Easy 5000

Online English Version
Issued April 2009 Revision 1

Technical Manual

Westomatic
The ultimate coffee house experience

DICHIARAZIONE DI CONFORMITÀ - DECLARATION OF CONFORMITY
DECLARATION DE CONFORMITE - DECLARACION DE CONFORMIDAD
KONFORMITÄTSERKLÄRUNG - DECLARAÇÃO DE CONFORMIDADE
DEKLARATION OM STANDARDDISRING

FAS INTERNATIONAL S.p.A.

Dichiariamo sotto la nostra responsabilità che il prodotto :
Declare under our responsibility that the product :
Déclare sous sa propre responsabilité que le produit :
Declara bajo propia responsabilidad que el producto :
erklären unter eigener Verantwortung, daß das Produkt,
Declara sob sua responsabilidade que o produto :
Bekendtgør på vort ansvar at nendennævnte produkt :

al quale questa dichiarazione si riferisce è conforme alle seguenti norme :
to which this declaration relates is in conformity with the following standards :
auquel cette déclaration se réfère est conforme aux normes suivantes :
objeto de esta declaración es conforme a los siguientes estandardes :
auf das sich diese Erklärung bezieht, folgenden Normen entspricht :
objecto desta declaração está conforme as seguintes normas :
auf das sich diese Erklärung bezieht, folgenden Normen entspricht :

EN 60335-1 - EN 60335-2-75
EN 55014-1 - EN55014-2 - EN 61000-3-2 - EN 61000-3-3

in base a quanto previsto dalle Direttive :
following the provisions of the Directives :
suivant les clauses des Directives :
seguiendo las clausolas de las Normas :
gemäß den Bestimmungen der Weisungen :
obedecendo ao clausulado das Normas :
Ifølge retningslinjer nedfældet i Direktiver :

73/23 EEC Directive (Low Voltage Directive) and subsequent amendments
89/336 EEC Directive (EMC Directive) and subsequent amendments

Schio, 04 Maggio 2007

ADRIANI LUCA
AMMINISTRATORE DELEGATO

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1　FOREWORD

This documentation is an integral part of the machine and must therefore accompany every transfer of property or of the company.

Before proceeding to the installation and the use of the distributor, it is necessary to carefully read and understand the content of this booklet as it gives important information concerning safety of installation, rules for the use and operations for the maintenance.

This manual serves to provide all the information necessary for ensuring safe working conditions for machine operators and maintenance personnel.

Furthermore, we recommend contacting the Manufacturer for information regarding spare parts and accessories; it is forbidden to perform any operation without being aware of its exact working procedure.

The manual or a copy thereof must always be kept close to the machine for consultation by the operator; it should be kept away from heat, damp and corrosive agents (oil, lubricants, corrosive products).

When consulting the manual, ensure that it is not damaged; do not remove the pages, replace or delete the information or modify its contents in any way.

Any revisions and pages illustrating the accessories form an integral part of this manual and should therefore be added to it.

1.1　TO INDENTIFY THE MACHINE

The immediately subsequent pages of this booklet show the user how to identify the product VENDING MACHINE; this information is very important in time in order to guarantee the builder the possibility to give the user quickly and safely technical information of whichever type or to faciliate the management of the spare parts.

☞	It is therefore **advised** not to damage or remove the means which are necessary for the identification of the product.
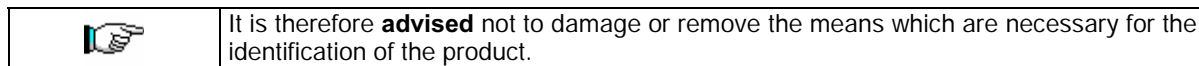
The identification means are the plasticized plate on which you can find all data you should mention to the builter in case of need.

This plate is the only one recognized by the builder as a means of identification of the product.

1.2　LOCATION OF THE STICKERS
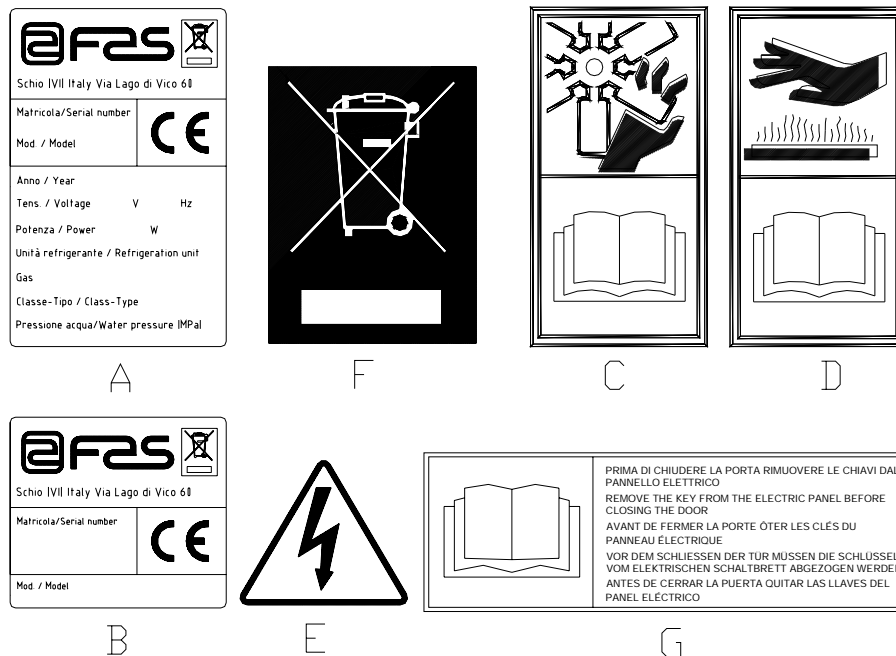
A	Complete identification plate
B	Identification plate
C	Safety sticker indicating danger from rotating parts
D	Safety sticker indicating surfaces at high temperatures
E	Safety sticker indicating voltage supplied
F	Disposal in accordance with EU directive 2002/96/EC
G	Key removal warning sticker

The complete identification plate "A", which states all the machine data, is located inside the cabinet (see diagram below). If there are any engraved details on the side of the cabinet, plate "B" is affixed to the rear of the cabinet, in the top right corner.

Furthermore, the serial number is also printed on the most important element of the machine (fans, compressor cards, etc…).

E N G L I S H

1.3   SAFETY

⚠	This appliance is not intended for use by person (includine children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

⚠	The use of accessories or components that are not original, endangers the safety of the machine. Fas declines all responsibilities because of the use of parts or accessories that are not original and is not accountable for whatever damages, direct or in direct, should result from such improper use. The variety of similar products that may be made available on the market, prevents FAS from a possible check on these components. Warning: the use of components and spare parts that are not original, may void the entire warranty on the machine.

⚠	**The vending machine construction and analysis relevant to safety issues refer to the requirements in force.** **The installation and maintenance procedures, including replacing the power supply cable, must be carried out by competent personnel.** **Any interventions other than routine maintenance procedures must be carried out with the plug of the power supply disconnected.** It is obligatory to wear suitable clothing as stipulated in this manual and by the ruling in force in the country in which the machine is used; avoid wearing baggy or loose clothing, belts, rings and chains; long hair must be kept under a suitable cap. It is strictly prohibited to operate the machine with the fixed and/or mobile protections disassembled or with the safety devices switched off. It is strictly prohibited to remove or tamper with the safety devices. Do not perform machine maintenance operations or adjustments of any kind without first having read and familiarised yourself with the contents of this manual. Adjustment carried out with reduced safety protections or with some switched off must be performed by one person only: During the adjustments, access to the machine by non-authorised personnel must be prohibited. If possible keep only one protection open at a time. After having performed adjustments or maintenance operations with reduced safety protections, the machine must be restored as soon as possible to its original conditions with all the protections active. Comply rigidly with the periodical maintenance operations described in this manual to ensure safe working conditions and to maintain machine efficiency. Keep the safety labels in good condition and learn their significance: these are necessary for preventing accidents; if the labels are damaged, lost or belong to replaced parts, they must be replaced with other original labels which can be requested from the Manufacturer. Position new labels in the exact positions indicated in this manual. **Remember that an alert operator in good mental-physical conditions is the best assurance against accidents.**

1.4   EMERGENCY SITUATIONS

⚠	**In the event of fire, do not direct jets of water against the machine as this could cause short-circuiting and result in accidents, even fatal, for persons nearby.**

1.5   CONSULTATION GUIDE

SYMBOL	MEANING	COMMENT
⚠	DANGER	Indicates a danger, even mortal, for the User.
☞	WARNING	Indicates a warning or notes on key functions or useful information. Pay careful attention to those parts of the text indicated by this symbol. The maintenance personnel are requested to take a measurement value, check a signal, check the correct position of any machine element, etc. prior to performing a determined command or operation.
🔧	ROUTINE MAINTENANCE	*By routine maintenance,* it is intended: the reloading operations, setting the control parameters, emptying out the coins, and the cleaning operations in the areas in contact with the food products.
🔧⚠	EXTRAORDINARY MAINTENANCE	*By extraordinary maintenance,* it is intended: the more complex maintenance operations (mechanical, electrical, etc.) in particular situations, or those agreed_with the user which are not considered ordinary maintenance.
♻🗑	RECYCLING	Obligation to dispose of the materials respecting the environment.

Pay particular attention to those parts of the text which are written in bold type, with larger letters or underlined as these are used to highlight particularly important operations or information.
The enclosed wiring diagrams are intended for use exclusively by specialised technical personnel authorised by the manufacturer to carry out extraordinary maintenance operations and checks.

⚠	**It is strictly prohibited to use the wiring diagrams to modify the machine.**

Throughout the manual, when referring to the machine, the terms "at the front" or "front" indicate the door side while the terms "at the back" or "rear" indicate the other side; the terms "right" and "left" refer to the operator facing the front of the machine.

For each operation to be carried out on the machine, a level of expertise (see below) is given to indicate the persons qualified to perform the operation concerned.

Final user	Person without specific expertise able to perform the operations of purchasing and retrieving the product only by using the controls displayed on the machine or by following the instructions given on the display.
Ordinary maintenance operator	Person capable of carrying out the operations in the above point and, in addition, of operating on the machine following the instructions in this manual marked with the symbol 🔧.
Extraordinary maintenance operator	Person capable of carrying out the operations in the above points and, in addition, of operating on the machine following the instructions in this manual marked with the symbols 🔧⚠. In each case, the specialised technicians must also be capable of operating with the protections disabled and therefore in reduced safety conditions. Any operations to be carried out with the parts of the machine in movement and/or on live equipment must only be performed in exceptional cases and once the impossibility of operating in suitable safety conditions has been established. Access to these areas should be permitted only to persons with a practical knowledge and experience of the machine, particularly in matters of safety and hygiene.

The operations described in this manual relative to each phase of the life cycle of the machine have been carefully analysed by the manufacturer. The number of operators and the level of expertise requested are therefore the most suitable for best performing each specific operation.

⚠️	Failure to respect the number of personnel or the level of expertise specified can endanger the safety of the persons involved or those found in the vicinity of the machine.

2   USE OF THE VENDING MACHINE FOR THE SALE OF FOOD PRODUCTS

☞	**WARNING:** **To determine and to set the conservation temperatures of the food products, comply with the instructions provided by the producer and by the relative laws in force.** **These operations must be assigned to adequately qualified personnel as defined by the responsible of the equipment.**

The vending machine can be used for the sale of food products.

☞	Food products must be dispensed by the vending machine in hermetically sealed packages. Comply rigidly with the producer's instructions regarding the expiry date of each product and the conservation temperature. The vending machine should be considered equipment suitable for maintaining the temperature of the products and **NOT** for cooling them. For fresh and/or perishable food products and, nevertheless, in all cases provided for by the ruling laws, it is necessary: to set the internal temperature of the vending machine in accordance with the laws in force; during transportation to the vending machine, to maintain the products at the temperatures provided for by the laws in force.

☞	This vending machine is equipped with a "refrigeration unit safety device" in accordance with the standards relevant to the preservation of fresh food in force in various countries which permits these products to be maintained in the conditions specified in the manual as long as these products are introduced at the correct temperature for their preservation as set forth in these standards. The non-observance of this regulation could activate the "refrigeration unit safety device".

Here are some **examples** of vendable foodstuffs:
- sweets, hazelnuts, chewing gum and similar sweets
- cookies, crackers and similar oven-baked products
- foods with pH level of 4.6 or less or with a water activity value (Aw) at 25°C of 0.85 or less
- foodstuffs maintained at a temperature of 5°C or lower for a period of time specified by the producer, but not more than 5 days
- foodstuffs packaged in hermetically sealed containers
- foodstuffs that have been treated to prevent deterioration

3   TECHNICAL FEATURES
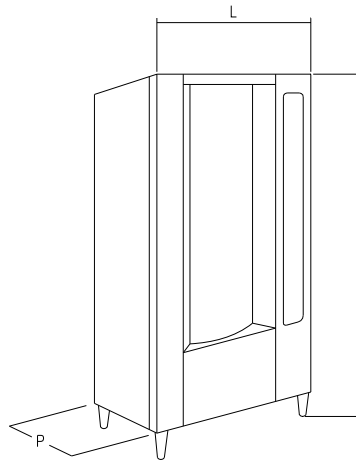
- Height (A)	: 1830 mm
- Width (L)	: 860 mm
- Depth (P)	: 760 mm
- Weight	: 310 kg (without packaging)
- Rated voltage	: 230 V single phase 50 Hz
- Rated power	: 810 W
- Vending mode	: SHOPPER / FIFO
- Delivery doors	: from 7 to 11
- Vending capacity	: min 336 a 528 products max
- Max weight per drum	: 7 kg (evenly distributed).
- Ambient working conditions (limit)	: Max temperature +32°C : Min temperature +3°C : Relative humidity 70% max
- Refrigeration system	: Compression - class N - Ventilated Evaporator Cyclic defrosting
- Refrigeration unit rated pressure at 32°C	: 15 bar
- Weighted sound pressure level "A"	: Less than 70 dB

CAPACITY:
Each drum can be subdivided into 6,12,16,24,48 compartments thereby offering a sales potential of up to 528 items.

VENDING MODES:
Each drum can be separately programmed for selling goods in either FIFO (First in First out) or SHOPPER mode. In FIFO mode, the items are sold in the order in which they are loaded, while SHOPPER allows the customer to choose each purchase individually.

PRICING OPTIONS:
DISCOUNTED PRICES can be programmed for each of the full prices.The machine can be programmed to work with the discounted prices one or twice a day.

SELECTING PRODUCTS:
A) Shopper drum:
Use the drum rotation push buttons to place the product to be purchased in the sale position; by pressing the selection push button (OK) the price of the product appears on the display.
B) FIFO drum:
The product is in the sale position; by pressing the selection push button (OK) the price of the product appears on the display.

PURCHASING PRODUCTS:
Once a selection has been made, a display message will prompt the customer to insert the corresponding credit and to confirm the selection by pressing the same selection button again. The delivery door of the selected product opens and the customer has several seconds to remove the purchase before the door closes again.

SINGLE VEND OR MULTIVEND?:
At this point (assuming that there is sufficient change in the coin mechanism) the machine can either return any change owed, if the single vend mode has been programmed, or show the remaining credit in the message display if the multivend option has been set. This remaining credit can be used for other purchases from the machine or returned as change by pressing the coin return button.

INTELLIGENT RELOAD SYSTEM:
The intelligent reload system is a method of stock control by which the microprocessor records the sale and monitors the shelf life of each item loaded into the compartments. This system allows the machine to vend from "VALID" compartments only. An "INVALID" compartment can be one containing an expired product or one from which the product has already been sold. Another major benefit of the intelligent reloading system is that loading is performed through the delivery doors. In this way, the loss of cold air from the machine during loading is kept to an absolute minimum.
When a drum is selected for reloading, it moves to the first empty or expired product compartment and the delivery door will open to allow the operator to insert a new product or to replace an expired one. The operator presses the OK button corresponding to that drum to confirm loading of that compartment and the drum positions itself at the next "INVALID" compartment.
If the operator does not have sufficient products to fill a compartment, this is signalled to the machine by pressing the corresponding selection button instead of the OK button and the drum will position itself at the next "INVALID" compartment. After each "INVALID" compartment of a drum has been checked and its status confirmed, the delivery door closes, the drum underneath moves and the delivery door opens at the next empty compartment. This procedure can be stopped by pressing the mode push button (P)or continued for each drum until the machine returns to the vending service position.
When rigid controls of the fresh food are not required, the machine can be loaded manually by opening the main door and rotating each drum by using the corresponding button on the mobile push button panel to make the compartments advance.

☞	**For detailed descriptions on the reloading modes, see paragraph "GUIDELINES FOR LOADING PRODUCTS"**

REFRIGERATION SAFETY:
The machine is allowed 30-60 minutes to reach the appropriate temperature after the main cabinet door has been opened. After this, machine vending is disabled and the fluorescent lights go off if the programmed temperature (normally 8°C) is exceeded or the electrical current has been interrupted. The display shows the message of the type: "Health control" ("Fridge safety has intervened"). To restore the frige safety: open the machine, insert the feeding key for some seconds (micro 230V) leaving the door micro switch open, remove the key and close the door.

	For detailed descriptions on the reloading modes, see paragraph "GUIDELINES FOR LOADING PRODUCTS"

REFRIGERATION SYSTEM:
Pre-programmable cabinet temperatures up to 3°C will be maintained by the refrigeration unit in ambient temperatures up to 32°C. The temperature can be displayed when the machine is in standby. Every 2 hours, a solenoid valve activates to melt the ice which has formed in the evaporator.

SALES INFORMATION:
The microprocessor memory keeps running totals of sales made on each of the full or discounted price lines. A sales and cash reconciliation can be made from the executive coin mechanism or from installed card payment system.

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4   DOOR LAYOUT

1) **Alphanumeric display**: displays all the information relative to product vending and indications for machine programming and tests.
2) **Coin insert slot**: the coin insert slot below the display is used by the customer to insert the credit required to purchase the product.
3) **Coin return push-button**: this is used to release coins stuck in the coin mechanism and to recover them.
4) **Selection push-button**: press this push-button for selection and purchase.
5) **Operating instructions**: the instructions panel is situated under the coin return button and at the side of the pushbutton panel. It provides the customer with the procedure for using the machine correctly.
6) **Drum rotation push-buttons**: they allow the drum rotation (clockwise or counterclockwise)
7) **Coin return cup**: the coin return cup is in the lower part of the door and is used for returning coins introduced.
8) **Delivery doors**: these are used by the customer for collecting purchases made.
9) **Price cover display:** serves to protect the single price display boards.
10) **Product label protection:** serve to contain any labels which indicate the ingredients of the products.
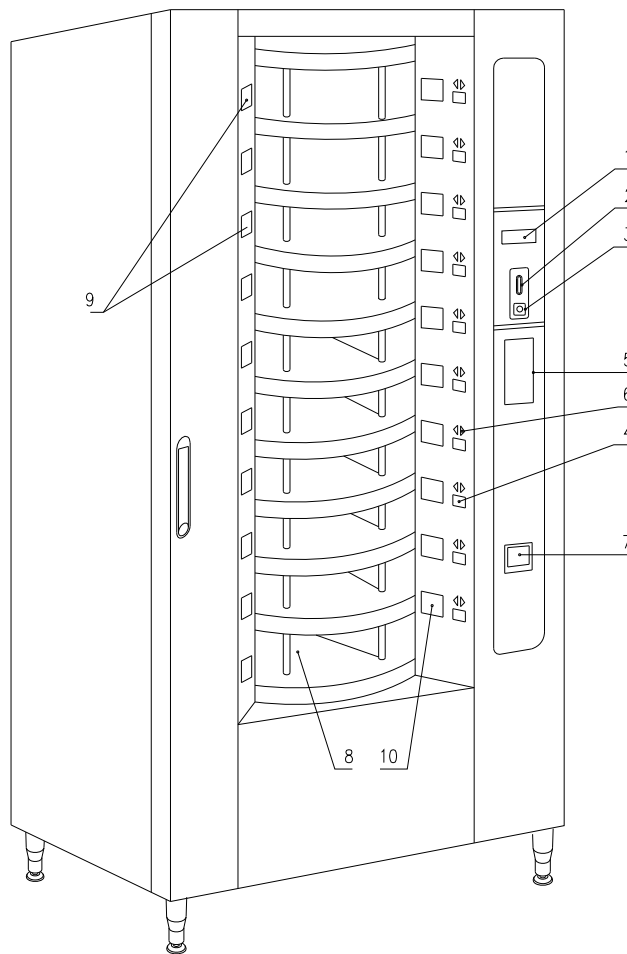
FIG. 1

5   COIN MECHANISM COMPARTMENT LAYOUT

1) **Refrigeration unit**: the refrigeration unit installed in lower part of the cabinet maintains the correct product conservation temperature.

2) **Electrical panel**: the electrical panel installed in the lower part of the cabinet feeds all the electrical circuits of the machine and houses the main switch, the fuses, the power board, the transformer and the connections to the fluorescent lamps.

3) **Drum rotation motors**: they allow the drum rotation (clockwise and counterclockwise)

4) **Delivery door motors**: the delivery door motors located on the left side of the counter-door serve to open the doors to enable the product to be retrieved. To the left of the motors, the door opening control microswitches indicate the position of the delivery doors (open or closed).

5) **Main board**: the main board inside the coin mechanism compartment manages all the different machine functions. The message display next to the board communicates the information processed by the main board.

6) **Counterdoor**: situated inside the machine, it is made of insulating material. When it is opened, access is given to the drum rotation and door drive motors.

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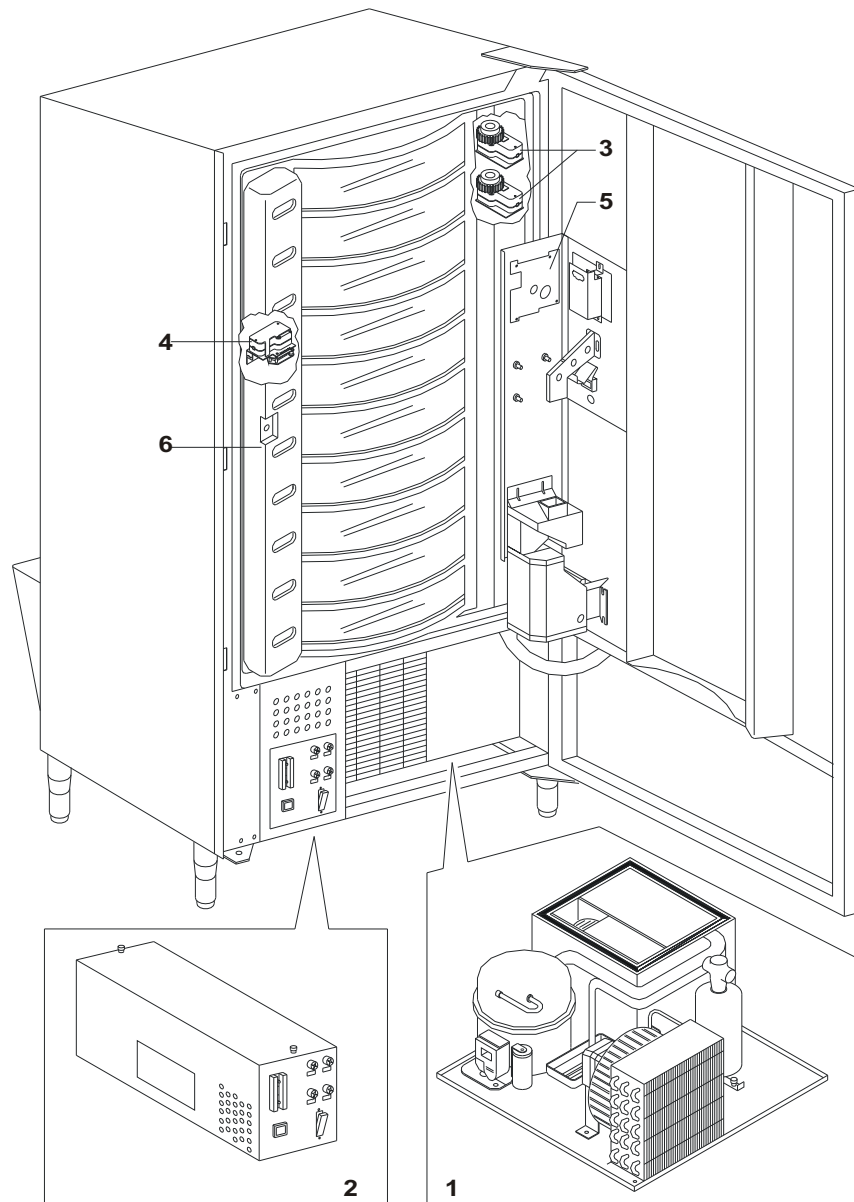
FIG. 2

6   TRANSPORT, STORAGE, UNPACKING PROCEDURE

👉	**Examine the machine both inside and outside and notify the carrier immediately of any damage.**

6.1   TRANSPORT AND STORAGE 🔍⚠️

In order not to cause damages to the distributor, the loading and unloading manoeuvring have to be performed with particular care. The loading/unloading manoeuvres must be carried out by lifting the machine with a lifting truck, either motor-driven or manual, and by positioning the forks in the area under the pallet. To move the machine over short distances, for example inside a premises or office, the pallet need not be used. Proceed however with maximum caution to prevent damaging the machine. It is always **prohibited**:

- To lie the machine down;
- To turn the distributor upside down;
- To drag the distributor with ropes or similar;
- To lift the distributor from the side;
- To lift the distributor with whatever sling or rope;
- To shake the distributor and its packaging.

👉	**It is highly recommended not to lie the machine down as the oil contained in the compressor could enter the valves and cause irreparable damage when the compressor is switched on.** **In the event that the vending machine is laid flat, place it in an environment with a temperature no less than 18°C and wait at least 2 hours before setting the machine at work.**

As to the storage of the machines, it is appropriate that the environment of conservation is very dry with temperatures between 0° ÷ 40° C.
Cover the machine after having positioned it in a protected environment and anchor it to prevent it from moving and to avoid accidental knocks.
It **is important** not to put one packed machine on the other and to maintain the vertical position shown by the arrows on the packaging itself.

6.2   UNPACKING PROCEDURE   🔍⚠️

The packing material must be removed carefully to avoid damaging the machine. Inspect inside and outside the cabinet for any damage. Do not destroy the packing material until the manufacturer's representative has examined it.

👉	**Remember to remove packing materials or equipment inside the vending machine which could affect the correct function of the machine.**

To remove the machine from the pallet, simply loosen the 4 hexagonal-head screws (2 at the back of the distributor and 2 at the front) which secure the machine base to the pallet and which are reached by opening the door and the protection of the electric panel.

N.B. The keys are fixed with tape inside the coin return cup.

♻	**The packing materials must be disposed of respecting the environment and the laws in force.**

👉	**When lifting the vending machine, ensure that the supporting feet are removed from the pallet.**

6.3   INSTALLATION 🔧⚠️

The vending machine must be installed on a surface (floor, intermediate floor) of suitable bearing capacity.

☞	The appliance is not suitable for external installation as it must not be exposed to direct sunlight or be installed where water jets may be used. The appliance is suitable for installation in locations where the ambient temperature ranges between 3°C and 32°C.

1) Ensure that the main switch is in the "OFF" (O) position and that the fuses are securely in place.
2) The equipment must be supplied with single-phase voltage 230V 50Hz with the general switch off.

⚠️	The appliance must be connected to a power supply mains featuring earthing which complies with current legislation. The manufacturer recommends providing an electric power supply mains for the vending machine which is equipped with a disconnecting device having a contact opening of at least 3 mm. Ensure that the plug is accessible after installation. It is strictly forbidden to use extension cords, adaptors or multiple jacks.

☞	**The following instructions are valid only to the United Kingdom** The wires in the cable are coloured coded as follows: *GREEN AND YELLOW - EARTH ---- BLUE - NEUTRAL ---- BROWN - LIVE* *As the colour of the wires in the cable of this equipment may not correspond to the colour marking in the terminals of your socket, proceed as follows:-* *The GREEN and YELLOW wire must be connected to the socket terminal marked with the letter E or with the GREEN or GREEN and YELLOW earth symbol. The BLUE wire must be connected to the socket terminal market with the letter N or coloured BLACK or BLUE. The BROWN wire must be connected to the socket terminal marked with the letter L or coloured RED or BROWN.*

☞	**The manufacturer cannot be held responsible for damages caused by the failure to observe the precautions given above.**

3) After having positioned the machine, adjust the four adjustable feet so that the machine is perfectly horizontal; all the feet must be in contact with the floor.
4) To ensure adequate air circulation of the refrigeration unit, install the conveyor supplied with the machine following the instructions given on the conveyor itself.
Check that the grids behind and under the refrigeration unit are kept clean and unobstructed.
It is not recommended to install the covers of the front legs in environments where the ambient temperature exceeds 30°C.

☞	**Failure to install or incorrect installation of the rear conveyor annuls the guarantee.**

If the machine is to be fitted into a wooden cabinet or similar housing, ensure that the grills and the lower sides of the machine are kept clear for ensuring adequate air circulation.
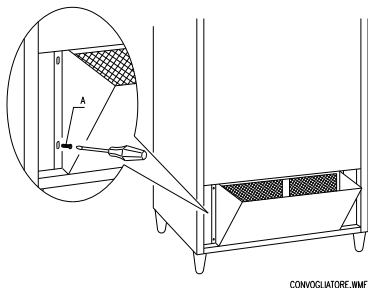
WALL FIXING BRACKETS:
Fix the brackets above the V.M. by means of the screws provided in the kit. Fix them to the wall by making a suitable hole.

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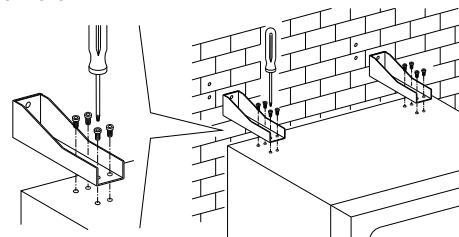
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5) To switch on the machine, follow the instructions below:
- Open the door and switch the general switch to "I" (on)
- Insert the interlock key into the upper micro-switch (marked POWER) located close to the electrical panel.

⚠	**WARNING: DO NOT insert the interlock key into the lower micro-switch (DOOR) as this will cause the movement of a number of parts and may cause accidents.**

- If the message "MEMORY CLEARED" appears on the display, press the button on the main board inside the box of the coin dispensing mechanism (see fig. 3) to initialize the memory. The message "DOOR OPEN, MACHINE IN MAINTENANCE MODE" appears on the display. The machine automatically starts a self-test. If no errors are identified, the column moves into the starting position and the machine is ready for use.

6) Programme the machine (see chap. "PROGRAMMING") and set the prices.

7) If the machine is supplied with change-giving mechanism, insert the corresponding coins in the change-giving tubes.

8) Load the machine with products (see paragraph Loading the products).

6.4   WARNINGS FOR THE INSTALLATION 🔧⚠

The machine is sold without payment system. Therefore whatever default to the machine or damages to person or things due to an incorrect installation, use or similar caused by the payment system will be only and exlusively charged to those who have carried out the installation of the machine.

🔧 ⚠	**To install the coin mechanism, proceed following the example given in the diagram at the side:** **1.** Secure the coin mechanism on the support, positioning it between the pins. **2.** Press the coin mechanism downwards to block it correctly. **3.** Secure the coin mechanism using the screw at the back of the support. **4.** Secure the connectors (B) for connecting the main board to the coin mechanism (C). **5.** Connect the earth wire of the coin mechanism to the earth wire of the machine.	

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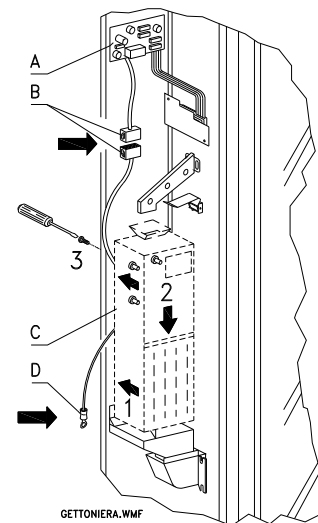
6.5   WARNINGS FOR THE DEMOLITION OF THE MACHINE 🔧⚠

If the machine is deinstalled in order to be definitively demolished, it is obbligatory to follow the rules in force reguarding the protection of the environment. All ferrous, plastic or similar materials should be taken to the authorized depots.
Particular care should be given to:

♻ 🗑	• Whichever type of **gases** (see identification plate) present in the refrigeration unit should be recovered with suitable equpment by specialized firms. • **Insulation materials** should be recovered by specialized firms. • Disposal in compliance with EU 2002/96/EC standards, according to the implementation of the Directive into the national law. • This equipment complies with Directive 2002/95/EC (RoHS).

Should you have any queries, you are recommended to contact competent local refuse disposal authorities.

7   OPERATION ON THE MACHINE

7.1   DOOR MICROSWITCHES

	There are two microswitches on the electric panel. These are protected against accidental activation and can only be operated with the appropriate key supplied.
	The upper microswitch, in compliance with safety regulations, drumonnects feed to all the machine's electrical parts when the door is opened. If necessary, feed can be restored by inserting the appropriate key in the seat on the covering panel.
	The lower microswitch signals to the machine that the door is open. The message "**Door open, machine in maintenance mode**" appears on the display. The ventilation and refrigeration units are switched off. In this condition, the vending cycle is prohibited and only machine programming and testing can be accessed. Normal machine operation can be restored by inserting the appropriate key. **"REMOVE THE KEY FROM THE ELECTRIC PANEL BEFORE CLOSING THE DOOR".** *WARNING: The column rotation will start as soon as the second service key is inserted.*

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7.2   TEST PROCEDURE

When the vending machine is switched on, "INIT" appears on the display until the main board (VMC) and the POWER board connect; if this does not occur, "NO LINK WITH POWERB." appears on the display .
Once the Main/Power connection is established the following could occur:
a.   "memory cleared" appears on the display: this means that the memory does not contain reliable data. Press push button TEST on the main board inside the coin mechanism box and the memory is automatically initialised with the predefined values described in the programming section. Then pass on to point "b".
b.   The machine executes a series of tests after which, if all is ok, it begins to function. If the vending machine stops, the test or error number corresponding to the malfunction (see table command 99) appears on the display.
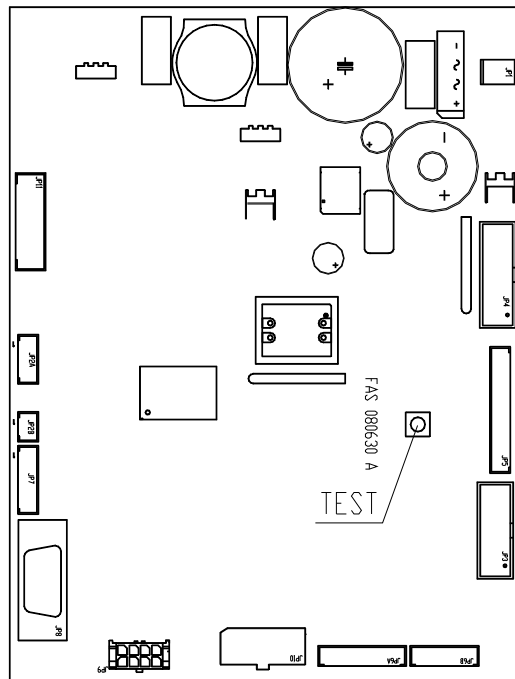
FIG. 3

7.3   PROGRAMMING PROCEDURE
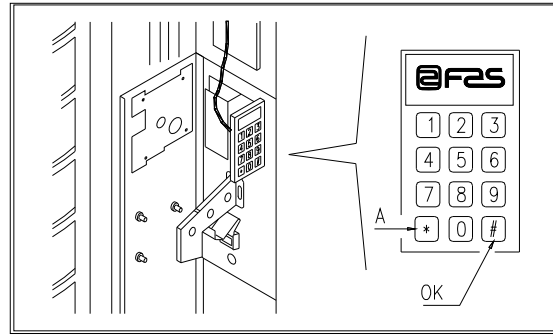
FIG. 4

Open the door, keep the mode pushbutton (P) pressed down for approximately 2 seconds until the message "**Command 00**" appears on the second line of the display and the buzzer emits a long signal. The first display line will indicate that the machine is in "**programming mode**". At this point the programming command panel is enabled. The **"Command 00"** message indicates that it is possible to read sales data and to set the machine operating parameters. Press button **A (*)** to quit the programming mode.

If the mode button is released before the "**Command 00**" message appears on the display, the machine will enter "**intelligent reload**" mode and the message "**Select drum to reload**" will appear on the first line of the display. To exit this mode, press the **programming** button then repeat the process holding the button down for the time necessary for "**Command 00**" to appear on the display.

☞	For the reload, free vend and machine test functions to operate properly, both keys MUST BE inserted into the door microswitches.

7.4   LIST OF PROGRAMMING COMMANDS

ACCESS TO SUBMENUS (7.5.1)
Command 01	Machine test.
Command 02	Recalls daily timer clock submenu.
Command 03	Recalls price setting submenu.
Command 04	Recalls discounted price setting submenu.
Command 05	Recalls price reference setting submenu.
Command 06	Setting product code and product capacity.
Command 07	Displays sales for full price selection.
Command 08	Displays sales for discounted price selection.
Command 09	Displays non-clearable cashed totals.
Command 10	Displays clearable totals.

COMMANDS 27-39:
Mode EXECUTIVE	*not used.*
Mode BDV	see paragraph *BDV.*
Mode MDB	see paragraph *MDB.*

TO SET REFRIGERATION PARAMETERS (7.5.2) 🔑⚠️

☞	**WARNING: To determine and to set the conservation temperatures of the food products, comply with the instructions provided by the producer and by the relative laws in force. These operations must be assigned to adequately qualified personnel as defined by the responsible of the equipment.**

Command 41	Sets internal temperature.
Command 43	Sets temperature to end defrost cycle.
Command 44	Sets defrost cycle frequency.
Command 45	Sets alarm off time.
Command 46	Sets safety control temperature.
Command 47	Sets the maximum off time.
Command 48	Setting the drip time.

TO SET MACHINE PARAMETERS (7.5.3)
Command 50   Setting the delivery door speed and drum operating parameters.
Command 51   Setting the reload mode. (0, 1, 2; default 1)
Command 52   Sets intell. reloading mode safety feature (1 on, 0 off, default 1).
Command 53   Delivery doors configuration
Command 54   Sets delivery door time open (1-60s, default 10)
Command 55   Programmes product expiry time.
Command 56   Buzzer operation option.
Command 57   Sets decimal point display.
Command 58   Price configuration.
Command 59   Option of accessing all the compartments.
Command 60   Erases the memory.
Command 61   Resets the security/access code.
Command 62   Enables the discounts.
Command 63   Sets single/multi-vend.
Command 64   Sets message display language.
Command 65   Displays optional messages.
Command 66   Displays cabinet temperature.
Command 67   Sets inner temperature and evaporator temperature display.
Command 68   Modifies displayed currency.
Command 69   Chooses functioning mode of the coin mechanism.

SETTING DRUM PARAMETERS (7.5.4)

		Compts	FIFO (1) / Shop (0)	Expiry
Command 71	To configure drum 1	(def.12)	(def.0)	(def.99)
Command 72	To configure drum 2	"	"	"
Command 73	To configure drum 3	"	"	"
Command 74	To configure drum 4	"	"	"
Command 75	To configure drum 5	(def.16)	"	"
Command 76	To configure drum 6	"	"	"
Command 77	To configure drum 7	"	"	"
Command 78	To configure drum 8	"	"	"
Command 79	To configure drum 9	"	"	"
Command 80	To configure drum 10	"	"	"

TO SET MACHINE PARAMETERS (7.5.5)
Command 90   Selects data sent to RS232.
Command 91   Inputs machine code.
Command 92   Resets sales data.
Command 93   Displays the temperature status over the last 24 hours.
Command 94   Displays the last 10 power-offs.
Command 95   Inputs user message 1.
Command 96   Inputs user message 2.
Command 97   Enables user message 1 display.
Command 98   Enables user message 2 display.
Command 99   Displays error events.

SUBMENU FOR SETTING THE CLOCK & DAILY EVENT TIMERS (7.5.6)
Alarm set 01   Sets the year/month/day.
Alarm set 02   Sets the hour/minute.
Alarm set 21   Sets first discount activation time.
Alarm set 22   Sets first discount deactivation time.
Alarm set 23   Sets second discount activation time.
Alarm set 24   Sets second discount deactivation time.
Alarm set 31   Selection disabled period start.
Alarm set 32   Selection disabled period end.
Alarm set 33   Second selection disabled period start.
Alarm set 34   Second selection disabled period end.
Alarm set 36   Setting of selections subjected to hourly disabled periods.

7.5   EXPLANATION OF THE PROGRAMMING COMMANDS

After entering the programming mode you are found in the main menu and the display shows **"Command 00"**. From this level it is possible to access some of the data directly or other submenus by using the selection pushbuttons corresponding to the commands and by pressing **the (#) key, referred to here simply as 'OK'**, (fig.4) to confirm the selection. When entering a submenu the display shows an identification message. **The shopper key OK** is also used to confirm the data inserted from the keyboard and to store them. In this case, the message **"OK"** appears on the display for a few seconds.

Press **the selection pushbutton (*), referred to here simply as 'A'**, to exit the programming function or to pass from a submenu to the main menu.

Please note: Only the lighted buttons are active

1. Product selection
2. Introduce your credit
3. Button for the opening of delivery doors
4. If you don't get the product, press return coin
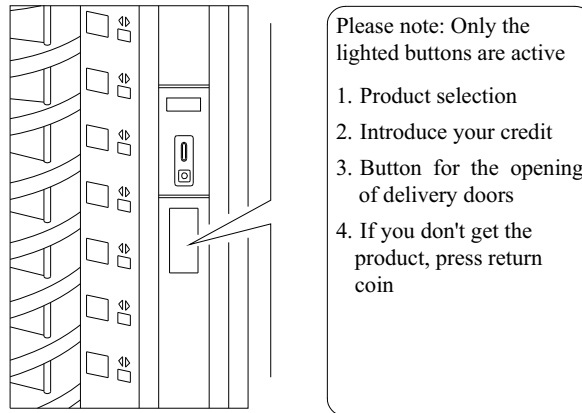
FIG. 5

7.5.1   ACCESS TO THE SUBMENUS

Command 01 Machine test:

This command is used to perform a functional test of the machine. Type in 01 and press the OK key to display "Select the test to be carried out …1 or 2 or 3". Test number 3 allows the distance between the zero position sensor of the drum and the corresponding magnet to be checked and adjusted. Press 3 then the OK key, the message "Zero position sensor adjustment" appears on the display, and all the magnets installed on the drums line up with their corresponding sensors. Now check the distance which should be between 2 and 3 mm, and if necessary make the adjustment. Exit the function automatically by pressing any selection key. Wait for the drums to move to the zero position, and the message "select test to run" appears on the display. If 2 is chosen, then this is a manual test of the door opening/closing carried out through the selection keys. Whereas the number 1 selects an automatic test beginning with "Time on   00", which is a value expressed in hours referring to the duration of the test. "00" corresponds to a continuous test. By entering the required value and pressing the OK key, the display shows the message "Time off 00". This represents the duration in hours of the test pause. By entering the value required and pressing the OK key, the display shows the message "Column rotation x". By setting this value at "1", the column will rotate during the test. By setting the value at "0", the column remains stationery. The test is started by pressing the OK key, once the last option has been confirmed. The test consists in the opening and closing in sequence of the doors followed by rotation of the column. The test stops as soon as an operating anomaly is encountered with the relative error code being shown on the display.

N.B.:   Command 66 must be set at 0;
              Command 67 must be set at 1.

Command 02 Recalls daily timer clock submenu:

Key in 02 and press the **OK** pushbutton to enter the submenu for setting the clock and daily timers. **Alarm set 00** will appear on the display. Follow the procedure described in the specific section to display and alter the parameters.

Command 03 Recalls price setting submenu:

Key in 03 and press the **OK** pushbutton to enter the submenu for setting the prices. '**Drum number   00**' will appear on the display. Key in the number of the drum the price of which you wish to modify and press OK. This appears on the display. Input the new value and press OK again to store it or press A to return to the main menu without altering the value. 10 prices are available.

☞	Programming the value of the full prices (1-10) modifies the values of the corresponding discounted prices making them equal. Therefore when vending at different prices, i.e. with the discount feature, the full price must be programmed first and then the discounted one, never vice-versa or only one and not the other.

To set price No. 10 at 20 pence, proceed as follows:
1. Go into programming mode to display..Command 00
2. Key in 03 and press the OK button to display ....Drum number
3. Key in 10 and press the OK button to display the present value of the price................................. Price xxxx
4. Set value to 20 and press the OK button.

☞	**PRICE HOLDING/PRICE DISPLAY** If command 69 is set at 1 the machine works by price lines, therefore, the programming procedure is the following:

1. Go into programming mode to display ....Command   00
2. Key in 03 and press OK to display .... Price number   00
3. Key in 10 and press OK to display the present price value .... Price xxxx
4. Key in the value 20 and press OK.

☞	**MULTIPRICE** If command 58 is set at 2 (2 prices for each drum) or at 3 (3 prices for each drum), the machine works by price lines and, therefore, the programming procedure is the following:

1. Go into programming mode to display ....Command   00
2. Key in 03 and press OK to display .... Price number   00
3. Key in 10 and press OK to display the present value of the price .... Price val. 10
4. Set value 20 and press OK to display.. . OK

By setting 2 prices for drum (see Command 58), each drum will be divided into 2 equal sections. Products sold at 2 different prices can be entered in the same drum. If 3 prices for drum are set, products sold at 3 different prices can be entered in the same drum. The following table will help you associate each drum compartment with the corresponding price line:

	Section 1 - Price no.	Section 2 - Price no.	Section 3 - Price no.
drum 1	1	12	23
drum 2	2	13	24
drum 3	3	14	25
drum 4	4	15	26
drum 5	5	16	27
drum 6	6	17	28
drum 7	7	18	29
drum 8	8	19	30
drum 9	9	20	31
drum 10	10	21	32
drum 11	11	22	33

If the drum is divided into 2 sections, consult the first 2 columns of the table for the prices, whereas if the drum are divided up into 3 sections (3 prices for drum), all 3 columns contained in the table are used.

Arrangement of the compartments if the drum is divided into 2 sections:

	6 compartments	12 compartments	16 compartments	24 compartments	48 compartments
section 1	Compart. 1-3	Compart. 1-6	Compart. 1-8	Compart. 1-12	Compart. 1-24
section 2	Compart. 4-6	Compart. 7-12	Compart. 9-16	Compart. 13-24	Compart. 25-48

Arrangement of the ompartments if the drum is divided into 3 sections

	6 compartments	12 compartments	16 compartments	24 compartments	48 compartments
section 1	Compart. 1-2	Compart. 1-4	Compart. 1-6	Compart. 1-8	Compart. 1-16
section 2	Compart. 3-4	Compart. 5-8	Compart. 7-11	Compart. 9-16	Compart. 17-32
section 3	Compart. 5-6	Compart. 9-12	Compart.12-16	Compart. 17-24	Compart. 33-48

Command 04 Recalls discounted price setting submenu:
This command has the same functions as command 03 except that it shows the discounted prices.

Command 05 Recalls price reference setting submenu:
This command is only used when the prices are set on the coin mechanism.
Key in 05 and press OK to enter the submenu for setting the references to prices. **'Drum number 00'** will appear on the display.
This submenu allows a price number to be associated to each selection. Key in the code identifying the selection and press OK. The *number* of the price associated to the selection chosen appears on the display. Key in the *number* of the new price that you wish to associate to the selection and press OK to store it or A to return to the submenu leaving the previous value stored. Then repeat the procedure for another selection or press pushbutton A to return to the main menu.
For example, to associate the price number 10 to drum 5, proceed as follows:
1. Go into programming mode to display...Command 00
2. Key in 05 and press OK to display .... Drum number 00
3. Key in 05 and press OK to display the present value of the parameter .... Price number
4. Key in 10 and press OK.

☞	The command is not available with the MULTIPRICE (Command 58 on 2 or 3).

Command 06 Setting product code and product capacity:
This command associates a product code of 4 figures to each selection. This code will then be sent during "audit" session (DEX-UCS) together with the sales statistics.
To associate a code to the products in drum 7, simply proceed as follows:
1. Go into programming mode to display ....Command 00
2. Key in 06 and press OK to display .... Drum number 00
3. Key in 7 and press OK to display .... Product code 0000
4. Key in the required code and press OK.

☞	**MULTIPRICE** If command 58 is set at 2 (2 prices for each drum) or at 3 (3 prices for each drum), the machine works by price lines and, therefore, the programming procedure is the following:

If, for example, you would like to associate a product code with price line 15 (products contained in section 2 of drum 2), go ahead as follows
1. Go into programming mode to display ....Command 00
2. Key in 06 and press OK to display .... Price 00
3. Key in 15 and press OK to display .... Product code 0000
4. Key in the required code and press OK.
At this stage, the machine asks the operator to set the maximum number of products for a specific drum or for a specific price line. Introduce the parameter and confirm with OK.

Command 07 Displays sales for full price selection:
This command is used to enter the submenu that displays the number of sales per full price selection. The display shows '**Drum number 00**'. Key in the code identifying the selection of which you wish to know the sales data and press OK to display the requested value. Press pushbutton A to return to the submenu from which it is possible to display the number of sales relative to another selection by repeating the above procedure. Alternatively, press pushbutton A a second time to return to the main menu.
To display the number of sales carried out by the drum 8 proceed as follows:
1. Go into programming mode to display...Command 00
2. Key in 07 and press OK to display .... Drum number 00
3. Key in 8 and press OK to display the wished value ....No. of sales
4. Press OK to display .... Drum number 00

☞	**MULTIPRICE** : If command 58 is set at 2 (2 prices for each drum) or at 3 (3 prices for each drum), the machine works by price lines and, therefore, the programming procedure is the following:

If, for example, you would like to see the number of sales carried out on price 29 (products contained in section 3 of drum 3), go ahead as follows:
1. Go into programming mode to display .... Command 00
2. Key in 7 and press OK to display .... Price number 00
3. Key in 29 and press OK to display the required value .... no. of sales XX
4. Press OK to display .... Price number 00

Command 08 Displays sales for discounted price selection:
As with command 07 except that you enter the submenu for displaying the sales per discounted price.

Command 09 Displays non-clearable cashed totals:
This command is used to access display of the totals relative to the transactions carried out since initialisation of the machine. The data available are as follows:
Total sold, total in counter, total in tubes, tot. banknotes, total returned, total given out manually by the tubes, total cashed overprice, total discounted sales, total sales with cash less system, total sold in exact amount conditions, total cashed without sales, number of sales carried out, total value of the free vends, total number of the free vends.

Command 10 Displays clearable totals:
This command has the same functions as command 09, but can be cleared with command 92.

7.5.2   TO SET REFRIGERATION PARAMETERS

☞	To determine and to set the conservation temperatures of the food products, comply with the instructions provided by the producer and by the relative laws in force. These operations must be assigned to adequately qualified personnel as defined by the responsible of the equipment.

Command 41 Sets internal temperature:
This command sets the internal temperature of the machine, i.e. the temperature below which the compressor switches off. The preset value is 3°C and can be varied between 3°C and 20°C.
To set the temperature at +5°C, proceed as follows:
1. Go into programming mode to display.. Command 00
2. Key in 41 and press the OK button to display the present value of the parameter.................................... NN
3. Set value to 41 and press the OK button.

Command 43 Sets temperature to end defrost cycle:
This command sets the temperature at the end of the defrost cycle, i.e. the temperature measured by the probe installed on the evaporator. When the set temperature is reached the defrost cycle is terminated. The preset value is 20°C and can be varied between 5°C and 30°C.

Command 44 Sets defrost cycle frequency:
This command sets the interval in hours between the defrost cycles, i.e. the interval between one defrost cycle and the next. The preset value is 180 min. and can be varied between 60 min. and 480 min..

Command 45 Sets alarm off time:
This command sets the fridge safety feature activation delay time. This delay prevents machine function from being blocked following an operation involving opening of the door and consequently an increase in the internal temperature. Delay in the intervention of the safety feature allows the machine to achieve the correct working temperature. The value of this command is preset at 60 minutes and can be varied between 30 - 60 minutes.

Command 46 Sets safety control temperature:
This command sets the safety feature intervention temperature, i.e. the temperature above which the machine goes out of order and a warning message is displayed. This control is inhibited when the machine is switched on and after the door is closed for the time set at command 45. The preset value is +8°C, but can be varied between +8°C and +25°C. When the safety feature intervenes, the machine remains out of service until the door is next opened. The temperature set must be higher than the compressor activation temperature.

☞	The products must be introduced at the correct temperature for preservation as specified by the regulations in force. The non-observance of this regulation could activate the "refrigeration safety device".
	For detailed descriptions on the reloading modes, see paragraph "GUIDELINES FOR LOADING PRODUCTS"
	To restore the frige safety: open the machine, insert the feeding key for some seconds (micro 230V) leaving the door micro switch open, remove the key and close the door.

Command 47 Sets the maximum off time:
This is the maximum time in minutes that the machine can remain off without the fridge safety control being immediately activated when the machine is switched back on (i.e. if the machine remains switched off for longer than the time set at this parameter, the alarm exclusion time - command 45 - is by-passed when the machine is switched back on; if the internal temperature is greater than the safety temperature, the fridge safety function therefore intervenes immediately). This function can be used to prevent the sale of products that may have been altered should voltage to the machine have been disconnected for a long period. The parameter can be varied between 30 to 999 minutes and is preset at 999.

☞	**The control is active if the value of the parameter is between 30 and 998. If the value is set at 999, the control is excluded.**

Command 48 Setting the drip time:
This command sets the evaporator dripping time after defrosting, that is the length of time in which both the compressor and the fan remain 'off' in order to allow any water residues to flow to the discharge tray. It is preset at 60 seconds but can vary from 60 to 240 seconds.

7.5.3   TO SET MACHINE PARAMETERS

Command 50 Setting the delivery door speed and drum operating parameters:
With this command, it is possible to modify the speed of the delivery doors in the final part of their closing movement. The value is expressed as a percentage and can be varied between 40 and 95 (40% - 95% of the maximum closing speed). The value is preset at 60%. The following message then appears on the display: "drums   0001111111111" which represents the drum configuration that the machine has detected at that moment (1= drum detected ; 0= no drum ; the first drum on top is the one most to the right). If a drum is signalled as being missing even though it is actually installed in the machine, then this means that the corresponding control board is not communicating with the main board. This could simply be due to the board being disconnected, an incorrect configuration of the dip switches on the board, or a fault in the board functioning.
The configuration of the dip switches on the board depend on the position of the drum and follows the binary coding starting with the highest drum. Each individual dip switch is active in the OFF position. For example drum no.5 has its 4 dip switches set in the following way: 1=OFF; 2=ON; 3=OFF; 4=ON.
The VMC (Vending machine controller) then requires the drum speed to be set (DRUM SPEED), there are 3 values available from 1 to 3 in increasing order. The VMC then requires the setting of the Kp coefficient, which alters the way in which the drum approaches the stopping position (more or less rapid stopping).
At this point the parameter relevant to the alignment of the compartment with the sale position must be set. This represents the number of encoder impulses required after the reading of the "0" position by the "0" sensor to align the compartments with the sale position. The value can vary from 0 to 500 but it is normally set at 456 impulses. It is then possible to carry out some drum position tests, by selecting the required drum number upon the request of the VMC and therefore of the various stopping positions; at each stop the data related to the position appears on the display (absolute position expressed in encoder impulses and in compartment numbers).

Command 51 Setting the reload mode:
This command is for setting the type of reload operation. The following options are available:
0. *FAST* loading*:* this function enables the machine as if it has been completely reloaded. Open the main door, insert the red key in the microswitch at the top of the electric panel, and a message appears on the display signalling that the door is open, machine in maintenance mode.
1. *NORMAL* loading for drum pairs: the manual activation of the door microswitch lever produces the rotation of the corresponding and subsequent drum (approx. 1/3 of a turn) and, as a consequence, the loading of these drums. This operation must be carried out with the two doors open.
2. Reloading in *INTELLIGENT* mode only*:* in this case during the sale the availability of the product and the expiry date are controlled. The loading operation is carried out with the door closed through the delivery doors (see paragr.7.9).

☞	**When using the normal loading mode, or the fast loading mode that is with the door open, there are moving parts in the vicinity.**

Command 52 Sets intell. reload mode safety feature:
With this command, it is possible to enable or disable the safety feature during *INTELLIGENT* reloading of the machine. If the safety feature is enabled (parameter set at 1), the delivery door of a compartment being filled closes before the column rotates towards the next empty compartment and then re-opens.
If the value is set at 0, the delivery door remains open until all the empty compartments or those containing expired products have been refilled. This parameter is normally set at 1.

Command 53 Delivery doors configuration:

☞	To be used only if the machine does not begin to function when it is turned on, and the message: "CAUTION: machine not configured" appears on the display. To set the following option **ONLY**, enter the "programming mode" and when the message "command 00" appears on the display press the "test" button again for a further 3 seconds, after which the buzzer will sound again for a few seconds, and access to the second level of the menu is obtained. The message "Command 00" will appear again. To quit the programming mode press the "A" key .

1. Programming mode, the screen displays...Command 00
2. Type in 53 and press OK, the screen displays ....DRUMS NUMBER

Set the number of drums or doors present in the machine, and press OK. The message "Door Configuration, Please wait" appears on the screen, wait for all the doors to complete an opening and closing cycle. At this point, if the procedure has been successful, the message "CONFIG OK" appears on the screen, otherwise the message "CONFIG ERROR – READ =(number of doors detected) PRGM =(number of doors programmed) appears. In this case, check the connection of the delivery door motors to their corresponding microswitches.

Caution: motor and microswitch must be connected in the corresponding positions, that is with the same colour wire.

To identify the door which is either incorrectly or not connected, the relevant door will complete an extra opening/closing cycle, or none at all.

Command 54 Sets delivery door open time:
This command sets the time during which the delivery door remains open. The pre-set value is 10 seconds and can be varied from 1 to 60 seconds.

After that the machines asks the operator to activate or deactivate the door forcing alarm: "Door alarm ON/OFF", (ON=1, OFF=0) and the active time of the buzzer in seconds "Time alarm ON sec"; it can vary from 0 to 240 sec. In the event that a door has been forced, the corresponding drum is deactivated. At the same time, if programmed and activated, a sound alarm will be produced according to the parameters previously set.

Command 55 Programming time of product expiry:
This command is used to programme the time, relative to the expiry day, beyond which the product will have expired. Key in the exact hour and minute values and press OK to store them.

Command 56 Buzzer operation option:
By setting this command at zero the buzzer is disconnected during machine operation.

Command 57 Sets decimal point display:
With this command, it is possible to show the decimal point on the price display. This value can be 0 or 2.

Command 58 Price configuration:
In response to this command, a number is displayed corresponding to the subdivision of the prices on the column. The following possibilities are available.
a) 1 price: the value set is 1 for associating the prices 1-10 to drums 1-10.
b) 2 prices: the value set is 2; each drum is divided into two halves to which various prices can correspond. The first half of each drum refers to prices 1-10 while the second half of each drum refers to prices 12-21. Therefore price 12 corresponds to the second half of drum 1, price 13 to the second half of drum 2, etc.
c) 3 prices: the value set is 3, each drum is divided into 3 sections each of which refers to a different price. Prices 1-10 are associated to the first section of drums 1-10; prices 12-21 to the second section and prices 23-32 to the last section.
If for example you wish to set two different prices for each of the 10 drums, proceed as follows:
1. Go into programming mode to display .... Command 00
2. Key in 58 and press OK to display the current parameter value... NN
3. Key in 2 and press OK.

Command 59 Option of accessing all the compartments:
This option is only effective during an intelligent reloading operation. If set at "0" the machine presents all the empty compartments or those containing an expired product to the operator.
If, on the other hand, it is set at "1" and the drum expiry date is set at "99" the machine presents all the compartments without distinction to the operator.

Command 60 Erases the memory:

☞	Activation of this command cancels all the data programmed by the user and the new default parameters determined by the manufacturer are automatically set..

In response to this command, the display shows the message "**Code 0000**". By keying in the code **6203** and pressing the OK button, all the data in the machine memory are erased. This function must be used extremely carefully to avoid accidental loss of all the data. 'Electronically', the machine is as new. The message "**memory cleared**" appears on the display. The procedure for erasing the memory is as follows:
1. Go into programming mode to display.. Command 00
2. Key in 60 and press the OK button to display .... Code 0000
3. Key in 6203 and press the OK button to display .... memory cleared
To exit the command press the "test" push button once.

Command 61 Resets the security/access code:
Allows the access code used in the EVA_DTS protocol to be reset.

Command 62 Enables the discounts:
A number of discounts are possible by keying in the following values at this command:
0 = no discount
1 = discount per time band.
2 = discount for key/credit card purchases (only possible in the MDB mode).
3 = discount per time band and for key/credit card purchases (only in MDB mode).

N.B. In order for the discount to be applied, the values of the time bands required must be set on the daily timer 2

If the cashless system allows different price tables to be applied, the choice of the table to be used at the moment of the sale is made automatically by means of the communication protocol between the machine and reader (only possible for MDB cashless systems that feature this option). In this case, the command must be set at zero.

Command 63 Sets single or multivend:
If this command is set at 0, the machine operates in single vend mode and, in the cash operating mode, the credit exceeding the price is returned. If this is not possible, the amount increases the total value of overpaid cash. Vice versa, if the command is set at 1, the machine functions in multivend mode, the credit exceeding the price after the sale is displayed again and can be retrieved by pressing the coin return pushbutton or used for subsequent purchases. As default, this value is pre-set at 0

Command 64 Sets message display language:
This command is used to modify the language in which the messages displayed are given. Value **0** corresponds to Italian, value **1** to English, value **2** to French, value **3** to German, value **4** to Dutch, value **5** to Swedish, value **6** to Finnish, value **7** to Spanish, value **8** to Portuguese, value **9** to Danish. For example, to display the messages in English, proceed as follows:
1. Go into programming mode to display..._ Command 00
2. Key in 64 and press the OK button to display the present value of the parameter......................................_N
3. Set Value 1 and press the OK button.

Command 65 Displays optional messages:
This command serves to modify the message displayed by the machine when selection is made. By setting the command at 1, the machine displays the message "Insert card, price: xx p", which can be used when the payment system is the credit card type.

Commands 66-67 Internal temperature and evaporator temperature display:
The value set at these commands determines the information shown on the second line of the display (see table). As default, the clock is displayed.

Command	Command	Displayed value
66	**67**	
0	0	Displays clock
1	0	'' internal temperature
0	1	'' internal temperature + evaporator temperature
1	1	'' clock + internal temperature

When the machine is in stand-by mode, by pressing for 5 seconds one of the OK keys, which are situated on the front part of the main door, the inner temperature and the temperature of the evaporator will be displayed for a few seconds.

Command 68 Modifies displayed currency:
This command allows the currency displayed when a product is selected to be chosen. The currencies available are shown in the following table together with the code to be programmed:

p.	code 01	(Pence)	$	code 14	(Australian dollars)
K*	code 04	(Czeches kronas)	ps.	code 15	(Argentinian Pesos)
kr.	code 05	(Krona) (* Slovenians thalers)	/	code 16	(No currency displayed)
Kr	code 09	(Danish krone)	Euro	code 17	(Euro)
Chf	code 10	(Swiss francs)	R$	code 18	(Brazilian Real)
Rand	code 13	(South African rand)	Kr	code 19	(Norwegian krone)

(* *EPROM with second set of languages***)**

Command 69 Chooses functioning mode of the coin mechanism:
This command chooses the type and mode of functioning of the coin mechanism. The parameter can assume the following values:
0   System EXECUTIVE with prices controlled in the machine
1   System EXECUTIVE in PRICE HOLDING mode (i.e. prices programmed in the coin mechanism). In this case, the prices programmed at command 03 and those programmed in the coin mechanism must be the same.
3   System EXECUTIVE with prices controlled in the machine and data control of AUDIT coming from the coin mechanism (to enable the data sending of AUDIT, see the coin mechanism handbook).
4   System BDV 001 (see paragraph on using the BDV coin mechanism)
5   Payment system MDB (see paragraph on using the MDB payment system).

	Every time this value is altered, the vending machine must be turned off for a few seconds. By switching it on again the machine and the coin mechanism will communicate correctly.

7.5.4   SETTING DRUM PARAMETERS

Commands 71 to 80 :
This section allows the parameters relative to the physical configuration and some of the machine's functioning modes to be modified. By entering one of these commands and pressing the **OK** pushbutton, the message "**Compartment No. XX**" is displayed and shows the number of comparments set for the selected drum. The values possible are: 6,12,16,24,48. Each time one of these values is changed, or the setting is confirmed by pressing the **OK** pushbutton instead of pushbutton **A**, the drum is considered empty and any products left in the compartments will not be accessible.
After pressing the **OK** pushbutton to store the number of compartments required or the **A** button if you do not wish to store the value, the display shows the message "**Fifo/shopper X**" which enables the functioning mode of that drum to be selected. If the value is **0**, the drum is set in shopper mode while; if the value is 1, the drum is set in **Fifo** mode and the products will only be available for sale in the order in which they were loaded. The preset value is usually set at **0** for **Shopper** mode.
The value can be confirmed with the OK pushbutton or, by pressing pushbutton **A**, the message "**Expiry days YY**" displayed . YY indicates the shelf life of the products loaded in the selection starting from the preceding midnight. This feature is only operative with the machine in *Intelligent reload* mode and the sale of products that have not been sold within the programmed date is blocked.
For example, to programme drum no. 5 with 16 compartments in Shopper mode for products with a 7 day expiry period, proceed as follows:
1. Go into programming mode to display   ....**Command 00**
2. Key in **75** and press the **OK** button to display the no. of compartment   ....**Compartment No. NN**
3. Key in **16** and press the **OK** button to display   ....**Fifo/shopper X**
4. Key in **0** and press the **OK** button to display   ....**Expiry days YY**
5. Key in **7** and press ....**OK**

7.5.5   TO SET MACHINE PARAMETERS

Command 90 Selects data sent to RS232:
The control card has a jack RS232.
The male connector I/O is a 9 poles type (see figure 3) in which the following pins are used:

- Pin 2   Tx
- Pin 7   DTR
- Pin 5   Ground

The transmission occurs in accordance with the following specifications:

- 9600 baud   **- 8 bit of data**   **- no parity**

The transfer of the data is ruled by a control signal DTR (active high) provided by the device to fetch data.
The data fetch from the machine happens as follows:
a) Connection of the device to fetch data to the jack RS232.
b) Press data sending pushbutton.
c) After the transmission of data, the request to disconnect the device is displayed.

Through command 90 it is possible to choose the quantity of data sent to the jack RS232. There are three levels:
• level 1   totals regarding the transactions
• level 2   totals regarding the transactions of level 1, plus sales per each selection
• level 3   totals regarding the transactions of level 1, of level 2, plus behaviour of the internal temperature in the last 24 hours; data regarding the last 10 power- offs and machine restarting operations; data regarding the error events that have occurred.

If the command is set at 4, the machine dialogue with the outside world is achieved by means of an 082928 infrared interface, based on the specifications of the EVA-DTS protocol.

If the command is set at 5 the machine dialogues with the external world through an infrared 082925 interface (IRDA interface), according to the specifications of the protocol EVA-DTS vers.5.0.

Then, if the preceding option has been set at 4 or 5, the machine proposes selecting the input / output direction: towards the infrared interface (082928 or 082925 OPTICAL LINK) or towards RS232 (connector situated on the card). In the latter case the connector pins used are 2= VMC Tx, 3=VMC Rx, 5= GROUND in which case the transmission speed is fixed at 9600 baud. To select press any key on the keyboard to scroll the various direction options and confirm the desired value by pressing "B"

If the initial option is set at 5 the machine requests that the peripheral address be inserted: key in the desired value and press "B".

If the initial option is set at 5 the machine proposes selecting the transmission speed which must be consistent with the setting of card no. 082925 (see relevant instructions). The setting range is between 2400 baud and 19200 baud. To select press any key on the keyboard to scroll the various speed options and confirm the desired value by pressing "B".

If the command is set at 6 the machine dialogues with the user by means of DEX-UCS protocol.

Printing example:

Model Machine

Machine code	0
Software ver.	V.1.0
Date 10-07 ore	14:53

Coin Mechanism : MDB

Manuf. Code	JOF
Serial Numb.	00005610
Tuning rev.	F12SM
Software ver.	CC53
Changer level	3
Options	00000001

Total values

Pay Vend	600
To cashbox	0
To tubes	800
Banknotes	2000
Change	100
Inventory	1000
Overpay	0
Discount	0
Cashless	0
Ex. change	0
Without vend	18
No. of vends	5

Interim values

Pay Vend	600
To cashbox	0
To tubes	1400
Banknotes	2000
Change	100
Inventory	1000
Overpay	0
Discount	0
Cashless	0
Ex. change	0
Without vend	18
No. Of vends	5

Full price vends

Sel.	N. Vend	Price	Code
01	2	50	0000
02	1	100	0000
03	1	150	0000
04	0	200	0000
05	0	250	0000
06	0	300	0000
07	0	350	0000
08	0	400	0000

Discount price vends

Sel.	N. Vend	Price	Code
01	0	50	1024
02	0	100	0000
03	0	150	0000
04	0	200	0000
05	0	250	0000
06	0	300	0000
07	0	350	0000
08	0	400	0000

Temperature recording

hour 13:11	t = 05 °C
hour 13:26	t = 03 °C
hour 13:41	t = 01 °C
hour 13:56	t = 02 °C
hour 14:11	t = 03 °C
hour 14:26	t = 05 °C

Power off events

POWER-OFF	10-04	10:26
POWER-ON	10-04	10:26
POWER-OFF	10-04	10:45
POWER-ON	10-04	10:45

Error events

Code	Date	Time
16	06-25	14:47

ENGLISH

Command 91 Inputs machine code:

This command allows the machine code to be input. This 8-figure code is sent together with the other data to the data fetch device and is used to identify the machine.

The machine asks the operator to enter the: "Machine location". 30 characters are available to define this parameter. At this point the machine will ask the operator to complete the:" Machine Asset Number" field, (10 characters).

These data will be available in the audit phase of the DEX-UCS protocol.

Command 92 Resets sales data:

This command allows the machine sales data to be reset. This operation is dependent on the insertion of a particular access code. The procedure is as follows:

1. Go into programming mode to display..Command 00
2. Key in 92 and press OK to display ....Code 0000
3. Key in 1221 and press OK to display ....ERASE DATA?
4. By pressing the OK key, all sales data are reset whereas by pressing A you return to the main menu leaving the data unchanged.

Command 93 Displays the temperature status over the last 24 hours:

This command displays the behaviour of the internal temperature over the last 24 hours. The values are recorded every 15 minutes. The values are displayed starting from the earliest value. To pass to the next value press the OK button. Pushbutton A is used to return to the main menu.

☞	The clock must be programmed to start the recording (see command 02). **After having programmed the clock, all the data are automatically reset**

Command 94 Displays the last 10 power-offs:
This command displays the last 10 periods in which the machine has remained off.
The following values are displayed:

POWER OFF	DATE	TIME
POWER ON	DATE	TIME

To pass from one display to another display, press the OK pushbutton.

☞	The clock must be programmed to start the recording (see command 02). **After having programmed the clock, all the data are automatically reset**

Command 95 Inputs user message 1 (max 63 characters):
The command allows the first of the two messages that can be modified by the user to be input. This message is displayed in STAND-BY when the payment system can give change.
Key in 95 and press **OK**. On the first line of the display the message currently available appears while the second line shows the writing "**Character   00**". Key in the codes of the characters you wish to insert (see following table) and confirm from time to time with the **OK** pushbutton to compose the message required. At the end, press pushbutton **A** to return to the main menu.

CODE	CHARACTER	CODE	CHARACTER	CODE	CHARACTER
00	Cursor ahed	28	E	56	g
01	Cursor back	29	F	57	h
02	space	30	G	58	i
03	!	31	H	59	j
04	''	32	I	60	k
05	#	33	J	61	l
06	$	34	K	62	m
07	'	35	L	63	n
08	,	36	M	64	o
09	-	37	N	65	p
10	.	38	O	66	q
11	/	39	P	67	r
12	0	40	Q	68	s
13	1	41	R	69	t
14	2	42	S	70	u
15	3	43	T	71	v
16	4	44	U	72	w
17	5	45	V	73	x
18	6	46	W	74	y
19	7	47	X	75	z
20	8	48	Y	76	á
21	9	49	Z	77	å
22	:	50	a	78	ü
23	;	51	b	79	£
24	A	52	c	80	ä
25	B	53	d	81	ñ
26	C	54	e	82	ö
27	D	55	f		

The character with code 00 moves the cursor by one position.

☞	If the cursor is positioned beyond the first character of the message and you press **A** to return to the main menu, the message will be cut in the position corresponding to the cursor; therefore move the cursor to the end of the message before exiting.

N.B. It is advised to write the message on a piece of paper using the codes of the table (spaces included) and then to programme it into the machine.

Command 96 Inputs user message 2 (max 63 characters):
The command allows the second message that can be modified by the owner to be input. This message is displayed in STANDBY when the payment system cannot give change.
The instructions for inputting the message are the same as those given for the previous command.

Command 97 Enables user message 1 display:
By setting this command at 1 when the machine is in STAND-BY and the payment system is able to give change, message 1programmed by the owner with command 95 is displayed.
If the command is set at 0, the standard message is displayed.

Command 98 Enables user message 2 display:
By setting this command at 1 when the machine is in STAND-BY and the payment system is unable to give change, message 2 programmed by the owner with command 95 is displayed.
If the command is set at 0, the standard message is displayed.

Command 99 Displays error events:
Displays the last 20 error events encountered with relative date and time. Press the OK button to pass from one display to another.

ERROR CODE	SUB-CODE	MEANING
01	Door no.	Door does not open during sale
02	Door no.	Door does not close (only Command 01 Machine test)
03	Drum no.	Column tries to rotate drum with door open
05	Drum no.	Drum position time out
06	/	No communication between VMC board and push button interface board
07	Drum no.	Column does not reach zero position within 30 s
08	Drum no.	No drum encoder pulses
10	/	Internal temperature probe defective
11	/	Evaporator probe defective
16	/	Communication with power board blocked
20	/	Delivery door not controllable
21	/	Incorrect position parameter
25	Door no.	Door does not open during reloading
26	Door no.	Door does not close during reloading
29	Drum no.	Power board reset or the drum control card
30	/	Fridge safety intervention

☞	Apart from the cost of the selected item, the **price display** can provide other indications regarding the state of the machine: 1. If "− − − −" appears on the display it means that the corresponding drum is empty. 2. If "Ξ Ξ Ξ Ξ" appears on the display it means that the corresponding delivery door is out of order. 3. If " = = = =" appears on the display it means that the corresponding drum is out of order.

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7.5.6   SETTING THE CLOCK AND DAILY TIMERS

Alarms 01 Sets the year/month/day:
This command is used to set the year, month and day on the clock in the control board. The introduction format is YYMMDD.

Alarm set 02 Sets the hour and minute:
This command adjusts clock on the control board. Key in the exact time in hours and minutes and press the **OK** pushbutton to store the setting. The following procedure will set the clock at 10.30:
1. Go into programming mode to display... Command 00
2. Key in 02 and press the OK button to display .... Alarm set 00
3. Key in 2 and press the OK button to display the hours and minutes previously set .... NNNN
4. Key in 1030 and press the OK button.
N.B. Accurate setting of the clock is essential if you wish to use the features for controlling the sale of products by expiry date and the time controls for switching on the lamps, discount periods, etc.

Alarm set 21–24 Sets the timed discount periods:
Same as previous commands except that these commands serve to set the daily discounted sales periods. During those periods in which the discount is activated, the machine uses the prices set in the discount price submenu. Command 62 of the main menu must of course be set at 1.
For example, to set a discount period lasting from 10.30 to 13.30, proceed as follows:
1. Go into programming mode to display..Command 00
2. Key in 02 and press button OK to display .... Alarm set 00
3. Key in 21 and press button OK to display the time when discounted prices are first activated............ NNNN
4. Set value to 1030 and press button OK.
5. Key in 22 and press button OK to display the time when discounted prices are first deactivated........ NNNN
6. Set value to 1330 and press button OK,
N.B.: The periods must be programmed in the following order: 21-22-23-24.
If use of this function is not required, programme 2400 at **Alarm 21**.

Alarms set 31-34 Selections disabled for daily time periods:
These commands allow the selections set at command "Alarm 36" to be disabled for two time periods per day.
Alarm set 31 = selection disabled period start
Alarm set 32 = selection disabled period end
Alarm set 33 = second selection disabled period start
Alarm set 34 = second selection disabled period end
N.B.: The periods must be programmed in the following order: 31-32-33-34.
If use of this function is not required, programme 2400 at **Alarm 31**.

If , for example, you wish to disable sales between 1.30 pm and 3.30 pm, proceed as follows:
1. Programming mode, the screen displays ....Command 00
2. Key in 02 and press B, the screen displays .... Alarms 00
3. Key in 31 and press B, the screen displays .... NNNN
4. Set value 1330 and press B.
5. Key in 32 and press B, the screen displays .... NNNN
6. Set value 1530 and press B.

Alarm set 36 Setting of selections subjected to hourly disabled periods:
This command allows the choice of drums to be disabled during the time periods in which the "disabled selections " function is activated (see programming of **Alarms 31-34**). Example:
To activate the hourly disabled time period for drum 5 proceed as follows:
1. Programming mode, the screen displays ....Command 00
2. Key in 02 and press B, the screen displays .... Alarms 00
3. Key in 36 and press B, the screen displays .... drum no.00
4. Key in 5 and press B, the screen displays .... Disan./Enable 1/0   N
5. Set value 1 and press B.
N.B.: If all the drums are disabled, the payment systems will also be disabled during this time period.

7.6   USING THE EXECUTIVE PRICE HOLDING PAYMENT SYSTEMS

Executive Standard ⇒ Command 69 programmed at 0

The Executive standard payment system manages the prices directly in the machine and not on the payment system.

For example, to set selection 21 at 30 pence, follow the instructions below:
1.1) Enter programming mode to display ....**Command 00**
1.2) Key in 03 and press OK to display... **Drum Number 00**
1.3) Key in 21 and press OK to display..**Price 00**
1.4) Key in 30 and press OK to display... **Drum Number 00**

If you wish to programme another selection, repeat the sequence from point 1.2. Alternatively, press A twice.

Executive price-holding/price-display ⇒ Command 69 programmed at 1

In the Executive price-holding/price-display price system, the prices are managed by the payment system.
In this case, it is necessary to copy the price table (price list) programmed on the payment system to command 03 of the machine (from price 1 to price n) , while at Command 05 the prices will be matched to the selection by referring to their number.

For example, to set the selection 21 at 30 pence, proceed as described below:
Let us assume that the second price set on the payment system is 30 pence.

1.1) Enter programming mode to display ....**Command 00**
1.2) Key in 03 and press OK to display... **Price number 00**
1.3) Key in 02 (second price) and press OK to display...**Price 00**
1.4) Key in 30 and press OK to display... **Price number 00**
1.5) Press A to display ....**Command 00**
1.6) Key in 05 and press OK to display..**Drum number 00**
1.7) Key in 21 and press OK to display.. **Price number 00**
1.8) Key in 02 (second price) and press OK to display...**Disc number 00**

If you wish to programme another selection, repeat the sequence from point 1.6. Alternatively press **A** twice.

7.7   USE OF COIN MECHANISM BDV

Installation: : To connect the coin mechanism ask to builter for the suitable connection cable (code 300238). After having carried out the connection, switch on the machine, enter programming and set **command 69 to 4**, then switch off the machine for a few seconds. By switching it on again the machine and the coin mechanism will communicate correctly.

Command 30	Purchase obligation before return	(def. 0)
Command 31	Maximum credit	(def. 0)
Command 32	Maximum value of returned coins	(def. 0)
Command 33	Inhibition single coins	(all enabled)
Command 34	Coins only accepted for exact amount	(all enabled)
Command 35	Coin level for exact amount message	(def. 0)
Command 36	Exact amount equation	(def. 0)
Command 37	Enabling card reader	(def. 0)
Command 38	Emptying of change giving tubes	
Command 39	Filling up of change giving tubes	

Command 30 Purchase obligation before return:
By setting this command to 1, the customer is obliged to make a purchase before any change is returned. This is to avoid that the coin mechanism is used a a change-giving machine. If the purchase fails, then change return is made.

Command 31 Maximum credit:
The maximum credit accepted by the coin mechanism is set. If this value is exceeded, acceptance of further coins is blocked.

Command 32 Maximum value of returned coins:
This function is active only in the multi-sale mode. If the value of the credit which remains after a sale is higher than the value set by the command, return will be blocked. It will therefore be necessary to make further purchases until the remaining credit is lower than the value set. By moving the change return lever, it is possible to obtain the change return.

Command 33 Inhibition single coins:
The acceptance of particular coins by the coin mechanism will be blocked through this command. If you wish to block the acceptance of coin 5, proceed as follows:
1. Programming mode, to display ....Command 00
2. Key in 33 and press OK to display ....Coin number 00
3. Key in 5 and press OK to display 0
4. Key in 1 and press OK.

Command 34 Coins only accepted for exact amount:
This command blocks the acceptance of particular coins when the machine is unable to give change, i.e. when the display shows the message "Insert correct change".

Command 35 Coin level for exact amount message:
A value between 0 and 15 representing the number of coins can be programmed.

Command 36 Exact amount equation:
This represents the combination of empty states in the tubes so that the exact amount message can be activated. There follows a list of possible combinations:

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

Command 37 Enabling card reader:
The card reader function is enabled by setting this command at 1.

Command 38 Emptying of change giving tubes:
This command is used to perform an inventory of the coins in the coin mechanism tubes. To obtain the emptying of tube 1 (coins of lower value) proceed as follows:
1. Programming mode to display .... Command 00
2. Key in 38 and press OK to display .... Tube number 00
3. Key in 1 and press OK,
The coin mechanism starts giving out the coins from the chosen tube until pushbutton B is released.

Command 39 Filling up of change giving tubes:
Proceed as follows:
1. Programming mode to display .... Command 00
2. Key in 39 and press OK
3. Insert the coins into the coin mechanism.
4. Press OK pushbutton again
N.B. If the procedure is not carried out correctly, wrong values can result at commands 09 and 10.

E N G L I S H

7.8   USE OF MDB/ICP PAYMENT SYSTEMS

Installation: The MDB/ICP coin mechanism must be connected to the connector J4 of the control card (see figure). The command **69 must be programmed at value 5**, then switch off the machine for a few seconds. On switching on again, the machine and the coin mechanism will comunicate correctly.
There exist the following additional commands for use of these payment systems:

Command 27	Setting the signal for payment system out of order.	
Command 28	Select change giving tube content counter.	
Command 29	Cashless credit cannot be displayed.	
Command 30	Purchase obligation before return	(def. 0)
Command 31	Sets the max. accepted credit.	
Command 32	Minimum coin level in the tubes.	
Command 33	Inhibits single coins.	
Command 34	Coins only accepted for exact amount.	
Command 35	Resetting coin meters in change giving tubes.	
Command 36	Condition exact amount (no coins available for change).	
Command 37	Inhibits banknote validator in exact amount conditions.	
Command 38	Emptying of change giving tubes.	
Command 39	Filling of change giving tubes.	

Command 27 Setting the signal for payment system out of order:

☞	To set the following option **ONLY**, enter the "programming mode" and when the message "command 00" appears on the display press the "test" button again for a further 3 seconds, after which the buzzer will sound again for a few seconds, and access to the second level of the menu is obtained. The message "Command 00" will appear again. To quit the programming mode press the "A" key .

If the command is set at 1, when the connection with the MBD payment system is interrupted the vending machine goes out of order and the message appears on the display; if the command is set at 0 (zero), the option is disabled. The default setting is 0.

Command 28 Select change giving tube content counter:
This command allows the user to select whether to use the counters corresponding to the content of the coin mechanism change giving tube or use only the counters inside the machine. If the command is set at 1 at each power-up the counters inside the machine which correspond to the content of the change giving tubes are updated with the values transmitted by the coin mechanism. If, on the other hand, the command is set at 0 the values transmitted by the coin mechanism are ignored.

Command 29 Cashless credit cannot be displayed:
This command allows the user to prevent or enable display of credit from the MDB cashless device (key or card reader). If the command is set at 1 the credit corresponding to the cashless device is not displayed, whereas if the command is set at 0 the machine also displays the credit available on the cashless device.

Command 30 Purchase obligation before return:
By setting this command at 1, the client is obliged to make a purchase before change can be returned. This is to avoid the coin mechanism being used as a change machine. If the sale should fail, the return is made.

Command 31 Sets the max. accepted credit:
This sets the max. credit accepted by the coin mechanism. When this value is exceeded, the acceptance of other coins/banknotes is blocked.

Command 32 Minimum coin level in the tubes:
This is the number of coins for each coin box mechanism which must remain in each tube in order to guarantee the correct function of the coin delivery system. (Consult the manual of the coin box mechanism for instructions on setting the correct value of this parameter). If a different value is associated to each tube, the maximum value set must be between those indicated. The setting of this parameter is fundamental for ensuring the correct coin management by the vending machine.
N.B. The inventory of the tubes, command 38, stops when the contents of each tube reaches the value set at command 32. To empty the tubes completely, use the delivery pushbuttons of the coin box mechanism.

Command 33 Inhibits single coins:
This command blocks acceptance of particular coins by the coin mechanism. To block the acceptance of coin 5 proceed as follows:
1. Go into programming mode to display...Command 00
2. Key in 33 and press OK to display ....Coin number 00
3. Key in 5 and press OK to display 1
4. Key in 0 and press OK.

N.B.:   To activate any possible modifications of command 33, the machine must be turned off and on again after the modification.

Command 34 Coins only accepted for exact amount:
This command blocks acceptance of particular coins when the machine is unable to give change, i.e. when the display shows the message "Insert correct change".
1. Go into programming mode to display...Command 00
2. Key in 34 and press OK to display ....Coin number 00
3. Key in 5 and press OK to display 1
4. Key in 0 and press OK.

Command 35 Resetting coin meters in change giving tubes:
Use this command when replacing token meter or emptying the change giving tubes with the machine off to synchronize the meters with the actual contents of the change giving tubes.
1. Programming mode, display views..Command 00
2. Key in 35 and press B , display views ....Code 0000
3. Key in 6203 and press B.

Command 36 Condition exact amount (no coins available for change):
This command is for setting (for each change giving tube) the number of coins below which the machine can be considered to be in a condition of 'no coins available for change'. The set value must always take into consideration the coin minimum level in the tubes (command 32), that is it must be higher than the latter (example: if command 32 is set at 5, the command 36 values must have a setting of 6 as their minimum value). The tubes that are not included in this condition must be set at "0".
When the contents of any one of the tubes included in the condition drops below the corresponding set value the machine displays the warning that there are no coins available for change.

Command 37 Inhibits banknote validator in exact amount conditions:
Setting this command at 1 during exact amount conditions inhibits the banknote validator.
N.B.: If only the note validator is installed, this command must be set to 0.

Command 38 Emptying of change giving tubes:
This command is used to perform an inventory of the change in the tubes of the coin mechanism. To empty tube 1 (low value coins), proceed as follows:
1. Go into programming mode to display ....Command 00
2. Key in 38 and press OK to display .... Tube no. 00
3. Key in 1 and press OK,
The coin mechanism starts to empty the change from the selected tube until pushbutton B is released.

Command 39 Filling the change giving tubes:
Proceed as follows:
1. Go into programming mode to display .... Command 00
2. Key in 39 and press OK, mode to display ....- - Tubes fill - - / Tot. Amount XX
(where XX indicates the overall value of the coins contained in the coin mechanism tubes)
3. Insert the coins in the coin mechanism
4. Press the pushbutton OK again

N.B. if the procedure is not carried out correctly, wrong values can result at commands 09 and 10.

7.9   PRODUCT LOADING PROCEDURE 🗝

7.9.1   GUIDELINES FOR LOADING PRODUCTS 🗝

When the machine is switched on for the first time, wait approximately 12 hours for the machine to reach the operating temperature. In any case, check that the internal part of the machine has dropped below 4°C before placing the refrigerated products *(see Command 66 and Command 67)*.
If the "refrigeration unit safety device" is tripped, the products in the selections that are out of order must be eliminated; also in this case, when the machine is switched back on again, wait for the machine to reach the operating temperature before placing the new refrigerated products inside it.
To remain within the safety limits for the refrigerated products the total door-open time must be no more than 15 minutes. Consequently, all operations must be carried out in as short a time as possible.

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7.9.2   PRODUCT LOADING, FAST MODE OR NORMAL MODE
a)   Open the machine door and insert the upper service key. The message "**Door open, machine in "maintenance mode**" is displayed.
b)   the manual activation of the door microswitch lever produces the rotation of the corresponding and subsequent drum (approx. 1/3 of a turn) and, as a consequence, the loading of these drums. This operation must be carried out with the two doors open.

☞	When using the normal loading mode, that is with the door open, there are moving parts in the vicinity.

7.9.3   PRODUCT LOADING PROCEDURE - INTELLIGENT MODE

☞	With this reload mode, the product loading date is memorised; the machine is therefore able to recognise an expired product. **To ensure correct function, the date, time and the number of expiry days must be set (see commands 71-80).**

a)   Open the door and insert the two keys into the microswitches.
b)   Press the P push-button (fig.3) on the main control board which finds in the coin mechanism compartment. The following message will be displayed "**Select the drum to be loaded**".
c)   Press the selection button of the drum to be loaded. The vending machine will localise the first compartment empty or containing an expired product. This compartment will move to the sale position and the corresponding door will be opened to allow the product to be loaded or replaced. The number of the compartment which is now accessible is displayed and the price set for this compartment can be read on the next numeric display.
d)   Once the new product has been loaded, press the **OK** push-button to set the product presence into the compartment and the expiry date after which the product sale will be inhibited. If no product has been loaded, press the corresponding selection key to move to the next compartment. This procedure will be carried out until all the compartments are set or a new drum is selected for loading. The vending machine will automatically switch from the loading to the normal mode when all the drums have been checked. To interrupt at any time the loading procedure, press the P push-button (fig.3).
e)   When a **Fifo** selection is loaded, all the compartments **must** be loaded one after the other (no empty compartments are possibile). If there are not enough products to fill a Fifo selection: press the **OK** push-button after loading the last product and then quit the loading procedure (P push-button (fig.3) or select the next drum to be loaded.

7.10   VENDING A PRODUCT

7.10.1   USING A PAYMENT SYSTEM

After having loaded the machine following the instructions in paragraph 7.9 and having set the selling prices, filled the change tubes (if the machine is equipped with a change giving coin mechanism) and checked that the message "**Insert 1,2,5... etc. coins**" appears on the display , the machine is ready for vending.

1)   Shopper drum:
Use the drum rotation push buttons to place the product to be purchased in the sale position; by pressing the selection push button (OK) the price of the product appears on the display.

2)   FIFO drum:
The product is in the sale position; by pressing the selection push button (OK) the price of the product appears on the display.

3)Check the price of the product on the display.
4)Insert the money.
5)Confirm the product choice by pressing the same OK button.
6)Remove the product from the compartment which was opened automatically.

E N G L I S H

7.10.2   TEST VENDING USING THE FREE VEND FUNCTION

1) Open the door.
2) Insert the keys in the corresponding microswitches and wait for the column reset.
3) Press the button   Ref.P Fig.3 of the main control board of the coin mechanism compartment; the message "**Select drum to reload**" will appear on the display.
4) Press the top right selection push-button (RH arrows), the machine automatically switches to "Free vend" mode.
5) Product selection and sale as in 7.10.1 above.
6) Press the button Ref.P Fig.3 to exit FREE VEND.

8   ADJUSTMENTS

⚠	*Disconnect power by turning the general switch to "off" and disconnect the feed plug before starting the operations.*

8.1   REMOVING THE DRUMS FIG. 6 - FIG. 7

To remove the drums from the column proceed as follows:
- Open the main door of the vending machine and disconnect the electric power supply by turning the general switch to OFF;
- Open the internal door in order to be able to access the selection drums;
- Slacken the two handles (pos. A FIG. 6), both above and below. Furthermore, slacken the 3 screw studs (pos. C FIG. 6) located at regular intervals along the upright for the motors. Then shift the motor assembly, (pos. B FIG. 6), so that the gearwheels are released.
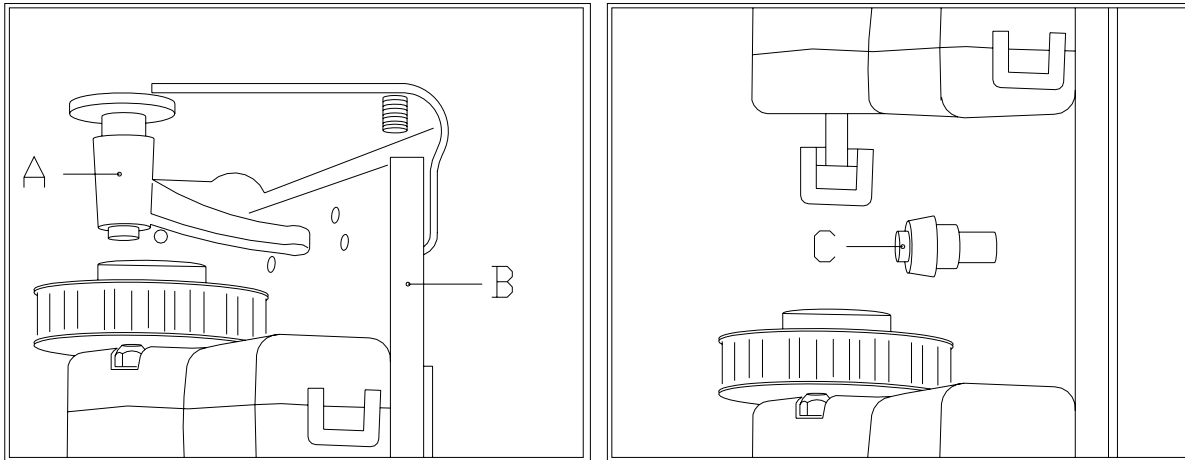
FIG. 6

- Release the column locking tie rod and remove it as shown in FIG. 7;
- Remove the first drum from the top, by lifting it and sliding it out of the machine;
- All the drums can be removed in this way one after the other.
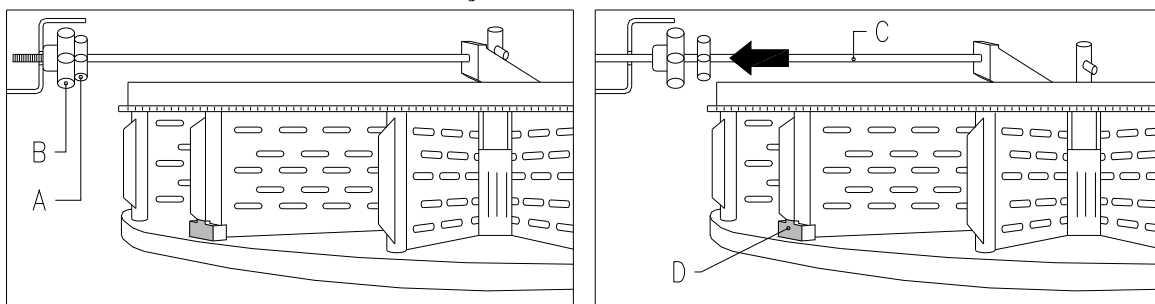
FIG. 7

To reposition the drums on the column proceed as follows:
- Insert the first drum on the bottom and then repeat with the remaining drums;
- The last drum on top pos. A fig. 8 is equipped with a bush pos. B FIG. 8 and a pin C FIG. 8 to secure the whole column. When reassembling the column it is important to correctly position part C and lastly place the drum pos. A as the final one of the ten.
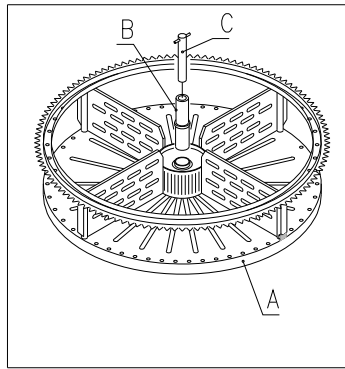
FIG. 8

- Lock the column by means of the tie rod;
- Bring the motor assembly closer and check that all the gearwheels mesh correctly; this operation is facilitated by acting on the 3 screw studs (pos. C FIG. 6). Then tighten the two handles, both above and below.

☞	Check that the coupling between the motor and the toothed section is not forced, in order to avoid damaging the motors.
	When the machine is turned on it automatically rotates all the drums until the stop pos. D FIG. 7 is in front of the sensor, in order to reset the machine.

8.2   REPLACEMENT OF THE DRUM ROTATION DRIVE MOTOR OR FINAL DRUM CONTROL BOARD

If one or more drum rotation drive motors do not function correctly they must be replaced.
To carry out this operation correctly follow the procedure described below:
- Open the main door of the vending machine and disconnect the electric power supply by turning the general switch to OFF;
- Open the internal door in order to access the selection drums;
- Remove all the drums to gain access to the Plexiglas protection;
- Remove the Plexiglas protection pos. A FIG. 9 by removing the 6 fastening screws to gain access to the electrical connectors;
- Remove the two socket head screws pos. B FIG. 9 which secure the bracket;
- Remove the connector pos. C FIG. 9 on the encoder;
- Remove the feed connector from the board pos. D FIG. 9 and pull the wires out of the metal bracket;
- Remove the drive motor together with the bracket, support and encoder;
- Carry out the procedure in reverse to reassemble.
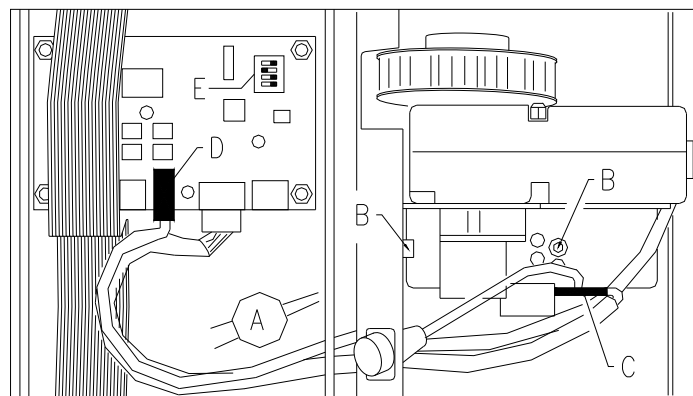
FIG. 9

☞	When mounting the new motor check that the gear is correctly engaged with the drum; if not, use the four fixing holes for centering.

If one of the final disc control card needs to be altered, proceed as for the previous phases by carrying out points 1 to 4, then disconnect the connectors and tighten the 4 fastening screws. Reposition the new card (use of original parts is highly recommended). Detailed descriptions of the dip switch positions for each of the drums follows below. E FIG. 9.

DRUM 1   DRUM 2   DRUM 3   DRUM 4   DRUM 5   DRUM 6   DRUM 7   DRUM 8   DRUM 9   DRUM 10
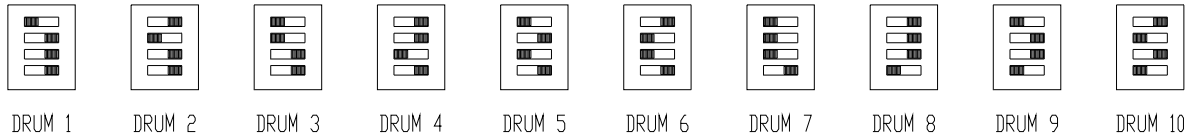
8.3   SELECTION DRUMS

The compartments of the selection drums supplied with the machine have been pre-set by the manufacturer as follows:
4 upper drums divided into 24 selections
6 lower drums divided into 12 selections
It may prove necessary to change the dimensions of the compartments in order to accommodate different types of products.
The number of compartments can be varied by removing or adding the divider plate.
The number of spaces per drum can be: 6, 12, 16, 24, 48.
It is important not to move the divider plates in correspondence with the three centring brackets of the drums and to ensure that the mobile bracket always corresponds with mobile bracket above it.

☞	It is important not to move the divider plate located close to the magnet support

8.4   COLUMN SPACE WORKING DIMENSIONS
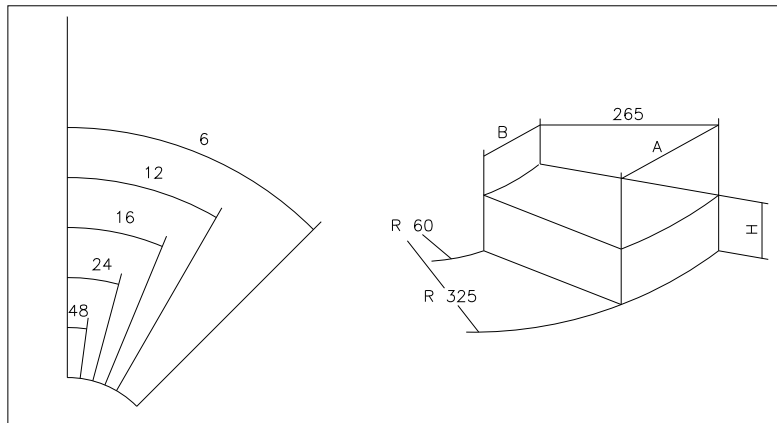
FIG. 10

PIECES DRUMS	A	B	10 drums H	8 drums H
6	316	51	95	125
12	158	21	95	125
16	117	13	95	125
24	75	5	95	125
48	32	0	95	125

8.5   CHANGING THE NUMBER OF COMPARTMENTS

1) Remove the drum with the number of compartments to be changed from the machine following the instructions in the paragraph REMOVING THE DRUMS;
2) Add or remove the divider plates in the central hub of the drum FIG. 11;
3) Fasten the divider plates with the screw pos. A by inserting it into the divider plate;
4) Adjust opening of the delivery doors as indicated in the relevant chapter.

☞	When changing the drum configuration it is important that a tie rod (and the corresponding divider plate) or a screw with washer are always present in the toothed section coupling areas.

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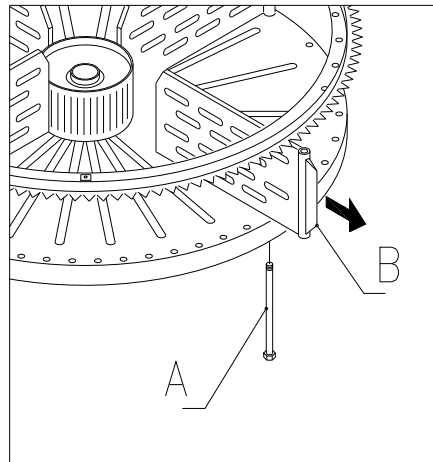
FIG. 11

8.6   POSSIBLE DIVIDER PLATE COMBINATIONS

48   24   16

12   6
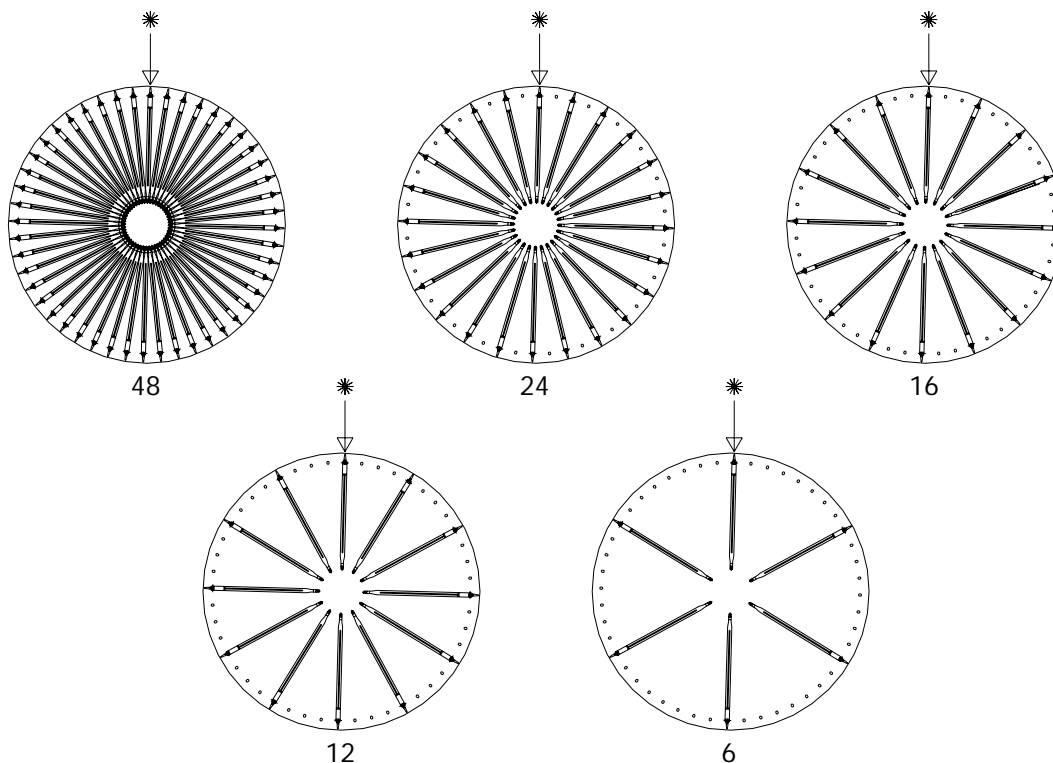
8.7 ADJUSTING OPENING OF THE DELIVERY DOORS FIG. 12 - FIG. 13

Having varied the dimensions of the compartments, opening of the delivery doors must also be modified.
To perform this operation correctly, follow the instructions below:
1. Open the main door of the vending machine and disconnect the electrical power supply by turning the main switch to off;
2. Open the internal door in order to access the delivery doors;
3. Remove the split pin that fastens the belt tightener pos. -A- and remove the belt tightener downwards;
4. Push the belt as far as possible towards the inside of the internal door;
5. From inside the door, pull the belt pos. -B- gently and then move the stop pos. -C- based on the adjustment of the compartments;
6. FIG. 13 illustrates the position of the stop in the various configurations: 6-12-16-24-48 compartments.
7. At the end of the adjustment, insert the belt again and then insert the belt tightener and fasten it with the split pin in the original position.
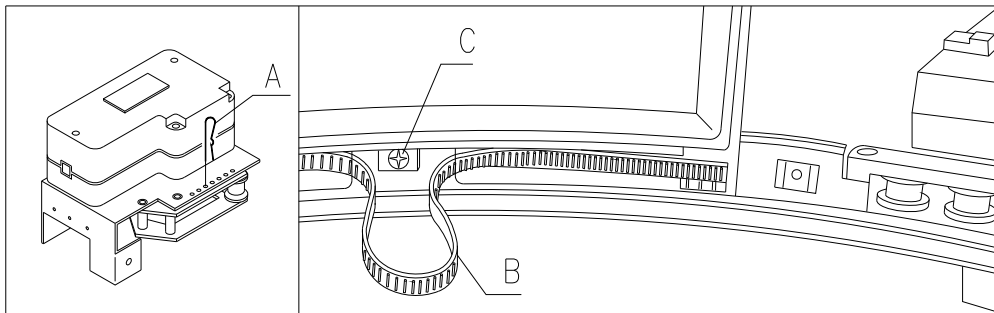
FIG. 12
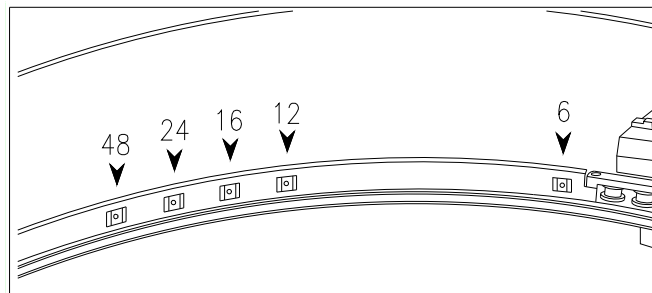
FIG. 13

8.8 ADJUSTING BELT TENSION FIG. 14

If the delivery doors do not close correctly, it may be necessary to check and tighten the toothed belt which moves the delivery doors.To perform this operation correctly, proceed as described below:
1. Open the main door of the vending machine and disconnect the electrical power supply by turning the main switch to off;
2. Remove the fastening split pin of the belt tightener pos. -A-;
3. As shown in the figure, move the split pin by one hole in the direction required, + tight or - tight;
4. Open and close the delivery doors to check whether the adjustment is correct.
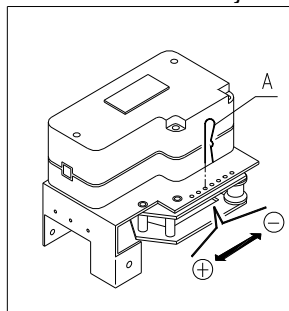

FIG. 14

8.9 REPLACING THE DELIVERY DOOR OPERATING BELT (FIG. 15)

If one or more of the belts break or show evidence of excessive wear they must be replaced.
Follow the instructions below in order to carry out this operation correctly:

- Open the main door of the vending machine and disconnect the electrical power supply by turning the general switch to OFF;
- Open the inner door to gain access to the selection drums;
- Remove the tension lock split pin from the relevant belt pos. A FIG. 15;
- Pull the tightening unit pos. B FIG. 15 downwards until it comes out completely;
- Remove the worn belt from the gear (If the belt is broken then this step is unnecessary);
- Remove the rear element pos. C FIG. 15 (if present, as it is an optional);
- Remove the neon lamp mounted on the internal door from the supports;
- Undo the screws that secure the door stop pos. D FIG. 15, and slide out the door in the direction indicated by the arrow pos. E;
- Pull the used or broken belt downwards and remove it completely from both sides of the delivery door (it is only held in by means of pressure);
- Push in the new belt in such a way that the first tooth corresponds to the first groove of the delivery door (from both sides of the door);
- To reassemble carry out the above procedure in reverse;
- After reassembly, tighten the belt by inserting the split pin into one of the holes provided.

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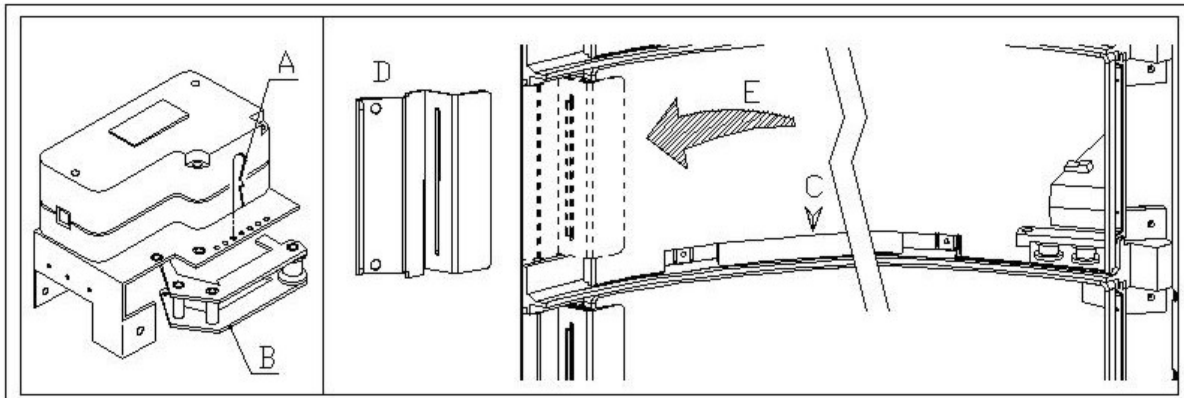
FIG. 15

8.10   REPLACING THE DELIVERY DOOR MICROSWITCHES FIG. 16

In the event that the delivery doors should not close correctly and the message TEST 02 is displayed, replace the microswitch relative to the defective delivery door.
To perform this operation correctly, follow the instructions given below:
1. Open the main door of the vending machine and disconnect the electrical power supply by turning the main switch to off;
2. Open the internal door in order to access the microswitches;
3. Remove the guard that protects the microswitch wiring by loosening the four screws;
4. Disconnect the connectors of the relative motor;
5. Loosen the fastening screws -B- of the microswitch -A-;
6. Remove the wires and the whole microswitch;
7. Replace with a new microswitch (use only original spare parts) and proceed with re-assembly.
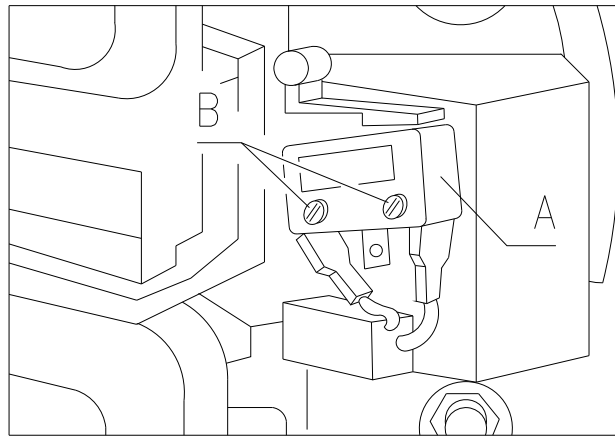
FIG. 16

8.11   REPLACING THE DISPLAY FIG. 17

In the event of malfunction of one of the displays, it will need to be replaced.
To perform this operation correctly, follow the instructions given below:
1. Open the main door of the vending machine and disconnect the electrical power supply by turning the main switch to off;
2. Remove the plastic protection that covers the display -A-;
3. Remove the blocking plate -B- of the defective display by loosening the two fastening screws -C-;
4. Remove the upper and lower connectors;
5. Replace the display -D- with a new one (use only original spare parts) and proceed with re-assembly,
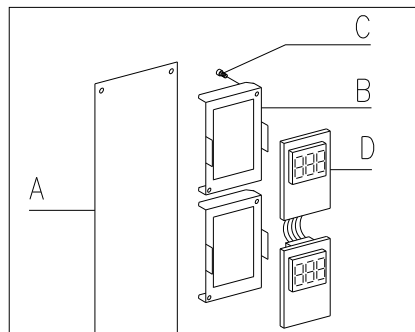

FIG. 17

8.12   REMOVING THE REFRIGERATION UNIT

If one of the following does not function correctly:
- evaporator fan;
- refrigeration unit condenser cooling fan;
- compressor unit

then the refrigeration unit must be dismantled.

To carry out this operation correctly follow the procedure described below:
- Open the main door of the vending machine and disconnect the electric power supply by turning the general switch to OFF;
- Open the internal door;
- Remove the front protection sheet from the refrigeration unit pos. A FIG. 18 by loosening the fastening screws and handwheels;
- Remove the electric wires from the slot on the sheet.
- Disconnect the feed connector of the refrigeration unit pos. B FIG. 18 (on the right hand side of the panel);
- Disconnect the feeler wire of the refrigeration unit pos. C FIG. 18.
- Remove the bottom right hand angle element pos. D FIG. 18 by loosening the screws

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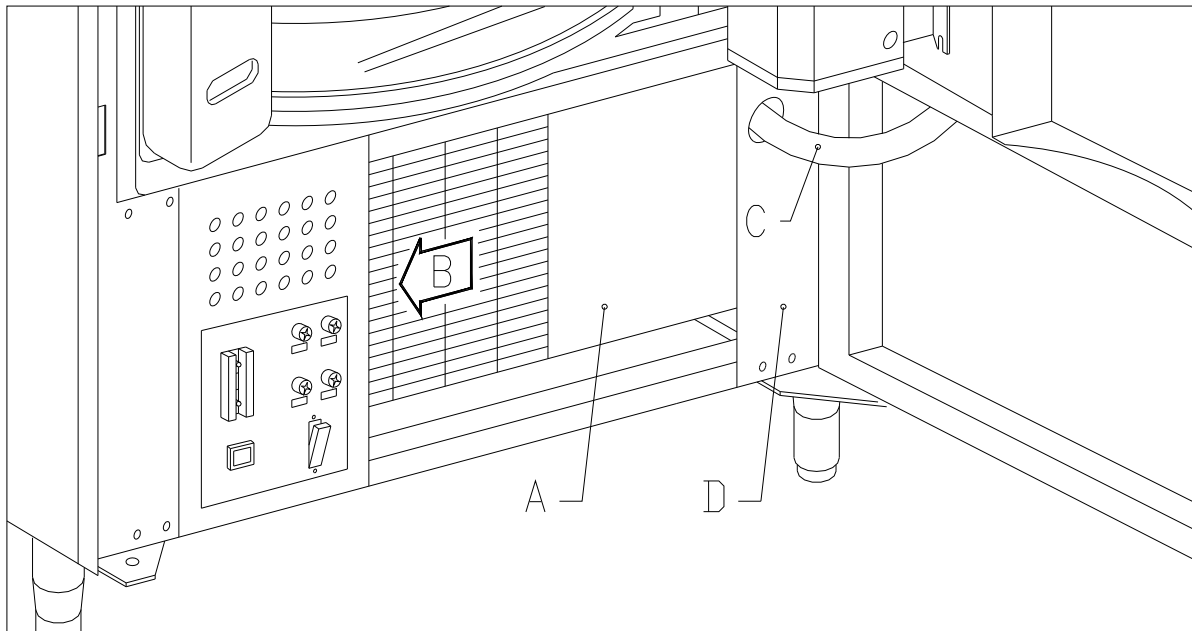
FIG. 18

- Loosen the handwheels pos. F FIG. 19 which lock the lowering lever mechanism of the evaporator box;
- Push the two brackets pos. G FIG. 19 in order to lower the evaporator box;
- At this point the whole refrigeration unit can be removed pos. H FIG. 19.
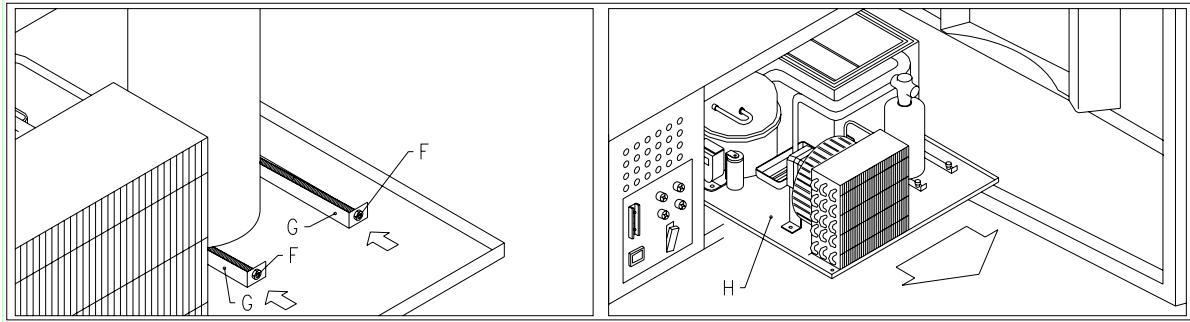
FIG. 19

After removing the refrigeration unit the refrigeration unit condenser cooling fan pos. I FIG. 20 or the evaporator fan pos. L FIG. 20 can be accessed for inspection or replacement.
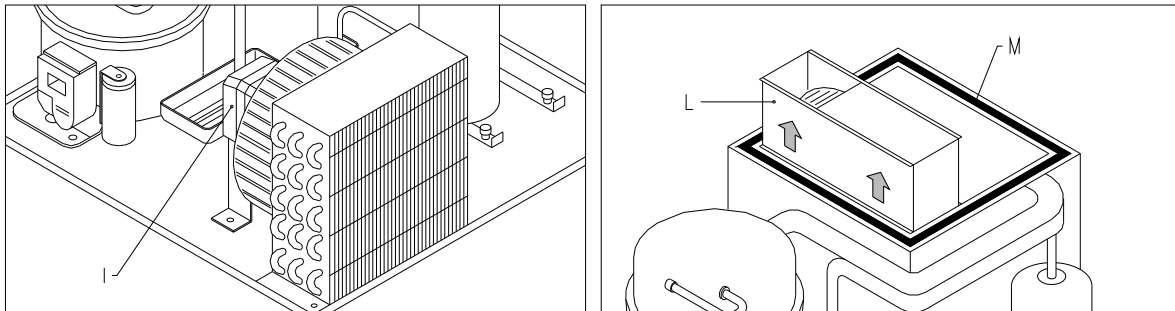
FIG. 20

👉	When reassembling the refrigeration unit check the position of the gaskets pos. M FIG. 20 so that during the operation they do not touch metal parts which could damage them.

8.13   FLUORESCENT LAMP DISASSEMBLY INSTRUCTIONS

🔧⚠️	**Door fluorescent lamp:** **A)** Open the main door of the vending machine and disconnect the electric power supply by turning the general switch to OFF; **B)** Release the fluorescent light unit from its supports. **C)** Cut the wire fastening bands. **D)** Remove the ends of the wiring. **E)** Replace the fluorescent light. **F)** Reassemble by proceeding in reverse order.

9   CLEANING INSTRUCTIONS

| ☞ | **These operations, which concern safety and hygiene, must be carried out by personnel having practical experience with this machine.** |

Adequate recurring maintenance of machine grants its reliability in operation. This section describes the required maintenance operations and their frequency which has however to be considered as indicative since it depends upon various factors such kind of products, climatic conditions and, especially, humidity. The operations described in this section do not exhaust all maintenance operations. During maintenance vending machine has to be switched off. Do not wash vending machine with direct jets of water and high pressure. Clean carefully stainless steel and painted surfaces in order to avoid oxidation or chemical etching. Do not use toxic detergent substances.

| ⚠ | **REMARK: before starting the cleaning procedure it is advised to turn the machine off acting on the main switch.** |

9.1   IMPORTANT CLEANING POINTS

Use the cleaning products as instructed on the label. Do not use detergents that that are too "aggressive" as they could damage some machine parts; in this case, the manufacturer declines all responsibility for damage caused by the incorrect use of such detergents, or by the use of toxic agents.

With sanitising products (chlorine-based detergents or similar products) 🔑	Inside cabinet, compartments of the column, delivery doors. Remove detergent, disinfectant and foodstuff residues with a damp sponge before restarting the machine.	At each reload, or at least every 5 days

With vacuum cleaner or compressed air 🔑⚠	Remove the dirt from the condenser. Make sure there is an air gap between the front and back of the condenser. Always clean the inside of the cabinet after this operation.	every month
If this operation is not performed correctly, the refrigeration system could be seriously damaged.		

| ⚠ | **NEVER IMMERSE THE COIN MECHANISM IN WATER**
DO NOT USE ABRASIVE MATERIALS
DO NOT USE SPRAY LUBRICANTS |

9.2   INACTIVITY

If long periods of machine inactivity are expected, it is recommended to adopt adequate precautions to prevent dangerous situations when the machine is re-started; for long periods, it is intended complete machine inactivity exceeding one month.
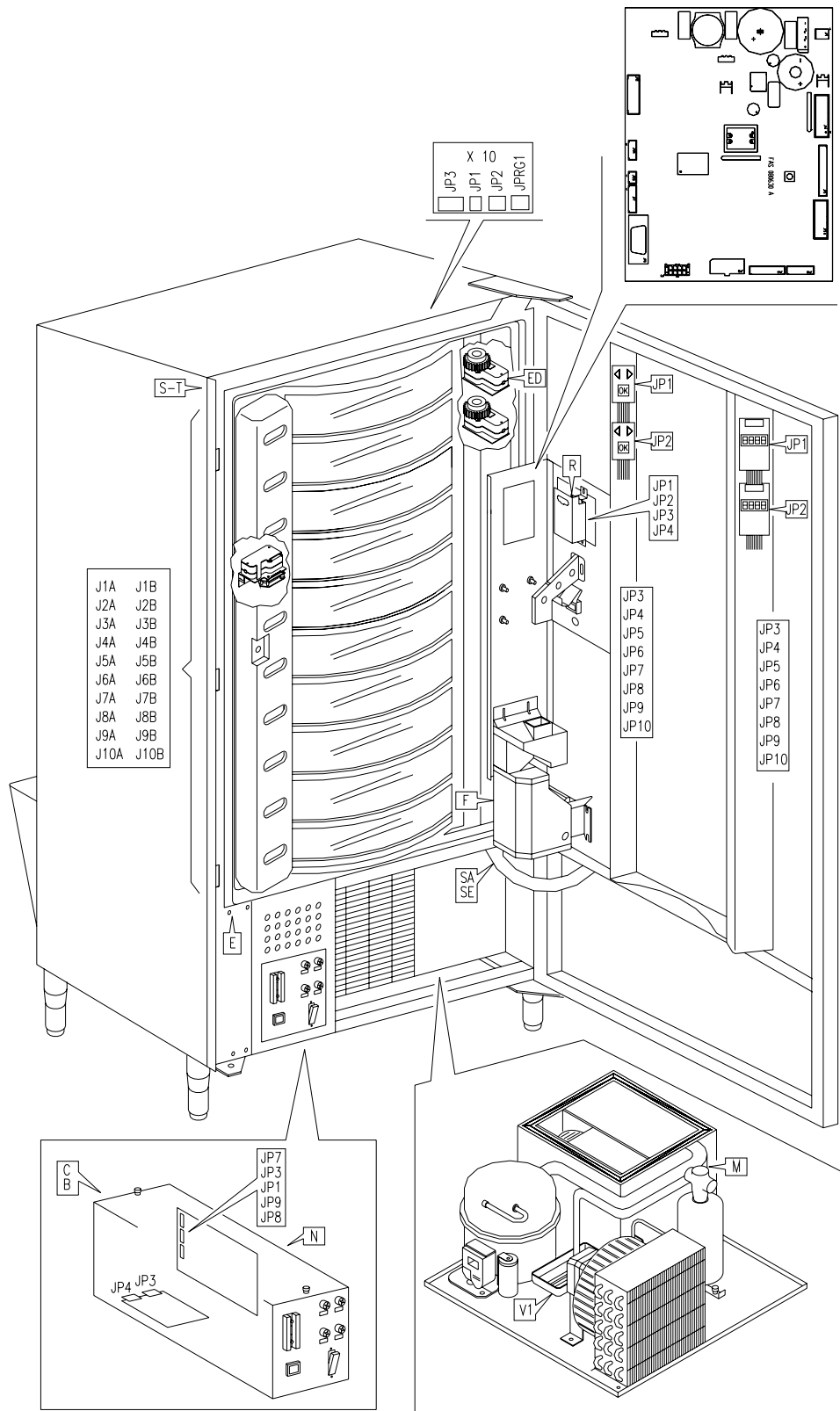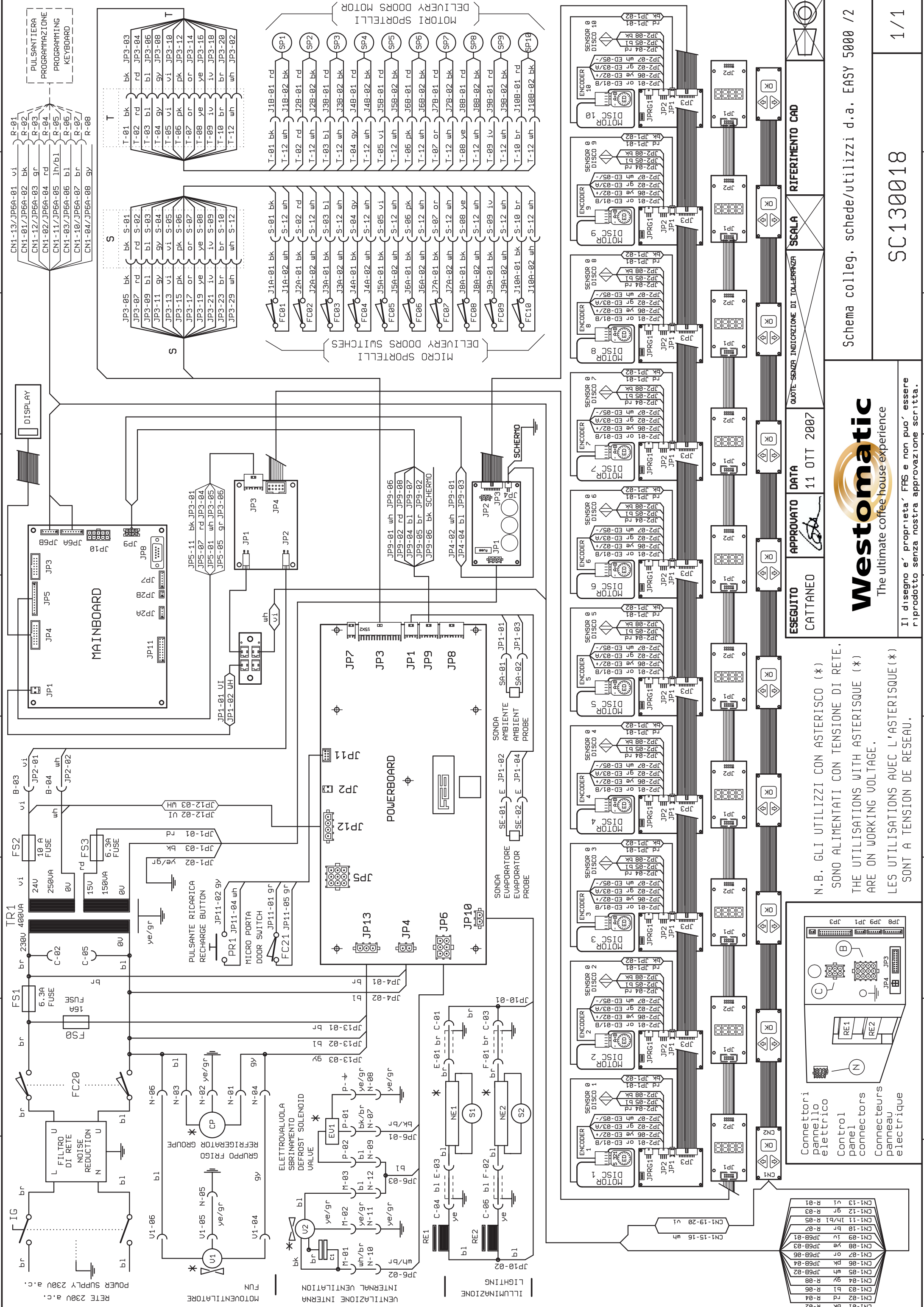For long resting period, it is necessary:
- To clean the machine thoroughly and to dry it;
- To check carefully for damaged or worn parts and to replace them;
- To check that the screws and bolts are securely tightened;
- To cover the machine after having stored it in a protected environment.

To re-set the machine at work, comply with the instructions given in the paragraph "Installation" of this manual and pay particular attention if food products are to be sold (see paragraph "Use of the vending machine for the sale of food products").

10   LAYOUT OF THE CONNECTORS

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JP3   X 10
JP1   JP2   JPRG1

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JP1
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JP2

J1A	J1B
J2A	J2B
J3A	J3B
J4A	J4B
J5A	J5B
J6A	J6B
J7A	J7B
J8A	J8B
J9A	J9B
J10A	J10B

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RIFERIMENTO CAD

N.B. GLI UTILIZZI CON ASTERISCO (*)
SONO ALIMENTATI CON TENSIONE DI RETE.

THE UTILISATIONS WITH ASTERISQUE (*)
ARE ON WORKING VOLTAGE.

LES UTILISATIONS AVEC L'ASTERISQUE(*)
SONT A TENSION DE RESEAU.

Connettori
Pannello
elettrico

Control
panel
connectors

Connecteurs
panneau
electrique

Il disegno e' proprieta' FAS e non puo' essere
riprodotto senza nostra approvazione scritta.