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

Valbrembo, 04/04/00

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

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

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

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

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

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

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

Zanussi intyggar att maskinen som beskrivs på identifieringsskylten överensstämmer med lagstiftningsföreskrifterna i direktiven: **89/392, 89/336, 73/23 CEE** och påföljande och kompletteringar.

Det erklæres herved, at automaten angivet på typeskiltet er i overensstemmelse med ovsdirektiverne **89/392, 89/336** og **73/23 CEE** og de senere ændringer og tillæg.

GOFFREDO BUTTAZZONI

Direttore Generale  
Directeur General  
Director General  
Directeur-generaal  
Direktør

General Manager  
Generaldirektor  
Director-Geral  
Verkställande direktor

**ZANUSSI**  
V E N D I N G

A handwritten signature in black ink, appearing to read "Goffredo Buttazzoni".



THE EUROPEAN NETWORK FOR QUALITY SYSTEM ASSESSMENT AND CERTIFICATION

*This is to state that*

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

*holds the Quality System Certificate*

CISQ/CISQ 9130-ZA18

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

Signed for and on behalf of EQNet member

Federazione CISQ  
IL PRESIDENTE  
Dr. Ing.

DATE

June 1st, 1994

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The issuing member holds all other EQNet members harmless for any claims arising from the existence of this document.



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



CERTIFICATO n.  
CERTIFICATE No. 9130-ZA18

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

ZAMUSSI VENDING S.p.A.

Via Roma, 24 - 24030 VALEREMBO (BG)

UNITA' OPERATIVA  
OPERATIVE UNIT

Via Roma, 24 - 24030 VALEREMBO (BG)

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

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

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

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

25 Luglio 1994

DATA DI RILASCIO  
ISSUED ON

IMO

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

CISQ è un sistema internazionale di  
certificazione indipendente del Siste-  
mi Qualità aziendali, gestito in modo  
coordinato da organismi di certifi-  
cazione referenziali.

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

MLU 373-500-694

# TABLE OF CONTENTS

<b>INTRODUCTION</b>	<b>PAGE 2</b>	<b>OPERATING MODES</b>	<b>PAGE 15</b>
IDENTIFICATION OF THE VENDING MACHINE	PAGE 2	NORMAL OPERATING MODE	PAGE 15
IN CASE OF FAILURE	PAGE 2	MAINTENANCE MODE	PAGE 15
TRANSPORT AND STORAGE	PAGE 2	<b>PROGRAMMING</b>	<b>PAGE 16</b>
USING THE VENDING MACHINE	PAGE 3	DISPLAYING CURRENT FAILURES	PAGE 16
POSITIONING THE VENDING MACHINE	PAGE 3	PROGRAMMING WATER AND POWDER DOSES	PAGE 17
WARNING FOR INSTALLATION	PAGE 3	PROGRAMMING THE PRICES	PAGE 17
PRECAUTIONS IN USING THE MACHINE	PAGE 3	PROGRAMMING THE PRICES AND THE SELECTION STATUS	PAGE 17
WARNING FOR SCRAPPING	PAGE 3	PROGRAMMING THE BASIC COIN AND THE DECIMAL POINT	PAGE 18
<b>TECHNICAL SPECIFICATIONS</b>	<b>PAGE 3</b>	PROGRAMMING THE VALIDATOR LINES	PAGE 18
POWER CONSUMPTION	PAGE 4	INITIALISING	PAGE 18
SERRATURA A COMBINAZIONE VARIABILE	PAGE 5	PROGRAMMING THE MACHINE CODE	PAGE 18
ACCESSORIES	PAGE 5	HEATING THE MIXER	PAGE 18
<b>LOADING AND CLEANING</b>	<b>PAGE 6</b>	WHIPPING TIMING	PAGE 18
DOOR SWITCH	PAGE 6	<b>COLD PRE-WASH</b>	PAGE 18
MAINTENANCE AND DISINFECTION	PAGE 6	INSTALLATION	PAGE 18
CONTROLS AND INFORMATION	PAGE 6	RESETTING FAILURES	PAGE 18
LOADING CUPS	PAGE 7	DISPLAYING THE STATISTICS	PAGE 18
LOADING COFFEE	PAGE 7	PRINTING THE STATISTICS	PAGE 19
LOADING SUGAR AND INSTANT PRODUCTS	PAGE 7	RESETTING THE STATISTICS	PAGE 19
SANITISING THE FOODSTUFF CIRCUITS AND THE MIXERS	PAGE 7	<b>PROGRAMMER</b>	<b>PAGE 19</b>
CLEANING THE SUGAR RELEASE DEVICE	PAGE 8	AUTOMATIC SETUP TRANSFER	PAGE 19
WEEKLY CLEANING OF COFFEE UNIT	PAGE 8	TRANSFERRED DATA	PAGE 20
REGENERATING THE SOFTENER UNIT	PAGE 9	CONFIGURING THE LANGUAGE	PAGE 20
SUSPENDING FROM USE	PAGE 9	<b>MAINTENANCE</b>	<b>PAGE 21</b>
<b>INSTALLATION</b>	<b>PAGE 10</b>	INTRODUCTION	PAGE 21
UNPACKING THE VENDING MACHINE	PAGE 10	MAINTENANCE OF THE BREWING UNIT	PAGE 21
INSERTING THE LABELS	PAGE 10	ANNUAL SANITISING	PAGE 22
CONNECTING TO THE WATER MAINS	PAGE 10	<b>PRINTED BOARD FUNCTIONS AND INDICATOR LIGHTS</b>	<b>PAGE 22</b>
CONNECTING TO THE POWER SUPPLY	PAGE 11	CONTROL BOARD	PAGE 22
DOOR SWITCH	PAGE 11	EXPANSION BOARD	PAGE 22
INSTALLING THE PAYMENT SYSTEM	PAGE 11	PUSH-BUTTON PANEL BOARD	PAGE 22
WASHING THE WATER SOFTENER RESINS	PAGE 11	CONFIGURING THE ELECTRONIC BOARDS	PAGE 23
FILLING THE WATER SYSTEM	PAGE 12	<b>HYDRAULIC SYSTEMS</b>	<b>PAGE 25</b>
OPERATION OF THE COFFEE UNIT	PAGE 12		
COFFEE DISPENSING CYCLE	PAGE 12		
CHECKING AND ADJUSTING THE MACHINE SETTINGS	PAGE 13		
STANDARD SETTINGS	PAGE 13		
ADJUSTING THE COFFEE UNIT PISTON STROKE SETTING	PAGE 13		
WATER TEMPERATURE CONTROL	PAGE 13		
ADJUSTING THE GRADE OF GRINDING	PAGE 13		
ADJUSTING THE COFFEE DOSE	PAGE 14		

# INTRODUCTION

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

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

**This manual is divided into three parts.**

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

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

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

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

## IDENTIFICATION OF THE VENDING MACHINE AND ITS CHARACTERISTICS

Every machine is identified by its own serial number, indicated on the data plate attached to the cabinet on the right-hand side.

This plate is the only one acknowledged by the manufacturer as identification of the machine, and indicates all the data which readily and safely give technical information supplied by the manufacturer. It also assists in spare parts management.

## IN CASE OF FAILURE

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

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

NECTA VENDING SOLUTIONS SpA  
Via Roma 24  
24030 Valbrembo  
Italy - Tel. +39 035606111

## TRANSPORT AND STORAGE

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

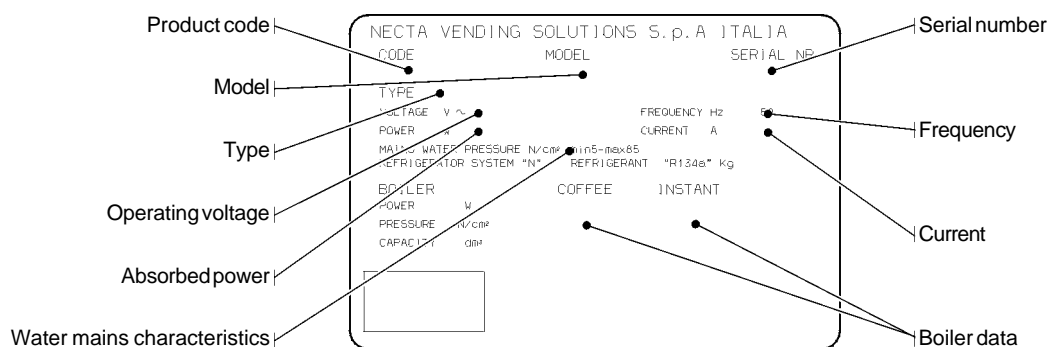
The machine can be lifted by a motorised or manual fork lift truck, and the forks are to be placed underneath the machine from the side clearly indicated by the symbol on the cardboard package.

**Do not:**

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

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

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



## USING THE VENDING MACHINES OF HOT DRINKS IN OPEN CONTAINERS

(Ex.: plastic cups, ceramic cups, jugs)

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

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

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

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

Any other use is unsuitable and thus potentially dangerous.

## POSITIONING THE VENDING MACHINE

The vending machine is not suitable for outdoor installation. It must be installed in a dry room where the temperature is between 2°C and 32°C, and not where water jets are used for cleaning (e.g. in large kitchens, etc.).

The machine should be placed close to a wall, so that the back panel is at a minimum distance of 4 cm from it and correct ventilation may be ensured.

The machine must never be covered with cloth or the like. The machine should be positioned with a maximum inclination of 2°.

If necessary provide proper levelling by way of the adjustable feet included (see Figure 8).

## WARNING FOR INSTALLATION

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

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

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

All packing materials shall be disposed of in a manner which is safe for the environment.

## PRECAUTIONS IN USING THE MACHINE

The following precautions will assist in protecting the environment:

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

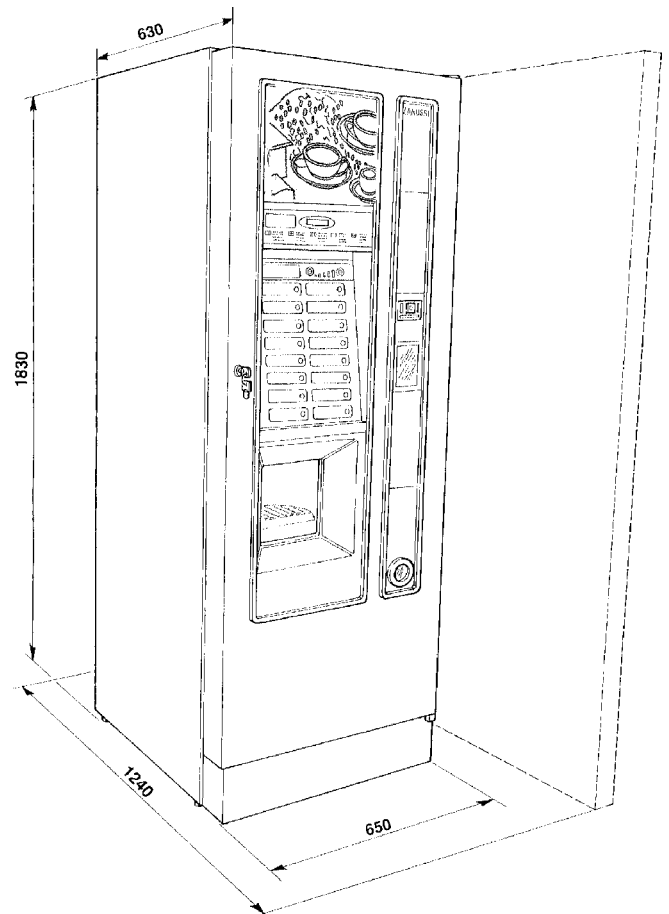
## WARNING FOR SCRAPPING

Whenever the machine is to be scrapped, the laws in force regarding environment protection should be strictly observed. More specifically:

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

## TECHNICAL SPECIFICATIONS

Height	1830 mm
Width	650 mm
Depth	630 mm
Weight	140 Kg



Power supply voltage	230 V~
Frequency	50 Hz
Installed power	2300 W

## CUP DISPENSER

- Suitable for cups with a rim diameter of 70-71 mm. with a capacity of approximately 600 cups;

## COIN MECHANISM

The machine is supplied with arrangement for the EXECUTIVE coin mechanism.

## SALES PRICES

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

## COIN BOX

Made with aluminized metal sheeting. Lid and lock are available as optional accessories.

## WATER SUPPLY

From the mains, with a water pressure of 5 to 85 N/cm<sup>2</sup>. The machine software is programmed to control the water supply coming from an internal tank (optional kit).

## AVAILABLE ADJUSTMENTS

- Espresso: volumetric for coffee, granulometry, instant products and water doses.
- Instant: time adjustment for coffee, instant products and water doses.

## Temperature control

Factory set on the correct operating temperature. Two trimmers located on the control board for the coffee boiler and on the expansion board for the instant boiler allow small adjustments (as necessary).

## CONTROLS

- Presence of cups
- Presence of water
- Presence of coffee
- Presence of coffee unit
- Liquid waste container full
- Operating temperature reached
- Position of mobile dispensing spouts

## SAFETY DEVICES

- Door switch
- Manual-reset boiler safety thermostats
- Air-break float jamming
- Overflow solenoid valve
- Float for full liquid waste container
- Instant boiler overboiling thermostat
- Boiler sensor short-circuit/failure control

- Time protection for:

- Pump
- Coffee unit ratiomotor
- Coffee dispensing
- Coffee grinder
- Column shift motor

- Temperature protection for:

- Doser units
- Coffee unit ratiomotor
- Coffee release magnet
- Pump
- Electric mixers
- Coffee grinder motor

- Fuse protection for:

- Board power supply transformer (primary and secondary)
- Executive power supply transformer

## CAPACITY OF CONTAINERS

Coffee beans	3.5	Kg
Sugar	4.2	Kg
Powdered milk	1.4	Kg
Decaffeinated coffee	1.2	Kg
Tea	4.3	Kg
Chocolate	3.0	Kg
Stirrers	N.	550

## POWER CONSUMPTION

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

Under average conditions, and namely:

- Ambient temperature: 20° C
  - Boiler temperature: 94° C
  - Inlet water temperature: 18° C
  - Water dose (average) per selection: 93 cc
- the following power consumption levels resulted:
- To reach operating temperature Wh 280
  - Hourly stand-by power consumption Wh 156
  - Average consumption for each selection Wh 11,2

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



## VARIABLE COMBINATION LOCK

Some machine models are fitted with a variable combination lock.

The lock is supplied with two silver colour keys to be used for normal opening and closing.

The lock can be customised by using a kit, available as accessory, which permits changing of the lock combination.

This kit includes a change key (black) for the current lock combination as well as the change (gold) and use (silver) keys for the new combination.

Sets of change and use keys with other combinations can be supplied on request.

Additional sets of use keys (silver) may be requested, indicating the combination stamped on the keys.

Generally, only the use key (silver) is used, while the combination change keys (gold) can be kept as spares.

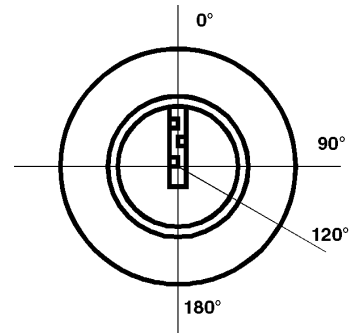
**Do not use the change key for normal opening, as it may damage the lock.**

**To change combination do as follows:**

- insert the current change key (black) and rotate to the change position (reference notch at 120°);
- remove the current change key and insert the new change key (gold);
- rotate to the close position (0°) and remove the change key.

The lock will now have the new combination.

**The keys with the old combination cannot be used for the new combination.**



## ACCESSORIES

A wide range of accessories can be installed on the machine to change its performance:

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

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

# LOADING AND CLEANING

## DOOR SWITCH

When opening the door a special switch disconnects the power from the machine electrical system to allow the operations described below, regarding loading and routine cleaning, in full safety.

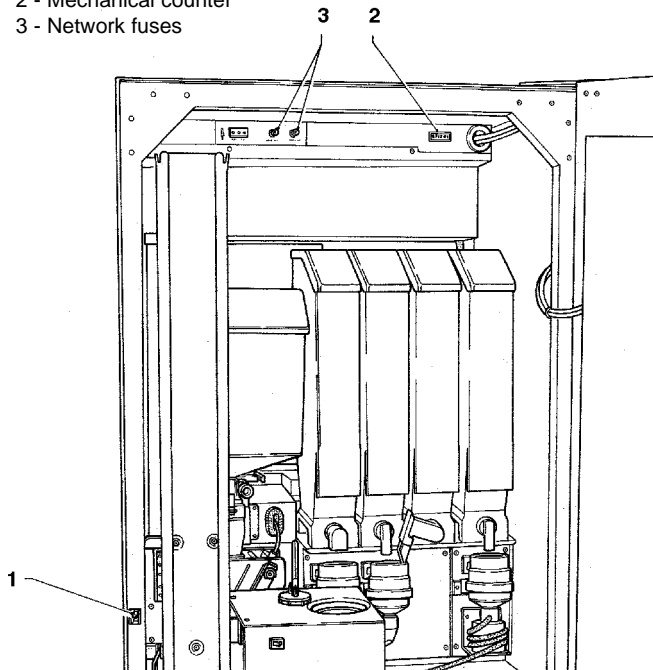
**All operations requiring the machine to be energized should be carried out by qualified personnel ONLY, informed about the specific risks of such situation.**

To energize the system with the door open, simply insert the special key into the slot (see Figure 1).

The door can be closed only after removing the key.

Fig. 1

- 1 - Door switch
- 2 - Mechanical counter
- 3 - Network fuses



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

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

**Before starting any maintenance operations requiring parts of the unit to be removed, the machine must always be switched off.**

## CONTROLS AND INFORMATION

All user controls and information are located on the external side of the door (see Figure 2).

The labels with the selection menu and the operating instructions supplied with the machine must be inserted at the time of installation.

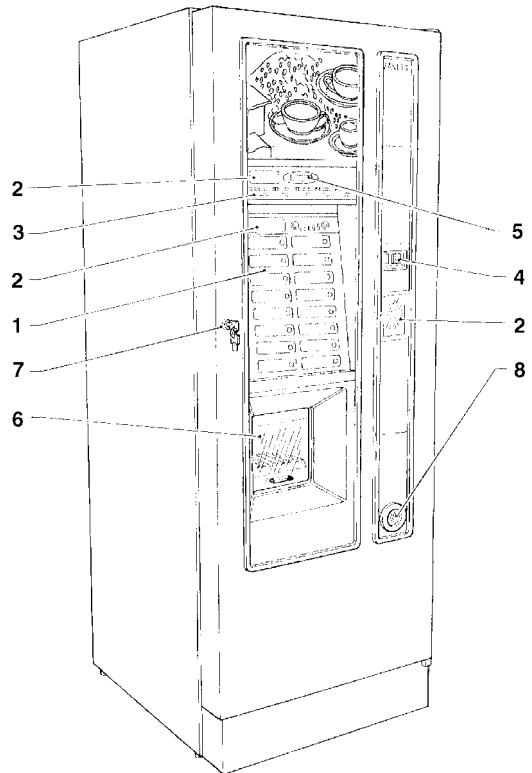


Fig. 2

- 1 - Selection menu
- 2 - Spaces for user information
- 3 - Operating instructions plate
- 4 - Coin slot / return button. "Exact amount" warning light
- 5 - Alphanumeric display
- 6 - Dispensing compartment
- 7 - Lock
- 8 - Coin return hatch

## MAINTENANCE AND DISINFECTION

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

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

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

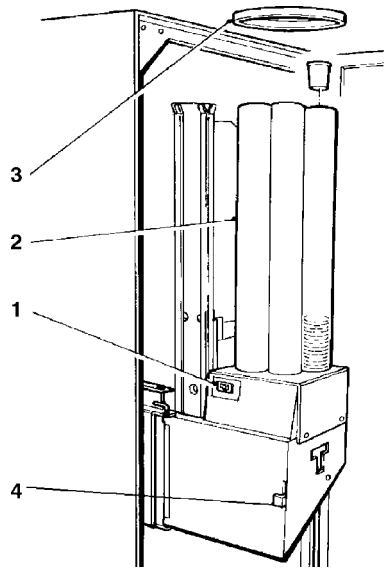
The Programming button, used to access the machine functions, and the mixer cleaning button are located on the right side of the coin mechanism compartment.

## LOADING CUPS

When loading cups for the first time (i.e. with the cup dispenser completely empty) do as follows:

- disconnect the power from the machine;
- remove the cover from the cup container;
- fill the columns with cups, except the one aligned with the dispensing opening;
- switch the machine on; the filled column will be positioned automatically over the dispensing opening;
- fill the empty column;
- release one or more cups using the special button and replace the cover.

Fig. 3

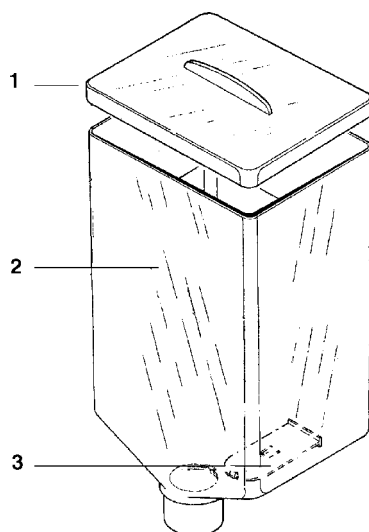


- 1 - Cover
- 2 - Cup stacker
- 3 - Cup release button
- 4 - Shelf release lever

## LOADING COFFEE

Lift the cover and fill the hopper with coffee, ensuring that the shutter is fully open (see Figure 4).

Fig. 4



- 1 - Cover
- 2 - Coffee hopper
- 3 - Shutter

## LOADING SUGAR AND INSTANT PRODUCTS

A self-adhesive label indicating the product is attached on each container.

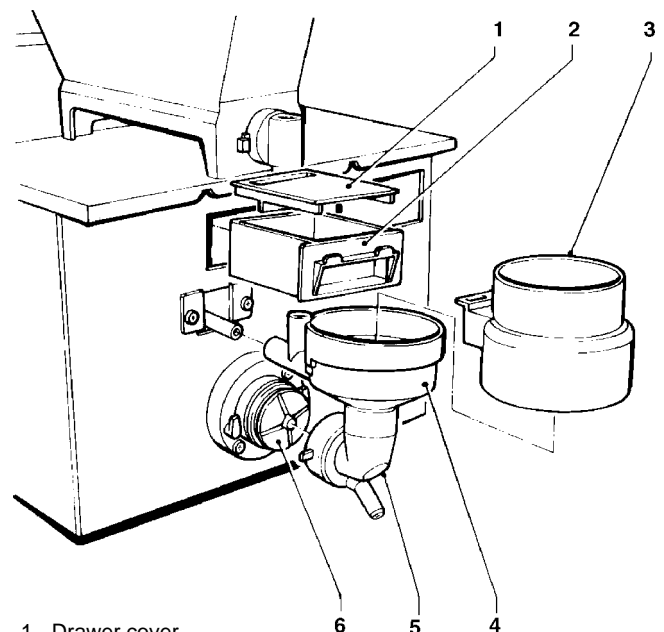
After lifting their cover, fill the single containers with the appropriate products, taking care not to compress them to prevent packing. Make sure the products do not contain any clots.

## SANITISING THE FOODSTUFF CIRCUITS AND THE MIXERS

When installing the machine, and then at least once a week or even more frequently according to the use of the machine and the quality of the inlet water, the mixers and the dispensing conduits must be thoroughly sanitised (cleaned and disinfected), to guarantee proper hygiene of the dispensed products.

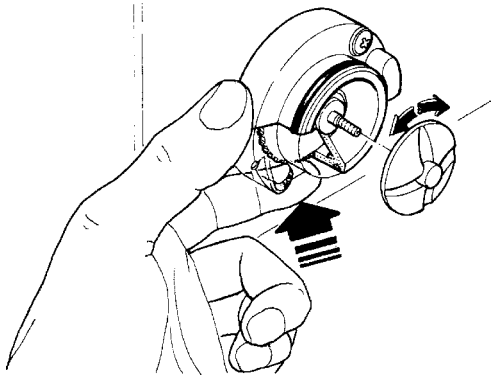
The parts to be cleaned are the following:

- powder deposit drawers, mixer and instant drink dispensing conduit;
- dispensing hoses and spouts;
- sugar chute;
- dispensing compartment.
- remove the powder and the water funnels, the feeders, the powder deposit drawers and the mixer blades from the mixers (see Figure 5);



- 1 - Drawer cover
- 2 - Powder deposit drawer
- 3 - Powder funnel
- 4 - Water funnel
- 5 - Feeder
- 6 - Mixer wheel

Fig. 5



## CLEANING THE SUGAR DISPENSER

For models with sugar dispensed directly into the cup, the sugar dispensing system must be cleaned periodically using hot water (see figure 6) proceeding as follows:

- to remove the mixer wheels it is sufficient to block the disk fitted on the mixer shaft with a finger;

- wash all parts with detergent being sure that all visible residue and product layers are mechanically removed, using a brush if necessary;

Disinfection should be carried out using chlorine-based detergents.

- soak all components for approx. 20 minutes in a container filled with the previously prepared chlorine-based solution;

- reinstall the feeders and the water funnels;

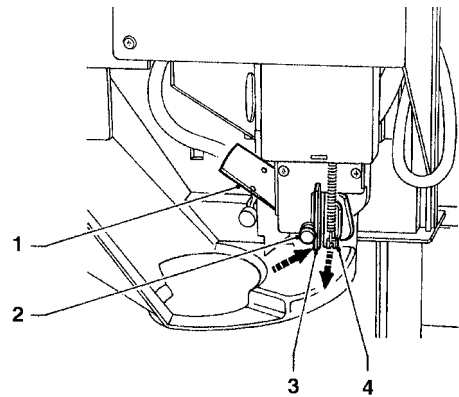
- reinstall the powder deposit drawers and the powder funnels after thorough rinsing and drying.

### After installing all parts, the following is required:

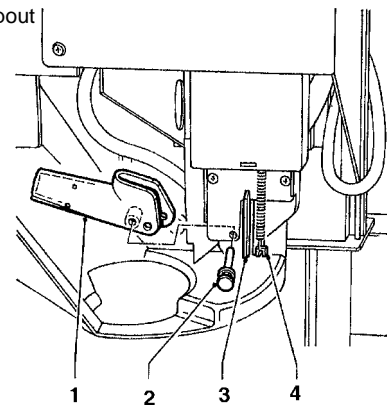
- go into "Maintenance" mode to clean the mixer (see relevant section) and add some drops of the chlorine-based solution into each funnel.

- after disinfection, thoroughly rinse all parts to remove all possible residue of the solution used.

Fig. 6



- 1 - Sugar dispensing spout
- 2 - Pin
- 3 - Flexible lever
- 4 - Return spring



- release the return spring;
- lift the flexible lever to free the pin;
- remove the pin and the dispensing spout;
- after cleaning, reinstall all parts in the reverse order.

## WEEKLY CLEANING OF THE COFFEE UNIT

Every time coffee is refilled, or at least once a week, any powder residue should be removed from the external parts of the coffee unit, particularly from the coffee funnel area.

## REGENERATING THE SOFTENER UNIT

The ion-exchange resins, contained in the softener unit, should be regenerated at least once a week or even more frequently depending on the hardness of the water from the mains used to supply the machine (see table below).

Water hardness		N. of selections	
° F.	° G.	60 cc.	130 cc.
10	5.6	25,000	12,500
20	11.2	12,500	6,000
25	14	11,000	5,250
30	16.8	9,400	4,500
40	22.4	6,300	3,000
50	28.0	5,500	2,500

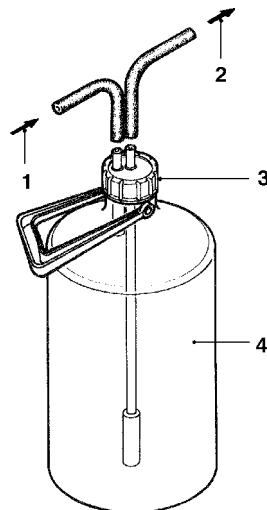
To regenerate the resins correctly do as follows:

- remove the softener unit from the cabinet and shake it vigorously to eliminate any preferential paths which may have formed;
- fill with 1.5 Kg. of sodium chloride (ordinary salt);
- connect the side hose union to a tap and the middle rubber-holder to a drain point; the direction of the water flow must be

### NECESSARILY

the one shown in figure 7

Fig. 7



- 1 - From the tap
- 2 - To the drain
- 3 - Cap
- 4 - Softener unit

- adjust the water flow in such a way as to completely dissolve the salt in 20 litres water within 35 minutes;
- during the regeneration operation, ensure that the softener unit is always full of water, bleeding any air which may have entered;
- at the end of this operation ensure that outlet water is no longer salted; it is advisable to check the hardness of the water by means of appropriate chemical reagents: the outlet water hardness should be 0°F.

## SUSPENDING FROM USE

If for any reason the machine is switched off for a period exceeding the use-by date of the products, the following will be necessary:

- completely empty the containers and thoroughly wash them with the chlorine-based detergents used to clean the mixers.
- completely empty the dosing grinder by dispensing coffee until the empty condition is indicated.
- completely empty the air-break and the instant product boiler, loosening the clamp on the hose.

# INSTALLATION

Installation and the following maintenance operations should be carried out with the **machine switched on** and therefore by qualified personnel only, who are trained in the correct use of the machine and informed about the specific risks of such situation.

**The machine should be installed in a dry room where the temperature remains between 2° C and 32° C.**

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

## UNPACKING THE VENDING MACHINE

After removing the packing, check that the machine is not damaged.

If in doubt do not use the machine.

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

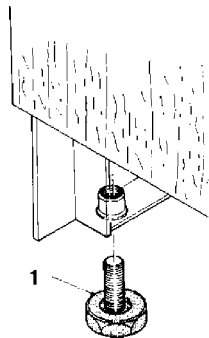
Packing materials must be disposed of in authorized areas only, and all recyclable materials must be recovered by specialised companies.

### Important notice!!

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

If necessary provide proper levelling by way of the adjustable feet included (see Figure 8).

Fig. 8



1 - Adjustable foot

## INSERTING THE PRODUCT LABELS

The labels, indicating the available selections, are supplied with the machine must be inserted into the special slots at installation.

According to the model, some buttons may not be used (refer to the selection dose table).

## CONNECTING THE MACHINE TO THE WATER MAINS

The machine must be connected to the drinking water mains. The water pressure must be 5 to 85 N/cm<sup>2</sup>. Run some water from the mains until it is clear and without impurities.

Use a hose capable of withstanding the water mains pressure and suitable for use with foodstuff (min. inside diameter of 6 mm) to connect the water supply to the union (1/4" gas) of the water inlet solenoid valve (see Figure 9).

- 1 - Water inlet union (1/4" gas)
- 2 - Water supply hose
- 3 - Overflow hose
- 4 - Inlet hose union

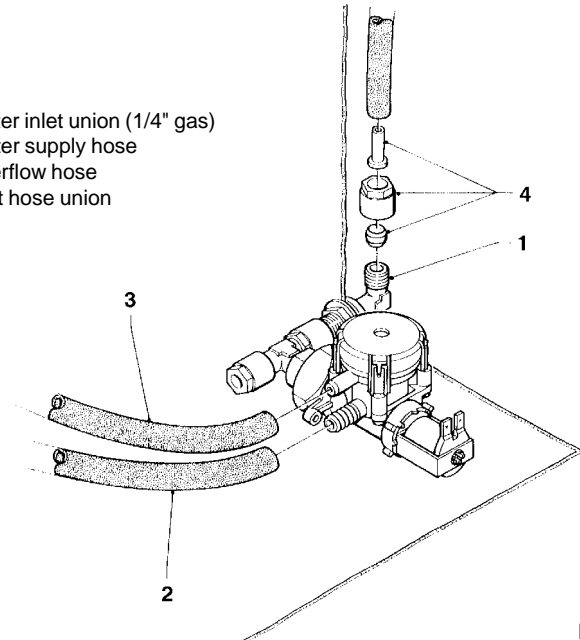


Fig. 9

**It is good practice to install the water supply tap outside the machine in an easily accessible position.**

## OVERFLOW DEVICE

The water inlet electrovalve (see Fig. 9) is equipped with an overflow device mechanically preventing the water from flowing in if there is a malfunction in the electrovalve itself or in the control device of the boiler water level.

To restore normal operation, proceed as follows:

- disconnect the electric power from the machine;
- drain the water contained in the overflow pipe;
- shut off the valve of the water supply outside the machine;
- loosen the nut which secures the electrovalve supply tube to relieve the water mains residual pressure and then tighten again (see Fig. 12);
- open the valve and switch on the machine.

## CONNECTING THE POWER SUPPLY

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

Before making the connection make sure that the ratings correspond to those of the power grid, and more specifically:

- the supply voltage rating should be within the limits recommended for the connection points;
- the main switch should be located within easy reach and be capable of withstanding the peak load required, and at the same time should ensure proper omnipolar disconnection from the power grid when the opening gap of the contacts is of at least 3 mm.

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

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

The power cable is of the type fitted with a fixed plug. Any replacement should be done by qualified personnel only, using exclusively cables of the type HO5 RN - F or HO5 V V-F or H07 RN-F with a section of 3x1-1,5 mm<sup>2</sup>.

**Do not use adapters, multiple sockets and/or extensions.**

Before switching the machine on, be sure it is correctly connected to the water mains and the cutoff valve is open.

**THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR ANY DAMAGE CAUSED BY NONCOMPLIANCE WITH THE ABOVE MENTIONED SAFETY RULES.**

## DOOR SWITCH

When opening the door a special micro-switch disconnects the power from the machine electrical system.

To energize the system with the open door, simply insert the special key into the slot (see Fig. 1).

**With the door open, no energised parts can be accessed. Inside the machine the only energised parts are the ones which are covered with protective casings which are marked with a plate indicating “before removing the cover disconnect the electricity”.**

**Before removing these covers it is necessary to unplug the machine from the mains socket.**

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

## INSTALLING THE PAYMENT SYSTEM

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

- Install the coin mechanism and make sure that the programming of the relevant parameters is correct;
- adjust the selector opening lever square piece in order to enable a complete selector opening;
- adjust the coin chute according to the type of coin mechanism installed.

## CLEANING THE SOFTENER RESINS (MODELS C ONLY)

Before filling the machine water system the resins contained in the softener unit must be cleaned, proceeding as follows:

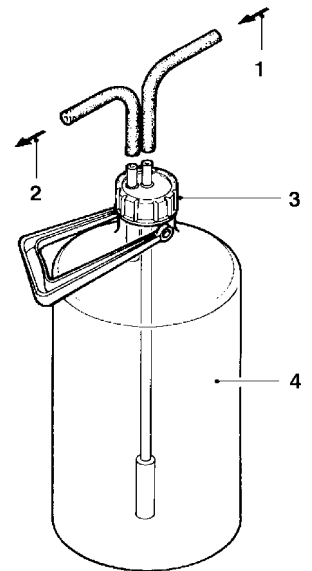


Fig. 10

- 1 - From the water inlet solenoid valve
- 2 - To the air-break
- 3 - Plug
- 4 - Softener unit

- remove the hose connected to the air-break from the softener unit hose union (see Fig. 10);
- insert a new hose provided onto the now freed hose union and direct it towards a drain;
- switch the machine on;
- bleed air out of the softener unit by loosening the plug, wait until it is full of water and tighten the plug, let a few litres of water flow out until it is clear;
- re-insert the hose connected to the air-breaks.

## FILLING THE WATER SYSTEM

If the air-break device indicates no-water for more than 10 seconds after the machine has been switched on, an installation routine will start automatically, and namely:

- the display will show

"INSTALLATION"

for the whole duration of the routine;

- the air-break and the instant product boiler are filled;
- (for the espresso models only) the coffee solenoid valve is opened so that the air may be bled from the boiler and 800 cc. of water filled.

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

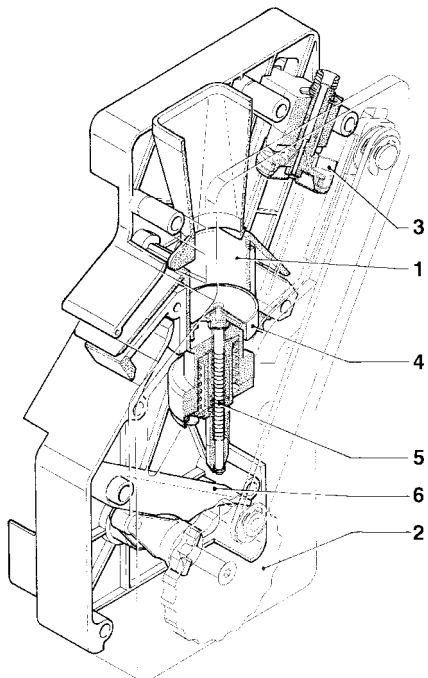
This operation must be carried out manually by pressing the special button when in "programming" mode, if the **water supply kit (optional) from an internal tank is fitted**, or after any maintenance requiring the boiler to be emptied but not the air-break.

## OPERATION OF THE COFFEE UNIT

### COFFEE DISPENSING CYCLE

When selecting coffee, the grinder is started and will continue until the coffee doser chamber is full (see Fig. 11).

Fig. 11

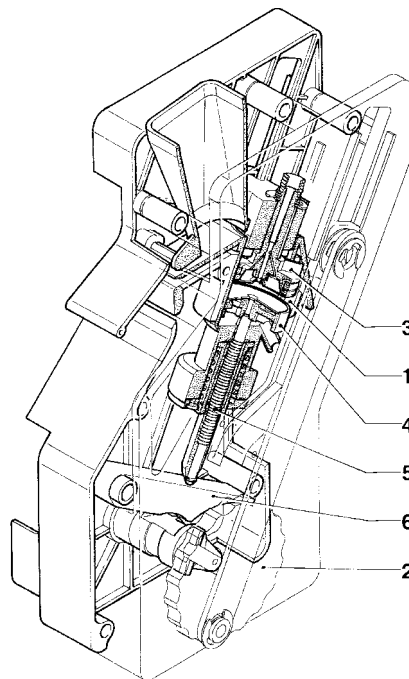


- 1 - Brew chamber
- 2 - External disk
- 3 - Upper piston
- 4 - Lower piston
- 5 - Pre-brewing spring
- 6 - Swinging lever

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

The coffee falls into the vertical brew chamber (1) (see Fig. 12).

Fig. 12



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

The ratiomotor handle engaged with the disk (2) located outside of the unit rotates by 180°, making the brew chamber swing and lowering the upper piston (3) (see Fig. 12).

Due to the water pressure, the pre-brewing spring (5) sinks and the lower piston (4) goes down 4 mm, thus forming a water cushion which allows an even use of the coffee dose.

At the end of the dispensing cycle and during a pause of 3 seconds, the pre-brewing spring (5) will discharge the water through the third way of the dispensing solenoid valve, lightly pressing the used coffee dose.

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



## CHECKING AND ADJUSTING THE MACHINE SETTINGS

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

### for coffee

That the used coffee dose is lightly compressed and damp.

The granulometry of the ground coffee.

The weight of the ground coffee.

The dispensing temperature.

The water dose.

### For instant products

The weight of the instant products.

The drink temperature.

The water dose.

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

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

To adjust them it is therefore necessary to follow the programming procedures.

## STANDARD SETTINGS

The vending machine is supplied with the following settings:

- coffee temperature (at the spout) approx. 85-89°C;
- instant product temperature (at the spout) approx. 75°C;

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

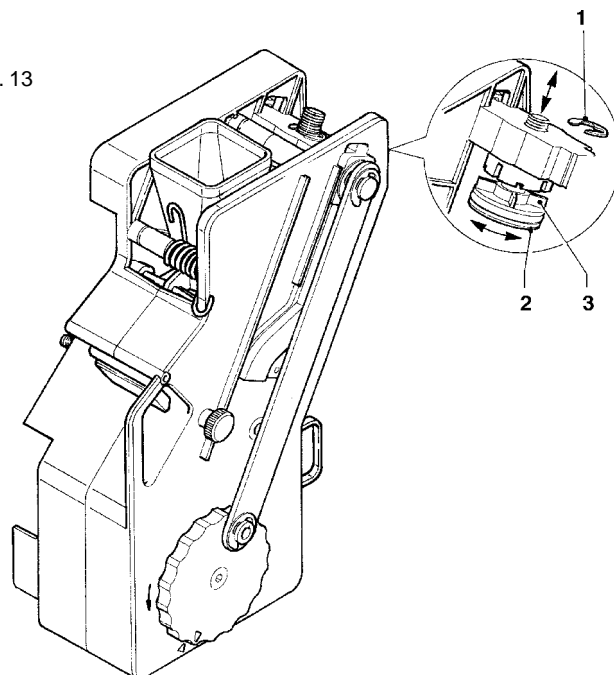
## ADJUSTING THE SETTING OF THE COFFEE UNIT PISTON STROKE

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

To change the piston position (see Fig. 13):

- remove the snap ring from its seat;
- place the piston in the proper adjusting notches:
  - .less deep notches for 5.5 to 6.5 g doses;
  - .deeper notches for 6.5 to 7.5 g doses.

Fig. 13



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

## WATER TEMPERATURE CONTROL

If the boiler temperature is to be changed, adjust the special trimmer (see figures 18 and 20) keeping in mind that:

- tightening will increase the temperature;
- loosening will decrease the temperature;
- the temperature varies by approx. 1° C every 2 turns.

## ADJUSTING THE GRADE OF GRINDING

When a variation in the grade of grinding is desired, turn the relevant adjusting knob on the grinder (see Fig. 14) as follows:

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

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

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

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

## ADJUSTING THE COFFEE DOSE

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

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

In addition, when the lever is fully rotated upwards, the ratchet can be released from the groove in the dose regulator (see Fig. 17) and replaced into a different groove to change the average dose setting to:

- low 6 g.  $\pm$  0.5
- medium 7 g.  $\pm$  0.5
- high 8 g.  $\pm$  0.5

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

### Warning!!!

**To refit the coffee unit, pay special attention to the piston position. Reference notches on the external disk and on the unit case should match (see Fig. 16).**

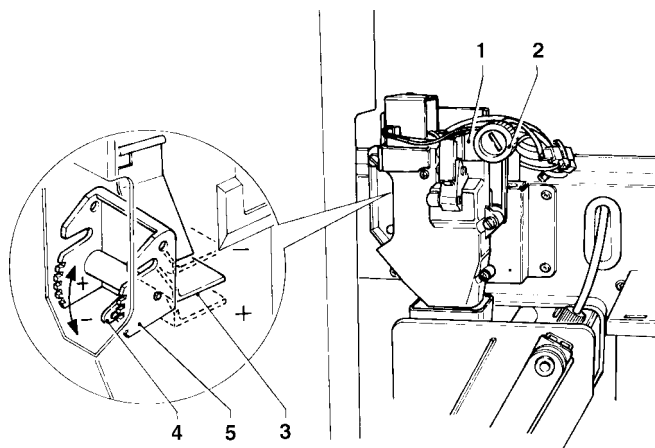


Fig. 14

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

## OPERATING MODES

Three different operating modes are provided for the machine, accordingly the buttons may have different functions based on the preset mode of the buttons. The available operating modes are as follows:

DISPLAY	FUNCTIONS
<b>Normal operating mode</b> "Ready"	coins accepted products dispensed
<b>Maintenance mode</b> "Maintenance"	test dispensing machine maintenance
<b>Programming mode</b> "Programming"	programming

### NORMAL OPERATING MODE

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

The messages displayed according to the current operation are as follows:

DISPLAY	FUNCTION
"Ready"	Machine ready.
"Price:...."	Price display selection made
"Credit:....."	Credit display.
"Out of Service"	Machine out of service
"Preparing"	Preparation of drink
"Temperature"	Wait time before reaching the operating temperature
"Installation"	Installation under way
"Sel. disabled"	Selection disabled
"Coffee out of S."	For espresso models only Coffee unit out of service
"Token"	Displayed if the payment system operates with pulses
"Take"	Drink ready
"Instant out of S."	Instant drinks out of service

## MAINTENANCE MODE

When the programming button located in the coin mechanism compartment is pressed once the machine will go to "Maintenance" mode.

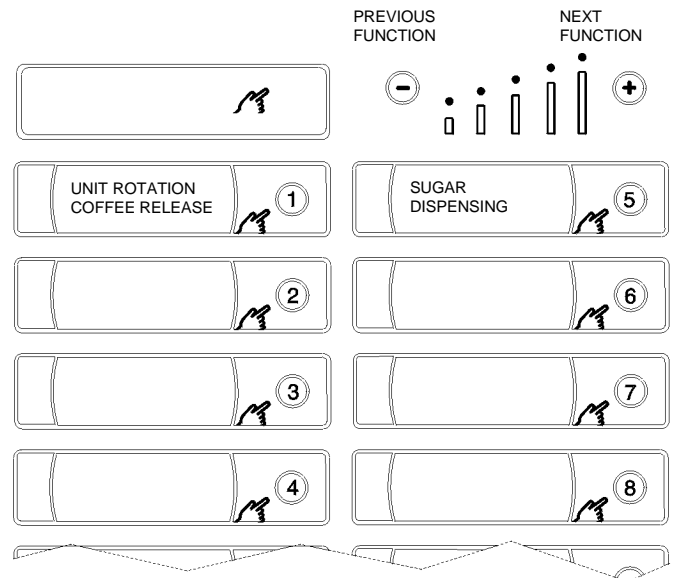
The message "Maintenance" is displayed for approx. 2 seconds and then the first option of the "maintenance" menu will appear to activate the following functions:

"Compl. selec."	Dispensing test including cup, sugar and stirrer
"Powd. only"	Dispensing powder only
"Water only"	Dispensing water only
"No Accessories"	Dispensing test without cup, sugar and stirrer
"Special functions"	Coffee grinding and release Rotating coffee unit Dispensing sugar

Each button controls the relevant selection for complete or partial test dispensing (see the selection dose table).

**N.B. For espresso coffee based selections, only the additions are dispensed with the partial dispensing of powder and water; if a selection requires no addition the message "Sel. disabled" will be displayed.**

When the display shows "Special functions" the buttons will have the following functions:



Button "1" is used to operate the coffee unit if this is connected to the electrical system, and to release a dose of coffee if disconnected.

Button "5" is used to dispense a sugar dose, which can be adjusted with the "+" and "-" buttons.

## PROGRAMMING MODE

When pressing the programming button located in the coin mechanism compartment twice, the machine will go to "Programming" mode.

The message "Programming" is displayed for approx. 2 seconds, after this the first option of the programming menu appears on the display enabling the following functions:

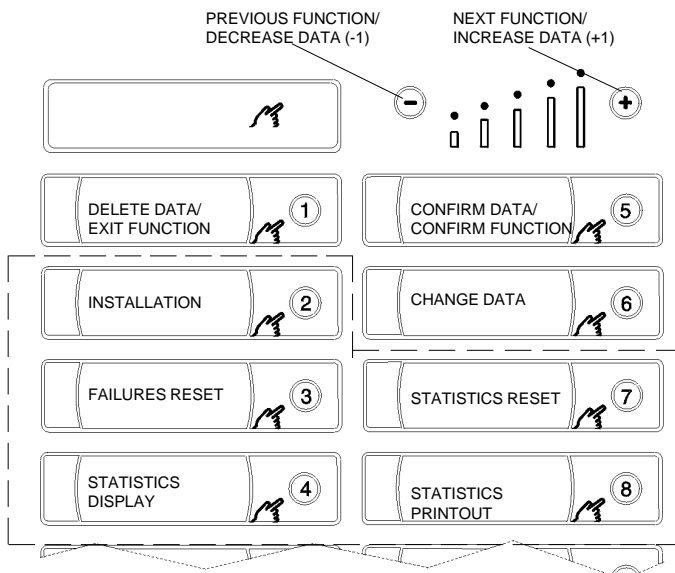
"Curr. failure"	current failure reading
"Water dose"	water dose setting
"Powd. dose"	powder dose setting
"Set Price"	price setting
"Set price/select."	prices/selections setting enable/disable selections
"Basic coin / DP"	basic coin value setting and decimal point position
"Validat. lines"	validator line value setting
"Initialising"	RAM initialising
"Machine code"	machine code setting
"Mixer heating"	enable/disable mixer heating
"Coffee whipping"	setting whipping time for instant coffee
"Mixer cooling"	enable/disable mixer cooling

The following is also possible:

- failure reset;
- machine installation;
- statistics display;
- statistics printout;
- statistics reset.

Now the buttons on the push-button panel will have different functions as shown in the figure below.

The buttons within the dotted line perform direct functions, the ones outside permit either menu scrolling or changing of data.



## DISPLAY OF CURRENT FAILURES

When the "Curr. failure" function from the "programming" menu is displayed, pressing confirm button "5" will display the error code of the current failure;

when pressing the "+" button the error code of the next applicable failure is displayed. If no failure is currently present, pressing confirm button "5" will display the message "No Failure".

The 16 failures are shown in the following cases:

### AIR-BREAK FAILURE

The machine will lock if after 7 selections the micro-switch has not signalled the lack of water.

### ESPRESSO BOILER FAILURE

If after 10 minutes of heating time from the machine start, or from the last selection, the coffee boiler fails to reach the operating temperature, coffee based selections will be disabled.

### INSTANT BOILER FAILURE

If after 20 minutes of heating time from the machine start, or from the last selection, the instant boiler fails to reach the operating temperature, instant product based selections will be disabled.

### COIN MECHANISM FAILURE

The machine will lock if it receives a pulse longer than 2 seconds on a validator line or the communication with the serial coin mechanism does not take place for more than 30 seconds.

### RAM DATA FAILURE

Data contained in the EEprom (i.e. the chip that stores the setting variations) is wrong and must be retrieved from the Eprom, whereas all statistics information will be lost.

### WATER FAILURE

If the air-break micro-switch is closed for more than one minute, the water inlet solenoid valve will remain energized until the water flow is restored; if the water supply kit, with internal tank, is installed in the machine, the pump is stopped.

## CUP FAILURE

When the empty cup column micro-switch opens, the column shift motor is activated. If after one full turn of the cup dispenser the micro-switch is not closed the machine locks.

## LIQUID WASTE CONTAINER FULL

The machine will lock after the liquid waste container float is triggered.

## VOLUMETRIC COUNTER FAILURE

Failed computation by the volumetric counter within a max. given time; coffee based selections will be disabled.

## COFFEE UNIT FAILURE

Due to wrong positioning, or non installation, of the unit. The machine is not locked, but all coffee based selections will be disabled.

## COFFEE FAILURE

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

## COFFEE RELEASE FAILURE

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

## SYRUP 1 AND 2 FAILURE

If one of the syrups runs out, the selections containing that syrup are disabled.

## MOBILE SPOUT FAILURE

If the spouts do not reach the dispensing points the machine is disabled.

## WATER FAILURE (COLD UNIT)

If there is no water in the cold unit, selections from such unit are disabled.

## PROGRAMMING THE WATER AND POWDER DOSES

When either the "Wat. dose" or the "Powd. dose" functions are displayed the doses can be varied from the "programming" menu.

The various doses are identified with dose codes, which are displayed each time.

The dose code locates the water and powder doses related to a given selection; changing the doses of a selection will have effect also on composed selections where the dose code is used.

For example, increasing the water dose for strong coffee will also increase the dose for cappuccino which is composed of strong coffee and milk.

The sugar dose controls the average amount. This dose can be varied by the user for each selection with the "-" and "+" buttons.

The dispensed dose changes by 1/3 of the the average dose each time the "-" and "+" buttons are pressed.

For example:

For the correspondence of the dose codes refer to the selection dose table.

0	$-\frac{2}{3}$	$-\frac{1}{3}$	Z1	$+\frac{1}{3}$	$+\frac{2}{3}$	
0	1,7	3,3	5	6,7	8,3	gr.

The values of the doses displayed are expressed in:

- tenths of a second for powders;
- tenths of a second for water in instant models;
- number of volumetric counter pulses for coffee water in espresso models.

Press the confirm button "5" from the "programming" menu to access the dose code list, which can be scrolled with the "-" and "+" buttons.

When pressing correction button "6", this value will be displayed blinking and can be modified as necessary.

## PRICE SETTING

When the "Set Price" function is displayed, the 16 sales prices stored can be changed from the "programming" menu.

The prices are indicated as number of basic coins. Press the confirm button "5" from the "programming" menu to access the price list, which can be scrolled with the "-" and "+" buttons.

When pressing correction button "6", this value will be displayed blinking and can be modified as necessary.

## PROGRAMMING THE PRICES AND THE SELECTION STATUS

When the "Set Price/Select." (price setting) function is displayed, the selection setting to one of the stored prices and/or the state of one selection can be varied from the "programming" menu.

Press the confirm button "5" from the "programming" menu to access the price list, which can be scrolled with the "-" and "+" buttons.

When pressing correction button "6" the selection status will blink and can be changed from (enabled) to (disabled) with the "-" and "+" buttons.

Press again the confirm button "5" to display the price number referred to in the price table.

When pressing correction button "6", this value will be displayed blinking and can be modified as necessary.

**N.B.: The residual credit is controlled by the minidips located on the CPU board. Refer to the "configuring the electronic boards" section for settings.**

## PROGRAMMING THE BASIC COIN AND THE DECIMAL POINT

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

Pressing the confirm button "5" from the "programming" menu will display the current value of the basic coin.

By using the "-" and "+" buttons, the display will alternate between the value of the basic coin and the number of the decimal point position "DP", i.e.:

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

When pressing the correction button "6" these values will be blinking and can be modified as necessary.

## PROGRAMMING THE VALIDATOR LINES

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

The values of the lines are indicated as number of basic coins.

Press the confirm button "5" from the "programming" menu to access the line list, after which this can be scrolled with the "-" and "+" buttons.

When pressing the correction button "6" this value will be blinking and can be modified as necessary.

## INITIALISING

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

This function should be used when a memory data error occurs or when the EPROM is replaced.

All statistical information will be reset.

Pressing button "5" makes the request "Confirm?" appear on the display for confirmation. When pressing button "5" a second time, the message "Working" is displayed for a few seconds.

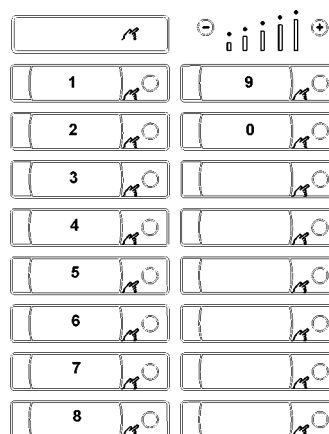
## PROGRAMMING THE MACHINE CODE

When the "Machine code" function is displayed the identification code number of the machine can be changed (from the default 0000 to a number up to 9999).

Press button "5" to confirm and display the current code number; when using the correction button "6" the first digit will blink.

The buttons will now have numeric functions.

Pressing any of the buttons will give its value to the flashing digit and the next digit starts blinking.



## HEATING THE MIXER

When the "heating mixer" function is displayed, pressing the confirm button "5" will display the status (enabled/disabled); press the correction button "6" to change the status of the function.

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

## INSTALLATION

Pressing the installation button "2" will enable the filling operation of the hydraulic system, even with the air break full.

## RESETTING FAILURES

When pressing the failure reset button "3" the message "Working" is displayed for a few seconds and all current failures will be reset.

## DISPLAYING THE STATISTICS

Pressing the statistics display button "8" causes the stored data to be sequentially shown on the screen with a time interval of 1 second if no other button is pressed and more precisely:

- 1 - single selection counter;
- 2 - single price counter;
- 3 - counter per type of coin cashed;
- 4 - total cash counter;
- 5 - failure counter.

## PRINTING THE STATISTICS

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

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

To connect the printer do as follows:

- Press the statistics printout button "8" and the message "Confirm?" will be displayed for confirmation;
- before confirming connect the printer;
- press the confirm button "5" to start printing.

## RESETTING THE STATISTICS

When pressing the statistics reset button "7" the flashing message "Confirm?" will be displayed for confirmation. Pressing the confirm button "5" the message "Working" is displayed for a few seconds and the statistics are reset.

## PROGRAMMER (OPTIONAL)

### AUTOMATIC SETUP TRANSFER

Using the programmer device makes it possible to read out the programming routines set and transferred to other apparatuses from a given vending machine.

These data are preserved also when the programmer is disconnected thanks to a couple of Duracell batteries LR03 Format AAA 1.5 V (to be replaced every 12 months). The programmer allows up to twenty different programs (setups) to be stored.

To identify, among the 20 setups available, those containing data, a special character is displayed, and more precisely:

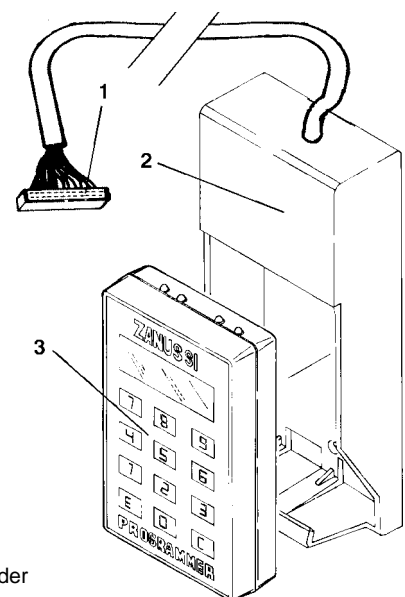
< - > = Setup free

< □ > = Setup with data.

When creating the setup only the programs containing data are available; if no setup contains data, the message "no data available" will appear on the programmer display. The special holder (see Fig. ) is used to connect the programmer to the machine, connecting the cable to the special connector of the push-button board (see fig. ). Then enter the "programming" mode and press twice the relevant button on the coin mechanism compartment. Now, by inserting the programmer in its holder, an automatic connection will take place, and the setup menu will be shown on the programmer display:

- Pressing button "E" will access the displayed function;
- Pressing button "O" will display the following function;
- Pressing button "C" will display the previous function.

Fig. 15



- 1 - Connector
- 2 - Programmer holder
- 3 - Programmer

PROGRAMMER SETUP READING	SETUP READING SETUP 01 <X>	SETUP 01 Confirm?	<X>
	SETUP READING SETUP 20 <X>		
PROGRAMMER CREATE SETUP	CREATE SETUP SETUP 01 <X>	SETUP 01 Confirm?	<X>
	CREATE SETUP SETUP 20 <X>		

## SETTING THE LANGUAGE

It is possible to change the programmer configuration as concerns the language in which the messages are to be displayed as well as to reset all of the data therein contained. To activate the "Programmer configuration" operate as follows:

- insert the programmer in its holder and start the machine.
- wait about 10" and then press the programmer buttons "C" and "O"; the first function will be thus displayed:

LANGUAGE CONFIGURATION	CONFIGURATION ITALIAN	CONFIGURATION Confirm?
	CONFIGURATION FRENCH	
	CONFIGURATION GERMAN	
	CONFIGURATION ENGLISH	
	CONFIGURATION SPANISH	
CONFIGURATION	INITIALISE INITIALISE	Confirm?
CONFIGURATION CONFIG. END	Exit from the configuration menu The software starts again from address 0000 (as when the machine is started)	

## TRANSFERRED DATA

Data transferred with the set up is as follows:

- . Water and powder doses
- . 16-price table
- . Prices/selection status
- . Basic coin
- . Decimal point position
- . Value of the validator lines
- . Mixer heating
- . Whipping time
- . Mixer cooling



# MAINTENANCE

The integrity of the machine and compliance of the relevant systems with the standards shall be checked at least once a year by qualified personnel.

Switch the machine off before any maintenance operations which involve disassembly of its components.

The operations described below must be carried out by personnel who have the specific knowledge on the functioning of the machine, both from the point of view of electrical safety and health regulations.

## INTRODUCTION

To ensure correct operating conditions over time, the machine must be subjected to regular maintenance.

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

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

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

To prevent any risks of oxidation or the action of chemical agents, the stainless steel and painted surfaces should be cleaned with mild detergents (solvents should be avoided).

**Do not use water jets to clean the machine.**

## MAINTENANCE OF THE BREWING UNIT

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

Maintenance is carried out as follows:

- remove the boiler teflon hose connection from the upper piston, paying attention not to lose the seal (see fig. 16);
- undo the knob securing the unit to the bracket;
- remove the coffee unit.

### Removing the upper filter

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

### Removing the lower filter

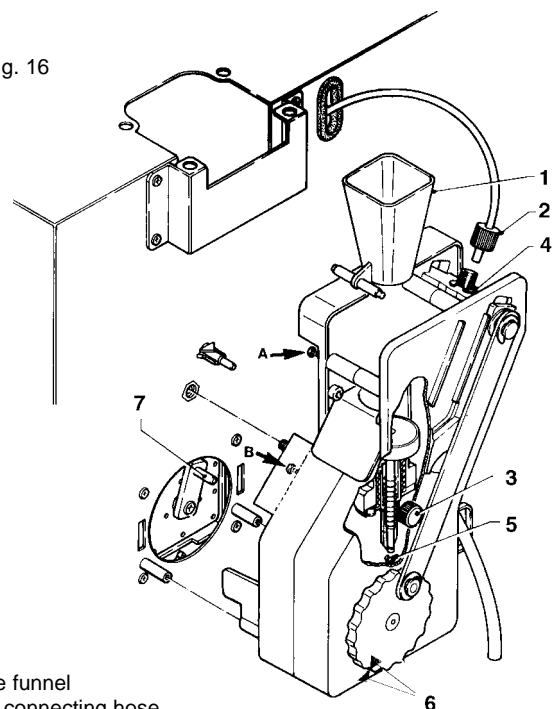
- Loosen screws A and B enough to release the coffee funnel (see fig. 16);
- remove the lower piston snap ring;
- take the piston from out of brew chamber and remove the filter.

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

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

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

Fig. 16



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

### Important notice!!!

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

## ANNUAL SANITISING

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

- all parts of the hydraulic system in contact with food, including the hoses, must be removed from the unit and fully disassembled;
- all visible residue and product films are mechanically removed using brushes or similar tools, if necessary;
- all components must be soaked in a sanitising solution for at least 20 minutes;
- the unit internal surfaces are to be cleaned with the same sanitising solution;
- Thoroughly rinse and then reinstall the parts.

**Before restarting the unit, the same sanitising procedure described in section "Sanitising the foodstuff circuits and the mixers" should be repeated.**

## PRINTED BOARD FUNCTIONS AND INDICATOR LIGHTS

### CONTROL BOARD

This board (see Figure 17) processes the information from the buttons and from the payment system, and controls the actuators and the push-button board.

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

The board also houses the EPROM chip.

- the yellow LED shows the presence of a 12 V DC voltage;
- the green LED blinking indicates that the microprocessor is working correctly;
- the red LED indicates the operating state of the espresso boiler heating element.



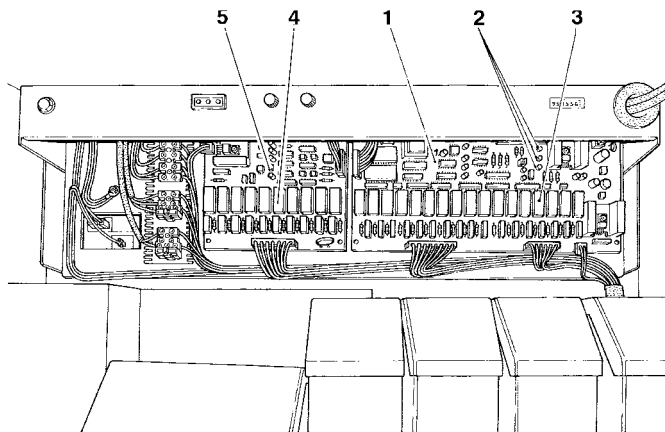
- 1 - To the programmer
- 2 - RS232 serial port
- 3 - Minidip for payment system  
(1-2 OFF = EXECUTIVE ON = MDB)
- 4 - Jp1 = 
- 5 - LCD display contrast adjustment trimmer
- 6 - Programming button
- 7 - Jp2 = 
- 8 - Mixer cleaning button
- 9 - To the LCD display
- 10 - To the push-button panel
- 11 - To the sugar LED card

Fig. 17



- 1 - Control board
- 2 - LEDs
- 3 - Relay
- 4 - Expansion board
- 5 - Red LED

### EXPANSION BOARD

This board (see figure 17) controls the actuators concerning the instant product boiler as well as the various optional applications (e.g. tea brewer, cold unit etc.).

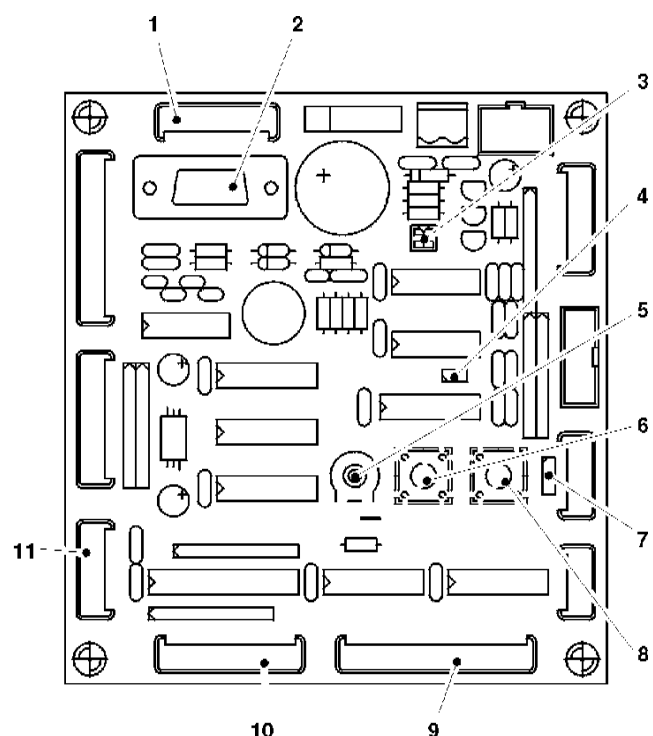
The red LED indicates the operating state of the instant boiler heating element

### BUTTONS BOARD

This board (see Fig. 18) controls the alphanumeric display, the selection buttons and the service buttons.

It supports the connectors for EXECUTIVE (or MDB if provided) coin mechanisms as well as the printer port.

Fig. 18



# CONFIGURING THE ELECTRONIC BOARDS

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

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

At the centre of the control board (see Fig. 19) and of the expansion board (see Fig. 20) two rows of minidips are located, which permit the board to be suitably configured for use in the various unit versions and in the various countries, and a jumper (5) which permit the board to be configured for Instant or Espresso models. The board is also preset to support 512 Kb and 1 Mb EPROMs by setting jumpers JS3 and JS4.

To correctly configure the boards, refer to the following tables, keeping in mind that the numbers are referred to the dips of the control board and the numbers followed by an "E" are to be referred to the dips of the expansion board.

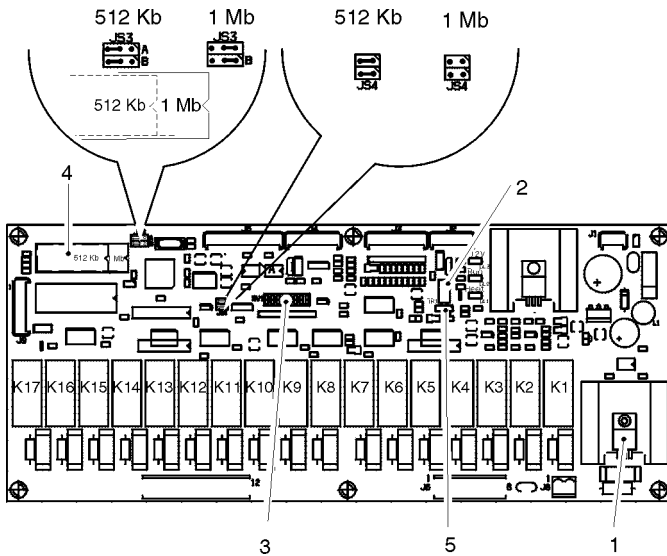


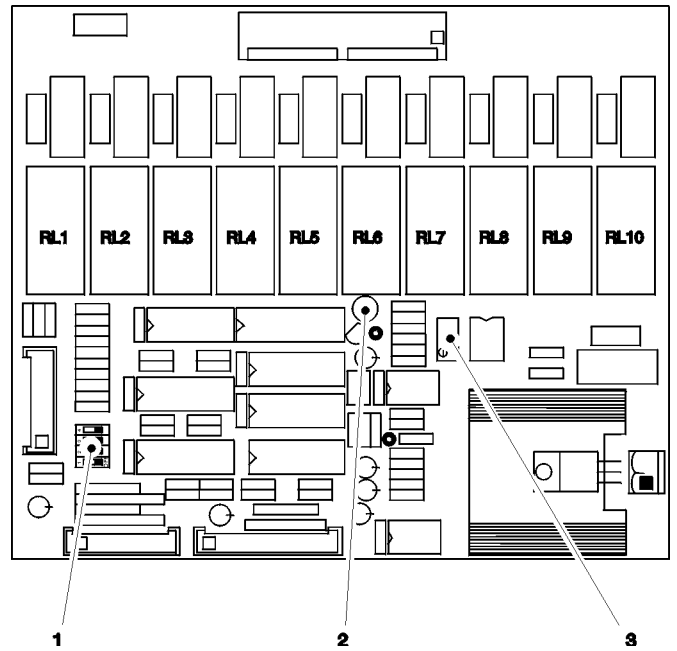
Fig. 19

- 1 - Triac of the boiler heating element
- 2 - Temperature control trimmer
- 3 - Configuration minidip
- 4 - EPROM
- 5 - Jumper: Espresso 2-3  
Instant 1-2

RELAY FUNCTION (see wiring diagram)

	ESPRESSO	INSTANT
K1	ER	MF4
K2	ESC	MF3
K3	MAC	MD5
K4	PM	E4
K5	M	E3
K6	E2	E2
K7	E1	E1
K8	MF1	MF1
K9	MD3	MD4
K10	MD2	MD3
K11	MD1	MD2
K12	MDZ	MD1
K13	MSB	MSB
K14	LF	LF
K15	MSCB	MSCB
K16	EIA	EIA
K17	MF2	MF2

Fig. 20



- 1 - Minidip
- 2 - Boiler heating element LED
- 3 - Instant boiler temperature control trimmer

RELAY FUNCTION (see wiring diagram)

	ESPRESSO	INSTANT
RL1	PM sanit	PM sanit
RL2	EV sanit.	EV sanit.
RL3	PMF2	PMF2
RL4	PMF1	PMF1
RL5	EVF1	EVF1
RL6	EVF2	EVF2
RL7	MSU	MSU
RL8	E3	free
RL9	MF3	MF5
RL10	MD4	MD6

## CONFIGURING THE LAYOUT

Depending on the selected drinks to be dispensed, minidips 6 and 7 on the control board and minidips 1 and 2 on the expansion board shall be set according to the selection dose table supplied with the machine.

## CONFIGURING THE MODEL

According to the model minidip 5 shall be set as follows:

MODEL	INSTANT	ESPRESSO
MINIDIP 5	ON	OFF

## CONFIGURING THE STIRRER DISPENSER

The unsweetened drinks can be dispensed with or without stirrer by setting minidip 2 to:

STIRRER	dispensed with unsweetened drinks	not dispensed with unsweetened drinks
MINIDIP 2	ON	OFF

## CONFIGURING THE PAYMENT SYSTEM

On the units of the Spazio range it is possible to either mount serial payment systems or only the 24 V validator, by setting minidip 1 as shown in table below:

SYSTEM	SERIAL	VALIDATOR
MINIDIP 1	ON	OFF

If the machine is to dispense free drinks, without using payment systems, it will be necessary to ensure that minidip 1 is positioned to OFF.

## CONFIGURING THE CREDIT MANAGEMENT

If only the validator is used, it is possible that the credit paid in excess be made available to the user for a period of three minutes by setting minidip 3 as shown in the table below:

CREDIT	MANAGED	NOT MANAGED
MINIDIP 3	ON	OFF

## CONFIGURING THE SERIAL SYSTEM

When serial systems are used dips 3, 4 and 8 shall be configured as shown in the table below:

SERIAL SYSTEM	DIP 3	DIP 4	DIP 8
Executive std. U-key URW 2	OFF	OFF	OFF
Executive price holding (parameter 36 = 3)	OFF	ON	OFF
ECS system	ON	OFF	OFF
U-Key URW3	OFF	OFF	ON

## CONFIGURING THE WATER SUPPLY

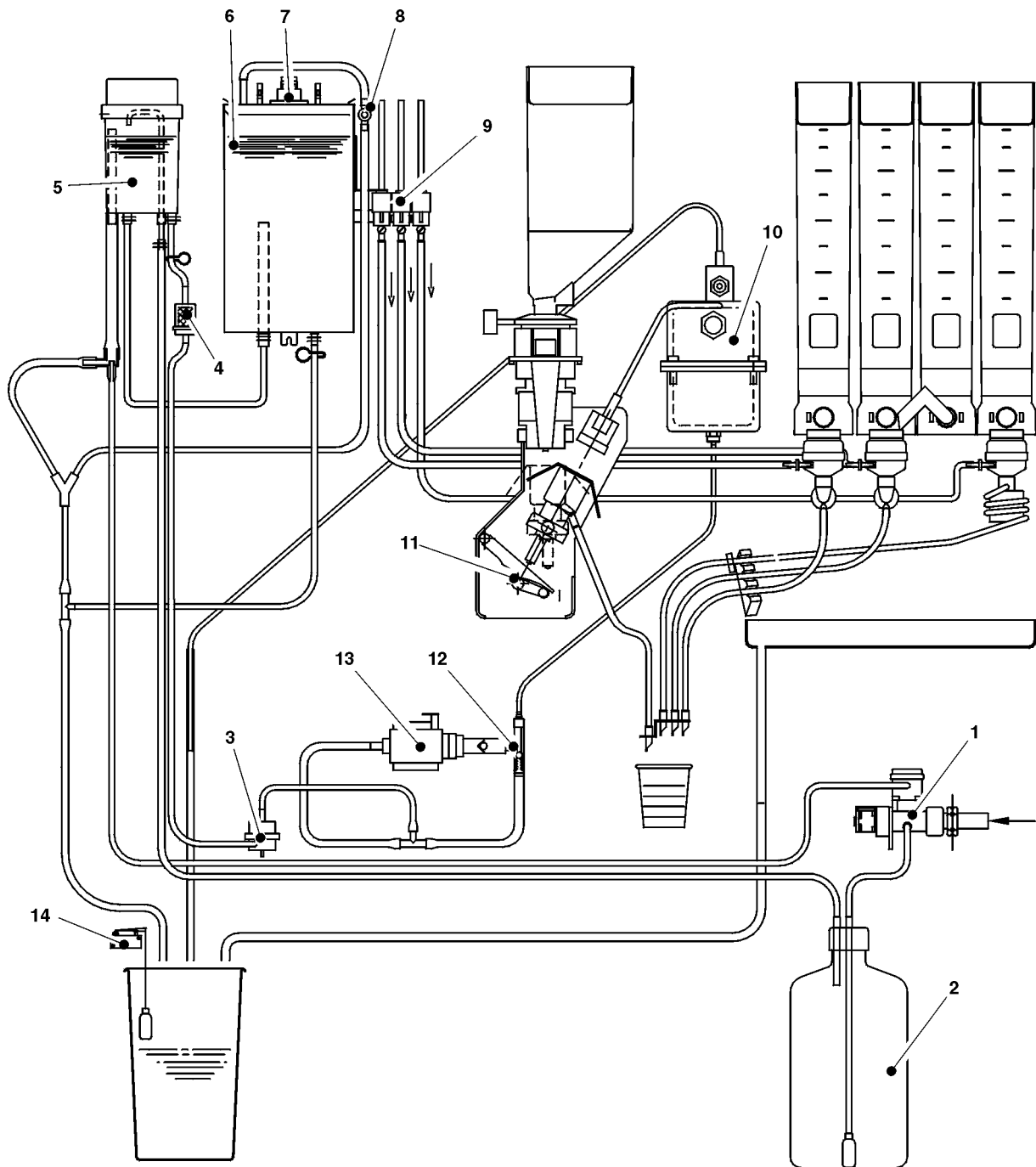
The option of water supply either from the mains or from the internal tank is according to the setting of minidip 4E on the expansion board.

Water supply	Internal tank	Mains
MINIDIP 4E	ON	OFF

### Important notice:

**The minidips which are not mentioned must be placed in the OFF position.**

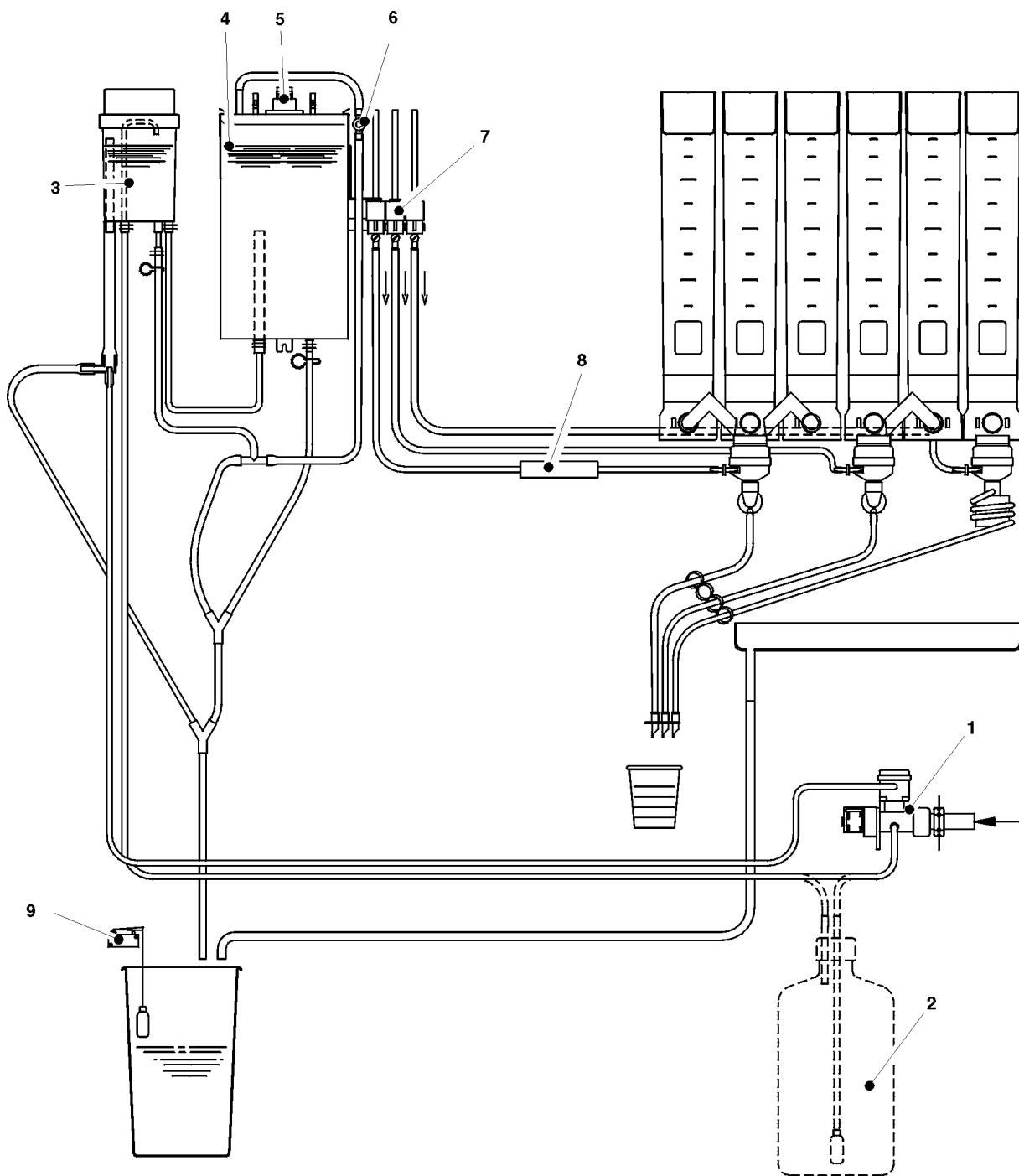
# HYDRAULIC SYSTEM FOR ESPRESSO



- 1 - Water inlet solenoid valve
- 2 - Water softener
- 3 - Volumetric counter
- 4 - Mechanical filter
- 5 - Air-break
- 6 - Instant prod. boiler
- 7 - Safety thermostat

- 8 - Anti-boiling thermostat
- 9 - Instant prod. solenoid valves
- 10- Coffee boiler
- 11- Coffee unit
- 12- Bypass
- 13- Vibration pump
- 14- Liquid waste container float

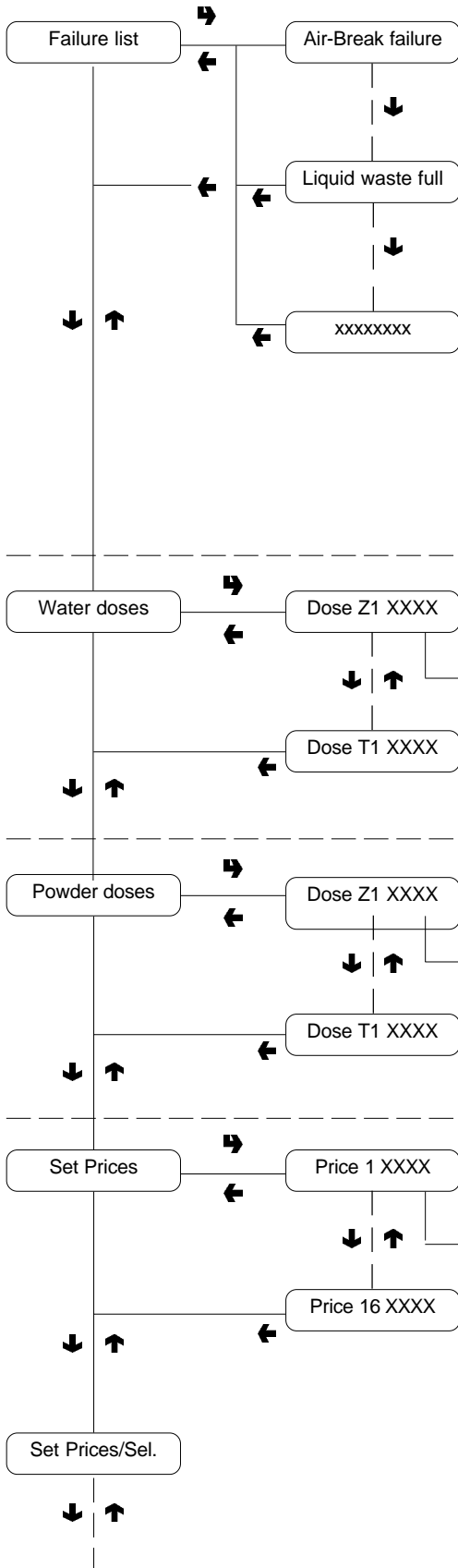
# HYDRAULIC SYSTEM FOR INSTANT



- 1 - Water inlet solenoid valve
- 2 - Water softener (optional)
- 3 - Air-break
- 4 - Instant prod. boiler
- 5 - Safety thermostat

- 6 - Anti-boiling thermostat
- 7 - Instant prod. solenoid valves
- 8 - Heating device

# Programming menu



## FAILURE DISPLAY

If no failure is detected, when pressing confirm button the message "No failures" is displayed

## FAILURE LIST

- Air-Break
- Espresso Boiler
- Instant Boiler
- Coin mechanism
- EEprom data
- Water failure
- Cup failure
- Liquid waste full
- Mixer wheel
- Coffee unit
- Coffee failure
- Coffee dose release failure
- Syrup 1 failure
- Syrup 2 failure
- Mobile spouts
- Cold unit water failure

## WATER DOSES

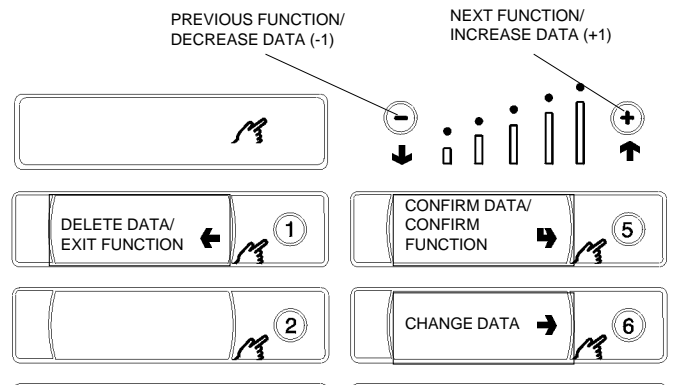
Refer to the selection dose table for the correspondence between dose code and powder or water dose

## POWDER DOSES

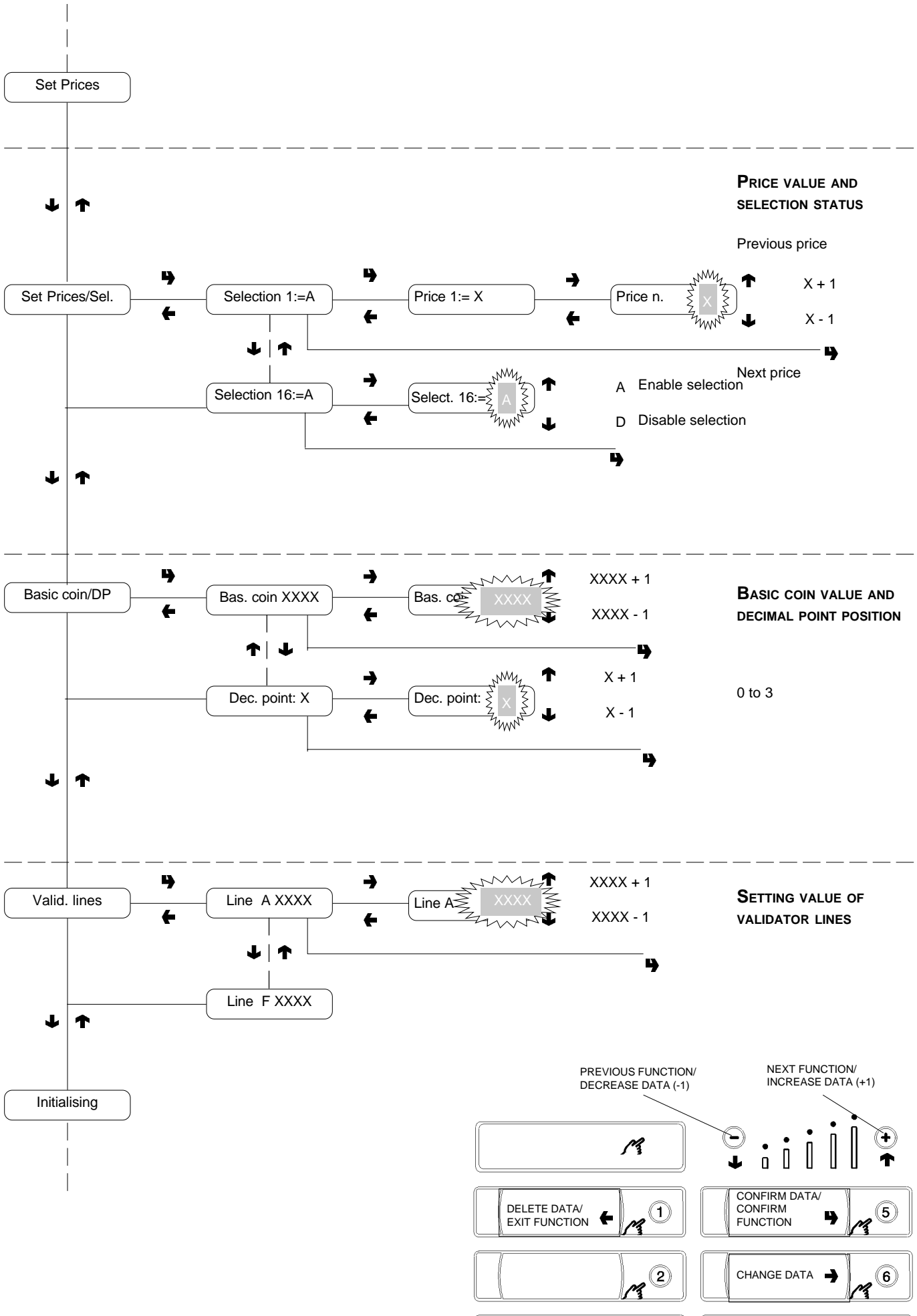
Refer to the selection dose table for the correspondence between dose code and powder or water dose

## PRICE VALUE

Price table; values expressed in basic coin

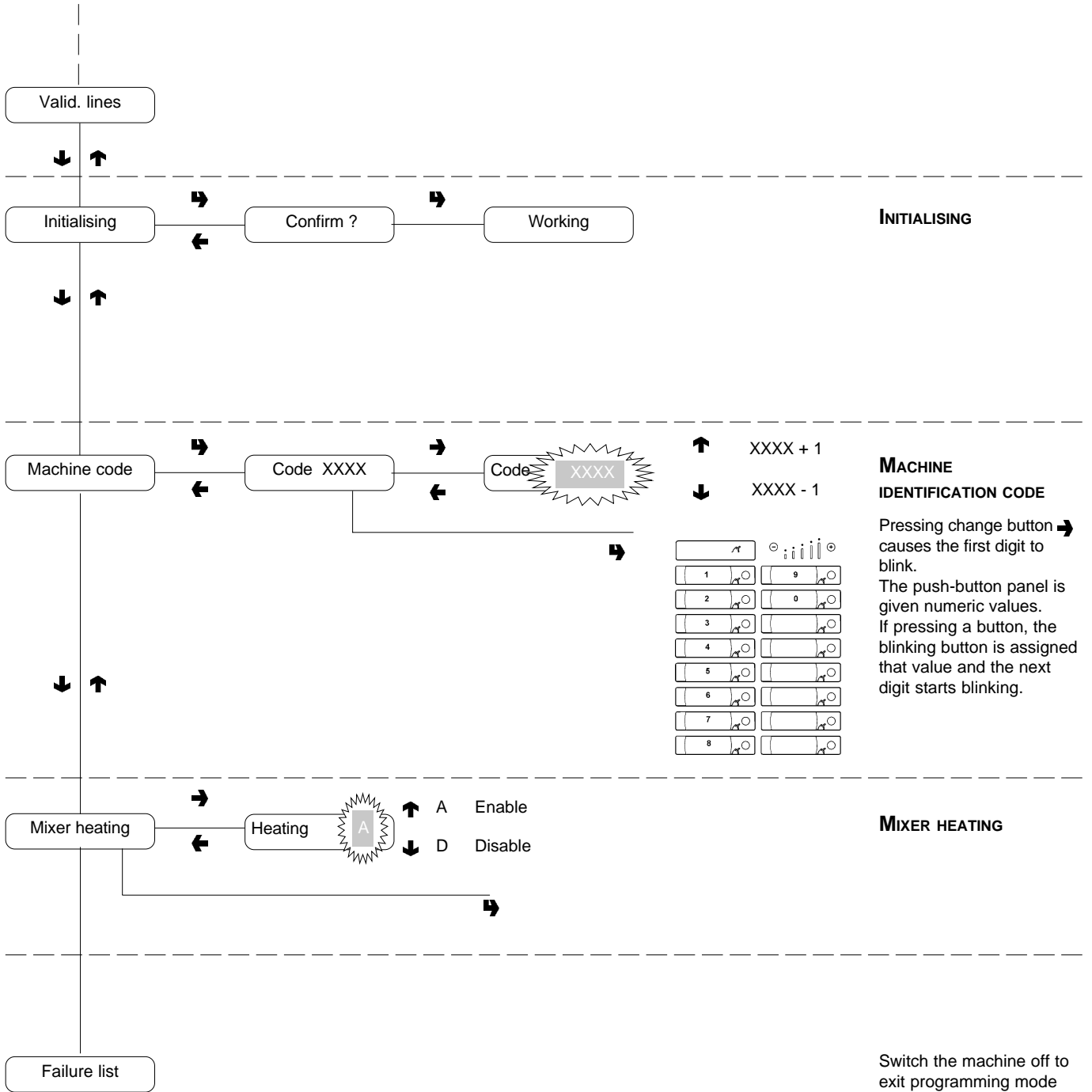


# Programming menu





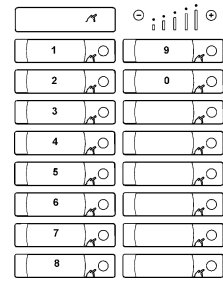
# Programming menu



**INITIALISING**

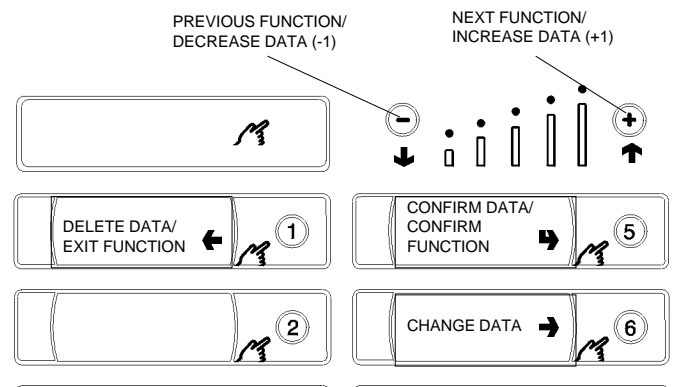
**MACHINE IDENTIFICATION CODE**

Pressing change button → causes the first digit to blink. The push-button panel is given numeric values. If pressing a button, the blinking button is assigned that value and the next digit starts blinking.

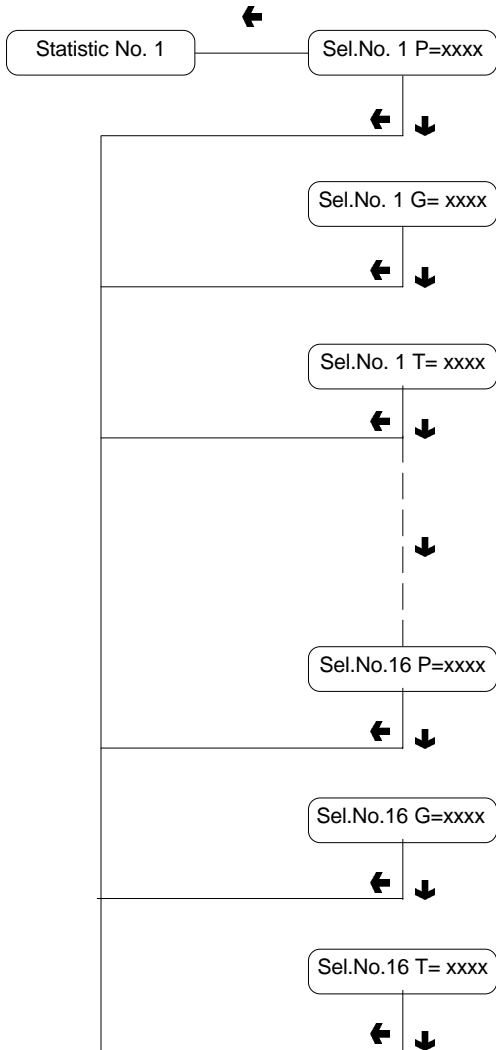


**MIXER HEATING**

Switch the machine off to exit programming mode



# Reading data



P = Paid dispensing

P = Free dispensing

P = Test dispensing

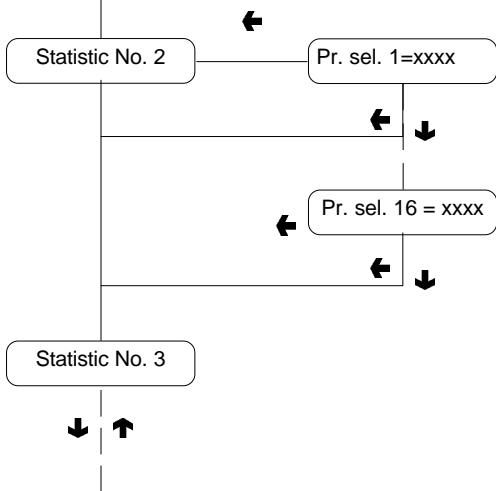
## DISPENSING BY SELECTION

Press button "8" to display statistics for each selection (1 - 16)

Automatic data scrolling at intervals of one second

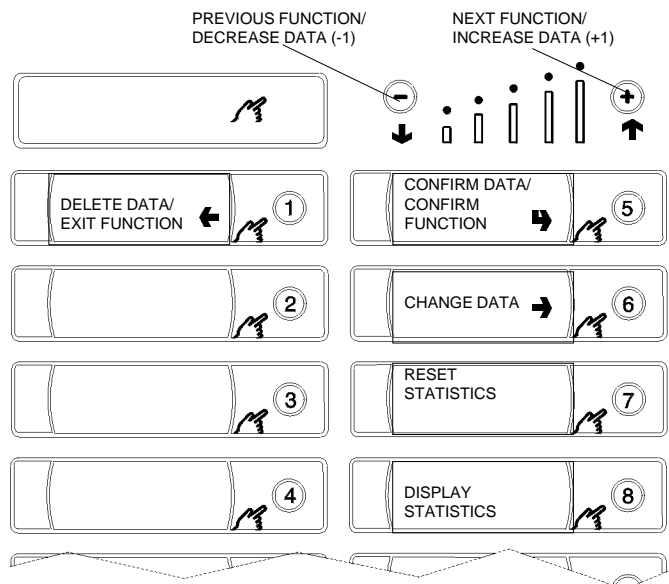
## WATER AND POWDER DOSES

Refer to the selection dose table for the correspondence between dose code and powder or water dose

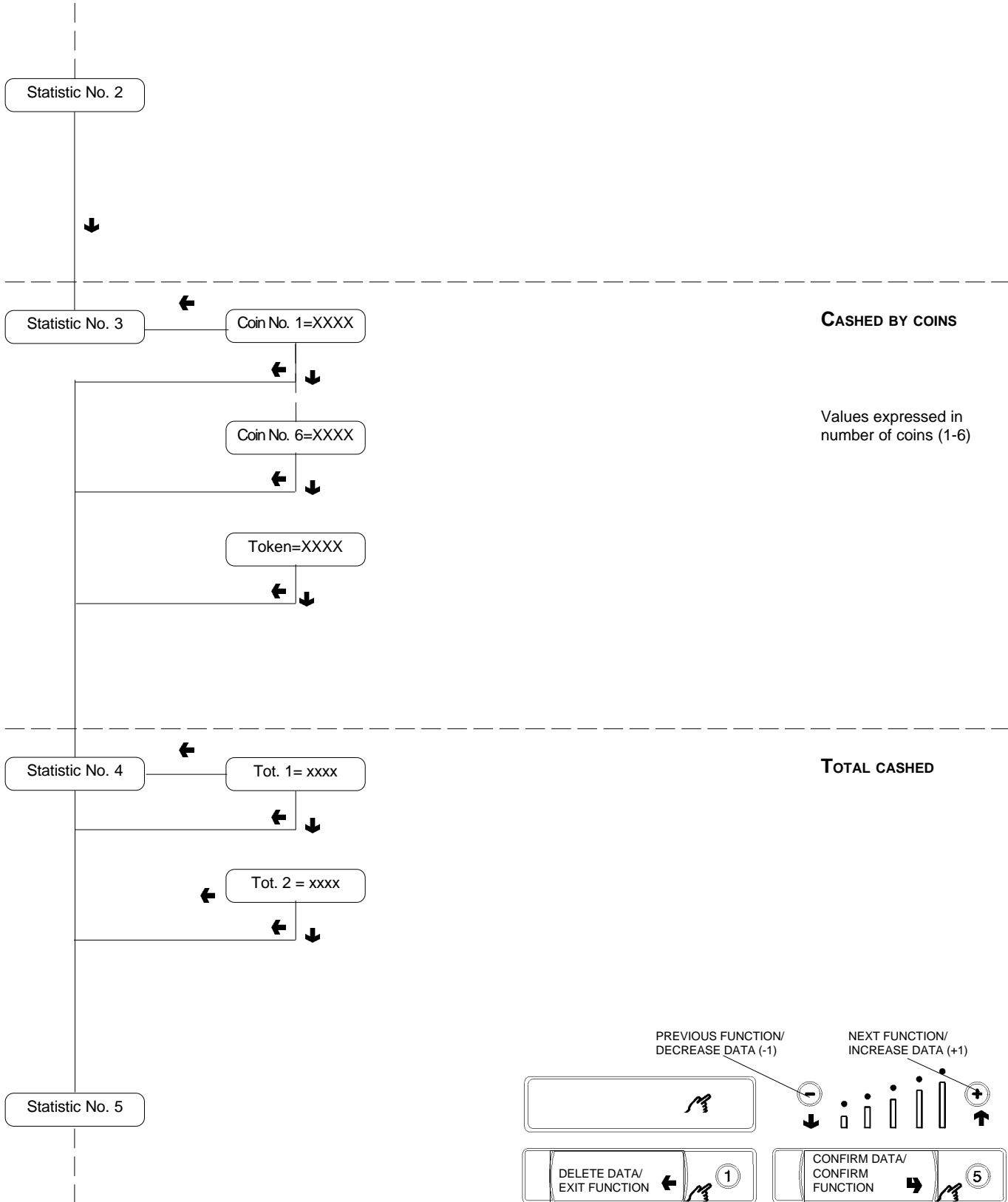


## DISPENSING BY PRICE

Automatic data scrolling at intervals of one second



# Reading data

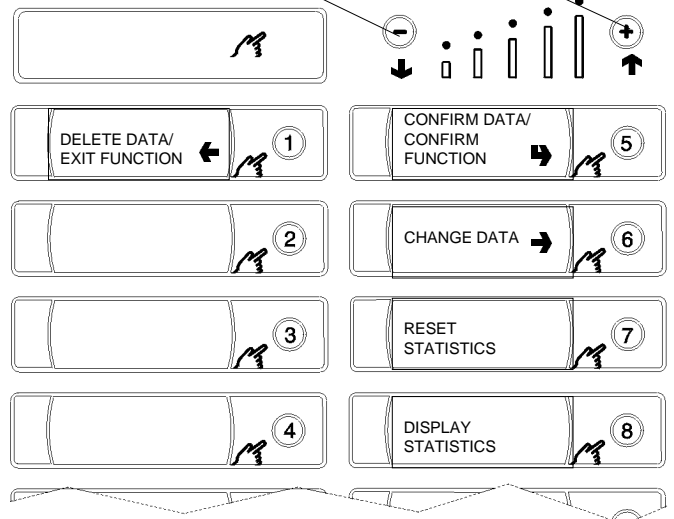


## CASHED BY COINS

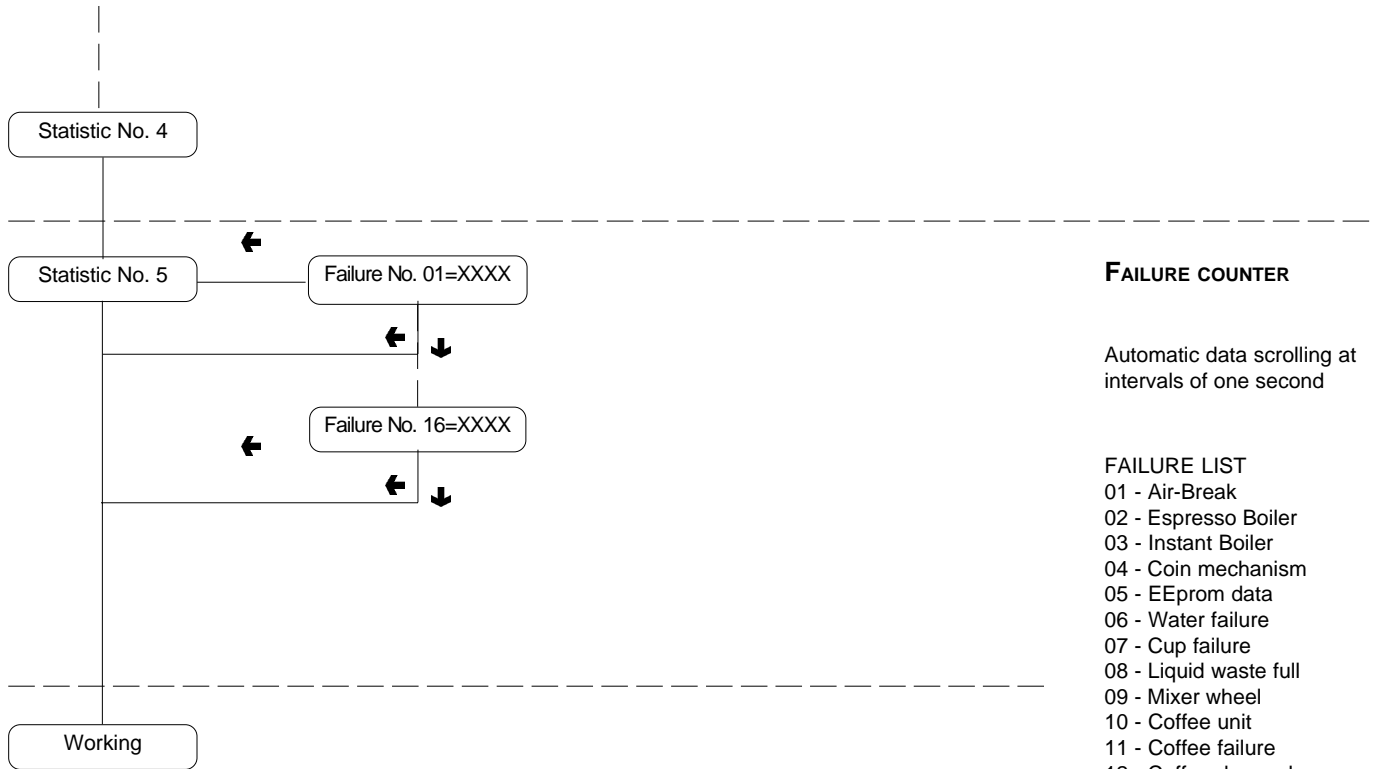
Values expressed in number of coins (1-6)

## TOTAL CASHED

PREVIOUS FUNCTION/ DECREASE DATA (-)      NEXT FUNCTION/ INCREASE DATA (+1)



# Reading data

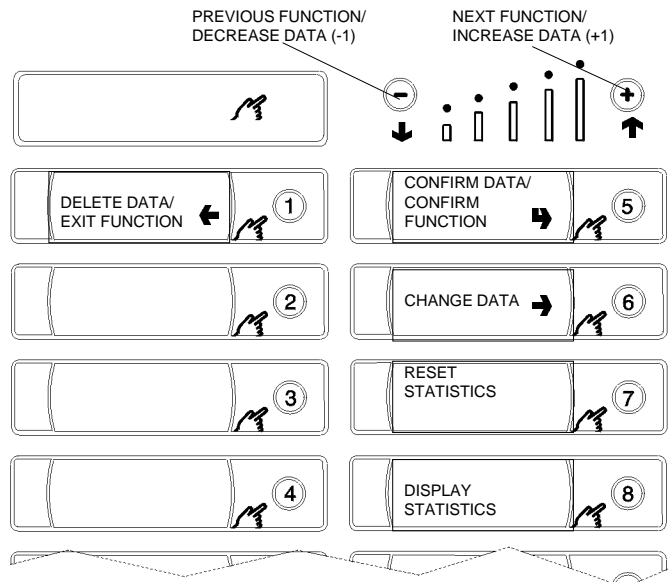


## FAILURE COUNTER

Automatic data scrolling at intervals of one second

## FAILURE LIST

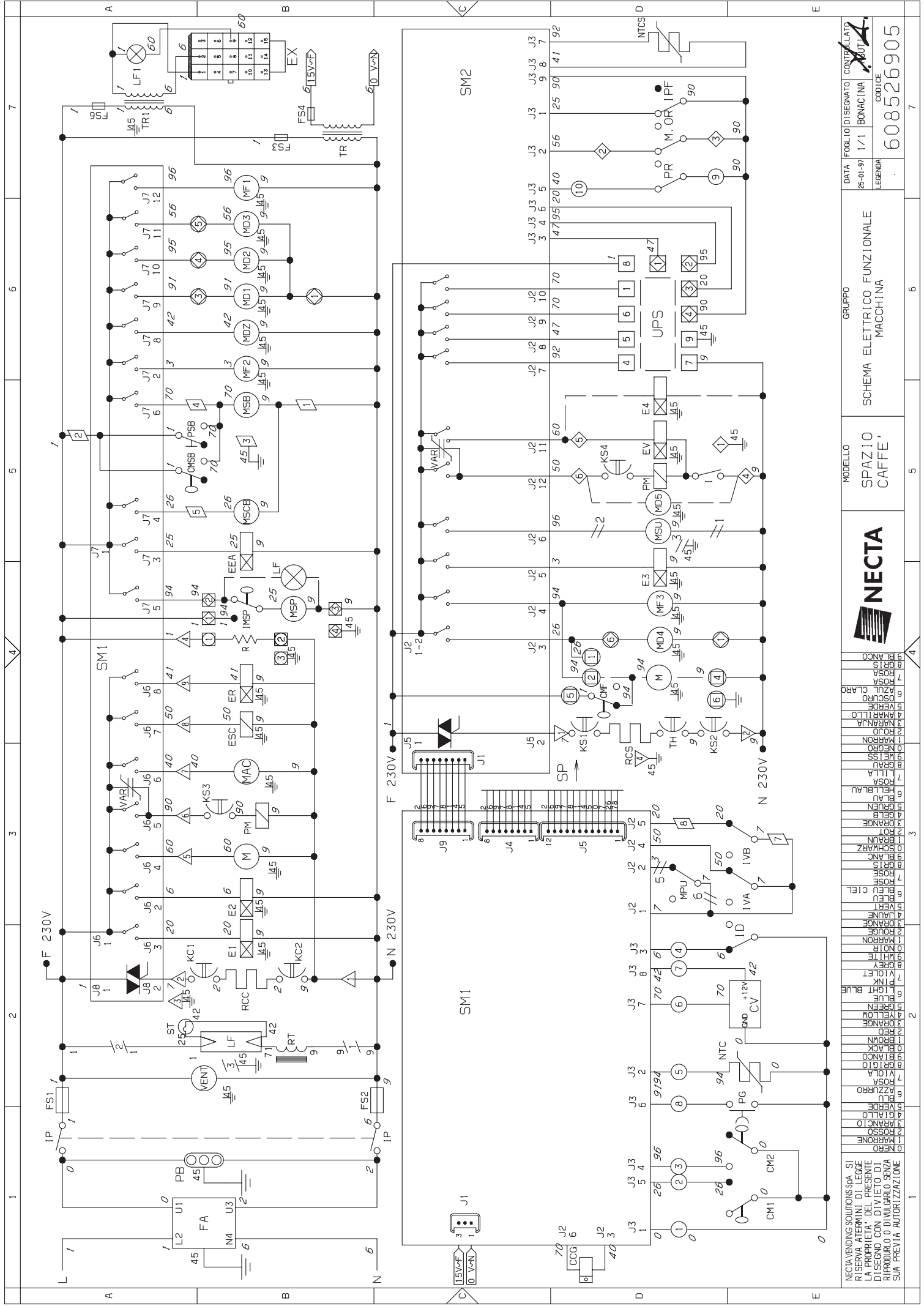
- 01 - Air-Break
- 02 - Espresso Boiler
- 03 - Instant Boiler
- 04 - Coin mechanism
- 05 - EEprom data
- 06 - Water failure
- 07 - Cup failure
- 08 - Liquid waste full
- 09 - Mixer wheel
- 10 - Coffee unit
- 11 - Coffee failure
- 12 - Coffee dose release
- 13 - Syrup 1 failure
- 14 - Syrup 2 failure
- 15 - Mobile spouts
- 16 - Cold unit water failure



## WIRING DIAGRAM LEGEND

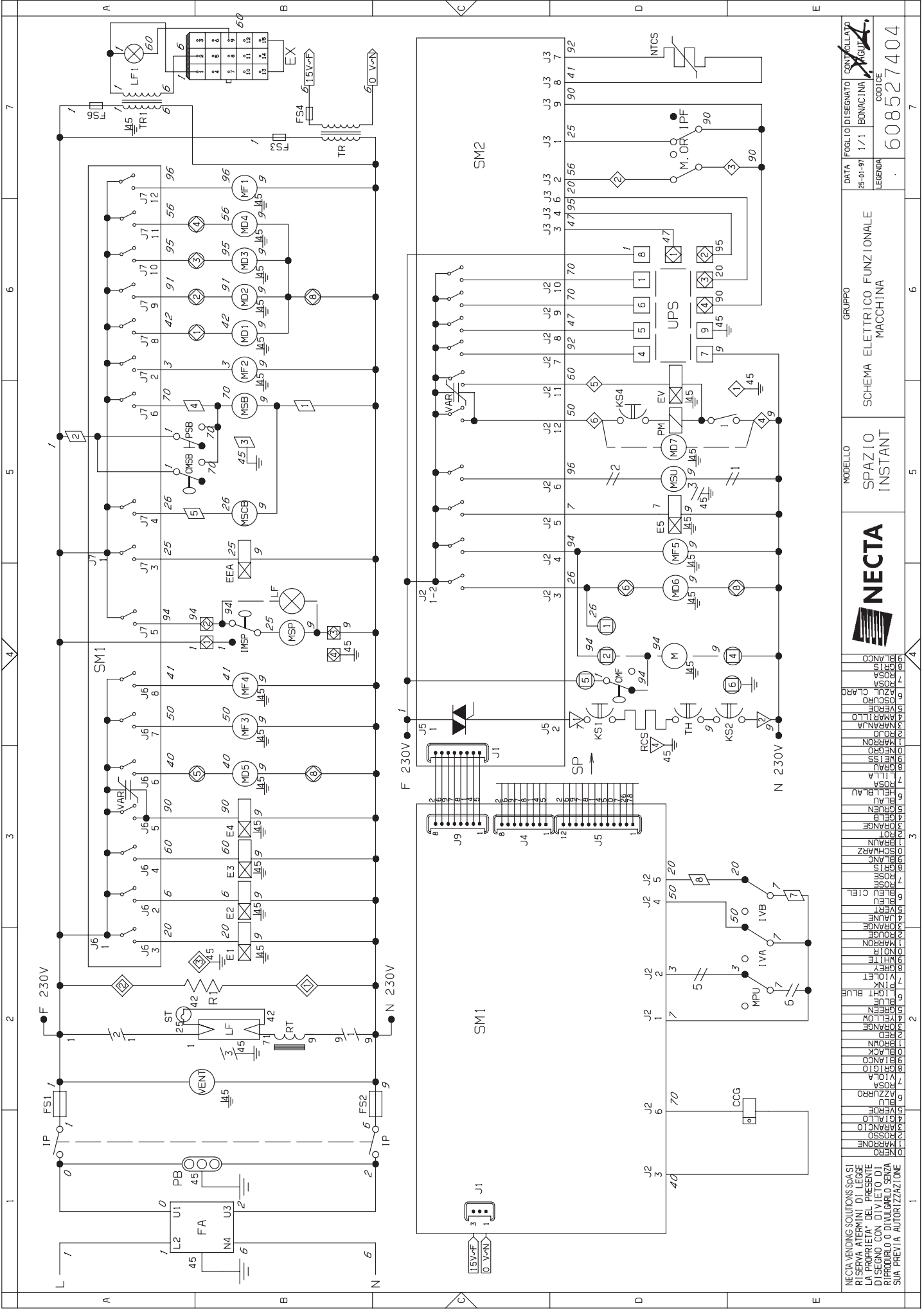
CODE	DESCRIPTION	CODE	DESCRIPTION
BDV	BDV COIN MECH CONNECTORS	MD1-..	INGREDIENT MOTOR - INSTANT
CCG	GENERAL COUNTER	MDZ	INGREDIENT MOTOR - SUGAR
CM1	COFFEE UNIT MOTOR CAM	MF1-..	WHIPPER MOTOR
CM2	COFFEE DISPENSING POSITION CAM	MFB	FRESH-BREW MOTOR
CMF	FRESH BREW MOTOR CAM	MPU	SPOUT POSITIONING MICROSWITCH
CMPF	FRESH BREW UNIT PISTON MICROSWITC	MSB	CUP RELEASE MOTOR
CMSB	CUP RELEASE MOTOR CAM	MSCB	CUP CONTAINER SHIFT MOTOR
CV	VOLUMETRIC COUNTER	MSP	STIRRER RELEASE MOTOR
E1-...	INSTANT SOLENOID VALVE	MSU	SPOUT MOVING MOTOR
EEA	WATER INLET SOLENOID VALVE	NTC1-..	TEMPERATURE PROBE
ER	COFFEE DISPENSER SOLENOID VALVE	NTCS	INSTANT BOILER TEMPERATURE PROBE
ESC	COFFEE RELEASE MAGNET	PB	POWER SUPPLY SOCKET
EV	HOT GAS ELECTROVALVE	PD	DIODE RECTIFIER
EX	EXECUTIVE COIN MECH CONNECTOR	PG	UNIT DETECTION MICROSWITCH
FA	RADIO INTERFERENCE SUPPRESSOR	PM	PUMP
FREE	FREE VENDING SWITCH	PR	PRESSURE SWITCH
FS1-..	FUSE	PSB	CUP RELEASE BUTTON
I	SANITISING KIT SWITCH	R1	POST-HEATING ELEMENT
ID	COFFEE DOSE SWITCH	RCC	COFFEE BOILER HEATING ELEMENT
IMSP	STIRRER RELEASE MICRO-SWITCH	RCS	INSTANT BOILER HEATING ELEMENT
IP	DOOR SWITCH	RT	BALLAST
IPF	WASTE CONTAINER OVERFLOW SWITCH	SAL	VOLTAGE SUPPLY BOARD
IVA	EMPTY BOILER MICRO-SWITCH	SLED	LED BOARD
IVB	EMPTY CUP DISPENSER MICRO SWITCH	SM1	CONTROL BOARD
JUG	JUG FACILITIES SWITCH	SM2	EXPANSION BOARD
KC1-..	COFFEE BOILER CUTOUT	SP	PUSH-BUTTON BOARD
KS1-..	SAFETY CUTOUT	ST	STARTER
KS3-4	PUMP SAFETY CUTOUT	TH	THERMOSTAT
LCD	LIQUID CRYSTAL DISPLAY	TR	TRANSFORMER
LF	LAMP	TR1	TRANSFORMER 230 V 24 V
M	COFFEE UNIT MOTOR	UPS	COLD UNIT PRINTED BOARD
M.OR	TIMER MICROSWITCH	VAR	VARISTOR
MAC	GRINDER	VENT	FAN





NECTA		SCHEMA ELETTRICO FUNZIONALE		GRUPPO		FOGLIO DI SEGNAIO		CONTRALLATO	
SPAZIO CAFFÈ		MACCHINA		1/1		25-01-97		BONACINA	
AUT.		LEGENDA		CODICE		608526905		7	
1		2		3		4		5	
6		7		8		9		10	
11		12		13		14		15	
16		17		18		19		20	
21		22		23		24		25	
26		27		28		29		30	
31		32		33		34		35	
36		37		38		39		40	
41		42		43		44		45	
46		47		48		49		50	
51		52		53		54		55	
56		57		58		59		60	
61		62		63		64		65	
66		67		68		69		70	
71		72		73		74		75	
76		77		78		79		80	
81		82		83		84		85	
86		87		88		89		90	
91		92		93		94		95	
96		97		98		99		100	

NECTA VENDING SOLUTIONS SPA - SI  
 RISERVA ATERMINI DI LEGGE  
 LA PROPRIETÀ DEL PRESENTE  
 DISEGNO CON DIVIETTO DI  
 RIPRODURRE O DIVULGARLO SENZA  
 SUA PREVIA AUTORIZZAZIONE



DATA F08/LIO DISEGNATO CONTROLLATO  
 25-01-97 1/1 BONACINA   
 LEGENDA CODICE  
 608527404

GRUPPO  
 SCHEMA ELETTRICO FUNZIONALE  
 MACCHINA

MODELLO  
 SPAZIO  
 INSTANT



9	GRANCO	9	GRANCO
8	GRANCO	8	GRANCO
7	GRANCO	7	GRANCO
6	GRANCO	6	GRANCO
5	GRANCO	5	GRANCO
4	GRANCO	4	GRANCO
3	GRANCO	3	GRANCO
2	GRANCO	2	GRANCO
1	GRANCO	1	GRANCO
0	GRANCO	0	GRANCO
9	GRANCO	9	GRANCO
8	GRANCO	8	GRANCO
7	GRANCO	7	GRANCO
6	GRANCO	6	GRANCO
5	GRANCO	5	GRANCO
4	GRANCO	4	GRANCO
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0	GRANCO	0	GRANCO
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0	GRANCO	0	GRANCO
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8	GRANCO	8	GRANCO
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6	GRANCO	6	GRANCO
5	GRANCO	5	GRANCO
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0	GRANCO	0	GRANCO
9	GRANCO	9	GRANCO
8	GRANCO	8	GRANCO
7	GRANCO	7	GRANCO
6	GRANCO	6	GRANCO
5	GRANCO	5	GRANCO
4	GRANCO	4	GRANCO
3	GRANCO	3	GRANCO
2	GRANCO	2	GRANCO
1	GRANCO	1	GRANCO
0	GRANCO	0	GRANCO

NECTA VENDING SOLUTIONS S.p.A. SI  
 RISERVA ATERMINI DI LEGGE  
 LA PROPRIETA' DEL PRESENTE  
 DISEGNO CON DIVIETO DI  
 RIPRODURRE O DIVULGARLO SENZA  
 SUA PREVIA AUTORIZZAZIONE







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EDITION 06 00    CODE:    H 088U 00

FOR APPROVAL

The Manager

A handwritten signature in black ink, appearing to read 'M. Robinson', is written over the printed text 'The Manager'.

