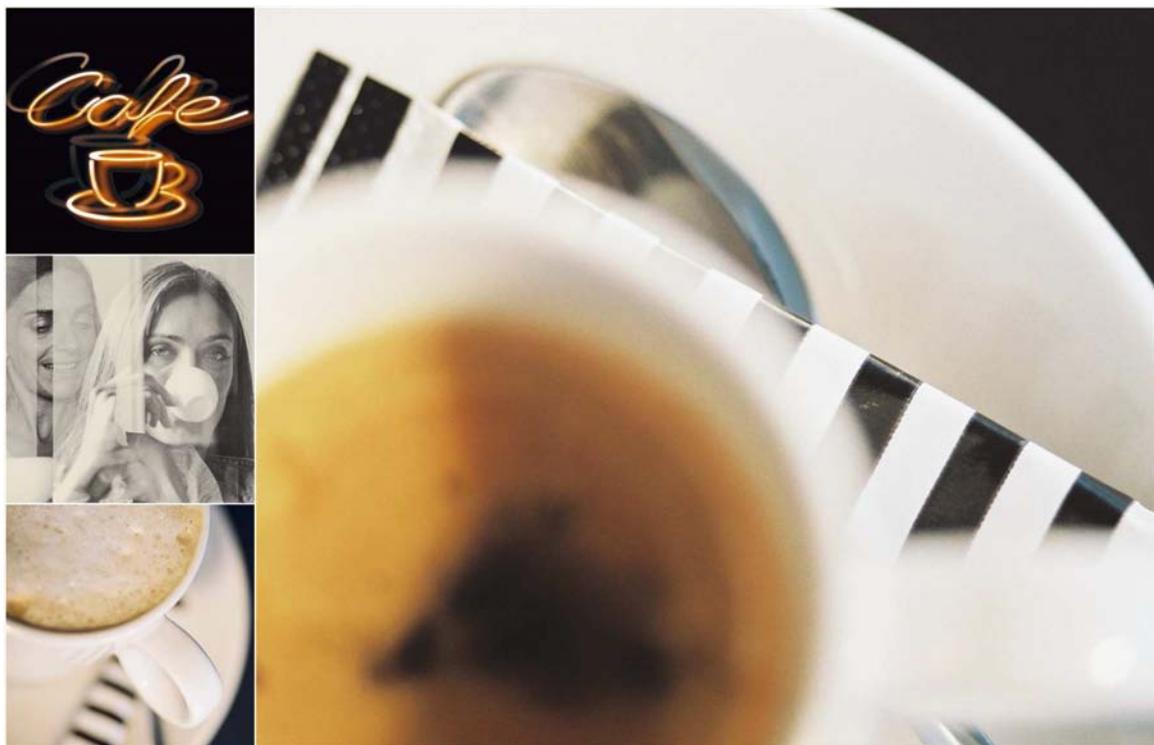


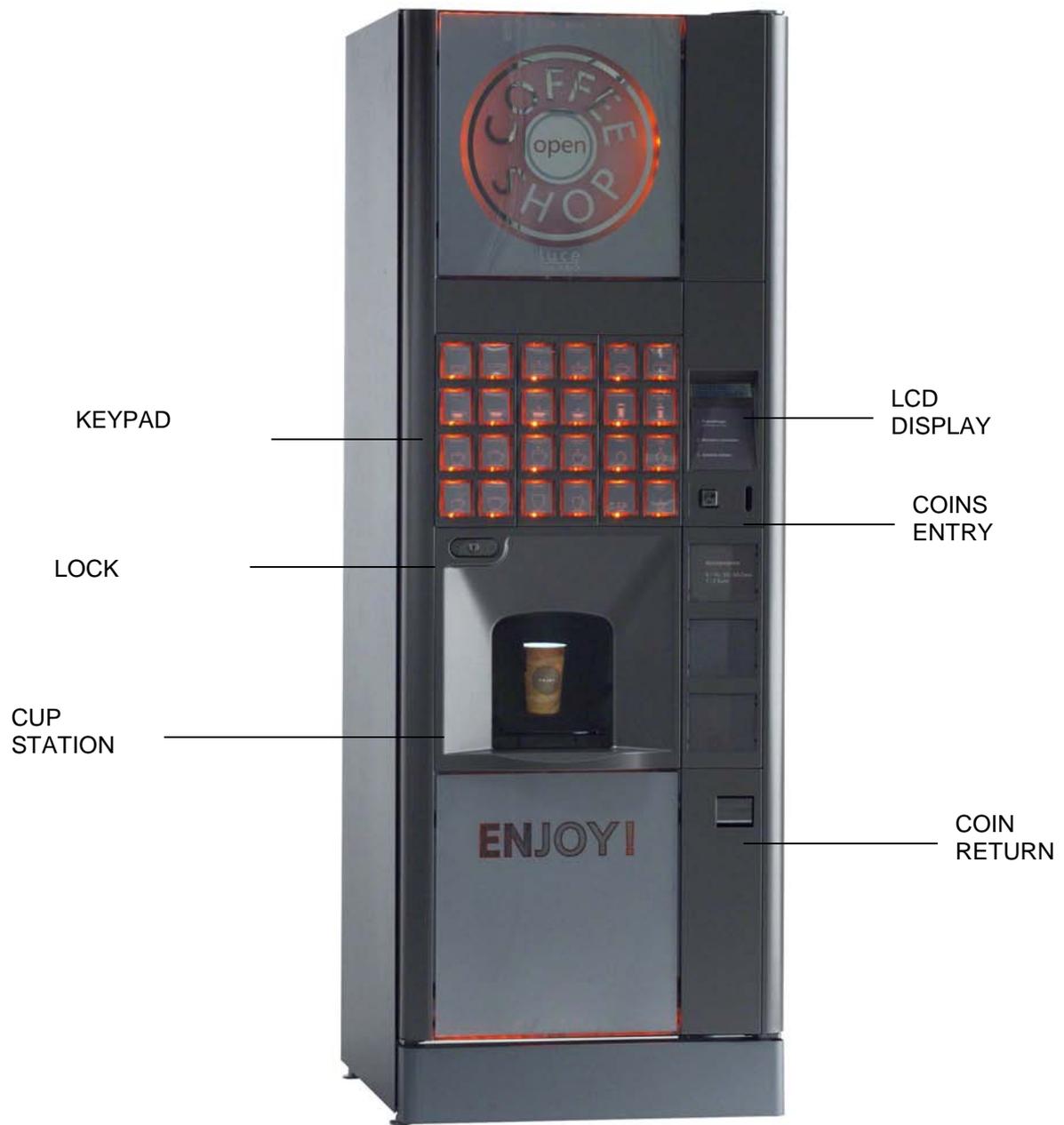


 **luce x2**
TYPE FST 3



Installation and maintenance manual
To be kept inside the machine

MAN4200005 Vers. 2 - 12/10/10



KEYPAD

LOCK

CUP
STATION

LCD
DISPLAY

COINS
ENTRY

COIN
RETURN

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1 Technical Data and Declaration of Conformity

DIMENSIONS

Height 1830 mm
Width 640 mm
Depth 705 mm

WEIGH

From 160 Kg to 190 Kg

CONNECTION TO THE MAIN WATER SUPPLY

Water inlet pressure between 0,1 MPa (1 bar) and 0,8 MPa (8 bar); mains water connection 3/8" gas female

CONNECTION TO THE ELECTRICAL SUPPLY

230 V ~ 50 - 60 Hz; Power consumption between 1700 W and 3100 W according to the version.

SOUND PRESSURE LEVEL WEIGHING-A

< 70 dB

DECLARATION OF CONFORMITY

Rhea Vendors S.p.A. declares that this vending machine has been planned and made in conformity with the following directives and security norms:

Directives:

2004/108/EC; 2006/95/EC
2002/95/EC (RoHS); 2002/96/EC (RAEE); 1238/07/EC (REACH)

Norms:

SAFETY: part. 2-75 (Particular requirements for commercial dispensing appliances and vending machines)
EN 60335 - 1:2002 + A11:2004 + A1:2004 + A12:2006 + A2:2006 + A13:2008 and EN 60335-2-75:2004+
A1:2005+A11:2006+ A2:2008

EMC: EN 55014-1:2006
EN 55014-2:1997 + A1:2001
EN 61000-3-2:2006
EN 61000-3-3:1995 + A1:2001 + A2:2005

EMF: EN 62233:2008

Machine's manufacturer: **Rhea Vendors S.p.A.**
via Trieste 49, Caronno Pertusella (VA)
I - 21042

The legal Agent



(A. D. Majer)

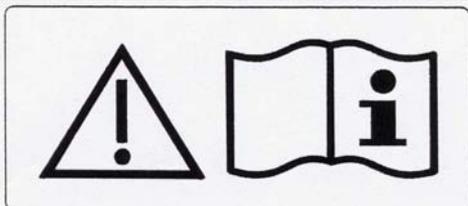
1.1 Copyright Information

© M.P.R. - All rights reserved.

This document contains confidential information, which is property of Rhea Vendors S.p.A. The content of this document cannot be neither circulated to third parties, nor copied or duplicated in any form, without previous written consent by Rhea Vendors S.p.A. Use, duplication or divagation of technical information contained in this document can be subject to legal protection by Rhea Vendors S.p.A., via Trieste, 49, I-21042, Caronno Pertusella (VA), Italia.

THIS MANUAL MUST BE KEPT INSIDE THE MACHINE.

Installation and maintenance manual Automatic Vending Machine TYPE FST 3 LUCE X2



WARNING: You find this warning label placed next to the serial number label inside the machine. It advises the user that a careful reading of this Manual is necessary before installation and use of the machine.

2 Introduction

We congratulate you on your choice of a Rhea Vendors S.p.A. automatic vending machine. This product has been designed by experts and it has been manufactured according to the high quality standards, which have always been a characteristic of all Rhea Vendors S.p.A. products. This instruction manual will help you to acquire a better knowledge of your machine. We recommend you to read it with the maximum attention and to follow the advice given in the text.

The present manual includes all information and instructions for loading and cleaning operations of the vending machine, as well as instructions reserved to technical personnel for performing maintenance operations of more complex nature. This is the reason why the manual pages are clearly identifiable with relation to the technical preparation of the user to whom they are destined:

Text with grey background: for any person having access to the interior of the vending machine. These pages consist of an introduction, sections of general interest and sections concerning loading and routine cleaning.

Text with normal background: these are for use by qualified technical personnel only. They include all operations related to installation, adjustment, and extra ordinary cleaning and general maintenance.

All information contained in this manual are aimed to obtain from the machine the best performance within the limits of use set by the manufacturer.

This Manual is integral to the equipment and must be available inside the machine until final deplacement. Inside the rear door of the machine there is a suitable pocket where the Manual should be kept.

In the event of loss or damaging of the Manual, to obtain an extra copy it will be necessary to supply to the manufacturer all the identification data appearing on the identification sticker.

In compliance with the Company's endeavour to adopt technical improvements whenever possible, Rhea Vendors S.p.A. reserves the right to ameliorate future production (and the contents of future Manuals) without prior notice and without any obligation of updating the products on the market.

The Technical service department of Rhea Vendors S.p.A is at your disposal for any further information. Just call or send a fax at the following numbers:

☎ +39.02.966551

☒ +39.02.9655086

or surf our web site www.rheavendors.com or send an e-mail at the address rheavendors@rheavendors.com.

In order to speed up the response to your requests it will be necessary to supply:

- All data appearing on the Serial Number Label.

CAUTION: Rhea Vendors S.p.A. is not liable for any damage that could affect, directly or indirectly, any person or property as a consequence of:

- Incorrect use of the vending machine.

- Incorrect installation.

- Unsuitable electrical or water supply.

- Major shortcomings in maintenance.

- Technical interventions or alterations of unauthorised nature.

- Adoption of non-original spare parts.

In the event of breakdown, Rhea Vendors S.p.A. has got no obligation whatsoever neither to compensate any economical damage deriving from the inactivity of the machine nor to extend the warranty period.

3 Description of the Equipment

3.1 Use

The LUCE X2 Vending Machine, in its different models, is an appliance meant for general use (non-professional). The Vending Machine is supposed to supply beverages automatically, mixing ingredients with water.

The distribution of beverages will take place into suitable cups automatically supplied by the machine itself.

WARNING: The appliance is not to be used by children or people with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are under supervision or receive punctual instruction. Children must be under supervision so that they do not play with the appliance.

3.2 Denomination of the models

Rhea Vendors S.p.A. adopts the following conventional codes for the definition of the different versions:

TYPE FST 3 <coffee>/<canisters> [<cold>] [<options>]

LUCE X2

where:

<coffee> states the main process for the preparation of coffee:

I ... Instant coffee (from soluble products)

E... Infusion process through a high pressure Espresso Coffee brewer

EE... Infusion process through a high pressure Espresso Coffee brewer from two different coffeebeans blends

<canisters> states the number of all product canisters. Capacity and variety of types of beverages that can be supplied by the vending machines will depend on this number.

[<bold>] states the type of cold beverage obtainable from the machine (if a refrigeration unit is present)

FP... cold beverages from powdered products with natural water

FG FP... cold beverages from powdered products with natural water and cold water with gas

BB ... cold beverages from syrups

3.3 Obtainable Beverages

All beverages obtainable from your machine are shown in the list attached to this manual, and they vary substantially according to the version of the machine.

It is possible to program the machine by the Rreaction software



using the Rhea black flash card. For further information contact Rhea vendors Customer Service.

4 Advice for the installer

Installation and maintenance operations described in text with normal background (white) must be carried out only by qualified technical personnel.

WARNING: For a correct operation, the machine must be installed indoors with operating temperature higher than 5°C in normal conditions of use.

WARNING: Forestall the machine and the ingredients freezing.

WARNING: Given the sensitivity of some ingredients used in the machine to excessive temperature and humidity, some malfunctions may occur if the machine is operated at temperature higher than 30°C or with relative humidity exceeding 80%. Under these conditions the components in contact with the powdered ingredients must be cleaned at least once a day.

WARNING: The maximum operation temperature is 95°C .

WARNING: The operations described in Text with normal background must be developed by qualified technical personnel only.

WARNING: Installation in premises where water jets are used (e.g. large kitchens) is to be avoided.

The LUCE X2 vending machine, that you have bought, has been manufactured according to the norms and regulations related to the non-toxicity of those parts coming in contact with foodstuffs and electric insulation. The machine is mounted inside of an industrial cleaned ambient. The person entrusted with the mounting and the test operations is subjected to frequent sanitary examinations to confirm his attitude. However, freight conditions, period of stay in the warehouse and possible handling due to the installation of the vending machines do not allow using it immediately. The machines, before their use, must be subjected to a cycle of sanitary tests as per the instructions shown in paragraph "Cleaning and disinfecting of those parts coming in contact with foodstuffs".

WARNING: Do not clean the machine with water jets.

WARNING: Respect the NATIONAL RULES for machines directly connected to the main water supply.

WARNING: The use of the safety key can make in movements internal parts of the machine.

WARNING: Install the machine placing the electrical plug easy accessible.

WARNING: The machine must be installed following the NATIONAL NORMS and only in good airy places.

WARNING: Use only ingredients specific for semi-automatic vending machines.

WARNING: The personnel in charge of the loading of the ingredients must own a valid certificate of good health following local and NATIONAL NORMS and be equipped with specific protections. Furthermore, compliance with any other domestic or local regulations must be checked.

5 Basic Operating Principles

The powered machine is normally in the stand-by mode. When a video button is touched, a vend cycle starts. If a sale price is pre-set (i.e. the machine is not pre-set for the free vend mode), before selection the required amount of money must be inserted by means of coins, bank notes or other.

According to the selection required and to the model of the machine, the vend cycle is composed by some of the following procedures.

5.1 Dispensing and positioning of the cups



If it is not disabled, the cup dispensing procedure is carried out before all vend operations are started.

Through the action of the unclamping servomotor, the cup is detached and falls in the appropriate support.

5.2 Dispensing of sugar

This supply is pre-set only for the models of machine equipped with the sugar dispensing group (models **E - EE**) in the event sugared beverages being selected. For the other models, always when the beverage requires it, the sugar is dispensed simultaneously with the preparation of the instant beverages and with the same procedure (see after).

- 1) The geared motor activates the screw feeder in the sugar canister which pours the correct quantity of sugar in the dispensing unit;
- 2) The servomotor of the dispensing unit causes the slide movement and the following pouring of the sugar in the cup.

5.3 Preparation of hot beverages from soluble ingredients

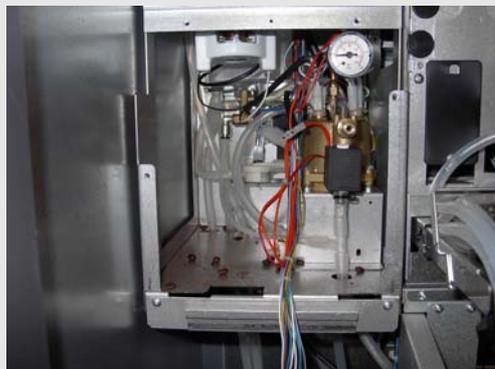


This procedure is usually carried out after the cup is correctly positioned under the outlet pipes of the beverage. More than one procedure of this sort can be carried out simultaneously or in sequence during a vend cycle.

- 1) One of the boiler pump is activated for a pre-set time to transfer the quantity of the required water into the correct mixing bowl;
- 2) If supplied, the mixer motor is activated;
- 3) The geared motor activates the screw feeder, in the canister of the corresponding ingredient, which pours the correct quantity of ingredient in the mixing bowl. More than one canister of ingredients can be activated simultaneously for the same mixing bowl;
- 4) The boiler pump is switched off;
- 5) If present, the motor of the mixing bowl is switched off;

5.4 Preparation of the espresso coffee

This procedure is carried out only in the models equipped with the espresso coffee group (**Version E - EE**) and after the cup is correctly positioned under the outlet pipes of the beverage. The execution priority between this procedure and the procedure for the preparation of hot beverages from instant ingredients is pre-set by the programme of the machine and varies according to the selection chosen.



- 1) The coffee grounds are ejected (this can occur also after 10 minutes of rest of the micro coffee group) and the group moves to receive the coffee dose;
- 2) The electromagnet of the coffee throw dispensing unit is activated and the canister is open. The correct quantity of ground coffee flows by gravity in the brewer of the espresso coffee group; *

- 3) The coffee grinder is activated until the pre-set quantity in the throw dispensing unit is restored;
 - 4) The coffee group moves to the infusion position: this occurs when the group movement motor is started. The lower filter is moved to close the brewer and press the preset throw the compress of ground coffee; *
 - 5) The water coming from a water refilling tank, in which the water level is kept constant, is conveyed by pressure in the coffee boiler by means of a pump. After the activation of a solenoid valve, the same quantity of warmed up water is then conveyed to the coffee group.
 - 6) The coffee group ends the cycle.
- * The operations marked with asterisk may be carried out in a different order according to the electronic presetting of the machine.

5.5 Dispensing of the stirrer

This procedure is carried out only in models equipped with stirrer feeder (**Version E**), and it is carried out when the cup is correctly positioned under the outlet pipes for the beverage vending. The stirrer can be dispensed before or after the preparation of a beverage, according to the machine programme and selection made. Furthermore, a programmable function allows the user to pre-set selections for which the stirrer is to be dispensed.

- 1) The unclamping electromagnet detaches the stirrer from the stack in the feeder. The stirrer slides in the cup.

5.6 Preparation of cold instant beverages

This procedure is carried out only in the models of machine equipped with the refrigerating group for natural water (versions **FP – FG – BB**), usually when the cup is positioned under the outlet pipes for the beverage vending.

- 1) If present, the mixer motor is activated (**FP** version);
- 2) The geared motor activates the screw feeder of the canister of the corresponding ingredient, which conveys the correct quantity of ingredient into the mixing bowl. More than one canister can be activated simultaneously for the same mixing bowl;
- 3) The corresponding solenoid valve in the refrigerating group is activated and the correct quantity of water is poured into the mixing bowl to dissolve the ingredients;
- 4) If present, the mixing bowl motor is switched off.

6 Transportation

Only qualified personnel must move the machine.

The machine must be carefully transported as any overturning of the machine is to be avoided.

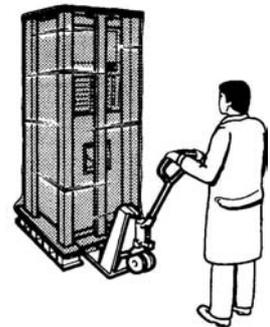
WARNING: The machine must be kept vertically positioned when moved to another location with the topline indicated on the box towards up. DO NOT OVERTURN THE MACHINE to avoid damages to the electronic boards.

The machines are carried on pallet.

WARNING: They must be moved on with dolly, at reduced speed and preventing any excessive bending movement of the machines.

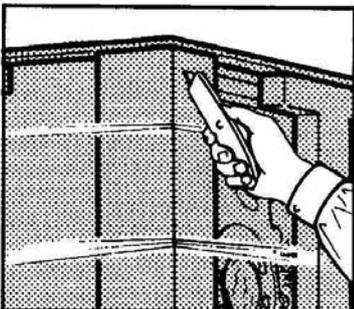
WARNING: the machine weighs from 160 to 190 Kg ca. Take care during transfer to avoid accidents to people (example: muscular rip, hernia, etc.).

If the machine must be stocked for a period before installing it, please keep the machine in a dry place (the relative humidity must not exceed 80%), with temperature between 5°C and 30°C. Do not place on one machine more than another one. Do not overturn the machines.

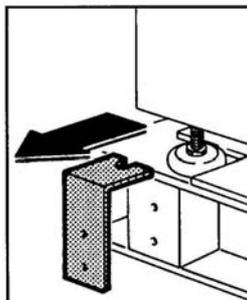


7 Unpacking

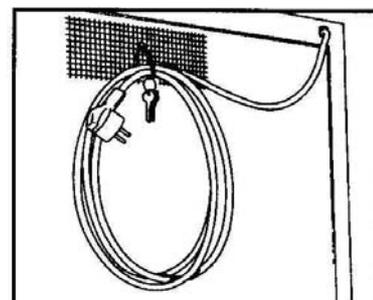
The machine must be unpacked as follows:



- 1) Cut the protection film along one of the protection angle bar around the machine



- 2) Remove the pallet from the machine by lifting the two lateral hooks;



- 3) Take the key on the rear of the machine, near the power supply cord.

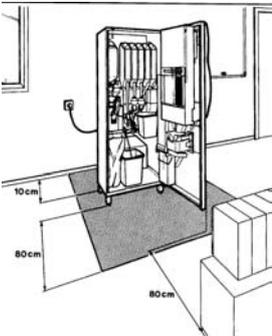
WARNING: the packing materials must be kept out of the reach of unauthorized people, specially children, as potentially hazardous. The disposal of special packing materials must be carried out by qualified waste recovery companies.

- Open the door and remove the adhesive tape from:
- the drops tray
- remove the board prism positioned between the canisters of the ingredients and the top of the cabinet.

8 Positioning

The machine must be installed indoor on a flat and sound floor. If the machine is installed in a safety gangway, the remaining opening of passage between the machine with the open door and the nearest obstacle must be at least 80 cm. Anchor the machine to the rear wall as follows:

- loosen the two screws which lock the fixing bracket on the machine cover;



- turn the bracket by 180° and fit it again to the machine by means of the appropriate screws previously removed;
- move the machine near the wall until the bracket rests against the wall;
- regulate the feet placed under the machine for a correct levelling: there must be less than 2° offset of the machine vertical axis with respect to the vertical axis of the wall;
- drill the wall with a diameter 8 mm pin, using the bracket as drilling template;
- fix the bracket to the wall by means of the screw anchors supplied in the waste disposal bucket.

Rhea Vendors S.p.A. declines all responsibility for any shortcomings caused by non compliance with installation instructions.

If the machine is installed on delicate or valuable floors, it is advised to lay a carpet under the machine, about 80 cm larger than the machine itself, made of rugged material, resistant to dirt and water (e.g. synthetic laminate). This is to protect the floor and also prevent it to get dirty for the accidental spilling of beverages. A schematic general lay-out is indicated in the figure.

9 Connection to the mains water supply and to the electrical supply

9.1 Connection to the mains water supply

Before proceeding to the connection carry out the following checks on the water to be used:

- Make sure that the water supply is of drinking quality possibly through certificate of a laboratory;
- Make sure that water mains pressure ranges from 0,1 MPa (1 bar) to 0,8 MPa (8 bar);
- If the mains pressure is lower than 0,1 MPa (1 bar), a pump must be installed;
- If the mains pressure is higher than 0,8 MPa (8 bar), a pressure reducer must be mounted, calibrated at 0,3 MPa (3 bar), on the water connecting hose of the machine; in any case the mounting of a pressure reducer is advisable in all installations where high pressure peaks occur.

If not already existing, install a 3/8" gas tap to exclude the machine from the mains source in case of emergency.

Connection of the tap to the machine must be made with a copper or plastic hose, which has been approved for food contact use and resistant to operating pressure not lower than 1 MPa (10 bar).

WARNING: connection to main water supply must be carried out by means of the pipes stored in each machine. No other equipment is admitted.

Make sure that the water is free of impurities and does not feature excessive hardness (higher than 20 French Degrees). This shortcoming can be solved using normal water softeners. Lime scale can be notably reduced by the use of the filter, ensuring a longer life of all components in contact with water and reducing maintenance.

Carry out the connection on the inlet coupling of the water softener or, should the filter not be mounted, directly on the inlet coupling of the water inlet solenoid valve.

The water softener and the water inlet solenoid valve are both provided with a 3/8" gas male inlet coupling.

If a water softening filter is mounted, the water hardness must be taken (special kits are available for sale) in order to define how often the filter shall be regenerated. This depends on the rate of use of the filter and on the grade of water hardness (see section "Regeneration of the water softener filter").

9.2 Connection to the electrical supply



Make sure that the grounding of the electrical mains to which the machine will be connected is in good conditions and in compliance with domestic and European standards concerning electrical safety.

The machine is equipped with a power supply cord H50VV-F 3x1.5 mm² with Shucko plug.

WARNING: place the machine with the electrical plug easily accessible.

Make sure that the electrical mains voltage is the same as indicated on the identification sticker of the machine and that the current rating of the plug is suitable for the current absorbed by the machine. The identification sticker is put inside the machine and can be seen opening the door. For connection, an electric plug, single-phase, 230V 50 Hz, for a maximum load of 16A is required.

Any type of plug, which is incompatible with the socket of the machine, must be replaced.

Warning: The replacing of the power supply cord must be carried out only by qualified and authorised technician.

Do not use adaptors or multiple plugs.

10 How to activate or deactivate the machine

10.1 Safety switch



A safety switch is provided in the machine which cuts the power off all electrical and electronic components in the machine when the door is opened. **If required, to switch the machine off open the door of the machine or unplug it from the electrical mains.**

Some operations will require to have the machine switched on and with the door open. To activate the machine with the door open, when specified in the instructions, insert the special plastic key, hanging on a cord near the switch and turn it clockwise by 90°.

WARNING: the opening and switching on of the machine with the door open (unless for cleaning operations) must be carried out only by authorised, qualified personnel. Do not leave the machine open unguarded.

10.2 Diagnostics cycle of the switching up

When the safety key is inserted, the machine carries out a diagnostics cycle to check the position of the mobile components, the correct quantity of some ingredients and the correct water mains supply pressure. The display shows:

rheavendors	03-07
LUCE X2 PB	V 1.A 03-07-07
LUCE X2 SM	V 1.A 03-07-07
Instant unit	Vers.1.B
Cold unit	Vers.1.A
Espresso unit	Vers.1.A

versions of the master files loaded in the vending machine (i.e vers. 1.A). At the end of checks, the standard invitation message will appear on the display, e.g.:

X2 PB
Espresso

rheavendors

During the installation procedure, the following messages are displayed:

water refilling

Please wait
temperature

meaning that some functions of the machine are temporarily inhibited for an easier and safe installation. In these phases, these messages replace the standard invitation message. In case of doubt, refer to installation instructions.

11 Start-up operations

11.1 Installation - Phase 1



The phase 1 of the installation of the vending machine contains the water loading of the boiler (**Version SM**) and the setting of the temperature of the boiler.

First installation phase foresees the following steps:

- Instant boiler water refilling;
- Water tank and Espresso boiler water refilling (**Version E - EE**);
- Cold unit water manual refilling (**Versions FP - FG -BB**);
- boiler and cold unit temperatures setting (**Versions FG -BB**)

11.1.1 Loading the boiler and setting temperature

Place the liquid waste disposal bucket on the bottom of the machine, sliding it in the appropriate guide tracks, and insert the drain pipes, the pressure relief tube. In case of **FP- FG -BB** version switch off the machine and fill in the cold unit with about 3 lt of water in case of Cold natural unit and with 1,5 lt of water in case of Cold unit with gas. Open the tap of the water circuit. Insert the key in the safety switch. After the switching on messages, the display shows:

Please wait
water refilling

The machine starts automatically loading water inside the boiler and inside the water tank. The boiler is filled up in about 3 min. The following message appears on the display.

Please wait
temperature

rheavendors
LUCE X2

Switch off and on the vending machine using the safety switch

The display shows:

PLEASE WAIT
TEMPERATURE

Until the right temperature is reached inside the boiler. At the end of the operation the display will shows:

rheavendors
LUCE X2



Make some coffee brewer and mixing bowls rinsing cycles to verify if water refilling has been carried out correctly. Use for this operation buttons **cc** an **MIX1**, **MIX2**, **MIX3**... on the service key pad placed on the door inside the machine.

11.2 Phase 2 of the installation

The phase 2 of the installation of the vending machine contains the cleaning of the parts in contact with foodstuff, the loading of the food products and the installation of some accessories.

11.2.1 Washing and disinfecting of components in contact with foodstuff.

With the vending machine switched on, make sure that the display shows:

LUCE X2

rheavendors

Make in sequence all the mixing bowls and coffee brewer rinsing cycles, pressing buttons **cc** an **MIX1**, **MIX2**, **MIX3**... on the service key pad placed on the door inside the machine. Use about 4 litres of water altogether. This will remove any possible trace of dirt from the boiler for instant ingredients.

In case of **E - EE** version coffee brewer rinsing cycle can be carried out using a specific vending cleaning product. Please follow cleaning product instructions.

Wash hands thoroughly.

Prepare separately, in a suitable container, a disinfecting antibacterial solution of chlorine, according to the instructions enclosed in the chemical.



Remove all the ingredients canisters from the machine (including the canister for coffee in beans, if present) separate the main body from covers and slides and immerse all parts in the solution previously prepared.



Remove aspiration unit of the mixing bowl. Turn in the clockwise sense the red lever under the mixing bowl. Remove the mixing bowl itself, the bowl support and the mixer's fan. Remove the silicone beverage outlet tubes and pertaining supports. Immerse all parts in the solution.

Using a cloth soaked in the solution, proceed to clean also the attachment bases of the mixers, which remain fixed to the machine. The time of permanence in the solution, in order to obtain a full disinfecting, is stated on the packaging of the chemical. At the end of the disinfecting, recover canisters and covers, dry them very carefully (using compressed air, a hair dryer or perfectly clean and sterile cloths) and reassemble them in the machine. Recover all other parts from the solution and put them back in the machine in opposite sequence with respect to disassembly. Carry out repeatedly rinsing cycles of the mixing bowls. Use about 2 litres of water altogether. This will remove all traces of disinfecting solution from the outlet pipes.

11.2.2 Refilling of ingredients

Read on the canister the indication of the ingredient to be loaded into the machine. Fill up the canister of the ingredients, after having removed the cover. Use a quantity of product suitable for a period between two refillings, and in any case do not exceed the quantities shown in the table here below.

PRODUCT	QT.
1 Cups Column depending on customer requests 70 mm plastic/paper 73 mm plastic/ paper	700 670
2 Cups Columns depending on customer requests 70 mm plastic/ paper 73 mm plastic/ paper 78 - 80 mm plastic/paper	450 430 400
Coffee beans (E) single canister	5 Kg
Coffee beans (EE) double canisters	2 x 3 Kg
Instant Coffee	1.2Kg
Sugar	5 Kg
Chocolate	3.5 Kg
Milk	1.4Kg
Instant Tea	4.4Kg
Stirrers (89 mm – 104 mm – 115 mm)	600

This will prevent deterioration of the quantity of product in excess.



Canisters for soluble ingredients can be removed from the machine, in order to facilitate refilling. Rotate the slide lock in order to avoid to spill powder. After having refilled, refit the canister and open the slide lock.



For E - EE version close the coffee beans tongue before removing the coffee beans canister form the machine and open it after replacing it.

11.2.3 Refilling of cups

It is recommended to use only cups specifically designed for automatic vending machines. Check the below table to verify the compliance with cups.

CUPS	

1 cup dispenser version		Ø 70mm 160cc	700 plastic/paper cups
		Ø 73mm 200cc	670 plastic/paper cups
2 cups dispenser version	(qty for each dispenser)	Ø 70mm 160cc	450 plastic/paper cups
		Ø 73mm 200cc	430 plastic/paper cups
		Ø 78mm 300cc	400 plastic cup
		Ø 80mm 300cc	400 paper cup

The distance between the rims of two cups stacked and positioned side by side must be between 2.6 and 3.2 mm. Should it be necessary to adopt cups having different sizes with respect to the above specifications, the Technical service Department of Rhea Vendors S.p.A. should be contacted in advance.

Before loading extract the safety switch.

WARNING: carry out the loading of cups only when the machine is switched off.

Proceed to the loading as follows:



Lift the cover of the cups columns tower.



Fill in with appropriate cups all the columns of the tower.



Do not overflow the column with the cups.



Place the cover over the cups columns tower.

Insert the key into the safety switch and wait until on the display appears that the machine is ready.



Then press the red button on the bottom of the cups column tower until a cup falls down. Extract the key. **WARNING: this operation must be carried on every time the cups columns tower remains completely empty. If you don't follow this step, first drink after the switching on will be dispensed without cup.**

Refilling of stirrers



The stirrer's feeder is standard fit on the models **E EE**, as an optional in models **I**. It is recommended to use only stirrers suited to automatic vending machines. The thickness of the stirrers must range between 1.2 and 1.8 mm and their length must be approx. 89 mm. If stirrers with different dimensions from those specified must be used, please contact the technical service of Rhea Vendors S.p.A.

When the machine is open and off remove the metal weight. Slide the stirrers still hold together with the packing band along the guide track and, once they have reached the end of the guide, rip the band off. Insert the weight again.

11.2.4 Inserting of the selection labels



The selection labels are supplied in the special pocket in the Manual. When the machine is open and off, remove both cups towers from the door of the machine. Unhook the fixing plate of the 3 labels modules and remove them from the panel. Remove the back protection from each module and place the selection labels following the menu programmed. Place in their previous positions the 3 modules, the fixing plate and the cups towers.

11.2.5 Application of the collection bag for coffee grounds

In models E-EE, 5 bags are supplied together with the machine to be used for the collection of the coffee grounds. They are in the liquid waste disposal bucket. Pull the support of the bag out from underneath the coffee brewer. Slide the bag around the support and replace the support and bag back to the original position.

12 Programming of the machine

12.1 Memory

The machine is controlled by a programme master stored in the microprocessor of the FLASH memory installed on the CPU board and by a slave programme stored into the microprocessor of the POWER board



CPU BOARD



SWITCH REGULATOR BOARD and POWER BOARD

The **master of the CPU** can be updated downloading it on a Rhea FLASH card and then inserting it into the FLASH slot of the **CPU board**.

The **master of the POWER board** can be updated downloading it on a Rhea FLASH card and then inserting it into the FLASH slot of the **POWER board**. For Espresso and Cold version further boards are foreseen.



ESPRESSO COFFEE BREWER BOARD



REFRIGERATOR UNIT BOARD

12.2 Factory set parameters

The machine is supplied already pre-set for the most common operation parameters. In particular:

- configuration of the version;
- throw of coffee, powdered ingredients, tea and quantity of water required;
- vend prices (set to 0: the machine is in the free vend mode);

- pre-setting for the use of the system of parallel payment;
- the clock function disabled;

The Data set of the machine must be modified only if the pre-set factory parameters are not complying with the required use. The parameters stored into the memory (**configuration file**) can be updated with **Rhea black flash card** programmed with the **Rheaction Program**.

- Download the configuration data file furnished from the factory on the flash card using the **Rheaction Program**;
- Switch off the machine;
- Insert the flash card into the flash slot in the front of the machine.
- Switch on the machine.
- Wait until the display shows:

1 = KEY ---> VMC
2 = VMC ---> KEY

- Press **button 1**. The display shows:

Programming
EAROM data

Programming
OK

- Switch off the machine.
- Extract the flash card.

12.3 How to enter and exit from the programming mode

To modify the operation parameters of the machine it is necessary to enter in the programming mode. To enter press the **key PROG** inside the machine on the CPU protection. The display shows:

PROGRAMMING ---
BUTTON 1 -----

Once the parameters have been modified, press again the **key PROG** inside the machine on the CPU protection. The display shows:

END PROGRAMMING

12.4 Buttons used in the programming mode

Programming is carried out by pressing buttons on the selection keypad. Notably:

- with **button 1** the sequence of programming sub-menus is visualised;
- with **button 6** the sequence of programming sub-menus is visualised in the reverse direction;
- with **button 2** the sequence of specific programming functions for the chosen sub-menu is visualised;
- with **button 3** the sequence of specific programming functions for the chosen sub-menu is visualised in the reverse direction;
- with **button 4** the value of the visualised function is increased or selected;
- with **button 5** the value of the visualised function is decreased or selected.



12.5 Programming sub-menus

Access to the programming sub-menus is possible at any time, after entering the programming mode and pressing 1 on the selection keypad. These sub-menus are repeated cyclically after the last one has been displayed. The sub-menus and their display order are as follows:

PROGRAMMING- --- -BUTTON 1 - - - - -
PROGRAMMING - - - -BUTTON 25 - - - - -
PROGRAMMING --- -PRICES - - - - -
PROGRAMMING --- -HAPPY PRICES
PROGRAMMING --- -COINS - - - - -
PROGRAMMING --- -TEMPERATURE ---
PROGRAMMING --- -MISCELLANEOUS --
DIAGNOSTICS - - - - - - - - - -
SALES AUDIT - - - - - - - - - -
PROGRAMMING- --- -MDB- - - - -
PROGRAMMING- --- -CLOCK- - - - -
REGISTRATION OUT OF ORDERS
PROGRAMMING PRODUCT QTY - - - - -
PROGRAMMING MAINTENANCE - - - - -
PROGRAMMING- - - - - RFID
TUNING PRODUCT MOTOR --- -
PROGRAMMING- - - - - ID MACHINE- - - - -

12.5.1 Pre-setting of buttons

The modification of throws is a delicate operation as the good operation of the machine can be affected. As a general rule, it is recommended to keep in mind that when instant ingredients are dissolved in water, a brief interval to rinse the mixing bowl must be foreseen at the end of the powdered ingredient vending. This is provided by programming a dispensing time for water about 2 sec. longer than the dispensing time for the instant ingredients. To each of the 16 buttons it is possible to associate the recipe of any drinks. To proceed at the pre-setting of each button, in the programming mode, press **1** until the display shows:

PROGRAMMING- - - -
-BUTTON 1- - - - -

Press **2** to visualise one of the following functions:

FUNCTIONING

INHIBITED

PRE SELECTION

Only for **FP** versions the display shows also the function:

FUNCTIONING
COLD

Scroll the functions pressing **4** and **5**. To inhibit button, which is going to be programmed, confirm **INHIBITED** pressing **1**.

Setting of a selection

To associate a **selection** to button, which is going to be programmed, confirm **FUNCTIONING**. For the **FP** versions it is possible programme cold drinks selecting the function **FUNCTIONING COLD**. Press **button 2**. The display shows:

COFFEE WATER
0=inhib. cc:

This parameter is present only in machines with the coffee brewer. Use this parameter to adjust the coffee beans water quantity. Activate this parameter only if you want to associate to this button a drink made with coffee beans. Increase or decrease the value pressing respectively **4** and **5**. To inhibit this function programme the value **0.0**.



The grounded coffee dosage can be manually adjusted, with the vending machine switched off and unplugged, moving the lever. Press again **2**.

Version **E - EE**. The display shows:

opt. coffee-milk
(0-1) X

Use this parameter to set the priority of starting between milk and ground coffee for drinks made with these ingredients. Increase or decrease the value pressing respectively **4** and **5**. Set this parameter at **0** if you want that milk starts before ground coffee and the value **1** for the opposite. Press again **2**.

Version **E - EE**. The display shows:

COFFEE BLEND
0



In case of double coffee beans canister use this parameter to associate the coffee beans blend to be used with this selection. Using buttons **4** and **5**, set **0** to select blend inside the canister on the left hand and **1** to use the one on the right hand side. Pressing in sequence **2** the display shows:

PRODUCT X
0=inhib. .0

The number of the product shows the position of the canister inside of the machine starting to count from the left the possible positions of the product motors. If the PRODUCT X is necessary for the drink that is being set, increase or decrease until the desired value, pushing respectively **4** and **5**; otherwise inhibit the ingredient setting its value to 0.0. If you press the **16**, you can dispense the quantity of product set. Only if PRODUCT 1 is not set at 0, entering again **2** the display shows:

start delay
PRODUCT X .0

Pressing respectively **4** and **5** increase or decrease the ingredient's pouring delay after the beginning of the selection. Pressing again **2** the display shows the same items for other products that can be set as the previous one following the recipe of the desired drink. The relative delays are shown only if the PRODUCTS are not at 0. Entering again **2** the display shows:

breaks number:
0

Entering respectively **4** and **5** increase or decrease the number of breaks during the dispensing of the product. The maximum number of programmable breaks is 2. I.e.: If you want that products be dispensed into two phases program this parameter at 1. Entering again **2** the display shows:

Latte-Mac. start Brewer:
0.0

Entering respectively **4** and **5** increase or decrease the coffee brewer start delay compared to Milk start in case of preparing the drink LATTE MACCHIATO. Pressing **2** the display shows:

PRODUCT LM
0=inhib. 0.0

Entering respectively **4** and **5** increase or decrease the milk motor activation time to add just second milk quantity for the drink LATTE MACCHIATO. The relative delay is shown only if the PRODUCT LM is not at 0, pressing **2** the display shows:

PRODUCT
MILK-LatteM n: 0

Pressing **4** and **5** to increase or decrease the number of the product motor correspondent to the canister in which milk is present. Pressing **2** the display shows:

WATER X time
0=inhib. .0

The number of the WATER shows the position of the mixer starting from the left. Increase or decrease the value pressing respectively **4** and **5**; otherwise inhibit WATER setting its value to 0.0. Only if WATER 1 is not set at 0, entering again **2** the display shows:

start delay
WATER 1 .0

Pressing **4** and **5** increase or decrease respectively the water pouring delay after the beginning of the selection. Pressing again **2** the display shows:

flow WATER X
slow

Pressing **4** and **5** it is possible to choose among the three parameters "**slow**", "**medium**", "**quick**" to increase or decrease the correspondent water flow. Pressing again **2** the display shows:

MIXER X
0=inhib. .0

Increase or decrease the value of the time of working of the mixer pressing respectively **4** and **5**; otherwise inhibit the MIXER setting its value to 0.0. Only if MIXER 1 is not set at 0, entering again **2** the display shows::

Start delay
MIXER X 1.0

Pressing **4** and **5** increase or decrease respectively the mixer start delay after the beginning of the selection. Pressing again **2** the display shows:

speed MIXER X
0

Pressing **4** and **5** increase or decrease respectively the mixer speed of the selection (0 = maximum speed, 5 = minimum speed). The relative parameters are shown only if the WATERS are not at 0. Pressing again **2** the display shows the same items for other mixers, that can be set as the previous one following the recipe of the desired drink. Pressing **2** the display shows:

WATER LM time
0=inhib. 0.0

Increase or decrease the value of the activation of the pump related to milk product to adjust the second milk water quantity that must be dispensed inside the LATTE MACCHIATO drink. Only if WATER LM is not set at 0, pressing **2** the display shows:

start delay
WATER LM 0.0

Pressing **4** and **5** increase or decrease respectively the water pouring delay after the beginning of the selection. Pressing **2** the display shows:

flow WATER LM
slow

Pressing **4** and **5** it is possible to choose among the three parameters “**slow**”, “**medium**”, “**quick**” to increase or decrease the correspondent water flow. Pressing **2** the display shows:

MIXER LM
0=inhib. 0.0

Pressing respectively **4** and **5** increase or decrease the value of the activation time of the mixer related to milk water during the second milk water dispensing for the drink LATTE MACCHIATO. Only if MIXER LM is not set at 0, pressing **2** the display shows:

Start delay
MIXER LM 0.0

Pressing **4** and **5** increase or decrease respectively the mixer LM start delay after the beginning of the selection. Pressing **2** the display shows:

speed MIXER LM
0

Pressing **4** and **5** increase or decrease respectively the mixer LM speed for the selection LATTE MACCHIATO (0 = maximum speed, 5 = minimum speed). Pressing **2** the display shows:

pipes system delay
0.0

Setting this parameter at 0.0 soon after the end of the activation of all 24 V actuators involved in this selection (product motor, mixer motor, boiler pump...) the out let pipes system will come back into its rest position. In case of a value different from 0.0 the outlet pipes system will wait for the programmed seconds before coming back. Pressing **2** the display shows:

OPTION SELECTION
CUP 1

Select one of the following options using buttons **4** and **5**, to get drink as follows:

OPTION SELECTION
CUP 1

Drink dispensed inside cup filled in cups tower on the left hand side.

OPTION SELECTION
CUP 1 + stirrer

Drink dispensed inside cup filled inside cups tower on the left hand side + stirrer.

OPTION SELECTION
CUP 2

Drink dispensed inside cup filled inside cups tower on the right hand side.

OPTION SELECTION
CUP 2 + stirrer

Drink dispensed inside cup filled inside cups tower on the right hand side + stirrer.

OPTION SELECTION
CUP 1 or CUP 2

In case of missing cups inside the cups tower associated, the drink is dispensed inside the other type of cup (WARNING: compare the dosage of the drink with the capacity of both types of cups).

OPTION SELECTION
CUP 1 or CUP 2 + stirrer

In case of missing cups inside the cups tower associated, the drink is dispensed inside the other type of cup (WARNING: compare the dosage of the drink with the capacity of both types of cups) + stirrer dispensing.

OPTION SELECTION
NO CUP

Drink dispensed without cup

OPTION SELECTION
NO CUP + stirrer

Drink dispensed without cup and with stirrer. Pressing **2** the display shows:

Canister sugar

N

Pressing **4** and **5** to increase or decrease the number of the product motor correspondent to the canister in which sugar is present. Pressing again **2** the display shows:

selection name:
standard

Pressing button **4** and **5** it is possible to modify the message shown in the display during the preparation of the drink. If you select the value **standard**, the display will show:

drink number N
preparing

otherwise if you select one of the available selection names the display will show:

selection name
preparing

Pressing again **2** **NEW: Using Rreaction Professional, starting from edition 3.3A, you can create the names of all selections by yourself!** When you create the configuration file you have to select from the menu "Selection Name" the "**custom**" option. Then write the name of the selection you need into the case box on the right hand side. Download the configuration file on your machine.

Custom name
preparing

ATTENTION: if all the parameters of a button set as FUNCTIONING are programmed at 0, the vending machine will dispense ONLY CUP.

Setting of a cold drink

In case of FP - FG - BB versions, depending on the accessories of the machine, you can program a drink as COLD. Look for:

FUNCTIONING
COLD

Scroll the functions pressing **2** and **3**.

Natural H2O time
0=inhib. .0

Pressing **4** and **5** increase or decrease respectively the room temperature natural water quantity to be dispensed. **Only if this parameter has not been set at 0**, pressing **2** the display shows:

natural H2O start delay
0=inhib. .0

Pressing **4** and **5** increase or decrease respectively the room temperature natural water dispensing delay compared to the selection beginning. Pressing **2** the display shows:

cold H2O time
0=inhib. .0

Pressing **4** and **5** increase or decrease respectively the cold natural water quantity to be dispensed. **Only if this parameter has not been set at 0**, pressing **2** the display shows:

cold H2O start delay
0=inhib. .0

Pressing 4 and 5 increase or decrease respectively the cold natural water dispensing delay compared to the selection beginning. Pressing 2 the display shows:

cold H2O mixer
0=inhib. .0

Pressing 4 and 5 increase or decrease respectively cold water mixer motor activation time. Pressing 2 the display shows:

cold H2O mix start delay
0=inhib. .0

Pressing 4 and 5 increase or decrease respectively the cold water mixer activation delay compared to the selection beginning Only if this parameter has not been set at 0, pressing 2 the display shows:

H2O mixer speed
slow

Pressing 4 and 5 increase or decrease respectively the cold water mixer motor speed (slow, medium, high). Pressing 2 the display shows:

cold gas H2O time
0=inhib. .0

Pressing 4 and 5 increase or decrease respectively the cold water with gas quantity to be dispensed. Only if this parameter has not been set at 0, pressing 2 the display shows:

cold gas H2O start delay
0=inhib. .0

Pressing 4 and 5 increase or decrease respectively the cold water with gas dispensing delay compared to the selection beginning. Pressing 2 the display shows:

syroup N H2O time
0=inhib. .0

Pressing 4 and 5 increase or decrease respectively the cold water quantity to be dispensed and mixed with syroup N. Pressing 2 the display shows:

syroup N H2O start delay
0=inhib. .0

Pressing 4 and 5 increase or decrease respectively the syroup N cold water dispensing delay compared to the selection beginning

Setting of a pre-selection

To associate a **preselection** to the current button, choose PRESELECTION pressing 4 and 5. Pressing again 2 the display shows:

presel. message
DECAFFEINATED

Pressing 4 and 5 the display shows all the other available pre-selections:

presel. message
BARLEY

presel. message
NO CUP

presel. message
EXTRA MILK

presel. message
SHORT

PRESEL MES
CUP 2

DECAFFEINATED/BARLEY

To associate to the current button the preselection DECAFFEINATED/BARLEY, choose it in the menu and press **2**. The display shows:

canister
DEC./BARLEY nr: 0

Press **4** and **5** to increase or decrease the position of the canister in which decaffeinated/barley coffee is present. Pressing again **2** the display shows:

ev-mixer
DEC./BARLEY nr: 1

Press **4** and **5** to increase or decrease the position of the solenoid valve to associate to decaffeinated canister. Pressing again **2** the display shows:

price decaf/barley
0 = + 1 = -

Pressing **4** and **5**, set 0 for a price increasing or 1 for a price decreasing; the price will be modified of the value of the price associated at the current button. Pressing again **2** the display shows:

enab. preSEL.
For button1 YES

Choose buttons to which associate the preselection that is going to be programmed. Press **2** and **3** to visualise all buttons and choose **YES** or **NO** with **4** and **5** to set or to inhibit the preselection at button shown on the display.

ATTENTION: in version **E - EE** during the setting of the drinks with coffee beans, you have to programme also the parameters of the drink with decaffeinated/barely coffee (PRODUCT, MIXER, EV); in version **I** during the programming of the drinks with instant coffee, set the parameters of both coffees; the two instant coffee canisters must have the same mixing bowl.

NO CUP

To associate to the current button to the preselection **NO CUP**, choose it in the menu and press **2**. The display shows:

enab. preSEL.
for button 1 YES

Proceed as for previous preselections.

EXTRA MILK

To associate to the current button the preselection **EXTRA MILK** choose it in the menu and press **2**. The display shows:

canister
MILK nr: 0

Pressing **4** and **5** to increase or decrease the number of the product motor correspondent to the canister in which milk is present. Pressing **2** the display shows:

quantity EXTRA
MILK + .0

Pressing **4** and **5** set the extra quantity milk wanted. The display shows:

enab. preSEL.
for button 1 YES

Proceed as for previous preselections.

SHORT

To associate to the current button the preselection **SHORT** choose it in the menu and press **2**. The display shows:

preSEL. message
SHORT

Pressing again **2** the display shows:

WATER quantity
SHORT - .0

Pressing **4** and **5** set the percentage (%) of water quantity to decrease from normal water quantity for short drinks. Pressing again button **2** the display shows:

**enab. preSEL.
for button 1 YES**

Proceed as for previous preselections.

CUP 2

To associate to the current button the preselection **SHORT** choose it in the menu and press **2**. The display shows

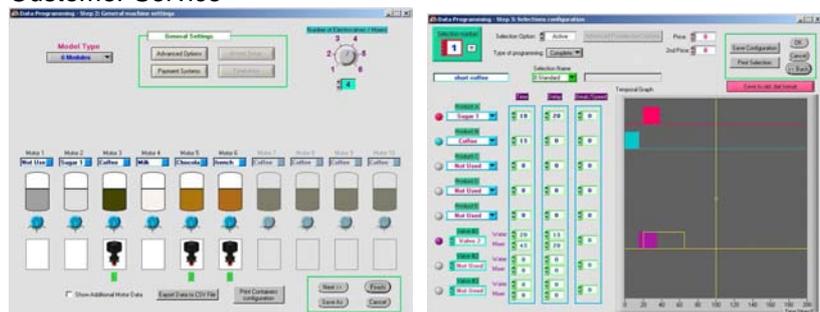
**PRESEL MES
CUP 2**

Pressing **4** and **5** set the chance to dispense the drink with an alternative cup as regards to the standard one (i.e.: paper cup). Pressing **2** the display shows:

**enab. preSEL.
for button 1 YES**

Proceed as for previous preselections.

At the end of the setting of buttons, push **1** to confirm the set data. All the settings described in this and in following paragraphs can be set in an easier way using **rheaction** software. For further information contact rheavendors Customer Service



ATTENTION: if all the parameters of a button set as FUNCTIONING are programmed at 0, the vending machine will dispense ONLY CUP.

Proceed as for previous preselections. At the end of the setting of buttons, push **1** to confirm the set data.

12.5.2 Pre-setting of the normal sale prices

One price for each selection available can be memorised in the machine. When a selection is matched to a price set to zero, the selection is in the free vend mode. To modify sale prices, in the programming mode, press button **1** until the sub-menu

**PROGRAMMING - - -
PRICES - - - - -**

is visualised. Press **buttons 2** and **3** and select the price to be modified. For example:

**PRICE X
XXXX**

will appear on the display. Press **4** and **5** to modify the value of the price displayed. Press **1** to confirm the set data. When the invitation message is visualised and with machine open and switched on, the pre-set sale prices can be by-passed by entering the mode test vend. To have access to this mode, press key **"FREE VEND"**. The display shows:

TEST VEND

At this point the machine is able to dispense any selection, without charge. Selections which are dispensed in the test mode are counted in a separate counter (see "Reading of sales data"). To exit from the test mode, press again the **key PROG** inside the machine on the CPU protection again.

12.5.3 Presetting of coin-set

The set of values that the machine assigns to each signal (canal) received from the payment system is called *coin-set*. Press **1** until to visualize the sub-menu:

**PROGRAMMING- - -
-COINS- - - - -**

Pressing **2** the display shows from:

COIN A 0

to:

COIN J 0

Pressing **4** and **5** change the value of the visualised coin. Press **1**, exit from the programming mode, and switch the machine off and on. The machine will use the new coin-set. For further information see the paragraph “ Modifying other operation parameters (Miscellaneous)” the parameter “single or multi vend”.

12.5.4 Modification of the operating temperature

The machine defines and regulates water temperature in the boilers. To modify the temperature thresholds, in the programming mode, press **1** until the sub-menu

PROGRAMMING
TEMPERATURE

is displayed. Pressing **2** the display shows:

TEMPERATURE
Boiler X

Pressing buttons **4** and **5** set the required value for instant boiler temperature. Pressing **2**, for **E - EE** versions, the display shows:

TEMPERATURE
Espresso XXX

Entering **4** and **5** set the value. Pressing **button 2**, for **E - EE** versions, the display shows:

DEF. FIRST COFFEE
Minutes N

Use this parameter to obtain drinks made with coffee beans at a right temperature also after long periods of inactivity of the coffee group. When this parameter is set (it is indicated in minutes) if for N consecutive minutes the machine does not make any selection with coffee beans, before making the next selection with coffee beans the machine will wait that the temperature reaches a defined value. Press the **buttons 4** and **5** to increase and decrease the value. Pressing **button 2**, for **E - EE** versions, the display shows:

Heating time
Sec: 0.0

Press the **buttons 4** and **5** to increase and decrease the value. The value corresponds at the seconds during which the heating element will be switched on in case of activation of FIRST COFFEE condition. Pressing **button 2**, for **FP - FG - BB** versions, the display shows:

TEMPERATURE
COLD 4

Pressing buttons **4** and **5** set the required value for cold unit. At the end of programming, press **button 1** to confirm the set data

12.5.5 Modifying other operation parameters (miscellaneous)

To modify parameters, in the programming mode, press **1** until the sub-menu

PROGRAMMING
MISCELLANEOUS

is visualised. Pressing **2**, the display shows:

MACHINE CODE A
0

Pressing again **2**, the display shows:

MACHINE CODE B
0

Press **4** and **5** to associate to each vending machine personal codes. These numbers are useful only when a data audit system is used with the machines. Pressing again **2**, the display shows:

MESSAGE NUMBER
0

Press **4** and **5** the number of the stand by message to show on the display during the working of the machine (from 0 to 7). Set the **message number 3** only if a programmable message is been set with the **rreaction** programme with the PC. Pressing again **2**, the display shows one of the following options (scroll the options pressing **4** and **5**):

coin-mech type
PAR. SING. VEND.

coin-mech type
PAR. MULT. VEND.

coin-mech type
EXECUTIVE

coin-mech type
PRICE HOLDING

coin-mech type
MDB

coin-mech type
PAR. spi SING

coin-mech type
PAR. spi MULT

Select:

type coin-mech
PAR. SING. VEND.

to programme a parallel payment system in single vend;

type coin-mech
PAR. MULT. VEND.

to programme a parallel payment system in multi vend;

coin-mech type
EXECUTIVE

to programme a serial Executive payment system;

coin-mech type
PRICE HOLDING

to programme a serial Executive payment system in Price Holding mode;

coin-mech type
MDB

to programme a serial MDB payment system

type coin-mech
PAR. spi SING

to programme a Rhea serial parallel payment system in single vend;

type coin-mech
PAR. MULT. VEND.

to programme a Rhea serial parallel payment system in multi vend.

WARNING: the appliance recognizes automatically the presence of a serial **MDB** payment system at the switching on. Entering again **2**, the display shows:

access code
00

To protect all the data set into the PROGRAMMING mode and the access to the test-vend modality, it is possible to introduce a 3 digits secret code; the machine requests this code every time somebody tries to enter into PROGRAMMING mode or DATA mode pressing the **key** on the display board inside the machine and then **1** or **2**. Entering **4** and **5** it is possible to set the secret code (from 111 to 999 with the exception of all the numbers containing the digit 0; i.e. the machine accepts the code 123 but not the code 109). Exit from Programming mode. Now when the **key** on the display board inside the machine is pressed if somebody tries to enter **1** or **2** the display will show:

**insert
access code**

Enter the code. If the inserted code is wrong the machines come back automatically to vend mode. Normally the machines come out from the factory without any code. To bypass the secret code, before entering in Programming you have to insert the Rhea RFID card into its slot programmed as SERVICE CARD. Pressing again **2**, the display shows:

**fan time
sec. 15**

pressing **4** and **5** it is possible to modify the value of the time range between the end of the cycle of a drink and the switching off of the aspiration fan. Pressing again **2**, the display shows:

**beep time
0.3**

Pressing **4** and **5** it is possible to modify the value correspondent to the beep signal that indicates the end of the distribution of the drink. Pressing again **2**, the display shows:

**decimals number:
0**

Pressing **4** and **5** it is possible to set the number of the decimal digits after comma according with the values of the coins, which the machine has to accept (Es: 0=50, 1=5,0 2=0,50...). Pressing **2**, the display shows:

**LOCAL TIME
1 = yes 0**

Pressing **4** and **5** it is possible to activate the function LOCAL TIME setting this parameter at 1. Pressing **2**, the display shows:

**Stirrer
0=before1=after 0**

Pressing **4** and **5** it is possible to program the stirrer dispensing at the beginning (0) or at the end of the drink cycle. Pressing **2**, the display shows

**Abil stirrer
SUGAR**

Pressing **4** and **5** it is possible to choose among the following possibilities:

- SUGAR: the stirrer is dispensed only with the drinks where sugar is added
- NO SUGAR: the stirrer is dispensed with the drinks where sugar is added also when is pressed the pre-selection NO SUGAR

Entering again **2**, the display shows:

**disintallation
4 = start**

This function must be used to empty the boiler during temporary out of service of the machine. At the end of the programming, press **1** to confirm the set data.

12.5.6 Diagnostics programmes

In the programming mode, a certain number of diagnostics programmes can be carried out in order to test the correct operation of some components of the machine. To modify the parameters, in the programming mode, press **1** until the sub-menu

**DIAGNOSTICS - - - - -
- - - - -**

is visualised. Pressing again **2**, the display shows:

**ABIL. DISPLAY
TEMP. 1=YES 0**

is displayed. According to the value of the parameter, which can be modified with **4** and **5**, the inside temperature of the machine is displayed in real time. Set the parameter to 1 (it is normally 0) to have the display of temperature. To read the temperature, press **1** and exit from the programming mode.

Pressing again **2**, the display shows:

**VOLTAGE
XX.X**

This parameter visualises the value of the supply tension at the 24 V actuators. This value should be included between 24 V and 28 V. Pressing again **2**, the display shows:

**STIRRER TEST
SEL. 4**

Press **4** to dispense a stirrer. At the end of the programming, press **1** to confirm the set data.

12.5.7 Reading of the sales data

The next sub-menu which can be selected in the programming mode concerns the reading of the sales data. The machine keeps various counters stored, which allow a direct reading for consumption and cashing. To have an immediate reading of the total number of cycles carried out, with the machine switched on and with the invitation message visualised simply press the key **PROG** and then **button 2** the machine. The following message will be displayed:

TOTAL SELECTIONS

0

Read the parameter, in the programming mode, by pressing **1** until the sub-menu

SALES DATA - - - - -

- - - - -

is displayed. Then press **2** and the following counters are shown in sequence:

TOTAL SELECTIONS

0

This value indicates the total sale cycles of the machine. This value cannot be set to zero.

PARTIAL SELECTIONS

0

This value indicates the partial number of sale cycles of the machine starting from the last reset operation. To reset a counter, when it is visualised on the display, keep pressed **4**.

TOTAL MONEY

0

This value indicates the total money amount collected by the machine. This value cannot be set to zero.

PARTIAL MONEY

0

This value indicates the money amount collected by the machine starting from the last reset operation.

TOTAL TESTS

0

This value indicates the total number of beverages prepared in vend test mode. This value cannot be set to zero.

PARTIAL TESTS

0

This value indicates the number of beverages prepared in vend test mode starting from the last reset operation.

TOTAL FREE

0

This value indicates the total number of free beverages. This value cannot be set to zero.

PARTIAL FREE

0

This value indicates the number of free beverages starting from the last reset operation.

TOTAL CASH

0

This value indicates the total money cashed. This value cannot be set to zero.

PARTIAL CASH

0

This value indicates the amount of money cashed starting from the last reset operation.

N. TOT. SEL. CASH

0

This value indicates the total number of beverages paid cash.

N. PAR. SEL. CASH

0

This value indicates the number of beverages paid cash starting from the last reset operation.

total loaded on cards
00000

This value indicates the total amount loaded on RFID Rhea cards through coin-mech.

partial loaded on cards
00000

This value indicates the amount loaded on RFID Rhea cards through coin-mech starting from the last reset operation.

total unloaded on cards
0000

This value indicates the total amount downloaded from RFID cards.

partial unloaded on cards
0000

This value indicates the amount downloaded from RFID cards starting from the last reset operation.

N. TOT. SEL. CARD
0

This value indicates the total number of beverages paid by means of RFID Rhea card.

N. PAR. SEL. CARD
0

This value indicates the number of beverages paid by means of RFID Rhea card starting from the last reset operation. Finally, partial counters are available for each sale price. By pressing **2** several times, the values from

SELECTION 1
0

to

SELECTION 24
0

appear the numbers of beverages supplied for each sale price starting from the last reset operation. Then from

SEL. 1 HAPPY
0

to

SEL. 24 HAPPY
0

appear the numbers of beverages supplied for each happy price starting from the last reset operation. Then from

SEL. 1 FREE
0

to

SEL. 24 FREE
0

Appear the numbers of free beverages supplied starting from the last reset operation.

12.5.8 Special presetting for MDB/ICP standard systems

The MDB/ICP standard systems are commonly used in the machine after programming function " COIN MECH TYPE " to value MDB (see above). Due to the characteristics of this system, the credit is managed mostly by the machine. The following parameters must be programmed for the correct operation of the MDB/ICP systems.

To modify the presetting of this function, in the programming mode, press **1** until the sub-menu:

PROGRAMMING
MDB

is displayed. Press **2** and **3** and chooses the functions, which requires to be altered. Press **4** and **5** and modify the values of the function displayed. The first function is:

EJECTION TUBES
sel 21 - 22 - 23 - 24

Some coin-mechanisms don't have internal buttons to empty tubes. In this modality when the selections 4, 5 and 6 are pressed, a coin will be dispensed from the corresponding tube. By pressing 2 the following message

abil. escrow
0=abil. 1=disab. 0

is displayed. Press 4 and 5 and modify the values of the function displayed. If this value is programmed at 0 it is possible to insert money and then press button of the return change without making any selection; if this value is programmed at 1 a selection must absolutely be pressed after that the money has been put inside the machine (this to prevent that the Vending Machine could be used like a change money machine). By pressing 2 the following message

MAX CREDIT
XXXXX

is displayed. Press 4 and 5 and modify the values of the function displayed. This parameter indicates the maximum value of credit accepted by the machine. When the maximum credit limit is overcome, the machine will accept no other payment. Leave this parameter set to 0 if no limitation is required. By pressing 2 the following message

MAX REST
XXXXX

is displayed. Press 4 and 5 and modify the values of the function displayed. This parameter indicates the maximum value of change dispensed by the token machine (only with system for change). Leave this parameter set to 0 if no limitation is required. By pressing 2 the following message

type sell
0=sing. 1=mult. X

is displayed. Press 4 and 5 and modify the values of the function displayed. Another characteristic of the MDB/ICP machine with system for change is the multisale function. This means that, instead of giving back the correct change and end vend cycle, as usually provided for, the machine keeps the possible residual credit available for the next selection. In order to have the change back, the customer must press button for coin ejection. This function is available when this parameter is set at 1.

ATTENTION: for mixed MDB/ICP systems, with system for change or card reader or credit key, it is advisable to activate the multisale mode. Transfer of credit to card or key (if present) will be carried out only when button for the coin ejection is pressed. By pressing **button 2** the following message

TOKEN VALUE
X

is displayed. Press 4 and 5 and modify the value of the token. By pressing 2 the following message from

coin A rest
0=enable 1=disab. X

to:

coin P rest
0=enable 1=disab. X

is displayed. Press 4 and 5 and modify the values of the function displayed. Set at 0 each coin from A to P which the coin-mechanism must accept and at 1 all the coins which the machine must not accept. This set of parameters is working only when the tubes of the coin-mechanism have inside enough coins to give back change. Pressing again 2 the display will show the set of the parameters that will be active when the tubes of the coin-mechanism don't have enough coins inside to give back change. From:

coin A no rest
0=enable 1=disab. X

until:

coin P no rest
0=enable 1=disab. X

Press 4 and 5 and modify the values of the function displayed. Set at 0 each coin from A to P which the coin-mechanism must accept and at 1 all the coins, which the machine must not accept. By pressing 2 the following messages are displayed:

Bill reader
Abil 0,1,2 0

0 means that the bill reader always accepts notes;

1 means that the bill reader accepts notes only if a sufficient rest is present inside change giver tubes or if it is present a cashless card/key that can be recharged;

2 means that the bill reader accepts notes only if it is present a cashless card/key that can be recharged.

By pressing 2 the following messages:

TUBES VALUE
XXXXXXXX

is displayed. This value means the total of money inside the tubes of the coin-mechanism. At the end of programming, press 1.

12.5.9 Pre-setting of functions based on the internal clock

The machine is equipped with an internal clock able to up-date the time also when the machine is switched off. Some functions of the machine are based on the internal clock. to modify the presetting of the clock, in the programming mode, push 1 until the sub-menu

PROGRAMMING ---
CLOCK -----

is displayed. By pressing 2 the following messages

hour:
hh:mm

day:
dd

month:
mm

year:
yyyy

day of week:
Monday

will appear. These functions are foreseen to adjust the current time (hh.mm), the current month (mm) and day (dd) and the current year (yy), the current day of the week (Monday), respectively. Press 2 and 3 and choose the function, which requires to be altered. Press 4 and 5 and modify the value of the displayed function. The next functions are:

Start happy 1
hh:mm

End happy 1
hh:mm

You will find 3 happy times. During this 3 time ranges (from Start to End) all selections will be sold at happy prices. Press 2 and 3 and choose the function, which requires to be altered. Press 4 and 5 and modify the value of the displayed function. Next functions from Monday to Sunday are:

SWITCHING ON
Monday hh:mm

SWITCHING OFF
Monday hh:mm

The time when the machine should be switched on and off (hh.mm) can be programmed. When the **machine is off**, all selections are disabled and, as a measure to save energy, the heating element is always off. When one of the two values is set to 00.00, the machine is never switched off. Pressing 2 the following message appears

kilowatthours
0

This parameter shows the consumption of the machine starting from last reset of this counter. Pressing 2 the following message appears:

CLEANING
hh:mm

appears. This function programmes the time for the daily automatic cleaning cycle. It is advisable to programme the automatic cleaning at the beginning of the day. The automatic cleaning is activated only when the value hh:mm is not set at 00:00 and when at least 5 cycles has been made by the machine in 24 h. At the end of programming, press 1.

12.5.10 Storing of OUT OF ORDERS

The machine stores the last 20 OUT OF ORDERS. To read them on the display, press 1 until the display shows:

STORING
OUT OF ORDERS

Pressing 2, the display shows hour, day, month and year of the last 20 OUT OF ORDERS.

n. 1 OFF NNN
hh:mm dd - mm - yy

To delete, visualize each OUT OF ORDER and keep pressed 4 for some seconds.

12.5.11 Pre-setting of Product Counters down

You can decide to set how many seconds an ingredient motor should work to dispense instant product. In some versions of machines it is possible to set how many seconds a motor should work to dispense instant product before displaying that the product inside the canister is finished.

To proceed at the setting of this parameter enter in PROGRAMMING mode, press 1 until the display shows:

PROGRAMMING
PRODUCT QTY - - - - -

Pressing button 2 the display shows:

QTY PRODUCT 1
[-xx] xx

until

QTY PRODUCT 8
[-xx] xx

Pressing 4 and 5 program the number of the seconds that the relative motor should work. To bypass this function pre set these parameters from **PRODUCT QTY 1** to **PRODUCT QTY 8** at 0.

To activate this function take note for each canister of how many seconds the relative motor should work to dispense 1 g of product. Calculate then, depending from the quantity of product that can be filled inside the canister, how many seconds the motor should work to finish the product and pre-set the value of the relative counter. **EG:** If inside the coffee canister, which corresponds to motor 1, you fill in 1000 g of coffee and the coffee motor dispenses 1 g of coffee in two seconds then the canister will be empty in 2000 seconds; so you have to program **PRODUCT QTY 1 = 2000.0**. When all selections prepared with this product are dispensed the relative counter is decreased the available seconds. When all the seconds finish all the drinks made with this product are inhibited and the display shows:

selection
not available

To confirm the value press key **PROG** for each counter. At the end of programming, press 1.

12.5.12 Maintenance

A new MAINTENANCE menu has been introduced to have the possibility to improve maintenance operations.

The display will show:

PROGRAMMING - - - -
MAINTENANCE

Water filter replacing

Pressing 2 the display will show the first maintenance option:

dec. filter H2O
[200] 200

Use 4 and 5 to increase or decrease the number of the selections that the machine has to dispense before the message that **the filter should be changed** appears on the display.

To program the number of drinks that can be dispensed press the **key P** inside the machine. The display shows:

reset H2O	filter
1=no	4=yes

Press **4** to confirm the number, **1** to exit. The machine comes back in stand-by mode.

During the functioning of the machine, the counter on the right decreases. Starting from 500 selections to 0, the machine still works but the display shows the message:

change
water filter

When the counters arrives at 0 the machine stops working and the display will show:

OUT OF SERVICE
water filter

This message means that you have to replace the water filter. After replacing the filter to reset the machine enter in the sub-menu MAINTENANCE, look for

dec. filter H2O	
[200]	200

and reset the counter keeping pressed **button PROG** inside the machine.

Coffee brewer cleaning

Pressing **button 2** the display will show the second maintenance option:

cnt. brewer cof	
[200]	200

Use **button 4** and **5** to increase or decrease the number of the selections that the machine has to dispense before the message that the **coffee brewer should be cleaned** appears on the display. To load the number of drinks to make into the machine keep pressed **key P** until the left counter (the one in brackets) contains the same number. During the functioning of the machine, the counter on the right decreases. Starting from 5 selections to 0, the machine still works but the display shows the message:

make brewer
cleaning

When the counters arrives at 0 the machine stops working and the display will show:

OUT OF SERVICE
cleaning brewer

This message means that it is necessary to make a brewer cleaning. After cleaning the coffee brewer to reset the machine enter in the sub-menu MAINTENANCE, look for

cnt. brewer cof	
[200]	200

and reset the selections keeping pressed **key P**.

Emptying ground coffee wastes bucket

Pressing **button 2** the display will show the third maintenance option:

cnt cof ground	
[200]	200

Use **button 4** and **5** to increase or decrease the number of the selections that the machine has to dispense before the message that the **ground coffee wastes bucket should be empty** appears on the display.

To load the number of drinks to make into the machine, keep pressed **key P** until the left counter (the one in brackets) contains the same number. During the functioning of the machine, the counter on the right decreases. Starting from 5 selections to 0, the machine still works but the display shows the message:

remove coffee
grounds

When the counters arrives at 0 the machine stops working and the display will show:

OUT OF SERVICE
coffee grounds

This message means that you have to empty the ground coffee wastes bucket must be emptied. After emptying the ground coffee wastes bucket to reset the machine enter in the sub-menu MAINTENANCE, look for

cnt cof ground
[200] 200

and reset the selections keeping pressed **key P**. Press **button 1** and exit from MAINTENANCE. Press **1** and exit from MAINTENANCE.

12.5.13 Setting of RFID CARD

The vending machine can work with RFID pre-paid cards. To proceed at the setting of this parameter enter in PROGRAMMING mode, press **1** until the display shows:

PROGRAMMING
RFID CARD

Entering **2**, the video shows

max. credit card
00000000

Pressing **buttons 4** and **5** program the value of the maximum credit that can be loaded in a RFID Rhea card. Entering again **2**, the video shows:

coin a
card 0 = acc

Press **buttons 4** and **5** to change the value of the parameter shown. Set **0** to each coin from **a** to **j** that the coin-mech has to accept when the RFID Rhea card is present and **1** to each coin that must not be accepted in this case. Entering **2**, the video shows

coin a
no card 0 = acc

Press **buttons 4** and **5** to change the value of the parameter shown. Set **0** to each coin from **a** to **j** that the coin-mech has to accept when the RFID Rhea card is not present and **1** to each coin that must not be accepted in this case.

12.6 TUNING MOTOR

With the aim to get more standard the dispensed products it is possible to adjust the activation time of the product motors keeping the same configuration file. To proceed at the setting of this parameter enter in PROGRAMMING mode, press **1** until the display shows

TUNING
PRODUCT MOTOR - - -
-

Pressing **2** the display shows:

Tuning pump N
+ 00.0%

Setting this parameter you can adjust in percentage the quantity of water dispensed from each pump of the boiler. Entering **4** and **5** you can decrease or increase this value from -30% to $+30\%$. Pressing **2** the display shows:

Tuning motor N
+ 00.0%

Setting this parameter you can adjust in percentage the quantity of the product dispensed from each ingredient motor of the machine. Entering **4** and **5** you can decrease or increase this value from -30% to $+30\%$. At the end of programming, press **1**.

12.7 EVA-DTS

The machine with proper hardware may be programmed to collect data following EVA-DTS protocol. To proceed at the programming of these parameters, press **1** until the display shows:

PROGRAMMING
EVA-DTS

Pressing **2**, the display shows:

Code ID 101
00

which identifies the number of the machine. Pressing **2**, the display shows:

Code ID 102
00

which identifies the model of the machine. Pressing **2**, the display shows:

Code ID 104
00

which identifies the location of the machine. Pressing **2**, the display shows:

codice ID 106
00

which identifies the type of the machine. Pressing **2**, the display shows:

Address VIDTS
00

which identifies which slave should be contacted during data collection.

Not used evadts
00

12.8 Connection to Damian Xtra

LUCE X2 machine can be connected as master to **Xtra Damian snack**. Place the Xtra Damian Snack next to LUCE X2 and switch off both machines. Connect the cable supplied with Xtra unit to the MDB connector of the LUCE X2 CPU board. Switch on both machines. Press button PROG on the keypad inside LUCE X2 machine and then **1** to enter Programming mode. The display shows:

PROGRAMMING
MDB USD - - - - -

Pressing **2**, the display shows:

PROGR. MDB USD
x **BUTTON 4**

Press **4** to activate Xtra Programming mode. At the end of programming, press **1**.

13 Installation of the payment systems



To install the payment systems always follow the instructions supplied by the manufacturer. For information only, the installation of a token machine is hereunder described.

Open the CPU and the coin-mech protections. Fit the token machine. Connect the dialogue cable to the CPU board.

In the case of Executive standard systems, the machine supplies the cable; in the case of other systems, the cable is supplied by the payment system.

Only for Executive standard systems: connect the power supply cord to the 24V connector placed in the fitting area of the token machine.

Switch the machine on by inserting the key in the safety switch. Enter the programming mode (see section "Entry and exit from the programming mode"). Pre-set the specific parameters for the token machine, which has just been installed (see section "Pre-setting of payment systems" and following). Exit from the programming mode. The machine is now ready to use the coin-mechanism.

14 Cleaning and loading operations

To guarantee a correct operation of the machine, it is advisable to carry out the periodic cleaning operations hereunder described. Some of these operations are required to comply with health legislation in force. The cleaning operations must not be carried out when the machine is not working (e.g. if it has already been temporarily out of service following instructions given in section "**Out of service - Temporary**"). The cleaning operations must be carried out when the machine is open and switched off. The loading of ingredients, if required, must be carried out after any cleaning operation.

14.1 Daily cleaning

The objective of these operations is to avert any growth of bacteria in areas in contact with foodstuff. **Before any operation, wash your hands thoroughly.**

To carry out these operations use two clean cloths as well as a clean brush); if drinkable water near the machine is not available, also provide for a container with drinkable water. Proceed as follows:

Make sure that the machine is off.



- 1) With a damp cloth, clean the visible components in the ingredients vend area.
- 2) Carefully remove and rinse:
 - the aspiration unit of the mixers
 - the mixing bowls
 - the mixer supports
 - fans

the slides of the ingredients and the relative caps.

The silicone, outlet tubes of the ingredients

the area where the cup rests (cup station).

When the mixers are disassembled, clean the basis of the mixer supports with a damp cloth. Dry the components thoroughly with a dry cloth and mount again all the washed components to the original position.

For machines equipped with coffee brewer (**Versions E -EE**), remove the coffee brewer, wash it with drinkable water (better if with running water) and refit it. This operation is carried out as follows:

- remove the red cover of the coffee brewer;
- remove the coffee grounds conveyer;
- take out the coffee outlet pipe;
- take out the coffee brewer inlet coffee pipe;
- unhook the coffee brewer turning the pivot;
- take out the coffee brewer;
- reassemble the coffee group in the original position.

Empty, clean or replace the containers of liquid waste disposal and coffee grounds (**Versions E - EE**).

14.2 Weekly cleaning

These operations are carried out once a week, after completing the daily cleaning operations.

Make sure that the machine is off. With a damp cloth clean the surface where the ingredient canisters lay and the bottom of the machine to remove any powder eventually spilled during loading. Clean the outside of the machine, taking care to the vend area.



14.3 Refilling of consumption products

When required, proceed to the following loading operations.

ATTENTION: the loading operation of ingredients must be carried out only with machine off.

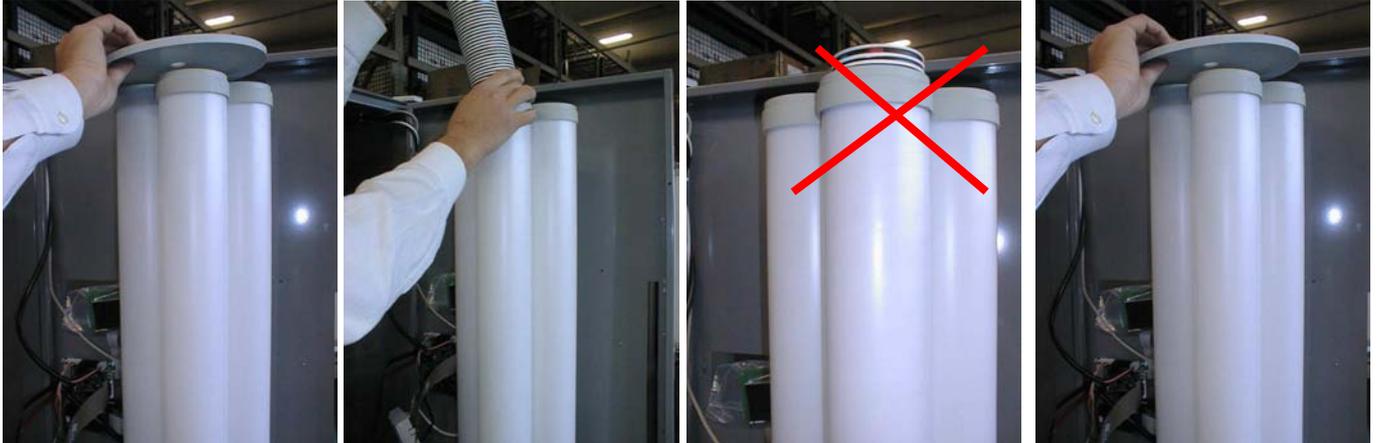
14.3.1 Refilling of cups

It is recommended to use only cups specifically designed for automatic vending machines. Check the below table to verify the compliance with cups.

CUPS	QT.
1 Cups Column	70 mm plastic/paper 73 mm plastic/ paper
2 Cups Columns	70 mm plastic/ paper 73 mm plastic/ paper 78 - 80 mm plastic/ paper

The distance between the rims of two cups stacked and positioned side by side must be between 2.6 and 3.2 mm. Should it be necessary to adopt cups having different sizes with respect to the above specifications, the Technical service Department of M.P.R. should be contacted in advance. Before loading extract the safety switch.

WARNING: carry out the loading of cups only when the machine is switched off. Proceed to the loading as follows:



Lift the cover of the cups columns tower.

Fill in with appropriate cups all the columns of the tower.

Do not overflow the column with the cups.

Place the cover over the cups columns tower.

Insert the key into the safety switch and wait until on the display appears that the machine is ready.



Then press the red button on the bottom of the cups column tower until a cup falls down. Extract the key.

WARNING: this operation must be carried on every time the cups columns tower remains completely empty. If you don't follow this step, first drink after the switching on will be dispensed without cup.

Refilling of stirrers



The stirrer's feeder is standard fit on the models **E - EE**, as an optional in models **I**. It is recommended to use only stirrers suited to automatic vending machines. The thickness of the stirrers must range between 1.2 and 1.8 mm and their length must be approx. 89 mm.

If stirrers with different dimensions from those specified must be used, please contact the technical service of Rhea Vendors S.p.A.

When the machine is open and off removes the metal weight. Slide the stirrers still hold together with the packing band along the guide track and, once they have reached the end of the guide, rip the band off. Insert the weight again.

14.4 Refilling of ingredients

Read the indication of the ingredient to load on the canister. Fill in the canisters after removing the cover. Use a quantity of product suitable for a period between two refillings, and in any case do not exceed the quantities shown in the table here below.

PRODUCT	QT.
1 Cups Column depending on customer requests 70 mm plastic/paper 73 mm plastic/ paper	700 670
2 Cups Columns depending on customer requests 70 mm plastic/ paper 73 mm plastic/ paper 78 - 80 mm plastic/paper	450 430 400
Coffee beans (E) single canister	5 Kg
Coffee beans (EE) double canisters	2 x 3 Kg
Instant Coffee	1.2Kg
Sugar	5 Kg
Chocolate	3.5 Kg
Milk	1.4Kg
Instant Tea	4.4Kg
Stirrers (89 mm – 104 mm – 115 mm)	600

This will prevent deterioration of the quantity of product in excess.

The canisters for instant ingredients can be removed from the machine for an easier loading. Turn the closure of the slide in order to prevent spilling of powder. After loading, refit the canister and reopen the closure of the slide.



Insert the orange tongue before removing coffee beans canister.



15 Ordinary and prevention maintenance

15.1 Monthly maintenance

15.1.1 Disinfecting of components in contact with ingredients

These operations must be carried out once a month to ensure the hygiene of the machine. These operations have already been described in the paragraph "Cleaning and Disinfecting of components in contact with ingredients".

15.1.2 Adjustment of grinding



This section is for **Versions E - EE** only.

The brewing time for a 50 ml espresso coffee must be around 20 sec. If, due to the wear and tear of the grinder, the brewing time is shorter, turn the adjustment ring nut of the grinder into a clockwise direction to get a finer grinding. A thinner grinding and therefore, an adequate brewing time is then obtained.

15.1.3 Maintenance of the espresso brewer

This section applies only to **Versions E - EE**. Every month, using a silicone grease compatible for foodstuff, the following components must be lubricated:

- the supporting rod of the lower filter;
- the guide tracks and guide arms of the upper filter.

If the group has vended at least 15000 coffees from the last check-up, the sealing of the filters must also be replaced.



Remove the plates of the superior filter



Turn upwards the superior filter, dismount and clean it with hot water removing all coffee powder.



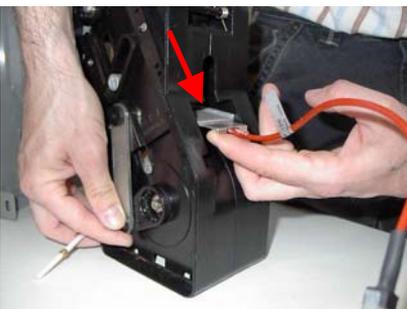
Turn the group in the position of ejection waste grounds and overturn the slide of coffee



Dismount the inferior filter and clean it with hot water removing all coffee powder.

- after completion of these operations, refit the cover of the lower filter and the cover of the coffee group.

15.1.4 Maintenance of the heated espresso brewer



This section applies only to **versions E - EE with heated coffee brewer**. Proceed as follows for a correct cleaning:

- Switch off and unplug the machine;**
- Wait until hot parts become cold;**
- Disconnect the power supply from the heating element of the coffee brewer;
- Disconnect the hydraulic connection of the brewer; Remove the coffee brewer. Extract the heating element from the coffee brewer.

WARNING: Before proceeding pay attention that all involved parts have reached a low temperature. The heating element could reach a temperature of about 75-80°C.



Proceed with usual coffee brewer cleaning.



Use a lot of water and dry.

At the end of the procedure place all parts in their correct position.

15.1.5 Maintenance of the refrigerator unit

This section applies only to **Cold versions**.



Clean periodically the condenser to eliminate any possible obstructions. This will enable the condenser to work efficiently

Fill the water tank only with clean water adding antifouling liquid.

15.1.6 Disinfecting of components in contact with ingredients

These operations must be carried out once a month to ensure the hygiene of the machine. These operations have already been described in the paragraph "Cleaning and Disinfecting of components in contact with ingredients".

15.1.7 Regeneration of the water softener filter

This section applies only to machines equipped with water softener filter. Check that the maximum quantity of softened water between two filter regenerations has not been reached. The table indicates the quantity of water which can be softened by the model supplied with the espresso machine, according to the water hardness grade. As a reference for water hardness grade, keep to the value taken when the machine was installed (section "Connection to the mains water supply").

°F	l
20°	1200
30°	1000
40°	900
60°	700
80°	500

The filter can be regenerated without removing it from the machine (keep a container of 30l capacity near the machine) this operation can be carried out near a 3/8" mains connection and a drain.

- close the tap of the mains water supply, outside the machine;
- insert the drain pipe of the upper tap in the container;
- turn the levers of the upper and lower tap towards the right hand side and wait for the water to totally flow out of the filter;
- loosen the upper fixing knob, remove the cover of the water softener and pour 1 Kg of fine salt into the filter;
- place the cover again and fix it with the knob;
- turn the lever of the upper tap towards the left hand side;
- open the tap of the mains water supply, outside the machine;
- leave the water flow in the container until it is clear and tasteless. The regeneration takes about 30 min.
- turn the lower tap lever towards the left hand side. The regeneration is completed.

16 Machine out of service

16.1 Temporary out of service

Should a long period be foreseen in which the machine will not operate, the following operations must be carried out. Extract the service key;

Unplug the machine from the electric mains. Unload all ingredients from the canisters. Remove and thoroughly clean in hot water all components in contact with foodstuff. The components are indicated in the part "Maintenance".

Close the tap of the external water mains supply and disconnect the water supply pipe from the machine.

Discharge the whole content of the boiler for instant ingredients by removing the cap from the end of the drain pipe.

Replace the cap on the pipe end. Use the liquid waste disposal bucket as container for the drained water.

Only for **E-EE Versions**, unscrew the cap of the lower flange of the coffee boiler and wait until it is empty. Use the liquid waste disposal bowl as container for the drained water. Empty and carefully clean the bucket for liquid waste disposal and the bucket for the tea leaves disposal. Remove and throw away the bag of coffee grounds.

Clean the inside and the outside with a damp cloth. Protect the outside of the machine with a piece of cloth or a plastic film. The machine must be kept in a sheltered place and at a temperature not lower than 5°C.

16.2 Definitive out of service

Before carrying out the definitive out of service operation, it is necessary to carry out all operations to empty the machine of ingredients and water according to instructions given in the above section.

The machine is not made of polluting materials. Therefore, for demolition it is advised to disassemble the machine by dividing the various components according to the type of material (plastic, metal, paper, etc.). Especially remove from the electronic board the battery and waste it in a safety way. The various components can be then delivered to authorised companies for waste disposal.

17 Further advice for the user

The automatic vending machine in your hands is safe for those who follow the loading and ordinary cleaning instructions indicated in this manual. The user must not gain access to areas in the machine, which feature a cover requiring a tool to be removed.

Some maintenance operations (to be carried out by authorised personnel only) require an intentional bypassing of safety protections of the machine. Technical qualification, the compliance of maintenance procedures indicated in this manual and the due care when having access to areas indicated as dangerous allow to operate in a safe way.

The stickers indicating danger are applied on fixed covers and show the following symbols:

- possible contact with components under voltage;



- possible contact with hot surfaces.



18 Troubleshooting

18.1 Problems visualised by the machine

The problems described in this section are shown by an error message on the display of the machine.

SYMPTOM	PROBABLE CAUSE	REMEDY
The display shows " OFF 1A/OFF1B : the machine is out of order	No cups inside one of the two cups columns tower	Load the cups into the cups columns towers
		Check the micro-switch for cup presence inside the cup dispenser and the related cable
	The material of the cups is not suitable	Refer to specifications in the manual
	The type of cups is not suitable	Refer to specifications in the manual
The display shows " OFF 2 ": the machine is out of order	No communication between the CPU board and payment system	Correctly programme the payment system (see section "Pre-setting the payment systems")
		Correctly connect the payment system to the CPU board
	The payment system is not powered or is faulty	Make sure that the payment system is working
The display shows " OFF 2E : the machine is out of order	No communication between the CPU board and payment system	EXECUTIVE system accidentally selected in PROGRAMMING
The display shows " OFF 2M : the machine is out of order	No communication between the CPU board and payment system	MDB system accidentally selected in PROGRAMMING
The display shows " OFF 3 ": the machine is out of order	Liquid waste in the inside collection bucket has reached the maximum level	Empty the bucket
		Check the water level floating, the related micro-switch and its cable.
The display shows " OFF 4 " the machine is out of order	Error pipes movement	Check the micro-switch of the pipes movement and verify the correct power supply at the pipes movement motor
The display shows " OFF 5 ": the machine is out of order	One or both EAROM memories are faulty	Replace CPU board
The display shows " OFF 6 A ": the machine is out of order	No water	Wait until the mains water pressure is reset
		Open the water supply
	The safety on the water inlet solenoid valve is activated	Reset the safety on the solenoid valve
		Check water level sensors inside the boiler
The display shows " OFF 6B ": the machine is out of order	Too many water refilling without making selections	Check if there are some leakings into the water tank or in its pipes and if the pipes are correctly connected
The display shows " OFF 7 ": does not vend beverages through the coffee brewer	(Versions E-EE) Check the volumetric counter	Dismount and clean the volumetric counter
	The brewing time of coffee is too long	Adjust the grinding by acting on the special ring nut of the grinder (Versions E - EE)
		Programme an adequate quantity of water for filter coffees
The display shows " OFF 8A ": The machine does not vend beverages through the coffee brewer (Versions E EE)	(Versions E-EE) The coffee brewer does not return to rest position	Check the micro-switch of the position of the coffee brewer and the correct power supply at the motor.
The display shows " OFF 8B ": the	The coffee brewer is not correctly	Check the micro-switch of the

machine does not vend beverages through the coffee brewer (Versions E-EE)	placed	presence of the coffee brewer
The display shows " OFF 9A/9B ": the machine does not vend beverages through the coffee group	(Versions E-EE) No coffee beans inside the coffee beans canister on the left hand side (9A) or on the right hand side (9B)	Fill the coffee beans canister.
	The mills of the grinder are worn up	Replace them
The display shows " OFF 10 ": the machine is out of order	Lost of data programming	Enter into the programming mode, reset the presettings of all functions until they show plausible values (the standard data can be typed in) and then exit from the programming mode
The display shows " OFF 14A ": the machine is out of order	Too many beverages have been supplied without resetting the level of the refilling pump for the instant ingredient boiler	Check and replace, if necessary, the upper microswitch of the pump or the relative cable
The display shows " OFF 15A/OFF15B ": the machine is out of order	Setback at one of the Cups columns towers	Check both of them and eventually remove trapped cups
The display shows " OFF 16 ": the machine is out of order	One of the button of the keypad inside the machine or the red cups column button is trapped	Check and replace button or the relative board, if necessary
The display shows " OFF 17 ": the machine is out of order	The selection keypad for buttons 1 to 24 has at least one trapped button	Check and replace the keypad or the relative cable, if necessary
The display shows " OFF 18 ": the machine is out of order	The selection keypad for adjusting sugar buttons has at least one trapped button	Check and replace the keypad or the relative cable, if necessary
The display shows " OFF 24 A " the machine is out of order	The power supply of the 24 V elements is excessive	Replace switching voltage supply board
The display shows " OFF 24 B " the machine is out of order	The power supply of the 24 V elements is insufficient	Replace switching voltage supply board
The display shows " OFF 25A/OFF25B " the machine is out of order	An error occurred at the cup fall motor	Check the micro-switch which controls the end of the cycle of the cup fall and the power supply of the cup fall motor
The display shows " OFF 31A ": the machine is out of order	(Versions E-EE) An error occurred in the temperature control of the coffee boiler (high temperature)	Check and replace, if necessary, the temperature probe in the coffee boiler, the resistance and the correspondent triac on the power board
The display shows " OFF 31B ": the machine is out of order	(Versions E-EE) An error occurred in the temperature control of the coffee boiler (low temperature)	Check and replace, if necessary, the temperature probe in the coffee boiler, the resistance
The display shows " OFF 31C ": the machine is out of order	(Versions E-EE) An error occurred in the temperature probe of the coffee boiler	Check and replace the temperature probe in the coffee boiler
The display shows " OFF 33A ": the machine is out of order	An error occurred in the temperature control of the instant boiler (high temperature)	Check and replace, if necessary, the temperature probe in the instant boiler, the resistance and the correspondent triac on the power board
The display shows " OFF 33B ": the machine is out of order	An error occurred in the temperature control of the instant boiler (low temperature)	Check and replace, if necessary, the temperature probe of the instant boiler, the clicson and the heating element
The display shows " OFF 33C ": the machine is out of order	An error occurred in the temperature probe of the instant boiler	Check and replace the temperature probe of the instant boiler
The display shows " OFF 34 ": the machine is out of order	(Cold version) An error occurred in the temperature probe of the cold unit.	Check and replace the temperature probe of the cold unit

The display shows " OFF 35 ": the machine is out of order	(Cold version) An error occurred during water loading inside the cold unit with gas	Check and replace the temperature probe of the cold unit with gas unit
The display shows " OFF 50 ": the machine is out of order	Communication problems between CPU board and Power board	Check the connecting USB cable and the SWITCHING REGULATOR, CPU and POWER boards.
The display shows " OFF 51 ": the machine is out of order	(Versions E – EE) Communication problems between CPU board and coffee brewer board	Check the connecting USB cable and the boards.
The display shows " OFF 53 ": the machine is out of order	Communication problems between CPU board and FP unit board	Check the connecting USB cable and the boards.
The display shows " PLEASE LOAD THE MASTER PROGRAM "	It has not been loaded any master program in the CPU board	Ask to Rhea technical service the correct master file and load the file master with flash card into the machine

18.2 Miscellaneous shortcomings

The shortcomings described in this section are not indicated by any message displayed on the machine.

SYMPTOM	PROBABLE CAUSE	SOLUTION
The machine does not switch on (no component is powered)	No mains voltage	Wait for the resetting of mains voltage
	The boiler is overheated	Reset the safety thermal switch boiler. Check the correct operation and cable of the thermal probe or the resistance in the boiler and replace them if necessary
	One general fuse (230V) is burnt out	Replace it
	The safety switch of the door is faulty	Replace it