



**UNION KEHLIBAR**  
PACKAGING MACHINES AND EQUIPMENT

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## **WORKING MANUAL FOR AUTOMATIC PACKAGING MACHINE AM028/AM029**



**2017**

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## **INSTALLATION**



### **1. Requirements:**

- ambient temperature 15 - 30°C
- humidity 35 - 85%
- electrical supply 220V±10%, 50Hz

### **2. Install the machine on a horizontal, stable and flat surface**

- the machine should be positioned in a place where its work will not be affected by high vibrations, dust and other similar conditions which will prevent the normal working cycle.
- there must be enough free space around the machine, so that to allow easier maintenance

### **3. Ground the machine! Working without grounding is not allowed!**

# **SAFETY INSTRUCTIONS**



## **SAFETY INSTRUCTION FOR WORKING WITH VFFS MACHINES**

### **1. Environment requirements:**

- temperature 15 - 30°C
- humidity 35 - 85%
- electrical supply 220V±10%, 50Hz
- Install the machine on a horizontal, stable and flat surface
- the machine should be positioned in a place where its work will not be affected by high vibrations, dust and other similar conditions which will prevent the normal working cycle.
- there must be enough free space around the machine, so that to allow easier maintenance.

### **2. Ground the machine! Working without grounding is not allowed!.**

### **3. For working with the VFFS machine are only allowed persons who are:**

- age 18 or above;
- passed all the necessary medical examinations;
- passed all of the mandatory briefings and instructions on the work place;

### **4. Before start working with the VFFS machine, the machine operator should get acquainted with all of the machine modules and parts, which may cause any physical harm and could bear risk for his overall health.**

The potential harmful parts of the VFFS machine are marked with the necessary pictograms. Some of the harms that may occur are:

- pinching (drawing belts or rolls);
- burning (soldering elements);
- smashing (sealing jaws);
- cutting (knife);

### **5. Working with a faulty machine is NOT allowed.**

**6. If any damage or indistinctive noises are observed, the work with the machine should stop IMMEDIATELY. If this happen, inform the authorized personnel immediately.**

**7. Working with an opened electrical panel is not allowed. All of the electrical maintenance is done ONLY by an authorized personnel.**

**8. Working with an opened protection covers is not allowed.**

**9. The VFFS machine is designed for packaging food products in polypropylene bags. Any other application of the machine may be considered dangerous and inappropriate.**

**10. Any mechanical adjustments and technical maintenance are not allowed when the machine is on. Turn of the machine first.**

**11. If any tearing, film gathering or sticking occurs due the forming process, STOP the machine before making any adjustments and corrections.**

**12. Any waste and spilled product around the machine is not allowed. The space around the machine should be absolutely dry, clean and should be enough to provide easy operation with the equipment.**

**13. A waste disposal container should be placed near the machine so that all of the wasted film to be collected in.**

**14. The access to the spaces around the forming collar, soldering elements, cutting knife, the electrical panel and the dosing device, is STRICTLY forbidden when the machine is working.**

**15. All of the maintenance operations like knife changing, rollers cleaning and all of the mechanical adjustments are done ONLY by technical personnel and ONLY on a fully stopped and turned off machine. The technical personnel should wait at least 15 minutes**

- after the machine is turned off, in order to allow all of the heating elements to cool down.
- 16.** During the film changing, the operator should follow all of the safety precautions mentioned above.
- 17.** In case, of which any of the instructions above is impaired, and a dangerous situation occurs, the machine operator should press the emergency button at once to stop the machine. If there is any limb caught in-between the sealing jaws, the machine operator should push one of the yellow buttons for manual control of the sealing mechanism, in order to release it.
- 18.** Taking off the ready bags at the machine's exit with bare hands is strictly forbidden. You should wait for the bag to fall on the ground. If any empty bags or pieces of film, stick to the soldering elements, the machine operator should turn off the machine, before cleaning it.
- 19.** Any actions from the machine operator, which are not according to the ones mentioned in the current instruction, are considered dangerous and insufficient, and the machine manufacturer bears no responsibility for them.

## STARTING THE MACHINE AND




## LOADING THE PACKAGING FILM

1. Turn on the packaging machine (from the black switch on the back of the electrical panel)  
You need to wait at least 10-15 minutes in order to allow the heaters to reach the set temperature.  
When the machine is turned on, the following Main Menu will be visualized on the screen (see img.1)



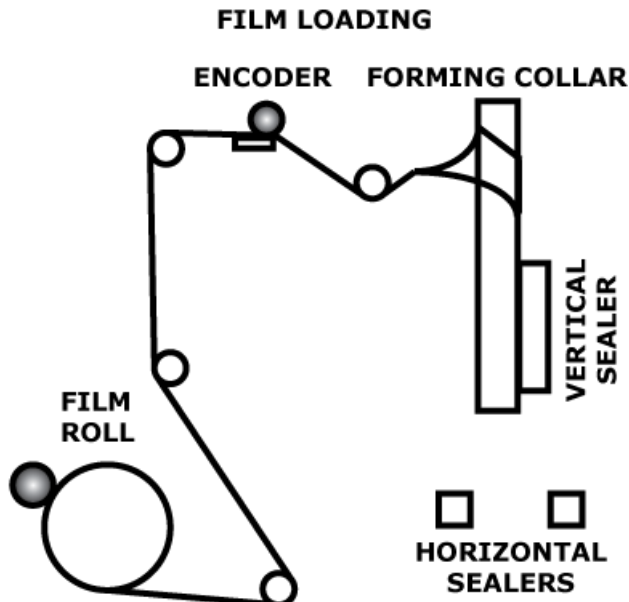
img. 1



Push the ENABLE button  , to set the machine READY for work.

2. Load the packaging film according to the schematic below (see img.2).

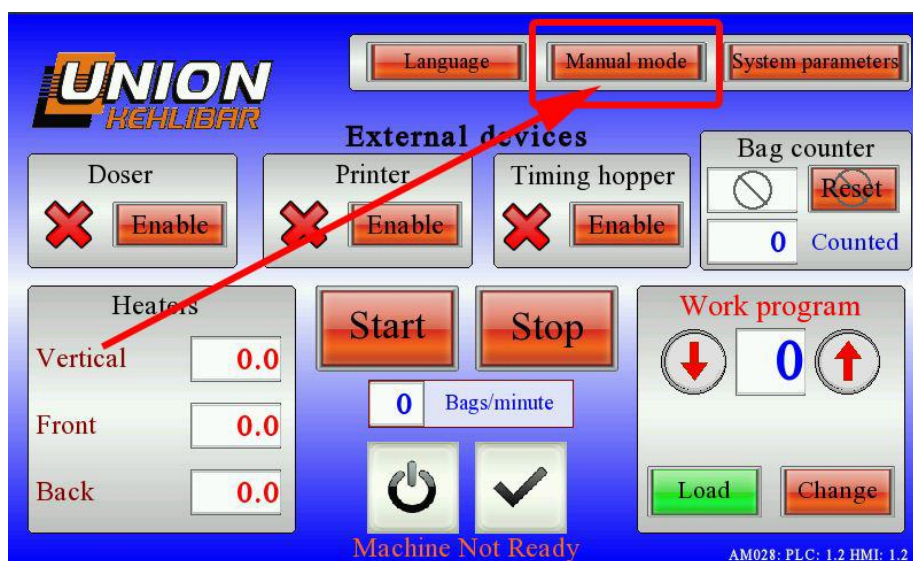
**NOTE:** The packaging film should move smoothly on the shafts. For this reason, the shafts should be maintained always clean, without any dust or stains on them. The improper maintenance may lead to slippage and difficult film movement, which will immediately cause a negative impact on the machine's overall performance.



img. 2

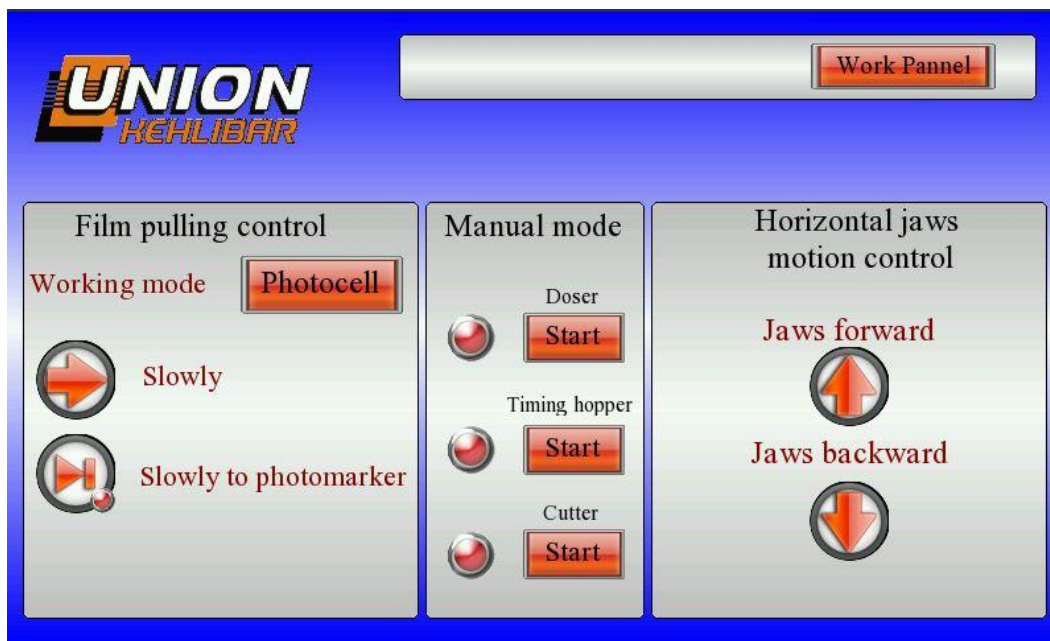
The schematic above is an example. The actual schematic may differ, according to the additional devices, installed on the machine. The actual schematic is illustrated on the machine itself.

3. After the film is loaded on the machine, you should pass it through the **bag-forming collar**. Once passed through the bag-forming collar, the sleeve should be pulled down the tube. In order to do that, please enter the MANUAL MODE on the Main Menu (see img.3).



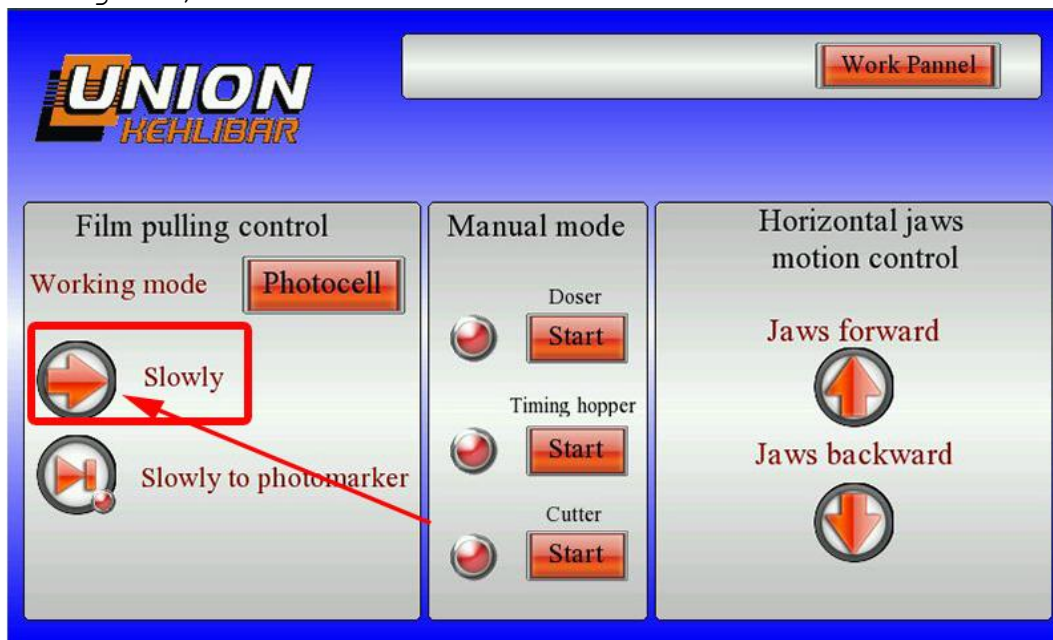
img. 3

When you enter the **MANUAL MODE**, the following screen will be visualized (see img.4)



img. 4


Using the button **SLOWLY**  from the *Film pulling control* section, you will manually activate the film pulling mechanism (see img. 5).

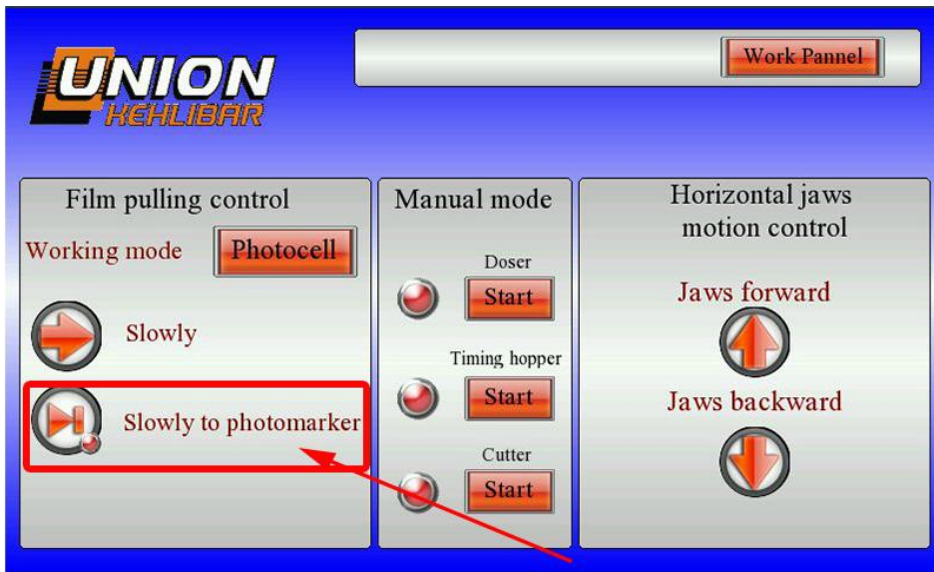


img. 5

After the film is successfully passed through the bag-forming collar, check the overlap on the vertical seal of the already formed sleeve. Fix it by hand if needed.



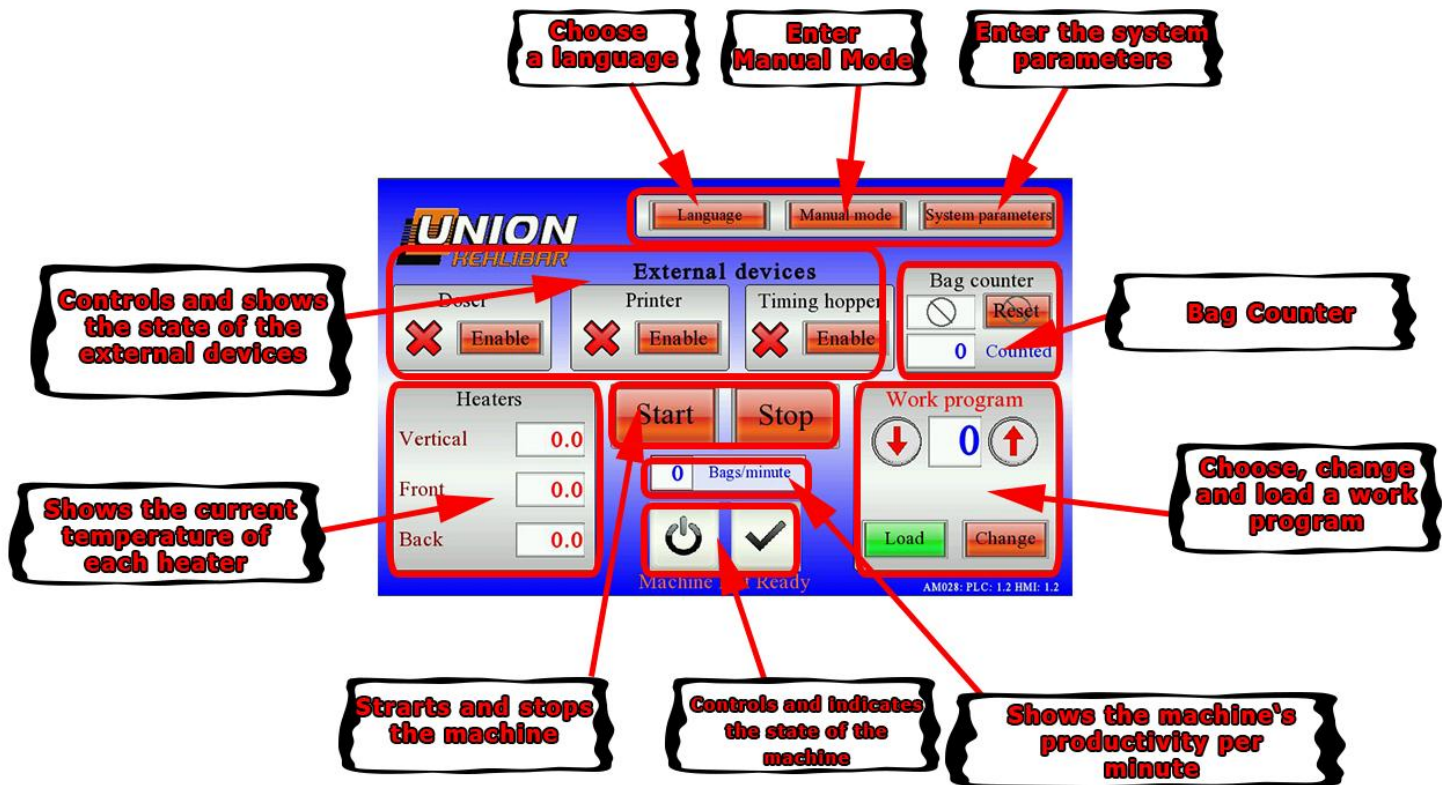
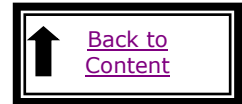
4. Finally, press the **SLOWLY TO PHOTOMARKER** button  , in order to position the packaging film on the right place (see img.6)



img. 6

**IMPORTANT:** in order to perform the steps mentioned above, the front glass cover should be opened. For safety reasons, the machine CANNOT BE STARTED when the cover is open. ONLY the **MANUAL MODE** is active when the covers are open due to easier film loading.

# MAIN PANEL



img.7



When the machine is started, the MAIN PANEL is visualized on the screen (see img.7)


The MAIN PANEL is divided into the following main sections:

- Section **WORKING PROGRAM**;
- Section **HEATERS**;
- Section **EXTERNAL DEVICES**;

## 1. Section **WORK PROGRAM**

This section is used to choose and setup a work program. In order to choose a work program, navigate with the up/down

arrows  and load it with the  button. The shown number corresponds to the selected work program.

By pressing the  button, you will enter in the **WORK PROGRAM SETUP** mode. The work program setup is explained later in the manual.

## 2. Section **HEATERS**

Shows the current/real temperature of each soldering element. This section is **only** for visualization of the current temperature values. In order to change the temperatures, you need to enter the **WORK PROGRAM SETUP** mode. The work program setup is explained later in the manual.

## 3. Section **EXTERNAL DEVICES**

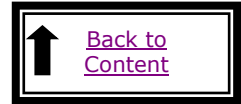
This section is used to synchronize the external devices (if any) with the packaging machine. In this section are also visualized the **ready/not ready** indication, which shows the actual state of each external device. The external devices which could be integrated with the packaging machine are:

- **Timing Hopper** - this device is used to increase the capacity of the machine, especially when the machine is equipped with a multihead weigher;

- **Doser** - The main function of the dosing device is the separating of the product into predefined doses, which are set by the machine operator. The ready doses are then fed to the packaging machines.

- **Printing device** - the thermo transfer printing device is used to print date, lot number, barcode and image to the packaging film.



## WORKING WITH THE PACKAGING MACHINE



In order to start the machine correctly, it's highly recommended to perform the steps in the following sequence:

**1.** Check the temperature value of the soldering elements. You need to wait at least 10-15 minute, so that the heaters to reach the values, set in the chosen work program.

**2.** Turn on the external devices, which you want to use with the machine (each of them has an **ENABLE/DISABLE** button)

**3.** Check the readiness of each external device, which is enabled. If the indication of the device is , it means that the device is not ready to work. If the indication of the device is , it means that the device is ready and will work in synchronization with the packaging machine.

The most common causes for the not ready state of a given device are:

- lack of power supply;
- lack of a ready dose (for the dosing device);
- incorrect plugging in of the synchronizing cables;

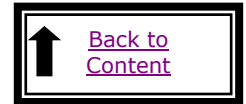
**4.** After the completion of steps 2 and 3, you can continue and start the machine from the **START** button (see img.8)



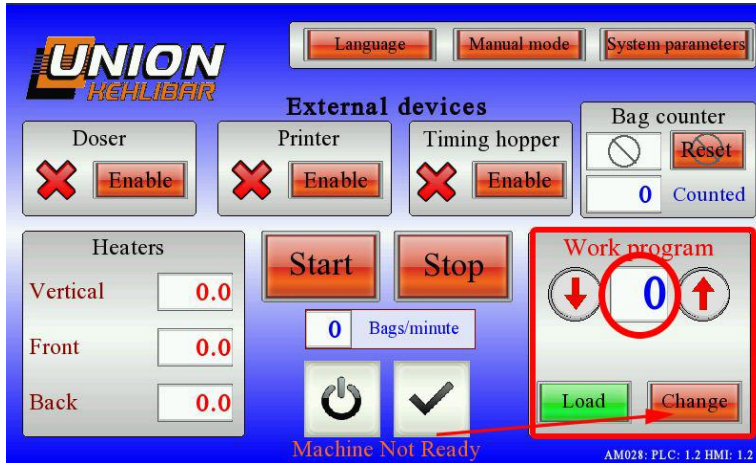
img. 8

**NOTE:** if you do not turn on any external devices and start the machine from the **START** button, the machine starts making empty packages. If you turn on an external device, the machine will start checking for the readiness of that device too. If, for example, the Dosing Device does not have a ready dose (and is not ready, respectively), the packaging machine WILL NOT produce empty packages, but will stop and wait for the ready state of the Dosing Device.

# WORK PROGRAM SETUP



1. From the **WORK PROGRAM** section, choose the program you want to configure and press the **CHANGE** button to enter SETUP MODE (see img.9)



img. 9

2. When entering the SETUP MODE, several pages with parameters will be visualized as follows:

- **Page #1 (see img. 10)**

**Program name**- here you can name the program for easier recognition;

**Vertical Heater [ 90-190]**- here you can set the temperature of the vertical heater between 90°C and 190°C

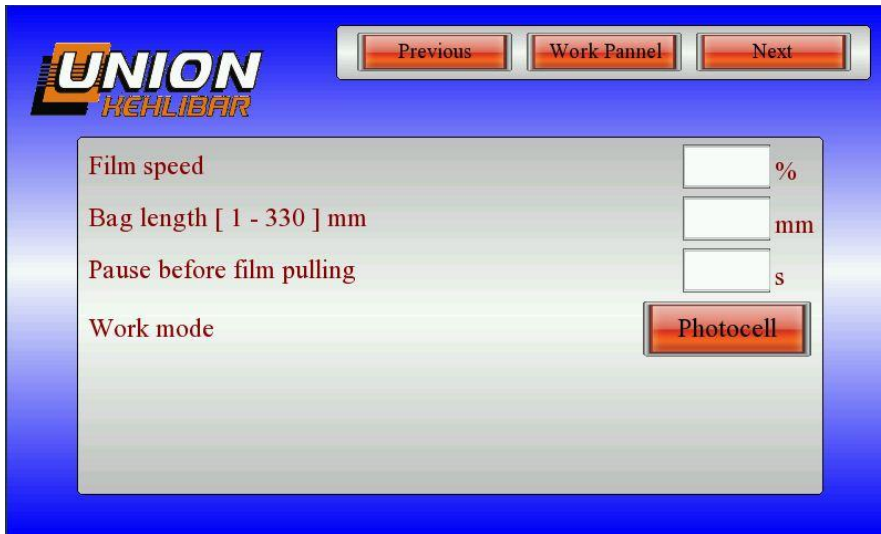
**Front Heater [ 90-190]**- here you can set the temperature of the front heater between 90°C and 190°C

**Back Heater [ 90-190]**- here you can set the temperature of the back heater between 90°C and 190°C



img. 10

- Page #2 (see img.11)



img. 11

**Film speed** - sets the film drawing speed. The standard values are between 70-90%;

**Bag length** - sets the required length of the ready bag in millimeters;

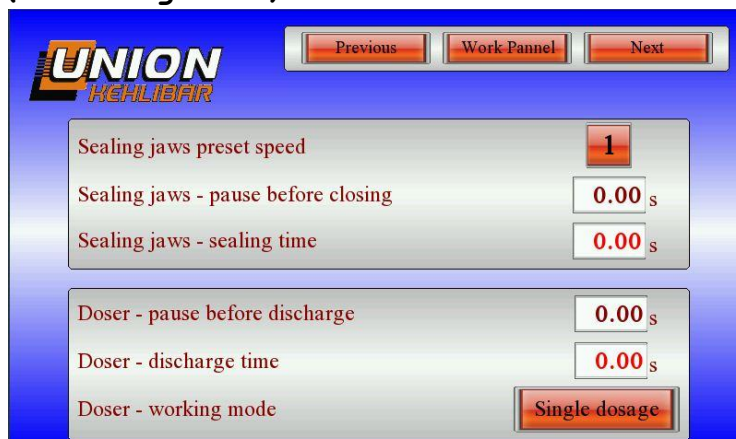
**Pause before film pulling** - sets the pause before the machine starts to pull the film down. The standard value is 0; задава пауза преди да започне изтеглянето на фолиото. Стандартно е 0.

**Work mode**- the work mode is set according to the packaging film.

-If you're working with a blank film (without a photo mark), you should set the mode to **Encoder**

-If you're working with a printed film (with a photo mark), you should set the mode to **Photocell**

- Page #3 (see img. 12)



img. 12

**Sealing jaws preset speed** - sets the opening and closing speed of the sealing jaws. 4 preset programs (speeds) are stored in the machine's memory. #1 is the fastest and #4 is the slowest preset speed program.

**Sealing jaws-pause before closing** - sets the time before the sealing jaws start closing. This time must be long enough, in order to avoid catching any product between the jaws. The standard value is 0.

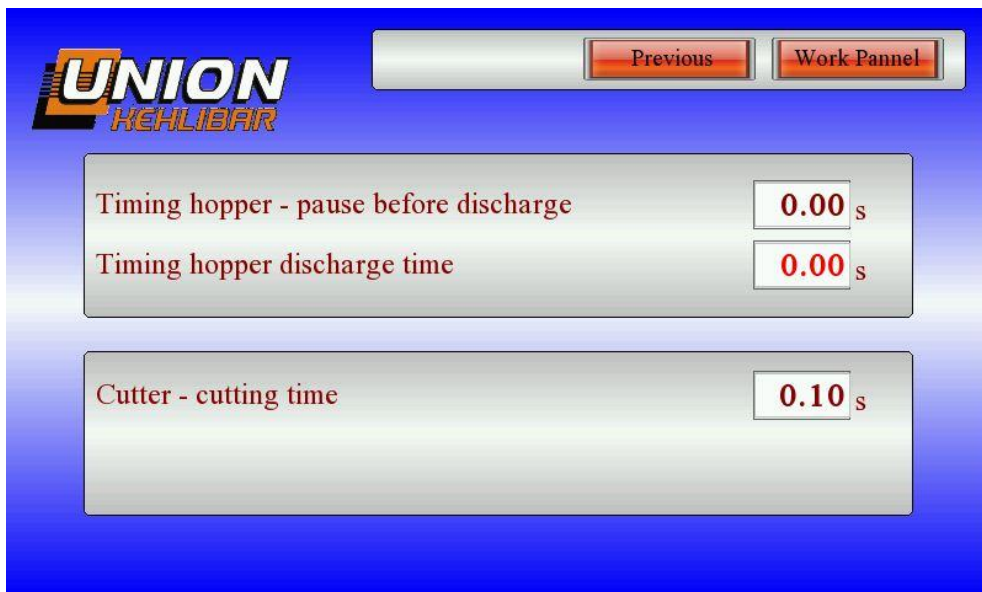
**Sealing jaws-sealing time**- sets the sealing time of the horizontal sealers.

**Doser-pause before discharge** - sets the time before the ready dose is discharged in the packaging machine. The standard value is 0.2.

**Doser-discharge time** - sets the time for discharging the ready dose. The standard value is 0.

**Doser-working mode** - sets the working mode of the dosing device - one dose into single bag or many doses into single bag.

- Page #4 (see img.13)



img. 13

**Timing hopper - pause before discharge**- sets the time before opening the timing hopper.

**Timing hopper discharge time**- sets how long the valve stays in open position before closing (set this parameter to ensure that all of the product in the valve is discharged)

**Cutter - cutting time** - sets the cutting time of the cutter. Default is 0.2 seconds.



## PARAMETERS



Submenu **PARAMETERS** is not used by the machine operator, on that reason it is protected by a password. The system parameters are set by the manufacturer and they are changed only in specific cases.

## WORKING WITH A PHOTOCELL



The photocell is used when working with packaging film with printed photo mark. When detecting a photo mark, the photocell sends a signal to the packaging machine to stop in order to seal and cut the bag. The photo mark sets the step/pace of the cutting and determines the length of the bag.

1. Ensure that the film is passing through the photocell scanning slot with the photo mark side (see img.14)



img. 14

2. When detecting a photo mark, the photocell red LED should flash/blink on. If the photocell is not blinking when photo marker/index is passing, you should adjust the sensitivity.

The sensitivity adjustment is done by the small screw, situated on the photocell's body (see img.15). Use a small screwdriver to readjust the sensitivity. Make slight adjustments until the photocell starts blinking when a photo mark passes through it.



img. 15

**Summary: if the machine makes bags with equal length and the photocell red LED flashes each time when photo marker/index is detected, it means that the photocell works well and the sensitivity adjustment is correct.**

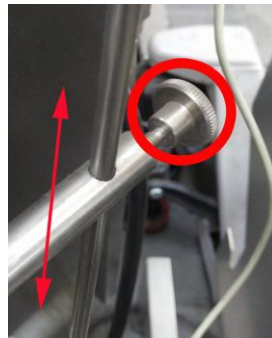
For setting the machine cutting position, so that to match the bag image design (cut where the photo marker is), please check the instructions in the next section.

## CUTTING POSSITION SETTING



For setting the cutting position so that the machine cut the bag on the required place (usually where the photo marker is printed), the photocell position should be changed (moving the photocell holder up or down). The process is empirical - the operator makes the setting and check the results until the required cutting position is attained.

In order to move the photocell holder up/down, the operator should unlock the side bolts (see img. 16) and move the holder on its new position.



img. 16

## MECHANICAL PRINTING DEVICE



1. Turn on the printing device and wait 10-12 minutes, in order to reach the set temperature (see img.17)



img. 17

2. Use the **TEST** button to try manually the device, in order to see if it is working fine (see img.18).

If the printing stamp quality is not good, the operator could readjust the printing head temperature. The values between 3.5 and 4 are standard.



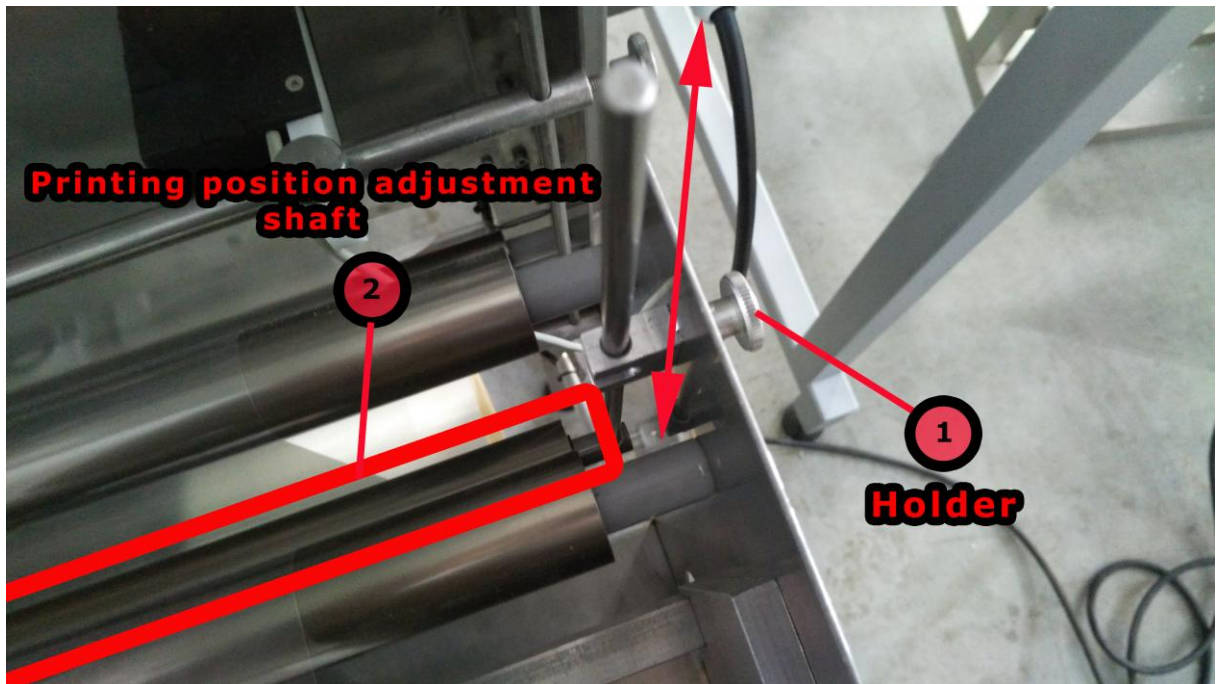
img. 18

The printing position can be adjusted horizontally and vertically. Depending on your requirements you might need to readjust the printing position

### 3. Vertical adjustment of the printing position.

In order to adjust the position vertically, you need to move the printing position adjustment shaft (see img.19) up or down, depending on your requirement. The printing position will change accordingly. For the purpose unscrew the holders, situated on the both sides, and move the shaft in the desired direction.

- Screw the holders.
- Repeat the procedure until you reach the required position.



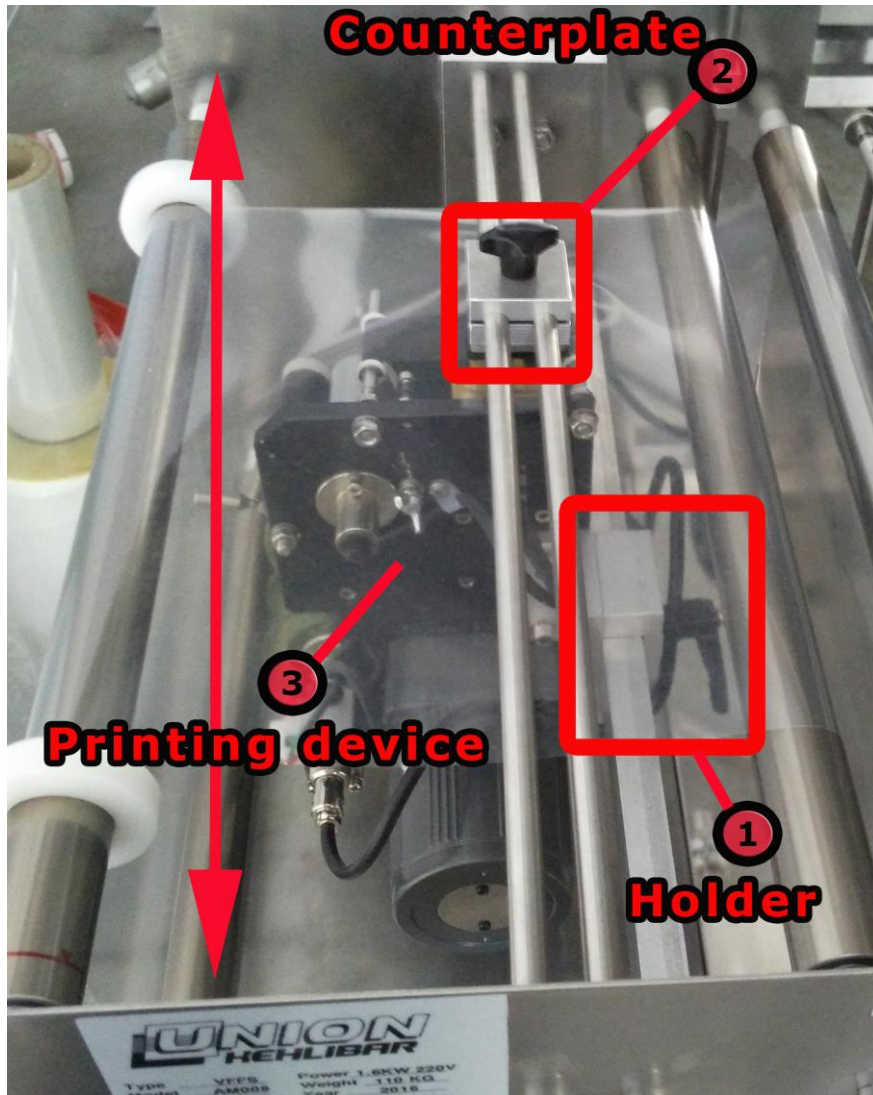
img. 19

### 4. Horizontal adjustment of the printing position.

In order to adjust the printing position horizontally, you need to move the entire printing device (see img.20)

Loosen the holder and move the printing device in the required.

- Tighten the holder.
- Move the counterplate so that to match it up with the printing head of the device.



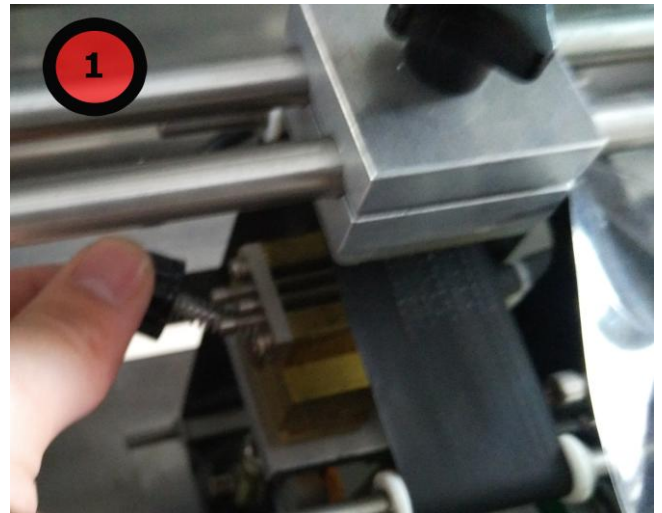
img. 20

5. Changing the printing content.

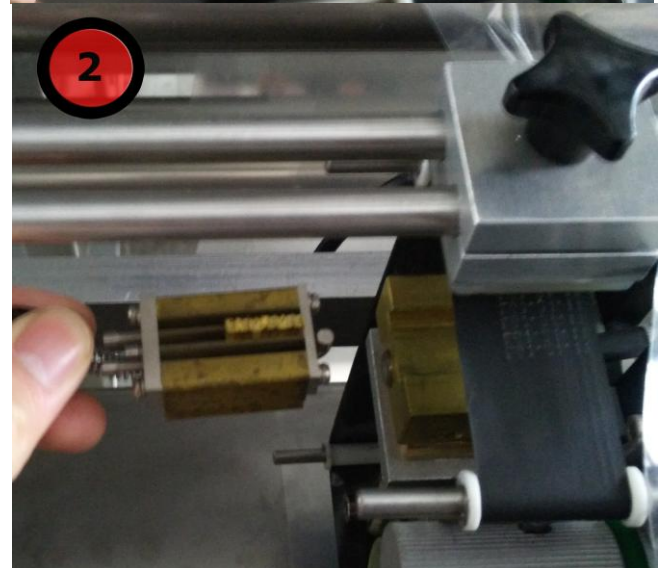
**ATTENTION!!!**

Before making any changes be sure that the printing device is switched off and cooled down, so that to prevent any injuries.

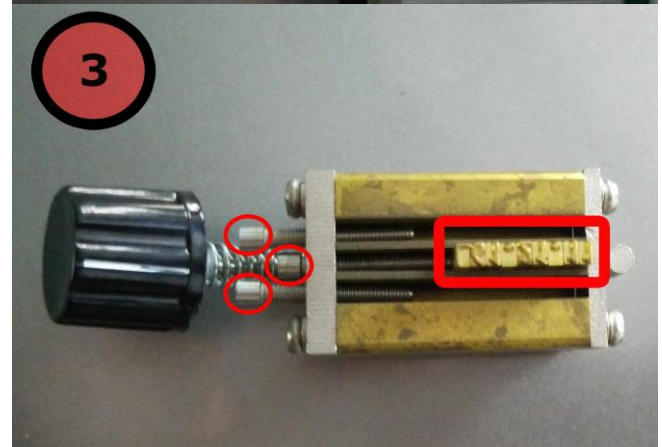
1.1. Turn the handle up, in order to release the printing head.



1.2. Carefully pull the printing head.

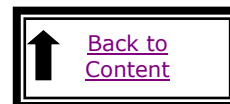


1.3. Change the printing content and push the head back to its place.





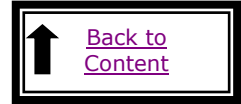
## TROUBLESHOOTING



Problem	Possible causes	Troubleshooting
The machine cannot be turned on	A circuit breaker is tripped off.	Check if all the circuit breakers are ON
The machine makes bags with unequal length	<ul style="list-style-type: none"> <li>- the photocell is not adjusted well and it cannot read well the photo mark.</li> <li>- dirty or dusty pulling rolls may be slipping which might lead to time over of the value set in 3t parameter before reaching the photo marker or the set position set via an encoding device</li> </ul>	<ul style="list-style-type: none"> <li>- setup the photocell sensitivity until its red LED flashes each time, when a photo marker is passing.</li> <li>- clean the pulling rolls with spirit so that to prevent the slipping</li> </ul>
The bags are not well sealed	<ul style="list-style-type: none"> <li>- low temperature;</li> <li>- the sealing time is not long enough;</li> <li>- low quality or not appropriate film;</li> <li>- broken spring;</li> </ul>	<ul style="list-style-type: none"> <li>- increase the sealing bars' temperatures</li> <li>- increase the sealing time by changing 1t parameter.</li> <li>- change the packaging film;</li> <li>- check if all the springs are intact.</li> </ul>
Film varying motion in left-right direction	<ul style="list-style-type: none"> <li>- the film is not centered to the forming tube;</li> <li>- the film roll is not properly wound.</li> <li>- unequal friction of the packaging film.</li> </ul>	<ul style="list-style-type: none"> <li>- center the film roll to the forming tube. If there is more film on the left side of the collar, compensate as moving the film roll in the right;</li> <li>- change the film roll;</li> <li>- check if all the shafts are clean; if the variations in film motion are not significant, the film motion might be stabilized using guides to keep it moving on the right track.</li> <li>If the variations are significant, change the film roll.</li> </ul>
1t ERROR is displayed.	<ul style="list-style-type: none"> <li>- the horizontal sealing bars caught some product;</li> <li>- the value of parameter [t is too small.</li> <li>- inappropriate position of the index/pointer which controls the motion of the horizontal sealing bars.</li> <li>- the slot in the horizontal sealing bars where the cutter is are full with product or clogged with dirtiness.</li> <li>- distorted or curved cutter;</li> </ul>	<ul style="list-style-type: none"> <li>- open the sealing bars using the yellow buttons. Clear the error by pressing the SELLECT button.</li> <li>- re-setup the value to 020.</li> <li>- correct the position of the index following the principles explained in this video: <a href="https://www.youtube.com/watch?v=cLVWluQxZvI">https://www.youtube.com/watch?v=cLVWluQxZvI</a></li> <li>- the slots in the sealing aluminum bars should be kept clean otherwise the cutter could be distorted or curved and getting blunt. This will obstruct the motion of the horizontal sealing bars.</li> <li>- replace the cutter;</li> </ul>

The current temperature of a certain sealing bar is not well displayed	- Broken temperature sensor. "strange" symbols are displayed.	- change the temperature sensor;
The machine is ON but it doesn't start after pressing the START button	- the emergency button is pressed. - some of the buttons don't function;	- released the emergency button; - make sure that all the buttons function as expected (with OHMMETER)
The film pulling rolls are slipping	- dirty or dusty pulling rolls;	-clean the pulling rollers;
The bags are not well cut	- blunt cutter;	- replace the cutter;
The machine is equipped with a dosing device but it makes empty bags	- the synchronization between the devices is not switched ON. - the synchronization cable is unplugged or damaged;	- check if the switch DOZA is in ON position. - plug the synchronization cable or check if all the wires are intact.
The film roll unwinding motor doesn't function	- the dancing roller doesn't actuate the motor starting switch (limit switch); - the switch which controls the unwinding motor is damaged; - damaged unwinding motor;	- check if the dancing roller touches/actuates the limit switch. If it doesn't, correct the position of the plastic cam so that it touches the switch. - replace the limit switch which actuates the unwinding motor; - replace the unwinding motor;

## MAINTENANCE



All the surfaces in contact with the product should be cleaned with spirit or other special preparations which are not hazardous and allowed to be used in food processing industry.

The film pulling rollers should be kept clean, without dust. They should be cleaned with a piece of cloth and spirit. An indication that the rollers should be cleaned is that if they start slipping instead of pulling the packaging film.

The slots in the horizontal sealing bars should be kept clean so that the cutter must be able to get in and out from the slots without any obstructions. If the slots are filled with product or other remnants, the cutter could curve or distort and obstruct the smooth movement of the sealing bars mechanism.