# MANUAL
# RADIAL AND DIAGONAL HONEY EXTRACTORS WITH MANUAL, ELECTRIC AS WELL AS COMBINED MANUAL AND ELECTRIC DRIVES FI 500,600,720,800,900 MM


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The following manual encompasses the honey extractors bearing the following codes:

**DIAGONAL AND RADIAL HONEY EXTRACTORS WITH MANUAL, ELECTRIC AS WELL AS COMBINED MANUAL AND ELECTRIC DRIVES**

W216, W216R, W217,W218, W218_12V_110V, W219, W270, W271, W2002, W2003, W2004, W2012, W20120, W2013, W20130, W2013A, W2013B, W2013C, W2014, W20140, W2043, W20430, W204300, W20430RAD

**MANUAL**

# 1. GENERAL SAFETY PRINCIPLES FOR HONEY EXTRACTOR OPERATION

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

## 1.1. Operating principles

**1.** Honey extractor is intended to extract honey from the frames.

**2.** Prior extraction, honey extractor shall be rinsed thoroughly with hot water containing slight quantities of agents accepted to be used in devices intended to come into contact with food or by means of a pressure washer.

Remember to protect electronic components and the bearing against getting wet!!!

## 1.2. Electric safety

**1.** 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.

**2.** If a non-detachable supply cable or connecting cable get damaged, they must be replaced. In order to avoid the threat, it must be performed by a guarantor or by a specialised servicing centre or by an authorised person.

Do not operate the honey extractor when a supply or connecting cable are damaged!

**3.** Prior to connecting the device to the mains, check whether the controller is switched off. Switch on the controlling panel shall be placed in “0” position.

**4.** The nominal voltage of the honey extractor and the power supply source must be checked for compatibility.

**5.** Be careful while connecting the device to the mains.

Hands must be dry!

The floor on which the extractor has been placed must be dry!

**6.** While activating the honey extractor, emergency STOP button must be switched off (it must be turned until it has jumped out)

Pressing the emergency STOP button shall stop the extractor operation immediately.

**7.** While extracting, the lid of the honey extractor must be closed ! it is strictly forbidden to open the lid during extraction.

**8.** The honey extractor must not be dislocated during extraction.

1. In case of a honey extractor with electric drive or combined manual and electric drive, the engine and controller must be protected against humidity; (also during the storage) .

**10.** It is forbidden to pull the supply cable. The supply cable must be kept away from heat sources, sharp edges and it god technical state must be taken care of.

## 1.3. Safety of operation

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. One must make sure that children do not play with the honey extractor.

**2.** In case of any damage to the honey extractor, in order to avoid the danger, the repairs may be performed solely by a specialist servicing centre or a qualified person

**3.** It is forbidden to perform any maintenance works or repairs when the device is in operation or connected to the mains!

**4.** All shields must be permanently attached to the honey extractor while operating it.

**5.** In case of any danger, emergency switch must be used at once. The honey extractor can be activated once the threat has been eliminated.

**6.** Devices are not intended to be used outdoors and may be operated indoors only. .

**7.** The device cannot be activated and stored with the ambient temperature below 0º C.

Honey extractor cannot be activated when the ambient temperature drops below 5º C. When the honey extractor has been moved from a room with a lower temperature to a room with a higher temperature, prior to its activation one must wait until the device has achieved the ambient temperature..

It is forbidden to repair the device under operation

It is forbidden to remove the shields under operation


Switch „0/1” on the controller casing in “1” position.

**Place of work**

It should be properly light and kept in order and cleanliness.

**2.HONEY EXTRACTOR MANUAL**

2.1 General principles to prepare the honey extractor for operation.

1. Place the honey extractor in the place specified for the purpose and kept in order and cleanliness.
2. Fix the honey extractor to the ground in order to avoid its displacement during operation.

**2.2 Operating principles**

**1.** Honey extractor is intended to extract honey from the frames.

3. Prior its first use and when honey harvesting has terminated, the honey extractor shall be washed according to the guidelines contained in point **Honey extractor maintenance.**

**3.** Place the previously prepared frames in the honey extractor basket , paying special attention to their proper arrangement. Erroneous arrangement of the frames may result in the damages excluded by the guarantee!

**4.** Prior to the honey extractor activation, one must:

- make sure that the frames have been properly placed in the basket.

- check whether the emergency switch is not pressed

- subsequently, plug the device into the socket and turn the controlling activation switch on the controlling cabinet from “0” position to “1” position.

Afterwards, start the honey extractor activation in line with the extractor controlling manual – see chapter 2.

**5.** The first phase of extraction shall be performed slowly in order to prevent a potential honeycomb breaking out. Special attention must be paid to the so called “young frames”.

**6.** Before the first extraction, the honey extractor must be washed thoroughly..

» Honey extractors with electric drives or combined manual and electric drives shall be dried after washing. Subsequently, plug the device into the socket and turn the “0/1” switch on the controlling cabinet into “1” position. Afterwards, Plus(+) button must be pressed, the honey extractor shall start extraction process.

Rotation speed of the device may be regulated by means of Plus (+) (increasing) and Minus (-) (decreasing) buttons.

» In case of the honey extractors with combined manual and electric drives, while switching to the manual mode the device must be unplugged and the V-belt must be removed from the pulley. Then, the manual mechanism operates easier (as the engine disconnected from the V-belt will not cause resistance). Manual mechanism crank shall be turned clockwise. In order to brake the basket, the crank must be pulled anticlockwise.

**7.** Once one side of the frames has been extracted, the honey extractor must be stopped:

» in case of the extractors with the manual drive, the crank lever must be turned anticlockwise and holding it in that position wait until the basket gets to a complete hold;

» in case of the extractors with electric drives, press the STOP button and wait until the basket stops completely.

**NOTE!!!** Frames can be displaced only when the extractor basket has come to a complete hold!.

**9.** Once the basket has stopped completely, the frames must be rotated by 180 degrees and the second side of the comb is to be extracted. The frames are to be extracted in two stages. Firstly, both sides of the comb with low speed. Secondly, both sides of the comb with higher speeds.

**10.** Spinning basket must not be blocked by the honey accumulated in the drum. If that is the case, the honey extractor is to be stopped to prevent damaging. Once the honey has drained into the containers, extraction can be restarted.

**11.** Containers intended for honey must be placed under the drain valves. During extraction, drain valves should be open to allow the honey to drain freely.

## 1. Characteristics for diagonal honey extractors

### 3.1 DIAGONAL MANUAL HONEY EXTRACTOR

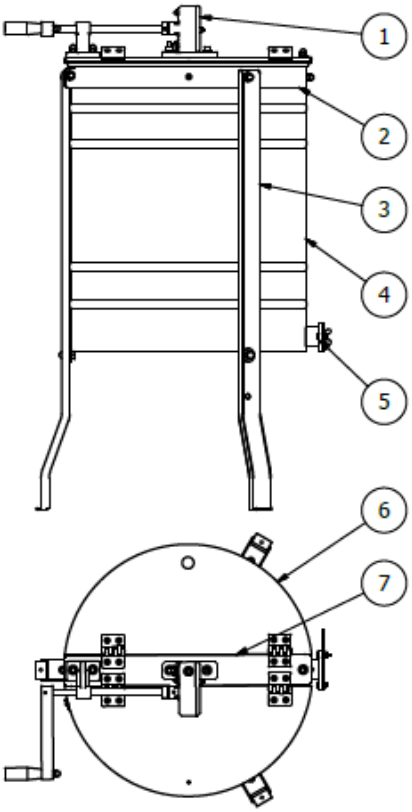
**Honey extractor with a small-diameter drum, characterised by universal features as it may extract almost all types of frames. This type of extractors is characterised by the necessity to rotate the frames. Diagonal extractors are intended for those beekeepers who possess small apiaries as well as to those treating beekeeping as a hobby.**

### 3.1.1. Technical parameters :

- Extractor basket, made of stainless and acid resistant steel rods, thickness of 2 mm and 5 mm, spaced in the way to protect the frames against comb breaking out during extraction. Size of the mesh: 20x20 mm
- The drum made of stainless and acid-resistant steel 0H18N9. The drum bottom has a conical shape, which allows for the honey to drain freely, it is adequately reinforced and stiffened.
- Rim, legs, upper beam, manual drive are powder coated.
- The lid is transparent, made of metaplex, thickness mm
- Plastic hinges
- Stainless steel flap valve
- Manual drive with a brake mounted on the upper beam of the extractor, allows to operate the device when access to electricity is limited.

### 3.1.2 Diagram for diagonal honey extractors

#### 3.1.3. Diagram for manual honey extractor




**LEGEND**

1. Manual drive of the extractor
2. Honey extractor rim
3. Honey extractor leg
4. Honey extractor drum
5. Honey extractor valve
6. Honey extractor lid
7. Honey extractor beam

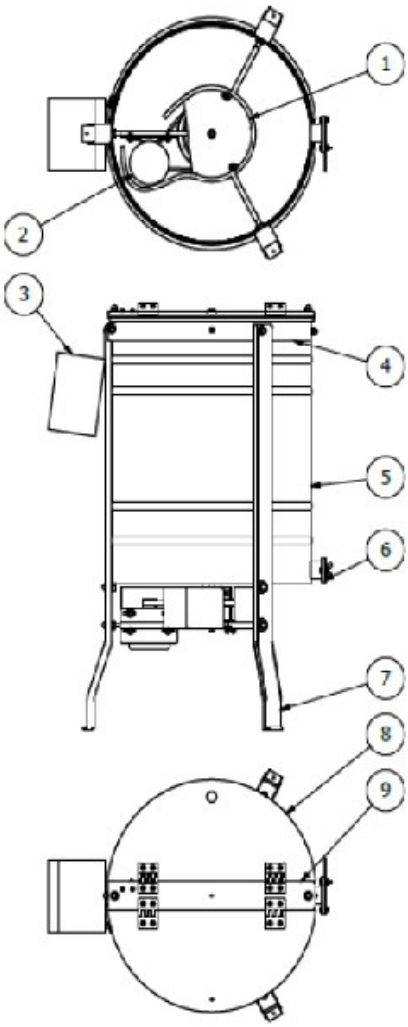
## 3.2. ELECTRIC HONEY EXTRACTORS

**Honey extractor with a small-diameter drum, characterised by universal features as it may extract almost all types of frames. This type of extractors is characterised by the necessity to rotate the frames. Diagonal extractors are intended for those beekeepers who possess small apiaries as well as to those treating beekeeping as a hobby.**

### 3.2.1.Technical parameters :

- Extractor basket, made of stainless and acid resistant steel rods, thickness of 2 mm and 5 mm, spaced in the way to protect the frames against comb breaking out during extraction. Size of the mesh: 20x20 mm, the basket with additional bearings in two housings, upper and lower one.
- Radial basket made of stainless and acid-resistant steel bars, thickness 8 mm, equipped with frame fixing, laser cut, the basket with additional bearings in two housings, upper and lower one.
- The drum made of stainless and acid-resistant steel plate 0H18N9. Drum bottom in conical shape, which allow for honey to drain freely, properly reinforced and stiffened.
- Rim, legs and upper beam powder coated
- Transparent lid, made of metaplex, thickness mm.
- Plastic hinges
- Safety lock mounted on the strip
- Electric drive mounted at the bottom. Engine:250W / 24V.
- Stainless flap valve
- Controller supplied by 12V DC or 230 V AC - SDD-2DP

### 3.2.2. Diagram for electric honey extractor




**LEGEND**

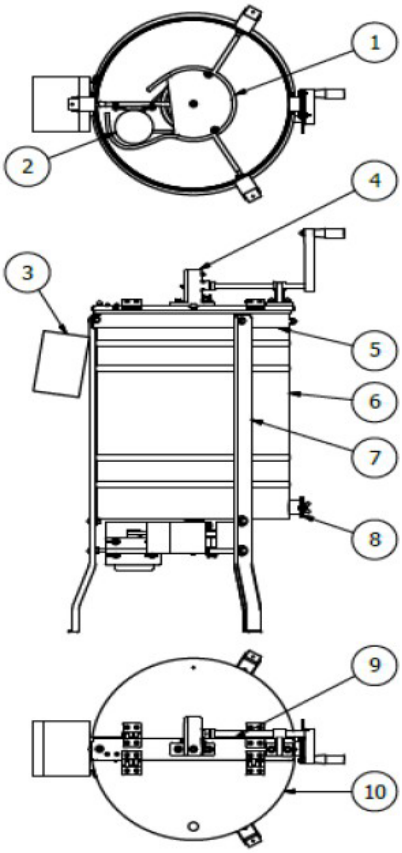
1. Engine cover
2. Honey extractor engine 250W/24V
3. Honey extractor controller SDD-2DP
4. Honey extractor rim
5. Honey extractor drum
6. Honey extractor flap valve
7. Honey extractor leg
8. Honey extractor lid
9. Fastening strip

## 3.3. DIAGONAL HONEY EXTRACTORS WITH COMBINED MANUAL AND ELECTRIC DRIVES

### 3.3.1. Technical parameters :

- Diagonal basket, made of stainless and acid resistant steel rods, thickness of 2 mm and 5 mm, spaced in the way to protect the frames against comb breaking out during extraction. Size of the mesh: 20x20 mm, the basket with additional bearing in lower housings
- The drum made of stainless and acid-resistant steel plate 0H18N9. Drum bottom in conical shape, which allow for honey to drain freely, properly reinforced and stiffened.
- Rim, legs, upper beam and manual drive powder coated
- Transparent lid, made of metaplex, thickness 3mm
- Plastic hinges
- Safety lock mounted on the strip
- Electric drive mounted at the bottom. Engine:250W / 24V.
- Stainless flap valve 5,4”
- Controller supplied by 12V DC or 230 V AC - SDD-2DP
- Manual drive with a brake mounted on the upper beam, allows to operate the device when the access to electricity is limited

### 3.3.2. Diagram for manual and electric honey extractors




**LEGEND**

1. Engine cover
2. Honey extractor engine 250W/24V
3. Honey extractor controller SDD
4. Honey extractor manual drive
5. Honey extractor rim
6. Honey extractor drum
7. Honey extractor leg
8. Honey extractor flap valve
9. Fastening strip with a lock
10. Honey extractor lids

## 4. Manual to handle the controller in radial and diagonal honey extractors with electric and combined manual and electric drives.

SDD-2DP system remains an advanced, DC engine rotation regulator based on a microprocessor, which improves the comfort and economy of honey extractor operation . Its main features are:

- A possibility to precisely configure the ramp-up time and speed
- Electronic overload protection .
- Function Auto Power OFF, which deactivates the engine power supply after 15 minutes of inactivity
- Using the PWM technique combined with highly effective power path and MOSFET technology allowed to achieve high operational effectiveness and relatively low electricity consumption.
- Clear and ergonomic operating panel allows to work with the device in a comfortable manner.

### CONTROLLING IN 3,4,5 – COMB RADIAL AND DIAGONAL HONEY EXTRACTORS WITH ELECTRIC AS WELL AS MANUAL AND ELECTRIC DRIVES


Controlling panel is equipped with navigating buttons *„PLUS”, „MINUS” and „STOP”.*

### 4.1. Controller characteristics:

Regulator SDD-2DP has an option to individually select the regulation characteristics – adjusts to the power supply conditions and to the parameters of the engine connected. Selection of the characteristics is based on setting up the three parameters: the one responsible for the lower limit of the engine rotational speed (L parameter),

upper limit of the engine rotational speed (H parameter) and the ramp-up time (A parameter). Characteristics of operation are to be selected in the following manner:

Configuration „L0” - low rotational speed for the speed index 1

…….

Configuration „L9” - medium rotational speed for the speed index 1

…….

Configuration „LJ” - high rotational speed for the speed index 1

Configuration „H0” - low rotational speed for the speed index 10

…….

Configuration „H9” - medium rotational speed for the speed index 10

…….

Configuration „HJ” - high rotational speed for the speed index 10

Configuration „A0” - low engine dynamics (long ramp-up time)

…….

Configuration „A9” - medium engine dynamics (medium ramp-up time)

…….

Configuration „AJ” - high engine dynamics (short ramp-up time)

Additionally, the following parameters are to be defined during subsequent steps: t – specifying the regulation type, and consequently the rage for defining the basket ramp-up time and

F – (frequency of the power module keying), in order to facilitate the system operation optimising.

Configuration „t0” - regulator with slow ramp-up time (range 90s – 900s)

Configuration „t1” - regulator with quick ramp-up time ( range 10s – 100s)

Configuration „F0” - low keying frequency

The last step in controller configuration is to define the values of the following parameter: P – defining the activation and deactivation of the energy saving function (Auto OFF).

Configuration „P0” - Auto OFF function deactivated

Configuration „P1” - Auto OFF function activated

The current configuration of the regulator can be changed from the level of the configuration menu. The sequence for such a change has been described below:

1. Press the **STOP** button on the activation of the device (digit “0” flashes on the display) and next release the button once the message “Pr” has appeared.
2. Set up the lower limit of the rotational speed by buttons **plus** and **minus** („L0” … „LJ”).
3. Confirm the settings by pressing shortly the **STOP** button.
4. 
5. By means of buttons **plus** and **minus** , set up the upper limit of the rotational speed („H0” … „HJ”).
6. Confirm the setting by pressing the STOP button for a short time.
7. 
8. By means of buttons **plus** and **minus** set up the dynamics of the engine start-up („A0” … „AJ”).
9. Conform the setting by pressing shortly the **STOP** button.
10. 
11. By means of buttons **plus** and **minus,** set up the regulation type („t0” or „t1”)
12. 
13. Confirm the settings by pressing the STOP button shortly.
14. 
15. By means of buttons **plus** and **minus** , set up the frequencies („F0” … „F2”)
16. By means of buttons **plus** and **minus** , activate /deactivate Auto OFF function („P0” or „P1”)
17. 
18. Confirm the settings by means of the STOP button. The configuration set up will be stored in the non-volatile memory of the controller.
19. 
20. Test the settings and perform the configuration sequence again, if need be.

## 4.2. Controller handling

After power supply activation, the regulator shall perform the auto-diagnostic sequence, which is signalled by flashing “0” digit.

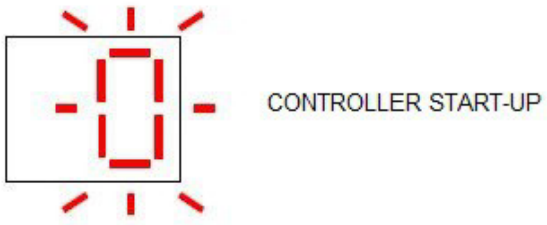



***Fig. 1 Start-up sequence – auto-diagnosis***

Detection of an error during auto-diagnostic procedure is signalled in the manner specified below. Message “d2” means that 2 errors have been detected. ‘E4” is the code of the last error detected. Error displaying occurs after the type of device has been displayed and blocks the device operation. Further work is impossible until the reason for the error/errors has been removed.

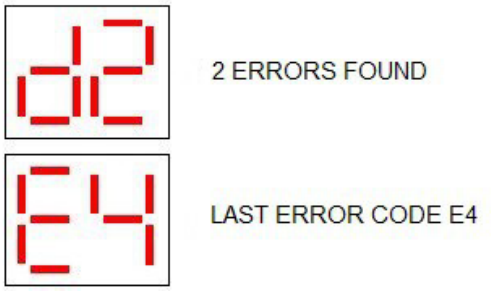



*Fig. 2 Diagnostics – errors detected*

E1 - (Error) – internal defect of the microprocessor controller

E2 - (Error) – damaging to a power board of the regulator

E3 - (Error) – short circuit on the line / pressing the (-) button

E4 - (Error) – short circuit on the line / pressing the (+) button

E5 - (Error) – short circuit on the line / pressing the STOP button

E6 - (Warning) – deleting the controller configuration settings

Once the auto-diagnostic sequence has terminated, the regulator switches into normal operation mode – awaiting the start-up. “0” appears on the display, which signals rotation deactivation. Rotation activation occurs by pressing the **plus** button. .

First pressing of the plus button (switching from “0” index to “1” index) triggers the start-up procedure. The regulator shall start with adequately increased power in order to decrease the power until the level adjusted by the first step of the settings. The regulator switches into normal operating mode, signalling the selected speed index in the following manner: .

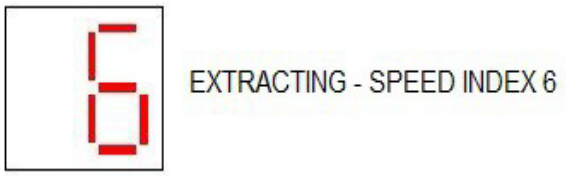



*Fig. 3 Extracting – speed setting*

Subsequent pressing / holding down the pressed **plus** or **minus** button shall change the engine rotational speed. Deactivation of the rotations is performed by the **minus** button (downgrading to “0” index) or by pressing the **STOP** button.

*Detection of the honey extractor lid opening or pressing the emergency stop button will bring about the deactivation of the engine rotations and the flashing symbol specified below shall appear on the display*

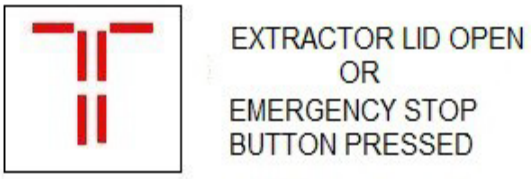
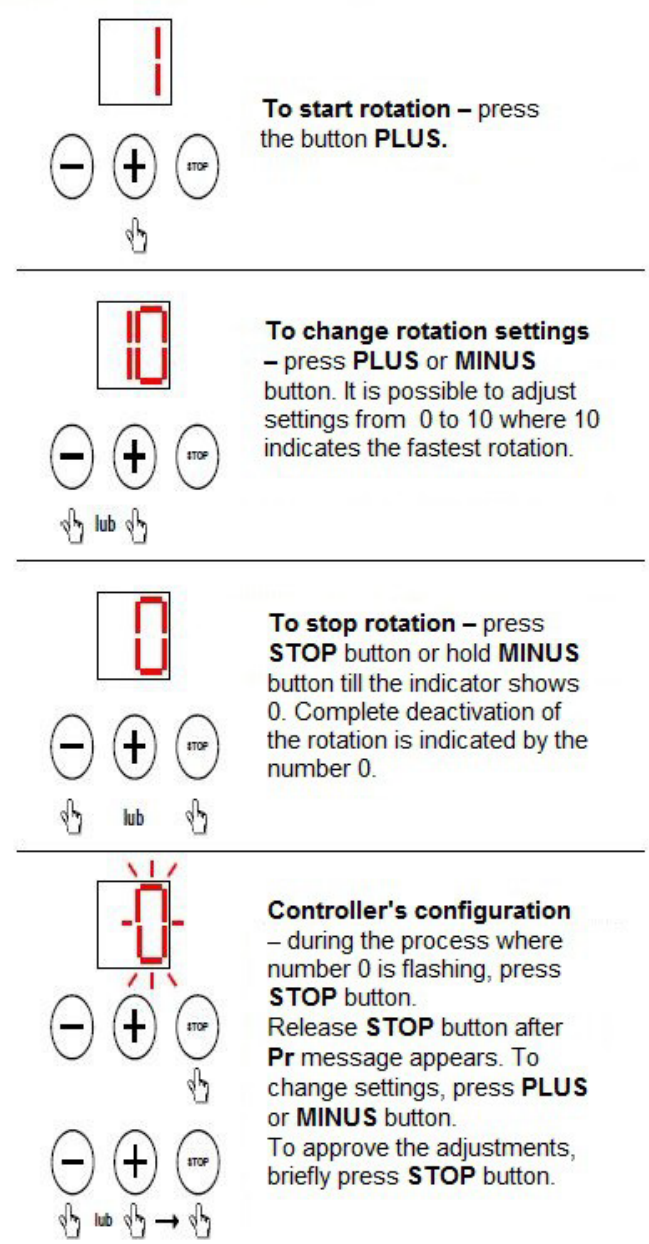



*Fig. 4 Open honey extractor lid, EMG STOP button pressed*

*SDD-2DP controller has been equipped with Auto OFF function – it switches off the engine rotations after 15 minutes from the last pressing of the plus or minus buttons*

SDD-2DP controller may be equipped with thermal protection function – it disconnects the engine power supply when the thermal protection sensor or the thermostat contacts are open. Triggering the protection is signalled by “Ht” message




## 5. Storing the honey extractors

Once the honey harvesting has terminated the device is to be washed thoroughly.

Prior to the honey extractor start-up, in case when it has 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 0° C.

Before every season, an additional technical inspection must be performed and n case when any defects have been detected , a service centre must be contacted.

## 6. Maintenance and cleaning of the honey extractors

**IMPORTANT!**

**Prior to starting the maintenance, the plug must be taken out!**
**ATTENTION!!!**
Device cover to be washed with soapy water at room temperature 25
**IMPORTANT!!!**
Do not use any detergents with alcohol (causes cracking in plexi glass)

Prior to first extraction, honey extractor shall be washed thoroughly with hot water containing slight quantities of agents accepted to be used in devices intended to come into contact with food 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)

While washing, the bearings placed under the drum cannot be flooded. Therefore, the orifice through which the basket axis goes must be covered inside the drum.

After washing, the honey extractor must be rinsed with pure water and dried.

**6.1. Dismantling the basket in manual diagonal honey extractors.**

- Unscrew the upper beam together with the drive and the lids
- take the basket out
- clean the honey extractor
- Put the basket into the drum
- Assemble the beam together with the drive and lids

**6.2. Dismantling the basket in radial and diagonal honey extractors with electric as well as combined manual and electric drives**

- Unscrew the engine cover
- Remove the V-belt
- Unscrew a bolt on the pulley
- Unscrew the upper beam together with the lids
- take the basket out
- clean the honey extractor
- Put the basket into the drum
- Assemble the beam together with the lids
- Screw on the pulley and assemble the V-belt
- Screw on the cover

## 7. 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

**8. Guarantee**

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

The guarantee duration equals 5 years *.

The guarantee period does not include the controlling elements and electric drive and fittings. Such ones are encompassed by a two-year guarantee.

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

*** details on the guarantee are available in the regulations on the website www.lyson.com.p**