MANUAL
HONEY FILLING LINE

LYSON

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Remarks regarding operational safety

"PREMIUM" honey dispenser with a transportation belt

Prior to starting the device operation, the following manual must be read carefully and the guidelines contained therein must be strictly observed. The manufacturer is not to be held accountable for any damages caused by improper usage of the device or its improper handling.

INTENDED USAGE

The device is intended for honey filling, pumping and creaming.

ELECTRICAL SAFETY

The device should be connected to a socket with earthing with the voltage specified on the 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 .
Check the state of a supply cables periodically. If the supply cable gets damaged, it 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 or connecting cable are damaged.
Check the state of a 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 power supply cable has been damaged.
Short circuit on the controller's outlets may damage the device.

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) In case of any damage to the device, in order to avoid the danger, the repairs may be performed solely by a specialist servicing centre or a qualified person .
c) Do not operate the device in the vicinity of flammable materials
d) It is forbidden to perform any maintenance works during operation.

e) In case of any danger, the device must be switched off immediately.

f) The device can be restarted once the danger has been eliminated.

g) The device can be activated indoors only. It is not adjusted for outdoor operation.
h) Controller must be protected against humidity (also during the storage).
i) It is forbidden to pull the power supply cable.
j) Power supply cable must be kept away from the sources of heat, sharp edges and its good state must be taken care of.
k) From time to time prior to washing

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.

1. Technical description of the line

The device has been designed in the manner to make it possible for one person only to handle the process of honey filling to jars quickly and easily.

The line consists of a set of devices

1.1 Two rotating tables ø900. The are equipped with an option to regulate the guides manually depending on the jar sizes. It is possible to change the rotation direction as well as the rotational speed for both tables as well.
1.2 ‘Premium” pumping dispenser with electric regulation of the lift height until 150 mm – see the manual
1.3 Transportation belt with the length of 2000 mm. it is equipped with an option to regulate the transporter height and the width of the guides according to the pre-selected jar size.

The tables as well as the dispenser have been made of stainless acid-

resistant steel.

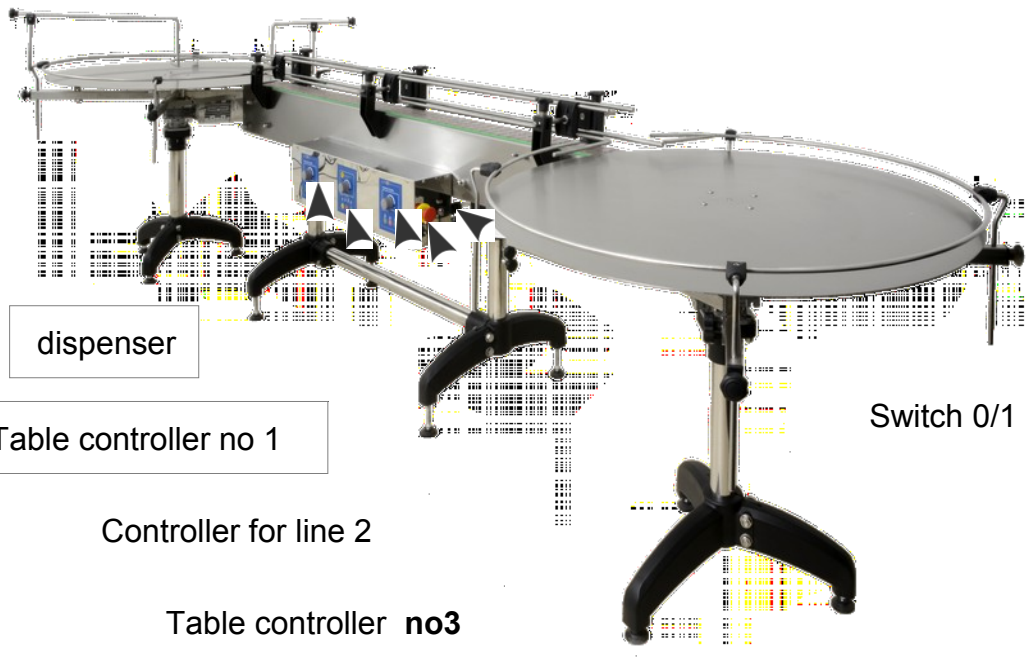
2. Technical data of the line

Lenght of the line	4000 mm
Width of the linbe	1200 mm
Height of the line	1300 mm
Weight of the line	approx. 130 kg
Filling size	jars with capacity ranging from 250g. to 1250g.
Line efficiency	approx. 350 jars a 500g / hour (dependign on the honey type and density)
Filling accuracy	+/- 1%.
Power supply	230 V

no1 Rotating table supplying the jars

no2 Transporting line

no3 Rotating table receiving the jars filled



dispenser

Table controller no 1

Controller for line 2

Table controller **no3**

Switch 0/1

Safety switch

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3. Assembly and installation

3.1 Line assembly ought to be commenced by aligning the line itself and regulating the transporter height with regards to the tables.

3.2 Regulate the guides in line with the pre-set jar capacity – point 4. Connect the line components with the power supply sockets.

3.3 Adjust the limit switch in order to position a jar with regards to the honey supplying nozzle in the dispenser – point 4.

3.4 Set the dispenser height and program the controller to the pre-selected honey supplying quantity – according to the manual "Premium" dispenser.

3.5 Activate the devices in the following sequence:

- table no 3,
- transporter no 2 – **IMPORTANT !** – transporter setups to be implemented while activating the service START button – **yellow colour (photo A)**
- table no 1.

Having placed a pre-selected jar on the table, regulate the speed of the tables and the transporter.

3.6 Having completed the speed set-ups, switch the START button on the controller – green colour

3.7 Perform a trial filling of a jar with honey in order to verify the filling accuracy.

3.8 An assembly tutorial is available at the link:

https://www.youtube.com/watch?v=ahaTAvwq72k

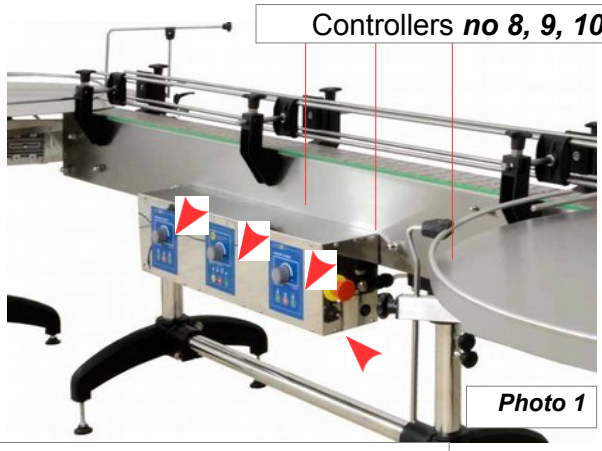
Photo A

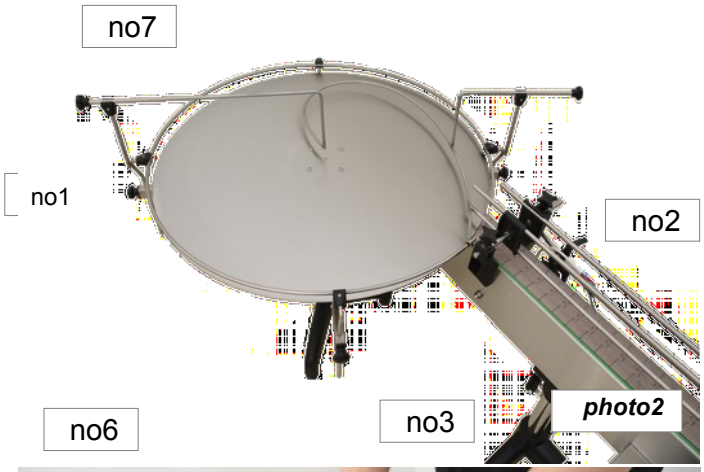
Service button

4. Regulation of the table and the transporting belt

4.1. Prior to regulating the table and the transportation belt, the following ought to be done:

- Connect the line to the mains, make sure that the safety switch (no 12) is not pressed – turn slightly in line with the guidelines on the red mushroom push button
- Move the switch („0/1”)(**no 11**) to position („1”).
- Set the knobs (**no 8,9,10**) („min” - „max”) to the minimum *photo 1.*
- Place the jars to which honey will be dispensed on the table plate ***photo 3***





4.2. Setting the guides:

- Place the jars intended for honey filling on the plate ***photo 1***
- Afterwards, we move on to setting all the guides at the turntable and at the transporting line
- Guides are set by releasing the tightening bolts

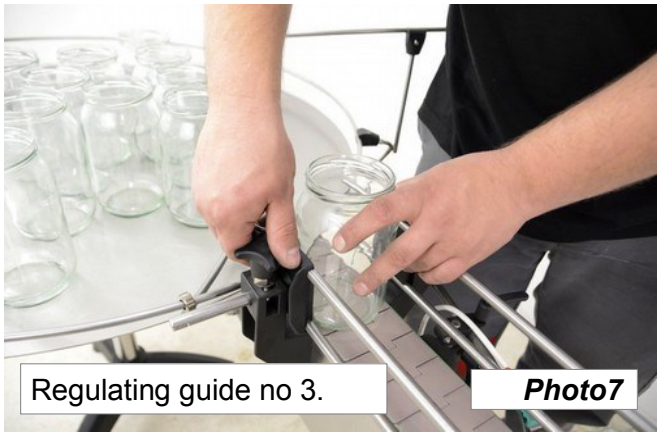
Regulating guide no 1 ***Photo 4***

Regulating guide no 2. ***Photo 5***

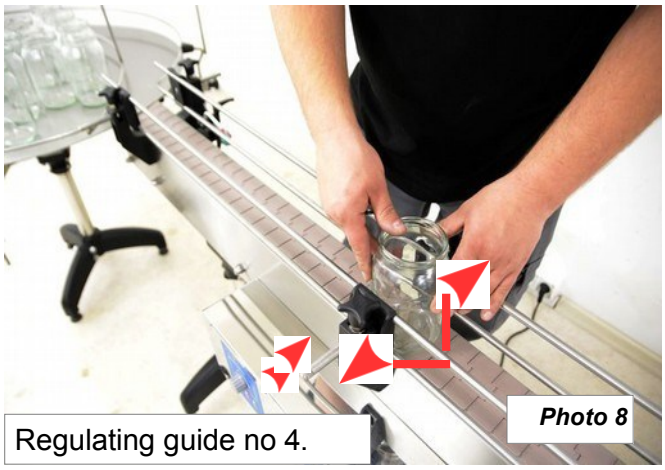
fot.6

The guides are to be set in line with the size of the jars, by matching them to the type of a given jar.

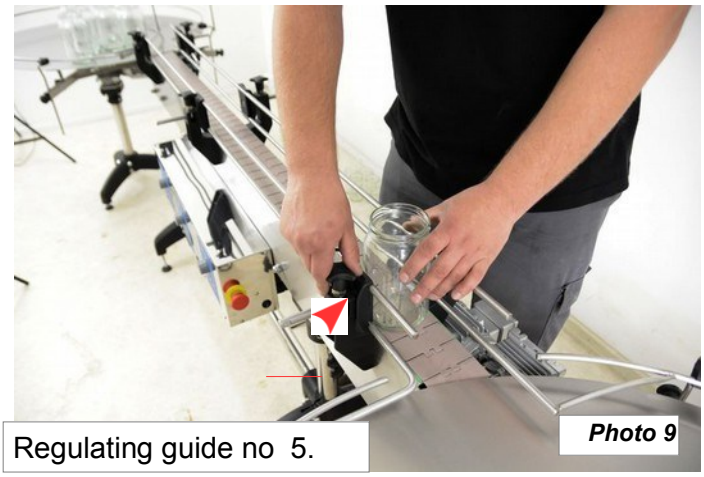
- The guides on the turntable are set in such a way to hold one jar in a loose manner.
- The guides on the transportation line are set in a way to provide a slight clearing. When the guides are set too tight thy will obstruct smooth move of the jars filled with honey



Regulating guide no 3. ***Photo7***



Regulating guide no 4. ***Photo 8***

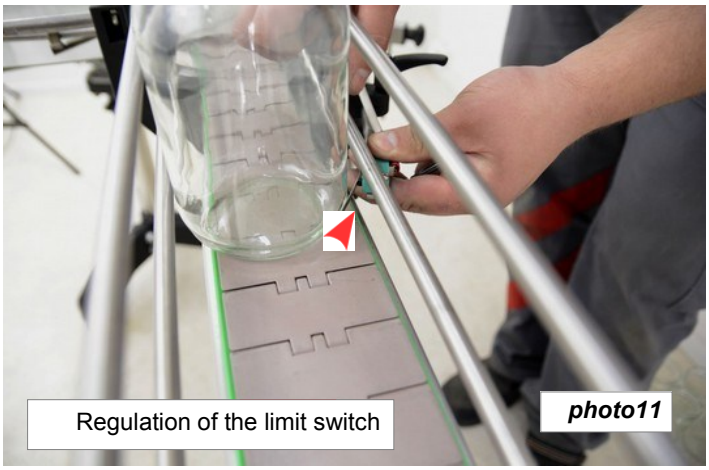


Regulating guide no 5. ***Photo 9***

Regulating guide no 6 and no 7 analogically

Photo 10

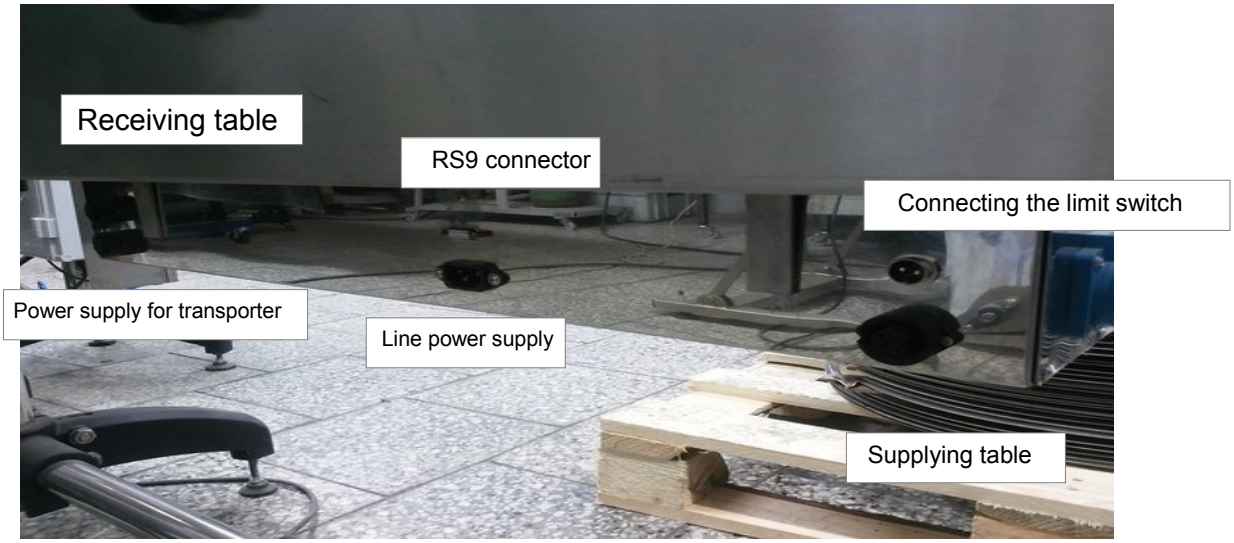
Having set the guides, operations of the table and the belt must be checked. If the jars move smoothly, the limit switch stopping the jars must be placed under the dispensing nozzle. Position of the limit switch must be checked when the table and transportation belt are activated. Each jar ought to halt for a while on the belt.



Regulation of the limit switch

photo11

4.3. Connecting the power supply cables:



5. Electrical installation

Line is supplied with the 230V voltage. Each component is equipped with a separate controller.
Power consumption for the following components:

1. Transportation belt – 370 W
2. 2 turntables– 200 W + 200 W
3. dispenser – 300 W

All line components are equipped with rotational speed regulation. It is possible to change the rotation directions for turntables 1 and 3 . The detailed manual for the dispenser controller is contained in the attached manual for "Premium dispenser".

6. The list of spare parts:

6.1 turntable :

- motor 0.18/1400/400 V GR63 - 1 pcs
- transmission 40/100 GR63 - 1 pcs
- bearing 6204 - 2 pcs
- sealing 25/47/7 - 1 pcs
- plate transportation castor - 4 pcs

6.2 honey filling line:

- motor 0.37/2800/400 V GR63 - 1 pcs
- transmission 40/100 GR63 - 1 pcs
- bearing housing UCFL 202 - 1 pcs

6.3 dispenser:

- electric actuator HARL - 1 pcs
- ceramic sealing - set - 1 pcs
- motor 0.18/1400/400 V GR63 - 1 pcs
- silicone rotor - 1 pcs

Handling and configuration of “PREMIUM” pumping dispenser with lifting and lowering functions

TECHNICAL DATA:

- Power supply 230 V
- Power 300 W
- Filling range 50 g – 5000 g
- Fills approximately 350 jars a 500 g/hour (depending on the honey type and density).
- Honey filling accuracy +/- 1 g
- Device controlled by computer technology
- Also to be used as a pump
- Self-priming, low-speed pump with a silicone rotor
- All parts coming into contact with the honey are made of stainless steel or plastics permitted to come into contact with food.
- Small dimensions allow to place the device in various manners, even with limited space.
- As for technical aspects, it is the latest technology device. It provides comfortable and professional work with the honey.
- Pump efficiency from 250 - 300 L of honey/h
- Regulated height of the honey dispenser against the turntable – until 150mm.

DESCRIPTION OF CONTROLLER'S FUNCTIONS

Dozing/making up the weight mode

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 ameliorated by an interactive, intuitive screen menu

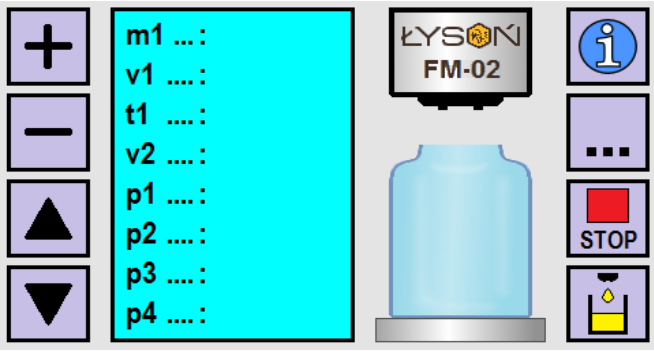


Fig 1. Controller handling screen – selected dosing/making up the weight mode

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 dozing <-> creaming / pumping. The button remains active in a stop mode.
Button „STOP"	Stopping the dozing 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 dozing mode is made by modifying the set of parameters to configure the dozing process. The parameters modified influence directly the shape of the dozing curve – demonstrated in fig 2 and 3. All modified parameters have been grouped – the groups have the common letter index.

PARAMETER	FUNCTION
m1	Parameter to regulate the quantity of pumped agent in one dozing cycle. The range of changes is 4-45000[g]. Set-up raster equals 1[g]. The value displayed equals the mass of the agent subject to dozing – 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 dozing. 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 dozing 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.

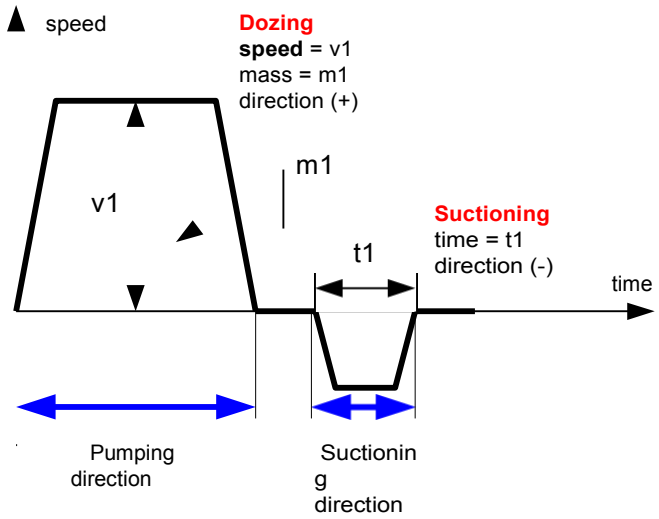


Fig. 2. The course of dozing process for the predetermined mass m1.

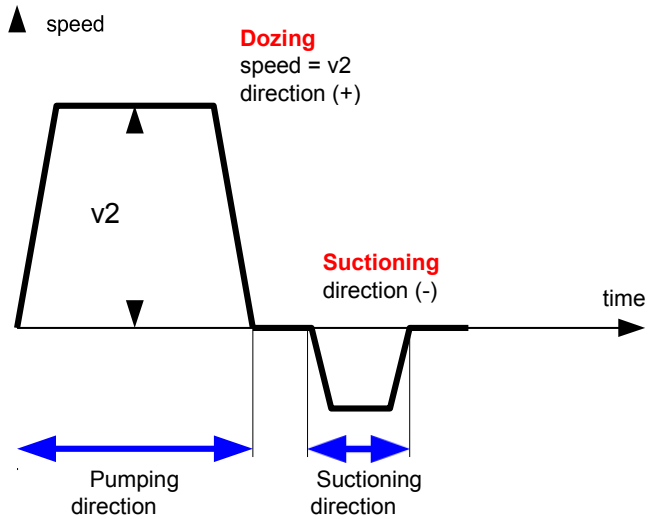


Fig 3. The course of the weight ma king up process for the mass 1[g]

Additional parameters of the mode

PARAMETER	FUNCTION
p1	The counter of dosing cycles counting up. It is possible 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

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.

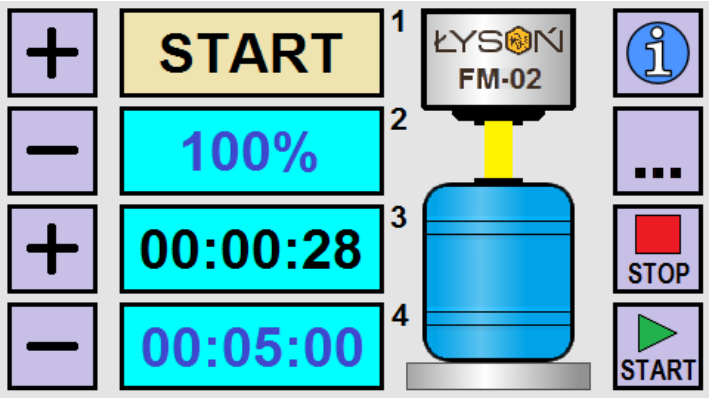


Fig 4. Controller handling screen – creaming/pumping mode selected

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.

FIELD	FUNCTIO N
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.

CONTROLLER'S 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 phase of the controller start-up (see picture below)

Fig. 5. Controller screen view durian start-up
Button numbering

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

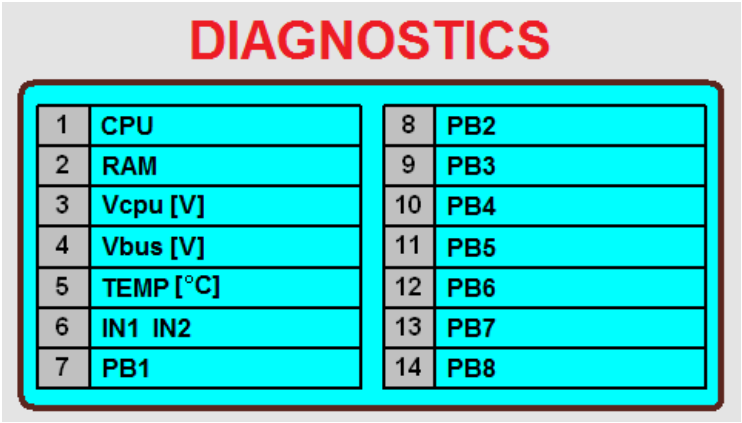


Fig 6. Controller's diagnostic screen view.

Sekcion	Description	Indication	Function
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 of ERROR notice m 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 .

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

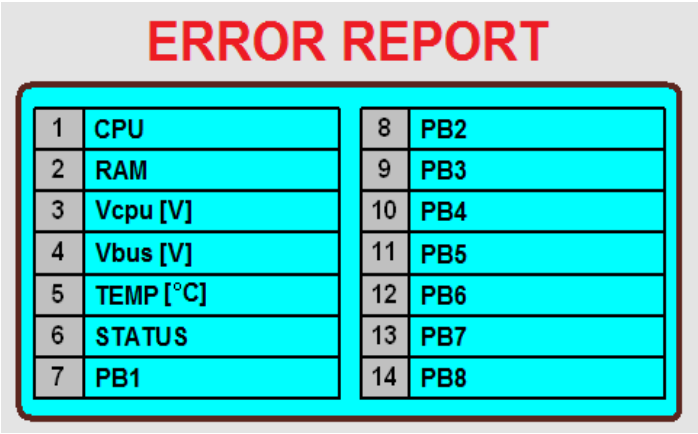


Fig 7. Controller error report screen view.

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.


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

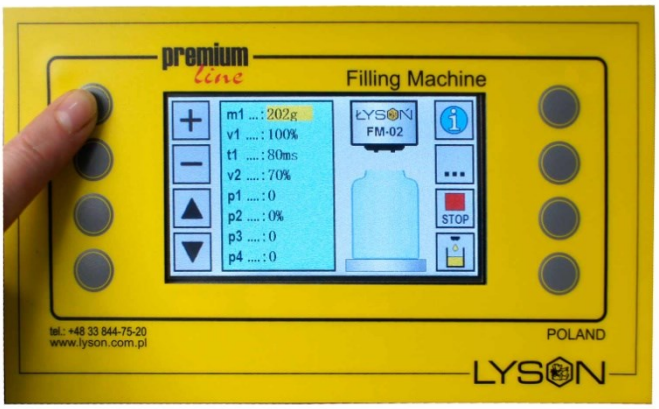
PRIOR TO STARTING WORK, THE ROTOR MUST BE SUBMERGED IN HONEY.
There are two ways to submerge the rotor in honey:
First way:

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.

SETTING UPT HE CONTROLLER FOR HONEY DOZING



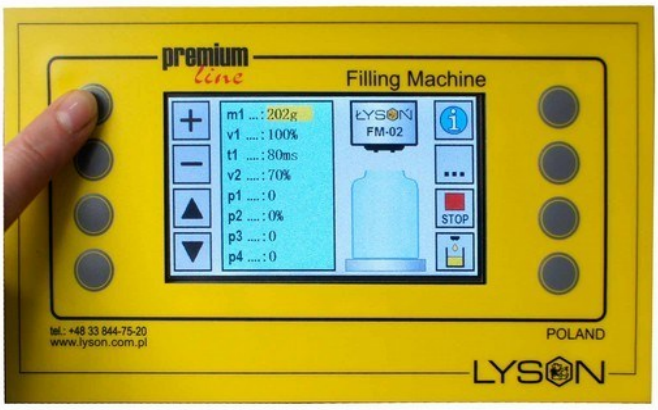


Photo. 1 Increasing the value of a given parameter

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: 4-45000[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.

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– **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[%]

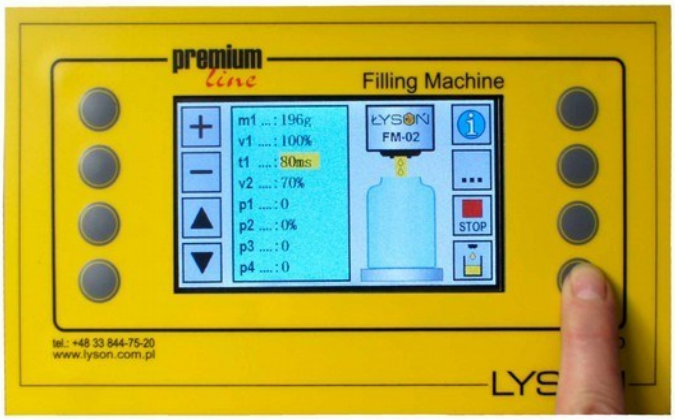


Photo . 5 *Button for making up the weight or pump permanent operations (pressing and holding makes the pump work permanently)*

– **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 tO a jar.
Range of changes *0-20*
Parameter setting does not disappear once disconnected from the mains

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.

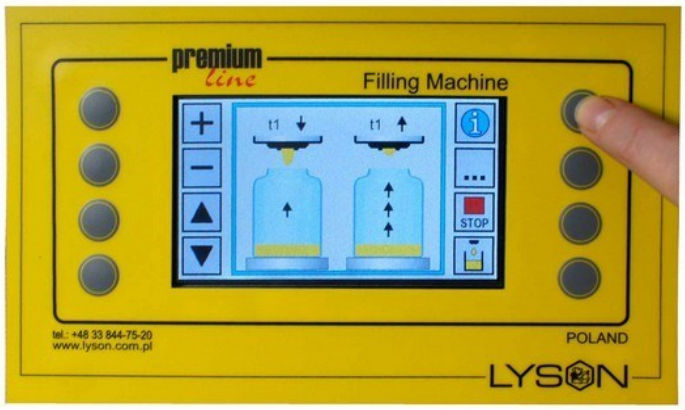


Photo 6 . *Information button*

SETTING UP THE 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 .

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.

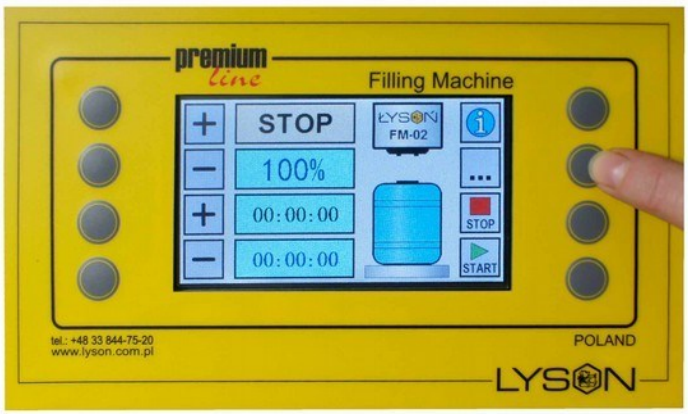


Photo 8 *Control panel after pumping/creaming option has been activated*

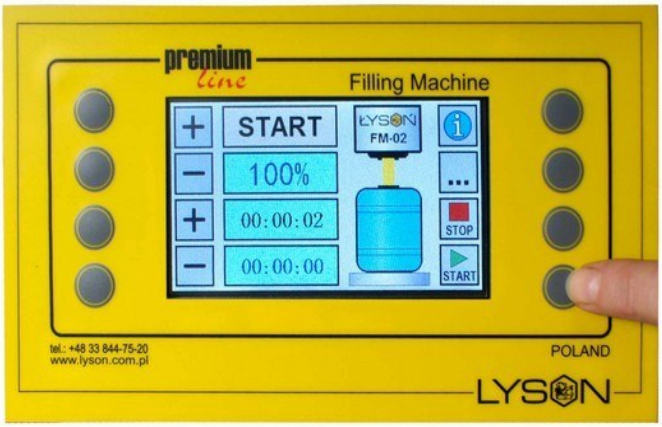


Photo 9 *Activation of pumping mode – button 8 START*
„START"
The pump starts continuous operations until STOP button has been pressed.

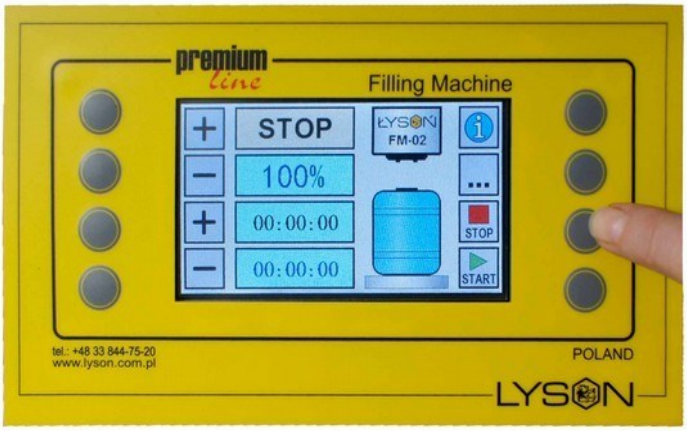
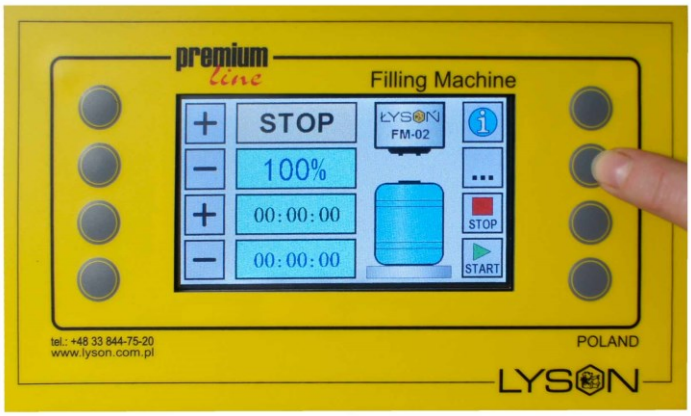
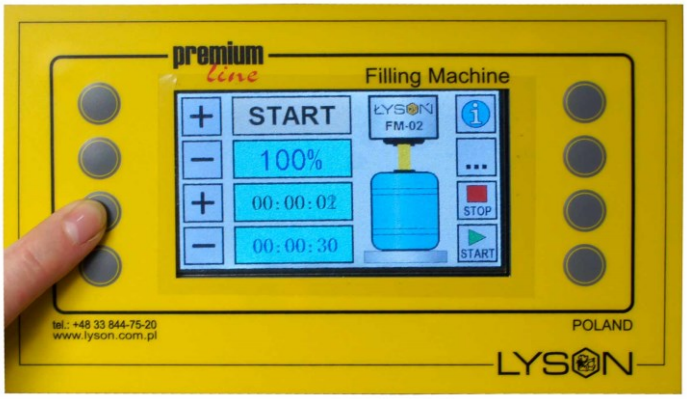


Photo 10 *Deactivation of the pumping mode, button no 7 (STOP)*

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.





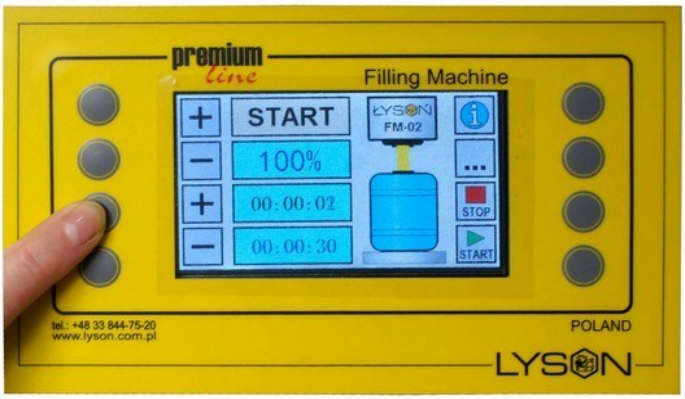
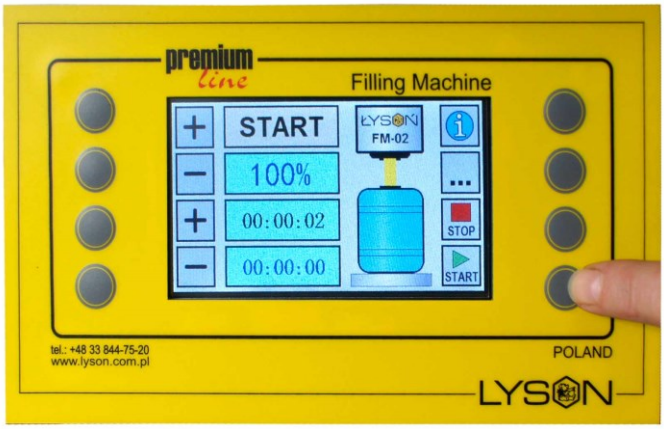


Photo 11 *By means of the Lower button* ***„plus” (no 3)*** or ***„minus” (no 4)*** set up the pump operating time.

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 set-ups 50% … 100%.

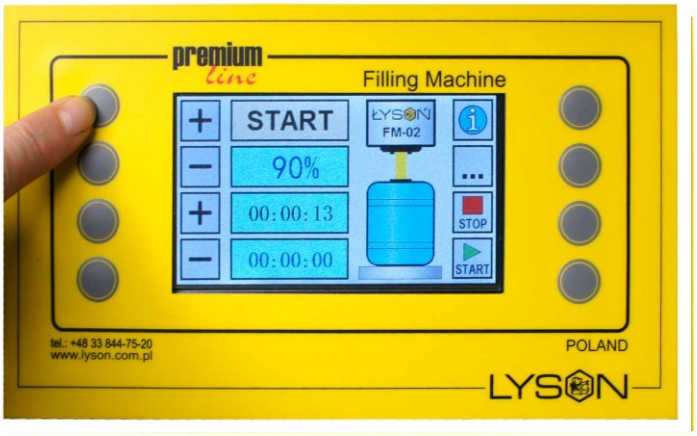


Photo 11 *Upper button* ***„plus" (no 1)*** or ***„minus"(no 2)*** serves to increase or decrease the pumping/creaming speed

HOSE TO A PUMP
(the set does not include an additional hose nor the couplings).