INSTALLATION, USE AND MAINTENANCE MANUAL

NECTA

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DICHIARAZIONE DI CONFORMITA'

DECLARATION OF CONFORMITY

DÉCLARATION DE CONFORMITÉ

KONFORMITÄTSERKLÄRUNG

DECLARACIÓN DE CONFORMIDAD

DECLARAÇÃO DE CONFORMIDADE

VERKLARING VAN OVEREENSTEMMING

INTYG OM ÖVERENSSTÄMMELSE

OVERENSSTEMMELSESERKLÆRING

YHDENMUKAISUUSTODISTUS

Valbrembo, 03/05/2001

Dichiara che la macchina descritta nella targhetta di identificazione, è conforme alle disposizioni legislative delle direttive: **89/392**, **89/336**, **73/23 CEE** e successive modifiche ed integrazioni.

Declares that the machine described in the identification plate conforms to the legislative directions of the directives: **89/392**, **89/336**, **73/23 EEC** and further amendments and integrations.

Déclare que l'appareil décrit dans la plaque signalétique satisfait aux prescriptions des directives: **89/392**, **89/336**, **73/23 CEE** et modifications/intégrations suivantes.

Erklärt, daß das im Typenschild beschriebene Gerät den **EWG** Richtlinien **89/392**, **89/336**, **73/23** sowie den folgenden Änderungen/Ergänzungen entspricht.

Declara que la máquina descripta en la placa de identificación, resulta conforme a las disposiciones legislativas de las directivas: **89/392**, **89/336**, **73/23 CEE** y modificaciones y integraciones sucesivas.

Declara que o distribuidor descrita na chapa de identificação é conforme às disposições legislativas das directivas **CEE 89/392, 89/336 e 73/23** e sucessivas modificações e integrações.

Verklaart dat de op de identificatieplaat beschreven machine overeenstemt met de bepalingen van de **EEG** richtlijnen **89/392, 89/336** en **73/23** en de daaropvolgende wijzigingen en aanvullingen.

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

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ANTONIO CAVO

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Registration Number: IT - 12979

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CERTIFICATION OF COMPANIES ENVIRONMENTAL MANAGEMENT SYSTEMS

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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

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 identification of the machine, and carries all data which readily and safely gives 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 serious failures or malfunctions, then contact the following:

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

TRANSPORT AND STORAGE

To prevent any damage, special care should be taken when loading or unloading the vending machine.
The machine can be lifted by a motor-driven or manual forklift 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.

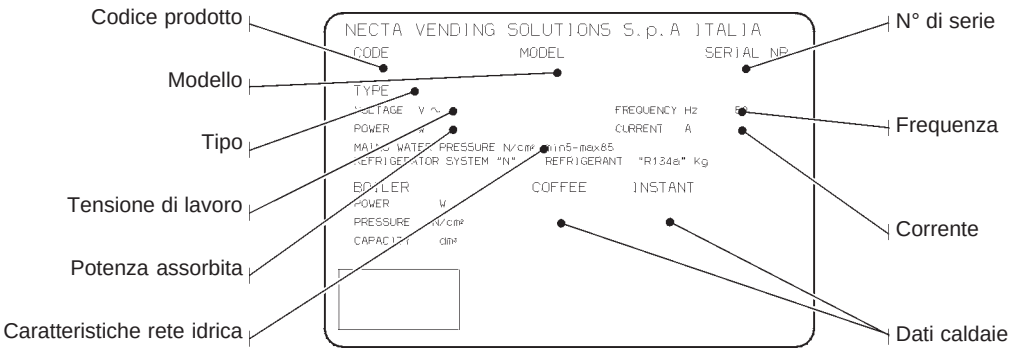

Fig. 1

POSITIONING THE VENDING MACHINE

The vending machine is not suitable for outdoor installation. It must be positioned in a dry room where the temperature remains between 2° C and 32° C, and not where water jets are used for cleaning (e.g. in large kitchens, etc.).
The machine should be placed close to a wall, so that the back panel is at a minimum distance of 4 cm from it and correct ventilation may be ensured. The machine must never be covered with cloth or the like.
The machine should be positioned with a maximum inclination of 2°.
If necessary provide proper levelling by way of the adjustable feet included (see Fig. 12).

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 is responsible for any damage to the machine or to things and persons caused by faulty installation.

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

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

PRECAUTIONS IN USING THE MACHINE

The following precautions will assist in protecting the environment:

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

WARNING FOR SCRAPPING

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

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

TECHNICAL SPECIFICATIONS

Height	1830	mm
Width	680	mm
Depth	800	mm
Overall depth with door open	1365	mm
Weight	250	Kg

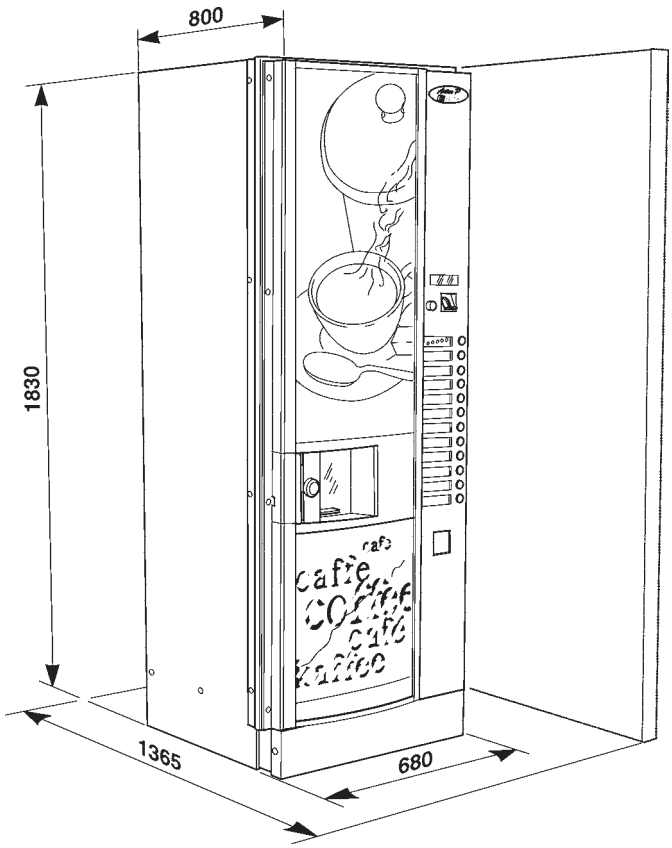

Fig. 2

Power supply voltage	230 V~
Power supply frequency	50 Hz
Installed power	2400 W

CUP DISPENSER

Suitable for cups with a rim diameter of 70-71 mm. with a capacity of approximately 650 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 DC validators.
Beside the coin mechanism housing, suitable space is provided for the installation (optional) of the most widely used payment systems.

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SALES PRICES

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

COIN BOX

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

WATER SUPPLY

From the mains, with a pressure of 5 to 85 N/cm^2.
The machine software is pre-set to control the water supply from an internal tank (optional kit).

AVAILABLE ADJUSTMENTS

Espresso: grade of grinding, coffee and water doses by volume.
Instant: time adjustment for coffee, instant product and water doses.

Temperature

Adjusted via software.

CONTROLS

- Presence of cups
- Absence of objects in the dispensing compartment
- Presence of water
- Presence of coffee
- Position of coffee unit
- Liquid waste container empty
- Operating temperature reached
- Product slider/flap closing
- Position of mobile dispensing spouts

SAFETY DEVICES

- Door switch
- Manual-reset boiler safety thermostat
- Instant boiler anti-over-boiling thermostat
- Air-break float jammed
- Overflow solenoid valve
- Float for full liquid waste container
- Boiler sensor short-circuit/failure control
- Timer protection for:
  - Pump
  - Coffee unit ratiomotor
  - Coffee dispensing
  - Coffee grinder
  - Cup column shift motor
  - Slider lock motor
  - Spout movement motor
- Overheating protection for:
  - Doser units
  - Coffee unit ratiomotor
  - Coffee release magnets
  - Pump
  - Electric mixers
  - Coffee grinder motor
- Fuse protection for
  - Electronic card and coin mechanism power supply transformer (primary and secondary windings)

CAPACITY OF CONTAINERS

Coffee beans	3.5 Kg
Stirrers	550 Approx.
Cups	600 Approx.

According to the model, containers with 3.5 or 11-litre capacity or a two compartment container can be fitted for instant products. Products quantities are indicated in the following table:

Container			**Compartment**	
size (litres)	**4.5**	**11**	**3.5**	**7**
Instant coffee Kg	1.2		0.9	1.8
Milk Kg	1.3	3.2	1.0	2.0
Chocolate Kg	3.1	7.5	2.4	4.8
Sugar Kg	4.2		3.3	6.6
Lemon tea Kg	4.3		3.4	6.8

The effective quantity can differ from what is indicated, according to the density of the various products.

POWER CONSUMPTION

The machine power consumption depends on many factors, such as the temperature and ventilation of the room where it is installed, the inlet water and boiler temperature, etc.
With an ambient temperature of 22 °C the following power consumption levels resulted:

30 drink selections	1.00 l
average drink temperature	78.6° C
Power consumption	
to reach operating temperature	463.7 Wh
24 h of stand-by	4368 Wh
30 selections /hour	305.5 Wh

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

CHANGEABLE COMBINATION LOCK

Some machine models are fitted with a changeable 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 the combination of the lock to be changed.
This kit includes a change key (black) for the current lock combination as well as the change (gold) and use (silver) keys for the new combination.
Sets of change and use keys with other combinations can be supplied on request.
Additional sets of use keys (silver) may be requested, indicating the combination stamped on the keys.
Generally, only the use key (silver) is used, while the combination change keys (gold) can be kept as spares.

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

To change combination do as follows:

- open the machine door to avoid forcing the rotation;
- lightly lubricate the inside of the lock with a spray;
- insert the current change key (black) and rotate to the change position (reference notch at 140°);
- remove the current change key and insert the new change key (gold);
- rotate to the close position (0°) and remove the change key.

The lock will now have the new combination.

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

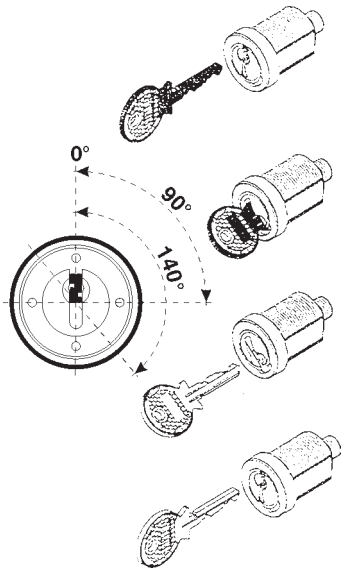

Fig. 3

ACCESSORIES

A wide range of accessories can be installed on the machine to vary its performance:
The installation kits are supplied with their own installation and test instructions, which must be strictly observed to ensure the machine safety.

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

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

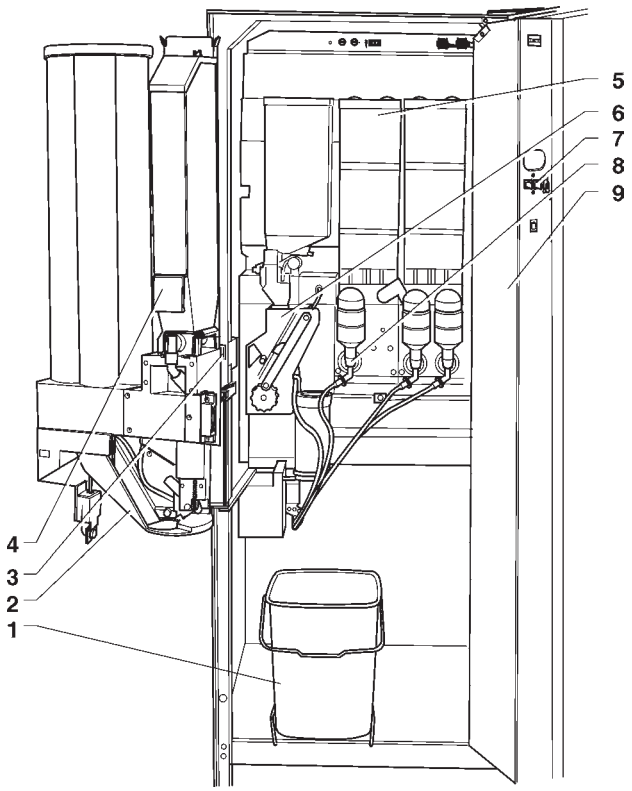

Fig. 4

1 - Liquid waste container
2 - Dispensing compartment
3 - Door switch
4 - Sugar container
5 - Instant prod. container
6 - Coffee unit
7 - Service buttons
8 - Instant prod. mixers
9 - Payment system box

HYGIENE AND CLEANING

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

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

The machine is not suitable for outdoor installation, it must be installed in a dry room where the temperature remains between 2°C and 32°C.
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 damage caused by non-compliance with the above instructions or by the use of strong or toxic chemical agents.

Do not use sprayed water for cleaning.

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

USING THE VENDING MACHINES OF HOT DRINKS IN OPEN CONTAINERS

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

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

- brewing products like coffee and tea;

- reconstituting instant and lyophilised products;

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

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

Any other use is unsuitable and thus potentially dangerous.

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CONTROLS AND INFORMATION

The user controls and information are located on the outside of the door (see Fig. 5).
The labels with the selection menu and instructions, supplied with the machine, must be inserted at the time of installation.

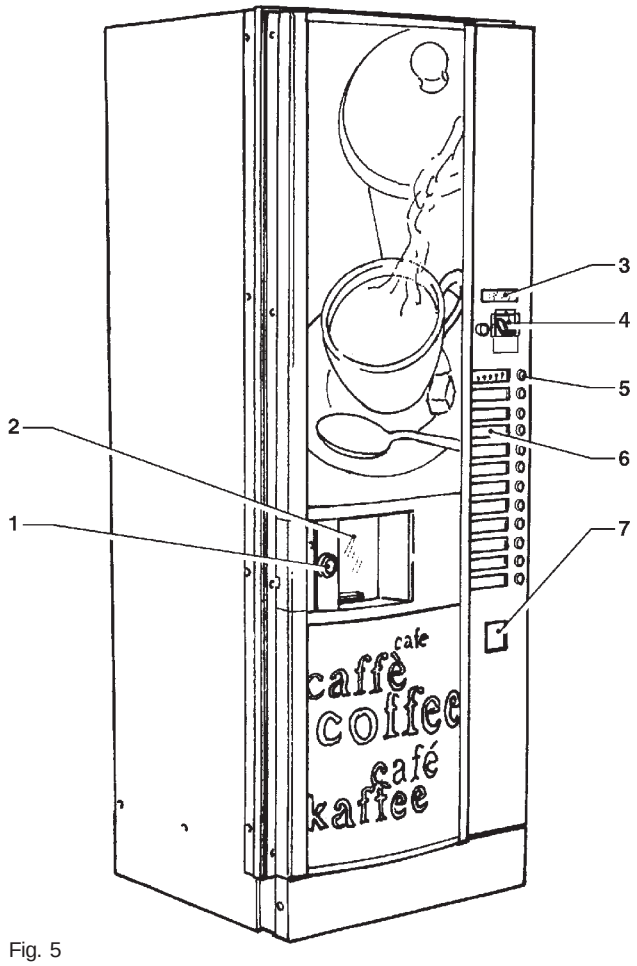


Fig. 5

1 - Lock
2 - Dispensing compartment
3 - LCD display (2 x 16 characters)
4 - Coin slot-return
5 - Pre-selection button
6 - Selection menu
7 - Coin return flap

The Programming button, to access the machine functions, and mixer cleaning button are located on the right-hand side of the coin mechanism compartment.

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

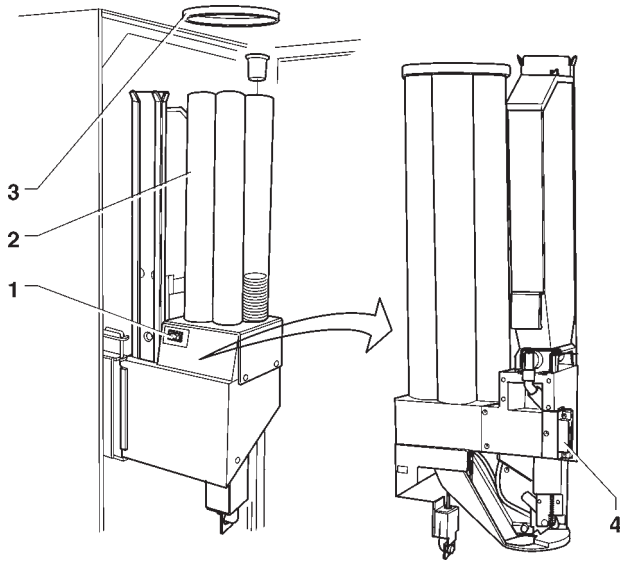


Fig.6

1 - Cup release button
2 - Cup stacker
3 - Cover
4 - Shelf lock magnet

LOADING COFFEE

Lift the cover and fill the hopper with coffee, ensuring that the shutter is fully open (see Fig. 6).

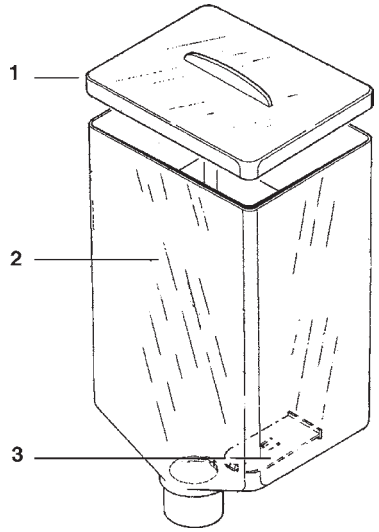


Fig. 7

1 - Cover
2 - Coffee hopper
3 - Shutter

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.

SANITISING THE MIXERS AND THE FOODSTUFF CIRCUITS

When installing the machine, and then at least once a week or even more frequently according to the use of the machine and the quality of the inlet water, the mixers and the dispensing conduits must be thoroughly sanitised (cleaned and disinfected), to guarantee proper hygiene of the dispensed products.

Do not use sprayed water for cleaning.

The parts to be cleaned are the following:

- powder deposit drawers, mixer and instant drink dispensing conduit;
- dispensing tubes and spouts;
- sugar chute;
- dispensing compartment;
- remove the powder and the water funnels, the feeders, the powder deposit drawers and the mixer wheels from the mixers (see Fig. 7);

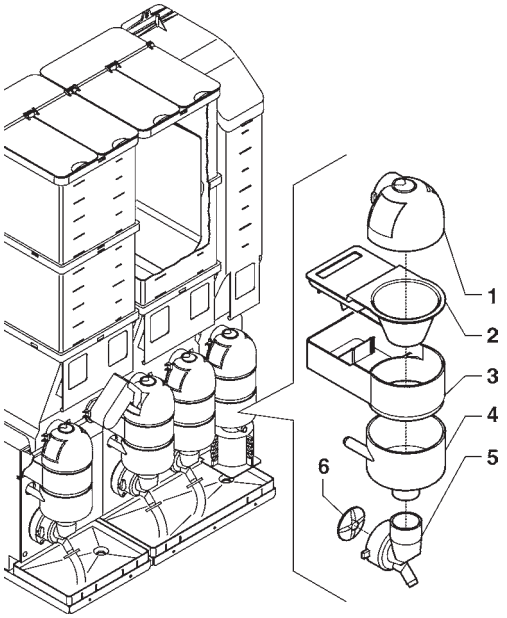
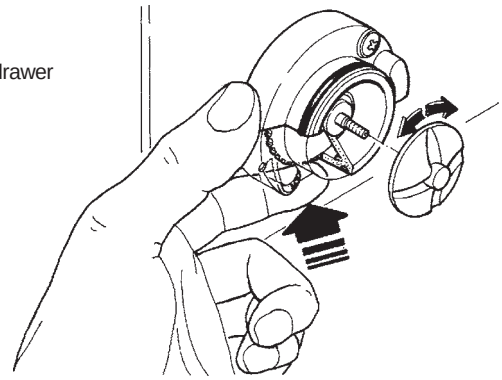


Fig. 8

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



- in order to undo the impellers, simply block the disk fitted on the mixer shaft with a finger (see Fig. 8);
- wash all parts with detergent (using the doses indicated by the manufacturer) 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 rinsing and 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.

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CLEANING THE SUGAR DISPENSER

For models with sugar dispensed directly into the cup, the sugar dispensing system must be cleaned periodically using hot water (see Fig. 9) proceeding as follows:

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

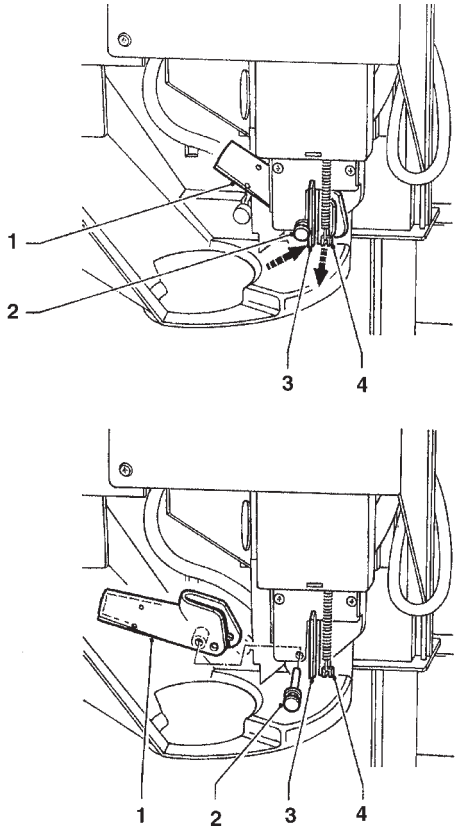

Fig. 9

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

WEEKLY CLEANING OF THE COFFEE UNIT

Every time coffee is refilled, or at least once a week, any powder residue should be removed from the external parts of the coffee unit, particularly from the coffee funnel.

REGENERATING THE SOFTENER UNIT

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

Water hardness		N. of selections	
° F.	° G.	60 cc.	130 cc.
10	5.6	25,000	12,500
20	11.2	12,500	6,000
25	14	11,000	5,250
30	16.8	9,400	4,500
40	22.4	6,300	3,000
50	28.0	5,500	2,500

To regenerate the resins correctly do as follows:

- remove the softener unit from the cabinet and shake it vigorously to eliminate any preferential paths which may have formed;
- fill 1.5 Kg. of sodium chloride (ordinary table salt);
- connect the side hose union to a tap and the middle rubber-holder to a drain point; the direction of the water flow must be

NECESSARILY

the one shown in figure 10

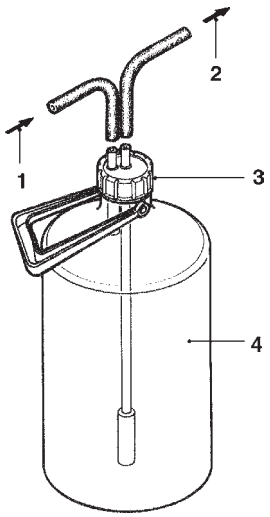

Fig. 10

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

- adjust the water flow in such a way as to completely dissolve the salt in 20 litres water within 35 minutes;
- during the regeneration operation, ensure that the softener unit is always full of water, bleeding any air which may have entered;
- at the end of this operation ensure that the outlet water is no longer salted; it is advisable to check the hardness of the water by means of appropriate chemical reagents.

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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 dosing grinder by dispensing coffee until the empty condition is indicated.
- completely empty the air-break and the instant product boiler, loosening the clamp on the hose.

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

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

DOOR SWITCH

When opening the door a special microswitch disconnects the power from the machine electrical system.
To energize the system with the open door, simply insert the special key into the slot (see Fig. 11).

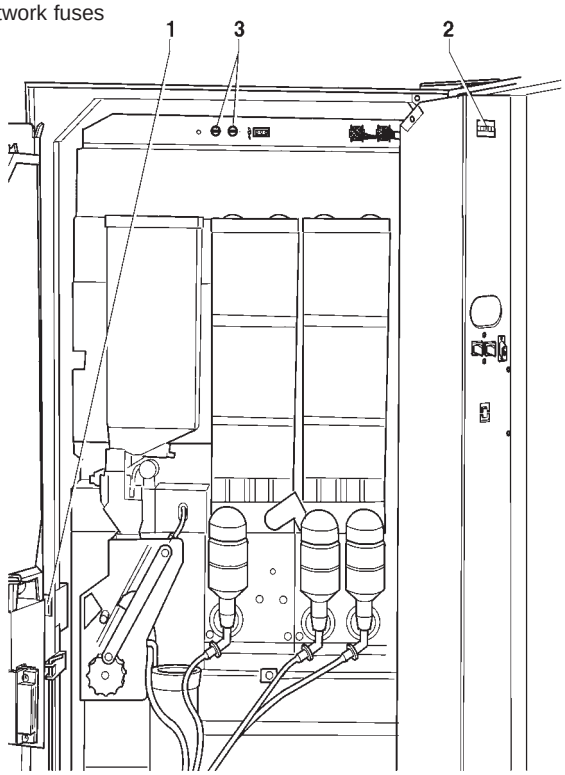
With the door open, there is no access to energised parts. Inside the machine, the only parts that stay energised are those protected by covers and carrying a plate with the warning "Disconnect the power before removing the protective cover".

Before removing such covers disconnect the power supply cable from the grid.

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

Fig. 11

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



UNPACKING THE VENDING MACHINE

After removing the packing, ensure that the machine is intact.
If in doubt do not use the machine.

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

Packing materials must be disposed of in authorised containers and the recyclable ones must be recovered by qualified companies.

Important notice!!

The machine should be positioned with a maximum inclination of 2°.
If necessary provide proper levelling by way of the adjustable feet included (see Fig. 12).

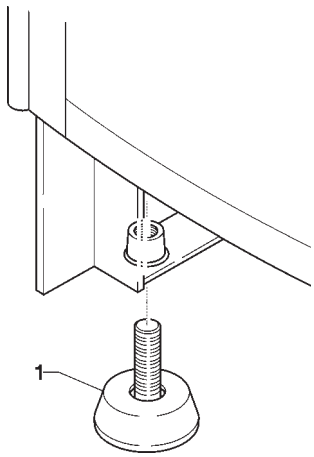


Fig. 12
1 - Adjustable foot

INSERTING THE PRODUCT LABELS

The labels indicating the available product selections are supplied with the machine and must be inserted into the special slots at installation.
According to the model, some buttons may not be used (refer to the selection dose table).
To insert the labels (see Fig. 13), proceed as follows:

- open the coin mechanism compartment door
- remove the fastening knurled nut and open the coin mechanism support
- disconnect the display button board connector
- remove the fastening knurled nuts and extract labels support frame
- insert the labels and reassemble everything in the reverse order

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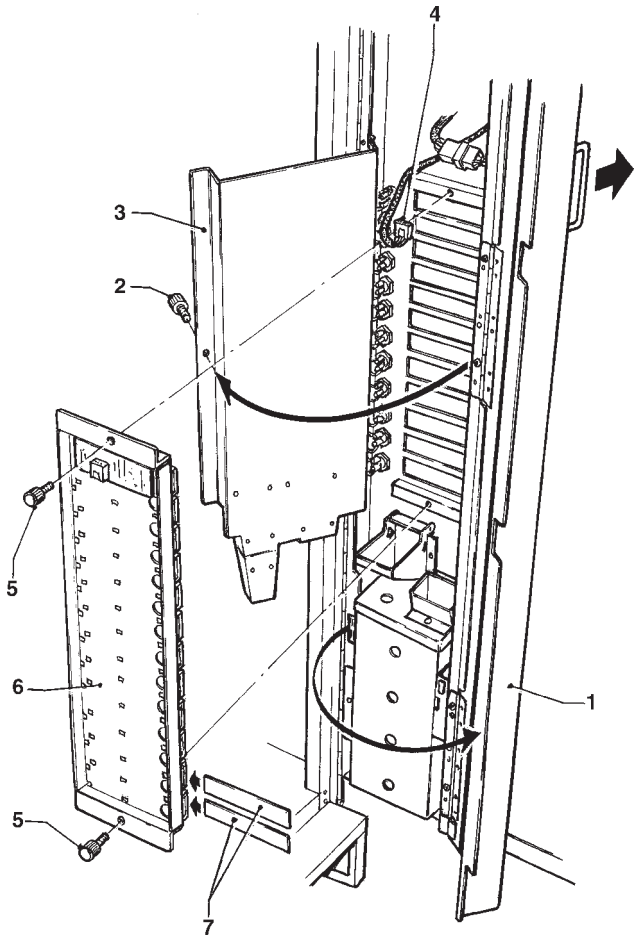

Fig. 13

1 - Coin mechanism compartment door
2 - Support knurled nut
3 - Coin mechanism support
4 - Display board connector
5 - Frame knurled nuts
6 - Label support frame
7 - Product labels

CONNECTING THE MACHINE TO THE WATER MAINS

The machine must be connected to the drinking water mains, taking into account law provisions in force in the country where the machine is installed.
The water pressure must be 5 to 85 N/cm$^{2.}$
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 pipe at the bottom of the machine back panel.

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

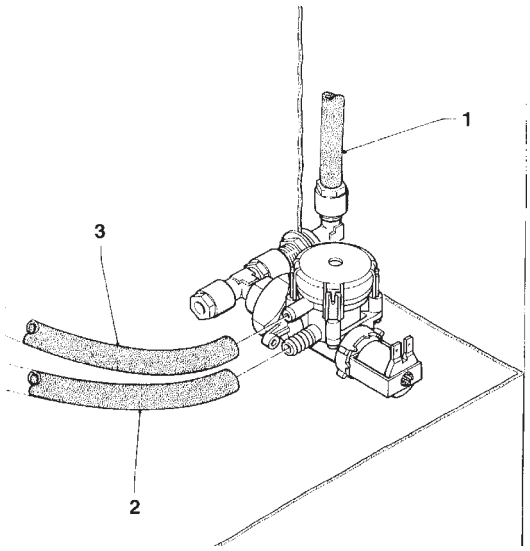

Fig. 14

1 - Water inlet hose
2 - Water supply hose
3 - Overflow hose

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:
- disconnect the electricity from the machine;
- 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 machine is designed to operate under 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 located within easy reach and be capable of withstanding the required peak load required, and at the same time should ensure proper omnipolar disconnection from the power grid when the opening gap of the contacts is of at least 3 mm.

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.

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.

REPLACING THE POWER SUPPLY CABLE

Any replacement of the power cable should be made by qualified personnel using only cables type HO5 RN - F, HO5 V V-F or H07 RN-F with a section of 3 x 1-1.5 mm^2.

To replace the cable, after disconnecting it from the grid, the following is necessary to:

- undo the fastening screws from the back protecting cover inside the machine;
- holding the back protecting cover, remove the two external screws located on the back of the machine.
- remove the cover and replace the cable with a suitable one;

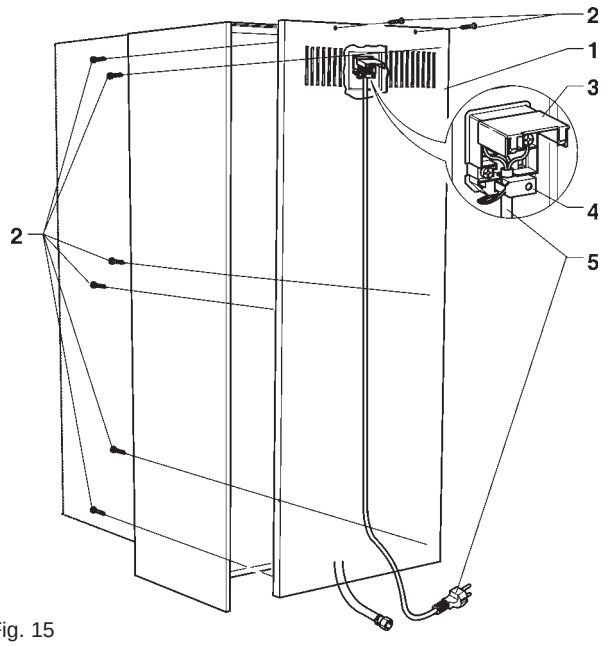

Fig. 15

1 - Back panel
2 - Back panel securing screws
3 - Lift cover
4 - Cable clamp
5 - Cable from the mains

- reposition the back protecting cover, ensuring that it is secured by all the screws.

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

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

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.

CLEANING THE SOFTENER RESINS (MODELS C ONLY)

Before filling the machine water system the resins contained in the softener unit must be cleaned, operating as follows:

- remove the hose connected to the air-break from the softener unit fitting (see Fig. 16);
- insert a new hose, provided with the machine, onto the now free hose fitting and direct it towards a drain;
- switch the machine on;
- bleed air out of the softener unit by loosening the plug, wait until it is full of water and tighten the plug, let a few litres of water flow out until it is clear;
- re-insert the hose connected to the air-break.

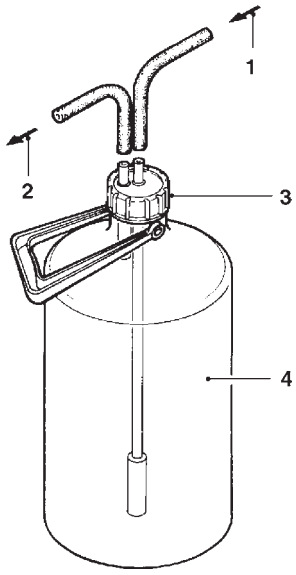

Fig. 16

1 - From the water inlet solenoid valve
2 - To the air-break
3 - Cap
4 - Softener unit

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

“INSTALLATION”

for the entire duration of the cycle;

- the air-break and the instant product boiler are filled;
- (for espresso models only) the coffee solenoid valve is opened so that air may be bled from the boiler and 600 cc. of water 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 manually, using the special function from the “test” menu in “Technician” mode, if the **kit (optional) for water supply from an internal tank is fitted** or after any **maintenance** requiring the boiler to be emptied but not the air-break.

OPERATION

CUP DISPENSING

The machine is fitted with a cup sensor and a dispensing slider/flap with automatic lock.
During the normal operation, the slider cannot be opened.
The presence of the cup is checked by the sensor at the beginning of dispensing. If the cup is not detected, the machine releases the cup a second time, locking the machine operation if the cup is not present after the second attempt.
At the end of dispensing, the slider is unlocked and the drink can be picked up.
After closing, the slider is locked only if the cup is not detected.
If the slider is left open, the display indicates the message “Close the slider” and the vending machine is pre-set to the next selection.

COFFEE DISPENSING CYCLE

When selecting coffee, the grinder is started and will continue until the coffee doser chamber is full (see Fig. 20).

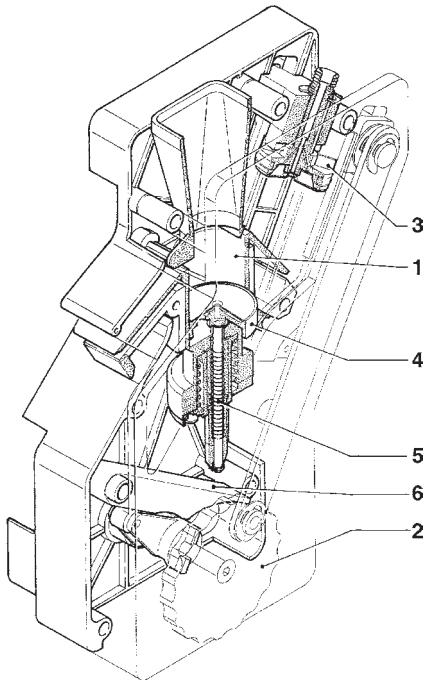

Fig. 17

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

When the doser unit is full, the ground coffee dose is released into the coffee unit.
The coffee falls into the vertical brewing chamber (1) (see Fig. 18).
The ratiomotor handle engaged with the disk (2) located outside of the assembly rotates by 180°, making the brew chamber swing and lowering the upper piston (3) (see Figure 18).
Due to the water pressure, the pre-brewing spring (5) sinks and the lower piston (4) goes down 4 mm, thus forming a water cushion which allows an even use of the coffee dose.

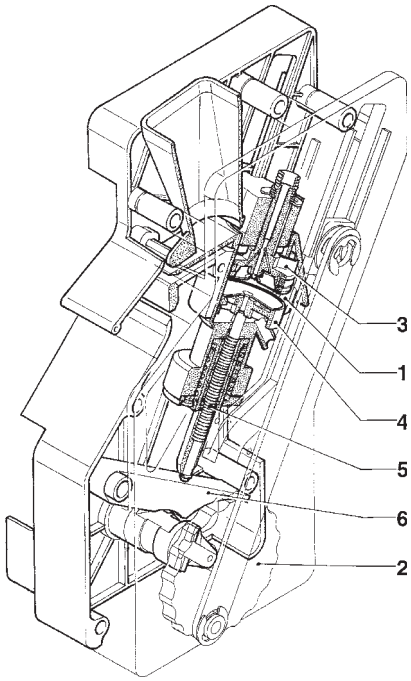

Fig .18

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

At the end of the dispensing cycle and during a pause of 3 seconds, the pre-brewing spring (5) will discharge the water through the third way of the dispensing solenoid valve, lightly pressing the used coffee dose.
By completing its rotation, the ratiomotor makes the swinging lever (6) lift the pistons and the coffee dose.
At the same time, when the brewing chamber returns to its vertical position, the scraper on the coffee hopper stops the used coffee dose and drops it.
The lower piston now returns to the bottom dead centre.

CHECKING AND ADJUSTING THE MACHINE SETTINGS

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

For coffee

That the used coffee dose is lightly compressed and damp.

The grade of grinding of coffee.

The dose weight of ground coffee.

The dispensing temperature.

The water dose.

For instant products

The weight of instant products.

The drink temperature.

The water dose.

Should the standard settings be varied, proceed as indicated in the next sections of this manual.
The weight of instant products, the water dose and temperature are directly controlled by the microprocessor.
To adjust them it is therefore necessary to follow the programming procedures.

STANDARD SETTINGS

The vending machine is supplied with the following settings:

- coffee temperature (at the spout) approx. 85-89°C;

- instant product temperature (at the spout) approx. 75°C;

The machine standard settings assign the same price to all selections.

ADJUSTING THE BREWING CHAMBER VOLUME

When the upper piston is correctly positioned, the coffee unit can operate with coffee doses of 5.5 to 8.5 g.
To change the piston position (see Fig. 19) do as follows:

- remove the snap ring from its seat;

- place the piston in the proper adjusting notches:

  .less deep notches for 5.5 to 7.5 g doses;

  .deeper notches for 6.5 to 8.5 g doses.

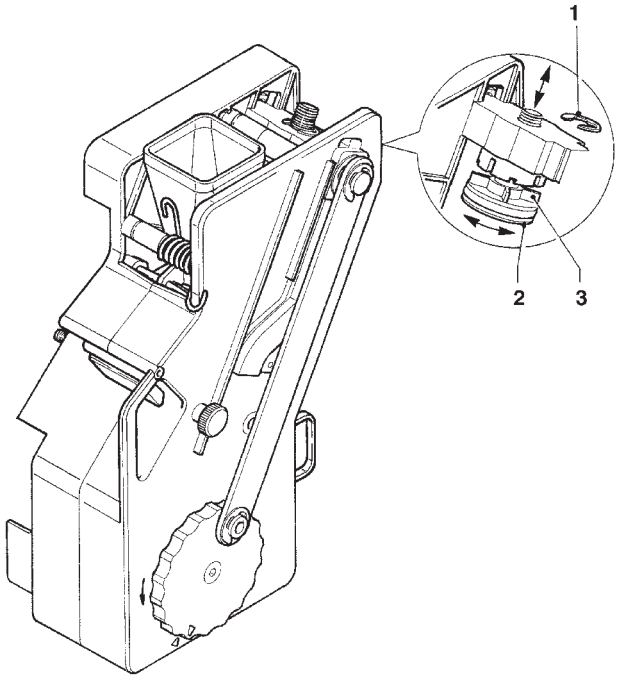

Fig. 19

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

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ADJUSTING THE GRADE OF GRINDING

When a variation in the grade of grinding is desired, turn the relevant adjusting knob on the grinder (see Fig. 20) and more specifically:

- turn the knob anticlockwise for coarser grinding;

- turn the knob clockwise for finer grinding.

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

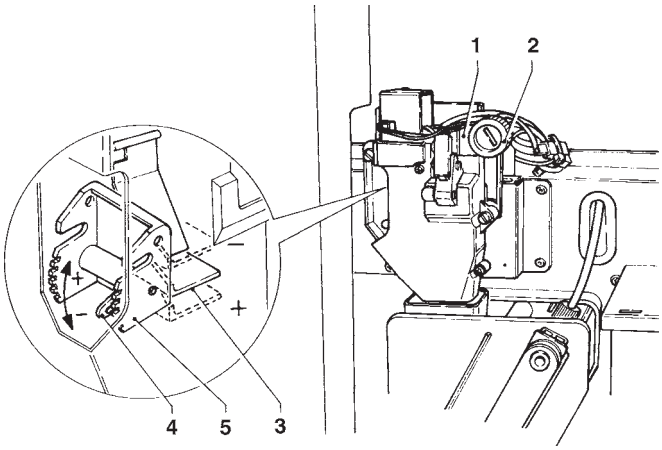

Fig. 20

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

NB: After adjustment of the grade of grinding, at least 2 test selections must be performed in order to check the new grade of grinding for ground coffee:

The finer the grade of grinding the longer the time necessary for dispensing the coffee and vice versa.

ADJUSTING THE COFFEE DOSE

The dose adjusting lever can be positioned in one of the 6 reference notches bearing in mind that:

- the dose is increased by lifting the lever:

- the dose is reduced by lowering the lever:

- every notch changes the dose by approx. 0.25 g.

In addition, when the lever is fully rotated upwards, the ratchet can be released from the groove in the dose regulator (see Fig. 14) and replaced into a different groove to change the average dose setting to:

- low 6 g ± 0,5

- medium 7 g ± 0,5

- high 8 g ± 0,5

To take the dose just remove the coffee unit and use the special function from the “Test” menu in “Technician” mode (see relevant section).

Important notice!!!

To refit the coffee unit, pay special attention to the piston position. Reference notches on the external disk and on the unit case should match (see Fig. 23).

WATER TEMPERATURE CONTROL

The boiler temperature is controlled by the software and can be adjusted directly from a menu.

OPERATING MODES

Three different operating modes are provided for the machine; the buttons will have different functions according to the machine operating mode.
The available operating modes are as follows:

	FUNCTIONS
Normal operating mode	coins accepted products dispensed
Filler menu	test dispensing machine maintenance
Technician menu	Programming of different parameters

USER INTERFACE

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

- Liquid Crystal Display (LCD), 2 lines x 16 characters.
- External direct selection push-button panel which takes on the following functions when in “Filler” and “Technician” mode (see Fig. 21):

Scrolling keys “↓” and “↑” :

To move to the next or previous menu option.

Confirm key “↳”:

To move from a menu to a sub-menu or it is used to confirm the current 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 for going from “Technician” mode to “Filler” mode and vice versa.

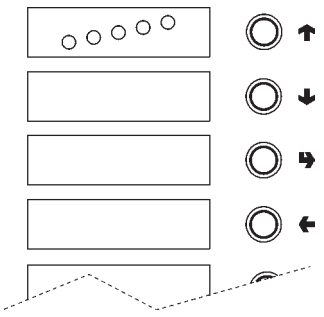

Fig. 21

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 massages 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 Press key	Machine ready
Vending machine out of service	Machine out of service
Selected drink in preparation Wait please	Drink preparation
Drink ready Take drink	Dispensing ended 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 selection
“Tube control”	Manual refill and release of change tubes
“Boiler temperature”	Displaying the boiler temperature in degree C.
“Test”	Complete dispensing Dispensing water only Dispensing powder only Dispensing without accessories Dispensing accessories only
“GSM”	Pre-alarm counter reset
“EVADTS”	Connection

STATISTICS

Data on the machine operations is stored in both total 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 selection;

2 - counter by time bands;

3 - discount counter;

4 - failure counter;

5 - coin mechanism data.

Relative

1 - counter by 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 "↵" to start printing.

DISPLAY

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

DELETING THE RELATIVE STATISTICS

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

- selections

- 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 for changing the sales price for each selection and for each time band that may be set.

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 validator 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 the temperature from the coffee boiler and from the instant boiler, directly in °C.

TEST DISPENSING

For complete or partial dispensing tests each button (or combination of buttons according to the model) is assigned a selection (see the dose selection table).

N.B. For espresso coffee based selections, only the additions are dispensed with the partial dispensing of powder and water; if a selection requires no addition the message "Sel. disabled", indicating a disabled selection, will be displayed. .

GSM PRE-ALARMS

The control software can send, via GSM modem, a signal indicating an "ending product" signal, when there is only a certain (programmable) number of pieces or grams of powder of a given product to go. With this function the counters that control the pre-alarms are reset.

EVADTS TRANSFER

When activating this function, the machine awaits the connection with a device to acquire the EVADTS statistics.

TECHNICIAN MENU

When pressing button "🡐" from “Filler” mode, the machine is preset to “Technician menu”.
The first option of the programming menu is displayed, enabling the following functions:

- Failures
  - Reading present failures
  - Cancel
  - Fluorescent lamps switched off
- Prog. param.
  - Cash
    - Prices
    - Time bands
    - Coin mechanisms
    - Decimal point
  - Selections
    - Water doses
    - Powder doses
    - Accessories
    - Selection status
    - Selection button
    - Check selection number
  - Mach. param.
    - Boiler temperature
    - Tank
    - Wash button
    - Mixer heating
    - Fast cycles
    - N. maintenance selections
    - Enable autom. cleaning
    - Cup settling time
    - Energy saving
    - Photocell
    - Slider det. time
  - Display
    - Language
    - Promotional message
    - Contrast control
  - Pre-selections
    - No cup
    - Extra sugar
    - Sugar
    - Less sugar
    - More sugar
    - More water
    - Less water
    - More powder
    - Less powder
    - Coffee powder dose
    - Extra milk
    - Mokka
    - Sugar+/-
  - Miscellaneous
    - FB unit data
    - Jug Facilities
    - Password
    - Enable filler menu
- Statistics
  - Electronic counters
    - Reading
      - Display
        - Counters by:
          - Selection
          - Time bands
          - Discounts
          - Failures
          - Coin mech
      - Cancel
        - Partial
        - Total
      - Display relative
        - Counters by:
          - Selection
          - Time bands
          - Discounts
          - Failures
          - Coin mech
      - Delete relative
        - Partial
        - Total
      - Enable counter at start-up
      - Print
        - Partial
        - Total
      - Print relative
        - Partial
        - Total
    - Cancel
- Test
  - Dispensing
    - Complete
    - Water only
    - Powder only
    - No accessories
    - Accessories only
  - Special functions
    - Unit rotation
    - Coffee release
    - Boiler emptying
    - Manual install.
    - Unit FB1
    - Unit FB2
  - Autotest
- Miscellaneous
  - Machine info
    - Installation date
    - Machine codes
    - Operator code
  - Initialising
  - Set cold unit ID
  - Spout exit time
  - Enable hot water additions
- EVADTS
  - Pass code
  - Security code
  - Connection
- GSM
  - Pin code
    - Set code for modem
  - Pre-alarms
    - Set thresholds
    - Reset Counters
  - No. in bank
    - Slave identification

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.
If the machine is equipped with water supply from an internal tank the pump will be switched off.

Waste container full

The machine locks if 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.

Cup failure

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

Mobile spouts

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

Volumetric counter

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

Instant boiler

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

Machine control board

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

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).

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.

Espresso unit

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

Coffee failure

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

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.

Espresso boiler

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

Cup release

If the cup sensor photocell is fitted, after three unsuccessful attempts at releasing cups the display will indicate the message “No cups”. Using a special function, it is possible to define whether this failure must lock the machine or leave it available for dispensing into a ceramic cup.

Coffee release 2 - Coffee failure 2

As in coffee release and coffee failure for the second doser unit (optional).

Slider motor

The machine locks if no opening/closing of the slider lock motor control switch is detected.

Fresh-brew piston 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 piston 2 / Fresh-brew scraper 2

As in unit and scraper 1 if the second brewing unit is installed.

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Cold unit pressure switch

In the event of lack of pressure from the mains, the cold drinks selections are disabled.

Syrup failure 1 and 2

Locking the relevant selection in the event of lack of syrup.

Carbonator failure

If the level control device of the carbonator indicates it is empty, cold drink selections are placed out of service.

Cold unit compressor

Cold unit control card

RESETTING THE FAILURES

By confirming this function all current failures will be reset

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.

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:

- Executive
- Validators
- BDV
- MDB

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

EXECUTIVE

The following payments systems are available for the Executive system:

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

VALIDATORS

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

BDV

The BDV protocol menus are used for defining the following functions:

Type of vending

Setting the operating mode for multiple or single dispensing. With multiple dispensing, the change is not automatically returned after a successful selection, however the credit is available for further selections. When pressing the coin return button, the available credit is returned if its value is lower than the maximum change value.

Change control

This function enables/disables the return of credit if no selections are made.
If enabled, this function allows the return of coins even if the first selection was not dispensed.
If however a selection fails for any reason, the change will be returned if requested.

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.

Not accepted coins

This function programs the rejection of coins when in “exact amount” mode.
Check the label on the coin mechanism for the correct coin to value matching, indicating the position of the coins.

Dispensing buttons

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

Value of “exact amount”

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.

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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. device

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).

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 VMC

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, enabled by default) and the price of the selections must be set to zero.

MDB

The MDB protocol menus are used for defining the following functions:

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 (if the function is enabled), the available credit is returned up to the maximum change value.

Change control

To enable/disable the operation of the coin return button.

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 when the change tubes are full.
Check the coin mechanism configuration for the correct coin to value matching.

Returned coins

It is possible to define which, among the coins available in the tubes, are to be used for returning the change. This parameter is active only with coin mechanisms that do not automatically control the choice of tube to be used (Auto changer payout).
Check the coin mechanism configuration for the correct coin to value matching.

Accepted bills

It is possible to define which, among the bills recognised by the reader, are to be accepted.
Check the reader configuration for the correct bill to value matching.

Minimum level of tubes

This function is used for setting the number of coins (0 to 15) to determine the status of full change tubes and the "Insert exact amount" message for the user.

Accepted coins with "exact amount"

It is possible to define which, among the coins recognised by the validator, are to be accepted when the machine is in the "exact amount" condition.
Check the coin mechanism configuration for the correct coin to value matching.

COMMON FUNCTIONS

IMMEDIATE CHANGE

Normally, the amount of 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.

WHIPPER CONTROL

The whipping time can be set for each selection button, for each water dose that composes such selection.
The duration can be set in two different modes:

Absolute

i.e. independent from the solenoid valve opening time.
The whipping duration is set as tenths of a second for Instant models and as volumetric counter pulses for Espresso models.

Relative

i.e. based on the difference, plus or minus, from the moment the solenoid valve closes.
The whipping duration is always expressed in tenths of a second.

SOLENOID VALVE SETTINGS

It is 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 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

Permitting the association of a selection number, indicated in the the selection dose table, to a button in the direct selection keypad.

CHECK SELECTION NUMBER

Verifying the selection number (for direct selection models only) associated to a button.

VENDING MACHINE PARAMETERS

TEMPERATURE

This function is used for setting the operating temperature, expressed in °C, of the boilers installed in the machine.
After selecting the boiler, press the confirm button "↵", the temperature value on the display will start blinking and can be modified as necessary.

TANK

The machine water supply can be from the mains or from an internal tank. For some applications it is also possible to used two internal tanks at the same time.
With this function it is possible to define whether the machine water supply is from the mains (tank = 0) or from the tanks (tank = 1 or 2).

ENABLING THE WASH BUTTON

With this function it is possible to enable the operation of the mixer wash button.
Normally the button is disabled.

MIXER HEATING

If the function is enabled and no selections were made in the last 3 minutes, a small amount of hot water is dispensed into the milk or instant coffee mixers before dispensing short instant coffee, instant coffee with milk and espresso coffee with milk.

FAST CYCLES

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

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

For espresso based selections

- pre-brewing of ground coffee is not performed.

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.

AUTOMATIC CLEANING

Option of setting the time when automatically cleaning the mixers and rotating the brewing 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 power 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

CUP SENSOR

The machine is fitted with a “cup sensor” composed of a photocell that detects the presence of an object in the dispensing compartment.
When the function is enabled, if an object is detected in the dispensing compartment, a cup is not released and the display indicates the message “Without cup”.
It is also possible to define whether, after two attempts to release a cup without the photocell detecting any objects in the dispensing compartment, the failure should lock the machine or leave it to operate using a ceramic cup.
A lighting lamp inside the dispensing compartment is controlled by the cup sensor.
If the the cup is still inserted, when the next selection is made the message “Remove cup” is displayed.

AUTOMATIC SLIDER

The machine is fitted with a device that automatically lifts the drink dispensing compartment slider. With this function it is possible to define whether the device is present in the machine and how long (programmable between 0 and 300 t/s, 70 by default) the slider is to be kept lifted.
The programmed duration controls also a lighting lamp inside the dispensing compartment if the cup sensor is not fitted.
In the event of a malfunction, in both opening and closing, the “Slider failure” is indicated in the failure list, not affecting the operation of the machine.
During the next 4 selections attempts are made to reposition the slider, then it will be necessary to switch off and on again the machine to reset the slider failure and the attempt counter.
In any case, the slider can still be operated manually.

DISPLAY

LANGUAGE

There is an option of language, selected among the ones available in the software, to be used for the messages on the display.

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 "←".

LCD CONTRAST CONTROL

This function is used for adjusting the display contrast from 5% to 99% (default).

PRE-SELECTIONS

During normal operation button "↑" is used for increasing the sugar dose by 1/5 of the median dose; when the highest level is reached, pressing button "↑" again will bring the sugar dose to 0 (unsweetened selection).
The LEDs will indicate the average dose change.
According to the layout set at the time of initialising, button "↓" can be used as a normal selection button or for pre-selecting the use of decaffeinated coffee in coffee based drinks.
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 brewing unit.

JUG FACILITIES

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

PASSWORD

It is a 5-digit numeric code which is required to access programming.
The default value of this code is set to 00000.

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.

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.

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STATISTICS

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

GENERAL COUNTER

An electronic counter stores the total of all selections made since the last reset.

DISPLAYING GENERAL STATISTICS

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 GENERAL STATISTICS

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 RELATIVE STATISTICS

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 STATISTICS

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.

ENABLING COUNTER DISPLAY

This function is used to enable/disable the display of the total number of drinks sold since the last statistic reset, during the switch-on phase of the machine.

PRINTING THE STATISTICS

Connect an RS-232 serial printer with a Baud rate of 9600, 8 data bit, no parity, 1 stop bit to the serial port located on the push button board, to print all the statistics described in the sections "Displaying general statistics" and "Displaying relative statistics". The hardcopy 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 "↳" to start printing.

TEST

DISPENSING

With this function it is possible to obtain, with the door open and without inserting any money, for each selection dispensing of:

- complete selection

- water only

- powder only

- without accessories (cup, sugar and stirrer)

- accessories only

SPECIAL FUNCTIONS

By accessing this function it is possible:

- to operate the espresso brewer unit (if fitted);

- to grind and release a coffee dose;

- to open a solenoid valve to allow the intake of air in the event of emptying the boiler for maintenance;

- manual installation of the boiler;

- to operate the fresh-brew units 1 and 2 (if fitted)

AUTOTEST

This function allows testing, in a semiautomatic way, of the main machine components.
Press button "↳" and the message "AUTOTEST" will start blinking.
It is possible to cancel each operation and go to the next one by pressing button "←"; confir with button "↳" to start the autotest routine.
Some checks occur automatically, others need the manual operation of the monitored component.

In a sequence:

- activation of the doser devices for 2 seconds
- activation of the mixers for 2 seconds
- release of a cup
- release of a stirrer
- operation/repositioning of the dispensing spouts
- (only for the brewer units that are actually present) rotation of the brewer unit
- (for espresso models only) grinding and release of coffee when a full dose is reached
- wash button; the machine awaits until the wash button is operated manually
- waste container switch; the machine awaits until the waste container microswitch is manually operated
- switching on of the neon lamps
- switching on of the dispensing compartment lamp
- push-button panel test; the machine will display the number of the button which must be pressed and awaits the actuation before going to the next button
- boiler temperature reading
- triggering of a sound signal
- coin mechanism test; checking that communication with the coin mechanism takes place correctly and which validator lines are set as being active.

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 software is replaced.
All statistic information will be reset.
Press confirm button “↵” and the display will indicate the message “Confirm?”. Press the confirm button “↵” again and some parameters will be requested, which are:

“Country”

intended as type of base doses for the different selections (e.g. IT coffee = 45 cc - FR coffee = 80 cc).
The available “countries” vary according to the models.

“Layout”

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

“Tank”

Defining whether the water supply is:
0 - from the mains
1 - from an internal tank
2 - from two internal tanks
When confirming the options the message “Working” is displayed for a few seconds.

SETTING THE COLD UNIT ID

This is used for indicating to the software the identification number (0 to 9) of a cooling unit connected to the vending machine.
With more machines connected in a bank the ID numbers of the cooling units must be different from each other.

MOBILE SPOUT EXIT TIME

In models with the spout support extension for cold drinks the positioning control is timed.
There are 2 programmable times expressed in tenths of a second:
100 to 150 to position the spouts for dispensing cold drinks;
100 to 200 to position the spouts for dispensing hot water (function provided only in some models). With the time set to 200 the mobile spouts reach the end of travel.

ADDING HOT WATER

It enables the option, in some models only, of adding or not hot water for some selections.

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EVADTS CODES

The EVADTS (European Vending Association Data Transfer System) communication protocol has two codes for identifying the machine and for recognising 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 in the data transfer terminal to allow its identification.
Press the confirm button "➥" and the code is displayed as "0000" regardless of the actual value; then press the correction button "⬅" and the first digit will start blinking.
Using the scrolling buttons, its value can be changed (during the change operation the value becomes visible).
Press the confirm button "➥" and the next digit starts blinking.
Press the confirm button "➥" after changing the fourth digit; the value is stored and the display indicates "0000" again.

SECURITY CODE

It is a further alphanumeric code for reciprocal recognition between machine and EVADTS terminal.
Programming works as in the "Pass" code.
Connection
This function places the machine in wait mode for connection to retrieve data.

EVADTS CONNECTION

When activating this function, the machine awaits the connection with a device to acquire the EVADTS statistics.

GSM

The control software can send, via GSM modem, a signal indicating a machine failure or an "ending product" "pre-alarm", after dispensing a certain (programmable) number of selections of a given product.

PIN CODE

This function is used for programming the identification code that will be sent to the GSM modem (optional) when switching the machine on.

SETTING THE THRESHOLDS

This function is used for defining the number of pieces or grams of powder for a given product, after which a "ending product" pre-alarm is signalled via modem.

RESETTING THE COUNTERS

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

MACHINE BANK NUMBER

The number in the bank of machines (1 to 7) that identifies the
machines that have the "slave GSM" function, therefore sending
data via the modem of the "master" machine.
The number 0 identifies the machine that is connected directly to the modem, i.e. the "master GSM".

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

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

- remove the boiler teflon hose connection from the upper piston, paying attention not to lose the seal (see Fig. 22);
- undo the knob securing the unit to the bracket;
- remove the coffee unit.

Removing the upper filter

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

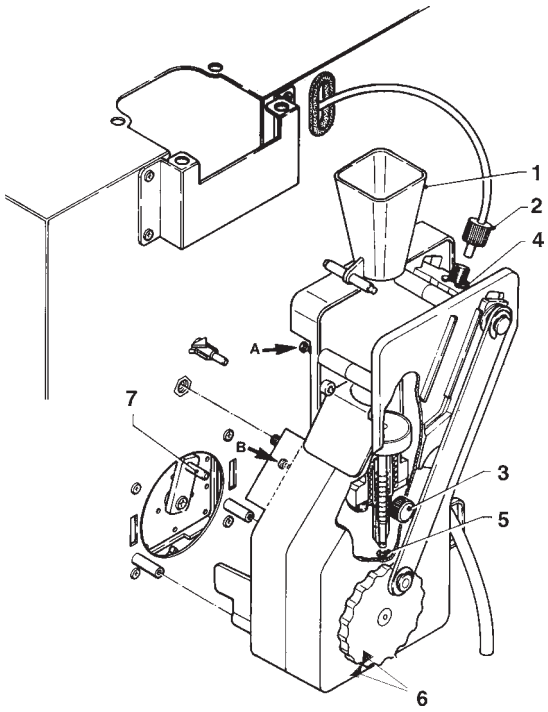

Fig. 22

1 - Coffee funnel
2 - Boiler connecting hose
3 - Unit securing knob
4 - Upper piston snap ring
5 - Lower piston snap ring
6 - Reference notches
7 - Ratiomotor handle pin

Removing the lower filter

- Loosen screws A and B enough to release the coffee funnel (see fig. 22);
- remove the lower piston snap ring;
- take the piston out of brew chamber and remove the filter.

Soak all components removed from the unit in a solution of boiling hot water and coffee machine detergent for approx. 20 minutes.
Thoroughly rinse and dry all parts, then reinstall them in the reverse order of disassembly, taking particular care that:

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

Important notice!!!

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

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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

ACTUATION BOARD

This board (see Fig. 23) activates the 230 V~ power users by means of relays. It controls the signals from the cams and/or the microswitches on the various power users. It also controls the boiler card and the relay card.
This board is powered with 24 VAC.
The control software of the board is installed directly (via RS232) in the microprocessor.

- the green LED (2) blinks during normal operation of the board
- the yellow LED (6) indicates the presence of 5 V DC
- the red LED (3) glows during the board reset
- the red LED (10) indicates the operating status of the Espresso boiler heating element
- the red LED (11) indicates the operating status of the Instant boiler heating element

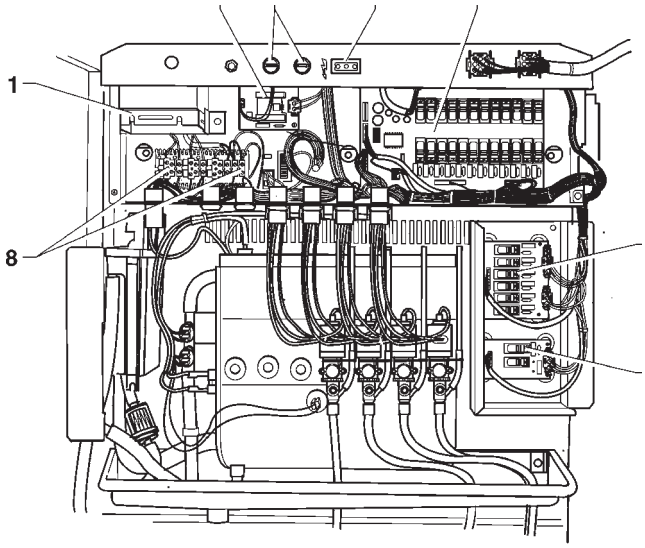

Fig. 23

1 - Instant boiler control board
3 - Network fuses
4 - Permanently live socket
5 - Actuation board
6 - 6-relay card
7 - 3-relay card
8 - Transformer fuses

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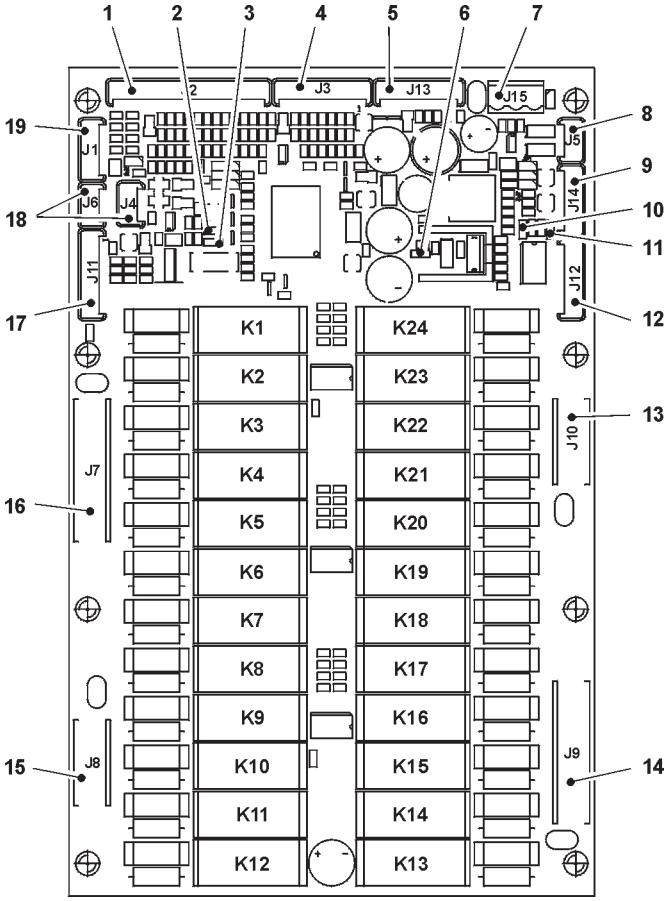

Fig. 24

1 - Input signal
2 - Green LED
3 - Red LED
4 - Input signal
5 - Connector for board programming (RS232)
6 - Yellow LED
7 - Board power supply (24 VAC)
8 - Not used
9 - Boiler control probes
10 - Red LED - espresso boiler heating element
11 - Red LED - instant boiler heating element
12 - Connection to 6-relay card
13 - 230 V~ power users
14 - 230 V~ power users
15 - 230 V~ power users
16 - 230 V~ power users
17 - Connection to 3-relay card
18 - Connection to “Can Bus”
19 - Not used

RELAY FUNCTION (see Wiring diagram)

K1	=	EEA		
K2	=	MSB		
K3	=	MSCB		
K4	=	MDZ		
K5	=	MSP		
K6	=	ESC2	VENT	
K7	=	MSU		
K8	=	PM	MF3	
K9	=	MD1		
K10	=	MF1		
K11	=	MD2		
K12	=	MF2		
K13	=	E1		
K14	=	E2		
K15	=	E3		
K16	=	E4		
K17	=	E5		
K18	=	E6		
K19	=	LF		
K20	=	MAC	MD4	MDFB
K21	=	ESC	MD5	MFB
K22	=	ER	MF5	MPF
K23	=	M	MD3	MDFB
K24	=	MAC2	MF4	MFFB

RELAY CARDS

The 6 and 3 relay cards are controlled by the actuation board and control some 230 V~ power users.

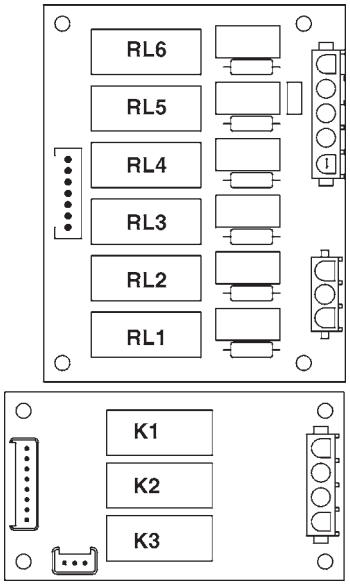

Fig. 25

RELAY FUNCTION (see Wiring diagram)

RL1	=	MF8	MPF
RL2	=	MD6	MDFB
RL3	=	MF6	
RL4	=	MF7	MFFB
RL5	=	MD7	MDFB
RL6	=	MD8	MFB

K1	=	LF (door)
K2	=	MAS
K3	=	EVT

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BOILER CONTROL CARDS

This board (see Fig. 25) controls the instant boiler heating element.
The coffee boiler is controlled by a similar card fitted in the espresso module.

C.P.U. BOARD

The C.P.U. (Central Processing Unit) board controls all power users set for the maximum configuration and processes the input signals from the keypad, the payment system and controls the actuation board.
The LEDs furnish the following indications during the vending machine operation:

- the green LED blinks during normal operation of the C.P.U. board
- the yellow LED glows when 5 V DC are present
- the red LED glows when, for any reason, the software is reset.

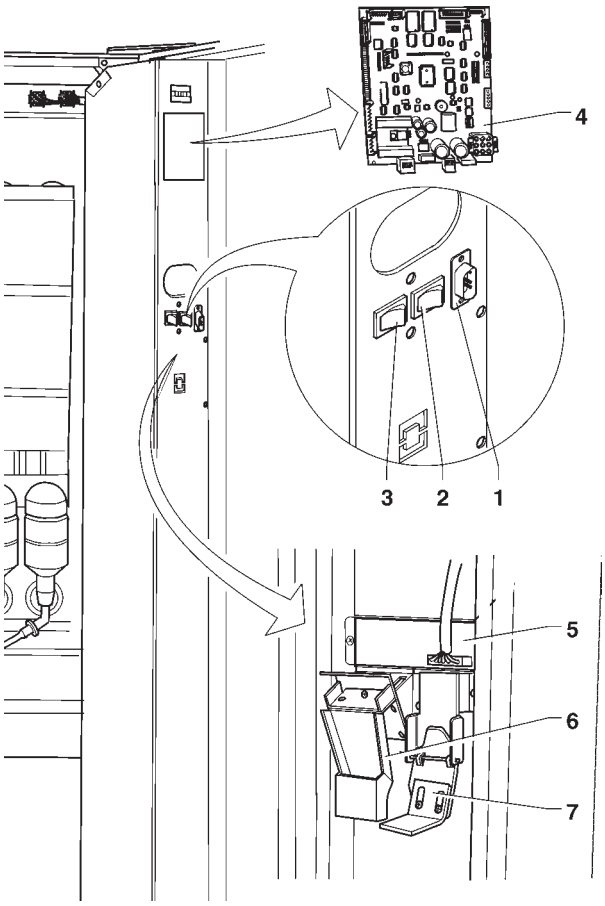

Fig. 26

1 - RS232 serial port
2 - Wash button
3 - Programming button
4 - C.P.U. board
5 - Display card
6 - Coin chute
7 - Coin return lever

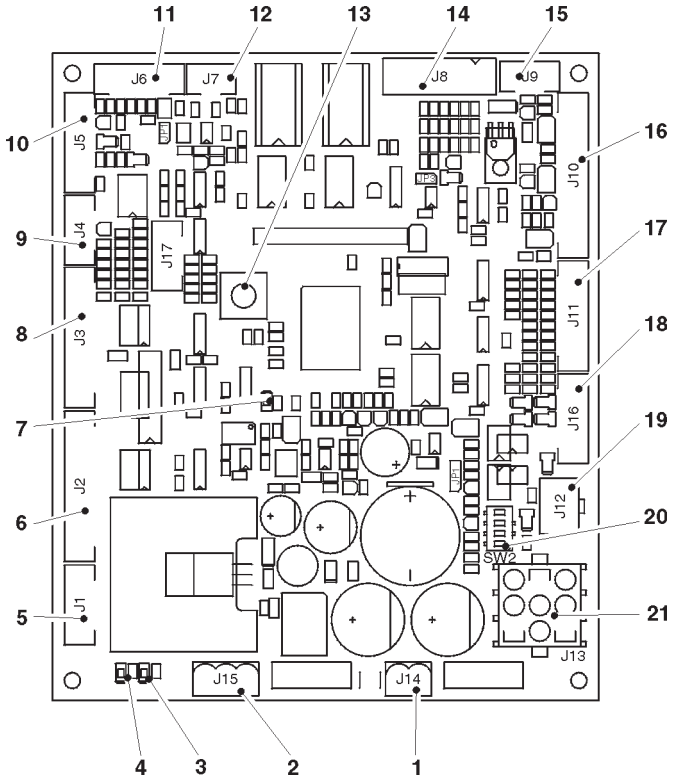

Fig. 27

1 - J14 Coin mechanism power supply
2 - J15 Board power supply
3 - Green LED: run (DL2)
4 - Yellow LED: 5 V DC (DL1)
5 - Connection to 24 V outputs
6 - Connection to 24 V outputs
7 - Red LED: CPU reset (DL3)
8 - J3 Input/output
9 - J4 Not used
10 - J5 Programmer (RS232)
11 - J6 Not used
12 - J7 Can-Bus
13 - Pre-programming button
14 - J8 Validators
15 - J9 Not used
16 - J10 LCD display
17 - J11 Keypad
18 - J16 Keypad
19 - J12 MDB coin mechanism
20 - Coin mechanism setting Minidip (SW2)
21 - J13 Expansion for BDV / EXE

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CONFIGURING THE ELECTRONIC BOARDS

The electronic boards are designed to be used in many machine models.
In the event of replacement, or when wishing to change the machine performance, it will be necessary to check the configuration of the boards and install the appropriate software.

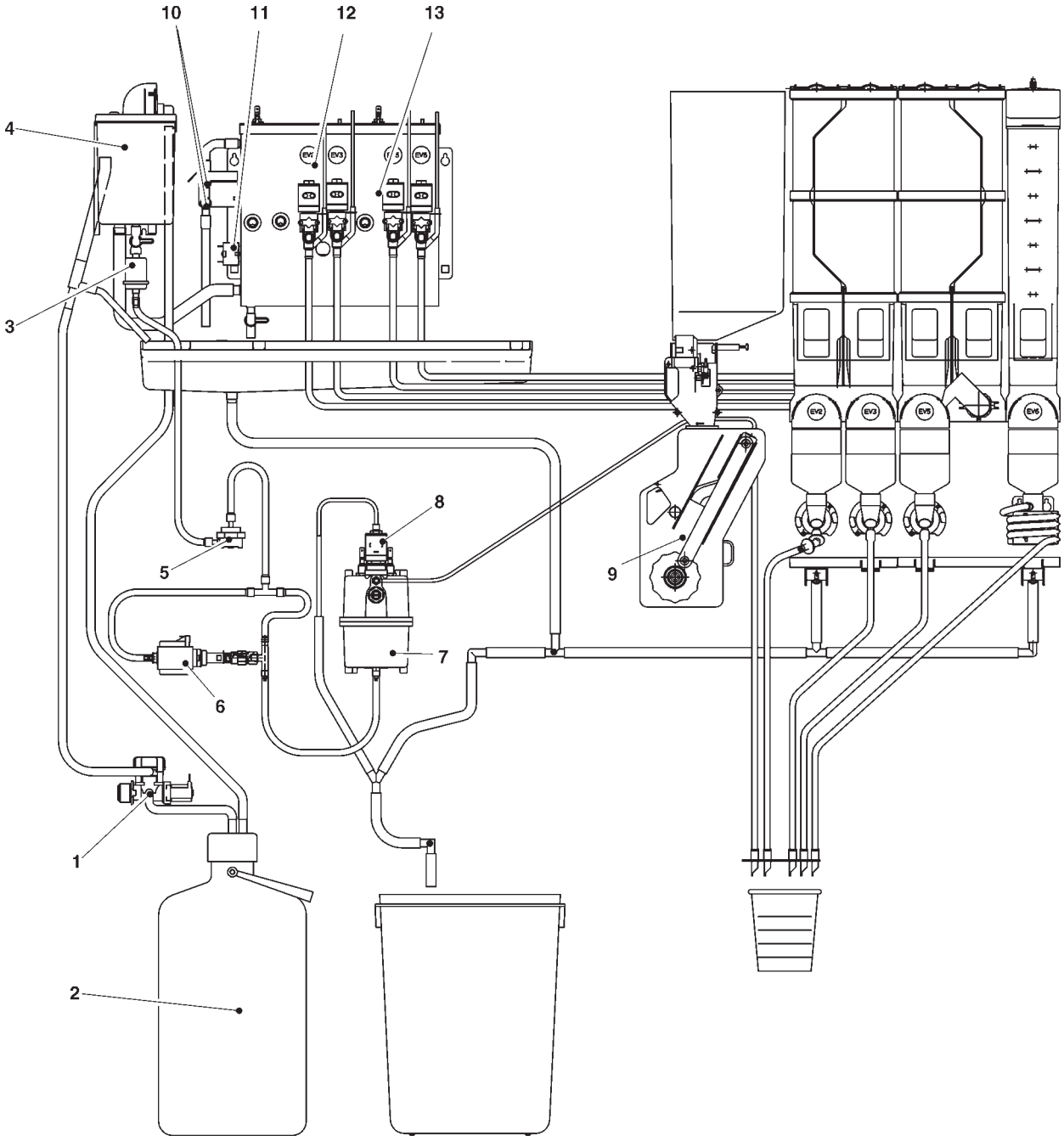
SOFTWARE UPDATE

The machine is fitted with Flash EPROMs which can be electronically updated.
By means of a special program and suitable system (Personal Computer or Palmtop) the machine management software can be updated without replacing the EPROMs.

PRE-PROGRAMMING

With the new board, after installing the appropriate software, it will be necessary to define which type of keypad to use before initialising and programming the various parameters.
In order to access the pre-programming function (choice of keypad) it will be necessary keep pressed the pre-programming button (see Fig. 29-13) while switching the machine on.
The display will indicate the blinking message “Pre-programming” and by quickly pressing button (13) it will be possible to scroll through the list of keypads (Astro - Numeric - Oblò etc.).
Keep button (13) pressed until a sound signal is emitted, the keypad indicated on the display will be stored and will be possible to initialise the machine.

HYDRAULIC SYSTEM FOR ESPRESSO



1 - Water inlet solenoid valve
2 - Water softener (if fitted)
3 - Mechanical filter
4 - Air-break
5 - Volumetric counter
6 - Vibration pump
7 - Coffee boiler
8 - Coffee dispensing solenoid valve
9 - Coffee unit
10 - Anti-boiling thermostats
11 - Safety thermostat
12 - Instant prod. boiler
13 - Instant prod. solenoid valves

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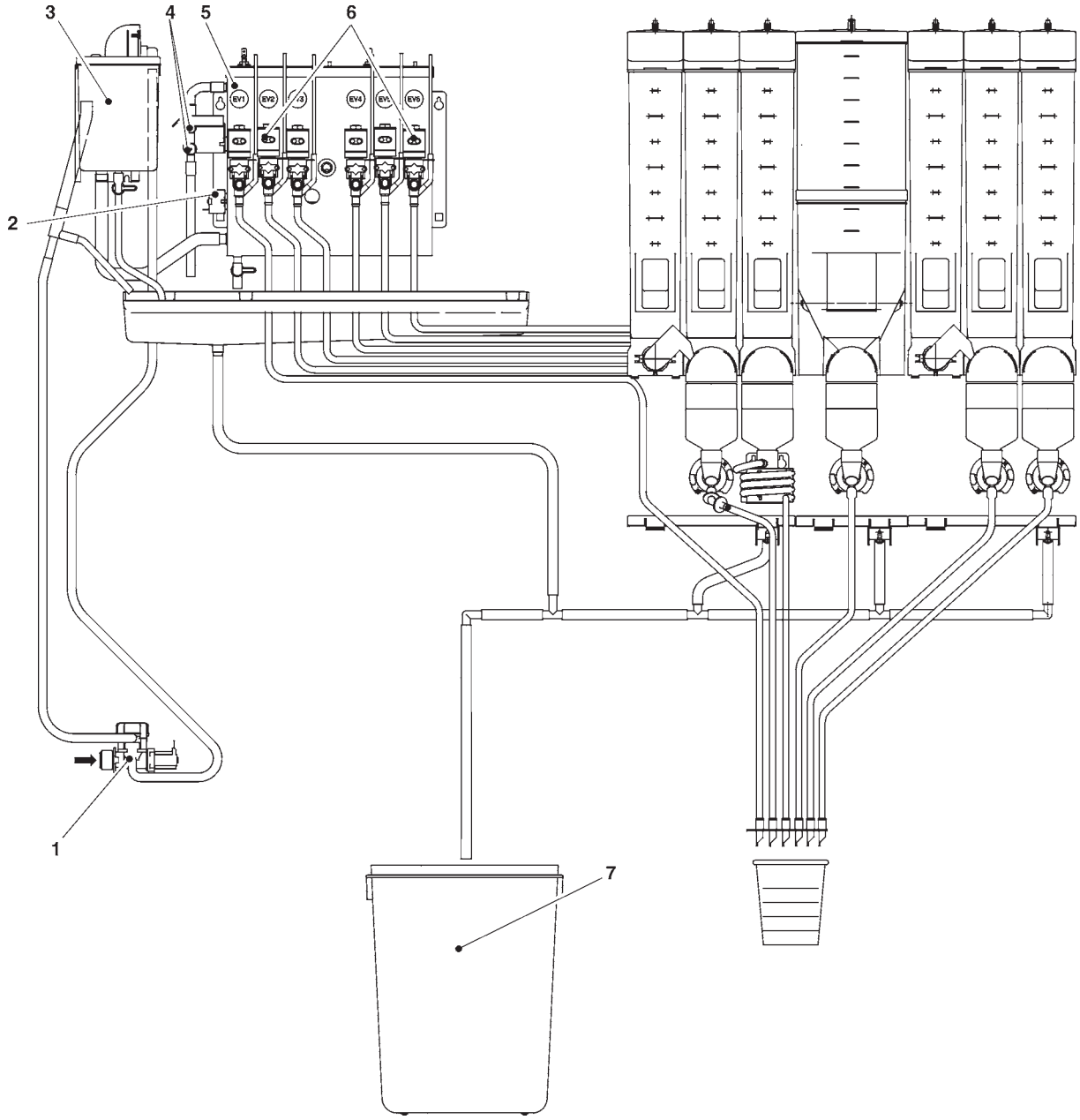
HYDRAULIC SYSTEM FOR INSTANT



1 - Water inlet solenoid valve
2 - Safety thermostat
3 - Air-break
4 - Anti-boiling thermostats
5 - Instant prod. boiler
6 - Instant prod. solenoid valves
7 - Liquid waste container

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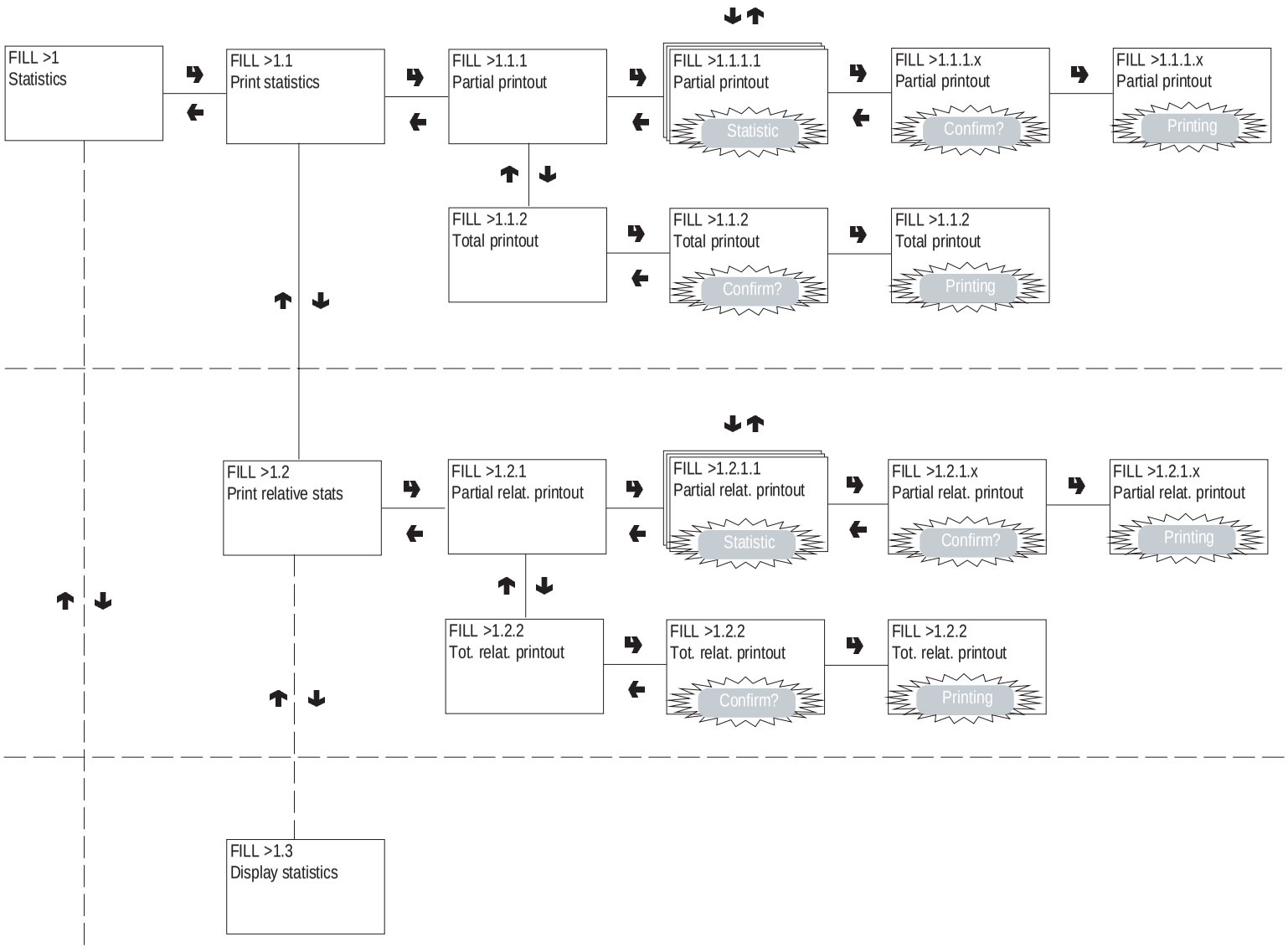
Filler menu - Summary



TOTAL STATISTICS

With the printer connected print all data as displayed

Print data for:
Selections
Time bands
Discounts
Failures
Coin mechanism data

Heading:
Current date
Machine model
Software edition
Operator code
Machine code
Installation date

Print data for:
Selections
Time bands
Discounts
Failures
Coin mechanism data

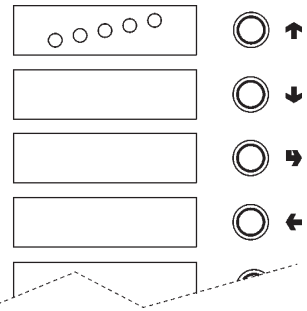
RELATIVE STATISTICS

NEXT FUNCTION/
INCREASE DATA UNIT (+1)

PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

CONFIRM DATA/
CONFIRM FUNCTION

DELETE DATA/
EXIT FUNCTION



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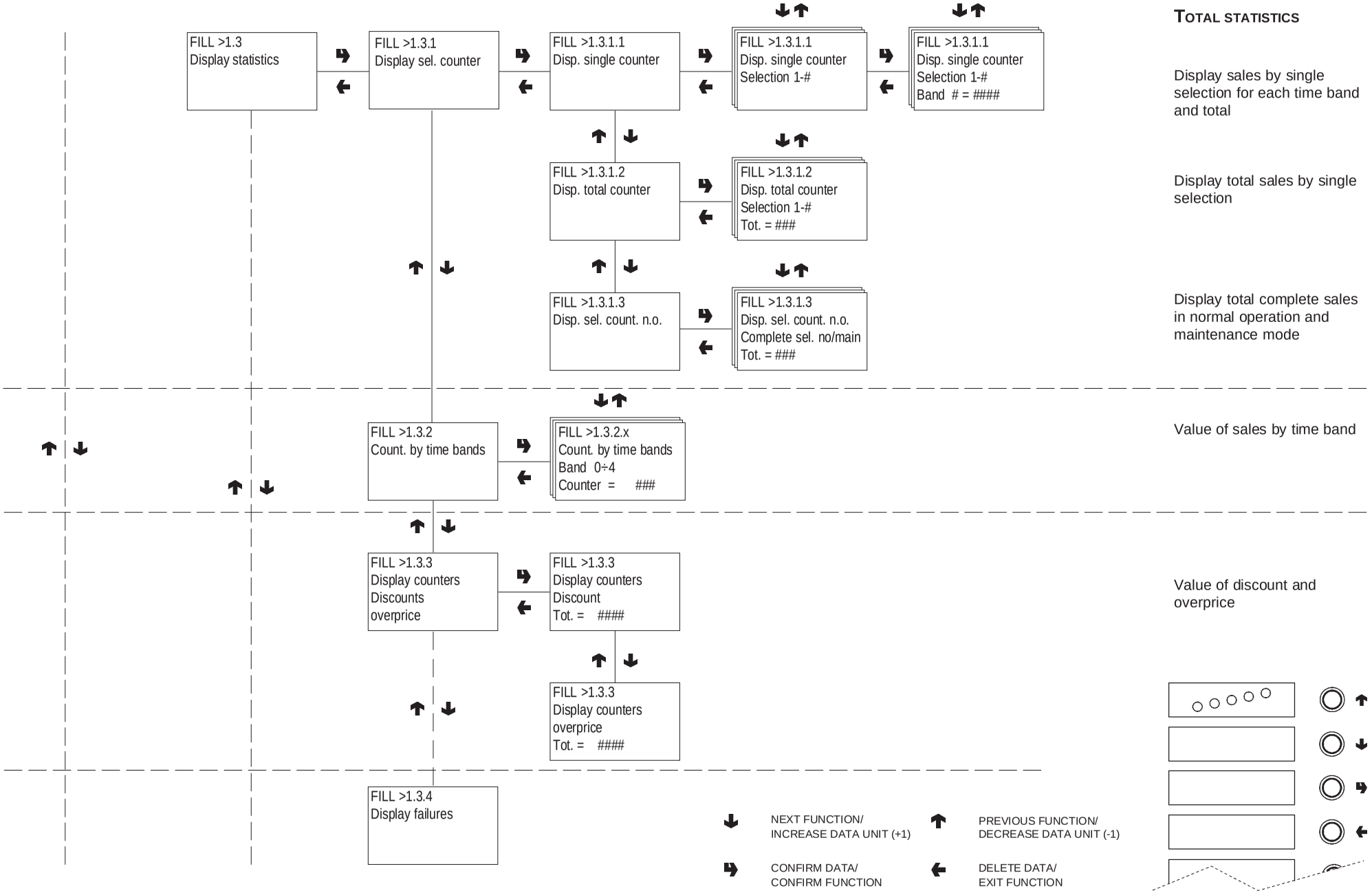
Filler menu - Summary



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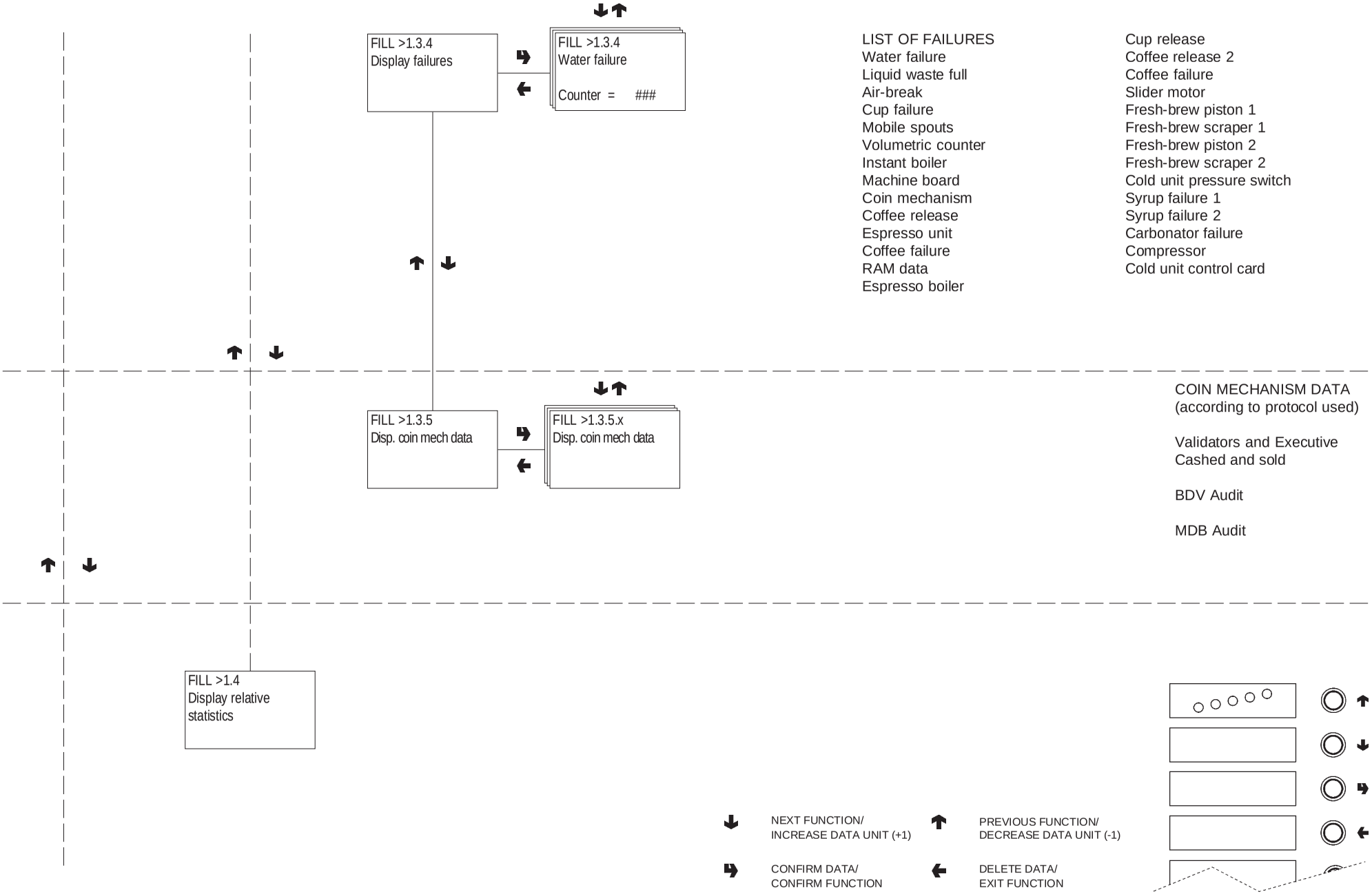
Filler menu - Summary



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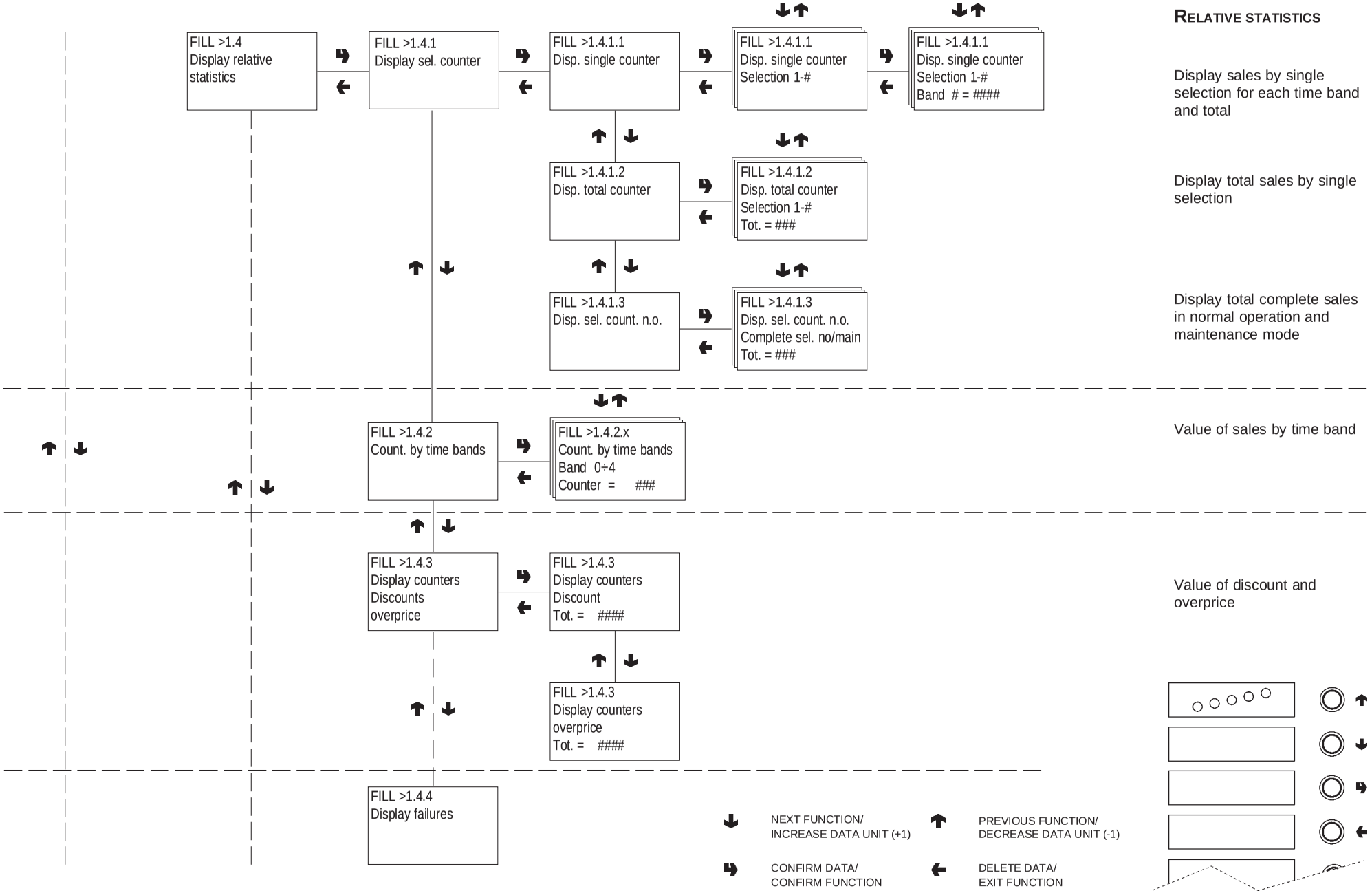
Filler menu - Summary



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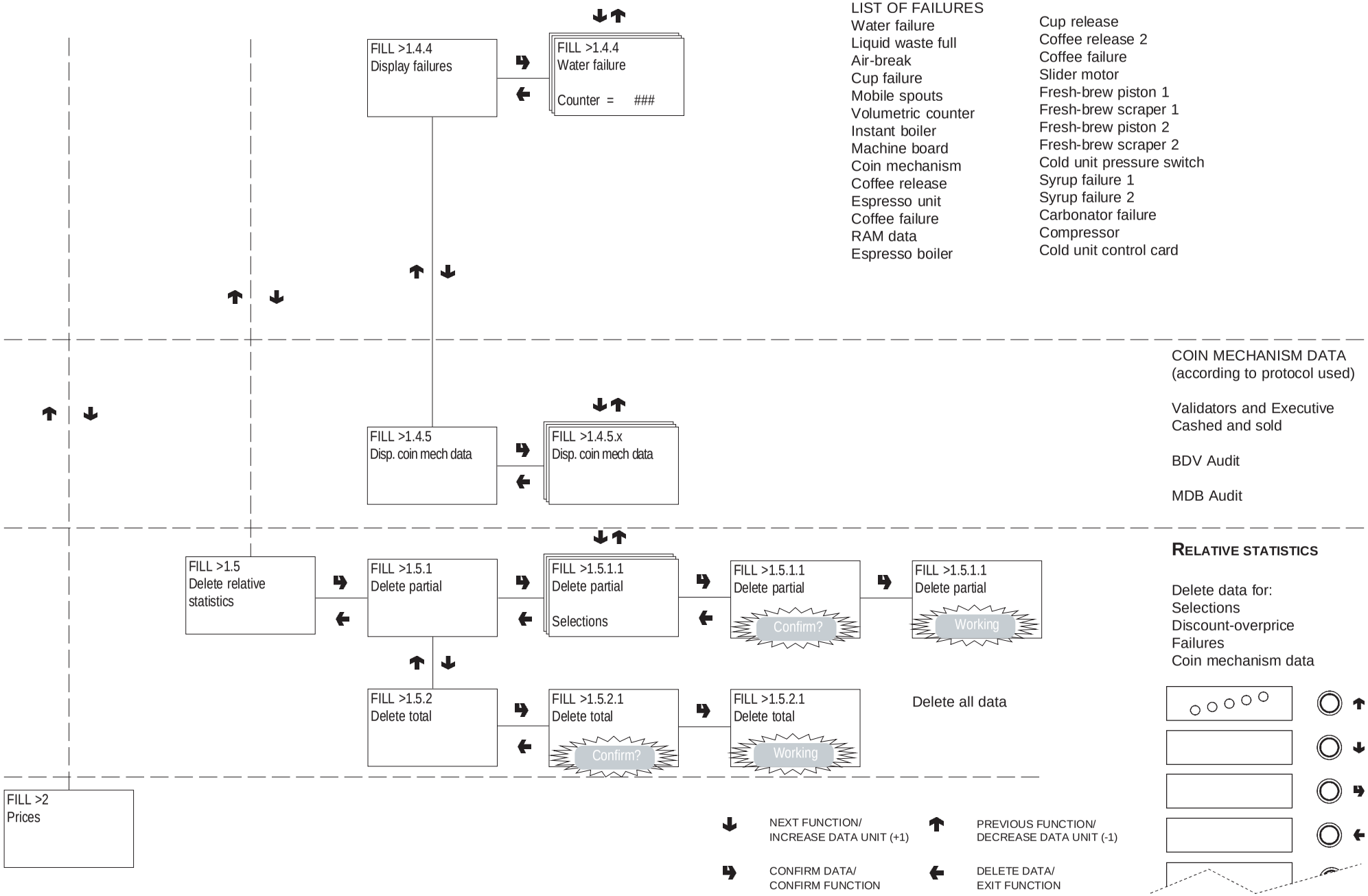
Filler menu - Summary



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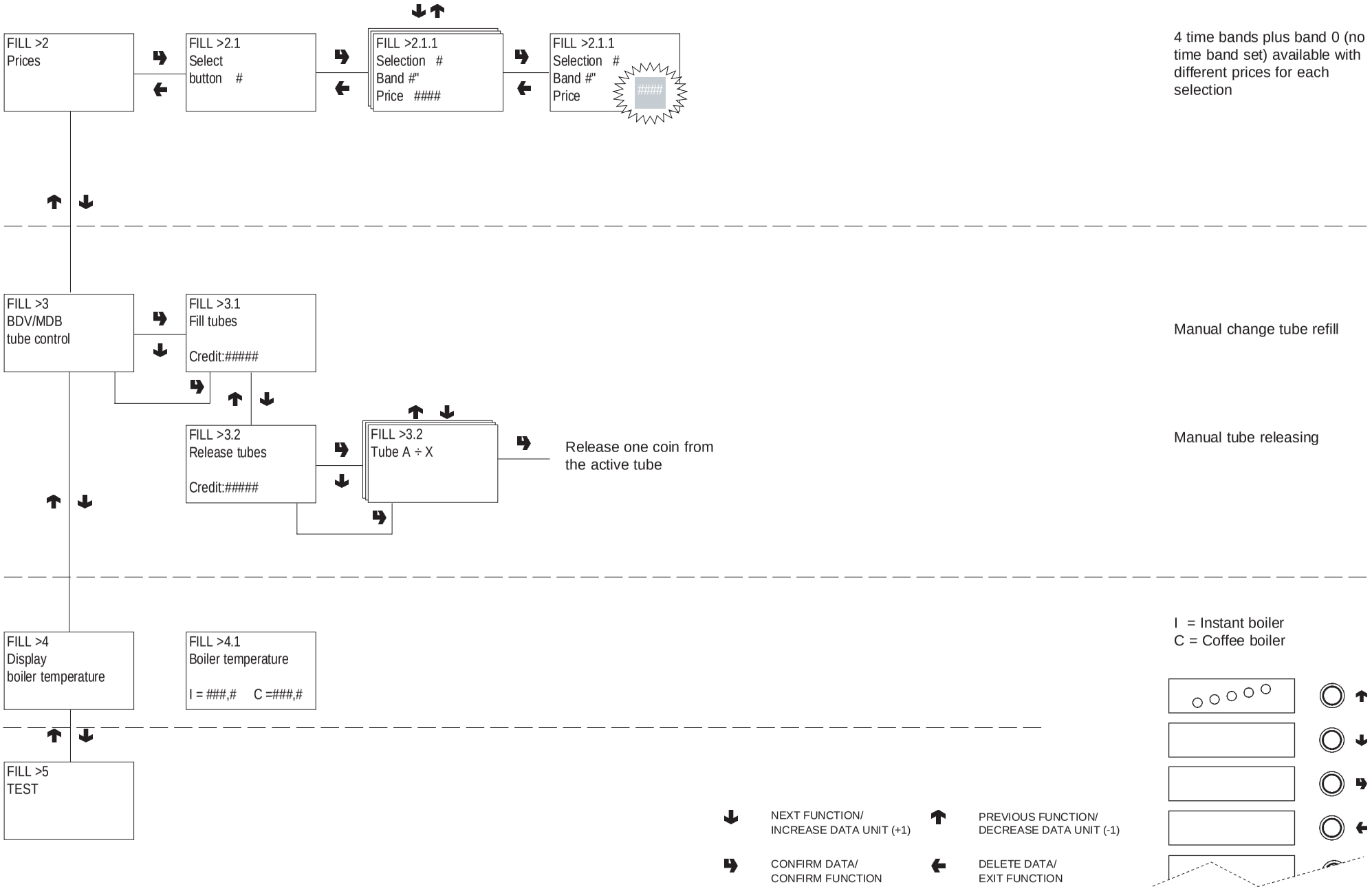
Filler menu - Summary



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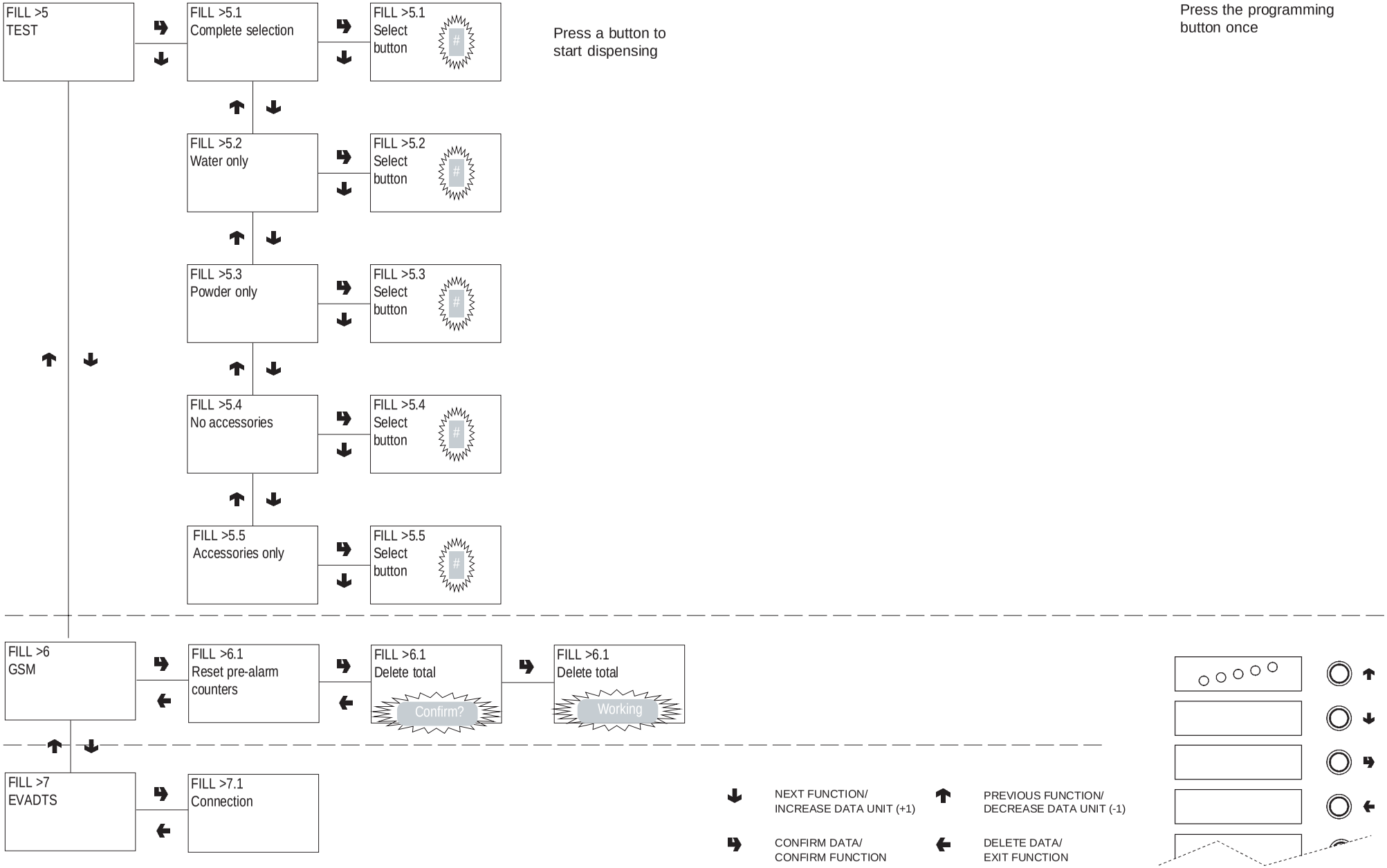
Filler menu - Summary



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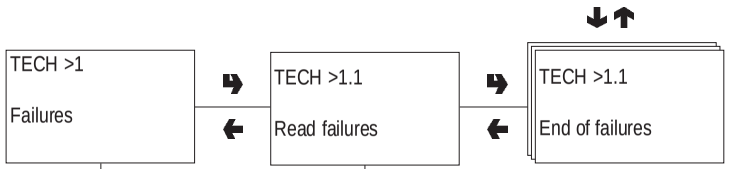
Technician menu - Summary

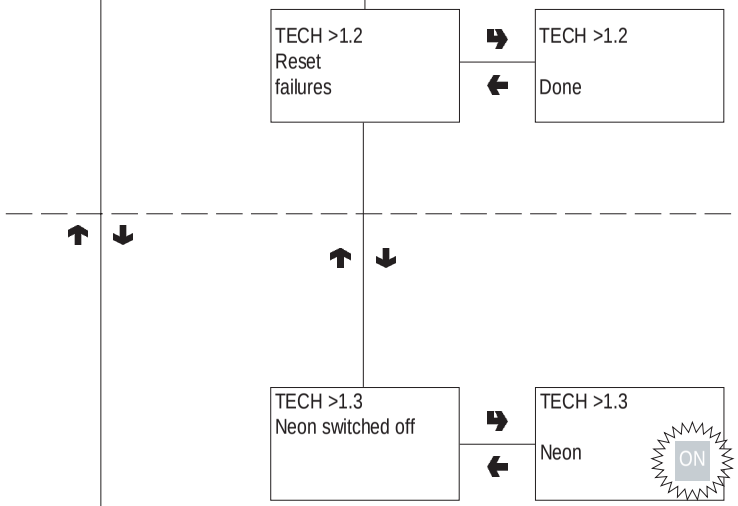


Timed scrolling of present failures

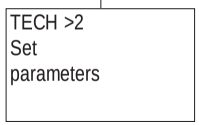
DISPLAY FAILURES

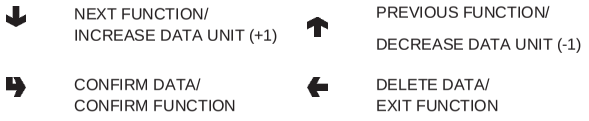
LIST OF FAILURES

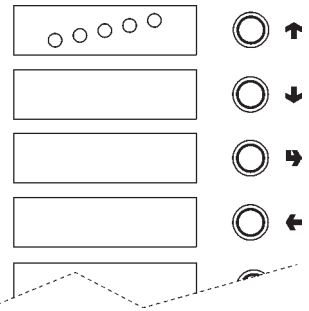
Water failure	Cup release
Liquid waste full	Coffee release 2
Air-break	Coffee failure
Cup failure	Slider motor
Mobile spouts	Pistone fresh brew 1
Volumetric counter	Fresh-brew scraper 1
Instant boiler	Pistone fresh brew 2
Machine board	Fresh-brew scraper 2
Coin mechanism	Cold unit pressure switch
Coffee release	Syrup failure 1
Espresso unit	Syrup failure 2
Coffee failure	Carbonator failure
RAM data	Compressor
Espresso boiler	Cold unit control card



External lamps switched off with machine out of service







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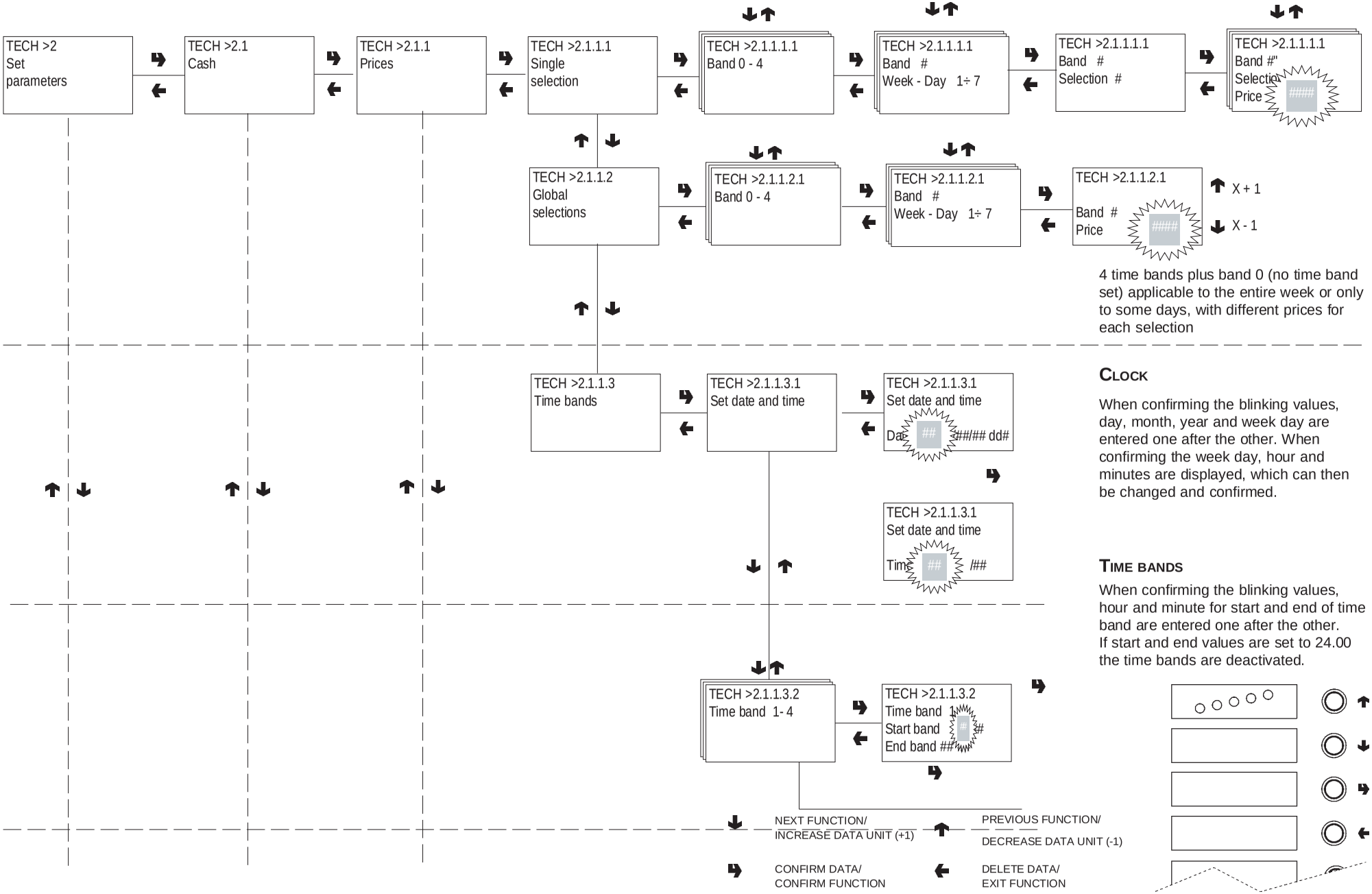
Technician menu - Summary



4 time bands plus band 0 (no time band set) applicable to the entire week or only to some days, with different prices for each selection

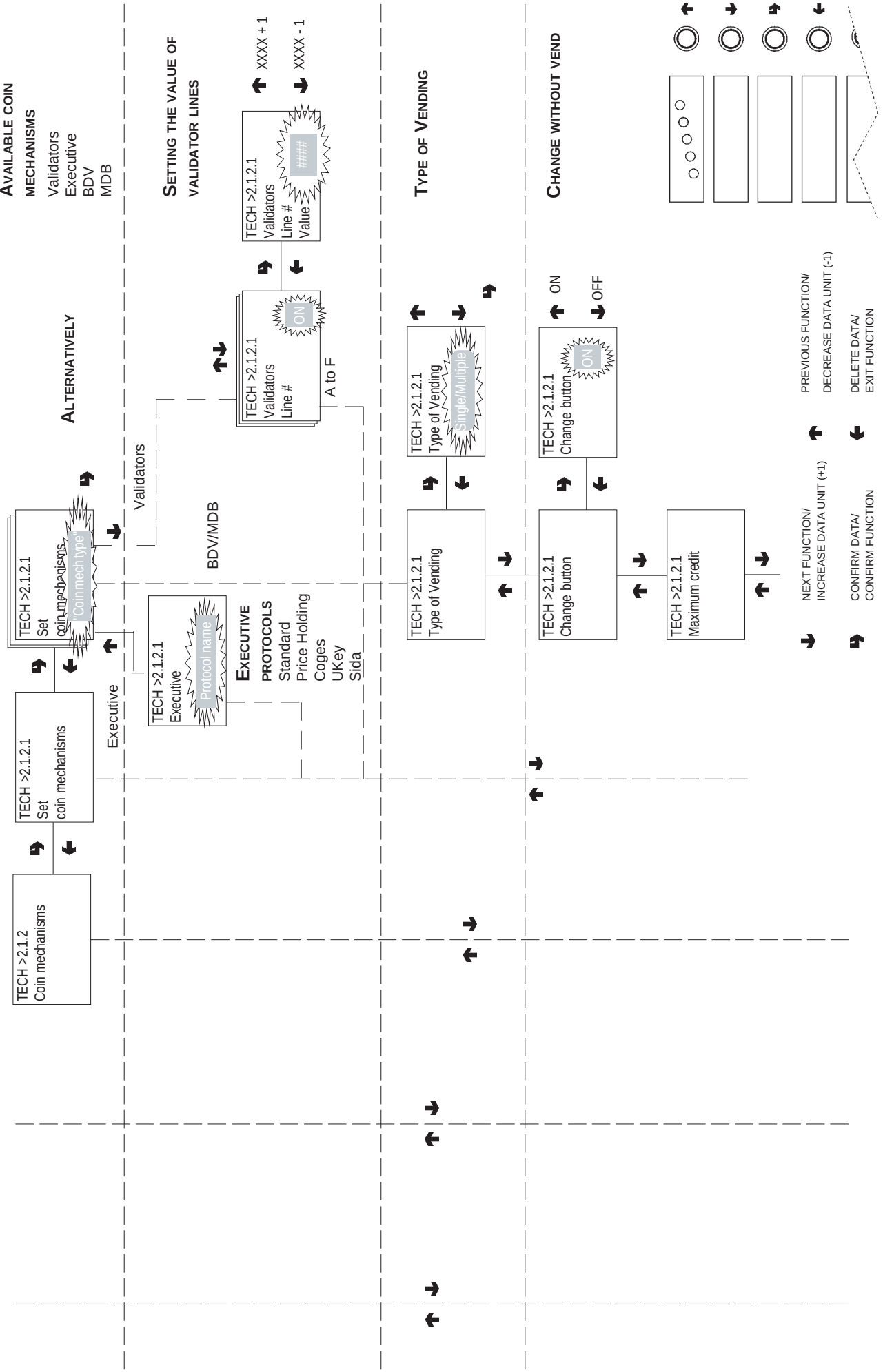
Clock

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, which can then be changed and confirmed.

Time bands

When confirming the blinking values, hour and minute for start and end of time band are entered one after the other.
If start and end values are set to 24.00 the time bands are deactivated.

Technician menu - Summary



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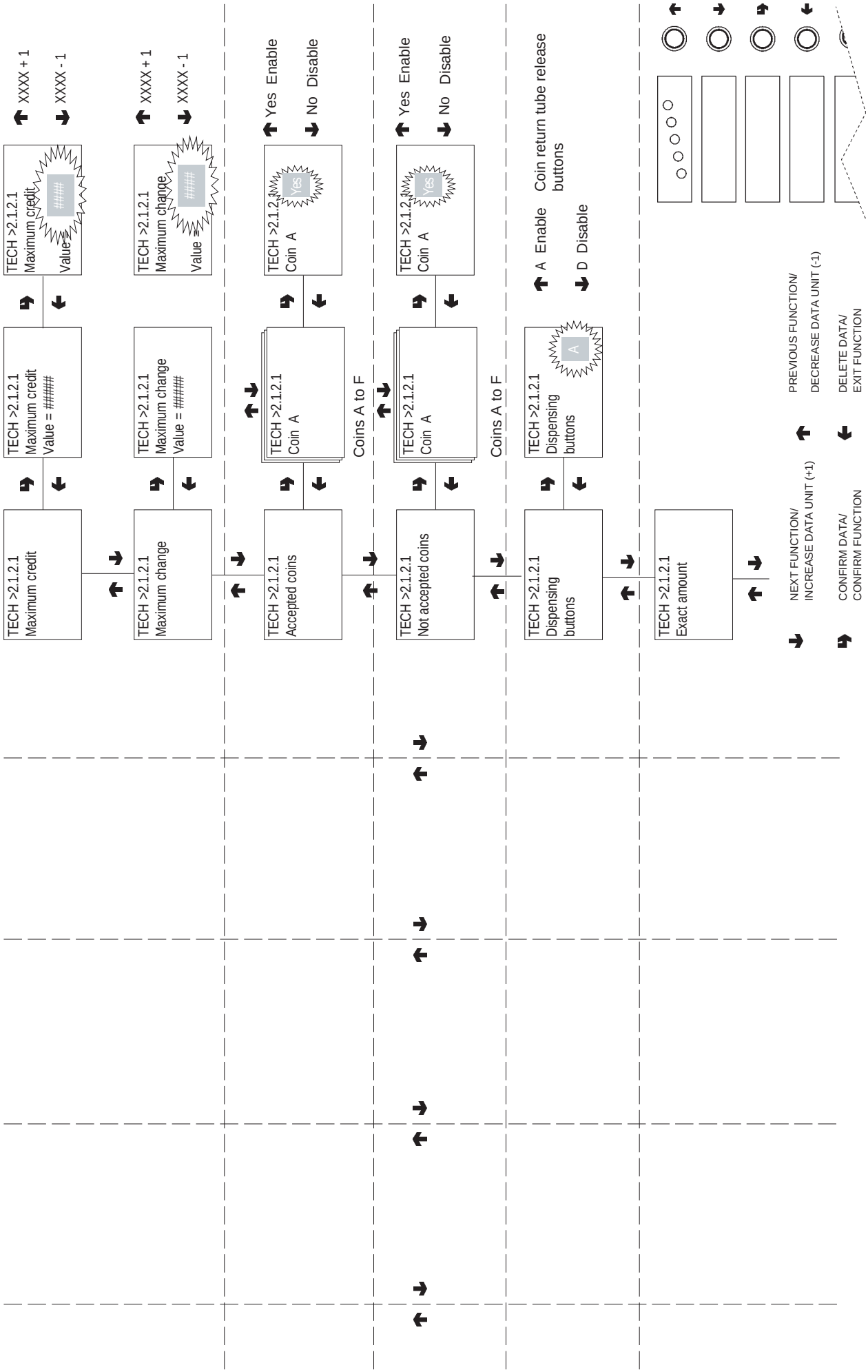
Technician menu - Summary



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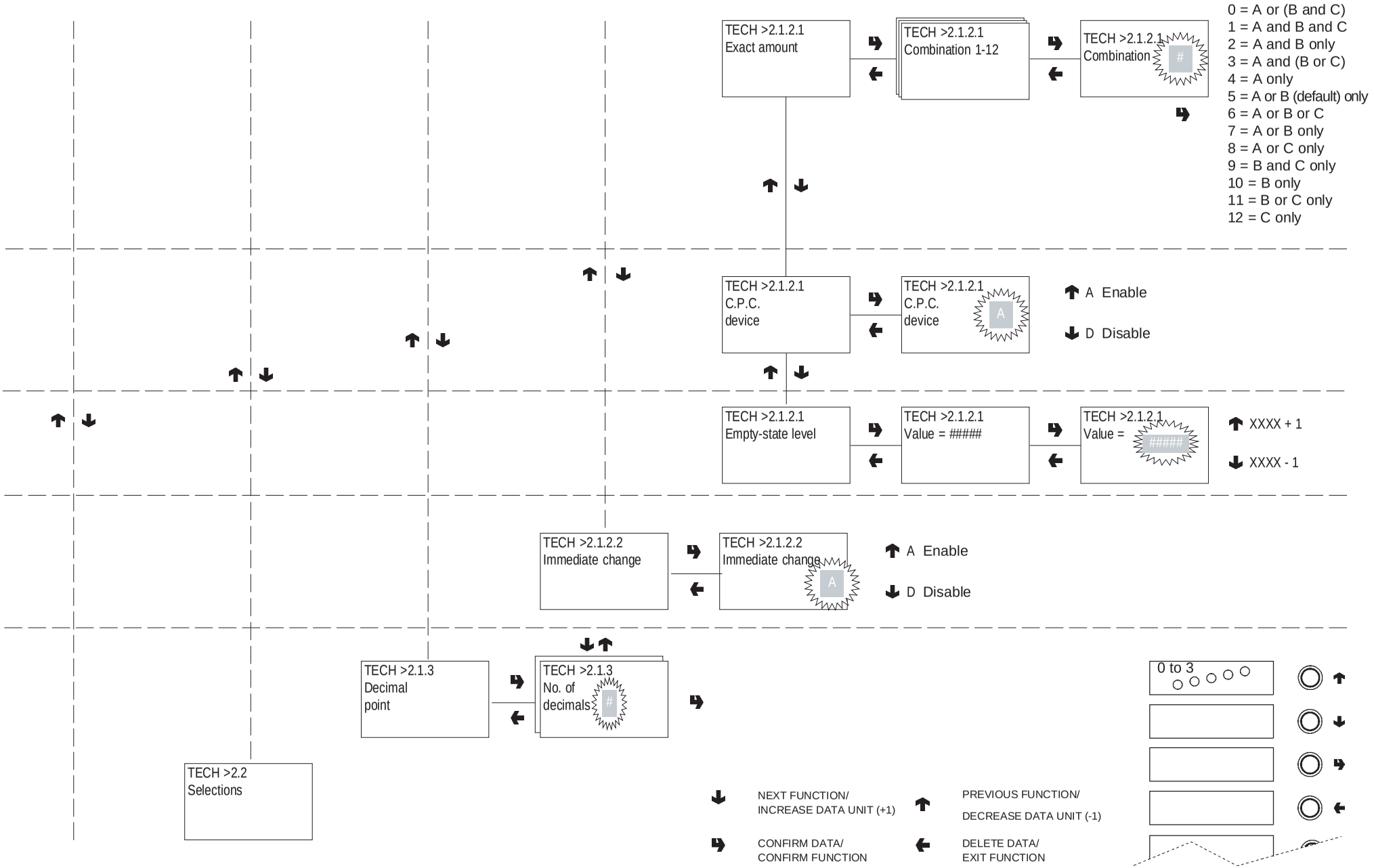
Technician menu - Summary



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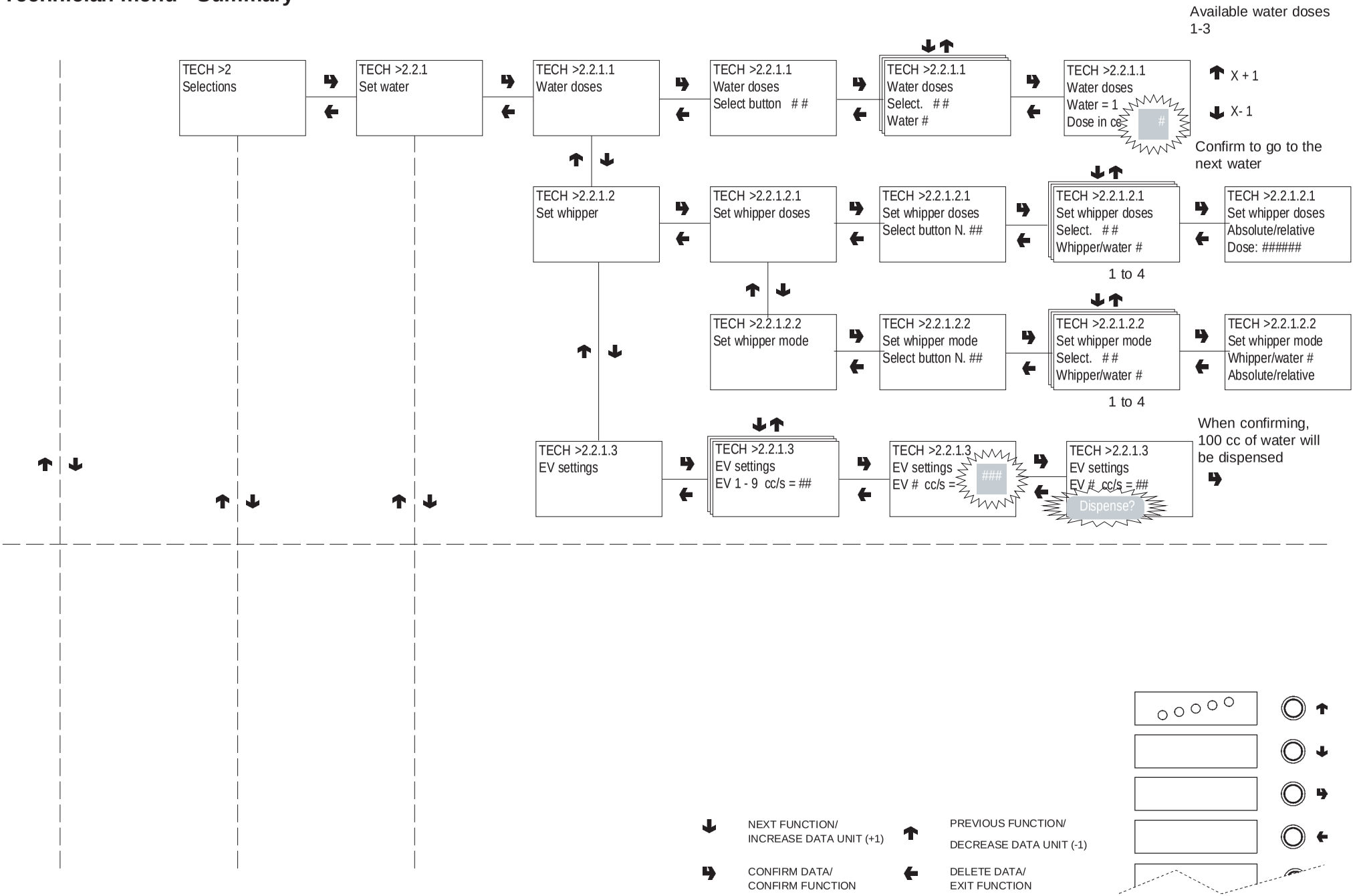
Technician menu - Summary



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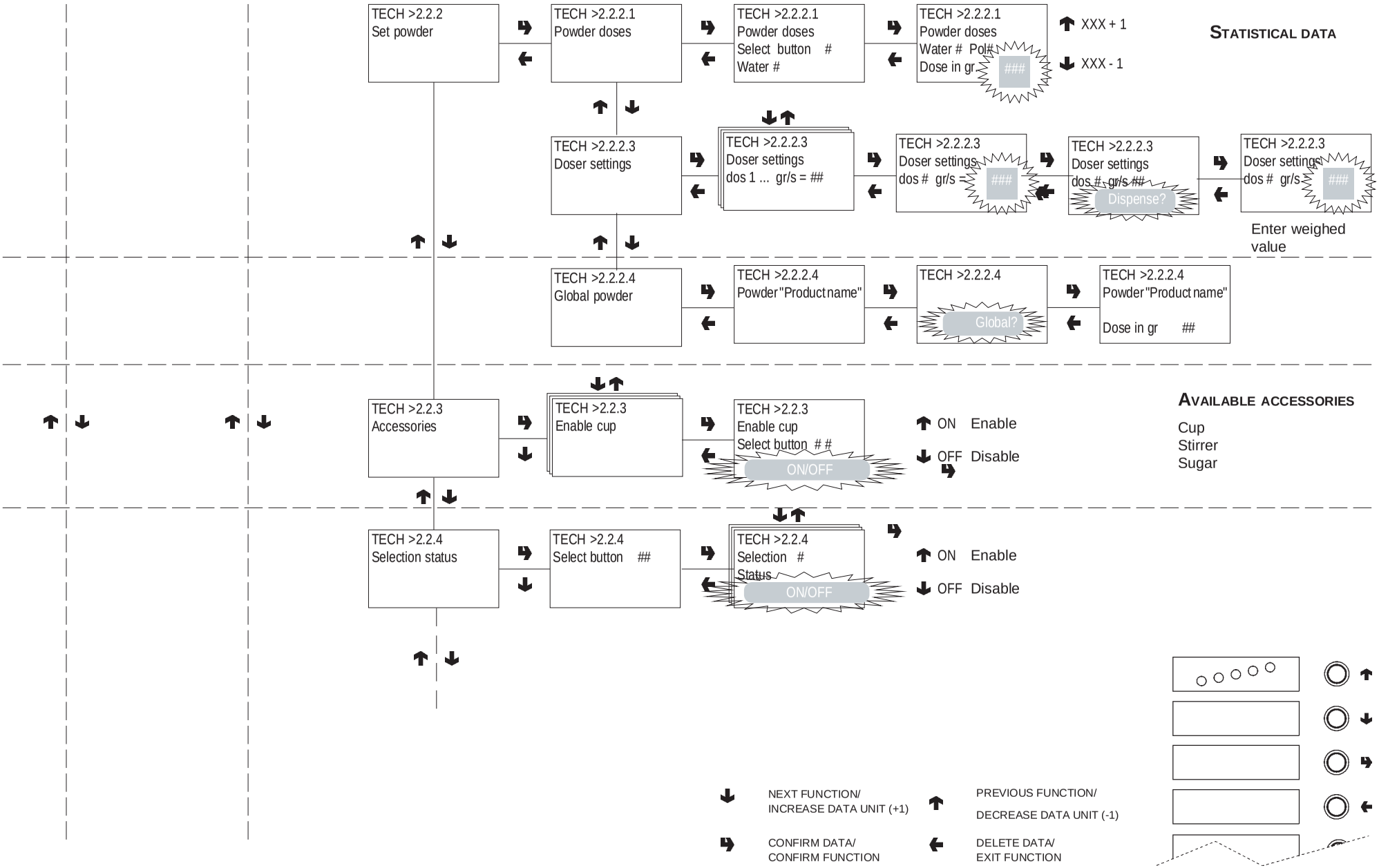
Technician menu - Summary



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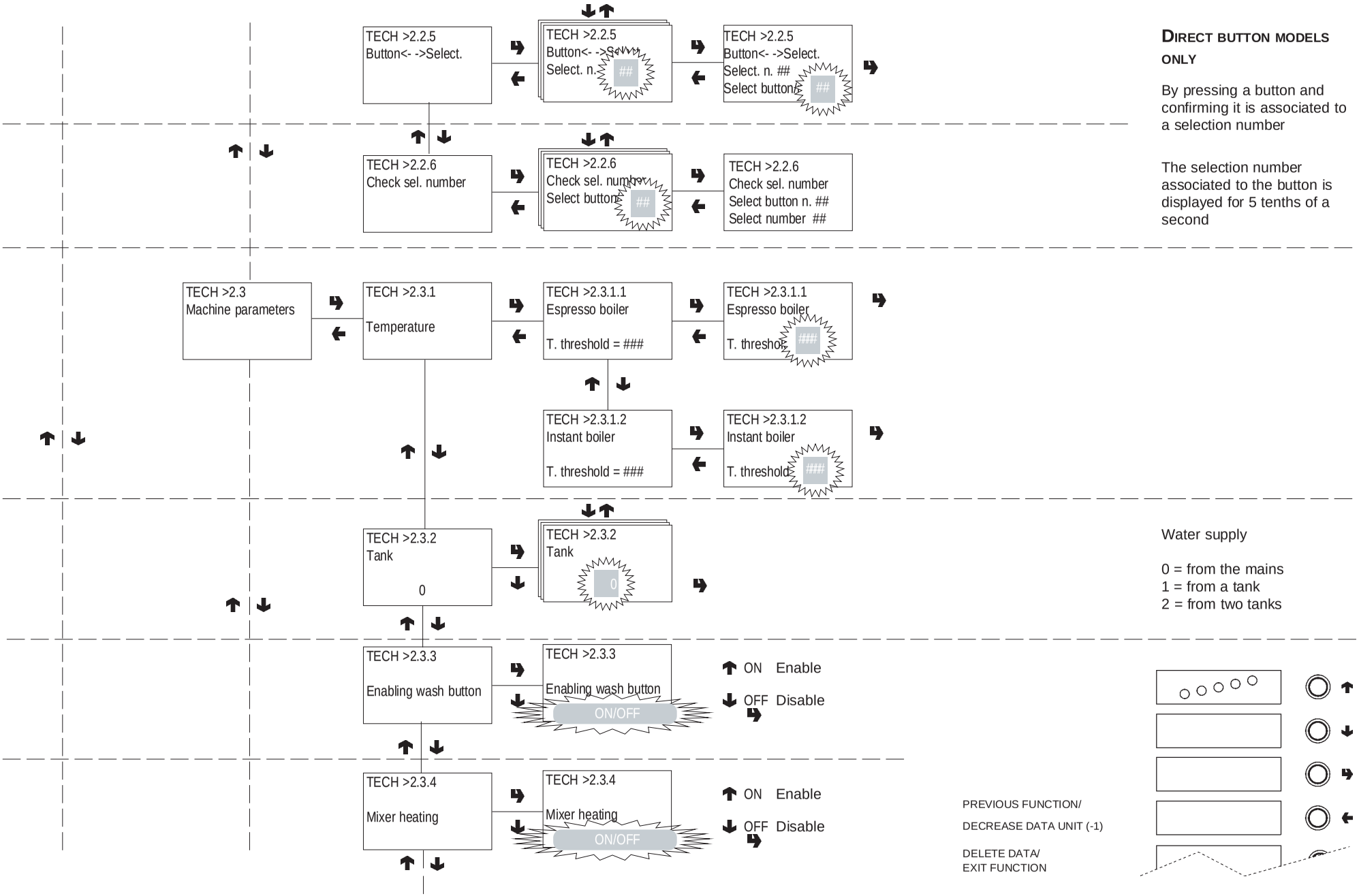
Technician menu - Summary



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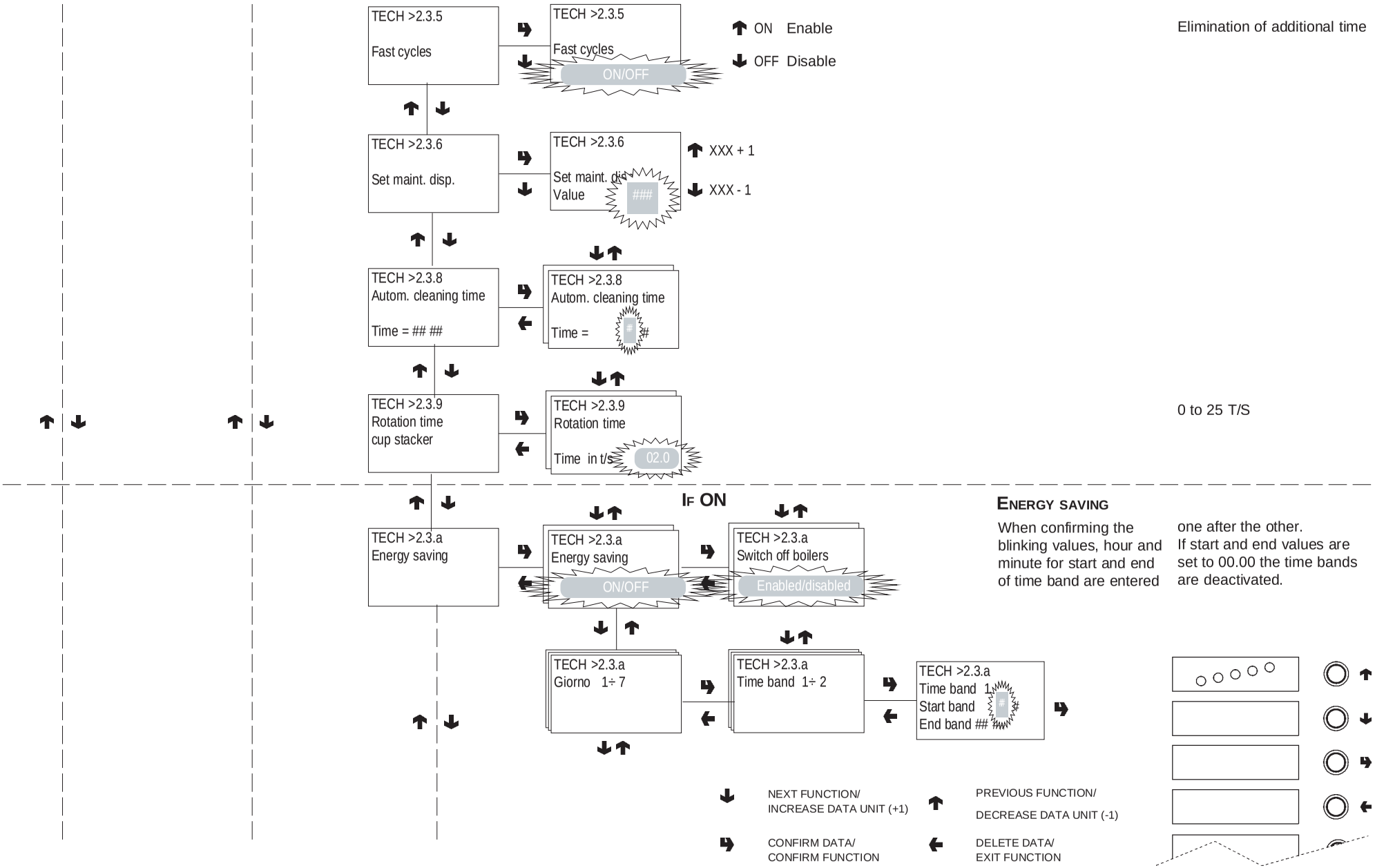
Technician menu - Summary



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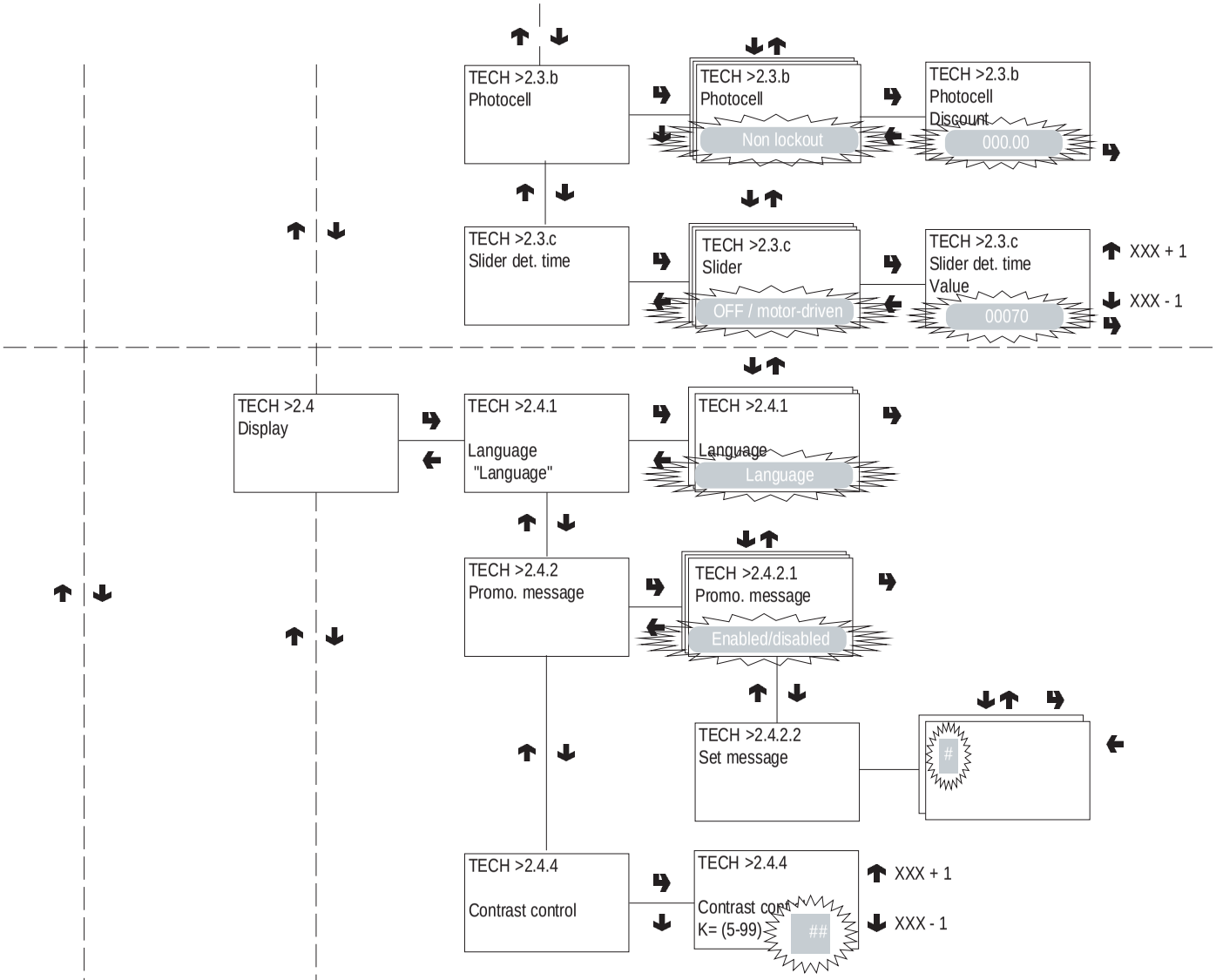
Technician menu - Summary



CUP SENSOR CONTROL

Disabled
Cup sensor
Non lockout failure
Lockout failure

SLIDER CONTROL

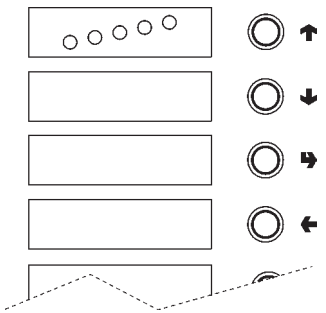
OFF = Manual
Motor-driven = Automatic
0 to 150 t/s

AVAILABLE LANGUAGES

Italian	German
English	Danish
Spanish	Norwegian
French	Swedish

Enabling and changing the promotional message

Enter the percentage value



NEXT FUNCTION/ INCREASE DATA UNIT (+1)

PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

CONFIRM DATA/ CONFIRM FUNCTION

DELETE DATA/ EXIT FUNCTION

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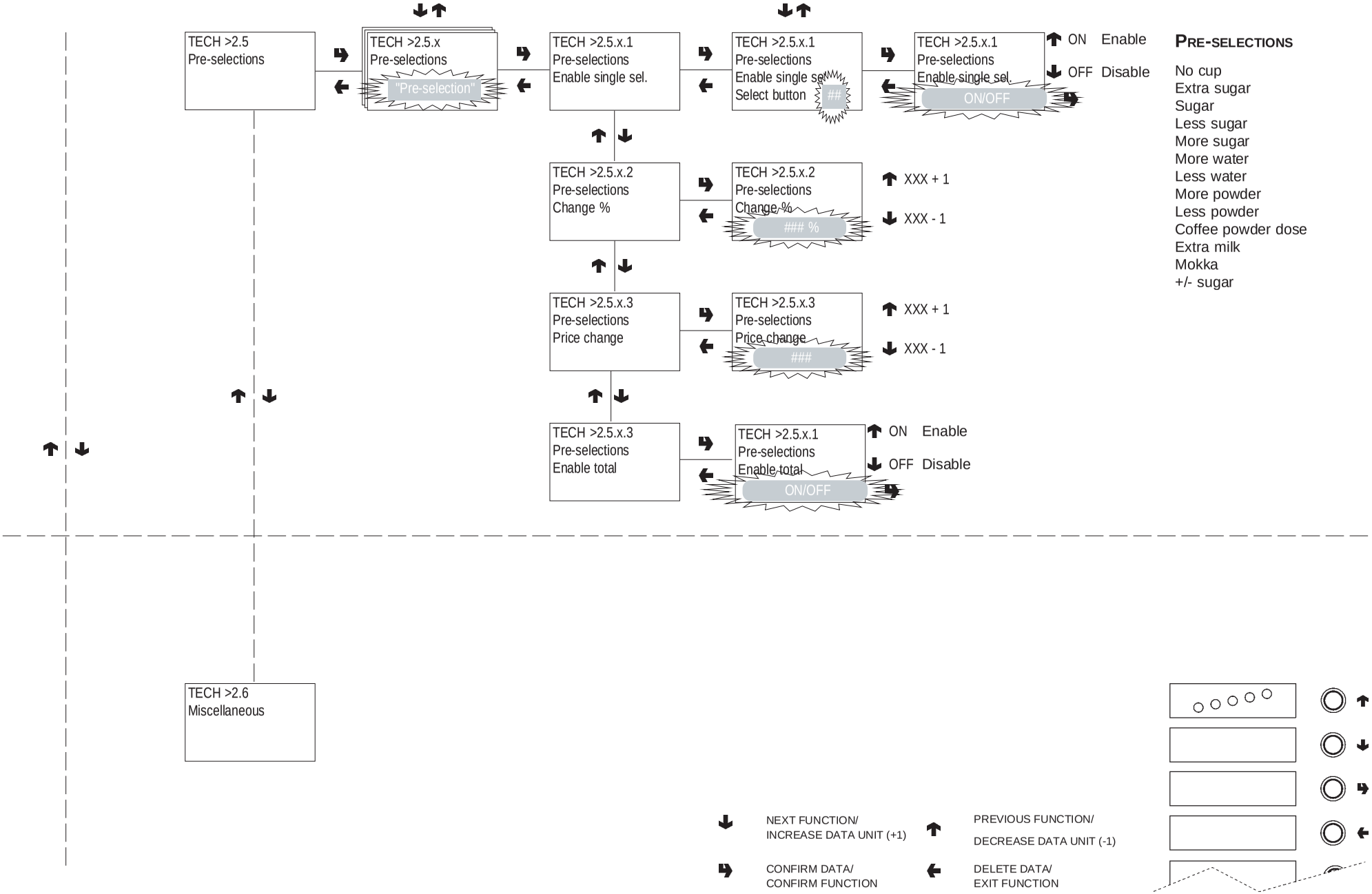
Technician menu - Summary



0305 209-00

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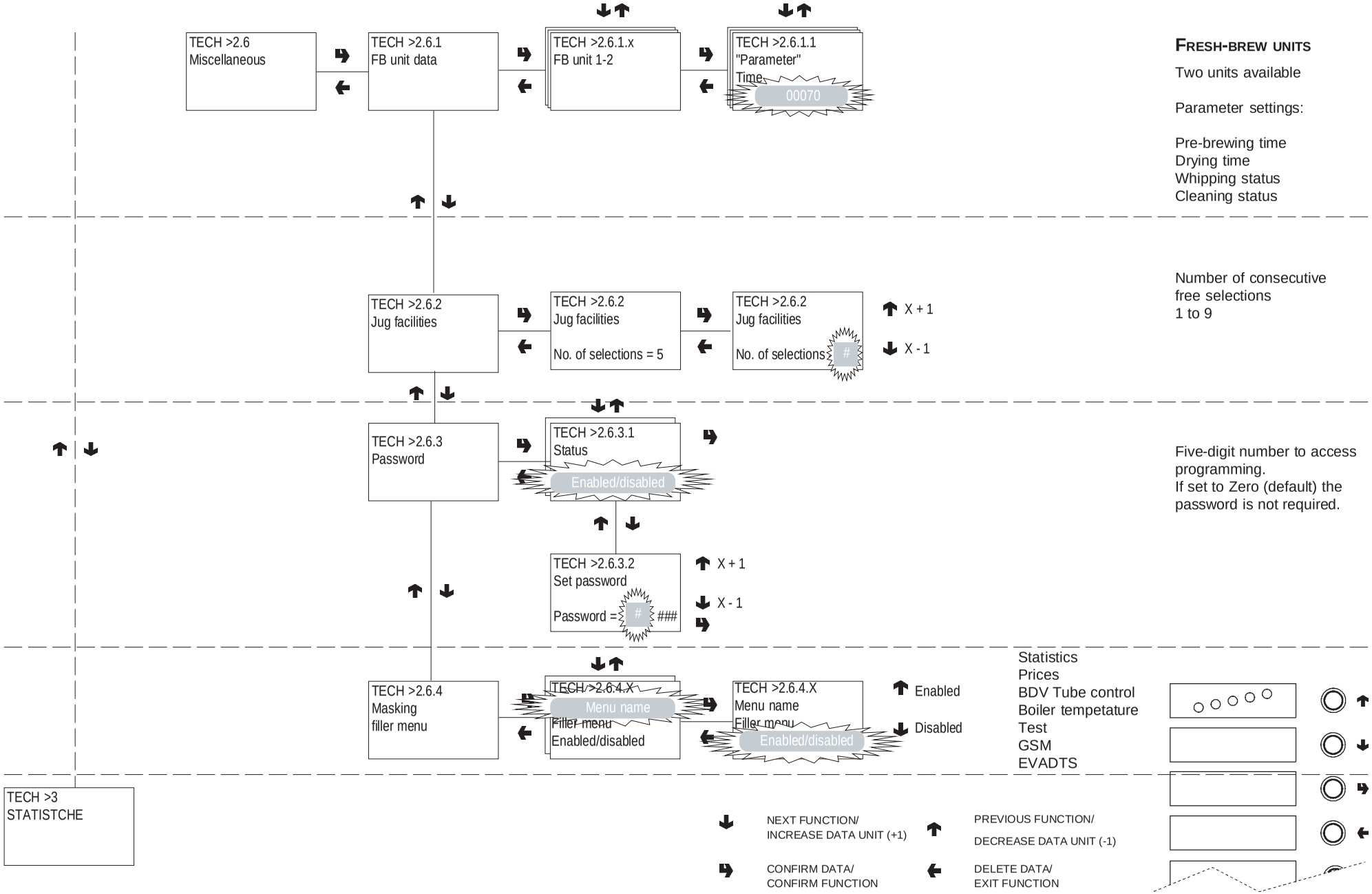
Technician menu - Summary



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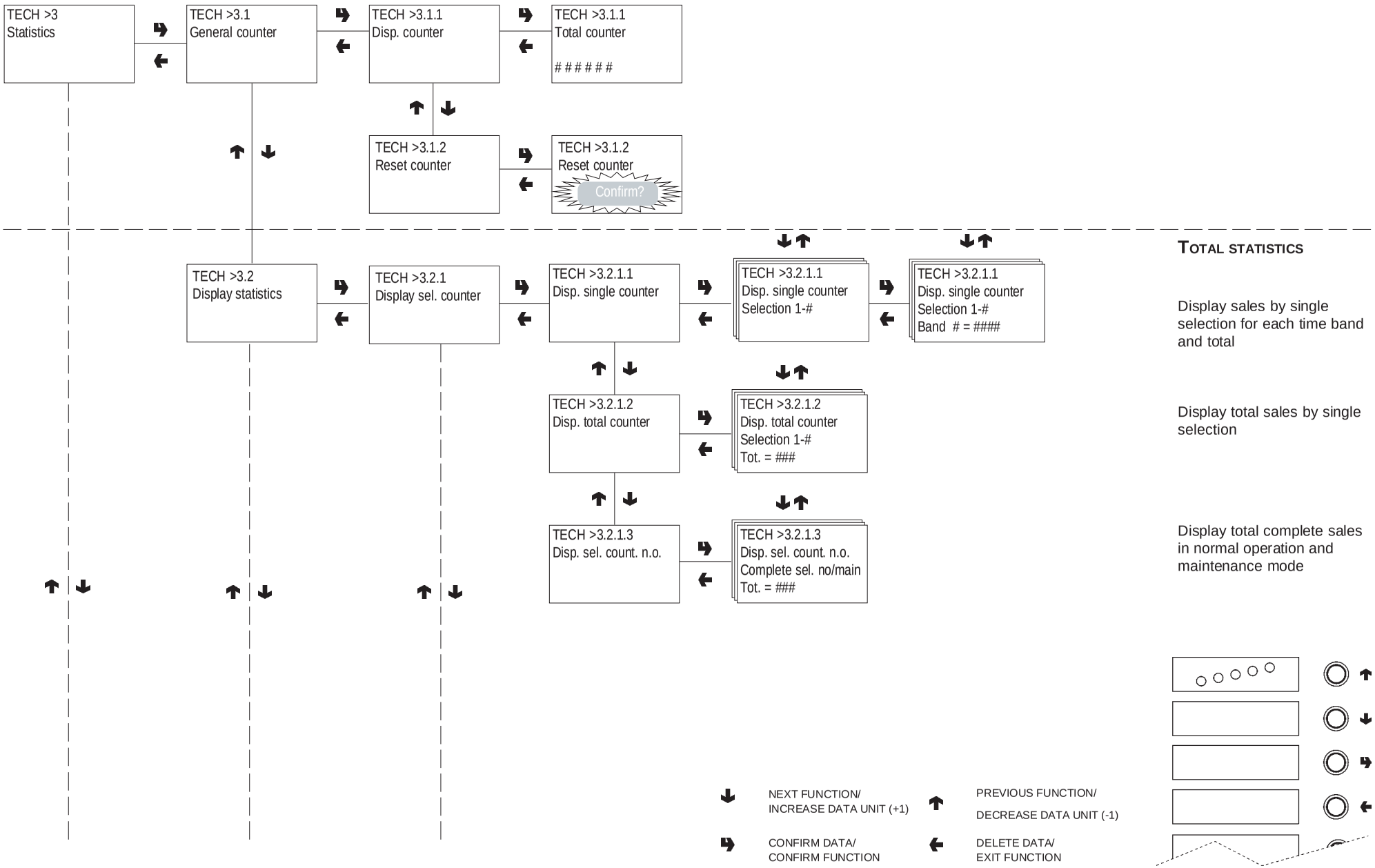
Technician menu - Summary



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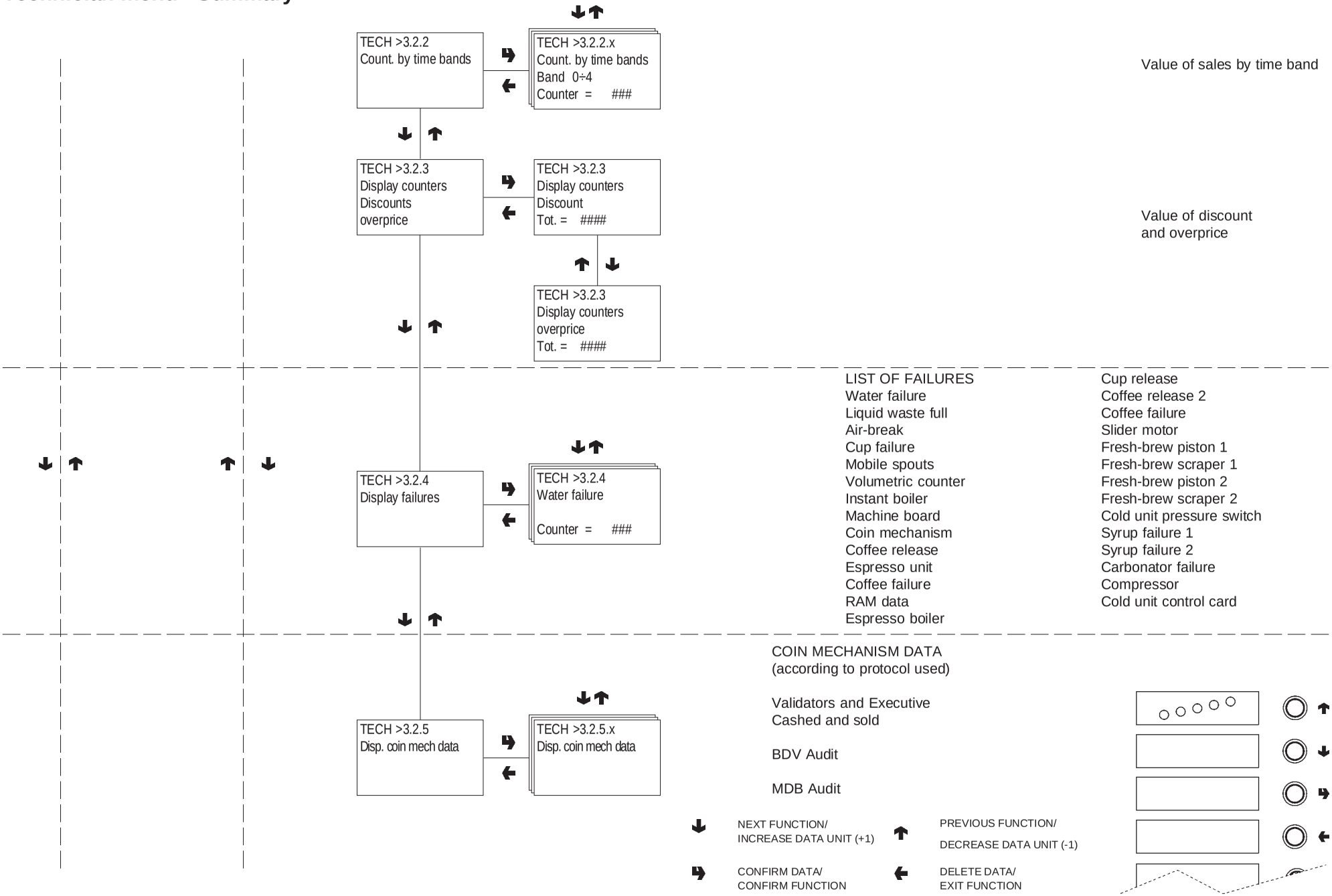
Technician menu - Summary



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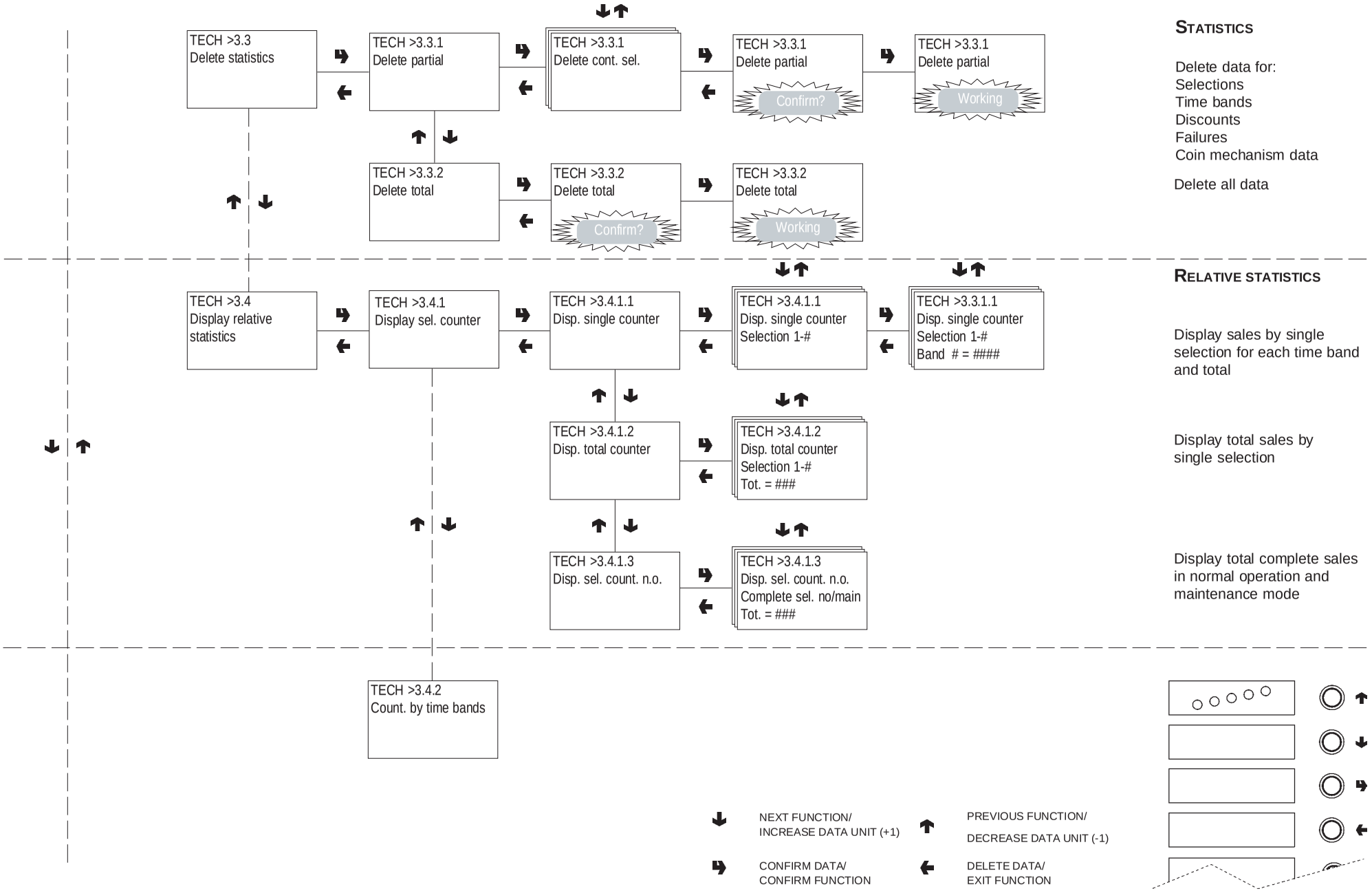
Technician menu - Summary



STATISTICS

Delete data for:
Selections
Time bands
Discounts
Failures
Coin mechanism data

Delete all data

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 maintenance mode

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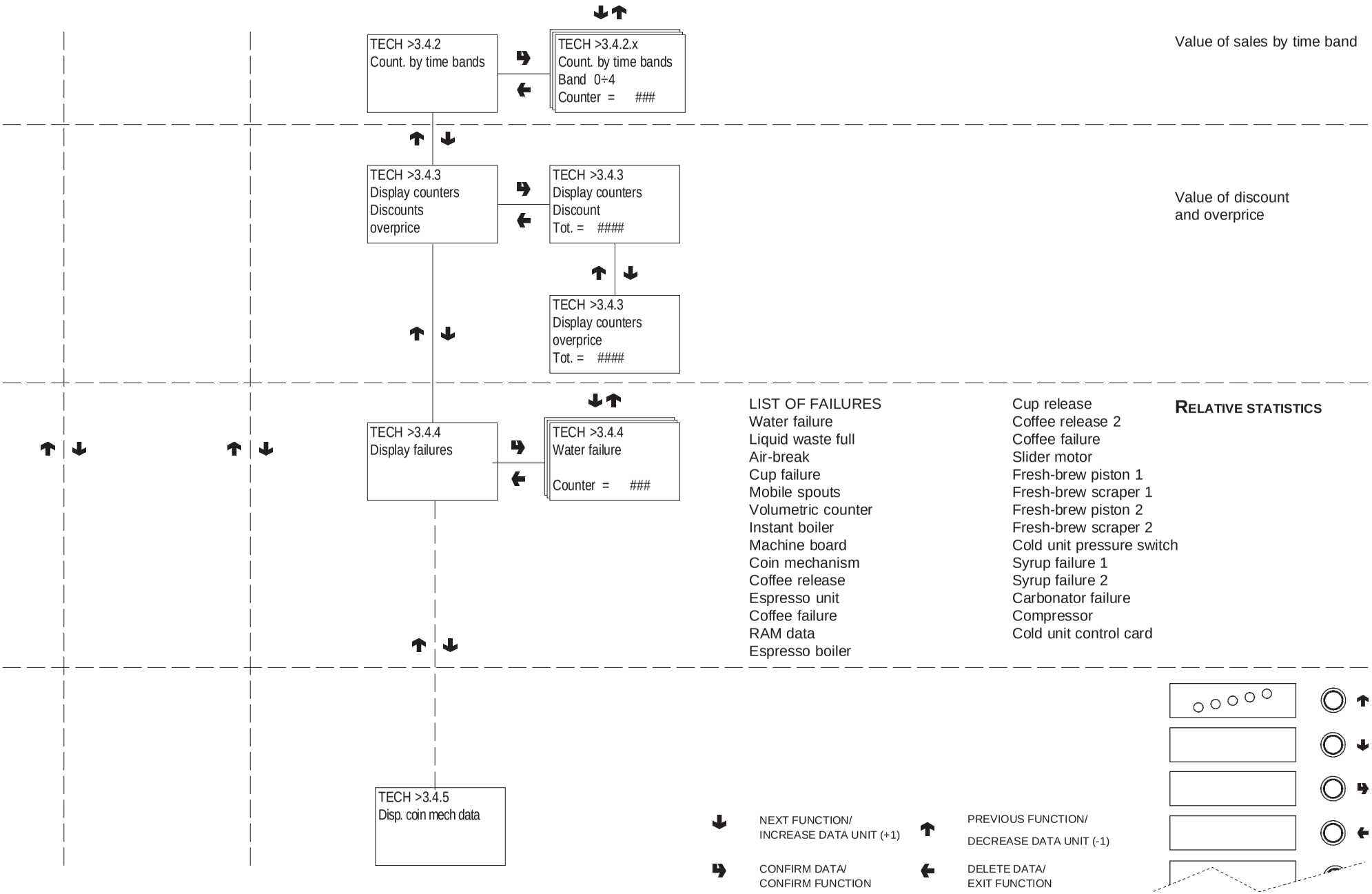
Technician menu - Summary



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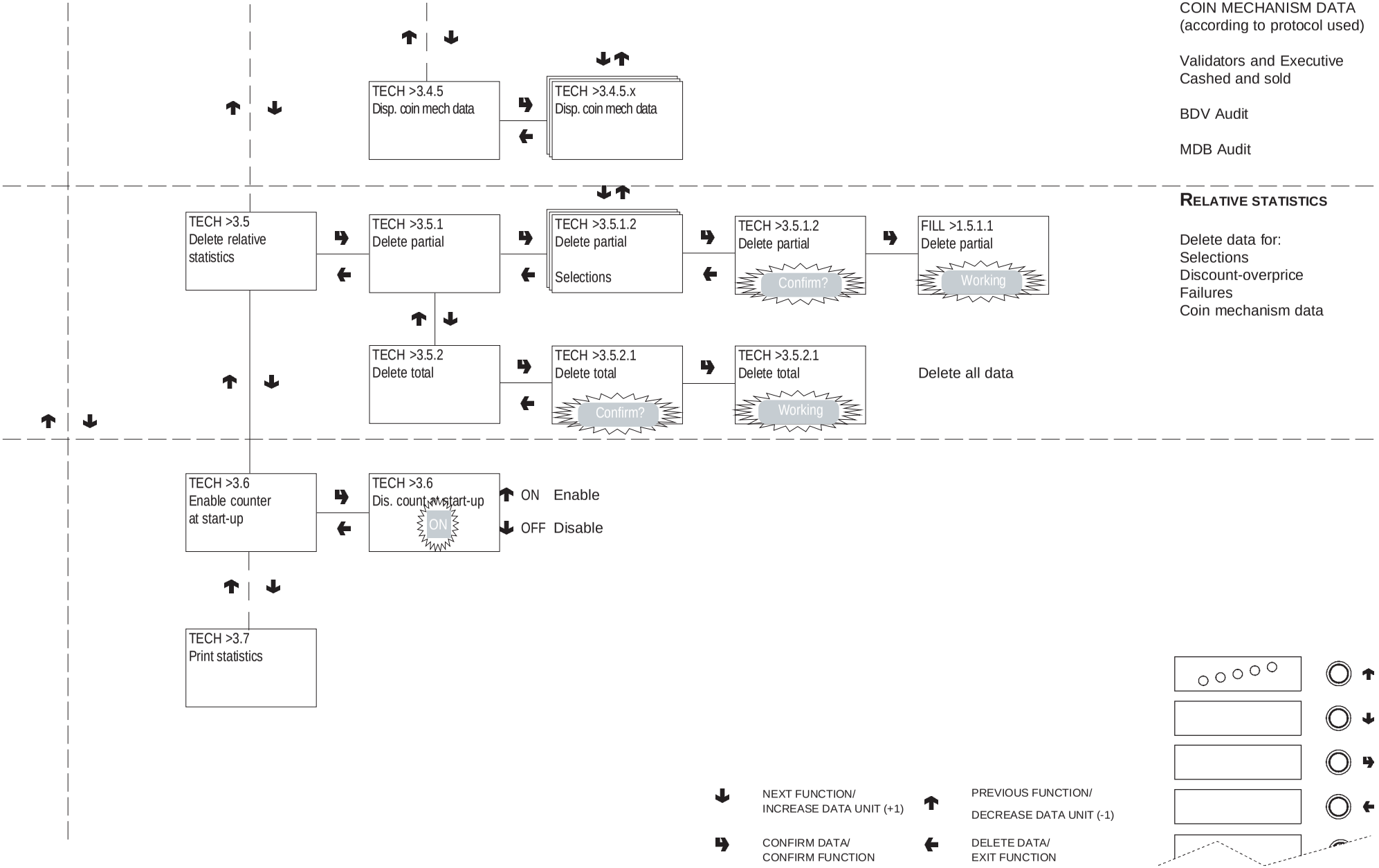
Technician menu - Summary



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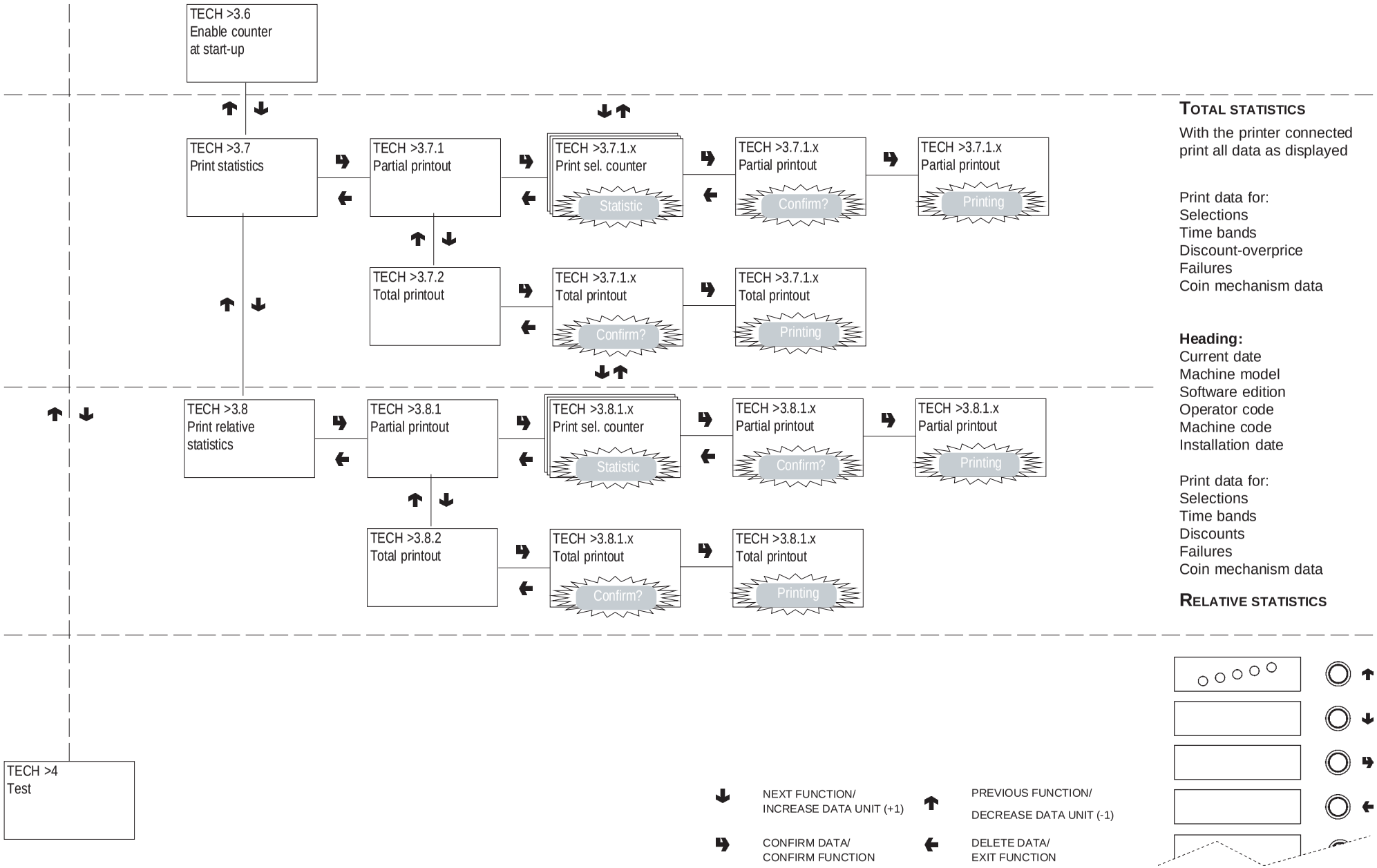
Technician menu - Summary



TOTAL STATISTICS

With the printer connected print all data as displayed

Print data for:
Selections
Time bands
Discount-overprice
Failures
Coin mechanism data

Heading:
Current date
Machine model
Software edition
Operator code
Machine code
Installation date

Print data for:
Selections
Time bands
Discounts
Failures
Coin mechanism data

RELATIVE STATISTICS

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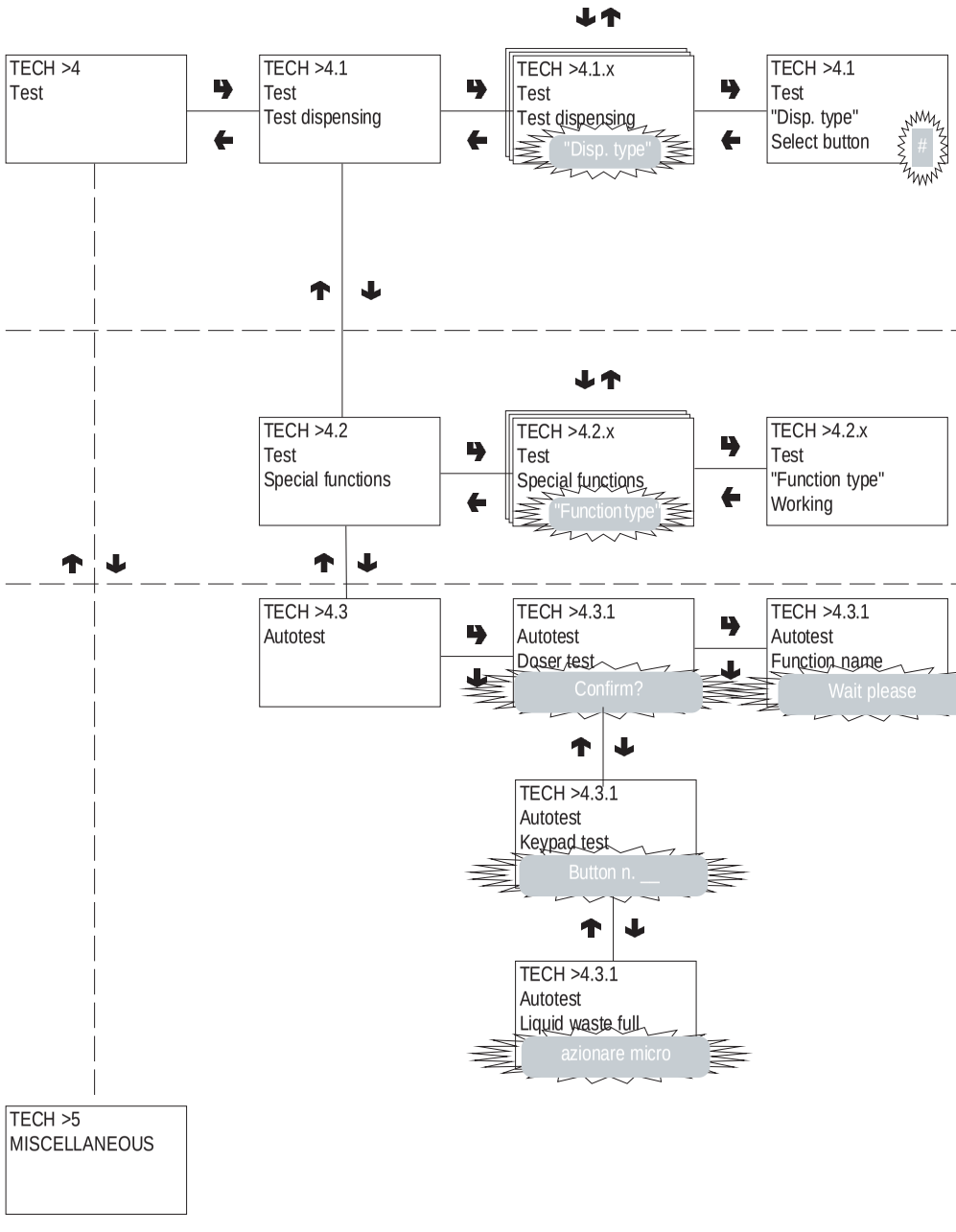
Technician menu - Summary



Press a button to start dispensing

DISPENSING TYPES

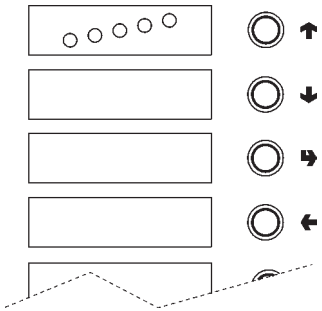
Complete selection
Water only
Powder only
No accessories
Accessories only

SPECIAL FUNCTIONS

Rotation of coffee unit
Releasing a coffee dose
Emptying the boiler
Manual installation
FB unit 1
FB unit 2

Actuation in sequence of:
.Doser devices
.Electric mixers
.Cup release
.Stirrer dispenser
.Mobile spouts
.Rotation of units
.Grinding and releasing
.Wash button*
.Liquid waste full*
.Neon lamps
.Dispensing compt lamp
.Push-buttons*
.Temperature
.Buzzer
.Coin mechanisms

*** these functions require the assistance of the user to actuate the switches.**



NEXT FUNCTION/ INCREASE DATA UNIT (+1)

PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

CONFIRM DATA/ CONFIRM FUNCTION

DELETE DATA/ EXIT FUNCTION

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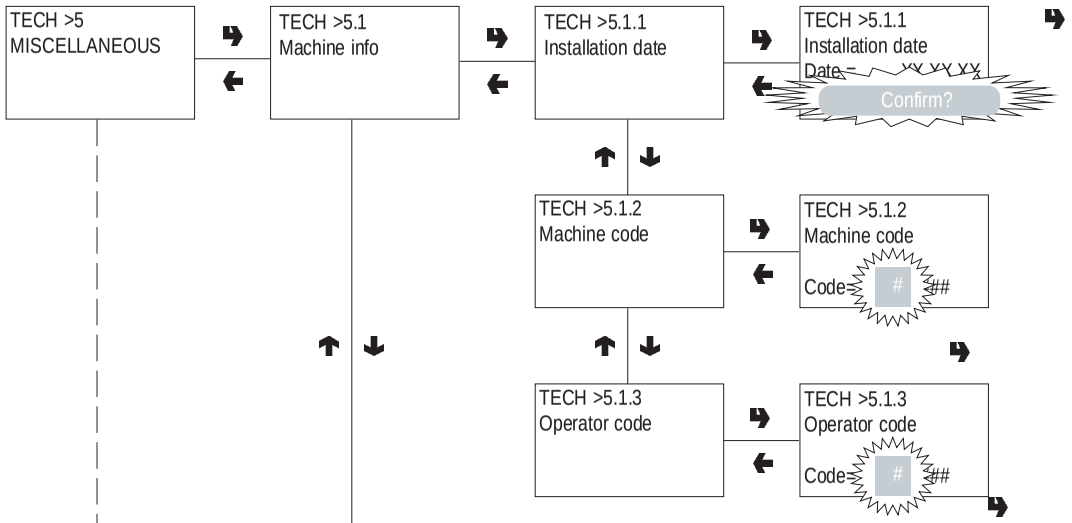
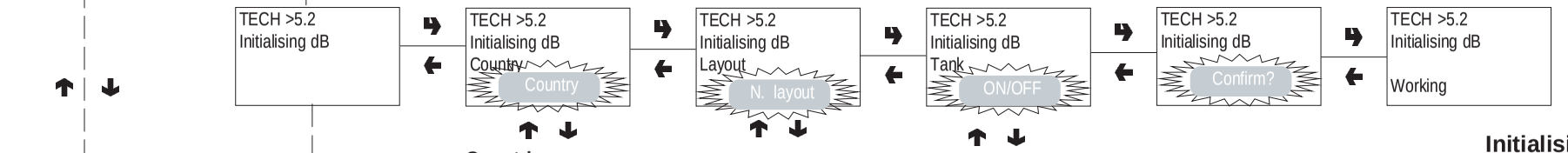
Technician menu - Summary

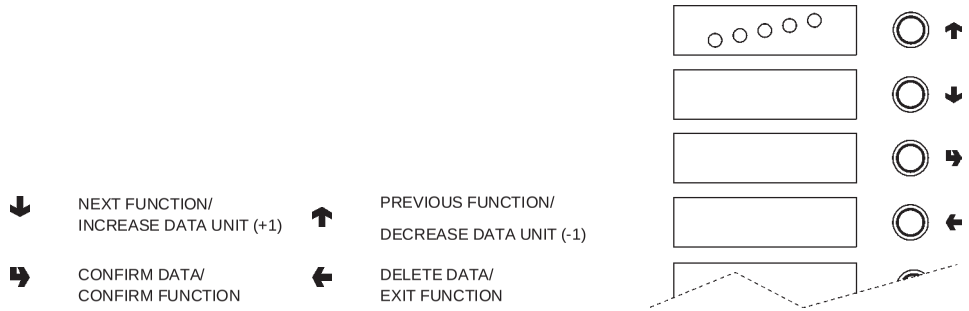


When confirming, the current date will be set as installation date



Countries:
Italy
Germany
Great Britain
France
Spain

Initialising databases



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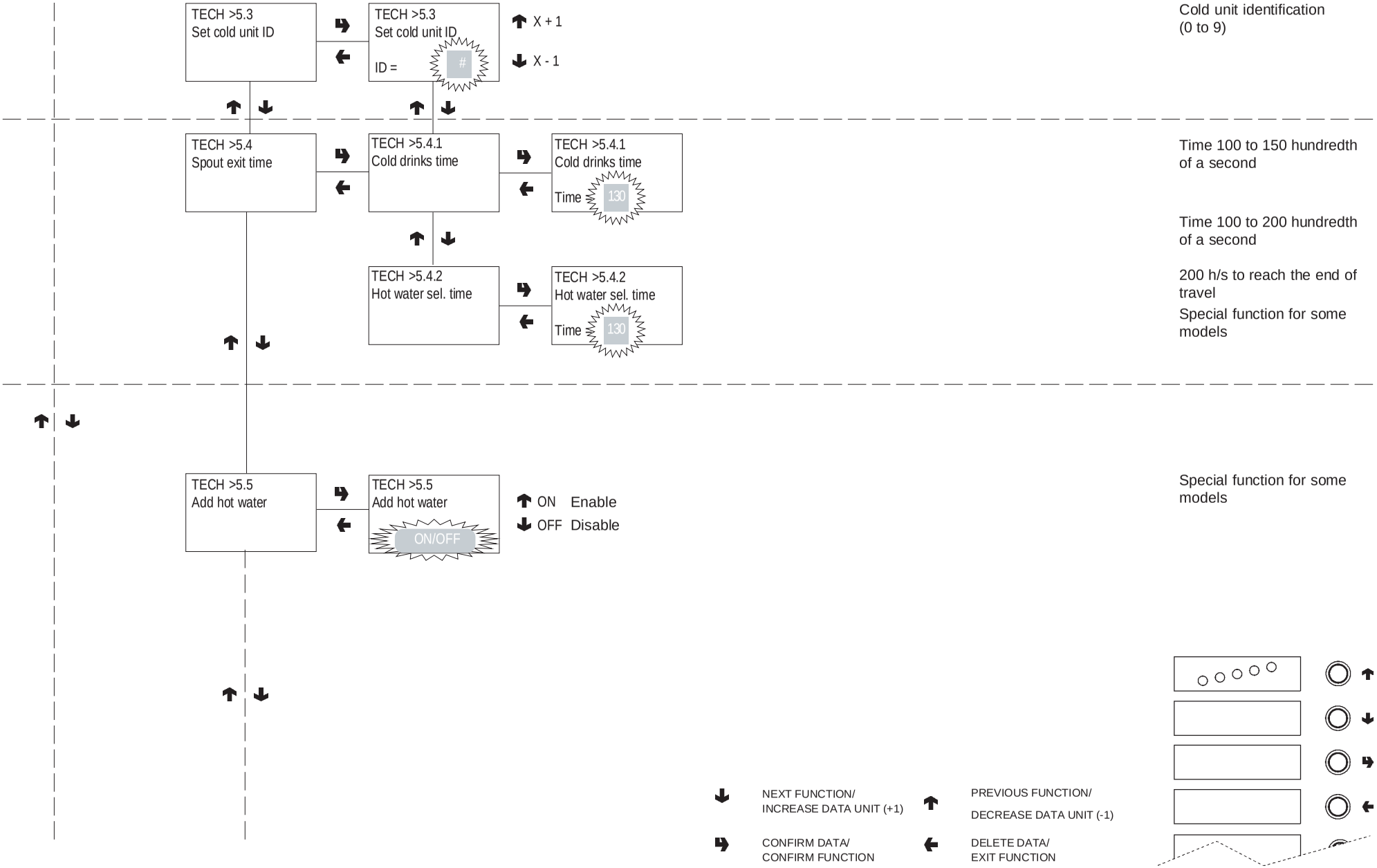
Technician menu - Summary



0305 209-00

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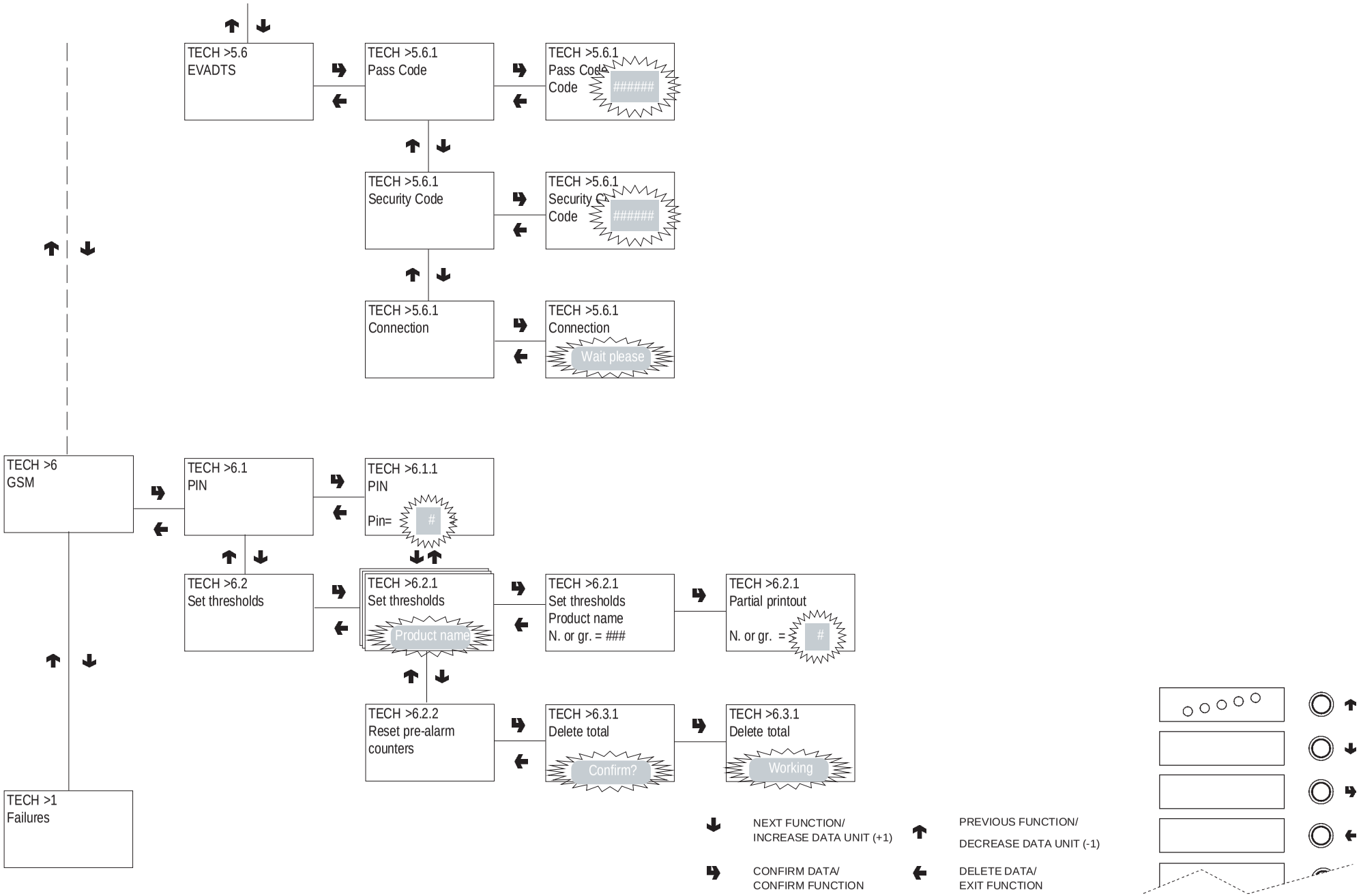
Technician menu - Summary



WIRING DIAGRAM LEGEND

INITIALS	DESCRIPTION	INITIALS	DESCRIPTION
BDV	BDV COIN MECH CONNECTORS	MDZ	INGREDIENT MOTOR - SUGAR
CCG	GENERAL COUNTER	MF1-..	WHIPPER MOTORS
CM1	COFFEE UNIT MOTOR CAM	MFB	FRESH-BREW MOTOR
CM2	COFFEE DISPENSING POSITION CAM	MPF	PRESH BREW PISTON MOTOR
CMF	FRESH BREW MOTOR CAM	MPU	SPOUT POSITIONING MICROSWITCH
CMPF	FRESH BREW UNIT PISTON MICROSWITC	MS1	DISP COMPT FLAP MICROSWITCH
CMSB	CUP RELEASE MOTOR CAM	MSB	CUP RELEASE MOTOR
CV	VOLUMETRIC COUNTER	MSCB	CUP CONTAINER SHIFT MOTOR
E1-...	INSTANT SOLENOID VALVE	MSP	STIRRER RELEASE MOTOR
EA	HOT WATER ELECTROVALVE	MSU	SPOUT MOVING MOTOR
EEA	WATER INLET SOLENOID VALVE	NTC	TEMPERATURE PROBE
ER	COFFEE DISPENSER SOLENOID VALVE	NTC1-.	TEMPERATURE PROBE
ESC	COFFEE RELEASE MAGNET	NTCS	INSTANT BOILER TEMPERATURE PROBE
EV	SANITISING KIT SOLENOID VALVE	PB	POWER SUPPLY SOCKET
EX	EXECUTIVE COIN MECH CONNECTOR	PG	UNIT DETECTION MICROSWITCH
FA	RADIO INTERFERENCE SUPPRESS	PIP	PROGRAMMING BUTTON
FREE	FREE VENDING SWITCH	PL	WASH CYCLE BUTTON
FS1-..	FUSE	PM	PUMP
GCR	CREAM ASSEMBLY	PR	PRESSURE SWITCH
I	SANITISING KIT SWITCH	PSB	CUP RELEASE BUTTON
ID	COFFEE DOSE SWITCH	R1	POST-HEATING ELEMENT
IMSP	STIRRER RELEASE MICRO-SWITCH	RCC	COFFEE BOILER HEATING ELEMENT
IP	DOOR SWITCH	RCS	INSTANT BOILER HEATING ELEMENT
IPF	WASTE CONTAINER OVERFLOW SWITCH	RG	UNIT HEATING ELEMENT
ISA	OPEN DISP COMPT FLAP SWITCH	RS232	SERIAL PORT
IVA	EMPTY BOILER MICRO-SWITCH	RT	BALLAST
IVB	EMPTY CUP DISPENSER MICRO SWITCH	SLED	LED BOARD
JUG	JUG FACILITIES SWITCH	SM1	CONTROL BOARD
KC1-..	COFFEE BOILER CUTOUT	SM2	EXPANSION BOARD
KS1-..	SAFETY CUTOUT	SP	PUSH-BUTTON BOARD
KS3-4	PUMP SAFETY CUTOUT	ST	STARTER
LCD	LIQUID CRYSTAL DISPLAY	STRC	BOILER HEATING TRIAC BOARD
LF	LAMP	SUC	C.P.U. BOARD
M	COFFEE UNIT MOTOR	TH	THERMOSTAT
M.OR	TIMER MICROSWITCH	TR	TRANSFORMER
MAC	GRINDER	TR1	TRANSFORMER 230 V 24 V
MAS	SLIDE OPENING MOTOR	TX....	DELAYED FUSE (X=COURRENT)
MD1-..	INGREDIENT MOTOR - INSTANT	TZ	CUP SENSOR
MDB	CONNECTOR FOR MDB COIN MECHANI	VAR	VARISTOR
MDFB	INGREDIENT MOTOR - FRESH BREW	VENT	FAN

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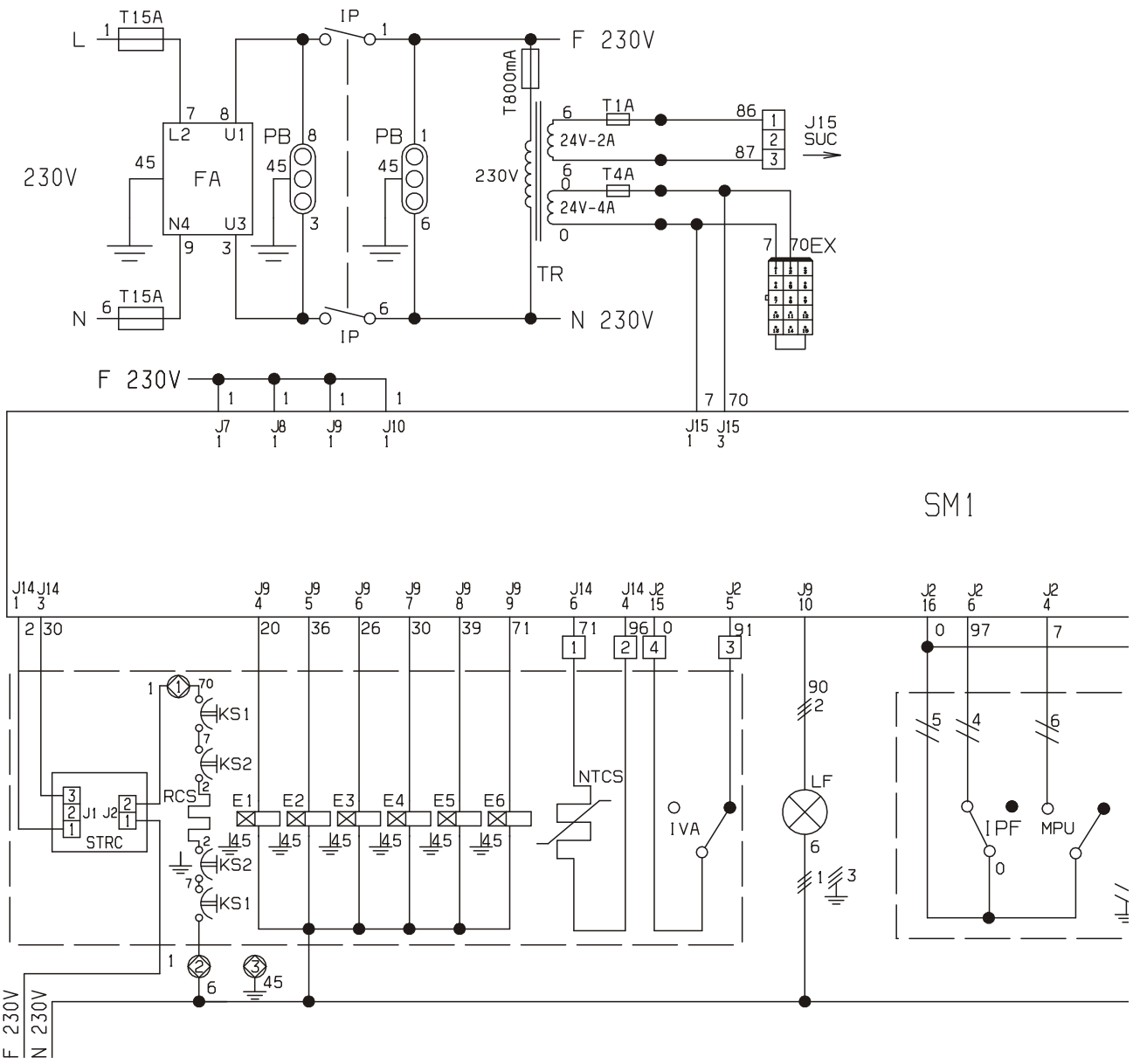
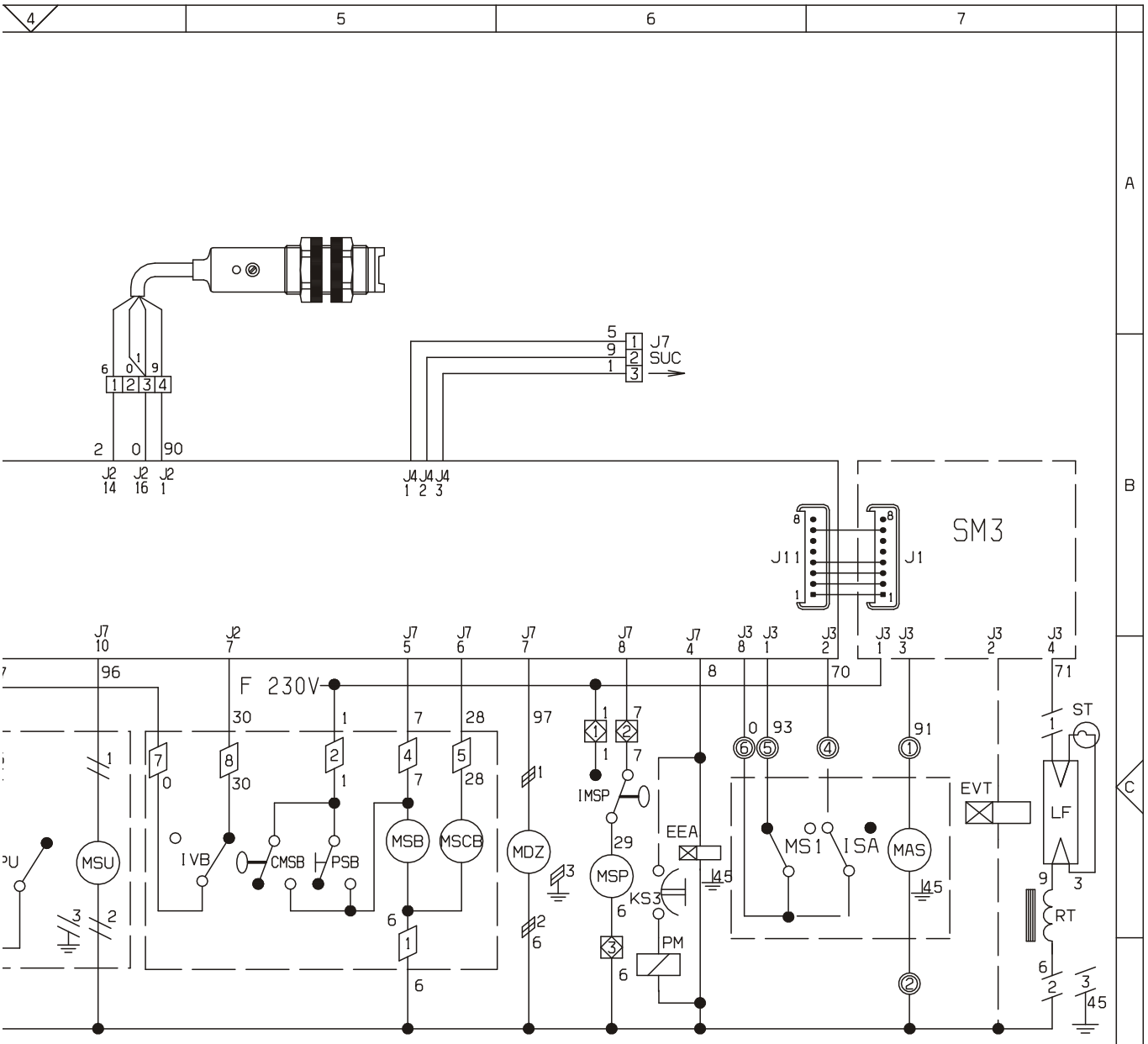
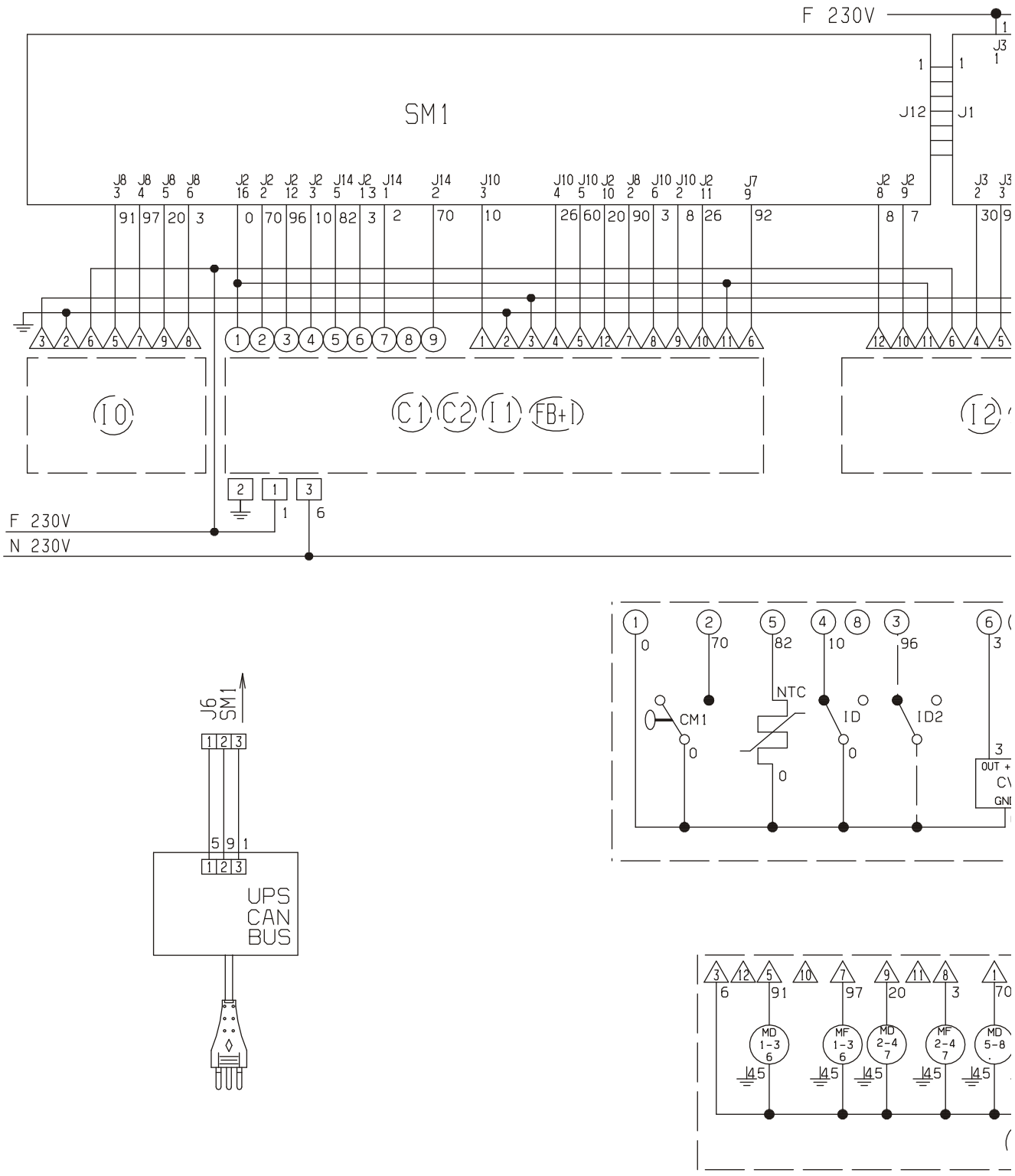


NECTA VENDING SOLUTIONS S.P.A.
SI RISERVA A TERMINI DI LEGGE LA PROPRIETA' DEL PRESENTE DISEGNO CON DIVIETO DI RIPRODURLO O DIVULGARLO SENZA SUA PREVIA AUTORIZZAZIONE

| | | |



8 GRIS 9 BIANCO	NECTA VENDING SOLUTIONS SpA A company of N&W GLOBAL VENDING GROUP	MODELLO Astro Oblò	GRUPPO SCHEMA ELETTRICO FUNZIONALE ALIMENTAZIONE	DATA 23-07-01	FOGLIO 1/1	DISEGNATO BONACINA	CONTROLLATO MONGUZZI
				LEGENDA .	CODICE 608537600		



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

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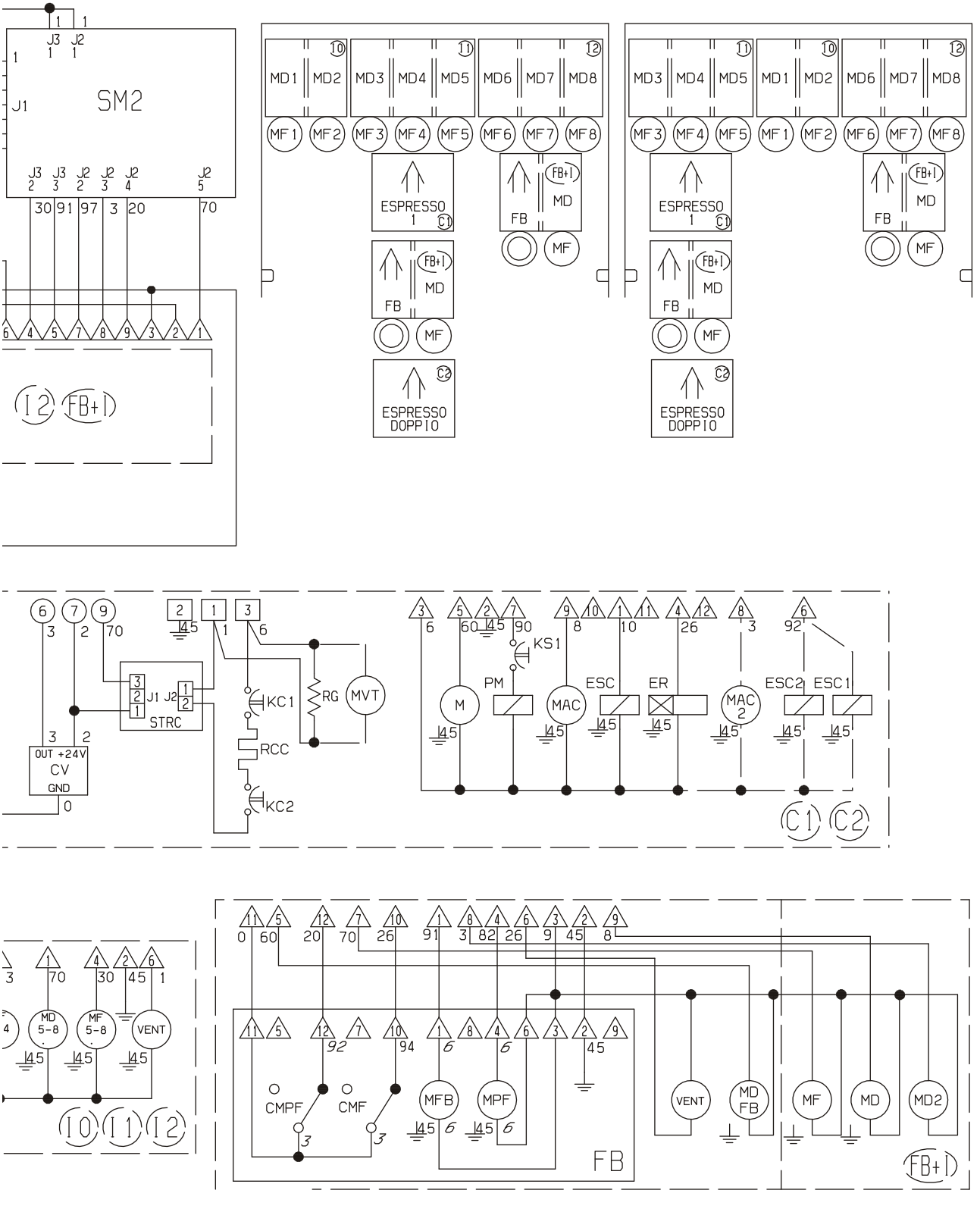
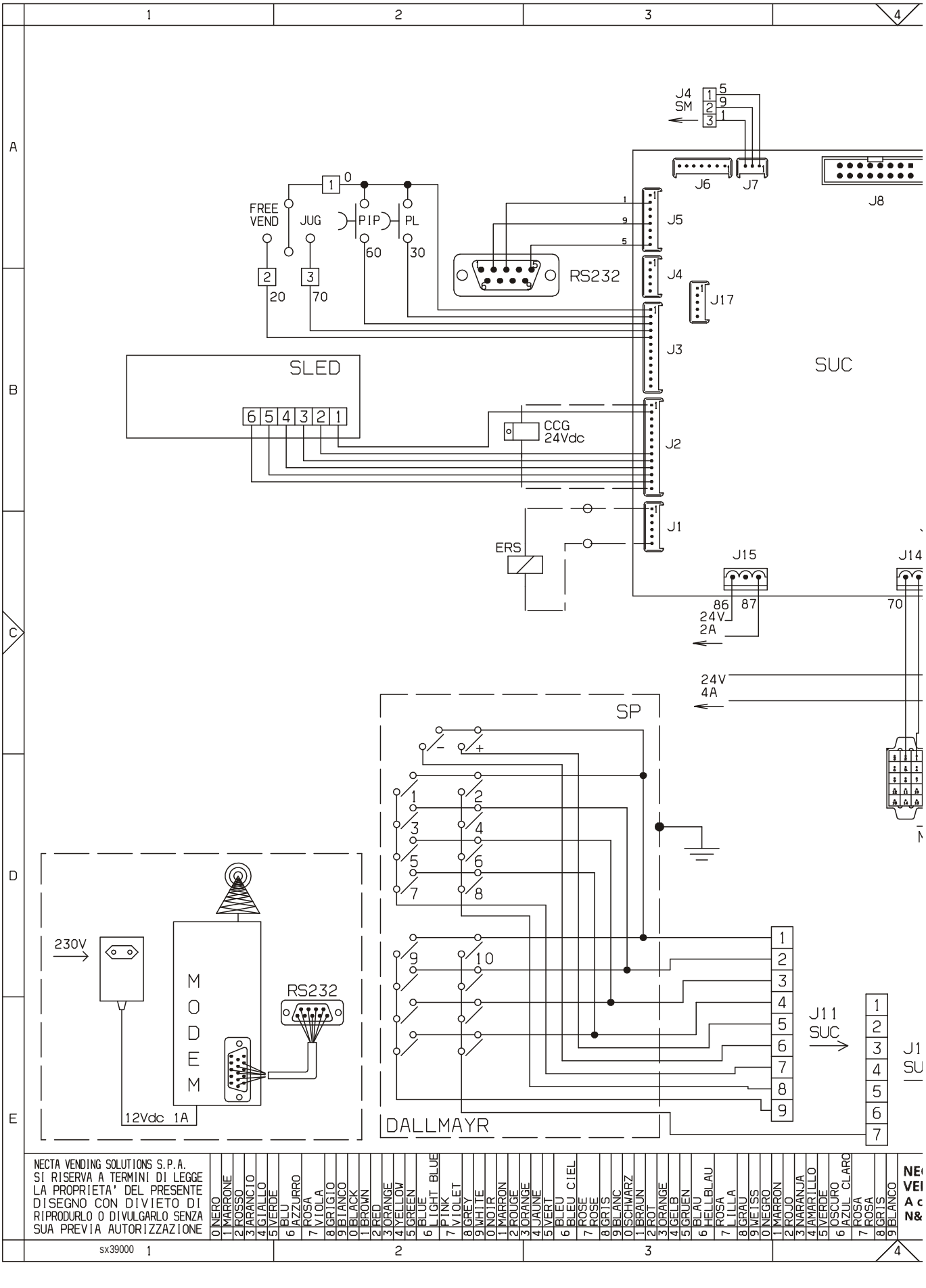
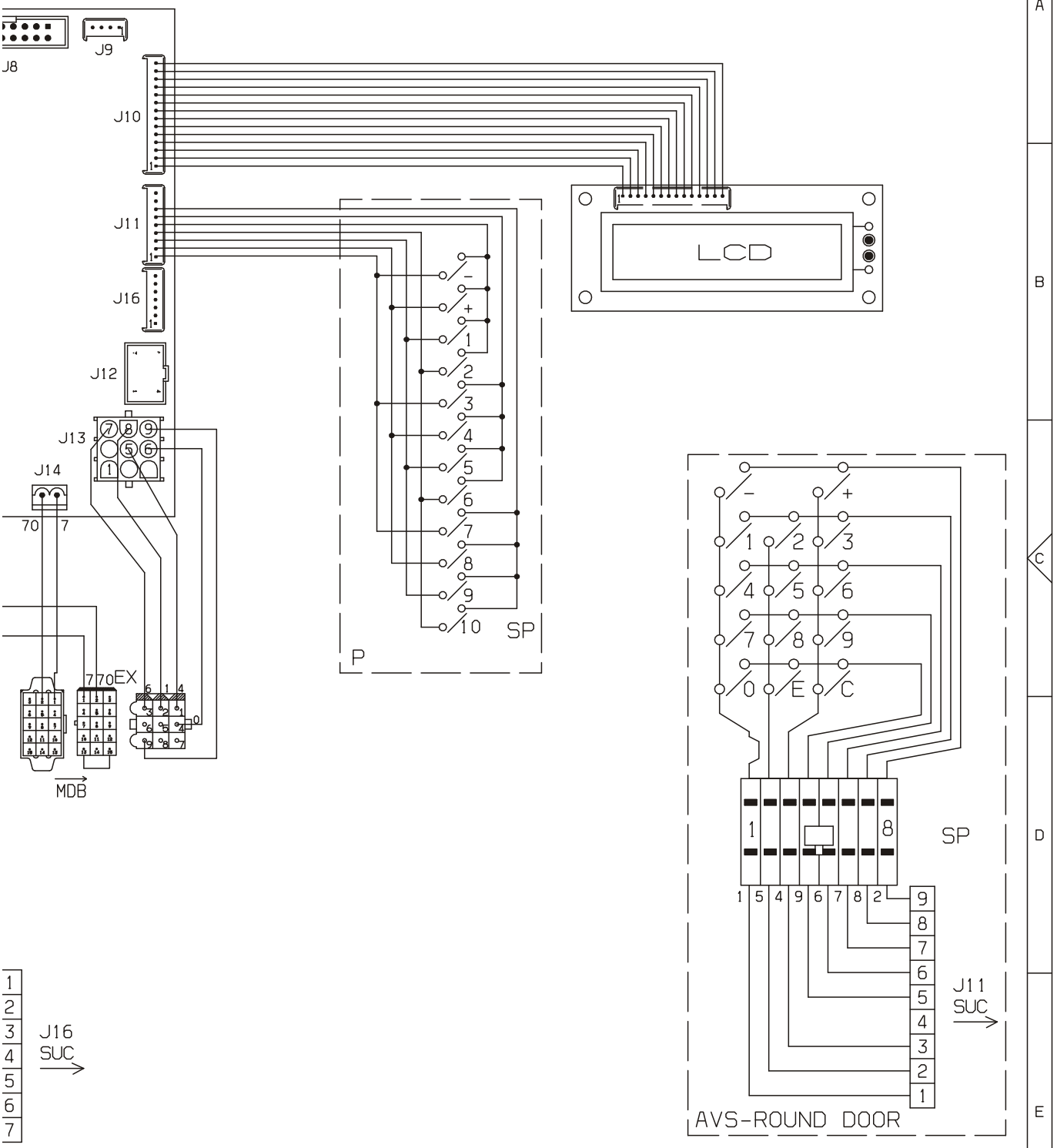


NECTA VENDING SOLUTIONS SpA A company of N&W GLOBAL VENDING GROUP	MODELLO Astro Obl	GRUPPO SCHEMA ELETTRICO FUNZIONALE MACCHINA	DATA 23-07-01	FOGLIO 1/1	DISEGNATO BONACINA	CONTROLLATO MONGUZZI
8 GRIS 9 BLANCO			LEGENDA .	CODICE 608537701		


J4
SM
J6
J7
J8
J5
J4
J17
J3
J2
J1
SUC
FREE
VEND
JUG
PIP
PL
60
30
20
70
RS232
SLED
6 5 4 3 2 1
CCG
24Vdc
ERS
J15
J14
86
87
70
24V
2A
24V
4A
SP
230V
MODEM
RS232
12Vdc 1A
DALLMAYR
J11
SUC
NECTA VENDING SOLUTIONS S.P.A.
SI RISERVA A TERMINI DI LEGGE
LA PROPRIETA' DEL PRESENTE
DISEGNO CON DIVIETO DI
RIPRODURLO O DIVULGARLO SENZA
SUA PREVIA AUTORIZZAZIONE
0 NERO
1 MARRONE
2 ROSSO
3 ARANCIO
4 GIALLO
5 VERDE
6 BLU AZZURRO
7 ROSA VIOLA
8 GRIGIO
9 BIANCO
0 BLACK
1 BROWN
2 RED
3 ORANGE
4 YELLOW
5 GREEN
6 BLUE LIGHT BLUE
7 PINK VIOLET
8 GREY
9 WHITE
0 NOIR
1 MARRON
2 ROUGE
3 ORANGE
4 JAUNE
5 VERT
6 BLEU CIEL
7 ROSE
7 ROSE
8 GRIS
9 BLANC
0 SCHWARZ
1 BRAUN
2 ROT
3 ORANGE
4 GELB
5 GRUEN
6 BLAU HELLBLAU
7 ROSA LILLA
8 GRAU
9 WEISS
0 NEGRO
1 MARRON
2 ROJO
3 NARANJA
4 AMARILLO
5 VERDE
6 OSCURO AZUL CLARO
7 ROSA
7 ROSA
8 GRIS
9 BLANCO
sx39000



NECTA VENDING SOLUTIONS SpA A company of N&W GLOBAL VENDING GROUP	MODELLO Astro P	GRUPPO SCHEMA ELETTRICO FUNZIONALE PORTA	DATA 06-09-02	FOGLIO 1/1	DISEGNATO BONACINA	CONTROLLATO MONGUZZI
8 GRIS 9 BLANCO			LEGENDA .	CODICE 608539000		

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