MANUAL FOR
HONEY EXTRACTING LINE
“OPTIMA” W20959_FULL

LYSON

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1. General safety operating principles for the „OPTIMA" honey extracting line W20959_FULL

Prior to device usage initiation, refer to the following manual and act according the guidelines contained therein. The manufacturer shall not be held accountable for any damages caused by improper usage of the device or its improper handling

1.1. Electric safety

1. Power supply electric installation must be equipped with RCD with nominal tripping current In below 30 mA. Functioning of overcurrent circuit breaker must be checked periodically.
2. If non-detachable power supply cable or a connecting cable get damaged and must be replaced, it must be performed at a guarantor's or by a specialised repair centre or by a qualified person in order to avoid any threat. Do not operate the device when the power supply cable or a connecting cable is damaged.
3. Prior to connecting the device to the mains, make sure that controller is off. A switch on the controlling panel should be in "0" position.
4. Check the nominal voltage of the device and the power supply source for compliance.
5. While connecting to the mains, be careful. Hands must be dry! The floor on which the device is placed must be dry too!
6. While starting work with the device, "EMERGENCY STOP" button must not be pressed (it must be switched until it has popped out). Pressing the 'EMERGENCY STOP" button allows to stop the machine immediately
7. The lid of the machine must be closed during spinning. It is forbidden to open the lid during spinning.
8. The motor and the controller must be protected against humidity (also during their storage)
9. It is forbidden to pull the power supply cable. The power supply cable must be kept away from any heat sources, sharp edges and its proper state must be secured.

1.2. Operational safety

1. 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. Make sure that children do not play with the device.
2. W In case when the device has got damaged , in order to avoid any danger, it may be repaired by a specialist repair centre or a qualified person solely .
3. It is forbidden to perform any maintenance works when the device is in operation.
4. Any covers must firmly attached to the device components when in operation.
5. In case of any danger, emergency stop button must be used immediately. The device may be reactivated once the danger has been eliminated.
6. The device is not intended for outdoor use, they may be exploited indoors only.
7. The device must not be switched on and stored with the ambient temperature below 0º C, it should not be switched on when the ambient temperature remains below 5ºC..
8. Each line component must be levelled prior to operation.

Making repairs in operations is forbidden

It is forbidden to remove the covers when the device is under operation

2. Using the „OPIMA" honey extracting line

2.1. Elements of the „OPTIMA" honey extracting line

The „OPTIMA" line consists of the following components:

- Mechanical uncapping machine with closed circulation
- Frame feeder with a loading arm (fig 1)
- Horizontal honey extractor with a ball valve 2"
- Receiver with a tub
- Extruder for uncapped honey 100kg.
- Insulated vertical strainer
- Honey pump 0.37kW

The 'OPTIMA FULL" line :

- 230V
- Total power 4kW
- Surface taken up by the line:
  length 5 m , width 1.5 m
- Recommended free space around the line should equal approximately 1 meter

2.2. Installation of the „OPTIMA" honey extracting line

1. Place the extractor at the intended site (Fig. 1)
2. Level it
3. Fix the extractor to the ground by means of dowels (Ø14 or Ø16, min. length 150 mm , dowels are not included into the line components)

Fig 1. Horizontal honey extractor

Fig.2. Frame feeder with a loading arm

4. Attach the frame pre-installed feeder with a loading arm (from the left) to the honey extractor **Fig.3**

5. By means of 4 Allen screws M8x20, fix the feeder to the honey extractor, while screwing it, it must be positioned properly with regards to the extractor and levelled
Fig.3

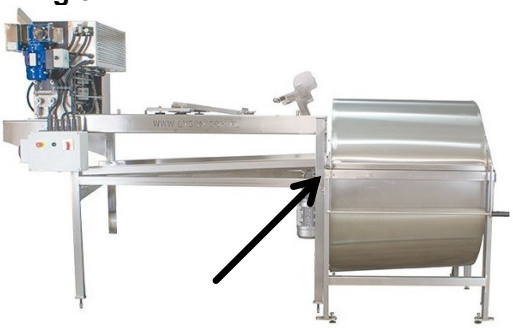

Fig.3. Fixing the frame feeder with an arm to the extractor

6. The receiver is to be placed to the right of the honey extractor **Fig.4**
7. By means of 4 Allen screws M8x20, fix the feeder to the honey extractor, while screwing it, it must be positioned properly with regards to the extractor and levelled
8. Level it.
9. By means of the attached bolts, screw the extractor controller to the receiver **Fig.4.**

Fig.4. Frame receiver with HE-3 controller

Installation of uncapping machine to the honey extracting line

- Uncapping machine is pre-installed on the feeder

Fig.5. The line with the uncapping machine

Assembly of the insulated vertical strainer to the honey extracting line

Fig.6. Insulated strainer with a float switch

- Strainer is positioned from the side of the honey extractor valve, under the feeder (to the left)
- Connect it to the extractor by means of a quick coupling connector **Fig.7**

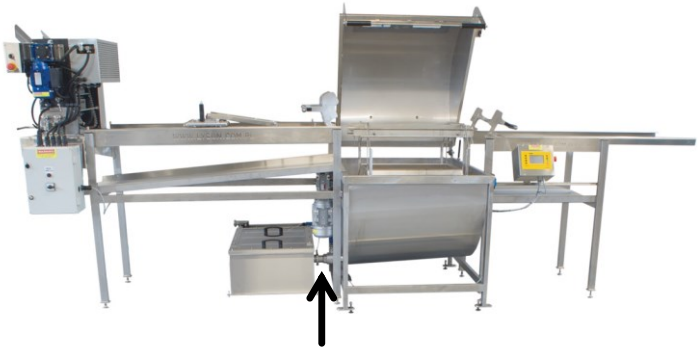

Fig.7. The line with the uncapping machine and an insulated strainer

Connecting the pump to the honey extracting line

Fig.8. Honey pump

- The pump and the strainer are connected by a Ø 40" hose and a quick coupling connectors and the float switch is to be installed in the strainer **Fig.11**

Connecting the extruder to the honey extracting line

- The extruder is to be placed under the uncapping device
- Extruder tub drain is connected to the strainer by means of a Ø 60 hose with quick coupling connectors Fig.10

Fig.9. Extruder

Fig.10. The extractor line with uncapping machine, strainer and extruder, connecting hose marked

Fig.11. The 'OPTIMA – FULL" line with uncapping machine, insulated strainer, extruder and honey pump, connecting hose marked

Starting work with the „OPTIMA" line

Prior to the first usage, one shall:

- check whether all its elements have been connected property, in line with the guidelines contained in Chapter ……
- check connection to electrical installation
- wash thoroughly all line components in line with the guidelines contained in Chapter: Maintenance and Cleaning

Stage I. Preparing the uncapping machine for operation
Stage II. Setting up the honey extractor controller
Stage III. Setting up the pump controller
Stage IV. Starting the uncapping and extracting
Stage V. Starting the extruder

STAGE I – preparing the uncapping machine for operation

Prior to placing the frames in the uncapping machine feeder, its parameters and glides (internal, external, upper and lower) must set up.

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Fig.12. *Regulating the upper and lower glide and proper placing of the frames in the glides*

Frame glide regulation is dependent on the height of the frames to be uncapped and the width of the beams.

For this purpose, several proper frames shall be placed on the feeder and the upper and lower guides shall be set up to allow for the frames to move freely towards the chain.

REGULATING THE FRAME HOLDFAST

A subsequent activity that must be performed is to regulate the frame holdfast depending on the honeycomb width ***Fig.13***
This activity shall provide proper frame lead during uncapping

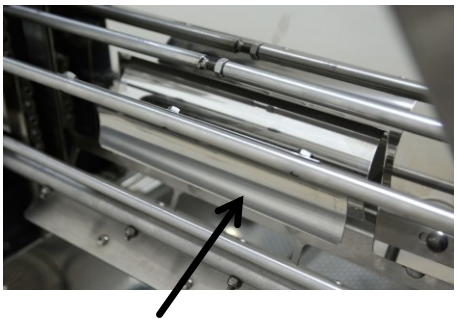

Fig. 13. Frame holdfast

Holdfast regulation is based on the narrowing or extension of the space between the holdfasts by adjustment
Fig.13
REGULATION OF THE UNCAPPING MACHINE KNIVES SPACING

Fig.14. Uncapping machine knives

This activity is performed by regulation of the screws in order to provide even uncapping of the surfaces from both sides
Fig.15

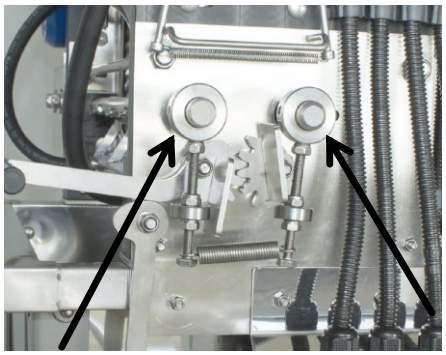

Fig.15. regulation of the knives

Closed circuit

NOTE!!!!
Uncapping machine closed circuit tank is pre-filled with a mixture of glycol and water (5 litres). (proportion: 1l.glycol - 4l. water)

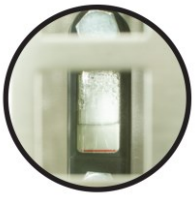

Fig.16. Liquid level indicator.

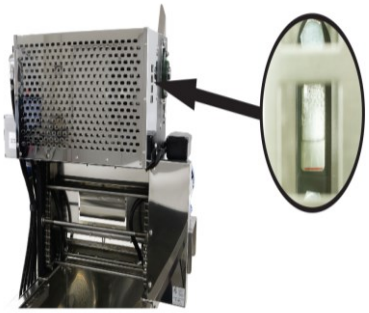

Fig.17. Before the casing there is a liquid level indicator. The liquid level shall be controlled to avoid heart overheating

Important!!!

During operation, the liquid level in the closed circuit must be controlled. In case when the liquid level decreases to the minimum level, a device must be stopped, disconnected from the power supply source and the tank must be refilled to the initial preset value (half of the indicator level)

In order to refill the tank, unscrew and fill the liquid into the tank and screw the cap back **Fig.18**.

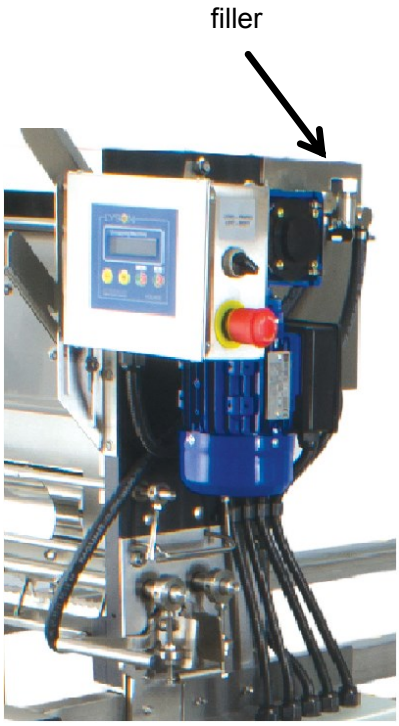

Fig.18. The place where the filler is located to refill the tank with fluid.

Once the liquid has been refilled, knife heating must be switched on. Wait until the uncapping machine knives get heated. Start the uncapping machine and return to the uncapping process.

One must pay attention to the number of frames uncapped placed on the feeder, remove them in order to provide enough space for subsequent frames.

STARTING THE UNCAPPING MACHINE

Automatic uncapping machine is adjusted to the power supply of 400 V AC from a three-phase socket or 230 V, depending on the model purchased.

Prior to device start-up, check whether the emergency switch (Fig 19A) is not pressed.

Fig.19. Emergency switch „STOP" A

Changing the motor rotation direction is possible by shifting the switch RIGHT/LEFT on the controller (Fig. 19B)
When the frames get blocked, switch to the rotations to the left and the chain rotates in the opposite direction

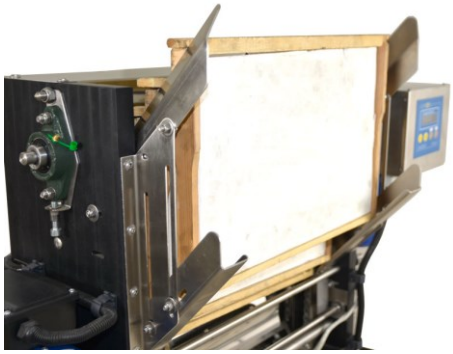

Fig.20. Proper arrangement of the frames on the glide.

UNCAPPING

After the knives have got heated up, the frames must be placed in the previously regulated glide, Fig 20. Start the uncapping machine by means of the "ON-M" button and start the uncapping process.

Check the quality of the uncapped frames, correct the regulation if needed. .

Prior to starting the regulation, stop the device (OFF-M button)!

It is forbidden to make any corrections in the regulation when the uncapping machine is switched on. Proper position of the switch during the regulation is the "0" position. Fig 19-B

Pay attention to hot knives of the uncapping machine!!!

Only then can any indispensable corrections to the machine set-ups be made.

NOTE!

In case of the need for immediate stop, press the emergency stop button. Fig. 21

Pressing the emergency stop button shall deactivate the heating system, circulation pump, uncapping knives, chains and H1 heater power supply.

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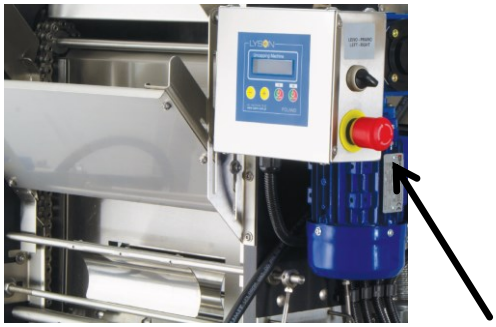

Fig.21. Emergency button „STOP”

Fig 22. Power supply cabinet with the main switch

Before starting work with the uncapping machine, one should:

- Connect the device to the mains and check whether safety switch is not pressed Fig 21 (turn gently in line with the arrows on the red head. If pressed, it will pop out when turned)
- Turn the 0/1 switch to ‘1” position, after which the controller gets activated. Fig 22.

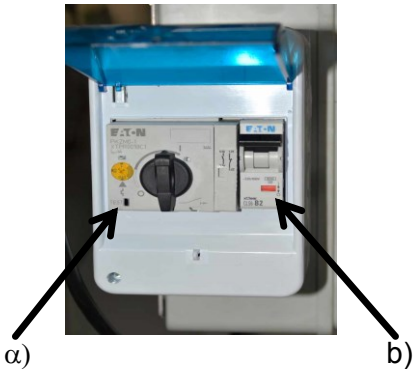

Fig .23.

a) Overload protection switch - protect the motor against overheating by cutting off the power supply when , e.g., the frame gets jammed. Fig 23

b) Surge switch (fuse) - it protects electric system by cutting off the power supply. Fig 23

Setting up the PC-02 controller on the uncapping machine

Fig.1. Controller panel prior to start-up

Microprocessor controller used in automatic uncapping machines

BUTTON NUMBER	BUTTON DESCRIPTION
1 (-)	Lowering the setpoint value for the heater temperature
2 (+)	Increasing the setpoint value for the heater temperature
3 (H)	Activation of deactivation of knife heating system
4 (M)	Activation or deactivation of the frame driving system

<u>Setting the temperature for the uncapping knives</u>

Setting up the controller boils down to setting the temperature for the uncapping knives heaters.

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Fig. 2. Controller panel after switching on

The controller displays the current temperature of the uncapping knives **T.**

The parameter below **S –** Setpoint temperature to be set up.

Setting range: 30°C - 95°C .

The temperature is increased by button number 2 „PLUS” (Fig.4) or decreased by button number 1 „MINUS” (Fig.5)

Fig.4. Increasing the heater temperature

Fig.5. Decreasing the heater temperature

Having set the knife heater temperature, switch on the knife heating by button number 3 „ON/OFF"- H . Fig 6. Pressing number 3 button "ON/OFF"- H again will deactivate knife heating (Fig. 6)

Description	Function
1	Graphs to signal the heater operations. Heater – activated – graphics displayed, heater deactivated – no graphics.
2	Current heater temperature
3	Setpoint heater temperature
4	Heating system operating mode. **H=ON** - knives heating system ON with the pump controlling outlet **H=OFF** – knives heating system OFF with the pump controlling outlet
5	Frame driving system operating mode. **M=ON** - Frame driving motor ON **M=OFF** –frame driving motor OFF

Fig .6

After switching on the heaters, message ON will be displayed on the controller, graphic information will e displayed to the left **Fig.6**

After switching off the heaters, message OFF will be displayed on the controller, there will e no graphic information to the left. .

Activation and deactivation of uncapping knovesh

Fig.7. activation of uncapping knives with button 4

„ON/OFF"-M once the knives activated, ON inscription appears on the controller and the uncapping knives start to move

Fig .8. Activation of uncapping knives with button no 4 „ON/OFF"-M .

Once the uncapping knives get deactivated, the inscription OFF will appear on the controller – the knives will stop

Controller panel – display

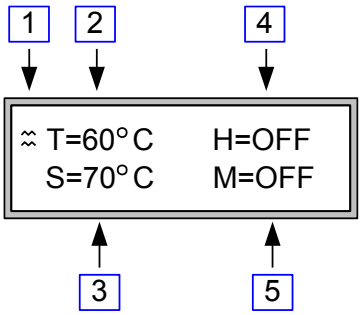


Fig 1. PC-02 controller display

Controller panel - keyboard

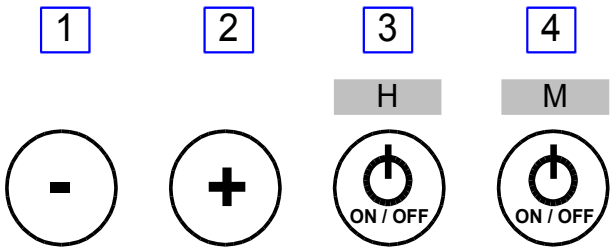


Fig 2. Elements of handling the controller for frame uncapping machine

Description	Function
1	Decreasing the setpoint heater temperature value
2	Increasing the set point heater temperature value
3	Activation or deactivation of the heating system for the knives and the pump outlet
4	Activation or deactivation of the frame driving system

Diagnostics – protection and codes

PC-02 controller has been equipped with extensive diagnostics procedures – intended to increase the safety and comfort of operations with the device for frame uncapping.

Emergency stop

1. Occurs when emergency STOP button has been pressed, which is signalled by **„EMG STOP”,** work restarting is possible once the STOP button is deactivated
2. **Error signalling**
3. Errors are signalled on the display by the following message

„E-xxx” where xxx refers to the number of an error placed in the table at the end of the manual.

The controller can be restarted once the failure has been eliminated.

The list containing „ terror codes) is included in the appendix at the end of the manual.

Controller technical parameters

PC-02 MICROPROCESSOR CONTROLLER	
The range of the temperature measured:	0°C do +115°C
The setting range of the stabilised temperature:	+30°C do +95°C
Regulation type:	Bi-state (ON / OFF)
Temperature regulation hysteresis:	±1°C
Resolution of temperature readout/setting:	1°C
Guaranteed temperature measurement accuracy:	±0.5°C for the range 0°C to +85°C ±2°C for the range 86°C to +90°C
Sounder:	yes

3.2. STAGE II – setting up the controller for horizontal honey extractor

Manual for the controller in the PREMIUM LINE honey extractors

Controller HE-03 enables the operation in a manual mode

Manual mode operation.

Manual mode operations includes work during which the motor rotates in one of the previously chosen directions, the user has an influence over the spinning speed.

In order to start the manual mode operation, one shall , by means of the following buttons:

- „**ARROW UPWARDS**”
- „**ARROW DOWNWARDS”**
- „**ARROW TO THE LEFT**”
- „**ARROW TO THE RIGHT”**

select the relevant programme: P1 or P2, spinning in a selected direction and next start it by pressing the **„START"** button.

Spinning may be stopped at any time – after pressing the „**STOP"** button

Implicitly, the spinning duration in manual mode is not defined. Thus, the drum shall spin from activation until stopping by pressing the **„STOP"** button.

Such a solution is the most frequently encountered standard , however in some cases a timer function may appear to e helpful.

The time function is a delay in spinning deactivation, i.e. move stopping, after the preset time has passed. In order to activate timer function, with the selected one of the two manual mode programs (Program 1 or Program 2) and activated motion (START state), press the button **„ARROW**

UP" or **„ARROW RIGHT".** Single pressing of the button **„ARROW UP"** will increase the time that must e passed to motion by 60 seconds. Single pressing of the button **„ARROW RIGHT"** will extend the preset time by 15 seconds. Respectively, the buttons **„ARROW DOWN / ARROW LEFT"** shorten the preset time. The maximum time that is possible to set equals 900 seconds. Once the timer function has been activated, an icon of a stopwatch will appear in the left part of the manual mode screen, underneath the time that fill pass to stopping the motion will be displayed.

Fig.1

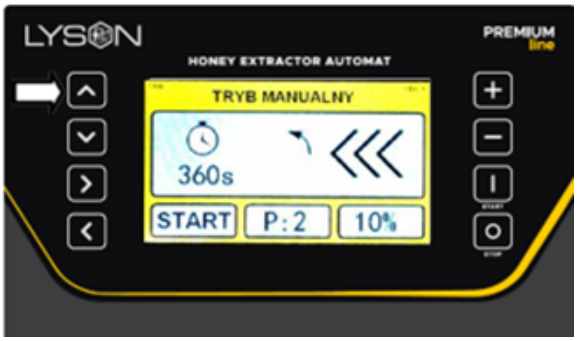
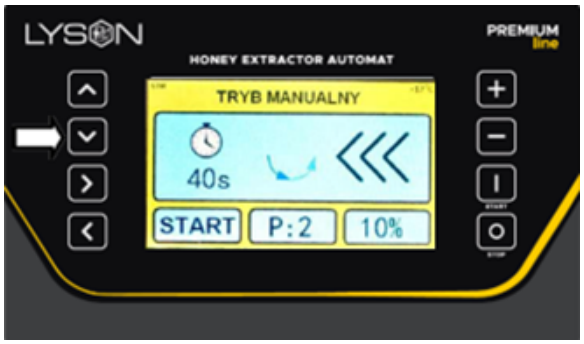


Fig.2



First, press the **„START"** button, later by means of the button **„ARROW UP"** or **„ARROW DOWN"** activate the Timer.

Pause function- is activated when the controller is in START state and the **„START"** button has been pressed. In manual mode, the pause function stops the time countdown , i.e.
“freezes” the timer function. If the timer has not been activated, starting the pause function does not influence the device operation. Pause function deactivation occurs once the **„START"** button is pressed again or the motion is stopped by pressing the **„STOP"** button

In case when the lid opening has been detected or emergency stop button pressed, the manual mode operation stops and the warning message appears on the screen **Fig.3**.

Fig.3

In case when a serious error in the functioning of the controller has been detected (controller’s error, inverter’s error), manual mode operation is stopped, the error report screen appears on the display. After 30 seconds of idleness , the controller will automatically start the function of screen saving. Screen saving includes the displaying of the slide show presenting the “Łysoń” company
The manufacturer of the honey extractor is able to switch off the screen saving function (see; manufacturer – entering the access code

Starting the manual mode

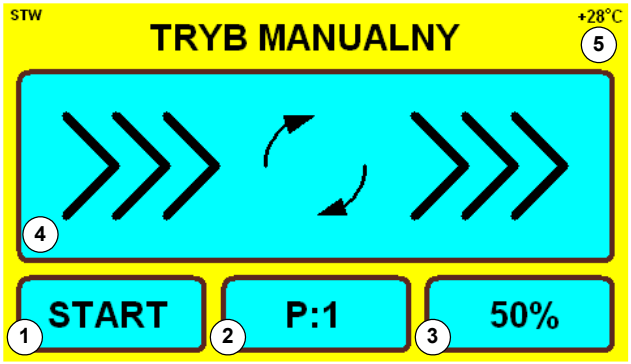


Fig.4

Field	Function
1	Indication **START / STOP** – shows the current operating status of the controller.
2	Indication of the program – displays the number of the currently selected program.
3	Indication of speed – the maximum spinning speed scaled in percentages.
4	Indication of the s[inning direction.
5	Indication of the temperature measured inside the controller’s casing.

With manual mode, P:1 remains a recommended Direktion for basket rotation IT IS NOT RECOMMENDED TO USE THE P:2 PROGRAM AS IT MAY LEAD TO EXCESSIVE WEAR OR DAMAGES TO THE EXTRACTOR MOTOR FIXING !

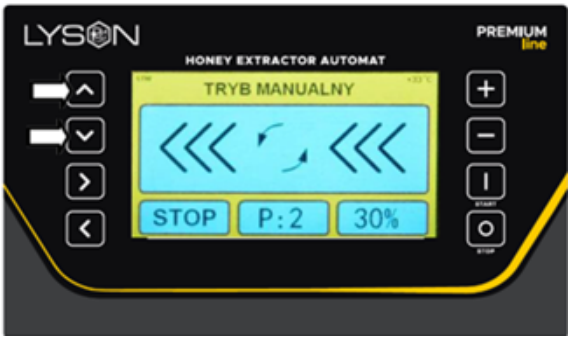


Fig.5

Fig.5 *by means of the button: „**ARROW UP**" or „**ARROW DOWN**" select PROGRAM P:1 or P:2 (basket rotation direction)*
Next press the START button as in **Fig.6**

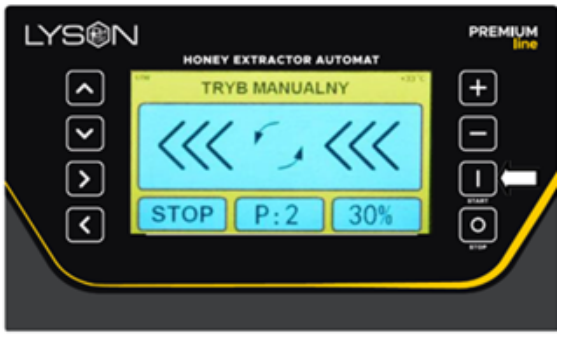


Fig.6 The **„START"** button - honey extractor activation

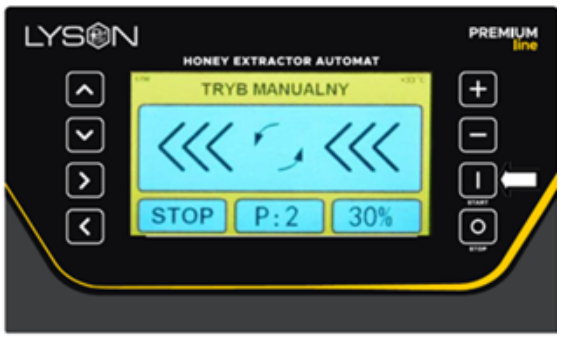


Fig.7 „„***PLUS**" or „**MINUS**" increasing or decreasing the basket rotations*.

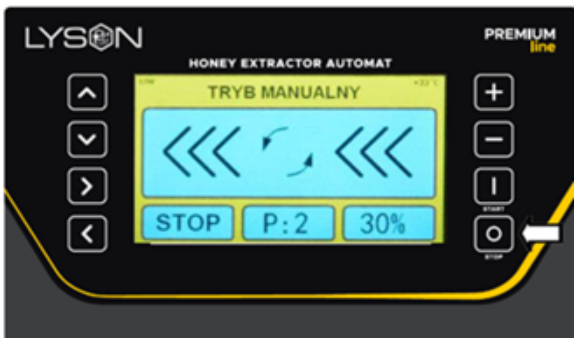


Fig.8 The **„STOP"** button, stopping the basket rotations.

5.2. Automatic mode operation.

Automatic mode operation is the type of work during which the controller performs one of the 8 programmed spinning sequences. Each sequence consists of seven steps. Each step is defined by the activation time, preset speed and direction of spinning. The last , seventh, step is defined by a single parameter – the time of cycle stopping.
In order to start the automatic mode operation, by means of the buttons:

- **„ARROW UP"**
- **„ARROW DOWN"**
- **„ARROW LEFT"**
- **„ARROW RIGHT"**

The relevant program must be selected and later started by pressing the **„START"** button. Program can be stopped any time after pressing the **„STOP"** button
The duration of each automatic cycle may be temporarily extended or shortened. With one of the 8 automatic mode programs selected and the cycle stopped (STOP status), **„PLUS"** or **„MINUS"** button must be pressed. Single pressing of the **„PLUS"** button extends the duration of each step by 10%. Respectively, pressing the „MINUS" button shortens the duration of each step by 10%. Such a program modification is temporary, after the controller restarting or when the program number is changed, the time parameters will returned to programmed values.
Cycle step duration modification is calculated with the rounding to 1 second and is possible on condition that the time limits for the cycle steps have not been exceeded.

Pause function- is activated when the controller is in START state and the **„START"** button has been pressed. In automatic mode, the pause function stops the time countdown , i.e. "freezes" the spinning cycle progressing. Pause function deactivation occurs once the **„START"** button is pressed again or the motion is stopped by pressing the **„STOP"** button

In case when the lid opening has been detected or emergency stop button pressed, the automatic mode operation stops and the warning message appears on the
screen **Fig.10,11**
In case when a serious error in the functioning of the controller has been detected (controller's error, inverter's error), automatic mode operation is stopped, the error report screen appears on the display.

After 30 seconds of idleness , the controller will automatically start the function of screen saving. Screen saving includes the displaying of the slide show presenting the "Łysoń" company. The manufacturer of the honey extractor is able to switch off the screen saving function (see

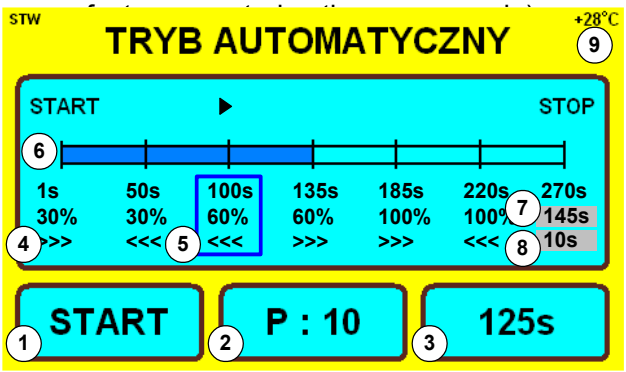


Fig.9

Field	Function
1	Indication START / STOP – indicates the current controller's operating status. START – spinning cycle is being performed, STOP honey extractor drive stopped, the cycle is not performed.
2	Program indication – displays the number of currently selected program.

3	Time indication: START status – displays the time which has passed since starting the program. STOP status – displays the total time for program duration
4	Step parameter indication – time of step activation, speed and direction of spinning.
5	Indication of the currently performed cycle step. This indication is active only in START status.
6	Progressing indication – increasing along with the performance of subsequent cycles steps – active in START status only.
7	Time indication – displays the time that remains till the spinning cycle termination. This indication remains active in START status only.
8	Time indication – displays the time which remains till the termination of the currently performed cycle step. This indication remains active in START status only.
9	Indication of the temperature measured inside the controller's casing.

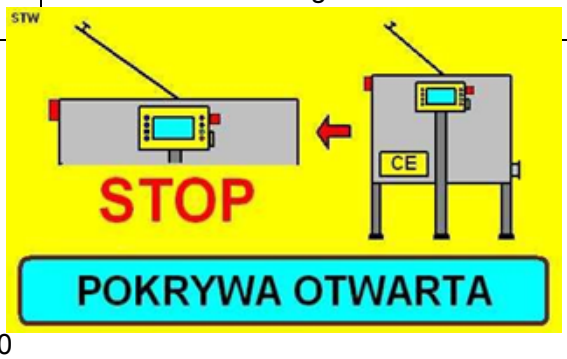


Fig.10

Warning messages.

Lid opened – the message displayed after the honey extractor lid has been opened.

Fig.11

Emergency stop switch pressed – the message displayed after the emergency stop button has been stopped. .

The aforementioned messages will not be displayed when:

- the controller is in the system menu or any of its items
- the controller displays the error report screen
- there has been an error in the electrical connection of the connectors

5.3. Controller's system menu

Entering the controller's system menu.

During the controller's start-up, in the lower part of the screen the following message will appear: " press the STOP button in order to enter the configuration mode" (Fig. 12). While the said message is displayed, press and hold the **„STOP"** button. The button may be released after the controller's system menu has appeared , **Fig.13**

Fig.12 Entering the programming menu

Fig. 13

By means of the buttons „**ARROW UP/ARROW DOWN",** select the relevant item in the menu

Confirm by „**START" button** – enter the relevant function.

1 Program editing.

Item in the menu, Program Editing, allows to create your own frame spinning cycles. While creating your own spinning cycle, you set up: the program number, time, speed and spinning direction. Currently changed (edited) parameter is highlighted by yellow colour. On the screen of program editor, the following buttons are used:

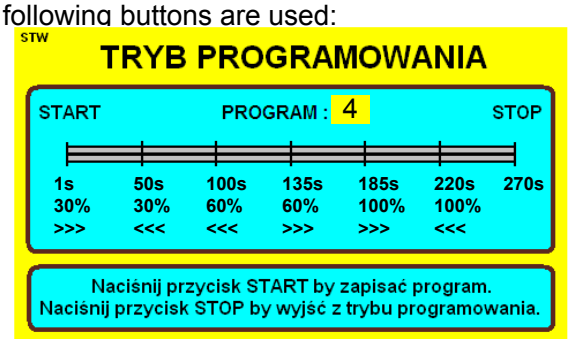


Fig.16

item	Button	Function
1	↑	Navigating button, serves to select the parameter to be changed. Highlighted item moves upwards.
2	↓	Navigating button, serves to select the

		parameter to be changed. Highlighted item moves downwards
3	→	Navigating button, serves to select the parameter to be changed. Highlighted item moves to the right.
4	←	Navigating button, serves to select the parameter to be changed. Highlighted item moves to the left.
5	PLUS	Change button (increasing) for the value of the modified parameter. In case of the spinning direction modification, pressing the value alternately changes the direction.
6	MINUS	Change button (decreasing) for the value of the modified parameter. In case of the spinning direction modification, pressing the value alternately changes the direction.
7	START	Pressing the button allows to store the currently edited program
8	STOP	Pressing the button allows to exit the program editing mode. If changes in the edited program have not been stored previously, they will be lost. .

2 Configuration.

The item in the menu, Configuration, allows to set up the relevant honey extractor type (radial or cassette). Setting up the honey extractor type is performed on two levels. First, by the buttons **„PLUS"** and **„MINUS"** select the relevant type of the extractor and next by means of the **„START"** button confirm the choice. Choice confirmation will trigger the uploading of the pre-defined spinning program – defined by the extractor manufacturer.
Changing the extractor type is possible once the relevant access code has been entered, see: manufacturer: entering the access code.
Without entering the access code, the current configuration is indicated by grey colour and the arrow showing the chosen item in the menu omits the configuration field.
.

3 Language.

Item in the menu, language, allows to set the language of the user's interface in the honey extractor's controller.
Changing the language is possible once the access code has been entered (access code: 1111)
Without entering the access code, the current language is indicated by grey colour and the arrow showing the chosen item in the menu omits the language field (number 3).
The code shall be entered by accessing option number 6.
- set the cursor on item 6 - Manufacturer .
- Confirm by **„START"** button.
- A field to enter the code is displayed.
- By means of the buttons **„PLUS"** and **„MINUS"** the digits are changed.
- By means of the buttons „**ARROW LEFT"** and „**ARROW RIGHT**" set up the place for change.

Confirm by „**START"** button

4 Service.

Item in the menu, Service, allows to shift to the extractor's drive timer screen. The said timers specify the time in minutes. The upper timer can be reset (**„MINUS"** button). The lower timer displays the total time that the extractor has worked for since manufacturing. The timer can be reset only once the relevant code has been entered. One can returned to the system menu after pressing the **„STOP"** button.

5 Diagnostics

Item in the menu Diagnostics allows to shift to the extractor controller diagnostics screen. The diagnostics screen allows to check the functioning of basic controller's functions.

6 Manufacturer

In point 6, Manufacturer, the protection codes are entered in order to make the changes in the controller's settings

7 Exit / Restart

Item in the menu which allows to exit the controller configuration mode and to continue the work with the honey extractor.

5.4. Error report

HE-03 controller has been equipped with advanced mechanism for error detection. Detecting any error triggers the emergency stop for the motor and activates the error report screen. Error report screen is displayed permanently. It is necessary to switch off the power supply, remove the source of error and restart the controller.

Fig.17

Error description at the end of the manual, as an Appendix.

5.5. Technical parameters

CONTROLLER'S TECHNICAL PARAMETERS	
The number of manual modes:	2 – spinning R/L
Time setups range for manual cycle:	15 – 900 seconds or ∞
Time regulation jump in manual cycle	15 seconds
Speed regulation range in manual mode:	10% - 100%, jump 5%

The number of automatic modes (cycles):	8
The number of steps in a cycle:	7
Time setups for automatic cycle:	60 - 960 seconds (16 minutes)
Time regulation jump in automatic cycle:	5 seconds
Speed regulating range in automatic cycle:	10% - 100%, jump 5%
The number of manual modes:	2 – spinning R/L
The number of languages handled:	32
Keyboard:	8 buttons
Power supply:	230V
Protection:	10A
Environmental conditions	
Temperature inside the regulator under operation:	5°C…60°C
Ambient temperature for the regulator under storage:	1°C…60°C
Air humidity for the regulator under operation:	Max 65% for 25°C

Languages handled

item	abbreviation ISO639-1	language
1.	EN	English
2.	PL	Polish
3.	RU	Russian
4.	DE	German
5.	FR	French
6.	CS	Czech
7.	SK	Slovakian
8.	RO	Romanian
9.	BG	Bulgarian
10.	AR	Arabic
11.	ES	Spanish
12.	SV	Swedish
13.	FI	Finnish
14.	NO	Norwegian
15.	TR	Turkish
16.	IT	Italian
17.	HU	Hungarian
18.	EL	Greek
19.	NL	Dutch
20.	DA	Danish
21.	UK	Ukrainian
22.	BE	Belorussian
23.	LT	Lithuanian
24.	LV	Latvian
25.	ET	Estonian
26.	PT	Portuguese
27.	SR	Serbian
28.	HR	Croatian
29.	BS	Bosnian
30.	SL	Slovenian
31.	ZH	Chinese
32.	JA	Japanese

3.3. STAGE III – setting up the pump controller

Having activated the pump, three diodes flash on the controller. This means that STOP button must be kept pressed by appox. 10 sec in order to activate the float switch which controls the honey level in the strainer. The float switch may be activated by raising it to the upper, horizontal, position,

Pump Speer is regulated by means of a knob **Fig.1**

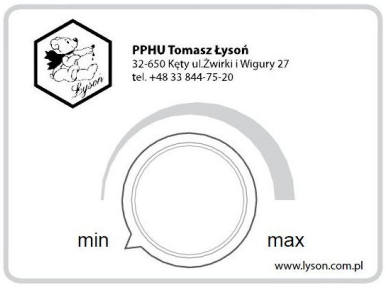


Fig.1 Knob (speed regulator)

By pressing the button Arrow to the left, Fig 2, or Arrow to the right , Fig. 3, we select the operational direction.
By means of the knob , Fig. 1, we increase or decrease the Speer.

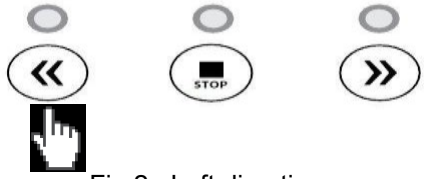


Fig.2 Left direction

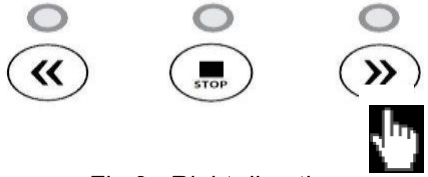


Fig.3 Right direction

In order to change the rotation direction , STOP button must be pressed and direction of rotation is selected as in Fig. 2 and Fig. 3

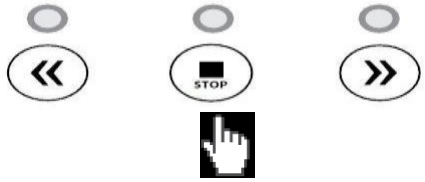
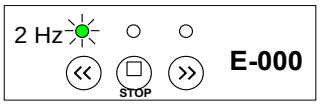
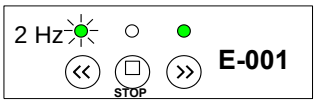


Fig.4 „STOP” stopping the device operation

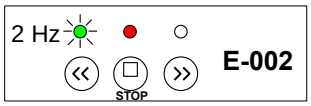
Pump controller – blink codes



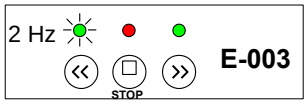
INTERNAL DEFECT OF THE MICROPROCESSOR CONTROLLER



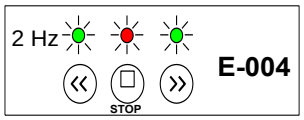
PRESSED / LOCKED THE START BUTTON DIRECTION - LEFT



PRESSED / LOCKED THE STOP BUTTON



PRESSED / LOCKED THE START BUTTON DIRECTION - RIGHT



WARNING – BROKEN FLOAT CIRCUIT – CONFIRM BY STOP BUTTON OR A SIGNAL FRM FLOAT SWITCH (LIFT THE FLOAT TO UPPER POSITION AND KEEP FOR 5-10 SECONDS)

3.4. STAGE IV– STARTING THE UNCAPPING AND EXTRACTION

- Frames taken out from the body shall be placed on the uncapping machine feeder and a preset cycle is to be started
- Uncapped frames shall be moved one by another to the receiving feeder of the line, fig 1
- By means of the loading arm, the frames are to be moved towards the honey extractor, fig. 2

Fig.1 Loading arm

Fig.2 Operation of a loading arm

Next, open the honey extractor, place the basket in the loading position, block by means of the clamps from the side of the loading arm and receiving device **Fig. 3 and 4**

Fig.3 Placing the basket in the position to be blocked

Fig.4 Blocking the basket

The proper number of frames is to be inserted into the basket, 20 frames per section. The honey extractor has two sections. It is important to load the full number of frames into the extractor. The lower number may cause the frames to fall out of the basket, which may lead to the basket getting damaged Fig.4

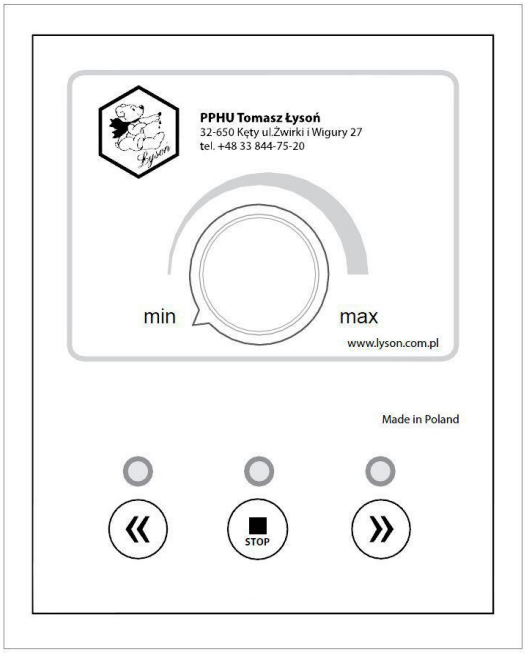
Fig.5 Erroneous frame arrangement in the basket

Unblock the basket (remove the “clamps”), frames get blocked automatically. Place the basket on the second section and repeat the steps. When the basket is full, close the honey extractor and start the controller. When the extracting cycle starts, the honey extractor lid get blocked until the extraction terminates.

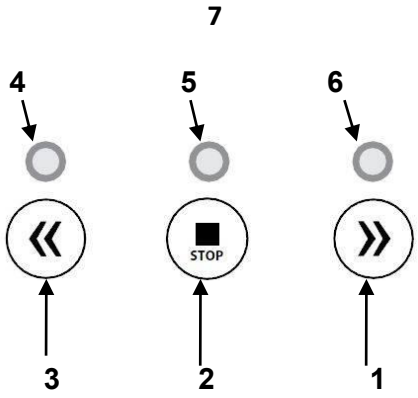
After extraction of the frames the basket stops, which releases the blockage. When the extractor lid is opened, place the basket in such a way to block a given section (from both sides). Fig.4.

While loading another batch of uncapped frames to the honey extractor , push the extracted frames out of the basket. The body may be placed directly under the receiver and placed them there directly.
Extracted honey flows into the strainer, from where it is pumped to the vessels (settling tank, drum). A float switch is mounted on the strainer and it controls the honey level in the strainer.
Uncapped honey flows on the tub to the extruder, which is activated when the feed is full. Honey obtained in he extruding process flows from the tub to the strainer.
.

3.5. STAGE V– starting the extruder



Controller's operation boils down to starting the extruder motor by means of the button 1 or 3 with the rotations set by a user by means of a knob number 7



DESCRIPTION OF BUTTONS – FUNCTIONS OF THE CONTROLLER

Element	Function
1	Button **START TO THE RIGHT**. Pressing it will start the extruder in permanent mode. STOP button (2) will stop the cycle
2	STOP button to terminate the operations. Pressing the button will switch the controller into the stop mode/
3	Button **START TO THE LEFT**. Pressing it will start the extruder in permanent mode. STOP button (2) will stop the cycle.
4	Diode signalling when the extruder works leftwards
5	Diode signalling when the device stops. When the diode flashes, it means the safety loop has been activated.
6	Diode signalling when the extruder Works rightwards
7	**The knob to regulate the rotational speed** (Speer setups ranking between 0 – max). Setting the speed at 0 will deactivate the device

HANDLING THE CONTROLLER

Having switched the power on, the controller goes through a start-up sequence – performs several basic diagnostic tests to confirm that the device works correctly. Error detection is signalled by blinking the diode number 4 and the proper combination of diode 5 and 6 is lit up. If no errors have been detected, the controller will switch into stop status – waiting for the user's commands.

Handling the controller boils down to starting the extruder by means of the button 1 and 3. STOP button will stop the extruder's operation. Cycle is restarted once button number 1 or 3 has been pressed.

Detection of the safety loop activation (pressing the Emergency STOP button) will stop the motor rotations immediately and the extruder will stop as well.

Releasing the protection (switching the STOP button to the right) mans that the device is ready for operation again.

Error signalling

Error codes

The controller has been equipped with diagnostic procedures – enhancing the safety and comfort of operation

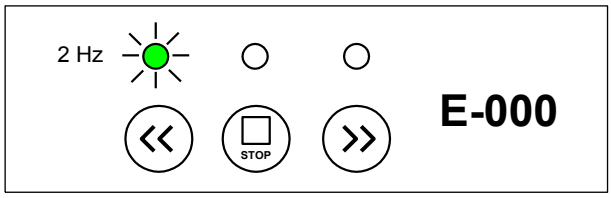
Error signalling

· errors are signalled by a proper combination of diodes number 4, 5, 6

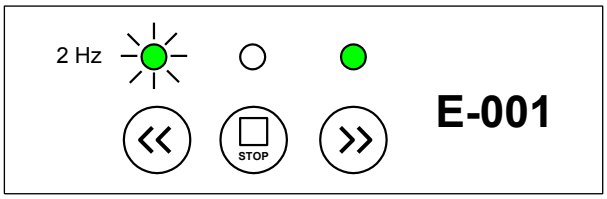
· terror detection stops the extruder immediately

· controller is restarted when: power has been cut off, fault has been removed and power supply has been reconnected

· when power supply of the controller is disconnected, the error memory is deleted

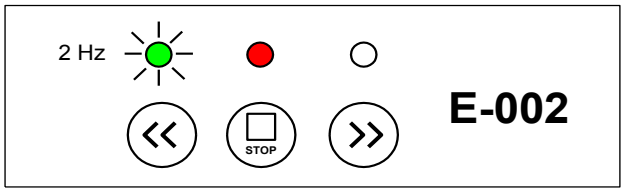


INTERNAL DEFECT OF THE MICROPROCESSOR CONTROLLER

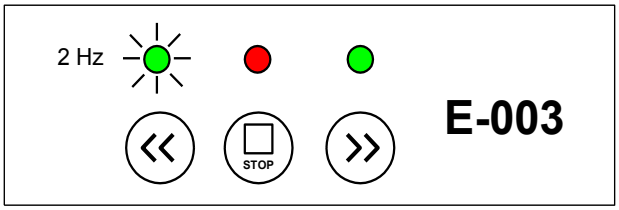


PRESSED / LOCKED THE START BUTTON

DIRECTION - LEFT

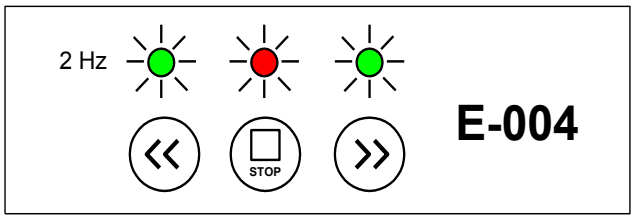


PRESSED / LOCKED THE STOP BUTTON



PRESSED / LOCKED THE START BUTTON

DIRECTION - RIGHT



ERROR OF THE ALARM LOOP - EMERGENCY BUTTON PRESSED

4. Storing the Honey Extracting Line Optima – Full

After honey harvesting time honey extractor shall be washed thoroughly and dried . Prior to the activation of extractor, extruder, pump or strainer, in case when they have been transferred from a room with a lower ambient temperature to a room with a higher one , one must wait until the device has reached the ambient temperature. The device is to be stored in dry rooms with the temperature above 0º C.

5. Maintenance and clearing the OPTIMA – FULL LINE

IMPORTANT!

It is forbidden to use Karcher-type devices due to the risk of flooding the controller's casing and the cables. Damages of such types are not covered by the guarantee terms

Cleaning the horizontal extractor - unscrew the strainer from the extractor, place a flange with a valve, pour hot water into the extractor, close the lid and start the extractor. Enough water has been poured in when the basket gets wet and it can collect water while extracting.

After harvesting, each line component shall be washed thoroughly with hot water containing slight quantities of agents accepted to be used in food processing industry or by means of a pressure washer. Be careful during the washing and prevent dumping the honey extractor engine or controller (they may be covered with water-resistant materials).

After washing, the line components must be rinsed with pure water and dried. Before every season additional technical inspection must be performed and in case any faults are detected a service point must be contacted
IMPORTANT!
Wash the covers using warm 25°C soapy water.
NOTE!
Do not use alcohol for cleaning
(it may cause surface cracks of the cover).

6. 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.

7.Guarantee

The products purchased in "Łysoń" company are encompassed by the manufacturer's guarantee.

The guarantee period equals 2 years *

A receipt or a VAT invoice is issued for each product purchased.
.

*** details on the guarantee terms and conditions available on www.lyson.com.pl**

9. Appendix with line parameters and error codes

Technical parameters for the line OPTIMA - FULL:

Line element	length mm	Width mm	Height mm	Power supply	Efficiency/capacity	Other
Uncapping device	450	600		230 V	5-8 frames/min	Controller PC-02 knives 0.18 KW closed circuit
Loading arm	2050	730	1400		40 frames	Loading arm – stainless steel, acid-resistant, brushed steel, thickness 4 mm, stainless steel profile 50x30 mm, stainless and acid-resistant steel H18, thickness 1 mm
Horizontal honey extractor	1200	1300	2000	230 V	ok. 400kg/h	Controller HE-03 Motor 0.75 kW, stainless Ball valve 2" Stainless steel plate, brushed H18, thickness 1.5 mm Extractor frame , stainless profile 50x30 basket – stainless steel plate, acid-resistant H18, thickness 4.0 mm
Frame receiver	1500	700	1300		40 frames	Stainless steel, acid-resistant steel plate, brushed steel, thickness 4 mm, stainless steel profile 50x30 mm, stainless steel, acid-resistant steel plate, brushed H18, thickness 1 mm
Extruder	1150	720	820	230 V	100 kg/h	Controller HES-02 Motor 0.55 kW Weight 45 kg
Pump				230 V	900 L/h	Controller HES-02 Motor 0.37 kW Weight 18.5 kg
Horizontal strainer	1000	600	350		120L	Equipped with a float switch

EXTRUDER

ERROR CODE	ERROR DESCRIPTIONS
E-100	CONTROLLER SOFTWARE MEMORY ERROR
E-101	CONTROLLER CONFIGURATION MEMORY ERROR
E-102	CONTROLLER OPERATING MEMORY ERROR
E-200	PRESSED/BLOCKED BUTTON „-”
E-201	PRESSED / BLOCKED BUTTON „**+**”
E-202	PRESSED / BLOCKED BUTTON „**ON/OFF - H**”
E-203	PRESSED / BLOCKED BUTTON „**ON/OFF - M**”
E-300	POWER CIRCUIT PROTECTION TRIGGERED
E-301	TEMPERATURE SENSOR OUT-OF-ORDER
E-302	HEATERS TEMPERATURE TOO HIGH
E-303	HEATERS TEMPERATURE TOO LOW
E-304	HEATING SYSTEM FAILURE

Error description

E-302 – measured temperature has exceeded the maximum value = 90°C.

E-303 – measured temperature dropped below the minimum value = 0°C.

E-304 – error communicated in case when the temperature has not reached the required lowest programmable value of stabilised temperature >= despite the fact that 10 minutes have passed since the knives heating system was activated .

Honey extractor

section	Descr.	Indication	Error description
1	CPU	OK / ERROR	ERROR indication means data memory error of the main processor controller. This error is mot frequently caused by damages caused by electrostatic discharges.
2	RAM	OK / ERROR	ERROR indication signals the detection of controller's RAM data cohesion error. The situation is possible when the controller works within the environment affected by excessive level of disturbances. That may be brought about by: damaged cable connections, damaged inverter, damaged inverter's casing. Other reasons may include damaged main processor module due to electrostatic discharges.
3	Vcpu [V]	OK / ERROR	ERROR indication means that the measured power supply voltage of controller module exceeded the permissible range. This situation means a failure or overloading of 5V feeder, a failure of a controller or damaged cable connections between feeder <> controller.
4	Vbus [V]	OK / ERROR	ERROR indication means that the voltage measured on the data transmission connector to the inverter exceeded the permissible range. This situation means a failure of an inverter, a failure of a controller or a gap in the cable connection inverter <> controller.
5	TEM	OK /	ERROR indication means that the

	P [°C]	ERROR	temperature measured inside the controller's casing has exceeded the permissible range 5 °C to 60 °C. This may be brought about by Overloaded inverter or using the extractor within the temperatures outside the permissible range.
6	STATUS	OK / ----	
7	↑	OK / ERROR	ERROR indication means the detection of pressing the button – directly after the power supply activation. If the situation was not deliberate, button failure may be anticipated – e.g. pressing and jamming due to excessive pressing force.
8	↓	OK / ERROR	Description – see above.
9	→	OK / ERROR	Description – see above.
10	←	OK / ERROR	Description – see above.
11	PLUS	OK / ERROR	Description – see above.
12	MINUS	OK / ERROR	Description – see above.
13	START	OK / ERROR	Description – see above.
14	STOP	OK / ERROR	Description – see above.