

# Zenith

**Fresh Brew**

**Instant**

**UK**

English



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

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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.

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C.E.O



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Via Roma, 24 - I-24030 VALBREMBO (BG)

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

**ISO 9001**

Issued on: 2000 - 03 - 31

Registration Number: IT - 12979

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Prima emissione  
First issue  
**1 Giugno 1994**

Emissione corrente  
Current issue  
**31 Marzo 2000**

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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

This manual describes the following machines:

- models with two units for brewing FB coffee or FB tea and reconstituting instant products;
- models with one unit for brewing FB coffee or FB tea and reconstituting instant products;
- instant models for reconstituting instant products.

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

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

## IN CASE OF FAILURE

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

Should there be failures or malfunctions that cannot be solved, then contact:

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

## TRANSPORT AND STORAGE

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

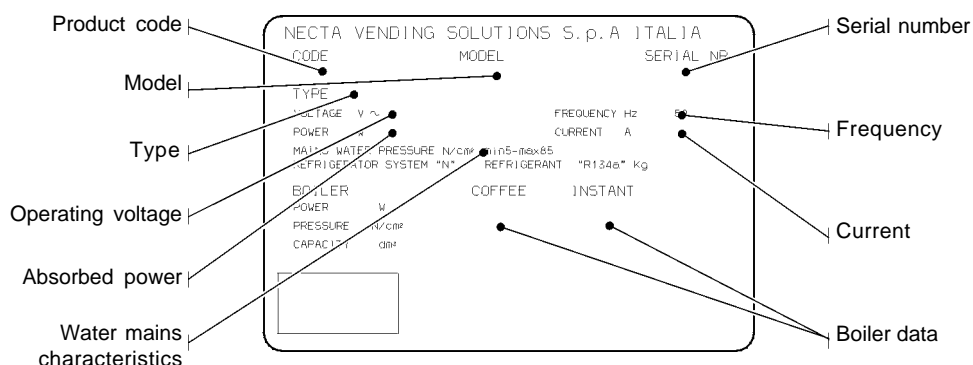
The machine can be lifted by a motor-driven or manual fork lift truck, and the forks are to be placed underneath the machine from the side clearly indicated by the symbol on the cardboard package.

**Do not:**

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

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

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



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

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

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

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

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

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

Any other use is unsuitable and thus potentially dangerous.

## POSITIONING THE VENDING MACHINE

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

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

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

If necessary provide proper levelling by way of the adjustable feet included (see Figure 11).

## WARNING FOR INSTALLATION

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

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

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

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

## PRECAUTIONS IN USING THE MACHINE

The following precautions will assist in protecting the environment:

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

## WARNING FOR SCRAPPING

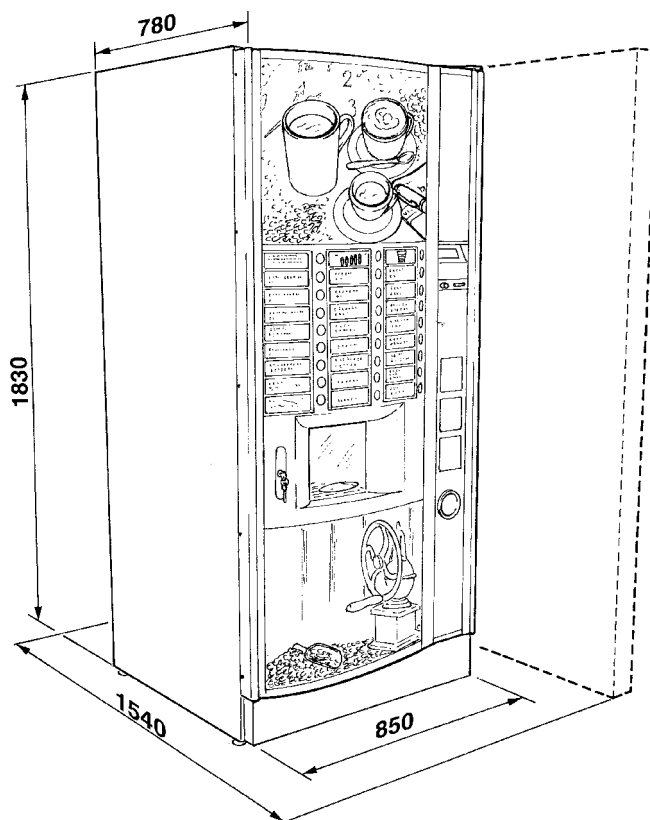
Whenever the machine is to be scrapped, the laws in force regarding environment protection should be strictly observed. More specifically:

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

## DIMENSIONS

|                              |         |
|------------------------------|---------|
| Height                       | 1830 mm |
| Width                        | 850 mm  |
| Depth                        | 780 mm  |
| Overall depth with door open | 1540 mm |
| Weight:                      |         |

| Weight | 2 Units | 1 Unit | Instant |
|--------|---------|--------|---------|
| Kg     | 235     | 225    | 220     |



## TECHNICAL SPECIFICATIONS

|                      |      |    |
|----------------------|------|----|
| Power supply voltage | 230  | V~ |
| Frequency            | 50   | Hz |
| Installed power      | 2400 | W  |
| Lighting lamps power |      |    |

| Lamps (230 V~)      | N. | W  |
|---------------------|----|----|
| Advertising panels  | 2  | 15 |
| Selection menu      | 3  | 8  |
| Internal (optional) | 1  | 8  |

### CUP DISPENSER

Suitable for cups with a rim diameter of 70-71 mm. with a capacity of approximately 900 cups;

### PAYMENT SYSTEM

The machine is supplied with all electrical prearrangement for systems with Executive, BDV and MDB protocol, as well as for installation of 24 V validators.

Beside the coin mechanism housing, suitable space is provided for the installation (optional) of the most widely used payment systems.

### SALES PRICES

A different price in 4 programmable time periods can be set for each selection;  
the standard setting has the same sales price for all selections without any time bands.

### ENERGY SAVING.

Option of setting the automatic switch-off of lamps and/or boilers over 3 daily time bands on a weekly basis, to save electric power during the machine idle periods.

### JUG FACILITIES AND FREE VEND

Using a special key, up to 9 freshly brewed drinks can be dispensed to fill a jug without releasing any cups; alternatively to get free dispensing of normal selections.

### COIN BOX

Made of aluminized plate.  
Cover and lock are available as accessories.

### WATER SUPPLY

From the mains, with a pressure of 5 to 85 N/cm<sup>2</sup> (0,5÷8,5 bar).

## AVAILABLE ADJUSTMENTS

Fresh brew: coffee or tea dose, water dose. brewing time and drying time.

Instant: time adjustment for coffee, instant products and water doses.

Temperature control programmable via software.

## CONTROLS

- Presence of cups
- Presence of water
- Fresh brew unit in start position
- Liquid waste container full
- Operating temperature reached
- Position of mobile dispensing spouts

## SAFETY DEVICES

- Door switch
- Manual-reset boiler safety thermostats
- Air-break float jamming
- Overflow solenoid valve
- Float for full liquid waste container
- Instant boiler anti-overboiling thermostat
- Boiler sensor short-circuit/failure control
- Timer protection for:
  - Brewer unit ratiomotor
  - Fresh-brew product dispensing
- Overheating protection for:
  - Doser units
  - Brewer unit ratiomotor
  - Electric mixers
- Fuse protection for:
  - Main electrical circuit
  - Board power supply transformer
  - Coin mechanism power supply

## CAPACITY OF CONTAINERS

|                   |     |    |
|-------------------|-----|----|
| Fresh brew tea    | 5,8 | Kg |
| Fresh brew coffee | 5,2 | Kg |
| Sugar             | 4,4 | Kg |
| Powdered milk     | 1,4 | Kg |
| Instant coffee    | 3,9 | Kg |
| Chocolate         | 3,4 | Kg |
| Soup              | 3,9 | 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.

Under average conditions, and namely:

- Ambient temperature: 20° C
- Instant boiler temperature 90° C
- Inlet water temperature: 18° C
- Water (average) per selection: 90 cc

the following power consumption levels resulted:

| Power consumption (Wh)         | 1 unit | Instant |
|--------------------------------|--------|---------|
| To reach operating temperature | 500    | 370     |
| For each hour of stand-by      | 270    | 215     |

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

## VARIABLE COMBINATION LOCK

Some machine models are fitted with a variable combination lock.

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

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

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

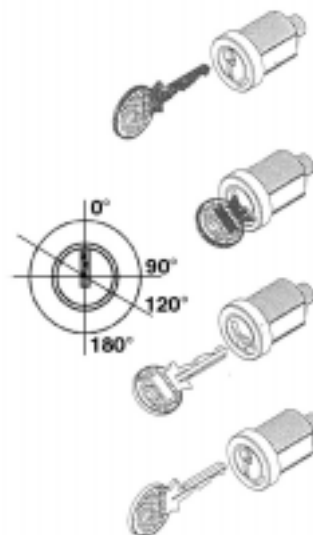
Sets of change and use keys with other combinations can be supplied on request.

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.**

Fig. 1



### TO CHANGE COMBINATION DO AS FOLLOWS:

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

The lock will now have the new combination.

**Keys with the old combination cannot be used for the new combination.**

## ACCESSORIES

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

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

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

## 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.**

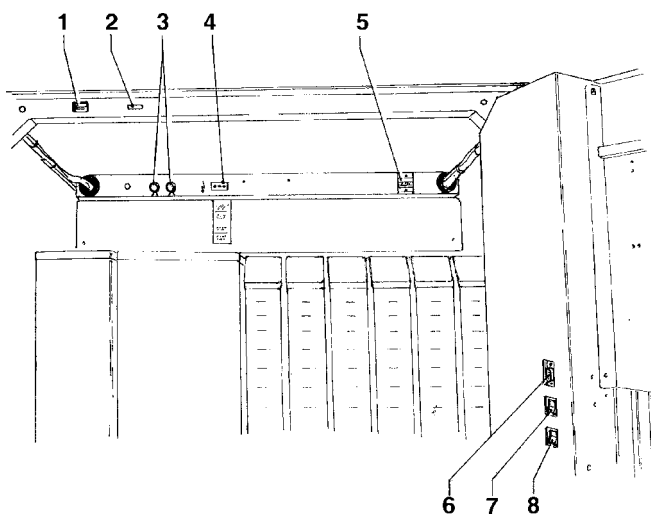
The service power socket, permanently live, is sized for small tools; care should be taken not to exceed the rating indicated on the specific plate.

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

The door can be closed only after removing the key.

Fig. 2

- 1 - Door switch
- 2 - internal lamp switch (optional)
- 3 - Network fuses
- 4 - Permanently live socket (230v~ 2 A. Max)
- 5 - Mechanical counter
- 6 - RS232 serial port
- 7 - Mixer cleaning button
- 8 - Programming button



**Do not leave the vending machine unattended with the door open.**

### MAINTENANCE AND DISINFECTION

According to current legislated health and safety 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 resulting from failure to comply with current regulations.

**Before starting any maintenance operations requiring parts of the unit to be removed, the machine must always be disconnected from the power supply.**

### CONTROLS AND INFORMATION

All user controls and information are conveniently located on the external side of the door (see Figure 3).

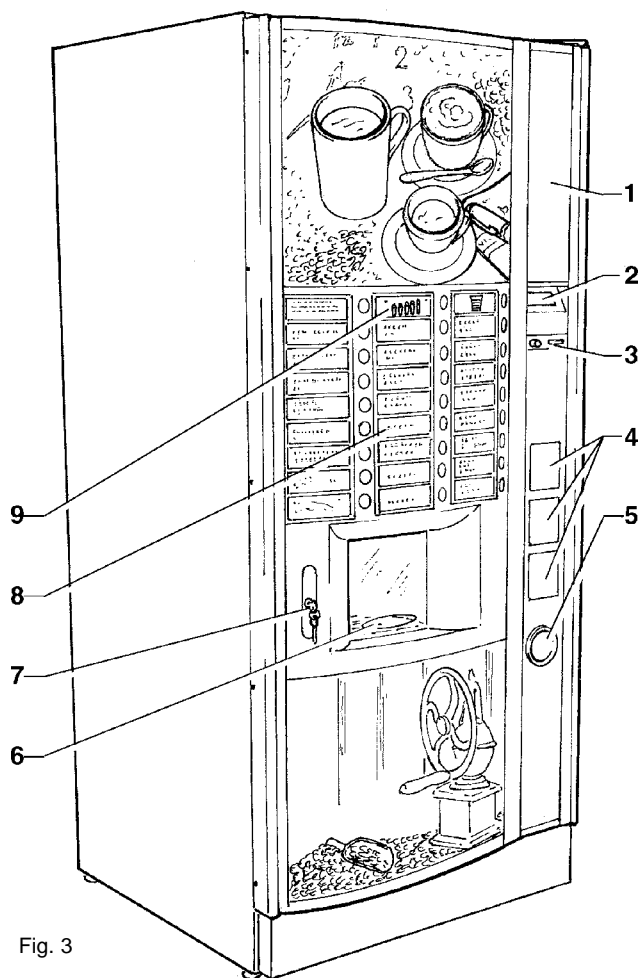


Fig. 3

- 1 - Modular elements for payment systems
- 2 - Alphameric display (4x20)
- 3 - Coin slot-return.
- 4 - Operating instructions labels
- 5 - Coin return flap
- 6 - Dispensing compartment
- 7 - Lock
- 8 - Selection menu
- 9 - Coffee dose selection

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

The programming button, to access the machine functions, and the mixer cleaning button are located on the coin mechanism compartment cover.

## LOADING CUPS

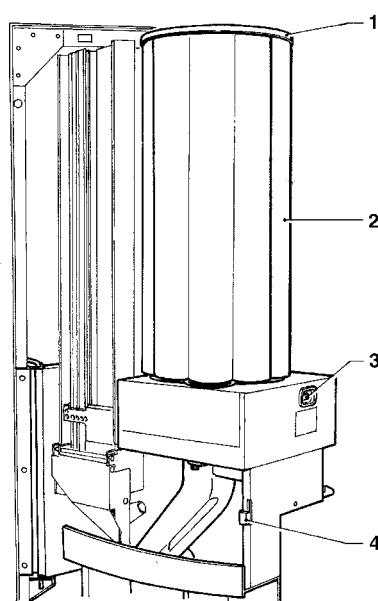
When loading cups for the first time (i.e. with the cup dispenser completely empty) do as follows:

- disconnect the electricity from the machine;
- remove the cover of the cup container;
- fill the columns with cups, except the one aligned with the dispensing opening;
- switch the machine on and the full column will be positioned automatically over the dispensing opening;

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

- fill the empty column;
- release one or more cups with the special button and replace the cover.

Fig. 4



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

## LOADING SUGAR AND INSTANT PRODUCTS

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

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

## LOADING STIRRERS

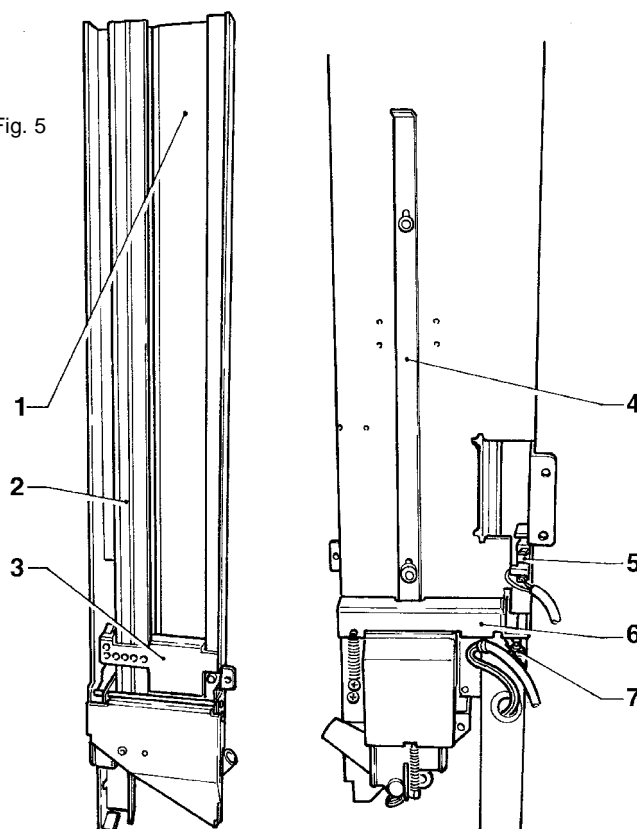
In order to load correctly the double stirrer stacker do as follows:

- remove the inner and outer stirrer weights, from above (see Figure 5);
- ensure that the inner column is pushed back using the special lever, so that the stirrers from the outer guide (in view) are dispensed first. By lifting the lever handle to lift the residual stirrers, the column can be pushed towards the inside until the release mechanism is reset.

With the profile positioned inside the stirrer columns, 90 or 105 mm stirrers can be dispensed;

Without the profile, 115 mm stirrers can be dispensed.

Fig. 5



- 1 - Double column
- 2 - Stirrer profile
- 3 - Removable weight
- 4 - Reset lever
- 5 - External column "empty" microswitch
- 6 - Internal column lock device
- 7 - Thermo-expander

## SANITISING THE FOODSTUFF CIRCUITS AND THE MIXERS

When installing the unit, 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.

**In order to make sanitising operations quicker, some spare parts, which can replace the parts to be cleaned, are supplied with the machine.**

The parts to be cleaned are as follows:

- mixer and instant drink dispensing conduit;
- coffee dispensing spout;
- cup chute;
- dispensing compartment;
- remove the covers, the powder and the water funnels, the feeders, the powder deposit drawers and the mixer wheels from the mixers (see Figure 6);

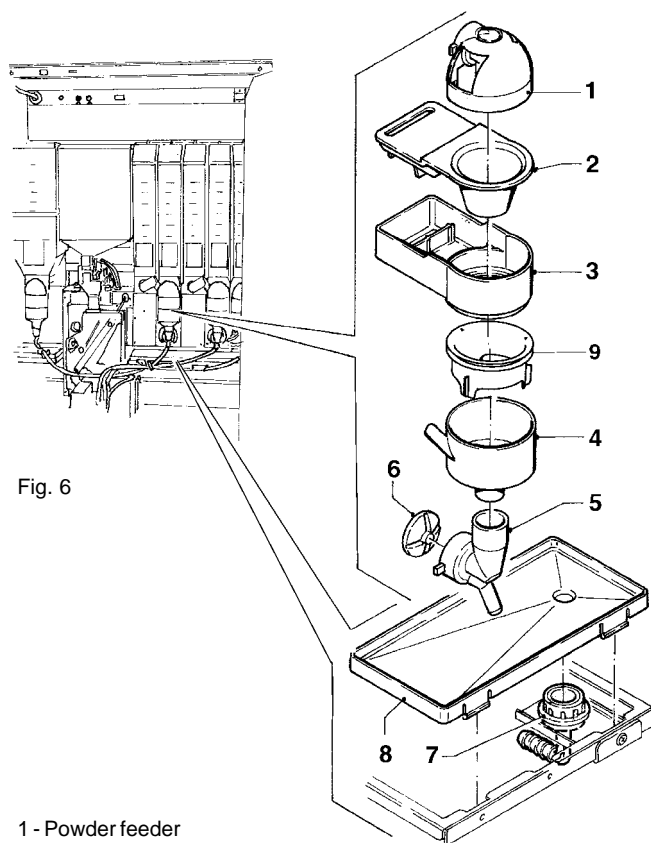
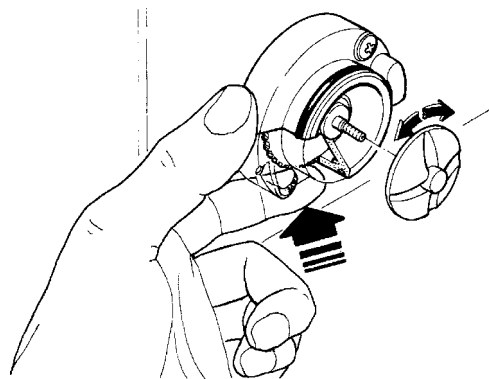


Fig. 6

- 1 - Powder feeder
- 2 - Powder funnel
- 3 - Powder deposit drawer
- 4 - Water funnel
- 5 - Feeder
- 6 - Mixer wheel
- 7 - Tray drain
- 8 - Overflow tray
- 9 - Splash guard ring

- a splash guard ring is also fitted in the fresh coffee and milk mixers; this must be cleaned and then replaced in the same mixers;
- in order to remove the wheels, block the disk fitted on the mixer shaft with a finger (fig. 7);

Fig. 7



- 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:**

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

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

Some models, with the fresh product being dispensed directly into the cup, are fitted with a special spout (see fig. 8), as alternative to the splash guard ring, preventing the pressure created by the brewer piston from being discharged into the cup.

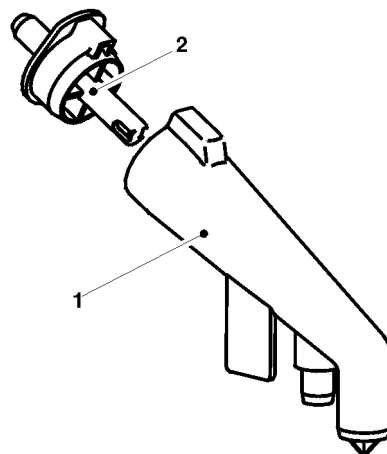


Fig. 8

- 1 - Tea dispensing spout
- 2 - Plug

Also this spout and its plug must be cleaned following the same procedure indicated for the mixers.

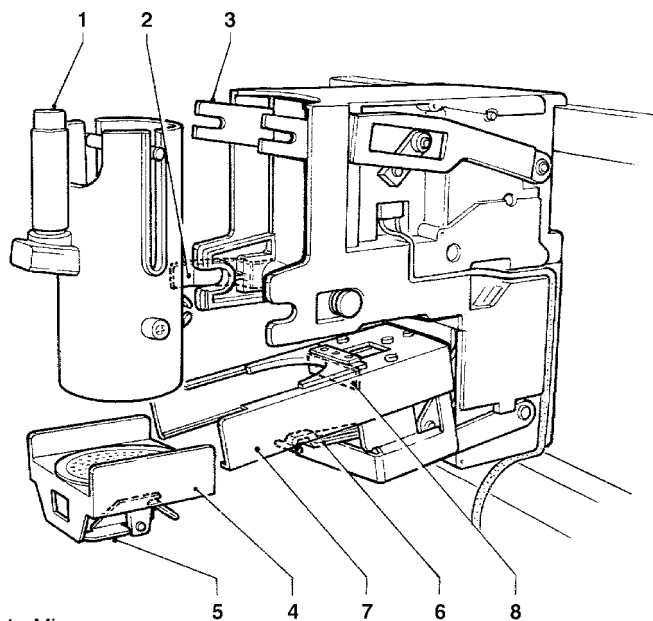
## WEEKLY CLEANING OF THE BREWER UNIT

On a weekly basis, besides cleaning the external parts of the brewer unit to remove any powder residue, especially in the area of the funnel, also the parts of the unit which come into contact with the drink should be sanitised.

**These operations must be carried out with the power switched off.**

- Undo the fastening screw and remove the cover to access the brewer unit.
- Disconnect the hose from the mixer and remove the mixer (9-1) from the brewing cylinder.
- Disengage the cylinder from the assembly by pulling the release lever (9-2) and slide it out of the piston control fork (9-3) by pulling it outwards.
- Slide out the piston from the cylinder.
- Extract the sliding filter holder (9-4) from the guide (9-7) releasing the link (9-6) from the stop lever (9-5).
- Extract the scraper assembly (9-8).
- Wash all parts with mild detergent, being sure that all visible residue and product layers are mechanically removed, using a brush if necessary.
- Soak them for approx. 20 minutes in a container filled with a chlorine-based detergent similar to the one used for the mixers.

Fig. 9



- 1 - Mixer
- 2 - Cylinder release lever
- 3 - Piston control lever
- 4 - Sliding filter holder
- 5 - Control link
- 6 - Filter holder release lever
- 7 - Guide
- 8 - Scraper assembly

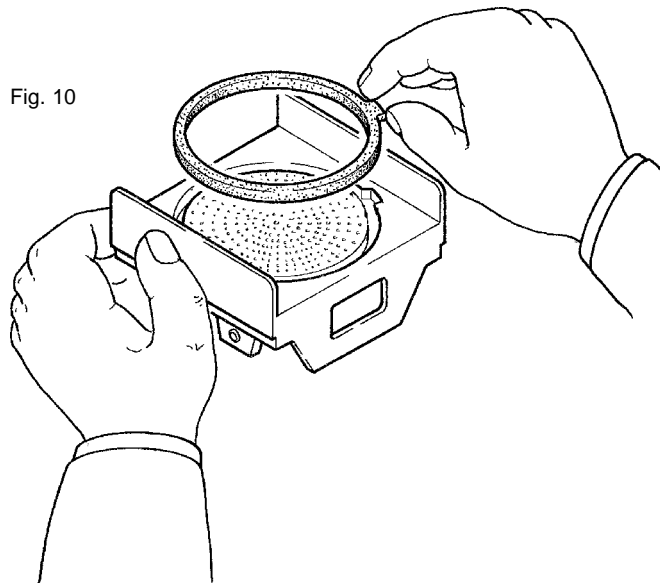
**Do not use screwdrivers or any other sharp objects against the filter holder seal and do not place the seal on surfaces which may damage it.**

If the metal filter is clogged, it should be replaced or cleaned with a specific product.

To remove the metal filter, first pull out the seal from its edge (see fig. 10).

The filter must be cleaned at least every 2,500 selections. To reassemble the brewer unit follow the above instruction in the reverse order, making sure that the seal is installed before the filter.

Fig. 10



## REPLACING THE FILTER CARTRIDGE

Every 30,000 drink selections or every 6 months, the mains metal filter cartridge should be replaced according to the procedure described in section "Installing the filter cartridge".

## 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 air-break and the instant product boiler, loosening the clamp on the hose.

**Before reinstating the machine, the cleaning and sanitising procedure described in the section "Yearly sanitising" should be carried out.**

## Chapter 2 INSTALLATION

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

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

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

### UNPACKING THE VENDING MACHINE

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

If in doubt do not use the machine.

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

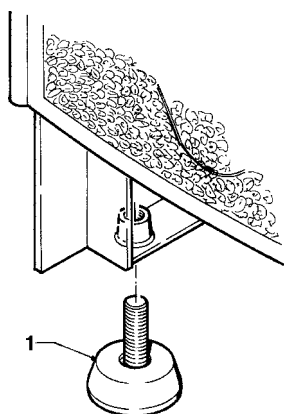
Packing materials must be disposed of in authorized areas only, and all recyclable materials must be recovered by specialised companies.

#### Important notice!!

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

If necessary provide proper levelling by way of the adjustable feet included (see Figure 11).

Fig. 11



1 - Adjustable foot

### INSERTING THE PRODUCT LABELS

To be able to insert the product labels, the front panel must be removed. Undo the fastening screws and then press the clamping tangs (see fig. 12).

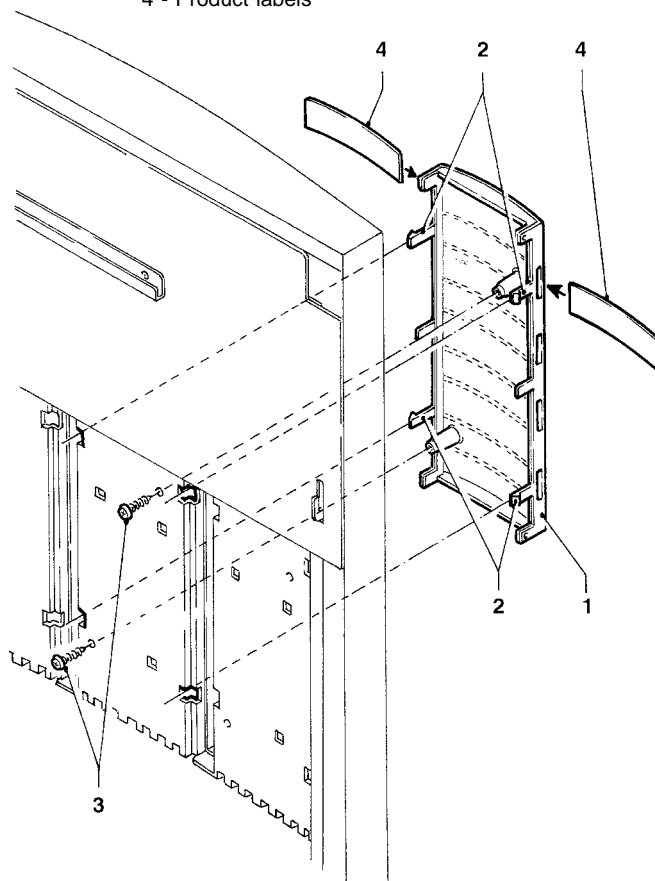
The labels must be inserted into the special slots with the opening positioned alternating on the left and right hand side.

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

The machine is supplied also with the self-adhesive labels to be attached to the product containers according to the layout (refer to the selection dose table).

Fig. 12

- 1 - Label support
- 2 - Clamping tangs
- 3 - Fastening screws
- 4 - Product labels



### INSTALLING THE FILTER CARTRIDGE

Make sure that the coloured ring is in the lower position (turned to the left). Wet the two cartridge seals (see Fig. 13).

- a) insert the cartridge into the ring,
- b) turn the cartridge to the right,
- c) turn the ring fully to the right until locking the cartridge;
- d) block the ring into place by lowering the lever, so that it is just in front of the ring nose.

**NOTE: The lever is used as a tap.**

**lever lifted = tap closed**  
**lever lowered = tap open.**

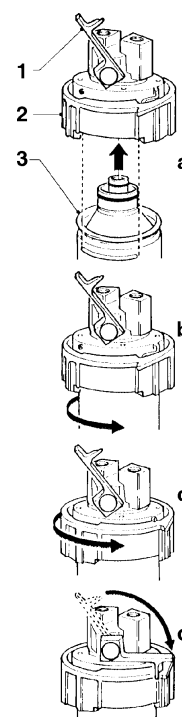


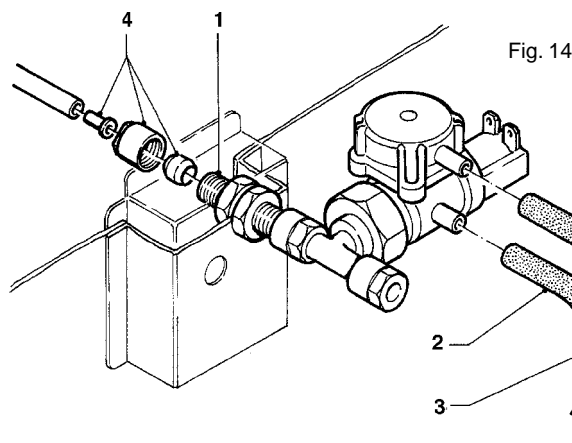
Fig. 13

- 1 - Lock lever
- 2 - Coloured ring
- 3 - Cartridge

## CONNECTING THE MACHINE TO THE WATER MAINS

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

Use a hose capable of withstanding the water mains pressure and suitable for use with foodstuff (min. inside diameter of 6 mm) to connect the water supply to the fitting (1/4" gas) of the water inlet solenoid valve (see Figure 14).



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

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

### OVERFLOW DEVICE

The water inlet solenoid valve (see Fig. 14) 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. 14);
- open the tap and switch the machine on.

## CONNECTING TO THE POWER SUPPLY

The vending machine is designed to operate under a single-phase 230 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 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.**

The power supply cable is of the type with a fixed plug. Any replacement should be carried out by qualified personnel only, using exclusively cables of the type HO5 RN - F or HO5 V V-F or H07 RN-F with a section of 3x1-1.5 mm<sup>2</sup>.

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

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

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

### 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. 2).

**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.**

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

## INSTALLING THE PAYMENT SYSTEM

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

- Install the desired coin mechanism according to the appropriate instructions and make sure that the relevant parameters are programmed correctly.
- adjust the selector opening lever bracket to allow complete opening of the selector;
- adjust the coin chute according to the type of coin mechanism installed.

## FILLING THE WATER SYSTEM

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

- the display will show "OUT OF SERVICE" for the entire duration of the cycle;
- the air-break and the boiler are filled;

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

**This operation must be carried out by hand after any maintenance requiring the boiler to be emptied but not the air-break.**

## BREWER UNIT OPERATION

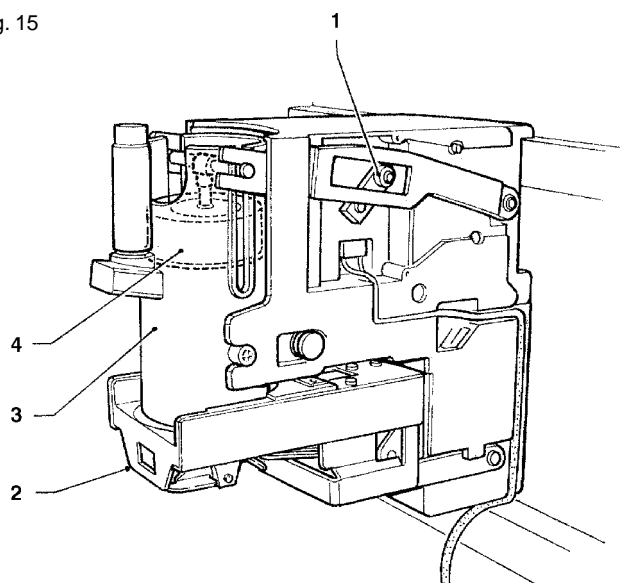
The unit is designed to brew ground coffee (suitable for vending machines).

**Ensure that the powder funnel is cleaned thoroughly at the end of the dispensing cycle.**

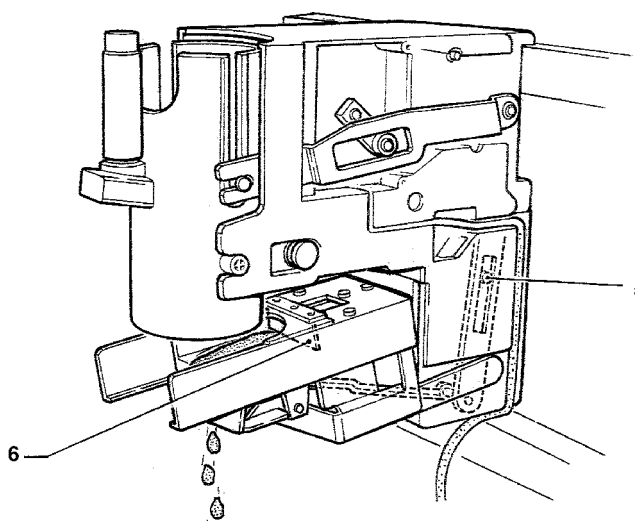
### DISPENSING CYCLE

When a selection is made, the Brewer unit motor (15-1) will lift the sliding filter holder (15-2) against the cylinder of the brewing chamber (15-3) until proper seal is achieved. At the same time, the brewing piston (15-4) is raised to let the water and the product mixture into the chamber. Water dispensing starts one second after the unit motor starts.

Fig. 15



- 1 - Brewer unit crank
- 2 - Sliding filter holder
- 3 - Brewing chamber cylinder
- 4 - Brewing piston
- 5 - Sliding filter holder motor
- 6 - Grounds removing scraper





Brewing will continue for a preset period of time, which can be programmed via software, then the piston is lowered to dispense the brewed drink and dry the dose of grounds. At the end of drink dispensing, the filter holder will be lowered, the filter holder motor (15-5) moves back the sliding filter holder, thus enabling the grounds to be removed by the scraper (15-6).

It is also possible to program a pause for drying the product dose to further improve the drink quality.

To improve the product aspect, a special dispensing spout is used on some models (see Fig. 8), for the purpose of preventing the pressure generated by the brewing piston from being discharged directly into the cup.

### 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 instant products;
- The water dose;
- The drink temperature.

The weight of instant products and the water dose 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:

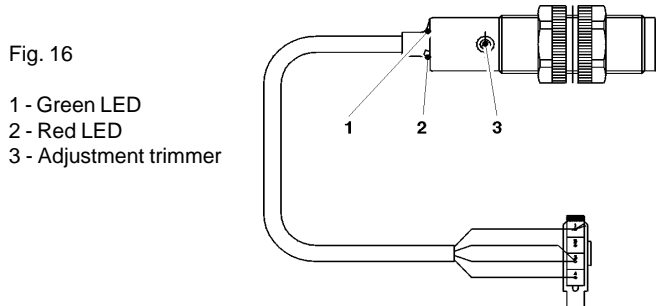
- Brew temperature (at the spout) approx. 85-89°C;
- Instant product temperature (at the spout) approx. 75°C.

### CUP SENSOR

The cup sensor (fig. 16) is adjusted in such as way as to detect objects (red LED glowing) placed between the sensor lens and the reflector.

The green LED glows when the reflector is read correctly. By means of the trimmer (preset at the factory) the sensing depth can be varied; the correct setting is approximately 30°, clockwise, from the maximum.

For a correct operation, the infrared transmitter and the reflector must be kept clean.



## 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 as follows:

|                 | FUNCTIONS                              |
|-----------------|--|
| Normal mode     | coins accepted<br>products dispensed   |
| Filler menu     | test dispensing<br>machine maintenance |
| Technician menu | programming<br>different parameters    |

### USER INTERFACE

The interaction between system and user occurs through the following components:

- Liquid crystal display (LCD) 4 lines of 20 characters.
- External push-button panel, with keys which have the following functions when in “Filler” and “Technician” mode (see Fig. 17):

**Scrolling keys “↑” and “↓” :**

To move to the next or previous menu option.

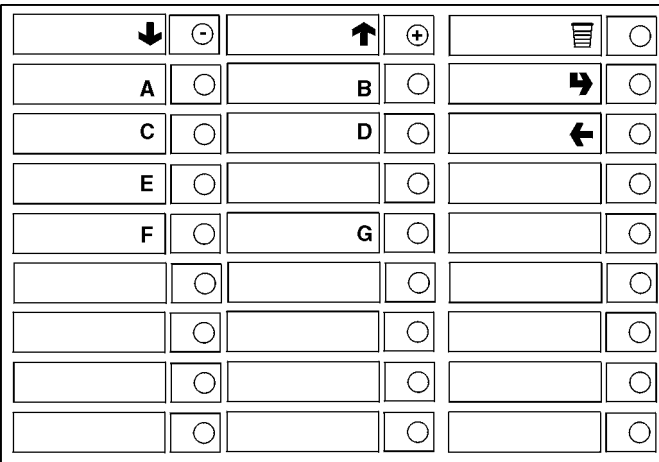
**Confirm key “↵”:**

To go from a menu to a sub-menu, or to confirm the information on the display.

**Exit key “⏮”:**

To move back from a sub-menu to the higher level menu, or used to cancel the current information on the display. It is also used to go from “Filler” mode to “Technician” mode and vice versa.

Fig. 17



## NORMAL OPERATING MODE

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

The displayed messages indicating the operation being carried out are fixed, while the instructions requiring an action from the user are blinking; the messages include the following:

| DISPLAY                                | FUNCTION                      |
|--|-------------------------------|
| Select drink<br>Press key              | Machine ready                 |
| Vending machine<br>out of service      | Machine out<br>of service     |
| Selected drink<br>essed<br>Wait please | Processing the proc-<br>drink |
| Drink ready<br>Take drink              | Dispensing ended<br>correctly |

## FILLER MENU

When pressing once the programming button located on the coin mechanism compartment, the machine goes into "Filler menu" mode.

The first option of the "filler" menu is displayed, allowing the following functions:

|                     |  |
|---------------------|--|
| "Statistics"        | Data reading   |
| "Prices"            | Changing the price for one<br>selection  |
| "Tube control"      | Manual refilling and release<br>of change-giver tubes  |
| "Display Temperat." | Displays the boiler<br>temperature   |
| "Test"              | Complete selection<br>Dispensing water only<br>Dispensing powder only<br>Dispensing without accessories<br>Dispensing accessories only |
| "GSM"               | Reset pre-alarm counters   |
| "EVADTS"            | Connection   |

## STATISTICS

Data on the machine operations is stored in both general counters and relative counters, which can be reset without losing total data.

### PRINT

Connect an RS232 serial printer having 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 of the statistics, and namely:

#### Total

- 1 - counter by single selection;
- 2 - counter by time bands;
- 3 - discount counter;
- 4 - failure counter;
- 5 - coin mechanism data.

#### Relative

- 1 - counter by single selection;
- 2 - counter by time bands;
- 3 - discount counter;
- 4 - failure counter;
- 5 - coin mechanism data.

The printout will also contain the machine code, the date and the software version.

To connect the printer, do as follows:

- press the confirm print button "➡", displaying the message "Confirm?";
- connect the printer before confirming;
- press the confirm button "➡" again to start printing.

### DISPLAY

When pressing the confirm button "➡" the data described in the paragraph "Printing the statistics" is sequentially displayed.

### DELETE STATISTICS

Statistics can be reset for relative counters globally (all types of data) or selectively for:

- selections
- discount / overprice
- failures
- coin mechanism data

Press the confirm button "➡", and the message "Confirm?" starts blinking.

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

## SELECTION PRICES

This function is used to change the sales price for each selection and for each time band (if programmed).

## CHANGE TUBES CONTROL

By accessing the "Tube control" function the change tubes can be filled or released manually.

Confirm refilling, and the display will indicate

"Credit: —" which is the value of money available in change the tubes; insert the desired coin into the selector and the display will indicate the value of money available in the change tubes.

When confirming releasing, it will be possible to decide which tube to release. Each time the confirm button "→", is pressed, a coin is ejected from the active tube.

## DISPLAYING THE TEMPERATURE

With this function, it is possible to read, directly in °C, the temperature of the coffee boiler (if fitted) and instant boiler.

## TEST DISPENSING

For complete or partial dispensing tests each button is controls its (see the dose selection table).

## GSM PRE-ALARMS

The control software can sent a "running-out" signal via GSM modem when a programmed number of pieces or grams of powder for a certain product have been used up. With this function the counters that control the pre-alarms are reset.

## EVADTS TRANSFER

When this function is activated, the machine awaits the connection with device for the acquisition of EVADTS statistics.

## TECHNICIAN MENU

When pressing button "←" from "Filler" mode the machine is set to "Technician menu" mode.


The first option of the programming menu is displayed, enabling the following functions:


|                 |                                    |                              |  |
|-----------------|------------------------------------|------------------------------|--|
| Failures        | Reading present failures<br>Cancel |                              |  |
| Prog.parameters | Cash                               | Prices                       |  |
|                 |                                    | Coin mechanisms              |  |
|                 |                                    | Decimal point                |  |
|                 |                                    | Valuta/Euro                  |  |
|                 | Selections                         | Water doses                  |  |
|                 |                                    | Powder doses                 |  |
|                 |                                    | Accessories                  |  |
|                 |                                    | Selection status             |  |
|                 |                                    | Selection button             |  |
|                 | Machine parameters                 | Boiler temperature           |  |
|                 |                                    | Wash button                  |  |
|                 |                                    | Stop button                  |  |
|                 |                                    | Whipping time                |  |
|                 |                                    | N. of maintenance selections |  |
|                 |                                    | Lighting                     |  |
|                 |                                    | Automatic washing            |  |
|                 |                                    | Turn time                    |  |
|                 |                                    | of cup column                |  |
|                 |                                    | Energy saving                |  |
|                 | Display                            | Language                     |  |
|                 |                                    | Promotional message          |  |
|                 |                                    | Custom. messages             |  |
|                 | Pre-selections                     | No cup                       |  |
|                 |                                    | Extra sugar                  |  |
|                 |                                    | Sugar                        |  |
|                 |                                    | Less sugar                   |  |
|                 |                                    | More sugar                   |  |
|                 |                                    | Less water                   |  |
|                 |                                    | (Mokka)                      |  |
|                 |                                    | More powder                  |  |
|                 |                                    | Less powder                  |  |
|                 |                                    | Espresso                     |  |
|                 |                                    | Coffee powder                |  |
|                 |                                    | Jug variation                |  |
|                 | Miscellaneous                      | FB unit data                 |  |
|                 |                                    | Jug facilities               |  |
|                 |                                    | Password                     |  |
|                 |                                    | Program.level                |  |
|                 |                                    | Cust. selections             |  |
|                 |                                    | EVADTS data                  |  |

|               |                             |  |
|---------------|-----------------------------|--|
| Statistics    | Display                     | Selection counters<br>Counters by time bands<br>Discount counters<br>Failure counters<br>Coin mechanisms   |
|               | Cancel                      | Partial<br>Total   |
|               | Relative display            | Selection counters<br>Counters by time bands<br>Discount counters<br>Failure counters<br>Coin mechanisms   |
|               | Cancel relative             | Partial<br>Total   |
|               | Display counter at start-up |  |
|               | Print                       | Partial  |
|               | Relative print              | Partial<br>Total   |
| Test          | Complete selection          |  |
|               | Unit control                | Enable provisionally buttons A÷I.  |
|               | Autotest                    | Actuation in a sequence of:<br>.doser devices<br>.mixers<br>.cup dispenser<br>.stirrer dispenser<br>.neon lamps<br>.door LED<br>.push-buttons<br>.mobile spouts<br>.coffee dose<br>.unit rotation<br>.waste cont. switch |
| Miscellaneous | Machine info.               | installation date<br>Machine codes<br>Operator code  |
|               | Initialising                |  |
| GSM           | Pin Code                    | setting the code for the modem   |
|               | Pre-alarms                  | set threshold<br>reset counters  |

## FAILURES

### READING PRESENT FAILURES

When the “Failure” function is displayed, press the confirm button “” to display the present failures.

If no failures are currently present, after pressing the confirm button “” the message “End failures” will be displayed.

The possible failures are indicated in the following cases:

#### Water failure

If the air-break microswitch is closed for more than one minute, the water inlet solenoid valve will remain energized until the water flow is restored.

#### Instant boiler

The machine is locked if after 20 minutes of heating time from machine start or from the last selection, the instant boiler fails to reach the operating temperature.

#### Espresso boiler

The machine is locked if after 10 minutes of heating time from machine start or from the last selection, the coffee boiler fails to reach the operating temperature (Only if the espresso unit is fitted).

#### Mobile spouts

If the spouts do not reach the dispensing position, the machine is disabled.

#### No cups

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

#### Espresso unit 1

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 (Only if the espresso unit is fitted).

#### Coffee failure 1

If after a period of 15 seconds of grinding coffee a dose is not obtained, all coffee-based selections are disabled (Only if the espresso unit is fitted).

#### Espresso unit 2 / Coffee failure 2

As Espresso unit 1 and Coffee failure 1 if the second coffee unit is fitted.

#### Coffee release

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 (Only if the espresso unit is fitted).

#### Volumetric counter

Failed computation of the volumetric counter within a max. given time (Only if the espresso unit is fitted).

#### Waste container full

This occurs after the liquid waste container float is triggered.

#### Air-break

The machine is locked if after 7 selections the microswitch has never signalled the lack of water.

## Coin mechanism

The machine is locked if it receives a pulse longer than 2 seconds on a validator line or the communication with the serial coin mechanism does not take place for more than 30 seconds (Executive protocol) or 75 seconds (BDV protocol).

## RAM Data

One or more areas of the RAM contain wrong data which was corrected with the default values.

The machine will continue to function, but it would be advisable to initialise as soon as possible.

## Machine control board

Failed dialogue between C.P.U. board and machine control board.

## Fresh-brew unit 1

Due to wrong positioning of the unit (piston opening time > 8 seconds). The machine is not locked, but all fresh product based selections are disabled.

## Fresh-brew scraper 1

Wrong positioning of the waste ejection scraper (movement time > 6 seconds).

The machine is not locked, but all fresh product based selections are disabled.

## Fresh-brew unit 2 / Fresh-brew scraper 2

As unit and scraper 1 if the second Brewer unit is installed.

## RESETTING

By confirming this function all current failures will be reset

# PROGRAMMING PARAMETERS

## CASH

This set of functions controls all parameters regarding the payment systems and the sales prices.

## SELECTION PRICES

Four different prices can be set for each selection according to the programmed time bands for when the time table option is enabled.

For each of the 4 time bands prices (0 to 65,535) can be programmed globally (same price for all selections) or for the single selections.

Should the majority of products be sold at the same price, it will be convenient to set the price globally and then change the figure of the selections with different prices.

## Time bands

Four programmable time bands are provided for selling products at different prices.

The time periods are programmable for beginning and end time by hours (00 to 23) and minutes (00 to 59).

If the values for start and end of the time band are set to 00.00 the time period is disabled.

The reference time is kept by an internal clock, programmable as:

day/month/year week-day 1-7

and then

hour/minutes/seconds.

If the values for start and end of the time band are set to 00.00 the time period is disabled.

## COIN MECHANISMS

It is possible to decide which of the payment system protocols available are to be enabled for the functions.

The available payment systems are:

- Validators
- Executive
- BDV
- MDB

By selecting one of the systems it is possible to control its functions.

## Validators

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

## Executive

The following payments systems are available for the Executive system:

- Standard
- Price Holding
- Coges
- U-Key
- Sida

## BDV / MDB

The BDV and MDB protocol menus are relatively similar: The following structure shows the differences.

### Type of vending

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

### Credit control

This function enables/disables the return of credit if no selections are made.

If enabled, this function will allow the return of coins even the first selection is not made.

### Maximum credit

This function is used to define the maximum accepted credit.

### Maximum change

It is possible to set a limit to the total amount of change returned by the coin mechanism when pressing the coin return button or after a single dispensing serving. Any credit exceeding the amount programmed with this function will be cashed.

### Accepted coins

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

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

### Rejected coins

This function programs the rejection of coins when in "No change" mode.

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

### Returned coins (MDB only)

This function enables/disables each of the buttons on the coin mechanism used to release the coins from the change return tubes.

### Dispensing buttons (BDV only)

This function enables/disables all the buttons on the coin mechanism used to release the coins from the change return tubes.

### Value of "exact amount" (BDV only)

This value defines the combination of empty coin tubes, setting the coin mechanism in "exact amount" mode. The possible combinations of empty coin tubes are indicated below. For greater simplicity, the combination is described with reference to tubes A, B and C, where tube A receives the lower value coins and tube C the greater value coins.

|    |   |                       |
|----|---|-----------------------|
| 0  | = | A or (B and C)        |
| 1  | = | A and B and C         |
| 2  | = | A and B only          |
| 3  | = | A and (B or C)        |
| 4  | = | A only                |
| 5  | = | A or B only (default) |
| 6  | = | A or B or C           |
| 7  | = | A or B only           |
| 8  | = | A or C only           |
| 9  | = | B and C only          |
| 10 | = | B only                |
| 11 | = | B or C only           |
| 12 | = | C only                |

### C.P.C. devices (BDV only)

It dialogues with the coin mechanism if devices are installed or removed from the serial interface (C.P.C.-type devices - the monitoring unit is always enabled by default).

### Accepted bills (MDB only)

It is possible to define which of the bills recognised by the reader are to be accepted.

### 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.

### Free Vend (BDV only)

Most payment systems with the BDV protocol control the free vend function.

However, there are some payment systems without such function.

In this case, if free selections are to be dispensed, free vending must be enabled with VMC (vending machine control, disabled by default) and the price of the selections must be set to zero.

### Immediate change (BDV only)

The amount of credit inserted for a selection is cashed after the machine sends the message "Selection successful".

When this function is enabled, disabled by default, the cash message is sent at the beginning of dispensing.

### DECIMAL POINT

Press the confirm button "➡" to display the position of the decimal point, i.e.:

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

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

## SELECTIONS

The selection menu is composed of various sub-menus which allow setting of the different parameters.

### WATER DOSE

The water dose, expressed in cc, can be set for each selection button and therefore each product assigned to it; the display indicates the name of the product being selected.

It is also possible to set the water flow rate of the single solenoid valves expressed in cc/s (the default value setting in cc/s is indicated in the selection dose table) to calculate the amount of water to be dispensed.

### POWDER DOSE

The powder dose, expressed in grams, can be set for each selection button and therefore each product assigned to it; the display indicates the name of the product being selected.

For correct conversion of product dose values, the flow rate of the single dosing units, expressed in g/s, can be set to calculate the amount of powder to be dispensed.

It is also possible to program the doses of a product "Globally", i.e. setting all selections with a single operation.

### ACCESSORIES

Dispensing of sugar, stirrer and cup can be enabled or disabled for each single selection button

### SELECTION STATUS

Each single selection button can either be enabled or disabled.


### BUTTON/SELECTION COMBINATION

This function is used to change the order of the selections associated to the push-button panel.

## VENDING MACHINE PARAMETERS

### TEMPERATURES


This function is used to set the operating temperature, expressed in °C, for the boilers actually installed in the machine.

After selecting the boiler, press the confirm button "", the temperature value starts blinking on the display and can be modified as necessary.

### ENABLE WASH BUTTON

This function is used to enable the functioning of the mixer wash button (see Fig. 1). Normally, the button is disabled.

### STOP COFFEE

This function is used to enable/disable button "", which stops coffee selections during normal operation.

## SETTING THE WHIPPING TIME

In some models there is the option of setting the whipping time for instant coffee, thus obtaining the best possible drink quality. For models where it is not necessary, this function is in the menu but does not operate.

## SETTING THE REGENERATION COUNTER

It is possible to display the message "Regenerate the water softener" upon accessing "filler" mode after a programmable number of drinks dispensed.

## EXTERNAL LIGHTING

Setting whether or not the lighting lamps in the external panels are to be switched on when the machine is out of service or during the "Energy saving" time band.

## AUTOMATIC WASH

Option of setting the time when automatically washing the mixers and rotating the Brewer units installed. When setting the time to 24.00 the function is disabled (default).

## COLUMN ROTATION DELAY

This function is used to set the delay time in stopping the cup column rotation in order to compensate any inertia due to the cup type.

## ENERGY SAVING

In order to save electric energy when the machine is not in use, this function is used to switch off boiler heating and/or external lighting.

2 switch-off time bands can be programmed on a weekly basis; the week days are identified by a progressive number (1=Monday, 2=Tuesday etc.).

The same time band cannot include days from different weeks.

If time bands are set overlapping, the machine will remain switched on for the shorter period.

For example, in order to set energy saving time bands to run the vending machine from 07.00 to 22.00 during the week and leave it switched off on the weekend, the time bands should be set, using the special menu, as indicated in the table below.

| Day    |       | 1     | 2     | 3     | 4     | 5     | 6     | 7     |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| band 1 | start | 00.00 | 00.00 | 00.00 | 00.00 | 00.00 | 00.00 | 00.00 |
|        | end   | 07.00 | 07.00 | 07.00 | 07.00 | 07.00 | 23.59 | 23.59 |
| band 2 | start | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 | 00.00 | 00.00 |
|        | end   | 23.59 | 23.59 | 23.59 | 23.59 | 23.59 | 00.00 | 00.00 |

## DISPLAY

### LANGUAGE

There is a choice of language, selected among the ones included in the EPROM, to be used for the messages on the display.

### ENABLE THE PROMOTIONAL MESSAGE

When in this menu, press the confirm button "►" display the status of the message (enabled or disabled). The status can then be changed using the "▲" and "▼" buttons

### SETTING THE PROMOTIONAL MESSAGE

The 4-line message can be written using the "▲" and "▼" buttons to scroll through the available characters.

Press the confirm button "►", the first character will start blinking and can be modified.

The message is stored by pressing button "◀".

### CUSTOMISING THE MESSAGES

The machine uses standard messages to give information to the user during normal operation (e.g. "Ready", "Take" etc.). When this function is enabled, the message can be changed in the same manner as setting the promotional message. Changes are stored as copies of the standard messages.

Therefore, if this function is disabled, the standard messages will be displayed again, but the changed messages are still stored.

### PRE-SELECTIONS

There is the option of enabling some selection buttons to have dispensing:

- without cup;
- with extra sugar, i.e. a greater amount of sugar (programmable) on all selections where it is dispensed;
- unsweetened, i.e. without sugar on all selections where it is dispensed;
- mokka, i.e. with a reduced amount of water (programmable) for coffee or tea;
- multiple for jug, i.e. it is possible to change the number of consecutive selections with the jug facilities function.

The "-" and "+" buttons can be used to vary the amount of sugar or, alternatively, of tea or coffee.

The LEDs will indicate the average dose change.

- strong/light, i.e. varying the amount of product (programmable) for coffee or tea.
- espresso, i.e. varying the amount of water (adjustable) for coffee selections.
- coffee powder, i.e. varying the amount of product (adjustable) for instant and fresh-brew coffee.

For each pre-selection it is possible to decide whether or not it is to be enabled, which button will be assigned to, the selection price change and the percentage change in product dose.

## MISCELLANEOUS

### FRESH-BREW UNIT DATA

For each of the two Fresh-brew units installed in the machine, it is possible to set the brewing time, the drying time for the used dose and whether or not to enable product whipping and automatic cleaning of the Brewer unit.

### JUG FACILITIES

Some models, supplied with a special button, permit dispensing of a number of selections (programmable between 1 and 9; 5 by default) without cup to fill a jug.

### ENABLING THE PASSWORD

This function is used to enable the option of requesting the password to access programming; the password request is disabled by default.

### PASSWORD

It is a programmable 5-digit numeric code which is required to access programming.

The default value of this code is set to 00000.

### MASKING THE FILLER MENU

This function is used to determine the filler menu options to be left active or to be disabled.

The reference numbers of the menus do not change even if some are disabled.

### CUSTOM SELECTION BUTTONS

The machine has the option of customising up to four selections as alternative to the 24 standard ones.

With this function it is possible to decide to which button assign them (replacing the standard selection).

## CUSTOMISING THE SELECTION COMPOSITION

The main parameters can be defined for each of the 28 available selections, regarding both doses and enabling the power users.

This way the composition of each single selection can be customised.

The definition and use of the various parameters is indicated below; the menu and the buttons to be used are indicated in the summary tables of the programming menus.

### SELECTION STRUCTURE

This function identifies the parameters, among the available ones (0÷15; 9 are managed on these machines), which can be enabled according to specific needs.

#### 0 Cup

cup dispensing.

#### 1 Sugar

sugar dispensing.

#### 2 Stirrer

stirrer dispensing.

#### 3 Selection

blocking dispensing of a selection even if assigned to a button on the bush-button panel.



#### 4 Sequential water dispensing

For the composite selections, this function defines whether the different water doses must be dispensed sequentially or at the same time.

#### 5 Sugar into cup

enabling the sugar dispensing device.

#### 6 Premixed sugar

dispensing sugar into the mixer.

#### 7 Spout return delay

delayed return of the mobile spouts after the selection, allowing dispensing of the drink to be completed (e.g., tea brewing coil).

#### 8 “Stop” button

enabling the button that stops strong coffee selections.

#### 9 Spout movement

When disabled, this function blocks the spout movement for selections where it is not required (e.g. cold drinks).

#### WATER DOSES

Each selection can be composed of 1 to 4 different water doses.

For each of the water doses, the parameters that allow correct dispensing must be defined.

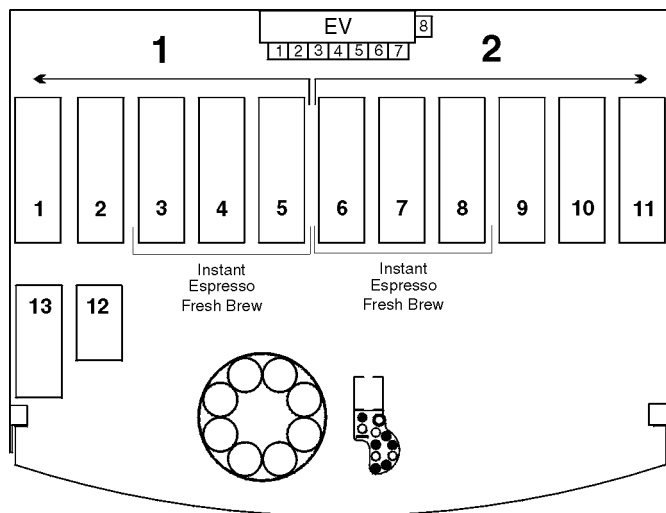
They are:

#### Unit

The machines in the Zenith range are conceived to ensure top modularity.

They are able to manage many combinations of functional units.

Fig. 18



The following can be fitted as alternatives on two interchangeable shelves:

- Three instant product containers.
- One espresso unit.
- One fresh-brew unit and one instant product container.

For the other positions, a tea brewer can be fitted as alternative to the instant product container.

Then, a unit dispensing cold drinks can be fitted.

The dispensing system for the water dose will change according to the type of unit defined.

The functional units that can be defined are identified by a number:

| N. | Unit              |
|----|-------------------|
| 1  | Instant 1 (LH)    |
| 2  | Instant 2 (RH)    |
| 3  | Espresso 1 (LH)   |
| 4  | Espresso 2 (RH)   |
| 5  | Fresh brew 1 (LH) |
| 6  | Fresh brew 2 (RH) |
| 7  | Tea brewer        |
| 8  | Cold unit         |

#### Name

The available names (0÷15; 13 are managed on these machines) identify the products which will displayed during the programming operations.

The product to number combination indicated in the following table is the same for both water and product doses.

| N. | Name           |
|----|----------------|
| 0  | Coffee         |
| 1  | Sugar          |
| 2  | Milk           |
| 3  | Chocolate      |
| 4  | Tea            |
| 5  | Soup           |
| 6  | Decaffeinated  |
| 7  | Syrup          |
| 8  | Instant coffee |
| 9  | Fresh-Brew     |
| 10 | Lemon          |
| 11 | Instant        |
| 12 | Cold           |
| 13 |                |
| 14 |                |
| 15 |                |

#### Solenoid valves

Also the solenoid valves (EV1÷9; 8 can be fitted on these machines) are identified by a number.

According to the type of functional unit defined for a given selection, the number will control the solenoid valve:

| Functional unit |                                     |                     |                |
|-----------------|-------------------------------------|---------------------|----------------|
| EV              | Instant<br>Fresh-brew<br>Tea brewer | Espresso            | Cold unit      |
| 1               | instant boiler                      | dispensing coffee 1 | water powder 1 |
| 2               | instant boiler                      | dispensing coffee 2 | plain water    |
| 3               | instant boiler                      |                     | water powder 2 |
| 4               | instant boiler                      |                     | soda           |
| 5÷8             | instant boiler                      |                     |                |
| 9               | not applicable for these models     |                     |                |

## Whipper

Assigning the whipper to the selection, identified by a number, 1÷13 (see figure 18).

## Water dose

it is the water dose value (4 digits). This value can be changed also from the "Selection menu".

## POWDER DOSES

1 to 4 powder (or syrup) doses can be assigned to each water dose composing a selection; For each of the powder doses, the parameters that allow correct dispensing must be defined.

They are:

### Dispensing mode

According to the dose and type, there are 4 product dispensing modes, identified by a number, and namely:

- 1- Continuous. Product dispensing starts with a programmable delay after the water dose and continues until the programmed dose is reached. However, product dispensing is stopped at the end of water dispensing.
- 2 - Stepped. The product is dispensed in 5 steps to cover the entire water dispensing time.
- 3 - Instant coffee. The product is dispensed before the water.
- 4 - "Sugar". The pre-selection buttons to vary the dispensed dose apply for the so defined powder.

### Name

The available names (0÷15; 13 are managed on these machines) identify the products which will be displayed during the programming operations.

The product to number combination indicated in the table is the same used for water doses.

### Doser device

Assigning the doser device to the powder dose, identified by a number, 1÷13 (see figure 18).

If the powder name is defined as "7 - syrup", the syrup dispensing devices will be defined as doser 1 and doser 2.

### Delay

Defining the product dispensing delay, in tenths of a second, after water dose dispensing starts.

### Product dose

it is the water dose value (4 digits) expressed in grams (tenths of a second for syrup).

This value can be changed also from the "Selection menu".

## EVADTS

The EVADTS (European Vending Association Data Transfer System) communication protocol uses two codes to identify the machine and recognise the data transfer terminal:

### PASS CODE

It is a four digit alphanumeric code (0-9; A-F) that must be the same as the one of the data transfer terminal for identification.

Press the confirm button "2" and the code number is displayed as "0000", regardless of the actual value: then press the correction button "3" and the first digit will start blinking.

The value can be changed using the scrolling buttons (during the change procedure the value becomes visible). When pressing the confirm button "2" the next digit starts blinking.

Press the confirm key "2" after changing the fourth digit; the value is stored and the display will again indicate "0000".

### SECURITY CODE

It is a further alphanumeric code for reciprocal identification between machine and EVADTS terminal.

Programming is the same as for the "Pass" code.

### EVADTS TRANSFER

This function, when activated by means of the special infrared reader with the correct codes, is used to transfer data.

## STATISTICS

Data on the machine operations is stored in both general counters and relative counters, which can be reset without losing total data.

### DISPLAYING GENERAL DATA

When pressing the confirm button "2" the stored data is sequentially displayed at 1 second intervals, and namely:

- 1 - counter by single selection;
- 2 - counter by time bands;
- 3 - discount counter;
- 4 - failure counter;
- 5 - coin mechanism data.

### RESETTING GENERAL DATA

Statistics can be reset either globally (all types of data) or partially for:

- selections
- discounts/overprice
- failures
- coin mechanism data

Press the confirm button "2" and the message "Confirm?" starts blinking.

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

## DISPLAYING RELATIVE DATA

When pressing the confirm button "↵" the stored data is sequentially displayed at 1 second intervals, and namely:

- 1 - counter by single selection;
- 2 - counter by time bands;
- 3 - discount counter;
- 4 - failure counter;
- 5 - coin mechanism data.

## RESETTING RELATIVE DATA

Statistics can be reset either globally (all types of data) or partially for:

- selections
- discounts/overprice
- failures
- coin mechanism data

Press the confirm button "↵" and the message "Confirm?" starts blinking.

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

## DISPLAYING COUNTERS

This function is used to enable/disable the display of the total number of sales since the last statistic reset, during the start-up phase of the machine.

## PRINT

Connect an RS232 serial printer having 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 of the statistics described in the paragraph "statistics display". The printout will also contain the machine code, the date and the software version.

Statistics can be printed partially or totally.

To connect the printer, do as follows:

- press the confirm print button "↵", displaying the message "Confirm?";
- connect the printer before confirming;
- press the confirm button "↵" again to start printing.

# TEST

## COMPLETE SELECTION

This function is used to get a complete selection with the door open without inserting any money.

## CONTROL OF UNITS

After accessing the "Unit Control" function, button "A" is used to operate the first coffee unit if this is connected to the electrical system, and to release a dose of coffee if disconnected;

Button "B" has the same function if the second coffee unit is installed; button "C" is used to operate the first "Fresh Brew" unit if this is connected to the electrical system; button "D" is used to operate the second "Fresh Brew" unit if this is connected to the electrical system; button "E" is used to operate a solenoid valve in the espresso coffee boiler continuously, to empty the boiler through the special cap.

Buttons "F" and "G" are used to operate the syrup dispensing devices (for models fitted with a cold unit).

Button "H" is used to carry out a filling cycle of the espresso boiler by opening the solenoid valve of unit 1;

button "I" is used to carry out the cycle with the solenoid valve of unit 2.

## AUTOTEST

This function allows testing of the main machine components.

Press button "↵" and the message "AUTOTEST" will be displayed blinking.

Press button "↵" to cancel the operation, confirm with button "↵" to start the autotest routine.

In a sequence:

- the mixers are activated for 2 seconds
- the mixers are activated for 2 seconds
- a cup is released
- a stirrer is released
- the fluorescent lamps are switched on
- the door LEDs are lit
- the push-button panel is tested; the machine will display the number of the button which must be pressed and awaits the actuation before going to the next button
- the dispensing spouts are operated/repositioned
- (for espresso models only) the coffee unit is rotated, coffee is ground and then released when a full dose is reached.
- waste container switch; the machine awaits until the waste container microswitch is manually operated.

## MISCELLANEOUS

This menu contains some sub-menus, used less frequently, which permit control of the functions described below.

### MACHINE INFORMATION

#### INSTALLATION DATE

This function is used to store the current date of system as installation date.

The date is printed when retrieving the statistics.

#### PROGRAMMING THE MACHINE CODE

When the "Machine code" function is displayed the eight-digit numeric code identifying the machine can be changed (from the default 0).

#### PROGRAMMING THE OPERATOR CODE

When the "Operator code" function is displayed the six-digit numeric code identifying groups of machines can be changed (from the default 0).

### INITIALISING

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

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

All statistic information will be reset.

Press confirm button "➡" to display the message "Confirm?". Press confirm button "➡" a second time and the message "Working" is displayed for a few seconds.

## GSM

The control software can send a machine failure signal or a "running-out" "pre-alarm" signal via GSM modem when a programmed number of selections for a certain product.

#### PIN CODE

This function is used to program the identification codes that will be sent to the GSM modem (optional) when the machine is started.

#### THRESHOLD SETTING

This function is used for setting the number of pieces or grams of powder for a certain product after which a "running-out" pre-alarm signal is sent via modem.

#### RESET COUNTERS

With this function the counters that control the pre-alarms are reset.

## PROGRAMMER (OPTIONAL)

### AUTOMATIC SETUP TRANSFER

Using the programmer device, the programming routines set and transferred to other machines can be read from a reference vending machine.

This data is preserved also when the programmer is disconnected thanks to two Duracell batteries LR03 Format AAA 1.5 V (to be replaced every 12 months).

The programmer allows up to twenty different programs (setups) to be stored.

To differentiate among the 20 set-ups available those containing data, a special character is displayed, and namely:

< - > = Setup free

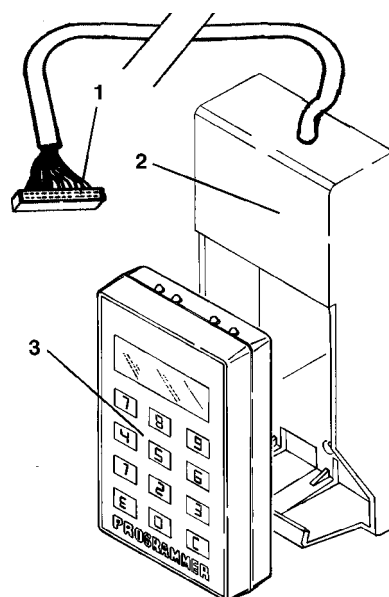
< □ > = Setup with data.

When creating the setup, only those programs containing data are available; if no setup contains data, the message "no data available" will appear on the programmer display. To connect the programmer to the machine the special holder is to be used (see Fig. 19) connecting the special cable to the connector of the push-button board (see Fig 20-13).

Then enter the "technician menu" mode by pressing twice the relevant button on the coin mechanism compartment. At this point, by inserting the programmer in its holder, connection will take place automatically, and the setup menu will be shown on the programmer display:

- |             |     |                                  |
|-------------|-----|----------------------------------|
| - press key | "E" | to access the displayed function |
| - press key | "O" | to display the next function     |
| - press key | "C" | to display the previous function |

Fig. 19



- 1 - Connector  
2 - Programmer holder  
3 - Programmer

|                             |                               |                      |     |
|-----------------------------|-------------------------------|----------------------|-----|
| PROGRAMMER<br>SETUP READING | SETUP READING<br>SETUP 01 <X> | SETUP 01<br>Confirm? | <X> |
|                             | SETUP READING<br>SETUP 20 <X> |                      |     |
| PROGRAMMER<br>CREATE SETUP  | CREATE SETUP<br>SETUP 01 <X>  | SETUP 01<br>Confirm? | <X> |
|                             | CREATE SETUP<br>SETUP 20 <X>  |                      |     |

## TRANSFERRED DATA

The following data is transferred with the setup:

- . Water and powder doses
- . Price table
- . Prices and selections status
- . Basic coin
- . Decimal point
- . Value of validator lines
- . BDV / MDB data
- . N. of "Jug Facilities" selections

## CONFIGURING THE LANGUAGE

It is possible to change the programmer configuration regarding the language in which the messages are to be displayed as well as to reset all of the data therein contained.

To activate the "Programmer configuration" mode do as follows:

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

|                              |   |                           |
|------------------------------|---|---------------------------|
| CONFIGURATION<br>LANGUAGE    | CONFIGURATION<br>ITALIAN  | CONFIGURATION<br>Confirm? |
|                              | CONFIGURATION<br>FRENCH   |                           |
|                              | CONFIGURATION<br>GERMAN   |                           |
|                              | CONFIGURATION<br>ENGLISH  |                           |
|                              | CONFIGURATION<br>SPANISH  |                           |
| CONFIGURATION                | INITIALISING<br>INITIALISING  | Confirm?                  |
| CONFIGURATION<br>CONFIG. END | Exit from the configuration menu<br>The software restarts from address 0000<br>(as at machine start-up) |                           |

## Chapter 3 MAINTENANCE

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

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

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

## INTRODUCTION

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

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

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

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

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

**Never use water jets to clean the machine.**

## BREWER UNIT MAINTENANCE

As well as cleaning once a week and/or every 2,500 selections, the brewer filter and its seal must be replaced every 25,000 selections, even if they appear to be still efficient.

The brewing unit must be disassembled completely and its components thoroughly cleaned every 100,000 selections replacing all worn out parts.

The brewing cylinder must be changed even if it appears to be still sound and efficient.

During these operations the area beneath the brewing chamber is to be properly cleaned.

### Important notice!!

Should the whole unit need to be removed, do not handle it by the cylinder or by the filter holder.

## OVERHEAT PROTECTION

If the brewer unit locks, the software control shuts off the power from the brewing unit motor.

The motor is however fitted with an overheat protection device with automatic reset.

## BOILER MAINTENANCE

According to the mains water hardness and to the number of selections made, periodic descaling of the boiler is necessary.

**This operation should be carried out by qualified technicians only.**

The boiler must be removed from the machine for descaling. Use only biodegradable, non toxic and mild products for descaling. Thoroughly rinse all parts before reassembling them.

**When reassembling make sure that:**

- the electrical contacts (terminals, fastons etc.) are perfectly dry and correctly connected;
- the safety and anti-boiling thermostats are suitably positioned and fastened;
- the hydraulic connections are correctly made.

### IMPORTANT NOTICE!!!

**If for any reasons the heating system of the boiler is operated without water, before restarting the machine the correct functioning of the boiler temperature sensor should be checked.**

**If heating without water continues until the safety thermostat is triggered (see hydraulic system) the boiler temperature sensor will be permanently damaged and it must be replaced.**

## ANNUAL SANITISING

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

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

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

## PRINTED BOARD FUNCTIONS AND INDICATOR LIGHTS

### CPU BOARD

The C.P.U. (Central Processing Unit) board is housed in the coin mechanism compartment; this board controls the communication with the control board and processes the input signals from the Key-pad, the payment system and controls the display.

The board houses the EPROM (the chip containing the program) and a series of minidips (see Fig. 20) which allow configuration of the board according to use of the machine (see relevant chapter).

The card also houses some LEDs which, during the machine operation, give the following indications:

- Green LED (2): blinks during normal operation of the C.P.U. board;
- Yellow LED (3): glows when 5 VDC are detected;
- red LED (4): glows in the event of a program error;
- red LED (5): glows during the card reset.

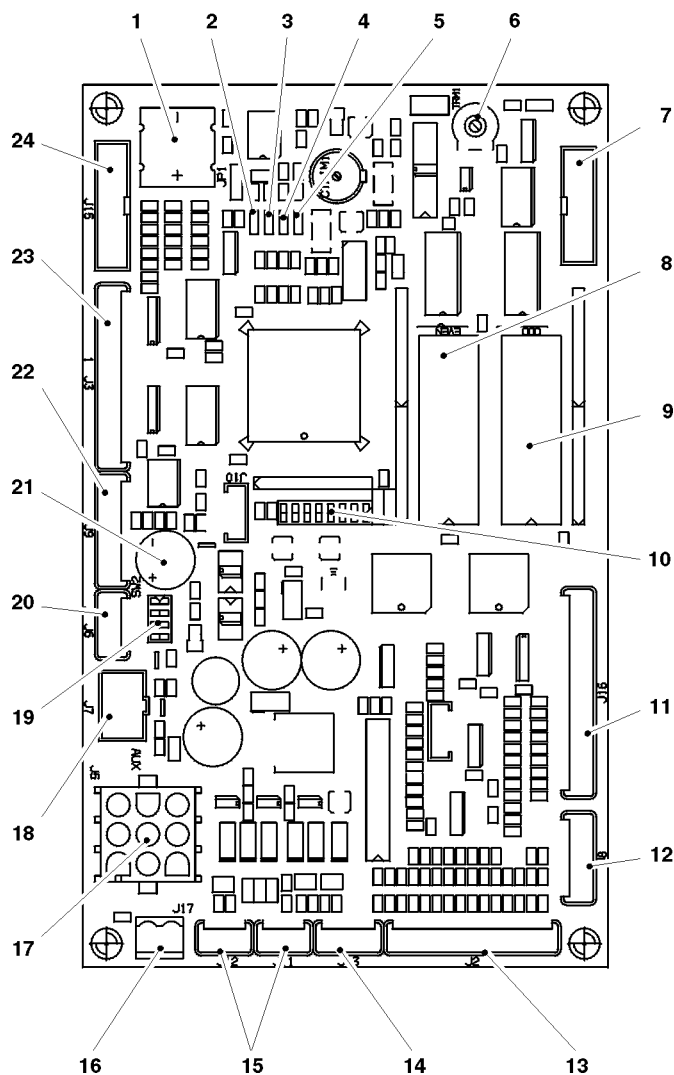


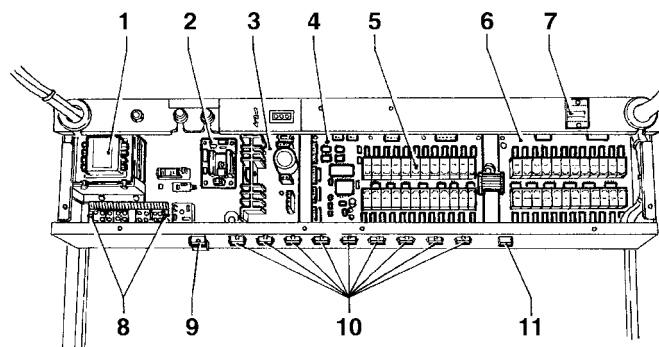
Fig. 20

- 1 - Battery
- 2 - Green LED: RUN
- 3 - Yellow LED: 5 Vdc
- 4 - Red LED: program error
- 5 - Red LED: board reset
- 6 - LCD contrast control trimmer
- 7 - LCD connector
- 8 - EPROM: EVEN
- 9 - EPROM: ODD
- 10 - Configuration Minidips
- 11 - Service keys connector
- 12 - Connector not used
- 13 - Key-pad connector
- 14 - Cold unit connector
- 15 - Connectors for control board communication
- 16 - 24 Vdc power supply to board
- 17 - BDV connector
- 18 - MDB connector
- 19 - Coin mechanism setting Minidip
- 20 - Connector not used
- 21 - Buzzer
- 22 - RS232 connector to programmer
- 23 - Connector of cup and sugar control board

## BOILER CONTROL BOARD

This board controls the instant boiler heating element.

Fig. 21



- 1 - Transformer
- 2 - Boiler control board
- 3 - Power supply board
- 4 - Actuation board
- 5 - Relay
- 6 - Expansion board
- 7 - Mechanical counter
- 8 - Transformer primary/secondary winding fuses
- 9 - Instant boiler connector
- 10 - Solenoid valve connector
- 11 - Sanitising kit connector (optional)

## ACTUATION BOARD

This board (see Fig. 22) activates, by means of relays, some of the 230V~ components of the machine.

This board is powered with 24 VDC.

The control board EPROM is fitted on this board:

- green LED, blinking at intervals of approximately one second, indicates that the microprocessor is working correctly; if blinking fast it indicates that there is no communication with the CPU card.
- red LED "H1", indicates the operating status of heating element on the first espresso boiler(if installed).
- red LED "H2", indicates the operating status of heating element on the second espresso boiler (if installed).
- red LED "H3", indicates the operating status of heating element on the instant boiler.

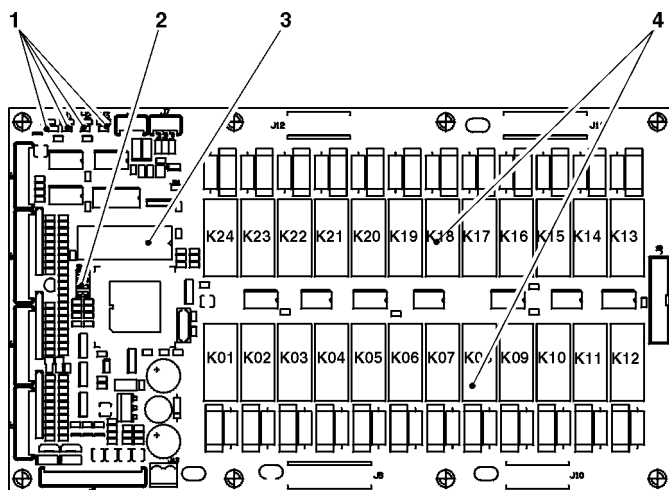


Fig. 22

- 1 - LED indicators
- 2 - Configuration Minidip
- 3 - EPROM
- 4 - Relay

RELAY FUNCTION (see Wiring diagram)

|     |   |      |      |     |
|-----|---|------|------|-----|
| K01 | = | PM   | MF3  |     |
| K02 | = | MFB  | MD5  | ESC |
| K03 | = | ER1  | MPF  | MF5 |
| K04 | = | M    | MDFB | MD3 |
| K05 | = | ER2  | MF   | MF4 |
| K06 | = | MAC  | MD   | MD4 |
| K07 | = | E8   |      |     |
| K08 | = | MD1  |      |     |
| K09 | = | MF1  |      |     |
| K10 | = | MD2  |      |     |
| K11 | = | MF2  |      |     |
| K12 | = | VENT |      |     |
| K13 | = | E1   |      |     |
| K14 | = | E2   |      |     |
| K15 | = | E3   |      |     |
| K16 | = | E4   |      |     |
| K17 | = | E5   |      |     |
| K18 | = | E6   |      |     |
| K19 | = | E7   |      |     |
| K20 | = | E9   |      |     |
| K21 | = | MSB  |      |     |
| K22 | = | MSU  |      |     |
| K23 | = | MSCB |      |     |
| K24 | = | MSP  |      |     |

## EXPANSION BOARD

This board (see Fig. 23) activates, by means of relays, the other 230V~ components of the machine.

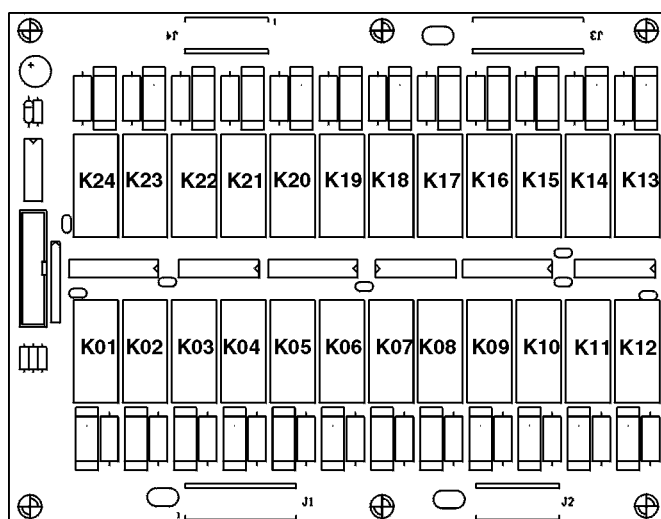


Fig. 23

RELAY FUNCTION (see Wiring diagram)

|     |   |           |      |     |
|-----|---|-----------|------|-----|
| K01 | = | PM (C2)   | MF6  |     |
| K02 | = | MPF       | MF8  |     |
| K03 | = | M (C2)    | MDFB | MD6 |
| K04 | = | MF        | MF7  |     |
| K05 | = | MAC (C2)  | MD   | MD7 |
| K06 | = | ESC (C2)  | MFB  | MD8 |
| K07 | = | not used  |      |     |
| K08 | = | MVP       |      |     |
| K09 | = | not used  |      |     |
| K10 | = | not used  |      |     |
| K11 | = | MDZ       |      |     |
| K12 | = | MD12      |      |     |
| K13 | = | MD9       |      |     |
| K14 | = | MF9       |      |     |
| K15 | = | MD10      |      |     |
| K16 | = | MF10      |      |     |
| K17 | = | MD11      |      |     |
| K18 | = | MF11      |      |     |
| K19 | = | PM sanit. |      |     |
| K20 | = | LF        |      |     |
| K21 | = | EV sanit. |      |     |
| K22 | = | EEA       |      |     |
| K23 | = | not used  |      |     |
| K24 | = | not used  |      |     |

## CONFIGURING THE ELECTRONIC BOARDS

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

When the boards are replaced, or when wishing to change the unit performance, ensure that the board configuration is correct.

Two series of minidip are fitted at the centre of the CPU board (see Fig. 20) and of the actuation board (see Fig. 22) allowing the board to be configured for use on the various versions.

To correctly configure the boards, refer to the selection dose table.

## SOFTWARE UPDATE

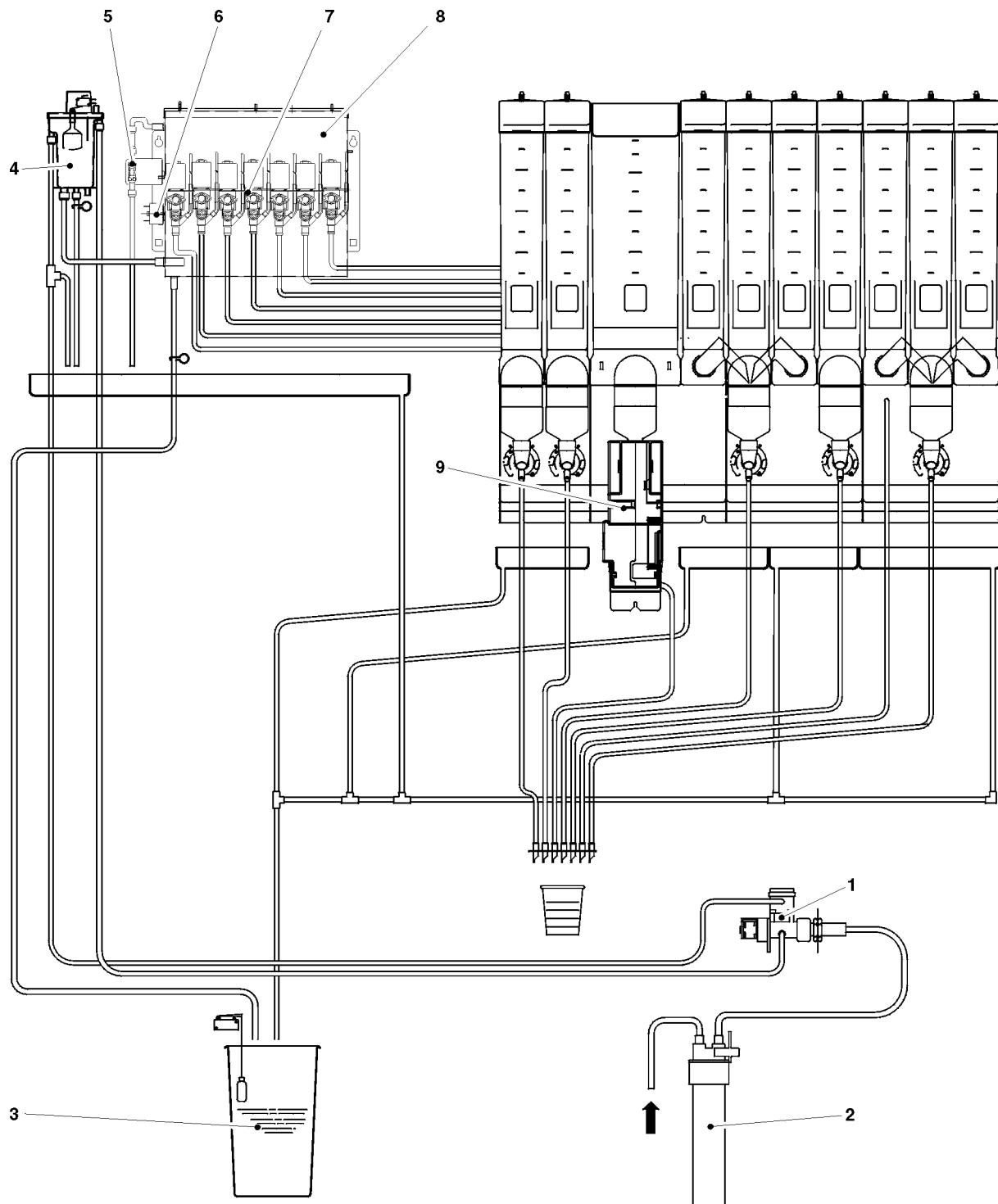
The machine is fitted with Flash EPROMs which can be electronically updated.

By means of a special program and suitable system (Personal Computer or similar) the machine management software can be updated without replacing the EPROMs



## HYDRAULIC SYSTEM

### Models equipped with one Fresh-Brew unit

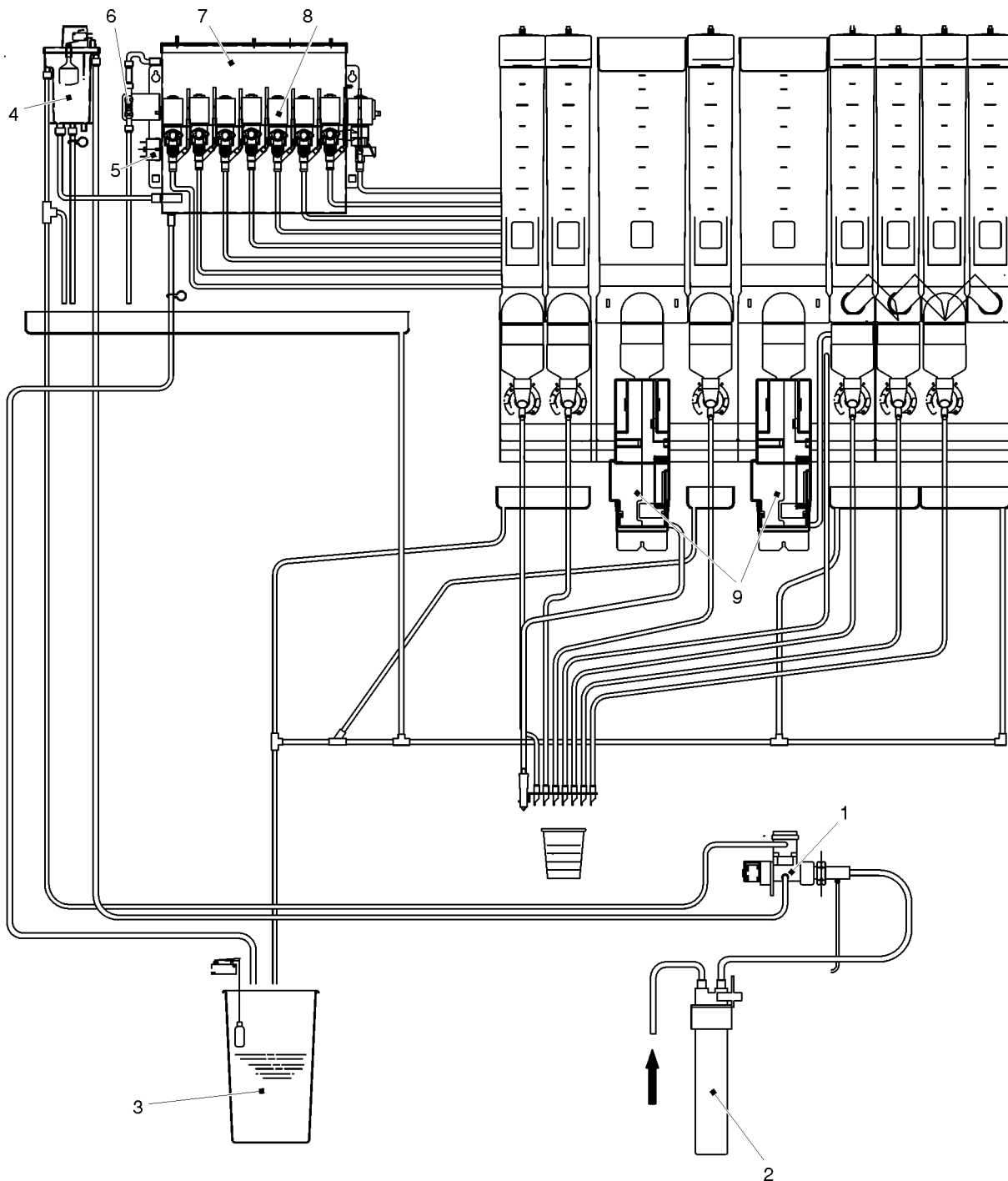


- 1 - Water inlet solenoid valve
- 2 - Everpure filter
- 3 - Liquid waste container
- 4 - Air-break
- 5 - Anti-boiling thermostat

- 6 - Safety thermostat
- 7 - Instant prod. solenoid valves
- 8 - Instant prod. boiler
- 9 - Brewer unit

## HYDRAULIC SYSTEM

Models equipped with two Fresh-Brew units.

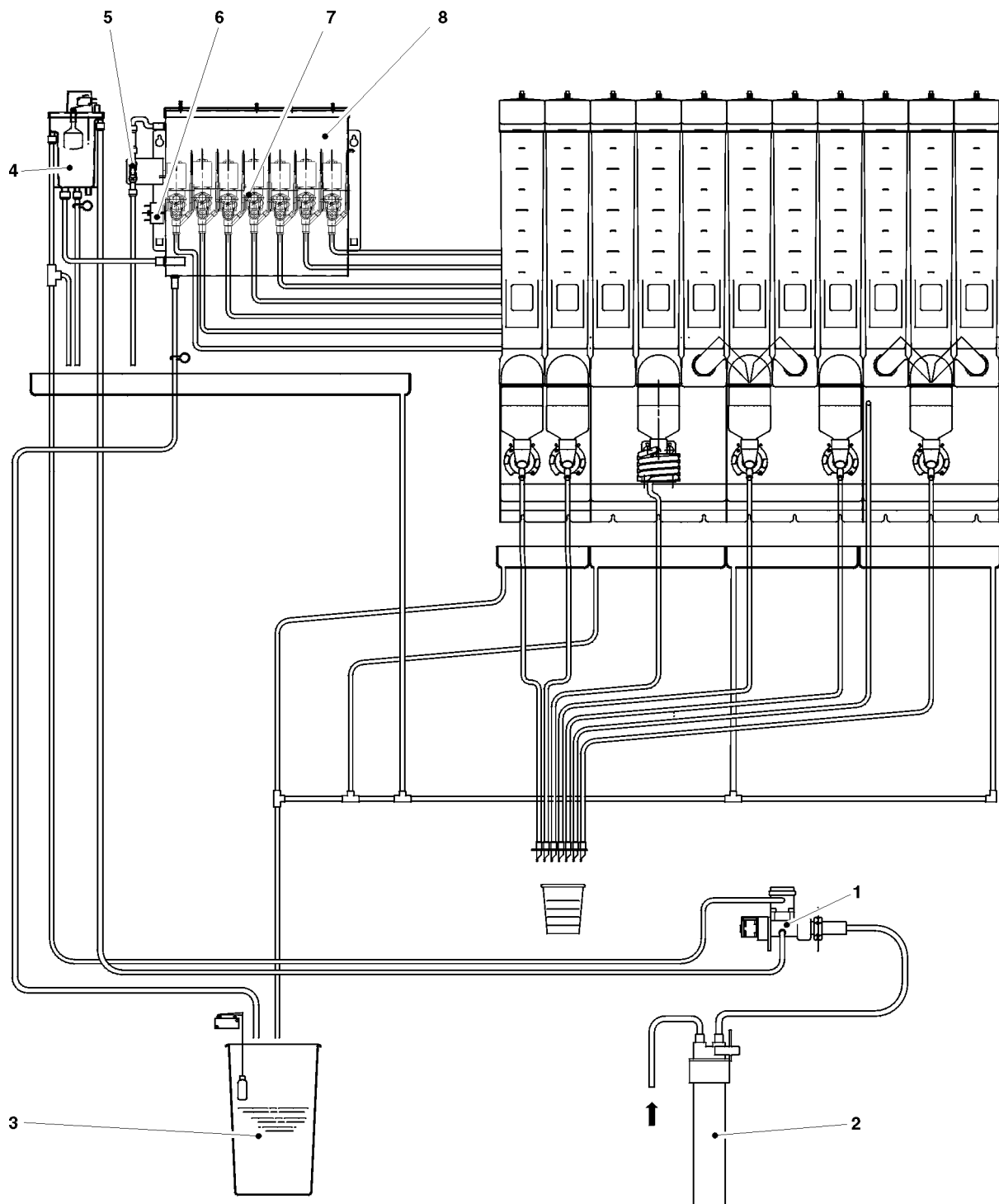


- 1 - Water inlet solenoid valve
- 2 - Everpure filter
- 3 - Liquid waste container
- 4 - Air-break
- 5 - Safety thermostat

- 6 - Anti-boiling thermostat
- 7 - Boiler
- 8 - Solenoid valves
- 9 - Fresh-Brew units

# HYDRAULIC SYSTEM

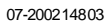
## Instant models



- 1 - Water inlet solenoid valve
- 2 - Everpure filter
- 3 - Liquid waste container
- 4 - Air-break

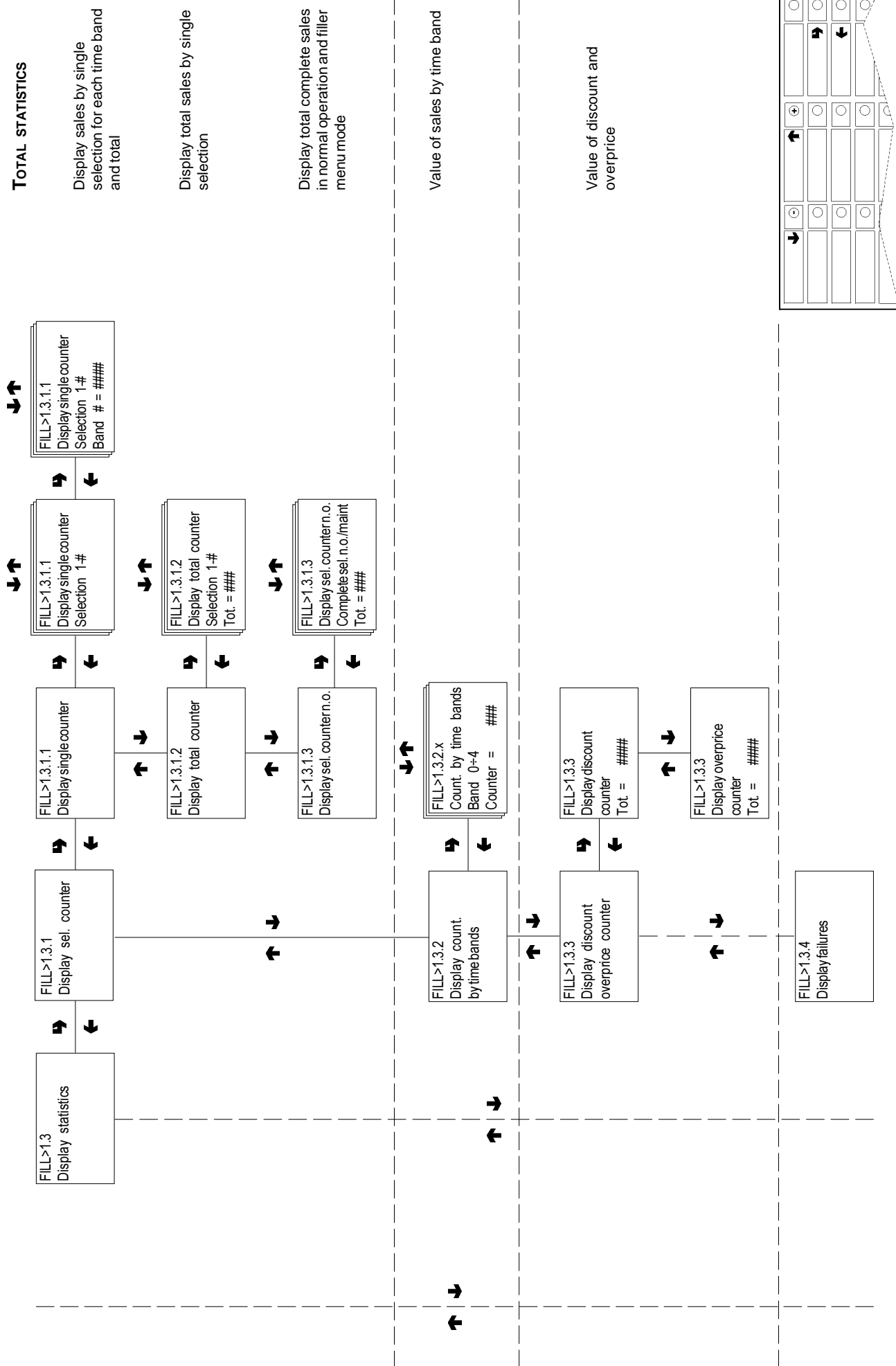
- 5 - Anti-boiling thermostat
- 6 - Safety thermostat
- 7 - Instant prod. solenoid valves
- 8 - Instant prod. boiler

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32 Downloaded from www.vendingbar.gr

## Filler menu - Summary

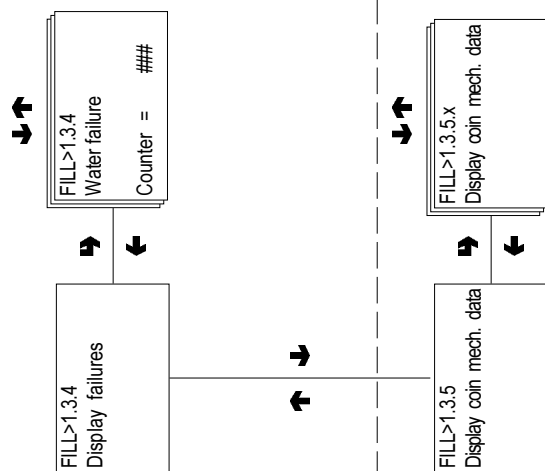


## Filler menu - Summary

## LIST OF FAILURES

Water failure  
Instant boiler  
Espresso boiler  
Mobile spouts  
Cup failure  
Espresso unit 1  
Coffee failure 1  
Espresso unit 2  
Coffee failure 2  
Coffee release

Volumetric counter  
Liquid waste full  
air-break  
Coin mechanism  
RAM data  
Machine control board  
Fresh-brew unit 1  
Fresh-brew scraper1  
Fresh-brew unit 2  
Fresh-brew scraper2



COIN MECHANISM DATA  
(according to the protocol  
used)

Validators and Executive  
Cashed and sold

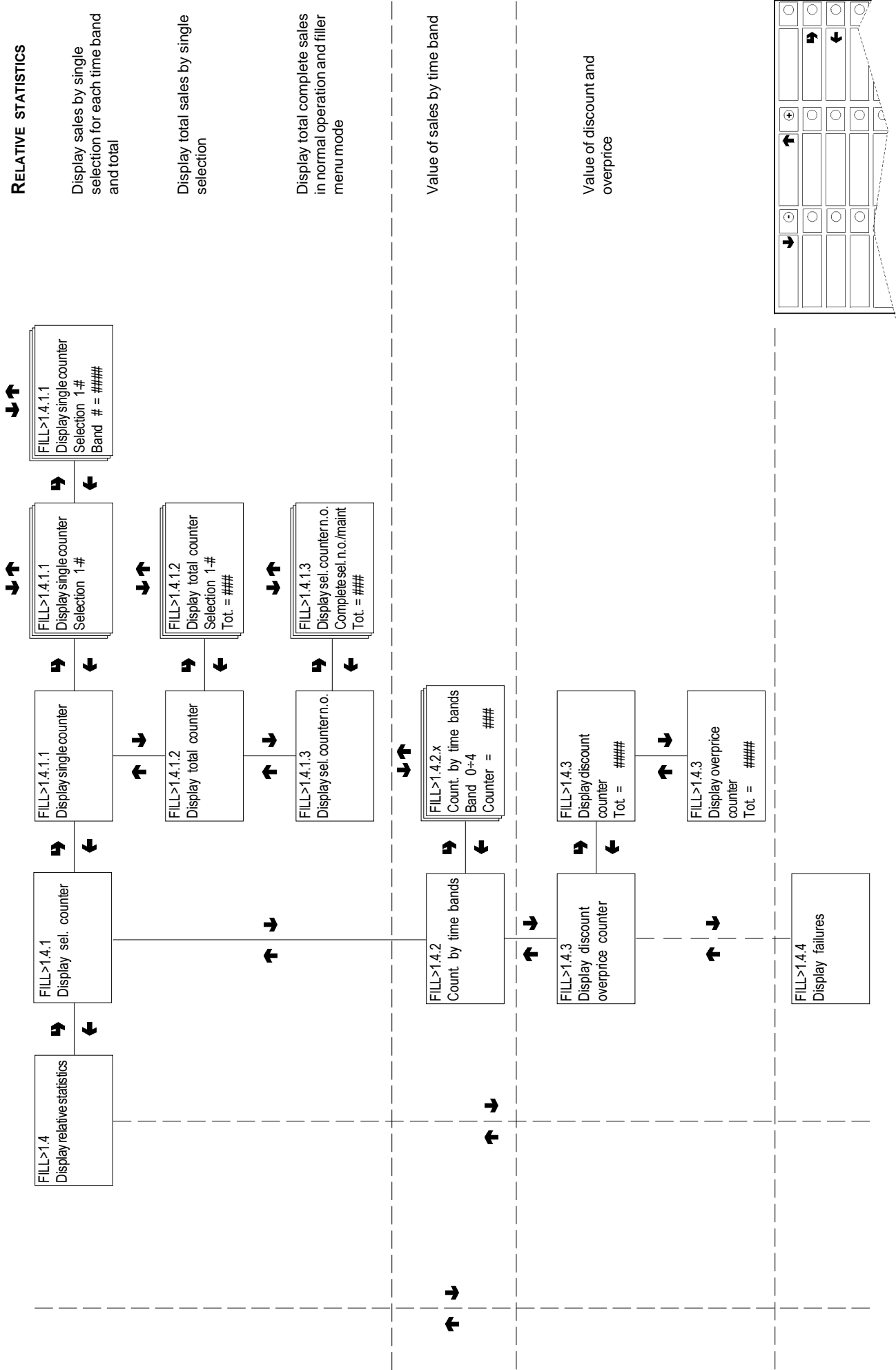
BDV Audit

MDB Audit

FILL>1.4  
Display relative statistics

|  |  |  |
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Filler menu - Summary



RELATIVE STATISTICS

LIST OF FAILURES

- Water failure

Instant boiler

Espresso boiler

Mobile spouts

Cup failure

Espresso unit 1

Coffee failure 1

Espresso unit 2

Coffee failure 2

Coffee release
- Volumetric counter

Liquid waste full

air-break

Coin mechanism

RAM data

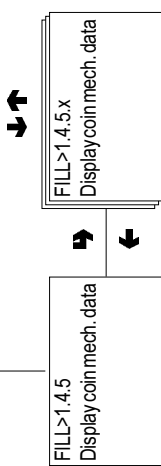
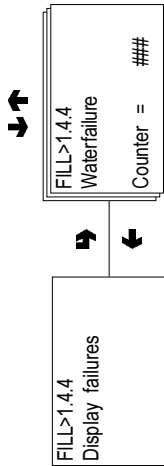
Machine control board

Fresh-brew unit 1

Fresh-brew scraper1

Fresh-brew unit 2

Fresh-brew scraper2

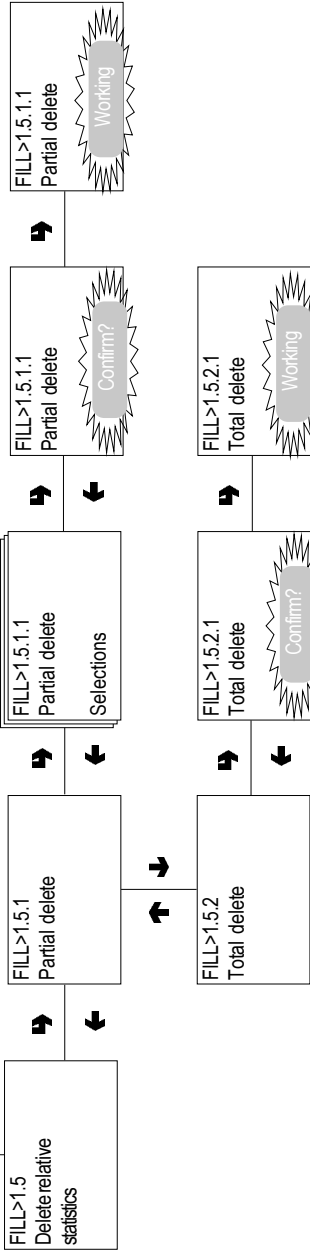


- COIN MECHANISM DATA  
(according to the protocol used)
- Validators and Executive

Cashed and sold

BDV Audit

MDB Audit



- RELATIVE STATISTICS
- Delete data by:
- Selections

Discount/overprice

Failures

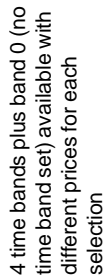
Coin mechanism data

Delete all data

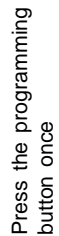
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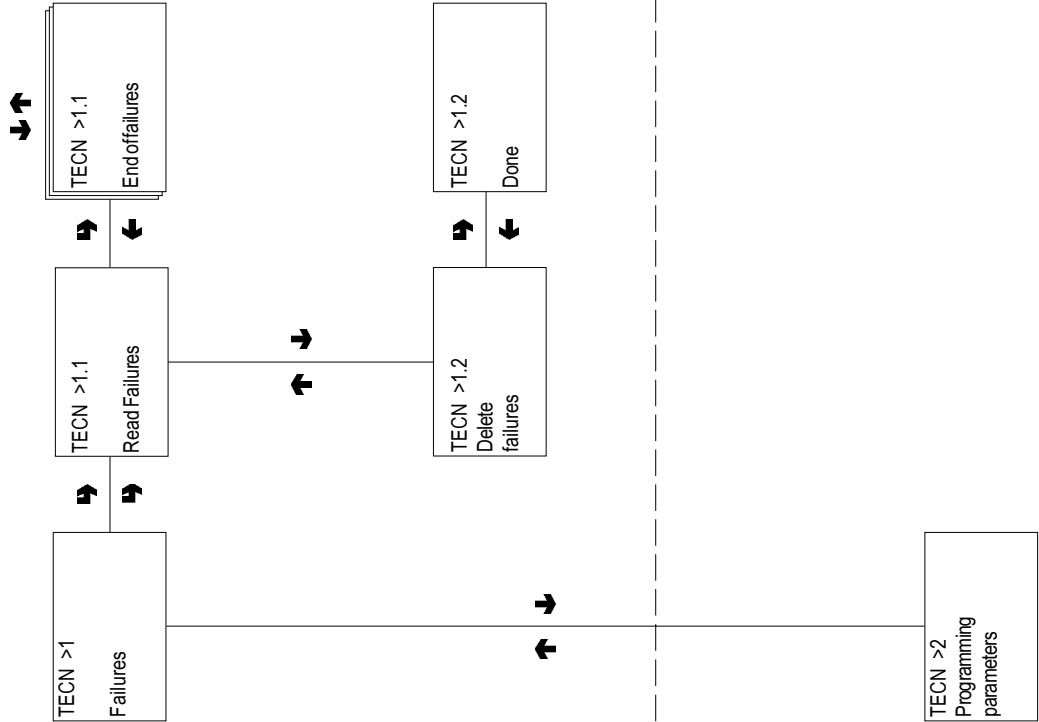
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Technician menu - Summary

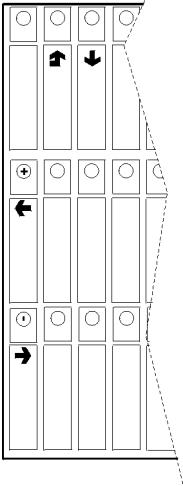


DISPLAY FAILURES

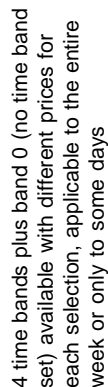
Monitored failures:

- Water failure
- Instant boiler
- Espresso boiler
- Mobile spouts
- Cup failure
- Espresso unit 1
- Coffee failure 1
- Espresso unit 2
- Coffee failure 2
- Coffee release
- Volumetric counter
- Liquid waste full
- Air-break
- Coin mechanism
- RAM data
- Machine control board
- Fresh-brew unit 1
- Fresh-brew scraper 1
- Fresh-brew unit 2
- Fresh-brew scraper 2

Time scrolling of present failures



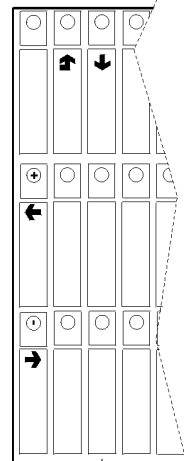
© by NECTA VENDING SOLUTIONS SpA



When confirming the blinking values, day, month, year and week day are entered one after the other. When confirming the week day hour and minutes are displayed, that can then be changed and confirmed.

When confirming the blinking values, hour and minute for start and end of time band are entered one after the other.

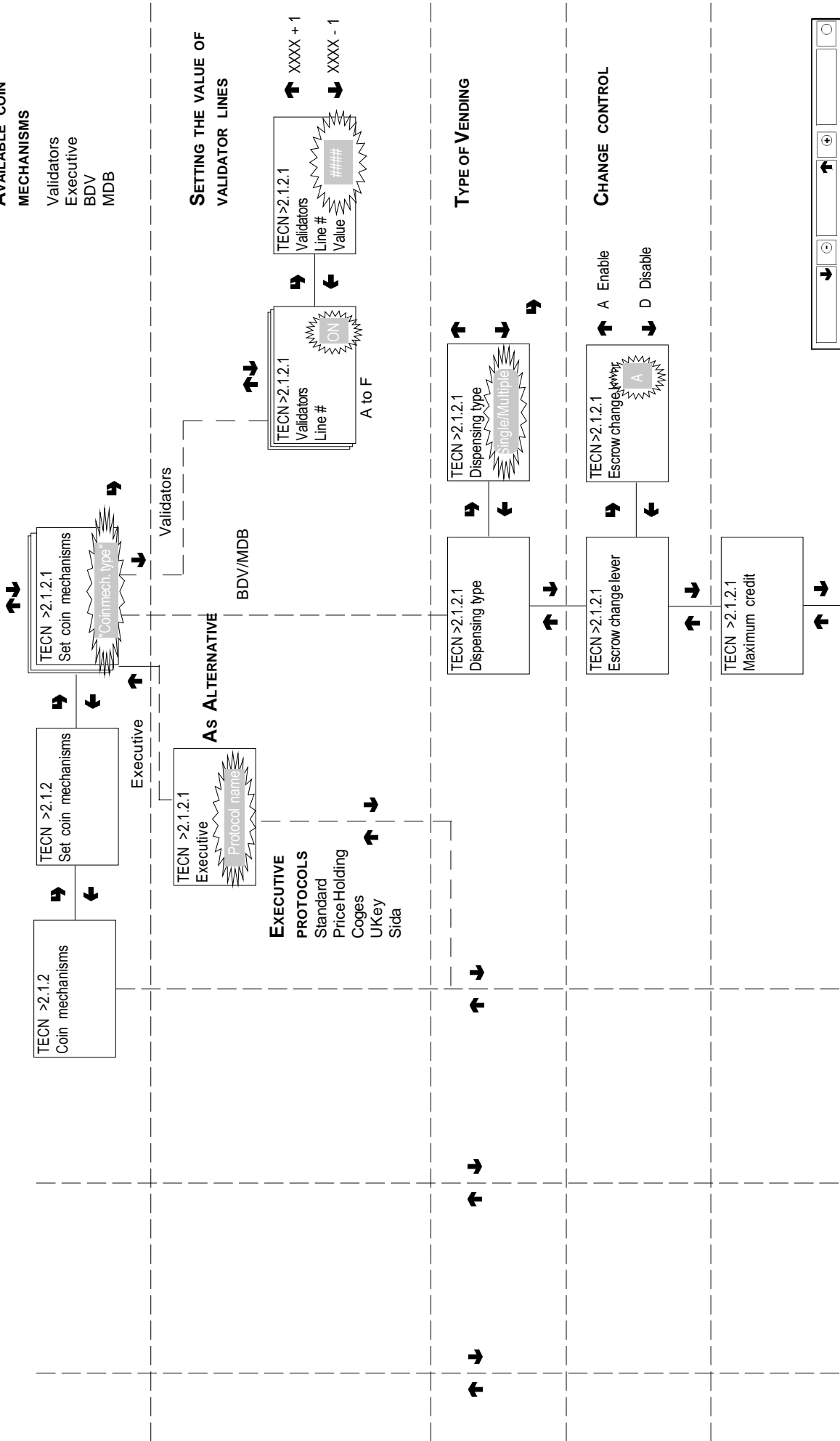
When start and end of time band are set to 24.00 the bands are not activated.



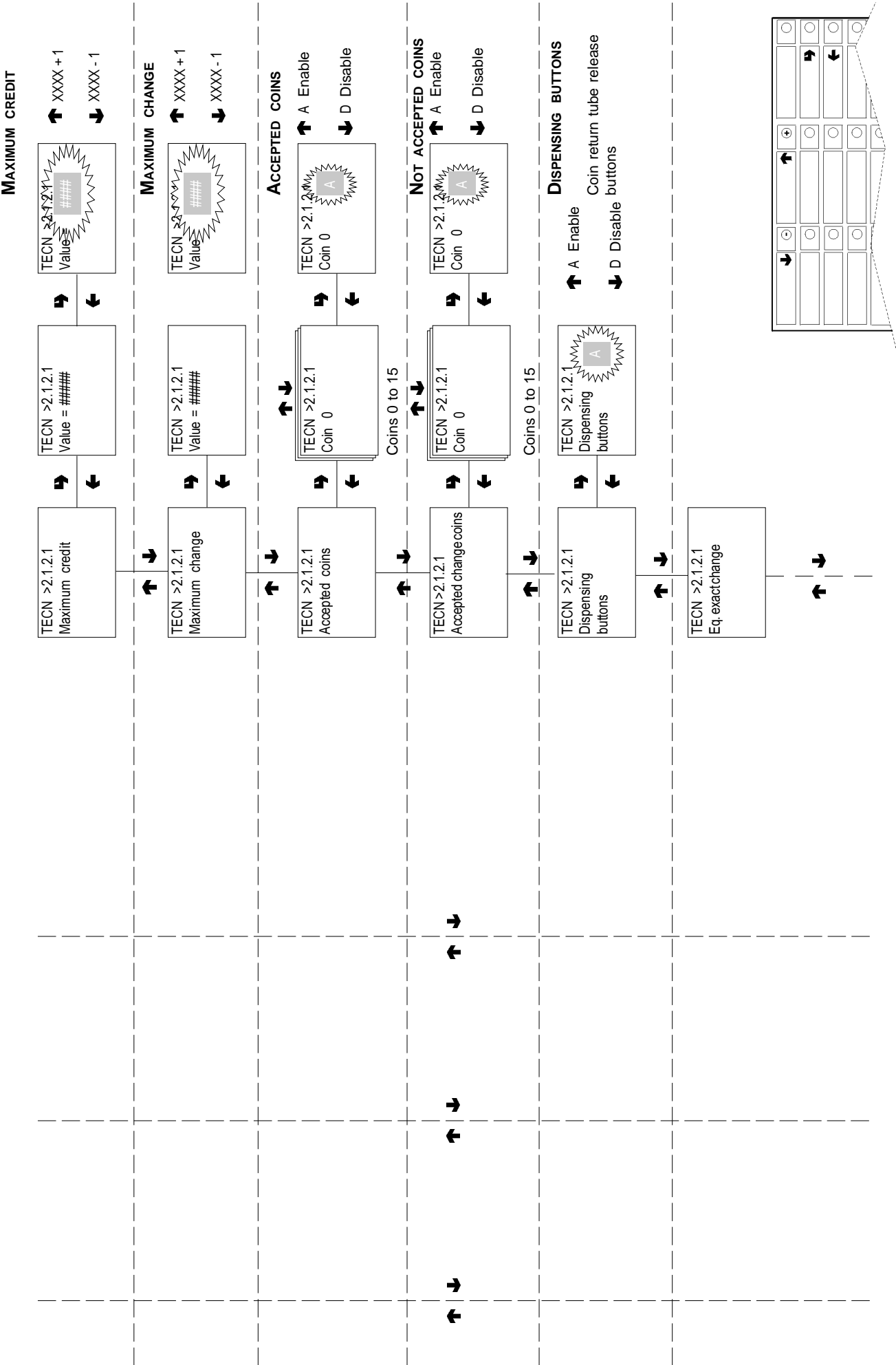
Technician menu - Summary

AVAILABLE COIN MECHANISMS

- Validators
- Executive
- BDV
- MDB



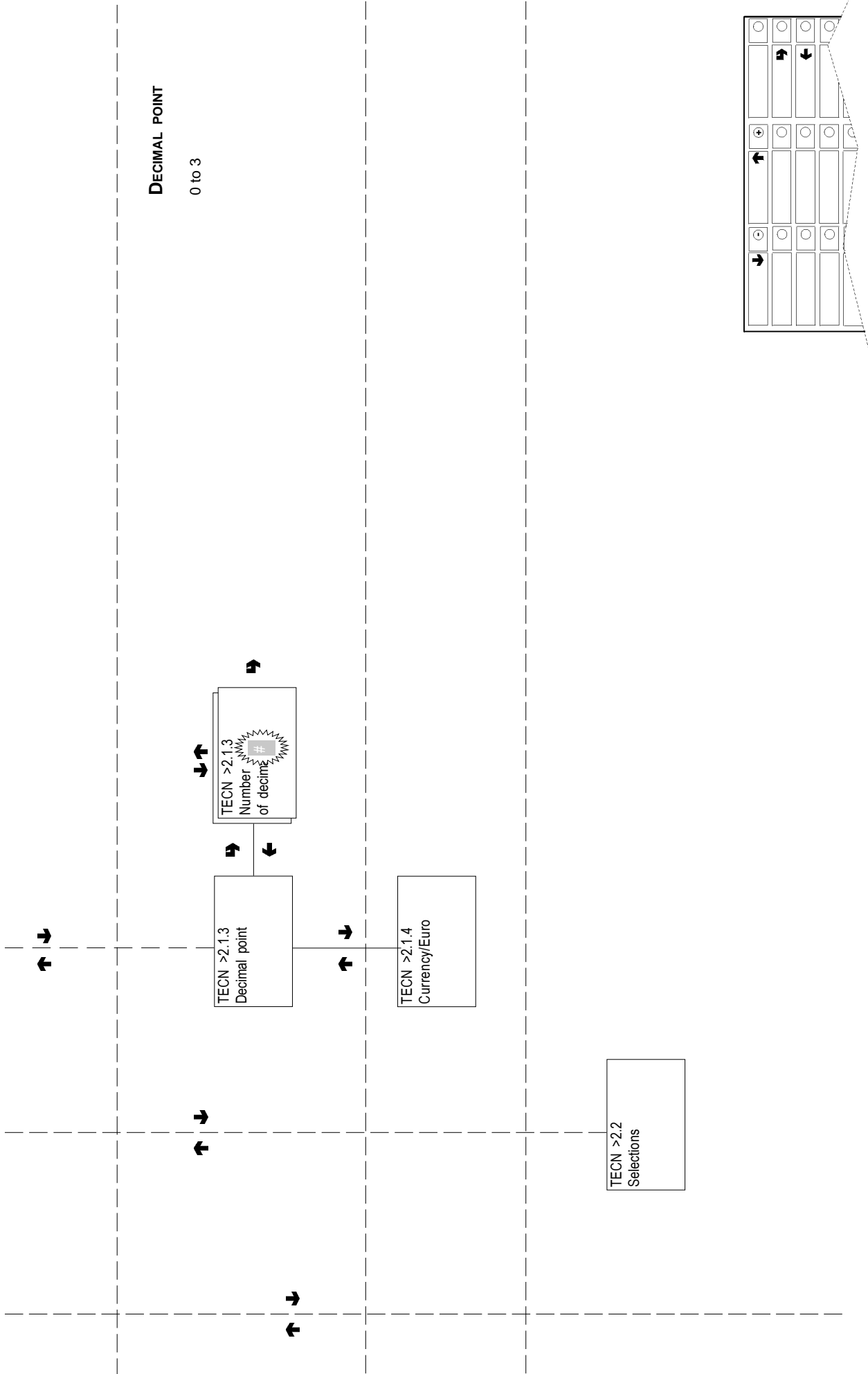
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### VALUE OF "EXACT AMOUNT"

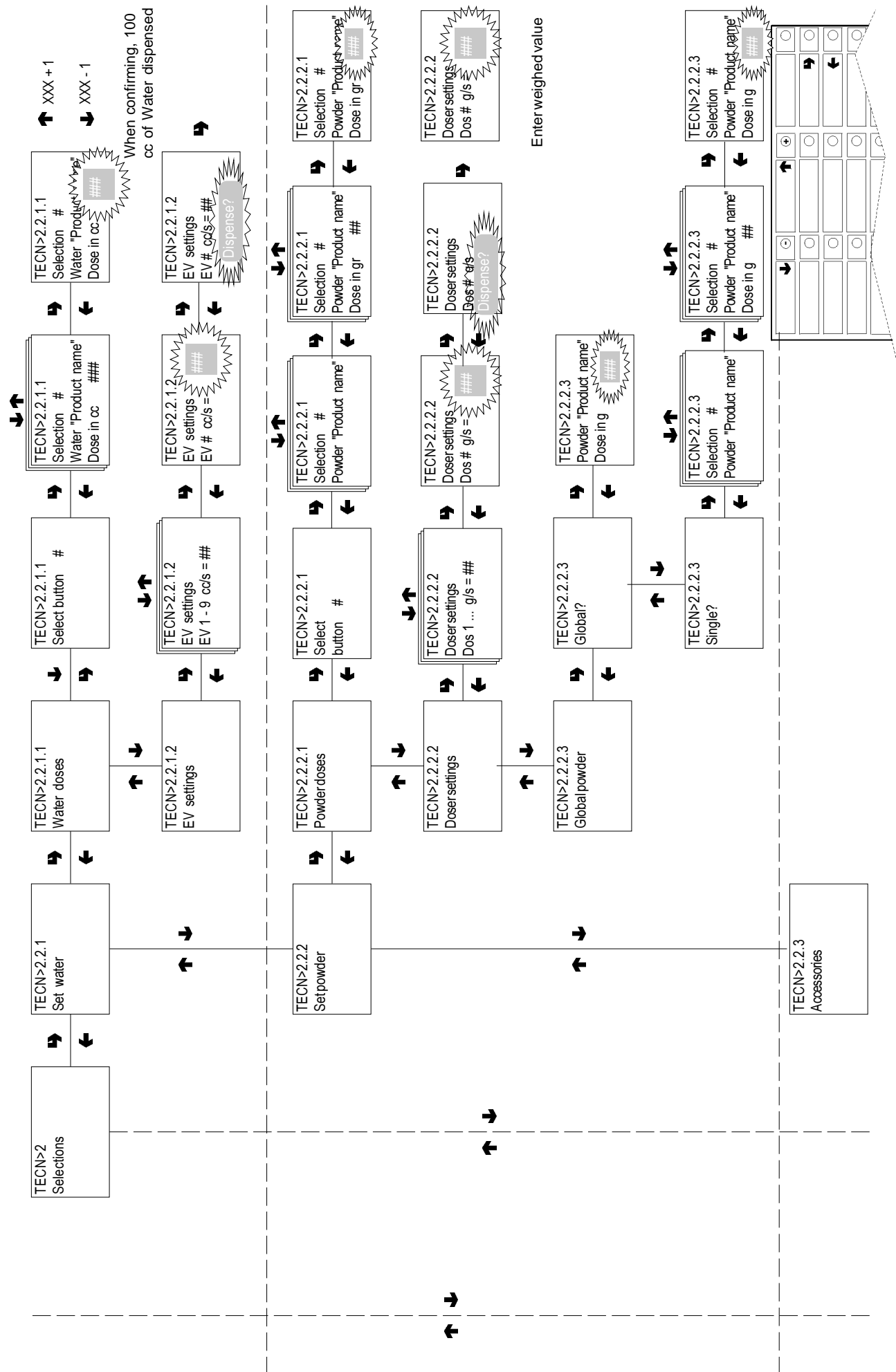


Technician menu - Summary

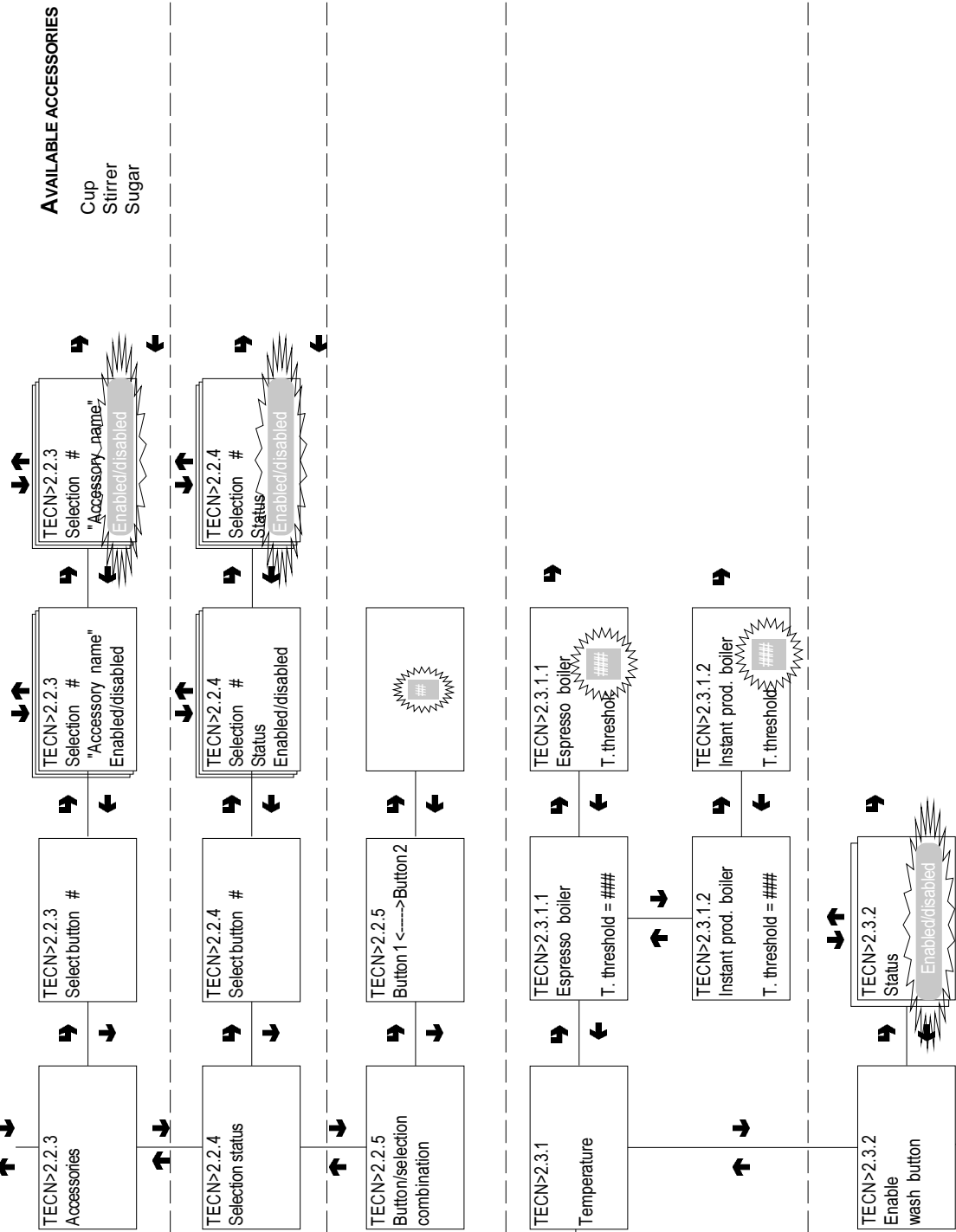




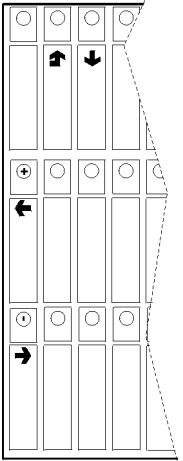
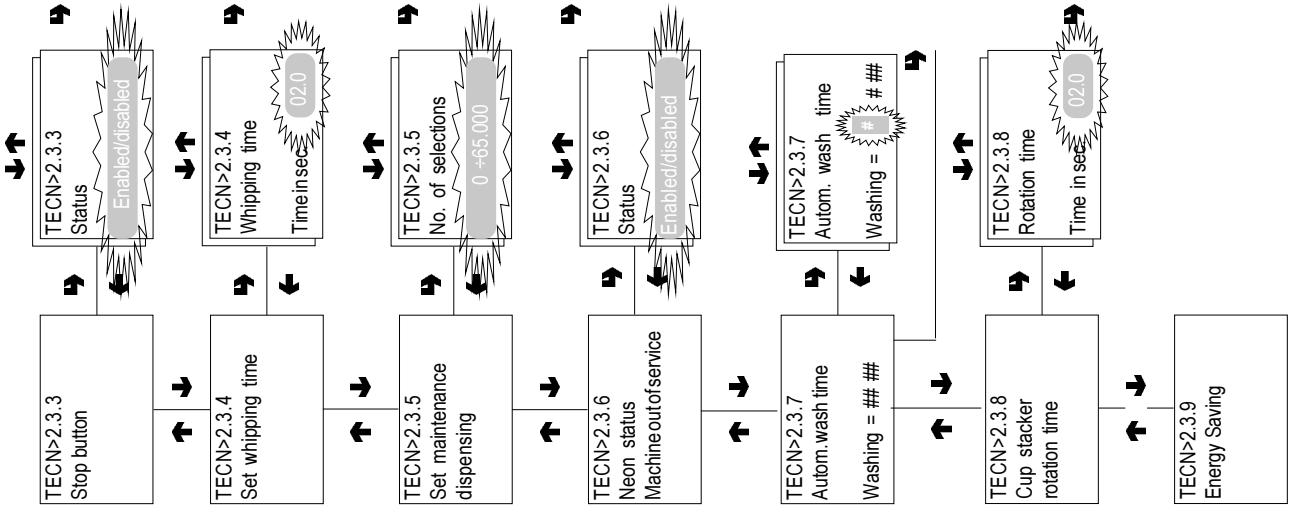
## Technician menu - Summary



## Technician menu - Summary



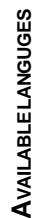
Technician menu - Summary



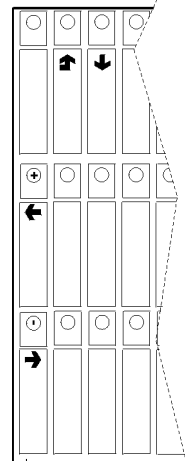
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When the blinking values are confirmed the hour and minutes for each time band start and end are entered one after the other.

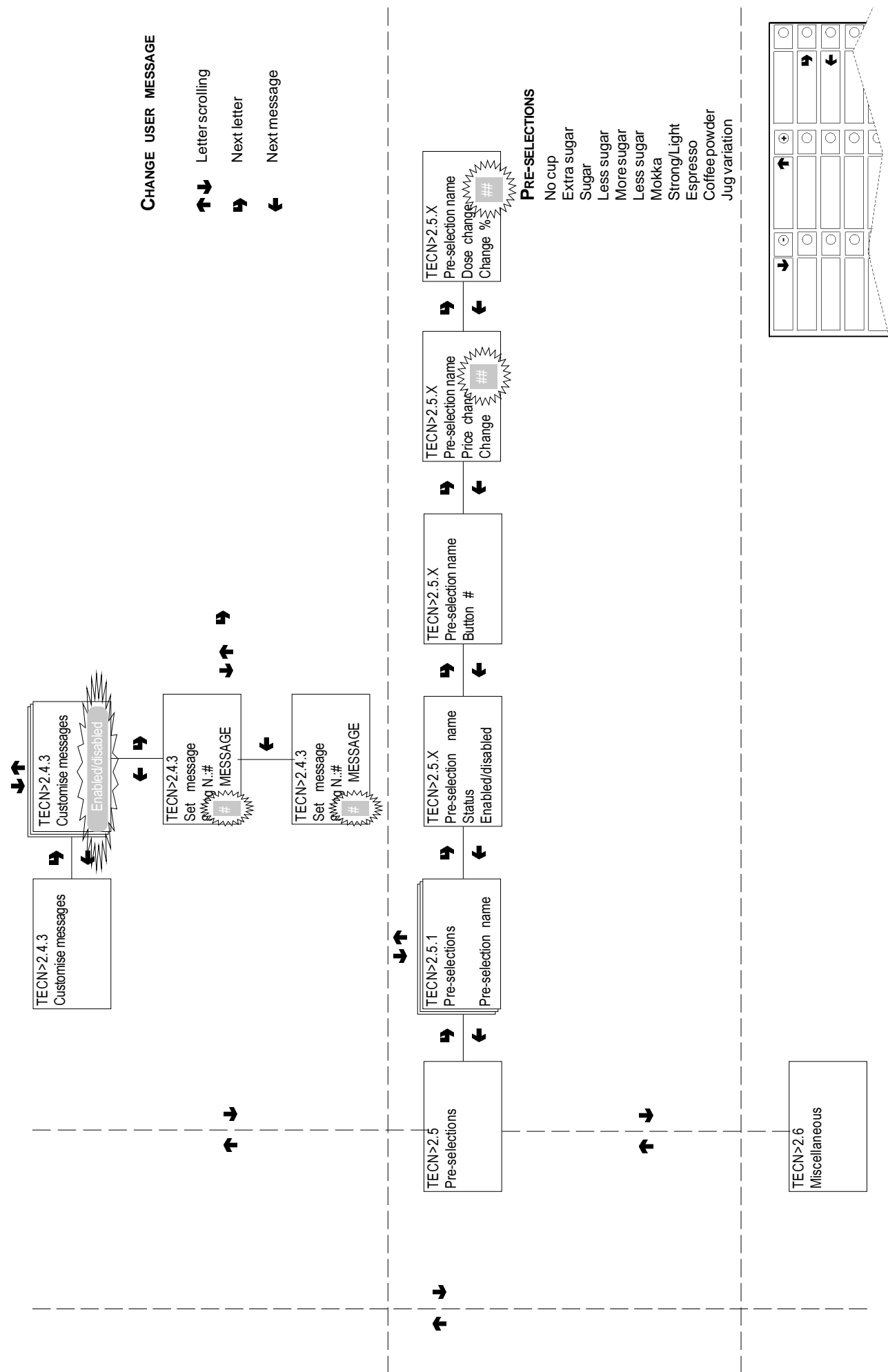
If start and end values are set to 00.00 the time bands are deactivated.



Italian  
German  
English  
French  
Spanish



## Technician menu - Summary

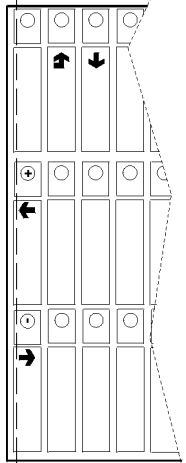


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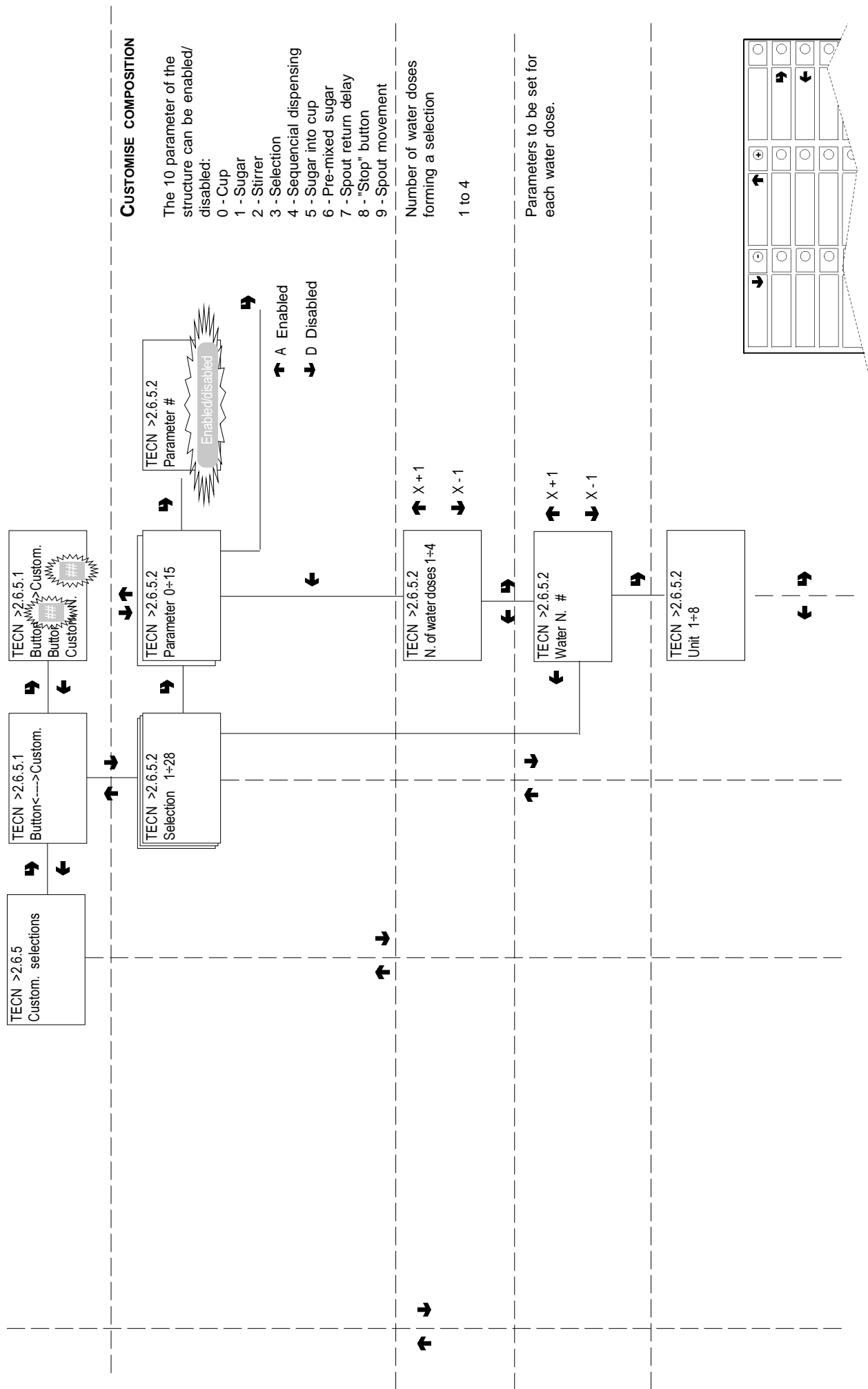
Two units can be installed

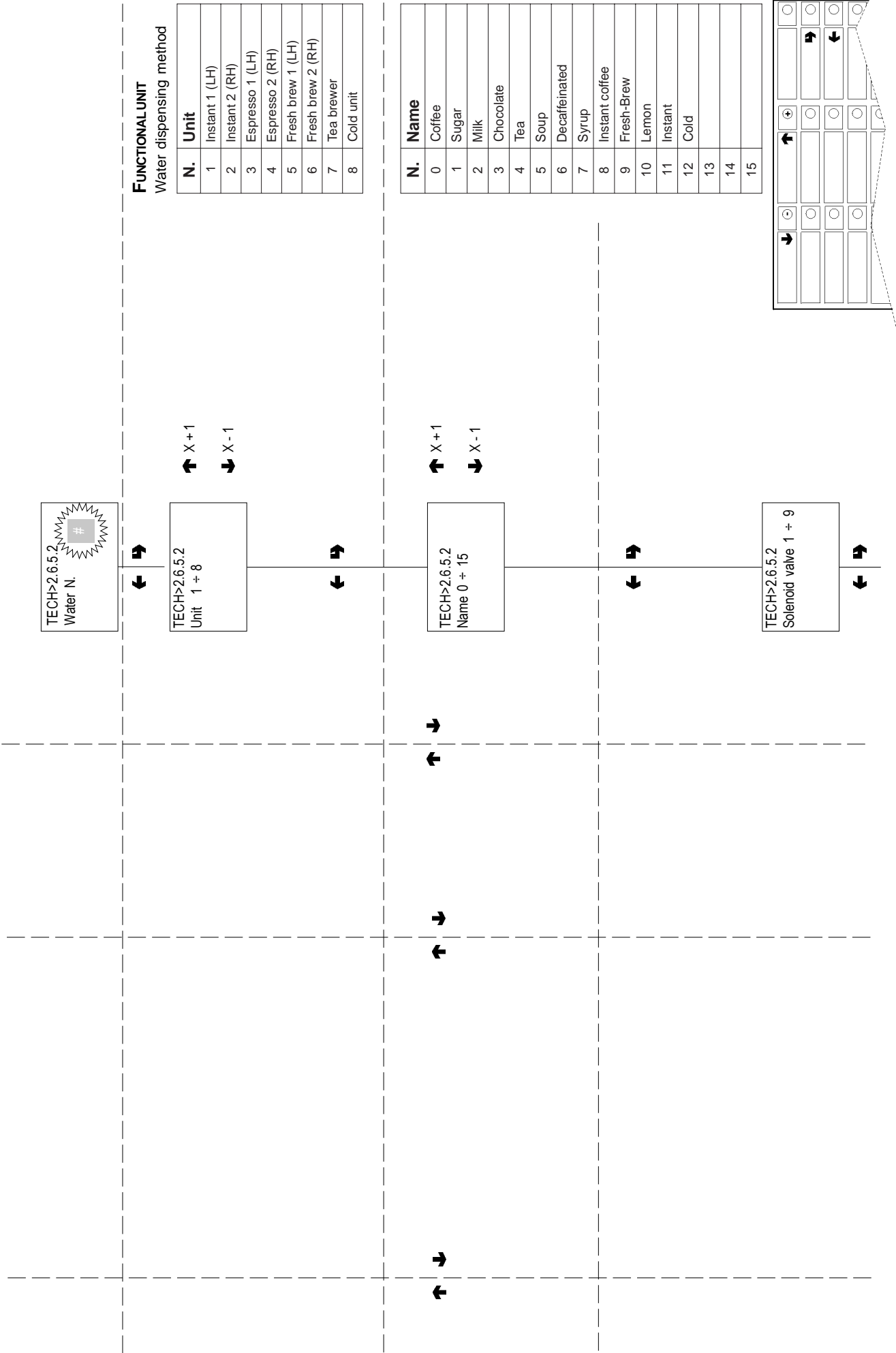
Parameter settings:

- Pre-brewing time
- Drying time
- Whipping status
- Wash status

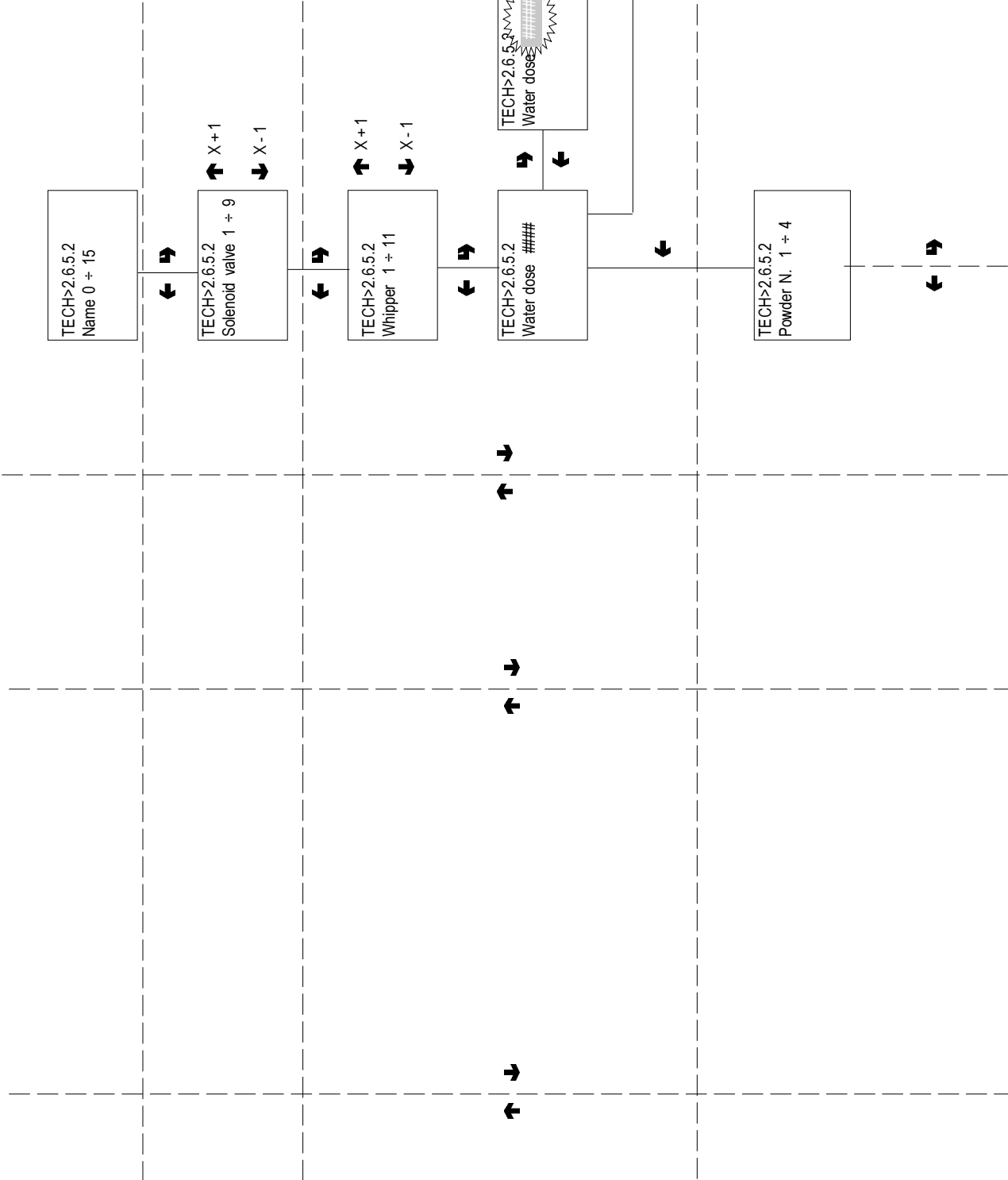


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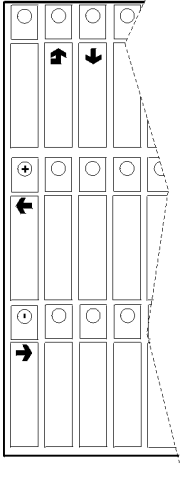
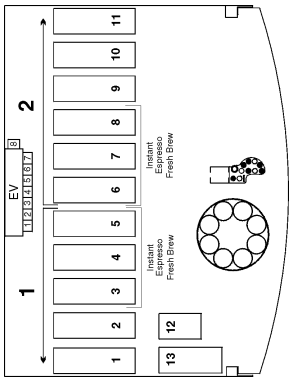




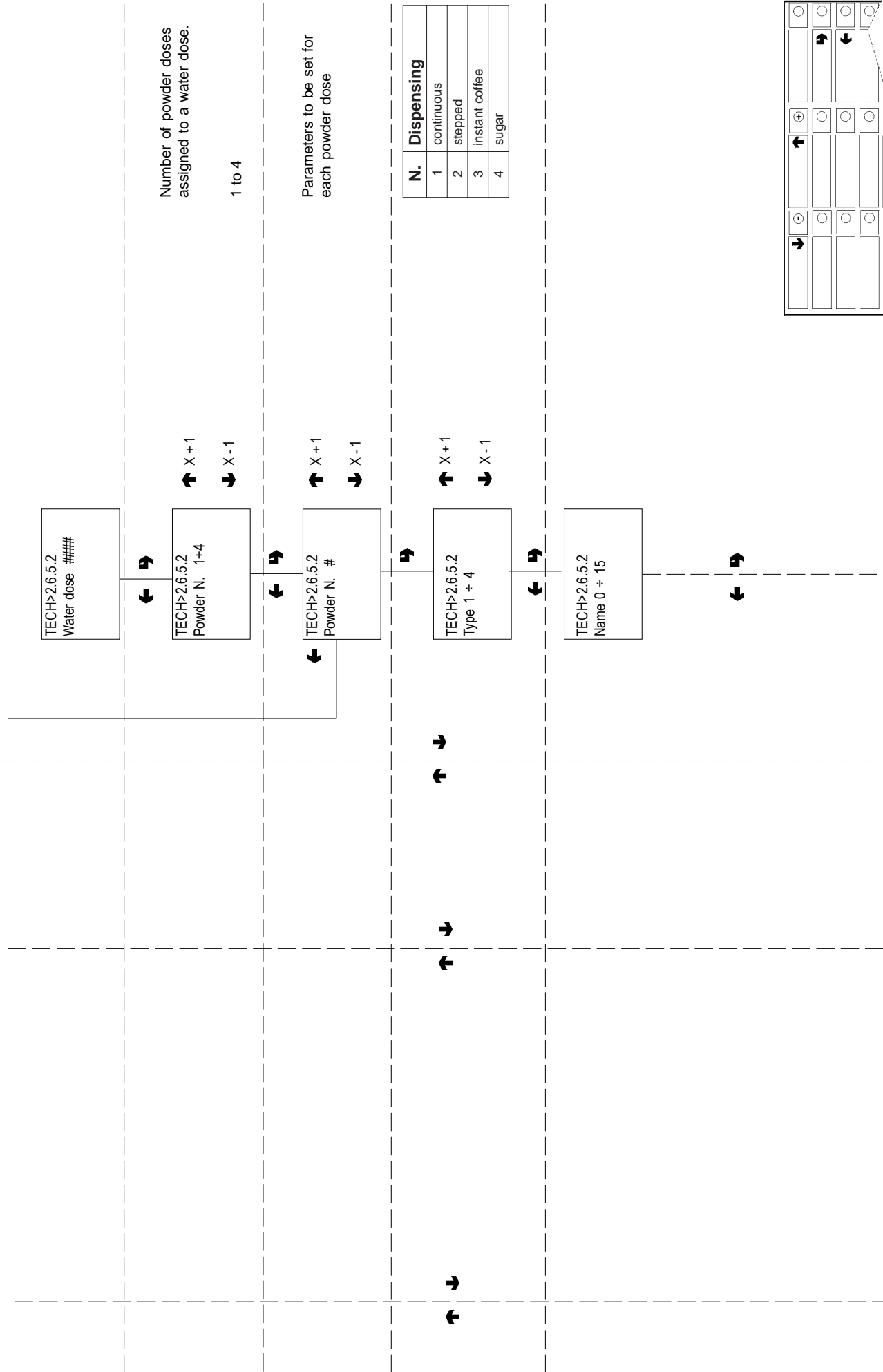


SETTING LAYOUT OF USERS

| Functional unit |                                 |                     |                |
|-----------------|---------------------------------|---------------------|----------------|
| Instant EV      | Fresh-brew Tea brewer           | Espresso            | Cold unit      |
| 1               | instant boiler                  | dispensing coffee 1 | water powder 1 |
| 2               | instant boiler                  | dispensing coffee 2 | plain water    |
| 3               | instant boiler                  |                     | water powder 2 |
| 4               | instant boiler                  |                     | soda           |
| 5-8             | instant boiler                  |                     |                |
| 9               | not applicable for these models |                     |                |

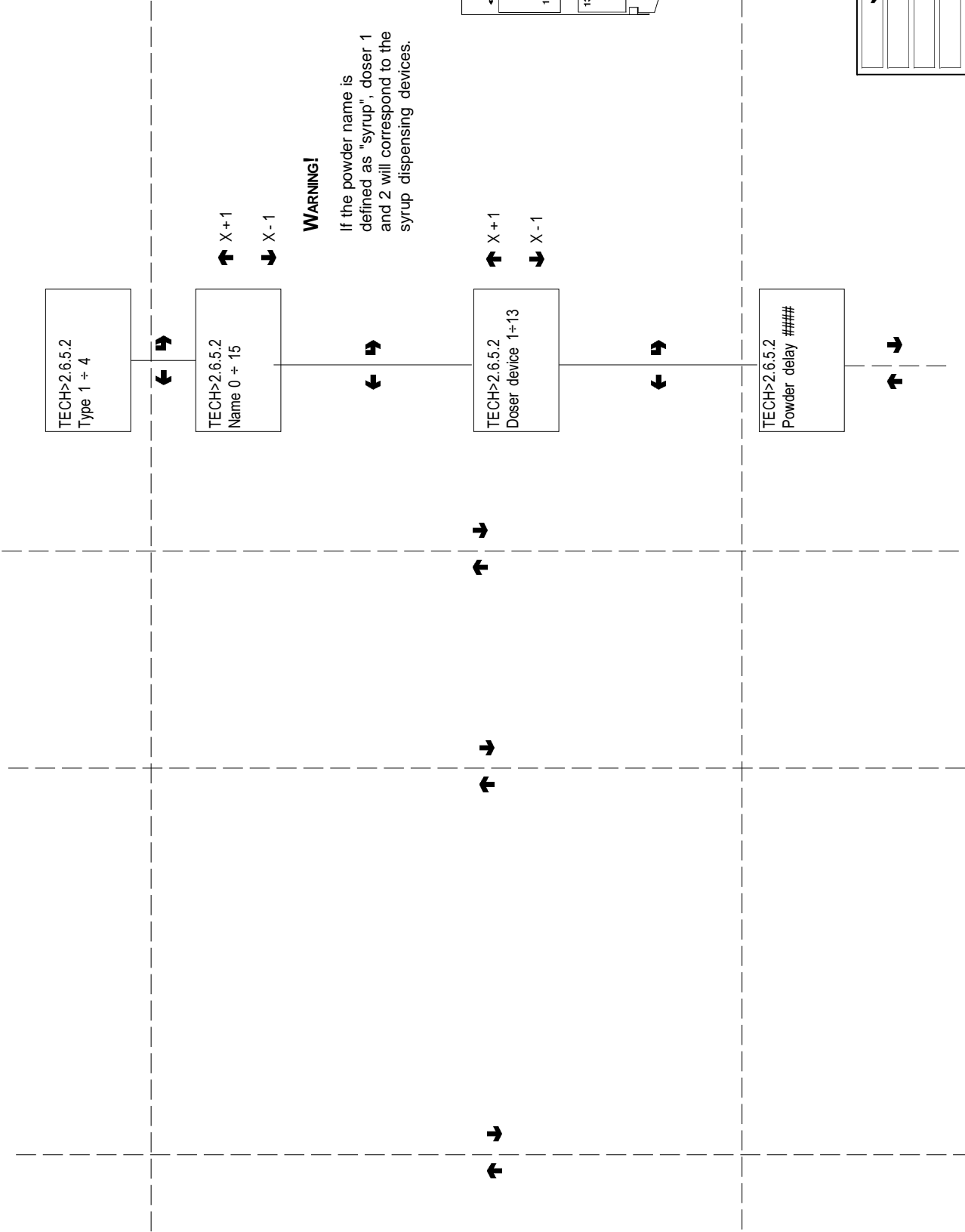


Technician menu - Summary



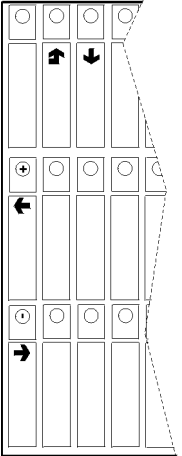
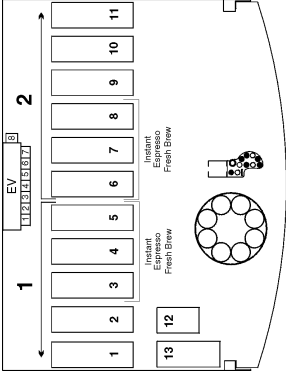
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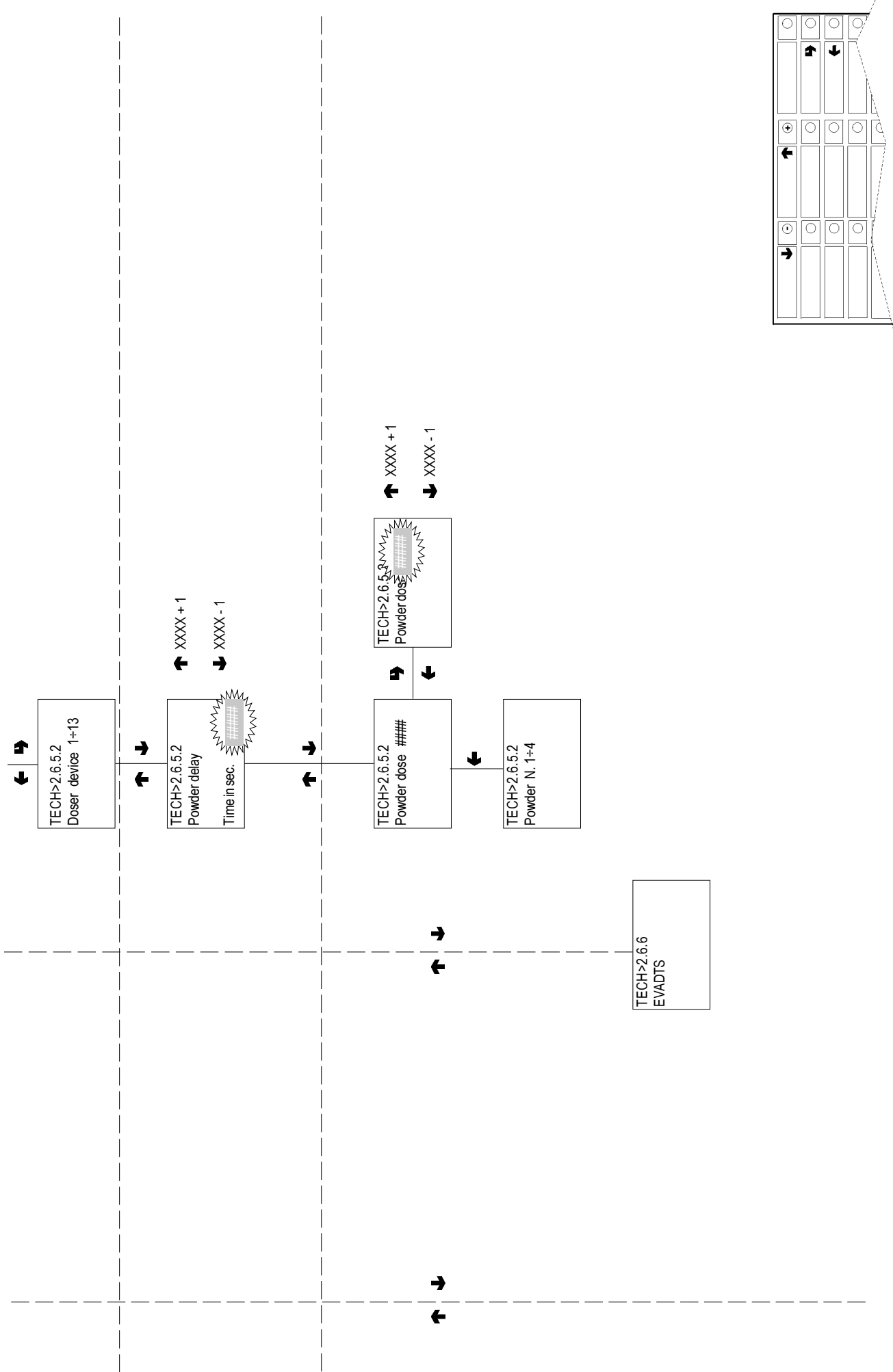
Technician menu - Summary



| N. | Name           |
|----|----------------|
| 0  | Coffee         |
| 1  | Sugar          |
| 2  | Milk           |
| 3  | Chocolate      |
| 4  | Tea            |
| 5  | Soup           |
| 6  | Decaffeinated  |
| 7  | Syrup          |
| 8  | Instant coffee |
| 9  | Fresh-Brew     |
| 10 | Lemon          |
| 11 | Instant        |
| 12 | Cold           |
| 13 |                |
| 14 |                |
| 15 |                |

**WARNING!**  
If the powder name is defined as "syrup", doser 1 and 2 will correspond to the syrup dispensing devices.



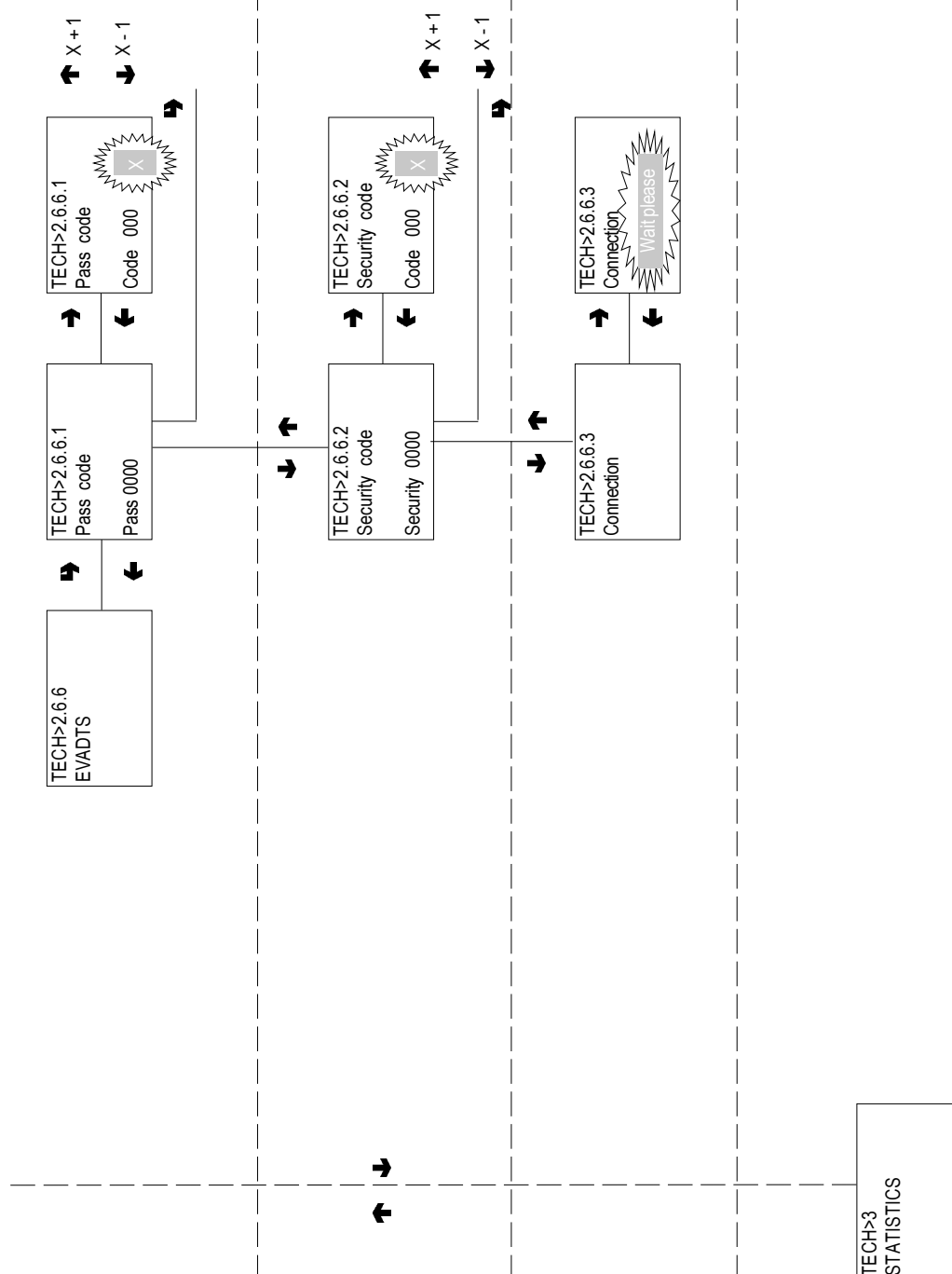


# MACHINE

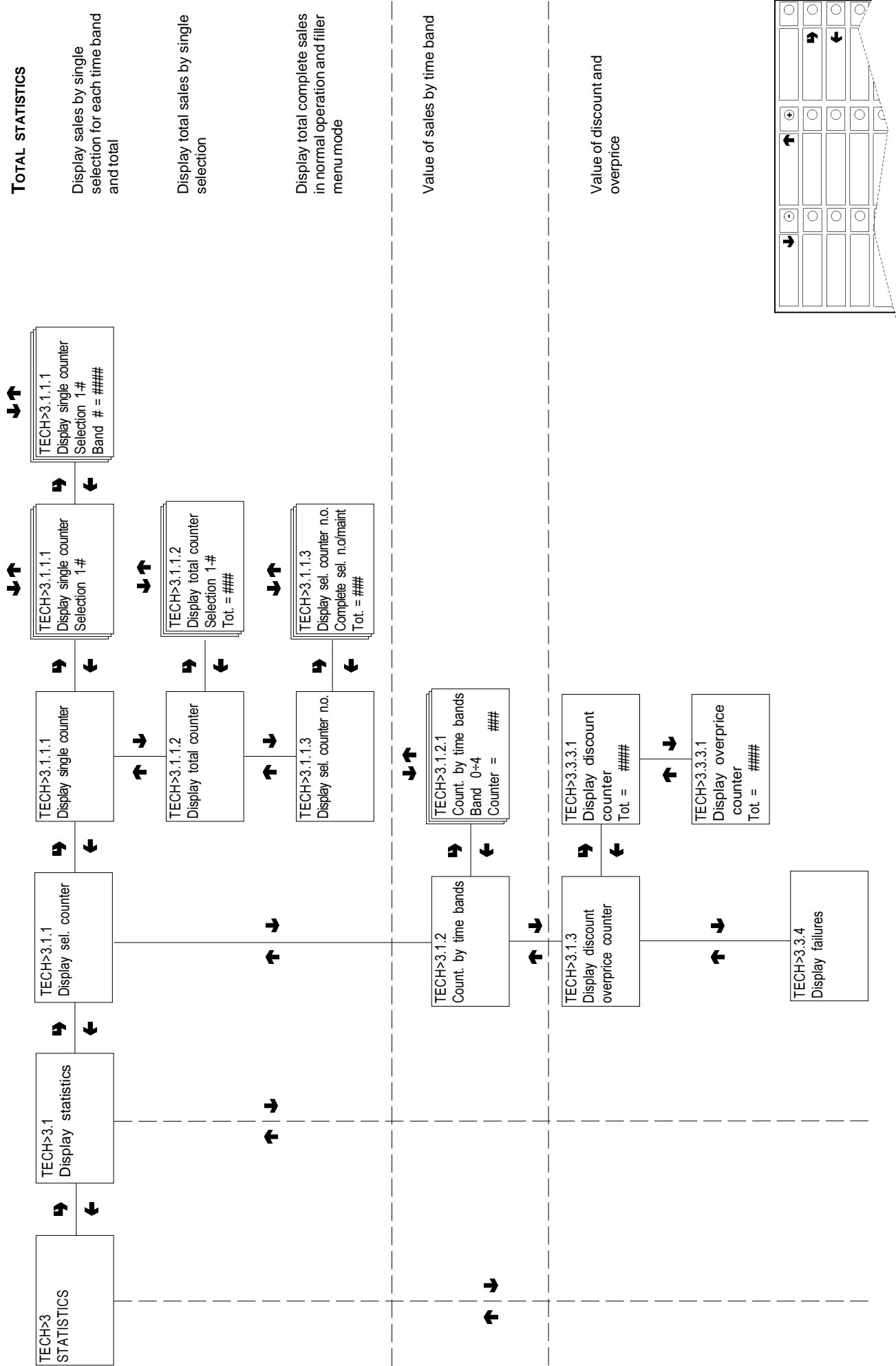
## IDENTIFICATION CODE

When pressing the change button ➡ the first digit strats blinking.

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

[illegible]

Technician menu - Summary





## Technician menu - Summary

## RELATIVE STATISTICS

Display sales by single selection for each time band and total

Display total sales by single selection

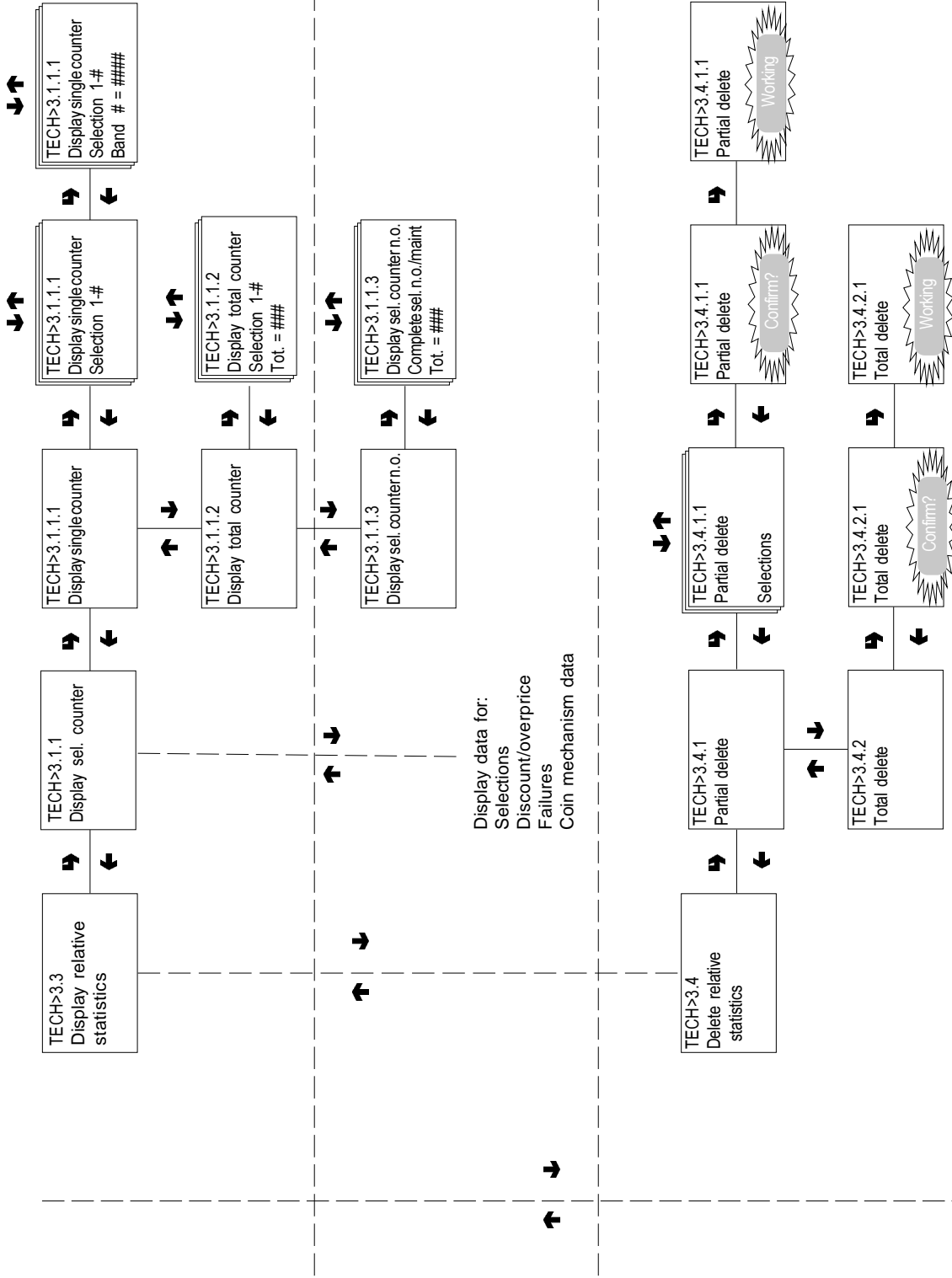
Display total complete sales  
in normal operation and filler  
menu mode

## DELETE RELATIVE STATISTICS

Delete data by:

- Selections
- Discount/overprice
- Failures
- Coin mechanism data

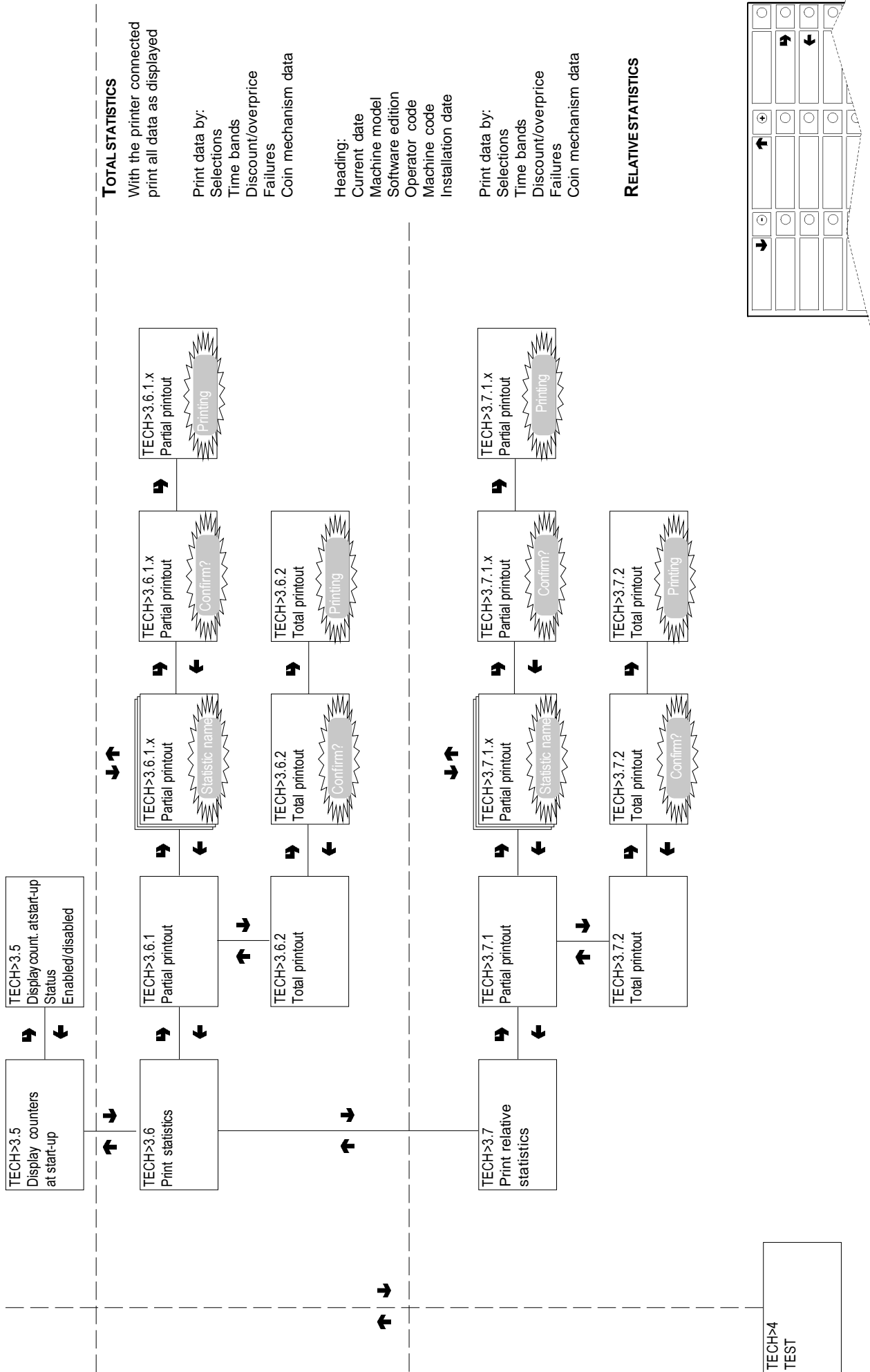
Delete all data



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Technician menu - Summary



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Two units can be installed

Parameter settings:

Pre-brewing time  
Drying time  
Whipping status  
Wash status

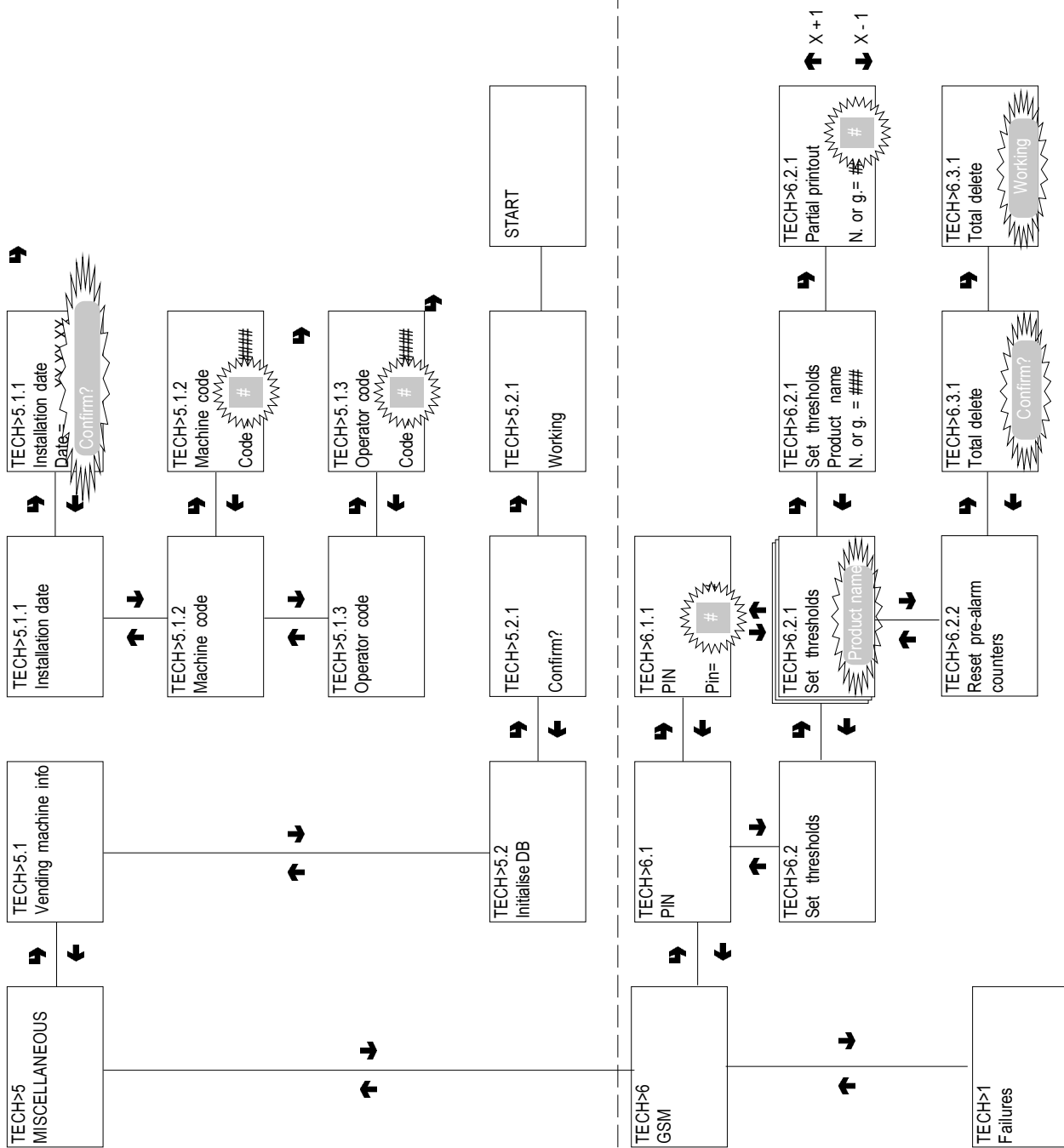
Actuation in a sequence of:

- doser devices  
mixers  
cup dispenser  
stirrer dispenser  
neon (fluorescent) lamps  
door LED  
push-buttons\*  
mobile spouts  
coffee dose  
unit rotation  
liquid waste full\*

\* these functions require the assistance of the user to trip the switches .



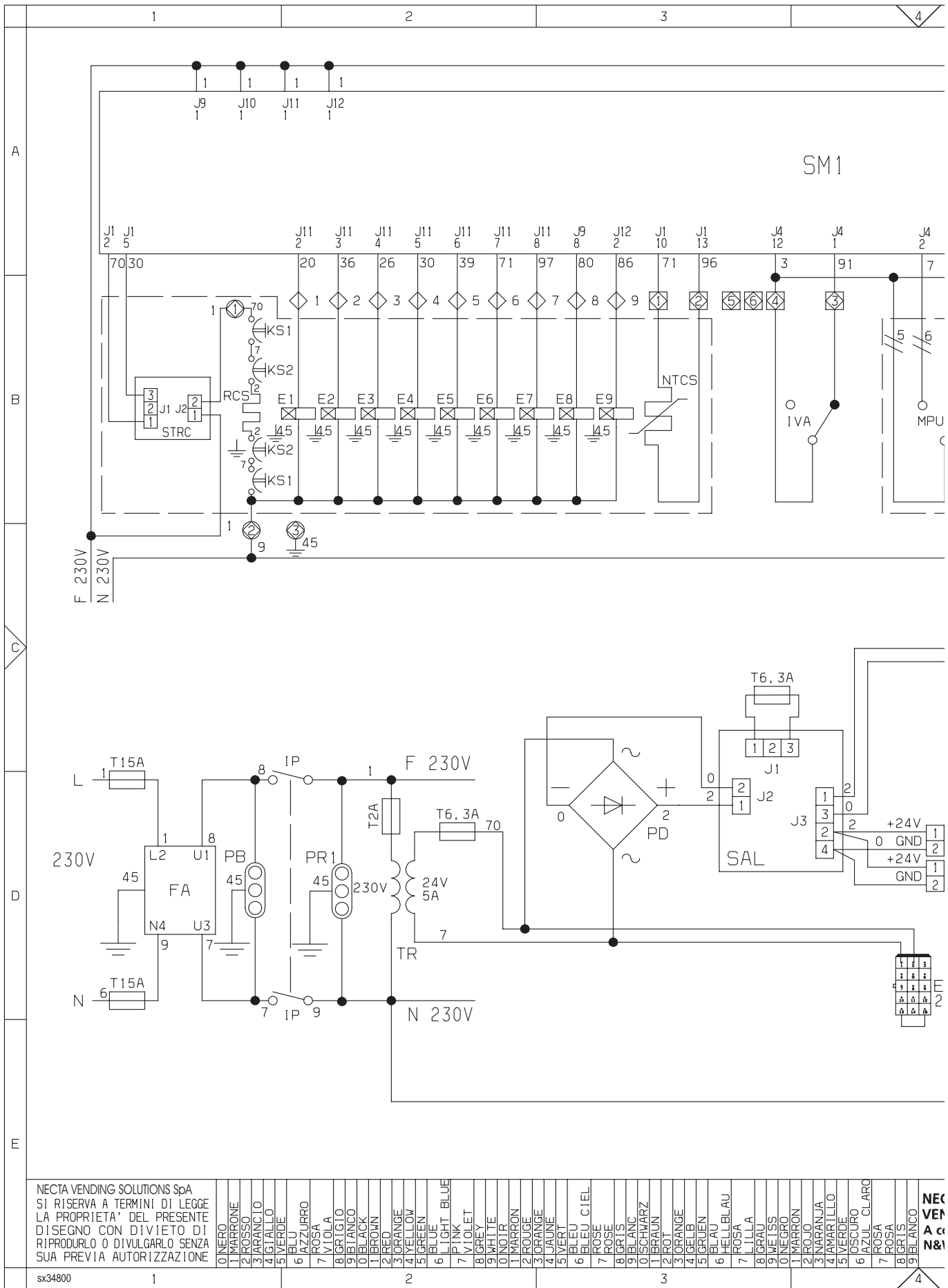
## Technician menu - Summary

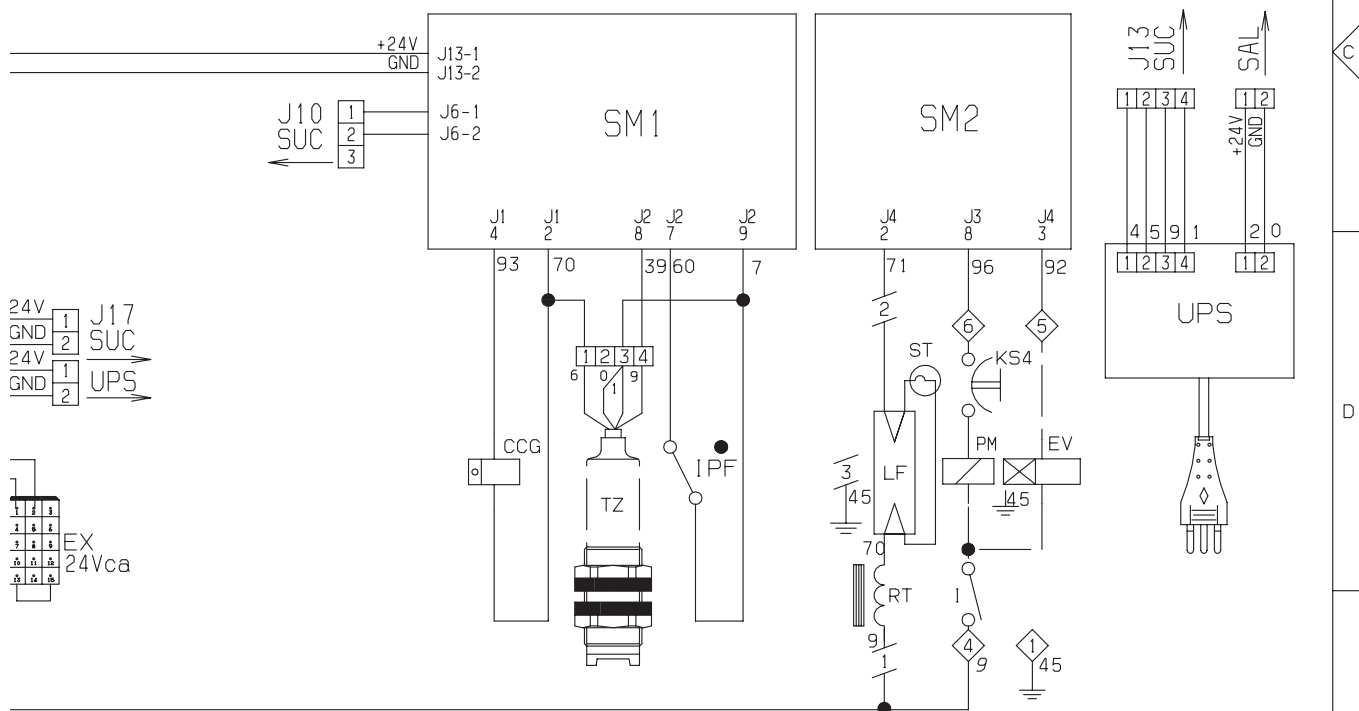
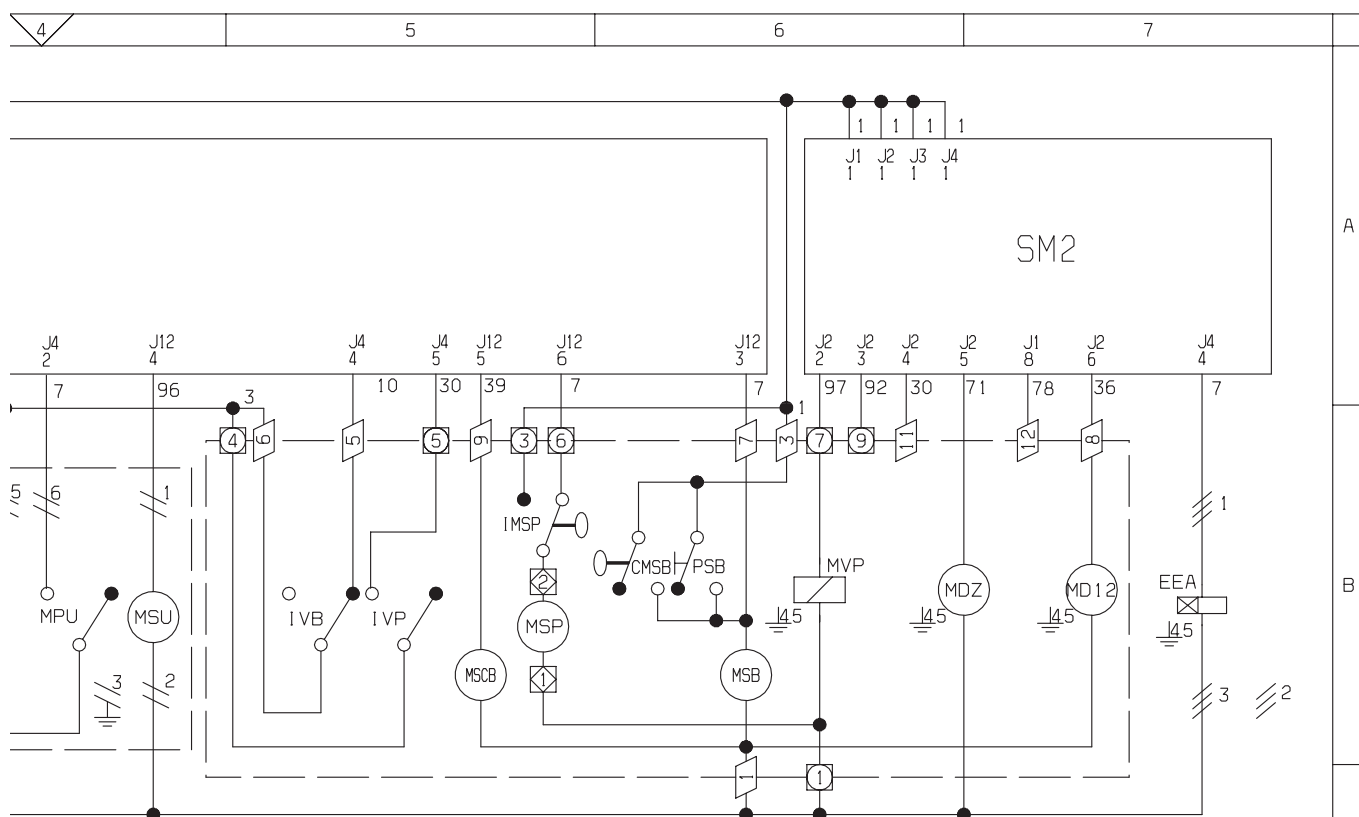
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## WIRING DIAGRAM LEGEND

| INITIALS | DESCRIPTION                         | INITIALS | DESCRIPTION                      |
|----------|-------------------------------------|----------|----------------------------------|
| BDV      | BDV COIN MECH CONNECTORS            | MPF      | FRESH BREW PISTON MOTOR          |
| CCG      | GENERAL COUNTER                     | MPU      | SPOUT POSITIONING MICROSWITCH    |
| CM1      | COFFEE UNIT MOTOR CAM               | MSB      | CUP RELEASE MOTOR                |
| CM2      | COFFEE DISPENSING POSITION CAM      | MSCB     | CUP CONTAINER SHIFT MOTOR        |
| CMF      | FRESH BREW MOTOR CAM                | MSP      | STIRRER RELEASE MOTOR            |
| CMPF     | FRESH BREW UNIT PISTON MICROSWITCH  | MSU      | SPOUT MOVING MOTOR               |
| CMSB     | CUP RELEASE MOTOR CAM               | MVP      | EMPTY STIRRER DISPENSER MOTOR    |
| CV       | VOLUMETRIC COUNTER                  | NTC1-    | TEMPERATURE PROBE                |
| EEA      | WATER INLET SOLENOID VALVE          | NTCS     | INSTANT BOILER TEMPERATURE PROBE |
| ER       | COFFEE DISPENSER SOLENOID VALVE     | PAG      | FAILURE RESET BUTTON             |
| ESC      | COFFEE RELEASE MAGNET               | PB       | POWER SUPPLY SOCKET              |
| EV       | SANITISING KIT SOLENOID VALVE       | PD       | DIODE RECTIFIER                  |
| EX       | EXECUTIVE COIN MECH CONNECTOR       | PG       | UNIT DETECTION MICROSWITCH       |
| FA       | RADIO INTERFERENCE SUPPRESSOR       | PIP      | PROGRAMMING BUTTON               |
| FREE     | FREE VENDING SWITCH                 | PM       | PUMP                             |
| I        | SANITISING KIT SWITCH               | PSB      | CUP RELEASE BUTTON               |
| ID       | COFFEE DOSE SWITCH                  | RCC      | COFFEE BOILER HEATING ELEMENT    |
| IMSP     | STIRRER RELEASE MICROSWITCH         | RG       | UNIT HEATING ELEMENT             |
| IP       | DOOR SWITCH                         | RS232    | SERIAL PORT                      |
| IPF      | WASTE CONTAINER OVERFLOW SWITCH     | RT       | BALLAST                          |
| IVA      | EMPTY BOILER MICROSWITCH            | SAL      | VOLTAGE SUPPLY CARD              |
| IVB      | EMPTY CUP DISPENSER MICROSWITCH     | SLCD     | LIQUID CRYSTAL DISPLAY CARD      |
| IVP      | EMPTY STIRRER DISPENSER MICROSWITCH | SLED     | LED BOARD                        |
| JUG      | JUG FACILITIES SWITCH               | SM1      | CONTROL BOARD                    |
| KC1-..   | COFFEE BOILER CUTOUT                | SM2      | EXPANSION BOARD                  |
| KS1-..   | SAFETY CUTOUT                       | SP       | PUSH-BUTTON BOARD                |
| LF       | LAMP                                | ST       | STARTER                          |
| M        | COFFEE UNIT MOTOR                   | STRC     | BOILER HEATING TRIAC BOARD       |
| MAC      | GRINDER                             | SUC      | C.P.U. BOARD                     |
| MD1-..   | DOSER DEVICES - INSTANT             | TR       | TRANSFORMER                      |
| MDB      | CONNECTOR FOR MDB COIN MECHANISM    | TX....   | DELAYED FUSE (X=CURRENT)         |
| MDFB     | DOSER DEVICE - FRESH BREW           | TZ       | CUP SENSOR                       |
| MDZ      | DOSER DEVICE - SUGAR                | UPS      | COLD UNIT PRINTED BOARD          |
| MF1-..   | WHIPPERS - INSTANT                  | VENT     | FAN                              |
| MFB      | FRESH-BREW MOTOR                    |          |                                  |



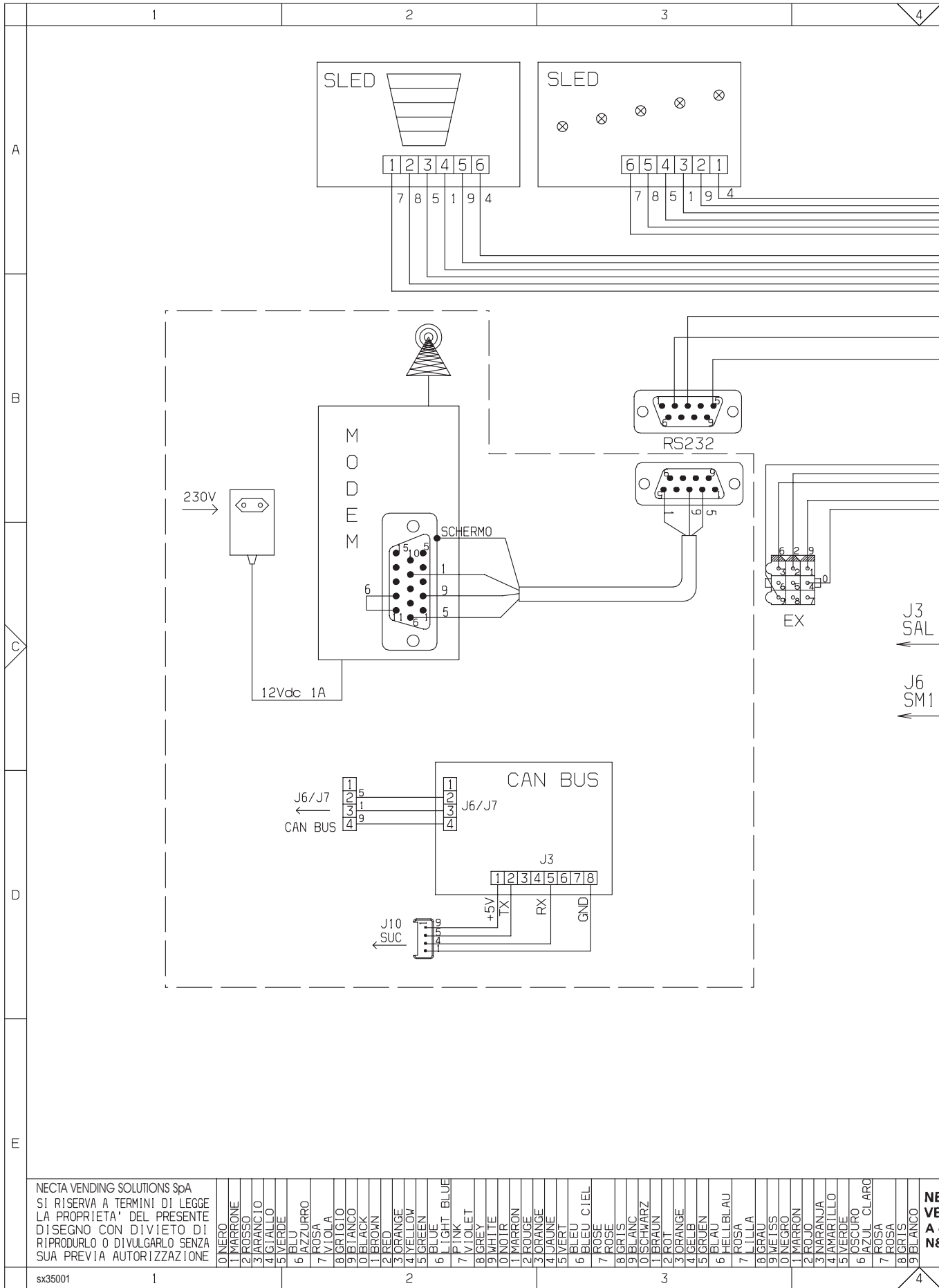




















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