MANUAL

Multifunctional device for honey dosing, creaming and pumping with a countertop

LYSON

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The following manual encompasses the device bearing the following coding:

W204003

Manual

1. **GENERAL SAFETY OPERATIONAL PRINCIPLES FOR THE DEVICE**

Prior to operating the device please refer to the manual and act according to the guidelines contained therein. The manufacturer cannot be held accountable for the damages cause by misusing the device or its improper handling

1.1. OPERATING PRINCIPLES

1. The device is intended to pour honey into the jars.

2. Prior to operations, the device must be washed thoroughly with hot water containing slight amount of detergents permitted to clean the device contacting food products

1.2. ELECTRICAL SAFETY

The device must be connected to the socket , having the voltage specified on the product nominal plate. Electric installation must be equipped with RCD having the nominal activation current below 30 mA. The operation of the over-current circuit breaker must be checked periodically .
Regularly check the supply cable. If a supply cable gets damaged, they must be replaced. In order to avoid the threat, it must be performed by a guarantor or by a specialised servicing centre or by an authorised person.
Do not operate the device when a supply cable is damaged .
Check the power supply cable periodically. If the supply cable gets damaged it must be replaced with the cable of the same type.
Do not operate the device when the supply cable is damaged.
Shortcut at the outlets of the controller may lead to the device being damaged.

1.3. OPERATIONAL SAFETY

a) The following equipment is not intended to be used by persons with limited physical, sensory or mental capabilities (including children) or persons inexperienced or unfamiliar with that type of equipment unless the usage occurs under supervision or in line with the equipment operating manual provided by safety supervising persons.

b) Make sure the children do not play with the device.
c) In order to avoid the threat, it must be performed by a guarantor or by a specialised servicing centre or by an authorised person .
d) Do not operate the device in the vicinity of flammable materials.
e) It is forbidden to make any maintenance works while device is under operation.
f) In case of any threat, switch off the device immediately.
g) The device can be restarted once the threat has been eliminated
h) The device may be activated indoors only. It has not been adjusted to be operated outdoors.
i) Protect the controller against the humidity (also Turing the storage)
j) It is forbidden to pull the power supply cable.
k) The power supply cable must be kept away from the heat sources, Sharp edges and its good technical conditions must be taken care of.

2. **MANUAL**

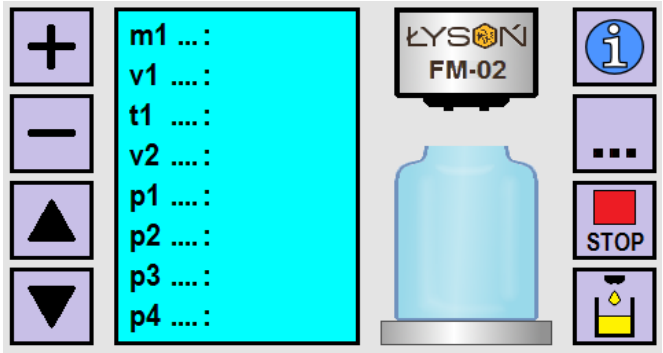
ATTENTION!

HONEY INTENDED FOR DOSING MUST BE HEATED TO THE TEMPERATURE OF 30°C.

PRIOR TO STARTING THE WORK WITH A DOSING DEVICE, THE ROTOR MUST BE SUBMERGED IN HONEY

2.1. THE MODE FOR DOSING / MAKING UP THE WEIGHT

FM-02 controller is a device to control the operation of the dosing pump as well as the creaming cycle. The device is fully programmable and makes it possible to set up the dosing sequence precisely. Device handling is



meliorated by an interactive, intuitive screen menu.

Fig.1. Controller handling screen – selected dosing/making up the weight mode

Button	Function
„plus” button	Increasing the value of a selected parameter.
„minus” button	Decreasing the value of a selected parameter.
Button„ arrow up”	Shifting between the changeable parameters – setting a cursor on a parameter subject to modification.
Button „arrow down”	
Button „i”	Displaying an aid to illustrate the function of a currently selected parameter to be modified. The button remains active in a stop mode.
Button „…”	Changing the operational mode dosing <-> creaming / pumping. The button remains active in a stop mode.
Button „STOP”	Stopping the dosing cycle.
Button „ma king up the weight” – 1g	Single-time adding the minimum doze. Holding the button pressed will add 1 g of weight and subsequently will activate the mode of permanent weight making up – it lasts until the button is released

Basic parameters of the mode

Programming of the controller dosing mode is made by modifying the set of parameters to configure the dosing process. The parameters modified influence directly the shape of the dosing curve – demonstrated in fig 2 and 3. All modified parameters have been grouped – the groups have the common letter index.

PARAMETRE	FUNCTION
m1	Parameter to regulate the quantity of pumped agent in one dosing cycle. The range of changes is 45-45000[g]. Set-up raster equals 1[g]. The value displayed equals the mass of the agent subject to dosing – calibrated for a precise density and temperature of the agent pumped. The parameter setting does not disappear once the power supply is switched off.
v1	The parameter to regulate the speed of the agent dosing. The range o changes is 50[%] – 100[%]. Change raster equals 10[%]. The parameter setting does not disappear once the power supply is switched off.
t1	The parameter to regulate the speed of reverse motion – cutting off the leakage of the dosing agent . The range of changes between 10-900[ms]. The setting raster equals 10[ms]. Parameter setting does not disappear once the power supply is switched off.
V2	The parameter to regulate the pump operating speed while making up the weight of agent (single-time weight making up by 1[g]). With maintained constant operating time towards pumping, change of speed causes the change in the quantity of the agent made up. Increasing the speed shall increase the quantity dosed. The range of changes is 40[%] – 100[%]. Setting raster is 5[%]. Parameter setting does not disappear after power supply is switched off.

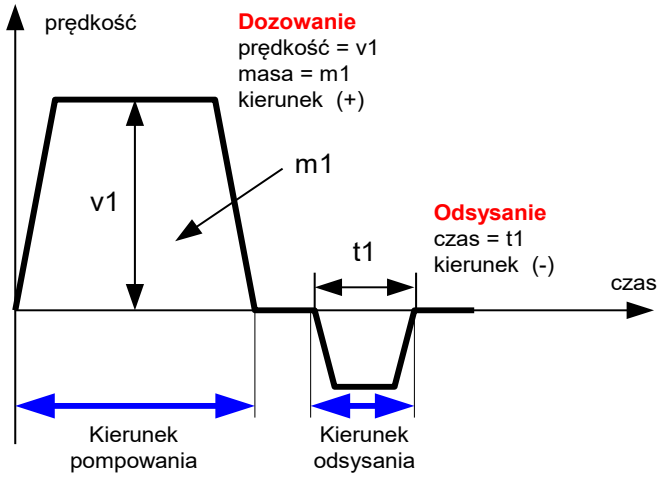


Fig 2. The course of dosing process for the predetermined mass m1.

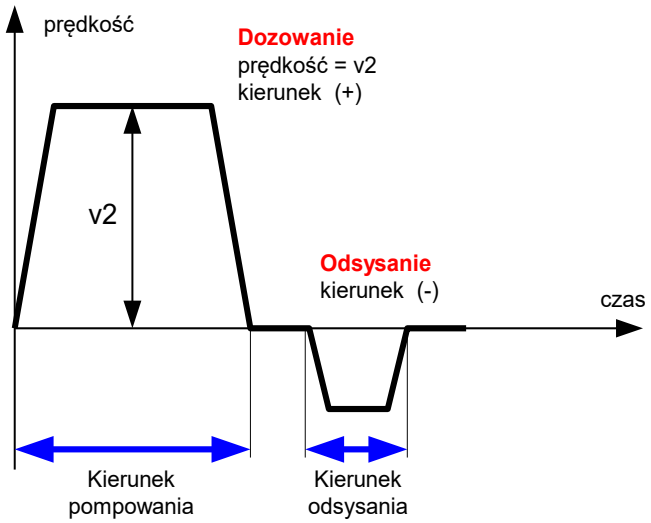


Fig 3. The course of the weight ma king up process for the mass 1[g]

Additional parameters of the mode

PARAMETER	FUNCTION
p1	The counter of dosing cycles counting up. It is possibile to enter any value as the basis for calculations. The range of the counter reading 0-999
p2	The parameter for filling up progress. The value displayed shows the percentage of filling-up process completion with relation to the value pre-set by parameter m1. Readings change within the range 0[%] to 100[%]. Reading raster is 1[%].
p3	Positive correcting factor. It allows to increase precisely the mass m1 to be dosed – in case when the mass to be dosed is below the pre-set value and the change raster 10 g is too big to set up the dose precisely. Increasing the value f the factor increases the quantity of the agent to be dosed. Possible range of setting 0-50. The factor does not refer to the current mass setting, i.e. adds the same value (mass) to the setting 50[g] as to the setting 1500[g]. The parameter setting does not disappear once the power supply is switched off.
p4	Negative correcting factor. It allows to decrease precisely the mass m1 to be dosed – in case when the mass to be dosed is below the pre-set value and the change raster 10 g is too big to set up the dose precisely. Increasing the value f the factor decreases the quantity of the agent to be dosed. Possible range of setting 0-50. The factor does not refer to the current mass setting, i.e. adds the same value (mass) to the setting 50[g] as to the setting 1500[g]. The parameter setting does not disappear once the power supply is switched off .

2.2. CREAMING /PUMPING MODE

The creaming process by means of a dosing device is based on pumping honey inside one container. The process involves a regular honey pumping for several days until the proper consistence has been achieved.

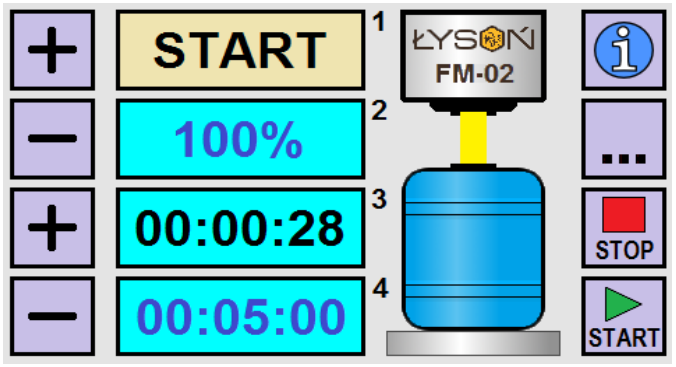


Fig4. Controller handling screen – selected mode creaming/pumping

FIELD	FUNCTION
1	Pump operating status (START / STOP).
2	Pumping speed (50% … 100%).
3	Indication of time that has passed since the pump was activated. Changing the timer setting zeros the indication
4	Indication of time after which the pump will be stopped automatically.

BUTTON	FUNCTION
Button „plus” (upper)	Increasing the creaming/pumping Speer. The range of settings 50% … 100%.
Button „minus”	Decreasing the creaming/pumping speed. The range of setting 50% … 100%.
Button „plus” (upper)	Increasing the time on the timer, after which the pump will be stopped automatically. The indication 00:00:00 will deactivate the function of automatic pump operating time stoppage. Setting may be changed in the start mode.

Button „minus”	Decreasing the time on the timer, after which the pump will be stopped automatically. The indication 00:00:00 will deactivate the function of automatic pump operating time stoppage. Setting may be changed in the start mode.
Button „i”	Displaying the help – active in the stop status.
Button „…”	Changing the operating mode <-> creaming/pumping. Button active in stop status.
Button „STOP”	Stopping the pumping.
Button „START”	Pumping activation.

2.3. CONTROLLER DIAGNOSTICS

FM-02 controller has been equipped with advanced diagnostics procedures – allowing to make tests. In order to enter the diagnostic mode, Press button no 5 during the proper chase of the controller start-up (see picture below)

Fig 5. *Controller view during start-up Button numbers*

Diagnostic screen is divided into 14 sections, their functions, see below. Leaving the diagnostic screen, diagnostic goes automatically after 25 s.

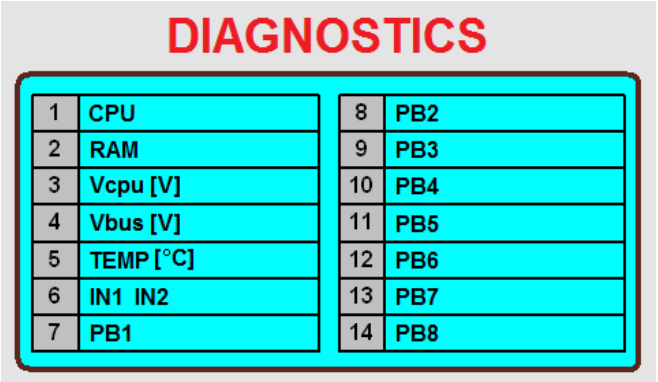


Fig 6. *Screen – controller diagnostic.*

Section	description	Indication	
1	CPU	1E9705	Displaying the value other than 1E9705 Indicates the Damages of the main processor.
2	EEPROM	OK / ERROR	Multiple, repetitive (despite controller restarting) appearance o the damages of EEprom memory cell/cells in the controller
3	Vcpu [V]	4,60 – 5,40	Measurement of the power supply voltage for the CPU module of the controller. Indication outside the range means damage/ overloading of the feeder or CPU module damage.

4	Vbus [V]	4,30 – 5,70	Measurement of the voltage on the connection of the data transmission to the inverter. Indication outsider the range means the inverter fault or a gap in the connection controller <> inverter
5	TEMP [°C]	5 - 65	Measurement of the temperature inside the controller cabinet. The values should not exceed the given range.
6	IN1 IN2	0 / 1 0 / 1	Testing the dosing start input (IN1) and the emergency button input (IN2)
7	PB1	0 / 1	Testing the operations of button 1.
8	PB2	0 / 1	Testing the operations of button 2.
9	PB3	0 / 1	Testing the operations of button 3.
10	PB4	0 / 1	Testing the operations of button 4.
11	PB5	0 / 1	Testing the operations of button 5.
12	PB6	0 / 1	Testing the operations of button 6.
13	PB7	0 / 1	Testing the operations of button 7.
14	PB8	0 / 1	Testing the operations of button 8.

2.4. ERROR REPORT

FM-02 controller has been equipped with advanced error detection mechanisms. Detecting any error activates the action of emergency motor stoppage and triggers the error report screen. It is displayed permanently So it is necessary to switch off the power supply, remove the error source and controller restarting

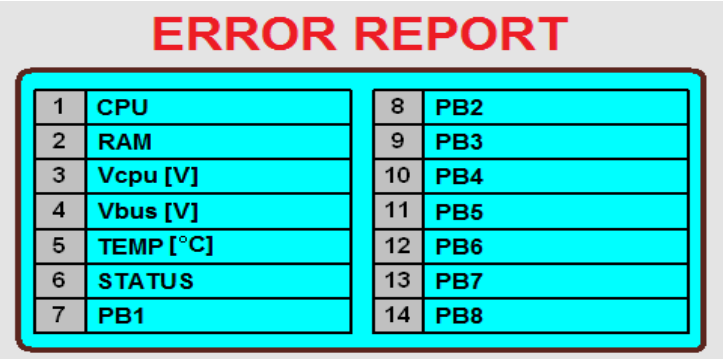


Fig. 7. Controller error report screen.

section	Description	Indication	ERROR DESCRIPTION
1	CPU	OK / ERROR	Indication ERROR means the error of the controller's main processor data memory. Most frequent reason for this fault to occur is the damage due to electrostatic discharges.

2	RAM	OK / ERROR	Indication ERROR signals the error detection with regards to controller's RAM memory data cohesion. The situation is possible in case when the controller operates within the environment with high level of background noise. This may be brought about by: damaged cable connections, damaged inverter, damaged inverter casing. Another reasons may include: damaging of the main processor module caused by electrostatic discharges.
3	Vcpu [V]	OK / ERROR	Indication ERROR means that the measured controller module power supply voltage is outside the permissible range. The said situation means the fault or overloading of 5V feeder, failure of the controller or damage to the cable connection feeder <> controller.
4	Vbus [V]	OK / ERROR	Indication ERROR means that the voltage measured on the data transmission connection to the inverter is outside the permissible range. The situation means the failure of inverter, failure of the controller or a gap in the cable connection inverter<> controller.
5	TEMP [°C]	OK / ERROR	Indication ERROR means that the temperature measured inside the controller casing is outside the permissible range 5 °C do 65 °C. This may be caused by inverter overloading or using the extractor in the temperatures outside the permissible range.
6	STATUS	OK / ----	
7	PB1	OK / ERROR	Indication ERROR means that button pressing has been detected – directly after power supply activation. If the situation has not been intentional, the button might be damaged. – e.g. pressing and button blockage due to excessive force having been applied.
8	PB1	OK / ERROR	Description – as above.
9	PB1	OK / ERROR	Description – as above.
10	PB1	OK / ERROR	Description – as above.
11	PB1	OK / ERROR	Description – as above.
12	PB1	OK / ERROR	Description – as above.
13	PB1	OK / ERROR	Description – as above.
14	PB1	OK / ERROR	Description – as above.

3. CONTROLLER SETTING

ATTENTION!
HONEY INTENDED FOR DOSING MUST BE HEATED UP TILL THE TEMPERATURE OF 30 °C.

PRIOR TO STARTING WORK, THE ROTOR MUST BE SUBMERGED IN HONEY.

There are two ways to submerge the rotor in honey:
First way:

1. Connect the duct to the dosing device rotor by means of a clamp, watch for the proper positioning of the gasket.
2. Next, pour approximately 1 kg oh honey by the other end of the duct.
3. Keep the duct upwards until the honey has drained to the rotor (dosing device)
4. The duct is transparent so one can see when the honey has reached the rotor,
5. When the honey has reached the rotor, put the hose in the honey tank, press and hold button no 8 until the honey has been sucked in
6. As soon as the hose is totally filled with honey, release button no 8 – the dosing device will stop.

Second way:

1. The rotor must be poured with honey by means of a syringe for cakes with the tip having the biggest orifice.
2. Assemble the hose watching for proper positioning of the gasket. The other end of the hose shall be placed inside the honey tank and press and hold button number 8 until the honey has been sucked in.
3. One should flow slight amount of honey to remove the air that stayed inside the hose, owing to which we will avoid the jars being filled unevenly.
4. It must be remembered to put a jar for honey under the dosing device nozzle.
5. When the hose is entirely filled with honey, release button number 8 – the dosing device will come to a hold.
6. Having completed the said activities, move to dosing device setting.

3.1. SETTING THE CONTROLLER FOR HONEY DOSING.

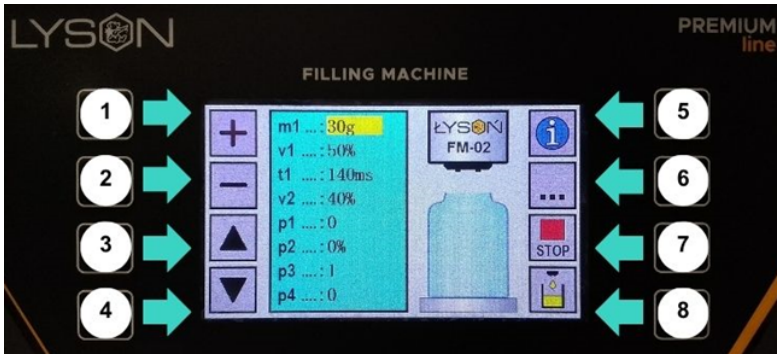


Photo. 1 *Increasing the value of a given parameter*

Once the controller has got activated, the interactive panel will be displayed, by which we can set up individual parameters needed to programme the controller. Once connected to the mains, the dosing device displays the parameters to be set by means of buttons **„plus" (*no 1*)**, **„minus" (*no 2*)**

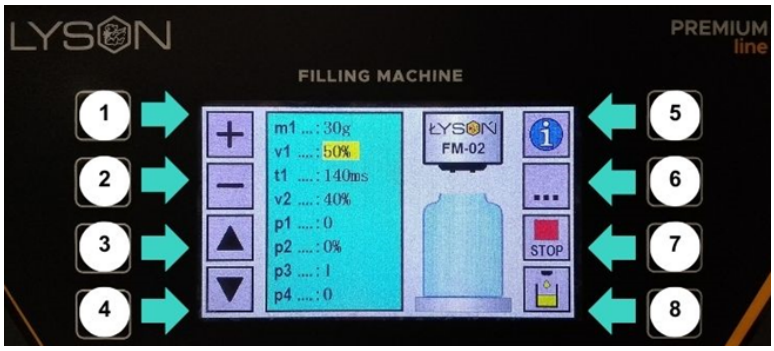


Photo 2 Decreasing the value of a given parameter In order to shift between the parameters, press the button arrow **„up"(*no.3*)** or arrow **„down" (*no.4*).**

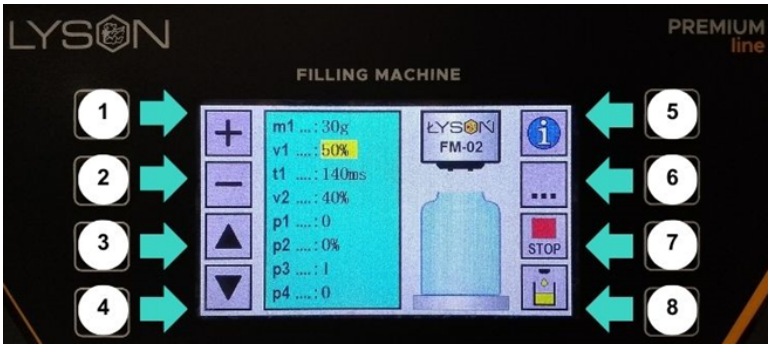


Photo. 3 *Selecting the parameter by means of the buttons arrow „up" and „down"(shifting between the parameters)*

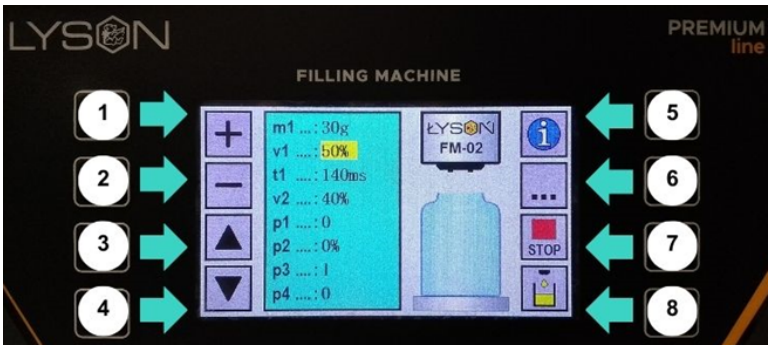


Photo. 4 *Selecting the parameter (shifting between the parameters)*

> After getting connected to the mains, the controller is ready for the changes in parameters to be introduced.

> After setting is completed, the dosing device remembers the parameters set automatically.

DESCRIPTION OF PARAMETERS

– **m1** parameter serves to set the weight (grams of honey to be dosed by the device)

Range of changes: 45-45000[g]

Parameter setting does not disappear after power supply deactivation.

– **v1** speed of honey pouring – e.g. 100%. If honey is pumped too quickly and gets aerated excessively, reduce the filling speed to, e.g. ,70%

Range of changes: 50[%] – 100[%].

Parameter setting does not disappear after power supply deactivation.

– **t1** withdrawing time specified in MS. This parameter ought to be set u after the first attempt to pour honey into jars. Then , it is easy to determine whether the dosing device withdraws honey quickly enough to avoid dripping.

Range of changes: to 10-900[ms]

Parameter setting does not disappear after power supply deactivation.

– **v2** Parameter serving to regulate the dosing device in order for it to make up the weight of 1 g of honey. The regulation boils down to setting up the rotational speed of the rotor with relation to the honey density, viscosity and temperature.

Parameter setting does not disappear after power supply deactivation.

Place a jar on the scales and tare the scales, press button number 8 (i.e. making up the weight) and check the result on the scales, whether is shows 1 g.

(**manual option** used during filling the jars by means of button number 8 or a pedal)

Range of changes: 40[%] – 100[%]

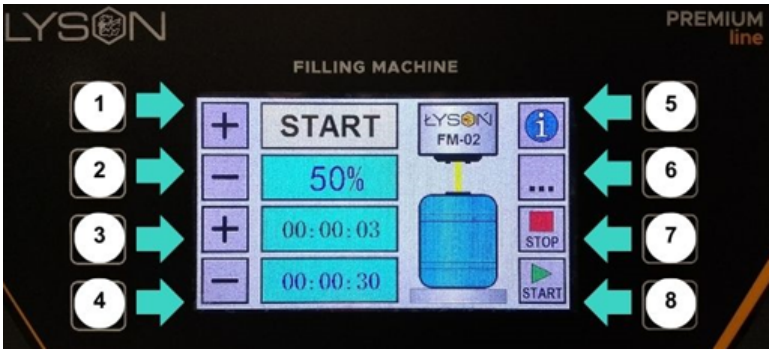


Photo . 5 *Button for making up the weight or pump permanent operations (pressing and holding makes the pump work permanently)*

- p1 no necessity to setting.

One may use the parameter by setting up the number of the jars filled in on the previous day in order to provide continuity of counting.

Range of counter indications: 0-999.

– **p2** not to be set, the parameter displays the degree of jar filling in %

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

Serves to calibrate (increasing) of the parameter m1.

When the weight m1= 500 g and is not sufficient and after filling the indication shows 495 g and the parameter m1 cannot be set, then correction may entered by means of the parameter p3.

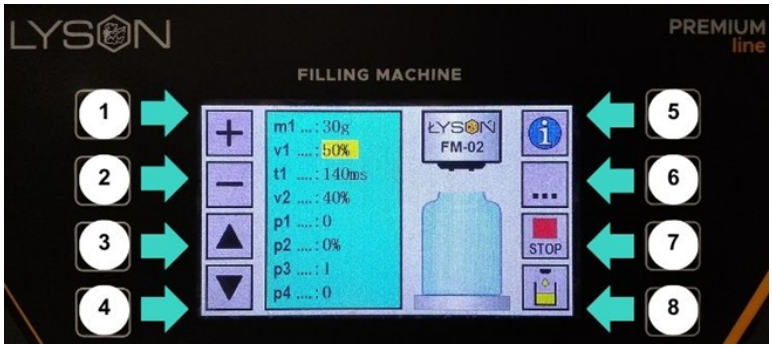
Set parameter p3 as 5 (i.e. the missing 5 g), which increases the weight m1 by 5. After activation, the controller sums up the parameter m1+p3 and doses 500 g of honey to a jar.

Range of changes *0-50*

Parameter setting does not disappear once disconnected from the mains.

- p4 - Negative weight calibration (1g)

Serves to calibrate (decrease) m1 parameter.



When the weight m1 = 500 g and is not sufficient and after jar filling the scales indicates 505 g and it is impossible to set m1 parameter precisely, then a correction must be made by means of p4 parameter.

Set p4 parameter as 5 (i.e. excessive 5 g), which will decrease weight m1 by 5. Once activated, the controller sums up weight setting m1+p4 and measures 500 g of honey t a jar.

Range of changes *0-20*

Parameter setting does not disappear once disconnected from the mains.

3.2. INFORMATION BUTTON

It gives a possibility to display graphic information about a given parameter. Pressing the button activates the graphics and pressing the button “i” (number 5) again deactivates graphic displays.

This parameter is a form of a hint showing what a given parameter refers to.

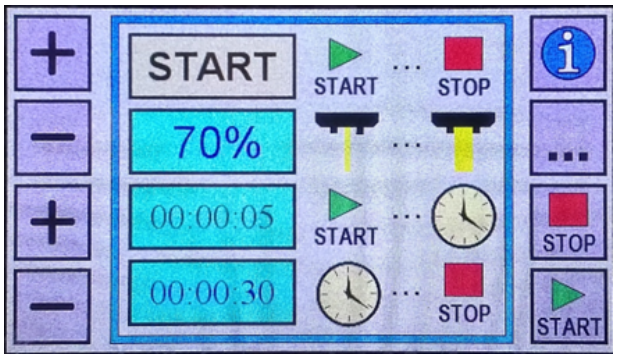


Photo. 6 *Information button*

3.3 SETTING UP PUMPING/CREAMING MODE

Honey creaming mode is based on pumping the honey, i.e. starting the pump in a continuous mode. Controller makes it possible to set the time for pumping/creaming.

CAUTION!

Before starting the process of honey creaming or pumping, remove the dosing nozzle immediately!!!

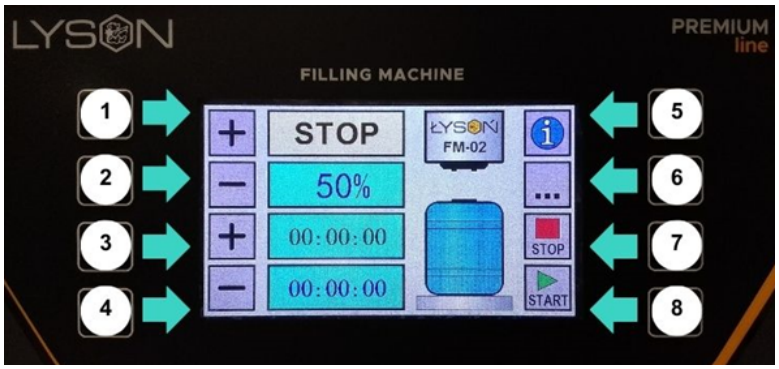


Photo. 7 *Entering the pumping/creaming mode* Having pressed button number 6, a panel for continuous pumping/creaming or pumping for a pre-set time , min 15 s – max 90 hours, is displayed.

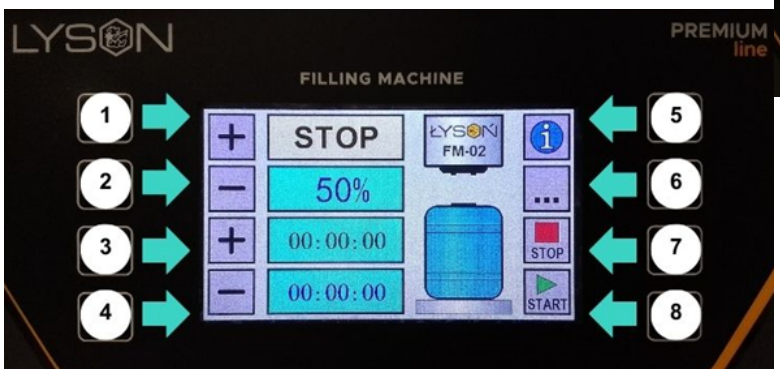


Photo. 8 *Control panel after pumping/creaming option has been activated.*

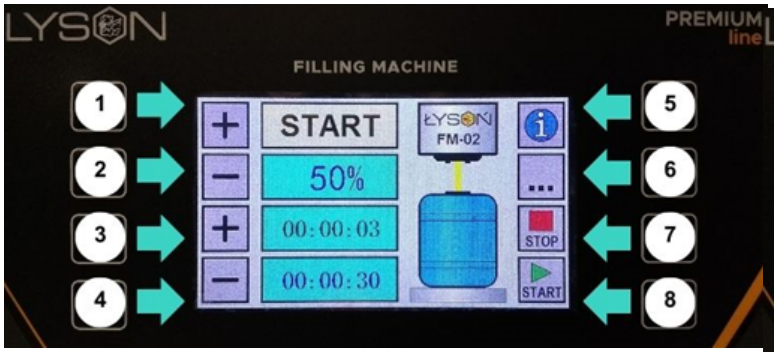


Photo. 9 *Activation of pumping mode - button number 8 START Pump starts continuous operations until STOP button is pressed*

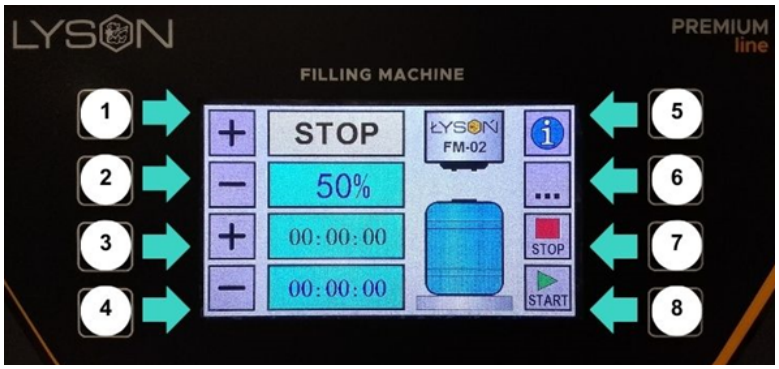


Photo. 10 *Deactivation of pumping mode , button number 7 (STOP)*

- SETTING UP THE PUMP FOR A SPECIFIED TIME AND SPEED

- in order to set up pumping for a specified time, e.g. 20 min, activate pumping/creaming mode (button no 6)
- Press Start button (***no 8***)
- When pumping is activated, by means of lower buttons ***„plus" (no 3)*** or ***„minus" (no 4)*** set the operating time for the pump. Once the time is programmed, the timer will start counting since the beginning, it will switch off automatically after the pre-set time.

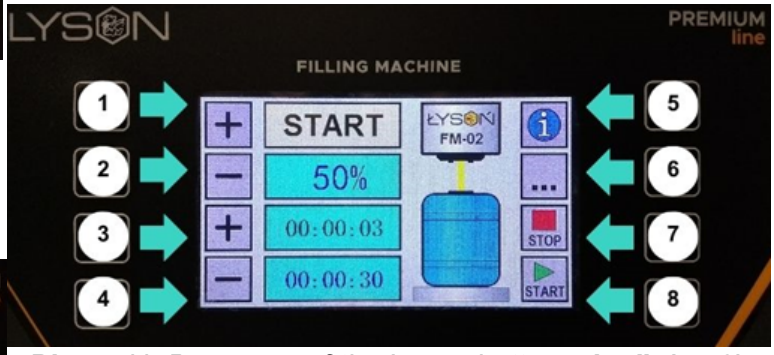


Photo 11 *By means of the Lower button**„plus" (no 3)*** or ***„minus" (no 4)*** set up the pump operating time. Setting up the pumping/creaming time ***„plus"(no 3)*** or ***„minus" (no 4)***.

By means of this parameter, honey pumping/creaming speed can be changed. Changing the setting possible during pump operation „START" or in a „STOP" mode **Range of changes 50% … 100%.**

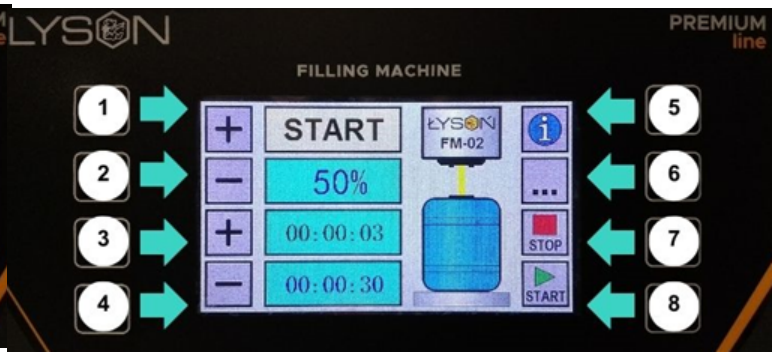
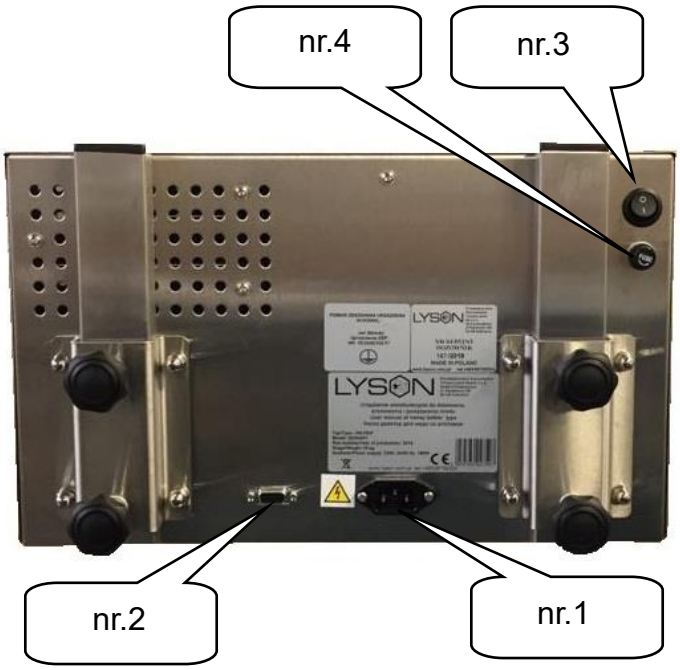


Photo 12** Upper button **„plus" (no 1)** or **„minus" (no 2) serves to increase or decrease the pumping/ creaming speed

3.4 TECHNICAL DATA

- Power supply 230 V
- Power 200 W
- Filling range 45 g – 45000 g
- Fills up approximately 350 jars a 500 g/hour (depending on the type and density of the honey).
- Filling accuracy +/- 1 g until the capacity of 1200 g , over 1200 g, accuracy +/- 1,5%
- All parts coming in contact with honey are made of stainless steel, plastics permitted to come into contact with food products.
- Small dimensions allow to place the device in different arrangements, even with limited surface.
- Pump efficiency 250 - 300 L of honey/hour

3.4.1 BOTTLER SOCKET DESCRIPTION



No.1 - power supply socket 230VAC
No.2 - communication socket (foot pedal switch, fill switch)
No.3 - main power switch
No.4 - fuse socket

3.4.2 DEVICE COMPONENT

- honey bottler
- bottler's table top
- foot pedal switch
- fill switch
- hose clamp ∅40
- hose ∅40 - 1,5mb

4. MAINTENANCE AND CLEANING

PRIOR TO THE MAINTENANCE, DISCONENCT FROM THE MAINS!

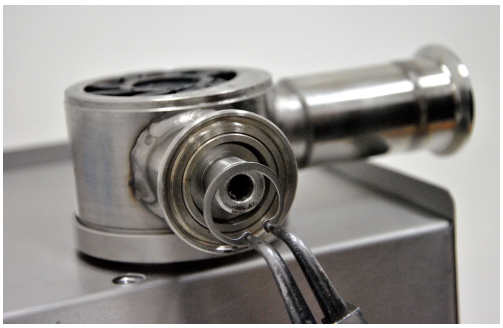
The dosing device shall be washed thoroughly before and after the usage. While washing be careful not to damp the motor and controller (they may be covered with water-resistant materials).
Dry the device after washing. Before every season, additional technical inspection must be performed. In case any defect is

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 crystallised 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 rotor cover bolts.

Step 2
Remove the cover.

Step 3
Remove the set ring



Step 4
Remove the dispensing nozzle

Step 5
Remove the pumping module

5. RECYCLING

Worn-out product must be removed as waste only within selective waste collection organised by the Network of Communal Electric and Electronic Waste Collecting Points. A customer is entitled to return the used equipment to the electrical equipment distributor network, at least free of charge and directly, if the device to be returned is of proper type and serves the same purpose as the newly purchased device

6. Guarantee

Products purchased from “Łysoń’ company are encompassed by the manufacturer’s guarantee.

The guarantee duration equals 24 months
A receipt or a VAT invoice is issued for each product purchased
Details on the guarantee, see www.lyson.com.pl