INSTALLATION, USE AND MAINTENANCE MANUAL

NECTA

Colibrì

Espresso

SEMI-AUTOMATIC

Instant

USA English

CE

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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

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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.

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09-2003 228 00

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.
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.

Non-standard devices will be indicated as “optional”.

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 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 THE EVENT OF FAILURES

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:

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24030 Valbrembo
Italy - Tel. +39 - 035606111

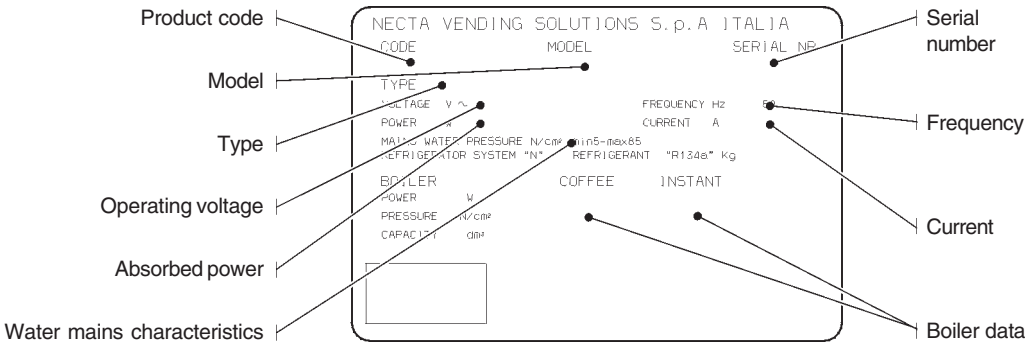
TRANSPORT AND STORAGE

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.



USING THE VENDING MACHINES FOR 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.

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:

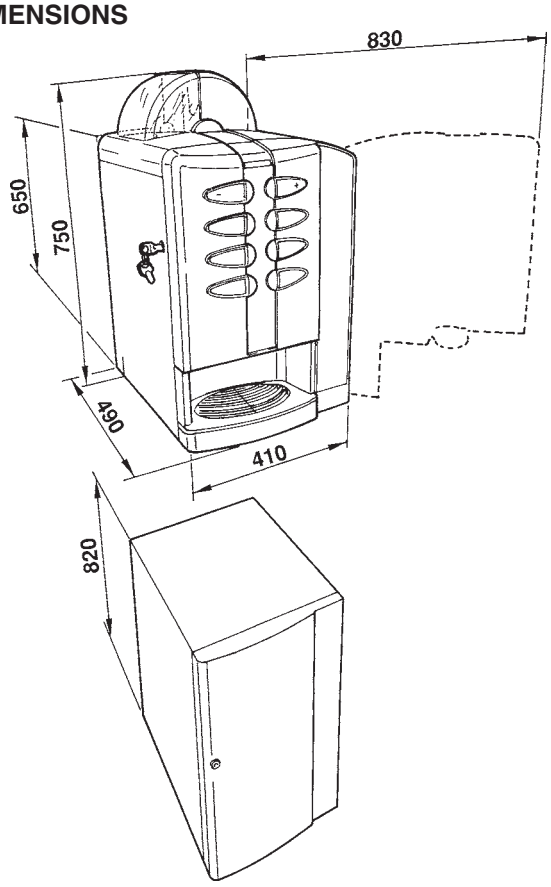
- ferrous and plastic materials and the like are to be disposed of in authorized areas only;

- insulating materials should be recovered by qualified companies.

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TECHNICAL SPECIFICATIONS

DIMENSIONS



Height	=	25.59"
Height with coffee hopper	=	29.13"
Width	=	16.14"
Depth	=	19.29"
Overall depth with door open	=	32.67"
Height of cabinet	=	32.28"

Weight

Colibrì	Espresso	Instant
Kg.	38	33

Power supply voltage	120 V~
Power supply frequency	60 Hz
Installed power	1.300 W

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, MDB or BDV protocol. The machine can accommodate the “cashless” payment system, while the “change-giver” payment system must be installed in the special support cabinet (optional).

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

From the mains, with a water pressure of 5 to 85 N/cm^2. A self-contained water supply kit (tank + accessories) can be installed in the support cabinet (optional).

AVAILABLE ADJUSTMENTS

- Grade of grinding for espresso coffee
- Coffee and water doses by volume
- Time adjustment for instant products
- Temperature via software (see “temperature setting” in the programming menu)

CONTROLS

- Presence of water
- Presence of coffee
- Operating temperature reached

SAFETY DEVICES

- Door switch
- Presence of coffee waste container (Espresso models only)
- 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)
- Timer protection for:
  - Pump
  - Coffee unit ratiomotor
  - Coffee grinder
- Overheating protection for:
  - Doser units
  - Coffee unit ratiomotor
  - Magnets
  - Pump
  - Mixers
  - Coffee grinder motor
- Fuse protection for:
  - Main electrical circuit
  - Board power supply transformer

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CAPACITY OF CONTAINERS

Capacity of containers (Kg)	Espresso	Instant
Coffee beans	2	-
Ground decaffeinated coffee	0.4	-
Instant decaffeinated coffee	-	0.6
Instant coffee	-	0.5
Milk	0.8	0.8
Chocolate	1	1
French Vanilla	1.4	1.4

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	Instant
Drink for 30 selections	0.96 litre	1.21 litre
Average drink temperature	76.2° C	76.1° C
Power consumption		
To reach operating temperature	28,6 Wh	28,6 Wh
24 h stand-by	1414 Wh	1414 Wh
30 selections/hour	171.2 Wh	152.9 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.

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.

The machine must be installed in a dry room with temperature between 2°C and 32°C.

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

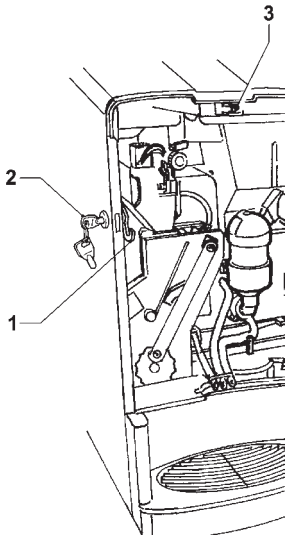


Fig. 1

1 - Door lock bolt
2 - Door lock
3 - Door switch

The door can be closed only after removing the key.

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, 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. 2).

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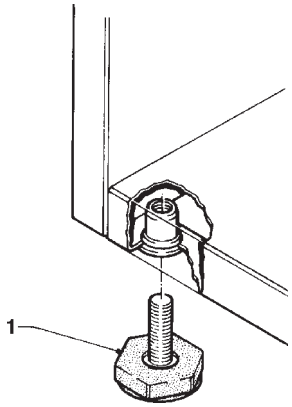


Fig. 2

1 - Adjustable foot

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. 3) 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.

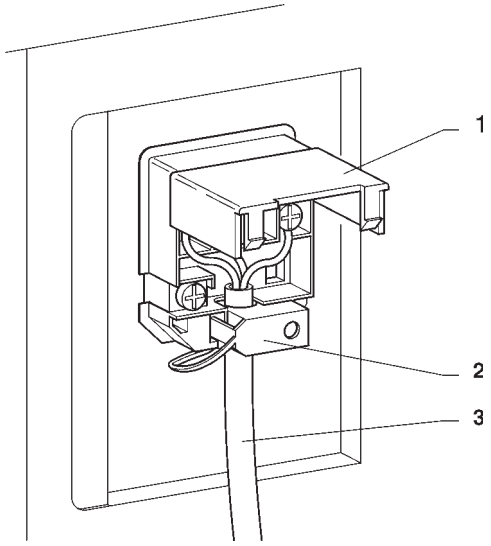


Fig. 3

1 - Lift-up 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, 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.

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 5 to 85 N/cm^2 (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. 4).

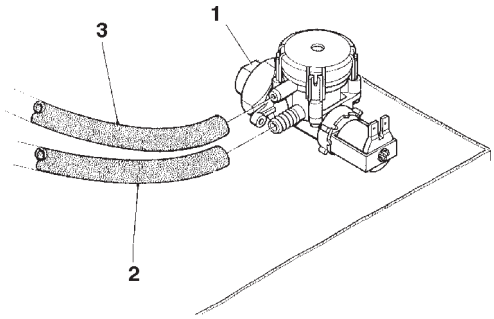


Fig. 4

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

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

OVERFLOW DEVICE

The water inlet solenoid valve (see Fig. 4) is equipped with an overflow device 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. 4);
- open the tap and switch the machine on.

CONTROLS AND INFORMATION

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

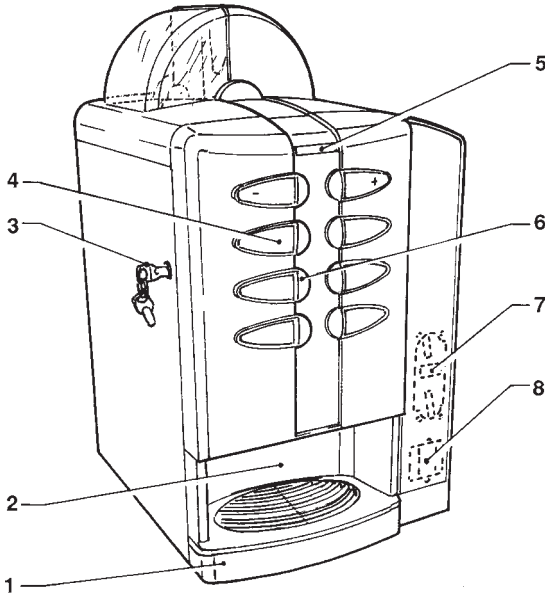


Fig. 5

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

DOOR SWITCH

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

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. 6).

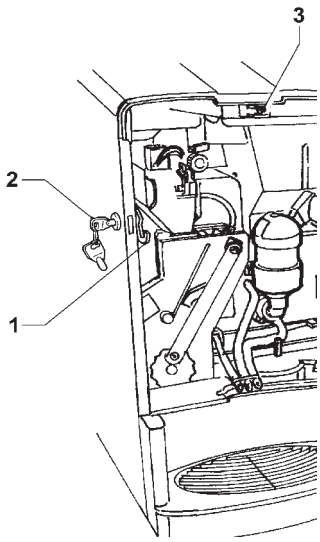


Fig. 6

1 - Door lock bolt
2 - Door lock
3 - Door switch

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

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.

"Model"

Defining whether the machine is Espresso or Instant.

"Country"

Intended as type of basic doses for the different selections (e.g. strong coffee IT = 40 cc - strong coffee FR = 60 cc). The available "Countries" are:
It - Fr - Es - Uk

"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"

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 (electrical functioning and water flow) and boiler (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 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.

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).

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).

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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.

SANITISING THE MIXERS AND THE 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;

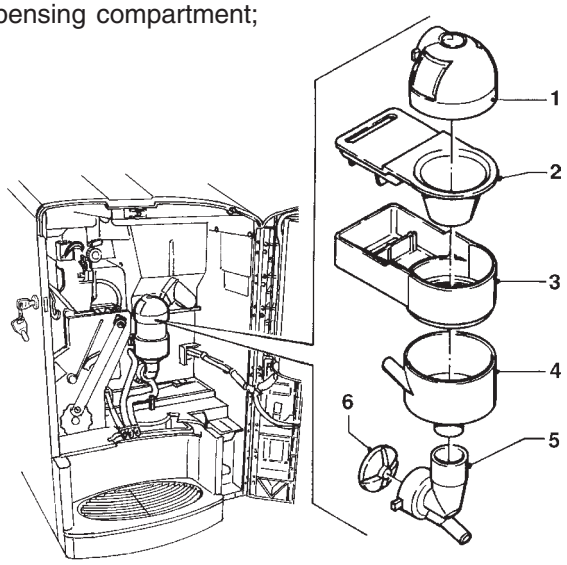
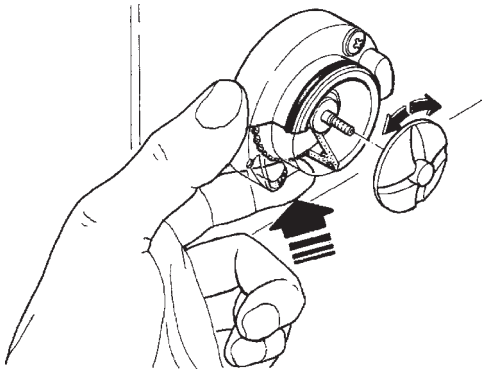


Fig. 7

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. 7);
- in order to remove the impellers, block the disk fitted on the mixer shaft with a finger (see Fig. 8);

Fig. 8



- 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.

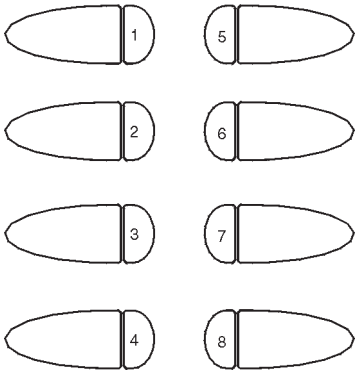
After reinstalling all parts the following is however required:

- 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.

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MIXER CLEANING

The mixer must 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.

LOADING

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. 9).

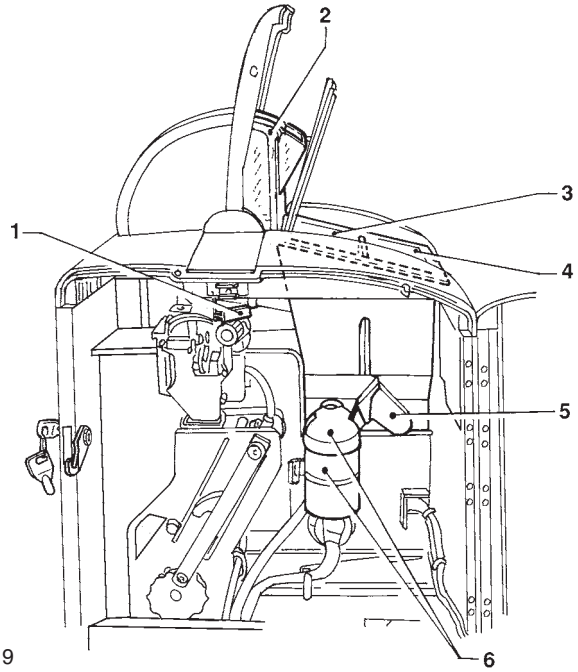


Fig. 9

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

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.

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 chlorine-based detergent used for the mixers.

CLEANING THE WASTE TRAYS

The waste trays can be easily removed even with the door closed (see Fig. 10) permitting quick emptying and cleaning.

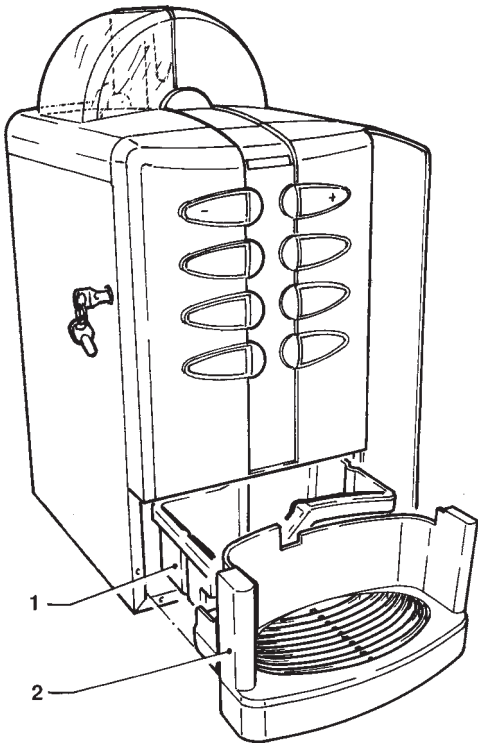
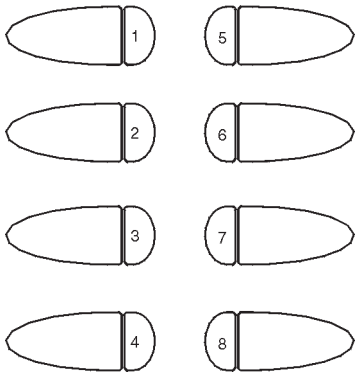


Fig. 10

1 - Coffee waste tray
2 - Dispensing compartment drip tray

The coffee container capacity is greater than that of the waste tray (if the support cabinet is not used).
The machine control software indicates on the display that the maximum number of coffee selections has been reached with the message “Waste tray full”.
After a few further selections the machine will lock.
The waste tray must be emptied without switching the machine off, to allow the software to detect the operation.

With the coffee waste tray removed, the machine is still available for instant drink selections but indicating the message “Insert waste tray” on the display.
The selection counters are reset 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 4231 to reset the counters.

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. 15).

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 water system.

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 accepter 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.

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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 Fig. 14).
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).

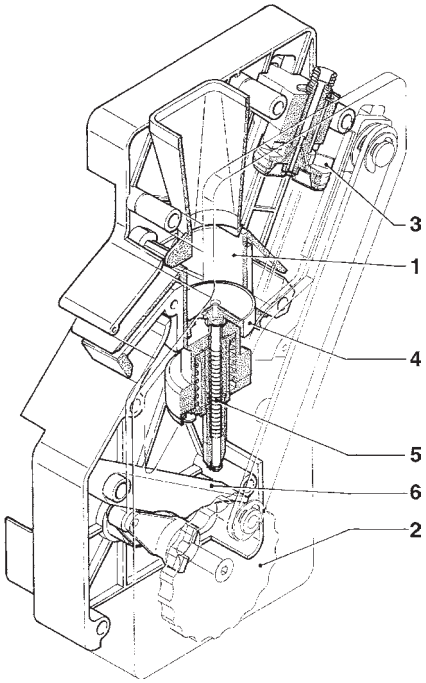


Fig. 11

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

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

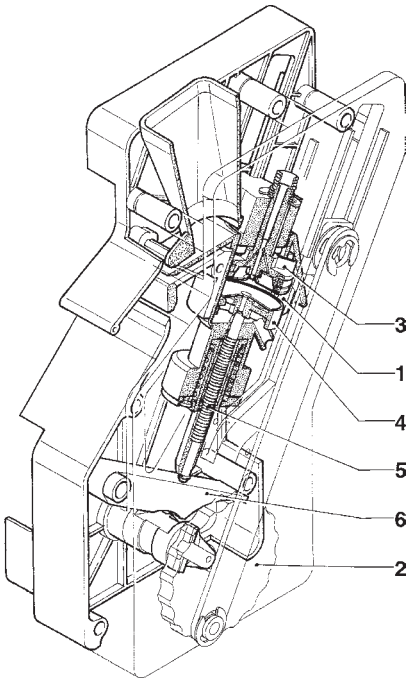


Fig. 12

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.

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STANDARD SETTINGS

The vending machine is supplied with the following settings:

- coffee temperature (at the spout) 70÷80°C approx.;
- instant product temperature (at the spout) 70÷80°C approx.;

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

ADJUSTING THE BREWING CHAMBER VOLUME SETTING

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.

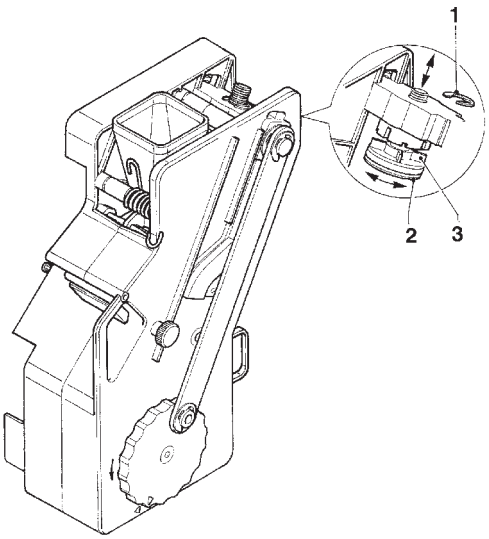


Fig. 13

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

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.

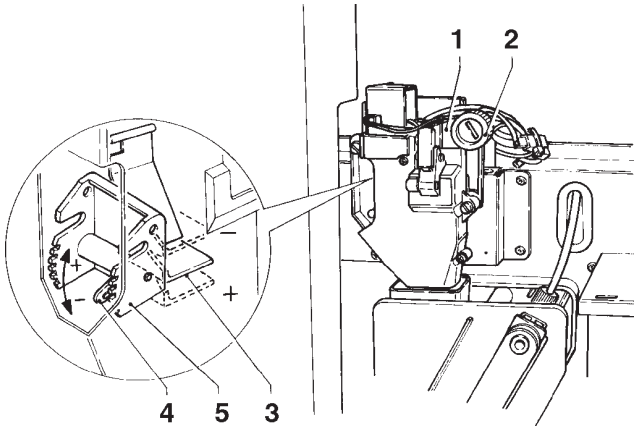


Fig. 14

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

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

N.B.: After adjustment of the grade of grinding, at least 2 test selections must be performed in order to check the new grade of 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 ± 0,5
- medium 7 g ± 0,5
- high 8 g ± 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. 15).

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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

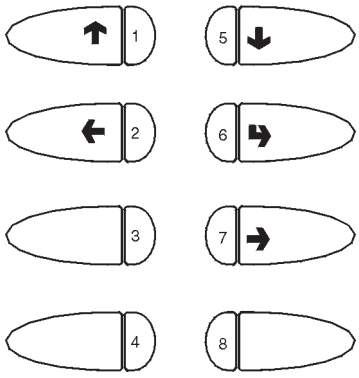
NORMAL VENDING MODE

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 massages 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

MAINTENANCE MODE

When the programming button located on the internal side of the push-button board (see Fig. 18) 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 "↵" 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

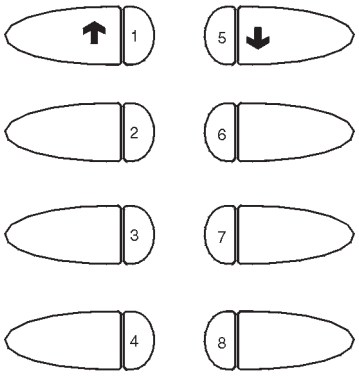
When pressing button "↵" the selection buttons will take on the original function for 7 seconds, permitting the test dispensing provided for each function.

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.

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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 -
4 - Autotest
5 - ↓ Next function
6 - Rotate coffee unit
7 -
8 - Empty air-break

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

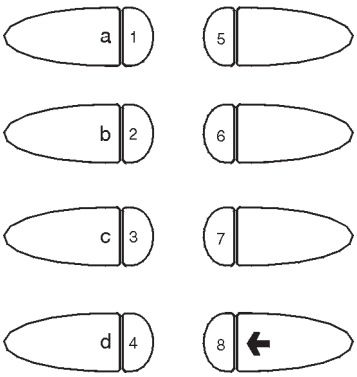
If a coffee dose is accidentally released with the unit installed, the unit will have to be rotated to unload the excess coffee.

FILLING 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.

When the function “Fill change tubes” is active, the buttons take on the release tube functions (a ÷ d):



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
- (for espresso models only) the coffee unit is rotated, coffee is ground and then released when a full dose is reached.
- (for Espresso models only) 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.

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.

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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 print-out will also contain the machine code number and the printout progressive number.
The progressive hardcopy 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 "➔", 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. 18) 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:

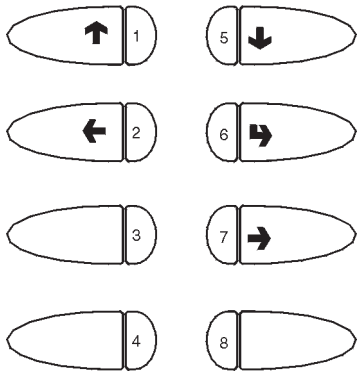
“Present failures”	current failure reading
“Water doses”	water dose setting
“Powder doses”	powder dose setting
“Set Prices”	price setting
“Set Prices/button”	prices/button combination enables/disables button
“Basic coin / DP”	setting the basic coin value and position of the decimal point
“Payment systems”	setting the validator and MDB MDB protocol control
“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”	whipping time for instant coffee
“Prog. password”	enabling the password to access programming
“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

“Display pre-sel.” setting the pre-selection on the display

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:
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 cases are:

Cases	Type of water supply		Equipped cabinet	Type of failure
	Mains	Tank		
1	X			- Water failure
2	X		X	- Water empty (EV always open)
3		X		- Water empty - Water leak
4		X	X	- Water empty (pump for 60 sec.)

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 Eprom, thus losing all statistics information.
The message “INITIALISE” will start blinking on the display.

WATER EMPTY 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 FAILURE

Models with water supply from a tank/without support cabinet

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.

IMPELLER 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 EMPTY FAILURE

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

COFFEE DOSE RELEASE FAILURE

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

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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.

WATER FAILURE

Models with water supply from the mains / without support cabinet

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.

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.
When pressing change button “”, this value will start blinking and can be modified as necessary.

PRICE SETTING

When the “Set Prices” (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 change button “”, this value will start blinking and can be modified as necessary.

PROGRAMMING THE PRICES AND THE 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 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, i.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 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”	C - Espresso I - Instant
“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”.

AFTER INITIALISING THE MACHINE MUST BE RECONFIGURED.

FAST CYCLES

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

instant selections

- all of the products that compose the drink are dispensed at the same time;
- 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

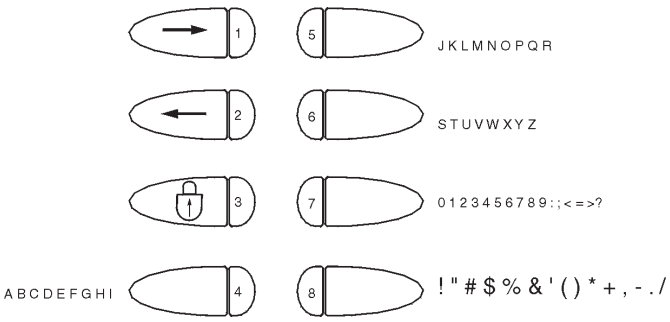
This function is used to lock the machine after a preset number of coffee selections, and a preset number of instant selections.
Since this is a control tool used only by the vending operator, a 4-digit password must be entered.
After entering the password, it is possible to set the number of selections 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.

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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 to set the operating temperature, expressed in °C, of the boilers actually installed in the machine.

DISPLAY PRE-SELECTIONS

It is possible to set which of the two available pre-selection messages is to be shown on the display:

- Decaffeinated
- Dark Roast

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.

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

Every 10,000 selections or every 6 months some maintenance of the brewer unit must be carried out.
Maintenance is carried out as follows:

- remove the boiler teflon hose connection from the upper piston, paying attention not to lose the seal (see Fig. 15);

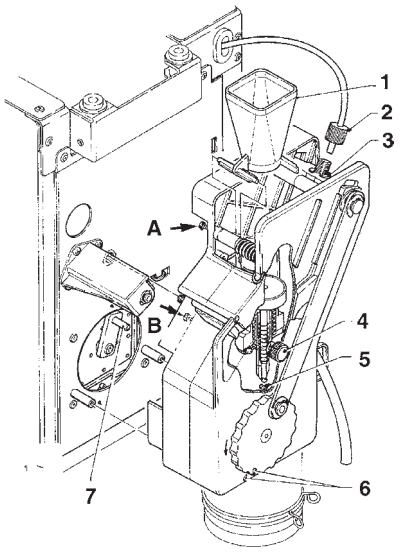


Fig. 15

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

- undo the knob securing the unit to the bracket;
- remove the brewer unit.

Removing the upper filter

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

Removing the lower filter

- Loosen screws A and B enough to release the coffee funnel (see Fig. 15);
- 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.

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 16

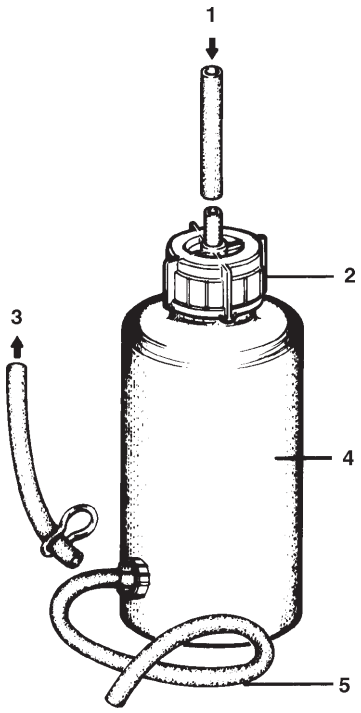


Fig.. 16

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

- 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.

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 mixers and the foodstuff circuits" should be repeated.

PRINTED BOARD FUNCTIONS AND INDICATOR LAMPS

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 actuations and the push-button board.
The 15 V AC voltage required for board operation is supplied by a transformer which is protected by a 160 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 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.

RELAYS	ESPRESSO	INSTANT
K1	ER	E3
K2	ESC	MD3
K3	MAC	MF2
K4	PM	PM/EIA
K5	M	MD4
K6	EV2	EV2
K7	EV1	EV1
K8	MF1	MF1
K9	MD3	MD3
K10	MD2	MD2
K11	MD1	MD1
K12	EIA	EIA
K13		
K14		
K15	MD4	MD4

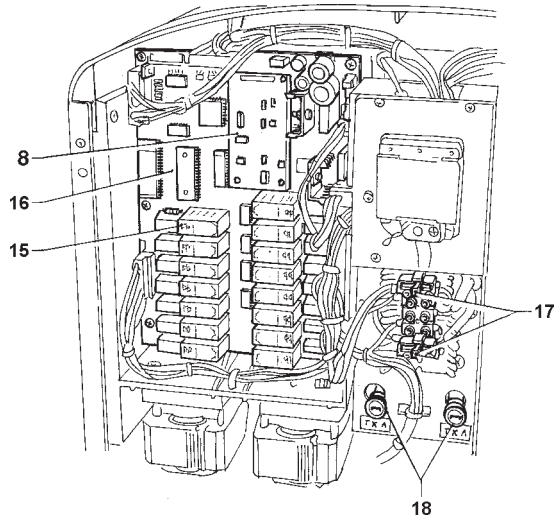
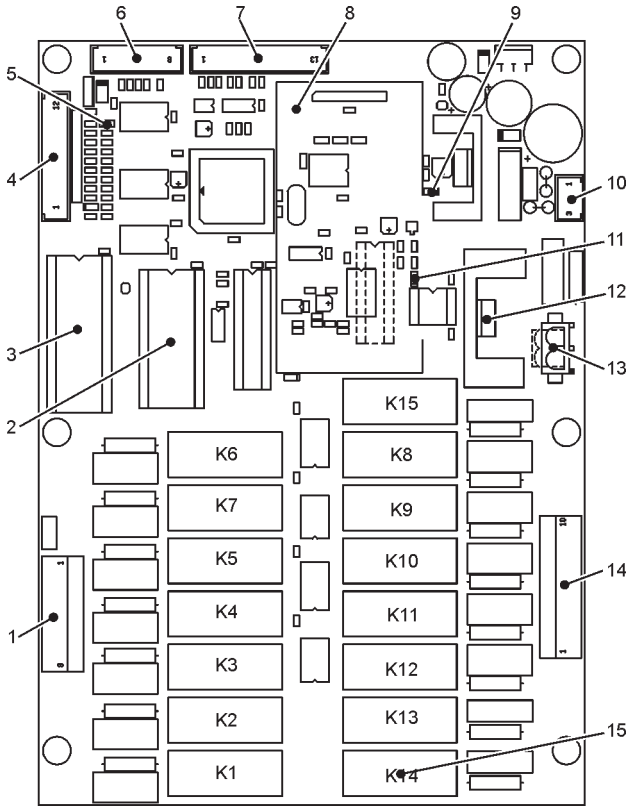


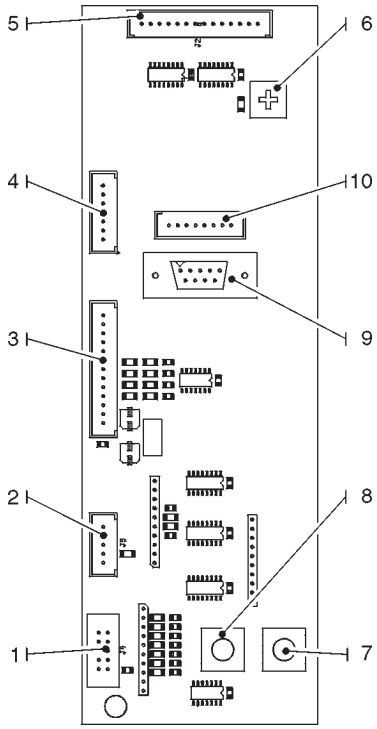
Fig. 17

1 - 110 V~ power 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 - TRIAC for the boiler heating element
13 - To boiler heating element
14 - 110 V~ power users
15 - Relays
16 - Control board
17 - Transformer fuse
18 - Mains fuses



PUSH-BUTTON BOARD

This board controls the alphanumeric display, the selection buttons and the programming button (see Fig 18). It supports the coin mechanism connectors as well as the printer port.



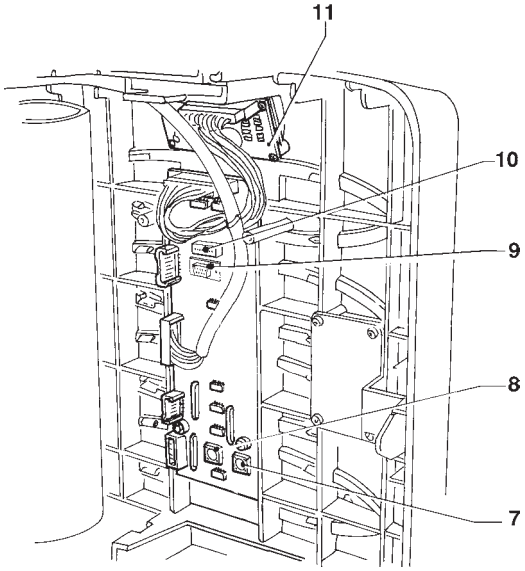
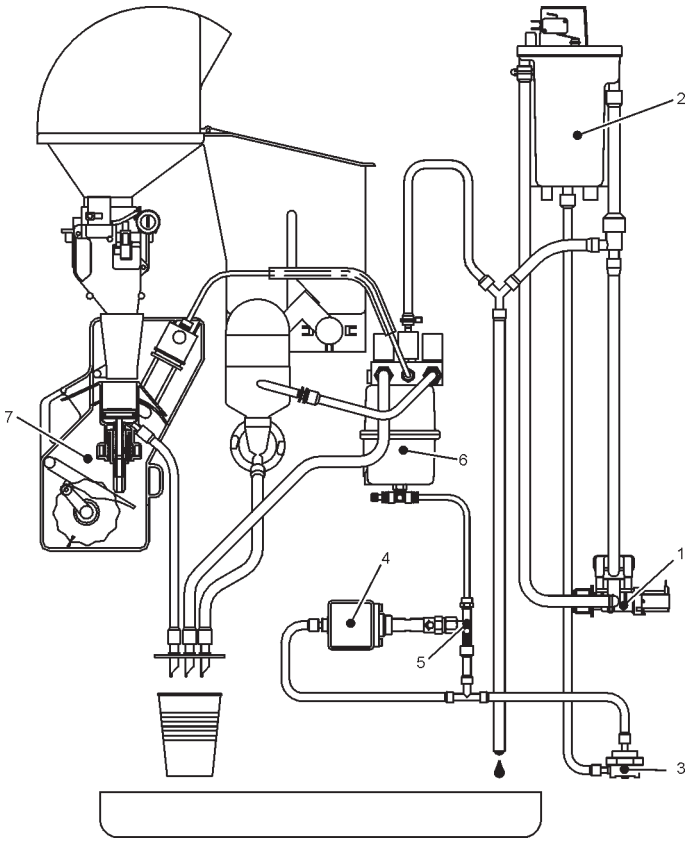


Fig. 18

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

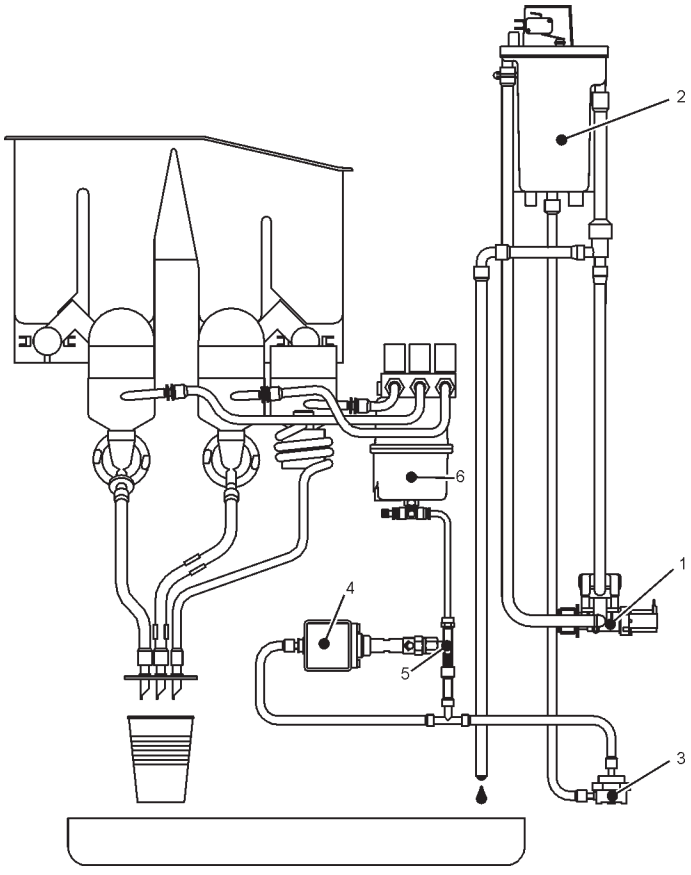
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Espresso



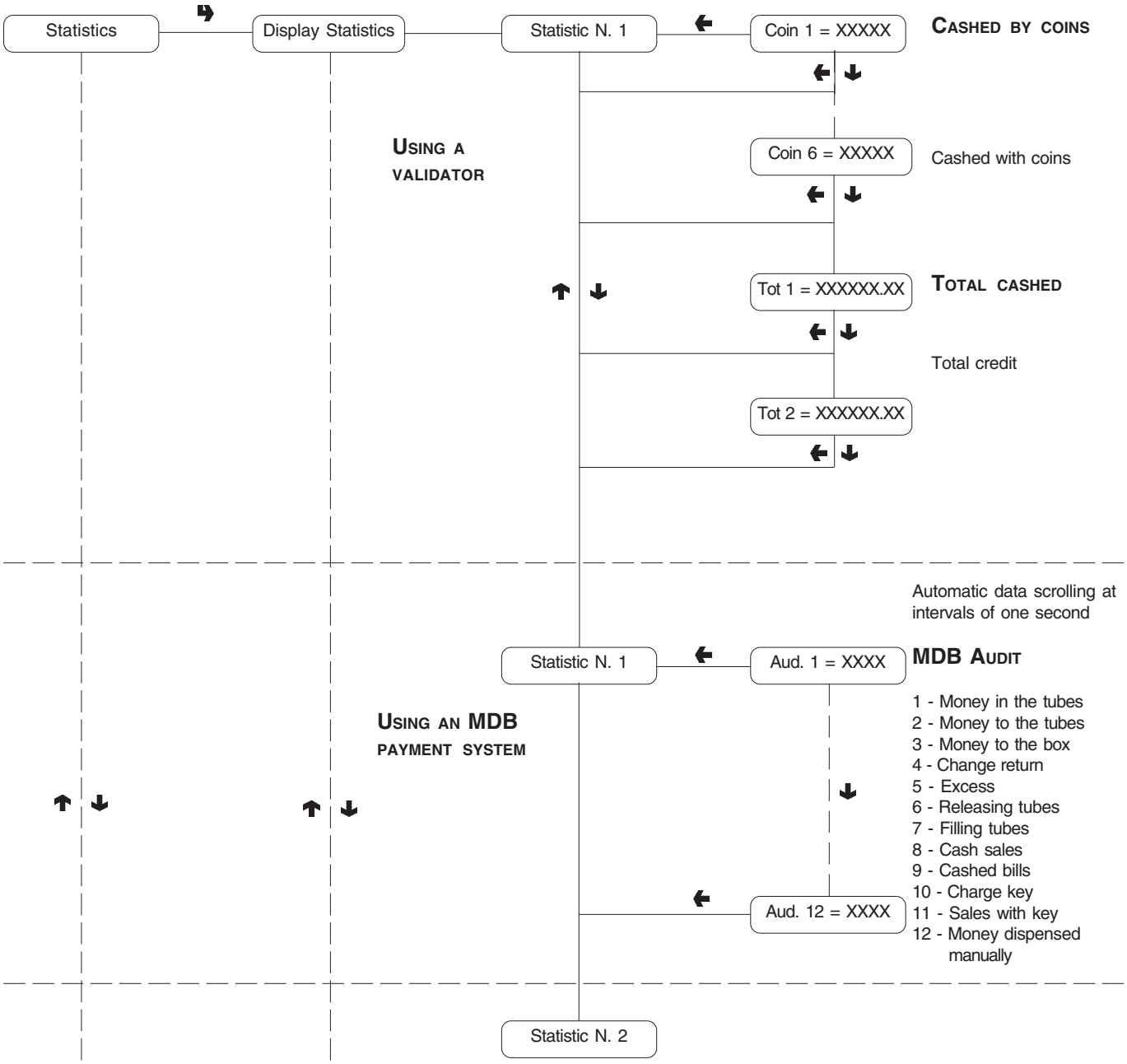
1 - Water inlet solenoid valve
2 - Air-break
3 - Volumetric counter
4 - Vibration pump
5 - Bypass
6 - Boiler
7 - Coffee unit

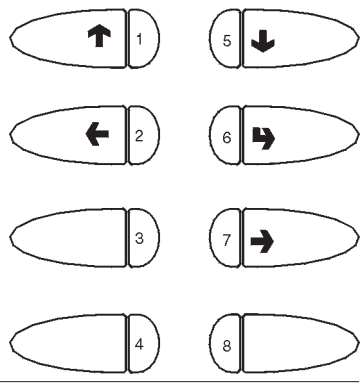
Instant



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"Maintenance" menu

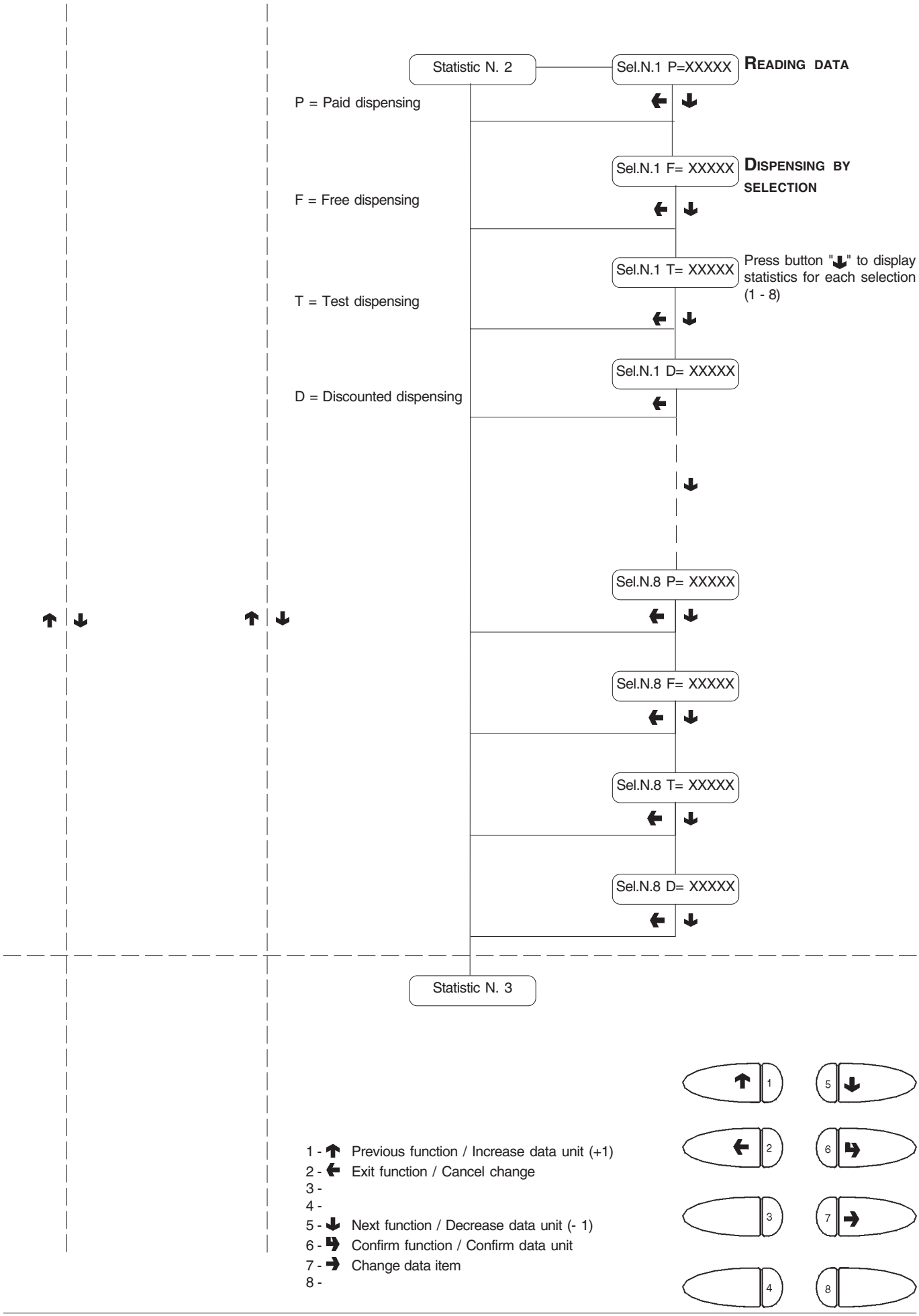




1 - ↑ Previous function / Increase data unit (+1)
2 - ← Exit function / Cancel change
3 -
4 -
5 - ↓ Next function / Decrease data unit (- 1)
6 - ↳ Confirm function / Confirm data unit
7 - → Change data item
8 -

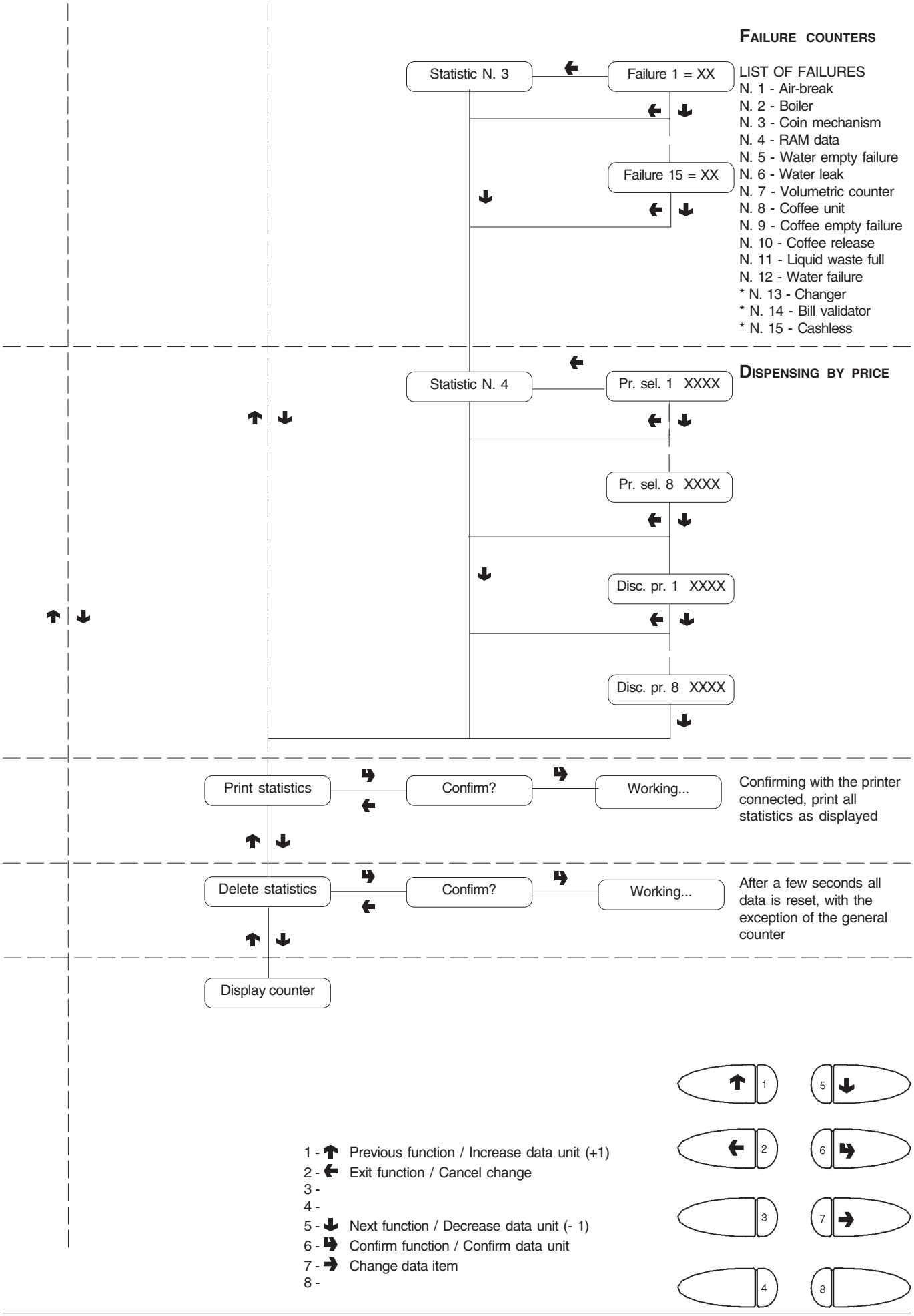
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"Maintenance" menu



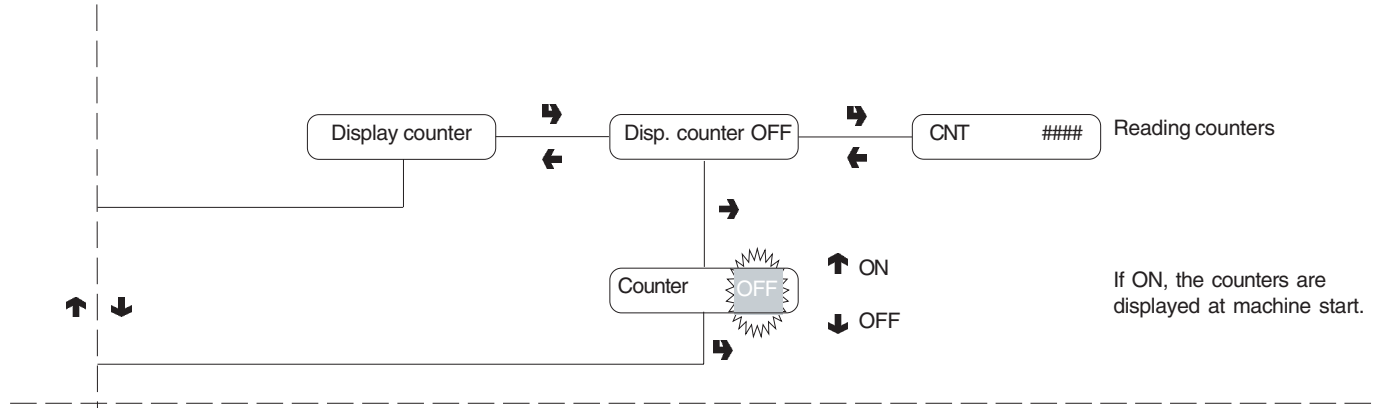
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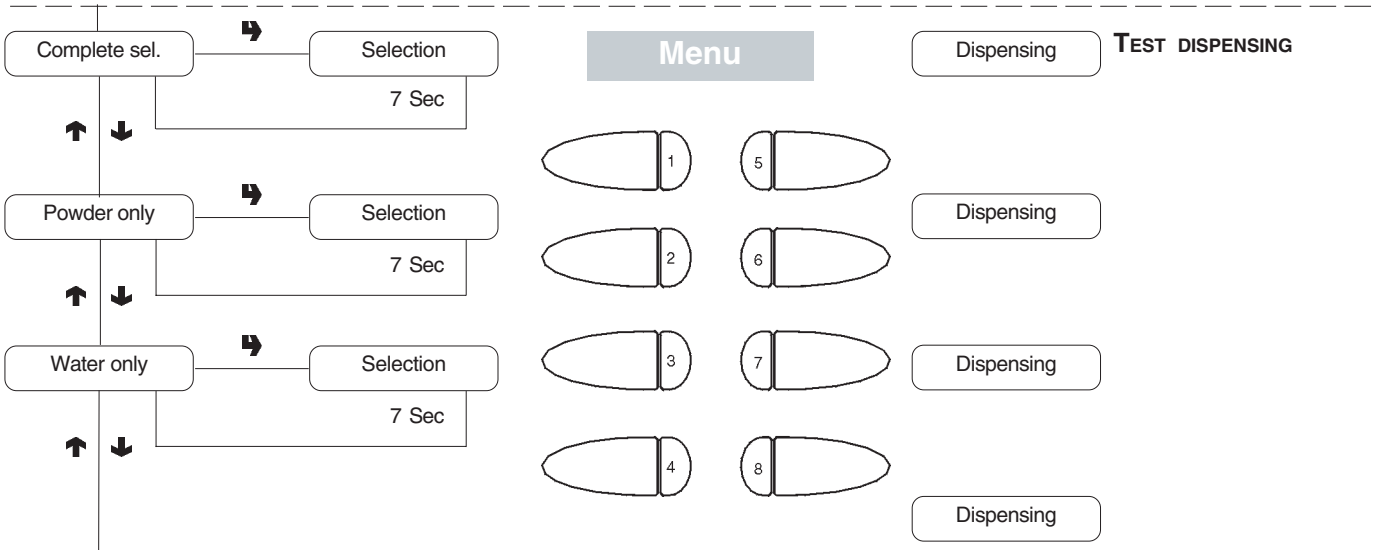
"Maintenance" menu

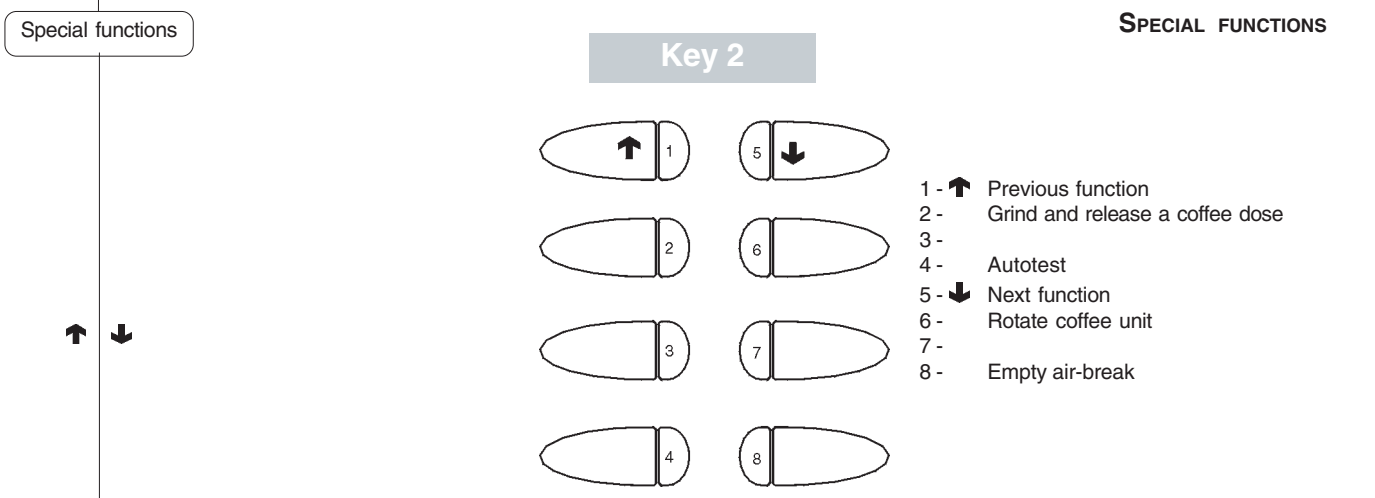


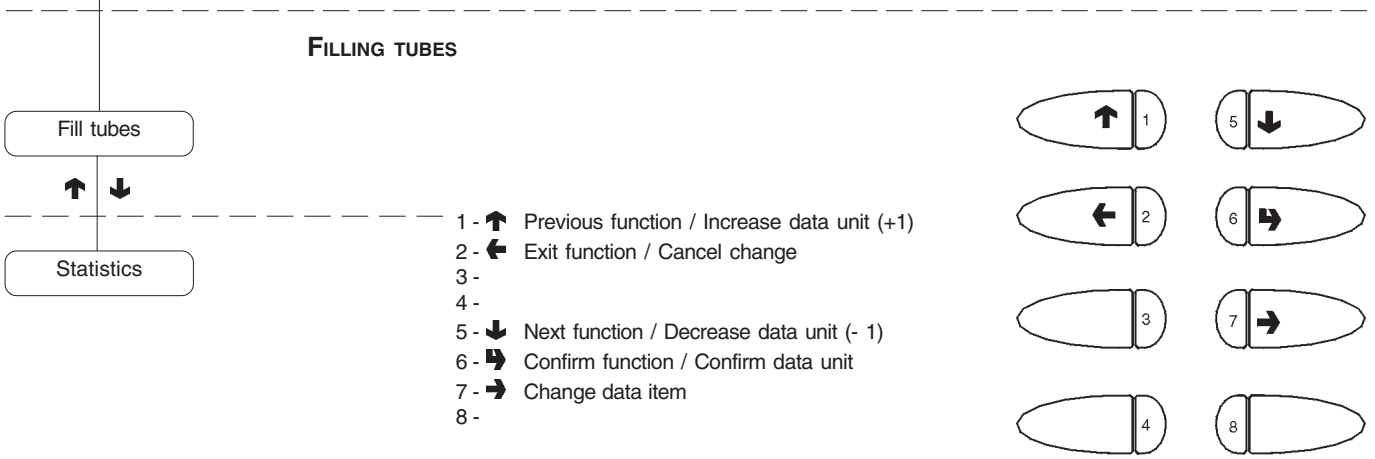
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"Maintenance" menu



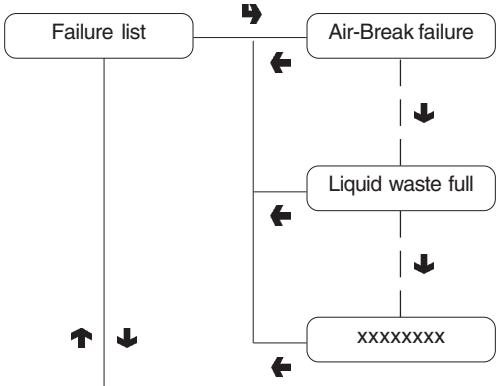






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"Programming" menu

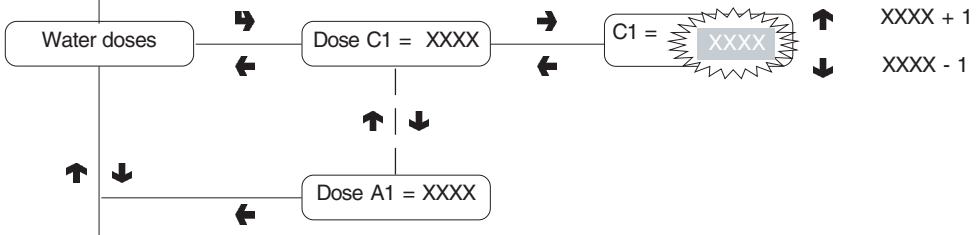


DISPLAY PRESENT FAILURES

LIST OF FAILURES

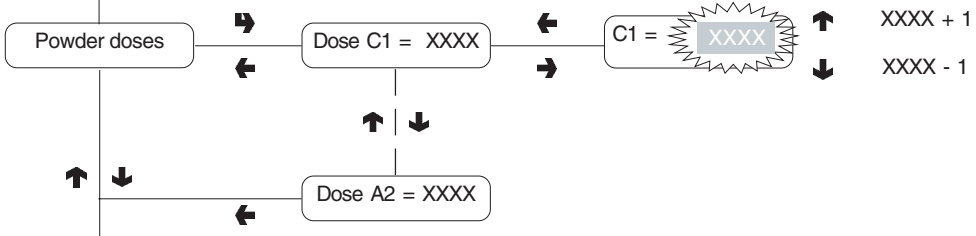
N. 1 - Air-break
N. 2 - Boiler
N. 3 - Coin mechanism
N. 4 - RAM data
N. 5 - Water empty failure
N. 6 - Water leak
N. 7 - Volumetric counter
N. 8 - Coffee unit
N. 9 - Coffee empty failure
N. 10 - Coffee release
N. 11 - Liquid waste full
N. 12 - Water failure
* N. 13 - Changer
* N. 14 - Bill validator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

* MDB only



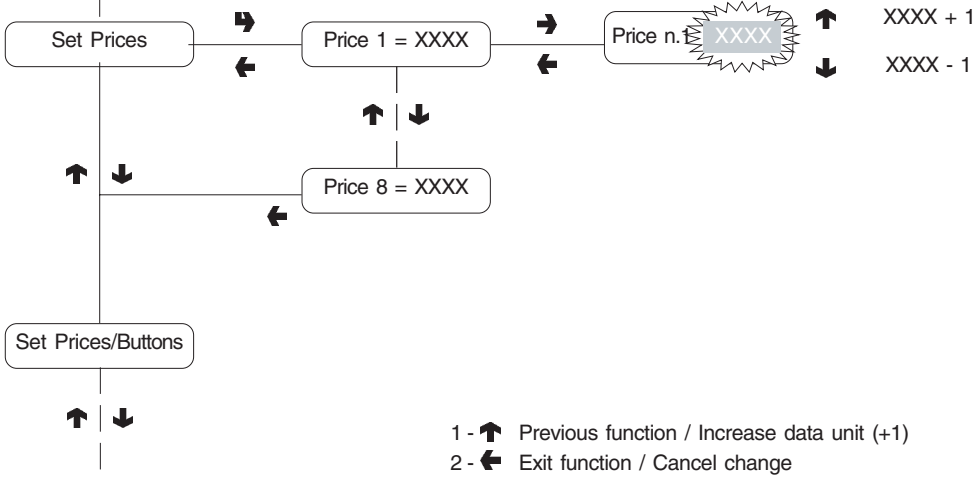
WATER DOSES

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

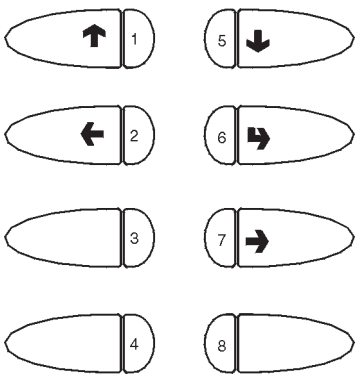


POWDER DOSES

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



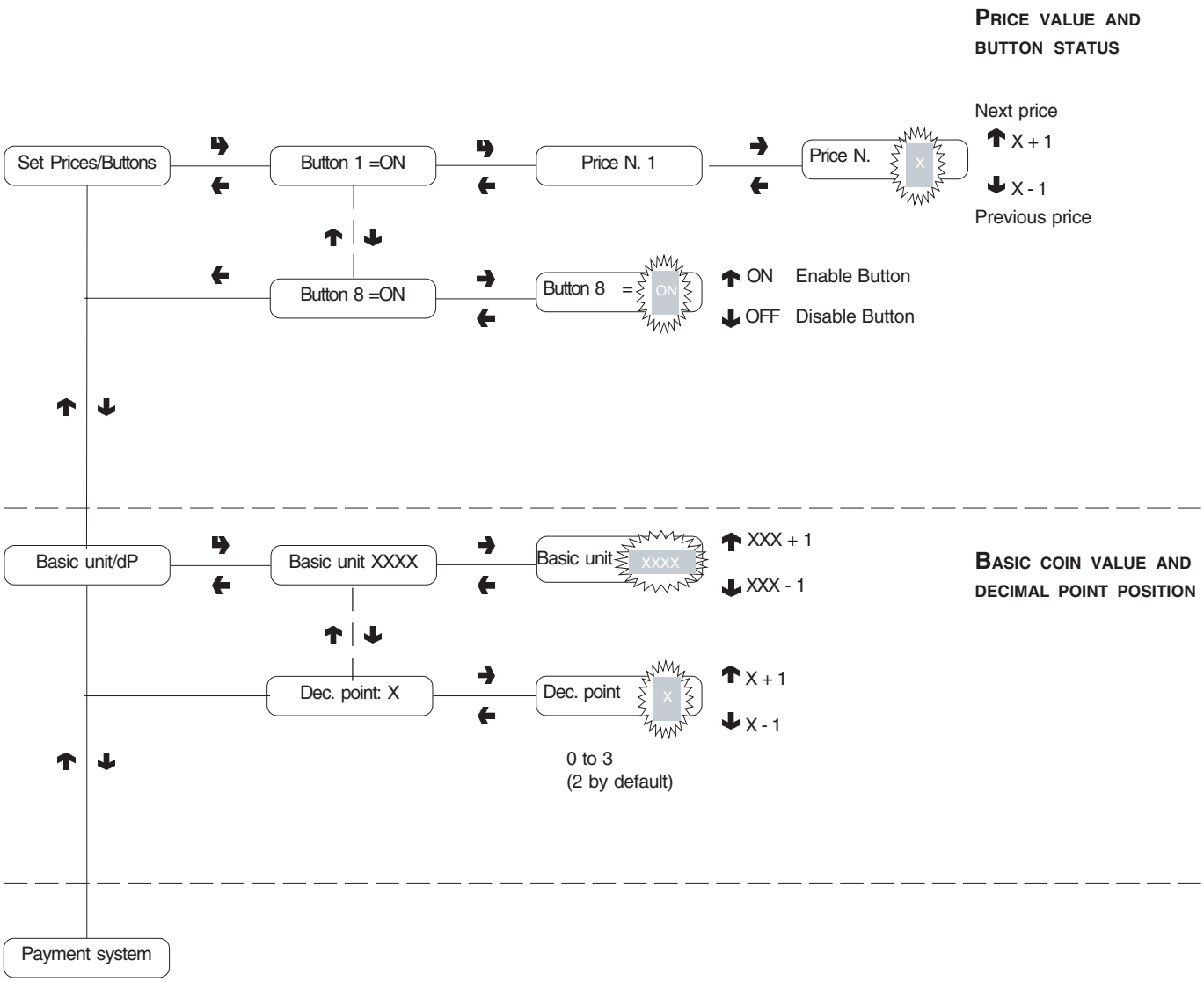
PRICE VALUE

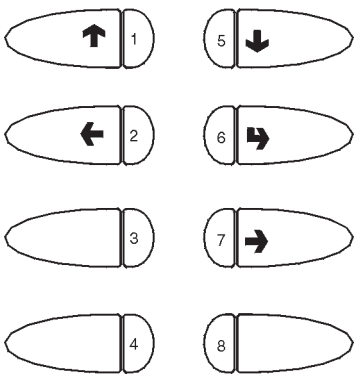


1 - ↑ Previous function / Increase data unit (+1)
2 - ← Exit function / Cancel change
3 - Machine installation
4 -
5 - ↓ Next function / Decrease data unit (- 1)
6 - ↳ Confirm function / Confirm data unit
7 - → Change data item
8 - Reset failures

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"Programming" menu

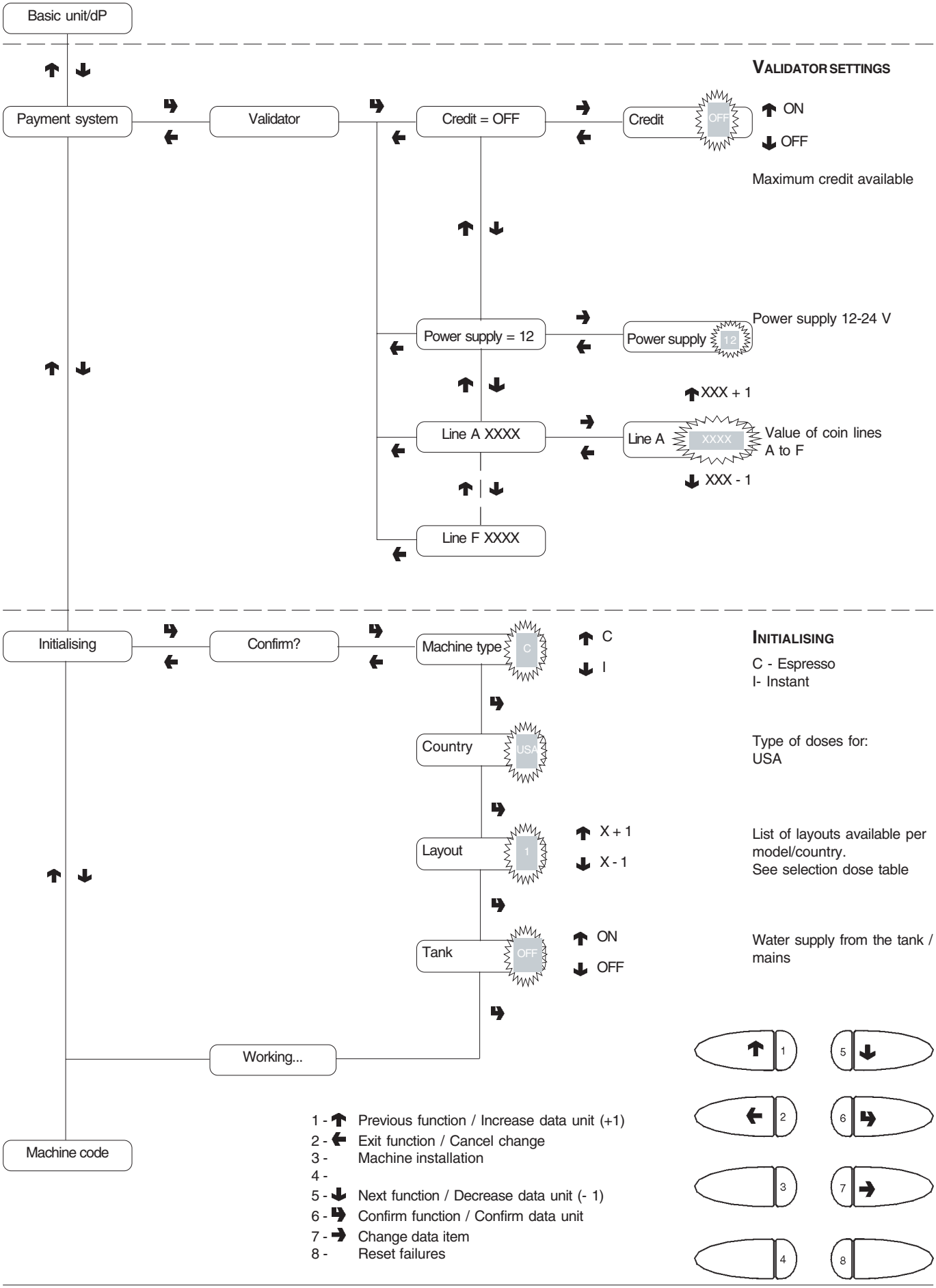




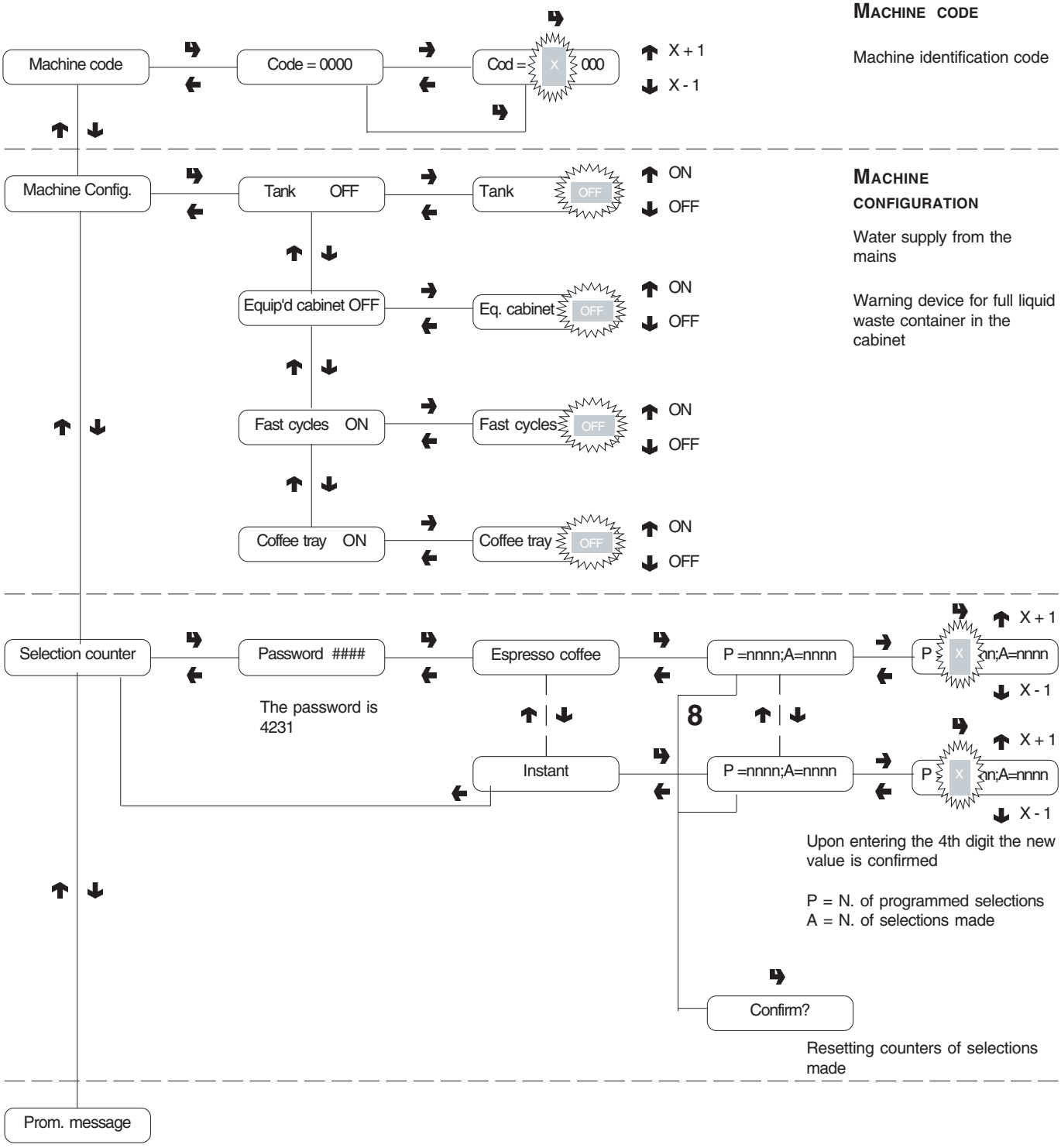
1 - ↑ Previous function / Increase data unit (+1)
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"Programming" menu



"Programming" menu



MACHINE CODE

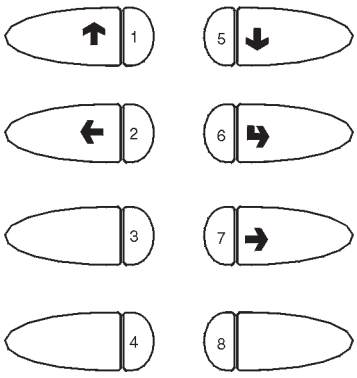
Machine identification code

MACHINE CONFIGURATION

Water supply from the mains

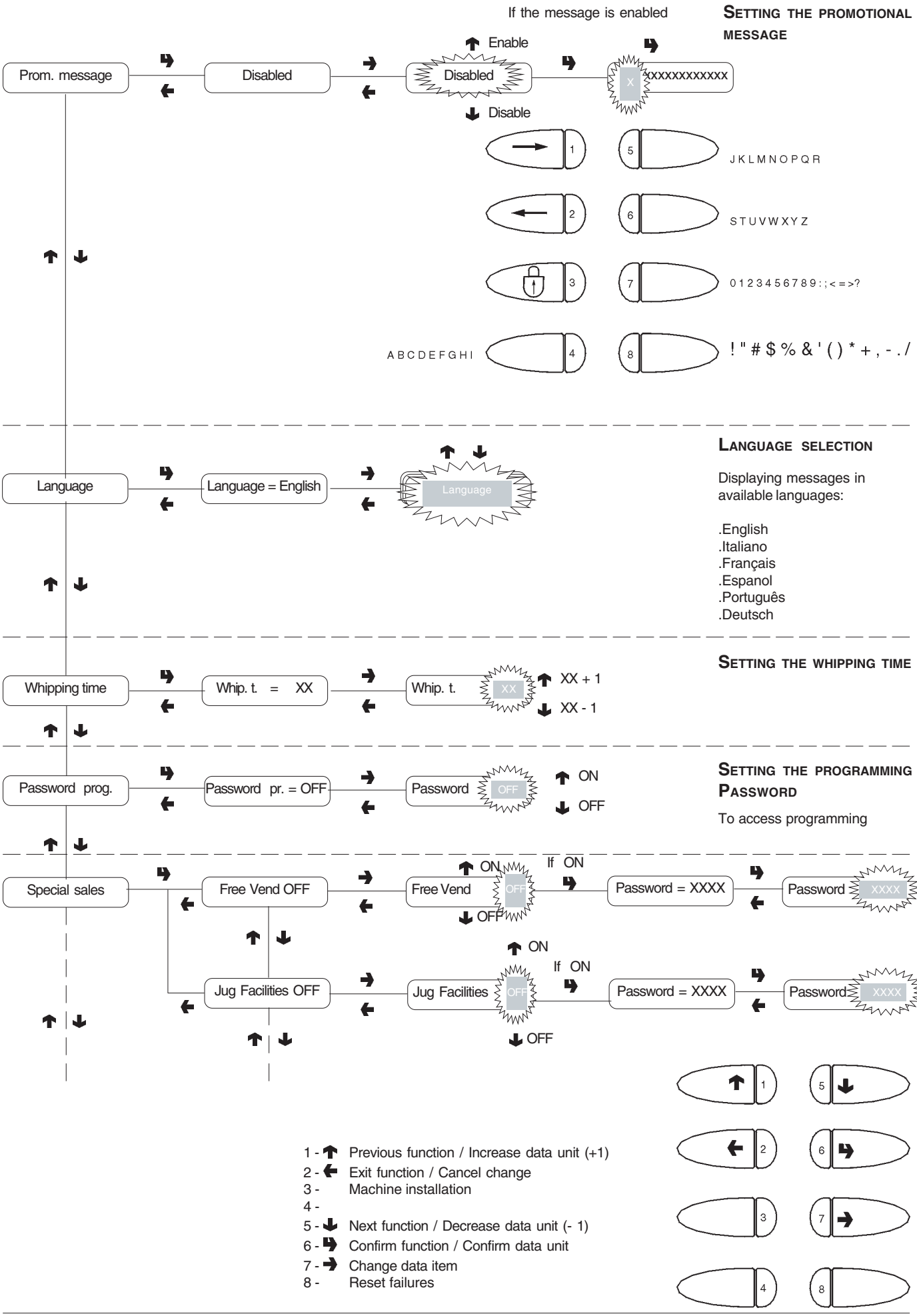
Warning device for full liquid waste container in the cabinet

1 - ↑ Previous function / Increase data unit (+1)
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4 -
5 - ↓ Next function / Decrease data unit (- 1)
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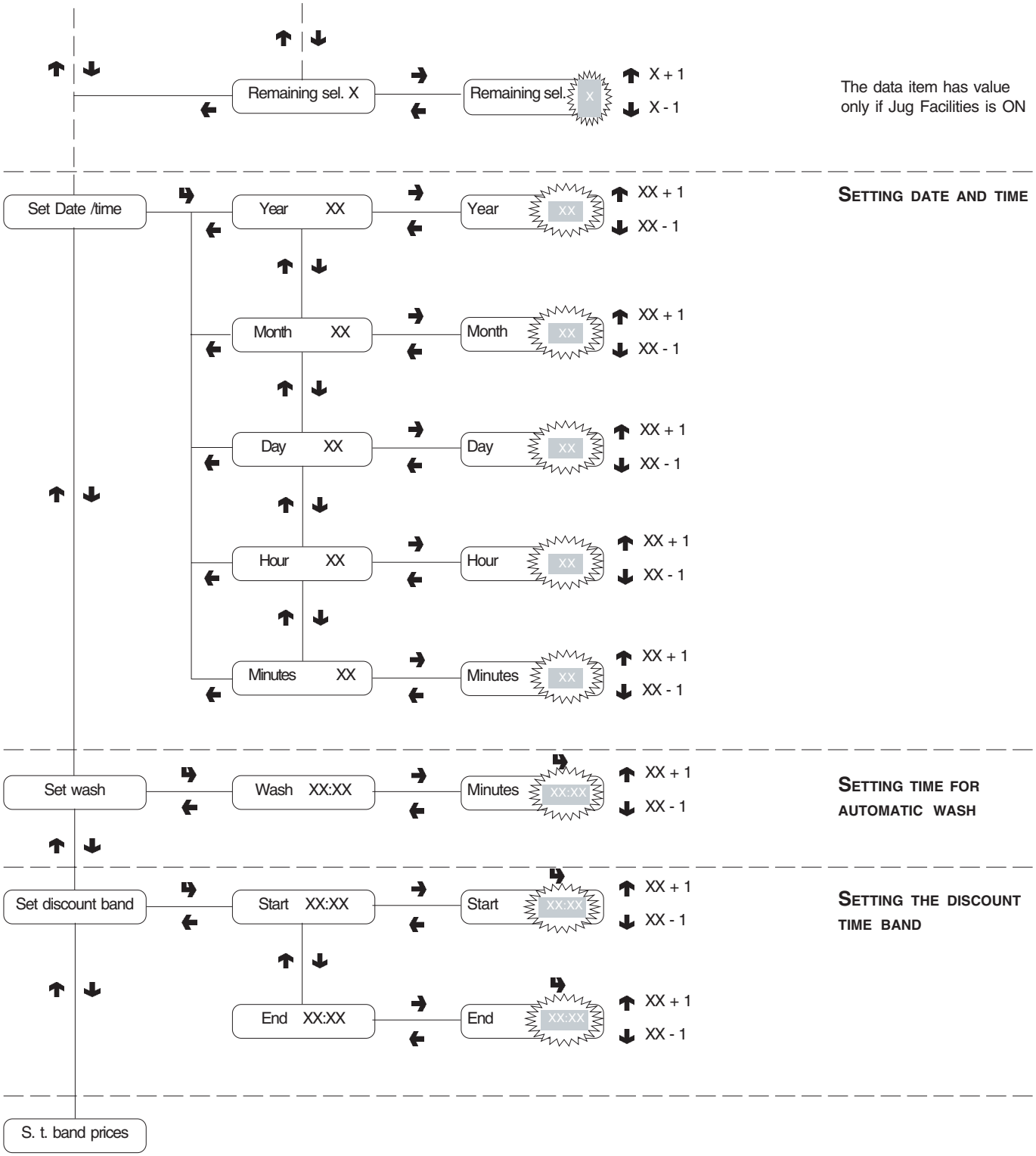
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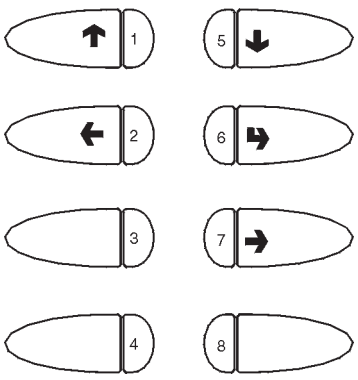
"Programming" menu



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"Programming" menu

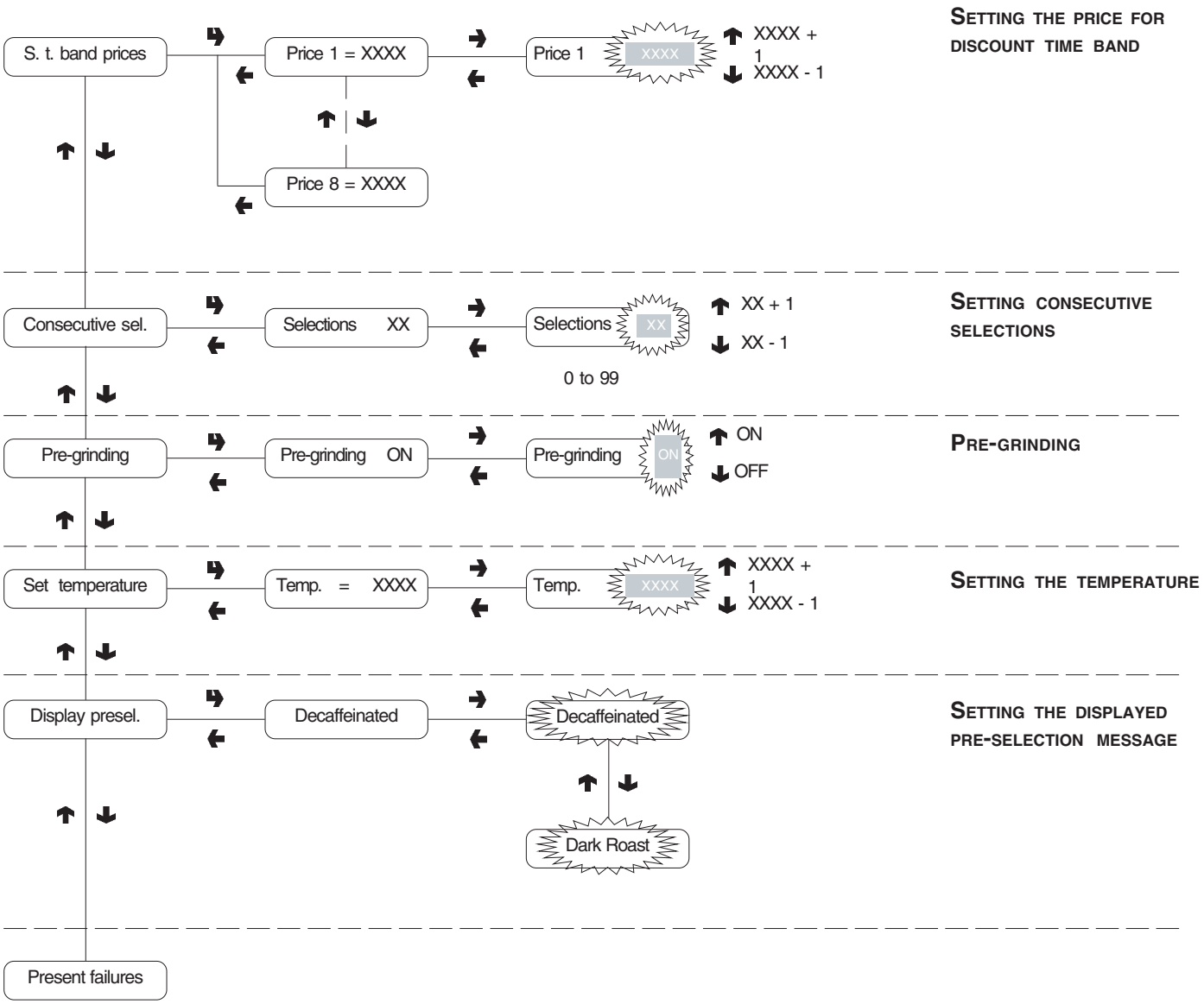




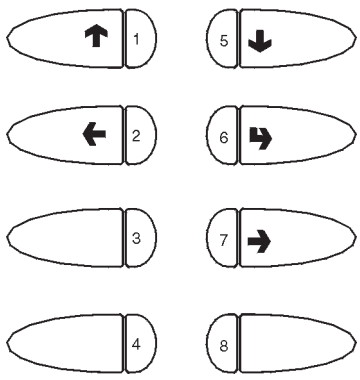
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"Programming" menu



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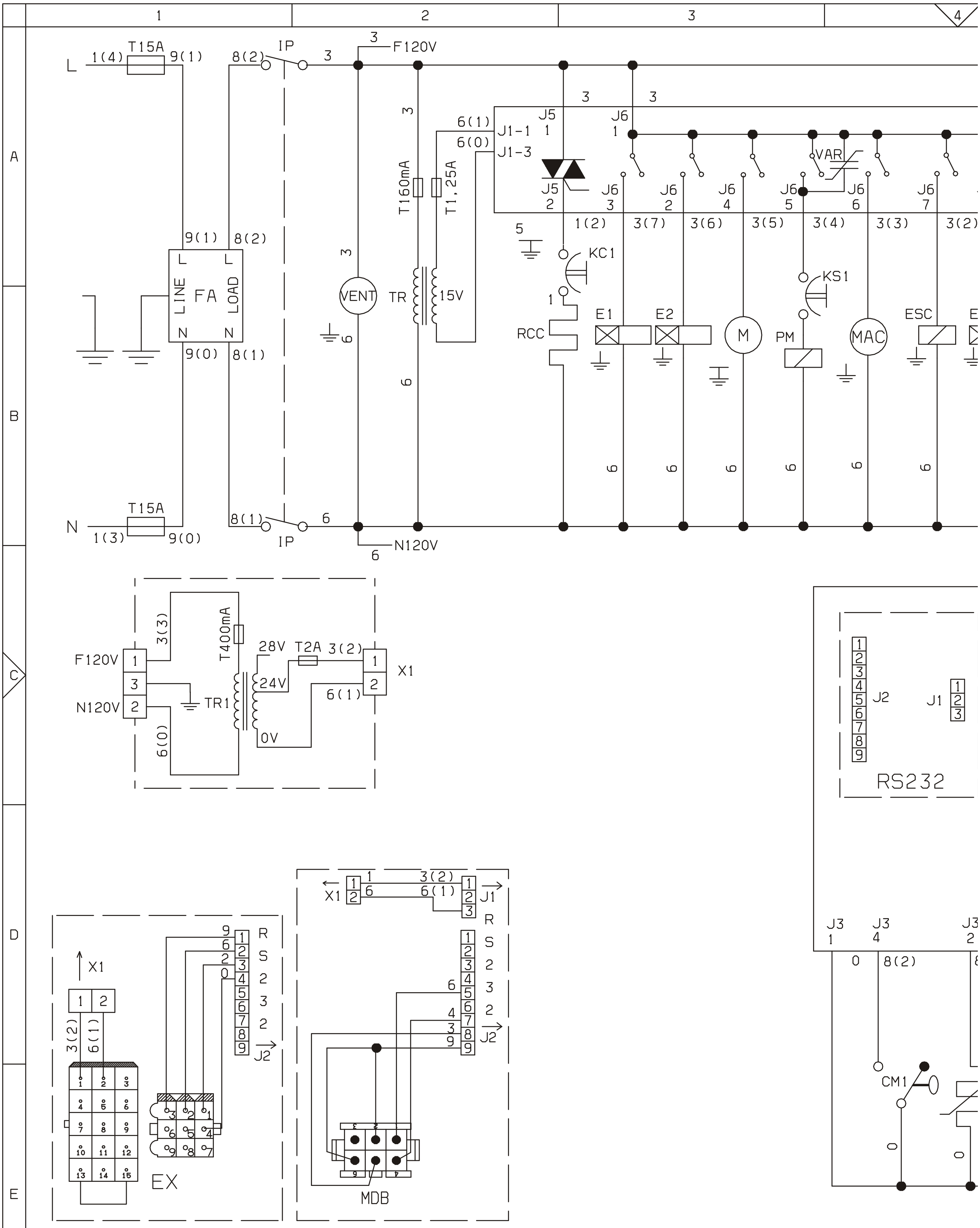


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WIRING DIAGRAM LEGEND

INITIALS	DESCRIPTION	INITIALS	DESCRIPTION
CM1-2	COFFEE UNIT MOTOR CAM	MAC	GRINDER
CV	VOLUMETRIC COUNTER	MD1-..	INGREDIENT MOTOR - INSTANT
E1-...	INSTANT SOLENOID VALVE	MDB	CONNECTOR FOR MDB COIN MECHANISM
EEA	WATER INLET SOLENOID VALVE	MF1-..	WHIPPER MOTORS
ER	COFFEE DISPENSER SOLENOID VALV	NTC	TEMPERATURE PROBE
ESC	COFFEE RELEASE MAGNET	PM	PUMP
EX	EXECUTIVE COIN MECH CONNECTOR	RCC	COFFEE BOILER HEATING ELEMENT
FA	RADIO INTERFERENCE SUPPRESS	RIS	COFFEE UNIT HEATER
ID	COFFEE DOSE SWITCH	RS232	SERIAL PORT
IP	DOOR SWITCH	SM	CONTROL BOARD
IPF	WASTE CONTAINER OVERFLOW SWITCH	SP	PUSH-BUTTON BOARD
IVA	EMPTY BOILER MICRO-SWITCH	TR	TRANSFORMER
KC1-..	COFFEE BOILER CUTOUT	TR1	230 V-24 V TRANSFORMER
KS1-..	SAFETY CUTOUT	TX....	DELAYED FUSE (X=CURRENT)
LCD	LIQUID CRYSTAL DISPLAY	VAR	VARISTOR
M	COFFEE UNIT MOTOR	VENT	FAN

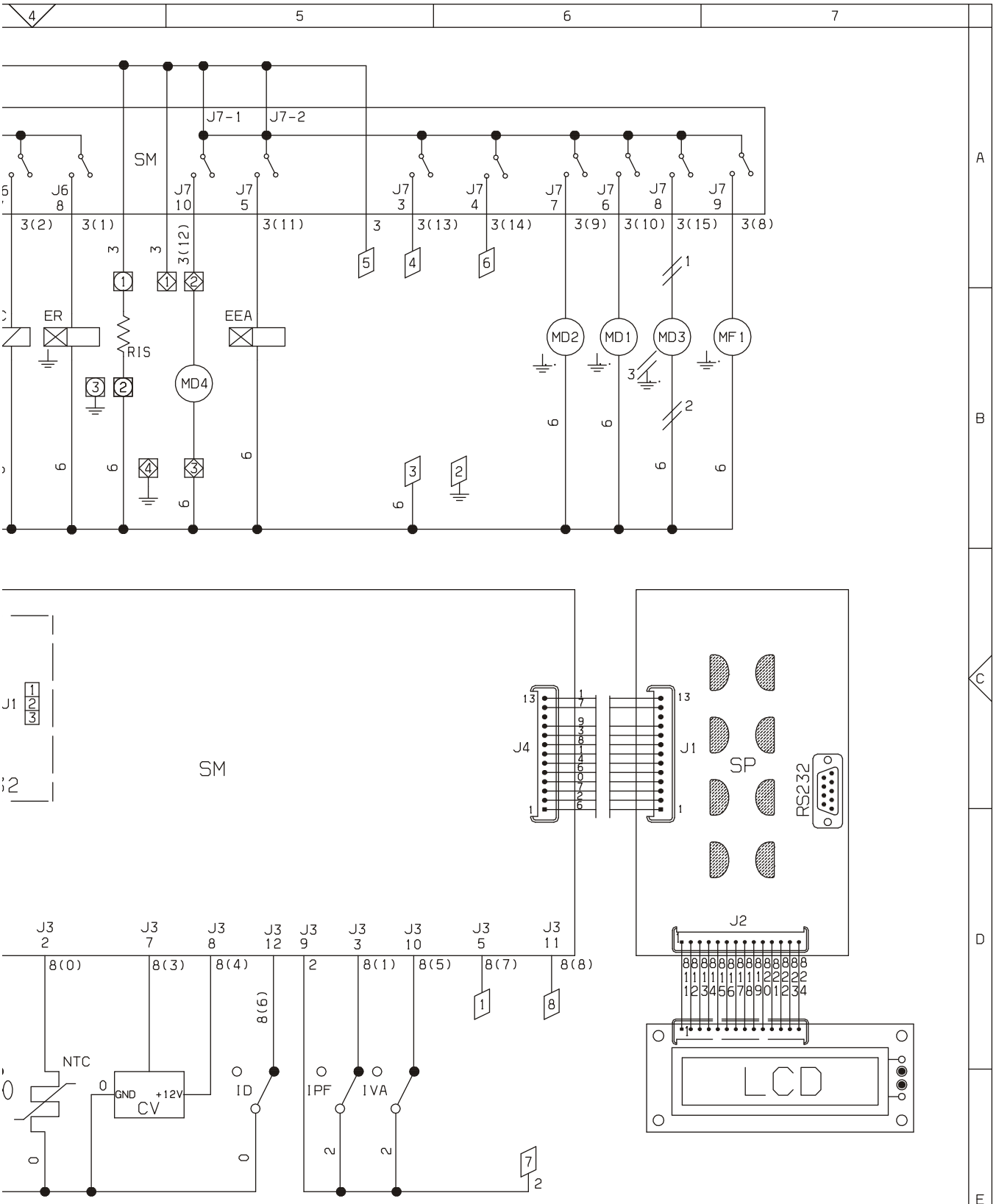
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SI RISERVA A TERMINI DI LEGGE
LA PROPRIETA' DEL PRESENTE
DISEGNO CON DIVIETO DI
RIPRODURLO O DIVULGARLO SENZA
SUA PREVIA AUTORIZZAZIONE

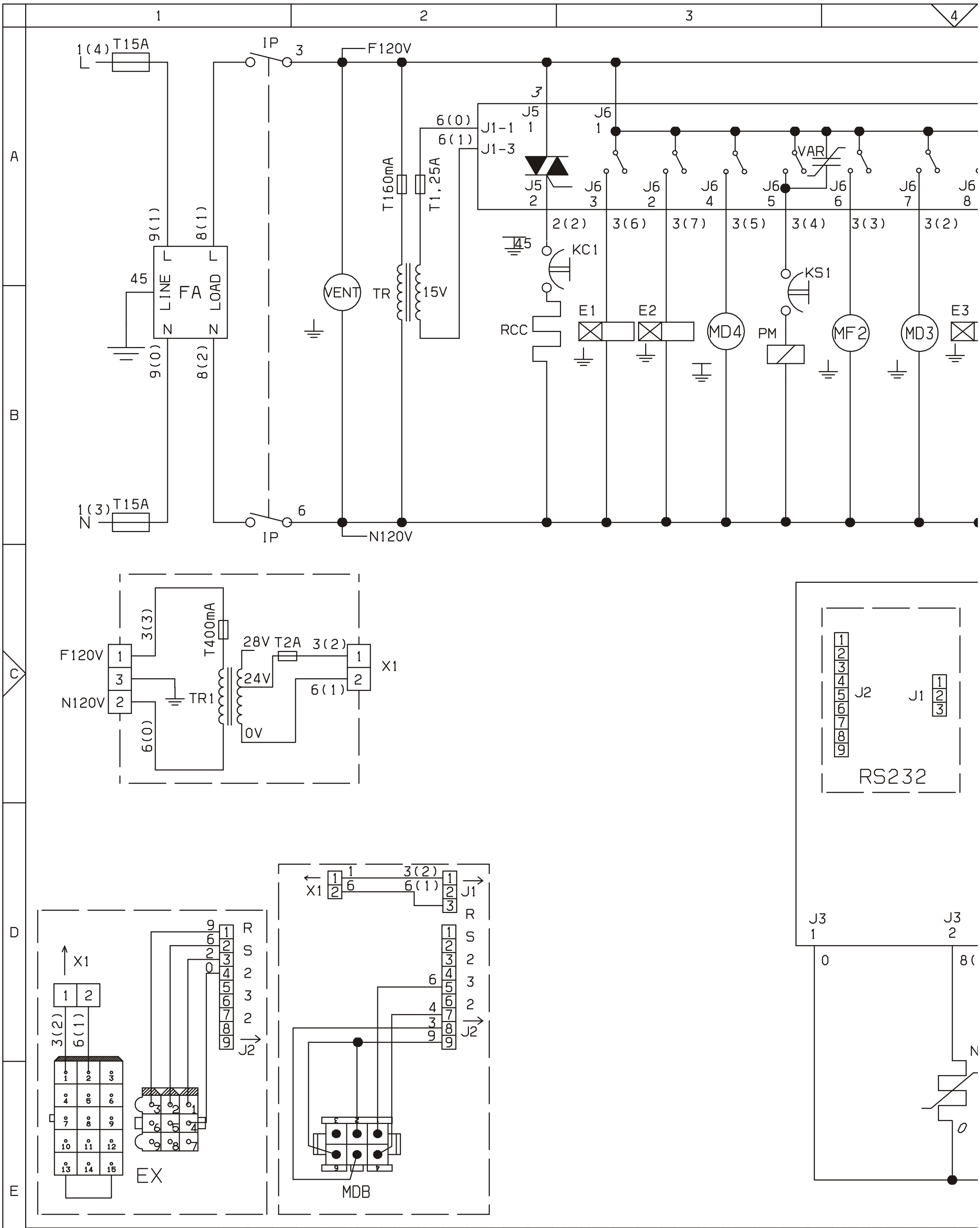
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1	MARRONE	BROWN	MARRON	BRAUN	MARRON
2	ROSSO	RED	ROUGE	ROT	ROJO
3	ARANCIO	ORANGE	ORANGE	ORANGE	NARANJA
4	GIALLO	YELLOW	JAUNE	GELB	AMARILLO
5	VERDE	GREEN	VERT	GRUEN	VERDE
6	BLU AZZURRO	BLUE LIGHT BLUE	BLEU BLEU CIEL	BLAU HELLBLAU	OSCURO AZUL CLARO
7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

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			LEGENDA .	CODICE 608539700		

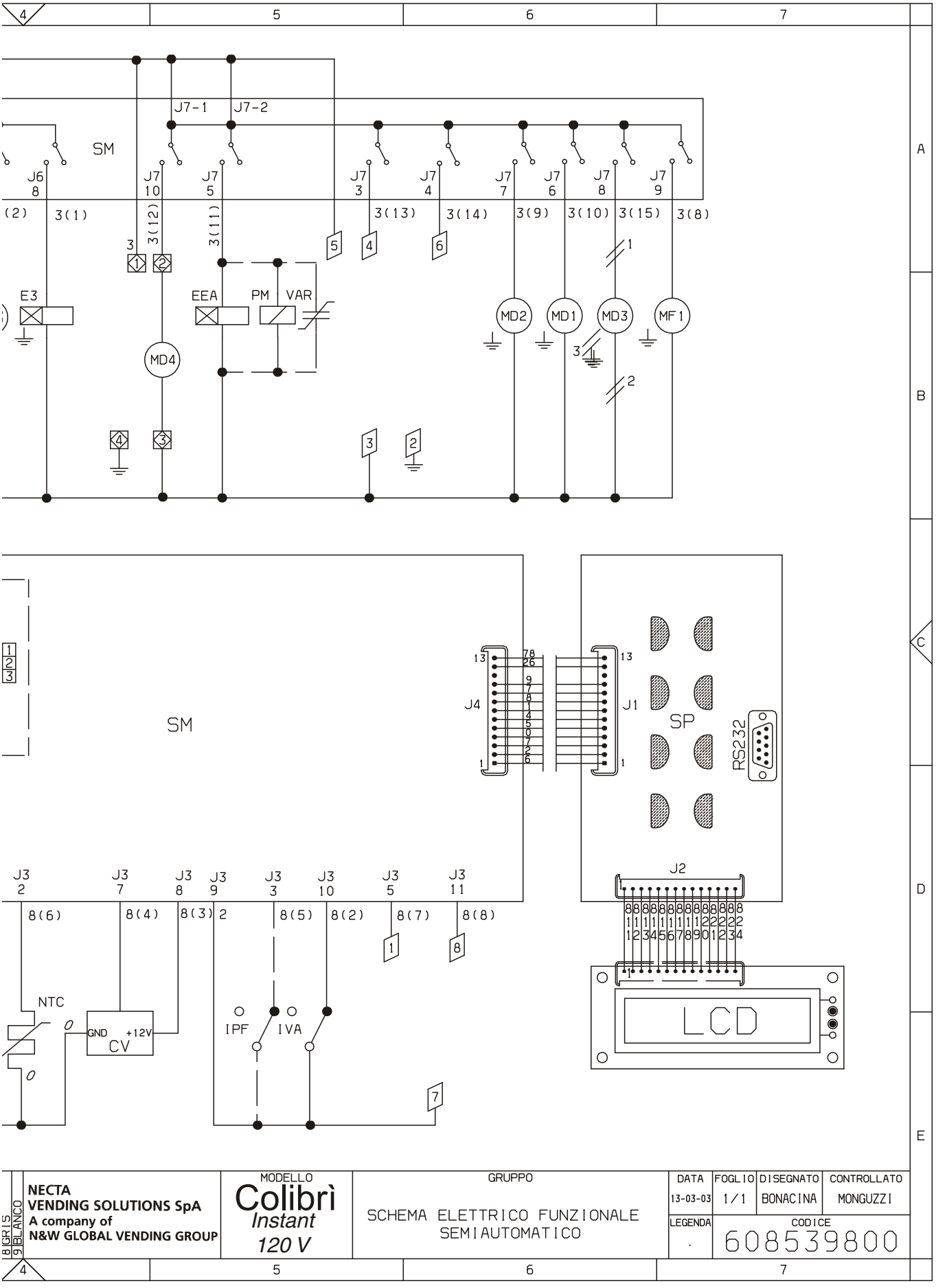
INGR. 8 GRIS 9 BLANCO



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LA PROPRIETA' DEL PRESENTE
DISEGNO CON DIVIETO DI
RIPRODURLO O DIVULGARLO SENZA
SUA PREVIA AUTORIZZAZIONE

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9	BIANCO	WHITE	BLANC	WEISS	BLANCO

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MF1
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8 GRIS
9 BLANCO
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13-03-03
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1/1
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BONACINA
CONTROLLATO
MONGUZZI
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