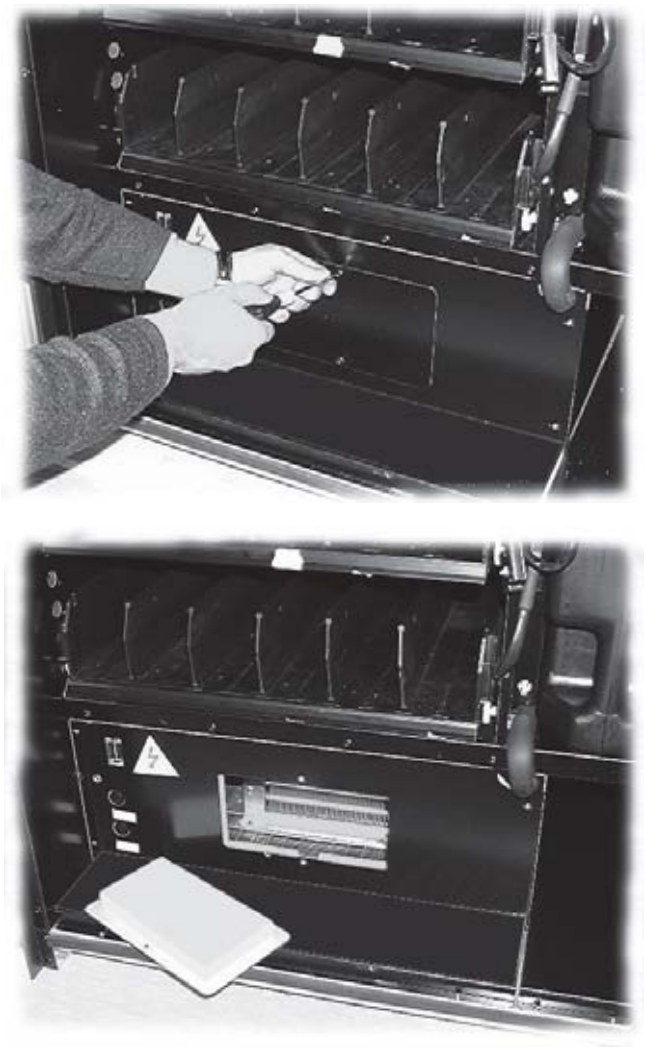


Fig. 123

Use a hoover to clean the refrigerating unit and the inside of the compartment (Fig. 124).

Fig. 124

10.2.13 Coffee grinder cleaning

Monthly clean the coffee grinder from any residues that might cause incrustation.

After removing the coffee bean hopper (10.2.9 - Fig. 113), clean the coffee grinder carefully with a hoover.

10.3 Unscheduled maintenance

Warning

All of the aforementioned warnings (10.2) are valid also in cases of unscheduled maintenance.

Unscheduled maintenance concerns the replacement and the adjustment of components where it is necessary to have specific knowledge and it foresees:

- the adjustment of the spirals (procedure described at 10.3.1);
- the replacement of the spirals (procedure described at 10.3.2);
- the replacement of the motors (procedure described at 10.3.3);
- the modification of the layout of the trays (procedure described at 10.3.4).

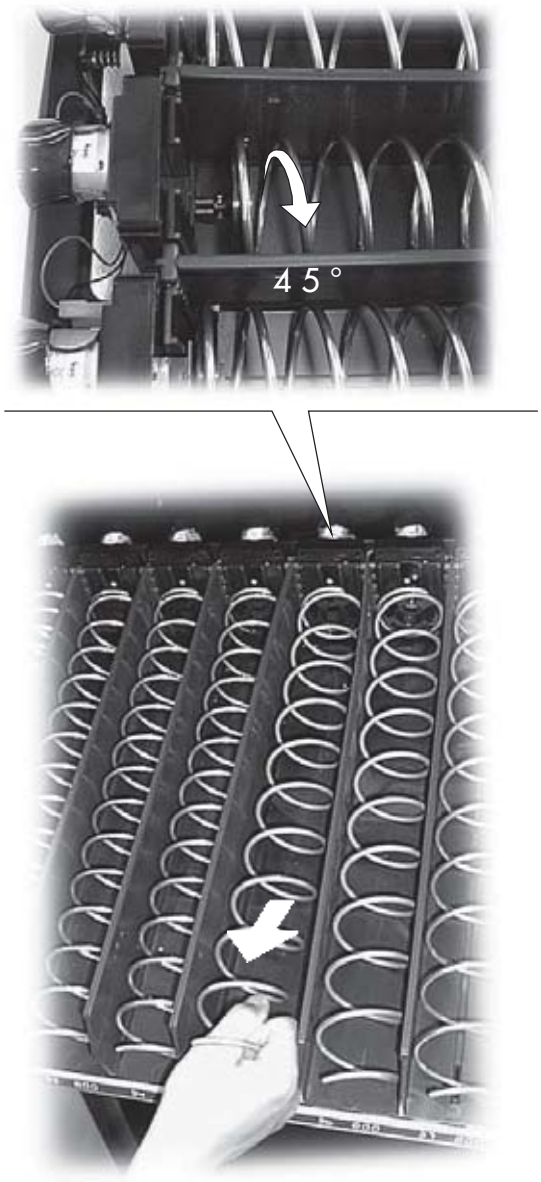


Fig. 125

10.3.1 Spiral adjustment

The adjustment of the spirals is made according to the types of product to be dispensed (snack, bottle or can). Spirals can be adjusted in the following way (Fig. 125):

- pull the spiral until releasing the joint from the motor housing;
- rotate the spiral of 45° at a time until finding the desired position;
- release the spiral and the joint will automatically re-enter its own seat.

10.3.2 Spiral replacement

In the standard version some spirals with different pitches are supplied, suitable for dispensing products of different sizes and consistency. Other spirals can be requested directly from the manufacturer.

All spirals are interchangeable and can be fitted in the trays of the vending machine in the following way:
- remove the tray from the vending machine and lean it on the workbench;
- remove the motor and the spiral from the tray (Fig. 126);

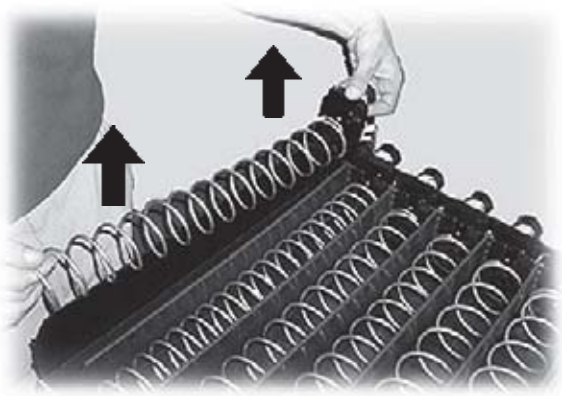


Fig. 126

- keeping the motor still, rotate the right spiral anticlockwise until you unblock it from the stop notch (Fig. 127). Rotate the left spirals clockwise.

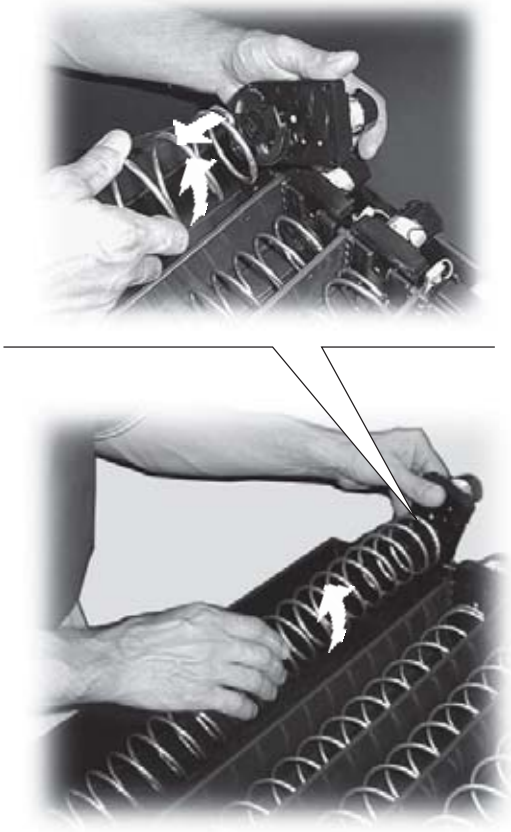


Fig. 127

- fit the most suitable spiral to the product to be dispensed. Fit it into the drive flange of motor carrying out the inverse procedure;

- adjust the spiral as indicated at 10.3.1.

Warning

Where the spiral to be replaced is coupled to a dispensing guide channel for bottles, cans or tetrapack, raise it from the bottom over the tray border, then remove it (Fig. 128).

You cannot remove the spiral without removing the dispensing guide first.

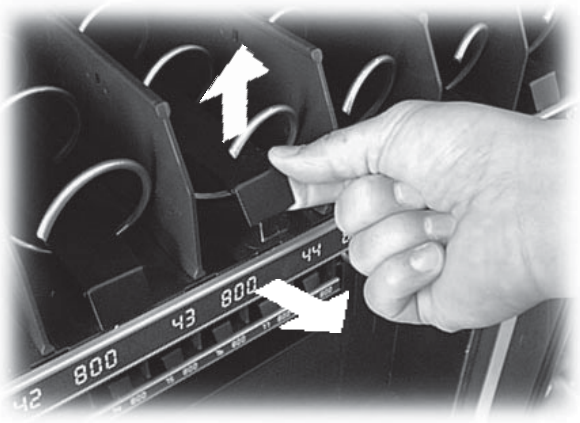


Fig. 128

10.3.3 Motor replacement

The procedure is the following:
- remove the tray from the vending machine and rest it on the workbench;
- remove the motor and the spiral from the tray (Fig. 126);
- remove the spiral (Fig. 127);
- remove the electrical connectors (Fig. 129);
- replace the motors and carry out the inverse procedure for assembly.

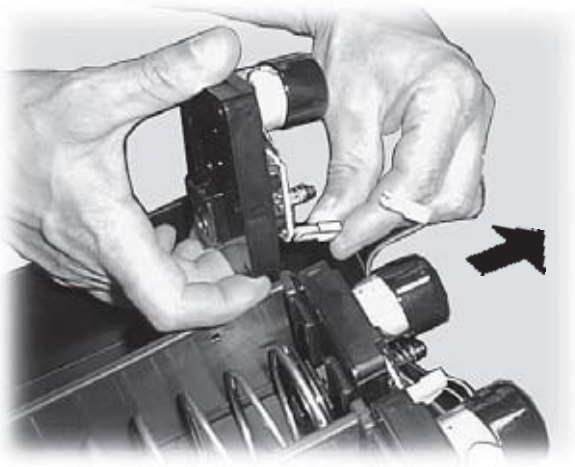


Fig. 129

If you want to replace a motor with a motor driving two spirals you need to:
- remove the tray from the vending machine and lean it on the workbench;
- remove the motor and the spiral from the tray (Fig. 126);
- remove the spiral (Fig. 127);
- if present, remove the dispensing guide (Fig. 128);
- remove the electrical connectors (Fig. 129);
- carry out the same procedure for the other spiral;
- remove the spacer (Fig. 130);

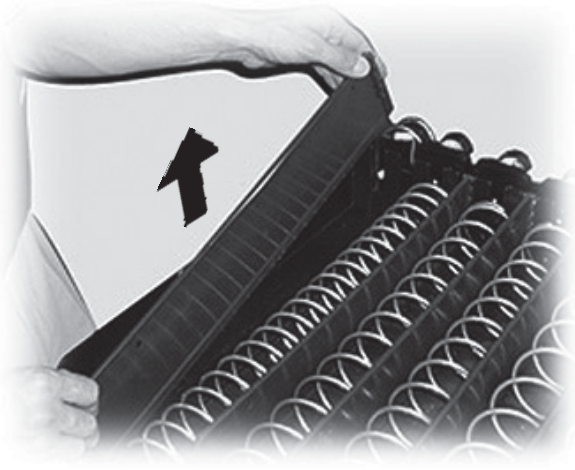


Fig. 130

- fit the snack conveyor (Fig. 131);

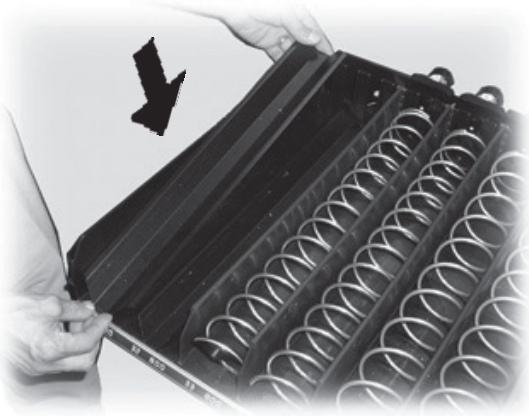


Fig. 131

- connect the two electrical connectors (Fig. 132);

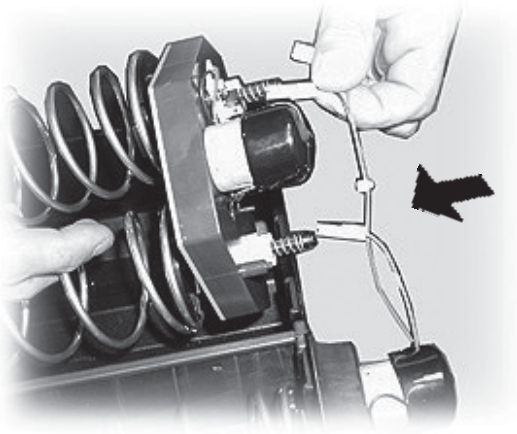


Fig. 132

- assemble the right and the left spirals on the double motor;
- insert the motor with the spirals in the proper channel (Fig. 133);

Fig. 133

- fit the tray into the vending machine and adjust the spirals as indicated in 10.3.1.

10.3.4 Modifications to the layout of the trays

It is possible to modify the position of the trays inside the vending machine moving the guides supporting them.
For this operation:

- remove the connector corresponding to the tray to be removed (Fig. 134);

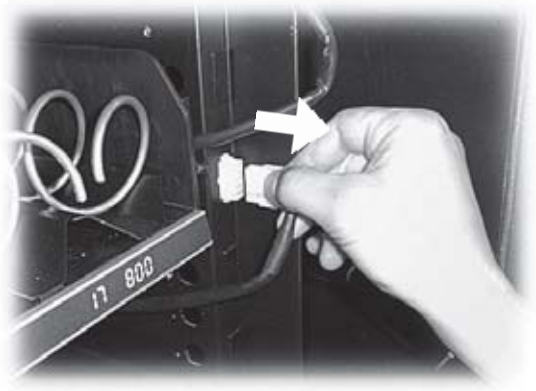


Fig. 134

- remove the tray completely;
- disassemble the right guide channel of the tray removing the front screw (Fig. 135);

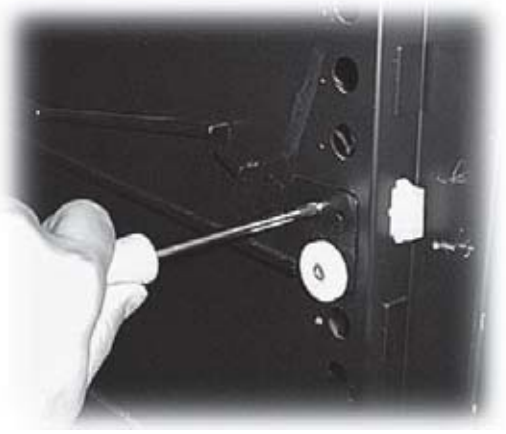


Fig. 135

- remove the guide channel from its seat (Fig. 136);

Fig. 136

- choose the desired seat in the vertical rod to reposition the guide channel. Retighten the previously removed screw;
- disassemble and reposition the left guide channel in the same way, paying attention to reassemble it at the same height as the right guide channel;
- slip in the tray and restore the power connection.

Important

If the tray is not connected to the preceding connector, you may need to reprogram the sales parameters of the products.

10.4 Software updating

The v.m. control program is in the flash memory inside the microcontroller.

The software can be updated using via the external EPROM or FLASH memory;

The following is the general procedure of the operations to be carried out for the above mentioned updates.

External EPROM or FLASH memory;

The procedure is the following:

- turn off the vending machine;
- disassemble the TIMEKEEPER (if present);
- insert the external memory on a strip of 16x2 (Fig. 137) with the section showing the PIN turned upwards; Make sure the memory pins are all fully fitted, so that it perfectly fits the strip 16x2.

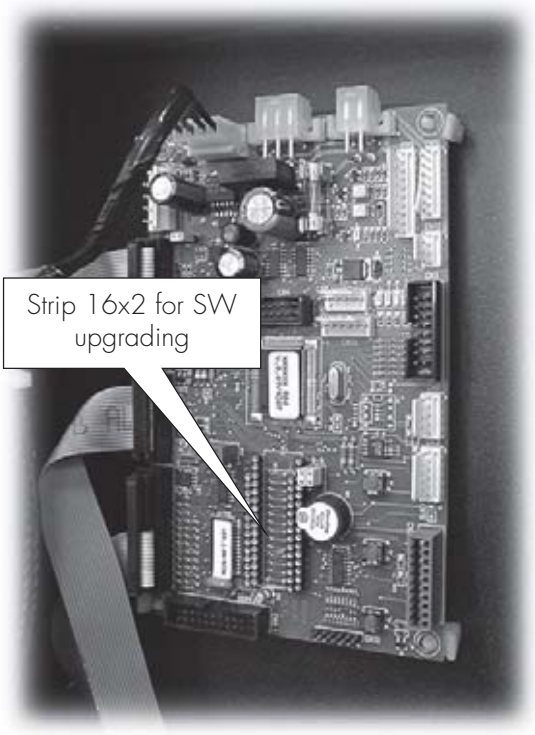


Fig. 137

- switch on the vending machine. The vending machine checks if a suitable external memory is present. It this is the case, the following message is displayed:

```
PRESS P1 TO UPDATE
FROM VX.yz >TO A.bc
```

- the message on the second line indicates that if the program is updated you will pass from the current version (X.yz) to the update flash version (A.bc);
- to upgrade the software press the internal button P1 (near the corner) of the CPU board, any other button will abort the operation
- the software requires abt 30 seconds to be updated and the procedure end is signalled by a message on the display;

```
UPDATE COMPLETED
```

- switch off the vending machine;
- disassemble the external memory;
- if required, assemble the TIME KEEPER.

11 DISPLAY MESSAGES

This section will show the messages displayed:
- during normal operation;
- in case of failure (error messages).

11.1 Messages during operation

The table below shows a list of messages displayed during the standard operating phases.

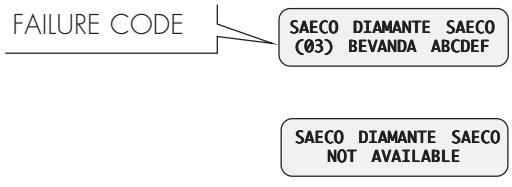
Error cedes	Message	Cause	Remedy
/	SAECO DIAMANTE SAECO	The vending machine is waiting.	
/	WAIT FOR PRODUCT	Beverage dispensing in progress.	
/	CLOSE DOOR	Dispensing outlet door open	Close the door
/	SUGAR 1-x SUGAR 2-xx SUGAR 3-xxxxx SUGAR 4-xxxxxxx	SUGAR QUANTITY to be dispensed with the beverage.	
/	DECAFFEINATED	Preset DECAFFEINATED	
/	SELECTION x ?	Waiting for snack selection second number.	
/	CAFFEE NOT AVAILABLE	Coffee beans hopper is empty.	Carry out the supply (see section 7).
/	NOT AVAILABLE	Type of product not available.	
/	USE EXACT CHANGE	The coin stacking tube level is under the preset limit.	Add coins into the change-giving coiner.
/	NO LINK	The VM does not detect any communication if the payment system is selected	Check the dialogue with the payment system

11.2 Error messages

The vending machine is able to detect a series of anomalies that may bring to a full or partial stoppage of v.m. functions. In case of a total stop, the first line of the display will show the out-of-service message, while the second line will display the failure code, for exemple:

In this case the vending machine is out of service. To bring it back into working order again, you need to remove the cause of the anomaly and possibly carry out the error reset procedure described at 8.3.3.

If the stoppage of the vending machine is only partial, it normally operates but uses the second line of the display to inform the user of the failure occured, for example:



In this case the second line of the display shows two messages that alternate to inform that the hot beverages A, B, C, D, E, F, are not available due to anomaly 03 (blocked coffee brewing unit 3). The remaining beverages (F, G, H) and all the snacks are available as normal.
To bring the vending machine back into full working order, you need to remove the cause of the trouble and possibly carry out the reset procedure of the errors described at 8.3.3.

Error code	Message	Cause	Remedy	This error blocks
01	NO WATER	Failure in the hydraulic circuit (faulty electrovalve, the mechanical servo control closes the electovalve).	Drain the water pipe (Fig. 139 – Point 12.2.1) and solve the problem.	HOT DRINKS
		Water network not working.	Check the hydraulic network	
03 - 04	BREWING UNIT BLOCK	Coffee unit is blocked.	Remove the cause of the blockage.	Beverages with coffe beans
05	NO FLOWMETER	Turbine not turning: 1. pump not working; 2. electrovalve blocked 3. water circuit clogged 4. turbine not working.	1. Check electric connection. 2. Check electric connection. 3. Check the water circuit. 4. Replace the turbine.	HOT DRINKS
06 - 07	ARM. DISP. BLOCKED	Dispensing arm is blocked.	Remove the cause of the blockage.	HOT DRINKS
08	NO CUPS	The cup loader is empty.	Add the cups (see 7.4).	HOT DRINKS
10	CUP DISP BLOCKED	Cup dispenser blocked	Remove the cause that determined the block.	HOT DRINKS with cup
14	TEMP. SENSOR ERROR	Trouble with temperature sensor	Check sensor efficiency. Call the maintenance technician or contact the authorized service centers.	HOT DRINKS
16		Control unit error in data input into memory.	Switch off the vending machine, assemble the TIME KEEPER and switch it on again.	Vending machine
20		No brew group	Fit the brew group properly	Beverages with coffe beans
22		Problems encountered while dispensing coffee	Check grinding, coffee dosage and the coffee-dispensing unit	Beverages with coffe beans
25		Saeco card without timekeeper.	Remove the cause of the message ERROR 27.	Vending machine
26		Compressor working for more than 4 hours with a faulty probe. This message is signalled after the ERROR 27 persists for 4 hours.	Switch off the vending machine. Check the connection of the probe and replace it if necessary. Switch on the vending machine again.	SNACKS
27		Fault in the ambient temperature probe	Check the connections, reset the faulty motors and if necessary contact your authorized customer service center.	SNACKS
28		All motors missing or faulty	Switch off the vending machine. Check the connection of the probe and replace it if necessary. Switch on the vending machine again.	SNACKS
29		Fault in the refrigerating system probe	Check the connections, reset the faulty motors and if necessary contact your authorized customer service center.	SNACKS
32		Automatic restart of the payment system manager	Notify Authorized Customer Service Centre.	

12 STORAGE - DISPOSAL

12.1 Change of location

Should the vending machine be positioned in another site you need to:
- unplug the machine;
- empty the coffee bean hopper, as well as the soluble and sugar containers;
- empty the snack/bottle trays;
- empty the AIR BREAK device. Slide out the spring from the right pipe (Fig. 138) and convey the water into a container. After draining completely the pipe, fit the spring back into position;

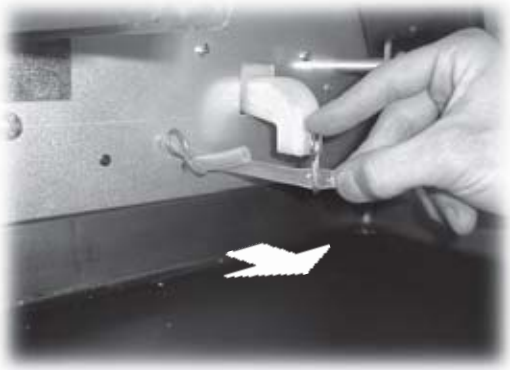


Fig. 138

- carry out the boiler draining cycle (maintenance menu);
- drain the water pipe. Slide out the spring from the left pipe (Fig. 139) and convey the water into a container. After draining completely the pipe, fit the spring back into position;

Fig. 139

- turn off the vending machine through switch 15 (Fig. 1);
- empty the coffee grounds bag (see 10.2.3);
- empty the discharge fluid tank and wash it (see 10.2.4);
- clean the vending machine as indicated in section 10;
- reassemble the components and close the doors;
- raise and position the vending machine in the selected site as indicated at 5.2.

12.2 Inactivity and storage

When the vending machine needs to be stored or remains inactive for a long period, it is necessary to carry out the same operations as described in 12.1. So you need to:

- wrap the vending machine with a tarpaulin to protect it from dust and dampness:
- check that the vending machine is in a suitable place (the temperature should not be less than 1°C) taking care to not lean any boxes or appliances over it.

13 INSTRUCTIONS FOR END-OF-LIFE DISPOSAL TREATMENT

This product complies with EU Directive 2002/96/EC.

The symbol  on the product or on its packaging indicates that this product may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.
By ensuring this product is disposed of correctly,you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Important

The diposal of the vending machine or of a part of it must be carried out with full respect of the environment and according to local laws in force.

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