



Palma M



Palma Mz



**= = C O N T E N T S = =**

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## 1. INTRODUCTION

The **Palma** series, **M** and **Mz** range machines are mixed machines used mainly for the automatic vending of snack, canned and bottled products via *spirals* and other extraction mechanisms.

### 1.1. DEFINITIONS

- ▶ **Programming status:** when the *machine* is ready to have one of its programming functions programmed.
- ▶ **Working status:** when the *machine* is ready to work and the user can request one of the services it offers.
- ▶ **Interior:** The word interior is used to describe the space inside the machine cabinet where the *shelf* assemblies and their components are located.

### 1.2. MAIN TECHNICAL CHARACTERISTICS

- ▶ Machines built with a modular design.
- ▶ The plastic materials are polycarbonates, which are highly resistant to adverse conditions.
- ▶ They can sell a large number of packed products of different shapes. The maximum permitted height is 220 mm.
- ▶ The *spiral* system caters for PET plastic bottles of up to 0.5 litres. The *can and bottle extraction mechanism* system caters for PET plastic bottles of up to 0.5 litres.
- ▶ The *product collection drawer* has an anti-theft system which prevents access to the products inside the machine.
- ▶ The *shelves* can be adapted to the size of the products on sale. They are also very easy to extract and fold to make product loading easier.
- ▶ The *extraction mechanisms* can be adapted for use with all kinds of cans and bottles of up to 0.5 litres.
- ▶ Each product extraction *spiral* has its own motor.



- ▶ Each *can and bottle extraction mechanism* has its own motor.
- ▶ The best, largest product display through the door glass.
- ▶ Anti-vandalism product selection *keyboard*.
- ▶ Anti-vandalism system closing the machine door.
- ▶ Electronic control via microprocessor.
  - Different accounting features: sales, money in cash box, money in returners, etc.
  - Programmable functions: product sale prices, impulses, discounts, etc.
- ▶ Product sale price flexibility:
  - Independent sale price for each product.
  - The maximum programmable sale price is €9,998, placing the decimal point at any position.
  - The product selections programmed as €0 work as free sales.
  - The product selections programmed as €9,998 do not work, the machine interpreting these as deprogrammed product selections.
  - A product from any of the product selections can be extracted without inserting money by pressing key A on the programming box once.
  - The machine can work in single or multiple sales mode.
  - The machine can be programmed so that all of the product selections work as free sales.
- ▶ Perfect adaptation of the extraction systems to the geometrical shape of the products:
  - Double *spirals* with rotation in opposite direction for double channels.
  - Motors with 180° rotation for middle channels.
  - Adaptors for cans or bottles.
  - Wide range of *spirals* with different pitch or diameter.
- ▶ All of the machines have a refrigeration system which uses Freon R-134A refrigerant.



- ▶ There is a kit to divide the interior into two areas with different temperatures: the upper area refrigerated to 12°C and the lower area to 3°C. This application is very useful for conserving products made of or containing chocolate in the best possible conditions.
- ▶ Automatic system managing the defrosting of the *evaporator*.
- ▶ The glass door is triple-glazed.
- ▶ The machine door can be turned up to 180°.

## 2. DESCRIPTION OF COMPONENTS

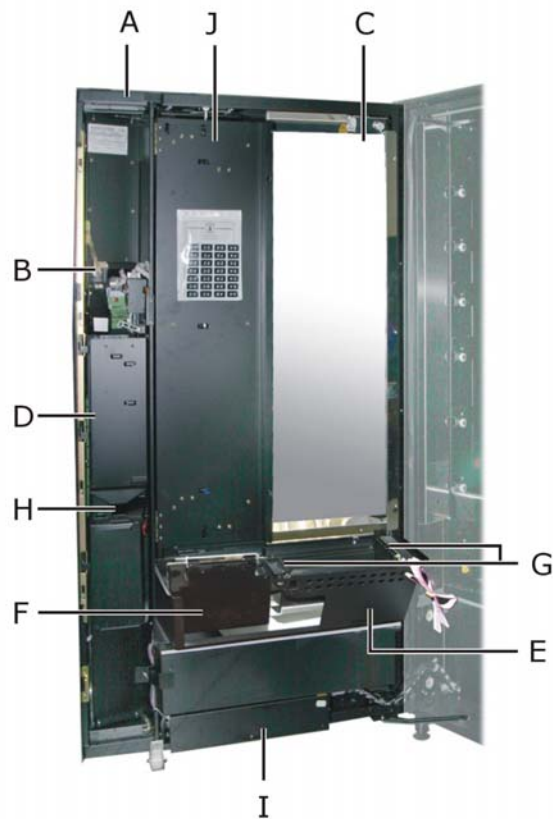


### 1. Door

Made of 1.2-mm thick, painted, F-111 galvanised-steel. The frame is injected with polyurethane to improve insulation and strength.

The access door to the *product collection drawer* is made of ABS plastic, which is highly resistant to impact.

- A. Door chassis
- B. Lock and bolt
- C. Glass
- D. Coin support system
- E. *Spiral* product collector
- F. Canned/bottled product collector
- G. idetect
- H. Recovery box
- I. Electronic card support
- J. Display



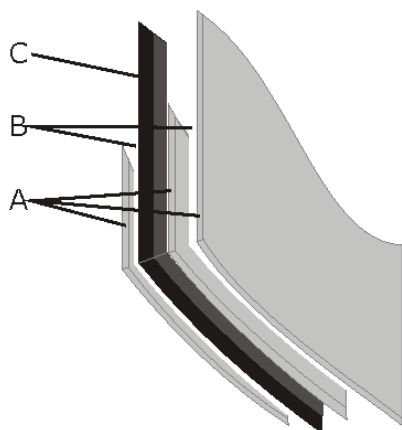
The door has 3 different areas:

- The area where the extraction mechanism lighting and *shelf* lighting is fitted.
- The bottom area where the can and snack collector is located. The snack collector is equipped with a product detection system (Idetect).
- The left side, where the change giver is fitted.

## 2. Glass

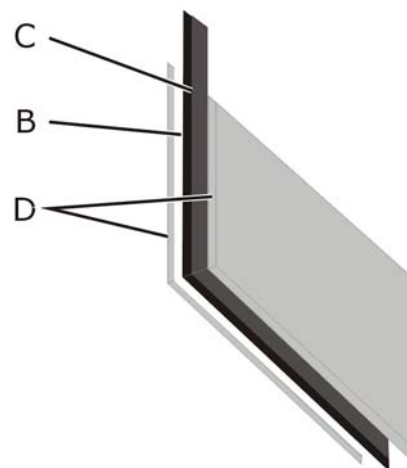
Triple-glazed. The glass consists of 3 4-mm thick, tempered-glass panes. On **Palma M** range models, the glass is curved and triple. On **Palma Mz** range models, the glass is 4-mm thick, curved and double. With an outside temperature of 32°C and 65% relative humidity, the interior on **Palma M** range models can reach 3°C without condensation.

With an outside temperature of 32°C and 65% relative humidity, the temperature which can be reached in the interior on **PALMA Mz** range models is 8°C.



- A. Curved, triple glass
- B. Air chamber
- C. Aluminium separation
- D. Flat, double glass

Palma M Glass



Palma Mz Glass

The glass is dismantled from the door as follows:

- ▶ Disconnect the machine from the mains electricity supply.
- ▶ Remove the four stainless-steel, interior *face plates*. First, remove the side face plates, then the lower one and finally the upper one, as shown in the figure.
- ▶ Unscrew the two side flanges which secure the glass on the inside. The left-hand flange is housed between the glass and the door chassis, making it necessary to pull it sideways as shown in the figure.
- ▶ Carefully dislodge the glass by pushing it along the perimeter from the outside while supporting it from the inside.

- A. Upper, left-hand face plate
- B. Upper, right-hand face plate
- C. Left-hand flange
- D. Right-hand flange
- E. Lower, left-hand face plate
- F. Lower, right-hand face plate







### 3. Display card

The *display* is an LCD with lighting. It has two lines and shows a maximum of 16 characters per line. It has 4 LEDs which light up the "change stock out" and "product stock out" signs.

The messages which the *display* can show are: time, date, temperature in the interior, publicity message, credit, faults and programming functions.

The *display* card also has:

- A recovery button
- A programming access button
- A buzzer
- A connector to connect the infrared sender/receiver card.

### 4. Keyboard

**Palma M range keyboard.** There are 2 types:

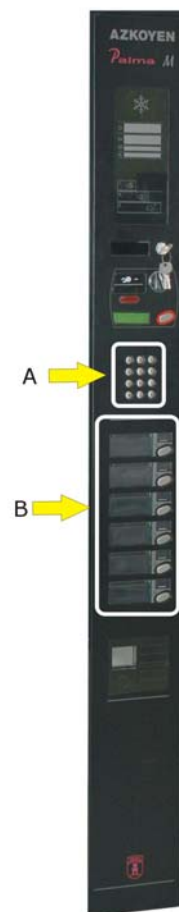
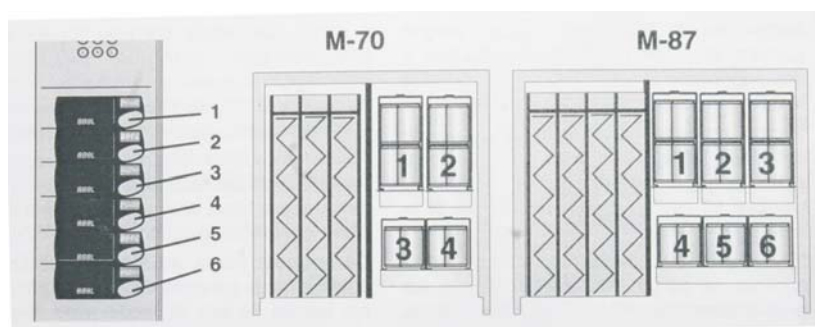
**1<sup>st</sup> Anti-vandalism keyboard** used to extract snacks. Consists of twelve steel buttons. The machine user selects the product he/she wishes to buy via a combination of 2 buttons.

The keyboard is also liquid-proof.

**2<sup>nd</sup> Keyboard for cans and bottles** used to extract cans and bottles. Consists of 4 or 6 buttons in a row. There is a red LED to indicate that the product in a specific channel has no stock.

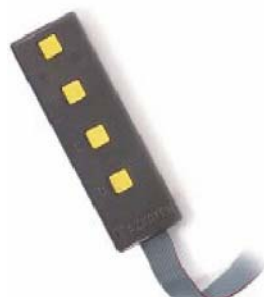
A. Snack selection

B. Can selection



**Palma Mz keyboard** There is a single keyboard on **Palma Mz** range models: the anti-vandalism keyboard.

## 5. Programming module



This element is used for all of the programming which can be performed on the machine.

## 6. Product collection drawer

The *product collection drawer* is located on the lower part of the machine door. The products

bought by machine users are deposited inside.

### **7. Anti-theft system**

Made of steel plating, the system consists of two seesaws which prevent access to the products. One of the seesaws is for snack products supplied by *spirals* and the other for cans and bottles.



### **8. Idetect system (production exit detection).**

Located in the top right-hand and left-hand corners of the *product collection drawer*. This device is based on infrared beams which inform the electronic card that the product has been supplied following a sale request.

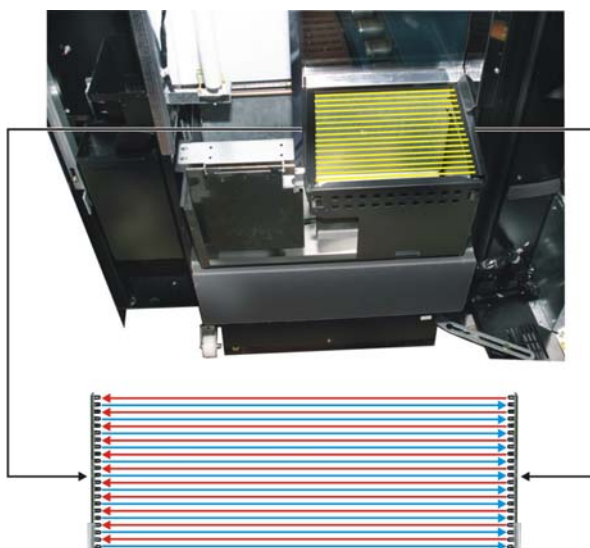
This device ensures that the amount is accepted when extraction takes place. If extraction does not take place, then the machine tries again with up to 6 180° rotations. If the product is not detected after 6 tries, the "product stock out" LED lights up and the machine does not accept payment. This selection remains in "product stock out" status until reset by entering and exiting programming.



**Left-hand detector**



**Right-hand detector**

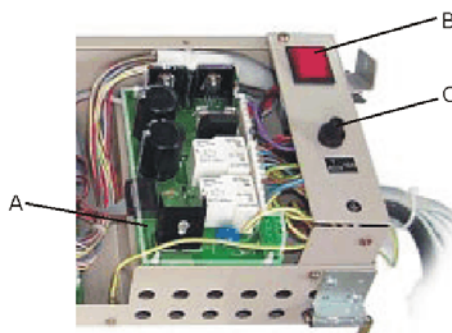


### 9. Power supply

There is a switch which connects and disconnects the machine to and from the mains electricity supply. Its main technical characteristics are:

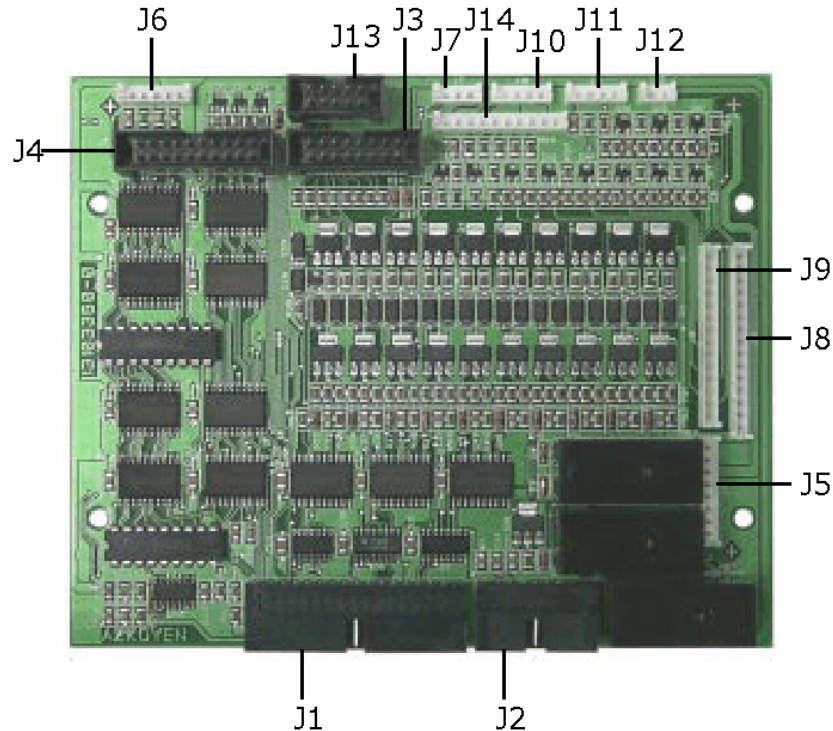
Switch	Lighted bipolar
Transformer	Toroidal
Transformer power	96 w
Transformer primary	230 Vac
Transformer secondary	24 Vac
	19 Vac
	12 Vac
Maximum amps of the transformer secondary	4 Amps
230 Vac mains supply protection fuse	10 A
24 Vdc circuit protection fuse	6 A

- A. Power card
- B. Lighted bipolar switch
- C. Mains protection fuse



## 10. Input and output card

This card controls all of the active elements on the machine according to the instructions it receives from the *control card*.

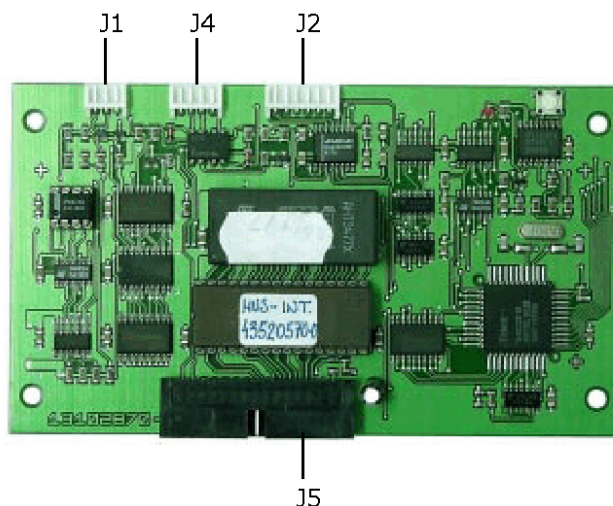


Connector	Pins	Function
<b>J1</b>	30	Connects with the control card
<b>J2</b>	14	Supplies voltage to the machine from the mains electricity supply
<b>J3</b>	16	Connects with the machine keyboard
<b>J4</b>	20	Connects with the <i>display</i> card
<b>J5</b>	8	Connects with the payment system. With the coin mechanism
<b>J6</b>	5	Receives the Vdc supply from the power card
<b>J7</b>	3	Connects with the temperature control system (temperature probe). Acts as thermometer and thermostat
<b>J8</b>	15	Connects with the <i>spiral shelf</i>
<b>J9</b>	14	Connects with the <i>spiral shelf</i>
<b>J10</b>	4	Free connector
<b>J11</b>	4	Free connector
<b>J12</b>	2	Free connector
<b>J13</b>	10	Connects with the programming box
<b>J14</b>	10	Free connector

## 11. Control card

Controls the machine. Processes the information sent by the peripherals via the *input and output card* and acts accordingly.

The only peripheral element it has direct communication with is the change giver.



Connector	Pines	Function
<b>J1</b>	3	Connects with the MDB change giver
<b>J2</b>	6	Connects with terminal RS232
<b>J4</b>	4	Connects with the executive change giver

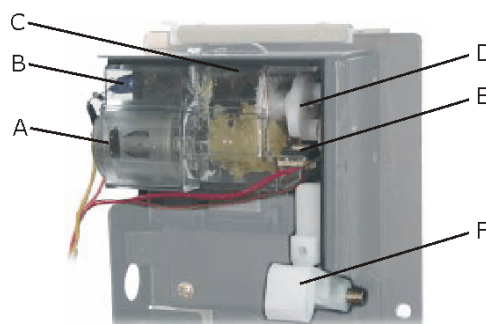
## 12. Recovery module

Activates the coin *validator* recovery lever. The aim is twofold:

1. To eliminate possible coin jamming.
2. On opening the *validator's* mobile hinge, a code is generated, called the recovery code, so that the change giver returns the coins inserted by the user.

The motor works at 24 Vdc.

- A. 24 Vdc motor
- B. Diode
- C. Reducer
- D. Cam
- E. Travel limit micro
- F. Opening lever



There are 2 different models of recovery module, the only difference lying in the type of connector used for communication with the machine.

### 13. Coin mechanisms

These machines admit change givers with EXECUTIVE protocol and MDB protocol.

### 14. Lighting

**Palma M** range machines have two, 30W fluorescent tubes to light the display area. Another 36W fluorescent tube lights the *shelf* areas containing products.

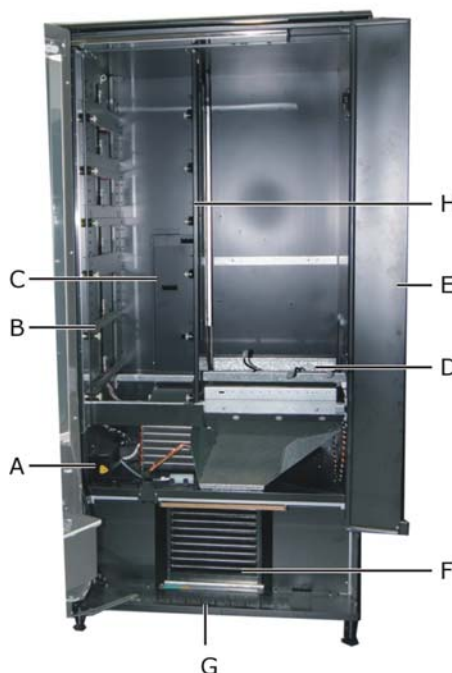
The **Palma Mz** range has one 30W fluorescent tube to light the glass and the photo. Another 36W fluorescent tube lights the *shelf* areas containing products.



### 15. Cabinet

Made of 0.8-mm thick, painted, F-111 galvanised-steel. The frame is injected with polyurethane to improve insulation and lend it greater strength.

- A. Lighting
- B. Shelf support
- C. Diffuser
- D. Fan
- E. Interior door
- F. Refrigeration unit
- G. Injected cabinet
- H. Separating partition



There are two compartments:

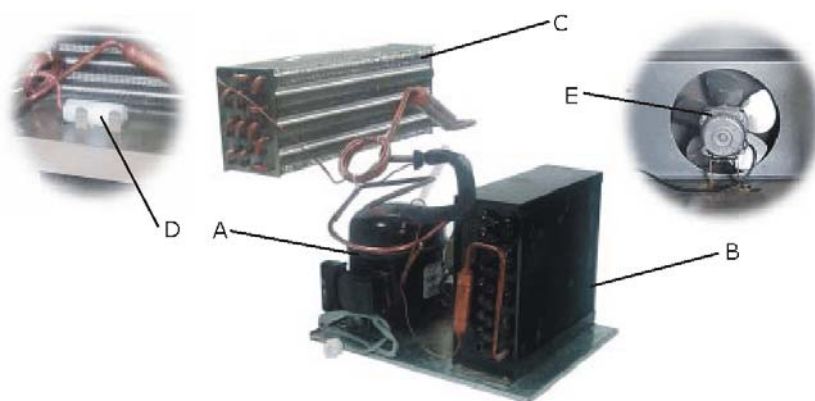
- The *interior* housing the *shelves* and the can and bottle mechanisms, which is divided in half: the *shelves* are on the right and the fixed mechanism and the rotating mechanism are on the left.
- The area housing the refrigeration unit. In this area and on the **Palma M-87** range only, there are two counterweights which balance the machine.

## 16. Refrigeration unit

The same *refrigeration unit* is used on all of the machine models in this series. Its main technical characteristics are:

Compressor make	Electrolux
Model	GP12TB
Compressor power	3/8 C.V.
Refrigerant	R-134a
Cylinder c.c.	12 c.c.
Refrigerant load	260 g.
Condenser fan power supply	230 Vac
Flow moved by the evaporator fan	450 m <sup>3</sup> /hour
Rotation direction of the condenser fan	Clockwise

- A. Compressor
- B. Condenser
- C. Evaporator
- D. Temperature probe
- E. Diffuser fan



1.

The temperature in the interior can be regulated between a minimum of 0°C and a maximum of 8°C by thermostat.



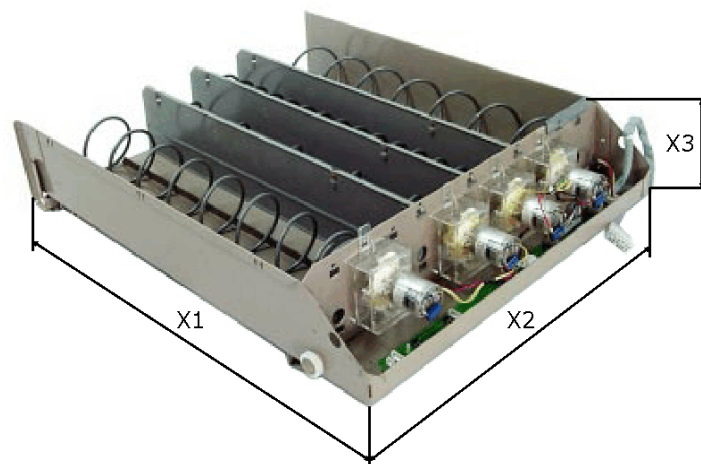
## 17. SHELVES

These can be adapted to the shape and size of the products on sale. The maximum capacity is determined by the number of *shelves* installed on the machine, the number of *spirals* on each of the *shelves* and the type of *spiral* used.

All of the *shelves* admit a maximum of 8 *spirals* separated by adjustable separators. A maximum of 7 height-adjustable shelves can be fitted in the machine. The minimum separation between *shelves* is 52 mm.

The measurements in millimetres of the *shelves* are:

	PALMA M-70 / Mz-70	PALMA M-87 / Mz-87
<b>X1</b>	583	583
<b>X2</b>	215	287
<b>X3</b>	90	90



The partitions separating the *spirals* can be moved to adapt to different shaped *spirals*. Movement is in steps of 72.5 mm



The vertical space between *shelves* can be increased or decreased in steps of 32 mm

To do this, proceed as follows:

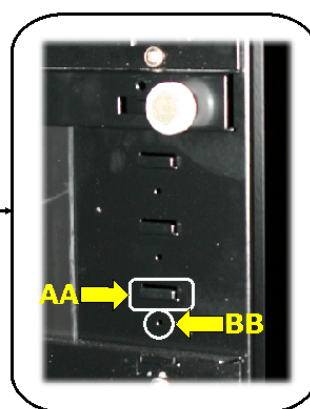
1. Disconnect the connection cable (A) from the tray.
2. Lift the tray slightly and extract it.
3. Remove the screws (B) which secure the guide (C).

4. Fit the guide onto the new supports and screw it again.
5. Repeat the operation with the other guide.
6. Put the tray back and reconnect it.



**Fitting the 7<sup>th</sup> shelf.** The standard format for all machines involves 6 *shelves*. A seventh shelf can, however, also be fitted. When you install the 7<sup>th</sup> shelf, the positions of the 7 shelves cannot be altered: the guides must be fitted onto the supports indicated in the following table:

<i>Shelf</i> support No	<i>Shelf</i>
27	A
22	B
17	C
12	D
7	E
2	F
1	G



**AA.** *Shelf*  
support

**BB.** *Shelf*  
support screw  
bore

**Dismantling a shelf.** To dismantle a *shelf*, proceed as follows:

- 1<sup>st</sup> Disconnect the machine from the electricity supply.
- 2<sup>nd</sup> Extract the *shelf* by lifting it slightly and pulling it out. The *shelf* slopes downwards to an angle of approximately 45°.

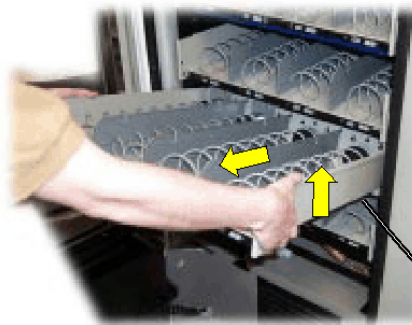
- 3<sup>rd</sup> Disconnect the connection cable from the *shelf*.
- 4<sup>th</sup> Lift the *shelf* with both hands to release it from the stops and remove it from the *interior*.



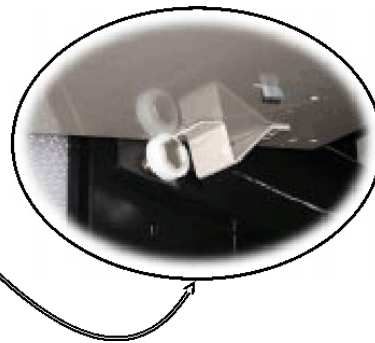
Step 2



Step 3

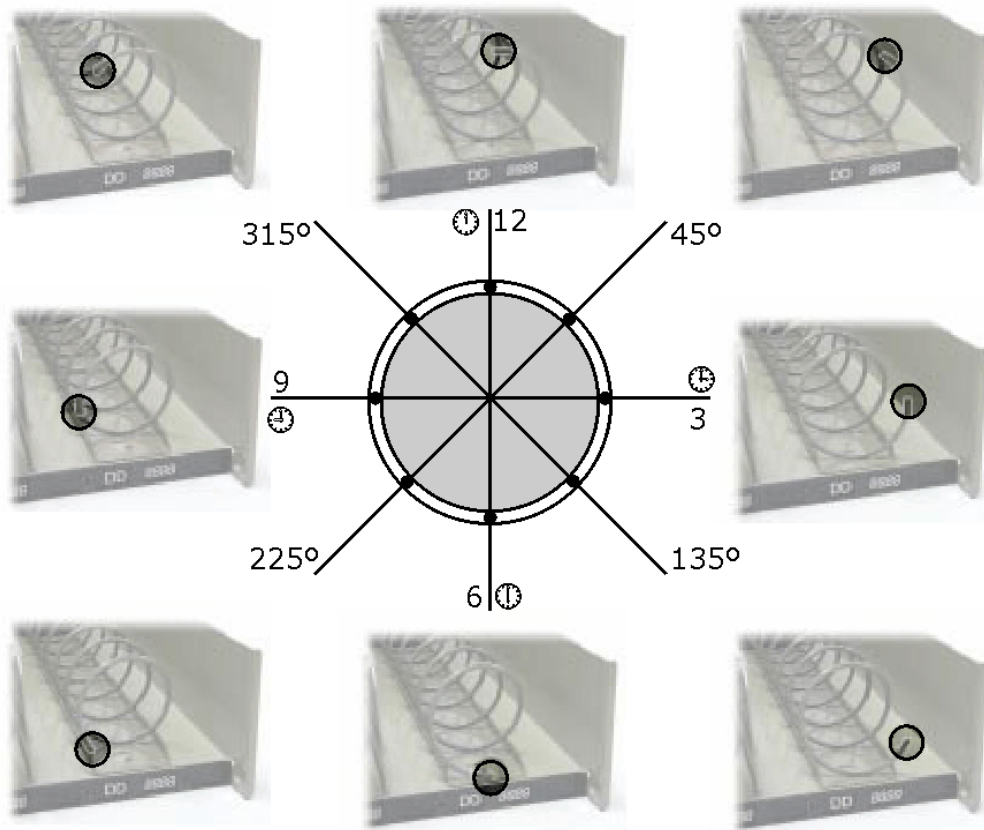


Step 4



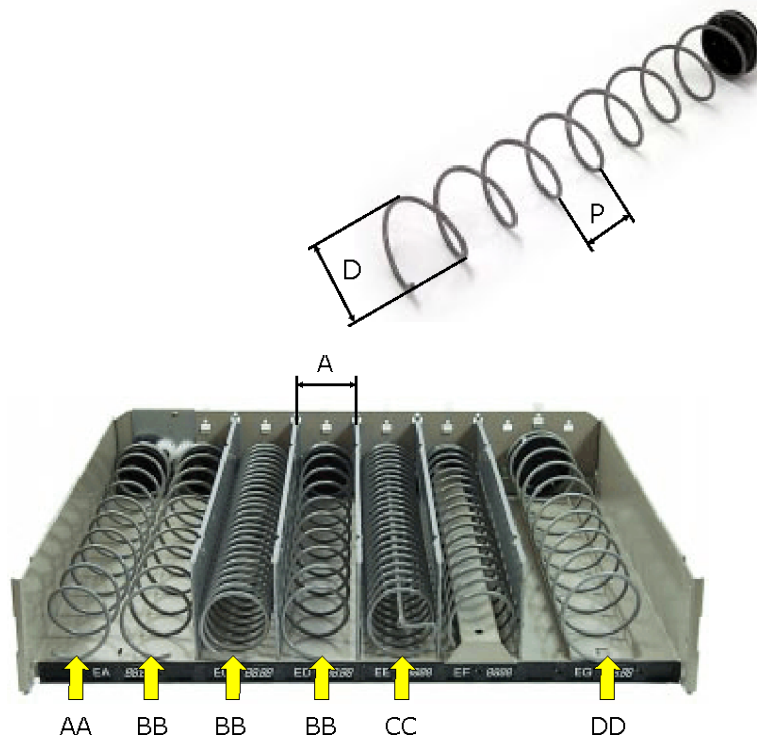
**Spirals.** The spirals which house the products are helical and made of 4-mm diameter steel. Each spiral is moved by its own motor.

Each *spiral* model has to be fitted onto the *Shelf* with its end set to a certain position. These positions are defined by reference to the hands of the clock.



Different types of *spiral*:

Name	Diameter (D)	Pitch (P)	Width between partitions (A)	Capacity (No. of products)	Position
65-20	65	20	72.5	22	6 o'clock
65-25	65	25	72.5	19	
65-30	65	30	72.5	15	
65-35	65	35	72.5	13	
65-40	65	40	72.5	11	
65-50	65	50	72.5	8	
65-60	65	60	72.5	7	
65-85	65	85	72.5	5	
65-20C	65C	20	145	22	One at 4 o'clock The other at 8 o'clock
65-25C	65C	25	145	19	
65-30C	65C	30	145	15	
65-35C	65C	35	145	13	
65-40C	65C	40	145	11	
65-50C	65C	50	145	8	
65-60C	65C	60	145	7	
65-85C	65C	85	145	5	
65-20D	65D	20	72.5	44	7 o'clock
65-30D	65D	30	72.5	30	
78-35	78	35	145	13	8 o'clock
78-45	78	45	145	10	
78-55	78	55	145	8	
78-65	78	65	145	7	
78-85	78	85	145	5	



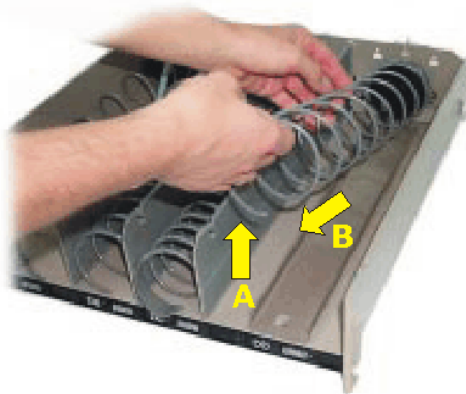
**AA.** Type "C" spiral Ø65

**BB.** Normal spiral Ø65

**CC.** Double spiral Ø65

**DD.** Normal spiral Ø78

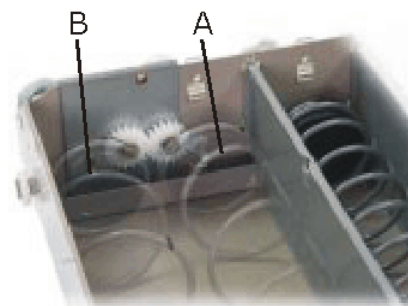
**Changing the Spirals.** To change a *Spiral*, lift it slightly (A) (approximately 45° re. the horizontal of the tray) and pull it gently outwards (B). To fit it back, repeat the same process in reverse order: position the *Spiral* at 45° to the horizontal of the tray, insert the *Spiral* on the reducer shaft and push it in gently until it clicks into place.



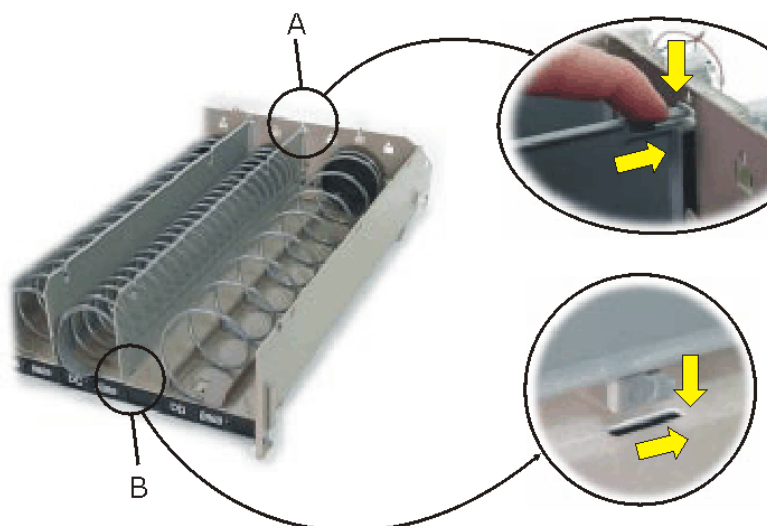
**Opposite spirals.** This assembly is especially indicated to extract large products or products which need to be stored vertically.

Motor rotation is directly transmitted to the normal *spiral* and this *spiral* turns the other one in the opposite direction via 2 cogs.

In order to assemble these *spirals* properly, first install *spiral* (A) and then *spiral* (B). The 2 pinions have to engage the toothed crown on the *spiral*.



**Separators.** The space may need to be increased or decreased because of the characteristics of the product on sale or because you wish to change the *spiral* model. This is done by moving the relevant separator.



**Load tests.** The load tests passed by the motors with the spirals loaded with products are:

	Snack	Cans / bottles
<i>Spiral</i> Ø78	2 Kg.	5 kg.
<i>Spiral</i> Ø 65	1.5 Kg.	4 kg.
Double <i>spiral</i>	1.5 kg.	
Opposite <i>spiral</i> and normal <i>spiral</i>	2 Kg.	



The difference in weights is because the cans or bottles are placed on a suitable support and there is less friction between these products and the *Shelf* when the *Spiral* advances

**Product loading.** Loading the products into the *Spirals* properly is the best guarantee of correct machine operation.

A few recommendations:

- Fit a *spiral* model suited to the dimensions, weight and type of container for each product.
- The seal of bags and boxes must not get hooked up beneath the *spirals*.
- Place heavier products on the lower *Shelves*.
- Always respect the margins established for placing products in the different types of *spiral*.
- Do not extract more than two trays at the same time. The stability of the machine may be affected.
- Chocolate and products containing chocolate should be kept at a temperature which does not rise above 13°C.

**Identification and fitting the product and price signs.** The product and price signs are fitted onto the front of all of the *shelves*. Each selection is identified by a sign beneath each *spiral* with a combination of two letters: the first letter identifies the position of the *shelf*; A, B, C, D, E, F, the 1<sup>st</sup> shelf at the top of the interior is letter A, the next tray down is letter B and so on until letter F. The second letter indicates the position of the *spiral* on the *shelf*. Here it is necessary to check which *shelf* card connector the *spiral* motor is connected to. They go from left to right. The 1<sup>st</sup> connector corresponds to letter A and the second to letter B, and so on.

To the right of the two letters identifying the product is a numerical sign showing the sale price.

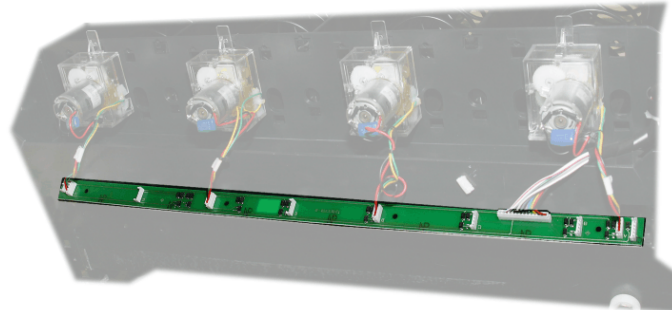
The signs can be extracted with the aid of a screwdriver, lifting them slightly and then pushing them upwards with your finger.





## 18. Shelf card

The product extraction motors are connected to this card. There is 1 model of *shelf* card for the **Palma M-87** and the Palma M-70, called "*shelf card 4*".

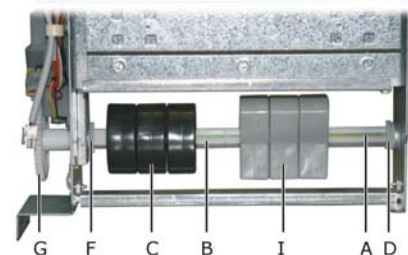
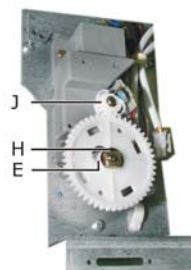


## 20. Extractor shaft

A motor engages this shaft to extract or expel the cans/bottles and send them to the product collection drawer so that the customer can obtain his/her product.

It consists of the following parts:

- A. Shaft
- B. Bushing (13, 26, and 52 mm.)
- C. Cam (Black, red, grey and blue)
- D. Stop bushing
- E. Square bearing
- F. Bearing retainer
- G. Reducer output pinion
- H. Shaft extractor washer
- I. Extraction wheel
- J. Double cam



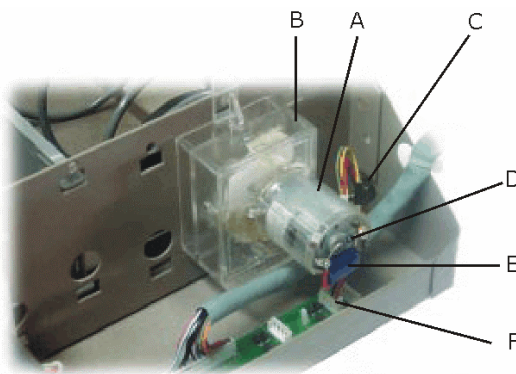
## 21. Product extraction modules

**Snack extraction module.** Main technical characteristics:

Supply voltage	12 Vdc.
Direction of rotation	Clockwise

It consists of:

- A. Motor
- B. Reducer
- C. Travel limit micro
- D. Diode
- E. Condenser
- F. Connection loom



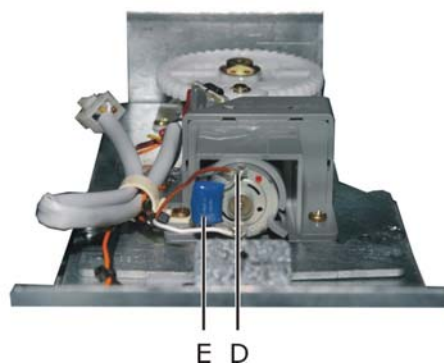
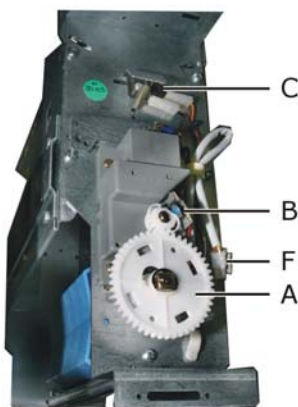
These motors are equipped with a travel limit micro which is activated twice by a double cam. Each travel limit activation supposes a rotation of 180°.

**Can extraction module.** Main technical characteristics:

Supply voltage	24Vdc.
Direction of rotation	Clockwise

It consists of:

- A. Reducer
- B. Travel limit micro
- C. Product stock out micro
- D. Diode
- E. Condenser
- F. Connection loom



These motors are equipped with a travel limit micro which is activated twice by a double cam. Each time the travel limit micro is activated supposes a rotation of 180°.

## 22. Container extraction modules

Container extraction mechanisms (cans, bottles) consist of a module or channel within which the cans or bottles are loaded.

The following types of can/bottle extraction mechanisms exist:

▶ **Unit modules (A2/B2/A4/B4/C2/C4)**

Individual channels which can be loaded in single, double, triple or quadruple channel, depending on the product, with width adjustments. The most commonly-used model for the Palma M series is module or extraction mechanism A2.

▶ **Module with 2 or 3 rotating selections (A1/2, A1/3)**

This is a battery of 2 or 3 channels which rotates in order to facilitate the loading of the interior channels and can be loaded with 33-cl cans in single channel.

▶ **Extraction module with 3 selections (A3/4)**

This consists of a battery of three channels which can be loaded with 33-cl cans in quadruple depth. This module is not often fitted on the Palma M series.

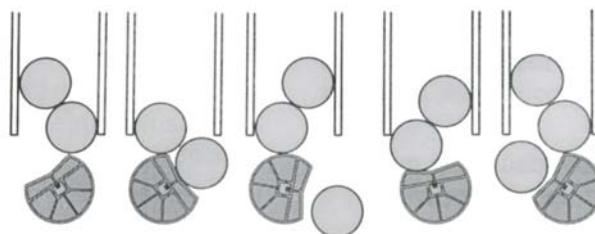
The containers are extracted via an extractor shaft with a set of cams and bushings which rotate driven by an extraction motor.

The container extraction mechanism consists of the following components: 1 Extractor 2 Detection strip 3 Stock out micro 4 Extraction motor 5 Cam

The mechanism has a load detection system. A strip which activates a micro informs the machine of the status of each channel at all times.

When one of the channels reaches minimum, the strip is released. The machine then understands that there is no product and this channel is rendered out of service. The diode positioned on the pushbuttons then lights up to inform that the channel is empty.

Cam movement is pendulous, as shown in the diagram.



These mechanisms are divided into: Fixed mechanism and rotating mechanism.



**Fixed**



**Rotating**

### **Fixed mechanism.**

Located at the back of the interior, this mechanism consists of 2 or 3 channels, depending on whether it is for the **Palma M-70** (only 2 channels fit) or for the Palma M-87 (in this case, there are 3 channels).

**Product loading in the fixed mechanism** Cans or bottles can be loaded indistinctly in the fixed mechanism. Cans are loaded in two staggered channels. When loading, care should be taken to make sure that the product stock out strip is in the right position, i.e. pressed by the cans.

Bottles are loaded with the cap facing the back of the channel and in two staggered channels. The bottles must press the product stock out micro.

Always start loading from the back of the interior to the front; with an A2 channel, place the first container at the back, the next container will be in line with the first, the third container will also go to the back of the mechanism, the fourth will be at the front, and so on.



Front view



Top view

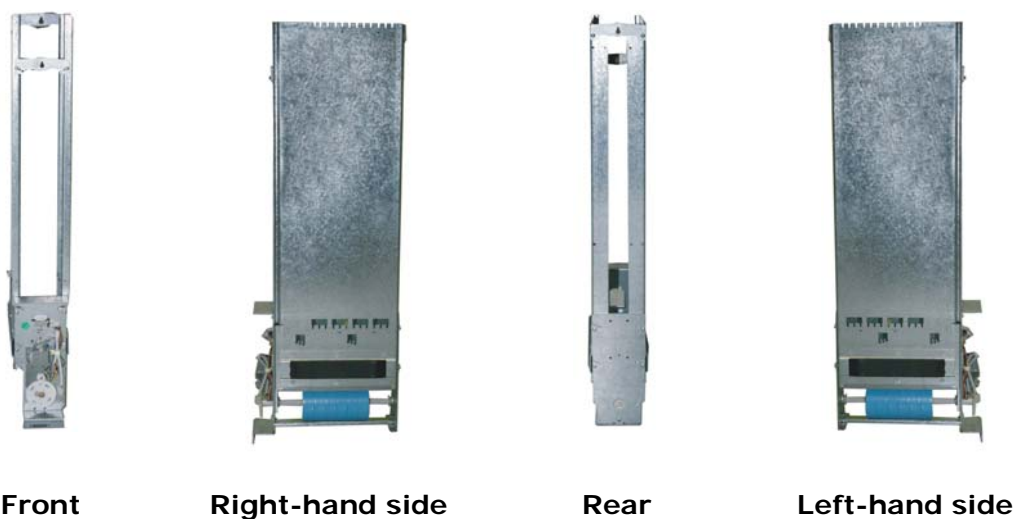
The types of extraction mechanism used for the fixed mechanism depends on the machine model:

**FIXED MECHANISM**

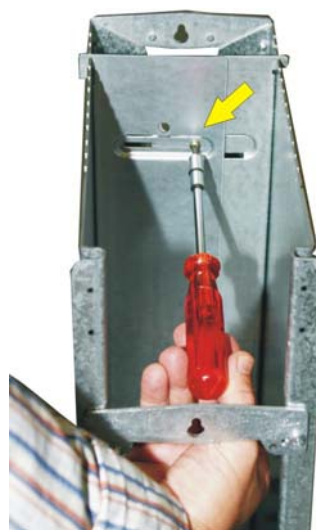
	Palma M-70	Palma M-87	Palma Mz-70	Palma Mz-87
<b>Mech. A2</b>	YES	YES	YES	YES
<b>Mech. A1/2</b>	NO	NO	NO	NO
<b>Mech. A1/3</b>	NO	NO	NO	NO

The number of **A2** mechanisms which can be fitted in the fixed mechanism area is:

	Number
Palma M-70	2
Palma M-87	3
Palma Mz-70	2
Palma Mz-87	3



Fit the limiter

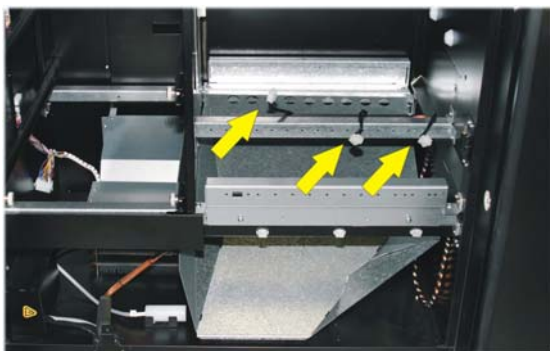


Screw the limiter

**Dismantling the fixed mechanism.** Steps to follow to dismantle the fixed mechanism:

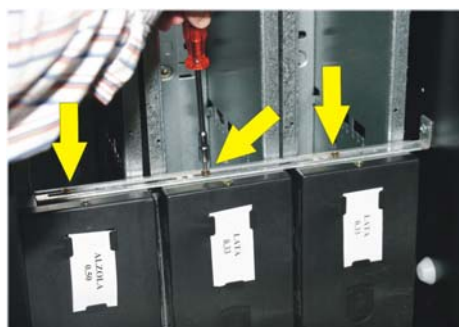
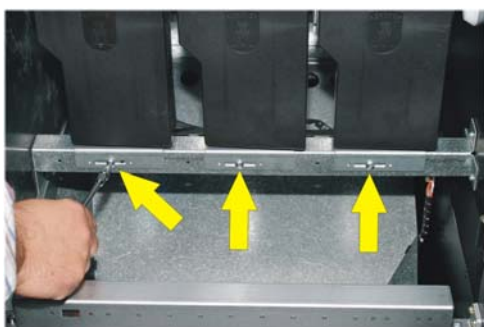
Remove the mobile mechanism.





Disconnect the supply loom..

Release the screw which is screwed between the lower front plate of the mechanism and the crossbeam which supports the channel



Hold and remove.



**Rotating mechanism.** Fitted in the front of the *interior*, this mechanism consists of 2 or 3 mechanisms joined together.

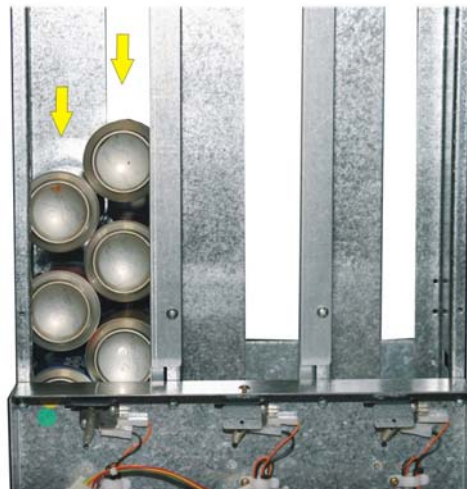
A1/3 mechanisms are used for machines from the **Palma M-87** and **Palma Mz-87** ranges.

A1/2 mechanisms are used for machines from the **Palma M-87** and **Palma Mz-70** ranges.

**Product loading in the rotating mechanism.**

Only cans can be loaded in the rotating mechanism. Load the cans staggered with the ring-pull facing the back of the interior. In such a way that the cans press the product stock out micro.

The product is loaded placing the first containers at the back, i.e. from the back of the interior to the front.



Types of extraction mechanism used for the rotating mechanism:

**ROTATING MECHANISM**

	Palma M-70	Palma M-87	Palma Mz-70	Palma Mz-87
<b>Mech. A2</b>	NO	NO	NO	NO
<b>Mech. A 1/2</b>	YES		YES	
<b>Mech. A 1/3</b>		YES		YES

**Dismantling the rotating mechanism.** Steps to follow to dismantle the rotating mechanism:



Turn the machine off. Open the interior door which provides access to the can mechanisms.

Pull the red tab and the mechanism is released, it now being possible to rotate it about 90° in order to remove it easily.



Dismantle the *supply loom* located on the side the mechanism is supported on



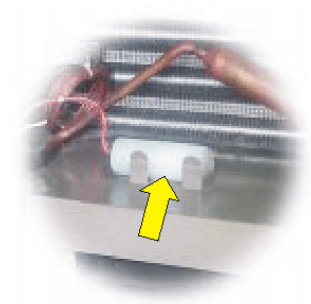
Remove the pin in the upper hinge, holding the mechanism at the same time so that it does not fall forwards.

Pull the rotating mechanism gently and remove it.



### 23. Temperature probe

Located next to the *evaporator*, the probe reads the temperature in the *interior*. The *refrigeration unit* connects or disconnects depending on the reading of this sensor.



### 3. INSTALLATION AND STARTING-UP

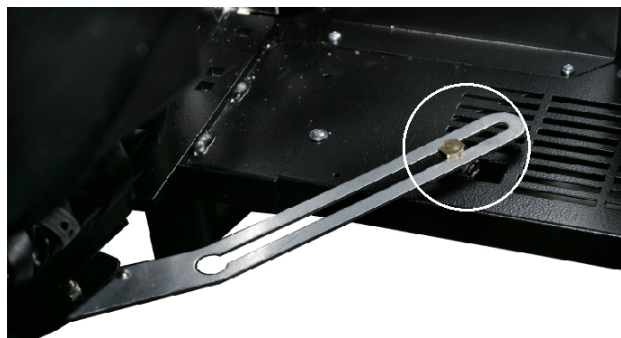
#### 3.1. UNPACKING

Unpack the machine when about to install it at the location in which it is to work. Observe current legal regulations concerning packing waste material.

#### 3.2. INSTALLATION AND STARTING-UP

- ▶ **Passing through 28" doors.** Palma M-87 and Palma Mz-87 models cannot pass through some doors due to their width and certain parts need to be removed. To do this, proceed as follows:

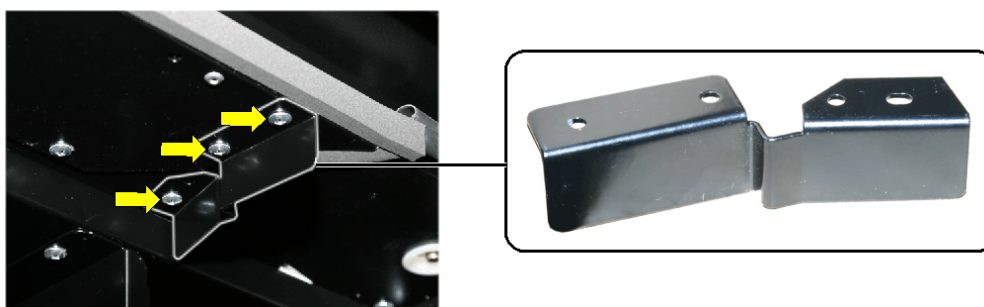
1<sup>st</sup> Remove the screw from the *Palma opening connecting rod*.



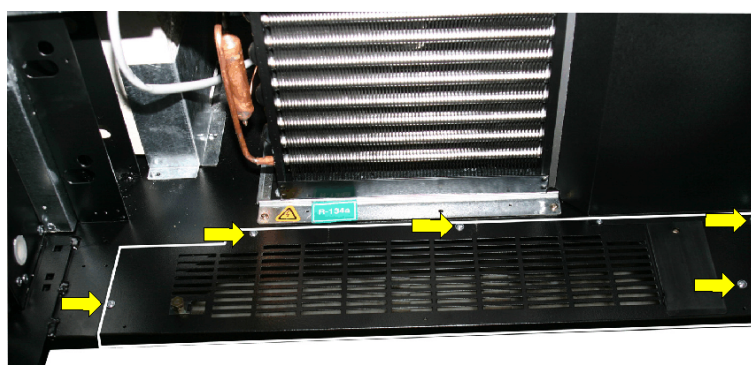
2<sup>nd</sup> Remove the 2 omegas fitted on the back of the machine.



3<sup>rd</sup> Remove the 3 screws from the closing seal. Then remove the 5 screws from the upper *anti-lever system*.



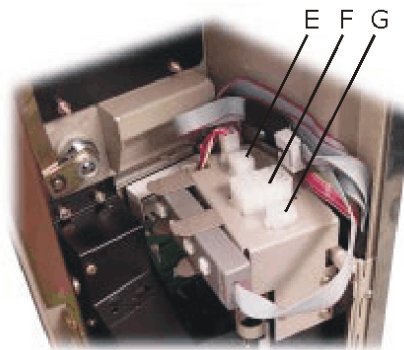
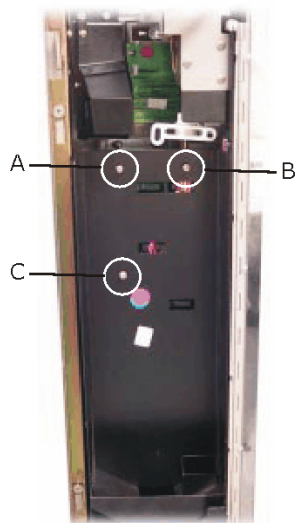
4<sup>th</sup> Remove the lower *anti-lever system* by removing the 5 screws.



- ▶ **Location of the machine.** When the *machine* is located in the chosen place, level it by rotating the adjustable legs. For greater leg adherence, it is recommended that you attach the rubber disks supplied with the machine to the front legs.



- ▶ **Ventilation.** There are stops or handles at the back of the machine in order to maintain a gap between the machine and the wall so that air can be expelled without hindrance.
- ▶ **Change giver installation.** Steps to follow to install the executive or MDB change giver:
  - Disconnect the machine from the electricity supply.
  - Slot the change giver on the three screws **(A)**, **(B)** and **(C)**.
  - Connect the change giver to the 3 connectors as shown in the photo **(E)**, **(F)** and **(G)**.



- E.** 6-way connector (MDB/ICP)
- F.** 15-way connector (Executive)
- G.** 9-way connector (Executive)

- ▶ **Electrical installation.** The electrical installation must comply with the following conditions:
  - The socket base must be European-type with earth and protected with a magneto-thermal switch.
  - Nominal voltage on the socket must be 230Vac ± 10%.
  - It must have a good earth connection to ensure user safety and to prevent electrical interference.

### 3.3. FAULT CONTROL

#### Total breakdown. Machine out of order

Message	Description
<b>F00:</b> EXTRACTOR ERROR	Extraction assembly fault
<b>F01:</b> RECOVERY ERROR	Recovery fault
<b>F02:</b> ERROR IN EPROM	Fault in the EPROM memory
<b>F03:</b> CONFIGURATION ERROR	Configuration data altered
<b>F04:</b> RECOVERY MOTOR ERROR	Recovery fault
<b>F05:</b> PUSHBUTTON ERROR	Recovery or programming pushbutton fault
<b>F09:</b> LOW MAINS ERROR	The mains supply voltage is below minimum
<b>F10:</b> TEMPERATURE ERROR	Error on the temperature probe

#### Partial breakdown. Machine working

Message	Description
<b>A01:</b> CHANGE GIVER ERROR	Fault on change giver
<b>A02:</b> CHANNEL XX ERROR	<i>Spiral</i> motor out of service
<b>A03:</b> KEYBOARD ERROR	Keyboard fault
<b>A04:</b> ACCOUNTANCY ERROR	Accountancy wrong
<b>A06:</b> CLOCK ERROR	Clock fault
<b>A07:</b> TEMPERATURE ERROR	The temperature in the interior has exceeded hygienic temperature for the set time
<b>A08:</b> TIME ERROR	The machine has been detected as off for more than the set time- The products need to be inspected and the machine needs to be reset manually.



## 4. CONDITIONS OF OPERATION AND STANDARDS

### ▶ TEMPERATURE AND RELATIVE HUMIDITY

Ambient temperature: from 0°C to 32°C.

Relative humidity: Between 35% and 95%.

### ▶ OPERATING INCLINATION

Neither front nor side inclination must exceed 2°

The sound level must not exceed 70 decibels

### ▶ ELECTRICAL SPECIFICATIONS:

Supply voltage: 230Vac

Voltage variations: 10% beneath nominal voltage, 6% over nominal voltage.

Frequency: 50 hz/s

Power consumed: 500W

### ▶ STANDARDS

The **PALMA M** and **Palma Mz** are designed in compliance with European standards:

- EN 60335
- EC machine directive DSM 89/392/EEC and all its modifications.
- EC low voltage directive DBT 73/23/EEC and all its modifications.
- EC electromagnetic compatibility directive EMC 89/339/EEC and all its modifications.
- EC directive 2002/96/CE and Royal Decree 208/2005 on electrical and electronic appliances and waste management.
- **EC**

## 5. CLEANING AND MAINTENANCE

### ► **Cleaning the outside of the machine**

Use warm water between 20°C and 40°C and one of the following products: washing-up liquid, neutral shampoo or window cleaner.

The outside of the machine should be rinsed with a 2% vinegar solution and dried with a soft cloth or chamois.

If there are stubborn stains (grease, beverages, etc.), use a solution of water and medical alcohol (96° Ethanol at 1% concentration).

### ► **Cleaning the condenser**

Dust and dirt accumulate on the condenser as a result of the refrigeration air which the fan blows through it.

As the condenser gets obstructed, so the performance of the refrigeration unit diminishes, the liquefaction of the refrigerant gas being lower.

The condenser and the rear air outlet grille should be cleaned regularly with a vacuum cleaner, a non-metal brush or compressed gas (air, nitrogen, CO<sub>2</sub>, etc.)

### ► **Cleaning the machine glass**

The machine glass should be cleaned every day. Use a solution of water and medical alcohol (96° Ethanol at 1% concentration).

### ► **Cleaning the *shelves***

The *shelves* should be cleaned once a week to prevent the spirals from getting blocked by dirt from liquid or sticky products like sugar, salt, etc.

### ► **Cleaning the product collection drawer**

The product collection drawer should be cleaned every 3 or 4 days.

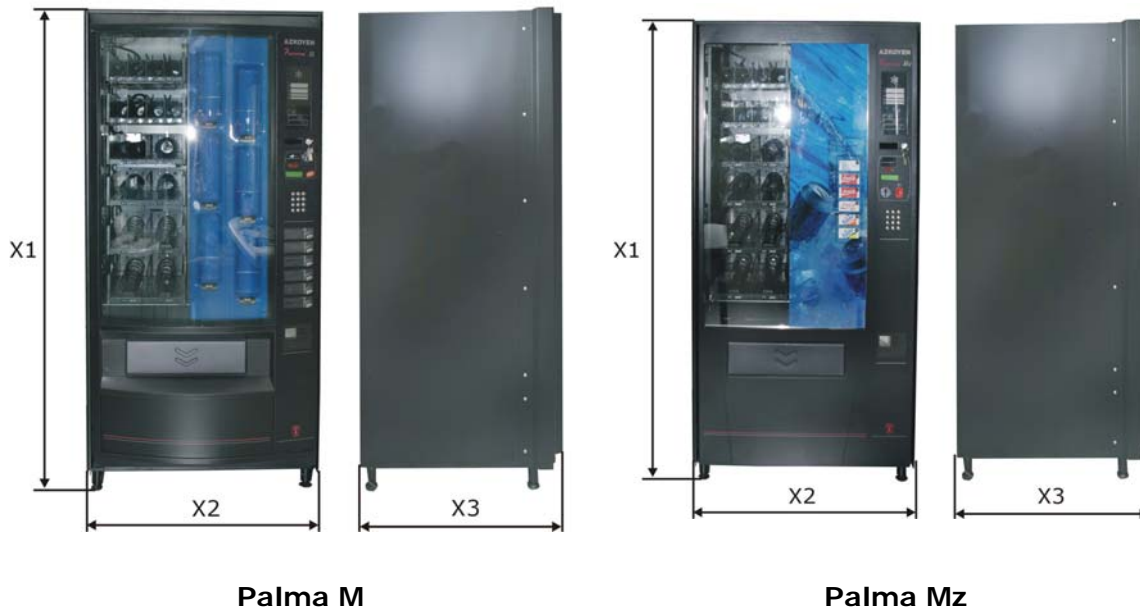
Continuous contact with the products sold by the machine means that it is exposed to deposits from some of these.



## 6. DIMENSIONS

Measurements are given in millimetres and weights are in kilograms.

Model	X1	X2	X3	Weight
<b>PALMA M-70</b>	1830	723	860	238
<b>PALMA M-87</b>	1830	888	875	272
<b>PALMA Mz-70</b>	1830	723	840	238
<b>PALMA Mz-87</b>	1830	888	840	272





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