
INSTALLATION, USE AND MAINTENANCE MANUAL

BLUE

LB 3202 Manual



USA

English



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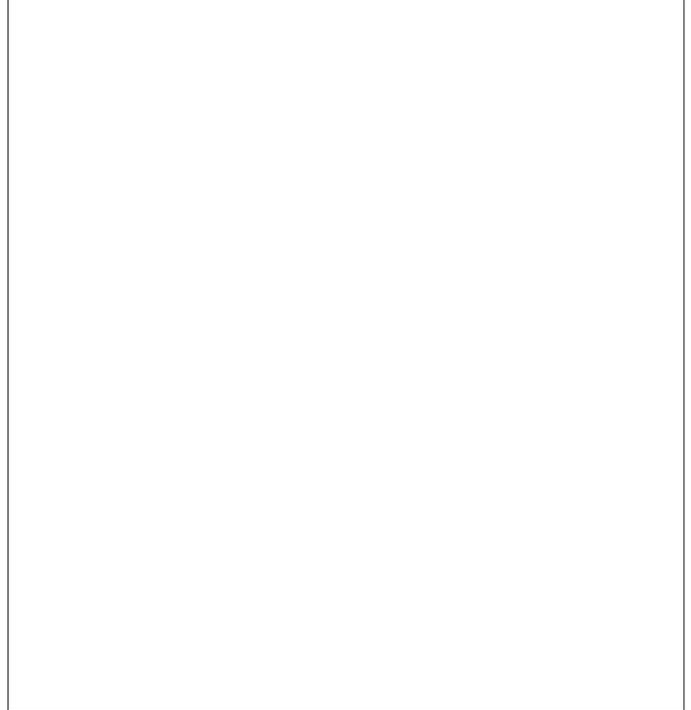
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DICHIARAZIONE DI CONFORMITA'
DECLARATION OF CONFORMITY
DÉCLARATION DE CONFORMITÉ
KONFORMITÄTSERKLÄRUNG
DECLARACIÓN DE CONFORMIDAD
DECLARAÇÃO DE CONFORMIDADE
VERKLARING VAN OVEREENSTEMMING
INTYG OM ÖVERENSSTÄMMELSE
OVERENSSTEMMELSESERKLÆRING
YHDENMUKAISUUSTODISTUS



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.

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

Det erklæres herved, at automaten angivet på typeskiltet er i overensstemmelse med 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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VIA ROMA 24 - 24030 VALBREMBO (BG) Italy

VIA DEL CHIOSO ANG. CAPITANI DI MOZZO - 24030 MOZZO (BG) Italy

for the following field of activities

Design, manufacturing and sale of electrical/electromechanical vending machines

*Refer to quality manual for details of applications to ISO 9001:2000 requirements
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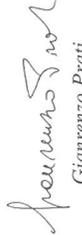
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Issued on: 2002 - 09 - 04

Registration Number: **IT - 12979**


Fabio Roversi
President of IQNet




Gianrenzo Prati
President of CISQ

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CERTIFICAZIONE DEI SISTEMI DI GESTIONE AMBIENTALE DELLE AZIENDE
CERTIFICATION OF COMPANIES ENVIRONMENTAL MANAGEMENT SYSTEMS



CERTIFICATO n. **9191.ZAV2**
CERTIFICATE n.

SI CERTIFICA CHE IL SISTEMA DI GESTIONE AMBIENTALE DI
WE HEREBY CERTIFY THAT THE ENVIRONMENTAL MANAGEMENT SYSTEM OPERATED BY

NECTA VENDING SOLUTIONS S.p.A.

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Via Roma, 24 - 24030 VALBREMBO (BG)

UNI EN ISO 14001

È CONFORME ALLA NORMA
IS IN COMPLIANCE WITH THE STANDARD

PER LE SEGUENTI ATTIVITÀ
CONCERNING THE FOLLOWING ACTIVITIES

Apparecchiature elettromeccaniche/elettroniche per la
distribuzione automatica e la ristorazione
Electronic/electromechanical vending-machines

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

Prima emissione
First issue

19 Dicembre 1997

Emissione corrente
Current issue

31 Marzo 2000

La validità del presente certificato è subordinata a sorveglianza annuale e al riesame completo del Sistema di Gestione Ambientale 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 Environmental Management System within three years according to IMQ S.p.A. rules

Data di scadenza
Expiring date



E.A. 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 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.

IDENTIFICATION OF THE VENDING MACHINE AND ITS CHARACTERISTICS

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

This plate (see Fig. 1) 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 THE EVENT OF FAILURES

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

Should there be serious failures contact the following:

After-sales service LAVAZZA
Strada Settimo, 410
10156 Torino - Italy
Tel. +39 011 2398429
Fax. +39 011 23980466
assistenza@lavazza.it

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.

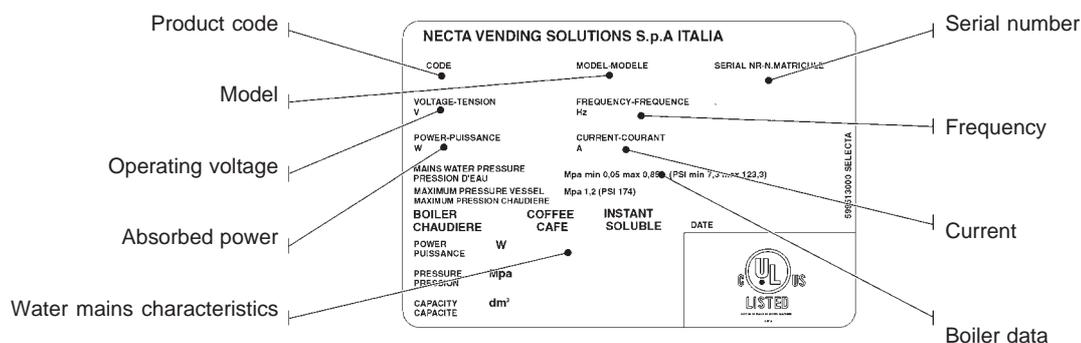


Fig. 1

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

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 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

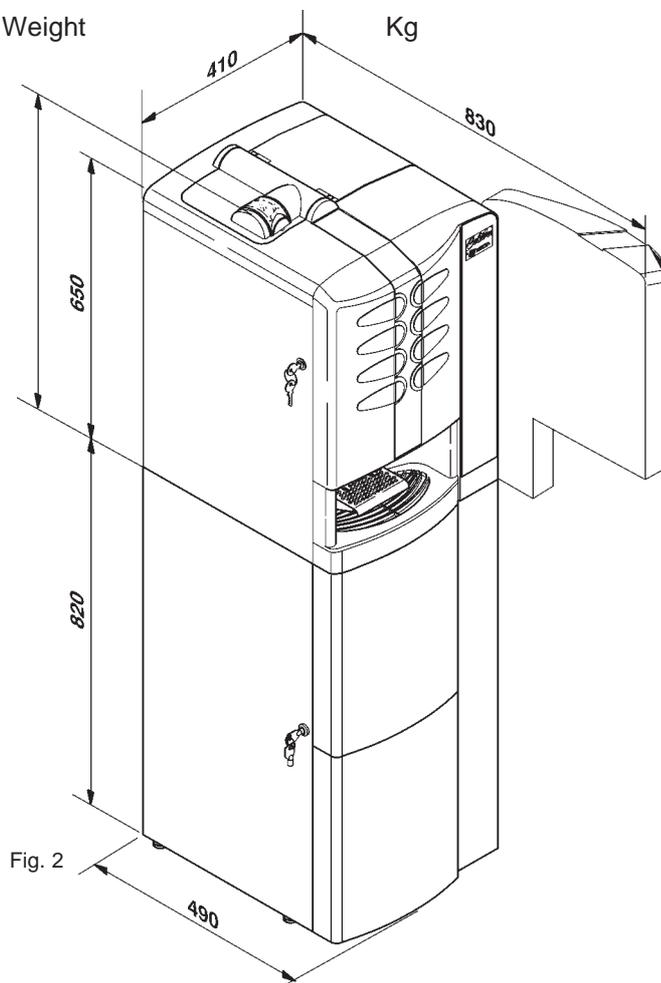
Whenever the machine is to be scrapped, the laws in force regarding environment protection should be strictly observed. More specifically:

- 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
Width	410 mm
Depth	490 mm
Overall depth with door open	830 mm
Height of cabinet	820 mm
Weight	Kg



Power supply voltage	120	V
Power supply frequency	60	Hz
Installed power	1.3	kW

PAYMENT SYSTEM

The machine is supplied with all prearrangement for a front validator. Specific kits are provided for the installation of payment systems with Executive or MDB protocol.

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

SALES PRICES

A different programmable price can be set for each selection;

the standard setting has the same sales price for all selections.

COIN BOX

Made of plastic with lock as optional accessory.

WATER SUPPLY

From the mains, with a pressure of 7.3 to 123.3 psig (0.5 to 8.5 bar).

AVAILABLE ADJUSTMENTS

Water doses by volume;

time adjustment for instant products.

Water temperature adjusted via software.

CONTROLS

- Presence of water
- Presence of coffee capsule
- Operating temperature reached
- Position of coffee unit during brewing

SAFETY DEVICES

- Door switch
- Manual-reset boiler safety thermostat
- Air-break float jamming (only with water supply from the mains)
- Overflow solenoid valve (only with water supply from the mains)
- Pump with timer protection
- Overheating protection for:
 - Doser units
 - Pump
 - Mixers
 - Capsule release magnet
- Fuse protection for:
 - Main electrical circuit
 - Board power supply transformer

CAPACITY OF CONTAINERS

Milk	=	0.8 Kg
Chocolate	=	1.4 Kg
French Vanilla	=	1.4 Kg

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:

To reach operating temperature 28.6 W/h

For 24 h in stand-by 1,414 W/h

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.

CHANGEABLE COMBINATION LOCK

Some machine models are fitted with a changeable combination lock.

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

The lock can be customised by means of a kit, available as accessory, permitting changing of the lock combination.

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

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

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

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

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

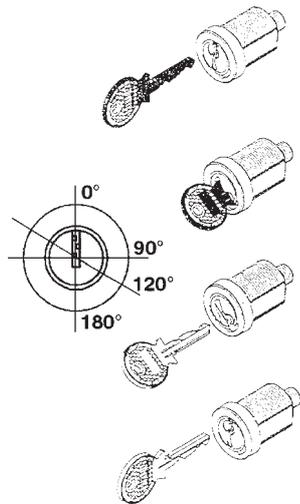
To change combination do as follows:

- open the machine door to avoid forcing the rotation;
- lightly lubricate the inside of the lock with a spray;
- insert the current change key (black) and rotate to the change position (reference notch at 120°);
- remove the current change key and insert the new change key (gold);
- rotate to the close position (0°) and remove the change key.

The lock will now have the new combination.

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

Fig. 3



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 loading and routine cleaning, in full safety.

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

It is advisable that specific sanitising products 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 damage caused by non-compliance with the above instructions or by the use of strong or toxic chemical agents.

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

(e.g. Plastic cups, ceramic cups, jugs)

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

- brewing coffee capsules
- 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.

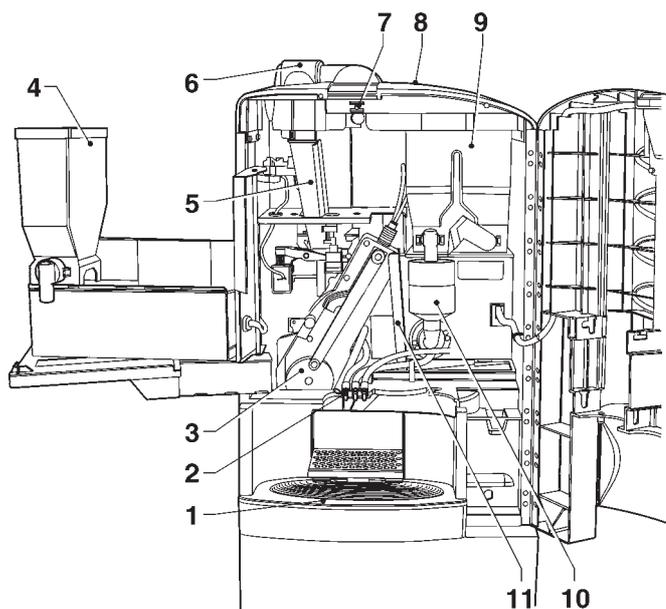


Fig. 4

- 1 - Liquid waste tray
- 2 - Dispensing spouts
- 3 - Coffee brewer unit
- 4 - Chocolate container
- 5 - Capsule chute
- 6 - Capsule dispenser lid
- 7 - Door switch
- 8 - Instant prod. container lid
- 9 - Instant prod. container
- 10 - Instant prod. mixer
- 11 - Used capsules chute

HYGIENE AND CLEANING

According to current safety and health rules and regulations, the operator of an automatic vending machine is responsible for the hygiene of materials that come in contact with foodstuff; therefore he must carry out maintenance on the machine to prevent the 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.

CONTROLS AND INFORMATION

The machine should operate at an ambient temperature of 2°C to 32°C.

The user controls and information are located on the outside of the door (see Fig. 5).

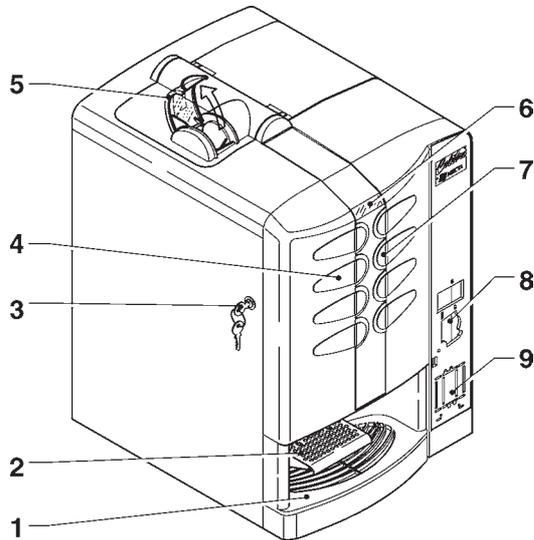


Fig. 5

- 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.

Press selection buttons No. 3 and No. 6 in a short sequence to automatically start filling the machine hydraulic system.

NOISE LEVEL

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

LOADING

The housing for capsules, sugar sachets and stirrers are located in the machine support cabinet.

Insert the cups upside down in the special stackers, ensuring that they are pressed.

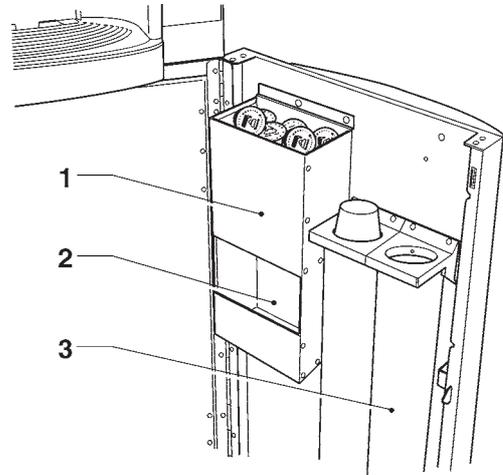


Fig. 6

- 1 - Capsules
- 2 - Sugar
- 3 - Cup stacker

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

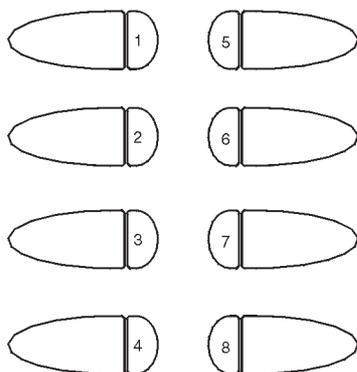
WASHING THE MIXERS

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.

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.

Fig. 7



CLEANING THE WASTE CONTAINERS

Each time the coffee capsules are loaded, the used capsule container and the liquid waste container must be emptied and washed; do not use strong or foamy detergents.

CLEANING THE WATER SUPPLY TANK

(OPTIONAL)

For machines equipped with a water tank inside the support cabinet, such tank must be sanitised at least once a week with the products used for the mixers.

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 sanitising products
- empty the used capsule container and remove the unused capsules and the sugar from the orientation device

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, especially from the capsule loading zone.

Chapter 2 INSTALLATION

- completely empty the water system.

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

The vending machine must be installed 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.).

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.

DOOR SWITCH

When opening the door a special microswitch disconnects the power from the machine electrical system.

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

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 power supply cable from the grid.

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

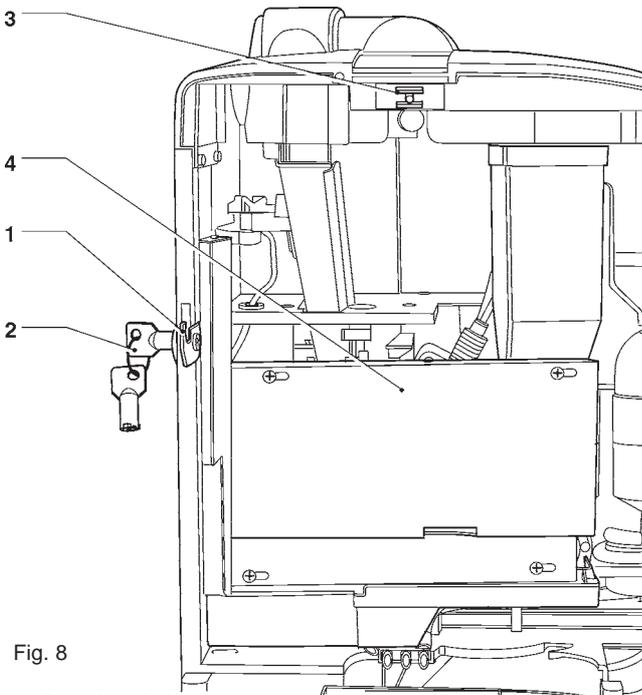


Fig. 8

- 1 - Door lock bolt
- 2 - Door lock
- 3 - Door switch
- 4 - Container bracket

UNPACKING THE VENDING MACHINE

After removing the packing, ensure that the machine is 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).

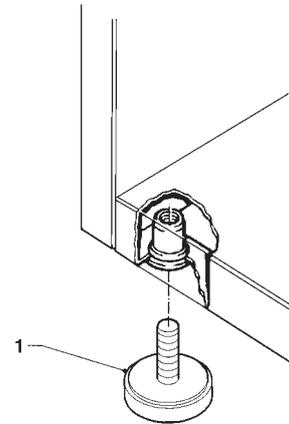


Fig. 9

- 1 - Adjustable foot

CONNECTING THE MACHINE TO THE WATER MAINS

The machine must be connected to the drinking water mains, taking into account law provisions in force in the country where the machine is installed.

The water pressure must be 7.3 to 123.3 psig (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 foodstuff (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. 10).

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. 10) is equipped with an overflow device which mechanically stops the water inlet if there is a malfunction in the solenoid valve or in the boiler water level control device.

To restore normal operation, proceed as follows:

- drain the water contained in the overflow hose;
- shut off the water supply using the tap outside the machine;
- loosen the nut which secures the solenoid valve supply hose to relieve the water mains residual pressure and then tighten again (see Fig. 10);
- open the tap and switch the machine on.

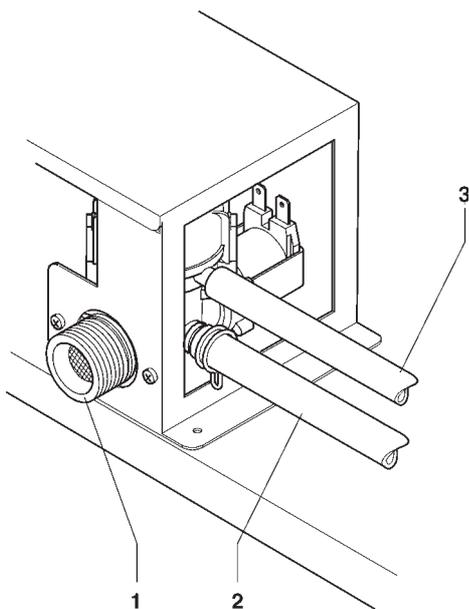


Fig. 10

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

CONNECTING THE MACHINE TO THE POWER SUPPLY

The machine is designed to operate under a single-phase 120 V~ voltage and is protected by 15 A fuses.

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 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 fixed plug. Any replacement of the power supply cable (see Fig. 11) should be made by qualified personnel only, using cables of the type UL SJT 3x16 AWG.

The electrical safety of the machine is ensured only when it is correctly 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.

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

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

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

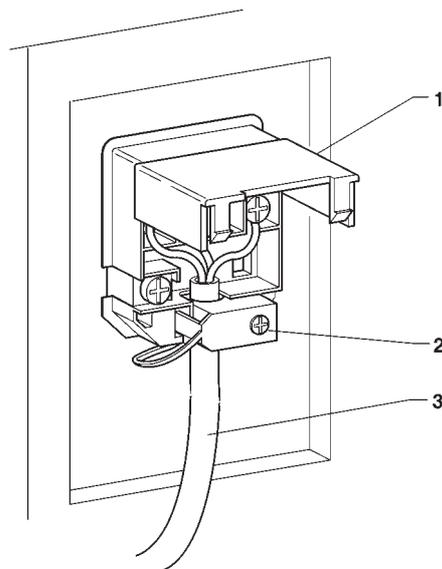


Fig.11

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

INSTALLING THE PAYMENT SYSTEM

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

- Install the validator and make sure that the programming of the relevant parameters is correct.

Other payments systems such as “change-giver” and “cashless” can be installed by using the specific kits.

The “cashless” systems can be housed inside the machine (see Fig. 5); other payments systems such as the “change-giver” must be housed inside the support cabinet (optional).

WATER SOFTENER UNIT

The machine is sold without water softener.

Should the water be very hard, a 2-litre ion-exchange resin water softener unit can be installed in the cabinet.

The water softener, available as accessory, must be replaced or regenerated regularly following the directions from the manufacturer.

For health and functional reasons, higher capacity water softener units should not be used.

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).

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.

“Machine type”

Automatic
Semiautomatic
Manual

“Country”

Intended as type of basic doses for the different selections (e.g. strong coffee IT = 40 cc - strong coffee FR = 60 cc).

The planned “Countries” are:

It - Fr - Es - Uk

“Layout”

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

“Tank”

Intended as water supply from a tank. This can be enabled or disabled (water supply from the mains):

FILLING THE WATER SYSTEM

When the machine is switched on the conditions of air-break (full or empty), pump and boiler priming (pressure) are checked.

If required by the conditions, the machine will automatically start an installation cycle, and namely:

- the message “Installation” will be shown on the display for the entire duration of the cycle;
- the water mains solenoid valve is opened or the 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.

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 is automatically started when the machine is switched on.

Versions with internal tank

For models with an internal tank, when the machine is first switched on, the installation procedure MUST BE carried out manually (see relevant chapter).

OPERATION

LOADING WITH CAPSULES

The system allows manual loading of a single capsule; it is essentially composed of two parts:

- the capsule orientation system;
- the capsule detection and release system.

INSERTION SYSTEM

The system is composed of a cell, protected by a slider, for the manual insertion of a coffee capsule and a motor that rotates the cell.

The open slider is detected by the machine, which then proceeds to dispense a coffee based selection. Dispensing is attempted even if a capsule is not inserted.

If coffee selection is made without having opened the slider, the display will indicate the message "Insert capsule".

When a coffee based selection is made the motor rotates the cell once, dropping the capsule in the detection and release system, returning to the initial position.

If the slider is opened during the rotation, the display will indicate the message "Close slider".

DETECTION AND RELEASE SYSTEM

When a capsule falls into the chute, because of the special shape of the release levers it is positioned vertically onto the release levers and triggers the capsule detection lever, indicating to the machine, by means of a micro-switch that it is possible to release the capsule into the brewer unit.

If the capsule is not detected, the machine returns to normal operating mode with an unopened slider status.

If after releasing the capsule this is still detected in the positioning chamber, the brewer unit is rotated to eject the capsule and a second release attempt is made. If the capsule is still detected, the coffee-based selections are blocked with a "Coffee release" failure.

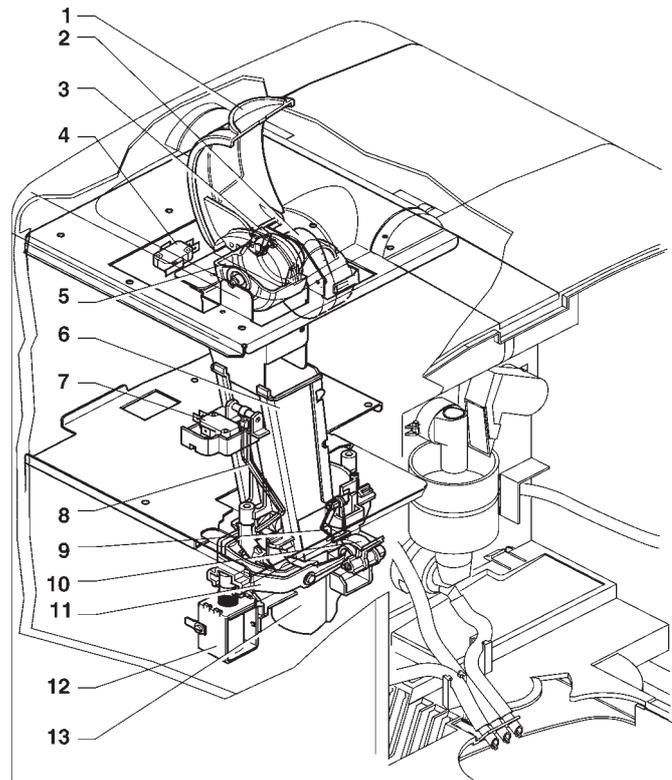


Fig. 12

- 1 - Door
- 2 - Cell rotation motor
- 3 - Motor position micro-switch
- 4 - Open slide micro-switch
- 5 - Capsule cell
- 6 - Chute
- 7 - Capsule detection micro-switch
- 8 - Capsule detection lever
- 9 - Capsule release lever
- 10 - Capsule dispensing lever
- 11 - Release control lever
- 12 - Release magnet
- 13 - Capsule release tube

COFFEE DISPENSING CYCLE

When a coffee-based selection is made the inserted capsule is released into the brewing chamber, which when in stand-by position is vertical (see Fig. 13).

The ratiomotor handle rotates 180°, making the brew chamber swing and lowering the upper piston (see Fig. 14).

The lock lever is positioned into the seat, stopping the piston pressure from making the mechanism move back. Due to the water pressure, the hydraulic piston is lowered until it seals onto the capsule edge and the brewing piston

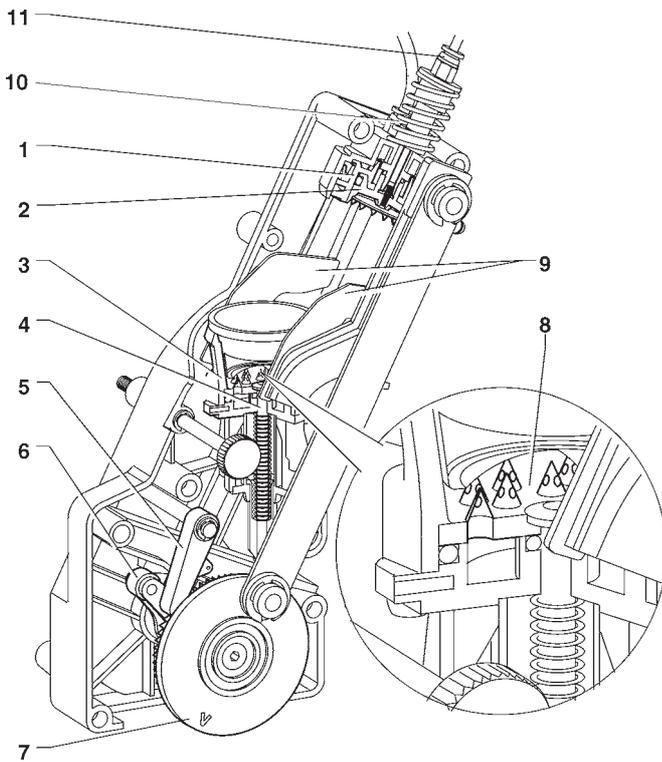


Fig. 13

- 1 - Hydraulic piston
- 2 - Brewing piston
- 3 - Brewing chamber
- 4 - Ejector piston stem
- 5 - Locking lever
- 6 - Ratiomotor handle
- 7 - Reference notch
- 8 - Lower piercing filter
- 9 - Capsule ejector levers
- 10 - Hydraulic piston fitting
- 11 - Brewing water fitting

pierces the protective film.

When the dispensing solenoid valve opens, water reaches the ground coffee through the pierced protective film.

The water pressure pushes the concave bottom of the capsule against the piercing filter.

The conical needles of the piercing filter pierce the bottom of the capsule, permitting the brewing of coffee and retaining the ground coffee inside the capsule.

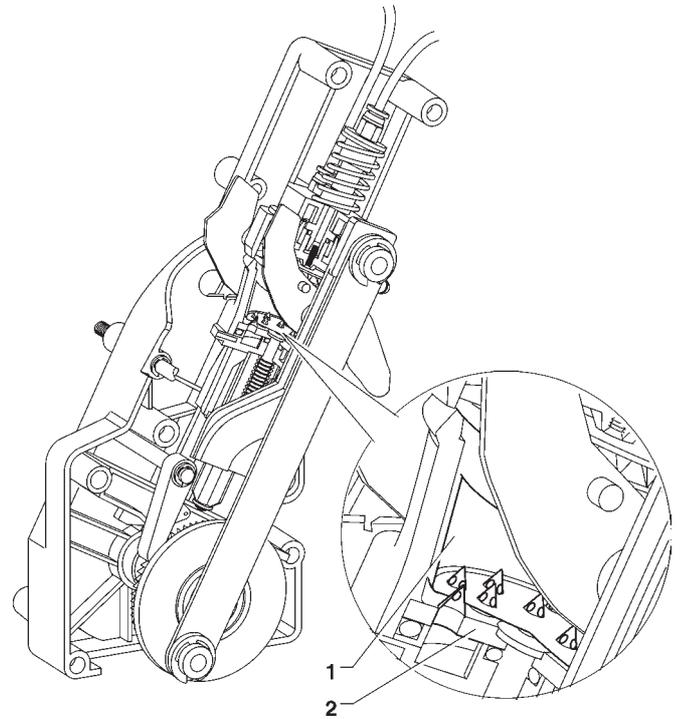


Fig. 14

- 1 - Capsule
- 2 - Lower piercing filter

At the end of dispensing, the water inside the capsule flows out through the 3rd way of the dispensing solenoid valve and the bottom of the capsule resumes its concave shape. The hydraulic piston is released and returns to the stand-by position.

The ratiomotor rotation continues, lifting the piston and the lower ejector.

At the same time, when the brewing chamber returns to its vertical position, the ejection levers push the used capsule and drops it.

The lower ejector returns to the rest position.

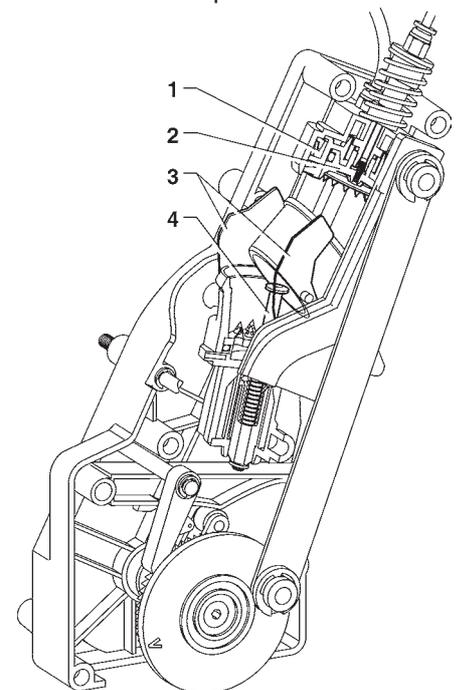


Fig. 15

- 1 - Hydraulic piston
- 2 - Brewing piston
- 3 - Capsule ejector levers
- 4 - Ejector piston stem

CHECKING AND ADJUSTING THE MACHINE SETTINGS

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

- The dose weight of the products.
- The temperature of drinks
- 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) 85-89°C approx.;
- instant product temperature (at the spout) 75°C approx.;

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

WATER TEMPERATURE CONTROL

The boiler temperature is controlled by the software (92°C by default) and can be adjusted directly from a menu.

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 operating mode "Ready for use"	coins accepted products dispensed
Maintenance "Maintenance"	test dispensing machine maintenance
Programming mode "Programming"	programming

NORMAL VENDING 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 vending 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 order"	Machine switched off
"Drink in process"	Drink preparation
"Heating"	Wait time before reaching operating temperature
"Installation"	Installation under way
"Sel. Disabled"	Selection disabled
"Coffee sel. out"	For espresso models only Coffee unit out of order
"Take the drink"	Drink ready
"Close door"	Door open during loading of capsule
"Check capsule"	Motor rotation not complete
"Insert capsule"	Selection made before inserting a capsule

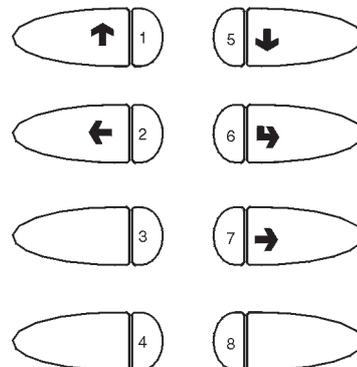
MAINTENANCE MODE

When the programming button located on the internal side of the push-button board (see Fig. 28) 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:

Fig. 16



- 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 "→" 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
"Powd. only"	Dispensing powder only
"Water only"	Dispensing water only
"No accessories"	Test dispensing without cup, sugar and stirrer

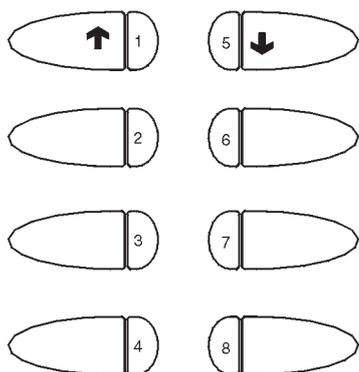
When pressing button "→" the selection buttons will take on the original function for 7 seconds, permitting the test dispensing provided for each function.

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:

Fig. 17



- 1 - ↑ Previous function
- 2 -
- 3 -
- 4 - Autotest
- 5 - ↓ Next function
- 6 -
- 7 -
- 8 - Empty air-break

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:

- activation of the doser units for 2 seconds
- activation of the mixers for 2 seconds
- rotation of coffee unit
- 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

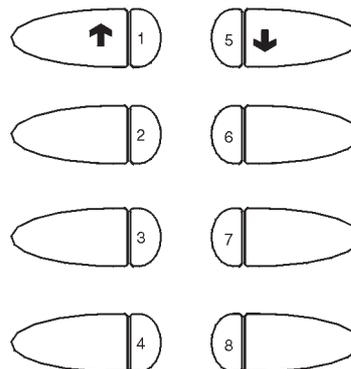
This function is used to partially empty the air-break, dispensing water from the milk solenoid valve for 8 seconds before blocking the machine, to allow the machine to be moved without spilling water; to restore normal functioning the machine must be switched off and then on.

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

COFFEE UNIT FUNCTIONS

When the display shows “Unit functions” the buttons take on the following functions:

Fig. 18



- 1 - ↑ Previous function
- 2 - Release capsule
- 3 - Rotate coffee unit without pressure
- 4 -
- 5 - ↓ Next function
- 6 -
- 7 - Rotate coffee unit with pressure
- 8 - Reset filter counter

DISPLAYING THE TEMPERATURE

With this function the boiler temperature in °C is displayed.

FILLING THE CHANGE TUBES

With the display indicating the “filling tubes” function, do as follow to manually fill the change-giver tubes:

- press any button to activate filling; the display will indicate “Credit: — ”, which is the money value in the tubes available as change;
- insert the desired coin into the selector (the display will indicate the value of money in the tubes available as change).
- press button “8” to end the operation.

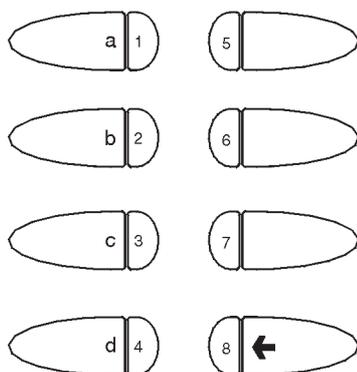


Fig.19

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:

VALIDATOR

- 1 - counter by type of coin cashed and total cash
- 2 - counter by single selection
- 3 - failure counter
- 4 - counters by coin type

MDB PROTOCOL

- 1 - MDB statistics
- 2 - counter by single selection
- 3 - failure counter
- 4 - counters by coin type

MDB statistics

- Total cash
- Inserted coins
- Returned coins
- Inserted bills
- Amount of total sales
- Amount of total cash
- Amount of cashless sales
- Money charge
- Amount of discounts

PRINTING THE 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 STATISTICS

Press button “↵” with the display indicating the “Delete 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 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 “↵” with the display indicating the “Display counters” function, the function status (ON/OFF) will be displayed; press button “↵” and 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.

PROGRAMMING

When the programming button located on the internal side of the push-button board (see Fig. 28) is pressed twice the machine will be set to "Programming" mode.

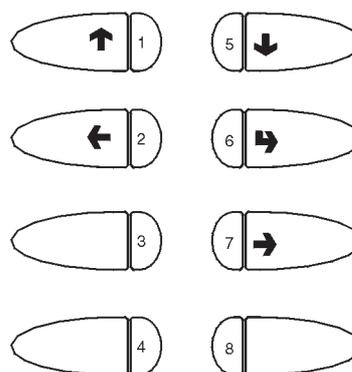
The message "Programming" is displayed for approx. 2 seconds, and then the first option of the programming menu is displayed to activate the following functions:

"Present failures"	reading current failures
"Water doses"	setting the water doses
"Powder doses"	setting the powder doses
"Set Prices"	setting the prices
"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 setting and MDB protocol
"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"	setting whipping time for instant coffee
"Prog. password"	enabling password to access programming
"Config. selections"	defining the accessories to be dispensed by each single button
"Special sales"	Free Vend and Jug Facilities
"Set date/time"	setting date and time
"Set wash"	setting the wash time

"Discount time band"	setting the time band for discounts
"Set band prices"	setting discounted prices
"Consecutive sel."	setting the number of selections after which the machine will pause for heating
"Set temperature"	programming the temperature

When in "programming" mode the selection buttons have the following functions:

Fig. 20



- 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 item
- 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.

Failures regarding water supply can vary according to the type and presence or not of the waste overflow warning device inside the cabinet.

The possible failures are indicated in the following cases:

AIR-BREAK

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

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

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

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

The message "INITIALISE" will start blinking on the display.

WATER FAILURE

Models with water supply from the mains

The machine locks if the air-break microswitch is closed for more than 10 seconds. When pressing a selection button the water inlet solenoid valve is triggered to check the water flow from the mains.

If the machine is equipped with a liquid waste container (housed in the cabinet) fitted with an overflow warning device, the solenoid valve will stay triggered until water from the mains is resumed.

Models with water supply from a tank/with support cabinet

The machine locks if the water level in the tank falls to less than approximately 300 cc. The tank's pump starts for 60 seconds to attempt correcting the failure.

WATER LEAK

If water is requested by the air-break without having been used (selections, cleaning etc.) and the configuration does not include the liquid waste container (housed in the cabinet) fitted with an overflow warning device, the machine will block further water requests.

COUNTER

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

COFFEE UNIT

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 RELEASE

If after releasing the capsule this is still detected by the microswitch in the positioning chamber, the brewer unit is rotated and a second release attempt is made. If the capsule is still detected after two release attempts, the coffee-based selections are blocked with a "Coffee release" failure.

WASTE CONTAINER FULL

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

WATER

The machine locks if the air-break microswitch is closed for more than 10 seconds. When pressing a selection button the water inlet solenoid valve is triggered to check the water flow from the mains. If the failure is not reset automatically, it will be necessary to restart the machine to be able to reset the failure again by pressing a selection button.

CAPSULE LOCK

The machine locks coffee based selections if the capsule insertion motor is not in stadby position.

CHANGER FAILURE (MDB only)

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

BILL VALIDATOR FAILURE (MDB only)

The bill accepter is not working or does not communicate.

CASHLESS FAILURE (MDB only)

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

PROGRAMMING THE WATER AND POWDER DOSES

When either the "Water doses" or the "Powder doses" functions from the "programming" menu are displayed the related doses can be changed.

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.

Press the change button "↔" to display this value.

PROGRAMMING THE PRICES AND THE PUSH-BUTTON STATUS

When the “Set Prices/Button” (price combination) 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 change 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 the change 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, .e:

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

Press the change 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 to use, selecting among:

- Validator
- MDB communication protocol

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

The payment systems must be housed in the cabinet (optional).

PROGRAMMING THE VALIDATOR

If the selected payment system is a validator, its operating parameters must be defined.

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 necessary to select the operating voltage, 12 V or 24 V.

VALIDATOR LINES

When the “Line A = XXXX” function (line programming) 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 the change 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
- Credit return
- 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 returned automatically after a successful selection, however the credit is available for further selections. When pressing the coin return button the available credit is returned up to the value of “Maximum change” setting.

CREDIT RETURN

This function enables/disables the return of credit upon pressing the coin return button. If enabled, this function will prevent any change return 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 product selection. 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 the “change given” condition.

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

NOT ACCEPTED COINS

This function programs the rejection of a coin as change when in the “exact amount” condition.

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.

INITIALISING

When the “Initialising” function is displayed the vending machine can be initialized 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 “” and the display will indicate 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 initialised.

The parameters are as follows:

“Machine type”	Automatic Semiautomatic Manual
“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 the mains or from a tank

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 change 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:

- water supply from the mains (Tank OFF) / internal tank (Tank ON)
- presence of warning device for full liquid waste container (equipped cabinet ON)
- fast cycles ON / OFF (see following paragraph)
- coffee tray ON / OFF

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 take on the default values: “Water supply from the mains/without full waste container warning device/ fast cycles ON”.

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

- the “post-whipping” time is eliminated.

Espresso selections

- 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, 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).

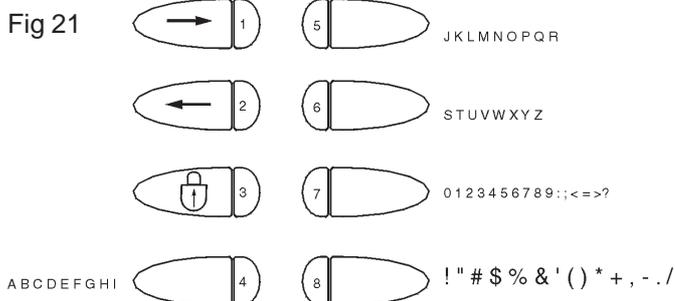
If the message is enabled, when pressing the confirm button “” the first character will start blinking and can be changed.

The buttons will take on the following functions:

- 1 - Previous character
- 2 - Next character
- 3 - Upper/lower case

The values are displayed alternately by pressing the button sequentially.

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
- Italiano
- Français
- Español
- Português
- Deutsch

WHIPPING TIME

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

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.

SETTING THE CLOCK

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

AUTOMATIC WASH

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.

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.

TEMPERATURE SETTING

This function is used for setting the operating temperature, expressed in °C, of the boiler installed in the machine.

DIRECT FUNCTIONS

INSTALLATION

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

RESETTING THE 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).

Under no circumstances should water jets be used to clean the machine.

BREWER UNIT MAINTENANCE

The piercing filter must be replaced every 5,000 selections.

After 5,000 selections, when accessing the maintenance menu the display will show the message "Check filter" with the number of selections made since the last filter replacement. Press button "8" from the "Unit function" to reset the counter.

In any case it will be necessary to disassemble and sanitise the upper filter, the piercing filter and the brewing chamber at least every 6 months.

Maintenance is carried out as follows:

- remove the teflon hose from the upper piston, connected to the boiler and to the tube for hydraulic control of the piston, paying undoing the colour rings (see Fig. 22);
- undo the knob securing the unit to the bracket and remove the coffee unit;
- remove the stop rings and take the rod out;
- remove the ring and take the ejector piston out;
- remove the front and back slides and the capsule ejector levers;

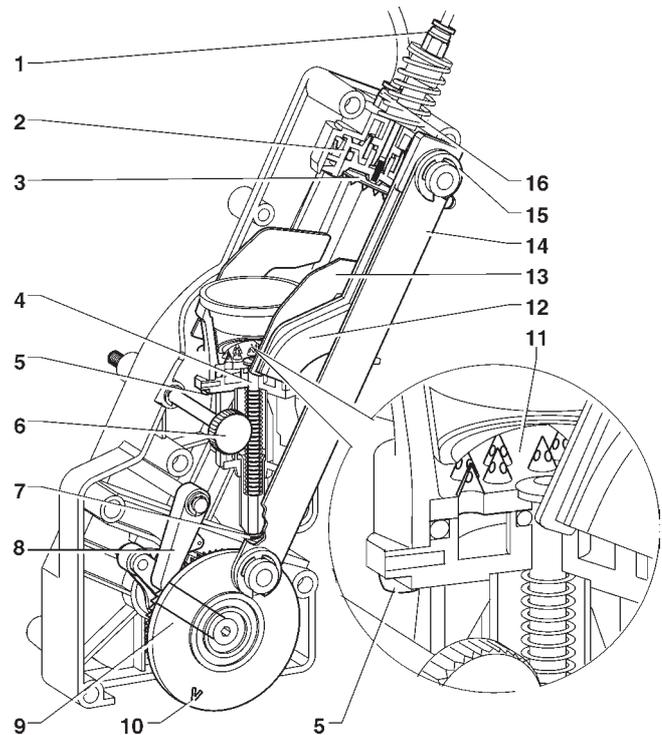


Fig. 22

- 1 - Brewing tube quick coupling
- 2 - Hydraulic piston
- 3 - Upper filter
- 4 - Ejector piston stem
- 5 - Brewing chamber fastening screws
- 6 - Unit securing knob
- 7 - Release piston snap ring
- 8 - Locking lever
- 9 - Ratiomotor handle
- 10 - Reference notches
- 11 - Piercing filter
- 12 - Slide
- 13 - Capsule ejector lever
- 14 - Rod
- 15 - Rod snap rings
- 16 - Hydraulic piston quick coupling

- remove the 4 fastening screws with a screwdriver and remove the piercing filter;
- disassemble the upper piston;
- disassemble the filter and the piston seal.

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 two reference notches match and that the coffee unit is inserted;
- check the efficiency of the seals, lubricating them with food safe grease.

The piercing filter must be replaced in any case.

Important notice!!!

During reassembly, check that the handle pin of the ratiomotor is correctly engaged in its seat.

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;

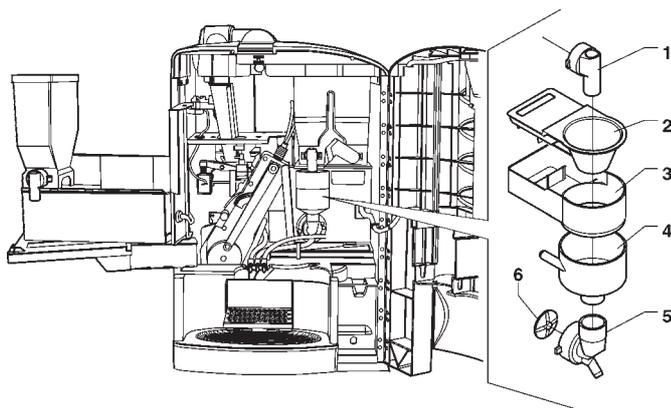


Fig. 23

- 1 - Powder feeder
- 2 - Powder funnel
- 3 - Powder deposit box
- 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. 23);
- in order to remove the impellers, block the disk fitted on the mixer shaft with a finger (see Fig. 24);

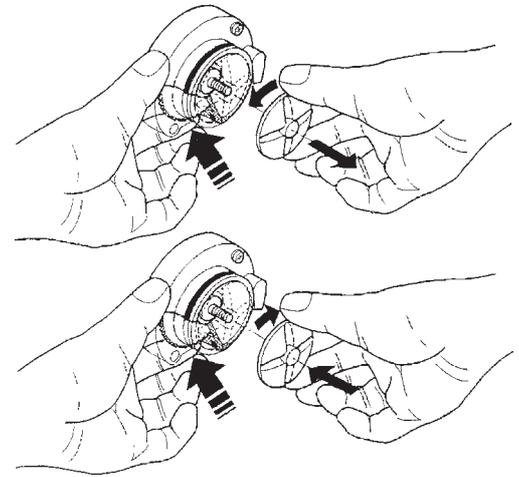


Fig. 24

- 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 sanitising products.

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

REGENERATING THE SOFTENER UNIT

(OPTIONAL)

Only a 2-litre ion-exchange resin softener unit can be used on these machines.

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

Water hardness		N. of selections	
°fH	°dH	60 cc.	130 cc.
10	5.6	5600	2800
20	11.2	2800	1400
30	16.8	1900	900
40	22.4	1400	700
50	28.0	1100	550

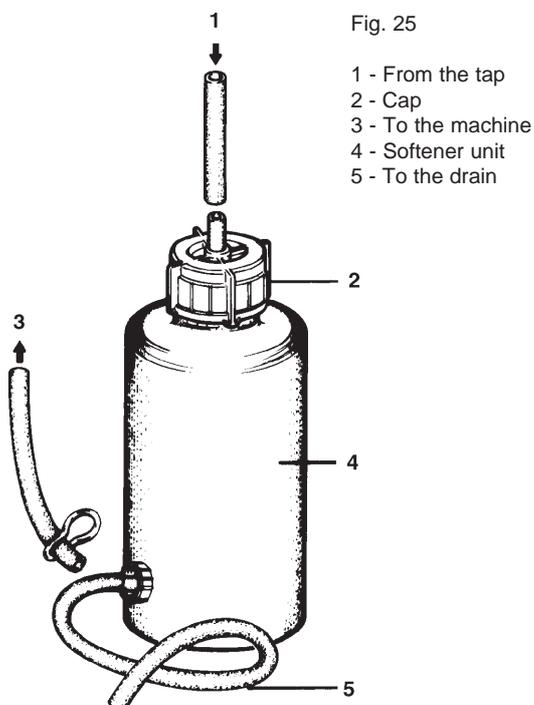
To regenerate the resins correctly do as follows:

- remove the softener unit from the cabinet and shake it vigorously to eliminate any preferential paths which may have formed;
- fill 0.5 Kg. of sodium chloride (ordinary table salt);
- connect the side hose union to a tap and the middle rubber-holder to a drain point;

The direction of the water flow must be

NECESSARILY

the one shown in figure 25



- adjust the water flow in such a way as to completely dissolve the salt in 10 litres water within 25 minutes;
- during the regeneration operation, ensure that the softener unit is always full of water, bleeding any air which may have entered;
- at the end of this operation ensure that outlet water is no longer salted; it is advisable to check the hardness of the water by means of appropriate chemical reagents, the outlet water hardness should be 0°fH.

PERIODICAL CLEANING

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 as described below.

SANITISING

- all parts in contact with food, including the hoses, must be removed from the machine and fully disassembled;
- all visible residue and product films are mechanically removed using brushes or similar tools, if necessary;
- all components must be soaked in a sanitising solution for at least 20 minutes;
- the machine 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 mixers and the foodstuff circuits" should be repeated.

CLEANING THE PRODUCT CONTAINERS

- Remove the containers from the machine;
- undo the product ports and slide out the augers from back of the container;
- clean all parts in a solution of hot water and sanitising products and dry thoroughly.

CLEANING THE CAPSULE RELEASE DEVICE

At least once a year, or more frequently according to the use of the machine, clean the capsule convey and release device, operative as follows:

- disassemble the release device by pressing on the fastening tabs and pulling downwards;
- remove the capsule chute cover by slightly pressing on the chute.

When reassembling the components pay special attention to:

- completely secure the cover of the chute;
- fasten the release device manually keeping the release control lever pressed so that the dispensing levers stay outside the release levers.

CLEANING THE PRODUCT CONTAINERS

- Remove the containers from the machine;
- undo the product ports and slide out the augers from back of the container;
- clean all parts in a solution of hot water and sanitising products and dry thoroughly.

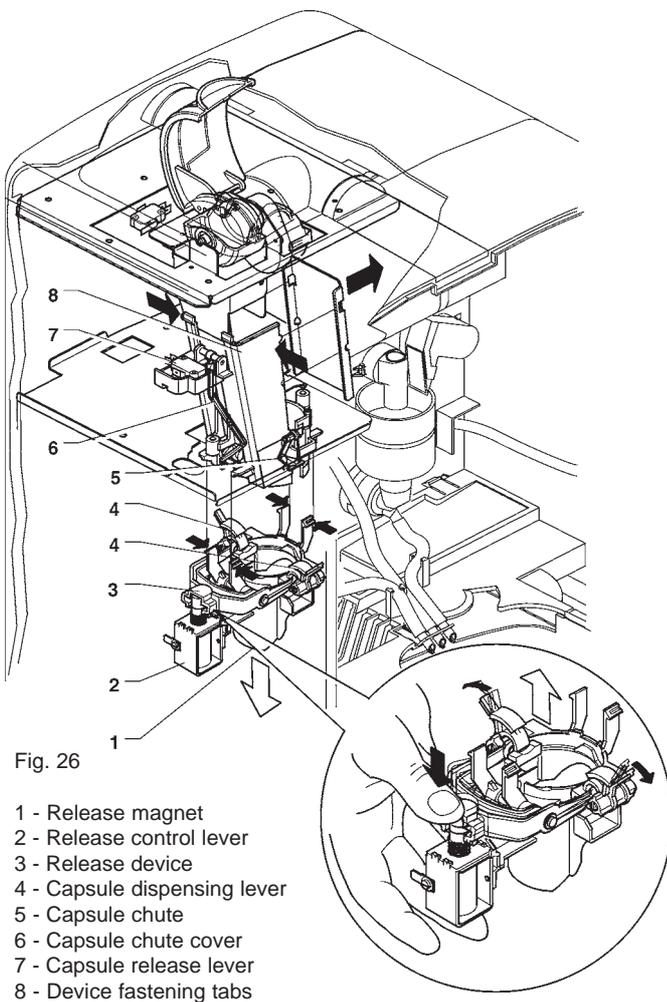


Fig. 26

- 1 - Release magnet
- 2 - Release control lever
- 3 - Release device
- 4 - Capsule dispensing lever
- 5 - Capsule chute
- 6 - Capsule chute cover
- 7 - Capsule release lever
- 8 - Device fastening tabs

PRINTED BOARD FUNCTIONS AND INDICATOR LAMPS

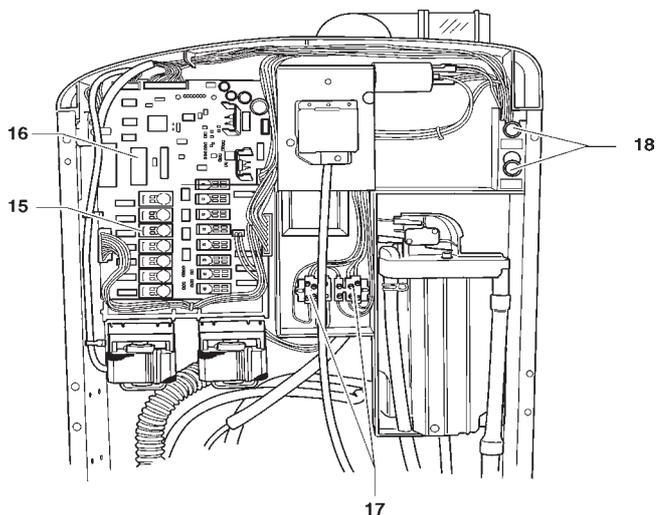
CONTROL BOARD

This board, placed at the back of the machine, (see Fig. 26) 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 125 mA T 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. 26).

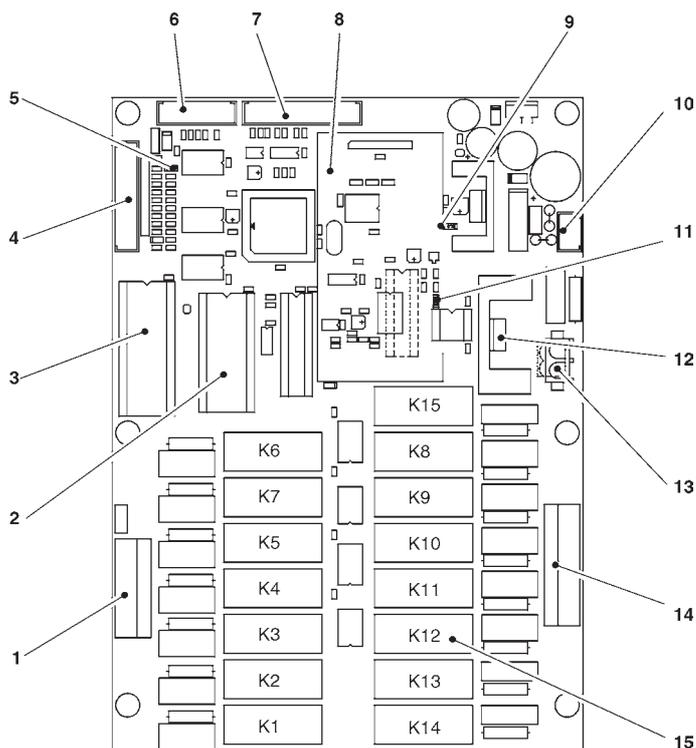
- the yellow LED indicates the presence of 12 V DC;
- the green LED blinking indicates that the microprocessor is working correctly;
- the red LED indicates the operating status of the boiler heating element.



- 1 - 120 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 - Green LED
- 10 - Board power supply
- 11 - Red LED
- 12 - Boiler heating element triac
- 13 - To boiler heating element
- 14 - 120 V~ users
- 15 - Relays K1÷K15
- 16 - C.P.U. board
- 17 - Transformer fuses
- 18 - Mains fuse

Fig. 26

RELAY	POWER USER
K1	ER
K2	ESC
K3	ESP2
K4	PM
K5	M
K6	EV2
K7	EV1
K8	MF1
K9	MDZ
K10	MD2
K11	MD1
K12	EEA
K13	MTP
K14	MTP
K15	MSP



PAYMENT SYSTEMS EXPANSION BOARD

This board (see Fig. 27) is supplied with the installation kit of “change giver” or “cashless” payment systems. It must be connected to the control board using the special connector.

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

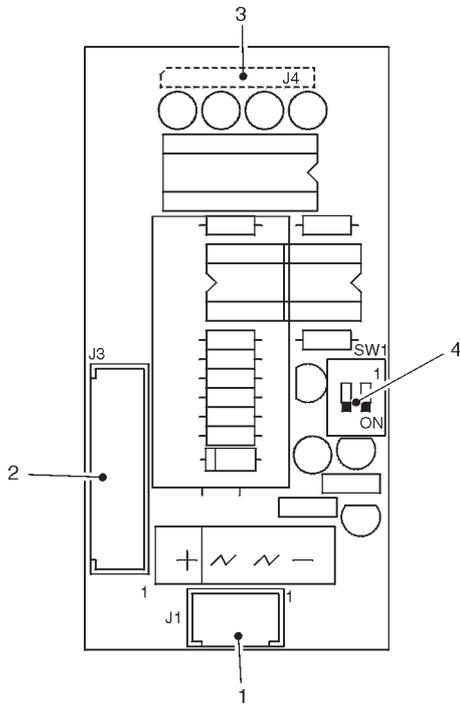


Fig. 27

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

PUSH-BUTTON BOARD

This board controls the alphanumeric display, the selection buttons and the programming button (see Fig 28). It supports the coin mechanism connectors as well as the printer port.

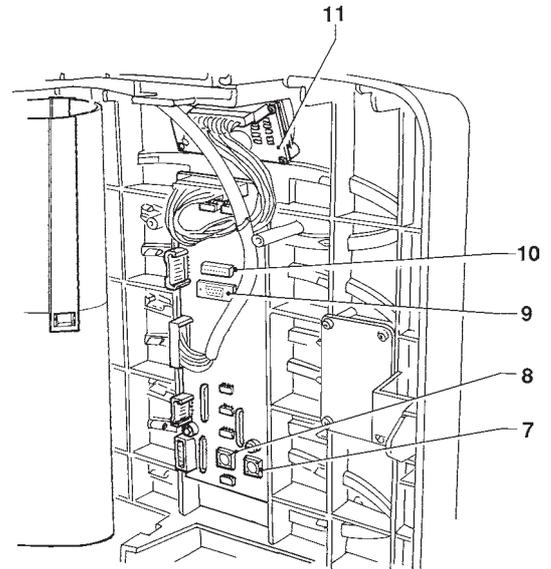
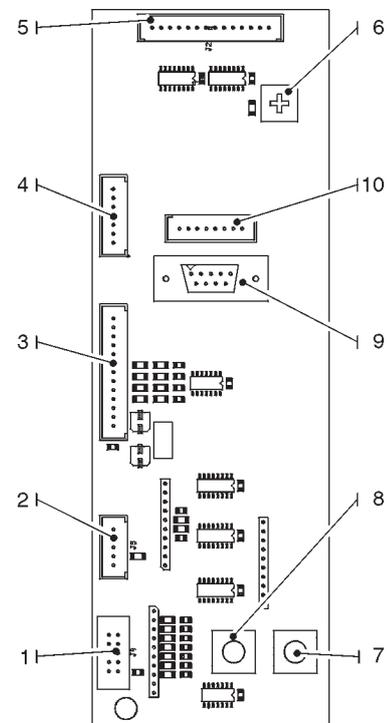
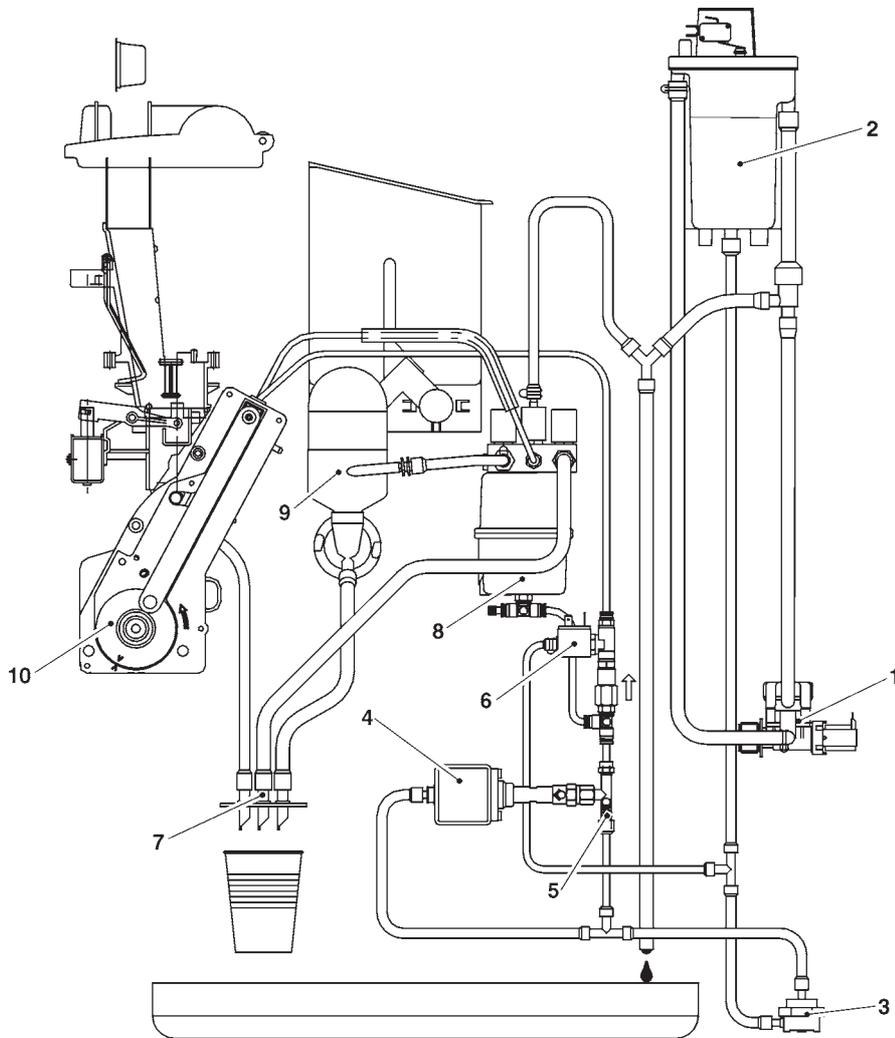


Fig. 28

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



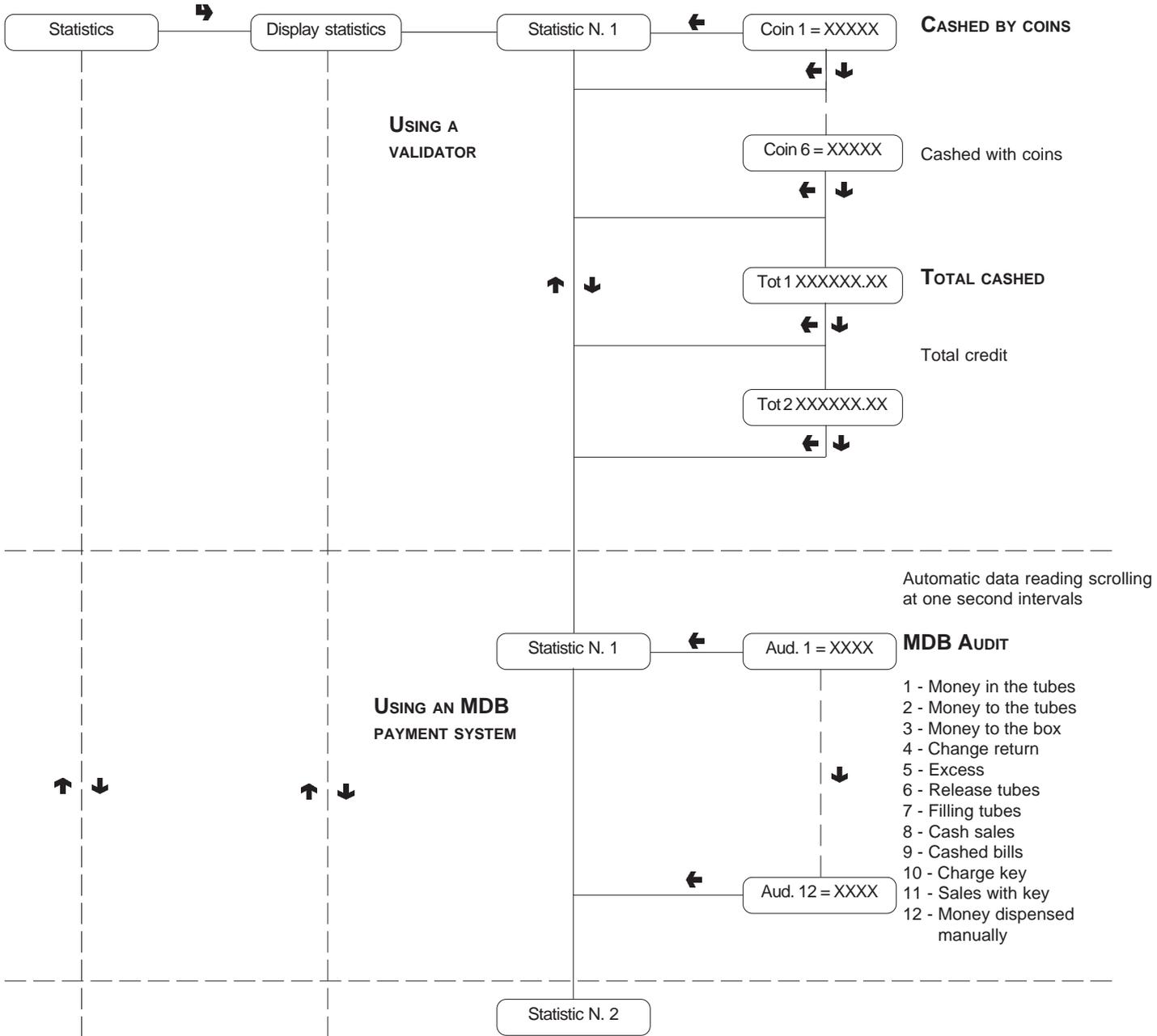
HYDRAULIC SYSTEM



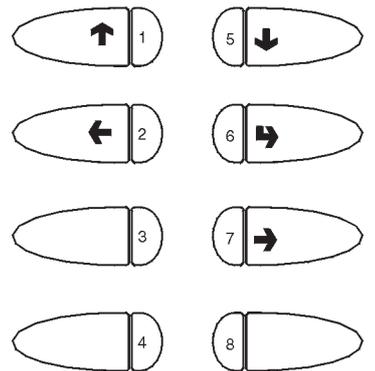
- 1 - Water inlet solenoid valve
- 2 - Air-break
- 3 - Volumetric counter
- 4 - Vibration pump
- 5 - 9 bar brewing bypass valve

- 6 - Activation solenoid valve and piston purge
- 7 - Dispensing spouts
- 8 - Boiler
- 9 - Instant drink mixer
- 10 - Brewer unit

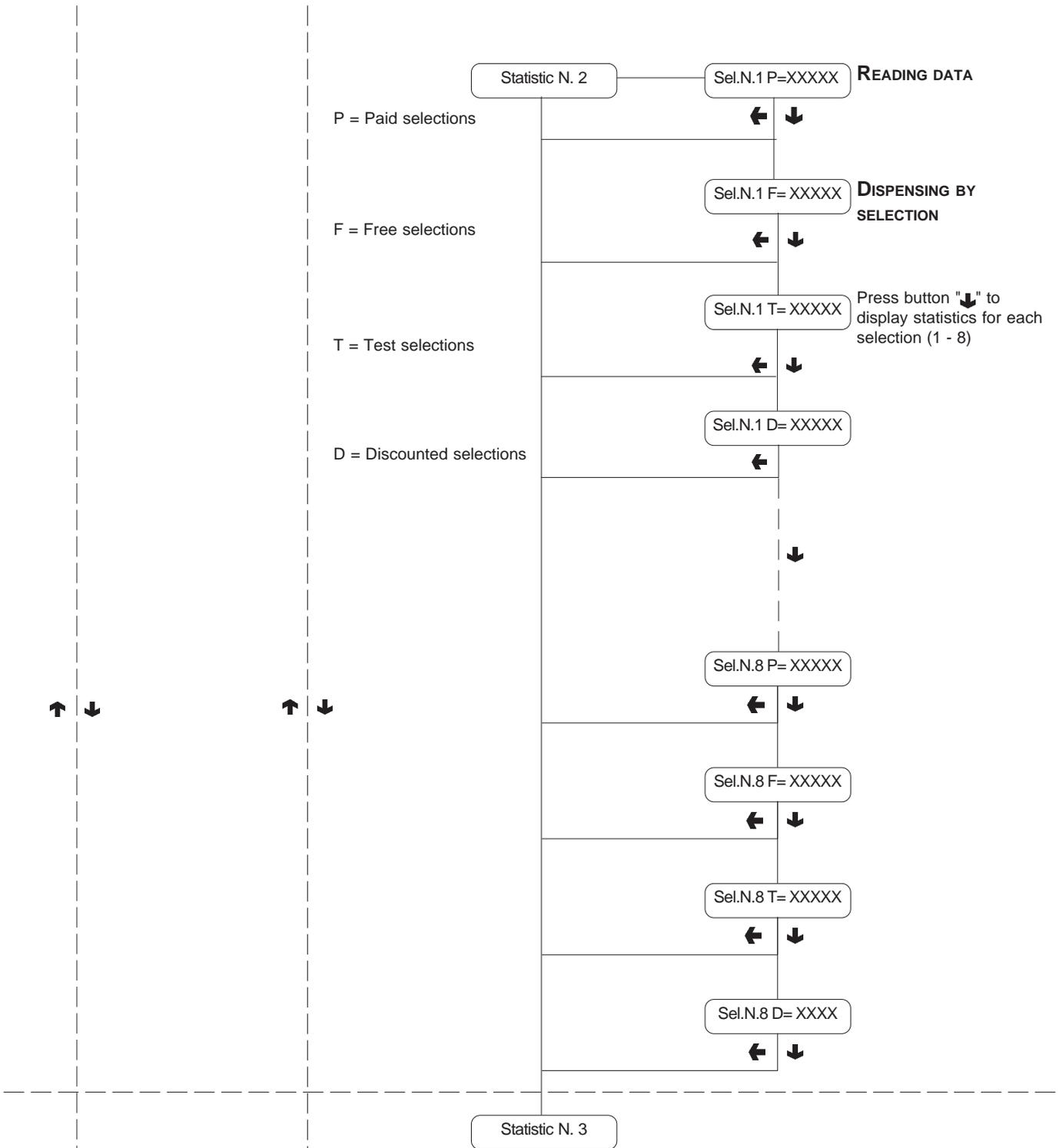
"Maintenance" menu



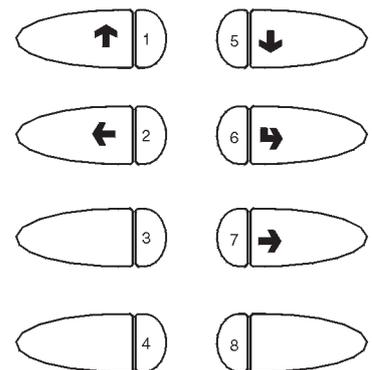
- 1 - ↑ Previous function / Increase data unit (+1)
- 2 - ← Exit function / Cancel change
- 3 -
- 4 -
- 5 - ↓ Next function / Decrease data unit (- 1)
- 6 - → Confirm function / Confirm data unit
- 7 - → Change data item
- 8 -



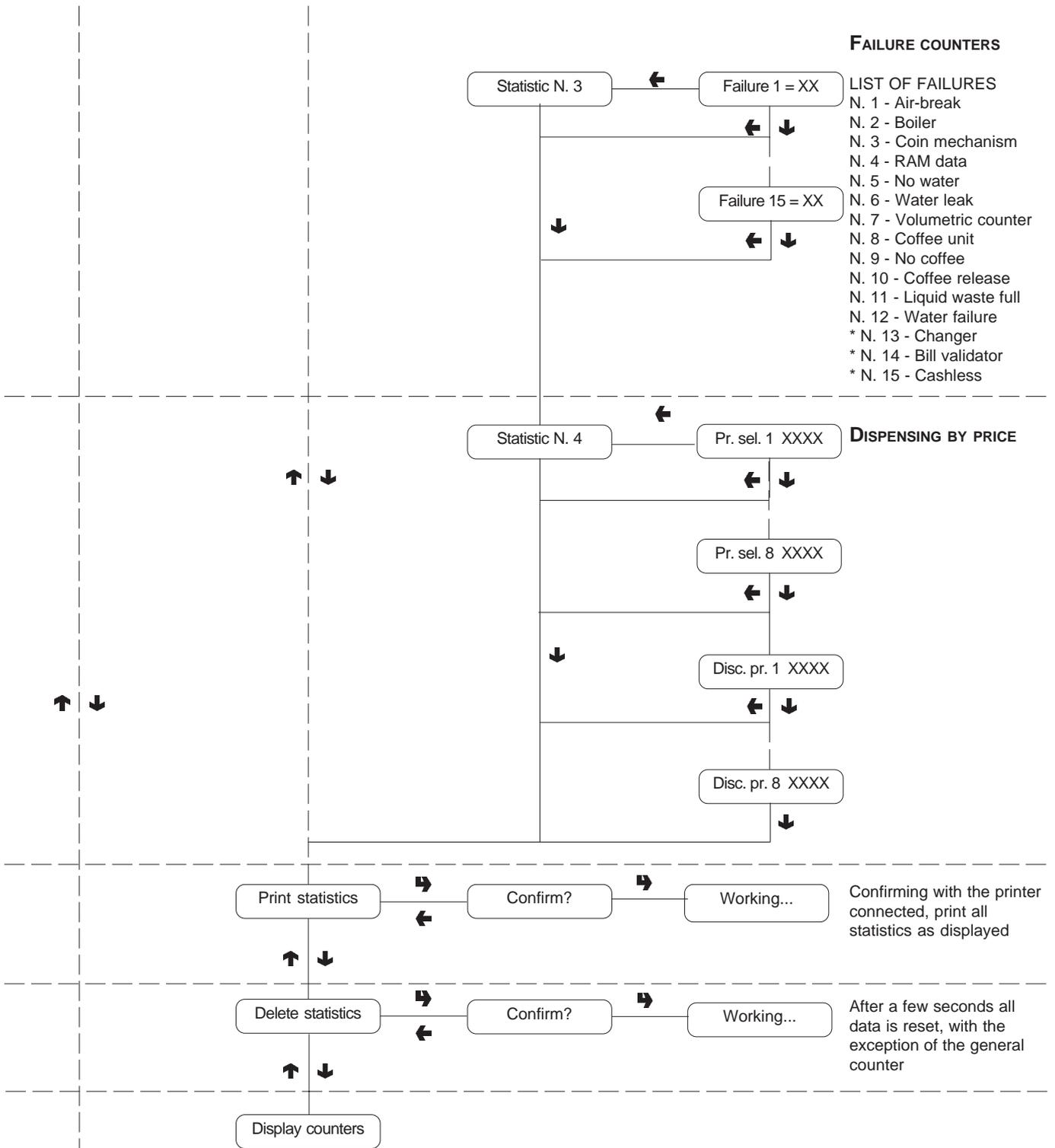
"Maintenance" menu



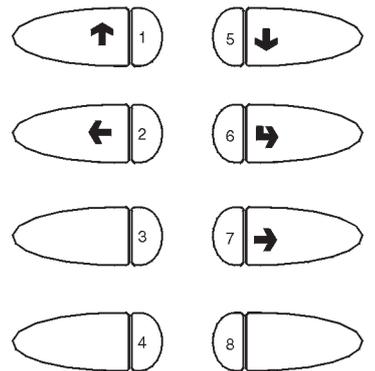
- 1 - ↑ Previous function / Increase data unit (+1)
- 2 - ← Exit function / Cancel change
- 3 -
- 4 -
- 5 - ↓ Next function / Decrease data unit (- 1)
- 6 - → Confirm function / Confirm data unit
- 7 - → Change data item
- 8 -



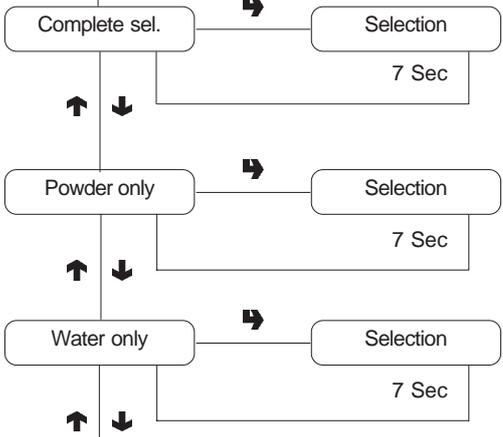
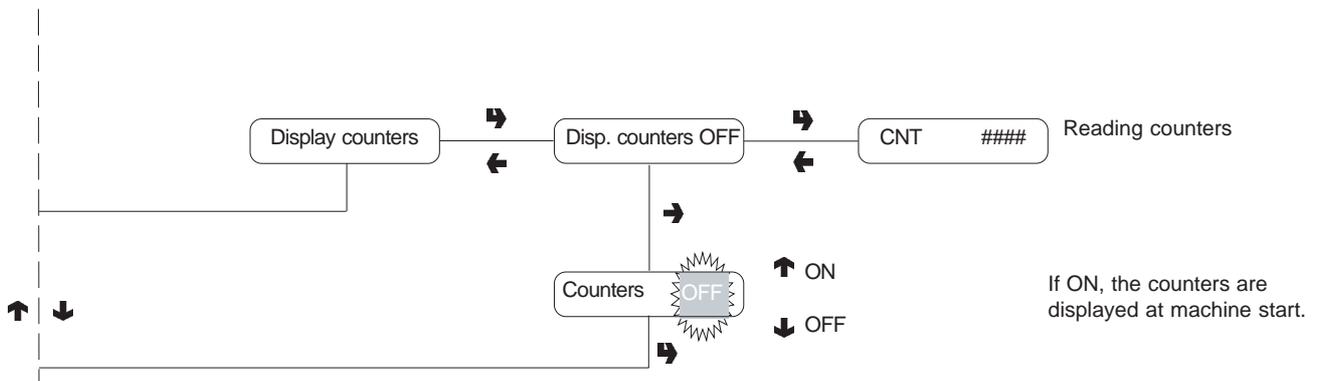
"Maintenance" menu



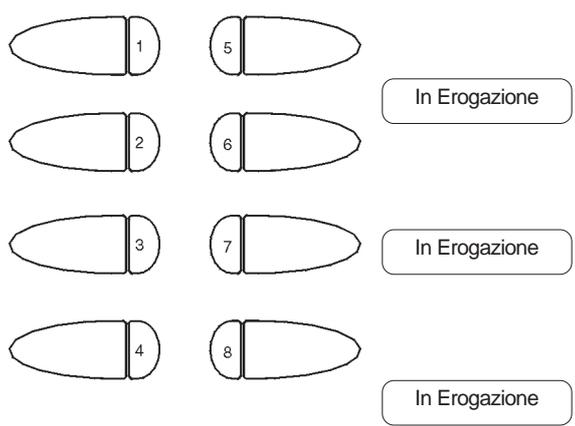
- 1 - ↑ Previous function / Increase data unit (+1)
- 2 - ← Exit function / Cancel change
- 3 -
- 4 -
- 5 - ↓ Next function / Decrease data unit (- 1)
- 6 - → Confirm function / Confirm data unit
- 7 - → Change data item
- 8 -



"Maintenance" menu



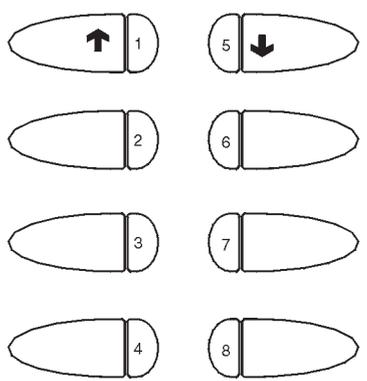
Menu



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Special functions

Key 2

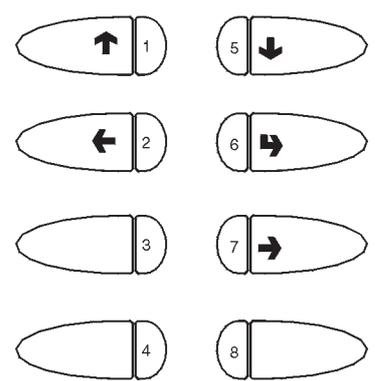


SPECIAL FUNCTIONS

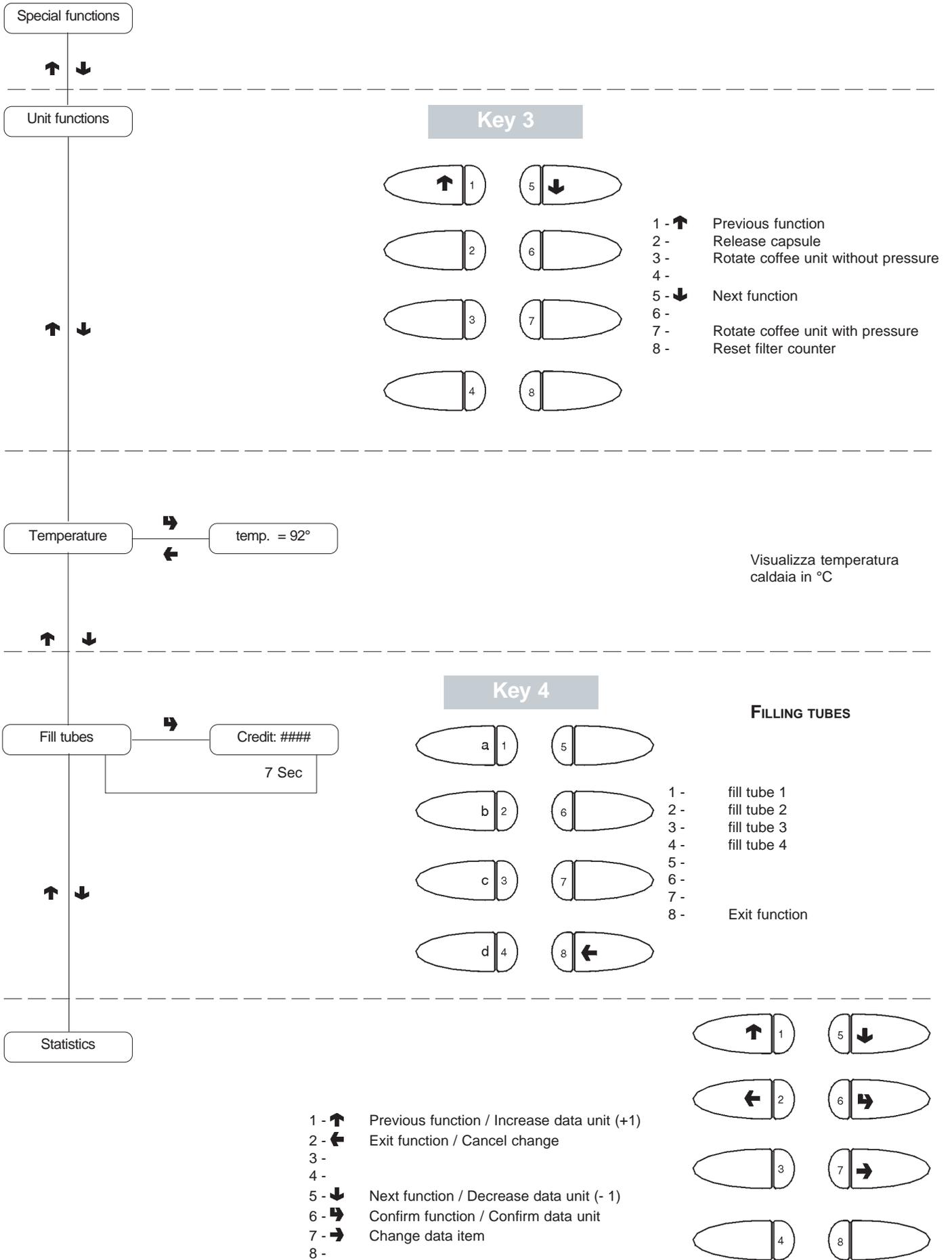
- 1 - ↑ Previous function
- 2 -
- 3 -
- 4 - Autotest
- 5 - ↓ Next function
- 6 - Rotate coffee unit
- 7 -
- 8 - Empty air-break

Unit functions

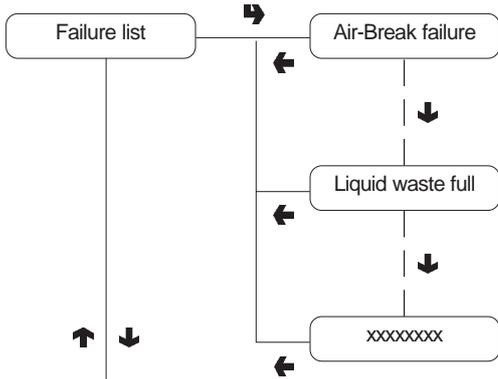
- 1 - ↑ Previous function / Increase data unit (+1)
- 2 - ← Exit function / Cancel change
- 3 -
- 4 -
- 5 - ↓ Next function / Decrease data unit (- 1)
- 6 - → Confirm function / Confirm data unit
- 7 - → Change data item
- 8 -



"Maintenance" menu



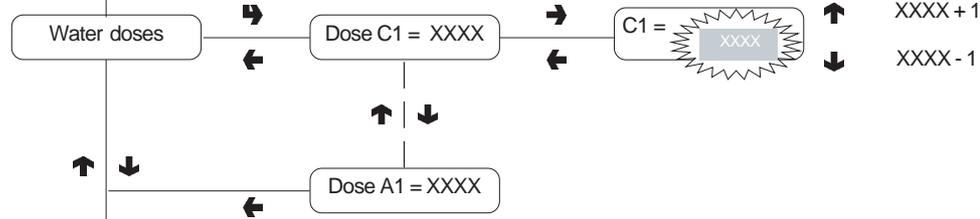
"Programming" menu



DISPLAY PRESENT FAILURES LIST OF FAILURES

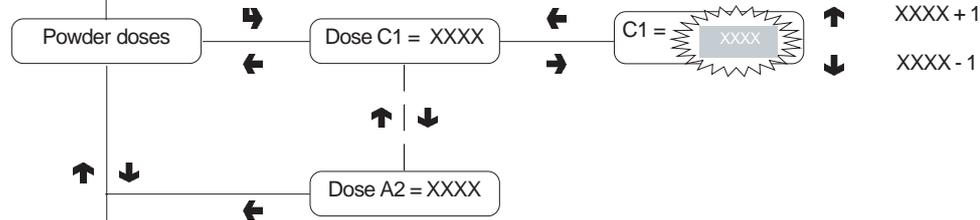
- N. 1 - Air-break
- N. 2 - Boiler
- N. 3 - Coin mechanism
- N. 4 - RAM data
- N. 5 - No water
- N. 6 - Water leak
- N. 7 - Volumetric counter
- N. 8 - Coffee unit
- N. 9 - No coffee
- N. 10 - Coffee release
- N. 11 - Liquid waste full
- N. 12 - Water failure
- * N. 13 - Changer
- * N. 14 - Bill validator
- * N. 15 - Cashless

* MDB only



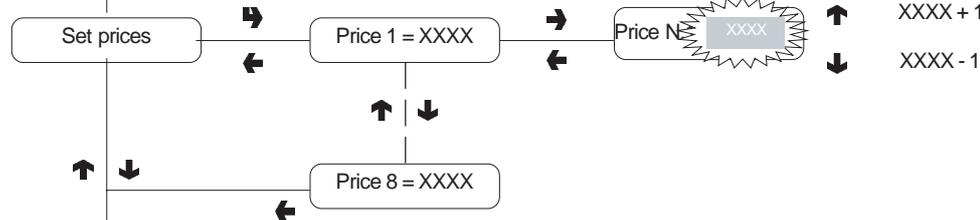
WATER DOSES

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

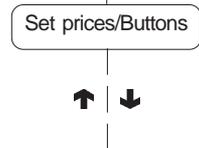


POWDER DOSES

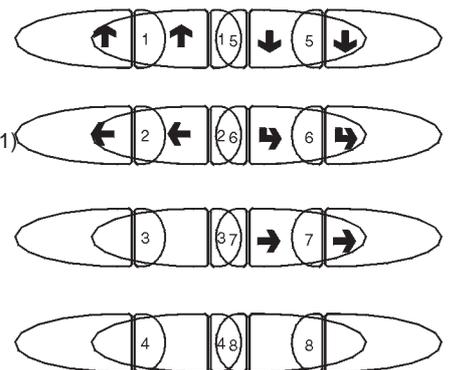
Refer to the selection dose table for the correspondence between dose code and powder dose



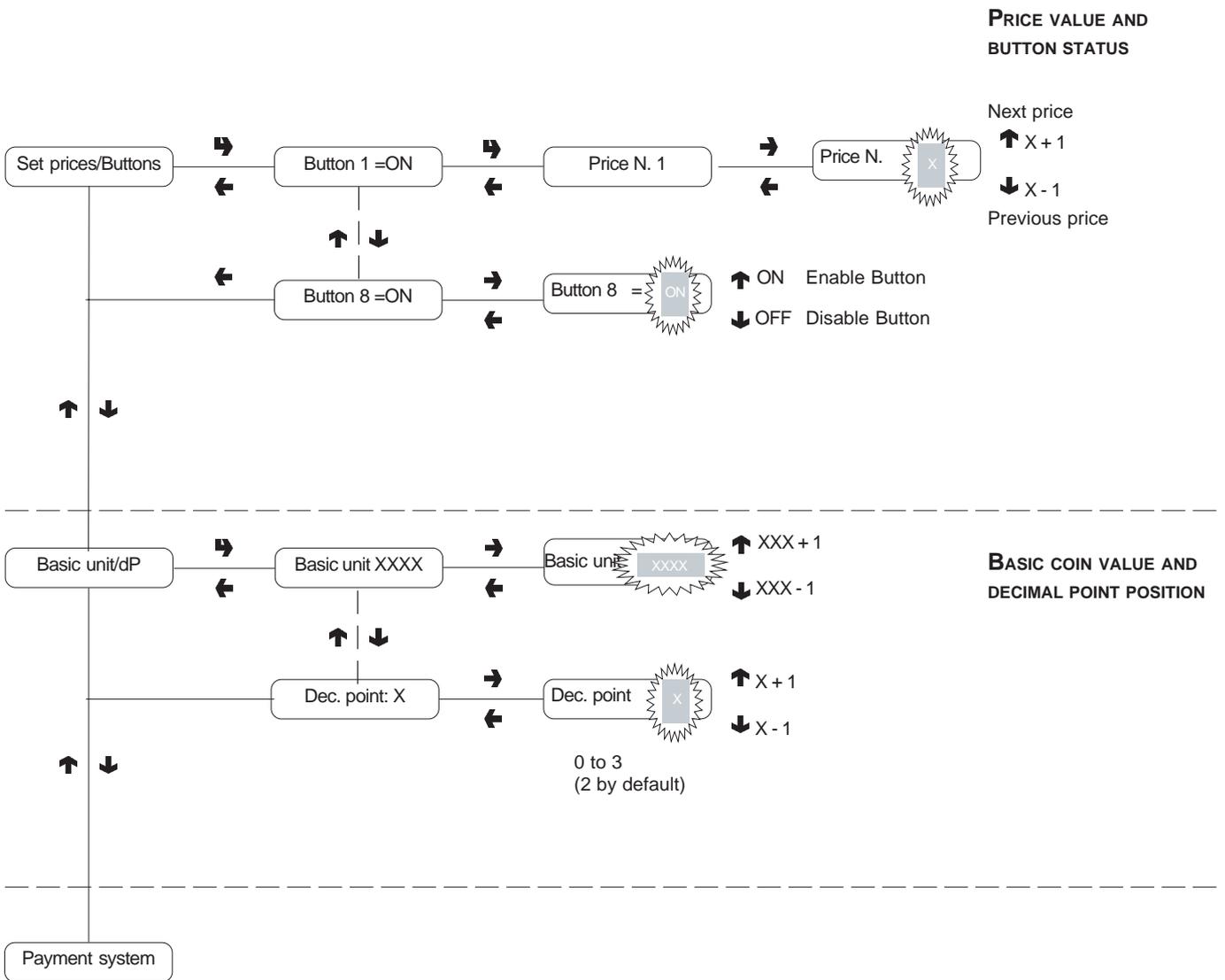
PRICE VALUE



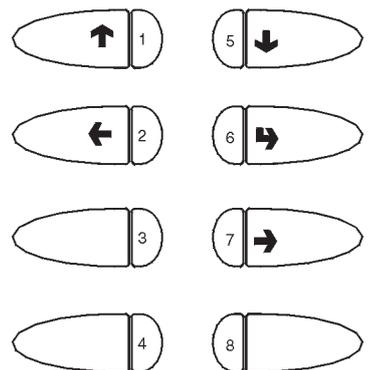
- 1 - ↑ Previous function / Increase data unit (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data unit (- 1)
- 6 - → Confirm function / Confirm data unit
- 7 - → Change data item
- 8 - Reset failures



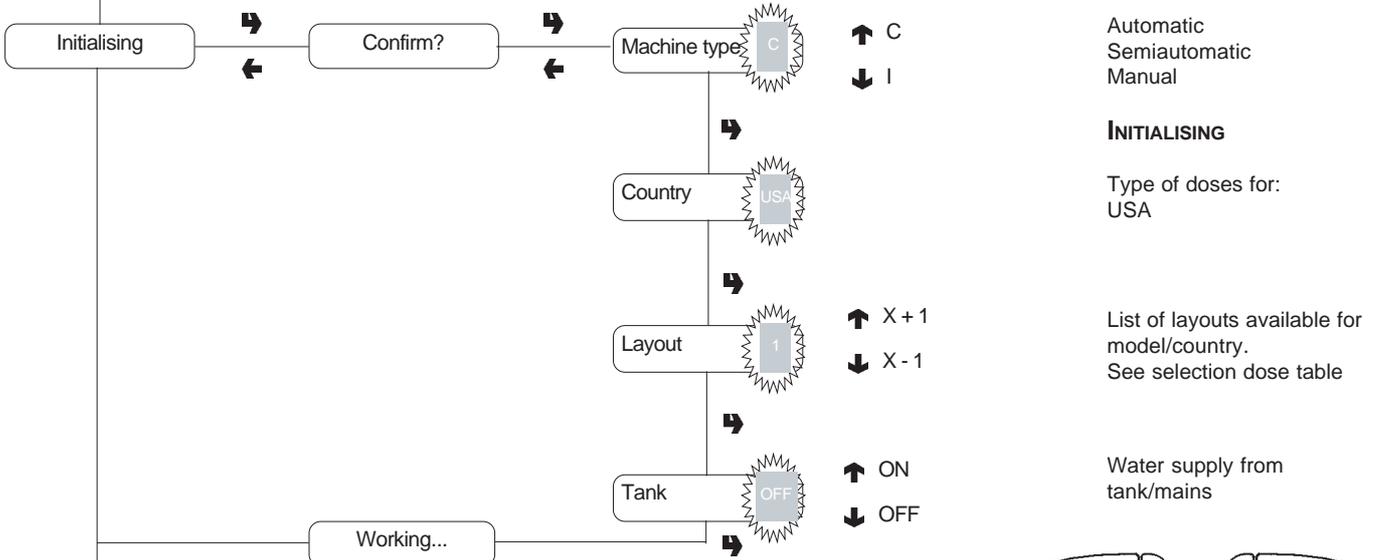
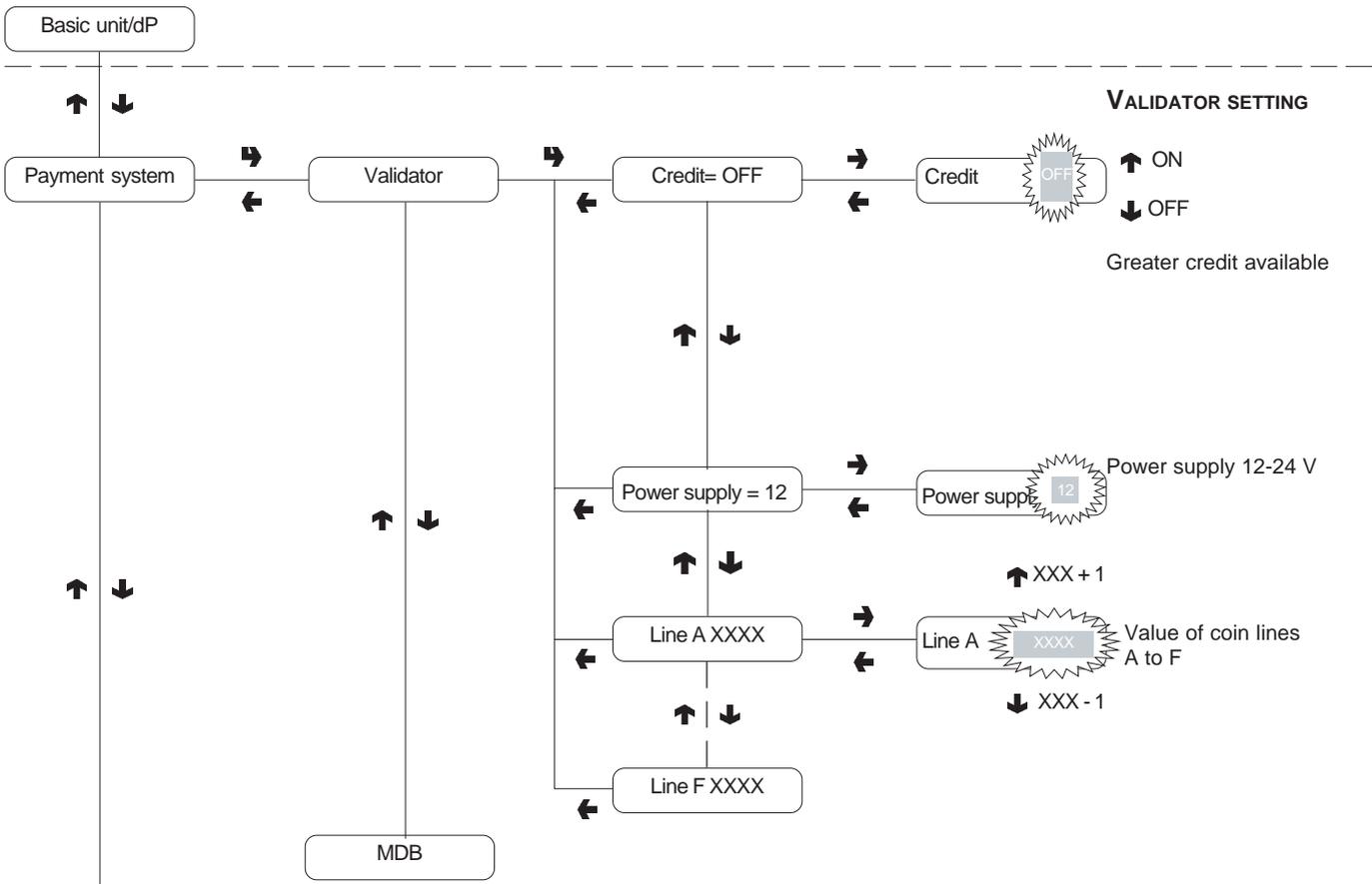
"Programming" menu



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

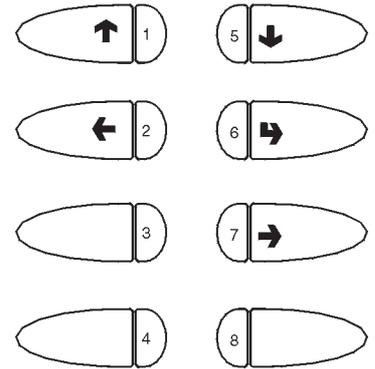


"Programming" menu

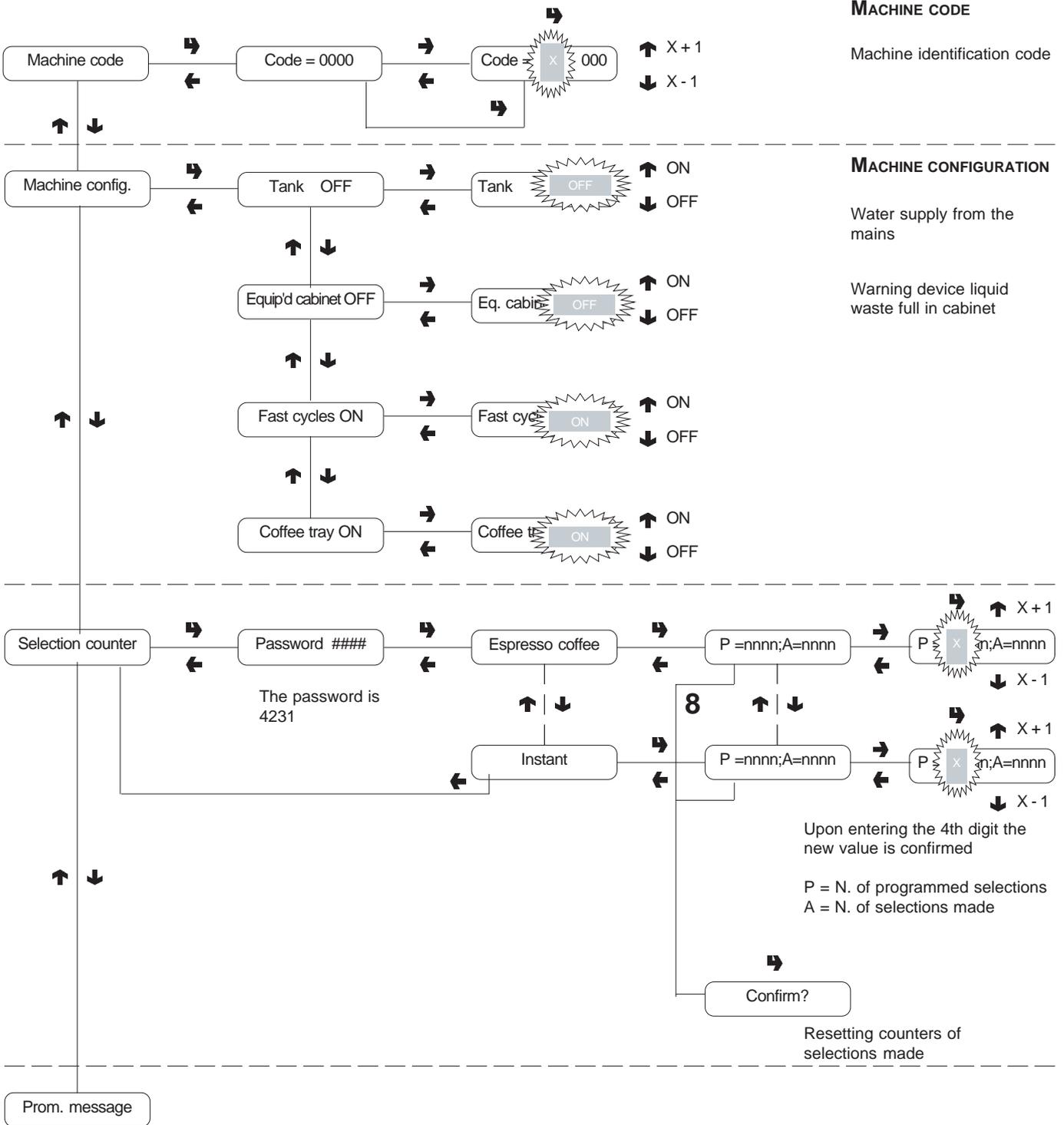


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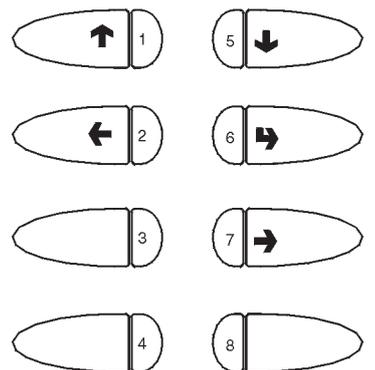
- 1 - ↑ Previous function / Increase data unit (+1)
- 2 - ← Exit function / Cancel change
- 3 - Machine installation
- 4 -
- 5 - ↓ Next function / Decrease data unit (- 1)
- 6 - → Confirm function / Confirm data unit
- 7 - → Change data item
- 8 - Reset failures



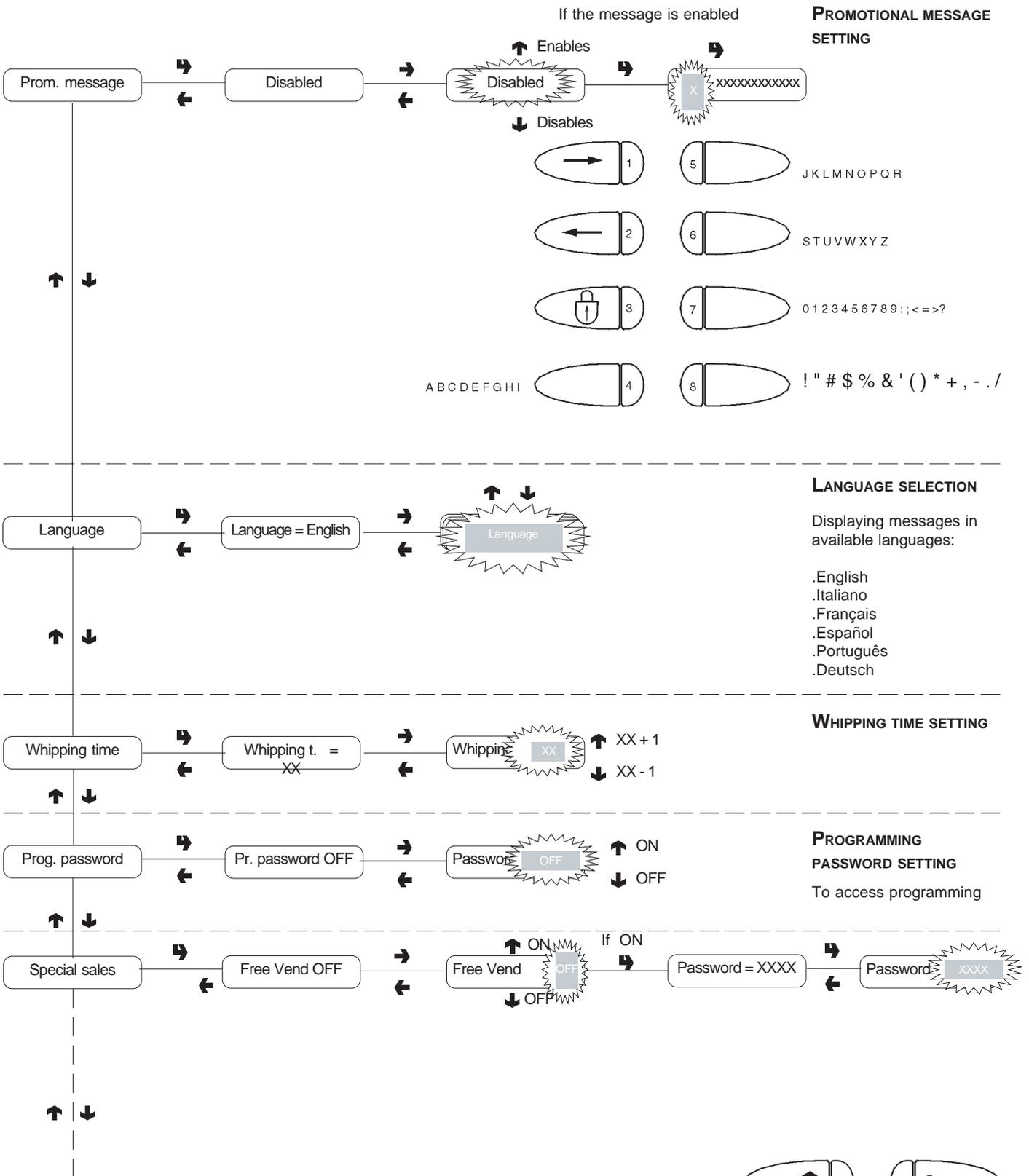
"Programming" menu



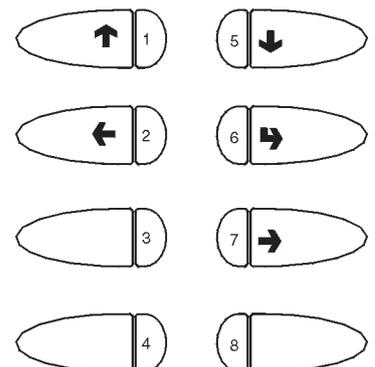
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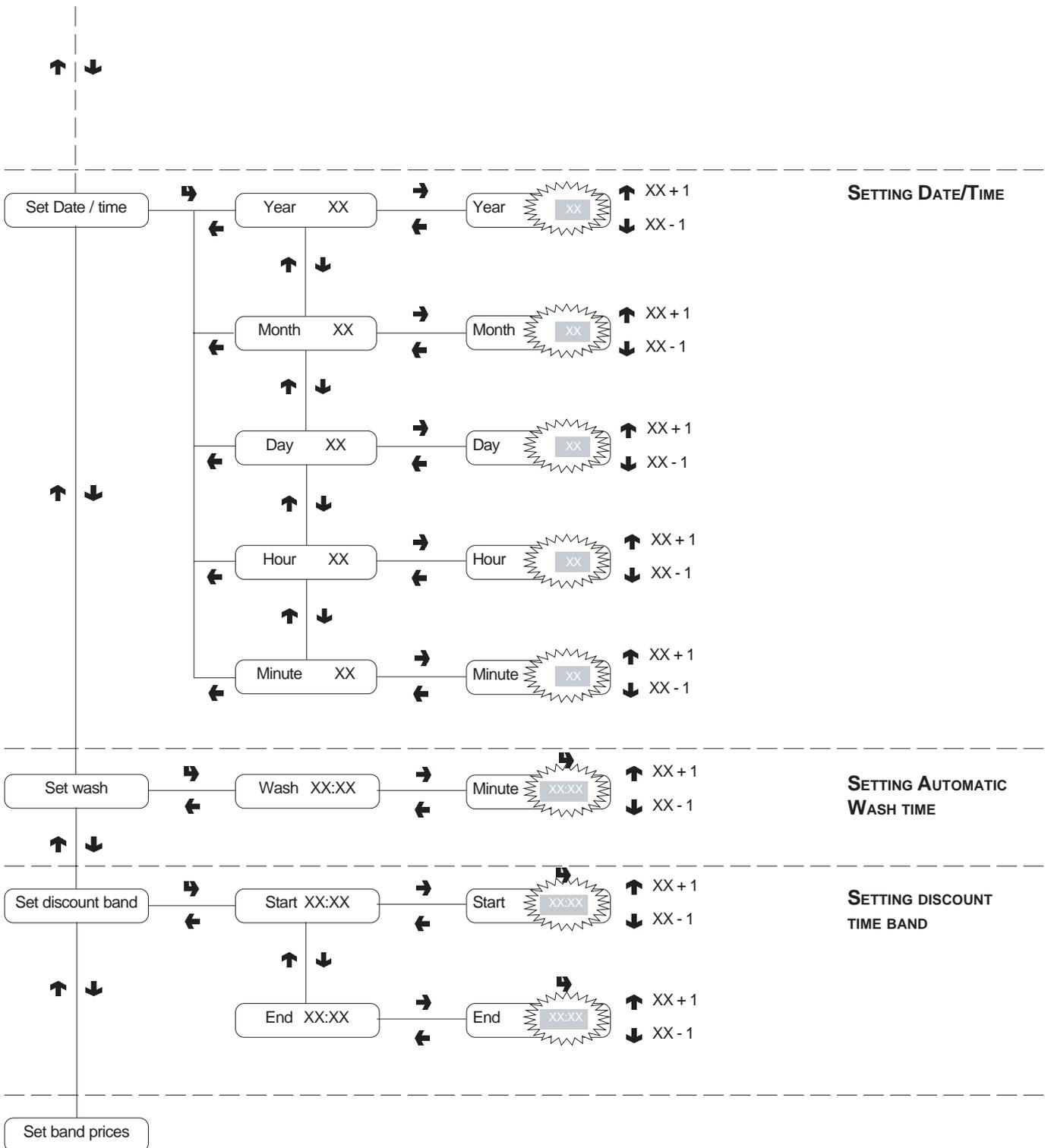
"Programming" menu



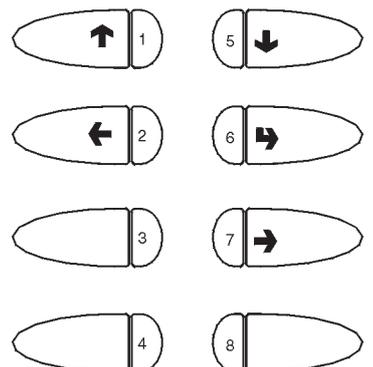
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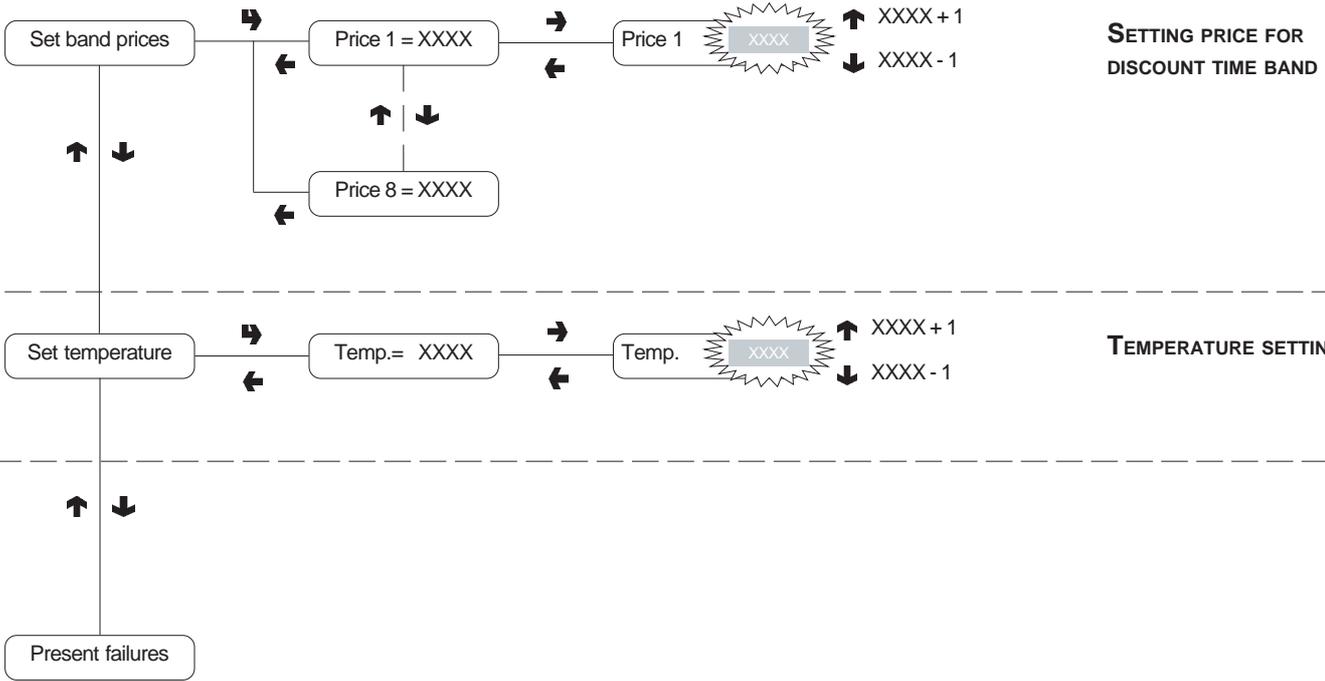
"Programming" menu



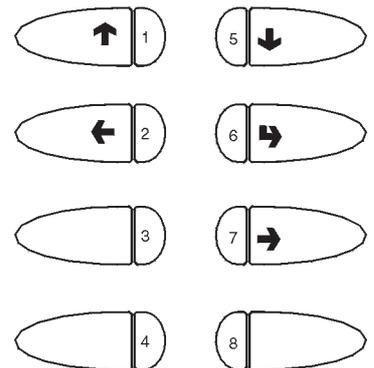
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"Programming" menu

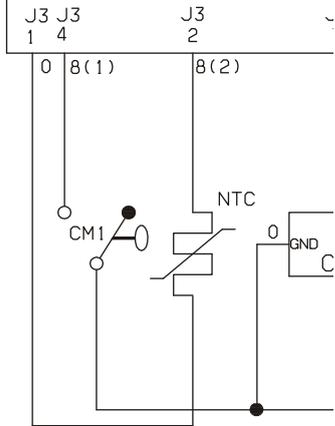
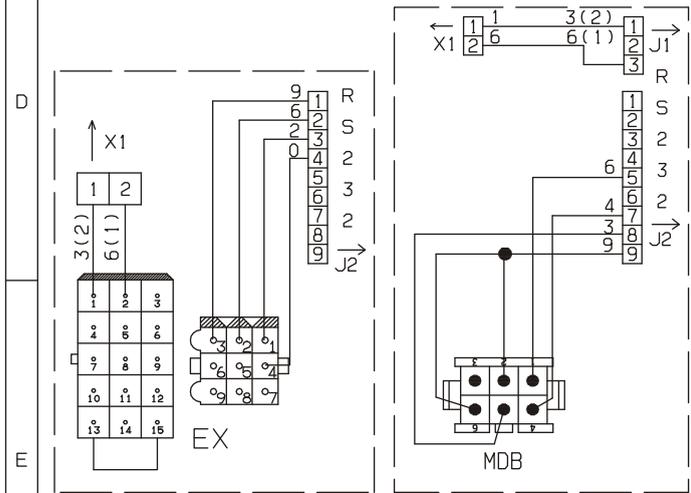
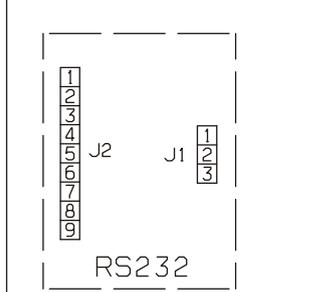
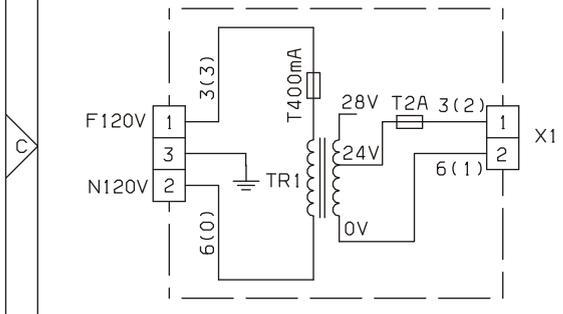
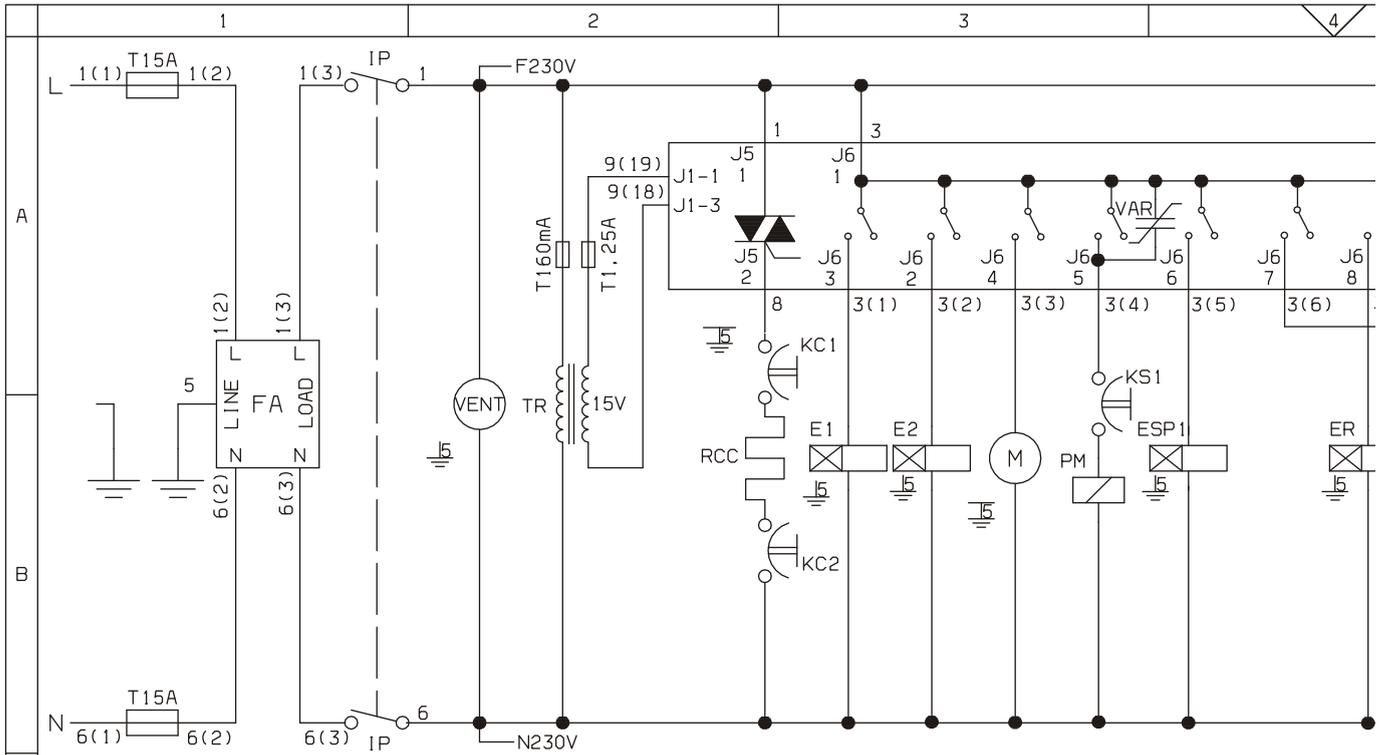


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WIRING DIAGRAM LEGEND

INITIALS	DESCRIPTION	INITIALS	DESCRIPTION
CM1	COFFEE UNIT MOTOR CAM	M	COFFEE UNIT MOTOR
CM2	COFFEE DISPENSING POSITION 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	MSP	STIRRER RELEASE MOTOR
ESC	COFFEE RELEASE MAGNET	NTC	TEMPERATURE PROBE
ESP1-..	DRAINING ELECTROVALVE	PM	PUMP
EX	EXECUTIVE COIN MECH CONNECTOR	RCC	COFFEE BOILER HEATING ELEMENT
FA	RADIO INTERFERENCE SUPPRESSOR	REED	NO WATER WARNING DEVICE
IMSP	STIRRER RELEASE MICRO-SWITCH	RS232	SERIAL PORT
IP	DOOR SWITCH	SM1	CONTROL BOARD
IPC	FULL PODS CONTAINER SWITCH	SP	PUSH-BUTTON BOARD
IPF	WASTE CONTAINER OVERFLOW SWITCH	TR	TRANSFORMER
ISA	OPEN DISP COMPART FLAP SWITCH	TR1	TRANSFORMER 230 V 24 V
IVA	EMPTY BOILER MICRO-SWITCH	TX....	DELAYED FUSE (X=CURRENT)
KC1-..	COFFEE BOILER CUTOUT	VAR	VARISTOR
KS1-..	SAFETY CUTOUT	VENT	FAN
LCD	LIQUID CRYSTAL DISPLAY		

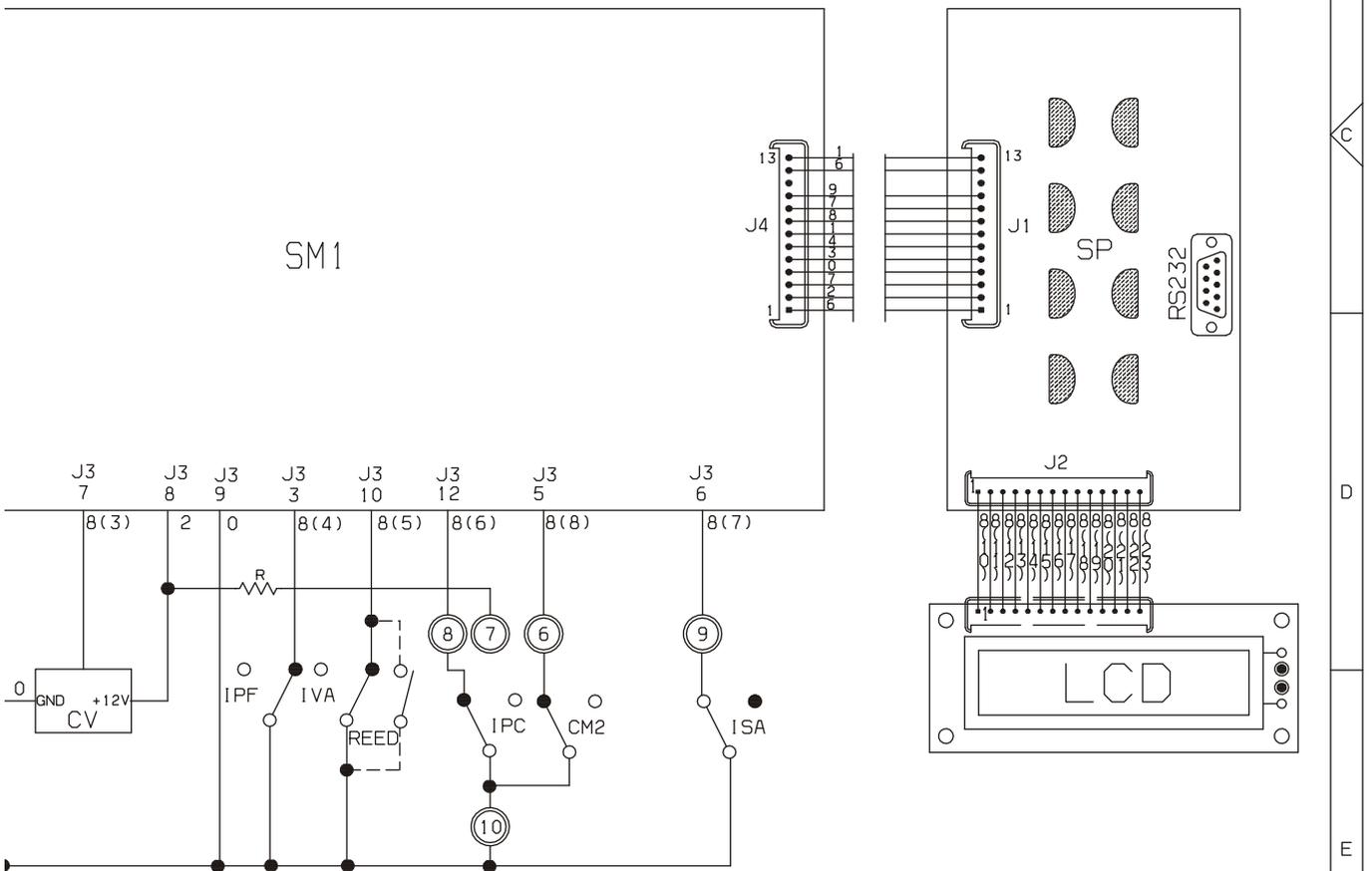
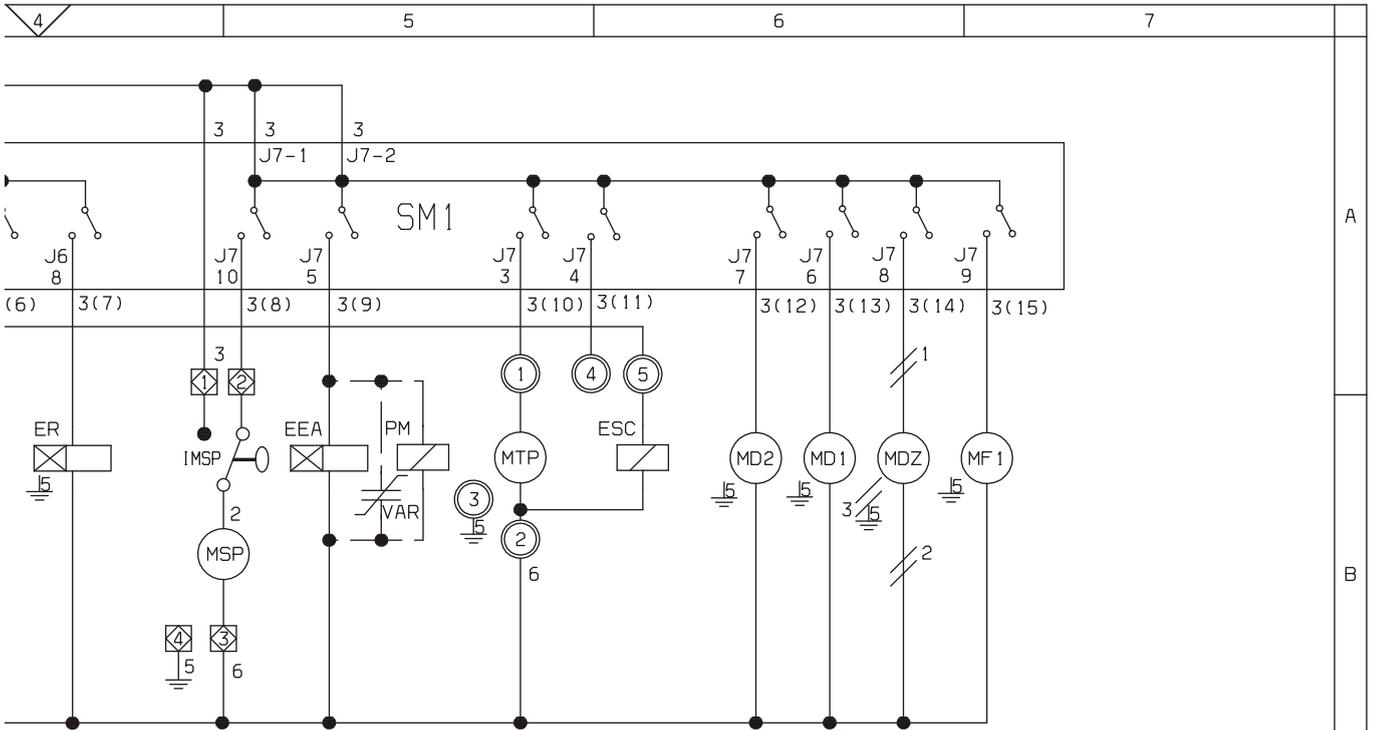


NECTA VENDING SOLUTIONS S.P.A.
 SI RISERVA A TERMINI DI LEGGE
 LA PROPRIETA' DEL PRESENTE
 DISEGNO CON DIVIETO DI
 RIPRODURLO O DIVULGARLO SENZA
 SUA PREVIA AUTORIZZAZIONE

- 0 NERO
- 1 MARRONE
- 2 ROSSO
- 3 ARANCIO
- 4 GIALLO
- 5 VERDE
- 6 AZZURRO
- 7 VIOLA
- 8 GRIGIO
- 9 BIANCO
- 0 BLACK
- 1 BROWN
- 2 RED
- 3 ORANGE
- 4 YELLOW
- 5 GREEN
- 6 BLUE
- 7 LIGHT BLUE
- 8 PINK
- 9 VIOLET
- 0 GREY
- 1 WHITE
- 0 NOIR
- 1 MARRON
- 2 ROUGE
- 3 ORANGE
- 4 JAUNE
- 5 VERT
- 6 BLEU
- 7 BLEU CIEL
- 8 ROSE
- 9 GRIS
- 0 BLANC
- 1 SCHWARZ
- 2 BRAUN
- 3 ROT
- 4 GELB
- 5 GRUEN
- 6 BLAU
- 7 HELLBLAU
- 8 ROSA
- 9 LILLA
- 0 GRAU
- 1 WEISS
- 2 NEGRO
- 3 MARRON
- 4 MARRONJA
- 5 AMARILLO
- 6 OSCURO
- 7 AZUL CLARO
- 8 ROSA
- 9 BLANCO

NEC
 VEN
 A cc
 N&V





8 GRIS 3 BILANCO	NECTA VENDING SOLUTIONS SpA A company of N&W GLOBAL VENDING GROUP		MODELLO LB 3202 120 V UL	GRUPPO SCHEMA ELETTRICO FUNZIONALE MANUALE	DATA 15-03-04	FOGLIO 1 / 1	DISEGNATO BONACINA	CONTROLLATO MONGUZZI
					LEGENDA		CODICE 608542200	
	4	5	6	7				



The Manufacturer reserves the right to modify, without prior notice, the characteristics of the equipment described in this publication; and further declines to accept any responsibility for any inaccuracies contained in this publication which can be ascribed to printing and/or transcription errors.

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