

Brio 250

Espresso
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MDB Protocol

UK English

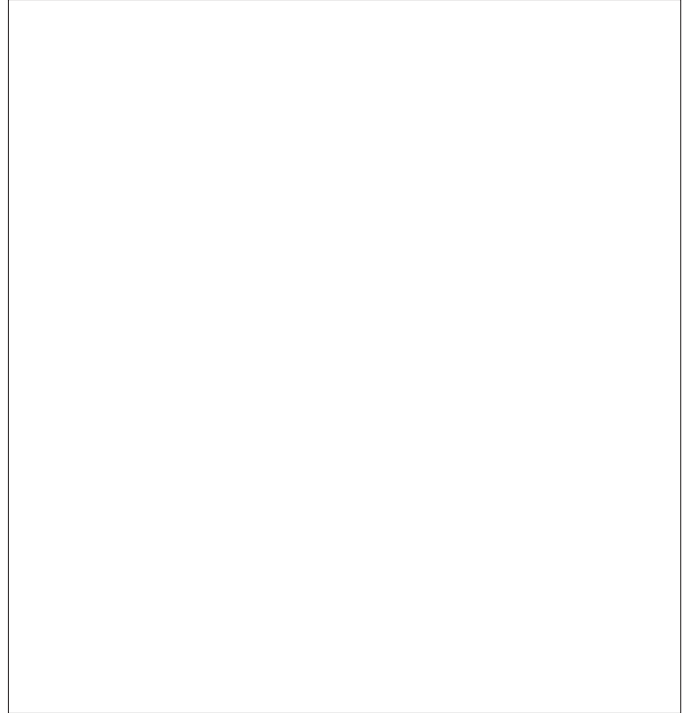


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DICHIARAZIONE DI CONFORMITA'
DECLARATION OF CONFORMITY
DÉCLARATION DE CONFORMITÉ
KONFORMITÄTSERKLÄRUNG
DECLARACIÓN DE CONFORMIDAD
DECLARAÇÃO DE CONFORMIDADE
VERKLARING VAN OVEREENSTEMMING
INTYG OM ÖVERENSSTÄMMELSE
OVERENSSTEMMELSESERKLÆRING
YHDENMUKAISUUSTODISTUS



Valbrembo, 03/05/2001

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.

Intygat 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 direktiverne **89/392, 89/336** og **73/23 EU** og de senere ændringer og tillæg.

Forsikrer under eget ansvar at apparatet som beskrives i identifikasjonsplaten, er i overensstemmelse med vilkårene i EU-direktivene **89/392, 89/336, 73/23** med endringer.

Vahvistaa, että arvokyltissä kuvattu laite vastaa **EU**-direktiivien **89/392, 89/336, 73/23** sekä niihin myöhemmin tehtyjen muutosten määräyksiä.



ANTONIO CAVO

C.E.O



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**IQNet and
CISQ/IMO-CSQ**

hereby certify that the organization

NECTA VENDING SOLUTIONS S.p.A.
Via Roma, 24 - I-24030 VALBREMBO (BG)

for the following field of activities
Design, manufacturing and sale of
electromechanical/electronic vending machines
has implemented and maintains a
Quality Management System
which fulfills the requirements of the following standard

ISO 9001

Issued on: 2000 - 03 - 31

Registration Number: IT - 12979



Catherine Neville
Catherine Neville
President of IQNet



Gianrenzo Prati
Gianrenzo Prati
President of CISQ

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ITALIAN CERTIFICATION OF COMPANY QUALITY SYSTEMS



CERTIFICATO n. **9130.ZAVE**
CERTIFICATE n. _____

SI CERTIFICA CHE IL SISTEMA QUALITÀ DI
NE HEREBY CERTIFY THAT THE QUALITY SYSTEM OPERATED BY

NECTA VENDING SOLUTIONS S.p.A.

UNITÀ OPERATIVE
OPERATIVE UNITS

Via Roma, 24 - 24030 VALBREMBO (BG)

UNI EN ISO 9001

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CONCERNING THE FOLLOWING ACTIVITIES

Progettazione, produzione e commercializzazione di
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Design, manufacturing and sale of
electromechanical/electronic vending machines

IL PRESENTE CERTIFICATO È SOGGETTO AL RISPETTO DEL REGOLAMENTO
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THE USE AND THE VALIDITY OF THE CERTIFICATE SHALL SATISFY THE REQUIREMENTS
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1 Giugno 1994

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Current issue

La validità del presente certificato è subordinata a sorveglianza annuale e al riesame completo del Sistema di
Qualità con periodicità triennale secondo le procedure dell'IMO S.p.A.

The validity of the certificate is submitted to annual audits and a reassessment of the entire Quality System
within three years according to IMO S.p.A. rules



EA: 19

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INTRODUCTION

This technical documentation is part and parcel of the vending machine and must always follow the machine in case it is moved or 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.

IDENTIFICATION OF THE VENDING MACHINE AND ITS CHARACTERISTICS

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

This plate (see Figure) is the only one acknowledged by the manufacturer and indicates all of the data which readily and safely gives 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 motor-driven or manual fork lift truck, and the blades are to be placed underneath the machine from the side which is clearly indicated by the symbol on the packing.

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.

It is important not to stack machines on top of each other and always maintain the vertical position as indicated by the arrows on the packing.

USING THE VENDING MACHINES OF HOT DRINKS IN OPEN CONTAINERS

(e.g.: plastic cups, ceramic cups, jugs)

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

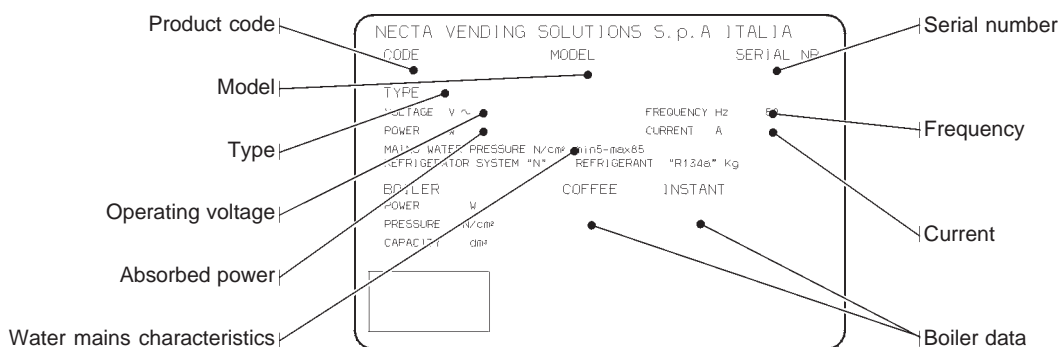
- brewing products like coffee and tea;
- reconstituting instant and lyophilized products;

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

The dispensed products should be consumed immediately. Under no circumstances should they be preserved and/or packed for later consumption.

Any other use is unsuitable and thus potentially dangerous.

Fig. 1



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.

Important notice!!

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

Therefore, provisions should be made for the machine to be rotated, thus allowing removal of the back panel.

Positioning the machine on a cabinet

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

If possible, it is advisable to use the special cabinet, which can house the liquid waste tray, the water supply kit, the payment system and, in the case of very hard water, the softener unit.

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 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.

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

DIMENSIONS

Height	750	mm
Width	540	mm
Depth	550	mm
Height of cabinet	820	mm
Weight	55	Kg

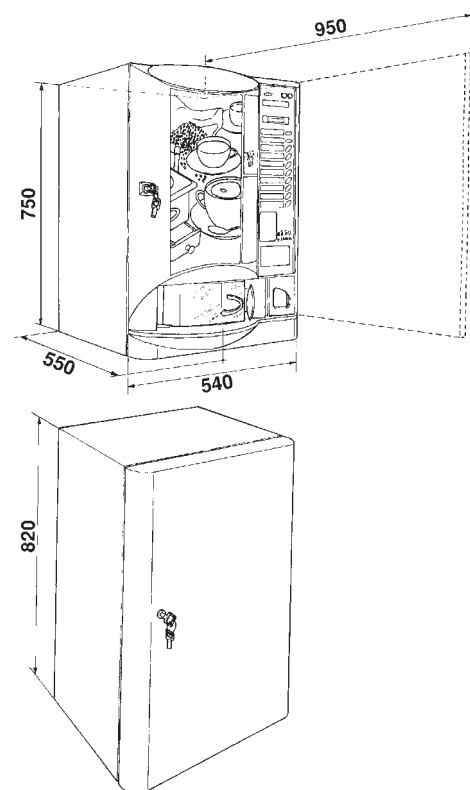


Fig. 2

Power supply voltage	120	V~
Power supply frequency	60	Hz
Installed power	1.400	W

CUP DISPENSER

Suitable for cups with a rim diameter of 73-74 mm. with a capacity of approximately 250 cups.

COIN MECHANISM

The machine is supplied with provisions for the installation of payment systems with MDB protocol.

SALES PRICES

A different programmable price can be set for each selection.

The standard setting has the same price for all selections.

COIN BOX

Made of plastic with lock as optional accessory.

WATER SUPPLY

From the mains, with a water pressure of 5 to 85 N/cm².

AVAILABLE ADJUSTMENTS

Grade of grinding, water doses for coffee by volume.

Time adjustment for instant product and water doses.

Temperature control

Factory set on the correct operating temperature.

A trimmer located on the control board allows small adjustments (as necessary).

CONTROL DEVICES

- Presence of cups
- Presence of water
- Presence of brewer unit
- Liquid waste container full
- Operating temperature reached

SAFETY DEVICES

- Door switch
- Presence of liquid waste container
- Manual-reset boiler safety thermostat
- Air-break float jamming
- Overflow solenoid valve
- Liquid waste container float
- Time protection for:
 - Pump
 - Brewer unit ratiomotor
- Overheating protection for:
 - Doser units
 - Brewer unit ratiomotor
 - Magnets
 - Pump
 - Electric mixers
- Fuse protection for:
 - Electronic card power supply transformer
 - Executive power supply transformer

CAPACITY OF CONTAINERS

Coffee beans	1.2	Kg
Decaffeinated coffee	0.7	Kg
Sugar	1.9	Kg
Powdered milk (standard)	0.8	Kg
Powdered milk (plus)	1.0	Kg
French vanilla	1.9	Kg
Chocolate	1.5	Kg
Stirrers (N.)	245	

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:	22° C
- boiler temperature:	93° C
- inlet water temperature:	18° C
- average water dose per selection:	93 cc

the following power consumption resulted:

- to reach operating temperature	53 Wh
- for each hour of stand-by	110 Wh
- for each selection (average)	7.65 Wh

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

ACCESSORIES

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

The assembly kits are supplied with their own installation and test 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.

INSTALLATION

Installation and the following maintenance operations must be carried out by qualified personnel only, trained in the correct use of the machine and informed on the specific risks of such operations.

The machine must be installed in a dry room, where the temperature stays always between 2° C and 32° C.

At installation it is necessary to completely sanitise the hydraulic system and all parts in contact with food, in order to eliminate any possible bacteria 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.

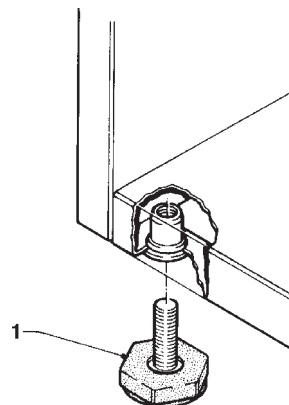
Packing materials must be disposed of in authorized areas only, and all recyclable materials must be recovered by specialised companies.

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 Fig. 3).

Fig. 3



1 - Adjustable foot

INSERTING THE LABELS

The menu and instruction labels, as well as the self-adhesive labels to identify the product containers, are supplied with the machine and must be inserted or attached at the time of installation (see "selection dose" table).

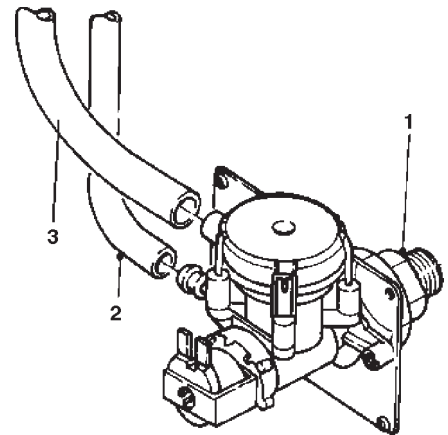
CONNECTING THE MACHINE TO THE WATER MAINS

The machine must be connected to the drinking water mains.

The water pressure must be 5 to 85 N/cm² (0,5-8,5 bar). Run some water from the mains until it is clear and without impurities.

Use a hose (also available as a kit) capable of withstanding the water mains pressure and suitable for use with food-stuff (min. inside diameter of 6 mm) to connect the water supply to the union (3/4" gas) of the water inlet solenoid valve (see Fig. 4).

Fig. 4



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

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

OVERFLOW DEVICE

The water inlet solenoid valve (see Fig. 4) is equipped with an overflow device mechanically preventing the water from flowing in, if there is a malfunction in the solenoid valve itself or in the control device of the boiler water level.

To restore normal operation, proceed as follows:

- drain the water contained in the overflow pipe;
- shut off the water supply tap outside the machine;
- loosen the union which secures the solenoid valve supply tube to relieve the water mains residual pressure and then tighten again (see Fig. 4);
- open the tap and switch the machine on.

CONNECTING THE MACHINE TO THE POWER SUPPLY

The machine is designed to operate under a single-phase voltage - 120 V~ 60 Hz - 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 capable of withstanding the peak load required, and at the same time ensure proper omnipolar disconnection from the power grid with an opening gap of the contacts of at least 3 mm.

The main switch, the power outlet and the plug should be located within easy reach.

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 (see Fig. 5) should be done by qualified personnel only, using exclusively cables of the type UL SJT 3x16 AWG.

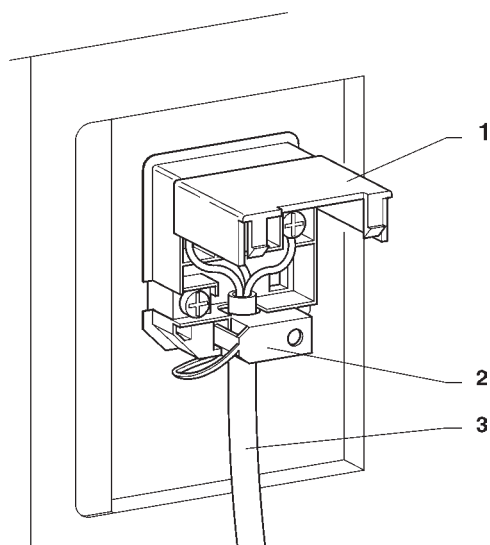


Fig. 5

- 1 - Lift cover
- 2 - Cable clamp
- 3 - Cable from grid

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

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

CONTROLS AND INFORMATION

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

The labels with the selection menu and the instructions supplied with the machine must be inserted at the time of installation, referring to the selection dose table.

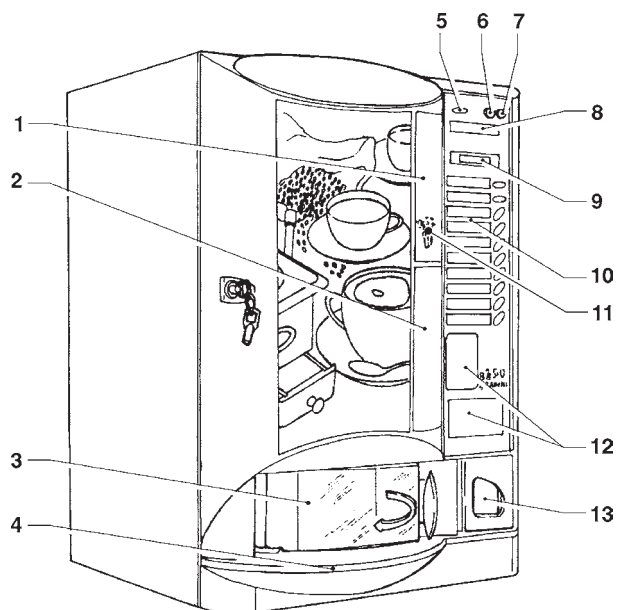


Fig. 6

- 1 - Prearrangement for payment systems
- 2 - Spaces for product labels
- 3 - Dispensing compartment
- 4 - Liquid waste tray
- 5 - Coin slot
- 6 - "Exact amount" warning light
- 7 - Coin return button
- 8 - Instruction labels
- 9 - Alphanumeric display
- 10 - Available selection menu
- 11 - Jug facilities / free vend key
- 12 - Prearrangement for front validator and/or labels
- 13 - Coin return compartment

The Programming button, used to access the machine functions, is located on the internal side of the push-button board.

Press the Programming button twice to access the "Programming" mode.

Press selection button No. 5 to automatically start filling the machine water system.

DOOR SWITCH

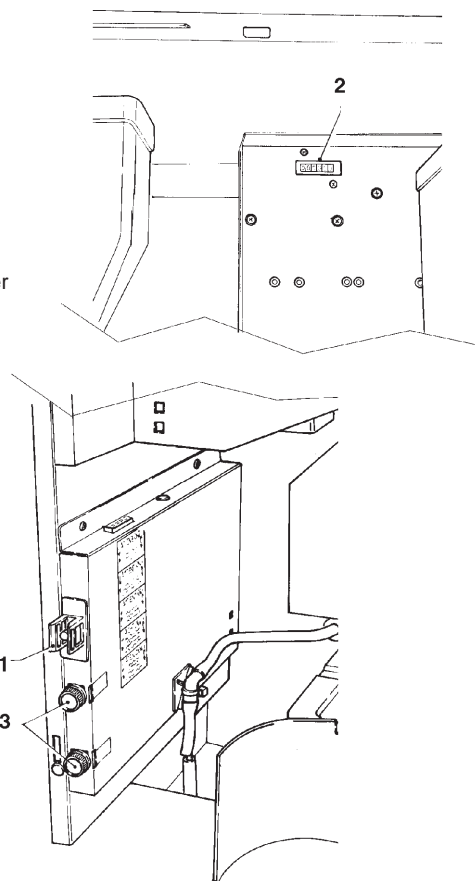
When opening the door a special switch disconnects the power from the machine electrical system,

except from the terminal board supporting the line cable and from the fuse box. Before removing the cover from these parts (marked by a special plate) it is necessary to disconnect the external switch.

To energize the system with the door open, simply insert the special key into the slot (see Fig. 7).

Fig. 7

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



All operations requiring the machine to be energized and the door open must be carried out with the door switch key inserted, and therefore by qualified personnel ONLY, informed about the specific risks of such situation.

The door can be closed only after removing the key.

Do not leave the machine unattended with the key inserted!

FILLING THE WATER SYSTEM

When switching the machine on, if the air-break signals no water for more than 10 seconds, the machine will automatically start an installation cycle, and namely:

- the display will show "Installation" for the entire duration of the cycle;
- the water mains solenoid valve is opened or the water supply pump is started;
- the air-break is filled;
- an instant product solenoid valve is opened so that air may be bled from the boiler and 600 cc. of water is filled.

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

IMPORTANT NOTICE!!!

This operation must be carried out manually in ALL VERSIONS after any maintenance requiring the boiler to be emptied but not the air-break.

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.

The machine has all electrical prearrangements for the installation of MDB payment systems, and namely:

- coin acceptor or "validator"
 - change-giver coin mechanism or "changer"
 - bill acceptor or "bill validator"
 - key/magnetic card reader or "cashless"
- that can be used in various combinations.

Compatibility for the housing of the payment systems must be checked by the installer under his own responsibility.

When switched on, the machine goes through a routine check to determine which payment systems are actually installed and that consequently will be configured.

MAINTENANCE AND DISINFECTION

According to current safety rules and health regulations, the operator of automatic vending machines 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.

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

The manufacturer declines all responsibility for any damage resulting from non-compliance with the above instructions or caused by the use of strong or toxic chemicals.

Always disconnect the machine from the power supply before starting any maintenance operations requiring parts of the unit to be removed.

SANITISING THE MIXERS AND FOODSTUFF CIRCUITS

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 instant drink dispensing conduits must be thoroughly disinfected, to guarantee proper hygiene of the dispensed products.

The parts to be cleaned are:

- powder deposit drawers, mixer and instant drink dispensing conduit;
- coffee dispensing spout;
- sugar chute;
- dispensing compartment.

LOADING AND CLEANING

LOADING CUPS

In order to load the machine with cups do as follows:

- disconnect the electricity from the machine;
- release the cup container, pushing the catch lever outwards, and tilt it forward;
- ensure that the column rotation knob has the lid locking notch lining up with the opening on the lid itself (if the dispenser is empty the positioning will be automatic);
- then, lift the knob and manually rotate the central stacker clockwise;
- lift the container lid;
- lower the cup container hatch;

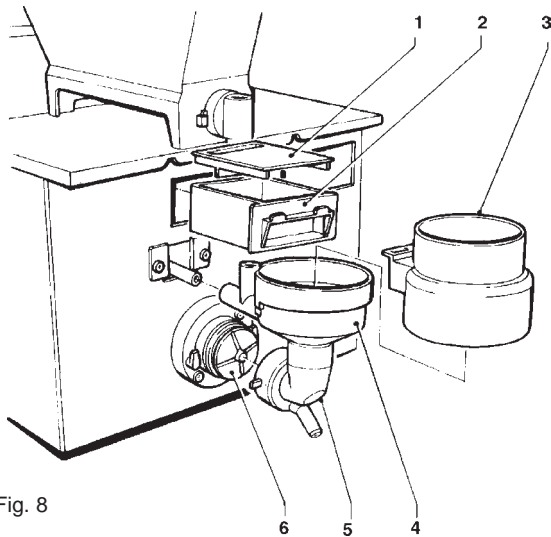


Fig. 8

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

- remove the powder and the water funnels, the feeders, the powder deposit drawers and the mixer rotors from the mixers (see Fig. 8);
- in order to remove the mixer rotors, with a finger block the disk fitted on the mixer shaft;
- wash all parts with detergent being sure that all visible residue and product layers are mechanically removed, using a brush if necessary.

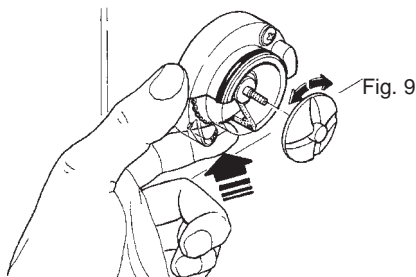


Fig. 9

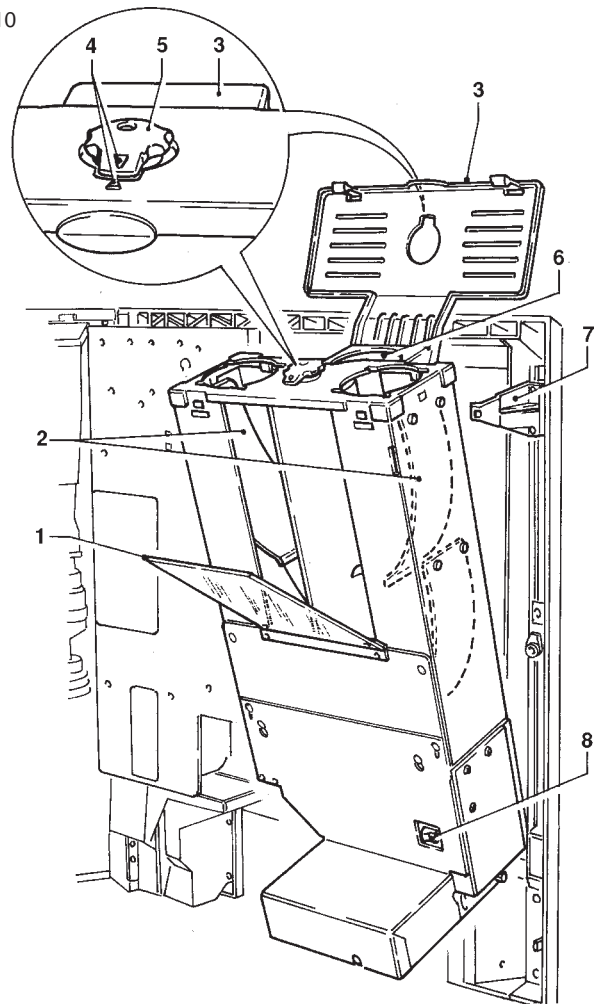
Disinfection should be carried out using chlorine-based detergents.

- soak all components for approx. 20 minutes in a container filled with the previously prepared chlorine-based detergent;
- reinstall the feeders and the water funnels;
- reinstall the powder deposit drawers and the powder funnels after thoroughly drying them.

After reinstalling all parts the following is however required:

- access "Maintenance" mode to clean the mixer (see relevant paragraph) and add a few drops of the chlorine-based detergent in the various funnels.
- After disinfection, thoroughly rinse all components to ensure that all residue of the solution is removed.

Fig. 10



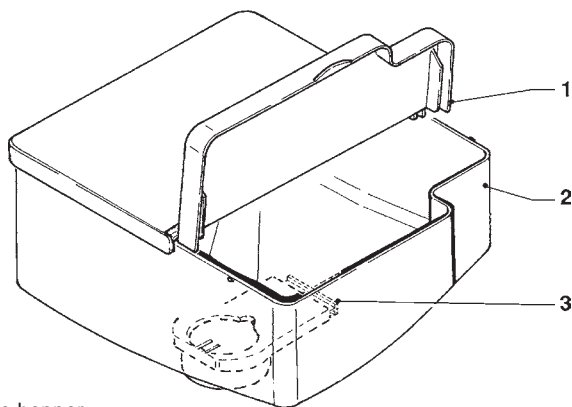
- 1 - Container hatch
- 2 - Cup release springs
- 3 - Container lid
- 4 - Lid locking notch
- 5 - Column rotation knob
- 6 - Central stacker
- 7 - Container catch lever
- 8 - Cup release button

- **fill the columns with cups ensuring that they are not forced inside each other;**
- the central column must be filled last;
- close the machine and make a test selection.

LOADING COFFEE

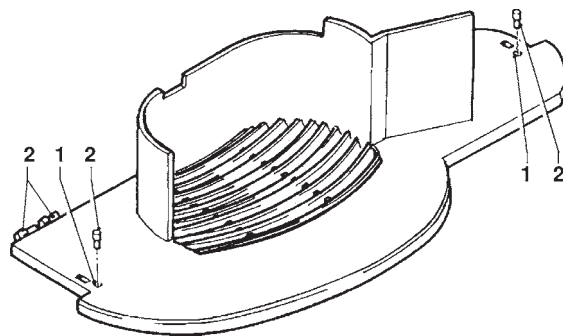
Lift the lid and fill the hopper with coffee, ensuring that the shutter is fully open (see Fig. 11).

Fig. 11



- 1 - Lid
- 2 - Coffee hopper
- 3 - Shutter

Fig. 12



- 1 - Tray locking holes
- 2 - Pins

CLEANING THE CUP SHIFTING ARM

The cup shifting arm must be periodically removed and cleaned. To be able to remove it, completely undo the knurled nut (see Fig. 13). When reinstalling ensure that the spacer washer is correctly fitted.

LOADING PRODUCTS AND SUGAR

After lifting their cover, fill each container with the appropriate product, taking care not to compress it to prevent packing. Make sure the products do not contain any clots.

LOADING STIRRERS

Remove the stirrer weight and insert the stirrers to be loaded. Remove the paper strip, ensuring that the stirrers are all placed horizontally. Replace the stirrer weight.

The stirrers must be burr free and not curved.

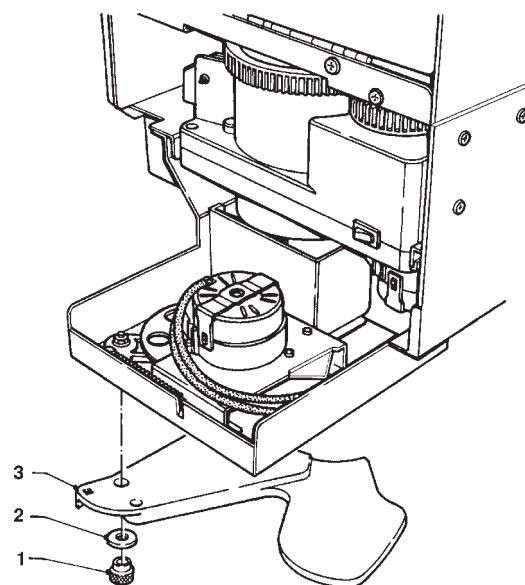
CLEANING THE LIQUID WASTE TRAY

The liquid waste tray can be removed easily for emptying and cleaning.

If the special pins fitted on the container cover are removed and inserted into the special holes (see Fig. 12), the tray can be removed only with door open.

For safety reasons, when removing the tray a special switch installed on the left-hand side will cut off the power supply from the machine.

Fig. 13



- 1 - Knurled nut
- 2 - Spacer washer
- 3 - Cup shifting arm

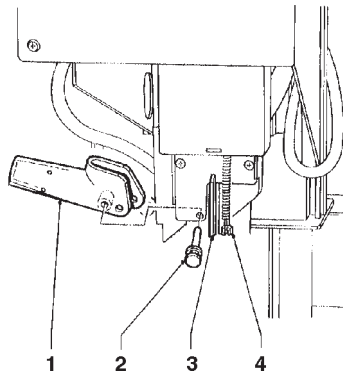
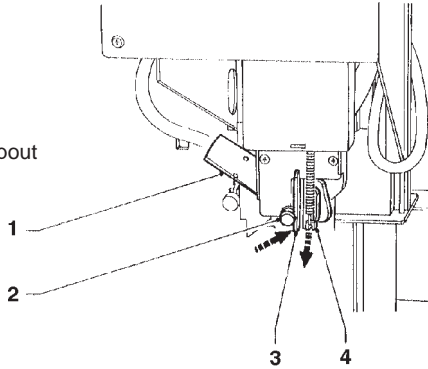
CLEANING THE SUGAR DISPENSER

For models with sugar dispensed directly into the cup, periodically the sugar dispensing system must be cleaned using hot water (see Fig. 14) proceeding as follows:

- 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.

Fig. 14

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



WEEKLY CLEANING OF BREWER UNIT

At every refill, or at least once a week, any powder residue should be removed from the external parts of the brewer unit, especially from the coffee funnel area (see Fig. 19).

SUSPENDING FROM USE

If for any reason the machine is to be 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 same chlorine-based detergents used to clean the mixers.
- completely empty the coffee doser unit by dispensing coffee until the empty condition is indicated.
- completely empty the water system using the special clamps.

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. 18). 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. 15).

The ratiomotor handle engaged with the disk (2) located outside of the unit rotates by 180°, causing the brew chamber to swing and lowering the upper piston (3) (see Fig. 16).

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.

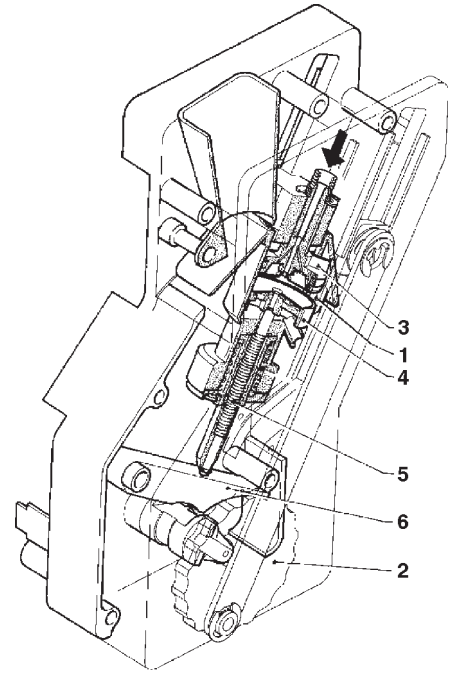


Fig. 16

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

CHECKING AND ADJUSTING THE MACHINE SETTINGS

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

For coffee

That the used coffee dose is lightly compressed and damp.

The grade of grinding of coffee.

The dose in weight of ground coffee.

The dispensing temperature.

The water dose.

For instant products

The dose in weight of the instant products.

The drink temperature.

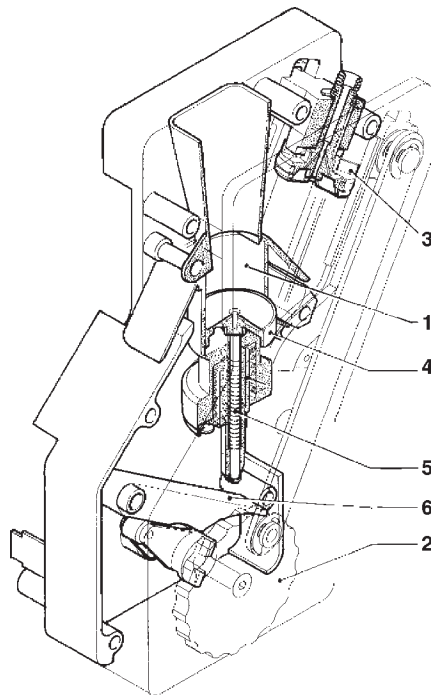
The water dose.

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.

Fig. 15

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



STANDARD SETTINGS

The vending machine is supplied with the following settings:

- tea temperature (at the spout) approx. 85÷89° C;
- instant product temperature (at the spout) approx. 75° C;
- operating pressure 4 bar max.

ADJUSTING THE BREWING CHAMBER VOLUME

When the upper piston is correctly positioned, the coffee unit can operate with coffee doses of 5.5 to 8.5 g.

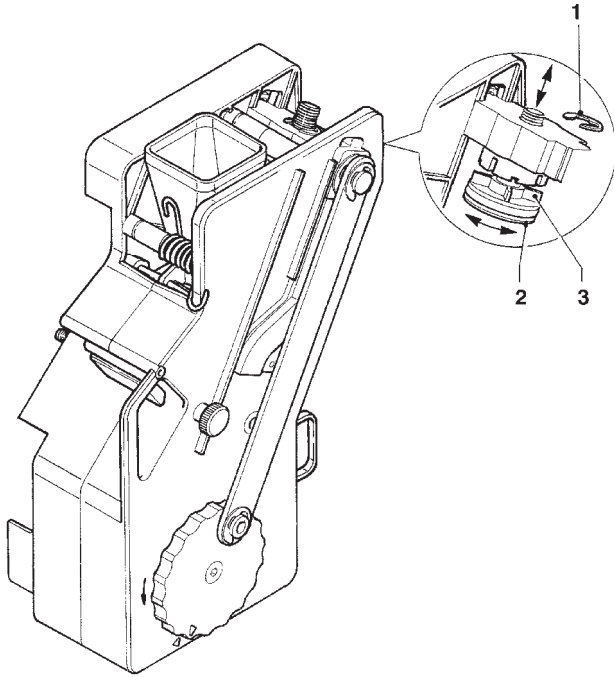


Fig. 17

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

To change the piston position (see Fig. 17) do as follows:

- remove the snap ring from its seat;
- place the piston in the appropriate adjusting notches:
 - .less deep notches for 5.5 to 7.5 g doses;
 - .deeper notches for 6.5 to 8.5 g doses.

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. 18) and more specifically:

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

For optimum results, it is advisable 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 performed in order to check the new grade 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. 15) and replaced into a different groove to change the average dose setting to:

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

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

Important notice!!!

To refit the coffee unit, pay special attention to the piston position. Reference notches on the external disk and on the unit case should match (see Fig. 19).

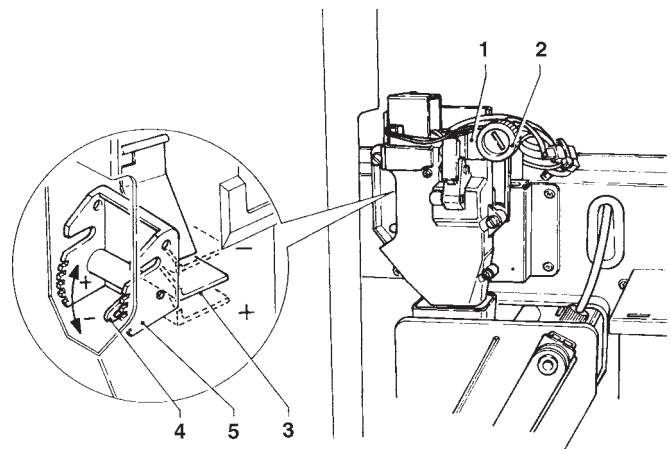


Fig. 18

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

WATER TEMPERATURE CONTROL

If requiring to change the boiler temperature, adjust the special trimmer (see Fig. 22) keeping in mind that:

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

MAINTENANCE

Important notice!!

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

Therefore, provisions must be made for the machine to be rotated, thus allowing removal of the back panel.

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

Switch the machine off before any maintenance operations which require removal of components.

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

INTRODUCTION

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

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

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

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

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

Never use water jets to clean the machine.

BREWER UNIT MAINTENANCE

Every 10,000 selections or every 6 months some maintenance to the brewer 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. 18);
- undo the knob securing the unit to the bracket;
- remove the brewer 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 seal.

Removing the lower filter

- Loosen screws A and B enough to release the coffee funnel (see Fig. 18);
- remove the lower piston snap ring;
- take the piston out of brewing chamber and remove the filter.

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

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

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

Important notice!!!

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

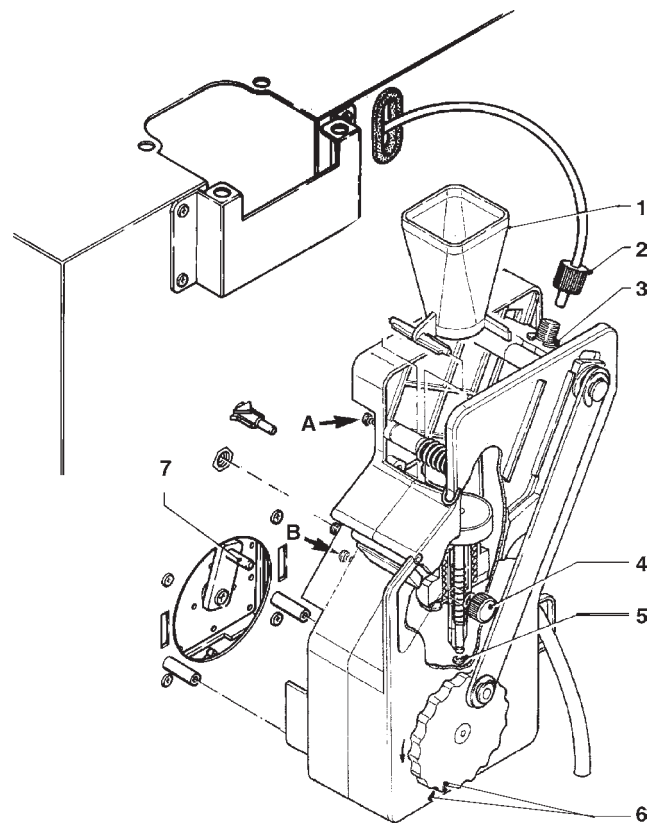


Fig. 19

- 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

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 sanitised 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;
- wash all components with detergents, ensuring that 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 machine 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 with the components reassembled.

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
Normal operating mode	
"Ready for use"	coins accepted products dispensed
Maintenance mode	
"Maintenance"	test dispensing machine maintenance
Programming mode	
"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 for use"	Machine ready.
"Price:...."	Price display selection made
"Credit:....."	Displaying the amount of credit inserted
"Out of Service"	Machine out of service
"Drink in Process"	Preparation of drink
"Temperature"	Wait time before reaching the operating temperature
"Installation"	Installation under way
"Sel. not avail."	Selection disabled
"Coffee sel. out"	For espresso models only Brewer unit out of service
"Empty tray"	Number of coffee cycles reached
"Take the drink"	Drink ready
"Only Dek available"	Coffee bean hopper empty

PRE-SELECTIONS

When pressing a pre-selection button for sugar, the messages "No Sugar" or "Extra sugar" are displayed for a few seconds.

For models with decaffeinated coffee, the same function is performed with a single button pressed in sequence. The second button pre-selects the use of decaffeinated coffee for the different selections:

BREWING CYCLE COUNTER

When the machine is used without support cabinet, an electronic counter that blocks the dispensing of brew product (after 150 cycles) must be set to prevent the small size internal tray from overflowing.

When the preset number of selection is reached the brew product selections are blocked.

To reset the counter, after cleaning the tray, button "1" must be kept pressed for two seconds within one minute from switching the machine on.

JUG FACILITIES

To be able fill a jug rotate the key a quarter of a turn clockwise, the machine will then be set to dispense 5 consecutive free selections without accessories.

The selection sequence can be stopped by turning the key back to central position before the end of a selection.

The number of residual available selections will be shown on the display at the beginning of each selection.

MAINTENANCE MODE

When the programming button located on the internal side of the push-button board (see Fig. 20) is pressed once the machine will go to "Maintenance" mode.











The message "Maintenance" is displayed for approx. two seconds and then the first option of the "Statistics" menu, allowing the following functions:

"Complete Sel."	Dispensing test including cup, sugar and stirrer
"Powder only"	Dispensing powder only
"Water only"	Dispensing water only
"No accessories"	Dispensing test without cup, sugar and stirrer
"Washing"	Rotating the coffee unit Dispensing sugar Dispensing extra sugar Washing
"Filling tubes"	Manual filling/releasing change tubes

For complete or partial dispensing tests each button is assigned a selection (see the dose selection 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 additions the message "Sel. not avail." will be displayed.

When the display shows "Washing" the buttons are assigned the following functions:

previous function	
next function	
wash mixer	
operate brewer unit	
dispense sugar	
dispense extra sugar	
not used	
not used	
not used	
not used	

Button "2" is used to operate the coffee unit if this is connected to the electrical system, and it releases a coffee dose if the unit is disconnected.







With the display indicating the function "Filling tubes", to manually fill the change tubes do as follows:

- press any button to enable filling; the display will indicate the message Credit: — , which is the value of money available in the change tubes;

- insert the desired coin in the selector (the display will indicate the value of money available in the change tubes;)

- press button "8" to end the operation.

When the function "filling tubes" is active, the buttons take on the following functions:

release tube "a"	
release tube "b"	
release tube "c"	
release tube "d"	
not used	
exit function /fill tubes	

The function cannot be accessed when in programming mode. In that case it will be necessary to switch the machine off and on again.

PROGRAMMING

When pressing the programming button located on the push-button card internal side twice (see Fig. 20), the machine goes into "Programming" mode; a password is requested, corresponding to the keys sequence "8", "6", "5" and "7".

After inserting the password the display shows the message "Programming" for approx. 2 seconds, and after this the first option of the programming menu appears on the display enabling the following functions:

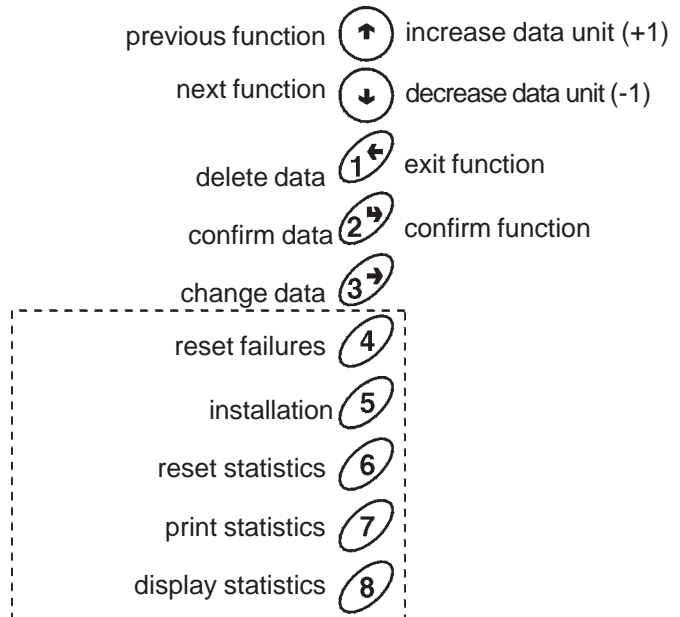
"Present failures"	reading present failures
"Water dose"	water dose setting
"Powd. dose"	powder dose setting
"Set Prices"	price setting
"Set Prices/Select"	price/selection combination enable/disable selections
"Basic unit / DP"	basic coin value setting and decimal point position
"Initialising"	RAM initialising
"Machine code"	setting the machine identification code
"Machine Config."	setting the machine version (fast/better cycles - mains/tank)
"Selec. counter"	setting the number of selections after which the machine will lock
"MDB data"	MDB protocol management
"Consecutive sel."	setting the number of selections after which the machine will pause for heating
"Pre-grinding"	setting grinding during the selection to be used for the next selection
"Set date/time"	setting the clock
"Set washing"	setting the time for automatic washing
"Set band"	setting the time of bands with sales at a different price
"Set price band"	setting the sales price of bands with sales at a different price
"Set jug"	number of consecutive selections with jug facilities key
"Set language"	language of displayed messages

"Set waste counter" number of brewing cycles
(plus version only)

The following operations are also possible:

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

At this point the buttons are assigned different functions as indicated in the figure below.



The buttons shown within the dotted line perform direct functions, the ones outside are used to scroll through the menu or to change data.

IMPORTANT NOTICE!!!

When initialising the machine, the configuration is given the default values "Supply from the mains/automatic cup dispensing".

THEREFORE AFTER INITIALISING, THE MACHINE SHOULD BE RECONFIGURED.

DISPLAYING THE PRESENT FAILURES

When the "Present failure" function from the "programming" menu is displayed, pressing the confirm button "→" will display the error code of the current failure; when pressing button "↓" the error code of the next applicable failure is displayed.

If no failure is currently present, pressing confirm button "→" will display the message "No Failure".

The 14 possible failures are shown in the following cases:

AIR-BREAK FAILURE

The machine will lock if the lack of water condition is not signalled by the microswitch after 7 selections.

BOILER FAILURE

The machine will lock if the boiler fails to reach the operating temperature after 10 minutes (Espresso models) or 20 minutes (Instant models) of heating from the machine start, or from the last selection.

COIN MECHANISM FAILURE

The machine will lock if none of the MDB payment systems communicates with the C.P.U.

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.

Also the machine configuration is by default and will have to be reconfigured.

The default configuration is automatic machine with water supply from the mains.

WATER FAILURE

If the air-break microswitch is closed for approximately one minute, the water inlet solenoid valve will stay triggered until water is resumed.

CUP FAILURE

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

LIQUID WASTE CONTAINER FULL

This occurs after the liquid waste container float triggers a signal (if fitted).

ROTOR FAILURE

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

COFFEE UNIT FAILURE

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

COFFEE FAILURE

If after a period of 15 seconds of grinding coffee a dose is not obtained, all coffee-based selections are disabled; the decaffeinated selections will continue working.

COFFEE RELEASE FAILURE

If after releasing the ground coffee dose the microswitch of the coffee doser unit indicates the presence of coffee in the doser chamber, all coffee based selections are disabled; the decaffeinated selections will continue working.

CHANGER FAILURE

The change-giver coin mechanism is not working or does not communicate.

BILL VALIDATOR FAILURE

The bill acceptor is not working or does not communicate.

CASHLESS FAILURE

The key device or the magnetic card is not working or does not communicate.

SETTING THE WATER AND POWDER DOSES

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

The various doses are identified with a dose code, which is 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.

The dose codes for the various selections are indicated in the selection dose table supplied with the machine.

The values of the doses displayed are expressed in:

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

Press the confirm button "→" from the "programming" menu to access the dose code list, which can be scrolled with the "↓" and "↑" buttons.

When pressing the change button "↔", this value starts blinking and can be modified as necessary.

SETTING THE PRICES

When the "Set Prices" function of the "programming" menu is displayed, the 8 sales prices stored can be changed.

Press the confirm button "→" from the "programming" menu to access the price list, which can be scrolled with the "↓" and "↑" buttons.

When pressing the change button "↔", this value starts blinking and can be modified as necessary.

SETTING THE PRICES AND THE SELECTION STATUS

When the "Set Prices/Selec." (price combination) function of the "programming" menu is displayed, the combination of the selection to one of the stored prices and/or to the status of a selection can be changed.

Press the confirm button "→" from the "programming" menu to access the price list, which can be scrolled with the "↓" and "↑" buttons.

When pressing the change button "↔" the selection status starts blinking.

Using the "↓" and "↑" buttons the selection status can be changed from (enabled) to (disabled).

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

When pressing the change button "↔", this value starts blinking and can be modified as necessary.

SETTING THE BASIC UNIT AND THE DECIMAL POINT

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

Press the confirm button "↵" from the "programming" menu to display the current value of the basic unit.

Use the "↓" and "↑" buttons to 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 change button "→", these values start blinking and can be modified as necessary.

INITIALISING

When the "Initialising" function is displayed, the machine can be initialised, thus resetting all default data.

This function is used in case of stored data error or replacement of the EPROM.

All statistical data is reset.

Press the confirm button "↵" and the message "Confirm?" is displayed. Press the button "↵" again and the message "Working" is displayed for a few seconds.

Also the machine configuration is by default and will have to be reconfigured. The default configuration is for an automatic machine with water supply from the mains.

SETTING 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 the confirm button "↵" to display the current code; when pressing the change button "→" the first digit will start blinking.

The buttons will have numeric values.

When pressing a button, the blinking digit will take on the displayed value and the next digit starts blinking.

MACHINE CONFIGURATION

When the "Machine Config." function is displayed, the machine configuration can be changed, and namely:

- water supply from the mains / internal tank
- fast/better dispensing cycles.

Press the confirm button "↵" to display the current status; when pressing the change button "→" the status starts blinking and can be changed with the "↓" and "↑" buttons.

IMPORTANT NOTICE!!!

When the machine is initialised, the configuration will reset to the default values: "Water supply from the mains/automatic cup dispensing".

Therefore, after initialising the machine must be reconfigured.

FAST CYCLES

When this function is enabled, some of the time that is useful for improving the drink quality is eliminated.

Instant selections

- All of the products that compose the drink are dispensed.
- The "post-whipping" time is eliminated.

Espresso selections

- Pre-brewing of ground coffee is not performed.
- The pump, used to increase the boiler pressure after an instant drink selection, is not started.
- The "post-whipping" time is eliminated.

SELECTION COUNTER

This function is used to lock the machine after a preset number of coffee selections, and a preset number of instant selections.

Since this is a control tool used only by the vending operator, a 4-digit password must be entered.

After entering the password, the number of selections after which the machine locks can be set, the number of selections already made can be read and the lock counter can be reset.

NB: The counters are set to zero by default;

With the counters set to zero, this function is disabled.



PROGRAMMING MDB DATA

The MDB protocol menu have the following structure:

- Type of vending
- Return of credit
- Maximum credit
- Maximum change
- Accepted coins
- Not returned coins
- Minimum level of tubes
- Dispensing buttons
- Accepted bills

TYPE OF VENDING

Setting the operating mode for multiple or single dispensing. With multiple dispensing, the change is not automatically returned after a successful selection, however it is available for further selections. When pressing the coin return button, the remaining credit is returned up to the "Maximum change" value setting.

RETURN OF CREDIT

This function enables/disables the return of credit when pressing the coin return button.

If activated, this function will inhibit the return of change if at least one purchase is not made.

MAXIMUM CREDIT

This function is used to define the maximum accepted credit.

MAXIMUM CHANGE

It is possible to set a limit to the total amount of change returned by the coin mechanism when pressing the coin return button or after a single dispensing serving.

Any credit exceeding the amount programmed with this function will be cashed.

ACCEPTED COINS

It is possible to define which, among the coins recognised by the validator, are to be accepted in "Change given" mode.

Check the label on the coin mechanism for the correct coin to value matching, indicating the position of the coins.

NOT ACCEPTED COINS

It is possible to program the rejection of coins when in "No change" mode.

Check the label on the coin mechanism for the correct coin to value matching, indicating the position of the coins.

MINIMUM LEVEL OF TUBES

It brings forward the "Insert exact amount" message for the user, by adding a number of coins between 0 and 15 to the programmed number of coins, to set the "full change tubes" status.

DISPENSING BUTTONS

This function enables or not the buttons on the coin mechanism used to release the coins in the change return tubes.

ACCEPTED BILLS

It is possible to define which, among the bills recognised by the validator, are to be accepted.

CONSECUTIVE SELECTIONS

It is possible to set the number of consecutive selections (0 to 99) (dispensed at less than 2 minutes intervals) after which the machine will not dispense other selections until the boiler reaches the correct temperature. With the value set to 0 (default) the function is disabled.

PRE-GRINDING

This function is used to enable/disable grinding of the coffee dose for the next selection. This permits the reduction of dispensing time for a coffee selection. The function is disabled by default.

SETTING THE CLOCK

This function is used to set date and time of the internal clock.

AUTOMATIC WASHING

Option of setting the time when automatically washing the mixers. When setting the time to 24.00 the function is disabled (default).

SETTING THE TIME BAND

This function is used to define the time band for sales at differentiated prices.

SETTING THE TIME BAND PRICES

This function is used to define the prices to be applied during the time band for sales at differentiated prices.

JUG FACILITIES

This function is used to define whether or not enable the use of an external key for consecutive free dispensing.

SETTING THE LANGUAGE

With this function is possible to define which language, among the three provided, is to be used for the messages on the display.

SETTING THE WASTE CONTAINER

In the "plus" model it is possible to define the number of selections (150 by default) after which coffee dispensing is blocked in order not to overflow the liquid waste tray, in the event the machine is not installed on a support cabinet.

DIRECT FUNCTIONS

RESETTING FAILURES

When pressing the failure reset button "4" the message "Working" is displayed for a few seconds and all present failures will be reset.

INSTALLATION

Pressing the installation button "5" will enable the filling operation of the hydraulic system, even with the air break full.

RESETTING THE STATISTICS

Press the statistics reset button "6" and the message "Confirm?" is displayed blinking.

Press the confirm button "2" and the message "Working" is displayed for a few seconds and the statistics are reset.

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 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 print button "7" to display the message "Confirm?";
- before confirming connect the printer;
- press the confirm button "2" to start printing.

DISPLAYING THE STATISTICS

Press the statistics display button "8" to display in a sequence at 1 second intervals the stored data, if no other buttons are pressed, and namely:

1 - MDB statistics

- Aud. 1 Money in the tubes
Money present that moment in the change-giver tubes.
- Aud. 2 Money to the tubes
Money sent to the change-giver tubes.
- Aud. 3 Money to the box
Money sent to the coin-box.
- Aud. 4 Change return
Total returned money.
- Aud. 5 Excess
Excess money. Extra amounts paid by the customer, which were not returned (in the even there is no money available for change).
- Aud. 6 Releasing tubes
Value of coins dispensed by means of the "Tube control" function.
- Aud. 7 Filling tubes
Value of coins cashed by means of the manual filling function.
- Aud. 8 Cash sales
Value of total sales by means of cash (coins + bills).
- Aud. 9 Cashed bills
Value of cashed bills.
- Aud.10 Charging key
Value of money charged to the key.
- Aud.11 Sales with key
Value of money cashed by means of selections with a key.
- Aud.12 Money dispensed manually
Value of coins dispensed manually by means of the dispensed buttons on the coin mechanism.

2- single selection counter

3 - failure counter

4 - single price counter

- normal
- discounted

PRINTED BOARD FUNCTIONS AND INDICATOR LIGHTS

CONTROL BOARD

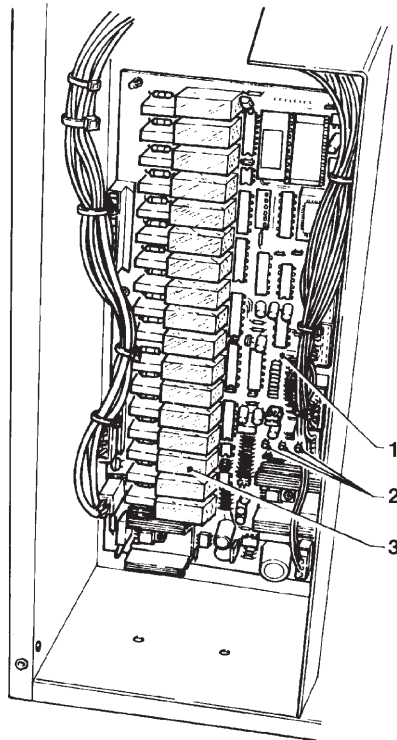
This board (see Fig. 20) processes the information from the push-buttons and from the payment system, it also controls the actuations and the push-button board.

The 15 V AC voltage required for board operation is supplied by a transformer which is protected by a 160 mA fuse on the primary and by a 1.25 AT fuse on the secondary winding. The voltage supply is rectified and stabilised directly by the board.

The board also houses the EPROM.

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

Fig. 20



- 1 - Control board
- 2 - LED
- 3 - Relay

PUSH-BUTTON BOARD

This board controls the alphanumeric display, the selection buttons and the programming button.

It supports the coin mechanism connectors (BDV or Executive as alternative) as well as the printer port.

EXPANSION BOARD

A relay card, fitted near the control board, is used in the "plus" model to control the decaffeinated doser device.

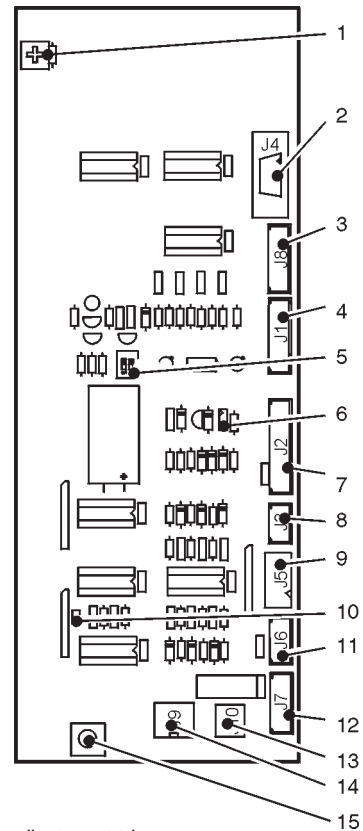


Fig. 21

- 1 - Brightness adjustment trimmer
- 2 - Printer
- 3 - Programmer connector
- 4 - To the control board
- 5 - Payment system minidips
(1-2 OFF = Executive - ON = MDB)
- 6 - Jp2 =
- 7 - To the control board
- 8 - Executive serial interface
- 9 - Front validator
- 10 - Jp1 =
- 11 - Coin return lamp
- 12 - not used
- 13 - MDB coin mechanism power supply
- 14 - MDB coin mechanism
- 15 - Programming button

CONTROL BOARD CONFIGURATION

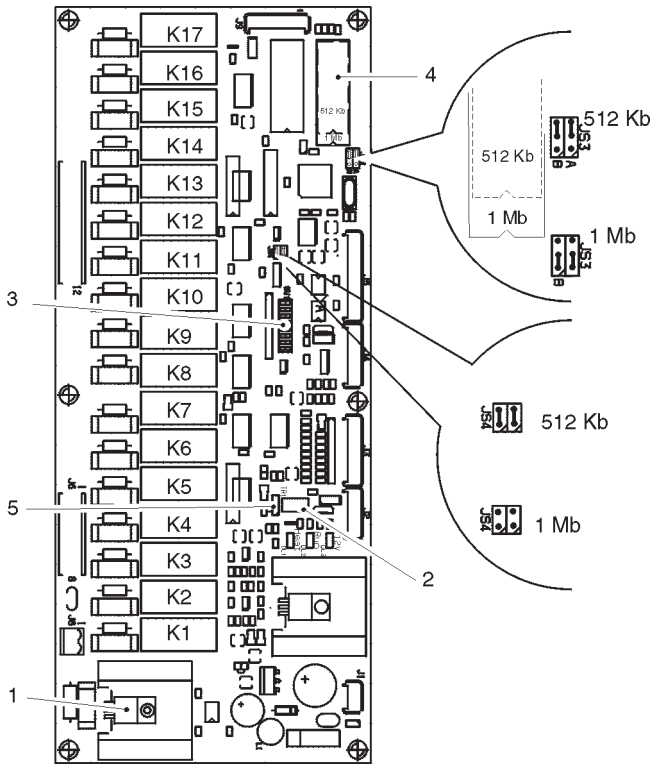
The electronic board was designed to be used on different machine models.

In the event of replacement it must be verified that the new board is correctly configured.

A set of 8 minidips (3), allowing configuration of the board for use in the various versions and in the different countries, and a jumper (5), allowing configuration of the board for Instant or Espresso models, are located at the centre of the board (see Fig. 22). The board is also designed to support 512 Kb and 1 Mb EPROMs by setting jumpers JS3 and JS4.

In order to correctly configure a board in the event of replacement or to change the machine performance refer to the following tables and to the selection dose table.

Fig. 22



- 1 - Boiler heating element TRIAC
- 2 - Temperature adjustment trimmer
- 3 - Configuration minidips
- 4 - EPROM
- 5 - Jumper: 1-2 Instant versions
2-3 Espresso versions
- JS3 - JS4 jumpers for EPROM size

RELAY FUNCTION (see Wiring diagram)
CONTROL BOARD

- K1 = ER COFFEE DISPENSING SOLENOID VALVE
- K2 = ESC COFFEE RELEASE MAGNET
- K3 = MAC GRINDER
- K4 = PM PUMP
- K5 = M COFFEE UNIT MOTOR
- K6 = EV2 INSTANT SOLENOID VALVE 2
- K7 = EV1 INSTANT SOLENOID VALVE 1
- K8 = MF1 INSTANT SOLENOID VALVE 1
- K9 = MD4 INSTANT DOSER DEVICES 4
- K10 = MD3 INSTANT DOSER DEVICES 3
- K11 = MD2 INSTANT DOSER DEVICES 2
- K12 = MD1 INSTANT DOSER DEVICES 1
- K13 = MSB CUP RELEASE MOTOR
- K14 = MSP STIRRER RELEASE MOTOR
- K15 = MSCB CUP COLUMN SHIFT MOTOR
- K16 = EIA WATER INLET SOLENOID VALVE
- K17 = MF2 INSTANT MIXERS 2

EXPANSION BOARD (model plus only)

- K1 = MD5 DECAFFEINATED DOSER DEVICE

MODEL CONFIGURATION

According to the model, minidip 5 and the jumper (see Fig. 21) shall be set as follows:

MODEL	INSTANT	ESPRESSO
MINIDIP 5	ON	OFF
JUMPER	1-2	2-3

STIRRER DISPENSER CONFIGURATION

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

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

FREE VEND CONFIGURATION

It is possible whether or not to use the payment systems by setting minidip 1 as indicated in the table below:

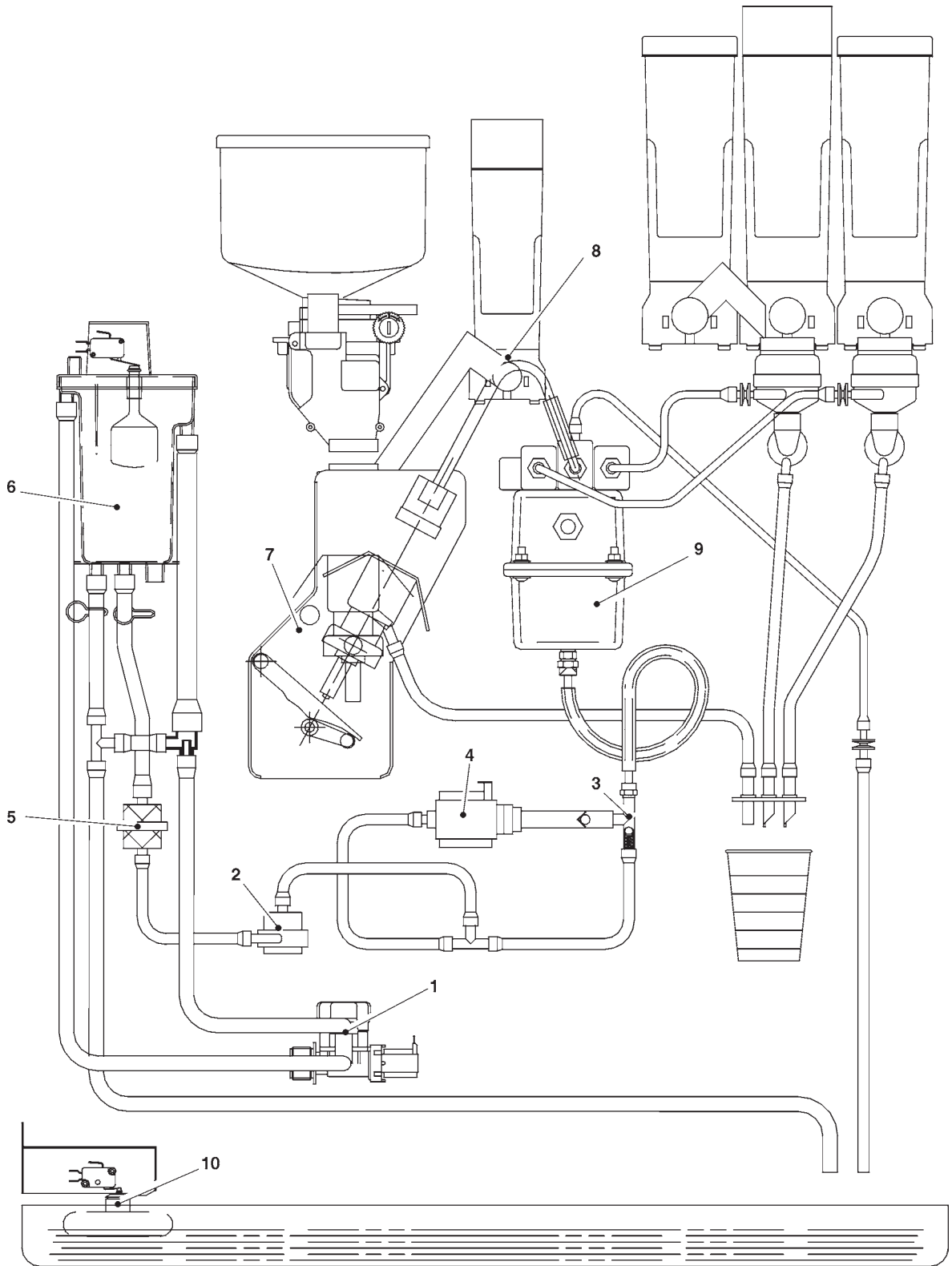
Payment systems	enabled	disabled
MINIDIP 1	ON	OFF

Important notice:

The machine layout can be changed by means of the minidips.

Refer to the selection dose table for the available versions.

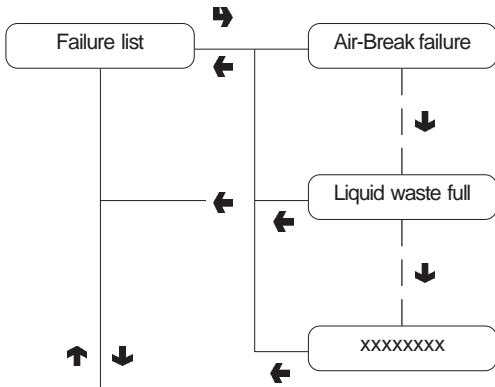
HYDRAULIC SYSTEM



- 1 - Water inlet solenoid valve
- 2 - Volumetric counter
- 3 - By-pass
- 4 - Vibration pump
- 5 - Mechanical filter

- 6 - Air-break
- 7 - Coffee unit
- 8 - Decaffeinated doser device (some models only)
- 9 - Boiler
- 10 - Liquid waste tray overflow float

Programming menu

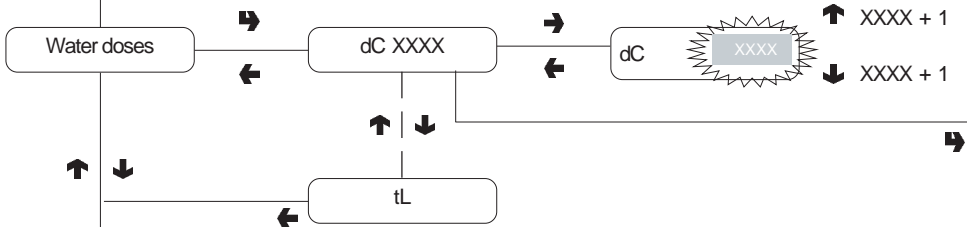


DISPLAYING FAILURES

If no failures are present, when pressing button the message "No failures" is displayed for 1 second

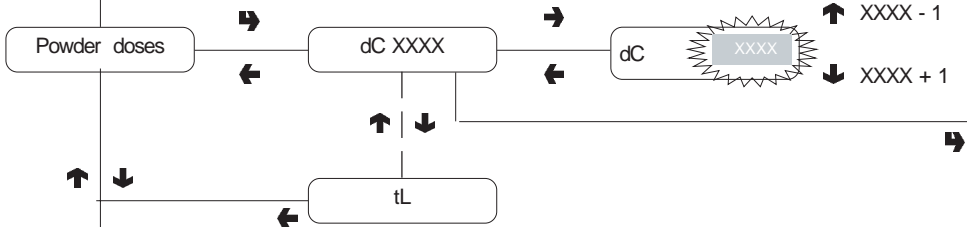
LIST OF FAILURES

- N. 1 - Air-Break
- N. 2 - Boiler
- N. 3 - Payment system
- N. 4 - EEprom data
- N. 5 - Water failure
- N. 6 - Cup failure
- N. 7 - Liquid waste full
- N. 8 - Volumetric counter
- N. 9 - Tea brewer
- N. 9 - Coffee unit
- N. 10 - Coffee failure
- N. 11 - Coffee release
- N. 12 - Changer
- N. 13 - Bill validator
- N. 14 - Cashless



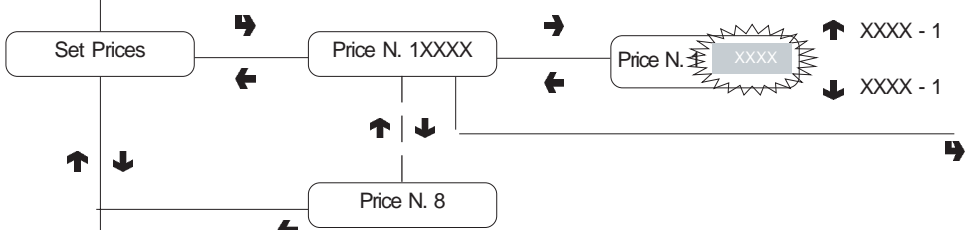
WATER DOSES

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

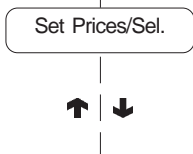


POWDER DOSES

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



PRICE VALUE



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

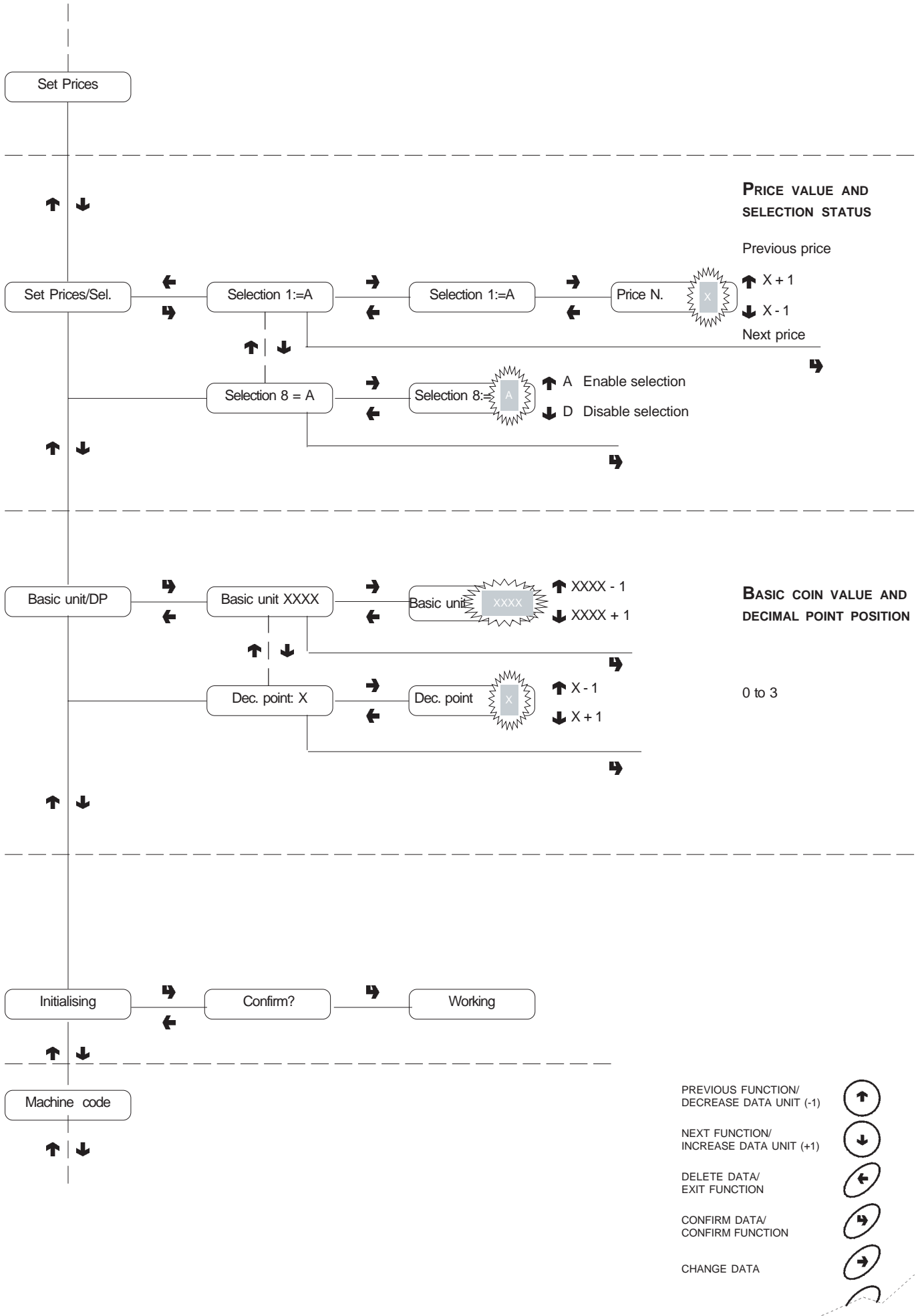
DELETE DATA/
EXIT FUNCTION

CONFIRM DATA/
CONFIRM FUNCTION

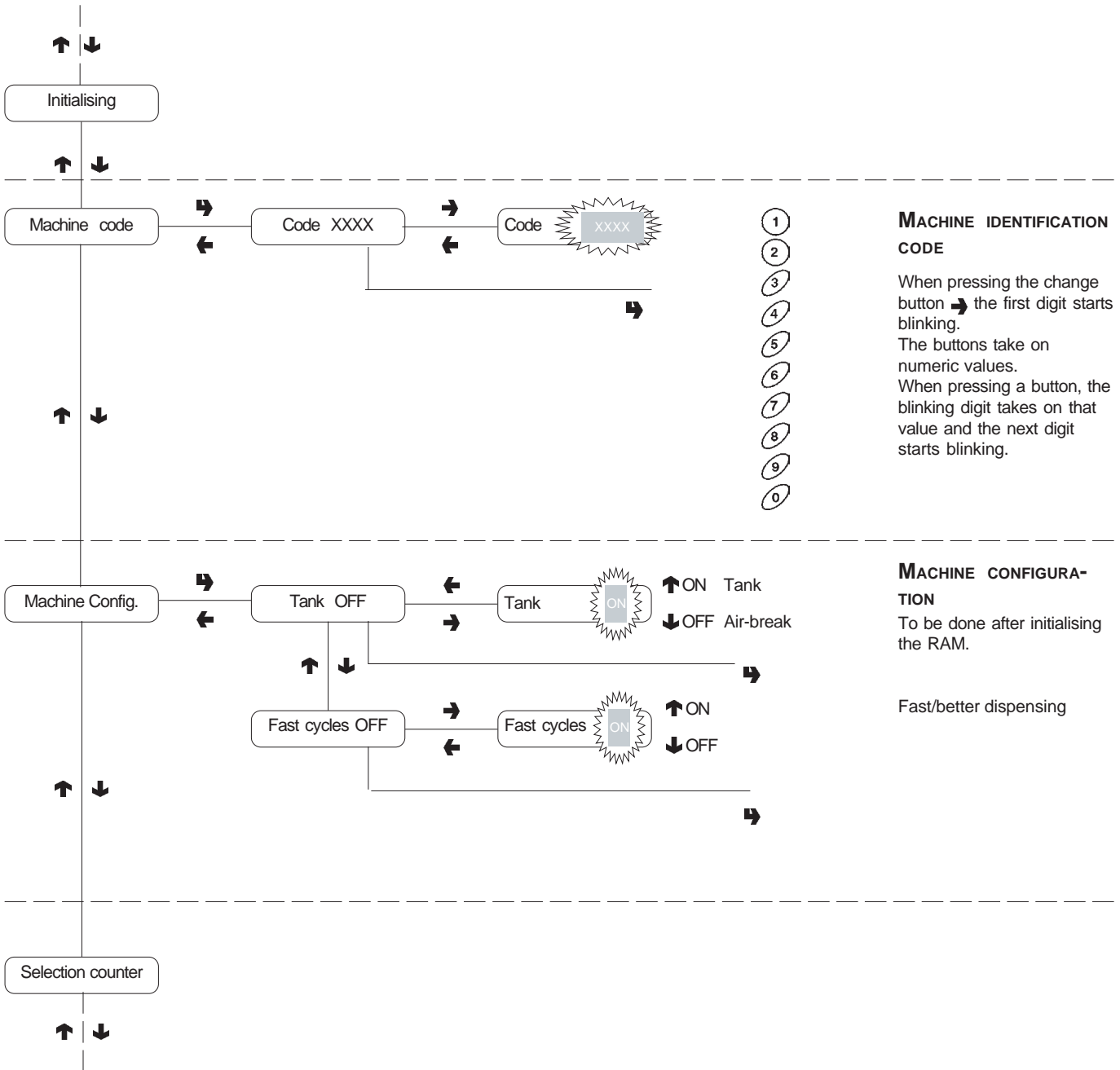
CHANGE DATA



Programming menu



Programming menu



MACHINE IDENTIFICATION CODE

When pressing the change button → the first digit starts blinking.
 The buttons take on numeric values.
 When pressing a button, the blinking digit takes on that value and the next digit starts blinking.

MACHINE CONFIGURATION

To be done after initialising the RAM.

Fast/better dispensing

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

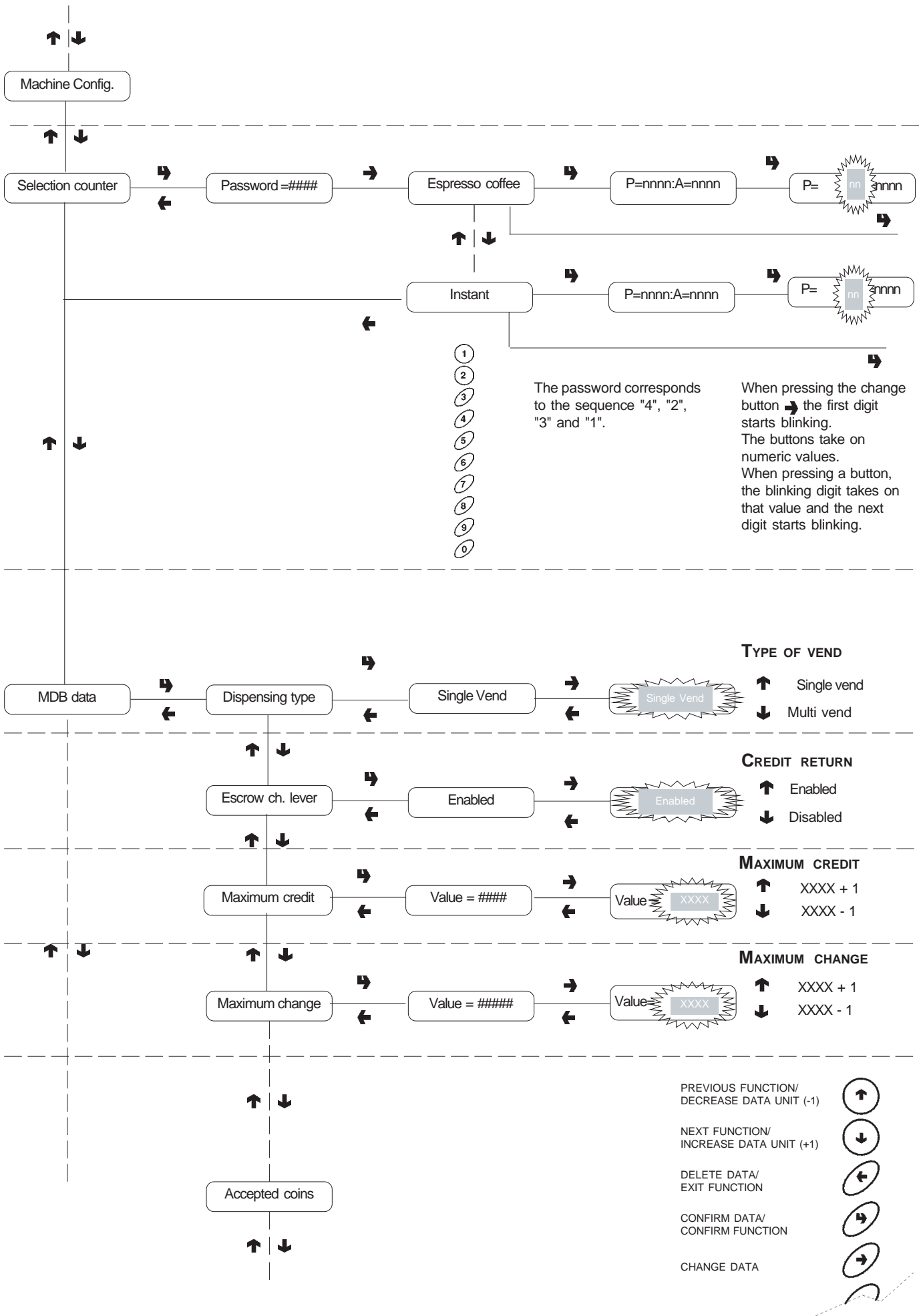
DELETE DATA/
 EXIT FUNCTION

CONFIRM DATA/
 CONFIRM FUNCTION

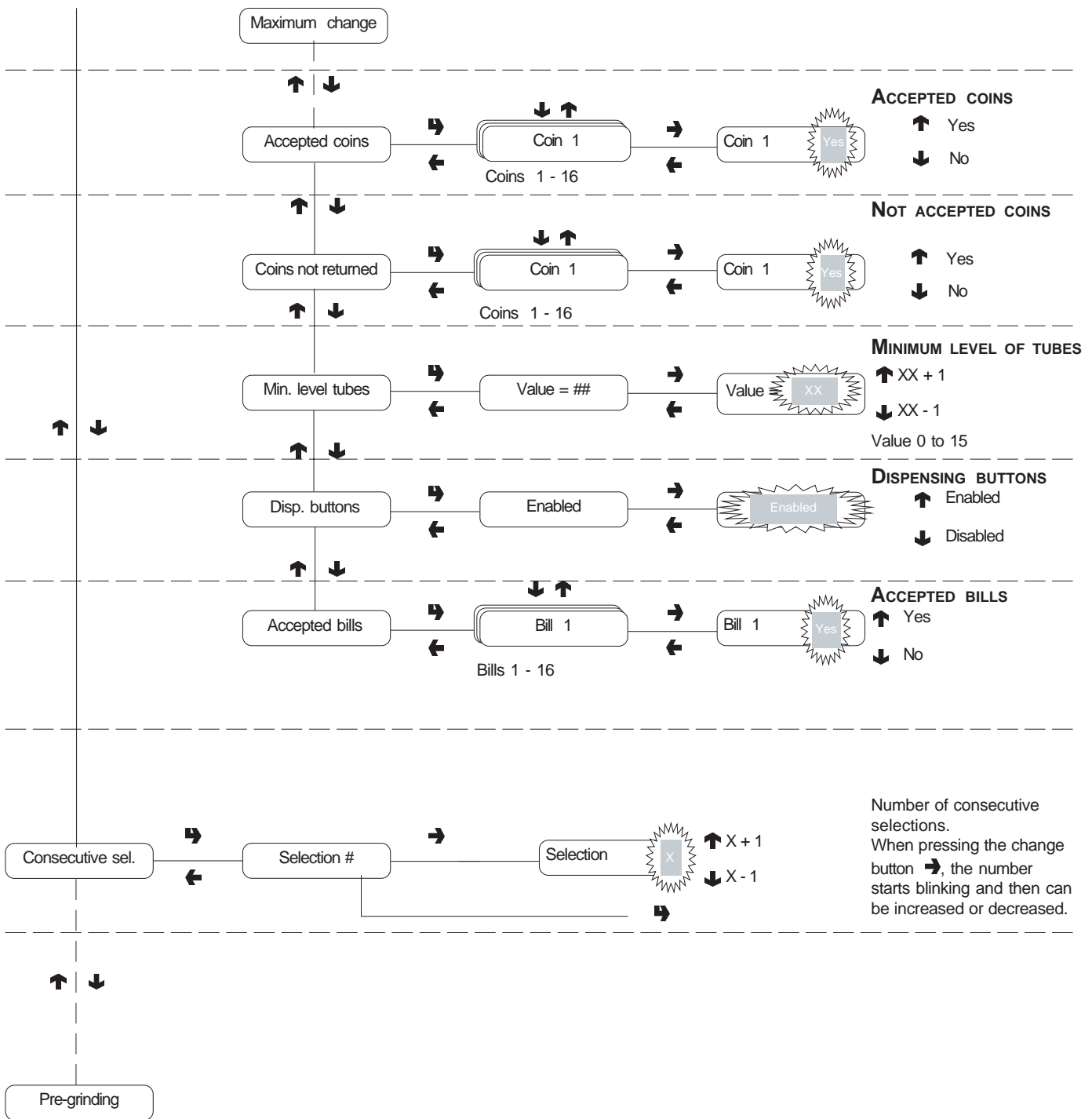
CHANGE DATA








Programming menu

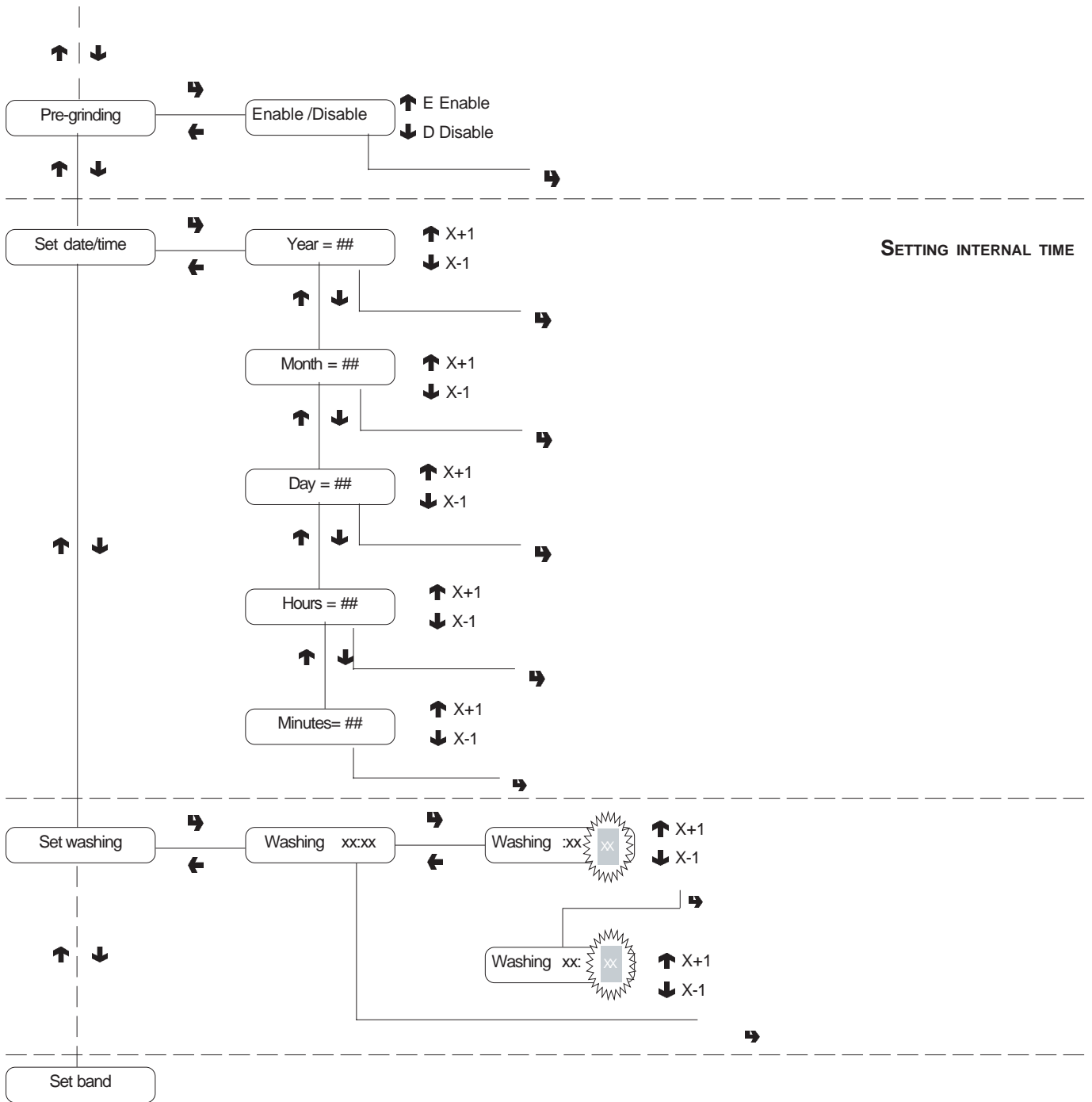







Programming menu



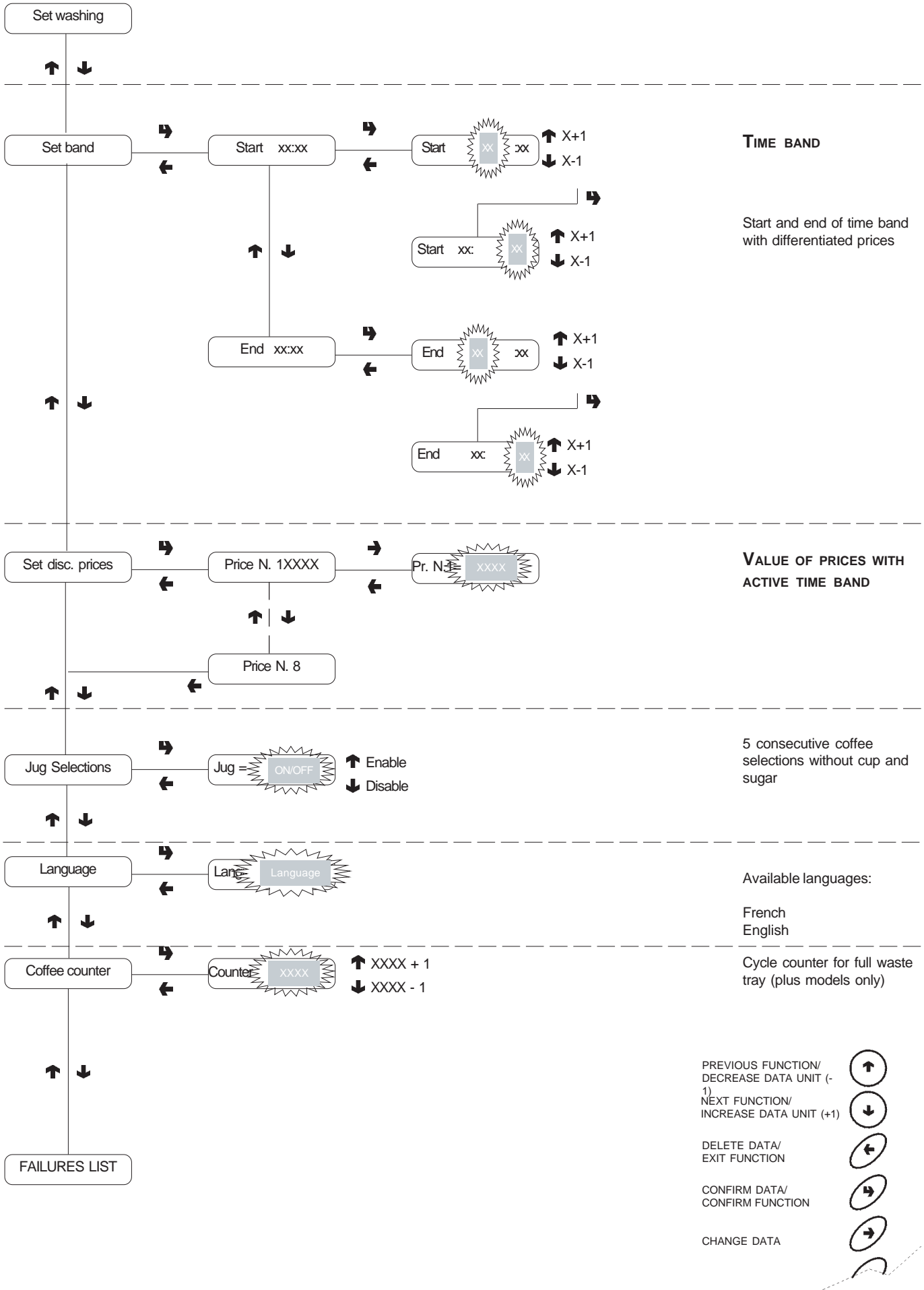
- PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1) 
- NEXT FUNCTION/
INCREASE DATA UNIT (+1) 
- DELETE DATA/
EXIT FUNCTION 
- CONFIRM DATA/
CONFIRM FUNCTION 
- CHANGE DATA 

Programming menu



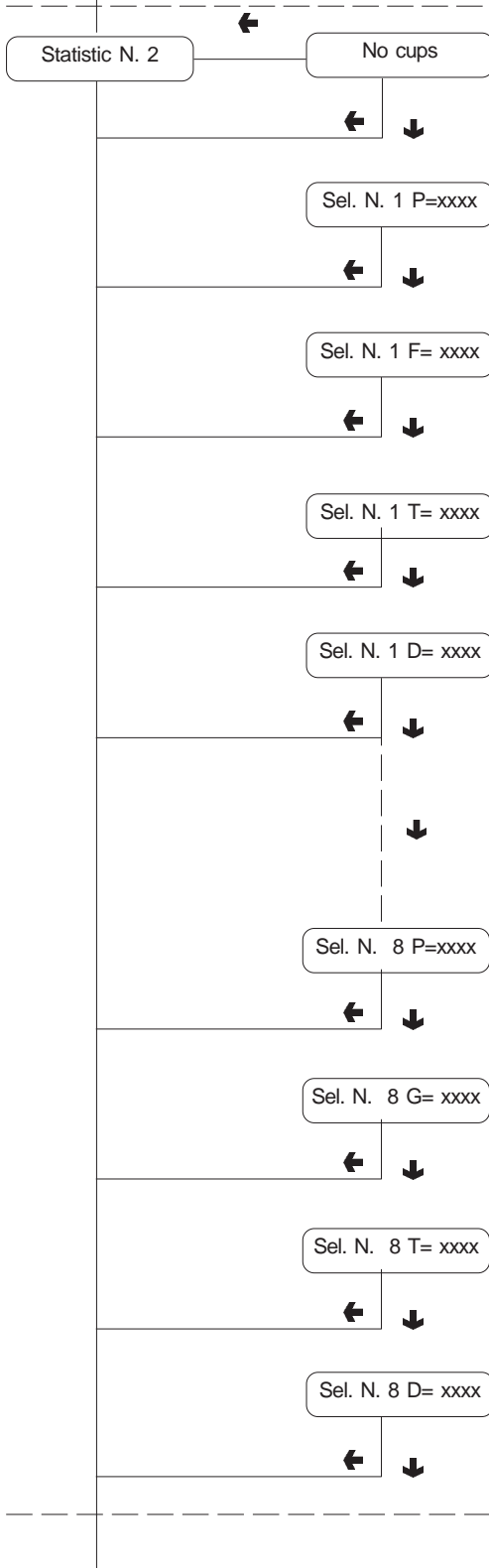
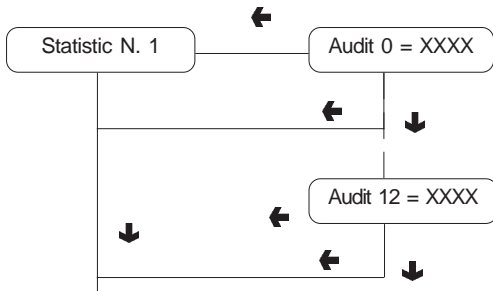
- PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1) 
- NEXT FUNCTION/
INCREASE DATA UNIT (+1) 
- DELETE DATA/
EXIT FUNCTION 
- CONFIRM DATA/
CONFIRM FUNCTION 
- CHANGE DATA 

Programming menu



Reading data

Automatic data reading scrolling at one second intervals



Total selections without cup

P = paid selections

F = free selections

T = test selections

D = discounted selections

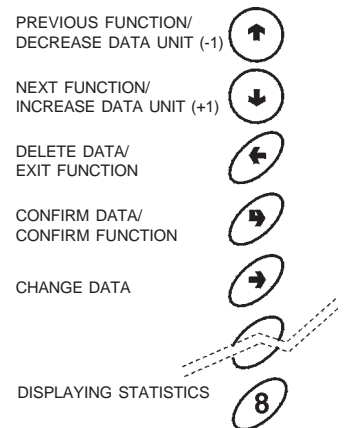
MDB AUDIT

- 1 -Money in the tubes
- 2 -Money to the tubes
- 3 -Money to the box
- 4 - Change return
- 5 - Excess
- 6 - Releasing tubes
- 7 - Filling tubes
- 8 - Cash sales
- 9 - Cashed bills
- 10 - Charging key
- 11 - Sales with key
- 12 - Money dispensed manually

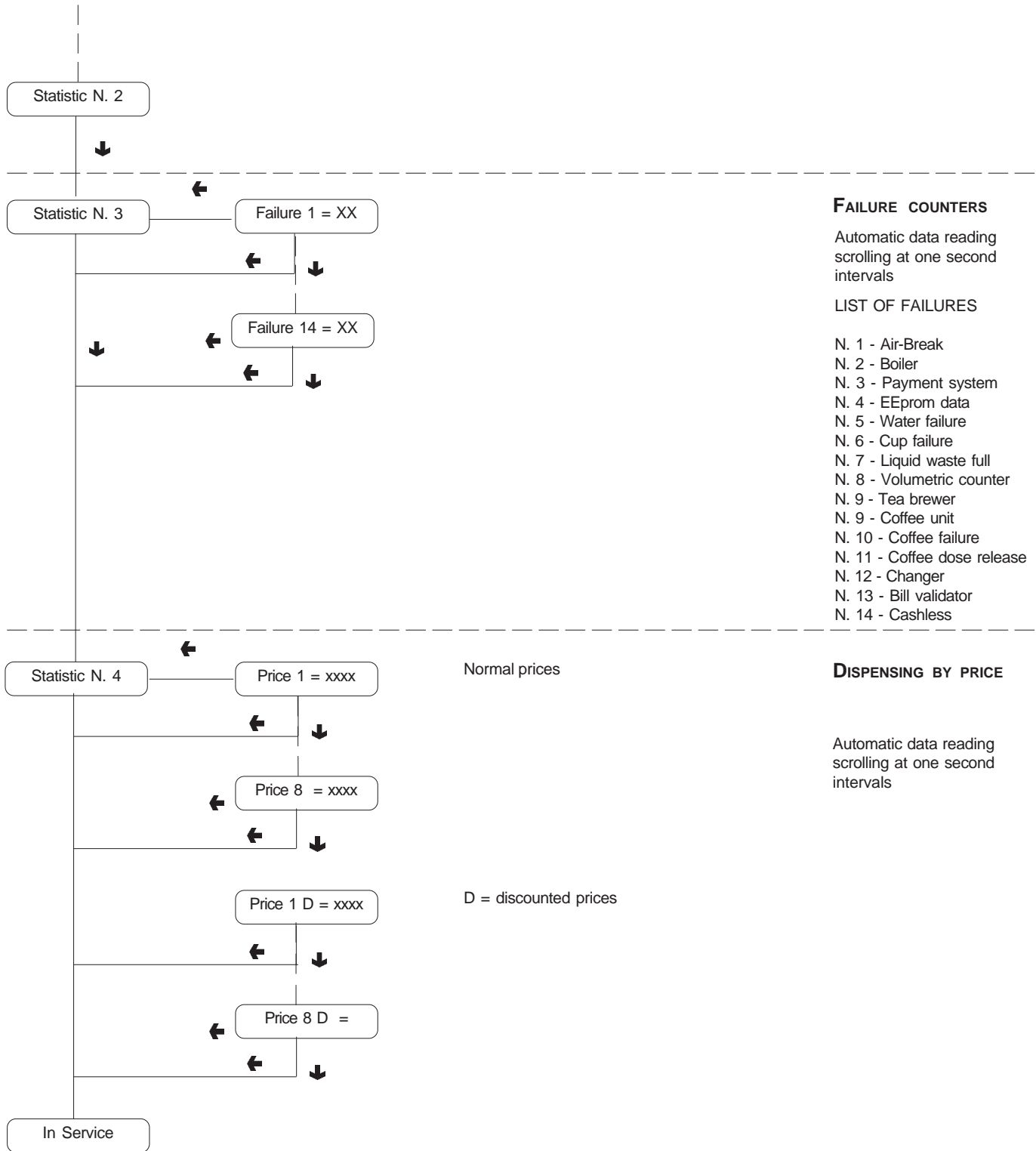
DISPENSING BY SELECTION

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

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



Reading data



FAILURE COUNTERS

Automatic data reading scrolling at one second intervals

LIST OF FAILURES

- N. 1 - Air-Break
- N. 2 - Boiler
- N. 3 - Payment system
- N. 4 - EEprom data
- N. 5 - Water failure
- N. 6 - Cup failure
- N. 7 - Liquid waste full
- N. 8 - Volumetric counter
- N. 9 - Tea brewer
- N. 9 - Coffee unit
- N. 10 - Coffee failure
- N. 11 - Coffee dose release
- N. 12 - Changer
- N. 13 - Bill validator
- N. 14 - Cashless

DISPENSING BY PRICE

Automatic data reading scrolling at one second intervals

PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1) 

NEXT FUNCTION/
INCREASE DATA UNIT (+1) 

DELETE DATA/
EXIT FUNCTION 

CONFIRM DATA/
CONFIRM FUNCTION 

CHANGE DATA 

DISPLAYING STATISTICS 

WIRING DIAGRAM LEGEND

INITIALS	DESCRIPTION	INITIALS	DESCRIPTION
BDV	BDV COIN MECH CONNECTORS	MF1-..	WHIPPER MOTORS
BFL	LIQUID WASTE TRAY SWITCH	MPF	FRESH BREW PISTON MOTOR
CCG	GENERAL COUNTER	MSB	CUP RELEASE MOTOR
CM1-2	MICROSWITCH FOR BREW UNIT MOTO	MSCB	CUP CONTAINER SHIFT MOTOR
CM3	CUP TRAY MICROSWITCH	MSP	STIRRER RELEASE MOTOR
CMCB	CUP CONTAINER MOTOR MICROSW.	MSV	TRAY MOVING MOTOR
CMSB	CUP RELEASE MOTOR CAM	NTC1-.	TEMPERATURE PROBE
CV	VOLUMETRIC COUNTER	PD	DIODE RECTIFIER
E1-...	INSTANT SOLENOID VALVE	PG	UNIT DETECTION MICROSWITCH
EEA	WATER INLET SOLENOID VALVE	PIP	PROGRAMMING BUTTON
ER	COFFEE DISPENSER SOLENOID VALV	PL	WASH CYCLE BUTTON
ESC	COFFEE RELEASE MAGNET	PM	PUMP
EX	EXECUTIVE COIN MECH CONNECTOR	PR	PRESSURE SWITCH
FA	RADIO INTERFERENCE SUPPRESSOR	PSB	CUP RELEASE BUTTON
FREE	FREE VENDING SWITCH	RCC	COFFEE BOILER HEATING ELEMENT
FS1-..	FUSE	RCS	INSTANT BOILER HEATING ELEMENT
ID	COFFEE DOSE SWITCH	RIS	COFFEE UNIT HEATER
IMSP	STIRRER RELEASE MICRO-SWITCH	RT	BALLAST
IP	DOOR SWITCH	SAL	VOLTAGE SUPPLY BOARD
IPF	WASTE CONTAINER OVERFLOW SWIT	SM	CONTROL BOARD
IVA	EMPTY BOILER MICRO-SWITCH	SM2	EXPANSION BOARD
IVB	EMPTY CUP DISPENSER MICRO SWITC	SP	PUSH-BUTTON BOARD
JUG	JUG FACILITIES SWITCH	ST	STARTER
KC1-..	COFFEE BOILER CUTOUT	TH	THERMOSTAT
KS1-..	SAFETY CUTOUT	TR	TRANSFORMER
LF1-..	LAMP	TR1	TRANSFORMER 230 V 24 V
M	COFFEE UNIT MOTOR	TX...	DELAYED FUSE (X=CURRENT)
MAC	GRINDER	TZ	CUP SENSOR
MD1-..	INGREDIENT MOTOR - INSTANT	VAR	VARISTOR
MDTE	FRESH REA DOSER UNIT	VENT	FAN
MDZ	INGREDIENT MOTOR - SUGAR		

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