

VPM Vending Machine

Operation Manual



03.11.2016

Hello,

Thank you for purchasing the VPM automatic vending machine for frozen or chilled products, manufactured by Eurovending Group.  
Congratulations on your choice - during its two years on the market, our VPM automatic vendor has proven itself as a reliable and easy to operate device.

When constructing our machines we have paid particular attention to ensure:

- high manufacturing quality
- reliable functioning
- constant monitoring of freezing temperature
- simple and intuitive operation

Please study this Operation Manual and follow the health and safety principles in line with our recommendations.

Our vending machines are covered by a 12-month warranty for all the parts and devices used for their construction. Our customers can always rely on our technical support through the entire period the machines are in use.

We reserve the right to introduce changes in order to improve our machines further. Please send all the comments and suggestions you may have at [kontakt@eurovending.pl](mailto:kontakt@eurovending.pl)

\* Please make this operating manual available to employees. By not observing the machine operation principles you release us from liability for possible damages and from our warranty obligations.

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## 1. Presentation of the VPM Automatic Vendor



Fig.1.1 Front view

1. Machine window (layered glass 4-1-4)
2. Locks
3. Pneumatic gripper
4. Display
5. Product selection push-buttons (8 push-buttons)
6. Coin insert
7. Coin refund
8. Product collection
9. Positioning and levelling feet
10. Castors for relocating the machine
11. Cancel purchase button



Fig. 1.2 Rear view of VPM (with 22' monitor)



Fig.1.4.Inside view



Fig. 1.4 b Sensor of 'freezer closed'



Fig. 1.4 c Sensor of "freezer opened" (machine rear)

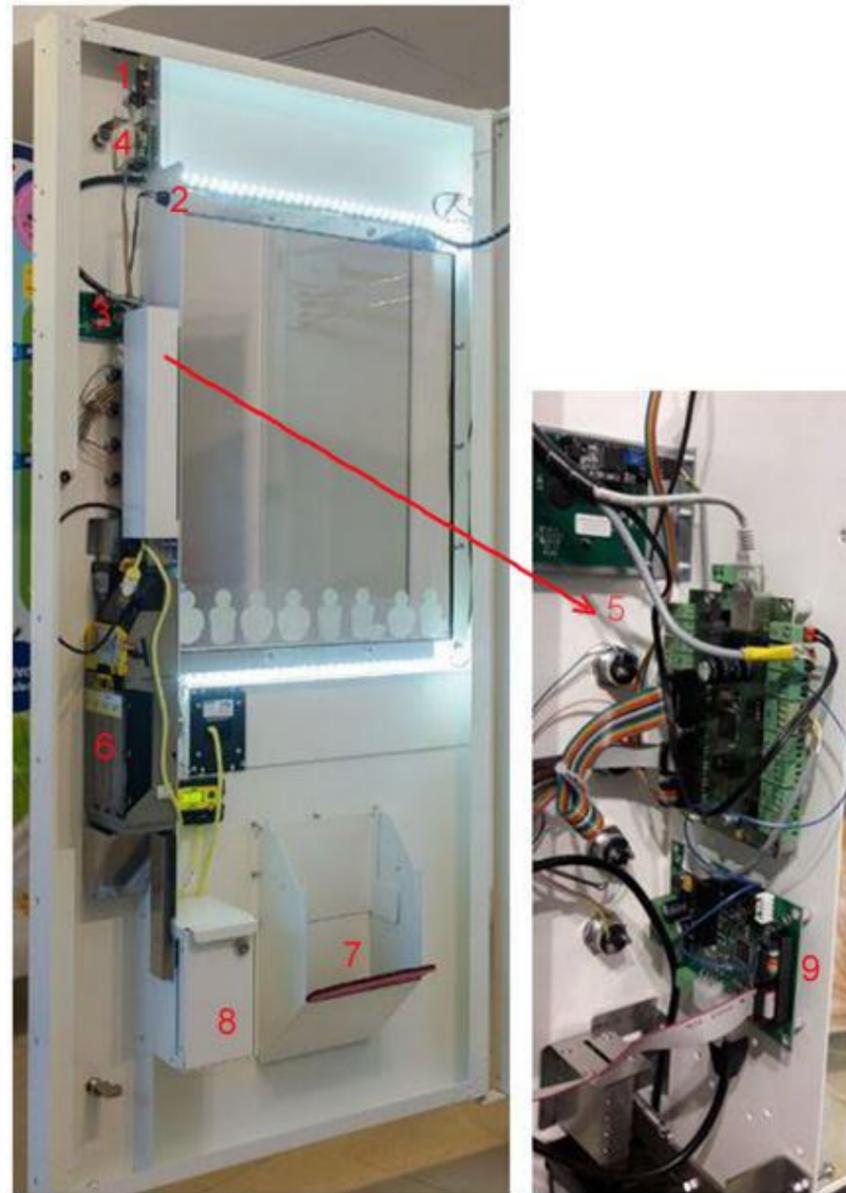
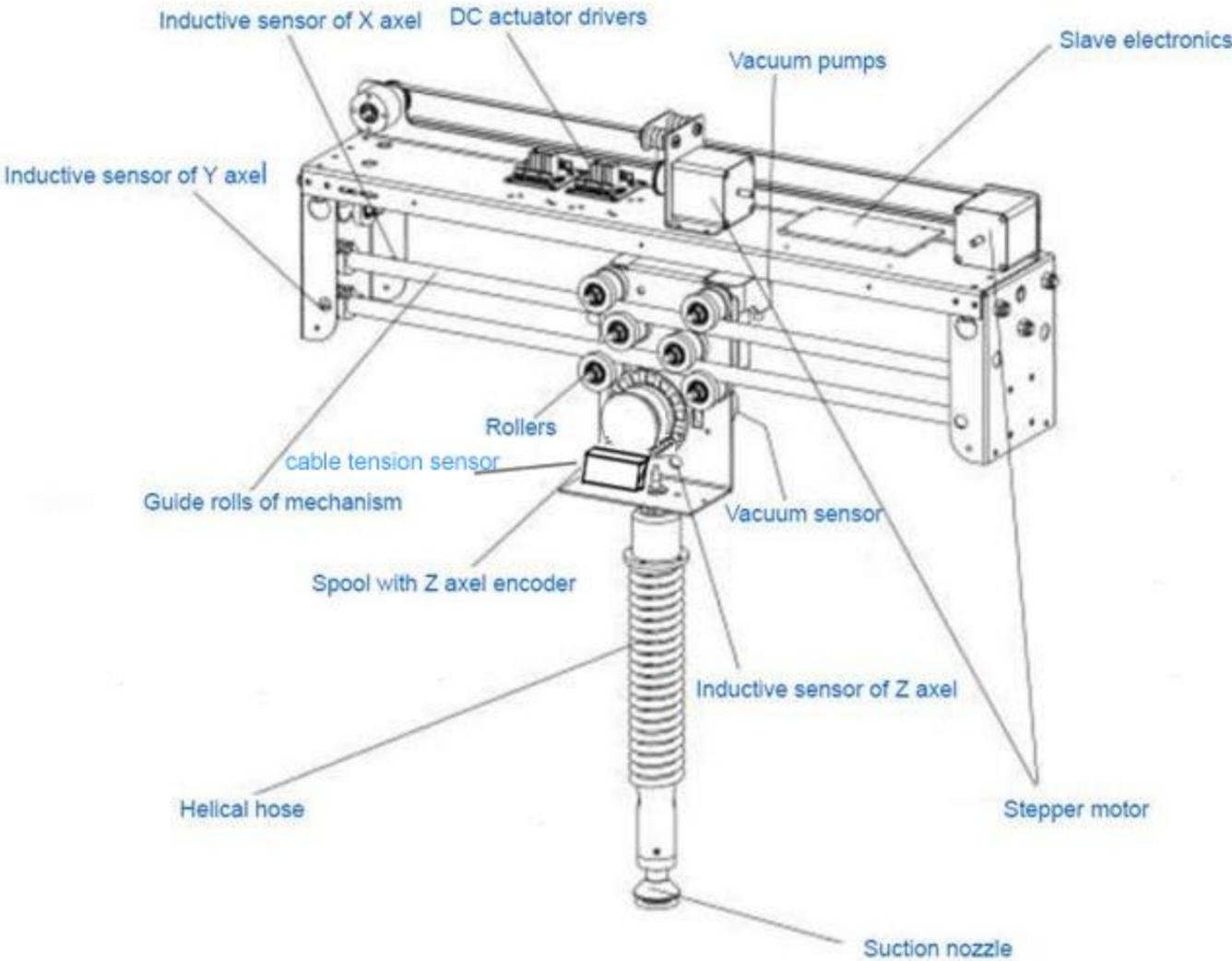


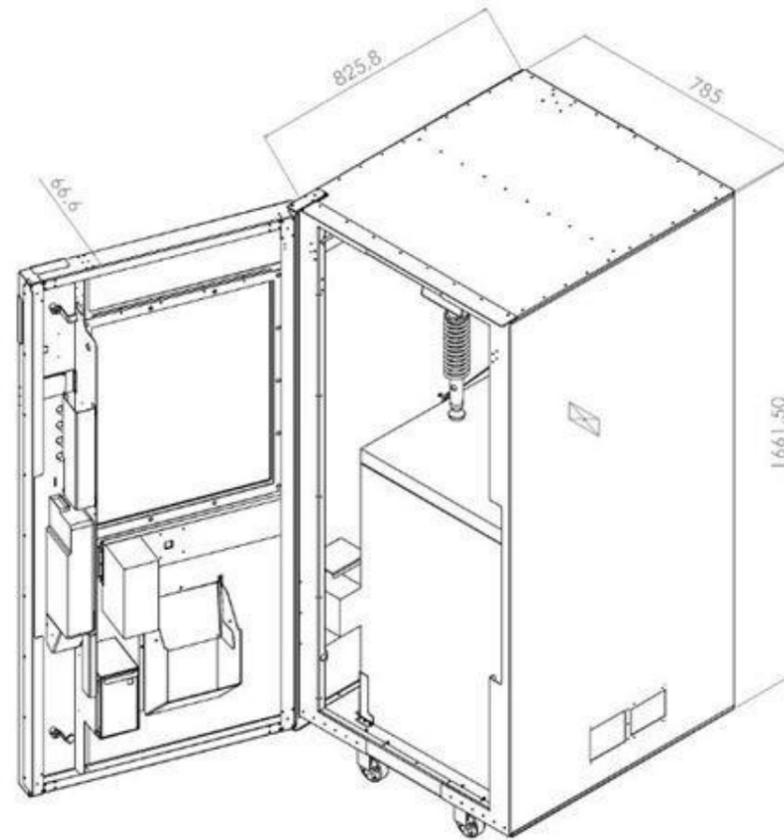
Fig. 1.5 Door inside view

( 1. GSM module, 2. service switch, 3. display, 4. telemetry 5. master module, 6. changeover , 7. the product collection tray , 8. cassette, 9 converter)

1.6. Three-axel mechanism with pneumatic gripper Pneo3



### 1.7. Technical parameters of the machine VPM



Overall dimensions:

Width : 786 mm

Height: 1775 mm (with castors)

Depth: 922 mm (or 987 mm with 22-inch monitor)

Weight : ca 100 kg

- average annual power consumption: about 300 kWh (given a greater frequency of product dispensing, the power consumption could be higher)

**Very important :**

**The VPM automatic vendor is designed for operation under a roof in an ambient temperature from 0 to 35 deg Celsius !**

→ Technical characteristics of the box freezer:

**Model 1:**

- producer: **Zanussi**
- model: ZFC14400WA
- energy efficiency class: A+
- freezing capacity, kg/24h: 13
- lowest ambient temperature for operation of the machine (°C): 0
- highest ambient temperature for operation of the machine (°C): 43

→ - noise emission level, db(A): 42

**Model 2 (only inVPM1):**

- producer: **Haier**
- model: BD-103RAA
- energy efficiency class: A+
- freezing capacity, kg/24h: 10
- lowest ambient temperature for operation of the machine (°C): 0
- highest ambient temperature for operation of the machine (°C): 45
- noise emission level, db(A): 42

→ Payment acceptance:

- coin acceptor capable of being adjusted for most currencies
- - pay card reader (a system adjusted to European standards)
- banknote acceptor

## **1.8 Protecting product shelf life and proper dispensing**

### **→ Supply voltage control**

The machine is provided with a battery-fed system which measures the power supply voltage of the freezer. Any voltage loss will be communicated to the service technician by a text message.

### **→ Temperature control**

In addition to the supply voltage control, the machine monitors the temperature inside the freezer. Should the limit temperature raise above..... deg Celsius, the sales will be disabled while the service technician gets an e-mail message communicating temperature increase in the machine. The display shows the current temperature of the freezer.

### **→ Monitoring the complete dispensing process**

The machine is protected against a program freeze and improper dispensing of the product. If the product drops, e.g. during dispensing, the service technician gets informed while the display shows a message reading "Failure".

## **2. Safety**

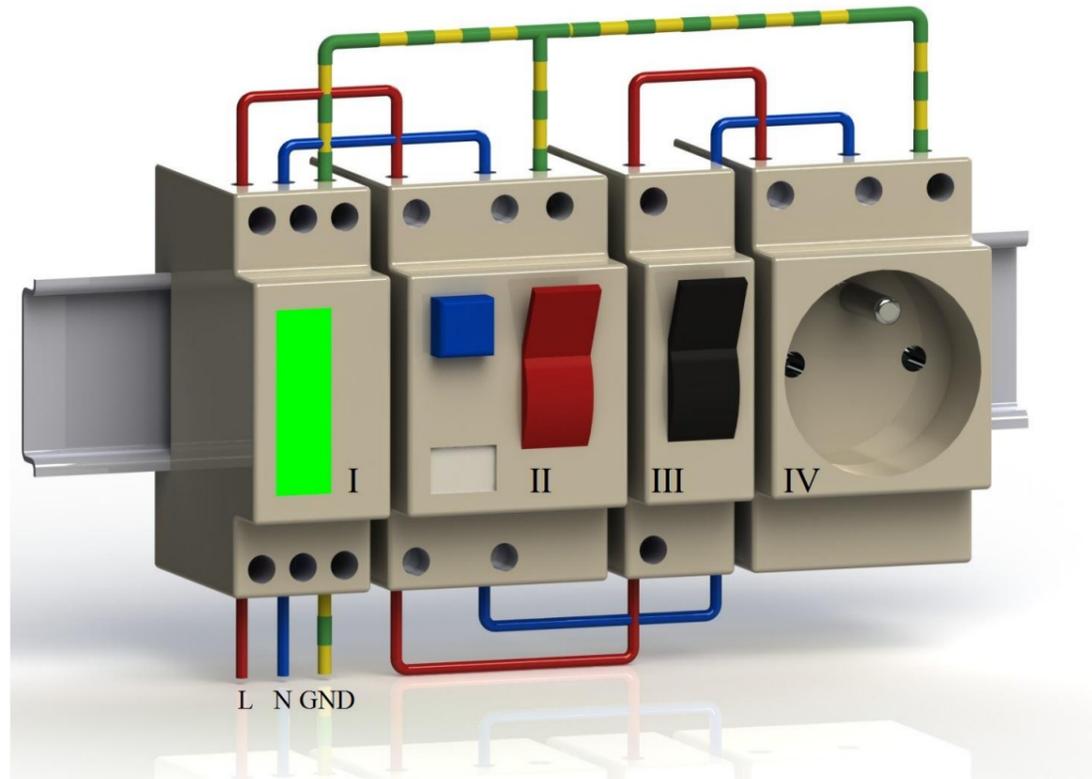
The following rules and recommendations must be observed when transporting / positioning the machine and during maintenance / repair:

- regulations of electric utility company
- workplace health and safety regulations
- sanitary regulations
- EU regulations

### **2.2 Electrical protection**

- I. electricity meter
- II. differential current switch : differential current 30mA, overload protection 16A

III. overcurrent circuit breaker: permitted current 16A  
IV. DIN socket, earthed



Electric shock danger !  
Access for authorized persons only.

## 2.2 Before powering on the machine for the first time

- Please refer to the Operating Manual before unpacking and commissioning the machine
- Carefully cut open the package and remove the cardboard and film which protected the machine during transport
- Please be careful during cutting not to damage the veneers, lacquer coatings or the power cord on the rear wall of the machine
- After removing the transport packaging, and after unlocking polyamide castors you can set the machine to the desired location
- Remove the keys from the product collection tray (Fig. 1.4) and open the machine door
- Turn the stabilizing feet, to the left, until polyamide castors are min. 5 mm above the floor . (Fig.2.2.1)
- Very important: always before moving the machine on the castors necessarily screw the foot up to the top!



Fig. 2.2



Fig.2.2.1



Do not use the machine without the stabilizing feet !  
Warning: the machine may collapse!

### **Removing the transport safety devices**

- remove the transport safety devices of axel X and axel Y (cable ties) and the safety device of axel Z made (plastic string). Be careful not to damage the cable connections! Fig. 2.2c



Fig. 2.2c

Protection devices of axel Y, X, Z

**Very important: the same protection devices of axel X,Y,Z must be used for any further transport !**



**Risky for the machine !**

**Do not remove the foam sealing of the freezer air inlet!** Fig. 1.4a

This isolation plays an important role: it restricts access of moisture into the interior of the machine so that frost in the freezer need not be removed often.

- After removing the protection devices, insert a SIM card in the GSM module Fig.2.2d

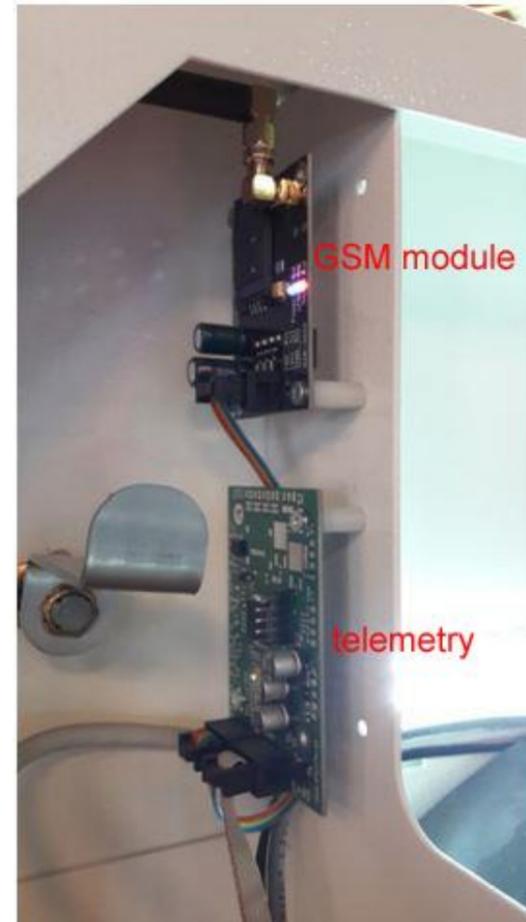


Fig.2.2d

Important: before inserting the SIM card, shift the card pocket gently down, then insert the card in line with the marking, press in and shift the card pocket up gently.

### 2.3 Powering on the machine for the first time

- Before the machine is switched on, it must be levelled.
- The polyamide castors should be min. 5 mm above the floor.
- **In order to enable automatic calibration of the machine, insert at least 3 products into each tube!**
- Make sure you have removed the transport protection.
- Check that the air can enter the ventilation grate of the machine.
- Make sure the main circuit breaker is off (Fig. 1.4a)
- **The freezer cover must be closed before the machine is connected to the power supply!**
- Insert the plug into the suitable 230 V socket with an earth connection, intended for the purpose.

**Never put a soaked plug into the 230 V socket and never touch the plug or the main switch with wet hands.**



**Electric shock danger!**

- Switch on the main switch.
- Switch the battery. Fig2.2
- First, turn on the main switch, then switch the battery!**
- Using the service switch (Fig. 1.5) select the "service mode"
- Lift the freezer cover, hang it on the hanger and fill the tubes with products, as described in sec. 3.2
- Then turn the service switch to get out of the "service mode"
- If the freezer has not yet reached the temperature limit of ..... degrees Celsius the display reads "technical break"( the temperature limit depends on the product)
- Upon reaching the right temperature the VPM vending machine it is ready to use.

#### 2.4. Washing and maintenance

**WARNING !** Before doing any work on the machine, disconnect the power supply and turn off the batteries



**Electric shock danger !**

If the machine is used as a freezer, it is recommended to remove ice when its thickness on the edges of the freezer exceeds about 4-5mm. Frost can also accumulate on the walls of product containers and must be removed regularly!

To maintain the freezer and the machine clean, you will need:

- 24V powered vacuum cleaner that can suck in water
- car ice scraper
- small ice scoop
- disposable towels
- cleaning agent

- disposable gloves

The rubber seals of the cover, the product selection buttons, the product delivery space and the glass should be cleaned regularly, preferably with disposable towels and proper cleaning agents.

The freezer needs a thorough cleaning once a quarter. The following procedure should be used:

1. Unplug the machine power supply cord.
2. Carefully dry your hands to prevent skin damage by contact with ice (it is recommended to use gloves).
3. Remove all the products from the machine and put them in a thermos box designed for frozen products, then put them in another freezer. Fig. 2.4.1



Fig. 2.4.1

4. After several hours, use a paper towel to remove water from the freezer and wash it with a suitable disinfectant.



**Please follow the recommendations, it is about health safety !**

## The maintenance

**WARNING !** Before doing any work on the machine, disconnect the power supply and turn off the UPS batteries



Electric shock danger !

- Every 4 weeks lubricate slightly the guides of the machine's three-axel mechanism (the x and y axels) using WD-40 or a similar lubricant.
- Every 6 months lightly grease the hinges, door locks and the coin cassette lock.
- The other moving parts require no maintenance.
- Every two months clean the dust from the master and slave board using a compressed air spray.
- The changegiver or coinacceptor also requires cleaning - according to the manufacturer's instructions

Note: to clean the slave board you must remove the cover of the three-axel mechanism and reinstall it afterwards. After reinstalling, secure it with the self-clamping band. Fig. 2.4.2



**Fig. 2.4.2**

## 2.5. Preparing the machine for transport

**The machine must be transported and positioned vertically!**

Before each transport of the machine:

- secure the three-axle mechanism, as in Fig. 2.2c
- screw metal feet in as far as possible so that the machine is standing only on castors **that can turn freely**
- wind the power cord and stick with adhesive tape on the rear of the machine
- pack the machine well with polystyrene foam and cardboard
- secure the machine with transport belts on the vehicle and tighten the brakes on the castors on the machine's front.

**IMPORTANT !**

**The automatic vendor must be transported on its stabilizing feet and on castors with strained brakes .**



**Risk of damage to the machine!**

### 3. Machine operation

#### 3.1. Price change

**A price change can only be made in the service mode** (switch No ....)

Proceed as follows:

- Press the product selection buttons 1 and 2 simultaneously
- The display shows "1. Price change"
- Confirm with button no. 2 (OK function)
- "Product 1" is displayed
- Confirm with button no. 2
- The display shows "Price Change P:1"
- Set the price using button 3 (-) or 4 (+)
- Confirm with button no. 2
- The message "Price filed" appears and, after a while, "1.Change prices"
- Confirm with button no. 2
- "Product 1" appears
- change to "Product 2" using button 4 (+)
- Confirm with button no. 2
- Continue in this way until the price changes are completed,  
then exit the service mode using the mode switch (lever downwards)

#### 3.2 Filling the machine and the acknowledgment of filling

When topping up the products please use disposable gloves.

Open the fridge cover as follows :

- press the product selection buttons 1 and 2 at the same time until the "Price Change" message appears on display.
  - button 7 will open the cover, button 8 will close it.
- 
- Remove the frost accumulated on the walls of the freezer with a scraper made of plastic; never use metal objects for this purpose (you can use a 24V powered vacuum cleaner that can suck in water);
  - Replenish the products in the chambers.



For products that rest deeper, use the hand gripper (Fig. 2.1)

- close the freezer lid.

**Important: follow the procedure to inform the machine of replenished products:**

- the display reads "Replenishment, Select Product"
- press the replenished product button, eg. no.1
- the display reads "Product 1 replenished"
- then press the button of the next replenished product, eg. no. 2
- the display reads "Product 2 replenished"
- continue to complete in this way, then get out of the service mode.

**Informing the machine about replenished products ensures proper functioning of the telemetry notification!**

### 3.3 Display messages and e-mail texts

**The machine's messages to customer :**

“Welcome..... ”

„Choose product”

„Insert coins”

„Paid”

„Collect product”

„Product dispensing”

"Operation cancelled" applies to a situation when the client pressed the button with the desired flavour but has not started to insert coins for 2 minutes

"No product, please choose another" - appears when you press the button for a product that ended

"Thank you for your purchase, you are invited again" - the message appears after a successful sale

"Dispensing error, please call us" - information displayed when the machine fails to provide the desired flavour.

#### **E-mail messages for the service:**

" Temperature error " - the message gets displayed in service mode; if it flashes and a temperature reading appears, it is a normal reading procedure in real time. If the "temperature error" lights up continuously for more than 5 minutes, replace the thermometer

"Complement/....1 " – means the flavour “1” replenishment information has been acknowledged

"End of product no... " – means that the next tube with product no. .... is empty.

"Price Change" – the mode allowing you to change price

"Price changing P: 1 ... 8"

"Price changed"

"Calibration" - this function not available to the user

"Sales" - information on the number of product units sold (the standard product unit is 10 pieces)

" Failure /Awaria no..” - information sent when the machine failed to deliver the product.

"Failure" is only visible on the telemetry page. It means there was a problem in one of the tubes (too much frost, upturned cup, suction nozzle damaged) and the **computer turned off the tube**. It is important because if we have 3 tubes of the same taste and 3 "failure" messages come, it means that all three tubes are off and the customer cannot choose the flavour !

"Technical break" – means limit temperature has increased due to frequent opening of the Refrigerator, high sales (the temperature will drop after 20-30 minutes)

"Lack of energy" - loss of power, the machine is powered from batteries

"Energy correct" – mains power is on again, the machine is powered from the mains

"Temperature too high." - an increase in temperature inside, the refrigerator can hold temperature out for max . 2- 3 hours

"Temperature correct" - the temperature is back to the proper level

"Watchdog" – a mechanical failure in the machine.

If two such reports come up, the machine has coped with the problem, **if 3 or more come** it means the computer has not received a signal from one of the sensors and **this must be checked** (any of the inductive sensors of the x, y, z axes or the closed position sensor of refrigerator cover may be damaged, the refrigerator cover may be open)

“Start” - start of the machine

#### **Important information:**

The following should be done during the visit the machine (after “Watchdog”) :

- disconnect the battery;
  - turn off the main power supply switch;
  - if the freezer cover is open, close it by turning manually the spool of the actuator that lifts the cover;
  - check whether the gripper string is properly wound (Z axel);
  - position the gripper over the centre of the freezer and gently lower the gripper by about 3-4 cm by unwinding the string (Z axel);
  - turn on the main switch, do not turn on the UPS;
  - if all the axels have positioned themselves properly, make several attempts to dispense the product;
  - if the gripper does not move to the starting position, check connections on the actuator controllers.
- Fig. 3.3a;

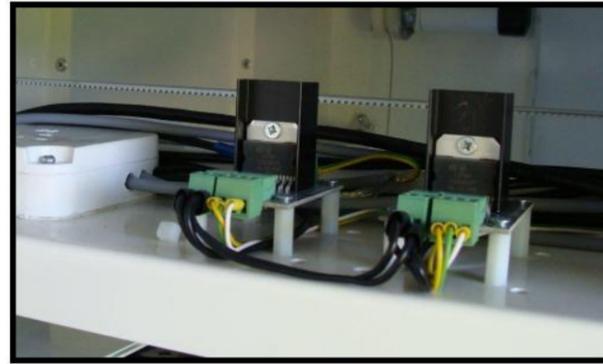


Fig. 3.3a

- if one of the actuators that provide movement along axels X, Y or Z does not trip and the machine makes a loud sound, switch it off and check the nut that fixes the sensor on that axel, replace the sensor if necessary;
- again position the gripper over the centre of the freezer and turn the machine on;
- if the gripper positions itself properly, switch on the battery; the machine is ready for operation.

#### 3.4 Programming with USPasp

- disconnect the battery,
- turn off the main power supply switch,

Programming procedure:

1. Run the SinaProg 2.0 program;
2. Connect the programmer to the PC;
3. Select processor Atmega128 in the Device window;
4. Select USBasp in the Programmer window;
5. Select Hex file, and indicate the location with the HEX software update file;
6. Plug-in the programmer into the programming connector on the master or slave board;
7. Click “Program” under the “Flash” inscription;

8. Programming starts;

9. When programming is complete, the message „Programming OK.” will show under HEX file path. If another message appears, repeat the steps.

**Important: install drivers before using the USPasp programmer:**

#### **4. Accessories**

4.1 On customer request, we equip our machines with 22-inch LCD monitors (Fig. 4.1) and MP3 players with speakers.

- Films or advertisements are played from a USB Flash Drive. The monitor manual is in the machine.



Fig. 4.1

- MP3 plays a melody after the product is chosen by the customer and after it is dispensed.

4.2 On request, we can apply the UV film to the machine featuring our or our customer's graphic design.

## 5. Service point addresses

- Please email all your technical queries to

[kontakt@eurovending.pl](mailto:kontakt@eurovending.pl)

We shall do our best to reply within 24 hours.

We ship spare parts with installation instructions as soon as possible!

- All parts subject to the 12 month warranty should be sent to this address

**Eurovending Group sp.z o.o**  
**ul.Poezji 12 lok 96**  
**04-937 Warszawa/ Polska**

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