

Colibrì

Espresso

MDB Protocol

UK English



DOC. NO. **H 217U 00**
EDITION 1 03-2003

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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.

Intygar 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

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IQNet and
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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 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

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ITALIAN CERTIFICATION OF COMPANY QUALITY SYSTEMS

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SI CERTIFICA CHE IL SISTEMA QUALITÀ DI
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OPERATIVE UNITS

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UNI EN ISO 9001

PER LE SEGUENTI ATTIVITÀ
CONCERNING THE FOLLOWING ACTIVITIES

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

IL PRESENTE CERTIFICATO È SOGGETTO AL RISPETTO DEL REGOLAMENTO
PER LA CERTIFICAZIONE DEI SISTEMI QUALITÀ DELLE AZIENDE
THE USE AND THE VALIDITY OF THE CERTIFICATE SHALL SATISFY THE REQUIREMENTS
OF THE RULES FOR THE CERTIFICATION OF COMPANY QUALITY SYSTEMS

Prima emissione
First issue
1 Giugno 1994

Emissione corrente
Current issue
31 Marzo 2000

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'IMQ S.p.A.

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

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INTRODUCTION

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

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

This manual is divided into three chapters.

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

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

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

The operations described in the second and third chapters 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.

The vending machines in the Colibrì range are designed to meet a wide spectrum of user needs.

This manual describes all possible machine configurations and the related safety and maintenance instructions.

Nonstandard devices will be indicated as "optional".

IDENTIFICATION OF THE VENDING MACHINE AND ITS CHARACTERISTICS

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

This plate (see Figure below) 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, 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.

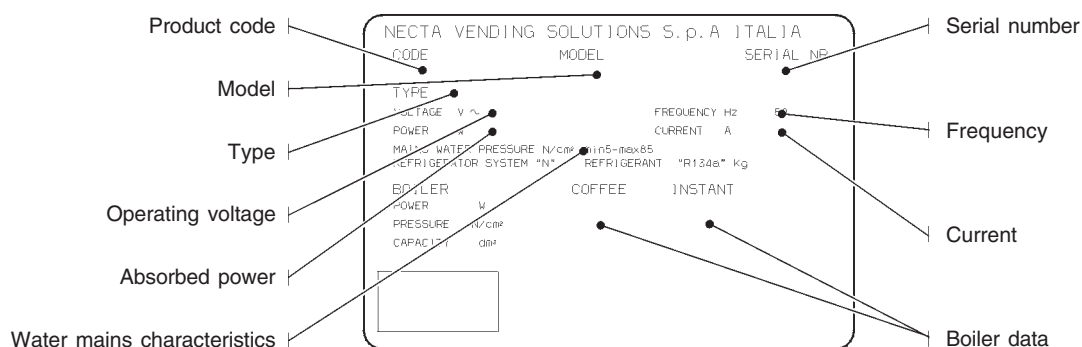
The machine can be lifted by a motor-driven or manual fork lift truck, and the blades are to be placed underneath the machine.

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.

Using the original packing, no more than 2 machines can be stacked one on top of the other and must always kept upright as indicated by the arrows on the packing.



POSITIONING THE VENDING MACHINE

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

The machine must be placed on the special support cabinet, which houses the liquid waste tray, the water supply device, the payment system and, in the case of very hard water, the softener cartridge.

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

Installation on the cabinet

The machine must be placed on the special support cabinet, which houses: 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 machine and compliance with the standards of the relevant systems must be checked at least once a year by qualified personnel.

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.

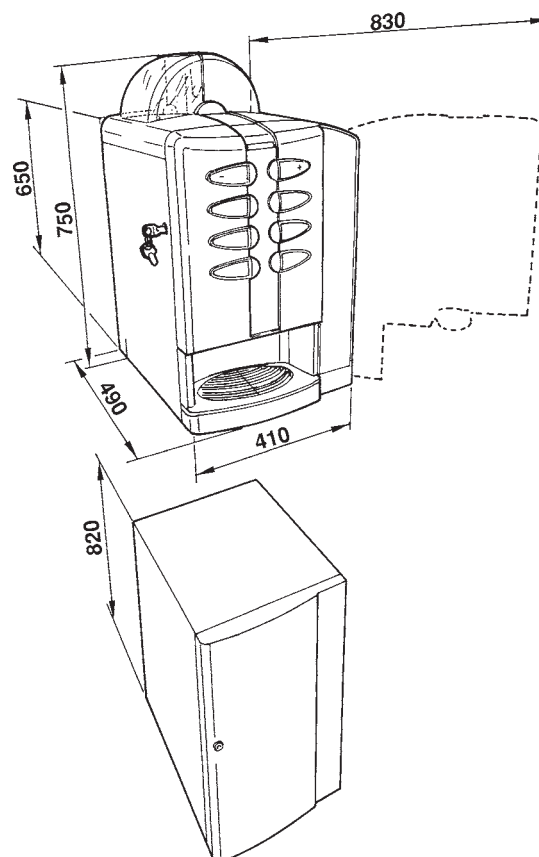
WARNING FOR SCRAPPING

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

DIMENSIONS



Height	650	mm
Height with container	750	mm
Width	410	mm
Depth	490	mm
Overall depth with door open	830	mm
Height of cabinet	820	mm
Weight	38	Kg
Power supply voltage	220	V~
Power supply frequency	60	Hz
Installed power	1300	W

CUP DISPENSER

Suitable for cups with a rim diameter of 73-74 mm. with a capacity of approximately 170 cups.

PAYMENT SYSTEM

The machine is supplied with all prearrangement for the MDB protocol.

The machine can accommodate the “cashless” payment system, while the “change-giver” payment system must be installed in the support cabinet.

SALES PRICES

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

COIN BOX

Made of plastic with lock as optional accessory.

WATER SUPPLY

A self-contained water supply device (with a 15-litre tank) is installed in the support cabinet.

AVAILABLE ADJUSTMENTS

- Grade of grinding for espresso coffee
- Coffee and water doses by volume
- Time adjustment for instant products
- Temperature control

Factory setting on the correct operating temperature. A trimmer on the control board is used to make small corrections (if necessary).

CONTROLS

- Presence of cups
- Presence of water
- Presence of coffee
- Operating temperature reached
- Cup release microswitch

SAFETY DEVICES

- Differential switch
- Door switch
- Presence of coffee waste tray
- Manual-reset boiler safety thermostat
- Air-break float jammed
- Timer protection for:
 - Pump
 - Coffee unit ratiomotor
 - Coffee grinder
- Overheating protection for:
 - Doser units
 - Coffee unit ratiomotor
 - Magnets
 - Pump
 - Electric mixers
 - Coffee grinder motor
- Fuse protection for
 - Main electrical circuit
 - Board power supply transformer

CAPACITY OF CONTAINERS

Capacity of containers (Kg)	Espresso
Coffee beans	2
Milk	0.8
Chocolate	1.4
Stirrers (N.)	165

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.

With an ambient temperature of 22° C the following power consumption levels resulted:

	Espresso
30 drink selections	0.96 l
Average drink temperature	76.2° C
Power consumption	
To reach operating temperature	28.6 Wh
24 h of stand-by	1414 Wh
30 selections /hour	171.2 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 vary its performance:

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

Important notice!!

The use of kits which are not approved by the manufacturer of the vending machine does not guarantee compliance with safety standards, especially for energised parts. The manufacturer declines all responsibility for the use of non approved components.

Installation and the following testing operations must be carried out exclusively by personnel who have a specific knowledge of the machine functions from a point of view of electrical safety and health regulations.

Chapter 1

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 filling and routine cleaning.

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

MAINTENANCE AND DISINFECTION

According to current safety and health rules and 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.

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

The manufacturer declines all responsibility for any damage to persons caused by non-compliance with current health regulations.

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

USING THE VENDING MACHINES OF HOT DRINKS IN OPEN CONTAINERS

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

Vending machines for drinks in open containers should be used only to sell and dispense drinks obtained by:

- brewing products like coffee and tea;
- reconstituting instant and lyophilised 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.

CONTROLS AND INFORMATION

The user controls and information are located on the outside of the door (see Fig. 1).

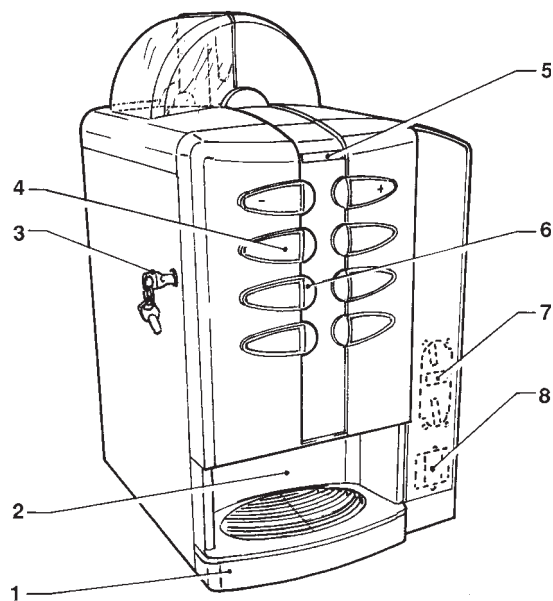


Fig. 1

- 1 - Liquid waste tray
- 2 - Dispensing compartment
- 3 - Lock
- 4 - Spaces for product labels
- 5 - Alphanumeric display
- 6 - Selection buttons
- 7 - Prearrangement for front validator
- 8 - Prearrangement for "cashless" payment systems

The labels with the selection menu and the operating instructions supplied with the machine must be inserted at the time of installation, referring to the selection dose table. The Programming button, used to access the machine functions, is located on the internal side of the push-button board.

Press the button once to set the machine to "Maintenance" mode;

press the Programming button twice to set the machine to "Programming" mode.

When in "Programming" mode press selection buttons No. 3 and No. 6 in a short sequence to start filling the machine hydraulic system.

NOISE LEVEL

The continuous, weighted equivalent acoustic pressure level is below 70 dB.

LOADING CUPS

To load the cups do as follows:

- open the door and remove the cover from the cup dispenser;
- slightly lift the cup dispenser and tilt it (see Fig. 2);
- do not rotate the columns during the loading operations;
- **load the columns with cups, without exceeding the dispenser height;**
- re-engage the cup dispenser and replace the cover;
- close the machine and make a test selection.

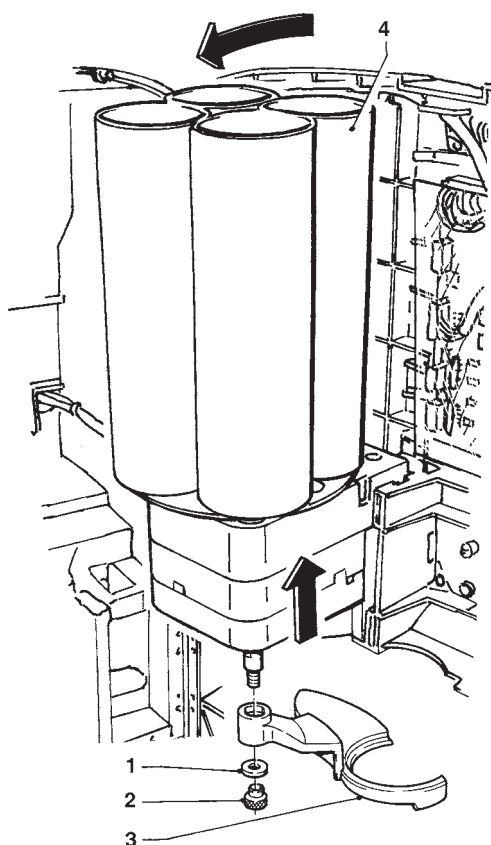


Fig. 2

- 1 - Spacer washer
- 2 - Knurled nut
- 3 - Cup shift arm
- 4 - Cup container

LOADING COFFEE

The cover can be opened only with the door open. Lift the cover and fill the hopper with coffee, ensuring that the shutter is fully open (see Fig. 3).

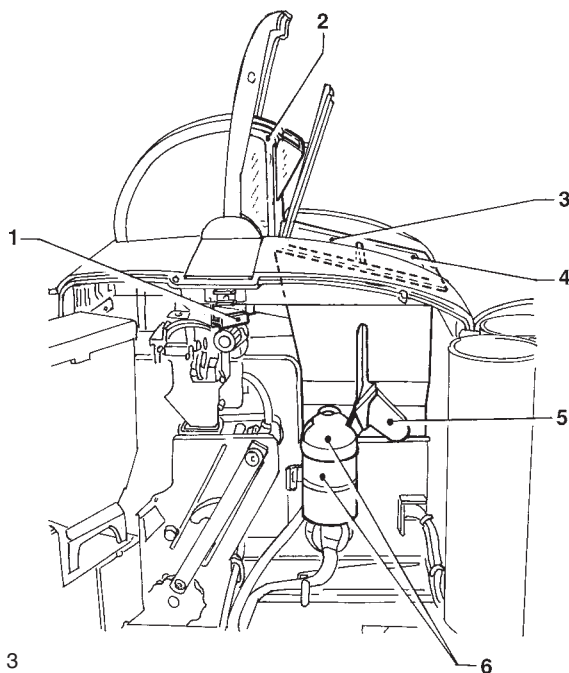


Fig. 3

- 1 - Coffee hopper shutter
- 2 - Coffee hopper
- 3 - Milk container
- 4 - Chocolate container
- 5 - Powder chute
- 6 - Powder feeder

LOADING SUGAR AND INSTANT PRODUCTS

The covers can be opened only with the door open. 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.

When handling the sugar/stirrer dispenser shelf, ensure that the key (see Fig. 8) is completely rotated clockwise to prevent the lock bolt from interfering with the stirrer stacker.

LOADING STIRRERS

Remove the cover and the stirrer weight (see Fig. 8), then insert the stirrers to be loaded.

Remove the paper strip, ensuring that the stirrers are all placed horizontally.

Replace the stirrer weight and the cover.

The stirrers must be burr free and not curved.

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 dispensing conduits must be thoroughly sanitised (cleaned and disinfected), to guarantee proper hygiene of the dispensed products.

The parts to be cleaned are as follows:

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

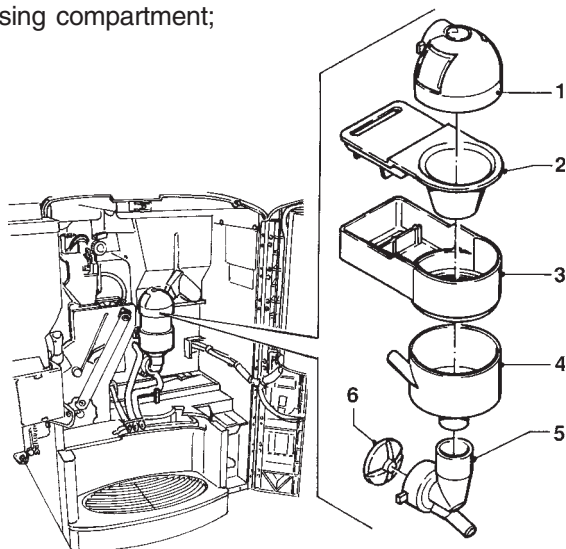


Fig. 4

- 1 - Powder feeder
- 2 - Powder funnel
- 3 - Powder deposit drawer
- 4 - Water funnel
- 5 - Feeder
- 6 - Mixer impeller

- remove the powder and the water funnels, the feeders, the powder deposit drawers and the mixer wheels from the mixers (see Fig. 4);
- in order to remove the wheels, block the disk fitted on the mixer shaft with a finger (see Fig. 5);

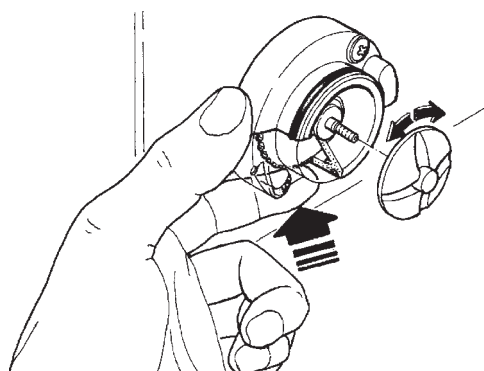


Fig. 5

- 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 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:

- add a few drops of the chlorine-based detergent in the mixer;
- using the mixer cleaning function with the door closed, thoroughly rinse all components to ensure that all residue of the detergent solution is removed.

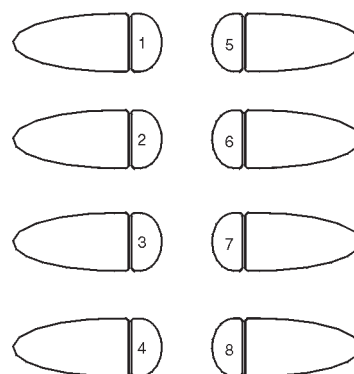
MIXER CLEANING

The mixer must be cleaned daily and every time the machine is refilled to prevent clogging of the mixer if any product is accidentally spilled during refilling.

It must be cleaned also after the mixer sanitising operations, as described in the relevant chapter.

The mixer is cleaned with the door closed, doing as follows:

- press button 8 for 2 seconds. The display will show the request to enter the password;
- press in a quick succession buttons 4 4 8 8 to start cleaning.



CLEANING THE WATER SUPPLY TANK

The water tank, positioned in the support cabinet, must be sanitised at least weekly with the chlorine-based detergents used for the mixers, being sure that all visible residue and product layers are mechanically removed, using a brush if necessary;

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 Fig. 6) proceeding as follows:

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

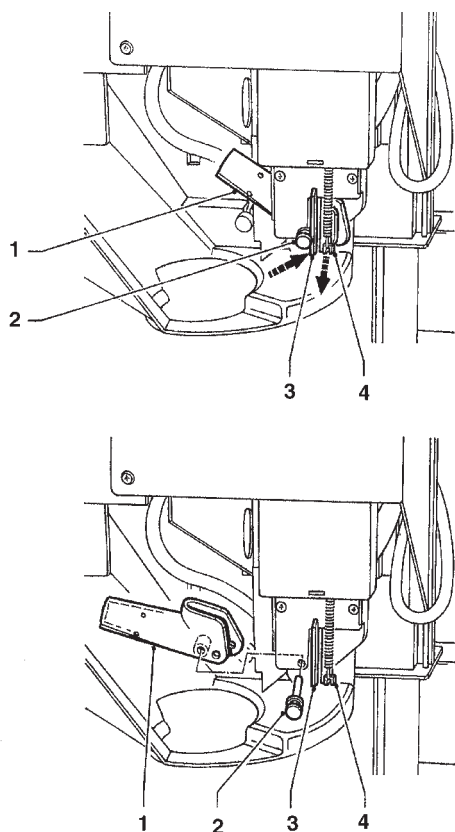


Fig. 6

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

CLEANING THE WASTE TRAYS

The liquid waste tray, located in the dispensing compartment, and the coffee waste tray, located in the support cabinet, as well as the liquid waste container in the support cabinet, must be emptied and rinsed at each refill.

At least once a week they must be sanitised using coffee machine detergents and mechanically removing all visible residue and product layers.

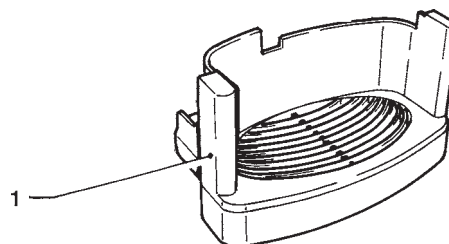


Fig. 7

- 1 - Dispensing compartment drip tray

CLEANING THE CUP SHIFT ARM

The cup shift arm must be cleaned periodically by removing it from the machine. In order to remove it, completely undo the fastening knurled nut (see Fig. 2).

When reinstalling it, ensure that the spacer washer is positioned correctly.

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 (see Fig. 16).

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 coffee doser unit by dispensing coffee until the empty condition is indicated.
- completely empty the hydraulic system.

Chapter 2 INSTALLATION

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

To energize the system with the open door, simply insert the special key into the slot (see Fig. 8). The door can be closed only after removing the key.

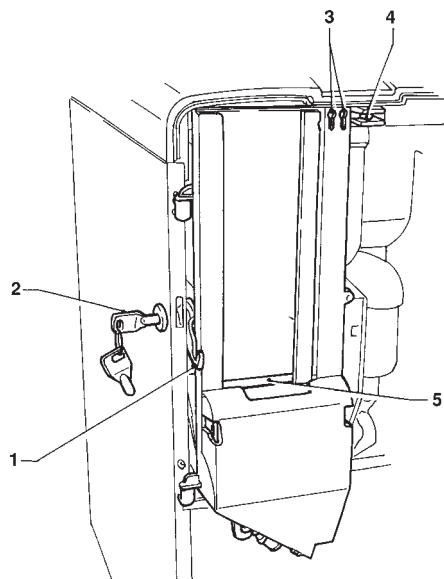


Fig. 8

- 1 - Door lock bolt
- 2 - Door lock
- 3 - Stirrer stacker adjusting slots
- 4 - Door switch
- 5 - Stirrer weight

The machine must be installed in a dry room with temperature 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 from the machine and from the support cabinet, ensure that the machine and all other equipment are intact.

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 authorised containers and the recyclable ones must be recovered by qualified 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. 9).

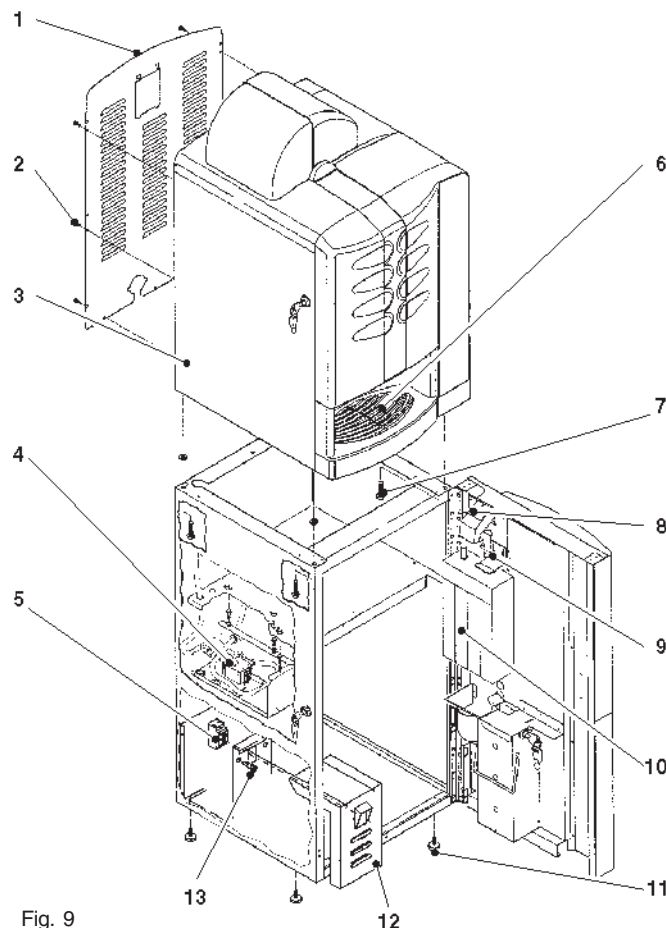


Fig. 9

- 1 - Back panel
- 2 - Back panel securing screws
- 3 - Wiring connectors' zone
- 4 - Water supply pump
- 5 - Differential switch
- 6 - Dispensing compartment drip tray
- 7 - Machine securing screws
- 8 - Coin chute
- 9 - Selector opening lever
- 10 - Coin mechanism
- 11 - Adjustable feet
- 12 - Removable lid
- 13 - Fuses

MACHINE AND CABINET ASSEMBLY

In order to assemble cabinet and machine, do as follows:

- Install the adjustable feet to the cabinet and adjust them to level the cabinet.
- Place the machine onto the cabinet and secure it using the special screws provided.
- Remove the back panel from the machine, undoing the securing screws.
- Connect the wires from the transformer and from the water supply device, located inside the cabinet, to the corresponding connectors inside the machine.
- Lay the cable of the payment system, located inside the machine, from the top panel of the cabinet to the coin slot zone.

- Fit the water supply hose onto the hose connector (see hydraulic diagram) located on the middle shelf of the cabinet.
- Make sure that the drain boss in the dispensing compartment tray is punched and lines up with the drain tube in the cabinet.

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 is electrically pre-set for the installation of MDB payment systems, and namely:

- coin acceptor or “validator”
- change-giver coin mechanisms or “changer”
- bill acceptor or “bill validator”
- key / magnetic card reader or “cashless”

that can be used in various combinations.

Compatibility for housing the payment systems must be ascertained by and under the sole responsibility of the installer.

When switched on, the machine goes through a control routine to determine which payment systems are actually installed and therefore configure the correct system.

CONNECTING THE MACHINE TO THE POWER SUPPLY

The machine operates under a single-phase 220 V~ 60 Hz voltage and is protected by 10 A fuses, located inside the support cabinet (see Fig. 9).

Before making the connection, ensure that the rating corresponds to that of the power grid, and more specifically:

- the supply voltage rating must be within the range 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 is protected by a differential switch.

The switch, the power outlet and the plug must be located in an easily accessible position.

The power supply cable is of the type with a two-pole straight plug of the non-detachable type. Any replacement of the power supply cable should be made by qualified personnel only, using cables of the type H05 RN - F or H05 V V - F with a section of 3x1.5 mm².

The electrical safety of the machine is ensured only when it is correctly connected to an efficient earthing system according to the safety standards in force.

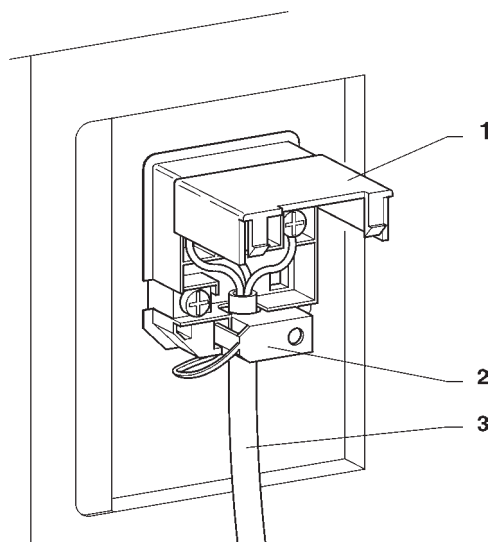


Fig. 10

- 1 - Lift cover
- 2 - Cable clamp
- 3 - Power supply cable

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

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

Before switching the machine on, ensure that the water tank is correctly filled.

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

DIFFERENTIAL SWITCH

The differential switch has the following characteristics:

- maximum current: 15 A
- maximum tripping current to earth: 15 mA
- breaking capacity: 1.5 KA

This switch is fitted for the purpose of protecting from any overcurrent and earth leakage, also protecting persons from contact with live parts.

If the switch is triggered again when is reset after tripping, the system must be tested by qualified personnel.

DOOR SWITCH

When opening the door a special microswitch (see Fig. 8) disconnects the power from the machine electrical system. The transformer inside the support cabinet remains energised.

The differential switch must be used to disconnect it.

With the door open, there is no access to energised parts. Inside the machine, the only parts that stay energised are those protected by covers and carrying a plate with the warning “Disconnect the power before removing the protective cover”.

Before removing such covers disconnect the machine from the power grid.

To energize the system with the open door, simply insert the special key into the slot (see Fig. 8).

All operations which require the machine to be energised with the door open must be carried out by qualified personnel who are aware of the specific risks of such condition.

WATER SOFTENER UNIT

The machine is sold without water softener.

Should the water be very hard, a water softener cartridge can be installed, using the connections provided in the hydraulic circuit.

The cartridge should be replaced according to the manufacturer's instructions.

INSERTING THE PRODUCT LABELS

The menu and instruction labels are supplied with the machine and must be inserted at the time of installation according to the layout and to the language (see “selection dose” table).

LENGTH OF STIRRERS

The correct installation position of the stirrer stacker (see Fig. 8) must be checked according to the length of the stirrers to be used (105 mm by default).

FILLING THE WATER SYSTEM

When the machine is switched on the condition of air-break (full or empty), pump (electrical functioning and water flow) and boiler (pressure).

When the machine is completely empty the “No Water” failure is indicated.

When the programming button located on the internal side of the push-button board (see Fig. 19) is pressed twice the machine will be set to “Programming” mode; when pressing the selection buttons 3 and 6 in a sequence, the machine will go through an installation cycle, and namely:

- the water supply pump is started to fill the air-break;
- the milk solenoid valve is opened so that the air may be bled from the boiler and 400 cc. of water filled.
- the message “Installation” will be shown on the display for the entire duration of the cycle;

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

IMPORTANT NOTICE!!!

If a considerable amount of air bubbles is formed in the water system, for example during maintenance, it is possible that an installation cycle need to be started when the machine is switched on.

INITIALISING

The machine was designed for different market needs. The software is capable of managing all possible configurations.

For this reason, before starting the machine, some parameters must be set.

“Country”

intended as type of base doses for the different selections. The available “Countries” are:

- Korea

“Layout”

A number of Button/Selection combinations to choose from is provided for each dose type model (the combinations available for each layout are indicated in the dose selection table supplied with the machine).

“Tank”

It is possible to define whether or not the water supply is from the tank in the cabinet.

The change in operating time of the power users is compensated automatically.

COFFEE UNIT OPERATION

COFFEE DISPENSING CYCLE

After each time the machine is switched on, upon the first espresso coffee based selection, the coffee unit is rotated completely before the normal cycle, too ensure that the device is in the correct start position.

When selecting coffee, the grinder is started and will continue until the coffee doser chamber is full (see Figure 14).

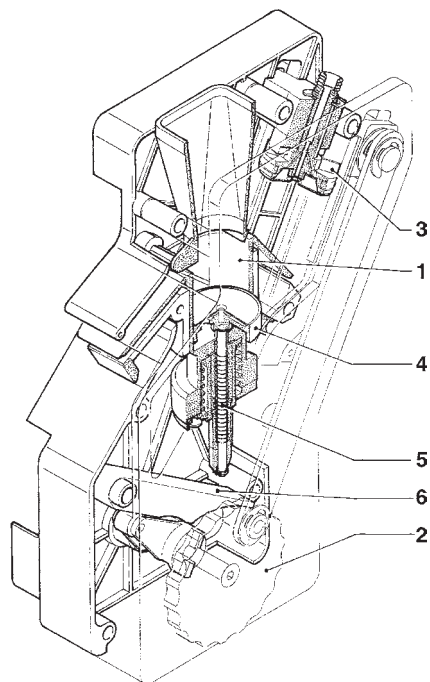


Fig. 11

- 1 - Brewing 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 brewing chamber (1) (see Fig. 11).

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

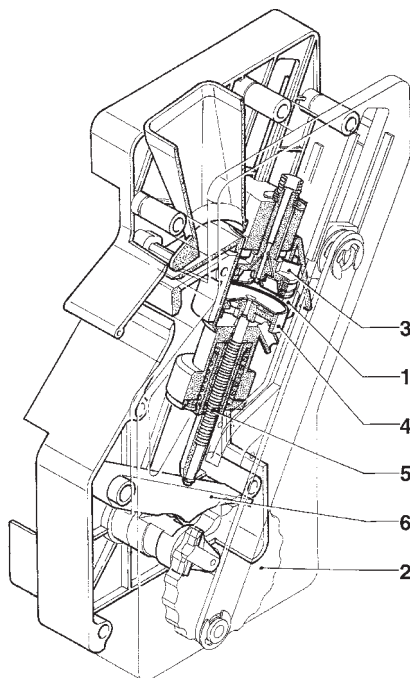


Fig. 12

- 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 ground coffee.

The dose weight of ground coffee.

The dispensing temperature.

The water dose.

For instant products

The dose weight of the instant products.

The drink temperature.

The water dose.

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

The weight of 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. $70 \div 80^{\circ}\text{C}$;
- instant product temperature (at the spout) approx. $70 \div 80^{\circ}\text{C}$;

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

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.

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

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

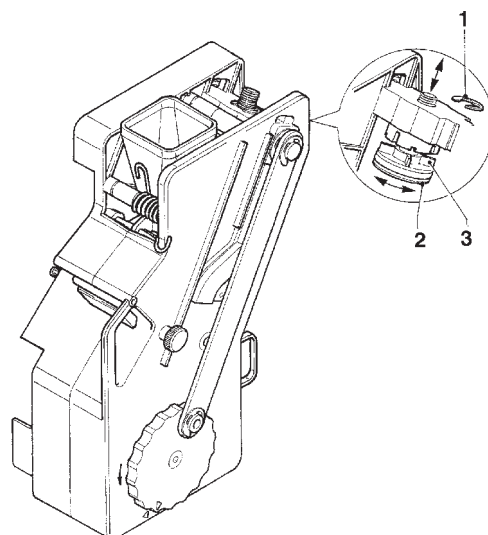


Fig. 13

- 1 - Anello elastico
- 2 - pistone superiore
- 3 - alette di riferimento

WATER TEMPERATURE CONTROL

If the boiler temperature is to be changed, adjust the special trimmer (see Fig. 17) keeping in mind that:

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

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) 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.

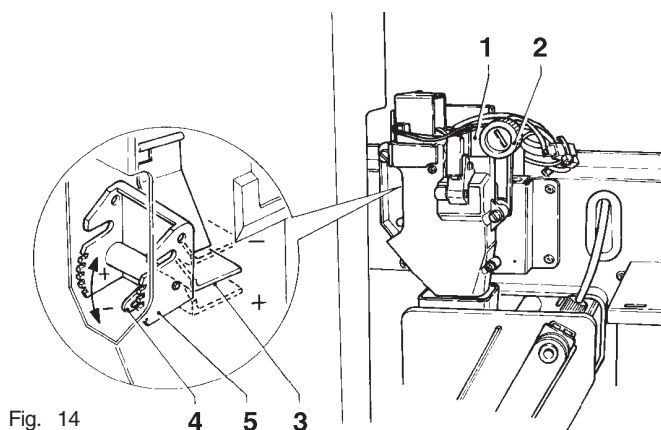


Fig. 14

- 1 - Macinino
- 2 - Manopola di regolazione macinatura
- 3 - Regolo dose
- 4 - Levetta regolazione dose
- 5 - Tacche di riferimento

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 grinding for 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.14) 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 button “6” from “Special functions” 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. 16).

OPERATING MODES

Three different operating modes are provided for the machine; the buttons will have different functions according to the machine operating mode.

The available operating modes are indicated in the following table:

DISPLAY	FUNCTIONS
Normal mode	
“Ready for use”	coins accepted products dispensed
Maintenance	
“Maintenance”	test dispensing machine maintenance
Programming mode	
“Programming”	programming

NORMAL OPERATING MODE

When switching the machine on, the display will show the message “Rev. X.X” (X.X indicates the software release number) for a few seconds, after which the machine will be set to normal operating mode.

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

DISPLAY	FUNCTION
“Ready for use”	Machine ready
“Price:....”	Price display of selected product
“Credit:.....”	Displaying credit inserted
“Out of service”	Machine switched off
“Drink in process”	Drink preparation
“Temperature”	Wait time before reaching operating temperature
“Sel. Disabled”	Selection disabled
“Coffee off”	Coffee unit out of service
“Take”	Drink ready

PRE-SELECTIONS

According to the layout set at the time of initialising buttons "1" and "5" can be assigned the function of sugar dose variations; in this case the display will indicate

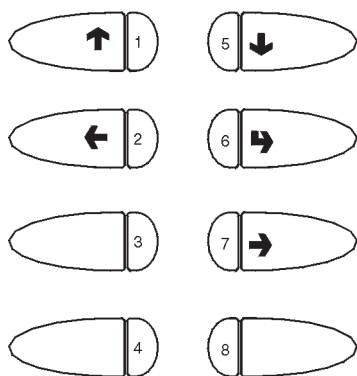
"Sugar ■■■□□" which represents the programmed median dose. Each time buttons "1" (minus) and "5" (plus) are pressed the dispensed dose varies by 1/4 of the median dose.

MAINTENANCE MODE

When the programming button located on the internal side of the push-button board (see Fig. 19) 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 is presented, permitting data management.

When in maintenance mode the buttons have the following functions:



- 1 - ↑ Previous function / Increase data item (+1)
- 2 - ← Exit function / Cancel change
- 3 -
- 4 -
- 5 - ↓ Next function / Decrease data item (- 1)
- 6 - → Confirm function / confirm data
- 7 - → Change data item
- 8 -

Press button "6" to access the following functions:

- Display statistics
- Print statistics
- Delete statistics
- Display selection counter

Scroll through the menu with the "↑" and "↓" buttons to highlight the following functions:

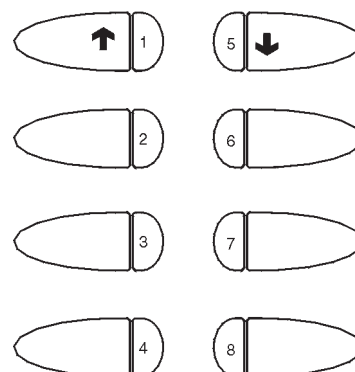
- "Complete Sel." Test dispensing complete with cup sugar and stirrer
- "Powd. only" Dispensing powder only
- "Water only" Dispensing water only
- "No Accessories" Test dispensing without cup sugar and stirrer

When pressing button "6" the selection buttons will take on the original function for 4 seconds, permitting the test dispensing provided for each function.

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", indicating a disabled selection, will be displayed.

SPECIAL FUNCTIONS

When the display shows "Special functions" the buttons take on the following functions:



- 1 - ↑ Previous function
- 2 - Grind and release a coffee dose
- 3 - Dispense sugar
- 4 - Autotest
- 5 - ↓ Next function
- 6 - Rotate coffee unit
- 7 - Release cup
- 8 - Empty air-break

In order to weigh the coffee dose using the "Grind and release" function, the coffee unit must be removed. The function stays enabled anyway.

If a coffee dose is accidentally released with the unit installed, the unit will have to be rotated to unload the excess coffee.

According to the type of pre-selection set in the layout, button "6" allows access to the sugar dose, which can be adjusted with buttons "↑" and "↓"; pressing button "6" again will release the set sugar dose.

AUTOTEST

This function allows testing of the main machine components.

Before carrying out this operation, remove the waste tray and the powder containers and disassemble the coffee unit.

Press button "4" and the message "AUTOTEST" will be start blinking.

Press button "2" to cancel the operation, confirm with button "6" to start the autotest cycle.

In a sequence:

- the doser devices are activated for 2 seconds
- the mixers are activated for 2 seconds
- a cup is released
- a stirrer is released
- the coffee unit is rotated, coffee is ground and then released when a full dose is reached.
- the waste tray is detected; the machine stops until the waste tray is manually re-inserted
- the push-button panel is checked; the machine displays the number of the button which must be pressed and waits for this to be done before going to the next button (number 9 corresponds to the cleaning button).

EMPTYING THE AIR-BREAK

This function is used to partially empty the air-break, dispensing water from the milk solenoid valve for 8 seconds before blocking the machine, to allow the machine to be moved without spilling water; to restore normal functioning the machine must be switched off and then on.

Before moving the machine on a long distance, especially if involving the use of a vehicle, the hydraulic system must be emptied manually.

DISPLAYING THE STATISTICS

Press button "↵" when the display indicates the "Display statistics" function; then the stored data will be sequentially shown on the screen, and more precisely:

With setting to VALIDATOR or TOTALIZER

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

With setting to MDB

- 1 - counter by single selection;
- 2 - counter by single price;
- 3 - failure counter;
- 4 - MDB Audit; displaying in the actual currency of:

Aud. 1 Money in the tubes

Money present in the change tube that moment

Aud. 2 Money to the tubes

Money sent to the change tubes

Aud. 3 Money to the box

Money sent to the coin box

Aud. 4 Change return

Total money returned

Aud. 5 Excess

Excess money. Extra amounts paid by the customer that were not returned (in the event there was no money available for return)

Aud. 6 Release tubes

Value of coins dispensed with the function "Tubes control"

Aud. 7 Loading tubes

Value of money cashed with the manual loading function

Aud. 8 Cash sales

Value of total sales with cash money (coins + bills)

Aud. 9 Cashed bills

Value of cashed bills

Aud. 10 Charge key

Value of money changed into the key

Aud. 11 Sales with key

Value of money cashed for dispensing with key.

PRINT STATISTICS

Connect an RS-232 serial printer with a Baud rate of 9600, 8 data bit, no parity, 1 stop bit to the serial port located on the push button board, to print all the statistics described in section "Displaying the statistics". The hardcopy printout will also contain the machine code number and the printout progressive number.

The progressive hard-copy printout number can only be reset by initialising the machine.

To connect the printer, do as follows:

- Press button "↵" when the display indicates the "Print statistics" function and the message "Confirm?" will be displayed;
- before confirming connect and switch on the printer;
- press the confirm button "↵" to start printing.

RESETTING THE FAILURE STATISTICS

Press button “↵” when the display indicates the “Reset statistics” function, then the message “Confirm?” will be start blinking.

Press the confirm button “↵”, the message “Working” is displayed for a few seconds and all statistics regarding failure counters are reset.

GENERAL COUNTER

The machine stores all selections in this counter, which cannot be reset.

This function allows reading or displaying of the counter when the machine is switched started.

Press button “↵” when the display indicates the “General counter” function and the function status (ON/OFF) will be displayed; press button “↵”, the status will start blinking and then can be changed with the “↑” and “↓” buttons.

Press button “↵” again and the stored value will be displayed for 3 seconds.

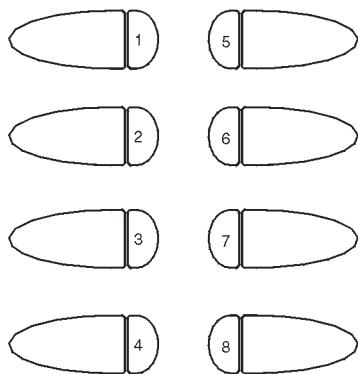
CHANGE TUBES CONTROL

By accessing the “Tube control” function the change tubes can be filled

or released manually. Confirm refilling, and the display will indicate “Credit: —”; insert the desired coin into the selector and the display will indicate the value of the money inserted.

The tubes can be emptied directly by pressing the selection buttons “1, 2, 3 and 4”.

Press button “8” to exit the function.



- 1 - Release tube “A”
- 2 - Release tube “B”
- 3 - Release tube “C”
- 4 - Release tube “D”
- 5 -
- 6 -
- 7 -
- 8 - Exit function

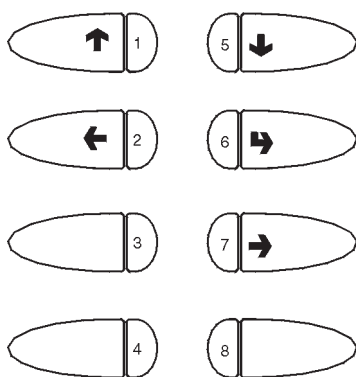
PROGRAMMING

When the programming button located on the internal side of the push-button board (see Fig. 19) is pressed twice the machine will be set to “Programming” mode.

The message “Programming” is displayed for approx. 2 seconds, and then the first option of the programming menu is displayed to activate the following functions:

“Present failures”	current failure reading
“Water dose”	water dose setting
“Powder dose”	powder dose setting
“Set Prices”	price setting
“Set Prices/button”	prices/button combination enables/disables button
“Basic coin / DP”	setting the basic coin value and position of the decimal point
“Payment systems”	Validator Totalizer MDB
“Initialise”	RAM initialising
“Machine code”	setting the machine identification code
“Machine Config.”	setting the machine configuration
“Selec. counter”	setting the number of selections after which the machine will lock
“Prom. message”	enabling and setting the promotional message
“Language”	setting the language used to indicate messages on the display
“Whipping time”	instant drinks whipping time
“Password”	enabling password to access programming
“Selec. configuration”	definition of accessories to be dispensed with each single button
“Discount data”	price change for using a ceramic cup
“Special sales”	Free Vend and Jug Facilities

When in “programming” mode the selection buttons have the following functions:



- 1 - ↑ Previous function / Increase data item (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data item (- 1)
- 6 - → Confirm function / confirm data
- 7 - → Change data item
- 8 - Reset failures

The buttons preceded by the symbol allow scrolling through the menu or changing of data; the other buttons are used directly for that function.

DISPLAYING THE EXISTING FAILURES

When the “Present failures” function from the “programming” menu is displayed, press the confirm button “→” to display the error code of the current failure; then keep pressing button “↓” to display the error code of the next present failure.

If no failures are present, when pressing the confirm button “→” the message “No Failure” is displayed.

The possible failures are indicated in the following cases:

AIR-BREAK FAILURE

The machine will lock if after dispensing water corresponding to 150 pulses of the volumetric counter the microswitch has not signalled the lack of water.

BOILER FAILURE

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

COIN MECHANISM FAILURE

The machine will lock if it receives an impulse longer than 2 seconds on a validator line or there is no communication with the serial coin mechanism for more than 30 seconds.

RAM DATA FAILURE

The data contained in the EEPROM (i.e. the chip that stores the setting variations) is wrong and must be retrieved from the Eeprom, thus losing all statistics information.

The message “INITIALISE” will start blinking on the display.

WATER FAILURE

The machine locks if the water level in the tank falls to less than approximately 300 cc.

CUP FAILURE

When the empty cup column microswitch opens, the column shift motor is activated. If after one full turn of the cup dispenser the microswitch is not closed the message “No cups” is displayed and the machine locks.

WATER LEAK FAILURE

If water is requested by the air-break without having been used (selections, cleaning etc.) the machine will block further water requests.

ROTOR FAILURE

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

COFFEE UNIT FAILURE

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

COFFEE FAILURE

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

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.

CUP RELEASE FAILURE

If after releasing one cup the positioning microswitch is not triggered the control software disconnects power from the release motor and the machine locks.

LIQUID WASTE FULL

If the machine is equipped with a liquid waste container (housed in the cabinet) fitted with an overflow warning device, the machine locks.

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.

PROGRAMMING THE WATER AND POWDER DOSES

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

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

The dose code locates the water and powder doses related to a given selection; any changes to one selection dose also affects the compound selections where the dose code is used.

Refer to the selection dose table for the dose code list.

The values of the doses displayed are expressed in:

- tenths of a second for powders;

- number of pulses of the volumetric counter for water.

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

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

PRICE SETTING

When the "Price sett." (price programming) function from the "programming" menu is displayed, the 8 sales prices stored can be changed.

The prices are indicated as number of basic coins.

Press the confirm button "➡" from the "programming" menu to access the price list, which can be scrolled with the "↓" and "↑" buttons. When pressing correction button "↩", this value will start blinking and can be modified as necessary.

PROGRAMMING THE PRICES AND THE BUTTON STATUS

When the "Set Price/Button" (price setting) function of the "programming" menu is displayed, the combination of the button 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 correction button "↩", the selection status starts blinking. Using the "↓" and "↑" buttons, the selection status can be changed from (enabled) to (disabled).

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

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

The buttons which control pre-selections do not need combination with prices. In any case prices have no effect on the pre-selection buttons.

PROGRAMMING THE BASIC COIN AND THE DECIMAL POINT

When the "Basic coin / DP" (basic coin value) function from the "programming" menu is displayed, the value of the basic coin 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 coin.

Using the "↓" and "↑" buttons, the value of the basic coin and the number of the decimal point position "dP" are displayed alternately, i.e:

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

Press the correction button "↩", these values will start blinking and can then be modified as necessary.

PAYMENT SYSTEMS

When the "Payment system" function is displayed, it is possible to define which payment system with MDB communication protocol to use, selecting among:

- Validator

- MDB

In order to install payment systems different from a validator or cashless system, special kits must be used.

The payment systems must be housed in the cabinet.

PROGRAMMING THE VALIDATOR

If the payment system is a validator, it will be necessary to define with which parameters to operate.

CREDIT CONTROL

It is possible to decide whether any excess credit paid is to be cashed or made available to the user.

OPERATING VOLTAGE

According to the type of validator it is necessary to define whether the

operating voltage is 12 V or 24 V.

VALIDATOR LINES

When the "Validat. Lines" (line setting) function is displayed, the value of the 6 validator coin lines can be changed.

The value of the lines is indicated as number of basic coins. Press the confirm button "➡" from the "programming" menu to access the line list, which can be scrolled with the "↓" and "↑" buttons.

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

PROGRAMMING THE MDB DATA

The menu of the MDB protocol has the following structure:

- Type of vending
- Change button
- Maximum credit
- Maximum change
- Accepted coins
- Not accepted 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 the credit is available for further selections. When pressing the coin return button, the available credit is returned if its value is lower than the maximum change value.

CHANGE BUTTON

It is used for enabling/disabling the change button, regardless of whether the selection was dispensed or not.

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.

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

DISPENSING COINS

This function programs the rejection of coins as change. 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 is used to enable or disable the buttons on the coin mechanism to release the coins in the change tubes.

ACCEPTED BILLS

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

INITIALISING

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

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

All statistic information will be reset.

Press confirm button "↵" to display the message "Confirm?". Press the button "↵" again to display the first variable parameter to define the machine configuration.

The available options (blinking) can be scrolled with the "↓" and "↑" buttons, the selection is confirmed with button "↵" and the next parameter is presented. When pressing button "↵" after the last parameter the display will show the message "Working" for a few seconds and the machine is set for the country use.

The parameters are as follows:

"Country"	Type of doses to be used for the selections
"Layout"	Layout of containers and selection menu from the available ones
"Tank"	Water supply from a tank in the cabinet

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 9999).

Press the confirm button "↵" and the current code number is displayed; then press the correction button "↵" and the first digit will start blinking.





The value of the blinking digit can be increased or decreased with the "↓" and "↑" buttons.

When pressing the confirm 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:

- cup dispensing / without cup
- with tank in the cabinet / from the mains
- presence of warning device for full liquid waste container (inside cabinet)

Press the confirm button “” to display the current status; when pressing the correction button “” the status starts blinking and can be changed with the “” and “” buttons.

IMPORTANT NOTICE!!!

When the machine is initialised, the configuration will be assigned the default values “with cup /with tank / with full waste container warning device”.

THEREFORE, AFTER INITIALISING THE MACHINE MUST BE RECONFIGURED.

OPERATION 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, it is possible to set the number of selections after which the machine locks, read the number of selections already made and reset the lock counter.

N.B.: The counters are set to zero by default;

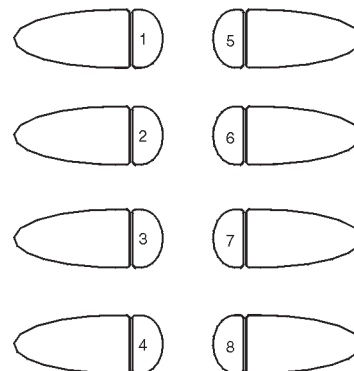
With the counters set to zero, this function is disabled.



SETTING THE PROMOTIONAL MESSAGE

When this menu is displayed, press the confirm button “” to display whether or not the message is enabled (ON/OFF).

If the message is enabled, when pressing the confirm button “” the first character will start blinking and can be changed.

The buttons will take on the following functions:



- 1 -  Next character
- 2 -  Previous character
- 3 - Upper case/lower case
- 4 - ABCDEFGHI
- 5 - JKLMNOPQR
- 6 - STUVWXYZ
- 7 - 0123456789;,<=>?
- 8 - !"\$%&'()*+,-./

The message is stored by pressing button “2” when on the last position.

LANGUAGE SELECTION

This function is used to select the language to be used for displaying the messages.

The available languages are:

- English
- Italian
- French
- Spanish
- Portuguese
- German

WHIPPING TIME

This function is used to define how long (in tenths of a second) instant drinks are to be whipped according to the amount to be obtained.

PROGRAMMING ACCESS PASSWORD

This function is used to enable the request for a password to access the programming procedures.

The password is the button sequence 1 1 2 2 and cannot be changed.

SELECTION CONFIGURATION

This function is used to determine, as an exception to the machine configuration, which accessories should or should not be dispensed for a specific selection.

The following is possible for each selection button (1 to 8, excluding the pre-selection buttons):

- not dispense the cup (if the machine configuration includes the cup, but not vice versa);
- not dispense the stirrer if the selection is unsweetened;
- not dispense sugar and stirrer for selections which are defined as sweetened (but not dispense sugar for selections which are defined as unsweetened).

The settings defined with the selection configuration are used also for complete test selections.

DISCOUNT DATA

This function is used to determine by how much to increase or decrease the price for a selection when using a ceramic cup.

With the value set to 0 the function is disabled.

SPECIAL SALES

This function is used to enable or disable Free Vend and to set the number of consecutive instant drinks (1 to 9; 5 by default) that are dispensed when the "Jug facilities" function is enabled.

After these functions are enabled, do as follows:

- while in normal operating mode, press button "8" for a few seconds;
- enter the password that was just set;
- make a selection within 10 seconds.

DIRECT FUNCTIONS

INSTALLATION

Press the installation button "3" to carry out the hydraulic system filling operations, even with the air-break full.

RESET FAILURES

Press the failure reset button "8"; the message "Running" is displayed for a few seconds and all present failures are reset.

Chapter 3 MAINTENANCE

Important notice!!

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

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

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

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

The operations described below 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 correct 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.

BREWING UNIT MAINTENANCE

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 brewing unit.

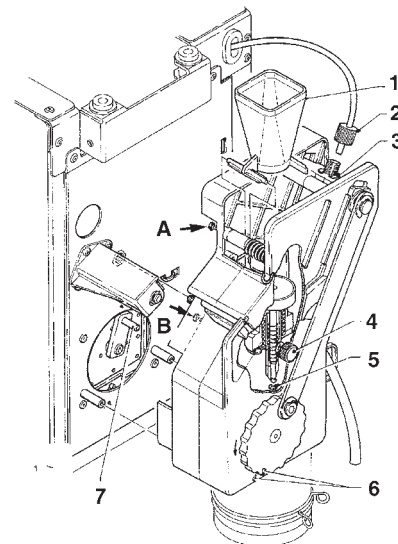


Fig. 16

- 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

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. 16);
- remove the lower piston snap ring;
- take the piston out of brew chamber and remove the filter.

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

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

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

Important notice!!!

Check that the handle pin of the 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, must be removed from the unit and fully disassembled;
- wash all parts with detergent being sure that all visible residue and product layers are mechanically removed, using a brush 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 machine, 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, placed at the back of the machine, (see Fig. 17) processes the information from the push-buttons and from the payment system; it also controls the actuators and the push-button board.

The 15 V AC voltage required for board operation is supplied by a transformer which is protected by a 125 mAT 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 (see Fig. 17 - 3).

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

RELAIS	ESPRESSO
K1	ER
K2	ESC
K3	MAC
K4	PM
K5	M
K6	E2
K7	E1
K8	MF1
K9	MDZ
K10	MD2
K11	MD1
K12	PM (EEA)
K13	MSCB
K14	MSB
K15	MSP

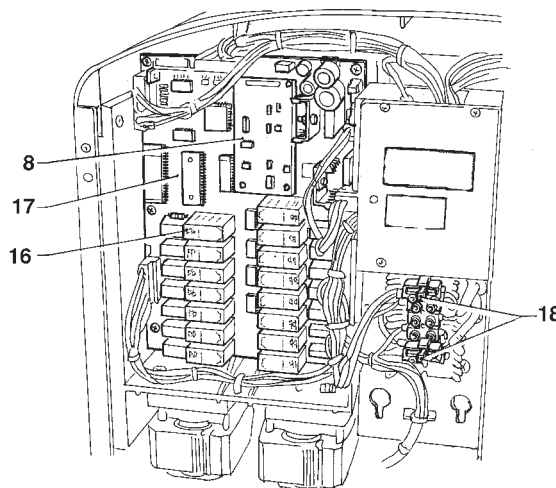
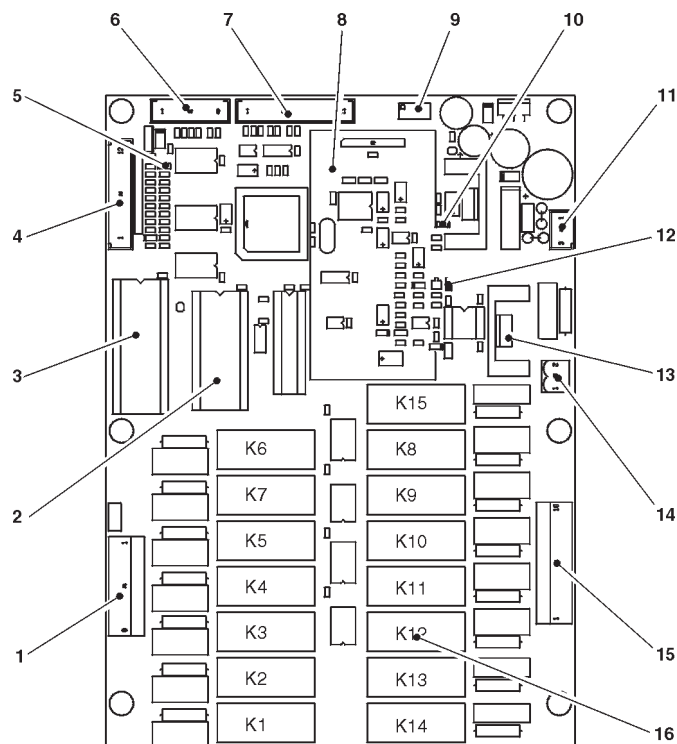


Fig.17

- 1 - 230 V~ users
- 2 - RAM
- 3 - EPROM
- 4 - Input signal
- 5 - Green LED
- 6 - Not used
- 7 - To the push-button board
- 8 - Expansion board for payment systems (optional)
- 9 - Boiler temperature trimmer
- 10 - Green LED
- 11 - Board power supply
- 12 - Red LED
- 13 - Boiler heating element TRIAC
- 14 - To boiler heating element
- 15 - 230 V~ users
- 16 - Relays K1÷K15
- 17 - C.P.U. board
- 18 - Transformer fuses



PAYMENT SYSTEMS EXPANSION BOARD

This board is located above the control board and controls the payment systems.

According to the communication protocol used by the payment system, the 2 minidips will have to be set to ON (MDB).

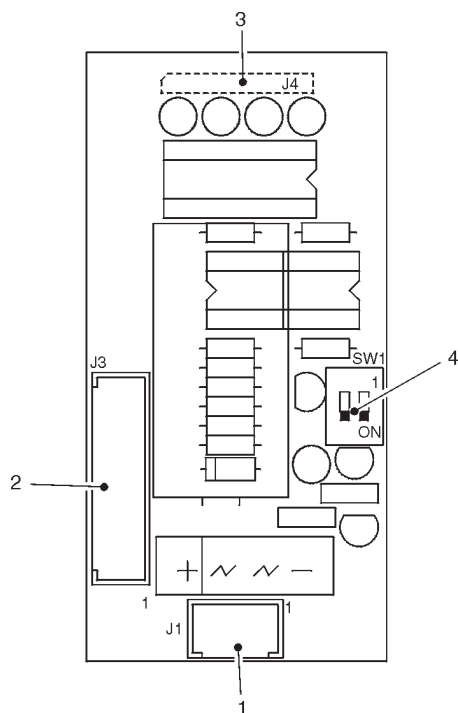


Fig. 18

- 1 - Power supply (MDB BDV)
- 2 - To the payment system (with specific cable)
- 3 - To the control board
- 4 - Payment system configuration minidips
 - OFF = Executive/BDV
 - ON = MDB

PUSH-BUTTON BOARD

This board controls the alphanumeric display, the selection buttons and the programming button (see Fig 19).

It supports the coin mechanism connectors as well as the printer port.

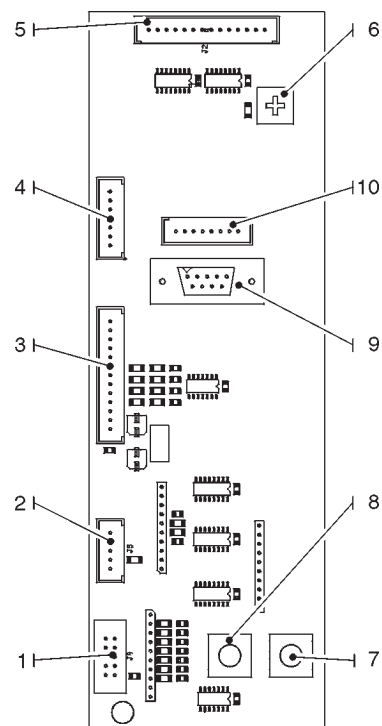
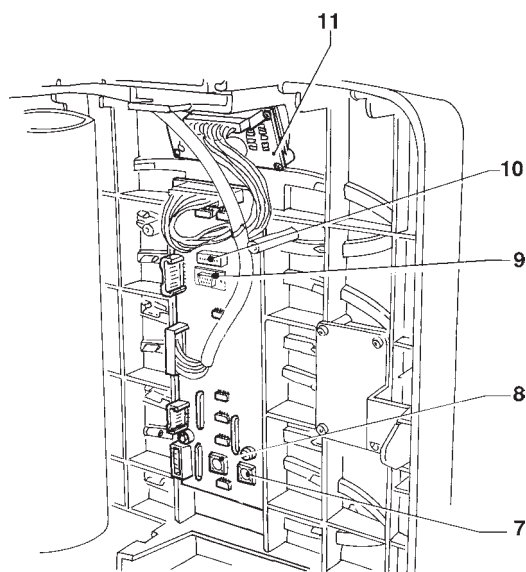


Fig. 19

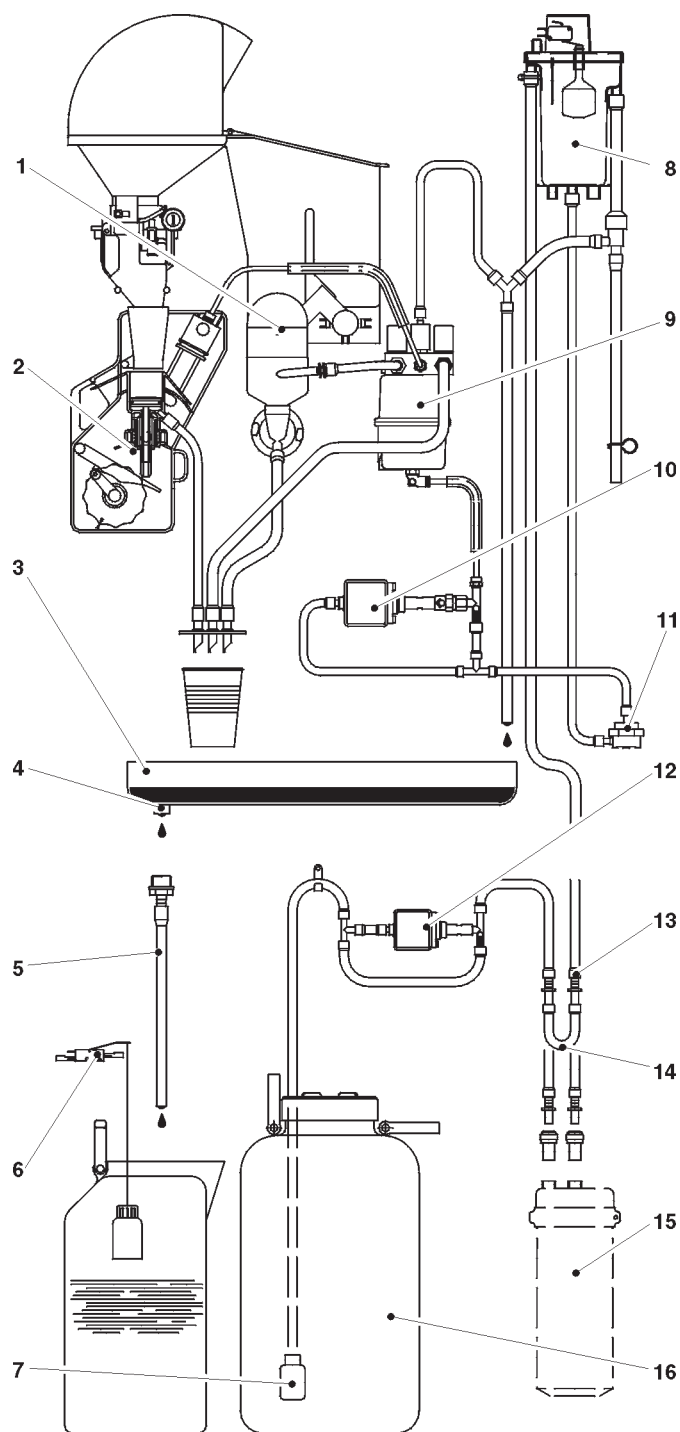
- 1 - To the front validator
- 2 - Not used
- 3 - To the machine board
- 4 - Signals: free vend - jug facilities
- 5 - To the display board
- 6 - Display contrast adjusting trimmer
- 7 - Programming button
- 8 - Cleaning button
- 9 - RS232 port
- 10 - To the programmer
- 11 - Display board



HYDRAULIC SYSTEM

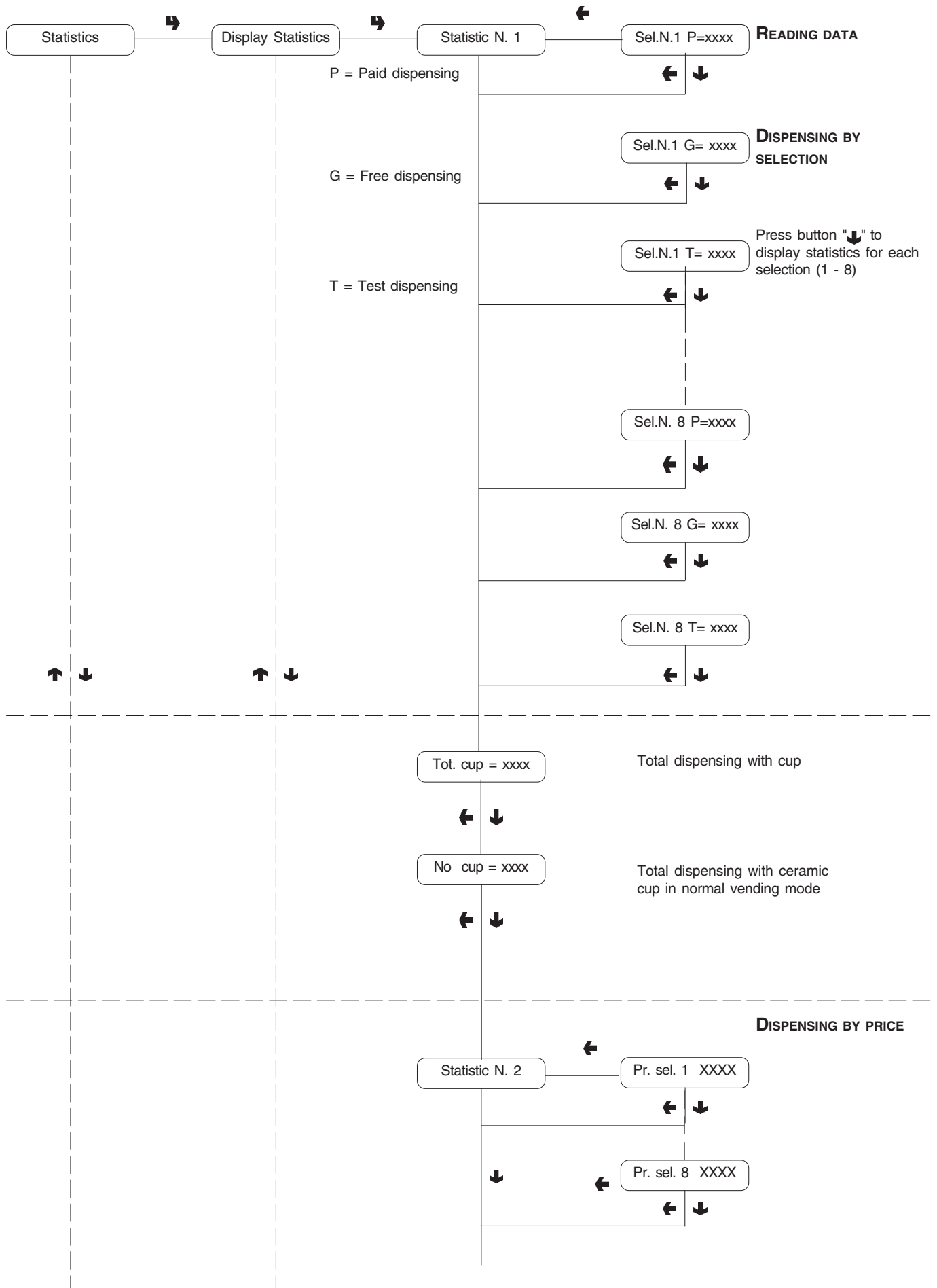
Machine

- 1 - Mixer
- 2 - Coffee unit
- 3 - Dispensing compartment drip tray
- 4 - Drip tray drain boss
- 5 - Drain pipe
- 6 - Liquid waste container float
- 7 - Non-return valve
- 8 - Air-break
- 9 - Boiler
- 10 - Coffee brewer pump
- 11 - Volumetric counter
- 12 - Water supply pump
- 13 - Water supply hose fitting
- 14 - Softener cartridge bracket
- 15 - Softener cartridge (optional)
- 16 - Drinking water tank

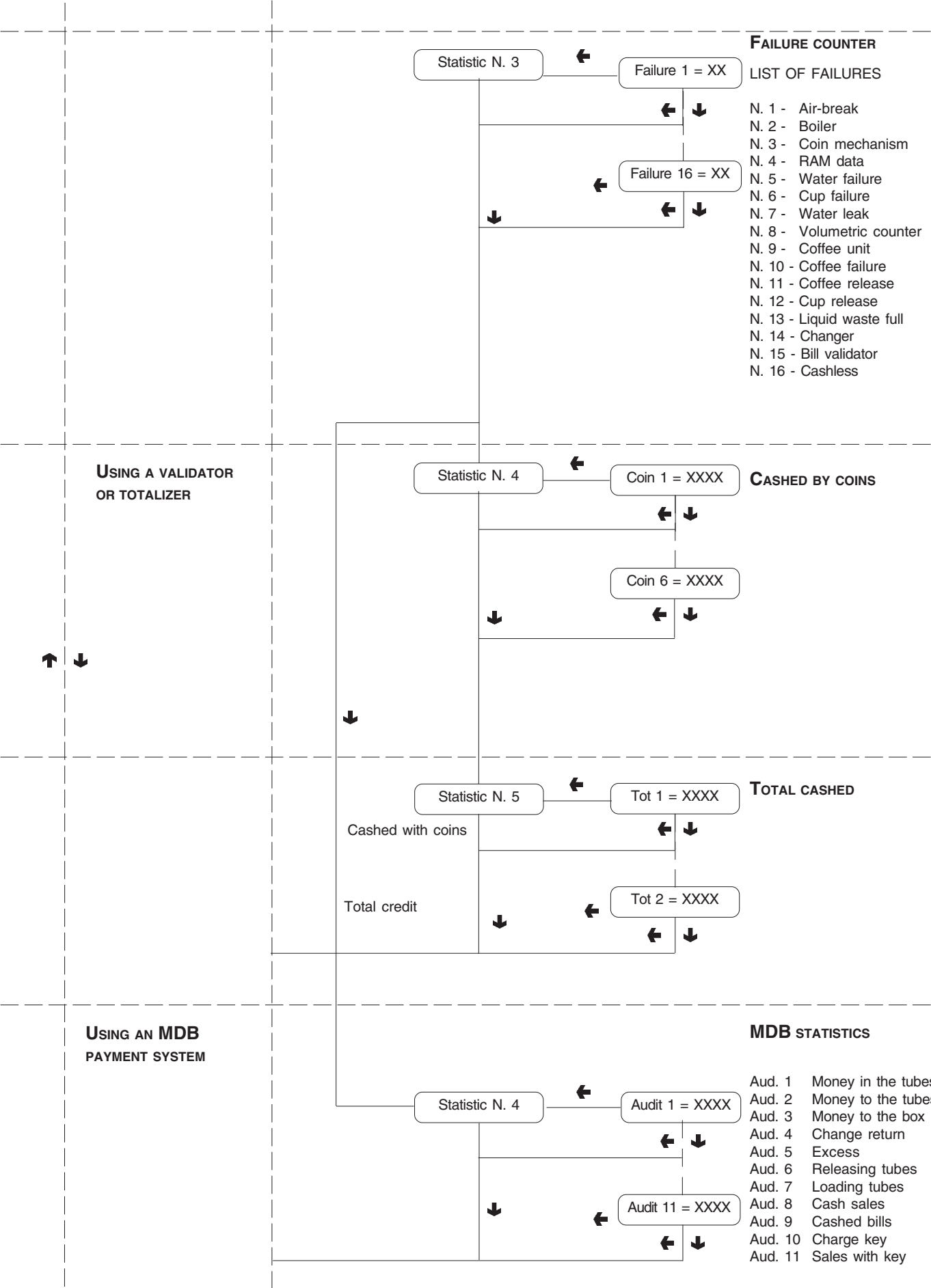


Cabinet

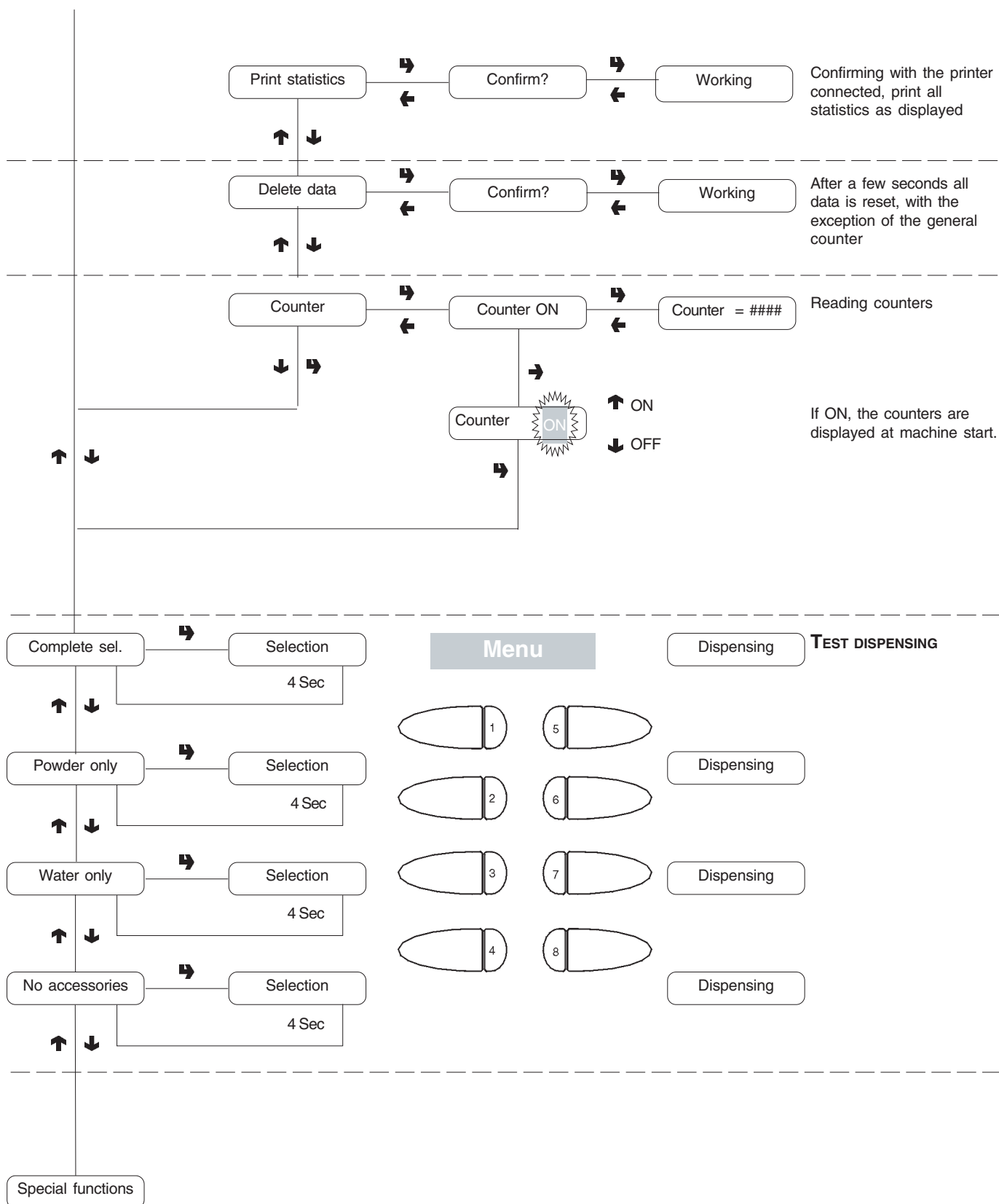
Maintenance menu



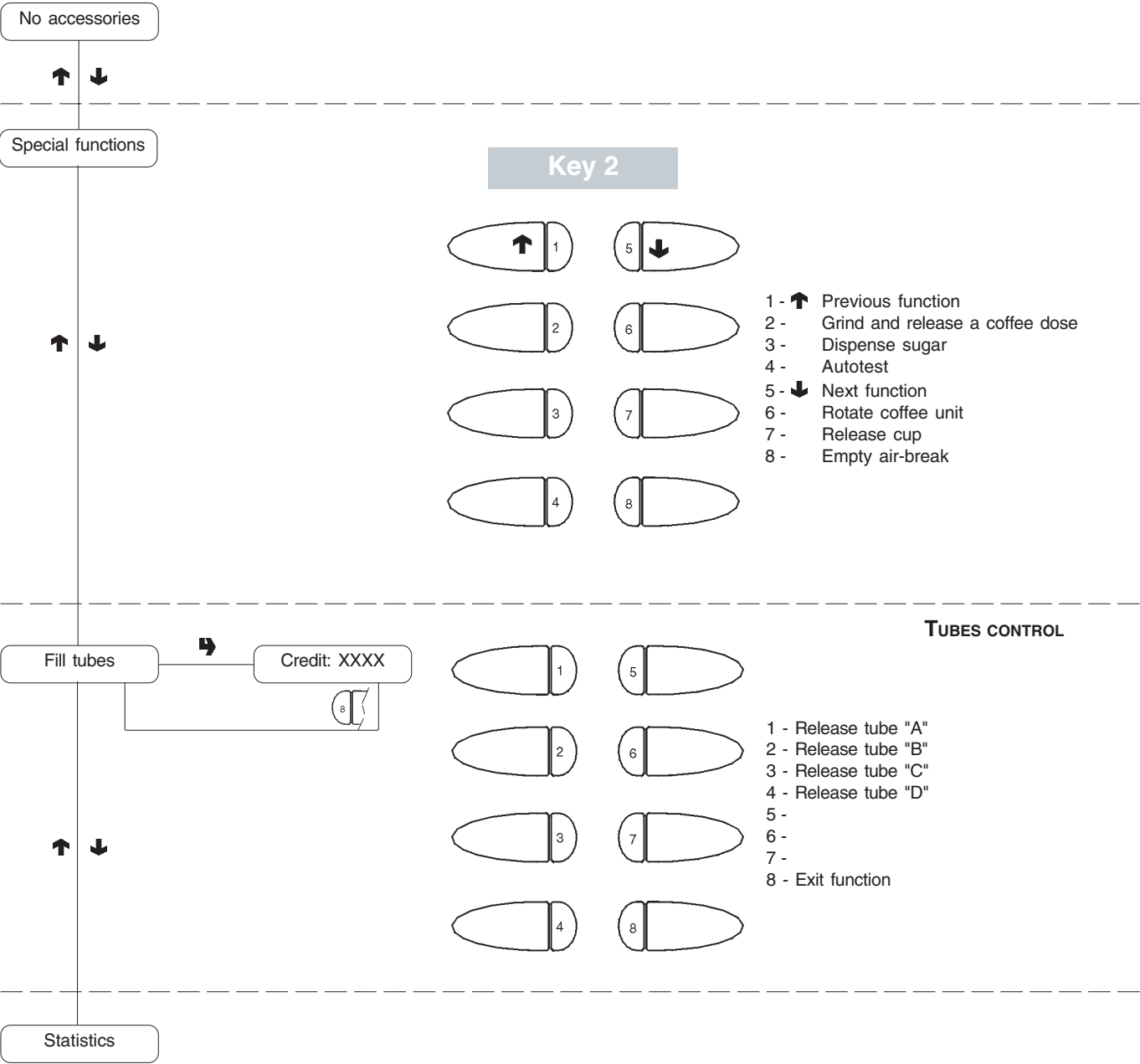
Maintenance menu



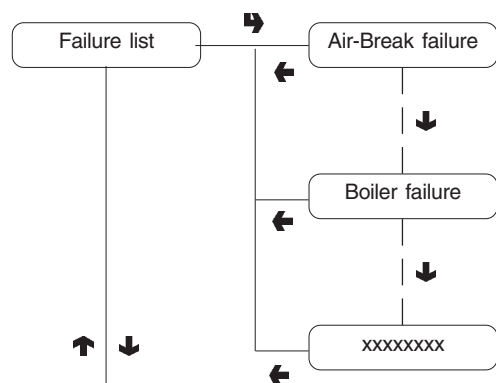
Maintenance menu



Maintenance menu



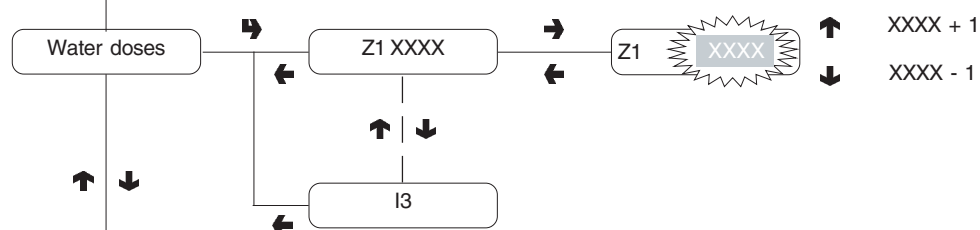
Programming menu



DISPLAY PRESENT FAILURES

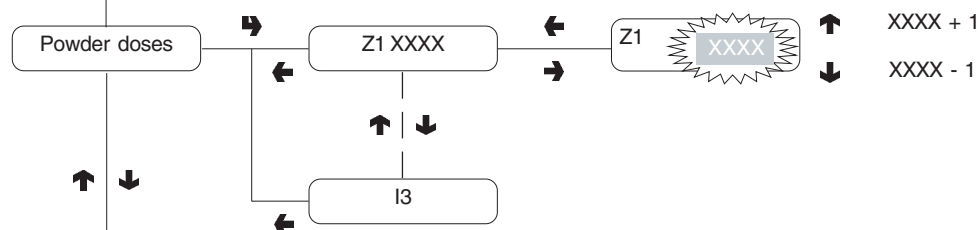
LIST OF FAILURES

- N. 1 - Air-break
- N. 2 - Boiler
- N. 3 - Coin mechanism
- N. 4 - RAM data
- N. 5 - Water failure
- N. 6 - Cup failure
- N. 7 - Water leak
- N. 8 - Volumetric counter
- N. 9 - Coffee unit
- N. 10 - Coffee failure
- N. 11 - Coffee release
- N. 12 - Cup release
- N. 13 - Liquid waste full
- N. 14 - Changer
- N. 15 - Bill validator
- N. 16 - Cashless



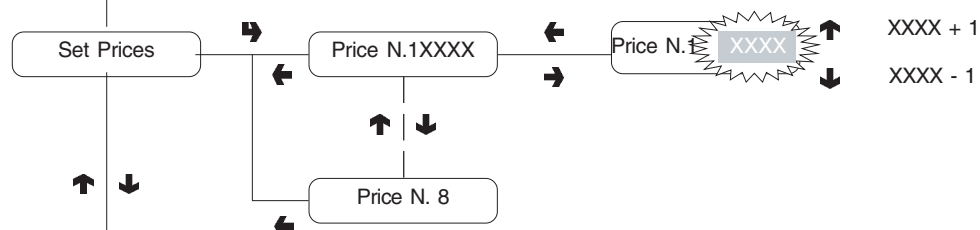
WATER DOSES

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

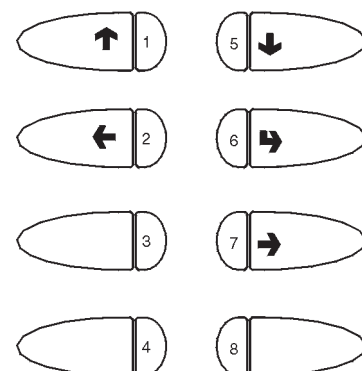


PRICE VALUE

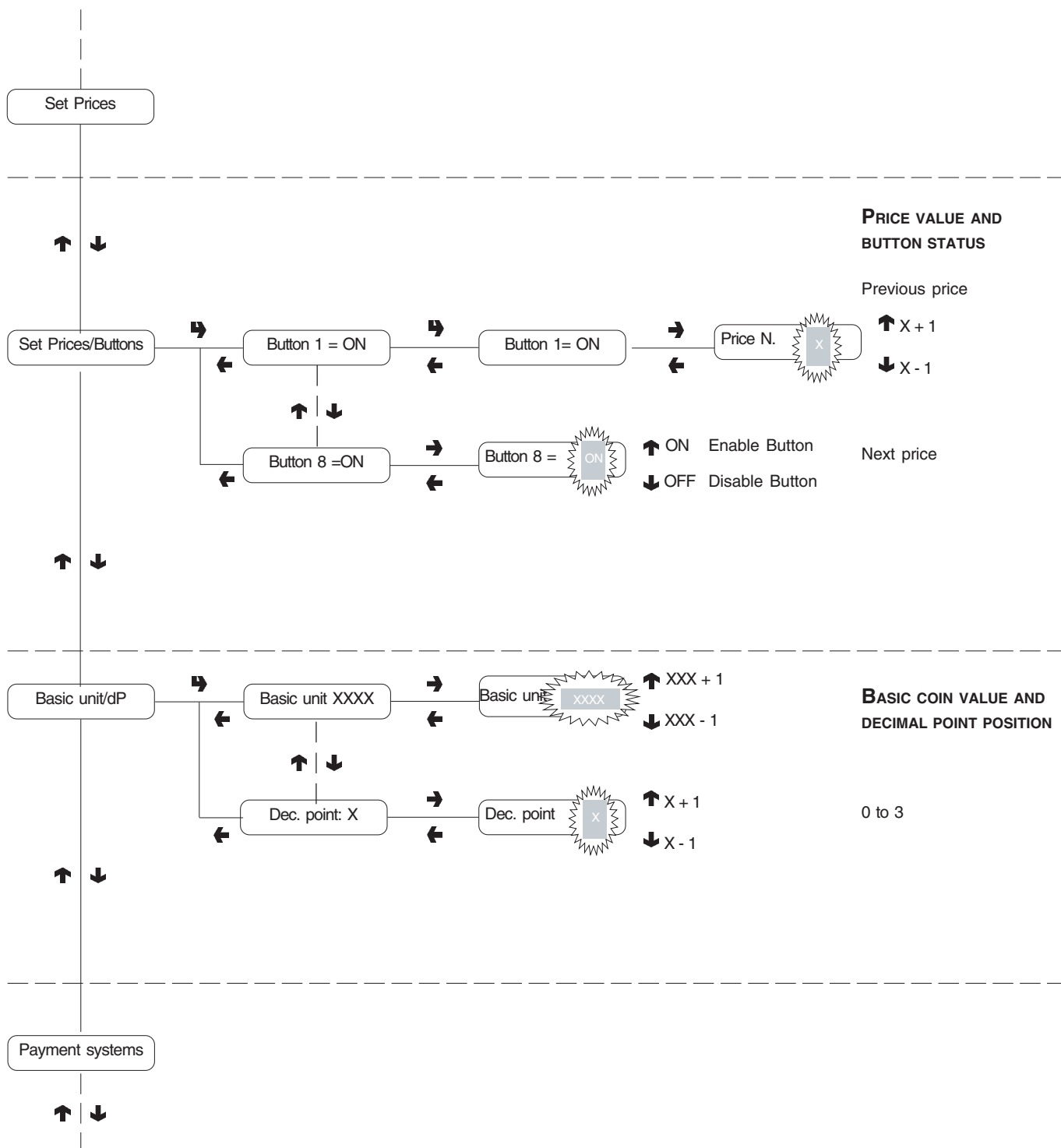
Set Prices/Buttons



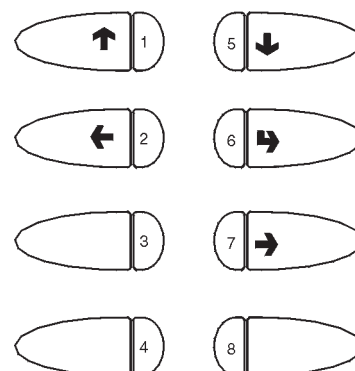
- 1 - ↑ Previous function / Increase data item (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data item (- 1)
- 6 - → Confirm function / confirm data
- 7 - → Change data item
- 8 - Reset failures



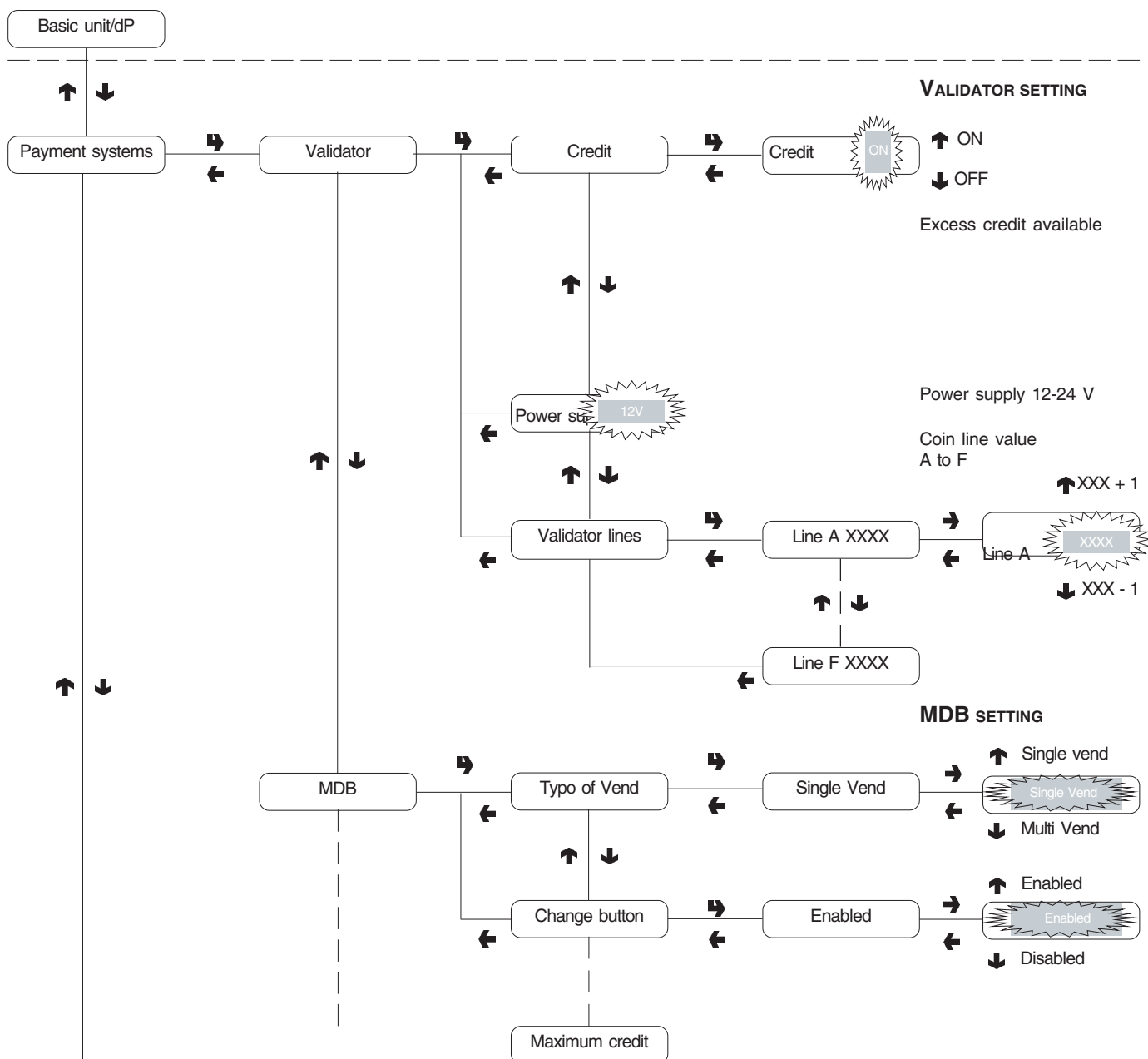
Programming menu



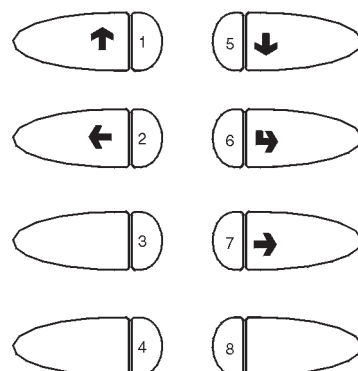
- 1 - ↑ Previous function / Increase data item (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data item (- 1)
- 6 - → Confirm function / confirm data
- 7 - → Change data item
- 8 - Reset failures



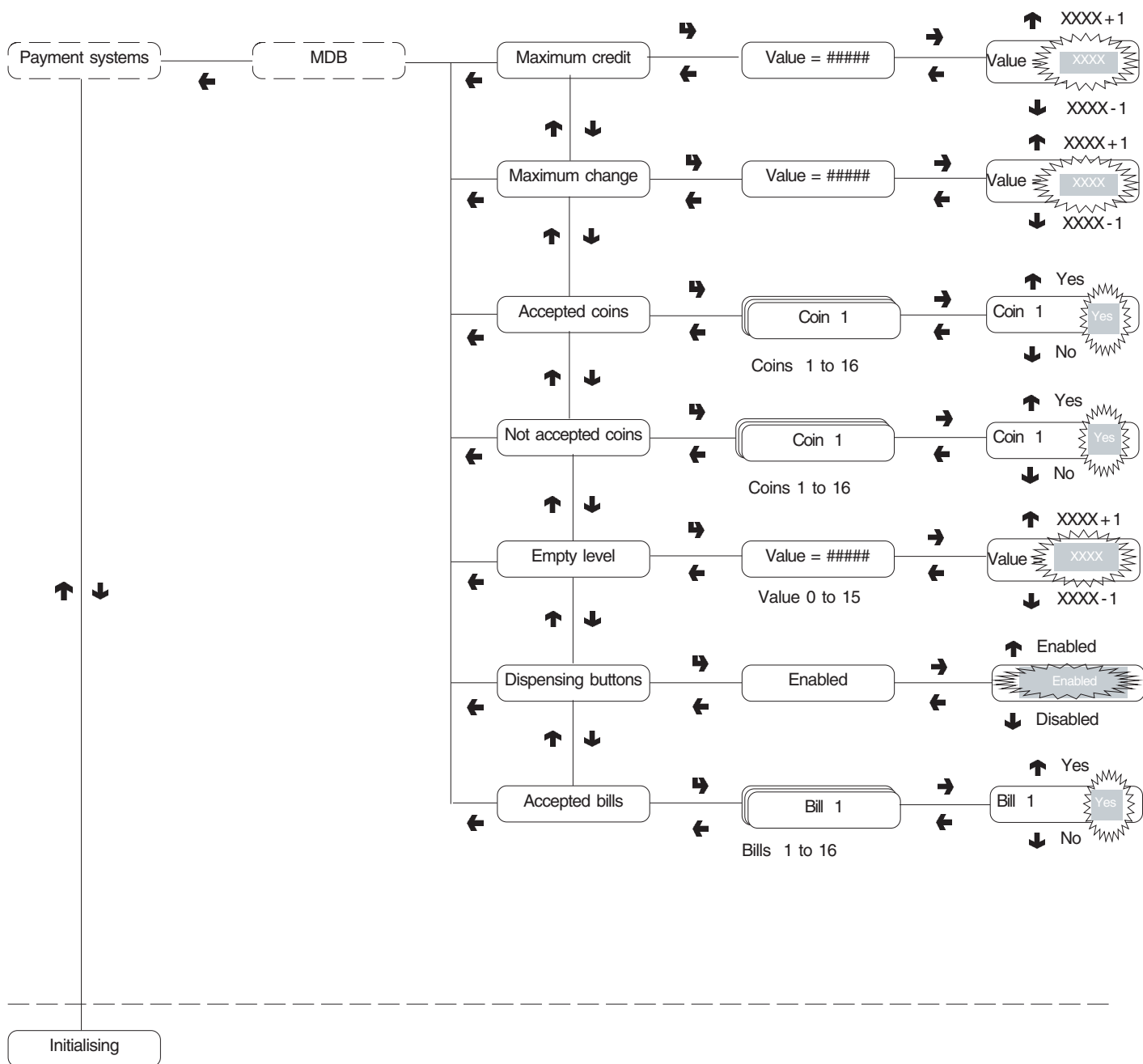
Programming menu








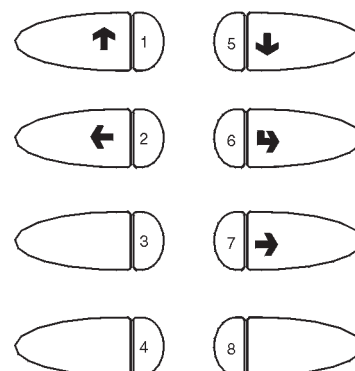
- 1 - ↑ Previous function / Increase data item (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data item (- 1)
- 6 - → Confirm function / confirm data
- 7 - → Change data item
- 8 - Reset failures



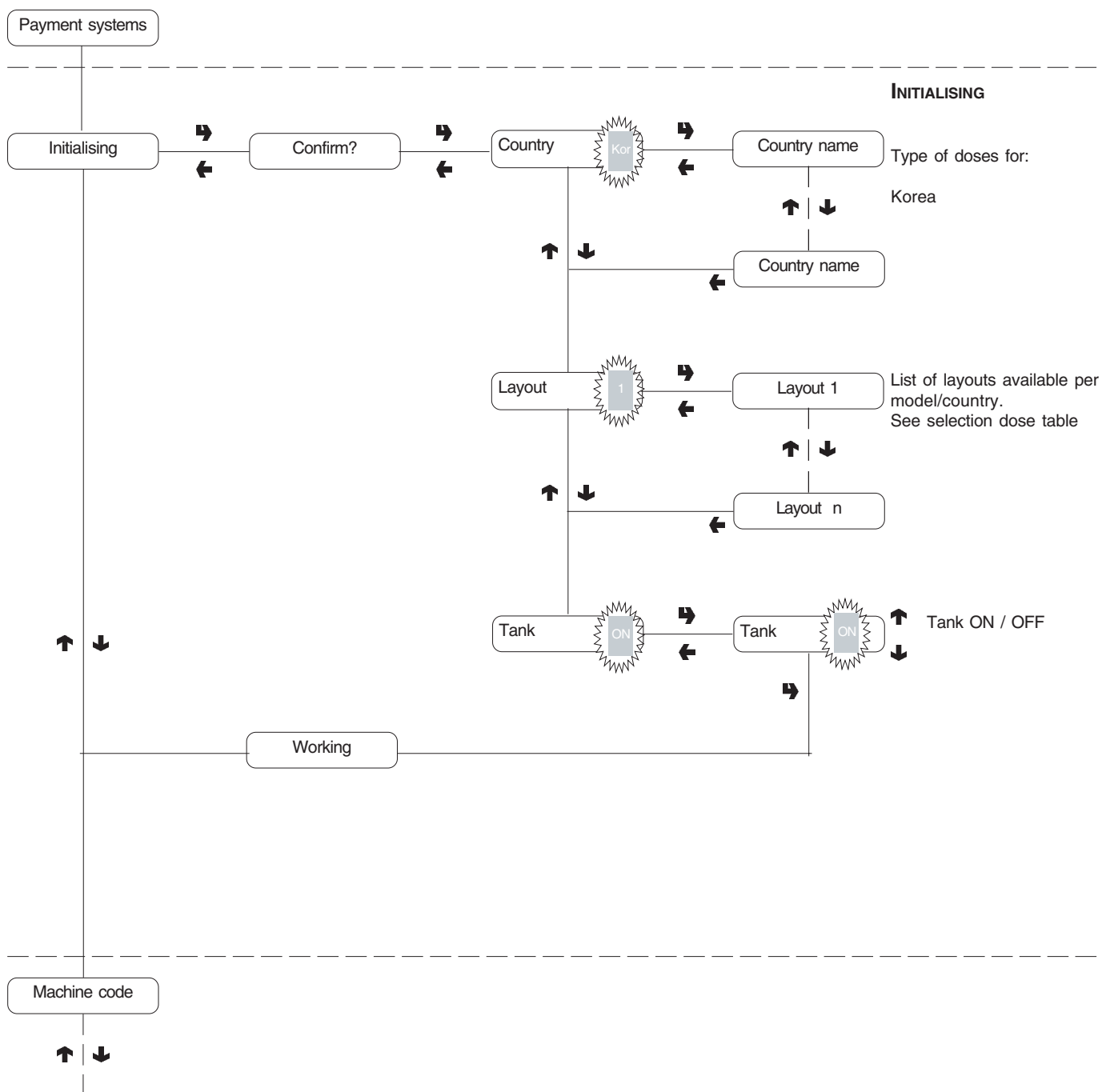
Programming menu



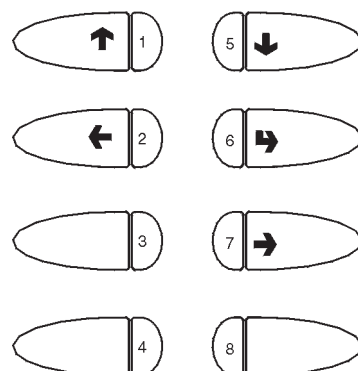
- 1 -  Previous function / Increase data item (+1)
- 2 -  Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 -  Next function / Decrease data item (- 1)
- 6 -  Confirm function / confirm data
- 7 -  Change data item
- 8 - Reset failures



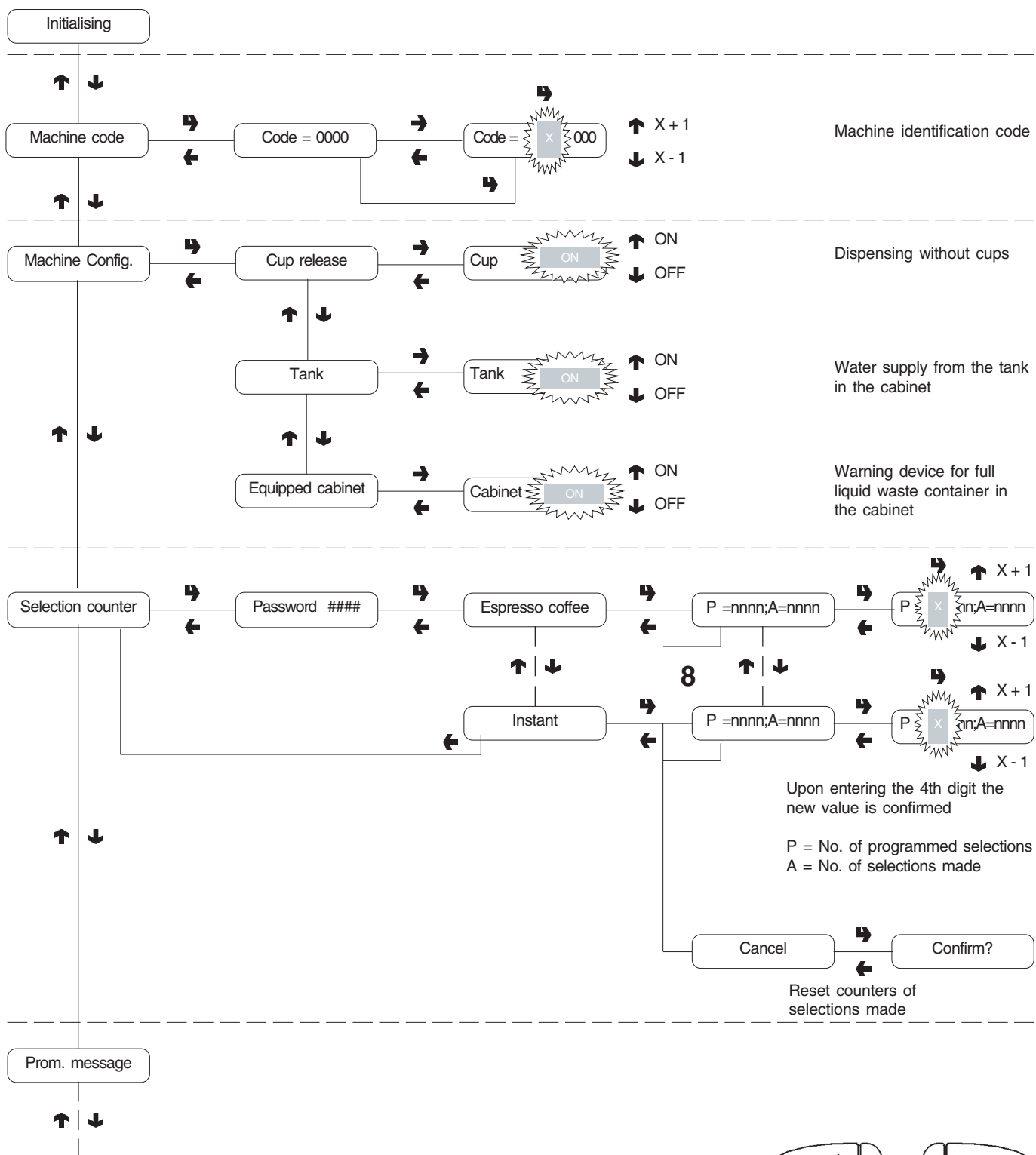
Programming menu



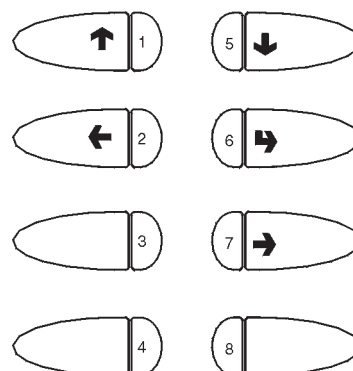
- 1 - ↑ Previous function / Increase data item (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data item (- 1)
- 6 - → Confirm function / confirm data
- 7 - → Change data item
- 8 - Reset failures



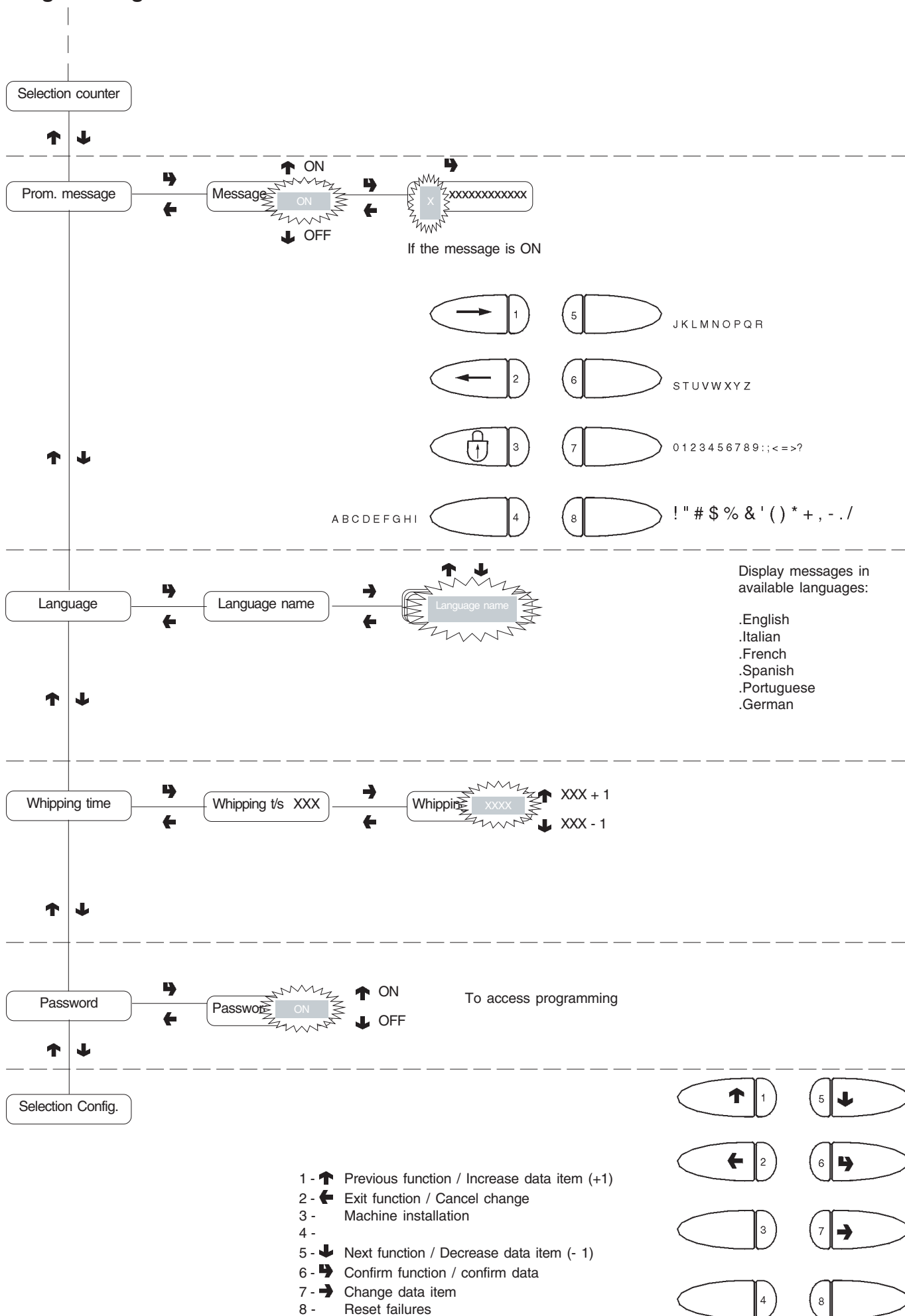
Programming menu



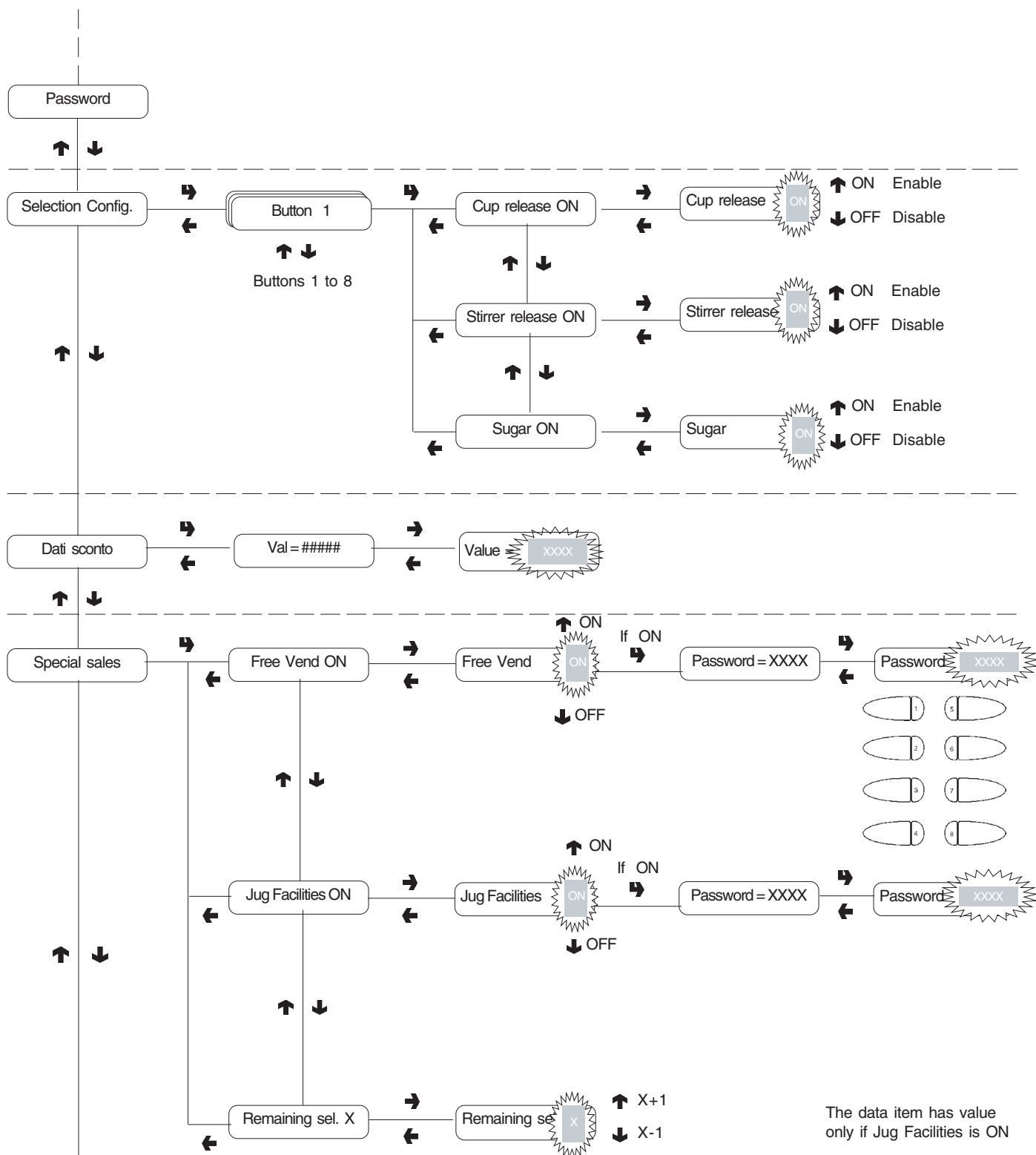
- 1 - ↑ Previous function / Increase data item (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data item (- 1)
- 6 - → Confirm function / confirm data
- 7 - → Change data item
- 8 - Reset failures



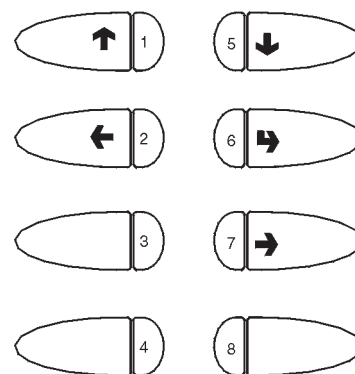
Programming menu



Programming menu

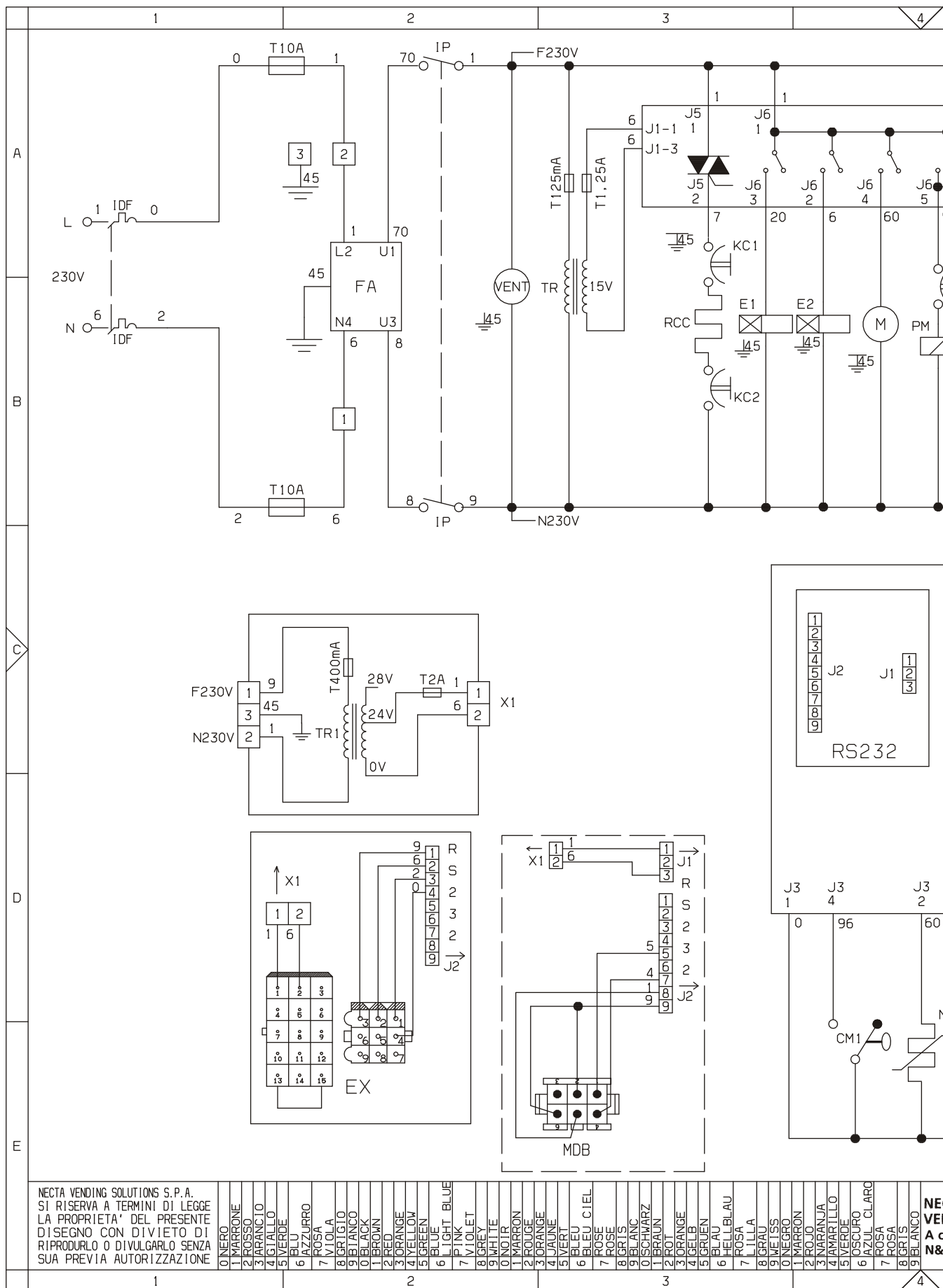


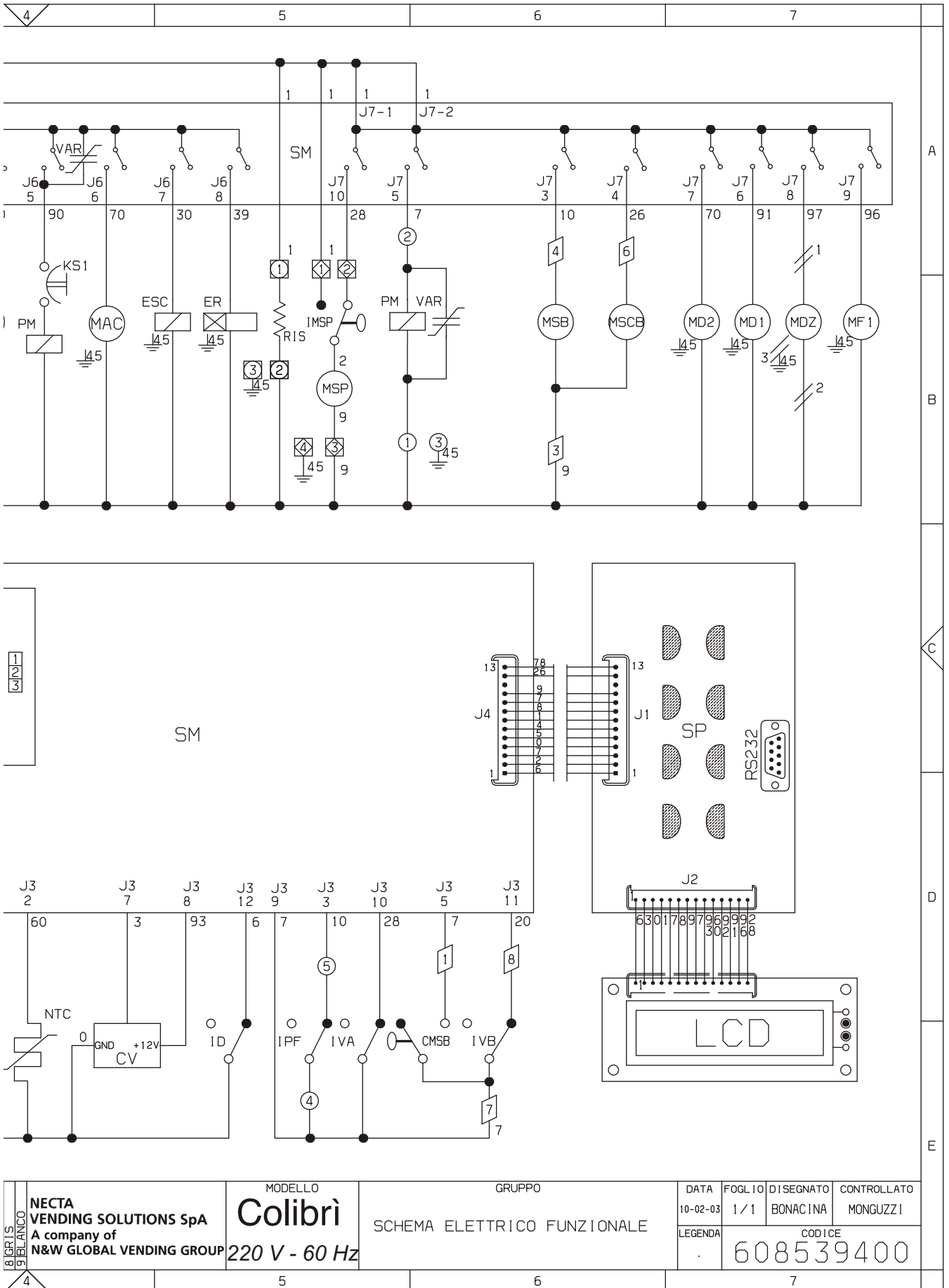
- 1 - ↑ Previous function / Increase data item (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data item (- 1)
- 6 - → Confirm function / confirm data
- 7 - → Change data item
- 8 - Reset failures



WIRING DIAGRAM LEGEND

INITIALS	DESCRIPTION	INITIALS	DESCRIPTION
CM1	COFFEE UNIT MOTOR CAM	MAC	GRINDER
CMSB	CUP RELEASE MOTOR CAM	MD1-..	INGREDIENT MOTOR - INSTANT
CV	VOLUMETRIC COUNTER	MDB	CONNECTOR FOR MDB COIN MECHANISM
E1-...	INSTANT SOLENOID VALVE	MDZ	INGREDIENT MOTOR - SUGAR
EEA	WATER INLET SOLENOID VALVE	MF1-..	WHIPPER MOTORS
ER	COFFEE DISPENSER SOLENOID VALVE	MSB	CUP RELEASE MOTOR
ESC	COFFEE RELEASE MAGNET	MSCB	CUP CONTAINER SHIFT MOTOR
EX	EXECUTIVE COIN MECH CONNECTOR	MSP	STIRRER RELEASE MOTOR
FA	RADIO INTERFERENCE SUPPRESSOR	NTC	TEMPERATURE PROBE
ID	COFFEE DOSE SWITCH	PM	PUMP
IDF	DIFFERENTIAL SWITCH	RCC	COFFEE BOILER HEATING ELEMENT
IMSP	STIRRER RELEASE MICRO-SWITCH	RIS	COFFEE UNIT HEATER
IP	DOOR SWITCH	RS232	SERIAL PORT
IPF	WASTE CONTAINER OVERFLOW SWITCH	SM	CONTROL BOARD
IVA	EMPTY BOILER MICRO-SWITCH	SP	PUSH-BUTTON BOARD
IVB	EMPTY CUP DISPENSER MICRO SWITCH	TR	TRANSFORMER
KC1-..	COFFEE BOILER CUTOUT	TR1	TRANSFORMER 230 V 24 V
KS1-..	SAFETY CUTOUT	TX....	DELAYED FUSE (X=CURRENT)
LCD	LIQUID CRYSTAL DISPLAY	VAR	VARISTOR
M	COFFEE UNIT MOTOR	VENT	FAN





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