Instructions Manual

Honey extractor Fi-720_4 LN cassette with automatic controller for beekeepers with disabilities

LYSON

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This manual covers following devices (codes):

HEC720C4LN230V_ELC

Table of contents

1. General safety instructions

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

1.1. Electrical safety

1. The electrical supply system must be fitted with a residual-current circuit breaker with rated tripping current not higher than 30mA. Performance of the circuit breaker should be checked periodically.
2. Periodically check the condition of the power cord. Replace the power cord if damaged. Replacing the power cord can only be performed by the manufacturer or by qualified personnel.
Do not use the device if the power cord is damaged!
3. Make sure that the main switch is in „0" position before plugging the unit in.
4. Make sure that the nominal voltage of the device and power source are compatible.
5. Carefully insert the plug into the mains socket. Make sure your hands and the floor surface in the room are dry!
6. The cover must be closed during operation! Do not open the cover while the basket is rotating!
7. Do not move the device during operation.
8. Protect the motor and the control unit from moisture (also during storage).
9. Do not pull the power cord.
Keep the power cord away from heat sources and sharp edges to ensure its good condition.

1.2. Operation safety

1. The device is not intended for use by persons (including children) with limited physical, sensory or mental abilities, or by inexperienced users, unless under supervision or with instructions given by an accountable party.
This device is not a toy, and shouldn't be used as one. Children should not to play with it.
2. In the event of damage to the device, to avoid any health and safety risks, repairs should be carried out only by qualified personnel.
3. Never carry out any maintenance or repairs during operation or if the device is plugged in!
4. All covers must be firmly attached to the device during operation
5. Do not start the extractor if the drum is tilted.
6. The tilt option can be used to make it easier to change, rotate the frames or empty the extracted honey from the tank.
7. When changing or reversing the frames to avoid injury, the basket should be locked with the dedicated latch (5).
8. Do not use or store the device at the ambient temperature below freezing. If the device has been moved from a cold room to a room with a higher temperature, before switching on wait until it reaches room temperature.

Never carry out any repairs during operation

Do not remove covers during operation

2.Instructions of use

2.1 General instructions – preparation for use

1. Set the device up in a designated, clean, dry and well lit room.
2. Keep a free space around the device for better handling.
3. Provide easy access to the power source.
4. If necessary, level the device to avoid any operation and safety issues during use.
5. Closely follow the instructions of use.

2.2 Operation instructions

1. This product is designed to extract honey from the frames. Additional customisations allows it to be comfortably used by beekeepers with disabilities.
2. The device has to be cleaned before the first use and after finishing work according to the instructions in the "Cleaning and Maintenance" section.
3. Before start:

- plug the power cord into the socket, check the safety switch by turning it slightly in clockwise direction and switch the main switch (11) from position "0" to "1",
- tilt the extractor by using the button UP-DOWN (13)

- lock the basket in position by using a dedicated latch (5) and place the frames in the extractor (repeat this procedure for each side of the basket).
- Place the previously prepared frames in the extractor's basket. Pay close attention to their correct positioning. Incorrectly positioned frame may cause damage which is not covered by the warranty,
- Use the UP-DOWN button (13) put the extractor back in vertical position.
- Close the extractor's cover (1), unlock the basket using latch (5) and start it is ready for honey extraction.

4. The beginning phase of the extraction process should be slow and gentle for both sides of the frames. It is the best way to prevent the frames/combs to be damaged. Special attention should be paid to the so-called "new combs" because of their relative softness.
5. The second phase should complete the process of extracting the honey from the frames.
6. Make sure the level of extracted honey in the extractor's tank is low enough to not restrict basket's movement. If such a situation happens, stop the extractor immediately and drain the extracted honey before resuming the process.
7. Place the honey container under the drain gate.
8. It is recommended to keep the drain gate open during extraction process so the honey can drain freely.

Attention! The frames can be reversed or removed only after the basket has completely stopped!

3. Product description

This extractor has been designed for people with lower limb disabilities. It may be used in small apiaries as well as by hobby beekeepers. It's compact dimensions set it apart from competition. Its design allows for easy operation and extraction of even the most dense honey types out there. The cone shape design of the tank's bottom allows the honey to flow freely towards the honey draining gate. The drum tilting functionality using an electric power actuator makes it much easier to remove the frames from cassettes. An additional basket locking system has been designed to prevent free movement of the basket and to minimise the hazard of potential injury to the operator.

3.1.Design

1 - cover
2 - hinges
3 - top bar M8 capped nuts
4 – top bar
5 – basket locking latch
6 – electric drive system
7 – basket (with locking sockets)
8 – extractor's tank
9 – controller unit
10 – main switch
11 – safety switch
12 – UP-DOWN button for tilting system
13 – electric actuator
14 – power cord
15 – honey draining gate
16 - frame
17 – locking latch handle

Fig.1

Fig.2

Fig.3

3.2. Technical specifications

Extractor's tank
Made of acid resistant stainless steel sheet 0.6mm thick. Additional embossed groves make the structure of the drum extra rigid.
Basket
The basket is made of acid-resistant stainless steel rods. It consists of a frame and four cassettes. The basket is mounted in a sleeve bearing. On the upper edge of the basket frame there are four snap-on sockets that may be used to lock the basket during frames reversing or removing.
Drive system
The device power rating is: 230V/370W. The device is equipped with the HE-02 automatic controller unit. The motor and its gear assembly are mounted on a top bar.
Cover
Transparent, 4mm-thick, made of metaplask, protects the user from the risk of injury caused by the rotating basket and keep all extracted honey inside the machine.
Honey gate
Stainless 6/4" flap design.
Frame
Powder coated steel.

Dimensions:

- height -1200mm.
- width – 1100mm.
- length – 900mm.
- weight – 69 kg

3.3.Basket demounting instructions

- remove the top bar (4), by undoing two capped nuts M8 (3)and lifting it off along with the drive motor (5) and both covers (1)
- remove the basket from the tank (7)
- clean the extractor's tank
- replace the basket (7) into the tank (9)
- replace the top bar assembly

4. HE-02 controller

- **Description**

The HE-02 automatic controller allows you to select 1 of 8 programs:
The first two programs are designed to work in manual mode **(L - left, P - right)**
Program 3 - automatic is preset by the manufacturer.
Programs from 4 to 8 allow you to enter your own custom extraction cycles. Each of them consist of 6 programmed steps.

The custom programs remain in the controller's memory even if the power supply is disconnected.

Programming of own cycles is done in the programming MENU (controller's settings mode). To enter your own program, enter the MENU (settings and programming mode). Settings menu can be accessed only while the controller is booting up - when the loading progress bar is being displayed.

- **Starting the controller**

To start the controller (after the device has been plugged in to the power supply):
- make sure that the safety button is released
- switch on the controller with the 0/1 main switch

After starting the controller, use the up and down arrow buttons to navigate the options.

- **Entering the settings and programming MENU**

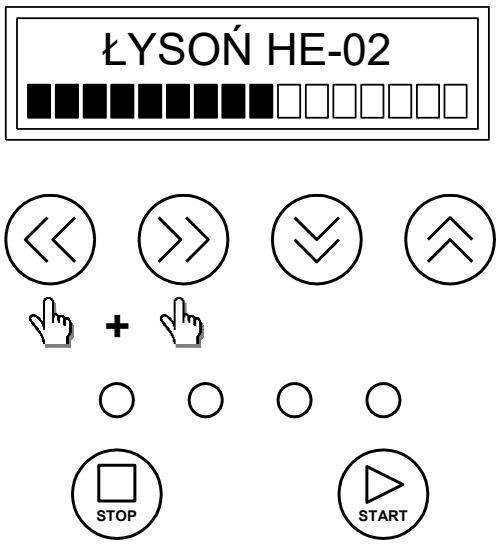
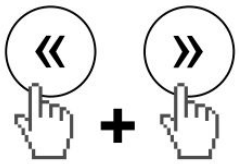


Fig 1. Entering settings and programming mode.

While the progress bar is displayed (Fig.1), press and hold the two navigation buttons "LEFT" and "RIGHT" simultaneously.



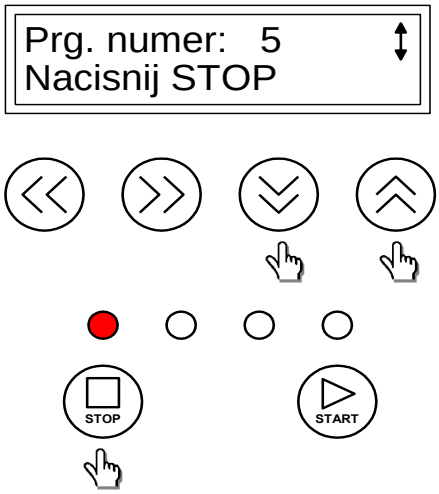
Then the following information will be displayed, which we confirm by pressing the "START" button **(see Fig.2).**

Fig 2. Accessing and confirming the programming mode.

There are two ways to force the controller to reboot (to enter programming mode):
1. by switching off and on the controller with the main switch (button 0-1), wait about 10 seconds until the controller switches off before switching on again.
2. by lifting and closing the extractor's cover.

- **Programming**

After accessing the programming mode with the START button, the program selection menu appears.
Using the navigation buttons, select the program



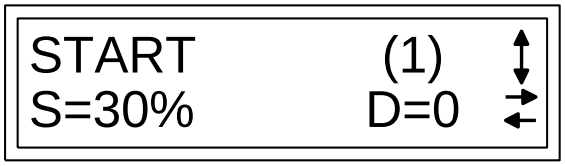
from 4-8 that you want to customise using "UP" or "DOWN" buttons. Confirm your choice with the STOP button (see Fig.3).

The LEDs that light up above the "START" or "STOP" button indicate which of these buttons is active and confirms the selected setting.

Fig 3. Select and confirm the program number you want to customise

After selecting a program i.e. #5, proceed to the programming procedure.
Each custom cycle consists of 6 modifiable steps (step 7 cannot be modified - it is a factory preset stopping algorithm).
Each step is defined by 3 parameters:
S = speed of basket rotation (10% - 100%)
D = direction of rotation (0 - right or 1 - left)
T = step time (10s - 1800s)
Each subsequent step is the sum of the settings in of the given parameter.
The figure below shows the first and the last step of programming procedure

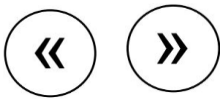
Krok nr 1 (START)



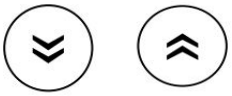
Krok nr 7 (STOP)

Fig 4. Programming of cycle sequence - steps (1) and (7).

*Navigation buttons **"LEFT"** and **"RIGHT"***



are used to modify the currently selected parameter, i.e. step length (time), speed value or rotation direction



*Navigation buttons **"DOWN"** or **"UP"** are used to move between parameters starting from the rotation speed of the step one and ending with the start time of the last step i.e. the cycle stopping time.*

To exit the sequence programming procedure set all the parameters to the last step and press the "START" button.

*After pressing the **START** button, the controller will check the consistency of the entered program, store the entered settings in its memory and restart. From now on the programmed sequence of the extraction cycle will be available under the entered program number.*

When programming custom cycles (programs) there are three basic parameters:

***Start time (step duration)** – the stretch of cycle duration time to which the next two parameters are assigned, i.e. speed and rotation direction.*

***Rotation speed** - this is the speed that starts from the point of time set in the "Start Time" parameter.*

***Rotation direction** - this is the direction which starts from the point of time set in the "Start Time" parameter*
"duration of step"
***0 = right** (rotation direction)*
***1 = left** (rotation direction)*

- **Programming Examples**

Defining your own cycles

Example 1 - a cycle with the following parameters:

*Total cycle time: **360s,** rotation in one direction (**for radial honey extractors**)*

Step No. (1)
T = 60s step duration,
D = rotation direction (0)
S = rotation speed 30%

Step No. (2)
T = 120s step duration (60s step 2 duration)
(each subsequent step adds up to the previous T values, i.e. step 1 + step 2 = 120s)
D = direction of rotation (0)
S = rotation speed 30%

Step No. (3)
T = 180s step duration (60s step 3 duration)
D = rotation direction (0)
S = rotation speed 50%

Step No. (4)
T = 240s step duration (60s step 4 duration)
D = rotation direction (0)
S = rotation speed 50%

Step No. (5)
T = 300s step duration (60s step 5 duration)
D = rotation direction (0)
S = rotation speed 100%

Step No. (6)
T = 360s step duration (60s step 6 duration)
D = rotation direction (0)
S = rotation speed 100%

Step No. (7)
STOP – not modifiable

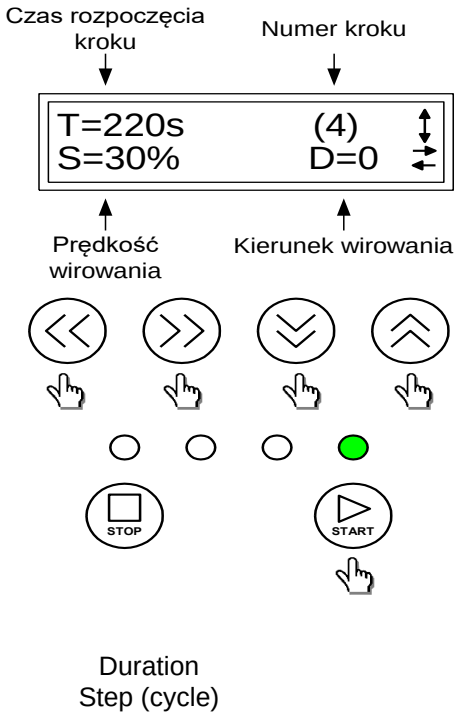


***Fig 5. Programming of cycle sequence - example step (4)*.**

Example 2 - a cycle with the following parameters:

Total cycle time: 360s, rotation in two directions (**for cassette honey extractors**)

Step No. (1)
T = 60s step duration,
D = rotation direction (0)
S = rotation speed 20%

Step No. (2)
T = 120s step duration (60s step 2 duration)
(each subsequent step adds up to the previous T values)
D = rotation direction (1)
S = rotation speed 30%

Step No. (3)
T = 180s step duration (60s step 3 duration)
D = rotation direction (1)
S = rotation speed 40%

Step No. (4)
T = 240s step duration (60s step 4 duration)
D = rotation direction (0)
S = rotation speed 50%

Step No. (5)

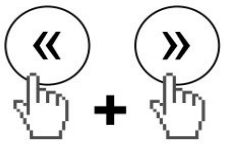
T = 300s step duration (60s step 5 duration)
D = rotation direction (0)
S = rotation speed 80%

Step No. (6)
T = 360s step duration (60s step 6 duration)
D = rotation direction (1)
S = rotation speed 80%

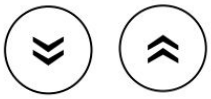
Step No. (7)
STOP - not modifiable

- **Default settings**

The HE-02 programmer allows you to restore the **controller's factory settings.**

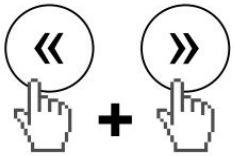


*To do this, enter the settings menu. When the progress bar is displayed (Fig.1), press and hold the two navigation buttons "**LEFT**" and "**RIGHT**" simultaneously.*
*Using the navigation buttons "**DOWN**" or "**UP**"*



*select the "**Default settings**" option.*
This option resets the controller to the factory default settings. Use this option to erase incorrectly entered cycle programs. After selecting this option all custom cycles will be overwritten and the factory default settings saved.

- **Language selection**



*The HE-02 controller also **offers a "Language selection" option.** To change the display language, enter the settings and programming mode. While the progress bar is being displayed **(Fig.1)**, press and hold the two navigation buttons "LEFT" and "RIGHT" simultaneously.*

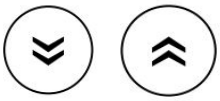
*Use the navigation buttons "DOWN" or "UP" to select the option "**Language selection**".*

(***Press three times "DOWN" button***  ***)***

Confirm by pressing START button.
Selection of languages (actual order shown below):

- Polish
- English
- Lithuanian
- Russian or Bulgarian (depends on which country)
- Slovenian
- Spanish
- Romanian
- Hungarian
- Czech
- French
- German

and confirm by pressing START.
Select the desired language using "Down" or "UP" buttons. Confirm the selection by pressing STOP button.



5. Storage

Clean and dry the unit thoroughly after use.
If the device has been moved from a cold room to a room with a higher temperature, before switching on wait until it reaches the ambient temperature and all condensation water evaporates.
Store the device in a dry and frost-free room.
Do not use the device when the ambient temperature is below 5ºC.
An additional technical check should be carried out periodically, and if any defects are found, please contact the manufacturer.

Programming data table

6. Cleaning and maintenance

IMPORTANT!!!
Wash the covers using warm (25°C) soapy water.

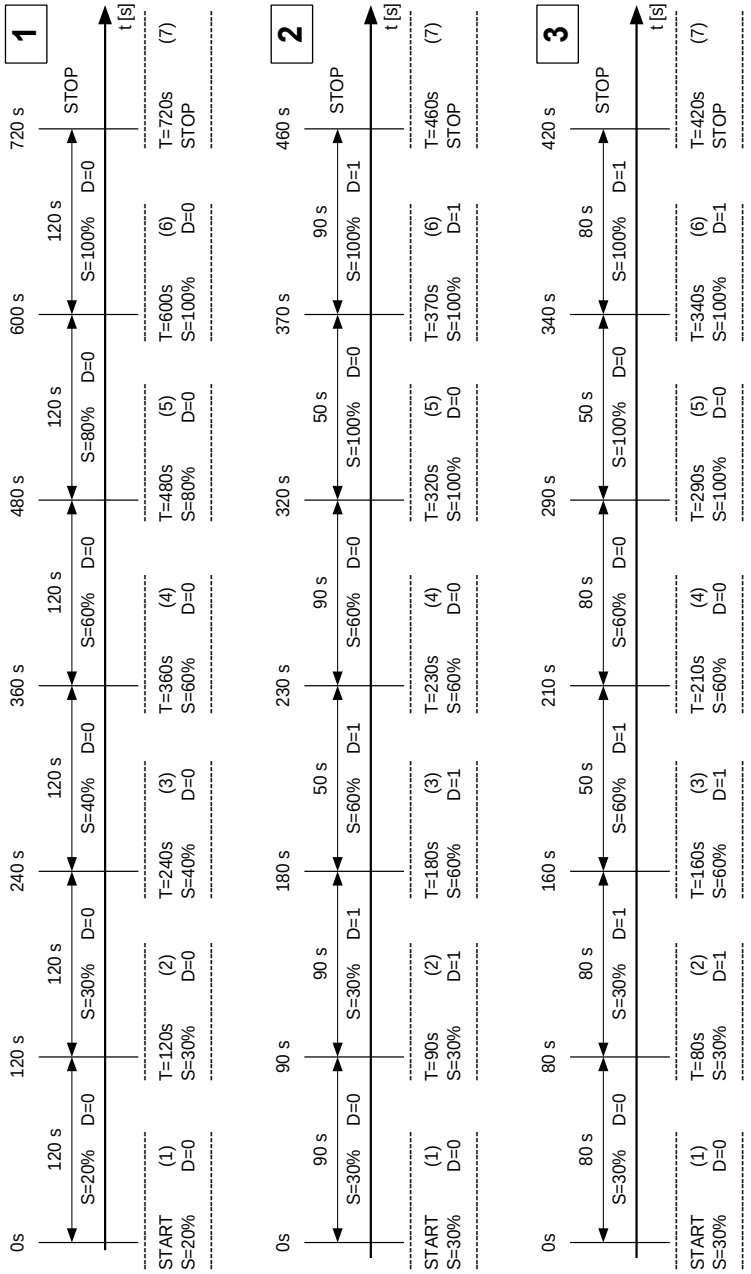
WARNING!!!
Do not use alcohol for cleaning.
(it may cause surface cracks on the plastic cover)

Unplug the device before commencing any maintenance or cleaning procedures!

Before first use and after finishing work the equipment must be thoroughly cleaned and dried.
While cleaning ensure the safety of all electrical components like motors and controller panels (for the time of washing cover them with waterproof fabric or plastic film).
No parts of the device require chemical conservation.
An additional technical check should be carried out before the start of the pollen harvesting season, and if any defects are found, please contact the manufacturer.

7. Waste disposal and environmental protection

The used product must be disposed in accordance with the local regulations. Return the device to a collection point from where it can be submitted for environmentally compatible recycling.
The consumer has the right to return used equipment directly to the manufacturer's distribution network, free of charge, while replacing it with a new unit as long as the used device is of the same kind and same application as the newly purchased device.



8. Warranty

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

All purchased products come with receipts or VAT invoices.

Warranty details at:

www.lyson.com.pl