Instructions Manual

PREMIUM pumping and bottling device with a stand

LYSON

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The manual covers following devices (codes):

W204003Z

Table of contents

1. General safety instructions, intended use

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 honey into the jars, and pump or cream honey

2. Before use, the appliance must be thoroughly cleaned with hot water and a small amount of detergent approved for cleaning food equipment.

1.2. Electrical safety

a) Make sure that the nominal voltage of the device and power source are compatible and the socket is grounded.
b) 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.
c) Periodically check the condition of the power cord. Replace the power cord if damaged. Replacing the power cord can only be performed by the manufacturer or by qualified personnel.
d) Do not use the device if the power cord is damaged!

1.3. Operation safety

a) 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.
b) In the event of damage to the device, to avoid any health and safety risks, repairs should be carried out only by qualified personnel.
c) Do not use the device near any flammable materials.
d) Never carry out any maintenance or repairs during operation or if the device is plugged in!
e) In case of any danger, use the safety switch immediately.
f) The device can be restarted after the hazard has been eliminated.
g) For indoor use only. The device is not suitable for outdoor use.
h) Protect the motor and the control unit from moisture (also during storage).
i) Do not pull the power cord.
j) Keep the power cord away from heat sources and sharp edges to ensure its good condition.

2. Operation instructions

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

POUR HONEY INTO THE PUMPING UNIT BEFORE USING THE DISPENSER.

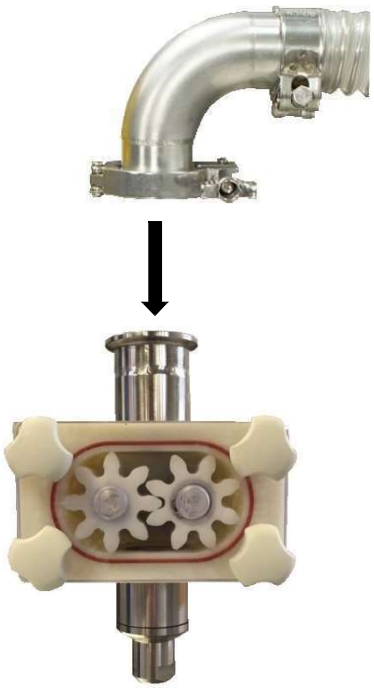


Fig.1

2.1. Tips:

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 „START" again.
7. Once the above steps have been completed, insert the hose into the honey barrel and start bottling or pumping.
8. Make sure there is no air left in the hose
9. The machine is ready for operation.

Pump hose

(the set does not include additional hose and connectors).

The device controller has a creaming function as an option. Creaming is done by pumping the honey.

3. Setting up and operation

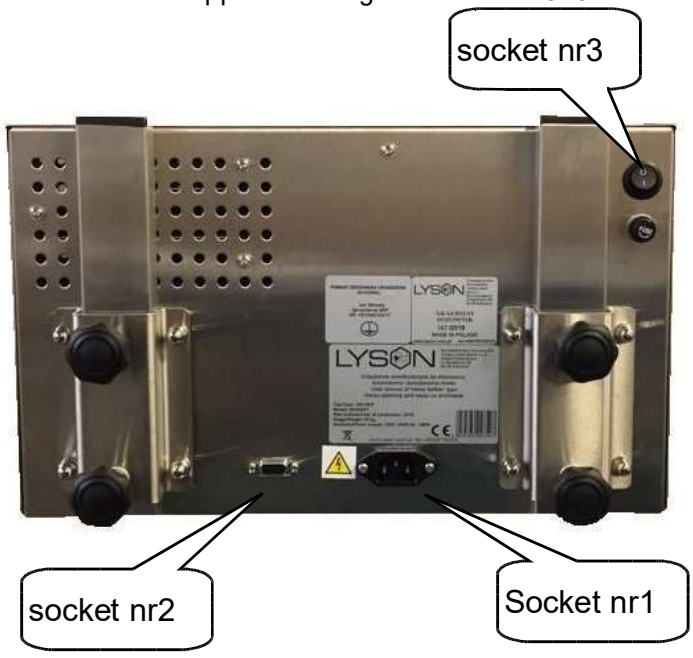
When starting to work with the device:

- Plug the power cable (230V) of the dispenser into socket 1
- Connect the dosing start pedal switch (Fig 2) or the limiter switch (Fig 3)

Fig.2

Fig.3

- Connect the dispenser to a 230V power supply.
- Switch on the appliance using main switch **no. 3**



3.1. Dosing / extra dose 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.

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	The parameter regulates the speed of dosing. The adjustment range is 50[%] - 100[%]. The setting raster is 10[%]. 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.

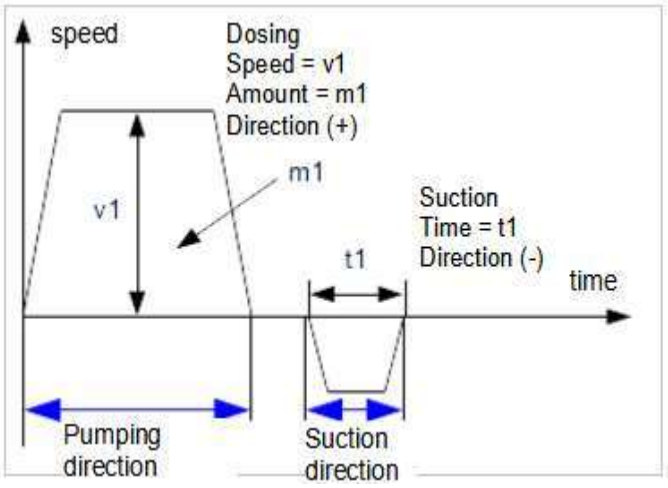


Fig 2. m1 dosing cycle.

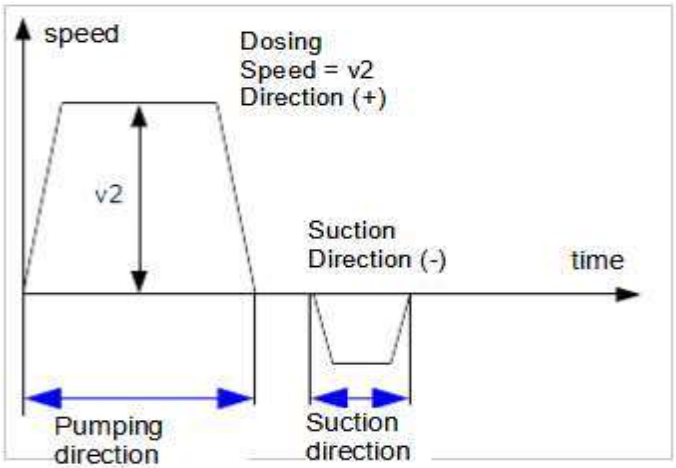


Fig 3. extra dose cycle 1[g]

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.

3.2. 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.

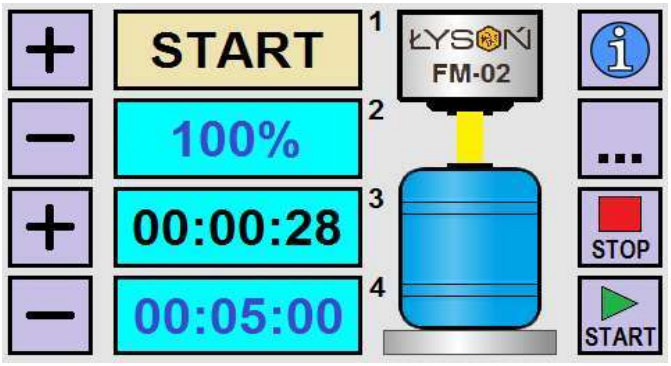


Fig 4. CREAMING / PUMPING MODE screen

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

3.3. 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 - starting

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

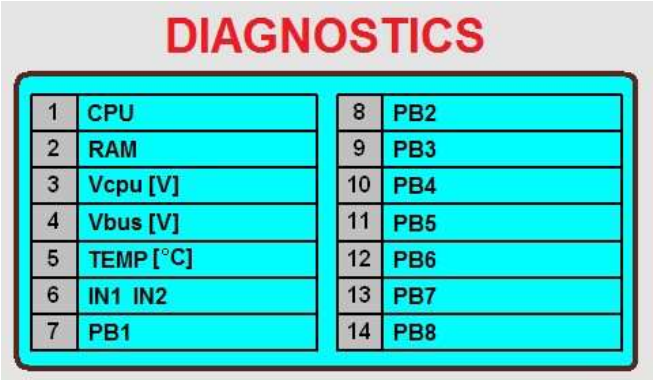


Fig 6. View of the controller diagnostics screen.

Section	Description	Indication	Error description
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]	4,30 – 5,70	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]	5 - 65	The ERROR indication means that the temperature measured inside the controller housing has gone beyond the acceptable range of 5 oC to 65 oC. The reason for this can be an overload of the inverter or using the device in temperature conditions outside the allowed 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	Button testing “1”
8	PB2	0 / 1	Button testing “2”
9	BP3	0 / 1	Button testing “3”
10	PB4	0 / 1	Button testing “4”
11	PB5	0 / 1	Button testing “5”
12	PB6	0 / 1	Button testing “6”
13	PB7	0 / 1	Button testing “7”
14	PB8	0 / 1	Button testing “8”

3.4. 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	Decr.	Indic.	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 [oC]	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

3.5. 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.

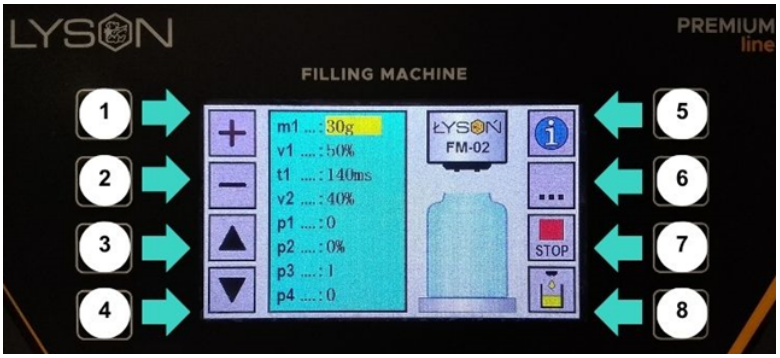
There are two ways of filling the module with honey:
One:

1. Connect the hose to the dispenser module using a clamp, taking care to seat the gasket correctly.
2. Then pour approximately 1 kg of honey into the other end of the tube.
3. hold the hose up until the honey flows into the toothed module.
4. the tube is transparent so you can see when the honey flows into the module.
5. 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.
6. when the hose is completely filled with honey release the No8 button - the dispenser will stop.

Two:

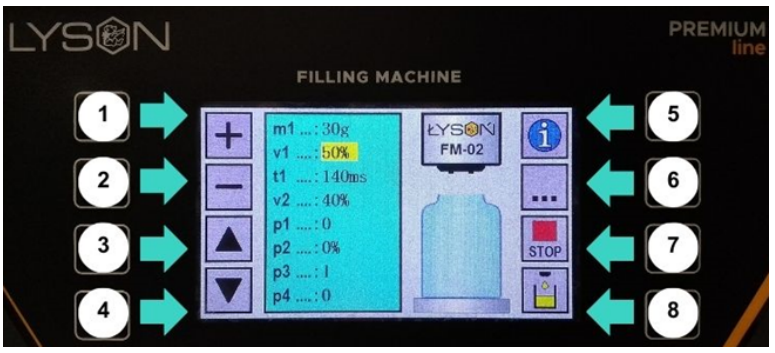
1. Pour honey generously over the rotor using a large syringe.
2. Put the hose on, taking care that the gasket is seated correctly. Place the other end of the hose into the container with honey and press and hold the "No8" button until the honey is sucked in and fills the suction hose. 3. Pass a small amount of honey through to remove the air that has remained in the hose, thus avoiding uneven filling of jars.
4. remember to place a honey container or jar under the dispenser nozzle.
5. When the hose is completely filled with honey release the button no8 - the dispenser will stop.
6. after completing the above steps proceed to setting the dispenser.

3.6. Bottling settings



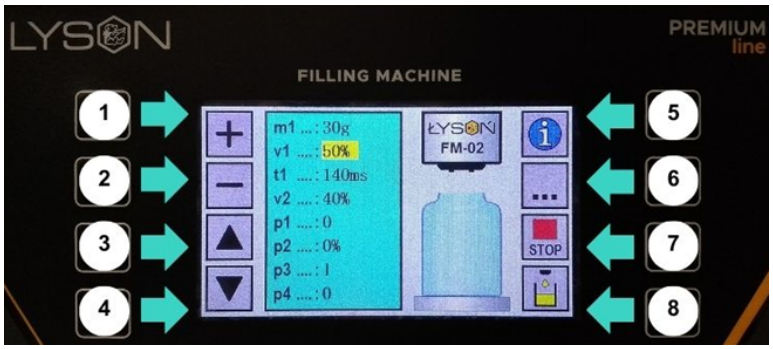
***Fot. 1** Increasing the value of a parameter*

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)**

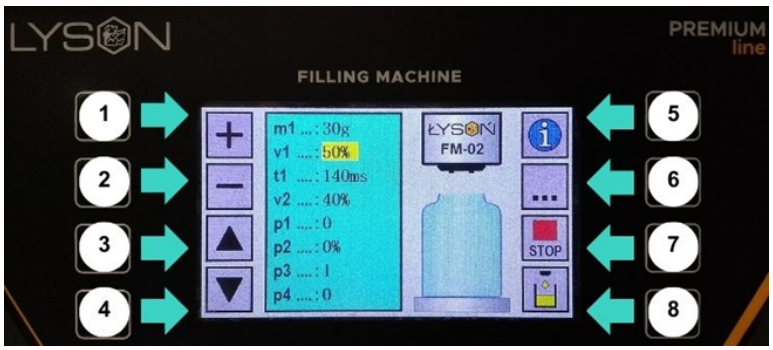


***Fot. 2** Decreasing the value of a parameter*

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.

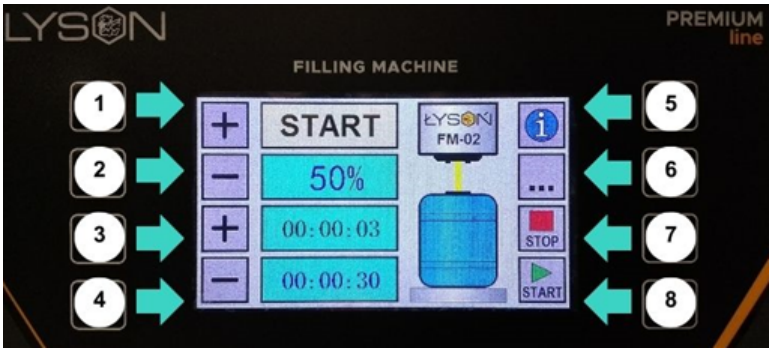
DESCRIPTION OF THE PARAMETERS

– ***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. reweighing) and check the result on the scale if it indicates 1g.*
(manual option used when filling jars using button No8 or footswitch)



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

• the counter range is 0-999.

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

• **p3** Positive weight calibration (1g)

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

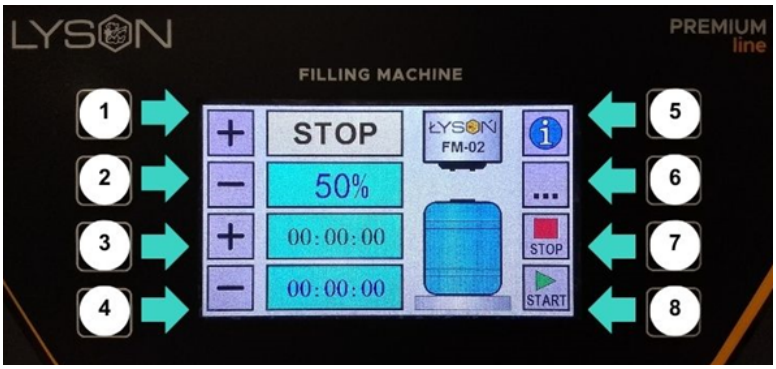
If set mass **m1=e.g. 500g** is not sufficient and after filling the jar the scale indicates **495g**, and there is no possibility to set parameter **m1** more precisely, then it is possible to make correction using parameter **p3.**

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.

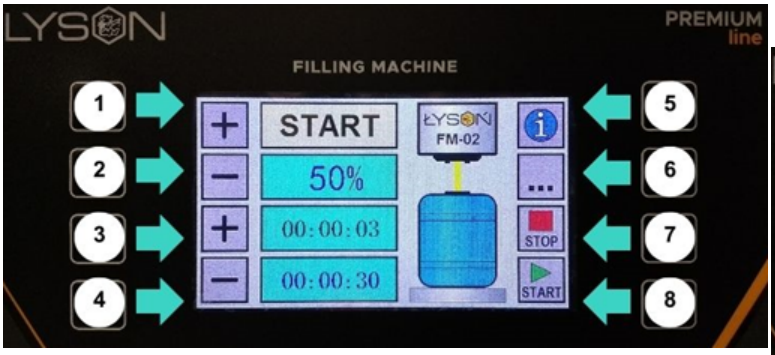
• **p4** - Negative weight calibration (1g)
It is used to calibrate (increase) the parameter m1.



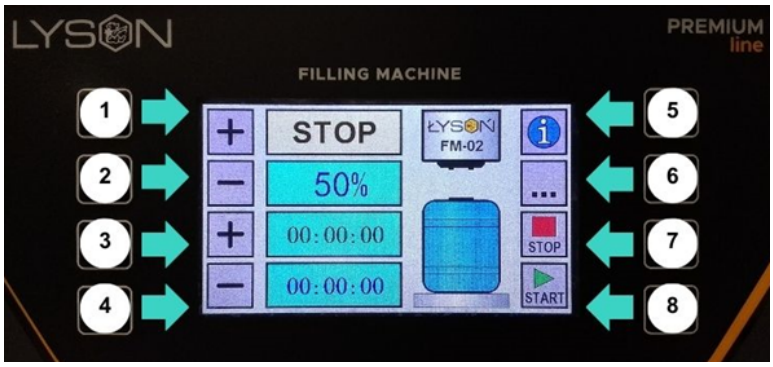
Fot. 8 *Control panel after activating the pumping/creaming mode*

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.

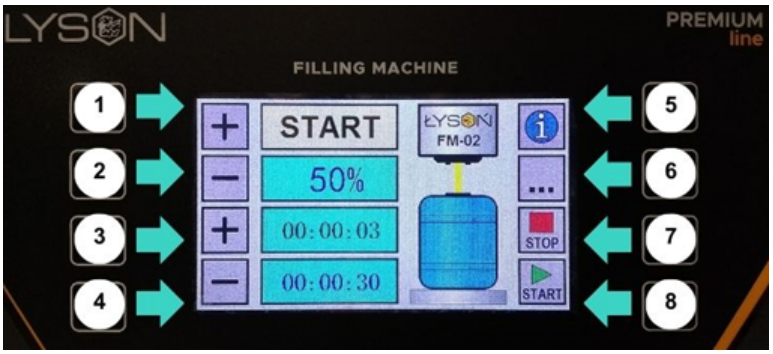


Fot. 9 *Switching on the pumping mode push-button No8 "START"*
The pump starts continuous operation until the "START" button is pressed.

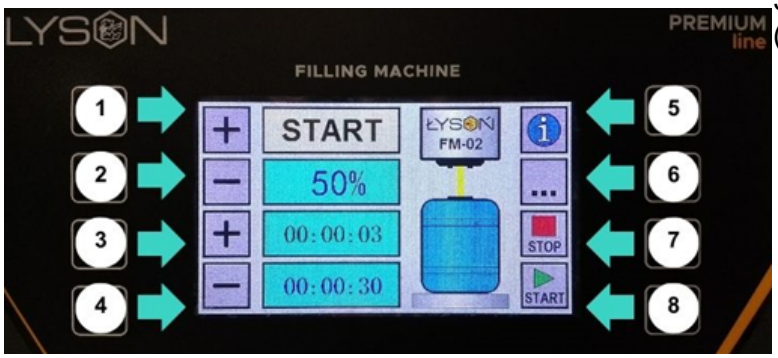


Fot. 10 *Switch off pumping mode push-button No7 (STOP)*

SETTING THE PUMP FOR A SPECIFIC TIME AND SPEED
- To set the pumping for a specific time, e.g.: for 20min. turn on the pumping/creaming mode **(button No6)**
Press the "**START" button (No8)**
- After activating pumping by means of the lower **"plus" (No3) or "minus" (No4)** we set the time for which the pump is to operate. After programming the time, the timer will start counting from the beginning and after the end of the programmed time it will turn off automatically



Fot. 11 Lower "plus" button (No3) or "minus" (No4) *set the pump running time.*
*Sett the pumping/creaming speed with "**plus" (No3) or "minus" (No4).***
With this parameter we change the speed of pumping/creaming honey. Changing the settings is possible during pump operation as well as in "STOP" mode.
Setting range 50% ... 100%



***Fot. 12** The **upper "plus" button (No1) or "minus" (No2)** is used to increase or decrease the pumping/creaming speed*

4. Technical specifications

- Power supply 230 V
- Power rating 180 W
- Filling range 50 g – 45 kg
- bottling capacity 350 jars 500 g/h (honey type dependant).
- accuracy up to 1200g +/- 1%, above 1200g +/- 1,5%
- can be used as a pump or a creamer
- self priming, low speed pump with silicone pumping module

all parts that come into contact with honey are made of stainless steel or food-approved synthetic materials.
The compact dimensions make it possible to position the machine in various ways, even when space is limited.
This device ensures comfortable, professional work with honey.

5. Maintenance and cleaning

Pull the mains plug before starting maintenance.

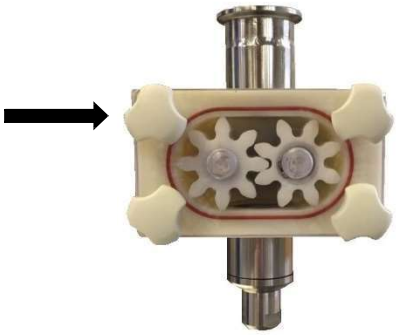
IMPORTANT !
Clean and dry the unit thoroughly after use.

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 bottling. Immediately after working with the dispenser,** place the suction hose into a container with warm water and pump 40 l of warm water to rinse out the dispenser module. For this operation, prepare approx. 40 l of water heated to 50°C to 60°C. This process protects the dispenser from damage that may be caused by crystallised honey (i.e.: breaking the seal and leaking honey). In the event of improper rinsing of the device, the seal on the shaft of the pumping module will break. Damage resulting from improper cleaning of the module is not subject to warranty.

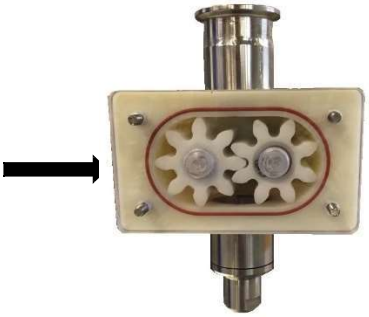
Final disinfecting phase - take the nozzle and rotor apart according to the following photographs. Wash thoroughly, dry and reassemble together again.

For cleaning you can use disinfectants approved for disinfection of equipment intended for contact with food, then rinse abundantly, dry and reassemble again.

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

Step 4-Remove the nozzle (size „22” wrench)

A - Creaming nozzle, B - pumping/dosing nozzle

6. 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.

7. 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