

Instructions manual

Automatic mini turntable with the multifunction bottling, pumping and creaming machine



LYSON

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The manual covers following devices (codes): W204013PZ

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1. General safety instructions

Before first use read the manual carefully and follow the instructions contained therein. The manufacturer is not liable for damage caused by equipment used inappropriately or by incorrect handling.

1.1. Intended use

1. The device is designed to automatically fill the honey into the jars.
2. Before first use and after finishing work the equipment must be thoroughly cleaned and dried. Use cleaning agents approved for food industry.



1.2. Electrical safety

1. The electrical supply system must be fitted with a residual-current circuit breaker with rated tripping current not higher than 30mA. Performance of the circuit breaker should be checked periodically.
2. Do not use the device if the power cord is damaged!
3. Make sure that the main switch is in „0” position before plugging the unit in.
4. Carefully insert the plug into the mains socket. Make sure your hands and the floor surface in the room are dry!
5. Do not move the working device.
6. Protect the motor and the control unit from moisture (also during storage).
7. Do not pull the power cord. Keep the power cord away from heat sources and sharp edges to ensure its good condition.

1.3. Operation safety

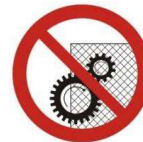
1. The device is not intended for use by persons (including children) with limited physical, sensory or mental abilities, or by inexperienced users, unless under supervision or with instructions given by an accountable party.

This device is not a toy, and shouldn't be used as one. Children should not to play with it.

2. In the event of damage to the device, to avoid any health and safety risks, repairs should be carried out only by qualified personnel.
3. Never carry out any maintenance or repairs during operation or if the device is plugged in!
4. Do not use or store the device at the ambient temperature below freezing. If the device has been moved from a cold room to a room with a higher temperature, before



Never carry out any repairs during operation



Do not remove covers during operation

2. Instructions of use

2.1 General instructions – preparation for use

1. Set the device up in a designated, clean, dry and well lit room.
2. Level the top surface of the table using appropriate tools.

2.2 Operation instructions

1. The device is designed to automatically fill the honey into the jars.
2. The device has to be cleaned before the first use and after finishing work according to the instructions in the "Cleaning and Maintenance" section.
3. Before start:
 - plug the power cord into the socket and switch the main switch from position "0" to "1",



- check if the safety switch is released by turning it slightly in clockwise direction



Elements:

- 1) Turntable's controller unit
- 2) Emergency „STOP” button
- 3) Table base
- 4) 600mm diameter turntable
- 5) Bottling machine mounting posts

Technical specifications::

- power supply 230V
- power rating 90W
- diameter 600mm.
- base width 500mm.
- height 635mm.

3.2. Controller

The controller controls the operation of the rotating table. It is designed to cooperate with the honey dispenser/bottling machine. The controller allows for precise adjustment of rotational speed of the table, and the service mode enables precise adjustment of positioning.

Controll panel – Fig.2

3. Product description

3.1. Device

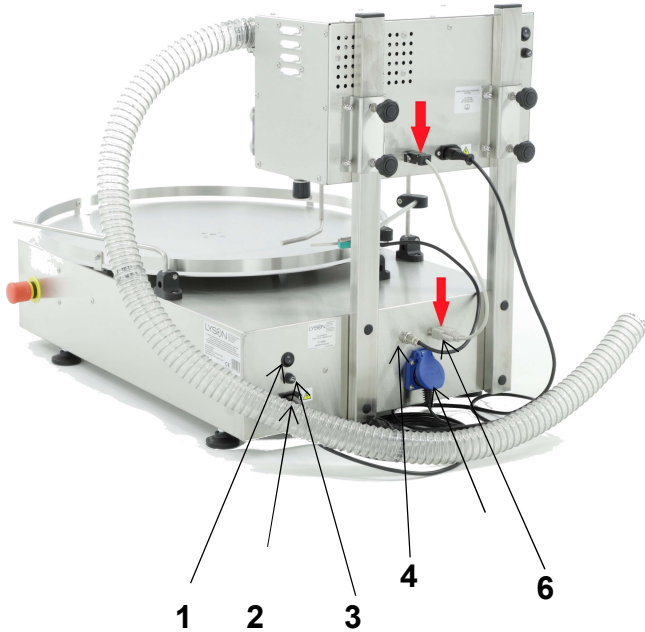
Fig.1



Buttons and dials:

- 1-speed control dial
- 2-service mode START button
- 3-bottling process indicator
- 4- STOP button
- 5- power indicator
- 6-bottling mode START button

Back panel – Fig.3



Elements:

- 1- main switch 0-1
- 2- power cord socket 230V
- 3- 10A fuse
- 4- position (limit) switch socket
- 5- power cord socket 230V
- 6- bottling machine COM socket (DB9)

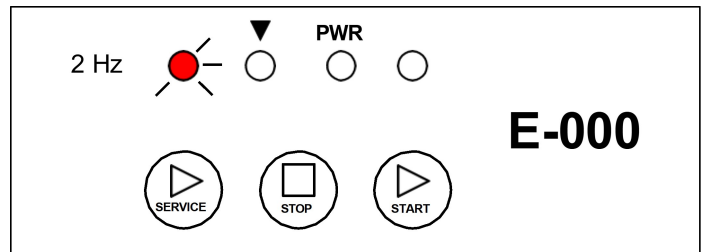
Service mode

The service mode (button 2, fig.2) is only used to adjust the limit switch (fig.4) - which stops the table when the jar/bottle is in the right position under the dispenser's nozzle. After pressing the START button of the service mode the table will start rotating at the speed determined by the speed dial (dial 1, fig. 2). Detection of a jar in the stop position (signal from the limit switch, Fig.4) stops the movement of the table for approx. 1s. After the mentioned time has elapsed the table movement is resumed. To exit the service mode press the STOP button (button 4, fig.2)

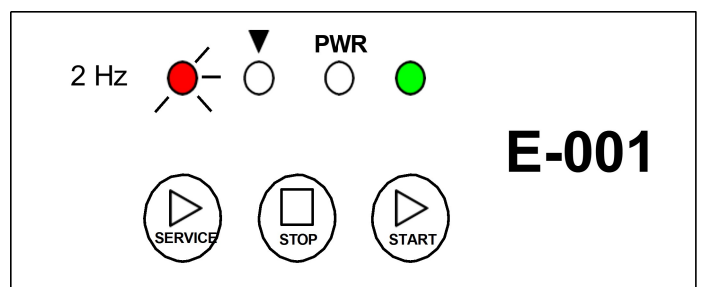
Fig.4



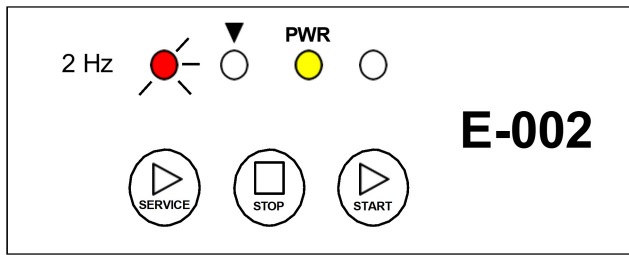
3.3 Error codes



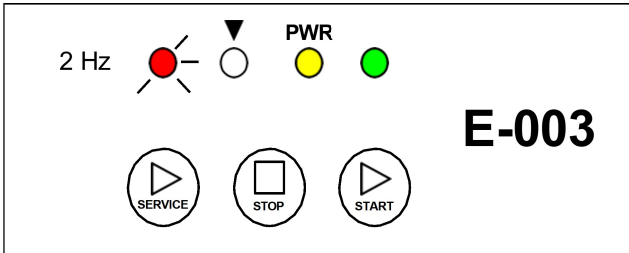
Internal CONTROLLER fault



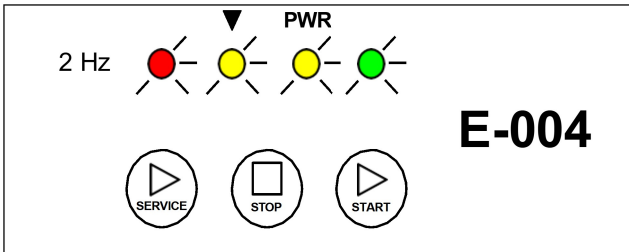
START (SERVICE MODE) button pressed / FAULTY



STOP button pressed / FAULTY



START (WORK MODE) button pressed / FAULTY



EMERGENCY STOP LOOP ERROR – EMERGENCY BUTTON ENGAGED – EMERGENCY CIRCUIT FAULT

4. Bottling machine



NOTE!

HONEY INTENDED FOR BOTTLING SHOULD BE WARMED UP TO 30°C.

POUR HONEY INTO THE PUMPING UNIT BEFORE USING THE DISPENSER.

Instructions:

1. Connect the hose to the dispenser pumping unit with a clamp, take care to seat the seal correctly.
2. Pour about 1 kg of honey (i.e. a 0.95 kg jar) into the other end of the tube.
3. Hold the hose up until the honey flows into the pump. The hose is transparent so you can see when the honey is flowing into the pump.
4. When the honey has flowed into the pump, press the „START” button
5. Remember to put a container or a jar for honey under the pump's (dispenser) nozzle.

6. When the honey poured earlier into the pipe is pumped, stop the pump by pressing the button „STOP”.
7. Once this has been done, insert the hose into the honey barrel and start bottling or pumping
8. Run a small amount of honey through to remove any air left in the tube. To do this, press the "START" button " after bleeding the air out the hose, press "STOP".
9. The machine is ready for operation.

4.1. Technical specifications:

- Power supply 230 V
- Rated power 240 W
- Filling range 50 g – 45 kg
- Bottling effectiveness 350 jars of 500g per hour (honey type dependent).
- Accuracy: in ranges up to 1200g. +/- 1%, over 1200g. +/- 1,5%
- computer-controlled device
- can also be used as a self-priming pump, slow speed pump with silicon impeller

All parts that come into contact with honey are made of stainless steel or food-grade plastic.

The small dimensions make it possible to use the machine in various ways, even where space is limited.

The machine employs the latest generation technology. It ensures comfortable, professional work with honey.

4.2. Setting Up and operation

When preparing to work:

- Plug the power cord (230V) of the dispenser into socket No 2 (Fig.3)
- Connect the dosing actuation pedal or the plug connecting the turntable with the bottling unit to socket No 6 (Fig.3) at the back of the bottling unit and the other end of the cable to socket at the back of the table controller.(Fig.3)
- Place the limit switch under the dispenser and plug it into socket 4. (Fig.3)
- Plug the power cord (230V) of the turntable into socket NR 5 (Fig.3)
- Connect the bottling unit and turntable to the 230V mains sockets.
- Switch on the appliance using button 1 (Fig.3)

4.3. Bottling mode

Presented FM-02 controller is a device that controls the operation of the dosing pump and controls the execution of the creaming cycle. The device is fully programmable and gives the possibility to precisely set the dosing sequence. The operation of the device is facilitated by an interactive, intuitive screen menu.

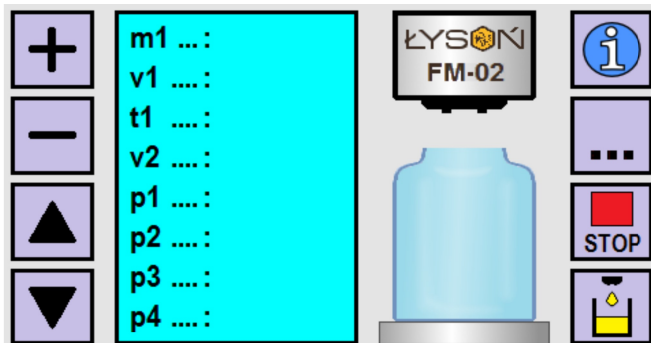


Fig 1. Controller's screen – selected dosing / extra dose mode

Button	Function
„plus” button	Increase the value of the selected parameter.
„minus” button	Decrease of the value of the selected parameter.
„up” button	Navigating through the parameters – place the cursor on the parameter to modify it
„down” button	
„i” button	Display of the currently selected parameter description. Button active in stop state.
„...” button	Operation mode selection button: dosing <-> creaming / pumping. Button active in stop mode.
„STOP” button	Stop button
„extra dose” – 1g button	Single application of the minimum dose. Pressing and holding the button dispenses 1g and then activates continuous weighting mode which continues until the button is released.

Basic mode parameters

Programming the dispensing mode of the controller is done by modifying a set of parameters that configure the dispensing process. Modified parameters directly influence the shape of the dosing curve - presented on figures 2 and 3. All modifiable parameters have been gathered in groups - having a common letter index.

Parameter	Function
m1	Parameter regulates the amount of pumped honey in one dosing cycle. The range of adjustment is 4-45000[g]. Setting raster is 1[g]. The displayed value corresponds to the weight of the dosed honey - scaled for the specific density and temperature of the pumped honey. The parameter setting does not reset after switching off the power supply.
v1	Parameter regulates the amount of pumped honey in one dosing cycle. The range of adjustment is 4-45000[g]. Setting raster is 1[g]. The displayed value corresponds to the weight of the dosed honey - scaled for the specific density and temperature of the pumped honey. The parameter setting does not reset after switching off the power supply.
t1	Parameter regulates the time of reverse movement of the pump rotor - blocking the dripping of the honey. The range of adjustment is 10-900[ms]. The setting raster is 10[ms]. The parameter setting does not reset after switching off the power supply.
V2	Parameter regulates the speed of the pump during extra dose filling (one dose of 1[g]). If the operation time in the pumping direction remains constant, the change of speed results in the change of the dosed amount. Increasing the speed increases the dosed amount. The range of adjustment is 40[%] - 100[%]. Setting raster is 5[%]. The parameter setting does not reset after switching off the power supply.

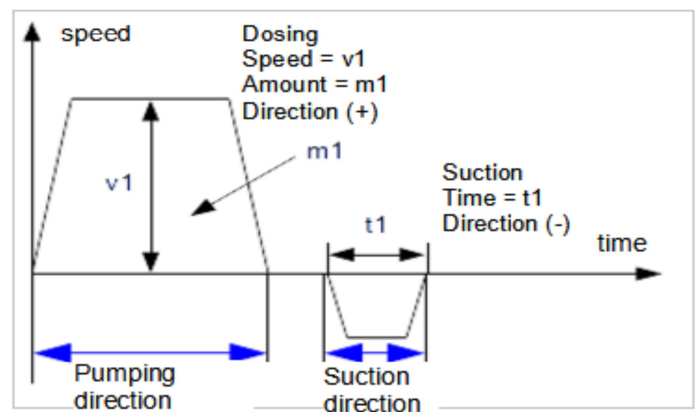


Fig 2. m1 dosing cycle.

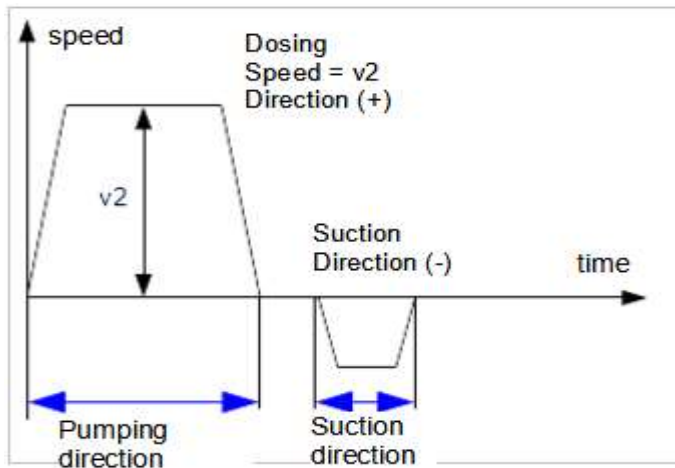


Fig 3. extra dose cycle 1[g]

Additional mode parameters

Parameter	FUNCTION
p1	Counter of dosing cycles. It is possible to enter any value as the starting value. The counter range is 0-999.
p2	Filling progress indicator. The displayed value represents the percentage of filling completion in relation to the value set by parameter m1. The indication varies from 0[%] to 100[%]. The indication raster is 1[%].
p3	Positive correction factor. The factor enabling precise increase of dosed mass m1 - in case when the dosed mass is smaller than the set value and the 10g jump is too big to precisely set the required dose. Increasing of the factor value increases the dosed amount. Range of settings is 0-50. The coefficient is not related to the current mass setting, i.e. it adds the same value (mass) to the setting of 50[g] as to 1500[g]. The parameter setting does not reset after switching off the power supply.
p4	Negative correction factor. The factor enabling precise decrease of dosed mass m1 - in case when the dosed mass is bigger than the set value and the 10g jump is too big to precisely set the required dose. Increase of the factor value decreases the dosed amount. Range of settings is 0-20. The factor is not related to the current mass setting, i.e. it subtracts the same value (mass) to the setting of 50[g] and 1500[g]. The parameter setting does not reset after switching off the power supply.

4.4. CREAMING / PUMPING MODE

The process of creaming using a dispenser is based on the principle of pumping honey from one container to another. The process consists in cyclical pumping of the honey over several days until the appropriate consistency is achieved.

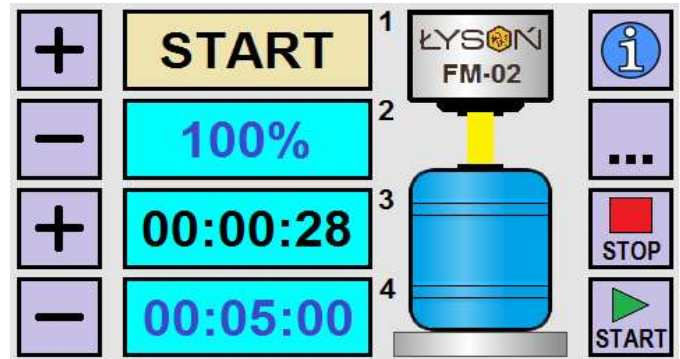


Fig 4. CREAMING / PUMPING MODE screen

Field	FUNCTION
1	Pump status (START / STOP).
2	Pumping speed (50% ... 100%).
3	Elapsed time counter. Changing the timer resets the counter
4	Time left to the program finish

BUTTON	FUNCTION
Upper „plus” button	Increase of the creaming / pumping speed. Setting range 50% ... 100%.
Upper „minus” button	Reduction of the creaming / pumping speed. Setting range 50% ... 100%.
Lower „plus” button	Increases the timer time after which the pump will stop automatically. The display 00:00:00 deactivates the automatic pump stop function. Change of setting possible in start mode.

Lower „minus” button	Reduces the timer time after which the pump will stop automatically. The display 00:00:00 deactivates the automatic pump stop function. Change of setting possible in start mode
„I” button	Help screen
„...” button	Operation mode selection button: dosing <-> creaming / pumping. Button active in stop mode.
„STOP” button	Pumping stop button
„START” button	Pumping start button

4.5. CONTROLLER DIAGNOSTICS

The FM-02 controller is equipped with a set of advanced diagnostic procedures – allowing to perform tests. In order to enter the diagnostics mode, press the button no. 5 in the appropriate phase of the controller start-up (see figure below).



Fig 5. Controller screen view during start-up

The diagnostics screen is divided into 14 fields with the functions described below. The diagnostics screen disappears automatically after approximately 25 seconds.

DIAGNOSTICS	
1 CPU	8 PB2
2 RAM	9 PB3
3 Vcpu [V]	10 PB4
4 Vbus [V]	11 PB5
5 TEMP [°C]	12 PB6
6 IN1 IN2	13 PB7
7 PB1	14 PB8

Fig 6. View of the controller diagnostics screen.

Section	Description	Indication	ERROR
1	CPU	1E9705	The display of a value other than 1E9705 indicates damage to the main processor.
2	EEPROM	OK / ERROR	Repeated (in spite of controller restarts) ERROR indication means Failure of memory cell(s) Controller EEprom.
3	Vcpu [V]	4,60 – 5,40	Measurement of the voltage supply to the controller's CPU module. An indication out of range means damage / overload of the power supply or damage to the CPU module.
4	Vbus [V]	4,30 – 5,70	Voltage measurement at the data communication interface to the inverter. An out-of-range display indicates a failure of the inverter or a break in the controller <> inverter connection.

5	TEMP [°C]	5 - 65	Measure the temperature inside the controller box. The readings should not exceed the specified range.
6	IN1 IN2	0 / 1 0 / 1	Testing the operation of the dosing start input (IN1) and the emergency button (IN2).
7	PB1	0 / 1	Testing button operation 1.
8	PB2	0 / 1	Testing button operation 2.
9	PB3	0 / 1	Testing button operation 3.
10	PB4	0 / 1	Testing button operation 4.
11	PB5	0 / 1	Testing button operation 5.
12	PB6	0 / 1	Testing button operation 6.

13	PB7	0 / 1	Testing button operation 7.
14	PB8	0 / 1	Testing button operation 8.

4.6. Error Codes

The FM-02 controller is equipped with advanced error detection mechanisms. The detection of any error initiates an emergency stop action and calls up the error report screen. The error report screen is displayed continuously. It is therefore necessary to switch off the power supply, remove the error source and restart the controller.

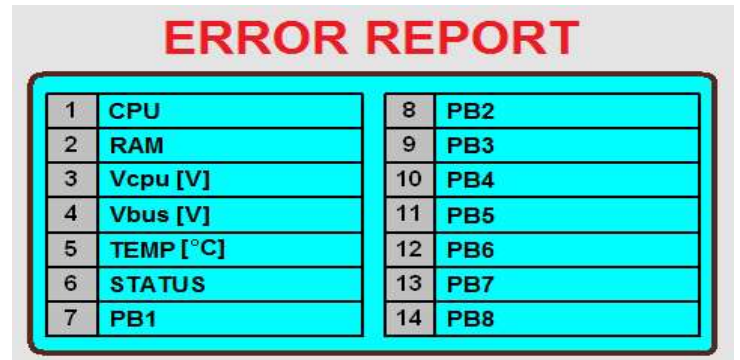


Fig 7. Controller error report screen view.

Field	Descr.	Indication	Error
1	CPU	OK / ERROR	The ERROR indication means an error of the data memory of the main processor of the controller. The most frequent reason of such failure is a damage caused by electrostatic discharge.

2	RAM	OK / ERROR	The ERROR indication signals the detection of a controller RAM data consistency error. This situation is possible when the controller operates in an environment with too much interference. The reasons for this may be: damaged cable connections, damaged inverter, damaged inverter housing. Another reason for such an error may be damage to the main processor module caused mainly by electrostatic discharges
3	Vcpu [V]	OK / ERROR	The ERROR indication means that the measured supply voltage of the controller module has gone out of the acceptable range. Such a situation means a failure or overload of the 5V power supply, failure of the controller or damage of the cable connection power supply <> controller.
4	Vbus [V]	OK / ERROR	The display ERROR means that the voltage measured at the data communication interface to the inverter is out of the acceptable range. This indicates a fault in the inverter, a controller fault or connection between inverter <> controller.
5	TEMP [°C]	OK / ERROR	The ERROR indication means that the temperature measured inside the controller housing has gone beyond the acceptable range of 5 °C to 65 °C. The reason for this can be an overload of the inverter or using the device in temperature conditions outside the allowed range.

6	STATUS	OK / ----	
7	PB1	OK / ERROR	The ERROR indication means that the button was pressed immediately after the power was switched on. If such a situation was not intentional action of the user, a damage of the button should be suspected - e.g. pressing and blocking caused by using too much force.
8	PB1	OK / ERROR	As above
9	PB1	OK / ERROR	As above

10	PB1	OK / ERROR	As above
11	PB1	OK / ERROR	As above
12	PB1	OK / ERROR	As above
13	PB1	OK / ERROR	As above
14	PB1	OK / ERROR	As above

4.7. Controller configuration



NOTE!
HONEY INTENDED FOR DOSING SHOULD BE WARMED TO 30 °C.

POUR A LITTLE HONEY OVER THE TOOTHED MODULE BEFORE STARTING TO WORK WITH THE DISPENSER.

**There are two ways of filling the module with honey:
One:**

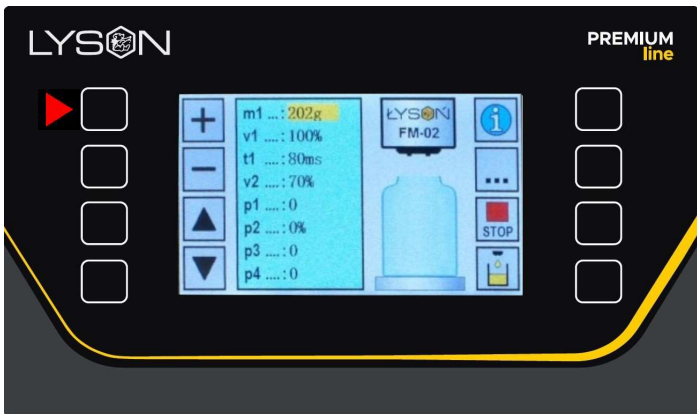
1. Connect the hose to the dispenser module using a clamp, taking care to seat the gasket correctly.

- Then pour approximately 1 kg of honey into the other end of the tube.
- hold the hose up until the honey flows into the toothed module.
- the tube is transparent so you can see when the honey flows into the module.
- when the honey flows into the module place the hose in the honey container press and hold the "No8" button until the honey is sucked in.
- when the hose is completely filled with honey release the No8 button - the dispenser will stop.

Two::

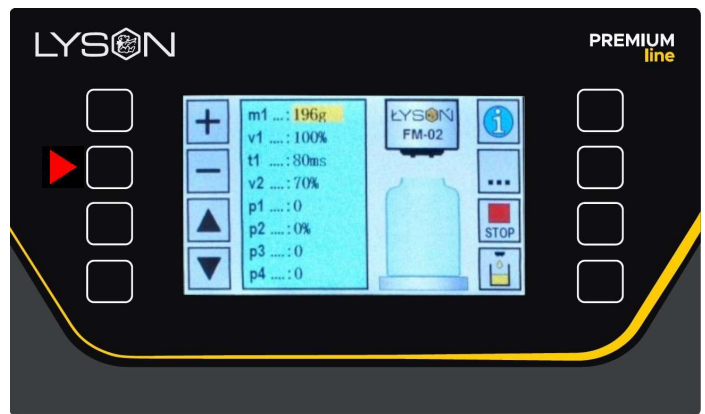
- Pour honey generously over the rotor using a large syringe.
- Put the hose on, taking care that the gasket is seated correctly. Place the other end of the hose into the container with honey and press and hold the "No8" button until the honey is sucked in and fills the suction hose.
- Pass a small amount of honey through to remove the air that has remained in the hose, thus avoiding uneven filling of jars.
- Remember to place a honey container or jar under the dispenser nozzle.
- When the hose is completely filled with honey release the button no8 - the dispenser will stop.
- After completing the above steps proceed to setting the dispenser.

4.8. Bottling settings



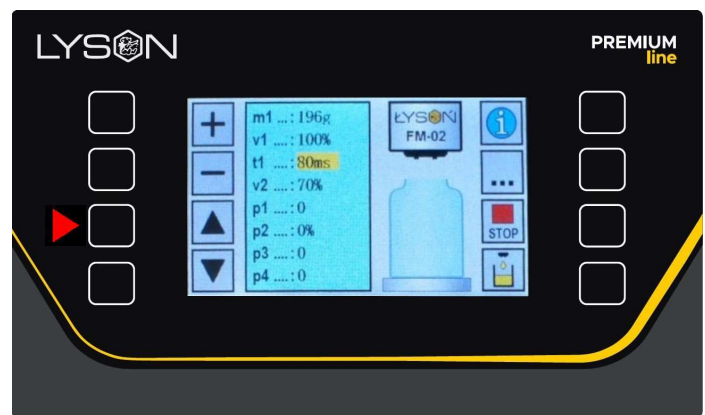
Fot.1 Increasing the value of a parameter

After starting the controller we can set the individual parameters needed for programming the controller. The dispenser after switching on displays the parameters which are set using the buttons „plus” (No1), „minus” (No2)

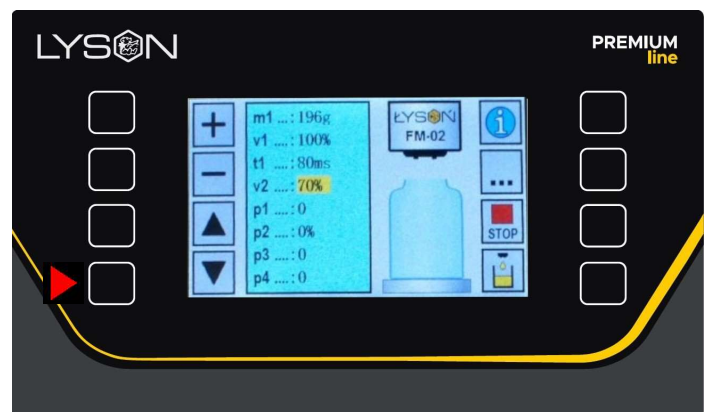


Fot. 2 Decreasing the value of a parameter

To move between parameters, press the "up" arrow button (No3) or the "down" arrow button (No4).



Fot. 3 Parameter selection by "up" or "down" arrow (moving between parameters)



Fot. 4 Parameter selection (moving between parameters)

- > The controller is ready to make changes to the parameters as soon as it is switched on.
- > After setting, the dispenser automatically remembers the changed parameters.

DESCRIPTION OF THE PARAMETERS

- **m1** parameter is used for setting the mass (number of grams of honey to be dosed by the device). The range of adjustment is 4-45000[g].
- The parameter setting does not reset after switching off the power supply.

- **v1** honey pouring speed - e.g. 100%. If the honey is pumped too quickly and aerates too much, then we decrease the filling speed, e.g. to 70%. The range of adjustment is 50[%] - 100[%].

The parameter setting does not reset after switching off the power supply.

- **t1** is the reversal time in ms. It is best to set this parameter only after the first attempt to pour honey into jars. Then it is easy to determine whether the dispenser withdraws honey fast enough to prevent dripping. The range of adjustment is 10-900[ms].

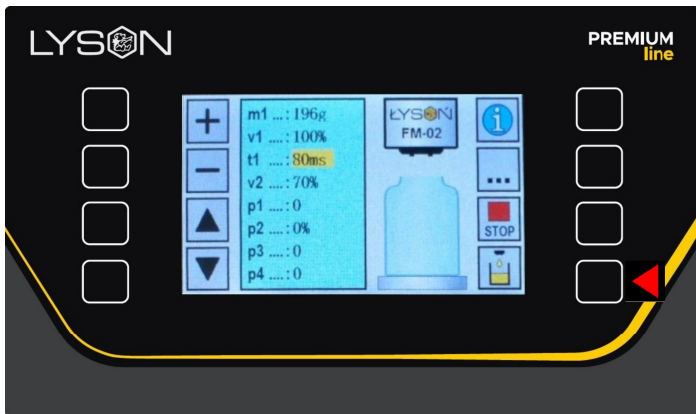
The parameter setting does not reset after switching off the power supply.

- **v2** This parameter is used to adjust the dispenser to dispense 1g of honey. The adjustment consists in setting the rotor rotational speed with respect to the density, viscosity, and temperature of the honey.

The parameter setting does not reset after switching off the power.

Place the jar on the scale, tare the scale, press button No8 (i.e. extra dose) and check the result on the scale if it indicates 1g.

(manual option used when filling jars using button No8 or footswitch). The range of variation is 40[%]-100[%].



Fot. 5 Button for boost or continuous pump operation (press and hold to run the pump continuously)

- **p1** No setting is necessary.

You can use the parameter by setting, for example, the number of jars poured the day before in order to have continuity of counting.

the counter range is 0-999.

- **p2** not to be set, parameter displays jar fill level in %.

- **p3** KPositive weight calibration (1g)

It is used to calibrate (increase) the parameter **m1**.

If set mass **m1=e.g. 500g** is not sufficient and after filling the jar the scale indicates **495g**, and there is no possibility to set parameter **m1** more precisely, then it is possible to make correction using parameter **p3**.

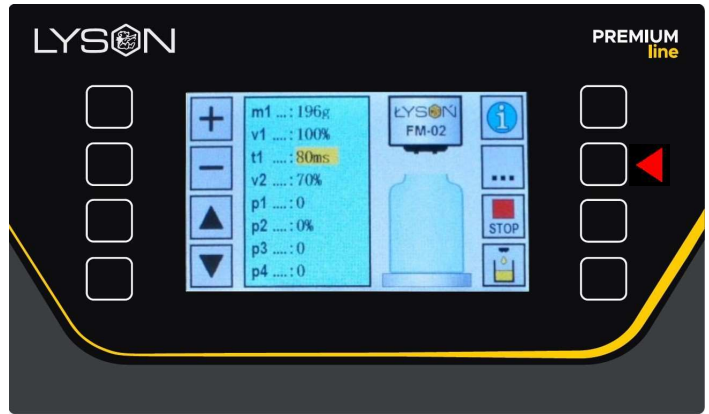
Set parameter **p3=5** (i.e. missing 5g), which increases the weight of **m1 by 5**. After starting work, the dispenser sums up the weight settings from parameter **m1+p3** and measures **500g** of honey into the jar.

Adjustment range 0-50

The parameter setting does not disappear after switching off the power supply.

- **p4** - Negative weight calibration (1g)

It is used to calibrate (increase) the **m1** parameter **m1**



If the set weight **m1=e.g. 500g** is too large and after filling the jar the scale indicates **505g**, and there is no possibility to set parameter **m1** more precisely, then it is possible to make a correction using parameter **p4**.

Set the parameter **p4=5** (i.e. **5g over**), which increases the weight of **m1 by 5**. After starting work, the dispenser sums up the weight settings from the parameter **m1+p4** parameter and measures **500g** of honey into the jar.

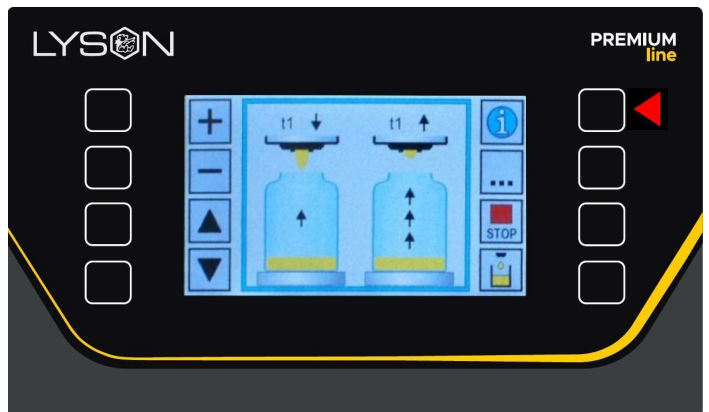
Adjustment range 0-20

The parameter setting does not disappear after switching off the power supply.

INFO BUTTON

Gives the option of displaying graphical information about the parameter in question. Pressing the button activates display of the graphic pressing the "i" button (No. 5) again turns off the display of the graphic.

This parameter is a form of prompting for what the parameter is responsible for.

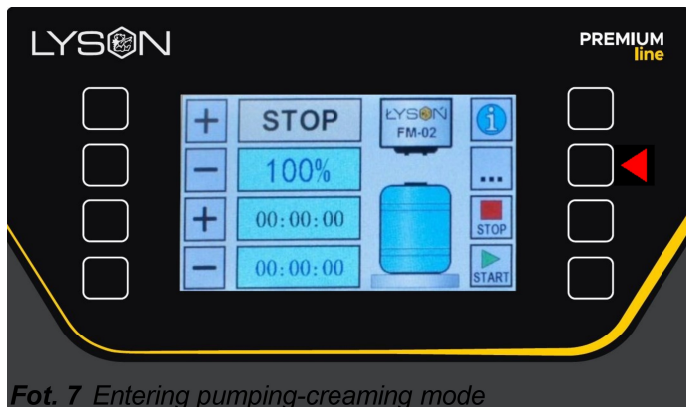


Fot. 6 Info button

4.9. Creaming/Pumping settings

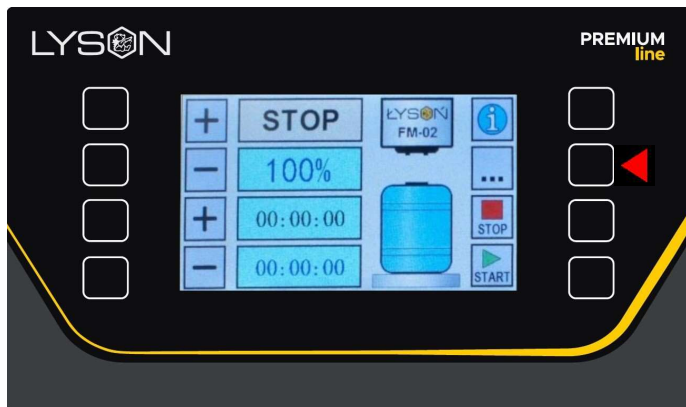
The honey creaming mode involves pumping the honey, i.e. running the pump in continuous mode.

The controller gives the option to set pumping/creaming for a specific time.

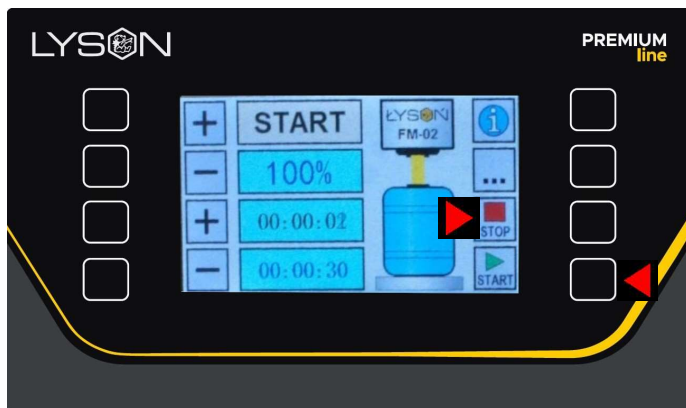


Fot. 7 Entering pumping-creaming mode

By pressing button (...)No6, a panel will be displayed giving the option of pumping -creaming continuously or pumping for a preset time min 15 s max 90hrs.

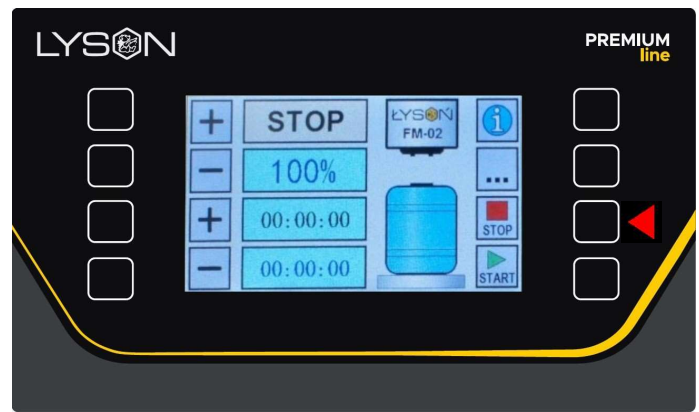


Fot. 8 Control panel after activating the pumping -creaming mode.



Fot. 9 Activation of pumping mode button nr8 "START"

The pump starts continuous operation until the "STOP" button is pressed



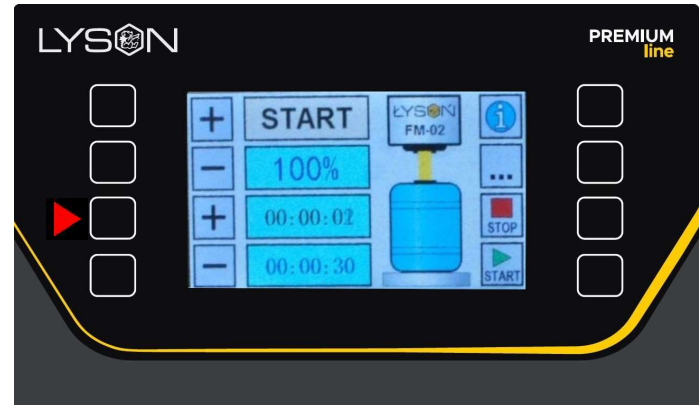
Fot. 10 Switch off pumping mode button nr7 (STOP)

4.10. Pumping timer and speed settings

- To set pumping for a specific period of time, e.g.: for 20min. activate pumping/creaming mode (**button nr6**)

- Press the "**START**" button (**nr8**)

- - Once pumping has been activated, use the **lower "plus" ("nr3") or "minus" ("nr4")** buttons to set the time for which the pump is to run. Once the operating time has been programmed, the timer will start counting down from the beginning and will switch off automatically when the programmed time has elapsed.

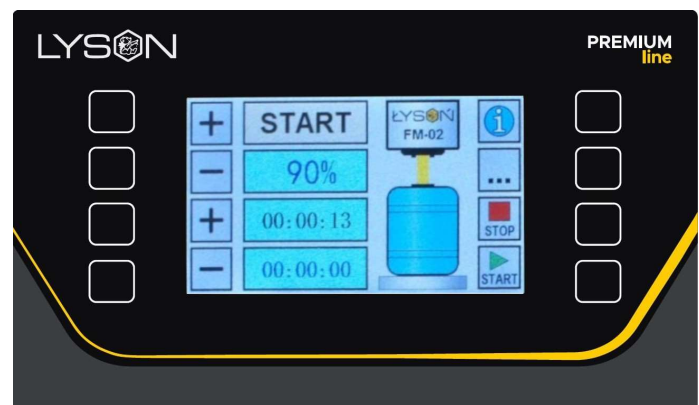


Fot. 11 Use the bottom button "plus" (no.3) or "minus" (no.4) to set the pump running time.

Setting the pumping/creaming speed "**plus**"(no3) or "**minus**" (no4).

With this parameter we change the pumping/creaming speed of the honey. Changing the settings is possible while the pump is running "**START**" as well as in "**STOP**" mode.

Adjustment range 50% ... 100%.



Fot. 12 The top button "plus" (No.1) or "minus"(no2) is used to increase or decrease the pumping/creaming speed

5. Storage

Clean and dry the unit thoroughly after use.

If the device has been moved from a cold room to a room with a higher temperature, before switching on wait until it reaches the ambient temperature and all condensation water evaporates.

Store the device in a dry and frost-free room.

Do not use the device when the ambient temperature is below 5°C.

An additional technical check should be carried out periodically, and if any defects are found, please contact the manufacturer.

6. Maintenance and cleaning



Pull the mains plug before starting maintenance.

Before first use and after finishing work the equipment must be thoroughly cleaned and dried.

While cleaning ensure the safety of all electrical components like motors and controller panels (for the time of washing cover them with waterproof fabric or plastic film).

No parts of the device require chemical conservation.

An additional technical check should be carried out before the start of the pollen harvesting season, and if any defects are found, please contact the manufacturer.

Clean the device in two phases: preliminary and final (disinfecting).

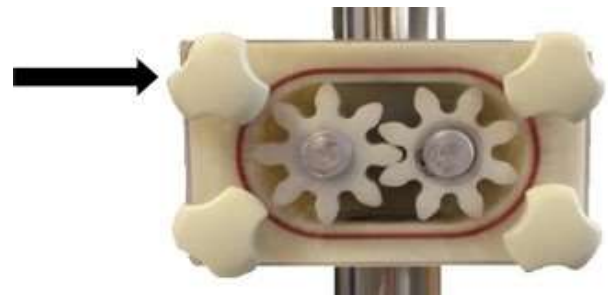
Preliminary phase – rinsing out the honey from the nozzle and dosing module. **Do not dismantle the dispenser after the bottling process is finished. Immediately after working with the device**, place the suction hose into a container with warm water and pump 40 l of warm water to rinse out the pump or dosing module.

For this operation, prepare approx. 40 l of water heated up to 50°C – 60°C. This process protects the dispenser from damage that may be caused by crystallized honey (i.e.: breaking the seal and leaking honey). If the unit is improperly rinsed, the seal on the pump module shaft will break. Damage resulting from improper cleaning of the module is not subject to warranty.

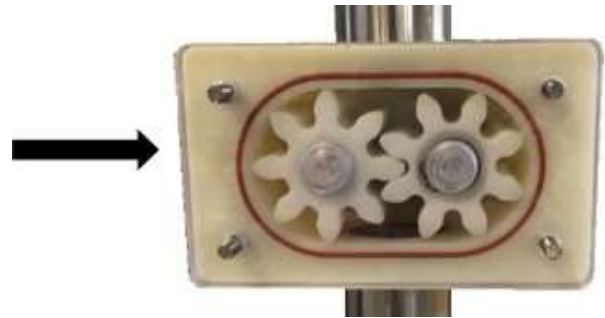
Disinfecting final phase – dismantle the nozzle and rotor as shown in the photographs below. Thoroughly wash, dry and assembly together again.

For cleaning use agents designated for disinfection of the equipment intended for contact with food, then rinse thoroughly, dry and re-assemble.

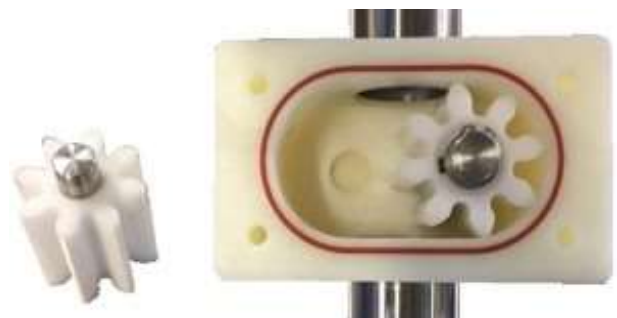
Step 1-unscrew the 4 knobs from the dosing module (from the front of the machine).



Step 2-Remove the cover



Step 3- remove the left cog



Step 4-Remove the module



7. Optional accessories

-non-return valve: W3400101



-dosing nozzle: 59900033



8. Waste disposal and environmental protection

The used product must be disposed in accordance with the local regulations. Return the device to a collection point from where it can be submitted for environmentally compatible recycling.

The consumer has the right to return used equipment directly to the manufacturer's distribution network, free of charge, while replacing it with a new unit as long as the used device is of the same kind and same application as the newly purchased device.

9. Warranty

The product purchased from the Lyson Company is covered by a manufacturer's warranty. The warranty period is 24 months from the date of purchase.

All purchased products come with receipts or VAT invoices. Warranty details at:

www.lyson.com.pl