

# User Manual



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## Section 2

### User Manual AL-E waterunloader

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## 1 Introduction

With the purchase of this installation, you have made the right choice. You are now the owner of an excellent machine, which has been manufactured with great care. In order to obtain the best results from this machine, please follow the instructions for safety, operation and maintenance contained in this user manual carefully.

The user manual must be made available to the users of the machine and should be kept in a defined place in the direct vicinity near the machine during operations. The user manual must be read and followed by everyone who works on or with the machine.

The Burg group is not responsible for direct or indirect damage as a result of operating errors, lack of proper maintenance or the use of the machine in any manner not in line with the contents of section 1 and 2 of this manual.

The Burg group will no longer be legally liable in case of works, modifications or extensions made to the machine, other than standard maintenance, by parties other than the Burg group.

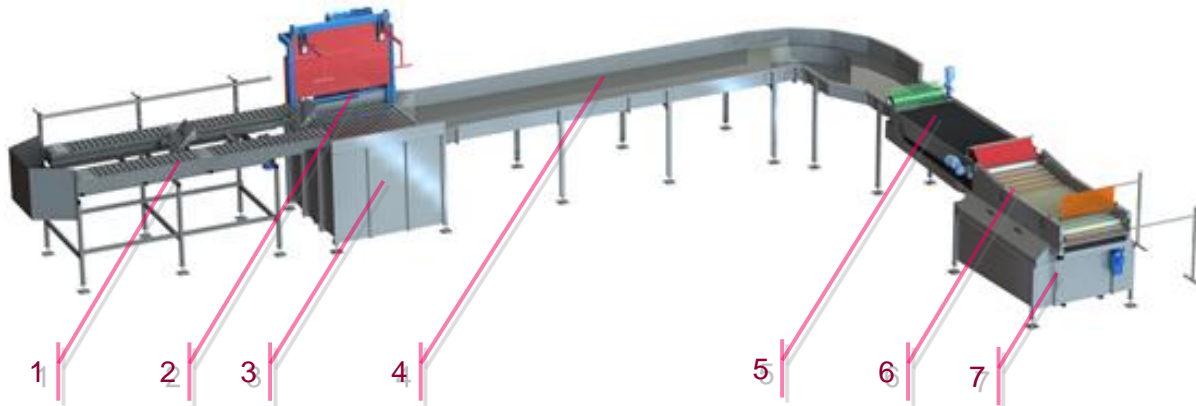
The machine is supplied under the general delivery and payment terms and conditions issued by the Metaalunie, and designated as the METAALUNIE TERMS AND CONDITIONS. The text of the document has been in force since the 1st of January 2001 and a copy of the same has been filed with the Clerk of the Court of Rotterdam, issued by the Metaalunie, Post box 2600, 3430 GA Nieuwegein.

## 2 General description of the working of the AL-E waterunloader

### 2.1 Intended use

The purpose of the AL-E waterunloader is gently unload floating fruits such as apples from storage bins so it can be feed into a pregrading system or a repacking station.

The product is unloaded in the dump tank by an integrated bin lift that clamps the full bin and gently submerges it in the dump tank. The fruits floats out of the bin and is taken along with the water current to the buffer channel.



1. Bin places with automatic pushers (optional)
2. Bin lift
3. Dump tank
4. Buffer channel
5. Disc conveyor (optional)
6. Dryer (optional)
7. Pump tank

Please note the representation above is schematic; the actual layout of the system can vary depending on customer requirements.

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## **2.2 Process conditions**

Maximum bin load	400 kg
Minimum bin dimensions	L x B x H 1000 x 1000 x 650 mm
Maximum bin dimensions	L x B x H 1200 x 1200 x 850 mm

## **2.3 Working principle**

The AL-E system is used for the gentle unloading of fruits.

An AL-E system with integrated bin handling automatically submerges the full bins in the unloaders dumptank. The product will float out of the bin and is transported by a water current out of the dumptank.

Optional functionality can be added to an AL-E system for applications such as a Bin places with automatic pushers, *SNEP's* (switching dam in the buffer channels for water management), etc. Please refer to dedicated manuals where applicable.

## **3 Installation, adjustment and commisioning**

### **3.1 General installation information**

Before starting up the installation and adjustment, take note of all safety regulations and precautionary measures as described in Section 1 chapter 2 & 3.

Depending on the machines configuration a water channel will be placed between the dumptank and the buffertank. When the unloader is fitted with an (automated) full-bin-place, this should be mounted in line with the rollers of the bin lift.

## **4 Operation**

### **4.1 General control information**

The installation is fitted with electronic-control system. This control system enables the installation to provide an automated continues process. The control system is made up from a broad spectrum of components such as sensors, actuators, motors, interfaces and software.

The control logic of the system will not take into account any tempering with the system during operation. For instance, when a box, pallet or crate is detected on the infeed part of the system it will assume it will also arrive at its destination. When the box is manually removed during the process, the machine will still try to manipulate it as if it's still there.

Please note; the control system will store it last know status and positions, even if the electric power to the system was interrupted. Interrupting the power supply to the installation is therefore never a solution to resolve an error status.

The same is true for switching from automatic operation to manual operation; when this is done the control system will store it's last know status and positions of the current automated cycle. When the system is returned from manual to automatic operation, any manipulations and adjustments that were made in manual mode, will be overridden with the previously stored status and positions from the last automatic operation cycle. This means the machine might start moving when switching from manual to automatic operation!

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## 4.2 Main hardware button interface

### 4.2.1 Installation start up sequence

- Before starting up the machine take all precautionary measures as described in Section 1 chapter 3 and check the following:
  - The drain for the water discharge is sufficient closed.
  - The water level is on the appropriate height.
  - The water supply is open and the float is working.
- Put the main power switch in *on* position.
- Make all sure the emergency stop switches are in neutral position, the emergency stop indicator light should be off.
- Make sure the *Manual/Auto*-switch is in the *Auto* position. Now the machine can be started by pressing the button *Start Installation*. The light indicator incorporated in this button is now switched on.

### 4.2.2 Unloading of bins

- Place a bin on the automatic bin lift. Depending on the bin handling options on the machine this can be done automatically or by fork lift. Once a full bin is positioned on the integrated bin lift, it can be unloaded using the *Down* button to submerge the full bin. ) The bin will be clamped and submerged in the water of the dumptank (during this operation the waterpump will temporarily stop to prevent turbulent water flow). The ascension of the bin will automatically stop by means of an end-switch. Once the bin is fully submerged, the fruits will float out of the bin. Once all fruits are taken from the dumptank by the water current, a photocell will detect the unloading is finished and the bin will automatically be lifted out of the dumptank. The lifting of the bin can be forced manually at any time by pressing the *Up* button.

### 4.2.3 Manual operation

- The machine can also be operated in manual operation. To switch to manual operation turn the *Manual/Auto*-switch is in the *Manual* position. The unloader lift can now be controlled with the *Up*-, *Down*- and *Stop*-buttons.
- If the unloader is fitted with an automated bin pusher, this can be operated in manual operation by using the *Push*-button. When the pusher is in operation it can be stopped by pressing the *Stop-Pusher* button. To move the pusher back to the starting position push the button *Manual-Pusher-Back*.

## 5. AL-E Specific Troubleshooting

Before performing any corrective actions to the system, take note of safety instructions regarding maintenance as described in chapter 6 of this section.

For general troubleshooting issues please refer to Section 1 Chapter 4.

Symptom	Solution
<b>Suction line of the water pump is blocked</b>	Disassemble suction pipe and remove the contaminants in the pump and in the pump rotor.
<b>Water level too low</b>	Top up water to required level
<b>Tap water input flow not sufficient</b>	Tap water pressure is reduced by utilities valve. Increase tap water pressure by opening valve.

## 6. AL-E Specific Maintenance Instructions

Before performing any maintenance operations, power down the machine according the procedure as described in Section 1 chapter 2.2. This also applies to the cleaning of the machines in order to eliminate the risk of accidents as a result of electrocution or entrapment of body parts.

For general Maintenance instructions please refer to Section 1 Chapter 5.

### 6.1 Cleaning the dumptank, channels and the exit unit.

Clean the dumptank, buffering channels and exit unit on a weekly basis.

Procedure:

- Drain the system from used water by opening the drain valve.
- Clean the system.
- Clean this compartment by using a (steam clear) water jet. **Caution: No persons or body part should be under the moveable bottom at any time!**

### 6.2 Dryer maintenance

In case the AL-E unloader line is fitted with a dryer unit, check the sponges on a monthly basis for integrity. If the sponges are degrading replace them.



## 7 DECLARATION BY THE MANUFACTURER

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We, Burg`s Machinefabriek BV Weihoek 11 4416 PX Kruiningen, herewith declare, on our own responsibility, that the product:

Type : AL-E  
Machine n° : 4767  
Finaltest date : 17-07-2015

to which this declaration relates corresponds to the relevant basic safety and health requirements of the Directive 2006/42/EEC, 2006/95/EG and 2004/108/EG

This machinery is CE-Marked for the parts that were delivered by Burg Machinefabriek BV. The Burg Machinefabriek BV Machinery parts will be working together with machinery of other suppliers in a Total production line. Burg Machinefabriek BV is not responsible for CE-Marking of the machinery that was not build by or delivered by Burg Machinefabriek BV nor responsible for CE-Marking of the total production line. Therefore the main contractor of this project has to carry out an overall CE-Marking on the Total production line. It is prohibited to start up the production line or take the production line into service before the total CE-Marking is carried out by the main contractor.

The Netherlands –Kruiningen 17-07-2015  
managing director A. Van Burg

