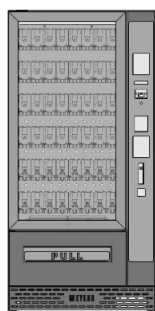


Service Manual

Spring Operated Automatic Vending Machine

SOLID



AS 6x6

AS 6x8

AS 6x10

AS 6x12



Evend is a brand of Polish vending machines produced by EBA Sp.z o.o. a company with long tradition of industrial production, strong position on the Polish and international market and a company that promotes the development and innovative technology.

Dear Customer

Thank you for purchasing our spring operated automatic vending machine and congratulations on a good choice. This service manual allows you to become familiarized with the operation, start-up and proper maintenance of the machine. The information contained concerns particular functions and a method of their use. You should carefully read the following recommendations and warnings, before starting installation.

EU DECLARATION OF CONFORMITY

EBA Sp. z o.o., ul. Popiełuszki 86, 38-401 Krosno, Poland

The undersigned EBA Ltd. declares, on its own responsibility, that the products:

Spring-operated automatic machines AS 6x6, AS 6x8, AS 6x10, AS 6x12

to which the declaration relates, are in compliance with the following directives:

- Low voltage electrical devices LVD 2014/35/UE
- Electromagnetic compatibility EMC 2014/30/UE

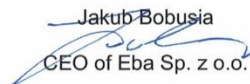
And the harmonized standards:

- PN-EN 60335-1:2004 + Ap1:2005+Ap2:2006+A2:2008+A12:2008+A13:2008+A14:2010,
- PN-EN 60335-2-75:2005+A1:2005+A11:2006+A2:2009+A12:2010
- PN-EN 55014-1:2007+A1:2010,
- PN-EN 55014-2:1999+A1:2004+A2:2009+IS1:2007,
- PN-EN 61000-6-1:2008,
- PN-EN 61000-3-2:2007+A1:2010+A2:2010,
- PN-EN 61000-3-3:2011



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Company seal


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CEO of Eba Sp. z o.o.

Krosno 01.01.2020

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1. Information

1.1. Equipment

The spring-operated automatic vending machine is the equipment used for the automatic sell of the packed products in controlled temperature. The drink and snack type products can be stored in it.

The automatic machine is built of three chambers. Refrigerating unit is placed in the first, the products in the second and a control block in the third one.

The products are visible through a double, low emission glazing. A purchase of the product can be made by means of a keyboard and a payment device. All operations are clearly visible on a graphical display. The purchased product can be collected from a product release pocket. Distribution servos are controlled by a main board with a microprocessor. It enables programming and modification of the automatic machine performance.

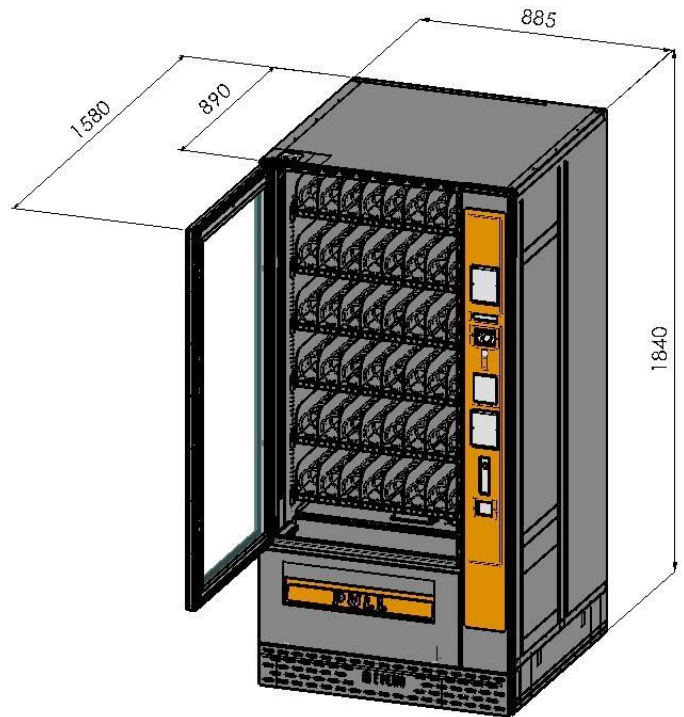


Fig.1 Spring-operated automatic machine AS6x8 with parameters

1.2. Specifications

	AS6x6	AS6x8	AS6x10	AS 6x12
Height	1840mm	1840mm	1840mm	1840mm
Width	737mm	885mm	1032mm	1185mm
Depth / (with doors opened)	890mm / (1430mm)	890mm / (1580mm)	890mm / (1727mm)	890mm / (1865mm)
Weight	290 kg	320 kg	350 kg	390 kg
Supply	230 V	230 V	230 V	230 V
Frequency	50 Hz	50 Hz	50 Hz	50 Hz
Power	400 W	600 W	600 W	600 W
Ambient temp.	from +9° to +26°C	from +9° to +26°C	from +9° to +26°C	from +9° to +26°C
Max. Relative humidity	60%	60%	60%	60%
Payments system	MDB	MDB	MDB	MDB
Coolant	Refrigerating unit	Refrigerating unit	Refrigerating unit	Refrigerating unit
Defrosting	Automatic, Manual	Automatic, Manual	Automatic, Manual	Automatic, Manual
Refrigerant	R452A	R452A	R452A	R452A
Max. drawer number	6	6	6	6
Numer of springs	30 single, 3 double	40 single, 4 double	50 single, 5 double	60 single, 6 double
Operating temperature	od +7°C do +20°C	od +7°C do +20°C	od +7°C do +20°C	od +7°C do +20°C

1.3. External structure of automatic machine

1. Loudspeaker with motion sensor /optional/.
2. Banknotes acceptor /optional/.
3. LCD display.
4. Numeric keyboard – used by customers to select a product and by an operator for the automatic machine servicing and programming.
5. Coin intake.
6. Withdrawal button – pressing the button results in a return of the thrown in coins from a coin mechanism before purchase of goods /the function depends on the coin mechanism setting.
7. Proximity card reader. RFID.
8. Lock – used to open and close main doors and control panel.
9. Coin return – receipt of a change and not accepted coins.
10. Product collection pocket – receipt of the purchased goods.
11. Front grill.

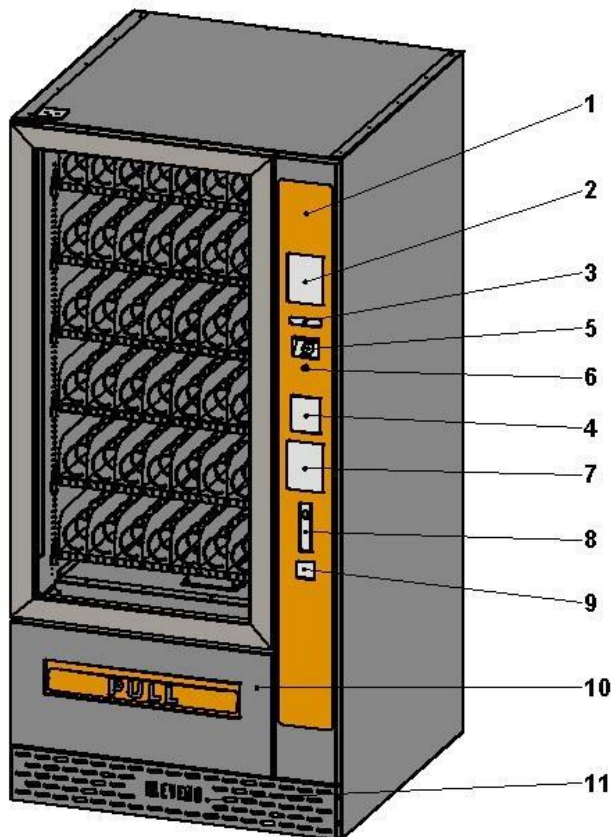


Fig.2 External structure of automatic machine

1.4. Internal structure of automatic machine

1. Spring operated drawers – used for storage and sell of products.
2. Product number and price display /optional/.
3. Hotspot Wi-Fi. /optional/.
4. Sense & Talk. Speaking system. Lighting change /optional/.
5. Main board with microprocessor - enables programming and modification of the automatic machine performance.
6. LED lighting . /optional LED RGB/.
7. Mains connector - /optional/.

8. Payment device – used to make payments.
9. Photocell – used for product release detection.
10. Refrigerating unit – responsible for proper temperature maintenance in the product chamber.
11. Electric box with thermoregulator. The thermoregulator is a programmable controller enabling direct control of the refrigerating unit.
12. Refrigerating unit filter.

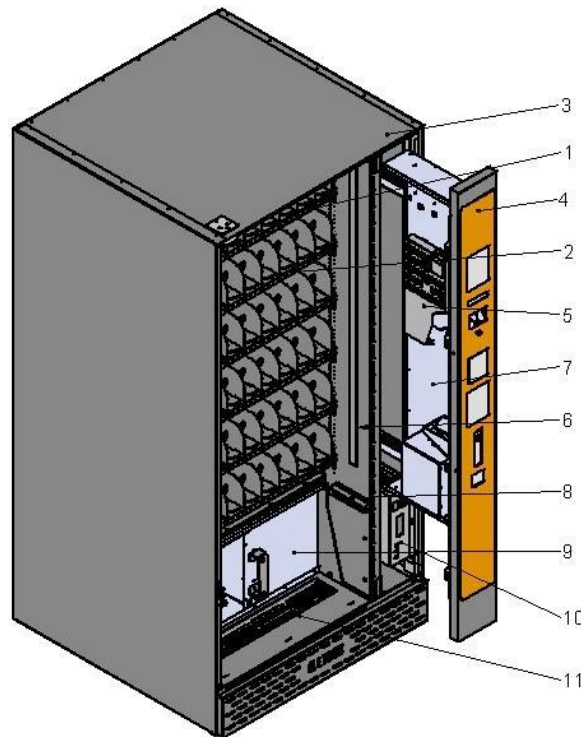


Fig.3 Internal structure of automatic

1.5. Assembly

The automatic machine is designed for indoor operation. The automatic machine must not be installed near intensive heat sources or water sprinklers. Before the installation make sure that the front glass is not subject to a direct effect of the sun's rays. The machine operates properly in the temperature range from 9°C to 26°C and the humidity not exceeding 60%.

In order to ensure a proper circulation, areas of air change shall be left free (front and back of the machine) (Fig.4). A distance between the machine and a wall shall not be less than 10 cm. It is recommended to apply the Upper Bracket Spacer (Fig.5). Where necessary the automatic machine can be fixed to a substrate with the Lower Angle Bracket (Fig.6), delivered with the machine, screwed into the machine feet.

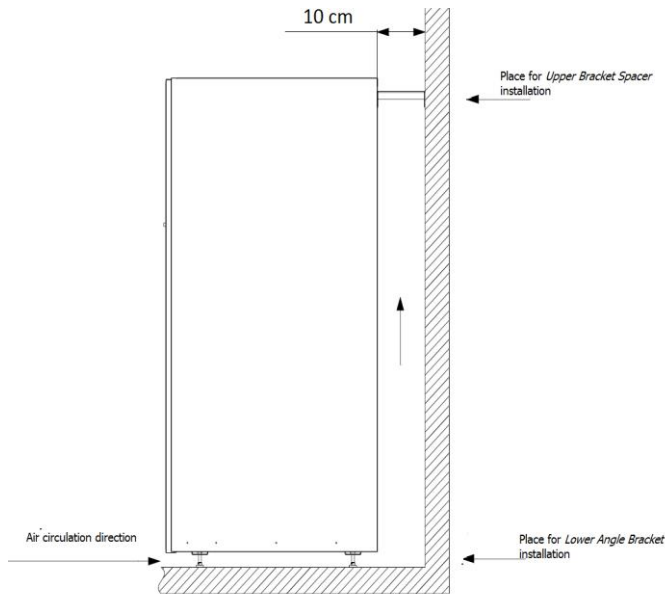


Fig.4 Proper machine installation

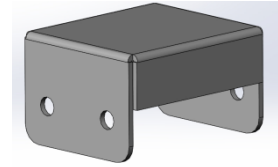


Fig.5 Upper Bracket Spacer

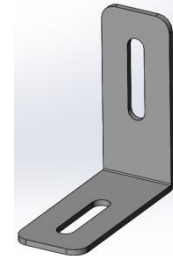


Fig.6 Lower Angle Bracket

The machine should be properly levelled. The lower machine feet should be used for that. The real machine dimensions (door opened, easy access) should be taken into consideration in planning distributor layout.

1.6. Power supply. Electric box.

The machine is supplied with the electric cable with plug for connection to 230V power network. Before making the electricity connection we need to ensure that the socket the machine will be connected to meets the standard requirements as well as verify the grounding integrity. An annual verification is strictly recommended.

The supply connections inside the machine shall not be modified.

Supply indications	
Brown	Phase
Blue	Neutral
Green-yellow	Protective

Power consumption:

The measurement was performed at the ambient temperature maximum 30°C, the refrigerating chamber temperature 10°C, the temperature of loaded products (with the machine empty) less than the ambient temperature. The power consumption for one day (24 hours) is 6kWh (for AS 6x8).

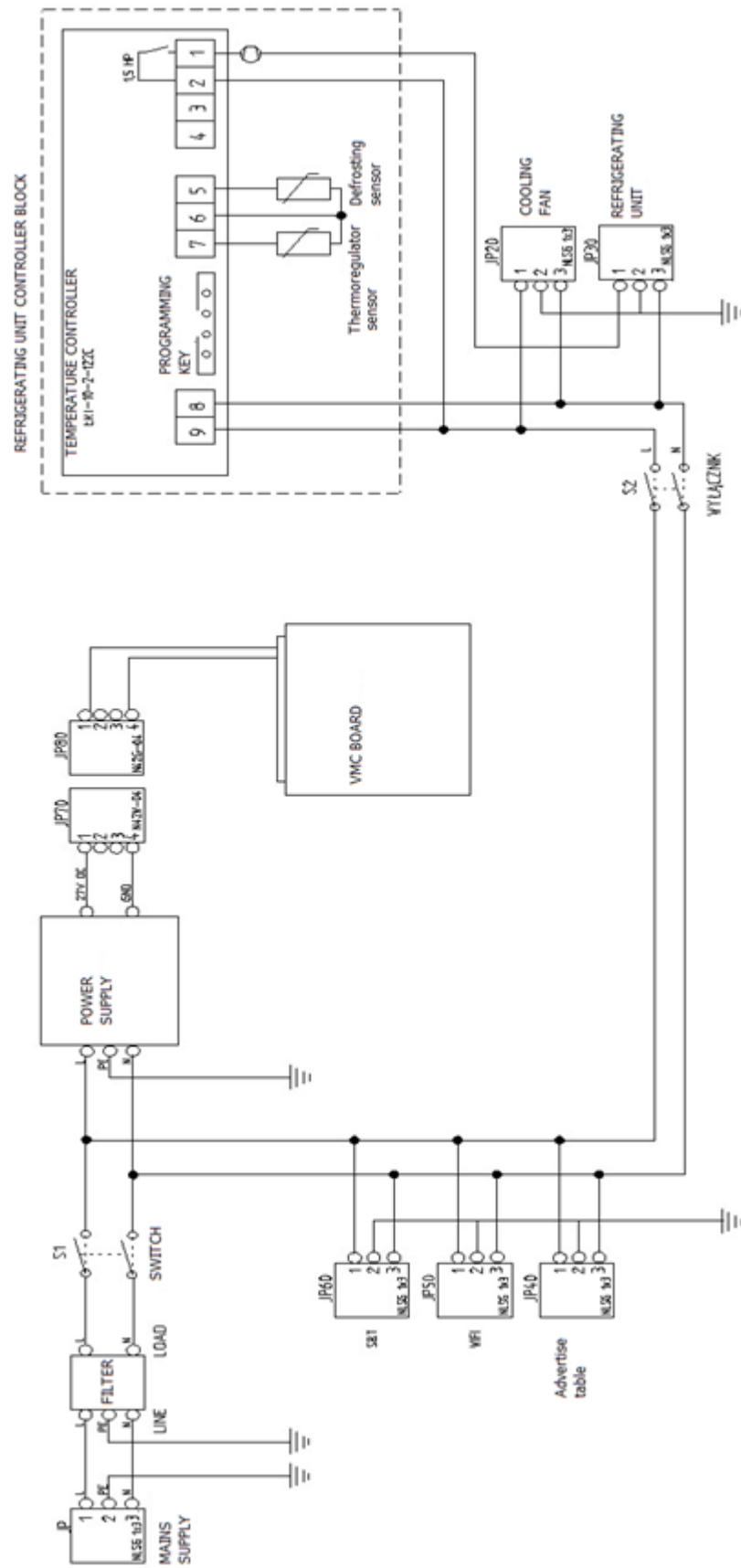


Fig.7 Block diagram of the automatic machine supply

Electric box

All installation operations shall be performed by a qualified personnel only and meet all the requirements of applicable standards.

The mains supply cable is led to the Input 230V AC connector. Remaining connectors are used to connect the components, according to the figure below.

- In the electric box the following items are placed:
- Refrigerating unit controller Thermoregulator (see Section 3.3)
- master switch, refrigerating unit switch.
- R10A 250V fuses 2 pieces, R2A 1 piece.

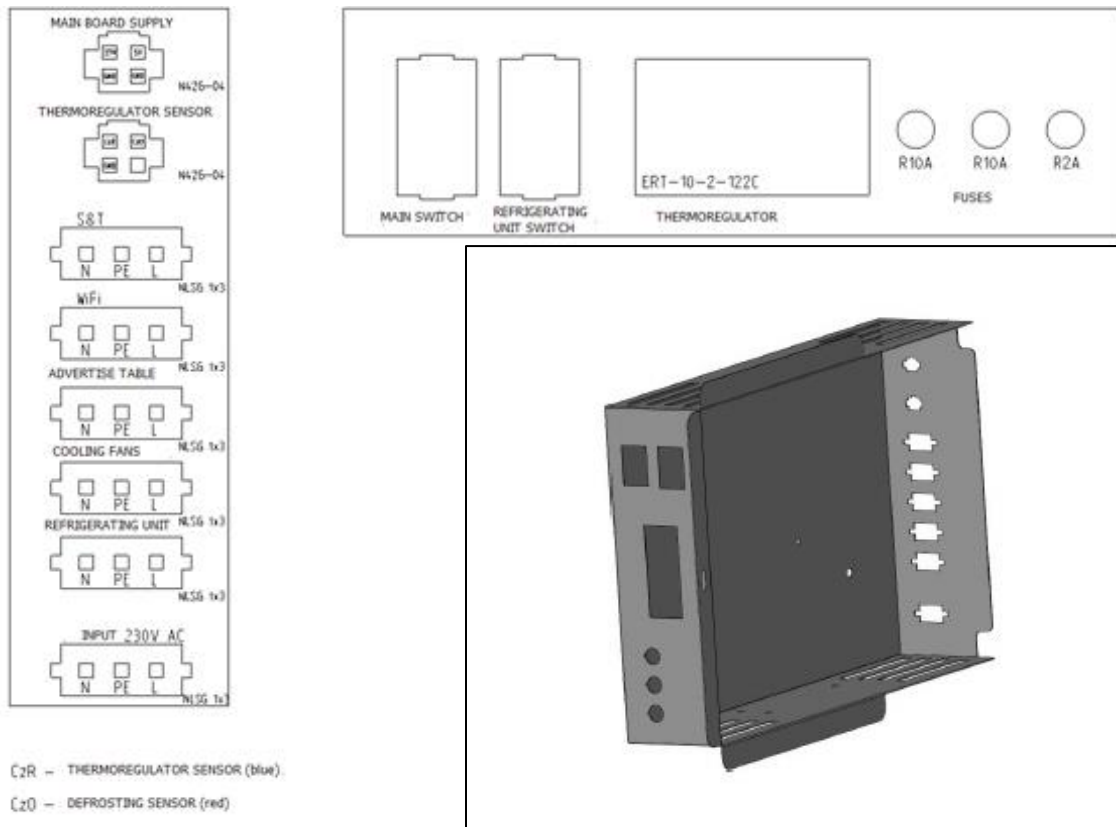


Fig.8 Electric box view

1.7. Display

The machine is equipped with the graphical display WC2002A, protected by the scratch resistant screen. The display enables performing all determination and selection operations by the user (the product selection, number of coins inserted into the machine, information on the purchase status, information on the selected product availability) and programming by the operator (main board operation, information on the machine status, faults etc.). The screen cleaning shall be performed with the dumped cloth only.



Rys.9 Graphical display WC2002A

1.8. Drawers

In order to fill-in, the drawer should be slightly lifted and pulled to the stopping point. The two highest mounted drawers tilt down to facilitate filling with the goods. Before the goods insertion the springs should be verified for a proper selection for a given product. Softer packagings should refill the lower drawers.



Fig.10 The drawer configured for 8 springs



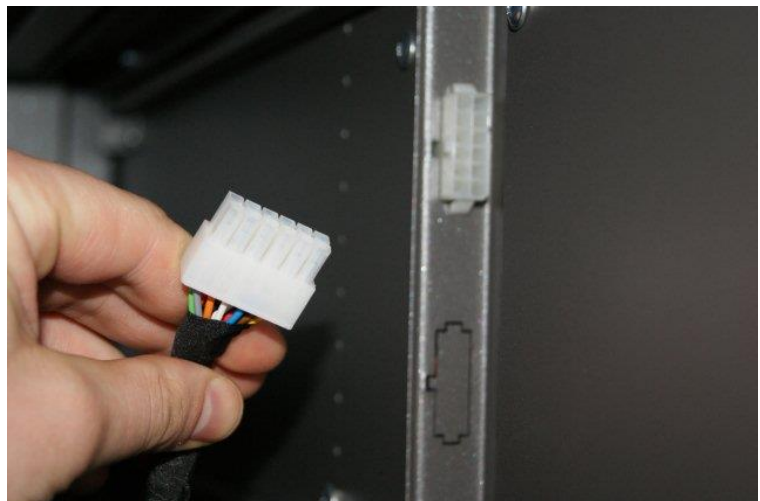
Fig.11 The drawer configured for 4 double springs

The drawer dismantlement

1. Lift and carefully pull to the stopping point.



2. Disconnect the motor connection cable.



3. Lift the drawer so as to disengage the wheels from the guide.



The machine is designed to allow any configuration of the drawers' orientation. In order to change a height, the position of the guides, mounted on the side walls, should be changed (ensure that the position of the left and the right guide respectively, is the same).

The bulkheads used for the engines support are placed on the back wall of the drawer. Thanks to the perfect fit of the engines the additional mounting is not needed, simplifying assembly and disassembly of the engines, respectively.

For the flat products and cans the additional slides facilitate sliding of the product. **For performing the adjustment of the spring position, the slide should be unscrewed at first.** The failure to observe these rules can result in damage of the slide or the slide mounting.

1.9. Springs

The machine is equipped with the steel springs, galvanic coated for corrosion protection. The selection of the springs spacing, to fit the product size, is possible. The springs can have 72 mm diameter with a stroke from 30mm to 80mm. For the big size products the double springs, mounted on the motor with the double power transmission system, are installed. The springs rotate in opposite direction (one to the right and one to the left).

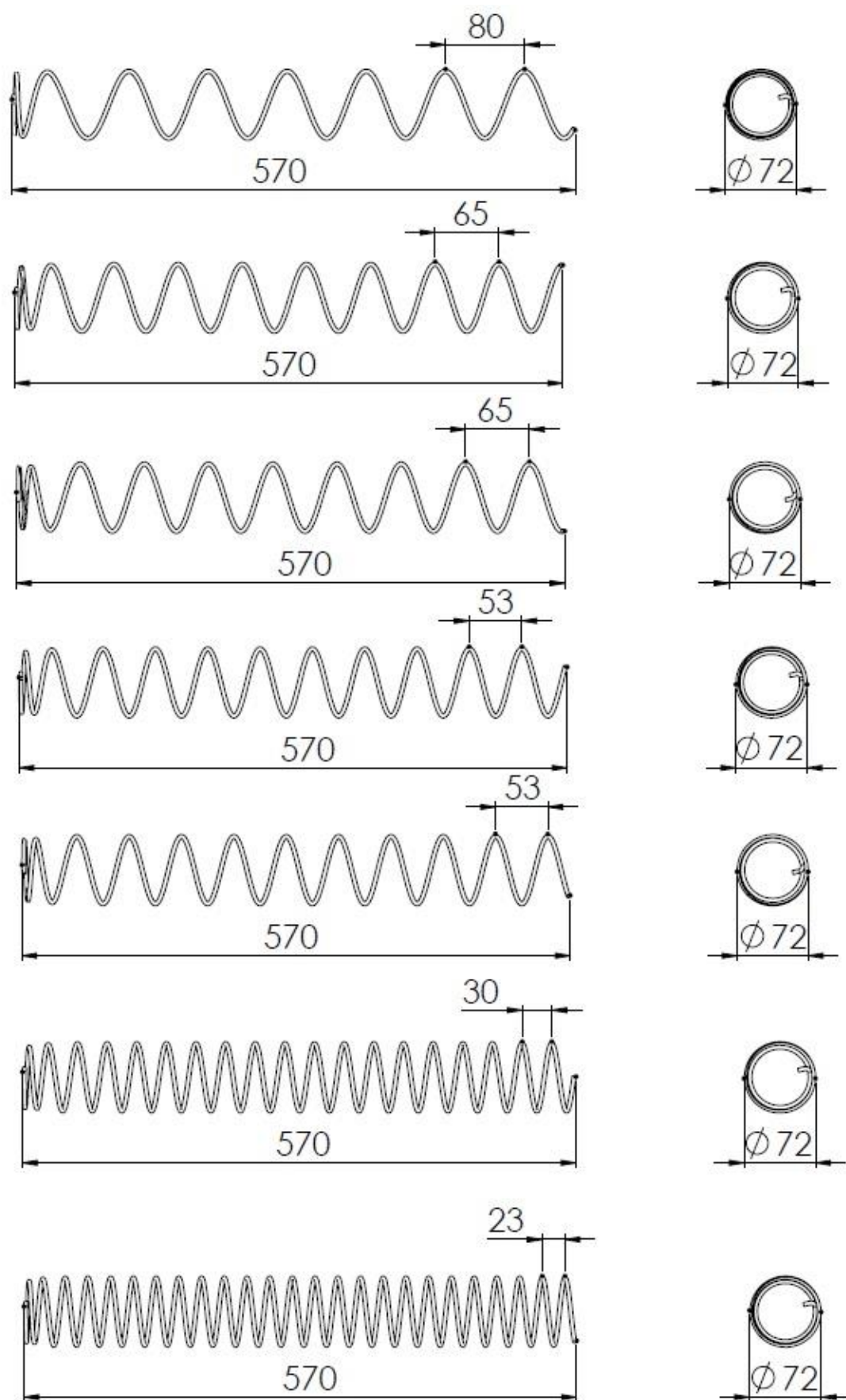


Fig.12 Spring types

1.10. Gear motors

In the machine, depending on the model and configuration, the number of motors (standard configuration) is as follows:

- SOLID 6 – 33 motors, the first drawer equipped with three motors, the remaining five drawers with six motors each.
- SOLID 8 – 44 motors, the first drawer equipped with four motors, the remaining five drawers with eight motors each.
- SOLID 10 – 55 motors, the first drawer equipped with five motors, the remaining five drawers with ten motors each.
- SOLID 12 – 66 motors, the first drawer equipped with five motors, the remaining five drawers with ten motors each.

The motors are used to rotate the springs. Supplied with 24 V DC.

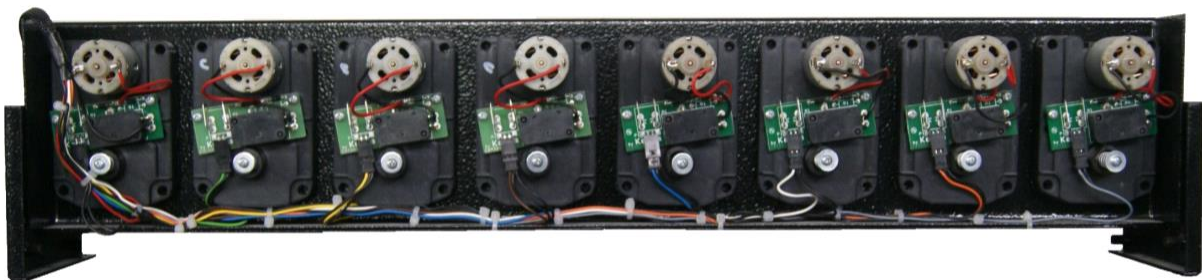


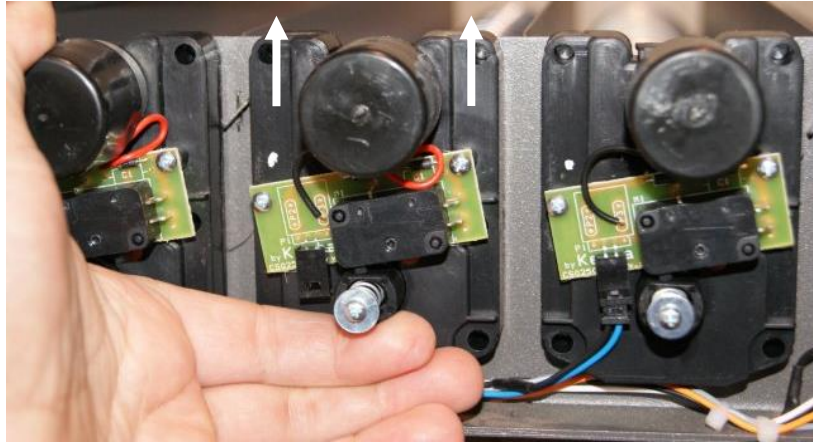
Fig.13 The back wall of the drawer view with the motors mounted for AS6x8

Motor dismantlement

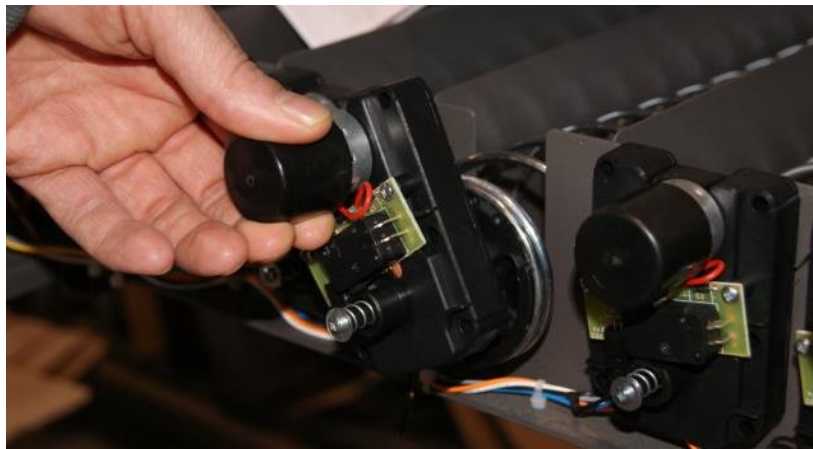
1. Carefully disconnect the power lead.



2. Pull the motor from the support bulkhead.



3. The end of dismantlement. Pull the spring from the spring fixture.



The assembly procedure should be performed in the reverse sequence.

1.11. Payment device

The automatic machines SOLID in SILVER version are not equipped with the payment device. The installation is performed by the customer individually. Payment device installation – in the control panel remove cap (see section 1.4.) by unscrewing the 4 nuts and then screwing frame PD (Fig. 14).

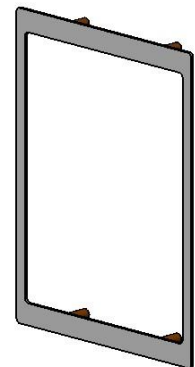


Fig.14 Frame PD

1.12. Maintenance and cleaning operations. Hygiene

All elements are high quality powder coated. This facilitates cleanness maintenance inside of the machine. Clean with a damp cloth. The producer shall not be liable for any defects resulting from cleaning with the aggressive chemical agents.

The refrigerating unit filter and the unit shall be periodically cleaned (every 60 days). In order to perform the unit filter cleaning, the front masking frame should be disassembled (see chapter 1.4). For the refrigerating unit maintenance and cleaning operation, dismantlement

of the unit is necessary (see chapter 3.2). The vacuum cleaner or the compressed air should be used for the impurity removal from the condenser.

The machine operator shall be responsible for the machine hygiene and maintenance. During all cleaning operations any water sprays should be avoided and for safety reasons the machine should be disconnected from the mains.

The following factors influence the machine service life:

- ambient temperature,
- temperature inside the chamber with products,
- machine location,
- kind of products,
- filling up frequency,
- usage culture.

1.13. Transport

The machine in transport shall not be:

- deflected,
- reversed,
- shaken,
- suspended on loops or ropes.

The forklift truck or pallet truck shall be used for the machine transport. Special care should be taken during transport activities. The machine should be stored in a vertical position. Special attention should be paid to all activities.

1.14. Additional equipment

The additional equipment includes the following:

- **Sense & Talk. Speaking system.** The system acts on a principle of move detection. When the device detects a person presence (movement) near the machine, the sensor will enable a music box and previously recorded sequence of sounds will be played. The music box operating manual is supplied together with the machine.
- **Hotspot. WLAN.** Two router set can be installed in the machine. They provide an open and public hotspot enabling use of Internet. The operating and configuration manual is supplied together with the machine. Wyświetlacze numerów i cen produktów.
- **Products numbers and prices displays.** The display system for the positions and prices in the machine. When established in the VMC main board menu, the prices will be automatically displayed on the displays below each position in the drawers of the spring-operated machine. In the service mode starting *statistics* → *collectible* → *number of products sold* on the displays (green color) the number of the products sold, for a given position, will be displayed.
This is a very convenient and attractive system. It saves operator's time and considerably improves attractiveness of the automatic machine.

2. Main board. Automatic machine configuration

2.1. Main board

The main board is mounted in the sliding drawer on the right side of the automatic machine, above the coin ejector. The board is power supplied with 29V DC. The parameter setting is performed manually with the numeric keyboard (from the menu level). Software update is performed via PC computer. The board features the RS232 port for communication, 1 WIRE and I² C bus.

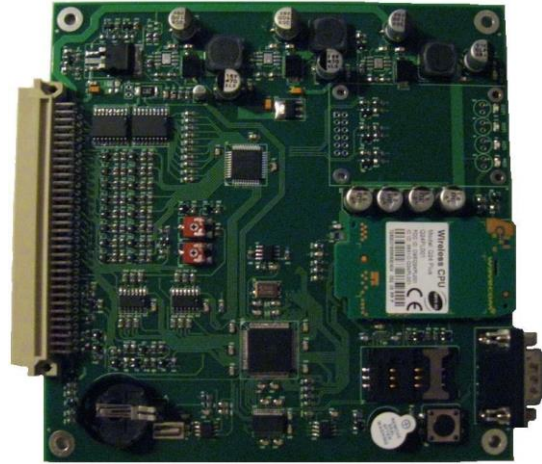


Fig.15 Main board

2.2.1. Main board components

The following components are connected to the main board (Fig. 15):

- Motors with position signalization systems, the so-called limits, (up to 80 motors),
- Matrix keyboard,
- LCD 2x20 display,
- Photocell,
- MDB payment system, coin intake, banknotes acceptor, no-cash system,
- Temperature sensor,
- LED / LED RGB lighting,
- Price and position displays,
- RFID proximity card reader,
- Telemetric modem.

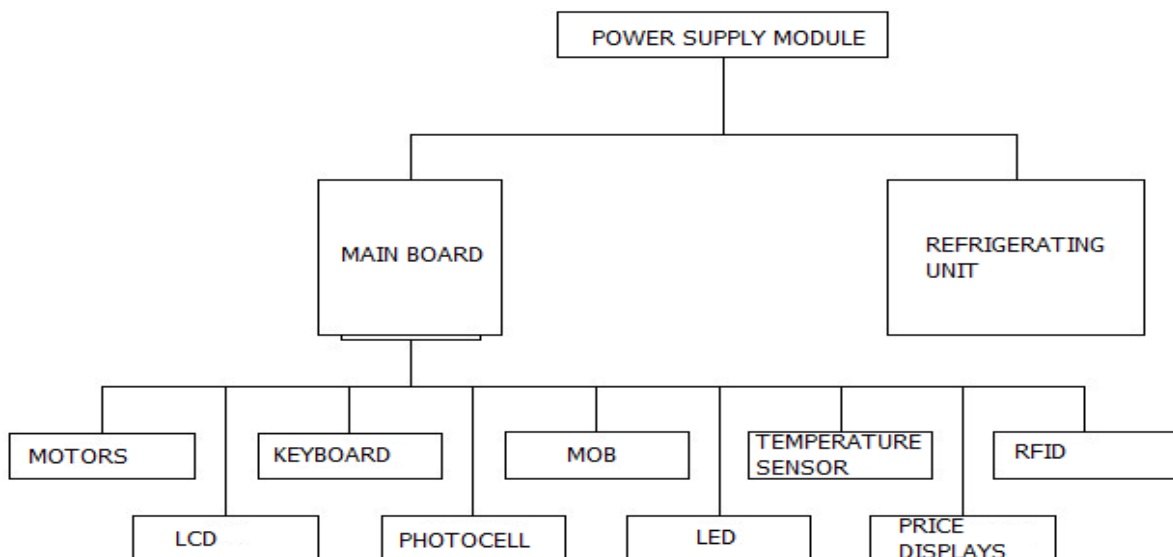


Fig.16 Block diagram of main board with components

2.2.2. Main board connector with pin description

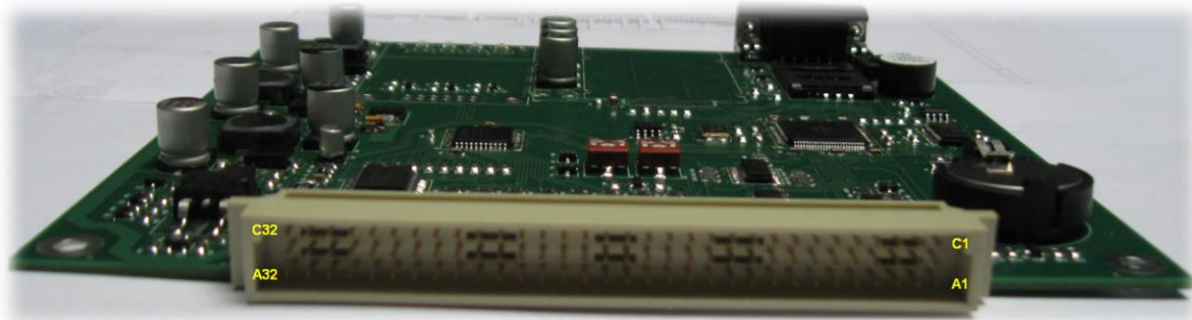


Fig.17 Main board connector view

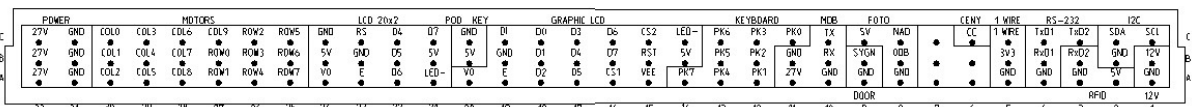


Fig.18 Main board connector pin view

Pin description acc. to the blocks.

Connector	Name	Block
A1	GND	Lighting
B1	12V	Lighting
C1	SCL	I2C bus
A2	5V	RFID
B2	GND	I2C bus
C2	SDA	I2C bus
A3	GND	RFID
B3	RXD2	RFID
C3	TXD2	Serial port 2
A4	GND	Serial port 1
B4	RXD1	Serial port 1
C4	TXD1	Serial port 1
A5	GND	1-WIRE bus
B5	3V3	1-WIRE bus
C5	1WIRE	1-WIRE bus
A6	---	Service signals
B6	---	Service signals
C6	---	CC Talk
A7	---	Service signals
B7	---	Service signals
C7	---	Service signals
A8	GND	Photocell
B8	ODB	Photocell
C8	NAD	Photocell
A9	GND	Doors
B9	SYGN	Doors
C9	5V	Photocell
A10	GND	MDB interface
B10	RX	MDB interface
C10	TX	MDB interface

A11	27V	MDB interface
B11	GND	MDB interface
C11	PK0	Matrix keyboard
A12	PK1	Matrix keyboard
B12	PK2	Matrix keyboard
C12	PK3	Matrix keyboard
A13	PK4	Matrix keyboard
B13	PK5	Matrix keyboard
C13	PK6	Matrix keyboard
A14	PK7	Matrix keyboard
B14	5V	Graphical display
C14	LED-	Graphical display
A15	VEE	Graphical display
B15	/RST	Graphical display
C15	CS2	Graphical display
A16	CS1	Graphical display
B16	D7	Graphical display
C16	D6	Graphical display
A17	D5	Graphical display
B17	D4	Graphical display
C17	D3	Graphical display
A18	D2	Graphical display
B18	D1	Graphical display
C18	D0	Graphical display
A19	E	Graphical display
B19	GND	Graphical display
C19	DI	Graphical display
A20	VO	Graphical display
B20	5V	Graphical display
C20	GND	Graphical display
A21	LED-	LCD 2x20 display

B21	5V	LCD 2x20 display
C21	D7	LCD 2x20 display
A22	D6	LCD 2x20 display
B22	D5	LCD 2x20 display
C22	D4	LCD 2x20 display
A23	E	LCD 2x20 display
B23	GND	LCD 2x20 display
C23	RS	LCD 2x20 display
A24	VO	LCD 2x20 display
B24	5V	LCD 2x20 display
C24	GND	LCD 2x20 display
A25	ROW7	Motors
B25	ROW6	Motors
C25	ROW5	Motors
A26	ROW4	Motors
B26	ROW3	Motors
C26	ROW2	Motors
A27	ROW1	Motors

B27	ROW0	Motors
C27	COL9	Motors
A28	COL8	Motors
B28	COL7	Motors
C28	COL6	Motors
A29	COL5	Motors
B29	COL4	Motors
C29	COL3	Motors
A30	COL2	Motors
B30	COL1	Motors
C30	COL0	Motors
A31	GND	Power supply
B31	GND	Power supply
C31	GND	Power supply
A32	27V	Power supply
B32	27V	Power supply
C32	27V	Power supply

2.3. Main board menu

Entry to the main menu after pressing the service button on the main board. Entering all the submenu groups is possible on that level. Operating of the menu is preformed via the keyboard, by an appropriate key selection.

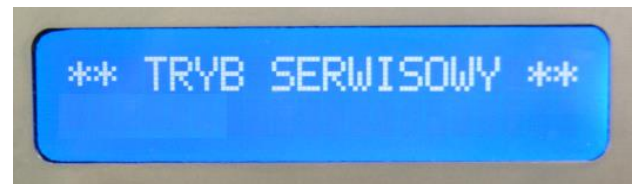






Fig.19 Main menu view

-  used to move right on the same menu level
-  used to move left on the same menu level
-  used to confirm a selection and move from a higher to a lower menu level
-  used to cancel a selection and move from a lower to a higher menu level

Menu levels:

1. PRICES
 - 1.1 Normal prices
 - 1.2 Prices with discount
 - 1.3 Free of charge sell
 - 1.4 Stock levels
2. STATISTICS
 - 2.1 Collectible
 - 2.2 Non-collectible
3. AUTOMATIC MACHINE SETTINGS
 - 3.1 Date and time
 - 3.2 Temperature display
 - 3.3 Photocell
 - 3.4 Language

- 3.5 Energy saving
- 3.6 Automatic machine number
- 3.7 Auto-reset settings
- 3.8 Factory settings
- 4. PAYMENT SETTINGS
 - 4.1 Coin intake settings
 - 4.2 Acceptor settings
 - 4.3 Maximal debt
 - 4.2 Maximal change
- 5. Accessories
 - 5.1 Music box
 - 5.2 Smell
 - 5.3 Lift
- 6. COMMUNICATION
 - 6.1 GPRS
- 7. TEST
 - 7.1 Motor test
 - 7.2 Motor auto-test
 - 7.3 Keyboard test
 - 7.4 Display test
 - 7.5 Photocell test
 - 7.6 Power supply test
- 8. FAILURES
 - 8.1 Review
 - 8.2 Clean errors list

2.3.1. Prices

The menu allows the product price setting. The following options can be selected:

- Normal prices. After pressing „#” key entering submenu for the given prices setting is possible. The price setting for the following is possible:
 - position,
 - shelf,
 - whole automatic machine.
- Prices with discount. After pressing „#” key entering submenu for the prices with discount setting is possible. The prices setting for the following is possible:
 - position,
 - shelf,
 - whole automatic machine,
 - hours with discount. After pressing „#” key entering submenu for the time range when the products are sold at the promotional price is possible.
- Free of charge sell. After pressing „#” key entering submenu for the free of charge sell activation/deactivation is possible.

Example:

To add a given position price, the main menu should be entered by pressing the service key on the main board. In the menu position PRICES should be selected, then the submenu should be entered after pressing „#” key and the Normal prices position should be selected by pressing „#” key. Then the for position option should be entered. Enter the position number and established price from the keyboard. When the procedure is performed properly the message Changes saved will be displayed.

- Stock levels. The option available with the telemetry module. In the default settings this option is disabled. The option allows the control of the number of goods in the machine. When the number of goods for a particular position will be equal to 0, a possibility of

„empty” purchase will be blocked and an information on a shortage will be sent to a serviceman.

- Show stock. After pressing „#” key the stock level will be displayed for the first position in the machine. Subsequent „#” key pressing will display the stock levels for the next positions.
- Add to stock. After supplemental addition of the products on the spring the number of supplemented products for the particular position should be entered. The machine will automatically aggregate the number of the supplemented goods with the number of goods present before that operation.
- Set stock. After the stock replenishment, the total number of products for the particular position should be entered.
- Activate stock. Enables the stock levels option.
- Deactivate stock. Disables the stock levels option.

2.3.2. Statistics

The menu enables statistics keeping for periodical and total sell of products. It also displays deposit in till and in coin intake tubes. The menu can be expanded into 2 submenu groups (pressing „#” key):

- Collectible,
- Non-collectible.

After entering the Collectible menu the statistics can be reviewed:

- For position (quantity) – after entering and selecting the given position number, the number of products sold for the position can be previewed.
- For position (amount) - after entering and selecting the given position number, the total amount value of products sold for the position can be previewed.
- Number of products sold – displays the total number of products sold. When the machine is equipped with the number and prices of products displays, the number of products for the particular position will be displayed (green color).
- Amount of products sold – displays the total amount value for the products sold.
- Inserted amount – displays the total amount value of money inserted into intake.
- Change amount – displays the total amount values for the change release.
- Till amount – displays the total amount in the machine till.
- Amount in tube – displays the total amount in the tubes.
- Test sell.
- Delete statistics. Enables the statistics zeroing. After entering the submenu the question *Delete statistics?* will be displayed. If you want to delete statistics you should confirm selection by pressing the key (5), if not the key *cancel* (*) should be pressed, then you should leave the submenu.

The Collectible and Non-collectible menus have identical submenus, except the *Delete statistics* submenu.

2.3.3. Automatic machine setting

This menu enables the following submenu selections (entering with „#” key, submenu selection with „1”, „2” keys) :

- Date and time. In the following format: DD/MM/YY HH/MM.

- Temperature display - option on/off. When activated the temperature inside the machine values will be displayed.
- Photocell
 - Calibration - submenu enabling verification of the photocell diodes proper operation.
 - On – pressing „#” key will switch on the photocell.
 - Off- pressing „#” key will switch off the photocell.
 - Parameters preview. Displays the photocell calibration parameters.
 - Tightening on. Pressing „#” key activates the spring tightening function. It involves the spring tightening by 30° in the case the photocell cannot detect the product. The tightening can be performed three times, if the photocell still cannot detect the product, the motor will be blocked and error xxx-004 will be displayed (see Chapter 2.3.6)
 - Tightening off. Pressing „#” key deactivates the spring tightening function.
 - Auto test on. Pressing „#” key activates the photocell auto test function. The function relates to the case when the photocell error message appears during calibration (the machine is out of order). The auto test is the automatical verification if the photocell is still unable to perform the proper calibration. If the calibration is performed properly, the automatic vending machine will restart the regular sell.
 - Auto test off. Pressing „#” key will deactivate the auto test function.
- Language. Enables the language change. Polish and English languages can be selected.
- Energy saving – it is possible to set the time, after which the machine lighting will operate with 50% of intensity.
- Automatic machine number. The main board has a unique number assigned for identification purposes.
- Service auto-reset. Enables the time setting, after which the service mode (idle condition) will be returned to the sell mode.
- Factory settings. Activation will result in the machine return to the factory settings. The “*Factory settings restored*” message will be displayed. It will cause the deletion of statistics, prices for the positions and return to the standard coin inlet settings. For restart of the motors the *Motor auto-test* should be performed.

2.3.4. Payment settings

For that menu the following options can be selected („#” key):

- Coin intake settings. On/off options.
 - On
 - Off
 - Tube supplementation. The function enables the coin intake supplementation with the coins.
- Banknotes acceptor settings. On/off options.
- Maximal debt. The function enables setting of the maximal face value accepted by the machine for purchase performance .(0- unidentified).
- Maximal change. The function enables setting of the maximal change value, given by the machine after purchase performance. (0- unidentified).

Example:

The operator sets the maximal change at 3,80 PLN for example. The customer inserts 10 PLN and purchases a products for 1,20 PLN. The debt value is 8,80 PLN at present, but he cannot receipt the change – he must purchase further products until the debt will be less or equal to the set value of 3,80 PLN. This helps to avoid money-changing in the machine.

2.3.5. Accessories

➤ Sense & Talk.

The speaking system. The system task is to attract potential customers' attention. The system operates on the motion detection principle. When the motion sensor detects a person presence (movement) in the machine proximity, the system will play a previously recorded sound sequence and change the lighting. Also after a purchase performance the sound sequence "Thank you, welcome back" will be played. It is important to record that sounds on the SD card in .mp3 format, under the names sequentially 01.mp3, 02.mp3, 03.mp3, ...

The system can operate in two modes: active, inactive.

Active mode. Selling mode. Activated by the motion sensor, in a moment of a potential customer detection. The sound sequence will be played, the machine lighting will be changed.

Inactive mode. The system goes into the inactive mode in a potential customer absence, ie. in an absence of any motion detection. The sound sequence is not played, the machine lighting will be changed for a more attractive color, aimed to attract the potential customer attention.

Sense & Talk submenus

- Motion detection on. Activates the motion detector.
- Motion detection off. Deactivates the motion detector.
- Activity period. The parameter used for the time setting, for the Sense&Talk system activity period.
- Inactivity period.
- Color of activity. The lighting color selection for the machine operation in the active mode.
- Color of inactivity. The lighting color selection for the machine operation in the inactive mode.
- Welcome message. The message selection, to be played after the motion detection (active mode on).
- Thanks message. The message selection, to be played after the automatic vending machine purchase performance.
- Loudness. Used for the sound sequence play loudness setting.
- Maximal activity time. It is a time for the Sense&Talk system in the active mode to play the „Welcome" message and change the machine lighting to the inactive mode, then return to the active mode.
-

➤ Sense & Smell

A smell system. Supplements the Sense & Talk system. It is a tool to attract potential customers' attention, by spraying the specially selected smell. The system operates on a cold diffusion principle.

Sense & Smell submenus

- Operation mode
 - ✓ PIR sensor. The system operates together with the motion sensor. When the motion sensor detects a person presence (move) in the machine proximity, the system will spray a smell to attract potential customers' attention.
 - ✓ Purchase. In that operation mode the system will start the smell spraying after the purchase completion. The smell can be assigned to the particular drawer. Application example: After the purchase from the drawer filled with the beverages for example, the chocolate smell can be sprayed, to encourage the customer to buy a Candy bar for example. Maximum 3 kinds of smell (devices) are at disposal.

- ✓ Timing. In this mode the periods, in which the smell spraying devices operate in the machine proximity, are established. Maximum 3 devices are at disposal. The system operation periods cannot overlap.
- Enable period. The parameter used for the device operation period setting. It is equivalent to the smell intensity in the machine proximity. The longer smell spraying period, the more intense smell.
- PIR mode settings
 - ✓ Smell #1. Activates the device connected to no.1 output on the VMC Sense & Smell board.
 - ✓ Smell #2. Activates the device connected to no.2 output on the VMC Sense & Smell board.
 - ✓ Smell #3. Activates the device connected to no.3 output on the VMC Sense & Smell board.
 - ✓ In sequence #1, #2. Activates in sequence the devices connected to no.1 and no.2 outputs on the VMC Sense & Smell board.
 - ✓ In sequence #1, #2, #3. Activates in sequence the devices connected to no.1, no.2 and no.3 outputs on the VMC Sense & Smell board.
 - ✓ Purchase mode settings
After this menu activation you will automatically access no 1 drawer selection, if you want to select the smell to be sprayed after the purchase of goods from that drawer, the selection confirmation key „#“ should be pressed and the number of the device to operate should be selected (device number can be changed with „1“, „2“ keys). If you do not want to select any smell to be sprayed for the particular drawer, the cancel key „*“ should be pressed. The access to the next drawer will be performed automatically.
 - ✓ Drawer #1
 - ✓ Smell #1, #2, #3 the smell selection for no.1 drawer
 - ✓ Drawer #2
 - ✓ Smell #1, #2, #3 the smell selection for no.2 drawer
 - ✓
 - ✓ Drawer #7
 - ✓ Smell #1, #2, #3 the smell selection for no.7 drawer
 - ✓ For each drawer one of the smells can be selected (#1, #2, #3).
- Timing mode settings
 - ✓ Operation time for smell #1
 - ✓ FROM: 08:00 TILL: 10:00
 - ✓ Operation time for smell #2
 - ✓ FROM: 11:00 TILL: 14:00
 - ✓ Operation time for smell #3
 - ✓ FROM: 15:00 TILL: 18:00
 - ✓ !!! IMPORTANT !!! The Times cannot overlap.
- PIR mode break. In case of the people presence in the machine proximity (PIR sensor activated = continuous Sense & Smell system operation) a break in the system operation can be established, to avoid the smell to become too intense and the smell stock exhaustion performing too fast. That parameter can be used to establish the system operation break for PIR mode, when the sensor is activated continuously.
- Timing mode interval. Can be used for the system operation break setting, to avoid the smell to become too intense and the smell stock exhaustion performing too fast. That parameter can be used to establish the break operation time for the system in the timing mode.

2.3.6. Communication

This menu can be used for the modem parameters settings, when a telemetric function is used.

- GPRS
 - Configuration
 - ✓ Automatic. The telemetric module modem uses the telecommunication network automatic parameters settings.
 - ✓ Manual. With this function selected the network parameters should be defined (APN, User name, Password)
 - APN. APN network name should be entered.(Access point Name).
 - Network user name. The use name should be entered.
 - Password. The password should be entered.
 - The information regarding (APN, User name, Password) will be received together with SIM card, for the particular telecommunication network operator.

2.3.7. Test

This menu enables the tests performance for the particular devices connected to the main board. The menu can be expanded into the following submenus (key „#“):

- Motor test,
- Motor auto-test,
- Keyboard test,
- Display test,
- Photocell test,
- Power supply test.

Motor test.

Enables the test performance for the particular motors. The motor selection is made via the keyboard. The principle of the test is turning the motor until a signal reception from a limit switch. After receiving the signal the motor will be stopped and „OK” message will be displayed. When the signal is not received the motor will be stopped after previously defined period. In case of motor lack or shortcut the test is ceased immediately. That case is signaled with „NOK” message.

Motor auto-test.

Enables the automatic test performance for all of the motors. After the test termination the message will be displayed. If any motors are inoperative the message on faults will be displayed. The test should be performed during the first machine startup in order to restart the motors and after each reset to the Factory settings.

Keyboard test.

It consists of displaying a pressed key on LCD display.

Display test.

Pressing # key cause displaying a letter sequence.

ABCDEFGHIJKLMNQRST
UVWXYZ0123456789abcd

Photocell test.

The test consist of a calibration performance. If the test is passed then OK message will be displayed, if the test is failed then Error message will be displayed. When the error message is displayed the verification of 100% “visibility” for the photocells should be performed, followed by retest.

Power supply test.

The main board voltage value will be displayed.

2.3.8. Failures

For that menu following submenus can be selected:

Browse. If the errors occur the message will be displayed as follows:

Error no.	Error code
Date	Hour

e.g.:

01	001-010
2011-05-23	23:43:15

Delete error list. The function running will result in the error list deletion.
For the motor errors for example.

01	026-003
2013-01-01	13:43:15

After the error deletion the message indicating the motor test performance will be displayed, it should be confirmed. The test for the proper motor will be performed, which is necessary for the proper performance of the error list deletion.

Error codes

001-xxx – coin intake errors

002-xxx – acceptor errors

008-xxx – photocell errors

008-001 – excess over min and max values for the photocells – calibration test errors (switch off and switch on the machine).

010-xxx do 080-xxx – motor errors, the digit before the hyphen indicates the motor number, the digit after the hyphen indicates the errors described below.

001 – the response time from the motor switch exceed

002 – the power consumption for the motor exceed

003 – the motor not detected

004 – the photocell error occurred at the sell operation

005 – the motor error occurred at the sell operation

3. Refrigerating unit

3.1. Refrigerating unit construction

The refrigerating unit is designed in a single block, slide-out completely, installed behind the product drawer.

The refrigerating unit elements:

1. Hermetic compressor, single-phase, with complete start-up unit.
2. Single-fan condenser, with single-phase motors, adapter for the refrigerating unit operation in the ambient temperature up to 25°C.
3. Evaporator.
4. ERT-10-2-122C temperature controller.
5. Two temperature sensors (controller sensor, defrosting sensor).

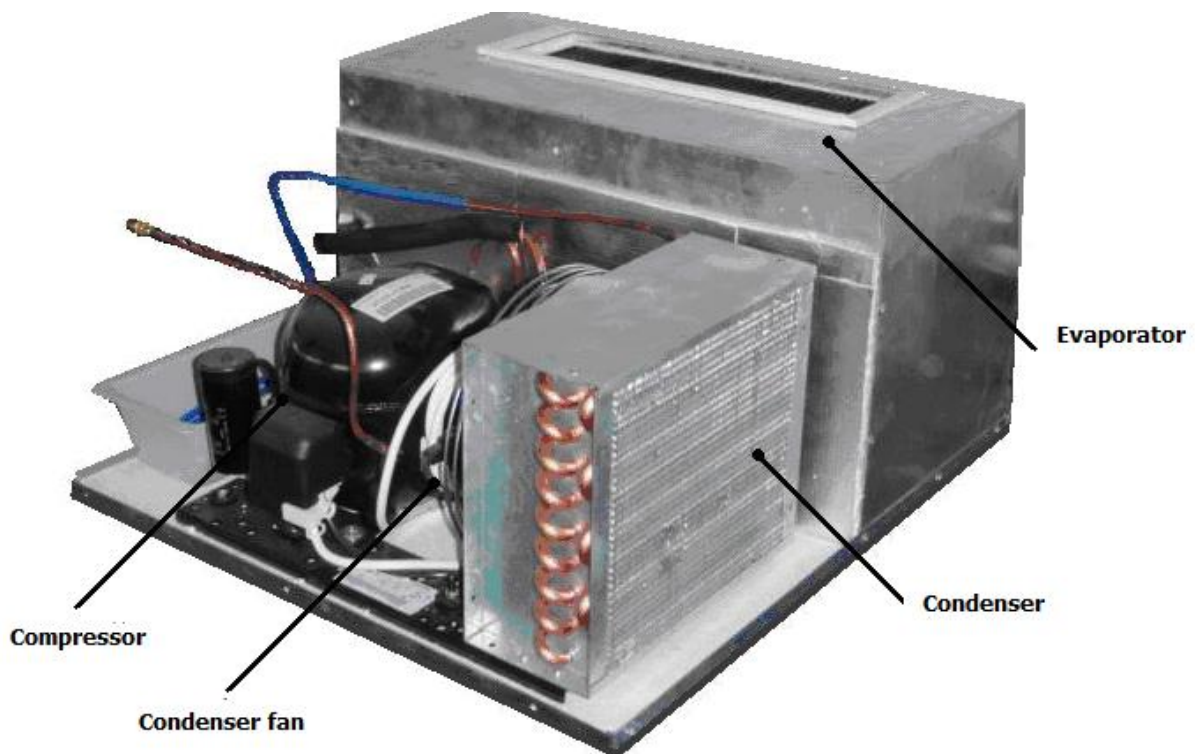


Fig.20 Refrigerating unit with components view

3.2. Refrigerating unit disassembly procedure

1. Disconnect the automatic machine power supply.
2. Open the main machine doors.
3. Pull up the pin and disassemble the masking frame.
4. Unscrew the fixing screw and disassemble two chute guides placed on the machine side walls.
5. Unscrew four fixing screws and disassemble the product receiver.
6. Disassemble the evaporator sensor lead. CAUTION. Failure to perform this operation will result in the lead damage during the drawer slide-out operation.
7. Disconnect the refrigerating unit power cables.
8. The refrigerating unit block can be slide-out safely.
9. The assemble procedure shall be performed in the reverse sequence.

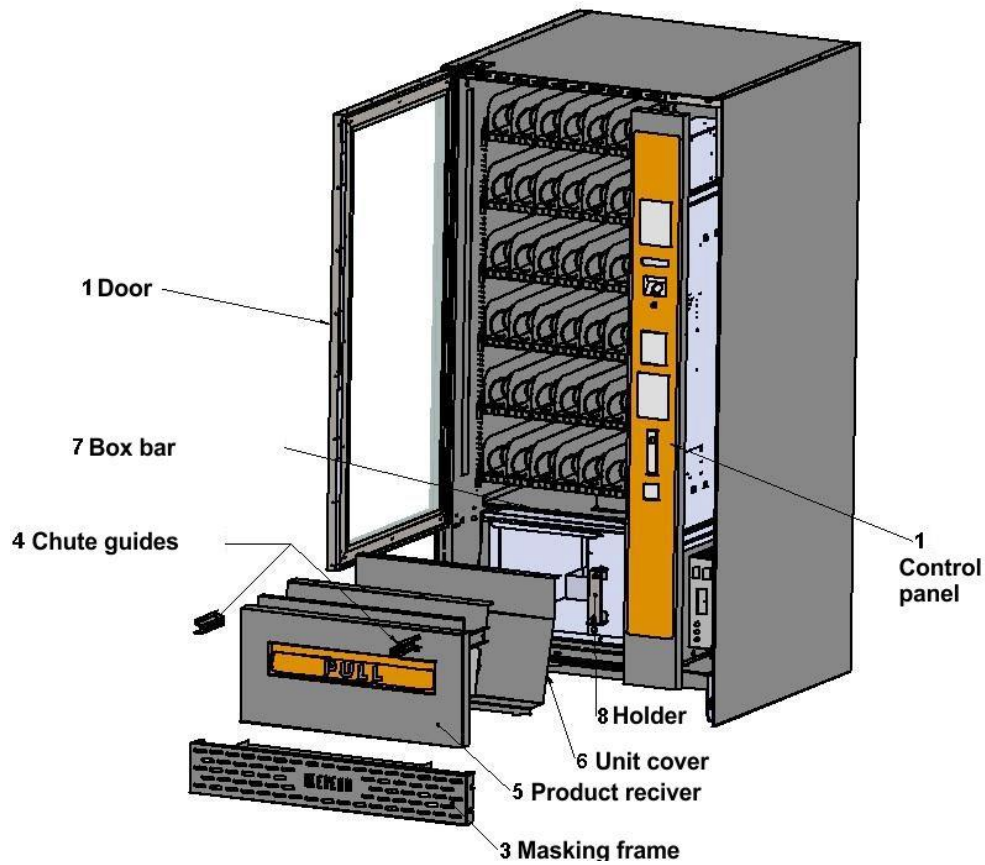


Fig.21 Refrigerating unit block disassembly

CAUTION. All of the assembly and disassembly operations shall be performed by the qualified personnel with the power supply disconnected.

3.3. PJEZS0H000 temperature controller

3.3.1. Controller's front panel

PJEZS0H000 temperature controlled is used for maintaining preset temperature in vending machines. Temperature may be set within the range of +5°C to +25°C. The preset can be adjusted with the use of buttons on the face panel. The set includes 2 NTC temperature sensors.



Fig. 21 Controller's face panel

1. UP/ON OFF button
2. SET/MUTE button,
3. DOWN/ DEFROST button,

Description of face panel and buttons function

Button	Function
UP/ON OFF	<p>UP/ON OFF</p> <p>In normal operating mode: pressing for over 3 seconds will cause the controller to toggle ON/OFF;</p> <p>In parameter setting mode: it enables navigating between parameter presets.</p> <p>When setting parameters value: it increases parameter value.</p>
SET/MUTE	<p>During normal operation of the controller: it disables the acoustic alarm signal; pressing for over 1 second shows the preset point; Pressing for over 3 seconds causes the parameter settings menu to display;</p> <p>In parameter setting mode: pressing the button changes the information displayed on the screen (parameter name / parameter value); pressing for over 3 seconds will save the adjusted parameters.</p> <p>When setting parameters value: pressing the button will save the entered parameter value.</p>
DOWN/DEFROST	<p>In normal operating mode: pressing for over 3 seconds toggles manual defrost mode ON and OFF;</p> <p>Pressing during boot-up causes software version to display.</p> <p>In parameters setting mode: it allows to move to the previous preset parameter.</p> <p>When adjusting parameter value: it decreases the value.</p>

LED display (3- digit)

- Three-digit display with decimal point and operation indications.
- Compressor symbol: the symbol turns on when the compressor engages. It blinks if the compressor start is delayed due to protective sequence. It blinks in *two blinks - stop* cycle when the controller works in continuous operation mode.
- Defrosting symbol: the symbol turns on after defrost function is enabled. It blinks when defrost start is delayed or when other procedure is in progress.
- Alarm symbol: the symbol turns on after an alarm is activated

3.3.2. Controller's back panel

PJEZS0H000 temperature controller is supplied by 230 V AC voltage. Compressor supply connects to terminal 4/5. Temperature controller supply connects to terminal 6/7. Controller sensor connects to terminal 8/9. Defrosting sensor connects to terminal 9/10. Controller sensor and defrosting sensor are of the same type. Dimensions of the enclosure behind the assembly panel, with the side catches attached and the screw terminals removed: width 82 mm, height 37 mm, depth 80 mm.

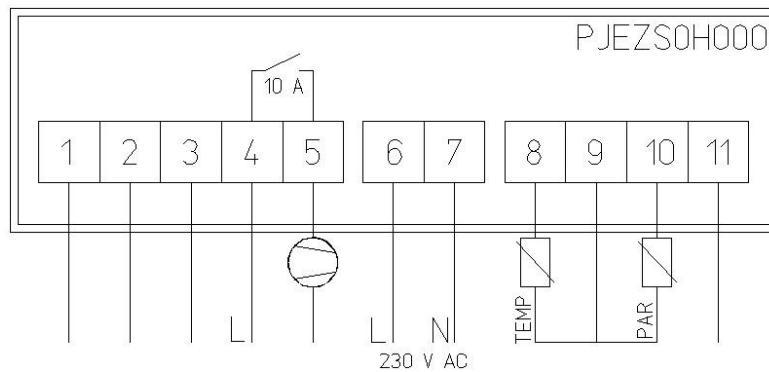


Fig. 22 Electrical diagram of controller

3.3.3. Functions of controller

Function	Function description
Programming temperature preset	In order to modify or preview the preset: 1. Press SET button for over 1 second; the button will light up, and the display will show the temperature preset. 2. Set the required temperature with UP/DOWN buttons. 3. The temperature preset is confirmed by pressing SET button; the button's backlight will turn off. The controller will return to displaying current temperature. If the temperature change is not approved within 30 seconds, the controller will restore the previous preset.
Manual defrosting	Defrosting is enabled by pressing DOWN/DEFROST button for over 3 seconds. It is indicated by a blinking defrosting symbol.

3.4. Automatic machine refrigeration unit cautions

The refrigeration unit performance depends on many external factors:

- Temperature and humidity in the installation room,
- Product collection and door opening frequency,
- Kind of products inside the automatic machine.

Periodically (every 60 days) the following control activities shall be performed:

- Condenser cleanness verification,
- Presence of ice in evaporator verification,
- Drainage hose for defrosted water permeability verification,
- Fans operation verification.

In continuous humidity conditions the leakages can appear under the refrigerating unit. Additional container should be installed in that case.

With high humidity of the air (above 60%) the glaze retting is normal condition.

The automatic machine operates properly for the ambient temperature range from 9°C to 26°C and humidity range not higher than 60%.

4. Environment protection

- Dispose in accordance with the applicable environment legislation.
- The machine shall not be dispatched at municipal wastes disposal sites. All machine parts shall be disposed in accordance with the applicable environment legislation and regulations. Properly performed machine disposal enables valuable resources conservation and avoids adverse effects on health and environment, which can be compromised through mismanagement of wastes.
- The spring-operated automatic machine shall be recycled together with packaging.

Illegal disposal is liable to criminal penalties



EU countries

Equipment marked with this symbol shall not be disposed together with municipal wastes. For more information contact producer.

Non-EU countries

Automatic machine owner should contact local authorities to receive information on proper machine disposal.

5. Warranty

EBA Ltd. company grants a warranty in accordance with the applicable law.

The warranty period begins from VAT invoice issue date.

Damages resulting from improper usage or user fault are not covered with this warranty.

After discovering a defect in a product, contact the service by filling a form on the website or send it by fax (the form attached to the operation manual).

General warranty conditions:

1. The warranty on a purchased product covers **12 months** period from the day of purchase.

2. Signing the Warranty Card and providing the statement on writing on becoming acquainted with the warranty conditions are required for the warranty validity. The warranty rights apply to the owner of the original and properly completed Warranty Card. The product seller shall be responsible for the proper completion of the warranty card.

3. Guarantor undertakes to remove the material defects and/or manufacturing defects resulted, without any doubts, from the producer fault, revealed within the warranty period, free of charge.

The defects will be removed by repair or replacement with the product free of defects, at the discretion of Guarantor.

4. The material defect and/or manufacturing defect are considered as the defects existing in the product, causing the product operation not in conformity with the specification and operation manual.

5. None of the rights and obligations under these terms of warranty should be construed or interpreted as entitling the Buyer to any reimbursing the loss of profit as a result of product defects. Guarantor shall not be held liable for any loss in property caused by the defective product.

6. The warranty in relations to consumer goods does not exclude, limit or suspend the Buyer rights resulting from the product nonconformity with the contract.

7. The Warranty Card is the only document, on the basis of which the entitled to the warranty can enforce his warranty rights on Polish territory. The warranty shall prevail any other warranties, which may be included in other documents attached to the product sold.

Warranty processes:

1. After discovering a defect, the entitled to the warranty shall contact the service by phone, fax, form on the website or e-mail, for the purpose of the real product defect verification. Technical assistance will be provided to help solving the problem or you will receive a notice on necessity to send the product to perform further repair.

2. For the products repair performed by the service, when the necessity confirmed by Guarantor, the written consent of the entitled to the warranty for the repair is required. Guarantor is not liable for any damages incurred during product transport to the service place.

3. Upon faults reporting, the entitled to the warranty should attach in writing the complete description of the defect, defective operation of the product including the product operational environment and the way of the defect disclosure. The description in writing should be attached to the product under complaint.

4. The complaints can be submitted on the seller service point forms or on Guarantor forms. In case of the seller service points, the service point shall immediately send the complaint signed by the user by fax or e-mail.

5. Guarantor reserves the right to refuse the complaint acceptance, based on the defect description, not indicating, without any doubts, the detection of the material defects and/or manufacturing defects. Guarantor shall send the reasons for refusal in writing to the user directly or via the seller service point within 3 days from the date of the complaints receipt.

6. The warranty is understood as the specialist operations performance by the service, appropriate for the removal of the defect covered by the warranty. The warranty repair does not cover the operations described in the operation manual as the operations, the user is obliged to perform, on his own and on his cost, e.g. replacement of the fuses, verification of the proper operation for the devices the product is connected to, maintenance activities etc.

7. Guarantor will make every effort, to remove the revealed defects within 7 working days from the date of receiving the defective product at the service point. Guarantor reserves the right to extend abovementioned period in duly justified cases. The user will be informed about such case occurrence directly or via the seller service point.

8. Guarantor reserves the right to charge the entitled to the warranty with the service and transport costs, in case that the revealed defects were not covered by warranty or that the product proved to be fully operational.

9. The following items are not covered by the warranty:

- the parts subject to a normal wear, consumables (fuses, springs, drawers etc.),
- the defects of the device resulting from the operation failing to comply with the operation manual, particularly from improper use, maintenance, service and storage,
- the defects resulting from the incorrect electrical installation (on the user side), flooding components with water,
- the mechanical damages and the defects resulting from that damages,
- the defects and damages attributed to force majeure (e.g. lightning, flood, corrosion, power-line surges),
- the defects resulting from the unauthorized repairs, modifications and design changes performer either alone or by unauthorized body,
- the activities and parts listed in the operation manual and belonging to the normal operation of the device,
- the defects resulting from improper device selection,
- the defects and malfunction of the device resulting from the device incorrect or faulty installation,
- the products whose the Warranty Card or serial number have been changed, blurred, removed or erased.

10. Guarantor reserves the right to refuse the complaint acceptance, based on the statement of the product incompleteness, unauthorized repairs performance, design changes, usage contrary to the intended use or intentional damage.

11. The matters not regulated in this warranty conditions shall be governed by the Civil Code.

12. In case the buyer is the buyer within the meaning of the trade law, disputes shall be settled by the court competent for the place of residence.

I declare that I have read and understood the warranty conditions and all information regarding the manner of product use.

Date and legible signature

COMPLAINT

dated

We remind you that the product under complaint should be clean and dry.

PLEASE ATTACH THE PROOF OF PURCHASE (receipt/VAT invoice)

COMPLETED BY THE CUSTOMER:

1. Claimant first and last name
2. Address
3. e@mail address.....
4. Description of the defective goods
.....
.....
.....
5. When and under which circumstances the defect was noticed by the customer
.....
.....
.....
6. Whether and if so, how long was the product used after the defect detection
.....
.....
7. Claimant expectations (acc. Art. 8.1 of Law dated 27 June 2002)
.....
.....

I agree with the abovementioned terms

Customer signature

COMPLETED BY THE SELLER

1. Date of purchase
2. Symbol
3. Product name.....
4. Purchase price.....
5. Proof of sale no.
6. Date of complaint receipt
7. Complaint handling deadline
8. Description of complaint product

Warranty

WARRANTY DOCUMENT

Completed by the seller:

Serial number:.....

Product name:.....

Date of sell:.....

Catalog number:.....

Proof of purchase number:.....

Repair record

Date of accept.	Date of repair	Scope of repair	Service seal & signature



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