

## **Manual BIO-FRESH machine.**

### **Description**

The bio-fresh machine contains of two parts, 1. A transport belt and the Bio/Fresh unit. The transport belt is driven by a stepless variable electric engine (380 – 400 V). This part of the machine is only to be used for transport as a part of your calibrating machine.

On the transport belt there is a waterfall and drying installation to apply the Bio-Fresh coating on your product. The waterfall is mounted above the drive sponge rolls on which your product is wet with the Bio-Fresh solution. After the sponge rolls the fruit will arrive at the disk track where the fruit will be dried. At the end of the Bio-Fresh machine a picking belt can be placed.

Below the machine a movable container is placed. This container is connected with the pump with a fast-connector. After the pump a heating unit is placed which will heat the Bio-Fresh solution to its desired temperature.

The machine has 2 purposes, 1 a transport belt, 2 adding the Bio-Fresh.

### **Setting the speed of the transport belt**

#### **Attention!!!**

The transport belt is driven by a stepless variable electric engine. The speed of the transportbelt can be adjusted with the rotary knob.

**!IT IS ONLY ALLOWED TO ADJUST THE SPEED WHILE THE MACHINE IS OPERATING!**

If the speed is adjusted while the belt isn't moving it is possible that you break the hydrolic variator.

The speed of the belt is defining for the drying process. If the speed is too high the fruits aren't dry enough when they leave the machine. This could damage the Bio-Fresh coating and reduce the positive effects on the shelf-life.

Extra option

On/off switches in an extra control cabinet which can placed at the pickingbelt.

### **Operating without Bio-Fresh**

As soon as the machine has power and the safety is on you can turn the transport function on and of with the switch S1. This switch is mounted on top of the drying tunnel and you can reach it from both sides of the machine. The speed of the belt is can be adjusted with the rotary knob on the hydraulic variator.

**!IT IS ONLY ALLOWED TO ADJUST THE SPEED WHILE THE MACHINE IS OPERATING!**

When the work is finished it is smart to remove the power from the machine by taking the electric plug out the socket.

## **Operating with Bio-Fresh.**

Before starting the machine follow the instruction manual how to prepare the Bio-Fresh solution. It is very important to follow these instructions step by step for a good effect of the coating.

When the solution is prepared according to the guideline it can be put in the container. The container can be put below the machine. Make sure the black flaps are hanging in the container. This is important to make sure the solution isn't spilled. The grid in the container needs to be in place as well. The grid has a double function. The first is to prevent filth coming in to the Bio-Fresh solution/pump. The second function is to let little drops fall into the container to destroy the foam.

After connecting the hose of the pump to the container the tap can be opened. It is important to depressurise the hose and the pump. To do this there is a repulsion valve and a depressor tap. By opening and closing this tap the air will be out of the hose and the pump. The pump isn't able to suck in water, that's why the pump is placed on a low point in the machine.

**ATTENTION! IF THE PUMP RUNS FOR A LONG TIME WITHOUT A LIQUID SUBSTANCE IT WILL BECOME TOO HOT. THE PUMP WILL LOSE ITS POWER PERMANENTLY OR EVEN BREAKS.**

It is important to have someone around when starting up the machine. Check if the waterfall is getting filled when turning on the machine. If there is no fluid running through the water fall turn off the machine immediately and check why there is no fluid coming in the water fall. (For more info check Problems)

To start up the Bio-Fresh aliquot switch S2 needs to be switched on. When the machine is started both of the electric fans will start rotating immediately. The heating unit will start heating as soon as there is enough fluid in the tube. If there is not enough fluid the heating unit will automatically be turned off. Also when the fluid is too hot the heating unit will automatically turn off.

When starting up the machine, the fluid isn't on the right temperature yet. This can take up to 15/20 minutes. The Bio-Fresh coating flows out much better when it's heated. This results in a better coating of the fruits. It is also possible to use Bio-Fresh without heating the solution, but the results aren't as good.

## **Restarting the machine after a break**

The machine is equipped to make sure the solution stays in the pump and the pipes. In the water fall is a small hole which enables it to run empty (this is to prevent pollution in the solution). Restarting the machine due to switch S2 will immediately fill up the waterfall.

## **Switch off the machine**

### **Switch off during a short period of time**

During a switch off during a short period of time it is sufficient to turn off switch S2 and S1. The waterfall will slowly run empty and all the solution from the leaking bin will run back in the container underneath the machine. All the piping, pump and heating unit will remain full,

### **Switch off during a long period of time**

Use the same procedure as used with the switch off during a short period of time. In addition the power source needs to be cut off from the machine by pulling the plug from the socket.

## **Cleaning the machine**

During a switch-off it can be necessary to clean the machine. To clean the machine the container needs to be removed from the machine and needs to be washed down with clean clear water. A container full of clear water needs to run through the machine to clean the pump, heating unit and piping. The water fall needs to be cleared off slit and dust. When needed clean the transport belt as well with warm water. The dried up coating can together with dust and mud get hard, this can result in damage to the fruit when not properly cleaned. The pump fan needs to be cleared of small leaves and dirt. To do so you can remove it with 2 screws together with the motor housing. Attention in the suction of the pump filth can accumulate which can result in a blockage.

## **Maintainance of the machine**

The most important is to keep the transport chain slick. This needs frequent lubrication. Filth and coating make the chain stiff. The 3 sponge rolls become hard because of the coating and filth. These need to be cleaned properly with clean and warm water.

## **Problems**

The machine does not start. When both of the switches don't trigger any kind of reaction from the machine it is likely that there is a problem with the power. It is possible that the control cabinet's safety switch is still turned off. There is one for the transport belt and the heating unit.

The transport belt is running and the Bio-Fresh unit isn't. Safety can be switched off. If so the Bio-Fresh unit doesn't work. If the safety is on the fans and the pump will work.

The heating doesn't work. On the heating unit is a safety circuit installed. Existing from 1 ingoing thermostate, 1 outgoing thermostate and a water level sensor in the waterfall. One of the 3 sensors can be broken or does not send a signal.

The fruits aren't handdry. Reduce the speed of the transport belt. Often it is too high. Or de fans don't work. Please check the fans and the power.

The waterfall doesn't give enough fluid to make a good film. The pump doesn't pump enough fluids. Often this is because the fan or the pump opening is constipated. The solution is to disassemble the pump en clean it. It is also possible that the safety valve needs cleaning. Please disassemble and clean. If this doesn't fix the problem it is possible that the pump is damaged due to running without fluid and lost a big deal of its power. In this case it's best to replace the pump.