INSTALLATION, USE AND MAINTENANCE MANUAL

Sfera

UK English

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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.

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

Det erklæres herved, at automaten angivet på typeskiltet er i overensstemmelse med direktiverne **89/392, 89/336** og **73/23 EU** og de senere ændringer og tillæg.

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

Vahvistaa, että arvokyltissä kuvattu laite vastaa **EU**-direktiivien **89/392**, **89/336**, **73/23** sekä niihin myöhemmin tehtyjen muutosten määräyksiä.

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

CSQ eco

CERTIFICATO n.
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CONCERNING THE FOLLOWING ACTIVITIES

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Electronic/electromechanical vending-machines

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English

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INTRODUCTION

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

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

This manual is divided into three chapters.

The **first chapter** describes the loading and routine maintenance operations which are carried out in areas of the machine accessible with simple use of the door key, without using any other tools.
The **second chapter** contains the instructions for correct installation and all information necessary for optimum use of the machine.
The **third chapter** describes maintenance operations which involve the use of tools to access potentially dangerous areas.

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

IDENTIFICATION OF THE VENDING MACHINE AND ITS CHARACTERISTICS

Each machine is identified by its own serial number, indicated on the rating plate attached inside the cabinet on the right side.
This plate (see figure below) is the only one acknowledged by the manufacturer as the identification of the apparatus, and carries all the data which readily and safely give technical information supplied by the manufacturer. It also assists in the spare parts management.

IN THE EVENT OF FAILURES

In most cases, any technical problems are corrected by small repair operations; however, before contacting the manufacturer we recommend that this manual be read carefully.
Should there be serious failures or malfunctions, contact the following:

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

TRANSPORT AND STORAGE

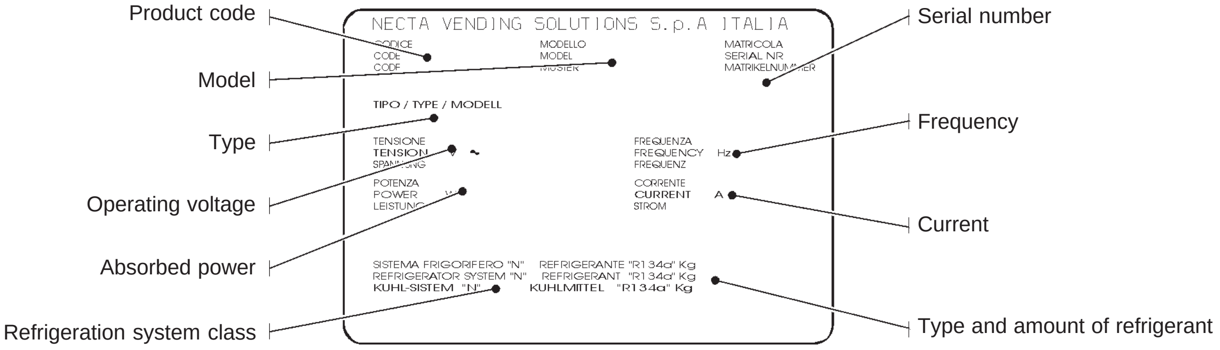
To prevent any damage, special care should be taken when loading or unloading the vending machine.
The machine can be lifted by a motor-driven or manual forklift truck, and the forks are to be placed underneath the machine from the side clearly indicated by the symbol on the cardboard package.

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 the vending machine.

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


Product code
Model
Type
Operating voltage
Absorbed power
Refrigeration system class
Serial number
Frequency
Current
Type and amount of refrigerant
NECTA VENDING SOLUTIONS S.p.A ITALIA
CODICE
CODE
CODF
MODELLO
MODEL
MUSTER
MATRICOLA
SERIAL NR
MATRIKELNUMMER
TIPO / TYPE / MODELL
TENSIONE
TENSION V ~
SPANNUNG
POTENZA
POWER W
LEISTUNG
FREQUENZA
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FREQUENZ
CORRENTE
CURRENT A
STROM
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REFRIGERATOR SYSTEM "N" REFRIGERANT "R134a" Kg
KUHL-SISTEM "N" KUHLMITTEL "R134a" Kg

USING THE VENDING MACHINE FOR PACKAGED PRODUCTS

A different sale price can be set for each product selection by the machine electronic control. The various functions are programmed through the selection keypad without any need for additional equipment.
All models are equipped with variable configuration trays, adding or removing dividers, spirals and ratiomotors; therefore the machine can be easily suited to specific needs.
All trays are preset for the operation of up to 8 selections (maximum setting).
The product holders are equipped with independent motors and spirals; each selection will continue its operation autonomously even if the other selections are disconnected.

This vending machine should only be used to sell and dispense packaged products that do not need refrigeration to be preserved.

Strictly comply with the producer's specifications regarding storage temperature and expiry date for each product.

Any other use is unsuitable and thus potentially dangerous.

POSITIONING THE VENDING MACHINE

The vending machine is not suitable for outdoor installation. It must be positioned in a dry room where the temperature remains between 5°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.
The ventilation system allows the back panel to be leaned against the wall, thus saving space, as air is drawn from under the machine and exhausted through a grille at the front.

Warning!

Incorrect ventilation may compromise the proper functioning of the cooling unit.

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

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.

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;
- keep the machine away from heat sources;
- regularly check the condition of the door seal to limit any heat dispersion;
- limit as much as possible door opening time during loading operations to avoid temperature increase inside the cabinet and subsequent power consumption.

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;
- the gas inside the cooling unit, regardless of the type (see the identification plate), should be recovered by qualified companies by means of special equipment.

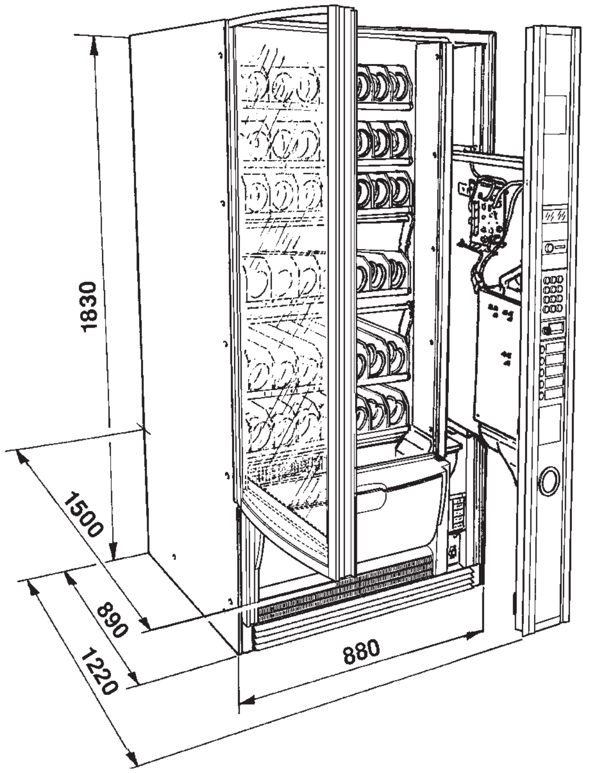
TECHNICAL SPECIFICATIONS

Power supply voltage	230	V~
Power supply frequency	50	Hz
Absorbed power	510	W
Max. operating conditions:		
Ambient temperature	32	°C
Relative humidity	65%	
Refrigeration system:		
Compressor’s refrigeration output	320	W
Fan-forced evaporator		
Programmable defrosting cycle		

DIMENSIONS

Height	1830	mm
Width	880	mm
Depth	890	mm
Overall depth with door open at 90°	1494	mm
Weight (approx.)	290	Kg

Fig. 2



PAYMENT SYSTEM

The machine can be supplied with the electrical setup for the installation of systems with the following protocols:
Executive, MDB, BDV and MDB
24 V DC validators.

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

SALES PRICES

A different programmable price can be set for each single selection.

COIN BOX

Cover and lock are available as an optional feature.

CONTROLS AND SAFETY DEVICES

- Payment system compartment switch
- Timeout for power supply to dispensing motors
- Compressor overheating protection
- Line fuses
- Fuses on transformer primary and secondary windings

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.

POWER CONSUMPTION

The machine power consumption depends on many factors, such as temperature and ventilation of the room where it is installed, temperature of loaded products, internal temperature of the refrigerated box.
Under average conditions, and namely:

- Ambient temperature: 20° C
- Refrigerated box temperature: 5° C
- temperature of loaded products (machine completely empty) 20° C

the following power consumption levels resulted:

- power consumption in 24 hour of stand-by 6,485 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 one silver colour key to be used for normal opening and closing.
The lock can be customised by means of a kit, available as accessory, permitting changing of the lock combination.
This kit includes a change key (black) for the current lock combination as well as the change (gold) and use (silver) keys for the new combination.
Sets of change and use keys with other combinations can be supplied on request.
Additional sets of use keys (silver) may be requested, indicating the combination stamped on the keys.
Generally, only the use key (silver) is used, while the combination change keys (gold) can be kept as spares.

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

To change combination do as follows:

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

The lock will now have the new combination.

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

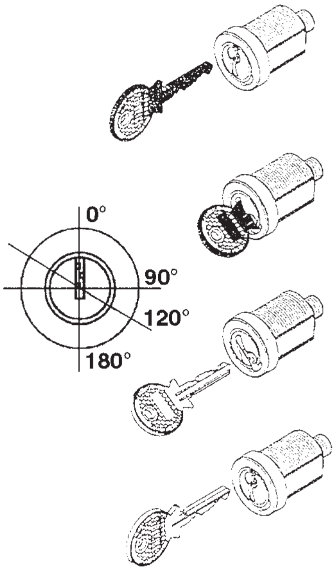


Fig. 3

Chapter 1

LOADING AND CLEANING

The vending machine is not suitable for outdoor installation. It must be positioned in a dry room where the temperature remains between 5°C and 32°C, and not where water jets are used for cleaning.

MAIN SWITCH

When extracting the sliding compartment,a special switch (see Fig. 4) disconnects the power from the machine electrical system to allow maintenance and cleaning operations in full safety.

The only parts that stay energised are those protected by covers and carrying a plate with the warning "disconnect the power before removing the cover".

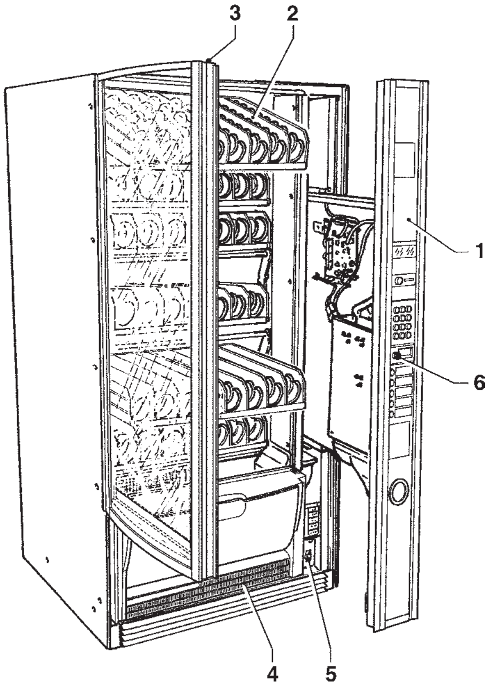


Fig. 4

1 - Sliding compartment
2 - Removable trays
3 - Door opening handle
4 - Ventilation grille
5 - Door switch
6 - Lock

CONFIGURING THE SPIRALS

According to the size of the products to be dispensed, each machine can be fitted with a variable number of trays (maximum 7), product compartments and with dispensing spirals of different pitch.

The spirals can be housed either in 152 mm compartments (two spirals, right-hand and left-hand, in each product holder) for large size products, or into 75 mm compartments (one right-hand spiral in each product holder) for small size products.

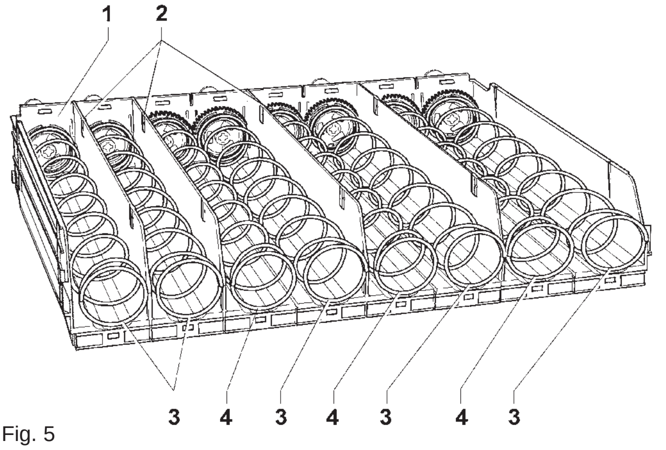


Fig. 5

1 - Tray
2 - Mobile walls
3 - Right-hand spiral
4 - Left-hand spiral

When dispensing sticks of candies or similar products, it is possible to set the rotation of the spirals to 180° instead of 360° for the 75 mm compartments and use a special right hand spiral fitted with a divider (see Fig. 6), doubling the capacity of the compartments.

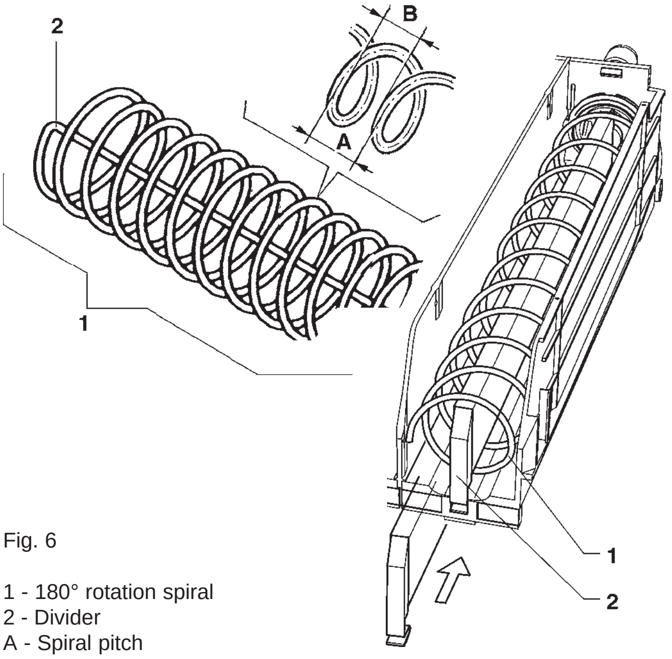


Fig. 6

1 - 180° rotation spiral
2 - Divider
A - Spiral pitch
B - Maximum product size

It is also possible to insert a divider in the already installed spirals (see Fig. 6).

As standard feature or using special kits, the machine can be equipped with small compartments, suitable for dispensing cans, plastic bottles up to 69 mm dia., 0.2 litre Tetra-Paks.

The compartments equipped in this way can be recognised by the shape of the product support bracket (see Fig. 7).

Some bottle types can be dispensed without using the supports.

Most bottles can be dispensed without using any special accessories, loading the bottles up side down, so that the cap slides in the compartment channel.

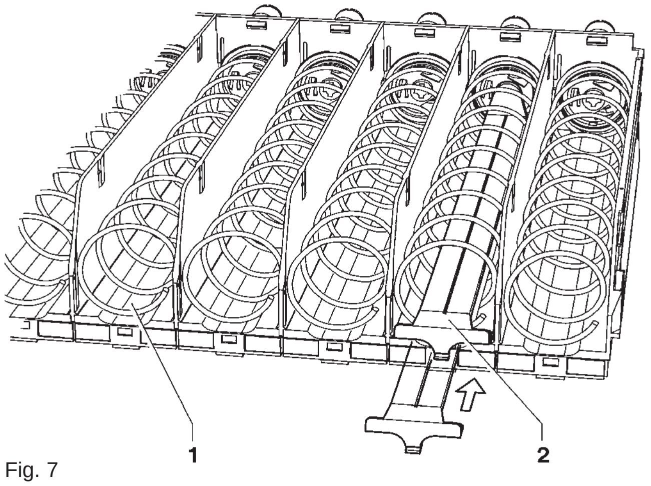


Fig. 7

1 - Tray groove
2 - Product support

The spirals can be positioned with 22,5 degree steps by pulling them towards the front and rotating them in the direction of ejection.

Normally, the products can be dispensed without any problems when the spiral end is in the lower centre position.

The maximum size (see Fig. 5) and the number of products, the pitch and the direction of rotation of the spirals are shown in the following table.

	A mm.	B mm.	N°
↺↻	80	76	6
	64	60	7
	54	50	8
	46	42	10
	40	36	11
	34	30	13
	30	26	15
	24	20	19
↻	24 (180°)	20	19+19

The machine is supplied with a table indicating the optimum setting for the different product types.

The configuration can be changed following the indications of the relevant chapter.

HYGIENE AND CLEANING

According to current health and safety regulations, the operator of vending machines is responsible for their hygiene and cleaning.

It is advisable to use sanitising products (chlorine based detergent or similar) to clean all surfaces even if not in direct contact with food.

Some parts of the machine can be damaged by strong detergents; especially the clear polycarbonate panel for which special care must be taken not to use tools that may scratch it.

The manufacturer declines all responsibility for damage caused by non-compliance with the above mentioned precautions and with current regulations.

At least every six months it is necessary to clean the ventilation grilles of the cooling system using a vacuum cleaner or compressed air, doing as follows:

- with the vending machine disconnected from the power supply, remove the front grille, completely undoing the two screws;
- remove the air intake grille.
- after cleaning the grilles, reassemble everything in the reverse order

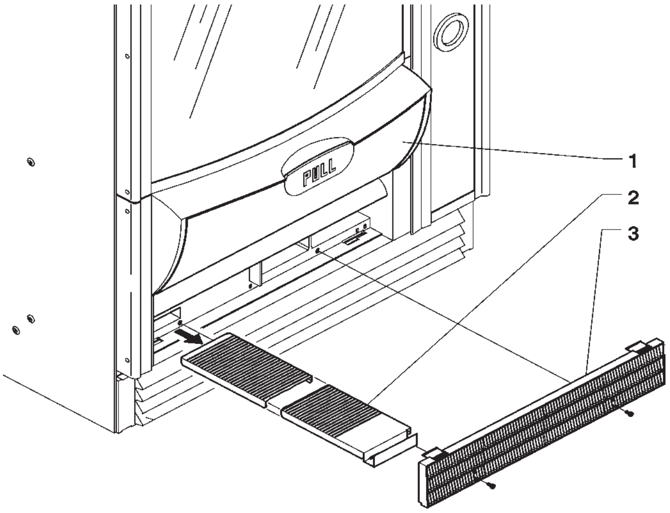


Fig. 8

1 - Dispensing compartment
2 - Air-intake grille
3 - Front grille

Under no circumstances should sprayed water be used.

Before any maintenance operation always switch the machine off.

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.

LOADING PRODUCTS

- Remove one tray at a time, lifting it and pulling it past the retaining slide. The upper trays will tilt downwards to facilitate loading.
- Load all products starting at the front, without inserting products with a temperature above 30°C, ensuring that all spaces are filled. The bottom of the product must rest at the bottom of the compartment with the label facing the window so that it can be identified.

All products should load easily, do not insert products which are too large for the space.

- Push in the trays completely, ensuring that they go past the retaining slide.

The sealed end of bags may be caught under the spiral, preventing the free fall of the product.
Fold the seal towards the front of the unit and upwards before inserting the product in the spiral.

More fragile products must be placed on the lower trays to prevent damage when they drop.

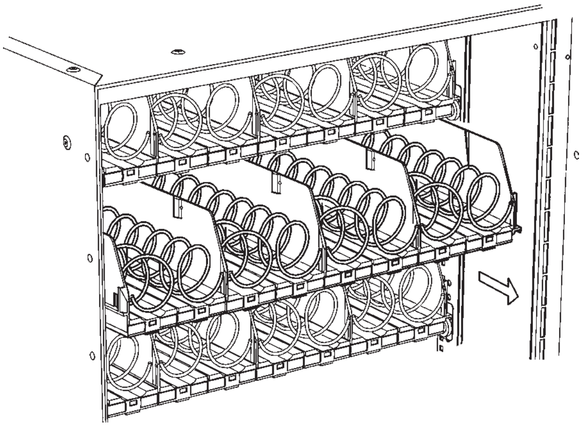


Fig. 9

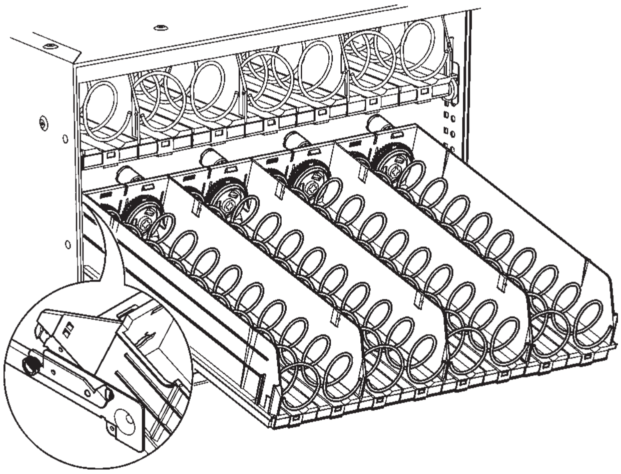
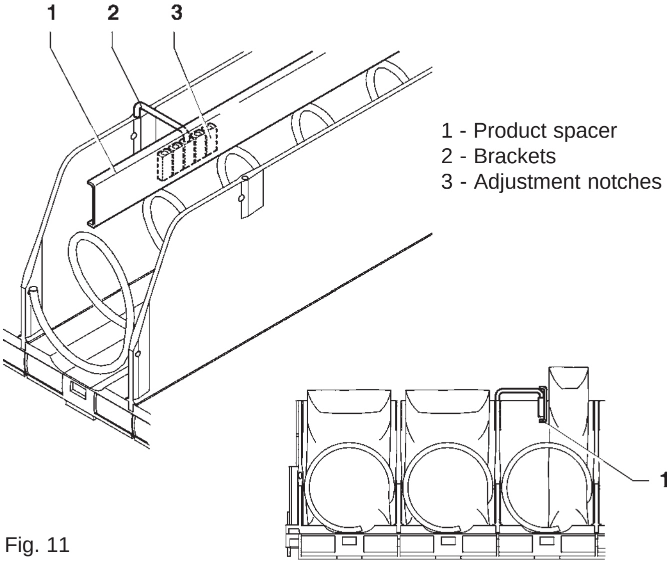


Fig. 10

Very thin products can be dispensed only using the special spacer.



1 - Product spacer
2 - Brackets
3 - Adjustment notches

Fig. 11

START-UP

Each time the machine is started the number of trays connected to the system are checked by the electronic controls and indicated on the display.
This permits to check that all trays were correctly connected after loading.
Also the number of actually connected compartments is checked.

The cooling unit is sized to ensure that a temperature of 7°C is reached in the lower section of the cabinet within 45 minutes from from the end refilling, if the machine was already running. If the machine had been switched off for a long period it will be necessary to wait that the operating temperature is reached before inserting refrigerated products.

NOISE LEVEL

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

Chapter 2
INSTALLATION

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

The machine is not suitable for outdoor installation, it must be installed in a dry room where the temperature remains between 5°C and 32°C.

It cannot be positioned where water jets are used for cleaning (e.g. in large kitchens, etc.).

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

The relative humidity must not exceed 65%.

UNPACKING THE VENDING MACHINE

After removing the packing, ensure that the machine is intact.
If the vending machine is found to be damaged, immediately inform the carrier and 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.

If the vending machine had been laid down during transport, allow at least one hour before connecting it to the mains.

INSTALLING THE PAYMENT SYSTEM

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

Install the coin mechanism paying attention, according to the type used, to:

- choose the most suitable securing holes;
- loosen the fastening screw and adjust the coin slot chute according to the coin mechanism opening;
- loosen the fastening screws and adjust the selector opening lever;
- to aid installation the coin mechanism support plate can be lifted and rotated.

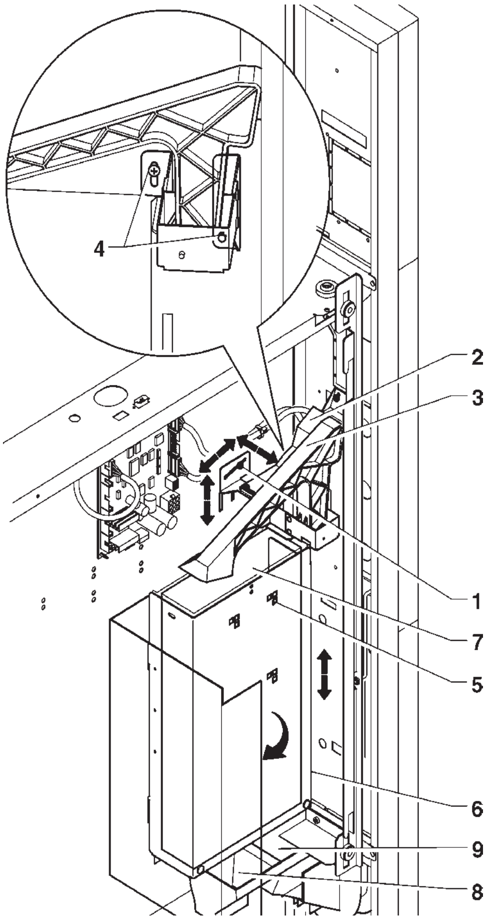


Fig. 12

1 - Coin chute fastening screw
2 - Coin chute
3 - Selector opening cam
4 - Selector lever fastening screw
5 - Coin mechanism securing holes
6 - Coin mechanism compartment door
7 - Coin mechanism
8 - Coin slot chute
9 - Coin return chute

CONNECTING THE MACHINE TO THE POWER SUPPLY

The machine is designed to operate under a single-phase 230 V~ voltage and is protected by T6.3 A fuses.
Before making the connection, ensure that the rating corresponds to that of the power grid, and more specifically:

- the supply voltage rating must be within the range recommended for the connection points;
- the main switch should be capable of withstanding the peak load required, and at the same time ensure proper omnipolar disconnection from the power grid with an opening gap of the contacts of at least 3 mm.

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

The electrical safety of the machine is ensured only when it is correctly earthed according to the safety standards in force.

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

The power supply cable is of the type with a fixed plug. Any replacement of the power cable (see figure) should be made by qualified and suitably trained personnel only using cables type HO5 RN - F or HO5 V V-F or H07 RN-F with a 3x1-1.5 mm^2 section.

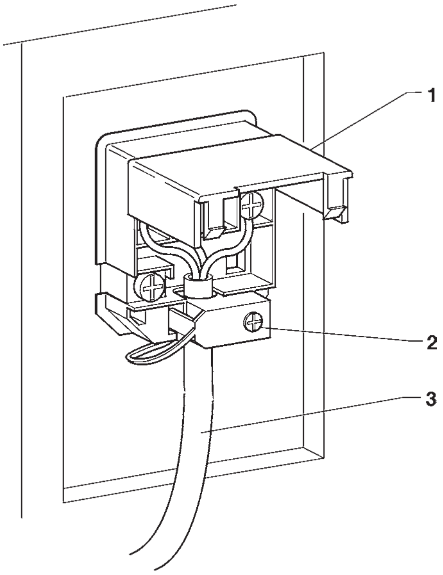


Fig. 13

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

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.

CONTROLS AND INFORMATION

The user controls and information are located on the outside of the sliding compartment (see Fig. 13).
The credit and all function messages are indicated on the display.
The keypad contains a series of numbered keys. To select a product, key in the double digit number corresponding to the desired product.
Key Ⓒ is used to cancel a selection already made.
Keys Ⓔ and ⓪ are not available to the user; they are used only for programming.

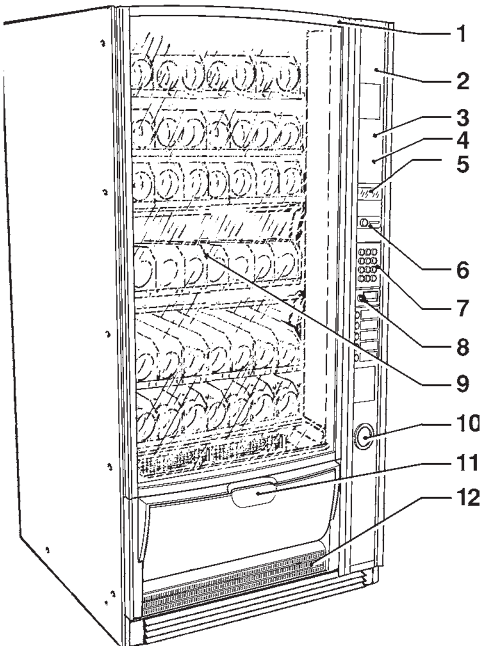


Fig. 14

1 - Door opening hand grip
2 - Advertising spaces
3 - Prearrangement for bill accepter
4 - Prearrangement for key type payment systems
5 - Display
6 - Coin slot/return.
7 - Selection keypad
8 - Lock
9 - Glass front
10 - Coin return flap
11 - Product flap
12 - Ventilation grille

INTERNAL COMPONENTS

The evaporator assembly mounted on the cabinet shelf comprises two fans, the evaporator, the air duct and a water retaining tray placed under the evaporator.
The CPU board (central processing unit) fitted inside the payment system compartment controls the different functions of the vending machine.

The cooling unit is located in the lower part of the cabinet. When sliding sideway all the shutters on the cold air distribution duct, lining up the duct holes with the ones on the shutters (shutters in the open position), a uniform temperature is obtained in the cabinet (setting between 5°C and 20°C).
With the ventilation grille partially covered by the shutters in the closed position, the temperature in the cabinet is diversified between the upper trays, with the corresponding holes on the duct closed by the shutters (12-18°C), and the lower trays, with the holes on the duct open (5 -8°C). According to the number of shutters in the open or closed position, it changes the level of temperature stratification in the cabinet.
The cooling unit is defrosted automatically every 6 hours. In any case, the timing is programmable.
The power supply unit, mounted in the lower section of the cabinet, contains the relay card which activates the compressor, the protection fuses and the switch on the payment system door.

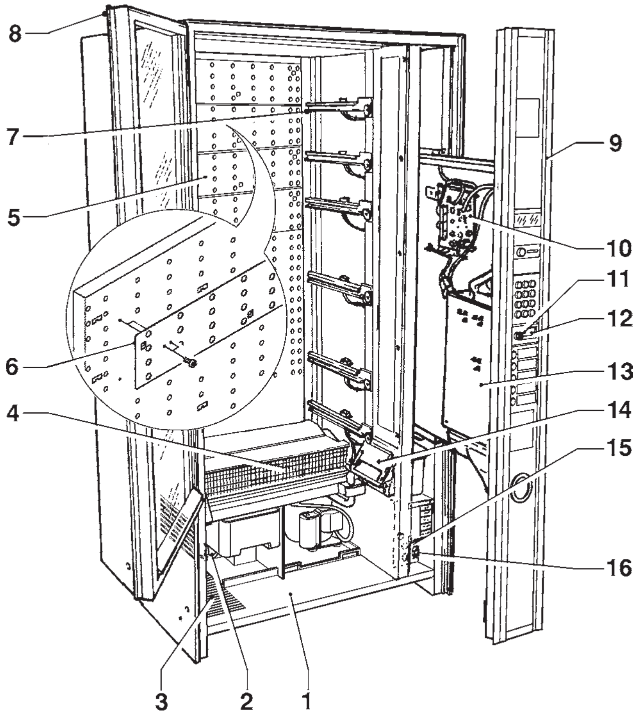


Fig. 15

1 - Product dispensing compartment housing
2 - Cooling unit condenser
3 - Removable ventilation grille
4 - Cooling unit evaporator
5 - Cold air flow grilles
6 - Removable cold air flow shutters
7 - Tray guides
8 - Glass-front opening handle
9 - Removable payment system compartment
10 - CPU board
11 - Payment system compartment lock
12 - Compartment opening handle
13 - Coin mechanism support
14 - Product passage photocells
15 - Power supply unit
16 - Door switch

MAIN SWITCH

The power supply unit (see Fig. 23) is fitted with a microswitch that, when opening the sliding compartment, disconnects the power from the machine electrical system,

except from the terminal board supporting the line cable, the line fuses and from the same switch area.

Before removing the cover from these parts (indicated with a specific plate) it is necessary to disconnect the external switch.

The power supply can be reconnected, if necessary, by inserting the special key supplied with the machine.

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

DISPENSING COMPARTMENT MANUAL RELEASE

Some models are fitted with a lock device in the dispensing compartment that is released through electric control when a selection is made (see compartment lock parameters).
Should for any reason be necessary to open the compartment without electric power, do as follows:

- remove the last tray;
- remove the anti-theft grille;
- manually operate the lock device (see Fig. 27).

OPERATING MODES

The machine control software has three different function levels, which are:

- normal operation;
- filler menu;
- technician menu.

According to the operating mode, the display and keypad functions change as described in the following paragraphs.

USER INTERFACE

The interaction between system and operator happens through the following components:

- Liquid crystal display (LCD) 4 lines of 20 characters.
- External keypad configured via software with numeric keys from 0 to 9, having with the following functions in the in the filler and technician menus:

Numeric keys

1 to 7 are used to select directly a menu item by keying in the corresponding number shown in the summary tables included in the appendix to this manual.

Next menu key ⓪:

"↓" is used to move to the next menu option.
In the case of command management it varies the status of Logical Data where required, or in the case of Numeric Data it writes the value 0.

Previous menu key ⑧:

"↑" is used to move to the previous menu option.
In the case of command management it varies the status of Logical Data where required, or in the case of Numeric Data it writes the value 8.

Enter key Ⓔ:

"➥" is used to move from a menu to a sub-menu or to enter a command.
In the case of Logical Data it enters the status that appears on the display.

Exit key Ⓒ:

"←" is used to move from a sub-menu to the higher level menu, or to exit from the current command.

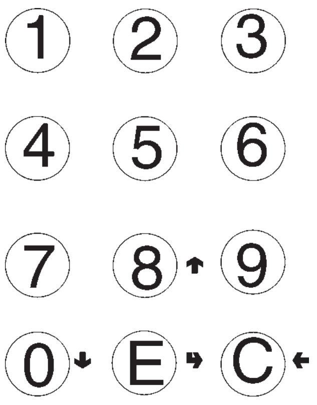


Fig.16

DIRECT SELECTIONS

The vending machine can be fitted (as standard feature or as optional according to the model) with a 5-button keypad to which allocate a group of selection.
After enabling the direct selection function, it will be possible to allocate a group of selections to each key by specifying the start and end numbers of the series.
The selections, as long as in a sequence, can be also from different trays. The products are dispensed alternating from each of the spirals that are grouped in a direct selection.
All selections belonging to the same group must have the same price.
For correct safety management of the selections it is advisable that also a dispensing detection device be installed in the machine.

NORMAL OPERATING MODE

The machine is preset to "Normal operation" mode when connected to the power supply and the payment system door is closed (see door switch - Fig. 14).
The lighting is switched on and the messages for the customer are indicated on the display.

FILLER MENU

The machine is preset to "Filler menu" when pressing the menu access button (located on the CPU board- see Fig. 16).
The keys "↑" and "↓" scroll through the filler menu which permits:

"Statistics"	Data reading and display
"Single Prices"	Changing the price for one selection
"Tubes control"	Manual refill and release of change tubes
"Special selections"	Virtual selections Return of virtual price Two-motor selections Photocell parameters
"Test"	Test selection Motor test Autotest
"GSM"	Resetting pre-alarm counters
"EVADTS"	Connection

If a menu is not enabled during programming, a title is displayed in the list but it cannot be accessed.

Price button ⑨

Key ⑨ is used to access directly the price/selection combination of time band 0, if the function is enabled in the "Programming" menu.

STATISTICS

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

PRINT

Connect an RS232 serial printer having a Baud rate of 9600, 8 data bit, no parity, 1 stop bit to the serial port located on the push button board to print all of the statistics, and namely:

Total

1 - counter by single selection;
2 - counter by time bands;
3 - failure counter;
4 - coin mechanism data;
5 - photocell errors;
6 - motor errors;
7 - dispensing compartment lock errors

Relative

1 - counter by single selection;
2 - counter by time bands;
3 - failure counter;
4 - coin mechanism data;
5 - photocell errors;
6 - motor errors;
7 - dispensing compartment lock errors

The hardcopy printout will also contain the machine information, and namely:

- date/time of print
- machine name
- software version
- operator code
- machine code
- Installation date.

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.

RESETTING THE RELATIVE STATISTICS

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

- selections
- failures
- coin mechanism data
- photocell errors
- motor errors
- dispensing compartment lock errors

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.

PRICES FOR SINGLE SELECTIONS

This function is used to change the sales price for each selection according to the time band.

Key ⑨ is used to access directly the price/selection settings, if the function is enabled in the "Technician" menu.

CHANGE TUBES CONTROL

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

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

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

SPECIAL SELECTIONS

VIRTUAL SELECTIONS

This function is used to define a pair of selections that can be sold at a price different from the sum of the two selections, using a single selection number. 10 virtual selections can be programmed (70 to 79).

RETURN OF VIRTUAL PRICE

This function is used to define, in the event of failed second dispensing in a virtual selection, not to cash the price of the second selection (only if an MDB payment system or validator are used). With other payment systems, it can be decided whether or not return the entire amount.

SELECTIONS WITH TWO MOTORS

In order to dispense long products, dividers can be fitted so that two motors are used for each single selection.

With this function the operation of two motors can be combined, specifying the selection number of the second motor.

The first motor number will be the selection number, while the selection number of the associated motor will remain disabled.

Important notice!

After a failure to the motors of these selections, the machine configuration procedure in the "Spiral/Selection" menu must be followed.

DISPENSING DETECTION

The vending machine can be fitted (as standard feature or as optional according to the model) with a device that, by means of photocells, detects the passage of dispensed products.
This device permits, in the event of failed detection of the dispensed product:

- set a rotation time for the spiral beyond the limit switch, to overcome any jamming;
- return or not the paid amount;
- block further selections for the involved spiral.

TEST

SELECTIONS

This function is used to simulate the normal dispensing of products without inserting any money to check the functioning of the spiral rotation by pressing the selection buttons.

MOTOR TEST

It activates all motors in a sequence, indicating on the display the number of the involved selection.

AUTOTEST

A function to check, in a semiautomatic manner, the correct operation of some devices is implemented in the software.
Some checks occur automatically, others need the manual operation of the monitored component; button "↳" is pressed to go to the next check.

The monitored devices are:

"Keypad"

Press the button requested on the display; if it works correctly the request for the next button is presented.

"Temperature"

The value of temperature detected by the probe is displayed.
In the event of disconnection the value -11.0 is displayed.
In the event of a short-circuit the value 41.0 is displayed.
"↵" to advance.

"Buzzer"

A series of sounds is emitted.

"Compressor"

The compressor is activated/deactivated using the "↳" and "↵" buttons.

"Selections"

All selections are activated in a sequence.

"Coin mechanisms"

Checking that communication with the coin mechanism takes place correctly and which validator lines are set as being active.

"Photocells"

If the product detection device is present, the light beam reading and interruption are checked.

"Disp compt lock"

If the device for locking the dispensing compartment opening, use the "↳" and "↵" buttons to lock and unlock the compartment opening.

"Direct keypad"

If fitted on the machine, the 5 buttons are checked sequentially.
Press the button requested on the display; if it works correctly the request for the next button is presented.

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 left. 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

Using the programming procedures described in this section, it is possible to set all variables regarding machine configuration.
The machine is preset to “Technician menu” when pressing button © from the filler menu.

N.B. By pressing again the button from the technician menu, the machine will return to “Filler” mode.

The keys “↑” and “↓” scroll through the technician menu items, which include:

Failures		Read Failures
		Reset failures
		Motor errors
		Motors status
		Reset motor errors
Prog.parameters	Cash	Prices
		Coin mechanisms
		Decimal point
		Bonus
	Spirals/select.	Spiral parameters
		Photocells
		Disp comp lock
		Cold parameters
	Display	Language
		User messages
		Promotional message
		Personalised strings
		Display counters
		Contrast control
	Miscellaneous	Password
		Energy saving
		Menu masking
		Fluorescent lamps switched off
Statistics	Display	Partial
		Total
	Delete	Partial
		Total
	Display relat.	Partial
		Total
	Delete relative	Partial
		Total
	Disp. counters at start-up	
	Print relative	Partial
		Total
	Delete	Partial
		Total
Test	Test selections	
	Motor test	
	Autotest	
Miscellaneous	Machine info	Installation date
		Machine code
		Operator code
	Initialising	
	EVADTS	Pass code
		Security code
		Connection
GSM	Pin code	
	Pre-alarms	Thresholds
		Counters
		Threshold association
	Bank Number	

PRESENT FAILURES

READING

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 monitored failures are:

Compressor

The machine is locked if the compressor runs non-stop for more than 24 hours.

Coin mechanism

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

RAM Data

One or more areas of the RAM contain wrong data which was corrected with the default values.
The machine will continue to function, but it would be advisable to initialise as soon as possible.

Probe

The machine is locked after 5 minutes if the internal temperature sensor is disconnected; the display will indicate a temperature of -11° C.
The machine is locked after one hour if a sensor short circuit is detected; in this case the display will indicate a temperature of +41° C.

Motor errors

With this function the failed motors are displayed for approximately 1 second.
Scrolling through all failed motors is automatic.

Note:

By restarting the machine any blocked motors are detected as not present.

Dispensing compartment lock

When the function “unlock compartment with dispensing” and the parameter “out of service if open” are active, the machine will lock if the locking device of the dispensing compartment remains blocked when closed or it does not close within the programmed time.

Motors status

This function is used to read the last failure that occurred in each spiral, even if the machine configuration has an empty position.
A motor can be in one of the following conditions:

- motor functioning;
- motor not present; when the motor is not detected at machine start-up.
- motor disconnected; when a motor detected at machine start-up is not detected during a selection.
- motor blocked; when the positioning button is not operated within the “timeout”.
- empty spiral; when, with the dispensing control installed, no dispensed product is detected.

Note:

By restarting the machine any blocked motors are detected as not present.

Temperature exceeded

This function is not active in this model.
If the internal temperature exceeds the pre-set temperature by 4°C for longer than:
45 minutes after loading
15 minutes during normal operation
once every eight hours
the trays dispensing “Food” are placed out of service.

RESET

By confirming this function all current failures will be reset.

PROGRAMMING PARAMETERS

CASH

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

SELECTION PRICES

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

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

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.

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.

Accepted bills with “exact amount”

It is possible to define which, among the bills recognised by the accepter, are to be accepted when the machine is in the “exact amount” condition.
Check the accepter’s configuration for the correct bill to value matching.

COMMON FUNCTIONS

Other menus are available, common to the three protocols, used for defining the following functions:

IMMEDIATE CHANGE

Normally, the amount of credit inserted for a selection is cashed after the machine sends the message “Selection successful”.
When this function is enabled, disabled by default, the cash message is sent at the beginning of dispensing.

DECIMAL POINT

Press the confirm button “↵” to display the position of the decimal point, i.e.:

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

Press the confirm button “↵”, these values will start blinking and can then be modified as necessary.

FREE VEND BONUS

This function, compatibly with the national laws, permits the dispensing of a free product every certain programmable number of sold selections. In any case the free selection is random within the programmed number. The machine emits an intermittent sound signal and the display indicates the message “Free selection”.

SPIRALS/SELECTIONS

This set of functions is used to define the selection control parameters.

MACHINE CONFIGURATION

This function is used to detect and store the number and position of the trays and of the selection motors.

VIRTUAL SELECTIONS

This function is used to define a pair of selections that can be sold at a price different from the sum of the two selections, using a single selection number. 10 virtual selections can be programmed (70 to 79).

RETURN OF VIRTUAL PRICE

This function is used to define, in the event of failed second dispensing in a virtual selection, not to cash the price of the second selection (only if an MDB payment system or validator are used). With other payment systems, it can be decided whether or not return the entire amount.

SELECTIONS WITH TWO MOTORS

In order to dispense long products, dividers can be fitted so that two motors are used for each single selection.
With this function the operation of two motors can be combined, specifying the selection number of the second motor.
The first motor number will be the selection number, while the selection number of the associated motor will remain disabled.

Important notice!

After a failure to the motors of these selections, the machine configuration procedure in the “Spiral/Selection” menu must be followed.

ROTATION SELECTIONS

With this function it is possible to create 6 groups of spirals with the same selection number that are activated by rotation, to increase the autonomy of the same product and make dispensing uniform.
The grouped spirals of a single selection must be next to each other.
All selections belonging to the same group must have the same price.
For correct safety management of the selections it is advisable that also a dispensing detection device be installed in the machine.

PRODUCT CODE

This function is used to assign a 4-digit identification code to each spiral for processing the statistics.

DIRECT SELECTIONS

The vending machine can be fitted (as standard feature or as optional according to the model) with a 5-button keypad to which allocate a group of selection.
After enabling the direct selection function,
it will be possible to allocate a group of selections to each key by specifying the start and end numbers of the series.
The selections, as long as in a sequence, can be also from different trays. The products are dispensed alternating from each of the spirals that are grouped in a direct selection.
All selections belonging to the same group must have the same price.
For correct safety management of the selections it is advisable that also a dispensing detection device be installed in the machine.

PHOTOCELL PARAMETERS

The vending machine can be fitted (as standard feature or as optional according to the model) with a device that, by means of photocells, detects the passage of dispensed products.
When this device is installed, the following can be monitored:

- Error before dispensing; when at the selection start the photocell beam is not read.
- Error after dispensing; when the motor fails during dispensing.
- Error for no product; when the device does not detect the passage of a product during dispensing.

In these cases the machine can be programmed to:

- set a rotation time for each spiral for settling beyond the normal rotation;
- return or not the paid amount;
- block further selections for the involved spiral.

DISPENSING COMPARTMENT LOCK PARAMETERS

The dispensing compartment can be fitted (as standard feature or as optional according to the model) with a lock device.
This function is used for deciding whether leaving the dispensing compartment “always free” or “unlock it with dispensing”.
In “unlock with dispensing” mode the dispensing compartment hatch is unlocked only for a certain period of time, programmable at between 1 and 10 minutes, after each product selection. In this case it is possible to enable the function that places the vending machine out of service for a certain period of time, programmable at between 1 and 10 minutes, if the dispensing compartment hatch stays open.
The machine is placed out of service if the lock device is always closed during dispensing.

REFRIGERATION PARAMETERS

The operation of the refrigeration system can be programmed for the following functions.

TEMPERATURE

The machine internal temperature during normal operation can be set directly in °C (3.5° to 20°C, 8°C by default). The temperature differential deviation defined with the previous function for starting/stopping the cooling unit is 2°C.

DEFROSTING

This function allows for a defrosting cycle (switching the cooling unit off, regardless of the temperature) of 20 minutes. The time interval between cycles can be programmed from 0 to 99 hours (set to 6 hours by default); the time interval will be determined according to the relative humidity and the frequency of door openings.
With the timing set to 0 the function is disabled.

ENABLE COLD UNIT

The cooling unit operation can be disabled. The change will apply when restarting the machine.

FOOD CONTROL

This function is not active in this model.

TEMPERATURE LOG

The internal temperature is stored every 10 minutes.
With this function, it is possible to read the date, time and stored temperature.

DISPLAY

This set of functions is used to manage the messages indicated on the external display.

LANGUAGE

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

DISPLAYING MESSAGES FOR THE USER

It is possible to choose the kind of information to be indicated on the display during normal operation.
The following information can be displayed:

- Internal temperature
- Time

It is possible to choose the language for the displayed messages.

PROMOTIONAL MESSAGE

Enable

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

Setting

The 2-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 "↲".

PERSONALISING THE MESSAGES

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

DISPLAY THE SELECTION COUNTERS

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

LCD CONTRAST CONTROL

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

MISCELLANEOUS

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

PASSWORD

ENABLING THE PASSWORD

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

ENTERING THE PASSWORD

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

ENERGY SAVING

This function, disabled by default, is used to suspend vending in certain hours.
2 switch-off time bands can be programmed.

DISPLAYING THE FILLER MENU

This function is used to determine the filler menu options to be left active or to be disabled (ON/OFF):

- Statistics
- Single selection prices
- Change tubes control
- Special selections
- Test
- EVADTS

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

EXTERNAL LIGHTING

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

STATISTICS

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

PRINT

Connect an RS232 serial printer having a Baud rate of 9600, 8 data bit, no parity, 1 stop bit to the serial port located on the push button board to print all of the statistics, and namely:

Total

1 - counter by single selection;
2 - counter by time bands;
3 - failure counter;
4 - coin mechanism data;
5 - photocell errors;
6 - motor errors;

Relative

1 - counter by single selection;
2 - counter by time bands;
3 - failure counter;
4 - coin mechanism data;
5 - photocell errors;
6 - motor errors;

The hardcopy printout will also contain the machine information, and namely:

- date/time of print
- machine name
- software version
- operator code
- machine code
- Installation date.

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.

RESETTING THE STATISTICS

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

Total

- selections
- failures
- coin mechanism data
- photocell errors;
- motor errors;

Relative

- selections
- failures
- coin mechanism data
- photocell errors;
- motor errors;

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.
N.B.: when resetting the total statistics also the relative statistics are reset.

BDV protocol Audit

The information regarding the coin mechanism indicates the actual currency of:

Aud. 1 Money in the tubes
Money present in the change tube that moment

Aud. 2 Money to the tubes
Money sent to the change tubes

Aud. 3 Money to the box
Money sent to the coin box

Aud. 4 Return of change
Total money returned

Aud. 5 Dispensed money
Total money dispensed manually

Aud. 6 Excess
Excess money. Extra amounts paid by the customer that were not returned (in the event there was no money available for return)

Aud. 7 Total sales
Total value of sales

Aud. 8 Exact change
Value of sales in the "no change" condition.

Aud. 9 Mixed dispensing
Total value of dispensing paid differently; for example also other types of payment (C.P.C., token).

Aud. 10 Manual filling
Money inserted in the coin mechanism through the manual filling function.

MDB protocol Audit

Aud. 1 Money in the tubes
Money present in the change tubes that moment

Aud. 2 Money to the tubes
Money sent to the change tubes

Aud. 3 Money to the box
Money sent to the coin box

Aud. 4 Change return
Total money returned

Aud. 5 Excess
Excess money. Extra amounts paid by the customer that were not returned (in the event there was no money available for return)

Aud. 6 Release tubes
Value of coins dispensed with the "Tubes control" function

Aud. 7 Filling tubes
Value of money cashed with the manual filling function

Aud. 8 Cash sales
Value of total sales with cash money (coins + bills)

Aud. 9 Cashed bills
Value of cashed bills

Aud. 10 Charge key
Value of money changed into the key

Aud. 11 Sales with key
Value of money cashed for dispensing with key

Aud. 12 Money dispensed manually
Value of coins dispensed manually with the dispensing buttons on the coin mechanism.

TEST

SELECTIONS

This function is used to simulate the normal dispensing of products without inserting any money.
Check the functioning of the motor rotation by pressing the selection buttons.

MOTOR TEST

It activates all motors in a sequence.

AUTOTEST

A function to check, in a semiautomatic manner, the correct operation of some devices is implemented in the software.
Some checks occur automatically, others need the manual operation of the monitored component; button "↳" is pressed to go to the next check.
The monitored devices are:

"Keypad"

Press the button requested on the display; if it works correctly the request for the next button is presented.

"Temperature"

The value of temperature detected by the probe is displayed.
In the event of disconnection the value -11.0 is displayed.
In the event of a short-circuit the value 41.0 is displayed. Press "⬅" to advance.

"Buzzer"

A series of sounds is emitted.

"Compressor"

The compressor is activated/deactivated using the "↳" and "⬅" buttons.

"Selections"

All selections are activated in a sequence.

"Coin mechanisms"

Checking that communication with the coin mechanism takes place correctly and which validator lines are set as being active.

"Photocells"

If the product detection device is present, the light beam reading and interruption are checked.

"Disp compt lock"

If the device for locking the dispensing compartment opening, use the "↳" and "⬅" buttons to lock and unlock the compartment opening.

"Direct keypad"

If fitted on the machine, the 5 buttons are checked sequentially.
Press the button requested on the display; if it works correctly the request for the next button is presented.

MACHINE INFORMATION

The machine can memorize a series of codes which will identify it when retrieving statistics.
More specifically the following can be stored:

- 6-digit operator code;
- 8-digit vending machine code which identifies the machine.

INSTALLATION DATE

This function is used to store the current date of system, if set correctly, as installation date.
The date is printed when retrieving the statistics.

MACHINE CODE

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

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, selecting the "country" (intended as configuration type) and the language, restoring all related default data.
This function should be used in the event of a memory data error or when the software version is replaced/updated.
All statistic information will be reset.
Press confirm button "↳"; the country and the language to be used are requested, then the message "Confirm?" is displayed. Press confirm button "↳" a second time and the message "Working" is displayed for a few seconds.

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 programmable number of selections.

The machine is pre-set to handle 7 pre-alarms.

The first five can be associated to spirals and the last 2 to trays.

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 after which a "ending product" pre-alarm is signalled via modem.

RESETTING THE COUNTERS

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

THRESHOLD ASSOCIATION

This function is used for defining which spirals or trays to associate to "pre-alarms" for "ending product".

By associating spiral 10 to pre-alarm N. 1 and setting the threshold to 10 units with the "threshold setting" function, dispensing the tenth product from spiral 10 will generate a pre-alarm N. 1.

By associating tray N. 5 to pre-alarm N. 6 and setting the threshold to 30 units with the "threshold setting" function, dispensing the thirtieth product from tray 5 will generate a pre-alarm N. 6.

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 of the "master" machine via modem.

The number 0 identifies the machine that is connected directly to the modem, i.e. the "master GSM".

Chapter 3
MAINTENANCE

The maintenance operations described in this chapter should be carried out with the machine energised and therefore by qualified personnel, who are trained in the correct use of the machine and are aware of the specific risks of such condition.
To energize the system with the open door, simply insert the special key into the switch on the payment system compartment door (see Fig. 25).

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 protective covers the external switch must be disconnected.

PRINTED BOARD FUNCTIONS AND INDICATOR LIGHTS

The CPU (Central Processing Unit) board controls all users set for the maximum configuration of the spiral compartment and processes the input signals from the keypad, the payment system and the cooling unit sensors. The card also houses some LEDs which, during the machine operation, give the following indications:

- Green LED (3): blinks during normal operation of the C.P.U. board;
- Yellow LED (4): glows when 5 V DC are detected;
- Red LED (7): glows when, for any reason, the software is reset.

CONFIGURING THE BOARD

This board is preset for the MDB protocol.
The 4 minidips for setting the SW2 coin mechanism (see Fig. 17) should be set to OFF for Executive-BDV and to ON for MDB.

SOFTWARE UPDATE

The machine is fitted with a Flash EPROM which can be electronically updated.
By means of a special program and suitable system (UpKey, Personal Computer or similar) the machine management software can be updated without replacing the EPROM.
Warning!
When downloading the software it is advisable to disconnect the motor connectors from the CPU board**(J1 e J2)**

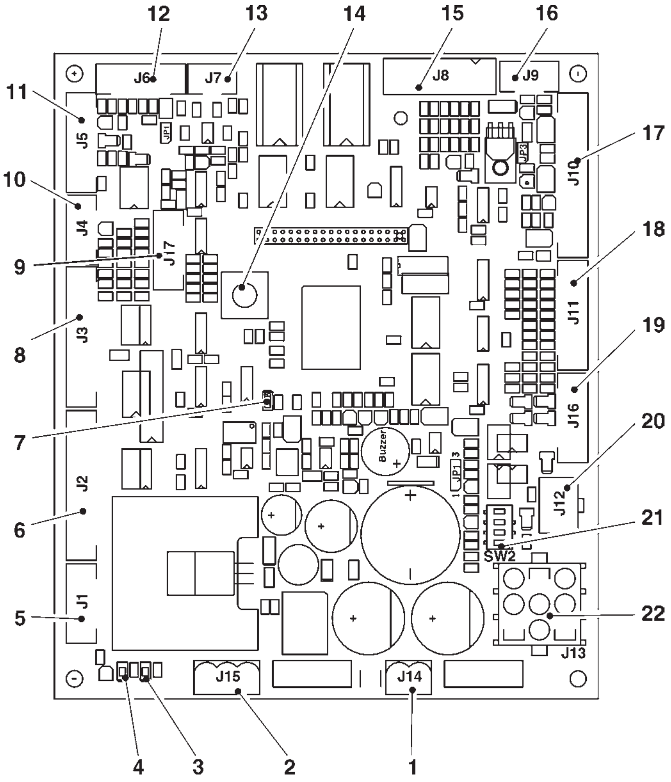


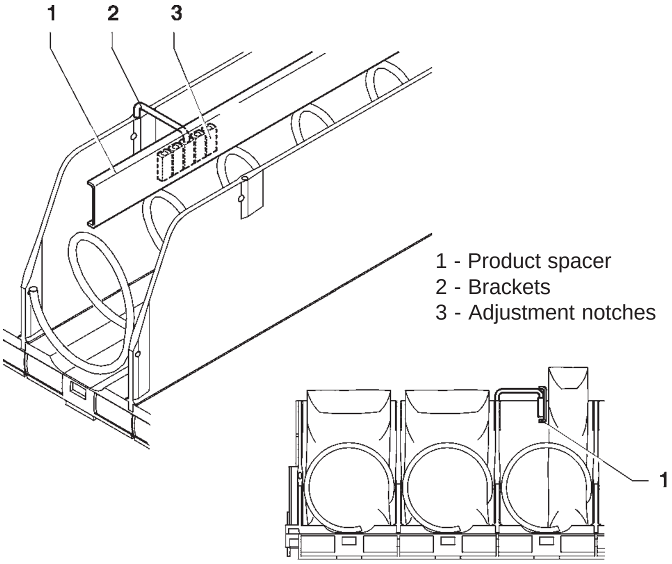
Fig. 17

1 - **J14** Coin mechanism power supply
2 - **J15** Board power supply
3 - Green LED: run (DL2)
4 - Yellow LED: 5 V DC (DL1)
5 - **J1** Dispensing compartment connection
6 - **J2** Spiral motor control
7 - Red LED: CPU reset (DL3)
8 - **J3** Input/output
9 - **J17** UpKey connection
10 - **J4** Not used
11 - **J5** RS232
12 - **J6** Photocells
13 - **J7** Can-Bus
14 - Button not used
15 - **J8** Validators
16 - **J9** Probe
17 - **J10** LCD display
18 - **J11** Direct selection keypad
19 - **J16** Keypad
20 - **J12** MDB expansion
21 - Coin mechanism setting minidips (SW2)
22 - **J13** Expansion for BDV / EXE

CONFIGURING THE TRAYS

PRODUCT SPACERS

The spacers are used when loading “narrow” products.
The spacers should be fitted to contain products, without blocking them, towards the right-hand side of the compartment, so that they stay upright. According to the type of products, assess whether it is more convenient to use the short or long side of the brackets and in which of the five adjustment notches to connect them.
Pull the spacer towards the front to close the space and push it back to open the space.
There must be at least 3 mm between the spacer and the products.



1 - Product spacer
2 - Brackets
3 - Adjustment notches

Fig. 18

PRODUCT EJECTOR

The ejectors, right-hand and left-hand, must be used for products packed in bags, such as potato crisps or similar. As they are hooked at the end of the spiral they push the products further out. If necessary slide the ejector along the spiral wire to locate the most appropriate position according to the product being dispensed.

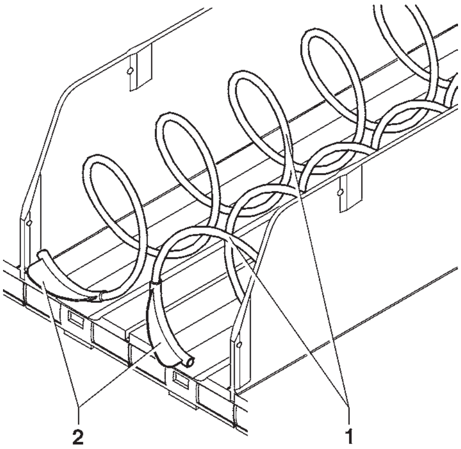


Fig. 19

1 - Spirals
2 - Ejectors

REPLACING THE SPIRALS

In order to change the number and the set-up of the product holders, proceed as follows:

- Slide out the concerned tray.
- Rotate the counter plate until releasing the ring and remove the motor flange.
- Rotate the spiral in the opposite direction to the ejection rotation, holding the plastic support flange still, to separate the two parts and fit the other spiral.
- Fit the new spiral assembly proceeding in the opposite direction, ensuring that the spiral is positioned correctly

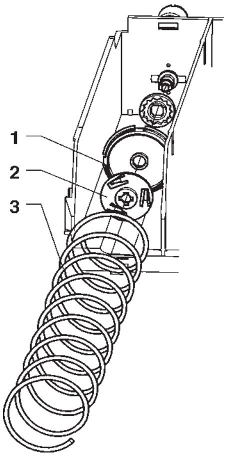


Fig. 20

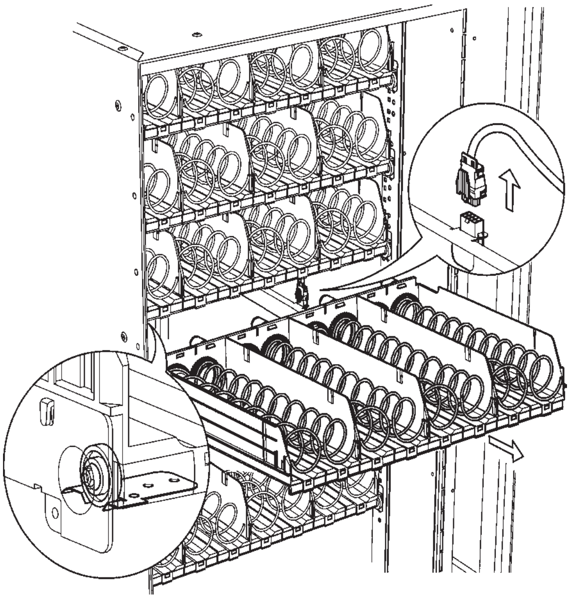
1 - Plastic flange
2 - Counter plate
3 - Spiral

REMOVING THE TRAYS

To replace the trays proceed as follows:

- Slide out the tray to be modified;
- remove the electrical connector from the tray, pushing on the tang;
- remove the tray completely, slightly forcing to overcome the resistance of the stop.
- To reassemble the tray, proceed in the reverse order.

Fig. 21



CHANGING THE NUMBER OF TRAYS

The vending machines are supplied with 6 trays.
It is however possible to bring the number of trays to 5, proceeding as follows:

- Disconnect the plug from the power supply.
- Remove all trays from the machine.
- Move the guides (see Fig. 22) placed on the side supports, except the first ones at the bottom which stay in the same position.
- Remove the pair of guides not used.
- Replace the 5 trays, ensuring that the connectors are inserted properly.
- Secure the removed cables, as not to be in the way of other trays and cables.
- Reprogram the machine.

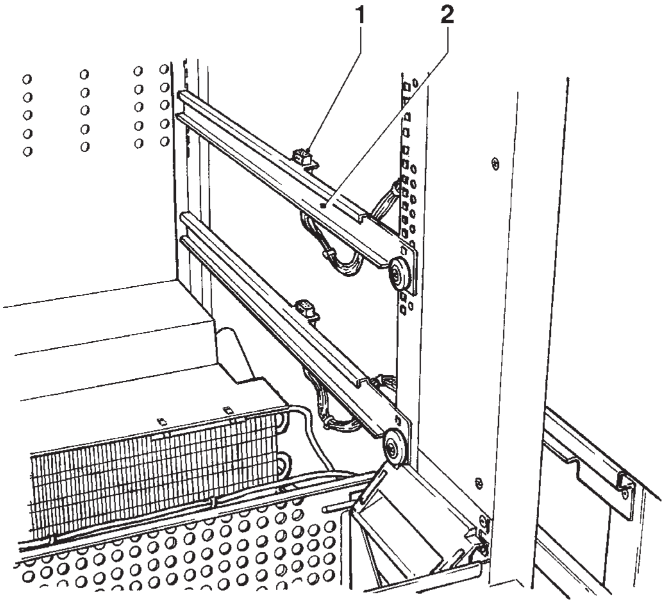


Fig. 22

1 - Tray connector
2 - Tray guide

TILTING TRAYS

Each tray is fitted with a system of levers (Fig. 23) permitting tilting downwards to facilitate loading.
In the positions where it is more convenient to keep the tray horizontal, it is sufficient to lock the system of levers with a screw.

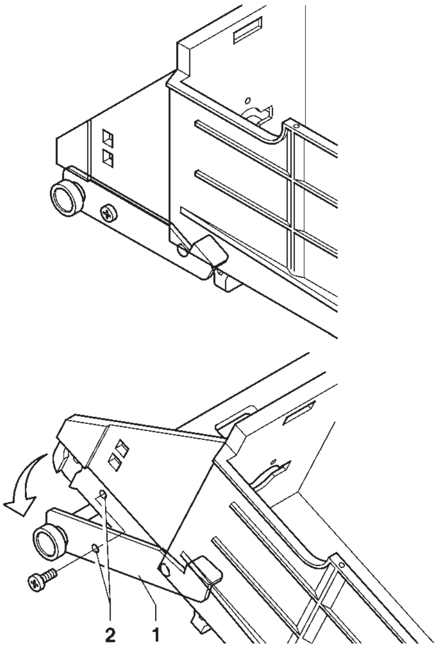


Fig. 23

1 - Tilting trays lever
2 - Lever locking holes (horizontal trays)

CHANGING THE TRAY CONFIGURATION

The configuration of the spirals on each tray can be changed. To go from two selections with single spirals to one selection with double spirals, do as follows:

- Remove the centre wall, pushing it towards the back and then lifting.
- Remove the spirals, and the flanges, from the two motors.
- Disconnect the left-hand side motor from the cable and remove it from the tray. In its place, fit the bush and pin bush.
- Install the right-hand and left-hand spirals with the same pitch onto the new flanges (right and left are identical), fitted with a cogged wheel, and then connect the right-hand one to the motor still on the tray and the left-hand one onto the previously installed bushes. The two cogged wheels must mesh.

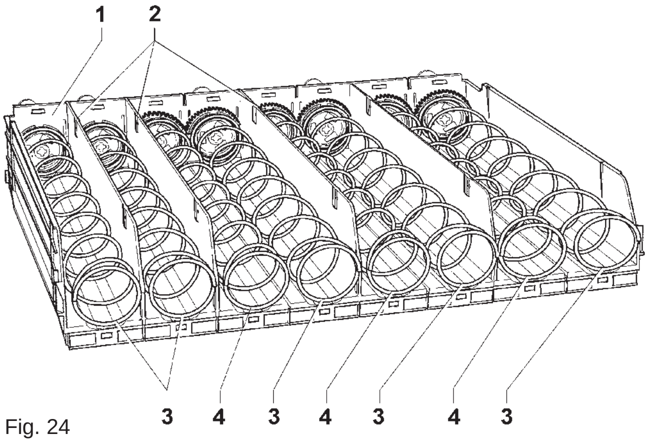


Fig. 24

1 - Tray
2 - Mobile walls
3 - Right-hand spiral
4 - Left-hand spiral

- Remove the price labels and the product holders no longer used, and if necessary update the price labels still in use.
- Program the new selections with the desired price.
- Test the modified selections, to be sure of their correct operation.

N.B.: The selection numbers are formed by two figures; the first figure refers to the tray number, counting from the top (1-6), the second figure refers to the spiral number, counting from the left (0-8).
The selection number to which the motor is connected will therefore be formed by the tray number plus the wire code number.

POWER SUPPLY UNIT

Fuses, switch and connectors positioned at the front of the power supply unit have the functions indicated below.

When replacing any fuses the power supply cable must be disconnected from the mains.

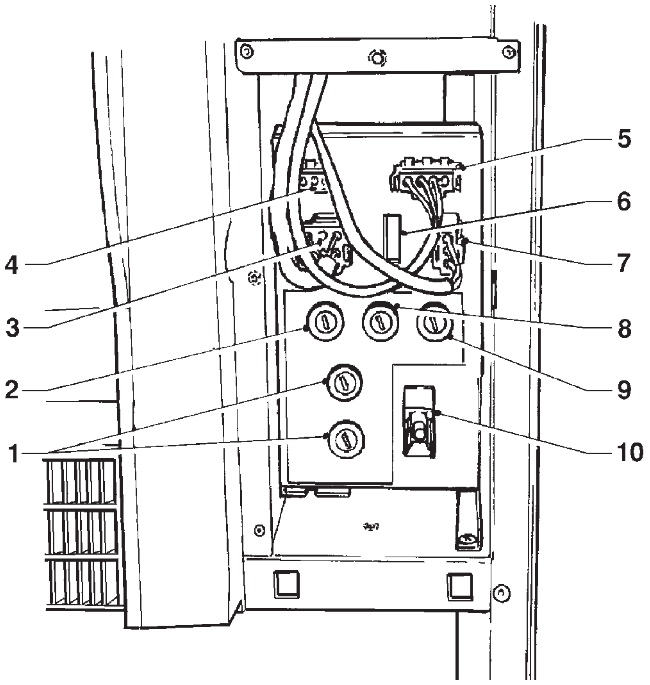


Fig. 25

1	Line fuses
2	Transformer primary winding protection fuse
3	CPU board power supply connector
4	Dispensing compartment heating element connection
5	Lamp connector
6	Not used
7	Compressor and fan connector
8	Secondary winding protection fuse for board power supply
9	Secondary winding protection fuse for payment system power supply
10	Main switch

ACCESS TO THE COOLING UNIT

If for any reason the cooling unit need to be accessed from the machine, do as follows:

- disconnect the machine from the power supply
- remove the last tray;
- remove the ventilation grille
- remove the anti-theft grille
- undo the fastening screws from the product dispensing compartment and remove it
- if fitted, disconnect the compartment lock connector.
- For reassembly, proceed in the reverse order.

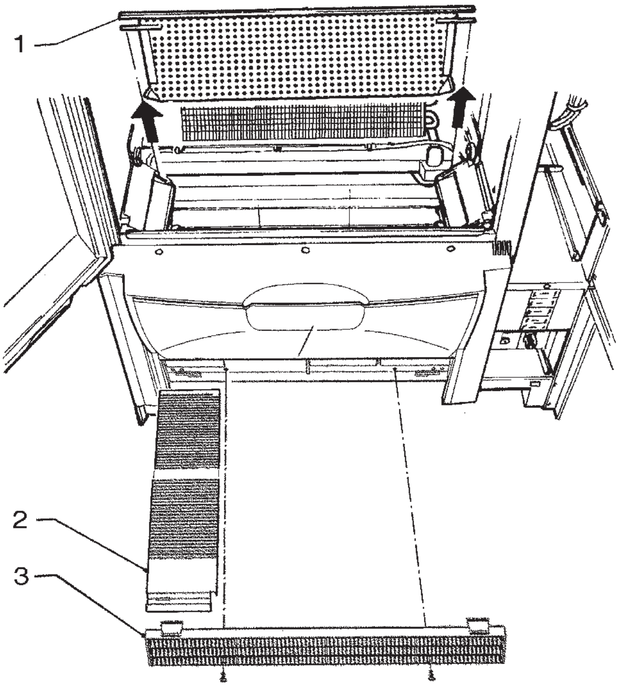


Fig. 26

1	Anti-theft grille
2	Removable grille
3	Ventilation grille

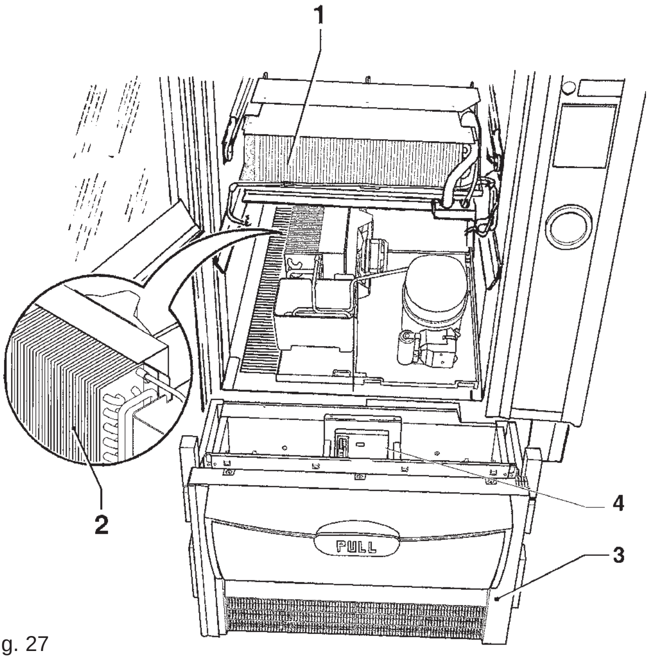
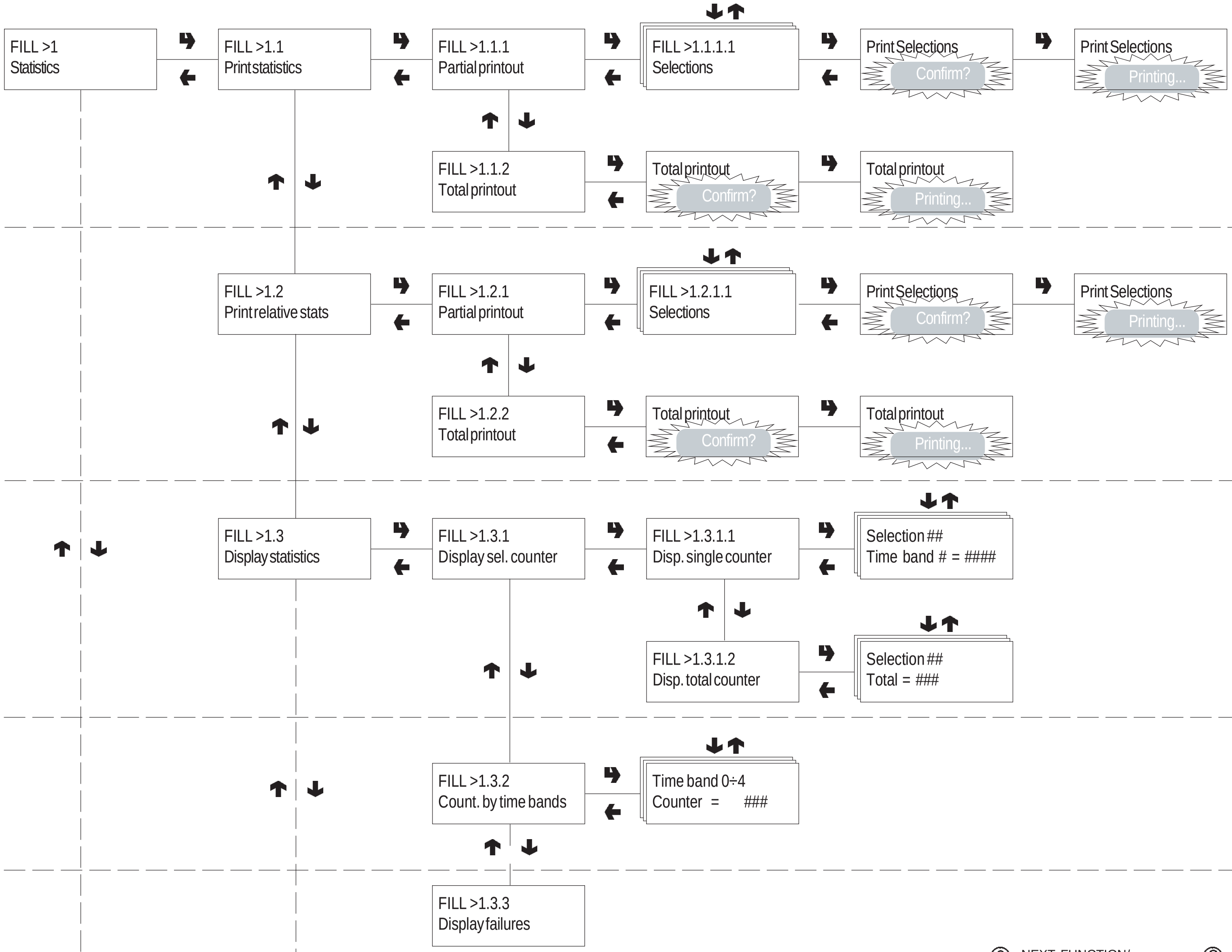


Fig. 27

1	Evaporator
2	Condenser
3	Dispensing compartment
4	Dispensing compartment lock device

Filler menu - Summary


FILL >1
Statistics
FILL >1.1
Print statistics
FILL >1.1.1
Partial printout
FILL >1.1.1.1
Selections
Print Selections
Confirm?
Print Selections
Printing...
FILL >1.1.2
Total printout
Total printout
Confirm?
Total printout
Printing...
FILL >1.2
Print relative stats
FILL >1.2.1
Partial printout
FILL >1.2.1.1
Selections
Print Selections
Confirm?
Print Selections
Printing...
FILL >1.2.2
Total printout
Total printout
Confirm?
Total printout
Printing...
FILL >1.3
Display statistics
FILL >1.3.1
Display sel. counter
FILL >1.3.1.1
Disp. single counter
Selection ##
Time band # = ####
FILL >1.3.1.2
Disp. total counter
Selection ##
Total = ###
FILL >1.3.2
Count. by time bands
Time band 0÷4
Counter = ###
FILL >1.3.3
Display failures

With the printer connected print all data as displayed

TOTAL STATISTICS

Print data for:
Selections
Time bands
Failures
Coin mechanism data
Photocell errors
Motor errors

RELATIVE STATISTICS

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

TOTAL STATISTICS
Display sales by single selection for each time band and total

Display total sales by single selection

Display total sales in normal operation and test mode

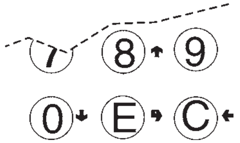
⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

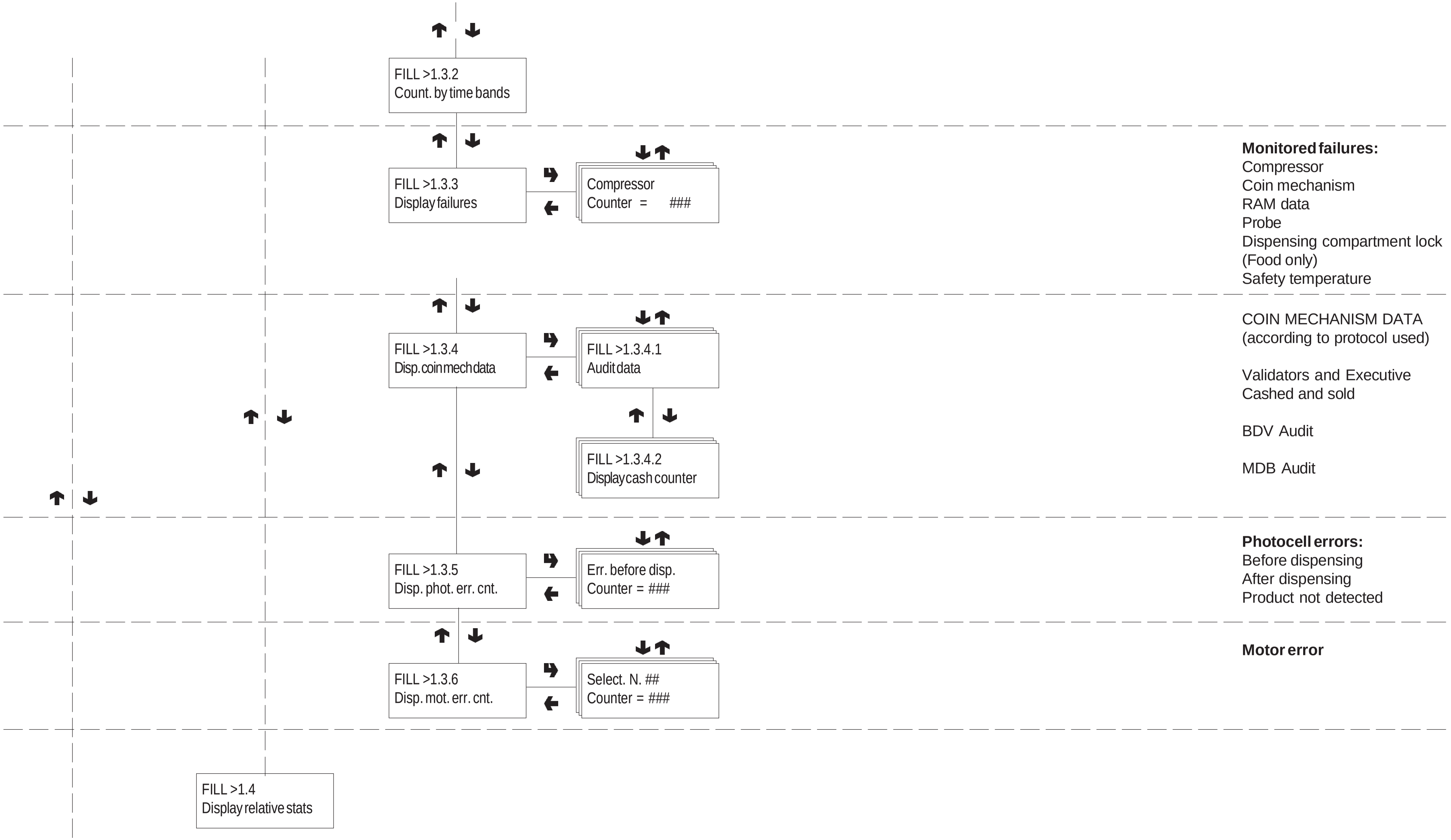
⑨ DIRECT ACCESS TO CHANGE PRICE OF BAND 0

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



Filler menu - Summary


FILL >1.3.2
Count. by time bands
FILL >1.3.3
Display failures
Compressor
Counter = ###
Monitored failures:
Compressor
Coin mechanism
RAM data
Probe
Dispensing compartment lock
(Food only)
Safety temperature
FILL >1.3.4
Disp.coinmechdata
FILL >1.3.4.1
Auditdata
FILL >1.3.4.2
Displaycash counter
COIN MECHANISM DATA
(according to protocol used)
Validators and Executive
Cashed and sold
BDV Audit
MDB Audit
FILL >1.3.5
Disp. phot. err. cnt.
Err. before disp.
Counter = ###
Photocell errors:
Before dispensing
After dispensing
Product not detected
FILL >1.3.6
Disp. mot. err. cnt.
Select. N. ##
Counter = ###
Motor error
FILL >1.4
Display relative stats

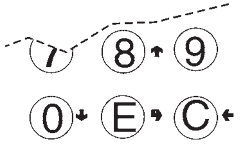
⓪ NEXT FUNCTION/
INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

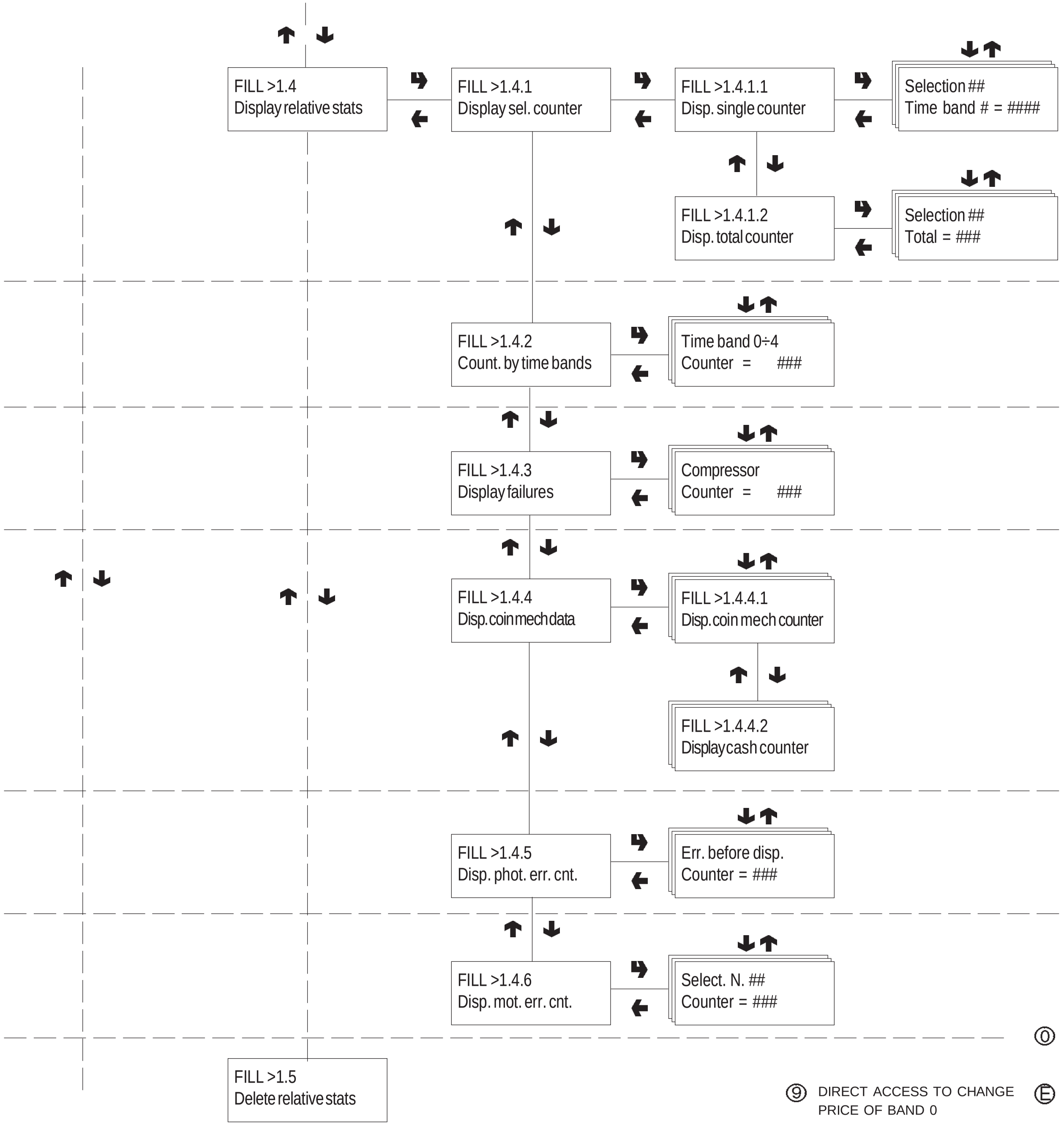
⑨ DIRECT ACCESS TO CHANGE
PRICE OF BAND 0

Ⓔ CONFIRM DATA/
CONFIRM FUNCTION

Ⓒ DELETE DATA/
EXIT FUNCTION



Filler menu - Summary


FILL >1.4
Display relative stats
FILL >1.4.1
Display sel. counter
FILL >1.4.1.1
Disp. single counter
Selection ##
Time band # = ####
FILL >1.4.1.2
Disp. total counter
Selection ##
Total = ###
FILL >1.4.2
Count. by time bands
Time band 0÷4
Counter = ###
FILL >1.4.3
Display failures
Compressor
Counter = ###
FILL >1.4.4
Disp. coin mech data
FILL >1.4.4.1
Disp. coin mech counter
FILL >1.4.4.2
Display cash counter
FILL >1.4.5
Disp. phot. err. cnt.
Err. before disp.
Counter = ###
FILL >1.4.6
Disp. mot. err. cnt.
Select. N. ##
Counter = ###
FILL >1.5
Delete relative stats

RELATIVE STATISTICS

Display sales by single selection for each time band and total

Display total sales by single selection

Display total sales in normal operation and test mode

Monitored failures:
Compressor
Coin mechanism
RAM data
Probe

COIN MECHANISM DATA (according to protocol used)

Validators and Executive
Cashed and sold

BDV Audit

MDB Audit

Photocell errors:
Before dispensing
After dispensing
Product not detected

Motor error

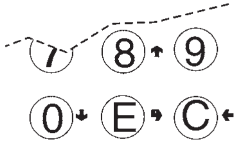
⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

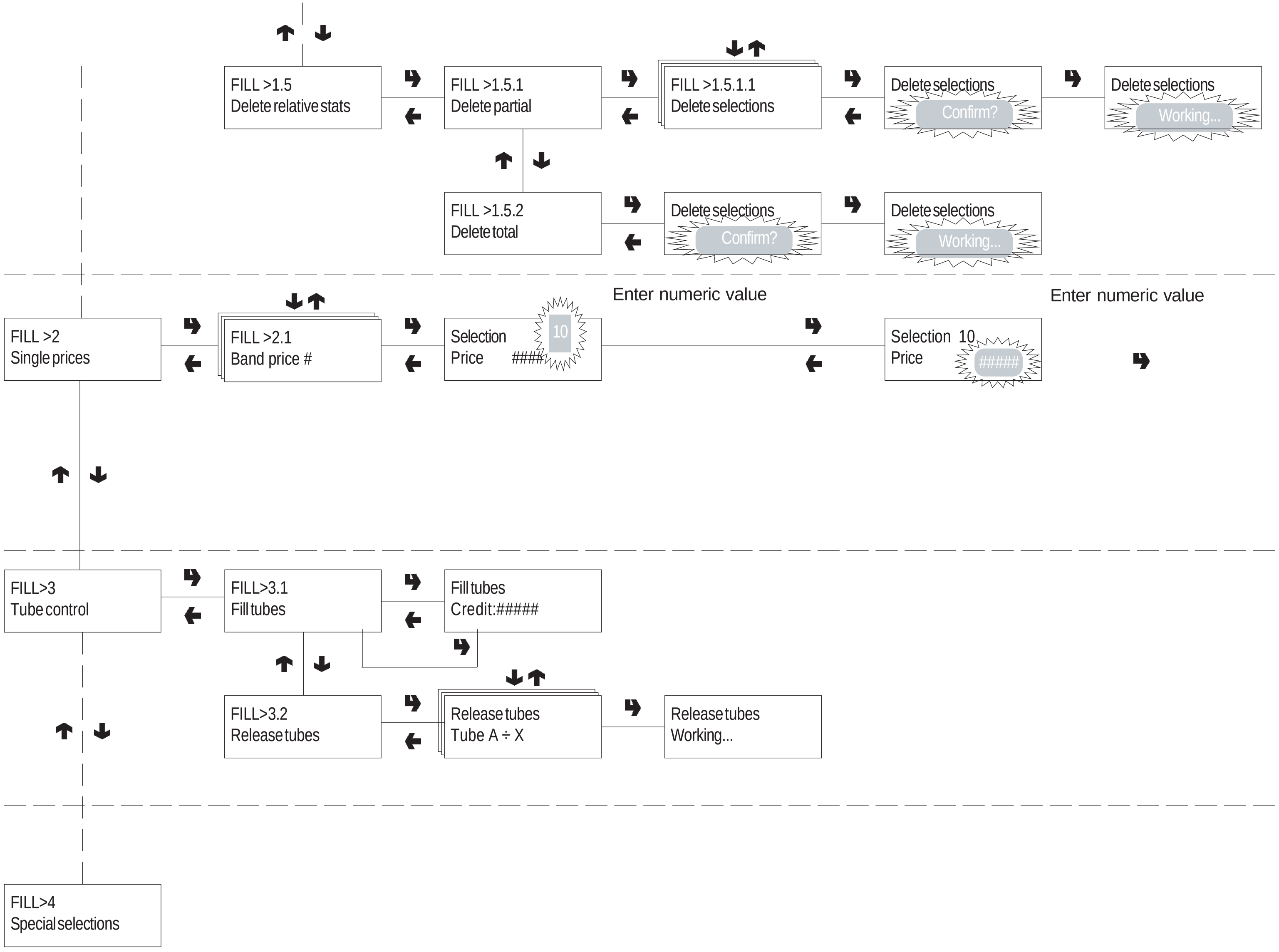
⑨ DIRECT ACCESS TO CHANGE PRICE OF BAND 0

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



Filler menu - Summary


FILL >1.5
Delete relative stats
FILL >1.5.1
Delete partial
FILL >1.5.1.1
Delete selections
Delete selections
Confirm?
Delete selections
Working...
FILL >1.5.2
Delete total
Delete selections
Confirm?
Delete selections
Working...
FILL >2
Single prices
FILL >2.1
Band price #
Selection
Price ####
10
Enter numeric value
Selection 10
Price
#####
Enter numeric value
FILL>3
Tube control
FILL>3.1
Fill tubes
Fill tubes
Credit:#####
FILL>3.2
Release tubes
Release tubes
Tube A ÷ X
Release tubes
Working...
FILL>4
Special selections

RELATIVE STATISTICS

Delete data for:
Selections
Time bands
Failures
Coin mechanism data
Photocell errors
Motor errors

Option of changing sales price for each selection in 4 time bands

BDV only
Manual change tube refill

Manual tube releasing

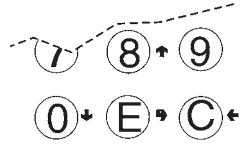
⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

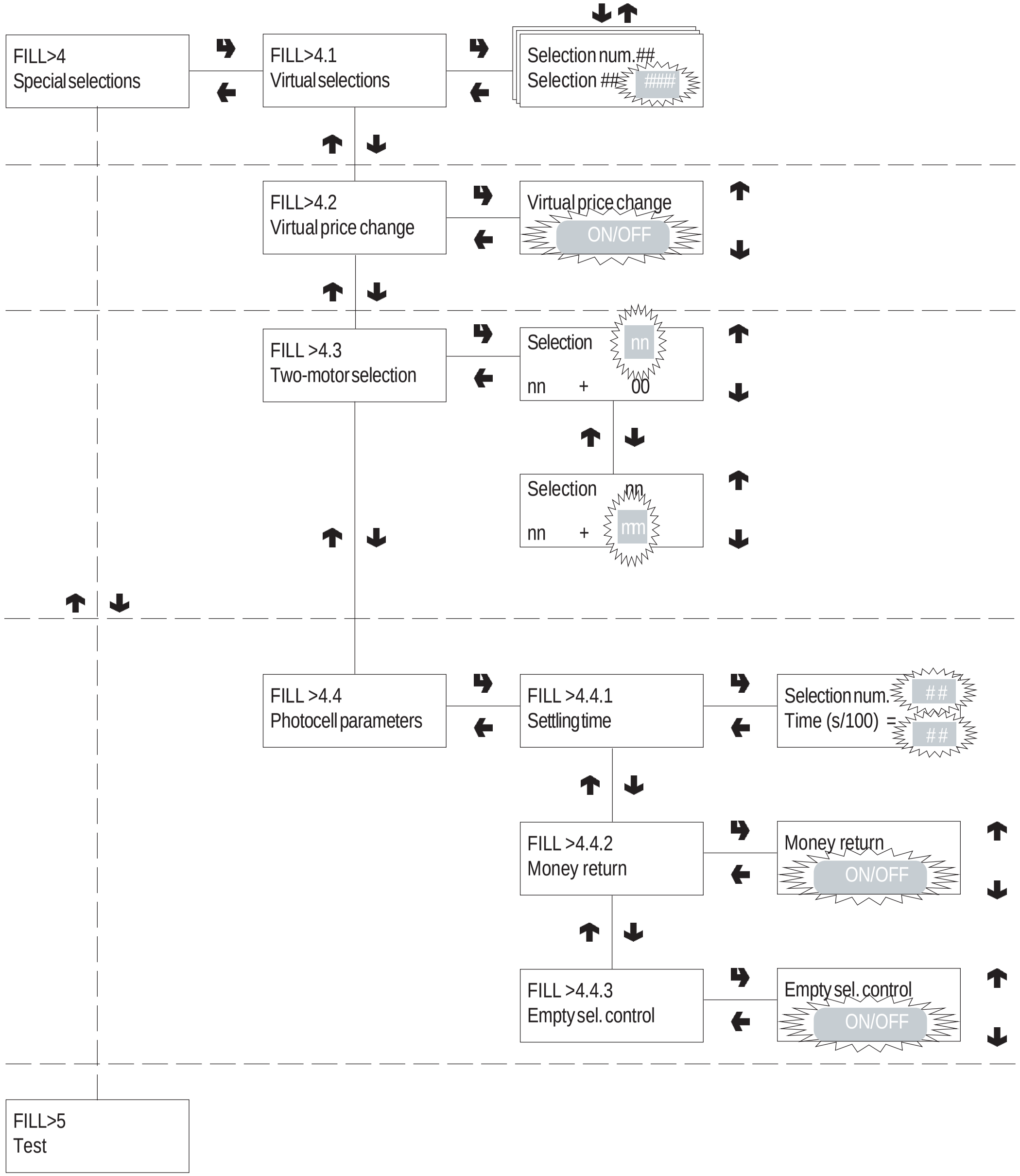
⑨ DIRECT ACCESS TO CHANGE PRICE OF BAND 0

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



Filler menu - Summary


FILL>4
Special selections
FILL>4.1
Virtual selections
Selection num.##
Selection ##
####
FILL>4.2
Virtual price change
Virtual price change
ON/OFF
FILL >4.3
Two-motor selection
Selection nn
nn + 00
Selection nn
nn + mm
FILL >4.4
Photocell parameters
FILL >4.4.1
Settling time
Selection num. ##
Time (s/100) = ##
FILL >4.4.2
Money return
Money return
ON/OFF
FILL >4.4.3
Empty sel. control
Empty sel. control
ON/OFF
FILL>5
Test

VIRTUAL SELECTIONS

Setting two selections (10 to 69) in a virtual one (70 to 79)

Selections 10 to 69

mm number of combined motor if mm = nn the combination between the two selections is cancelled

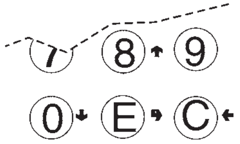
Ⓞ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

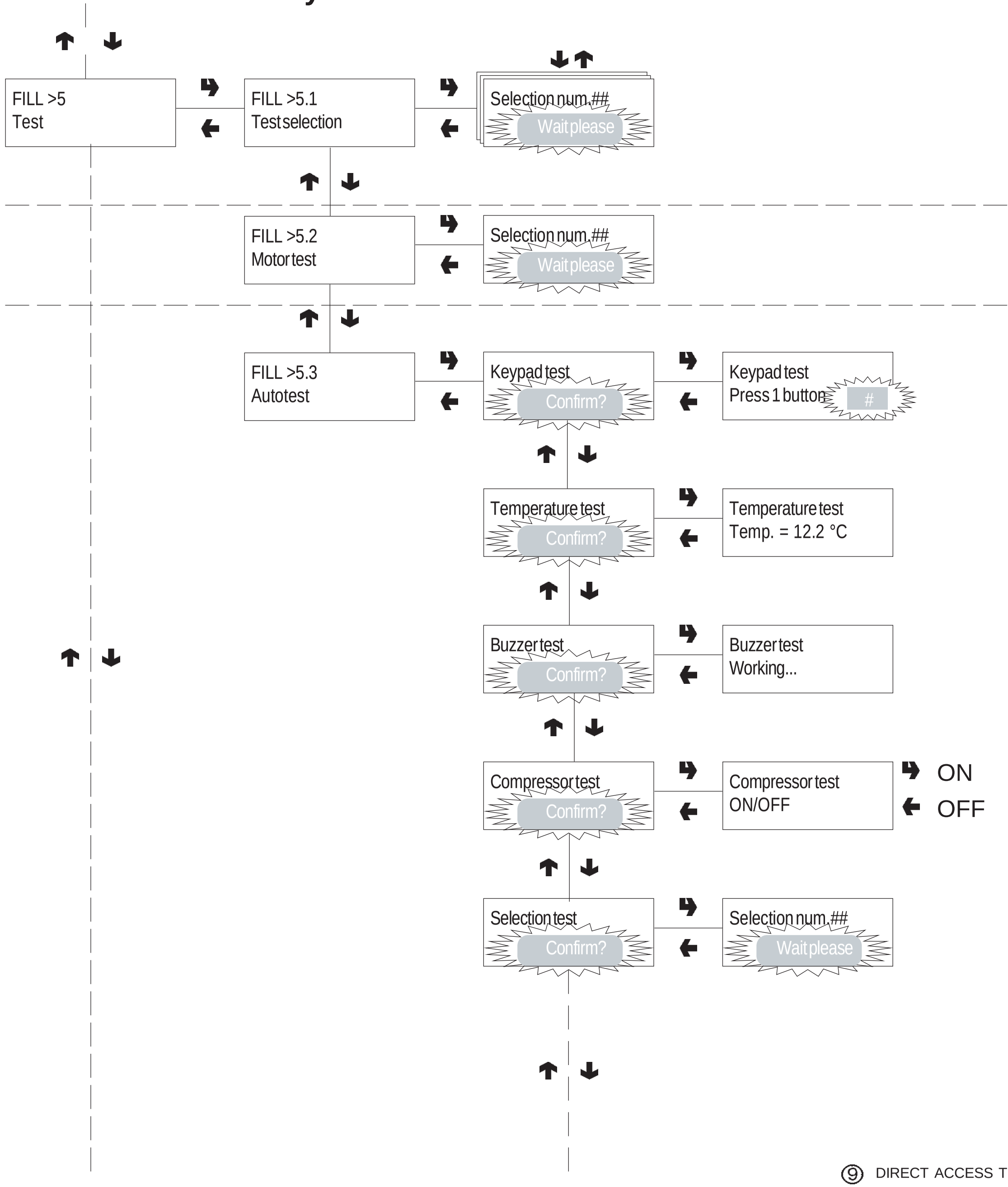
⑨ DIRECT ACCESS TO CHANGE PRICE OF BAND 0

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



Filler menu - Summary


FILL >5
Test
FILL >5.1
Testselection
Selection num.##
Waitplease
FILL >5.2
Motortest
Selection num.##
Waitplease
FILL >5.3
Autotest
Keypad test
Confirm?
Keypad test
Press 1 button
#
Temperature test
Confirm?
Temperature test
Temp. = 12.2 °C
Buzzer test
Confirm?
Buzzer test
Working...
Compressor test
Confirm?
Compressor test
ON/OFF
ON
OFF
Selection test
Confirm?
Selection num.##
Waitplease

The selection number changes automatically

When pressing the button, the next button is presented automatically

Emission of a series of sounds

All selections are activated in a sequence

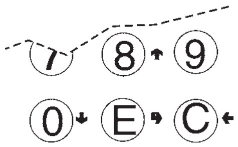
Ⓞ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

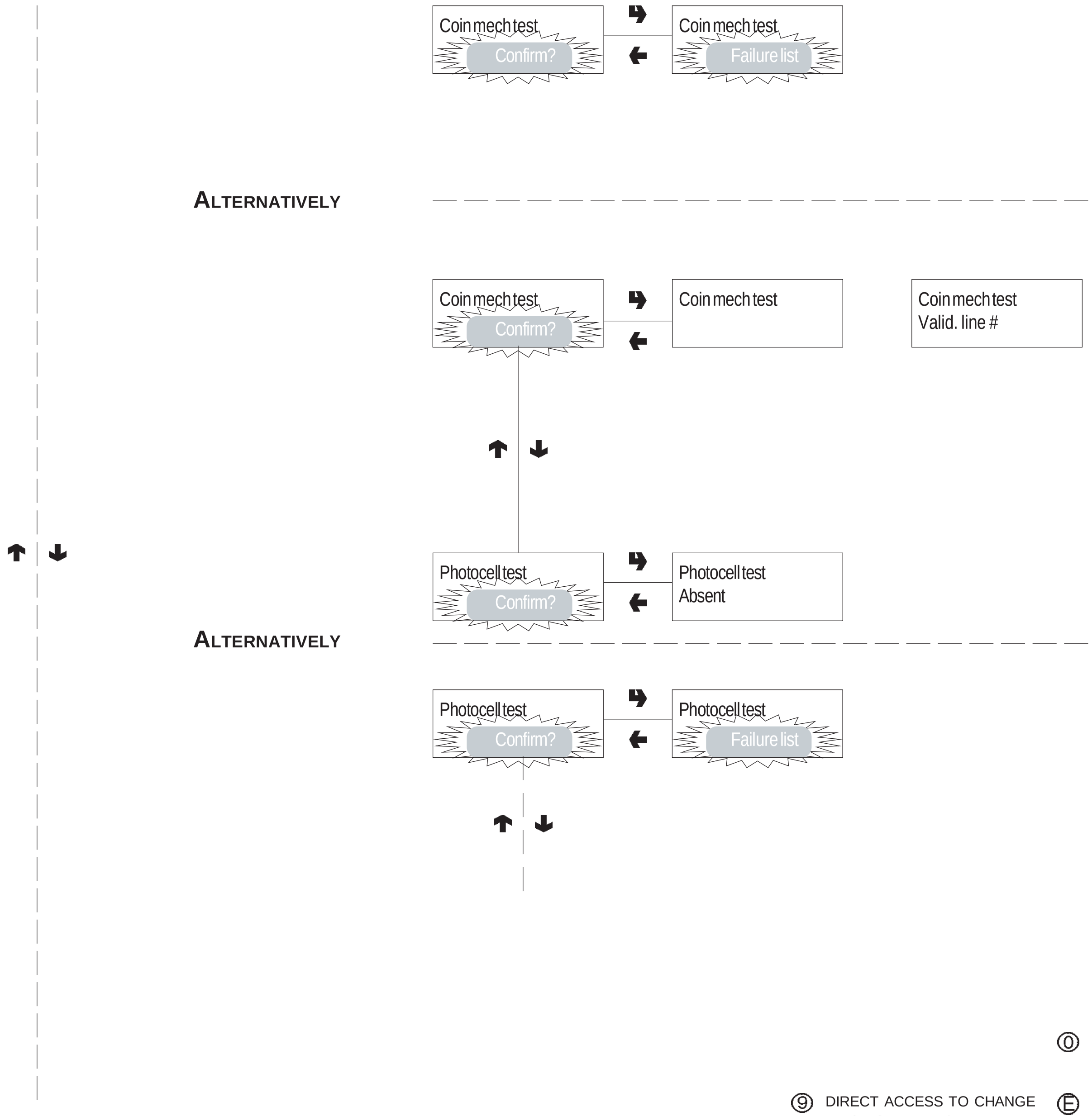
⑨ DIRECT ACCESS TO CHANGE PRICE OF BAND 0

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



Filler menu - Summary


Coin mech test
Confirm?
Coin mech test
Failure list
ALTERNATIVELY
Coin mech test
Confirm?
Coin mech test
Coin mech test
Valid. line #
Photocell test
Confirm?
Photocell test
Absent
ALTERNATIVELY
Photocell test
Confirm?
Photocell test
Failure list

WITH EXECUTIVE, BDV OR MDB COIN MECHANISMS

If the coin mechanism
communicates it displays "OK"

WITH A VALIDATOR

Line two remains for
approximately 2 seconds

WITH PHOTOCELLS DISCONNECTED

WITH PHOTOCELLS

If the light beam is interrupted
within 2.5 seconds it displays "OK"
or
Error no product
If a failure is present:

Error after dispensing
Error before dispensing

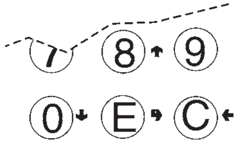
⓪ NEXT FUNCTION/
INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

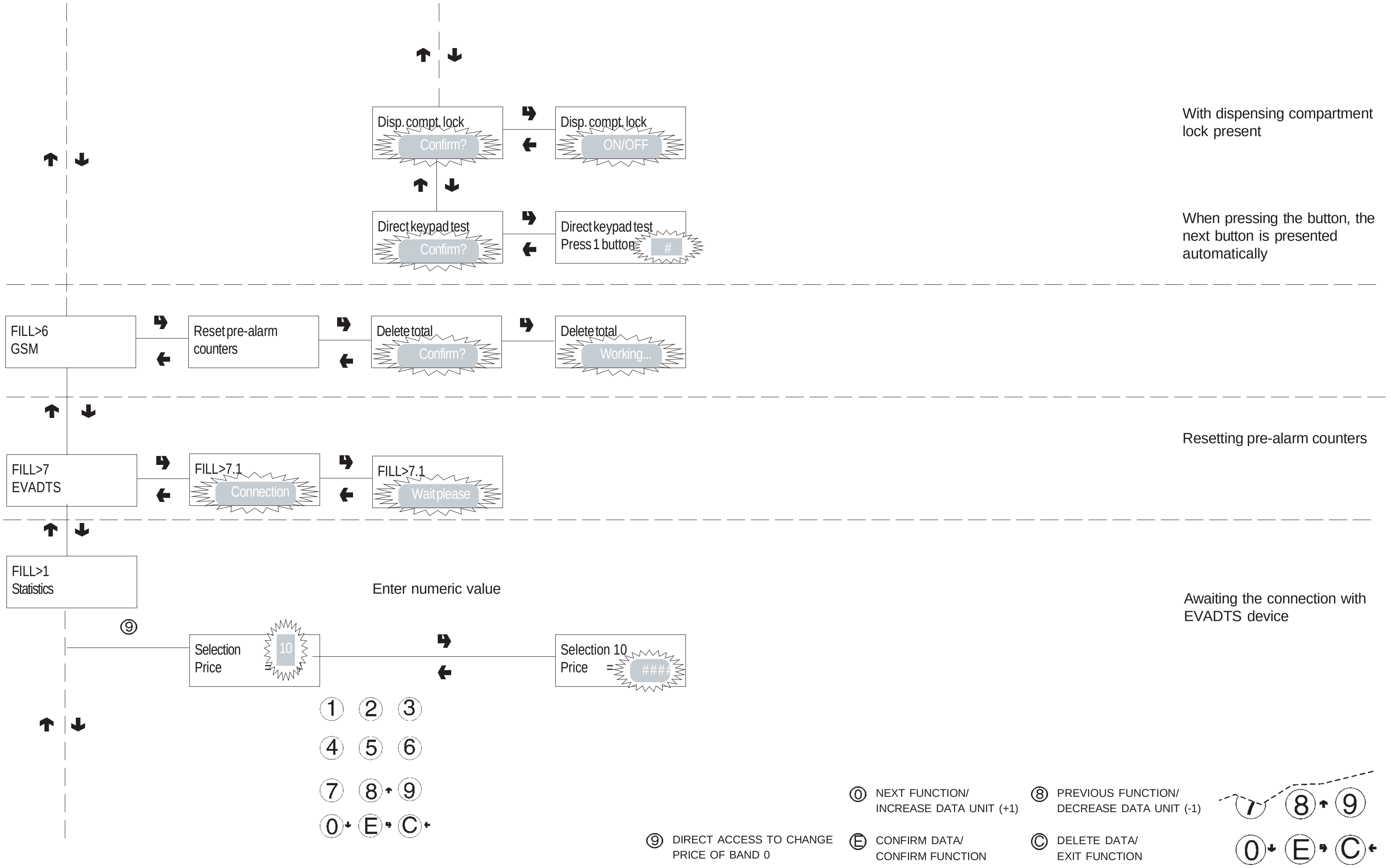
⑨ DIRECT ACCESS TO CHANGE
PRICE OF BAND 0

Ⓔ CONFIRM DATA/
CONFIRM FUNCTION

Ⓒ DELETE DATA/
EXIT FUNCTION



Filler menu - Summary


Disp. compt. lock
Confirm?
Disp. compt. lock
ON/OFF
Direct keypad test
Confirm?
Direct keypad test
Press 1 button
#
FILL>6
GSM
Reset pre-alarm
counters
Delete total
Confirm?
Delete total
Working...
FILL>7
EVADTS
FILL>7.1
Connection
FILL>7.1
Wait please
FILL>1
Statistics
9
Selection
Price
10
=
Selection 10
Price =
####
1 2 3
4 5 6
7 8 9
0 E C
7 8 9
0 E C

With dispensing compartment lock present

When pressing the button, the next button is presented automatically

Resetting pre-alarm counters

Enter numeric value

Awaiting the connection with EVADTS device

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

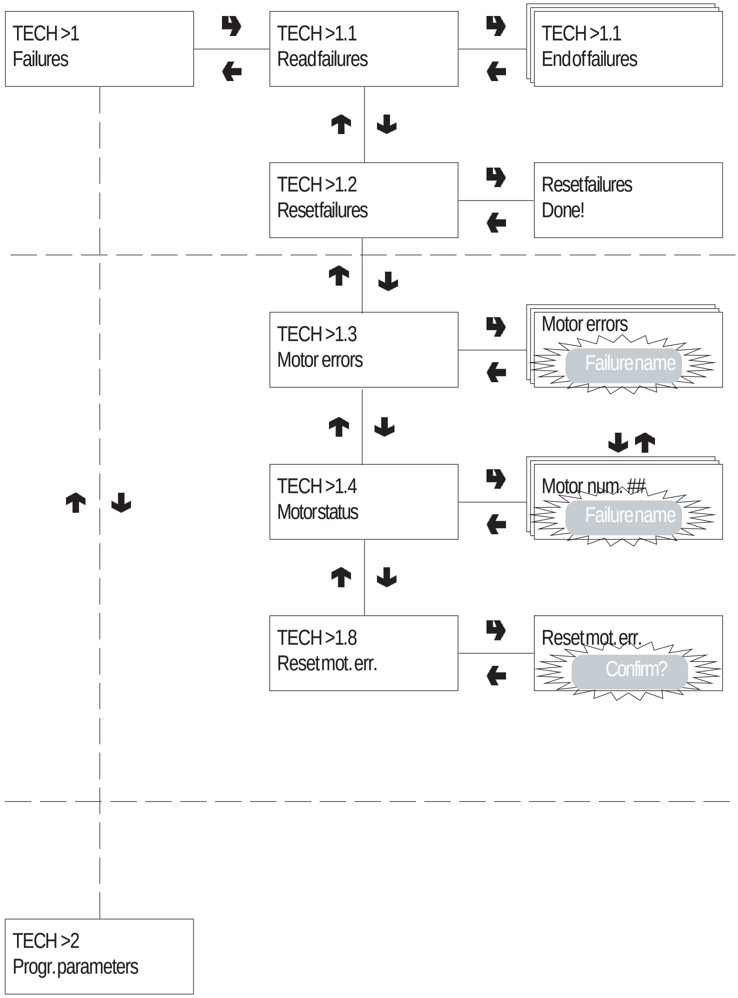
⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

⑨ DIRECT ACCESS TO CHANGE PRICE OF BAND 0

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION

Technician menu - Summary


TECH >1
Failures
TECH >1.1
Read failures
TECH >1.1
End of failures
TECH >1.2
Reset failures
Reset failures
Done!
TECH >1.3
Motor errors
Motor errors
Failure name
TECH >1.4
Motor status
Motor num. ##
Failure name
TECH >1.8
Reset mot. err.
Reset mot. err.
Confirm?
TECH >2
Progr. parameters

Time scrolling of present failures dei guasti presenti

Time scrolling of present failures

Displaying failures

Monitored failures:
Compressor
Coin mechanism
RAM data
Probe
Dispensing compartment lock (Food only)
Safety temperature

Possible motor conditions:

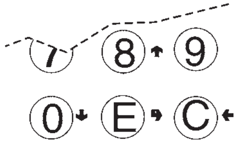
- OK
- Blocked
- Disconnected
- Not functioning
- Not present
- Empty selection

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

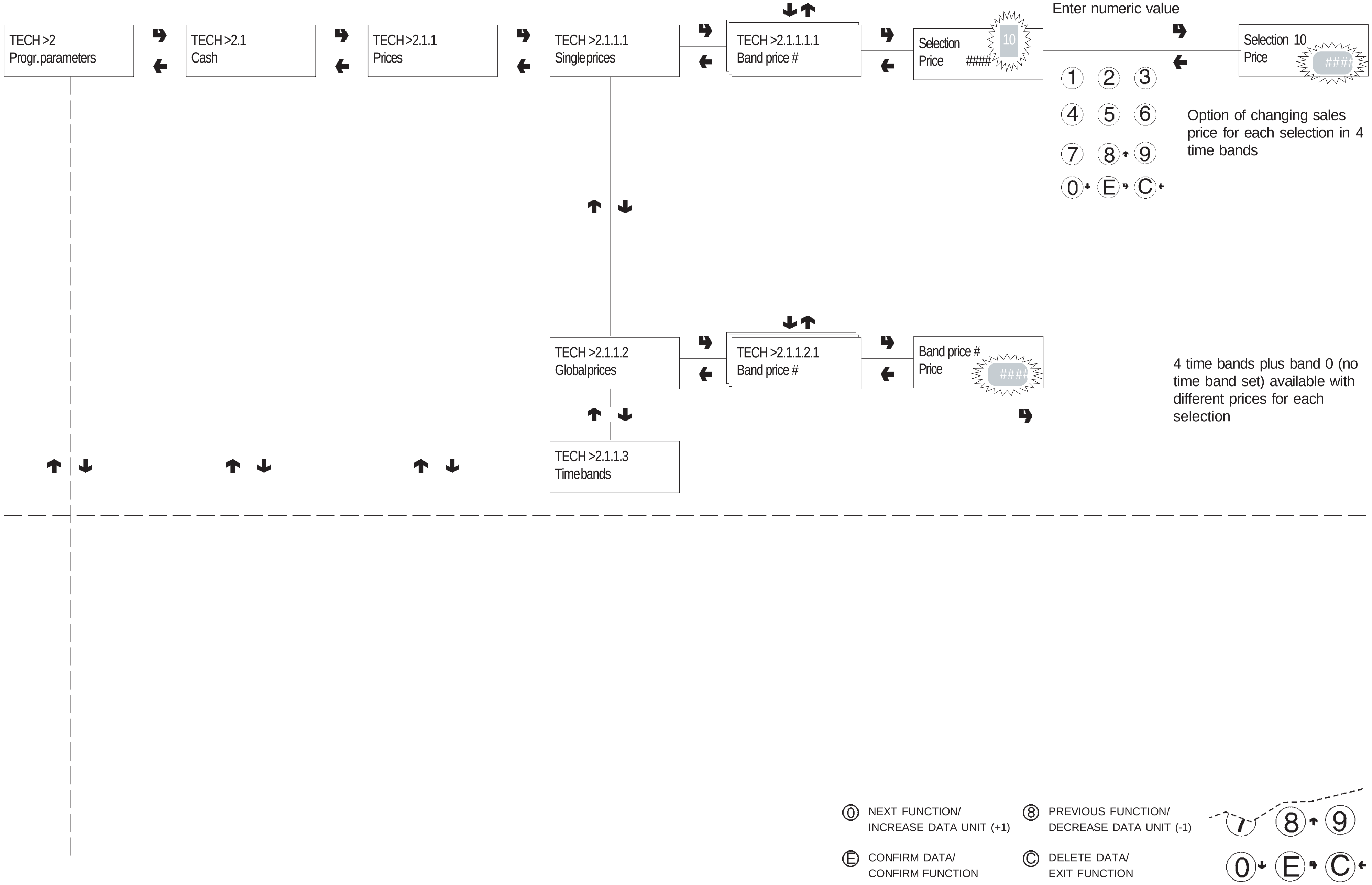
⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



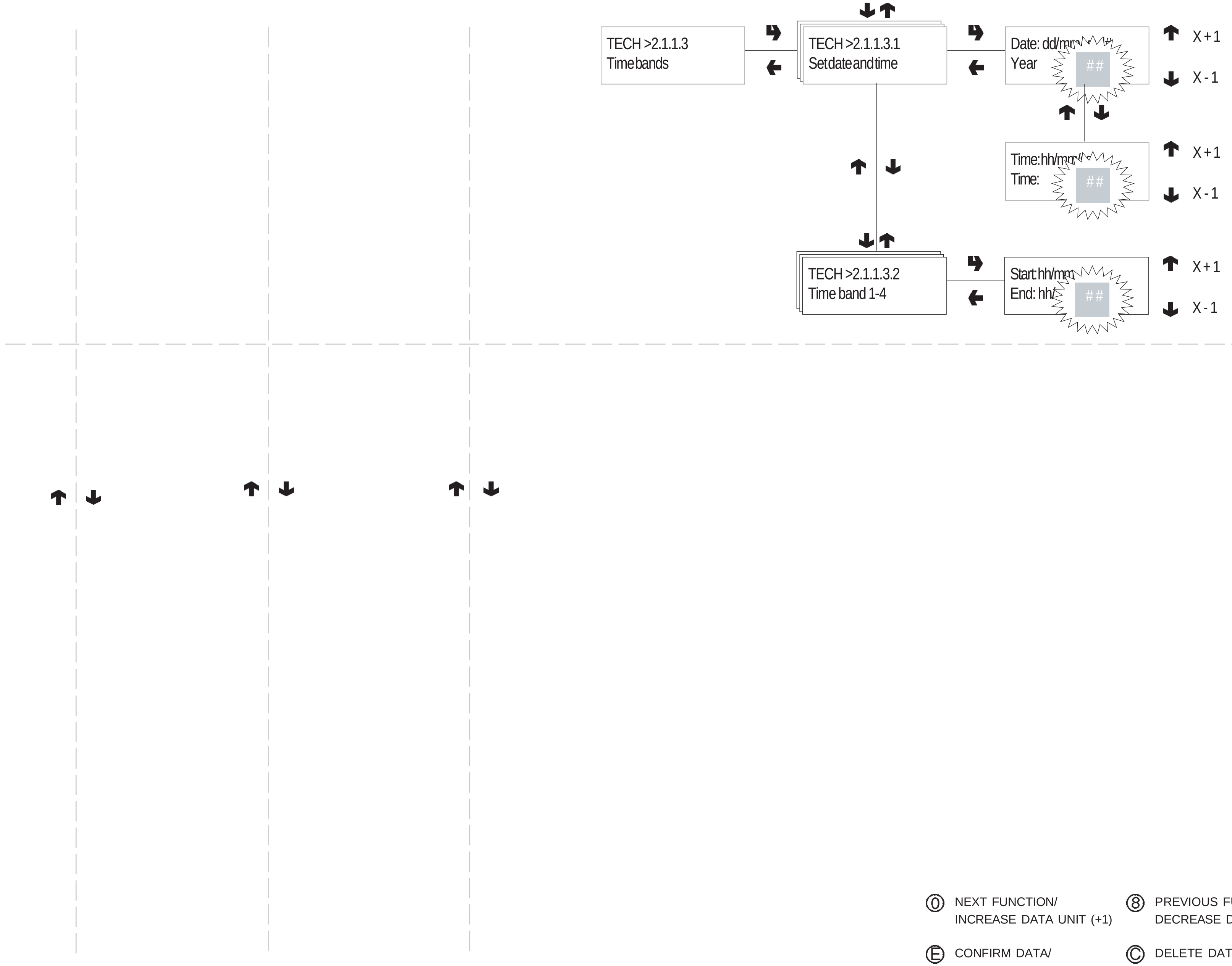
Technician menu - Summary


TECH >2
Progr. parameters
TECH >2.1
Cash
TECH >2.1.1
Prices
TECH >2.1.1.1
Single prices
TECH >2.1.1.1.1
Band price #
Selection
Price ####
10
Enter numeric value
Selection 10
Price
####
1 2 3
4 5 6
7 8 9
0 E C
TECH >2.1.1.2
Global prices
TECH >2.1.1.2.1
Band price #
Band price #
Price
####
TECH >2.1.1.3
Time bands
NEXT FUNCTION/
INCREASE DATA UNIT (+1)
PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)
CONFIRM DATA/
CONFIRM FUNCTION
DELETE DATA/
EXIT FUNCTION
7 8 9
0 E C

Option of changing sales price for each selection in 4 time bands

4 time bands plus band 0 (no time band set) available with different prices for each selection

Technician menu - Summary


TECH >2.1.1.3
Timebands
TECH >2.1.1.3.1
Setdateandtime
Date: dd/mm
Year
##
Time:hh/mm
Time:
##
TECH >2.1.1.3.2
Time band 1-4
Start:hh/mm
End: hh/
##
X+1
X-1
X+1
X-1
X+1
X-1

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, that can then be changed and confirmed.

TIME BANDS

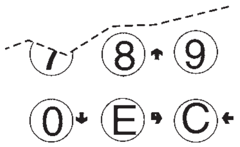
When confirming the blinking values, hour and minute for start and end of time band are entered one after the other. When start and end of time band are set to 00.00 the bands are not activated.

Ⓞ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

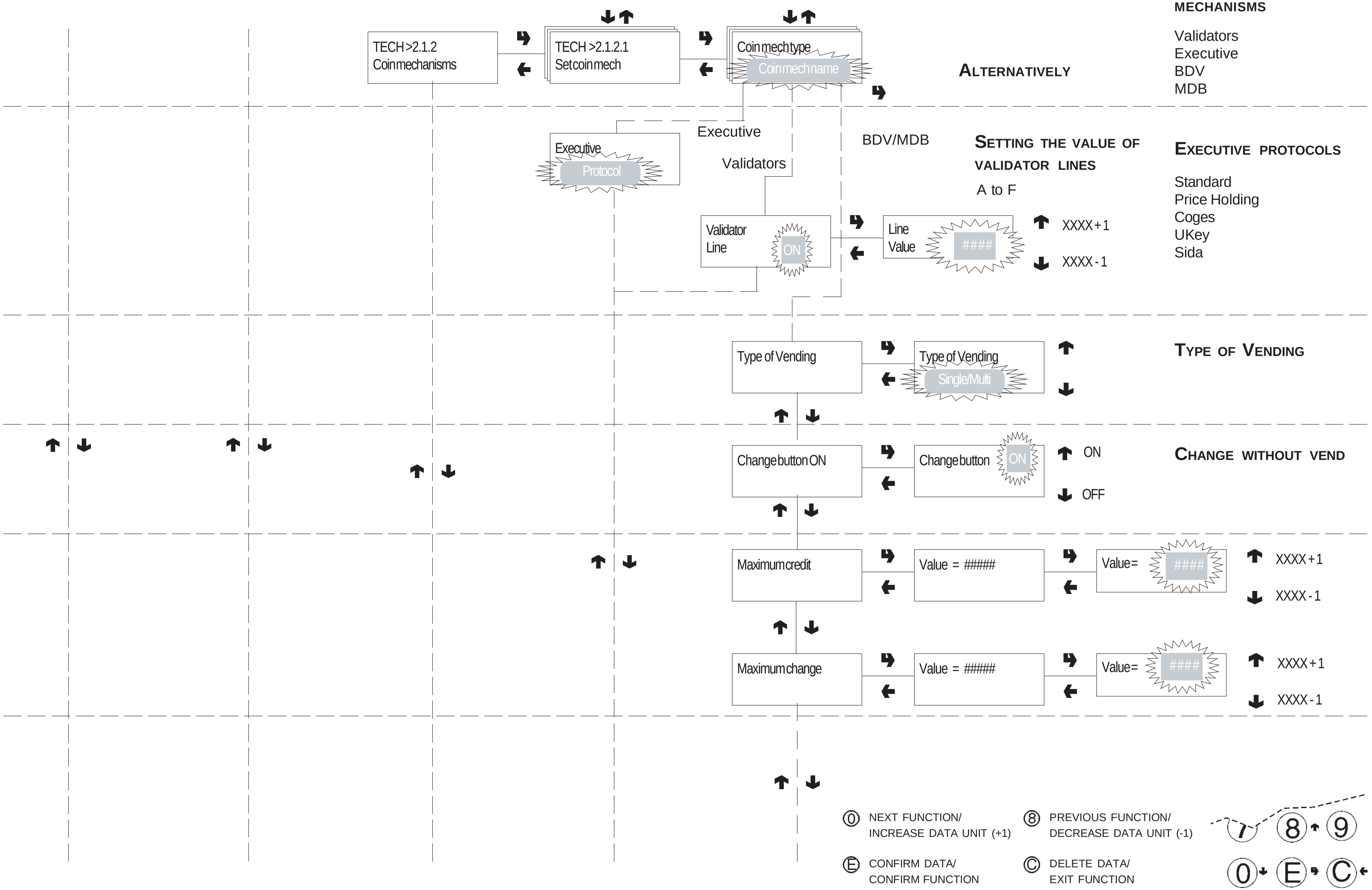
⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



Technician menu - Summary


TECH >2.1.2
Coinmechanisms
TECH >2.1.2.1
Setcoinmech
Coinmechtype
Coinmechname
Executive
Protocol
Executive
Validators
BDV/MDB
Validator
Line
ON
Line
Value
####
Type of Vending
Type of Vending
Single/Multi
Changebutton ON
Changebutton
ON
Maximumcredit
Value = #####
Value=
####
Maximumchange
Value = #####
Value=
####
7
8
9
0
E
C

Alternatively

Available coin mechanisms

Validators
Executive
BDV
MDB

Setting the value of validator lines

A to F

XXXX+1
XXXX-1

Executive protocols

Standard
Price Holding
Coges
UKey
Sida

Type of Vending

Change without vend

ON
OFF

XXXX+1
XXXX-1

XXXX+1
XXXX-1

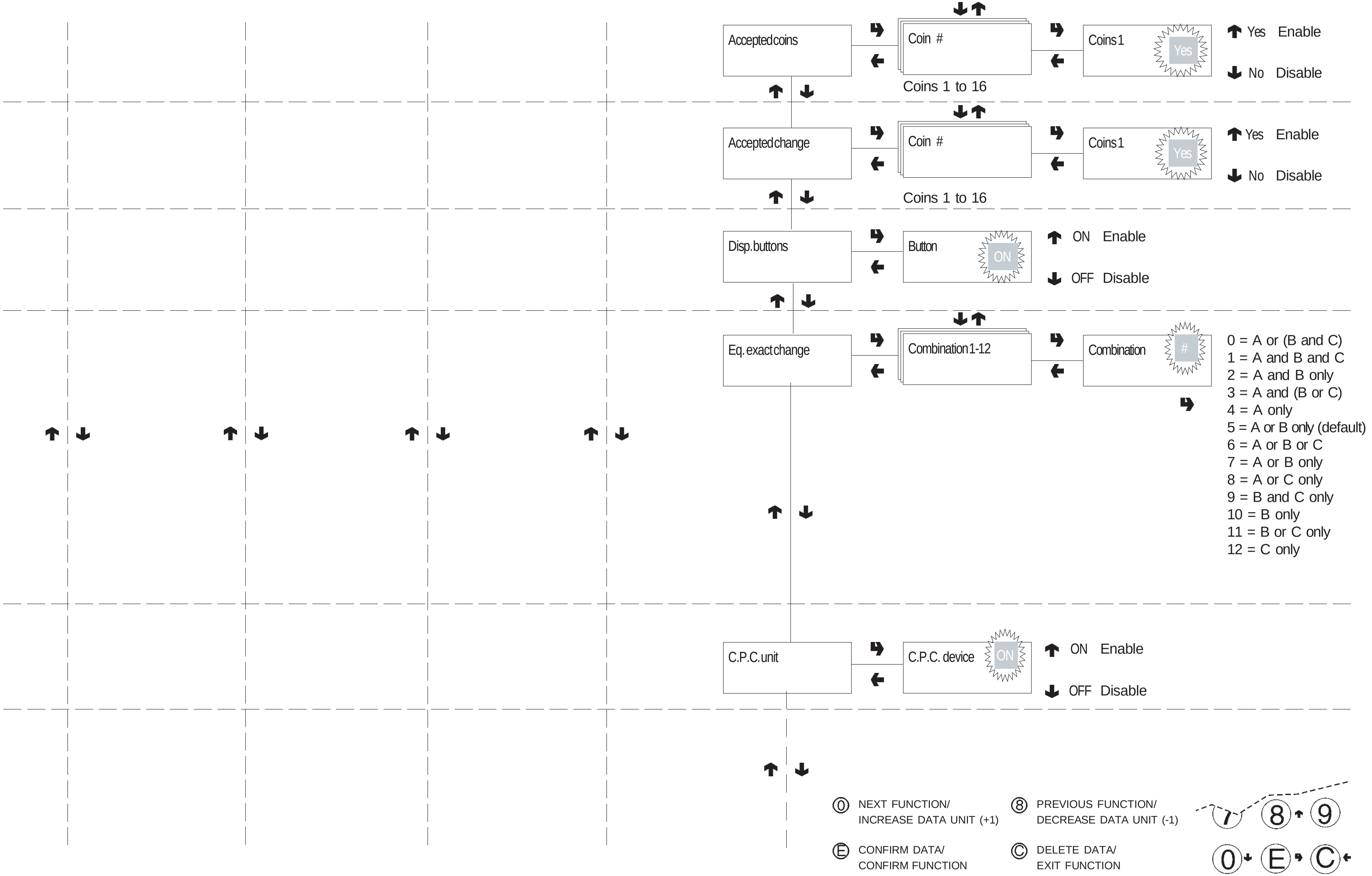
⓪ NEXT FUNCTION/
INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

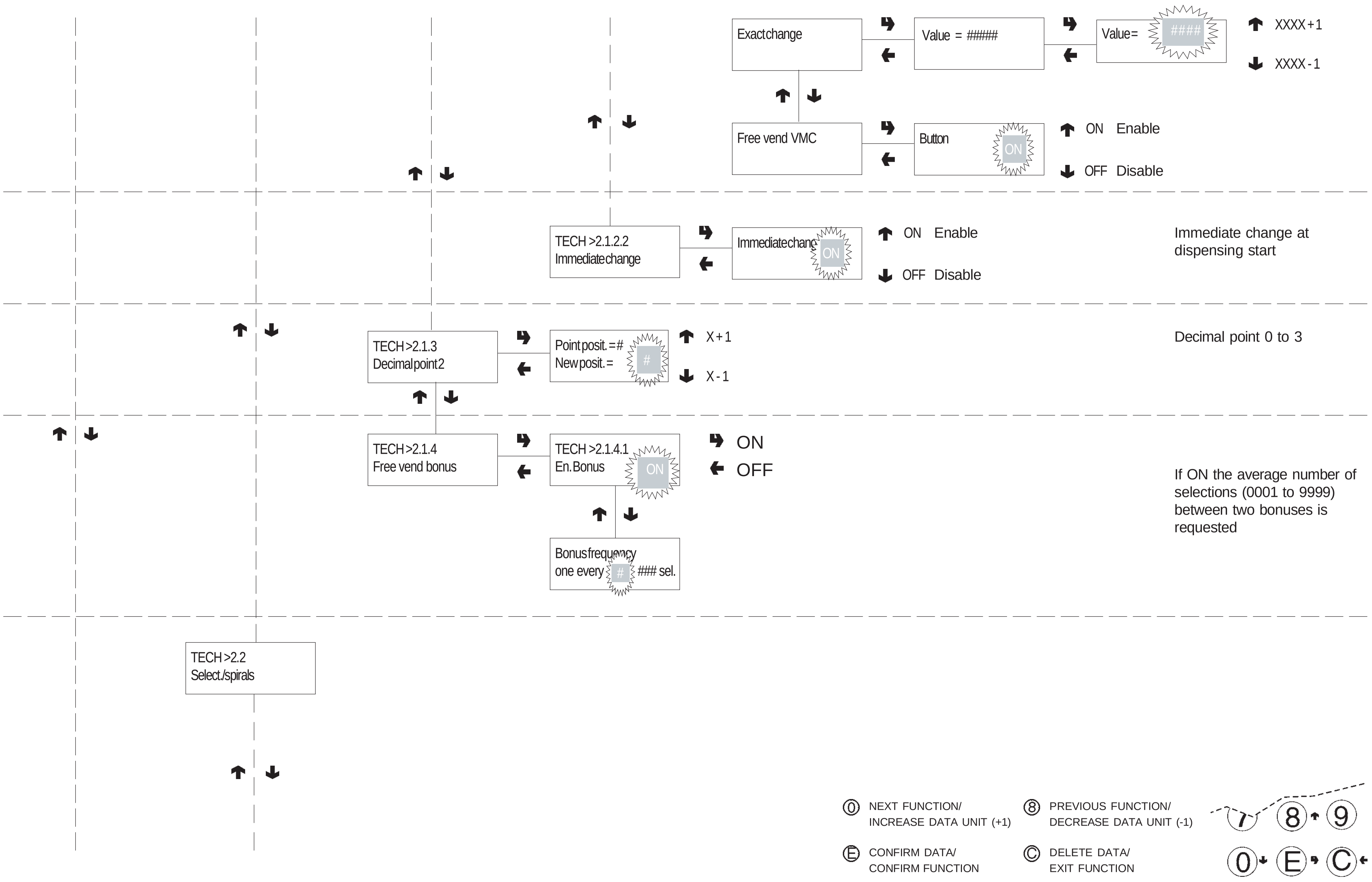
Ⓔ CONFIRM DATA/
CONFIRM FUNCTION

Ⓒ DELETE DATA/
EXIT FUNCTION

Technician menu - Summary


Accepted coins
Coin #
Coins 1 to 16
Coins1
Yes
Yes Enable
No Disable
Accepted change
Coin #
Coins 1 to 16
Coins1
Yes
Yes Enable
No Disable
Disp.buttons
Button
ON
ON Enable
OFF Disable
Eq. exact change
Combination 1-12
Combination
#
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. unit
C.P.C. device
ON
ON Enable
OFF Disable
⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)
⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)
Ⓔ CONFIRM DATA/ CONFIRM FUNCTION
Ⓒ DELETE DATA/ EXIT FUNCTION
7 8 9
0 E C

Technician menu - Summary


Exactchange
Value = #####
Value= ####
XXXX+1
XXXX-1
Free vend VMC
Button ON
ON Enable
OFF Disable
TECH >2.1.2.2
Immediatechange
Immediatechange ON
ON Enable
OFF Disable
TECH >2.1.3
Decimalpoint2
Pointposit.=#
Newposit.= #
X+1
X-1
TECH >2.1.4
Free vend bonus
TECH >2.1.4.1
En.Bonus ON
ON
OFF
Bonusfrequency
one every # ### sel.
TECH >2.2
Select./spirals
7 8 9
0 E C

Immediate change at dispensing start

Decimal point 0 to 3

If ON the average number of selections (0001 to 9999) between two bonuses is requested

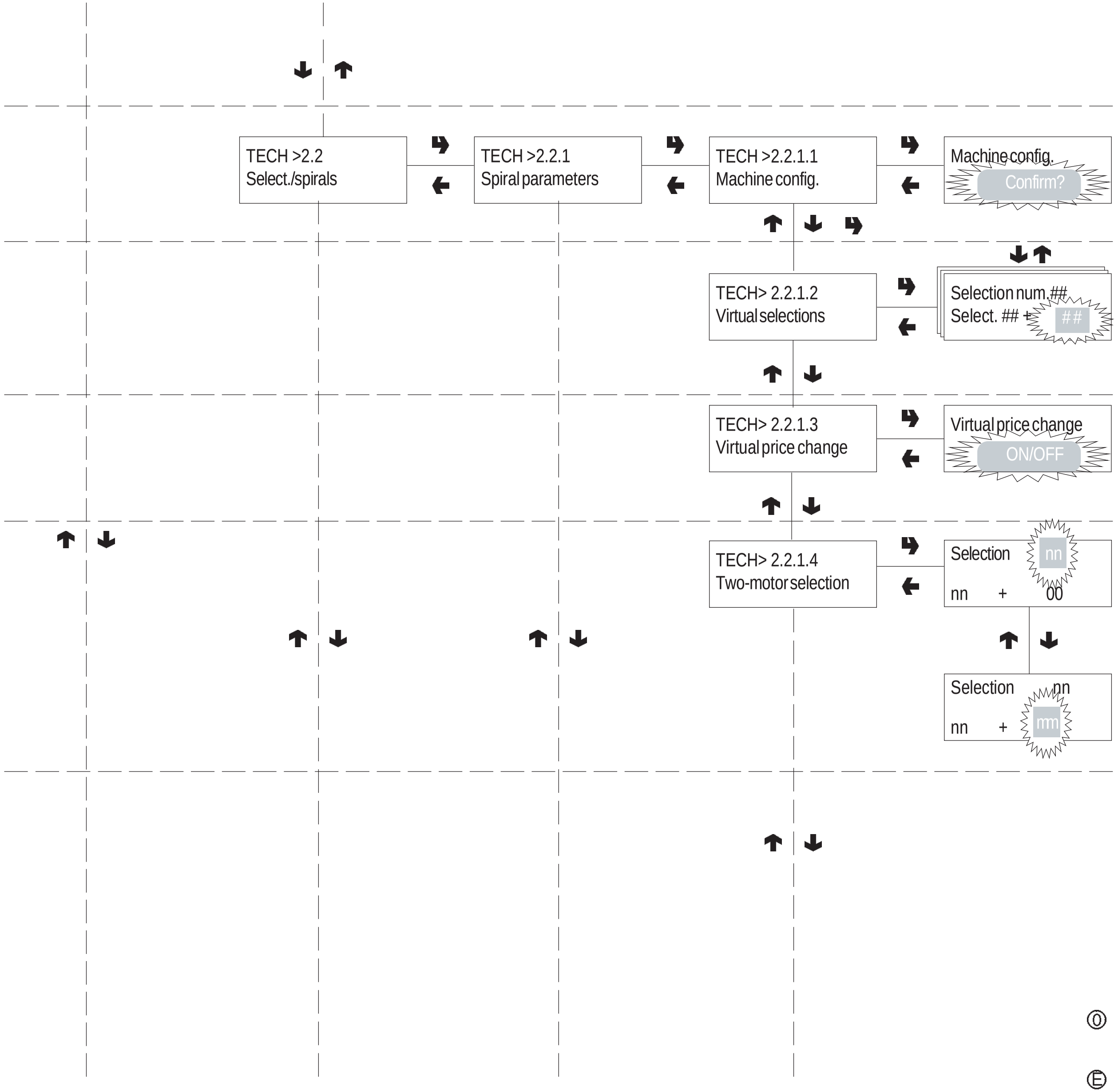
⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION

Technician menu - Summary


TECH >2.2
Select./spirals
TECH >2.2.1
Spiral parameters
TECH >2.2.1.1
Machine config.
Machine config.
Confirm?
TECH> 2.2.1.2
Virtual selections
Selection num.##
Select. ## + ##
TECH> 2.2.1.3
Virtual price change
Virtual price change
ON/OFF
TECH> 2.2.1.4
Two-motor selection
Selection nn
nn + 00
Selection nn
nn + mm

Virtual selections

Setting two selections (10 to 69) in a virtual one (70 to 79)

Selections 10 to 69

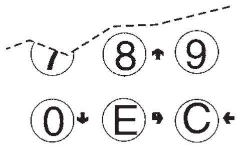
mm number of combined motor
if mm = nn the combination between the two selections is cancelled

⓪ NEXT FUNCTION/
INCREASE DATA UNIT (+1)

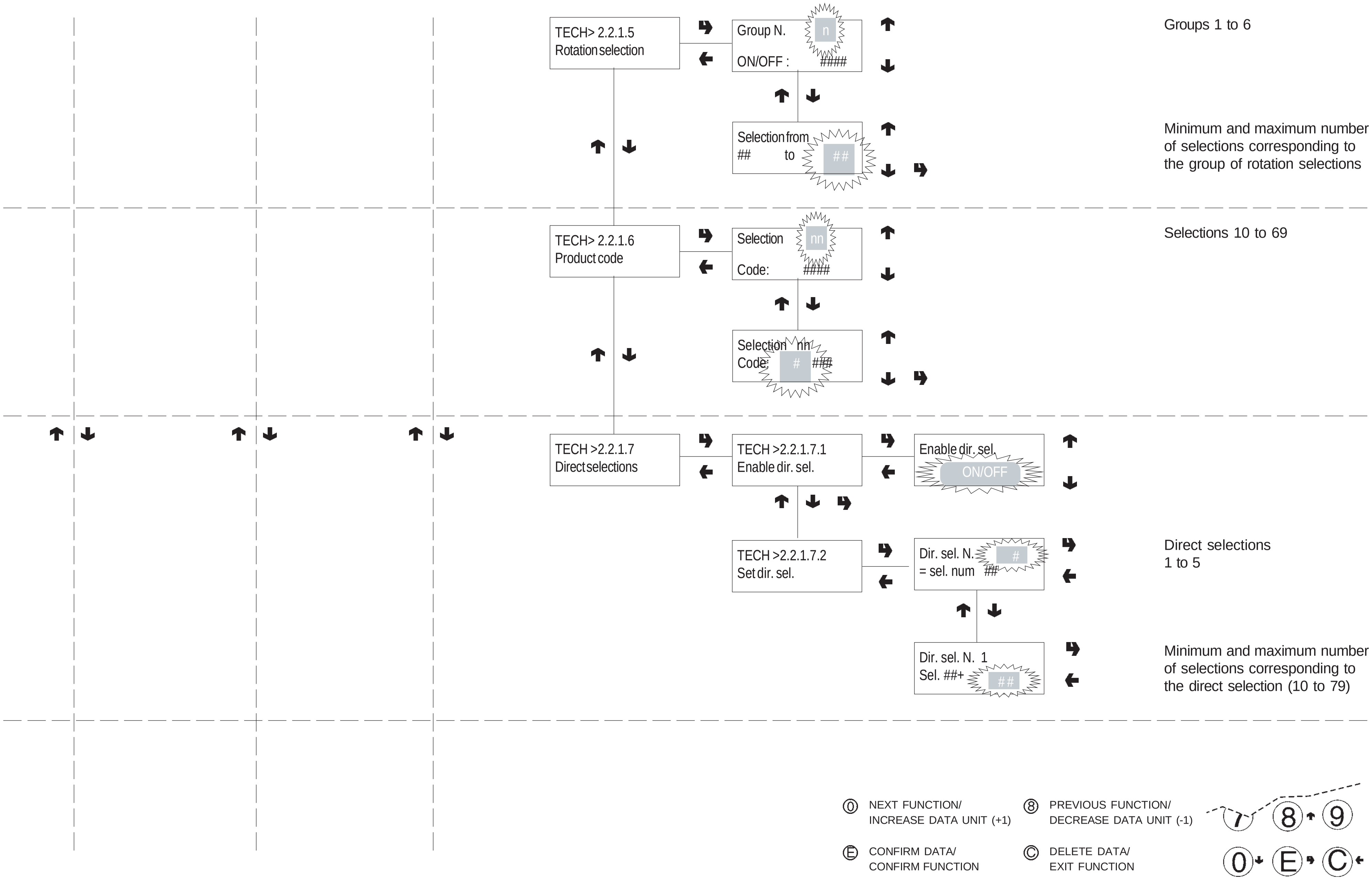
⑧ PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/
CONFIRM FUNCTION

Ⓒ DELETE DATA/
EXIT FUNCTION



Technician menu - Summary


TECH> 2.2.1.5
Rotation selection
Group N. n
ON/OFF : ####
Selection from
## to ##
TECH> 2.2.1.6
Product code
Selection nn
Code: ####
Selection nn
Code: # ###
TECH >2.2.1.7
Direct selections
TECH >2.2.1.7.1
Enable dir. sel.
Enable dir. sel.
ON/OFF
TECH >2.2.1.7.2
Set dir. sel.
Dir. sel. N. #
= sel. num ##
Dir. sel. N. 1
Sel. ##+ ##
7
8
9
0
E
C

Groups 1 to 6

Minimum and maximum number of selections corresponding to the group of rotation selections

Selections 10 to 69

Direct selections
1 to 5

Minimum and maximum number of selections corresponding to the direct selection (10 to 79)

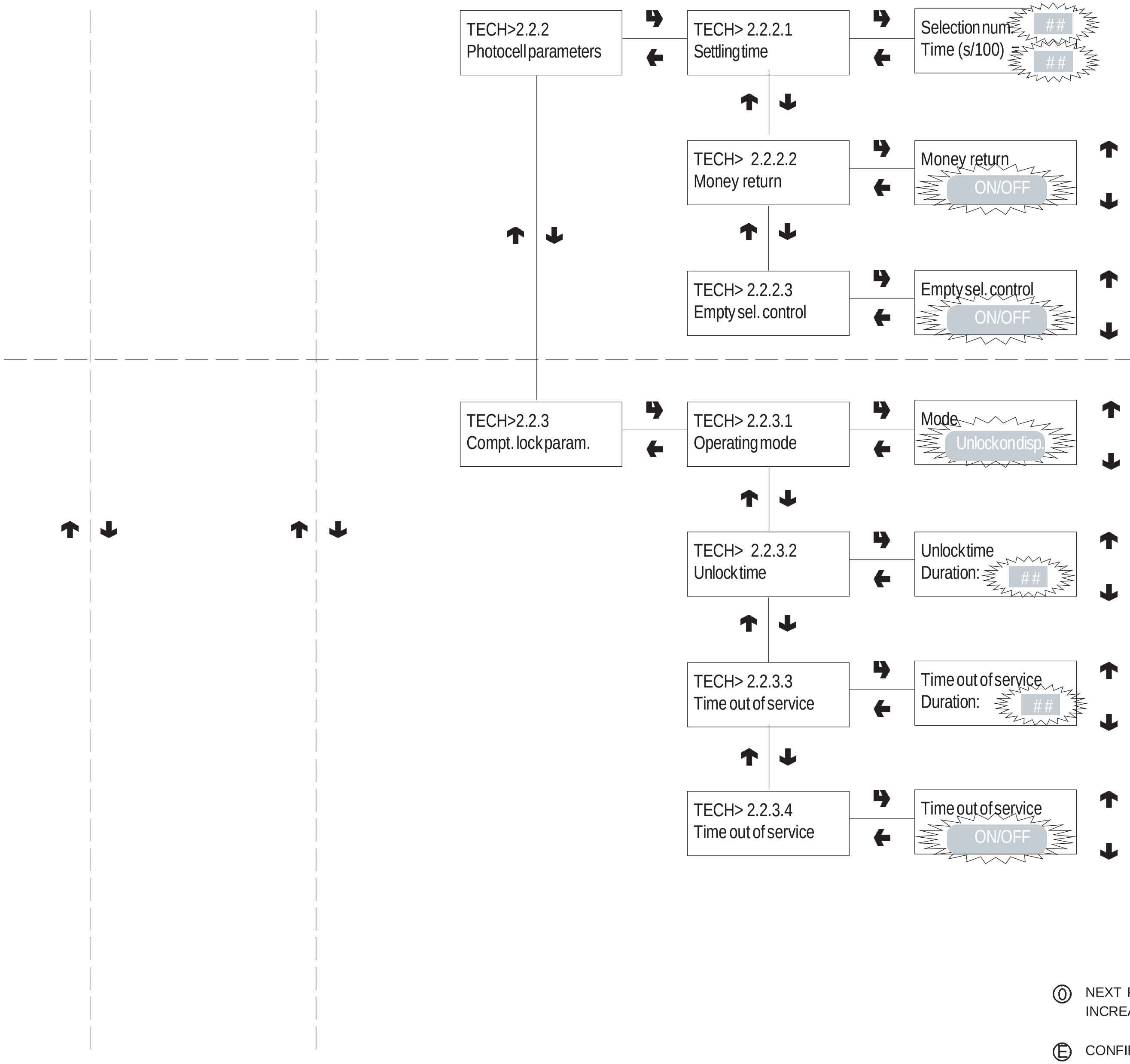
⓪ NEXT FUNCTION/
INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/
CONFIRM FUNCTION

Ⓒ DELETE DATA/
EXIT FUNCTION

Technician menu - Summary


TECH>2.2.2
Photocell parameters
TECH> 2.2.2.1
Settling time
Selection num.
Time (s/100)
##
##
TECH> 2.2.2.2
Money return
Money return
ON/OFF
TECH> 2.2.2.3
Empty sel. control
Empty sel. control
ON/OFF
TECH>2.2.3
Compt. lock param.
TECH> 2.2.3.1
Operating mode
Mode
Unlock on disp.
TECH> 2.2.3.2
Unlock time
Unlock time
Duration:
##
TECH> 2.2.3.3
Time out of service
Time out of service
Duration:
##
TECH> 2.2.3.4
Time out of service
Time out of service
ON/OFF

UNLOCK DISPENSING COMPARTMENT

Always unlocked

Unlocked upon dispensing for ## minutes

01 to 10 minutes

01 to 10 minutes

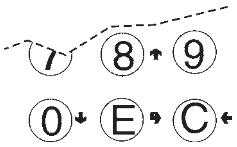
Out of service if the compartment fails when open

⓪ NEXT FUNCTION/
INCREASE DATA UNIT (+1)

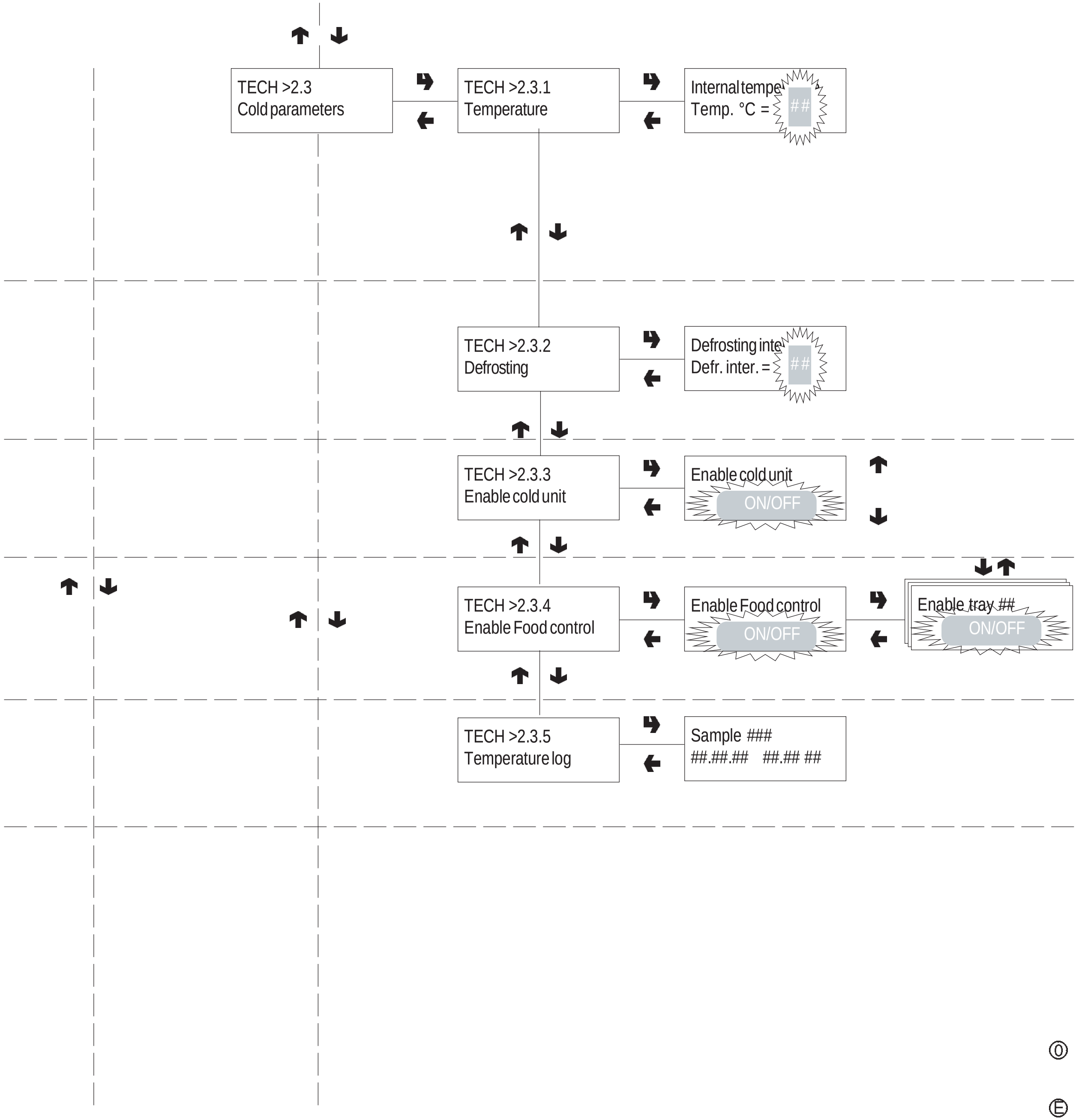
⑧ PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/
CONFIRM FUNCTION

Ⓒ DELETE DATA/
EXIT FUNCTION



Technician menu - Summary


TECH >2.3
Cold parameters
TECH >2.3.1
Temperature
Internal tempe
Temp. °C =
##
TECH >2.3.2
Defrosting
Defrosting inte
Defr. inter. =
##
TECH >2.3.3
Enable cold unit
Enable cold unit
ON/OFF
TECH >2.3.4
Enable Food control
Enable Food control
ON/OFF
Enable tray ##
ON/OFF
TECH >2.3.5
Temperature log
Sample ###
##.##.## ##.## ##

Operating temperature
5°C to 20°C.
8°C by default

Food models
2°C to 20°C.
8°C by default

Defrosting interval
0 to 99 hours
6 hours by default

Trays 4 to 6

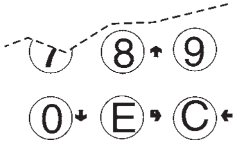
0 to 143 samples.
Reading
Date
Time
Temperature

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

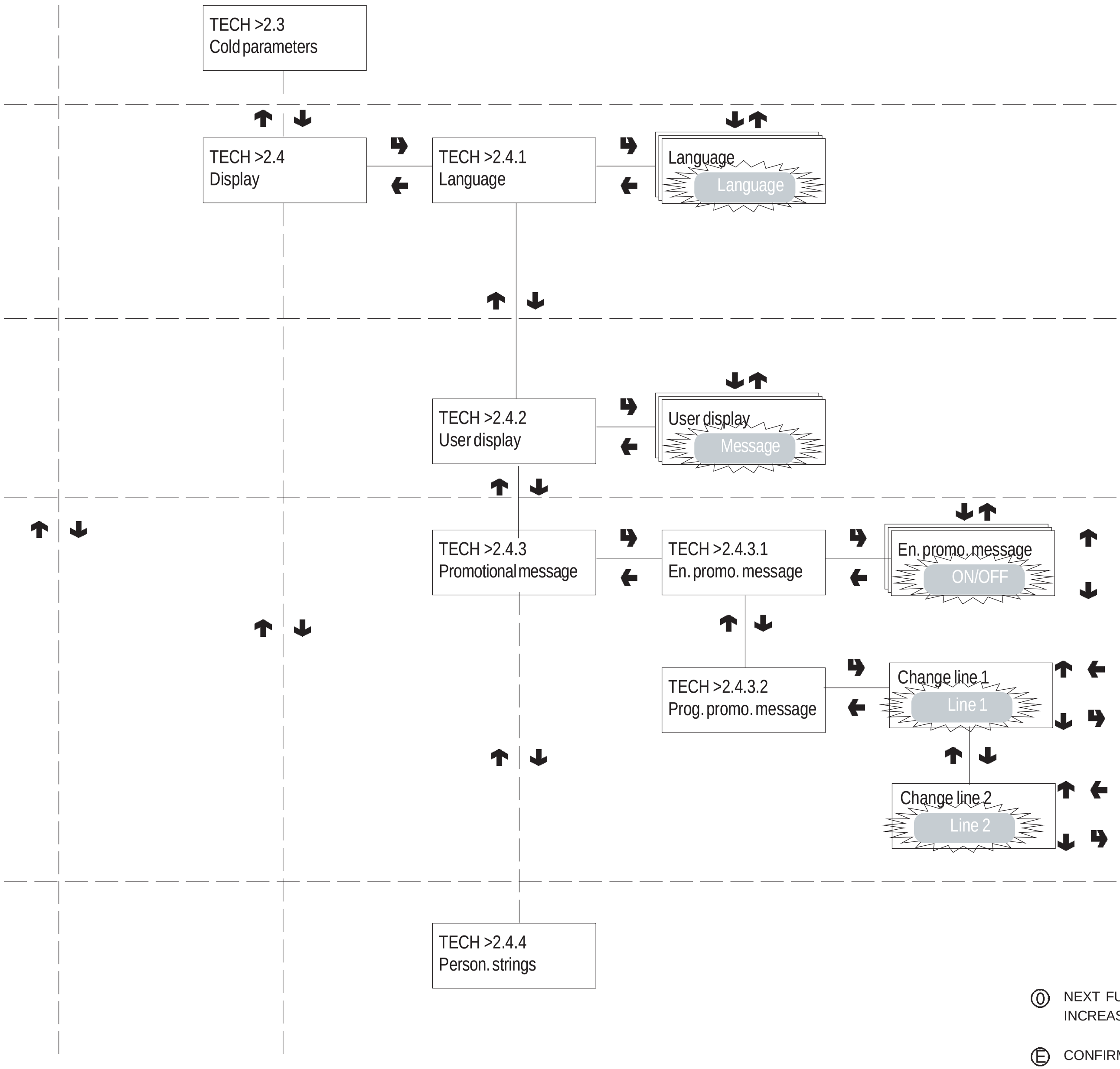
⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



Technician menu - Summary


TECH >2.3
Cold parameters
TECH >2.4
Display
TECH >2.4.1
Language
Language
Language
TECH >2.4.2
User display
User display
Message
TECH >2.4.3
Promotional message
TECH >2.4.3.1
En. promo. message
En. promo. message
ON/OFF
TECH >2.4.3.2
Prog. promo. message
Change line 1
Line 1
Change line 2
Line 2
TECH >2.4.4
Person. strings

AVAILABLE LANGUAGES

Italian
English
French
Spanish
Portoguese
Flemish

POSSIBLE MESSAGES

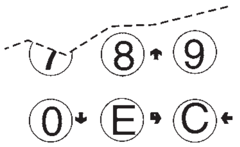
No messagge
Internal temperature
Time

CHANGE 2-LINE USER MESSAGE

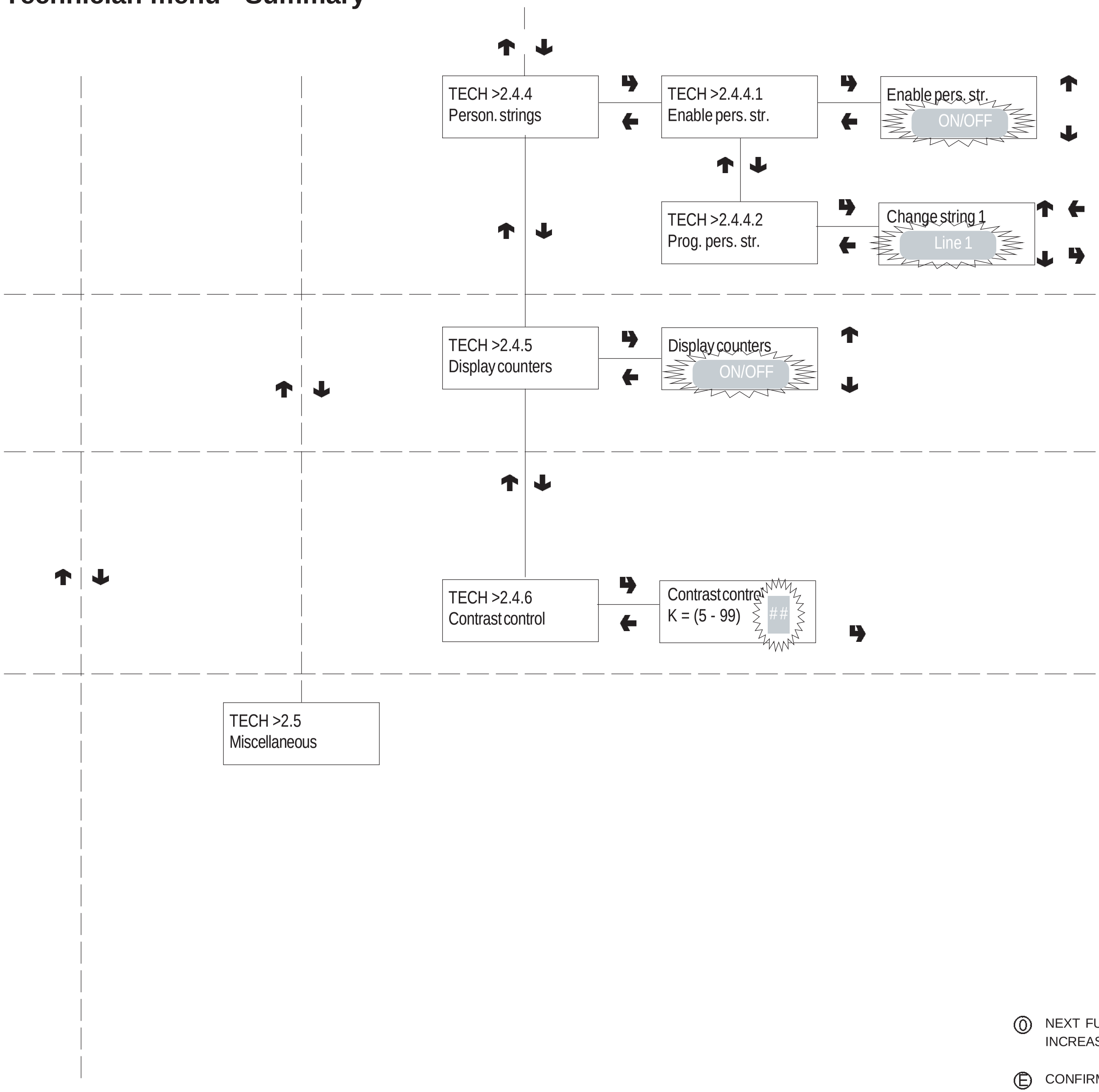
↑↓ Letter scrolling in a sequence (20 characters per 4 lines)

↳ Next letter
← Next message

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)	⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)
Ⓔ CONFIRM DATA/ CONFIRM FUNCTION	Ⓒ DELETE DATA/ EXIT FUNCTION



Technician menu - Summary


TECH >2.4.4
Person. strings
TECH >2.4.4.1
Enable pers. str.
Enable pers. str.
ON/OFF
TECH >2.4.4.2
Prog. pers. str.
Change string 1
Line 1
TECH >2.4.5
Display counters
Display counters
ON/OFF
TECH >2.4.6
Contrast control
Contrast control
K = (5 - 99)
##
TECH >2.5
Miscellaneous

CHANGE STRINGS

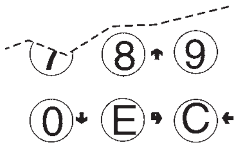
↑↓ Letter scrolling in a sequence (20 characters per 4 lines)

↪ Next letter
← Next string (1 to 30)

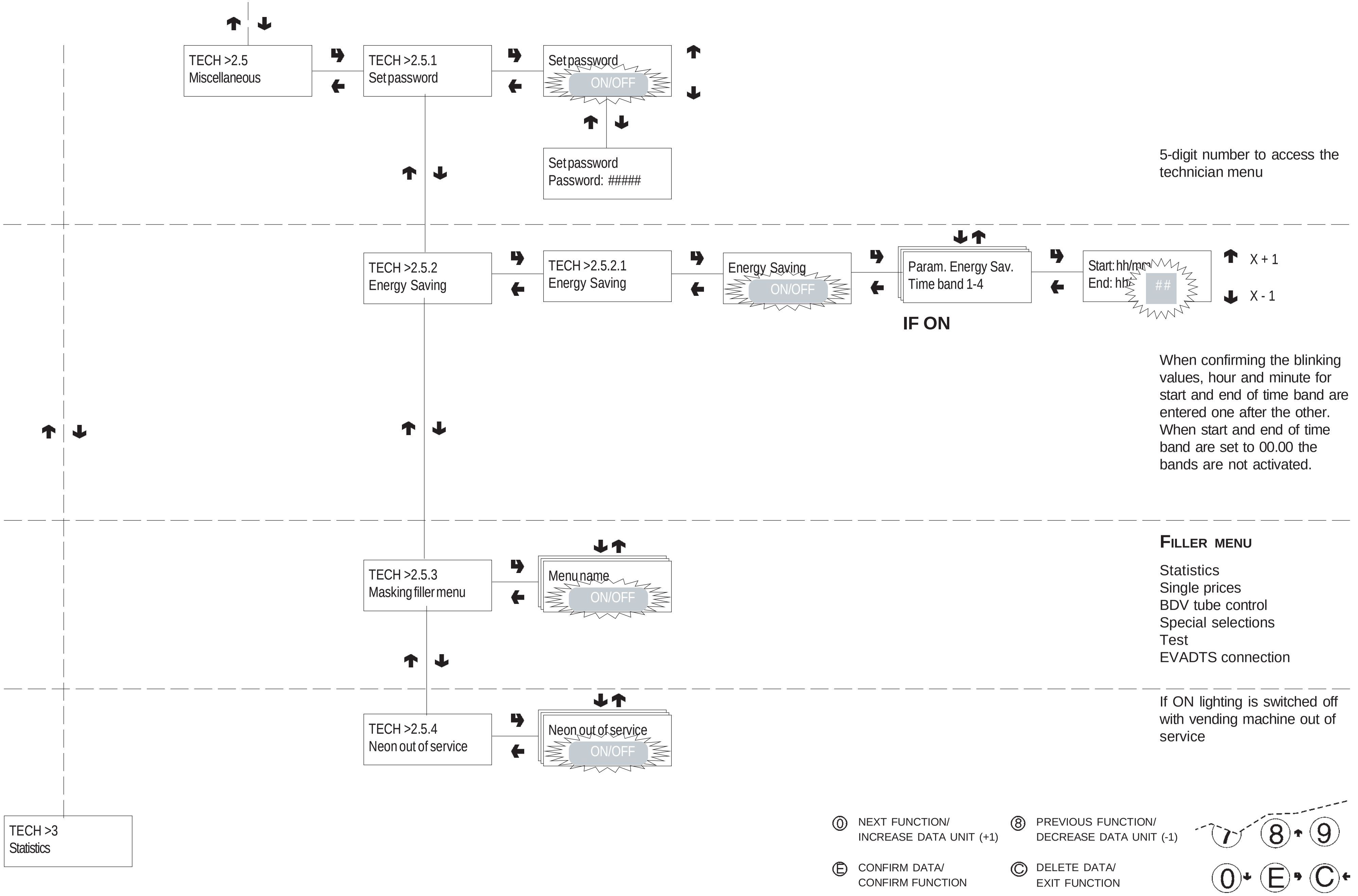
Displaying the general counter when the machine is switched on

Enter the percentage value from the keypad

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)
⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)
Ⓔ CONFIRM DATA/ CONFIRM FUNCTION
Ⓒ DELETE DATA/ EXIT FUNCTION



Technician menu - Summary


TECH >2.5
Miscellaneous
TECH >2.5.1
Set password
Set password
ON/OFF
Set password
Password: #####
TECH >2.5.2
Energy Saving
TECH >2.5.2.1
Energy Saving
Energy Saving
ON/OFF
Param. Energy Sav.
Time band 1-4
IF ON
Start: hh/mm
End: hh
##
X + 1
X - 1
TECH >2.5.3
Masking filler menu
Menu name
ON/OFF
TECH >2.5.4
Neon out of service
Neon out of service
ON/OFF
TECH >3
Statistics
7
8
9
0
E
C

5-digit number to access the technician menu

When confirming the blinking values, hour and minute for start and end of time band are entered one after the other. When start and end of time band are set to 00.00 the bands are not activated.

FILLER MENU

Statistics
Single prices
BDV tube control
Special selections
Test
EVADTS connection

If ON lighting is switched off with vending machine out of service

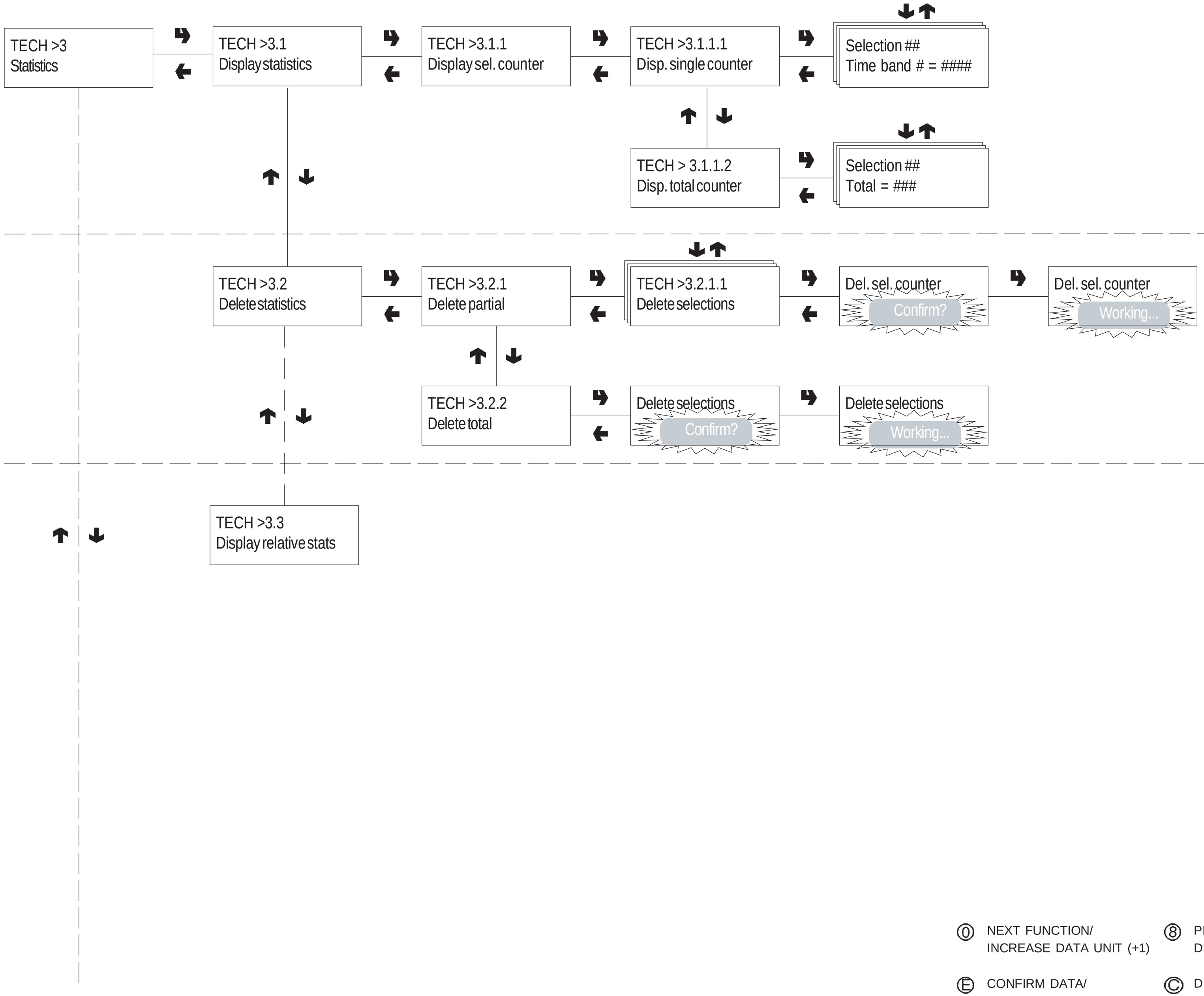
⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION

Technician menu - Summary


TECH >3
Statistics
TECH >3.1
Display statistics
TECH >3.1.1
Display sel. counter
TECH >3.1.1.1
Disp. single counter
Selection ##
Time band # = ####
TECH > 3.1.1.2
Disp. total counter
Selection ##
Total = ###
TECH >3.2
Delete statistics
TECH >3.2.1
Delete partial
TECH >3.2.1.1
Delete selections
Del. sel. counter
Confirm?
Del. sel. counter
Working...
TECH >3.2.2
Delete total
Delete selections
Confirm?
Delete selections
Working...
TECH >3.3
Display relative stats

TOTAL STATISTICS

Display sales by single selection for each time band and total

Display total sales by single selection

DELETE STATISTICS

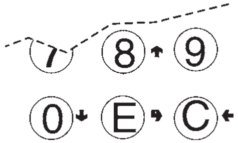
Delete data for:
Selections
Time bands
Failures
Coin mechanism data
Photocell errors
Motor errors

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

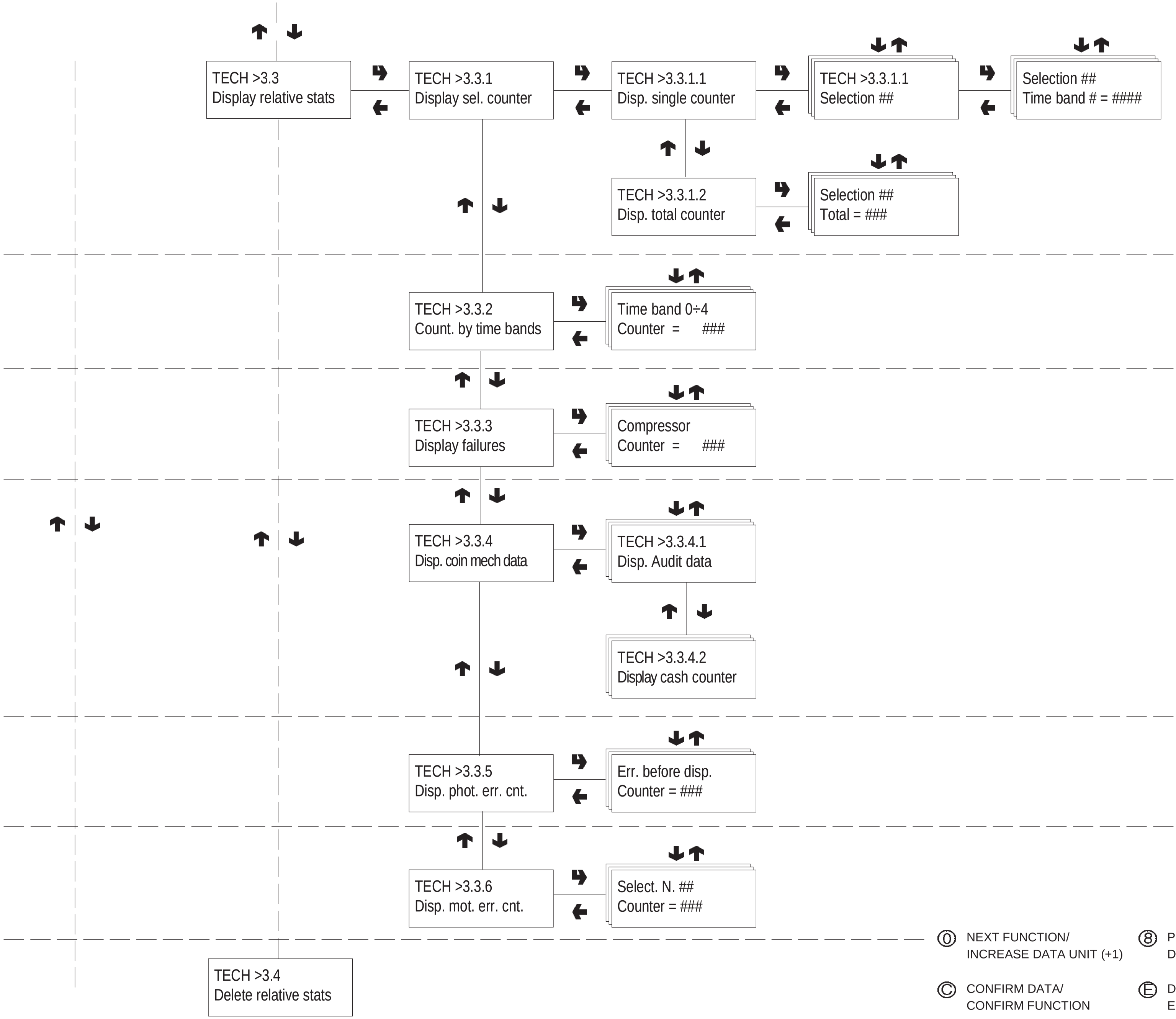
⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

Ⓔ CONFIRM DATA/ CONFIRM FUNCTION

Ⓒ DELETE DATA/ EXIT FUNCTION



Technician menu - Summary


TECH >3.3
Display relative stats
TECH >3.3.1
Display sel. counter
TECH >3.3.1.1
Disp. single counter
TECH >3.3.1.1
Selection ##
Selection ##
Time band # = ####
TECH >3.3.1.2
Disp. total counter
Selection ##
Total = ###
TECH >3.3.2
Count. by time bands
Time band 0÷4
Counter = ###
TECH >3.3.3
Display failures
Compressor
Counter = ###
TECH >3.3.4
Disp. coin mech data
TECH >3.3.4.1
Disp. Audit data
TECH >3.3.4.2
Display cash counter
TECH >3.3.5
Disp. phot. err. cnt.
Err. before disp.
Counter = ###
TECH >3.3.6
Disp. mot. err. cnt.
Select. N. ##
Counter = ###
TECH >3.4
Delete relative stats

RELATIVE STATISTICS

Display sales by single selection for each time band and total

Display total sales by single selection

TOTAL SALES
by band
in test mode
free

Monitored failures:
Compressor
Coin mechanism
RAM data
Probe

COIN MECHANISM DATA (according to protocol used)

Validators and Executive
Cashed and sold

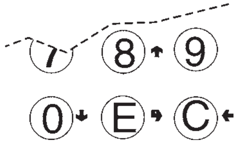
BDV Audit

MDB Audit

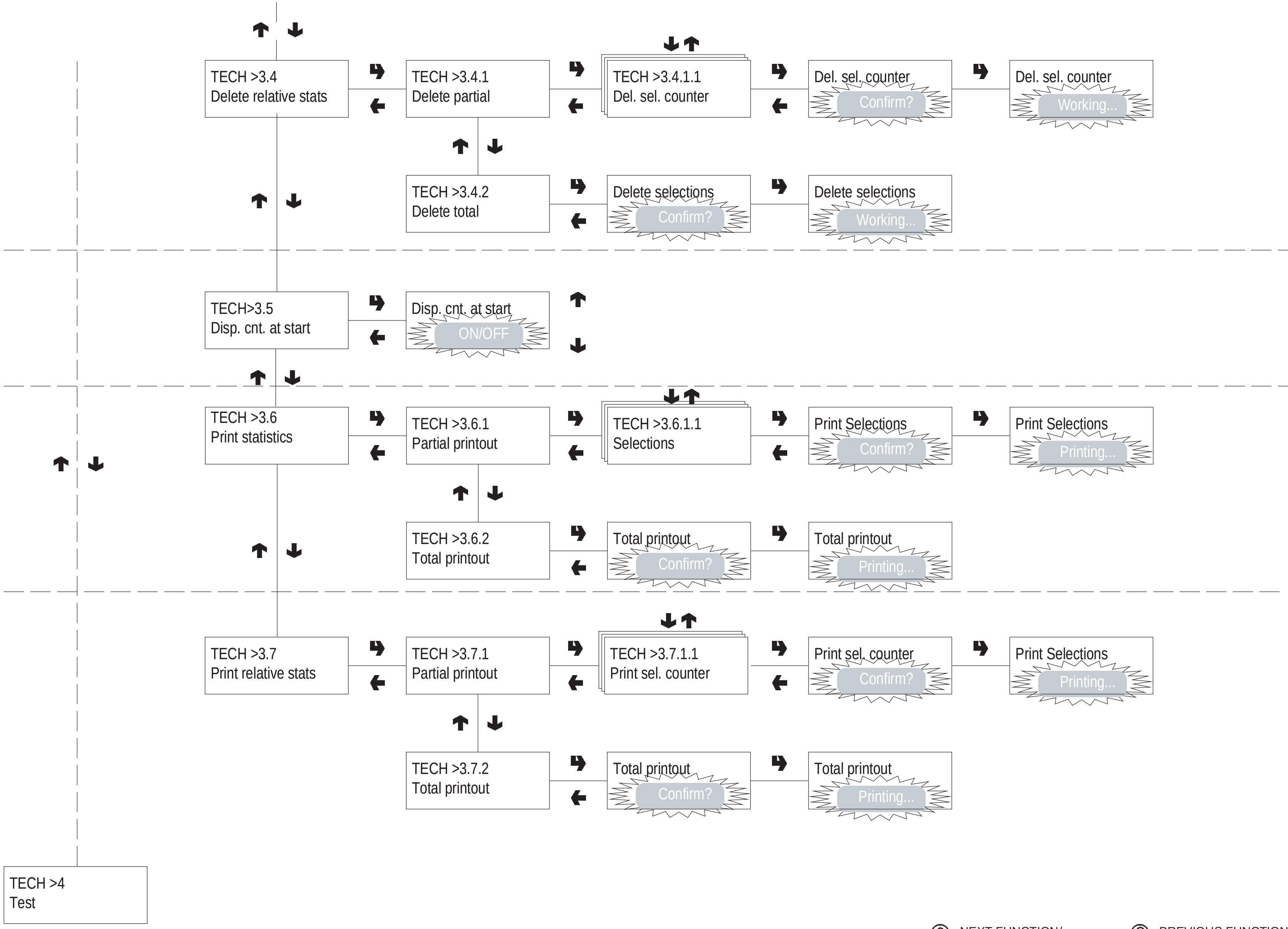
Photocell errors:
Before dispensing
After dispensing
Product not detected

Motor error

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)	⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)
Ⓒ CONFIRM DATA/ CONFIRM FUNCTION	Ⓔ DELETE DATA/ EXIT FUNCTION



Technician menu - Summary


TECH >3.4
Delete relative stats
TECH >3.4.1
Delete partial
TECH >3.4.1.1
Del. sel. counter
Del. sel. counter
Confirm?
Del. sel. counter
Working...
TECH >3.4.2
Delete total
Delete selections
Confirm?
Delete selections
Working...
TECH>3.5
Disp. cnt. at start
Disp. cnt. at start
ON/OFF
TECH >3.6
Print statistics
TECH >3.6.1
Partial printout
TECH >3.6.1.1
Selections
Print Selections
Confirm?
Print Selections
Printing...
TECH >3.6.2
Total printout
Total printout
Confirm?
Total printout
Printing...
TECH >3.7
Print relative stats
TECH >3.7.1
Partial printout
TECH >3.7.1.1
Print sel. counter
Print sel. counter
Confirm?
Print Selections
Printing...
TECH >3.7.2
Total printout
Total printout
Confirm?
Total printout
Printing...
TECH >4
Test

RELATIVE STATISTICS

Delete data for:
Selections
Time bands
Failures
Coin mechanism data
Photocell errors
Motor errors

The number of selections made are indicated on the display at machine start-up.

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

TOTAL STATISTICS

RELATIVE STATISTICS

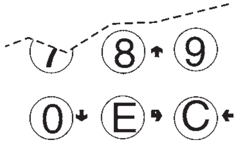
Print data for:
Selections
Time bands
Failures
Coin mechanism data
Photocell errors
Motor errors

⓪ NEXT FUNCTION/
INCREASE DATA UNIT (+1)

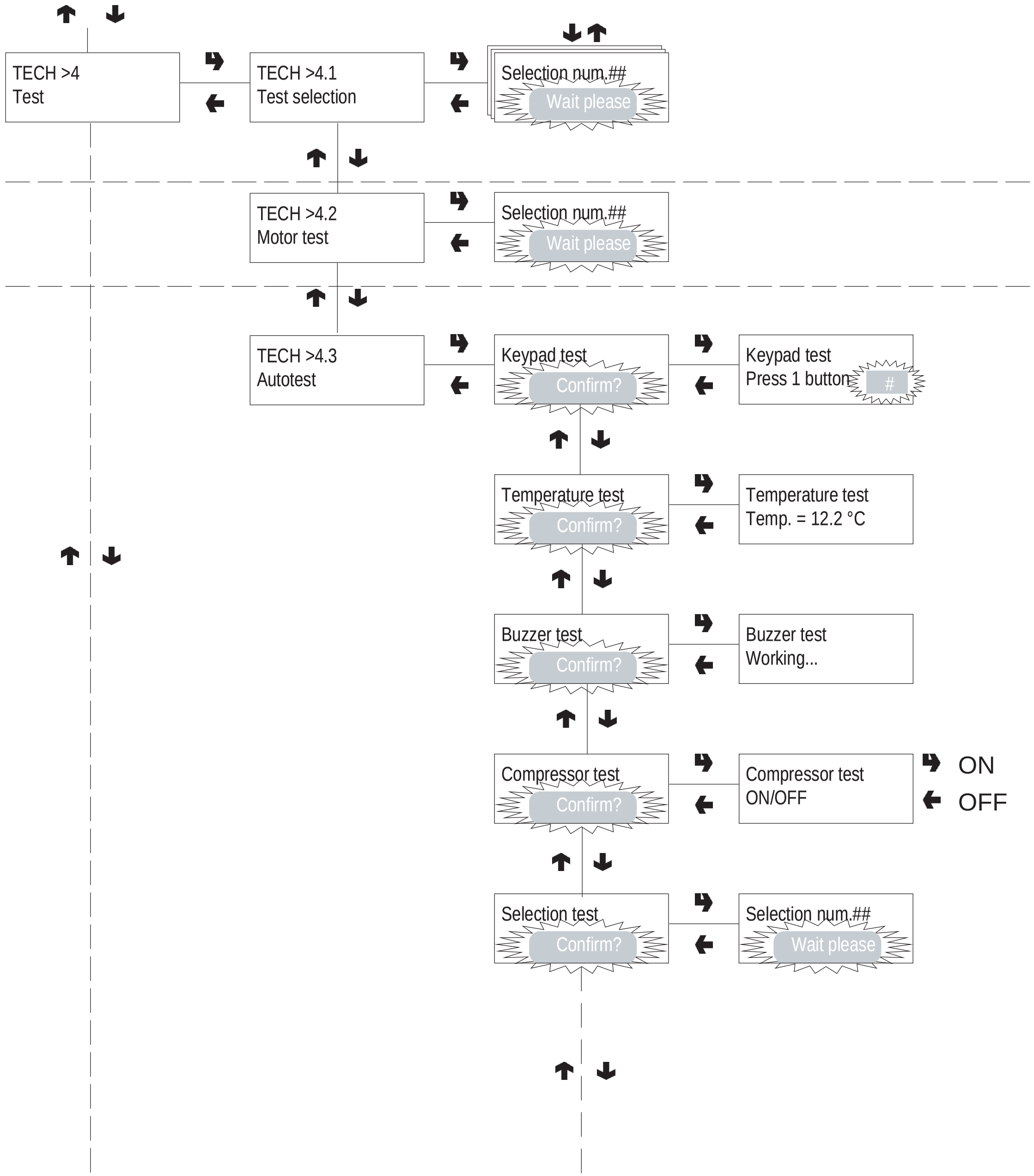
⑧ PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

Ⓒ CONFIRM DATA/
CONFIRM FUNCTION

Ⓔ DELETE DATA/
EXIT FUNCTION



Technician menu - Summary


TECH >4
Test
TECH >4.1
Test selection
Selection num.##
Wait please
TECH >4.2
Motor test
Selection num.##
Wait please
TECH >4.3
Autotest
Keypad test
Confirm?
Keypad test
Press 1 button
#
Temperature test
Confirm?
Temperature test
Temp. = 12.2 °C
Buzzer test
Confirm?
Buzzer test
Working...
Compressor test
Confirm?
Compressor test
ON/OFF
ON
OFF
Selection test
Confirm?
Selection num.##
Wait please

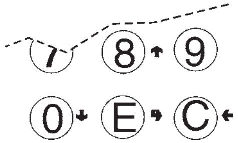
The selection number changes automatically

When pressing the button, the next button is presented automatically

Emission of a series of sounds

All selections are activated in a sequence

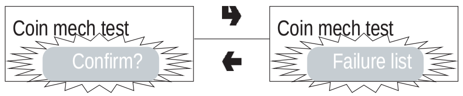
⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)	⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)
Ⓒ CONFIRM DATA/ CONFIRM FUNCTION	Ⓔ DELETE DATA/ EXIT FUNCTION



Technician menu - Summary

WITH EXECUTIVE OR BDV COIN MECHANISMS

If the coin mechanism communicates it displays "OK"

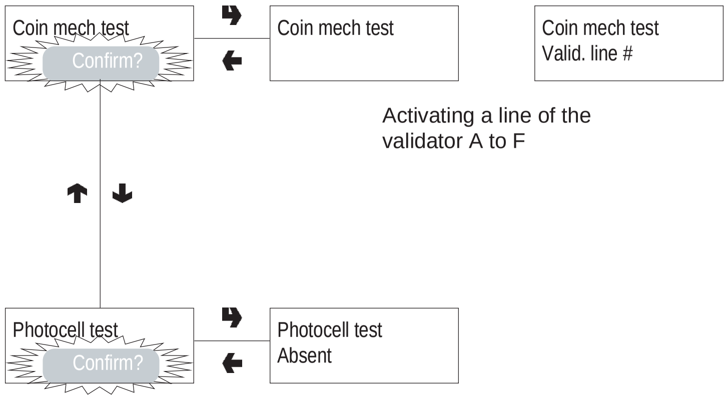

Coin mech test
Confirm?
Coin mech test
Failure list

ALTERNATIVELY

WITH A VALIDATOR

Line two remains for approximately 2 seconds

WITH PHOTOCELLS DISCONNECTED


Coin mech test
Confirm?
Coin mech test
Coin mech test
Valid. line #
Activating a line of the validator A to F
Photocell test
Confirm?
Photocell test
Absent

ALTERNATIVELY

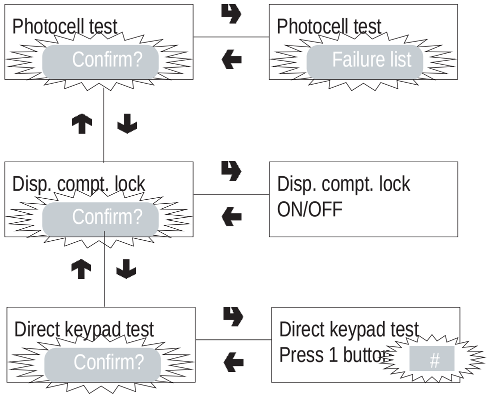
WITH PHOTOCELLS

If the light beam is interrupted within 2.5 seconds it displays "OK"
or
Error no product
If a failure is present:

Error after dispensing
Error before dispensing

With dispensing compartment lock present

When pressing the button, the next button is presented automatically

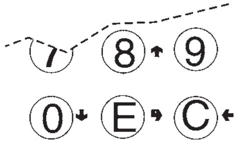

Photocell test
Confirm?
Photocell test
Failure list
Disp. compt. lock
Confirm?
Disp. compt. lock
ON/OFF
Direct keypad test
Confirm?
Direct keypad test
Press 1 button
#

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)

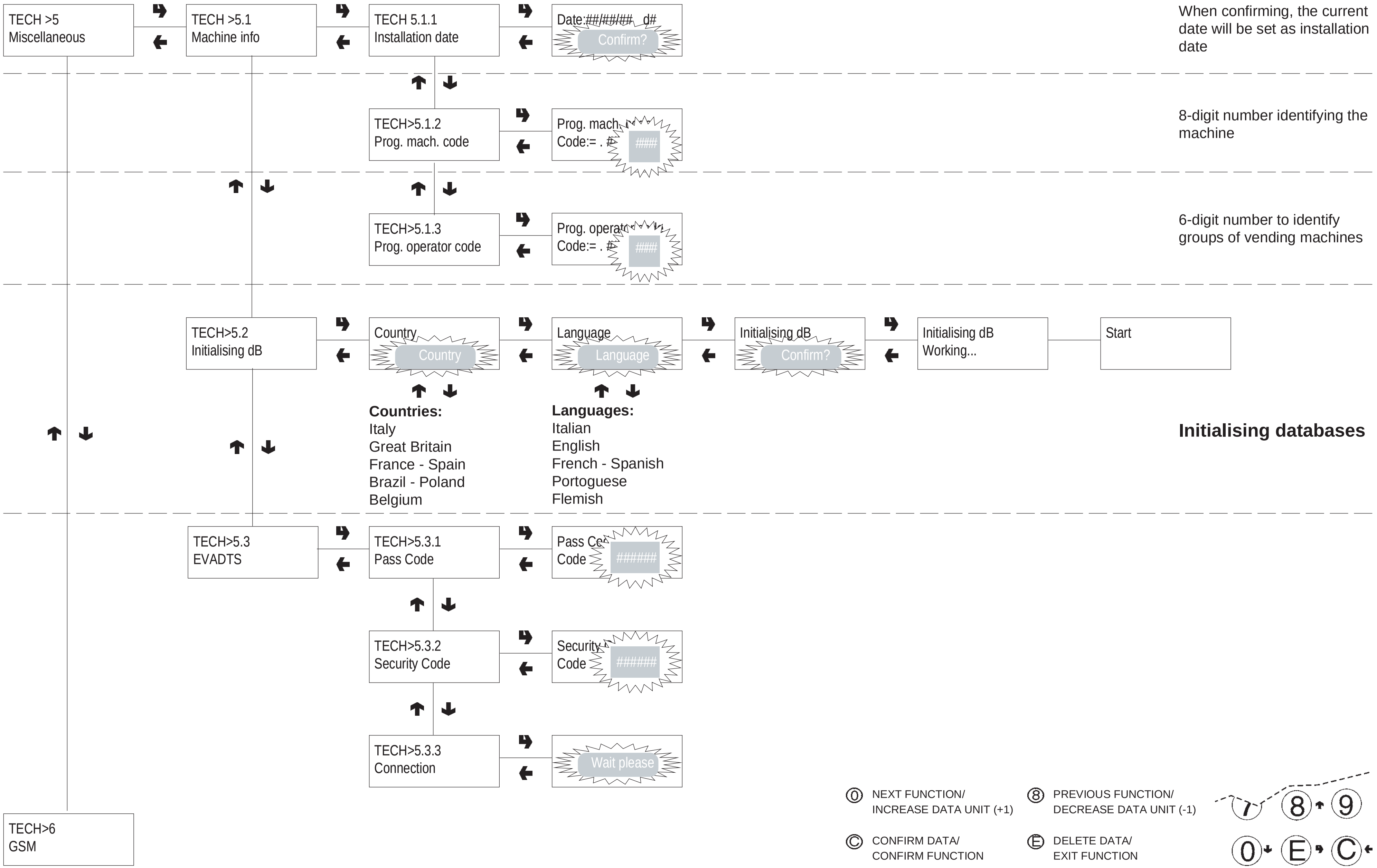
⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)

Ⓒ CONFIRM DATA/ CONFIRM FUNCTION

Ⓔ DELETE DATA/ EXIT FUNCTION



Technician menu - Summary


TECH >5
Miscellaneous
TECH >5.1
Machine info
TECH 5.1.1
Installation date
Date:##/##/## d#
Confirm?
TECH>5.1.2
Prog. mach. code
Prog. mach.
Code:= . #
####
TECH>5.1.3
Prog. operator code
Prog. operato
Code:= . #
####
TECH>5.2
Initialising dB
Country
Country
Language
Language
Initialising dB
Confirm?
Initialising dB
Working...
Start
TECH>5.3
EVADTS
TECH>5.3.1
Pass Code
Pass Co
Code
######
TECH>5.3.2
Security Code
Security
Code
######
TECH>5.3.3
Connection
Wait please
TECH>6
GSM
7
8
9
0
E
C

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

8-digit number identifying the machine

6-digit number to identify groups of vending machines

Countries:
Italy
Great Britain
France - Spain
Brazil - Poland
Belgium

Languages:
Italian
English
French - Spanish
Portoguese
Flemish

Initialising databases

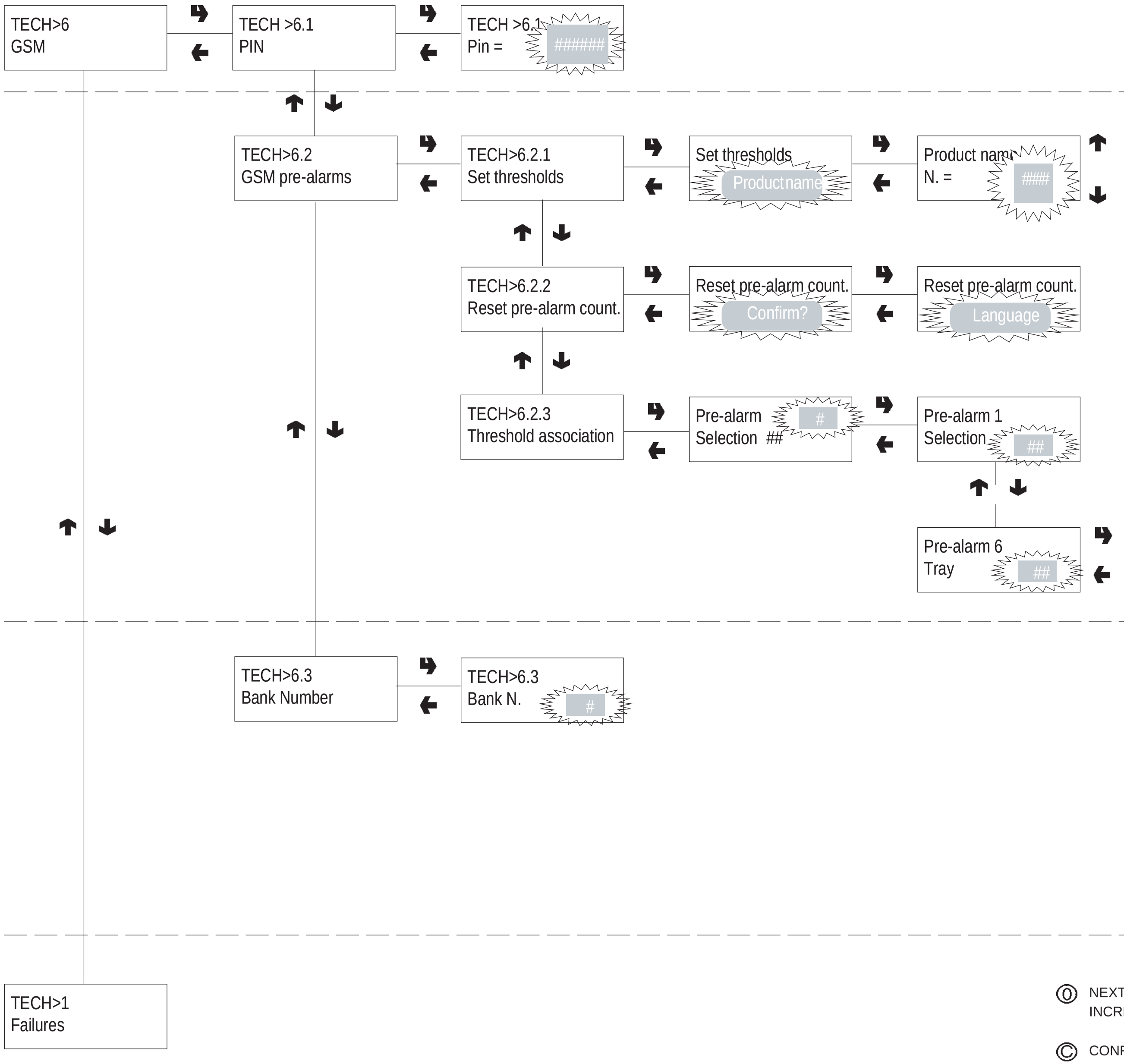
⓪ NEXT FUNCTION/
INCREASE DATA UNIT (+1)

⑧ PREVIOUS FUNCTION/
DECREASE DATA UNIT (-1)

Ⓒ CONFIRM DATA/
CONFIRM FUNCTION

Ⓔ DELETE DATA/
EXIT FUNCTION

Technician menu - Summary


TECH>6
GSM
TECH >6.1
PIN
TECH >6.1
Pin =
######
TECH>6.2
GSM pre-alarms
TECH>6.2.1
Set thresholds
Set thresholds
Product name
Product name
N. =
####
TECH>6.2.2
Reset pre-alarm count.
Reset pre-alarm count.
Confirm?
Reset pre-alarm count.
Language
TECH>6.2.3
Threshold association
Pre-alarm
Selection ##
#
Pre-alarm 1
Selection
##
Pre-alarm 6
Tray
##
TECH>6.3
Bank Number
TECH>6.3
Bank N.
#
TECH>1
Failures

Pin code assigned to the modem

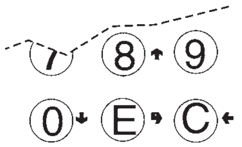
Number of products after which send an "ending product" pre-alarm

Resetting count of dispensed products

Association of thresholds to 5 selections and 2 trays.

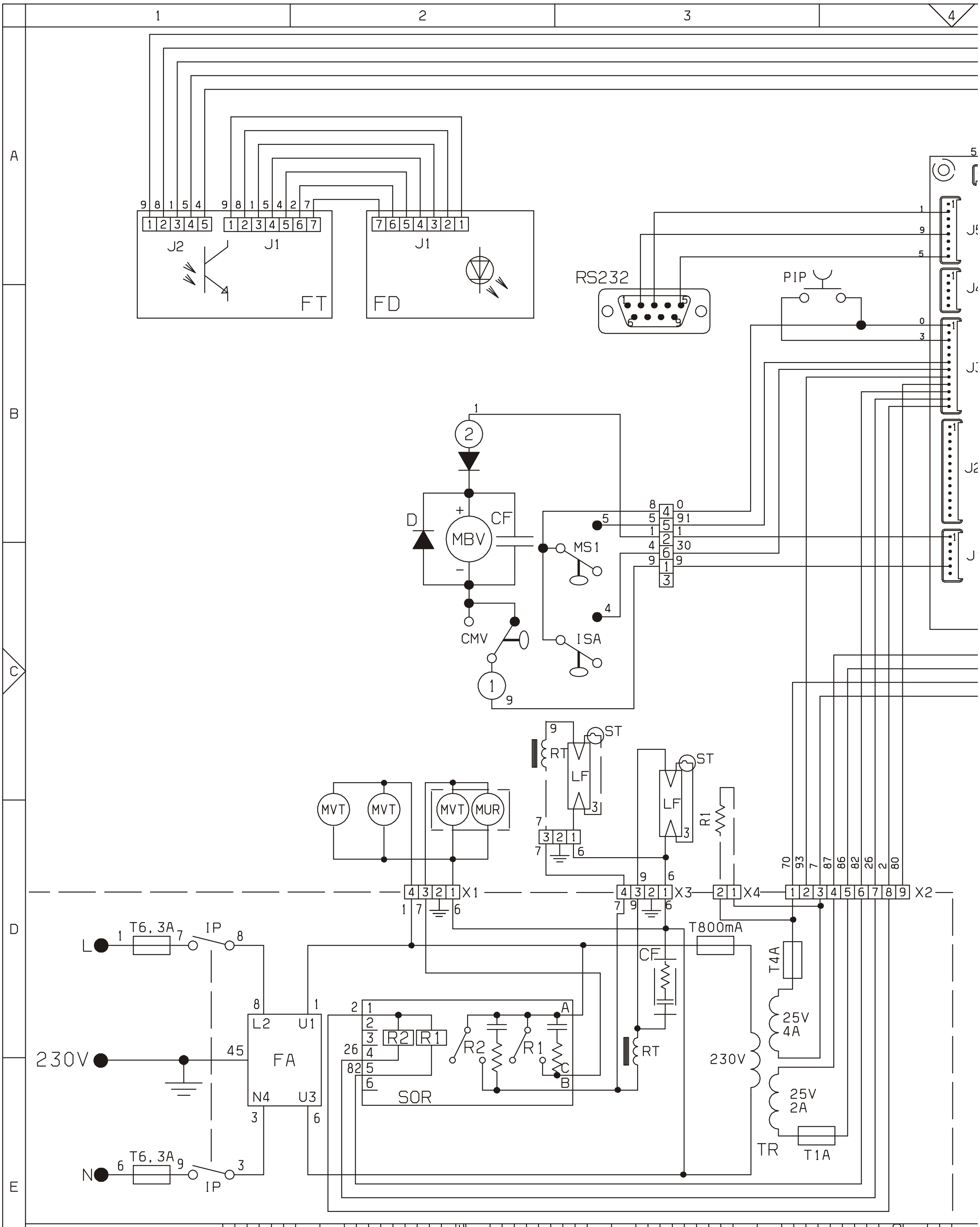
1 to 7 identifying
Slave GSM
0 identifying
Master GSM

⓪ NEXT FUNCTION/ INCREASE DATA UNIT (+1)	⑧ PREVIOUS FUNCTION/ DECREASE DATA UNIT (-1)
Ⓒ CONFIRM DATA/ CONFIRM FUNCTION	Ⓔ DELETE DATA/ EXIT FUNCTION



WIRING DIAGRAM LEGEND

INITIALS	DESCRIPTION	INITIALS	DESCRIPTION
BDV	BDV COIN MECH CONNECTORS	MIP	PROGRAMMING ACCESS MICROSWITCH
CF	FILTER CONDENSER	MS1	DISP COMPT FLAP MICROSWITCH
CM0-9	VENDING MOTOR CAM	MUR	COMPRESSOR
CMV	DISPENSING COMPARTMENT MOTOR C	MVT	FAN
D	DIODE	NTC	TEMPERATURE PROBE
EX	EXECUTIVE COIN MECH CONNECTOR	PIP	PROGRAMMING BUTTON
FA	RADIO INTERFERENCE SUPPRESS	R	ANTI-CONDENSATION HEATING ELEMEN
FD	PHOTODIODE	RS232	SERIAL PORT
FT	PHOTOTRANSISTOR	RT	BALLAST
IP	DOOR SWITCH	SOR	OUT/R BOARD
ISA	OPEN DISP COMPT FLAP SWITCH	SP	PUSH-BUTTON BOARD
LCD	LIQUID CRYSTAL DISPLAY	ST	STARTER
M1-...	RELEASE MOTOR	SUC	C.P.U. BOARD
MBV	DISPENSING COMPARTMENT LOCK MO	TR	TRANSFORMER
MDB	CONNECTOR FOR MDB COIN MECHANI	TX....	DELAYED FUSE (X=COURRENT)


1
2
3
4
A
B
C
D
E
J2
J1
FT
FD
RS232
PIP
J5
J4
J3
J2
J1
MBV
CF
D
MS1
ISA
CMV
RT
ST
LF
R1
MVT
MVT
MVT
MUR
X1
X3
X4
X2
T800mA
T4A
25V 4A
25V 2A
230V
TR
T1A
L
N
230V
T6,3A
T6,3A
IP
IP
FA
L2
U1
N4
U3
SOR
R2
R1
A
B
C

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

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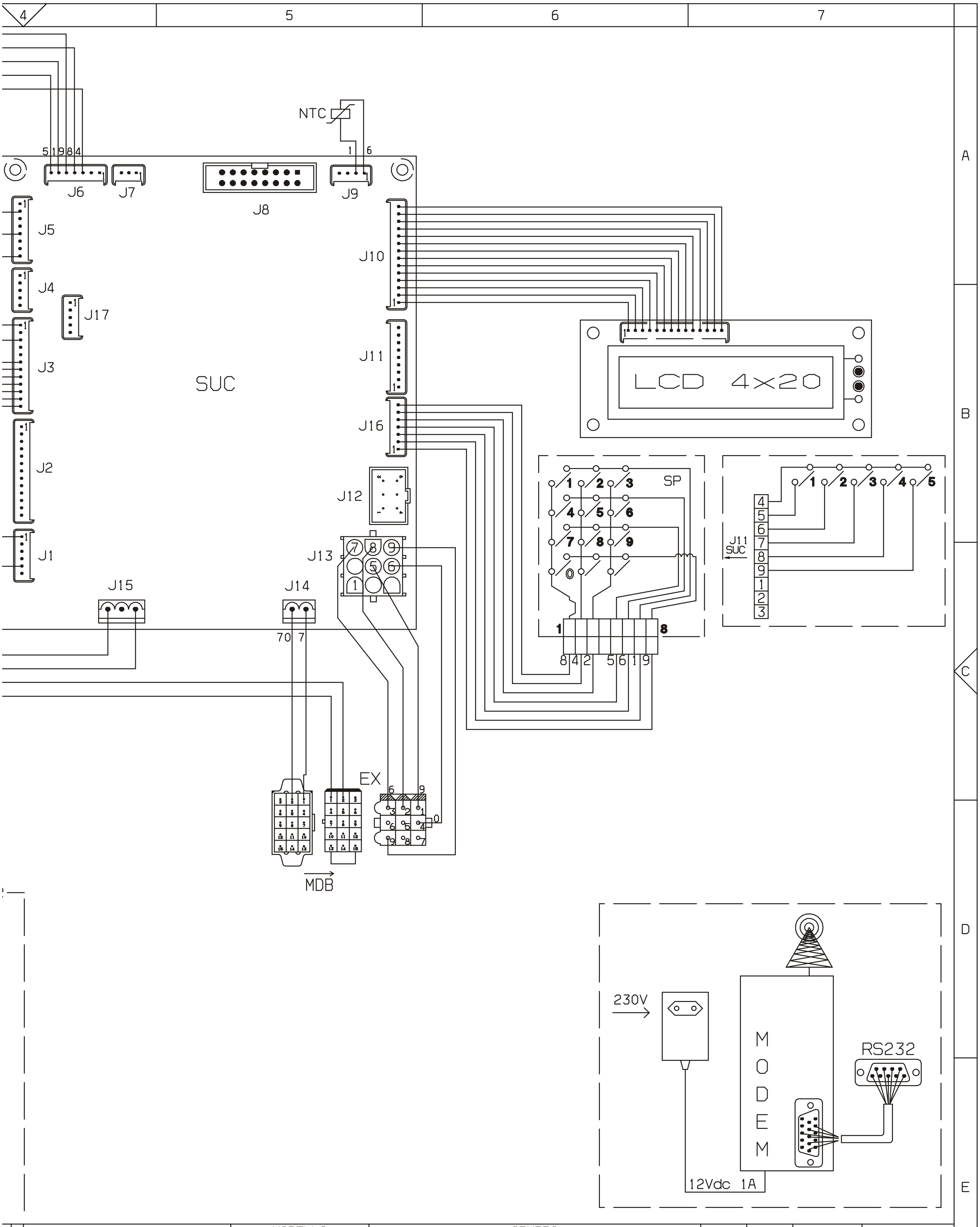
VEN
A c
N&

sx38500


4
5
6
7
A
B
C
D
E
NTC
1 6
5 1 9 8 4
J6
J7
J8
J9
J5
J4
J17
J3
J2
J1
J10
J11
J16
J12
J13
J14
J15
SUC
LCD 4x20
SP
1 2 3
4 5 6
7 8 9
0
1 8
8 4 2 5 6 1 9
J11 SUC
4 5 6 7 8 9 1 2 3
70 7
EX
6 9
MDB
230V
MODEM
RS232
12Vdc 1A

8 GRIS
9 BLANCO

NECTA
VENDING SOLUTIONS SpA
A company of
N&W GLOBAL VENDING GROUP

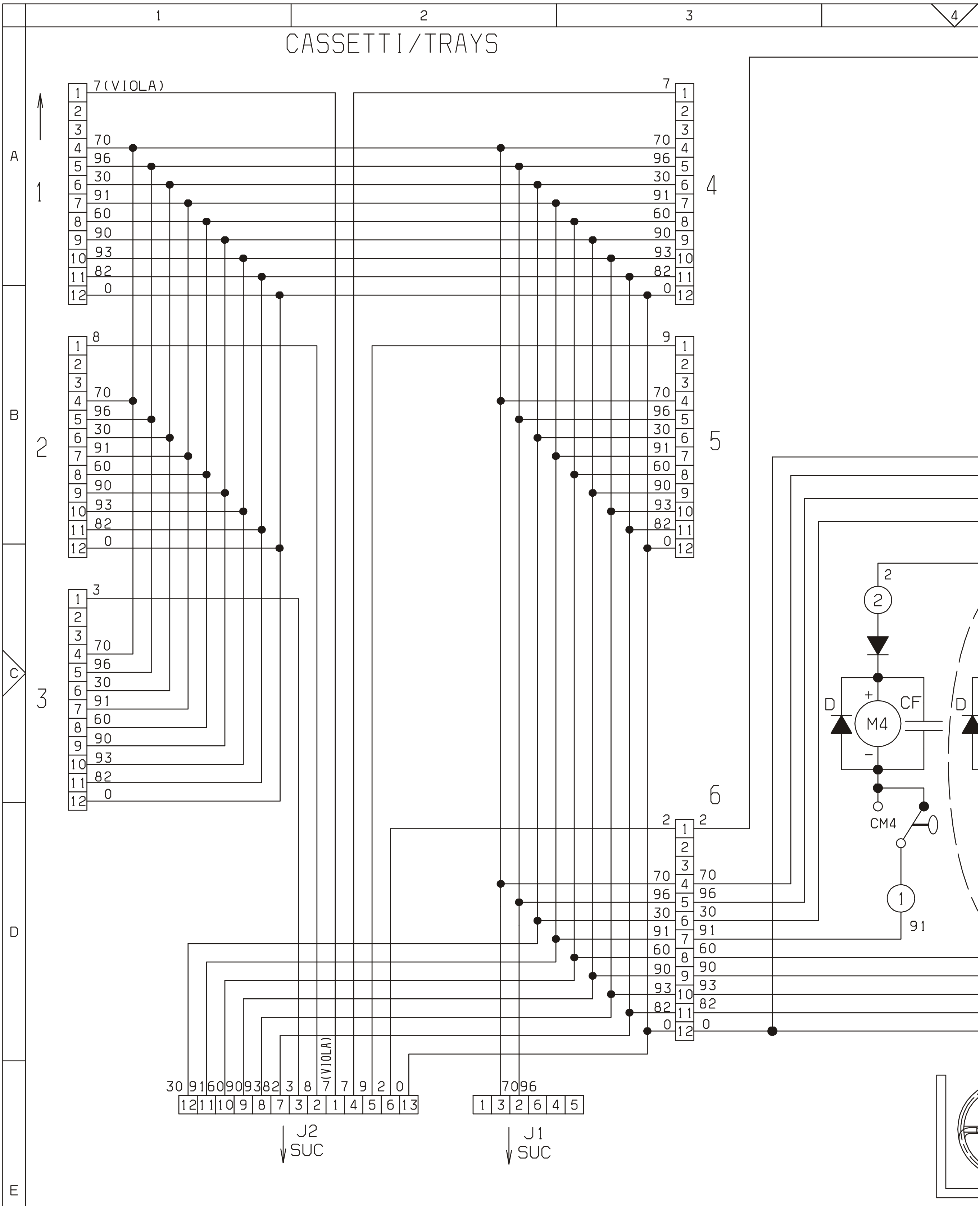
MODELLO
Sfera

GRUPPO
SCHEMA ELETTRICO FUNZIONALE
MACCHINA

DATA	FOGLIO	DISEGNATO	CONTROLLATO
05-02-03	1/1	BONACINA	MONGUZZI

LEGENDA	CODICE
.	608538500

4 5 6 7


1
2
3
4
A
B
C
D
E
CASSETTI/TRAYS
7(VIOLA)
1
2
3
4
5
6
70
96
30
91
60
90
93
82
0
8
9
3
7
2
J2
SUC
J1
SUC
30 91 60 90 93 82 3 8 7(VIOLA) 7 9 2 0
12 11 10 9 8 7 3 2 1 4 5 6 13
70 96
1 3 2 6 4 5
M4
CF
D
CM4
+
−
91

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

NE
VE
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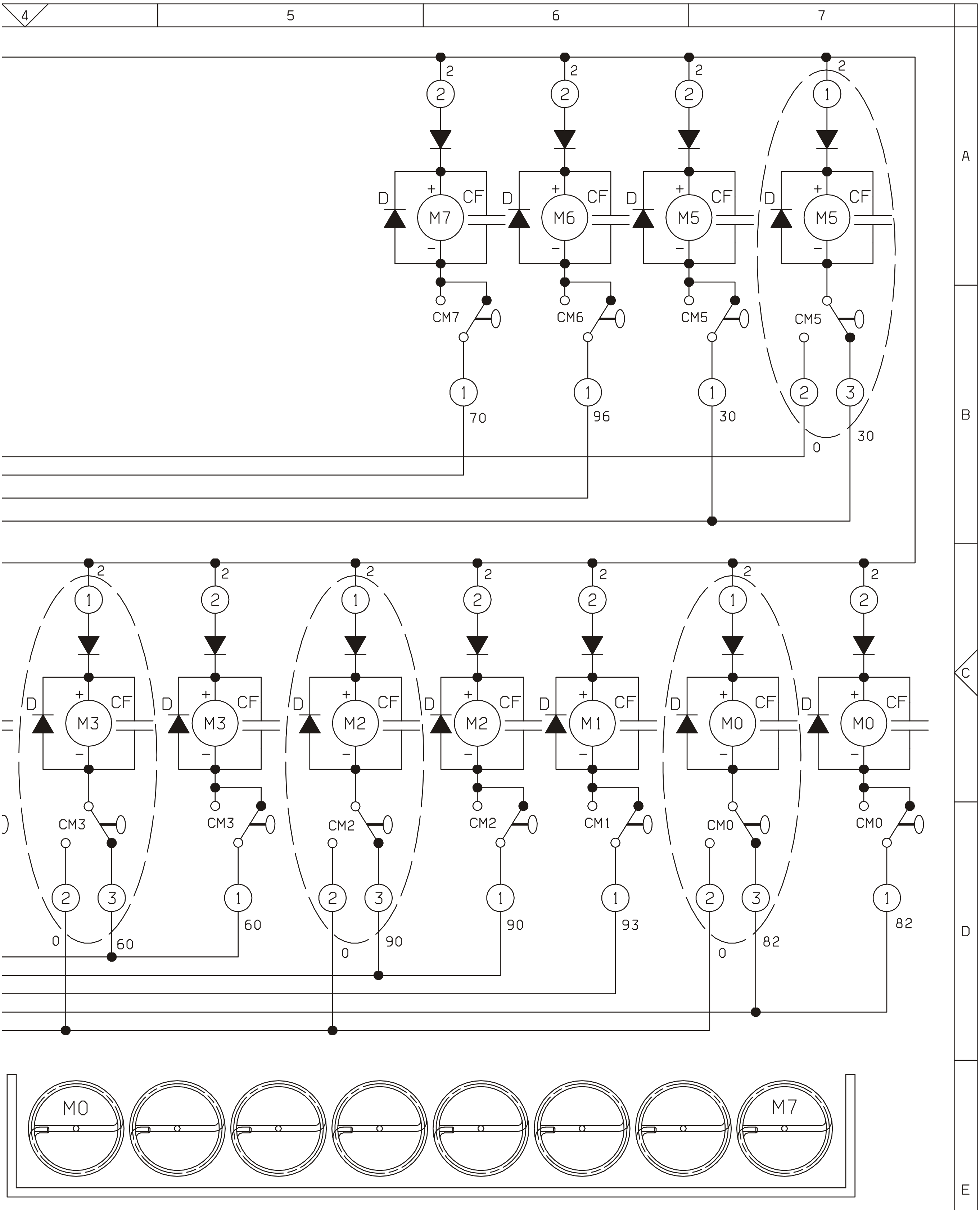
N&

sx38601 1 2 3 4


4
5
6
7
A
B
C
D
E
2
①
②
③
D
CF
+
−
M7
M6
M5
M5
M3
M3
M2
M2
M1
M0
M0
CM7
CM6
CM5
CM5
CM3
CM3
CM2
CM2
CM1
CM0
CM0
70
96
30
0
30
60
0
60
0
90
90
93
0
82
82
M0
M7

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8 GRIS
9 BLANCO

MODELLO
Sfera

GRUPPO
SCHEMA ELETTRICO FUNZIONALE
CASSETTI

DATA	FOGLIO	DISEGNATO	CONTROLLATO
05-02-03	1/1	BONACINA	MONGUZZI

LEGENDA
.

CODICE
608538601

4 5 6 7

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