



Partner in Growing



User Manual

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Robot Pusher JOR

With buffer belt

Machine nr.:



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Preface

This user manual is written for anyone working on or with the machine. Before working on or with the machine, first read this manual.

This user manual contains important instructions / information on how to use the machine in a safe, professional and economical way and must always be available where the machine is used.

In addition to this user manual, the mandatory rules and regulations for accident prevention and environmental protection in the country and place of use of the machine must also be observed.

This user manual contains information on the operation of the machine with all the possible options. Use only the information that applies to your machine. Depending on the intensity of use and customer requirements, this machine can be equipped with various options. Contact your sales consultant.

Supplier details if not directly supplied by Javo BV. Dealer stamp:



Javo BV is not responsible for any errors in this manual or the consequences thereof.

Javo BV is not liable for damage or consequential damage caused by operating errors, lack of expert maintenance and any use other than described in this manual.

The liability of Javo BV also expires once modifications or additions are made without written permission of Javo BV.

This machine is suitable for process and environmental conditions as stated in section "Specifications and Tolerances" of this manual. Any other use is not authorized by Javo BV and this allows the operator and / or its environment at risk.

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1 Technical specifications and tolerances

This machine is designed only to push pots or trays automatically from a conveyor to a buffer belt. This machine is designed for the processing of pots and other materials described in this user manual. Detailed operation of the machine is described in section "Operation".



This machine may be used only within the limits for specifications and tolerances of the order, on the assembly drawing and indicated in this manual. If the machine is used outside these specifications, Javo BV cannot take responsibility for this machine.



This machine is intended for products as agreed in the order confirmation only. To ensure the proper operation of this machine, only products with specifications and tolerances as specified in the order may be used.



Do not use the machine for purposes other than the intended purpose of Javo BV. This can lead to damage and danger to the operator and its environment.



This machine is CE marked. When placing multiple machines in one line, the entire line must be properly CE marked before using this machine. Until proper CE Marking of the line is carried out, commissioning of this machine is prohibited.

Specifications	
Voltage	*400Volt 50Hz 3~+N+ PE
Machine connection	16A 5pole
Power consumption	3 KW ex. Buffer belt
Weight	Depending on configuration of the buffer belt
Length	2840, 3340, 5330, 5830, 6330, 7820, 8320, 8820, 9350, 10310, 10810 of 12310 mm
bandwidth	1600, 1800 of 2000 mm
overall width	Size mentioned above + 187 mm
Height	600-920 mm
Belt material	PU (smooth belt)
Fixed speed	Several delays possible
Variable speed	inverter
Year of construction	See type plate
Type product	As agreed in the order confirmation.

* Other possible in consultation

1.1 Type plate

The type plate is placed onto the main cabinet door.

Partner in Growing			
Westeinde 4	2211 XP Noorwijkerhout	Nederland	
www.javo.eu		info@javo.eu	
Type		<input type="text"/>	
Machine nr.		<input type="text"/>	
Bouwjaar		<input type="text"/>	
<input type="text"/>	V	<input type="text"/>	kW
<input type="text"/>	A	<input type="text"/>	Hz

2 Safety



This machine is built according the state of the art technique and the accredited safety regulations. Despite this, the body and life from the user or third parties can be in danger when using it. There could also arise damage to the machine or other goods when using it.



This machine is CE marked. When placing multiple machines in one line, the entire line must be properly CE marked before using this machine. Until proper CE Marking of the line is carried out, commissioning of this machine is prohibited.

2.1 Provisions

1. Operation and maintenance of this machine must be performed by qualified personnel in compliance with warnings on the machine and in accordance with the user manual. Keep children and other (unauthorized) persons away while using machine.
2. This machine is suitable for process and environmental conditions as stated in section "Specifications and Tolerances" of this manual only. Any other use is not authorized by Javo BV and this allows the operator and / or the environment at risk.
3. It is prohibited to modify this machine, without prior written approval of Javo BV.
4. Thermal fuses and torque limiters may not be set different upon delivery of the new machine. The thermal circuit breakers should never be used to turn on / off the machine.
5. This machine should be installed so that there is sufficient space remaining for providing safe instructions and / or performing maintenance and / or inspections. Put the brakes on the castors before the machine is turned on.
6. Keep the work area clean and well lit. Cluttered or dark areas invite accidents.
7. This machine is not suitable to be used outside. Electrical components are only splash proof. Keep the machine away from rain and moisture. When using the machine in a humid environment is unavoidable, you should use an RCD.
8. Keep hands, hair, loose clothing and / or jewellery away from moving parts of the machine. Wear appropriate clothing without loose parts. Wear non-slip work shoes.
9. As long as the machine is on, no connection or safety devices may be removed. The machine may only be used when all protective devices and safety-related facilities are available and ready for use.
10. Do not stand on the machine when it is operating.
11. Never move the machine if the power cable and / or pneumatic supply is still connected.
12. Prescribed checks and maintenance in the user manual must be observed.
13. Allow the machine to be serviced and repaired by qualified personnel only with original replacement parts.
14. In addition to the user manual, generally applicable statutory and other regulations regarding accident prevention and environmental protection have to be respected. This is also referred to handling of personal protective equipment.
15. Inform operating personnel before start maintenance. Interrupt if possible the power (mains), before start machine investigation or maintenance by turning off the main switch and locking the main switch. Pull the plug from the wall socket.
 - a. As work must be done with power supply (mains) voltage on the machine, then arrange an additional person who can operate the emergency stop.
16. When a machine part is damaged or not working in the prescribed manner, the work must be interrupted immediately. Resumption allowed only when the machine part is repaired or replaced and checked. Consult your dealer if the machine is not functioning properly.
17. Machine and / or parts must be disposed in accordance with local laws and regulations.

2.2 Explanation of icons and symbols

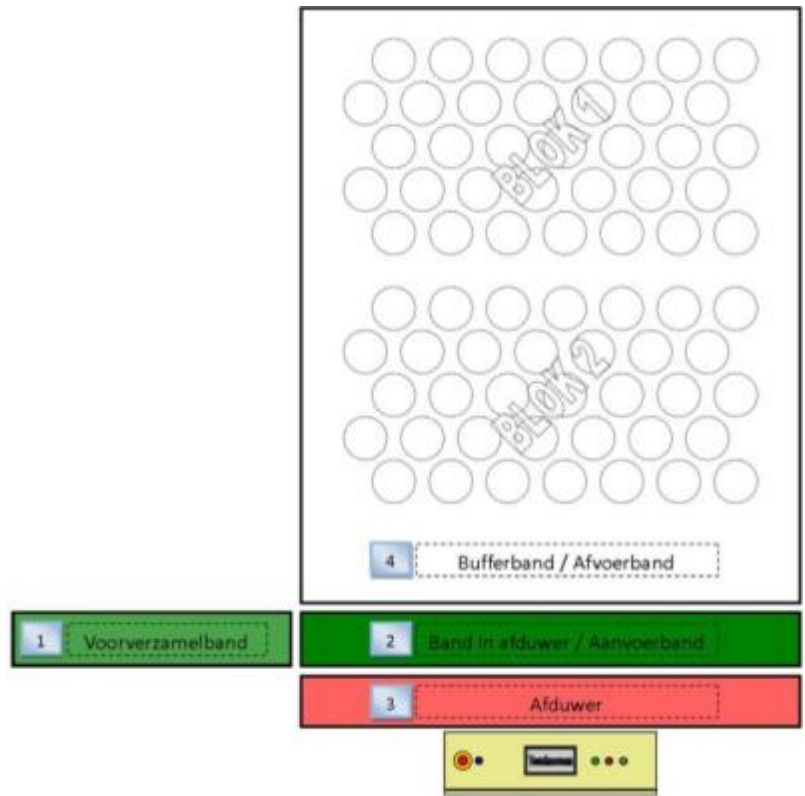
Pictogram	Meaning
	Read and understand this manual before using the machine and / or performing maintenance.
	Remove Power (mains).
	Wear during all work on or with the machine safety shoes and safety glasses.
	Wear during cleaning and maintenance work on this machine also safety gloves and protective clothing.
	Warning. Important points and / or instructions regarding safety and / or injury prevention are marked with this warning sign.
	Dangerous electrical voltage. Dangerous electrical voltage present.
	Risk of crushing. Danger of moving or rotating parts.
	It is forbidden to wear Loose clothing, long hair and / or jewelry nearby moving parts of the machine.
	Trespassing.
	Do not rinse control cabinet Danger of moisture in the cabinet when it is rinsed with water.

Symbols that may be present on this machine			
Drill 	Direction of movement 	Speed ground feeder (curved) 	Speed ground feeder (straight)
Speed pot belt (curved) 	Speed pot belt (straight) 	Brush disc Rotofill 	Tray belt Rotofill
Rotor Rotofill 			

3 Description of the machine

3.1 Machine overview

1. Pre collection belt.
 - a. Conveyor that provides pots or trays from for example a potting machine of plant line.
2. Belt pusher / supply belt.
 - a. The supply belt is a belt which places pots or trays into the correct position for the pusher. When a row is pushed onto the buffer belt, the row will be positioned correctly for the chosen pattern.
3. Pusher.
 - a. The pusher pushes a row of pots or trays onto the buffer belt.
4. Buffer belt.
 - a. The buffer belt is the belt on which rows of pots or trays are placed correctly to take off by a forklift truck or for manual take off.



3.2 Options

Depending on the intensity of use and customer requirements, this machine can be equipped with various options. Contact your sales consultant.

Options	Code	Specifications

3.3 Operation

This machine is designed only to push pots or trays automatically from a conveyor to a buffer belt.

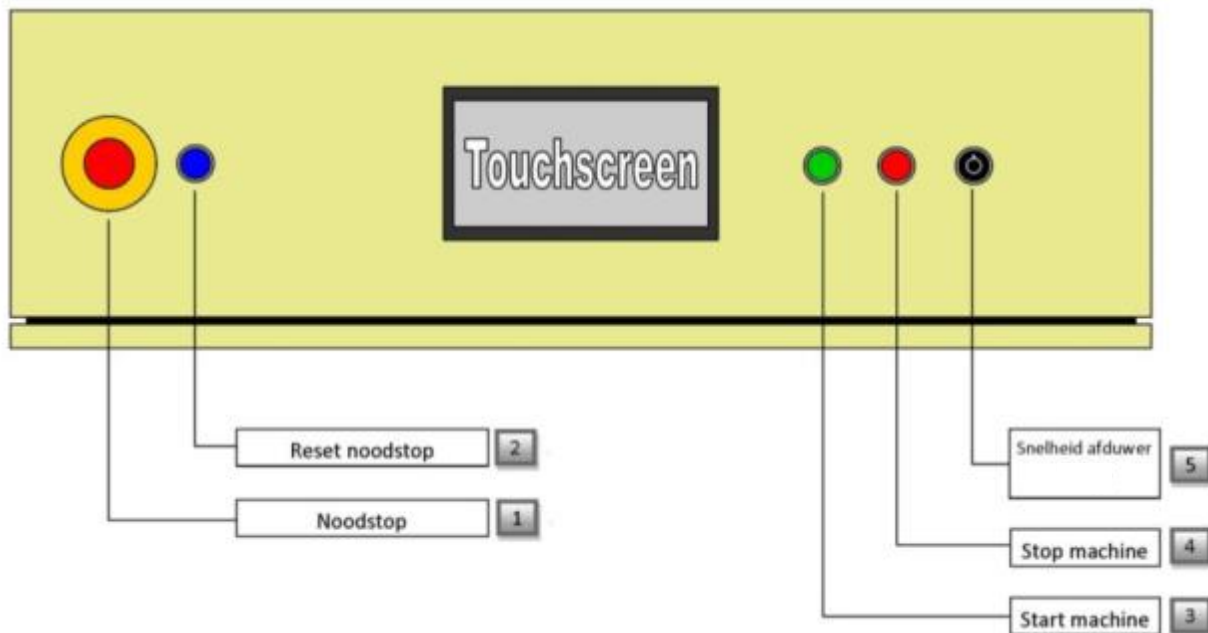
The pots are supplied from a machine that processes pots or trays, after which they are put in blocks on the buffer belt. The number of pots or trays that will be put in a block can be adjusted via software.

3.4 Machine workstations

There are no workplaces at this machine.

3.5 Controls

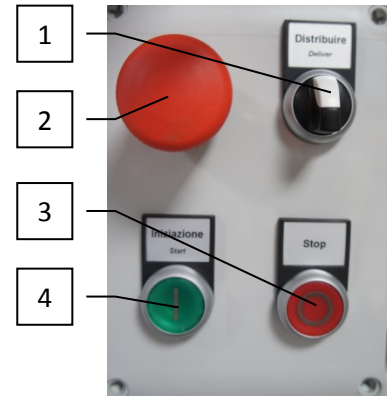
Operation of the machine can be done by means of the pushbuttons that are mounted on the upper side of the control cabinet.



- | | |
|-------------------------------------|--|
| 1) Emergency stop button | This button causes the machine to stop abruptly. Use it only in case Of emergency! (The machine has more than one emergency stop button, they are placed on the side of the buffer belt). |
| 2) Reset emergency stop (blue) | When the emergency has been active on the machine, the emergency stop relay (the relay which switches the machine safely) has to be reset, in order to ensure that the machine can safely start. |
| 3) Start machine (green) | This button allows the machine starts. This is allowed only if the emergency stop of the machine is not running and the emergency stop relay is reset. The LED in the button lights up when the machine is started and flashes if the machine is stopped by another machine (external stop). |
| 4) Stop machine (red) | This button causes the machine to stop. Use it when you are finished using the machine, or if there is a fault. The LED in the button lights up when the machine is stopped. Flashes, then there is a malfunction. (See section software) |
| 5) Speed of movement discharge unit | This rotary knob controls the speed at which the customer puts Sets the speed of the discharge unit. The speed can be controlled from a minimum of 10 Hertz up to 50 Hertz. |

Local controls at the end of the buffer belt:

1. Lever button
2. Emergency stop button
3. Stop button
4. Start button



Reducing valves:

There are two reducing valves placed at the buffer belt when you have chosen the pneumatic version. The first valve (left) controls the incoming air pressure. This is also the pressure set for the outgoing movement of the cylinders. The second valve (right) controls the back pressure on the ingoing movement of the cylinders.



4 Transport



Follow all instructions described in this manual, in particular chapter safety.

On delivery of the machine, a Javo mechanical engineer must be present to unload the machine from the (freight) wagon.

Prior to moving the machine, the electric, pneumatic and hydraulic power should be disconnected. Make sure the cables are stowed sufficiently.

When moving within the company (when the machine does not need to be lifted) the state of the machine should be checked. Make sure the path to be traveled is free, so the machine can be moved to the desired position without obstacles.

If the machine is to be lifted for movement (outside the company), please contact your dealer or contact a professional shipping company.

Before the machine can be moved, the conveyor belt must be removed.
The machine must be transported upright.

The relative humidity should not be too high so that water condenses in the machine.

Report damage during or immediately after delivery to the transport company and to Javo BV. Take all necessary steps to prevent further damage.

5 Mounting, installation and commissioning



Follow all instructions described in this manual, in particular chapter safety.



This machine is CE marked. When placing multiple machines in one line, the entire line must be properly CE marked before using this machine. Up to CE Marking of the line, commissioning of this machine is prohibited.

5.1 Placement

The machine must be placed on a flat surface, with sufficient weight capacity. Install the machine so that there is enough space left for service providing, safe instructions and / or cleaning, maintenance and / or inspections. Put the brakes on the castors before the machine is turned on.



This machine is not suitable to be used in the open air. Electrical components are only splashproof. Keep the machine away from rain and moisture. When using the machine in a humid location is unavoidable, you should use an RCD.

5.2 Facilities to take care of by the user

Prior to delivery of the machine, the required materials and facilities (power, etc.) needs to be present within 3 meters of machine.

Required power supply: 400 Volt, 3 Phase + Neutral + Earth. (N. America: 208/220V 60Hz.).

5.3 Mounting / Connecting

If applicable, the components supplied are to be mounted on the machine. Make sure that the moving parts are free. If the machine is complete, it can be connected (by a competent person) to the power supply.



Keep hands, hair, loose clothing and / or jewellery away from moving parts of the machine. Wear appropriate clothing without loose parts. Wear non-slip work shoes.



As long as the machine is on, no connection or safety devices may be removed. The machine may only be used when all protective devices and safety-related facilities are available and ready for use.

5.4 Check rotation direction



Check the rotation direction before you start working with the machine.

Procedure:

1. Connect the power cable.
2. Start the conveyor.
 - a. Turn on the main switch.
3. Check the direction of rotation.
4. Stop the machine.
5. Turn off the main switch.
6. When rotation direction is incorrect:
 - a. Turn the reversing switch if this option is installed. Otherwise, follow points b and c.
 - b. Remove the plug from the socket.
 - c. Open the plug and switch 2 of the 3 phases in the plug. This should only be carried out by suitably qualified personnel.

Note: All the conveyors with the exception of the trough-belts can work with both a pulling and with a pressing drive. With a pulling drive more weight can be moved and the belt will be less likely to slip.

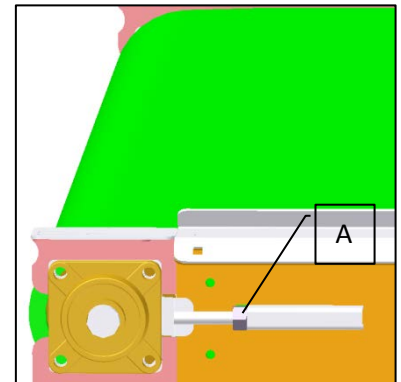
5.5 Check conveyor tension



Check the conveyor belt tension before you start working with the machine.

Procedure:

1. Check the conveyor belt tension. The correct tension is obtained when the belt in the middle deflects just a little (dependent on the length of the belt).
2. Adjust the belt tension if necessary .
 - a. The tension can be adjusted by simultaneously turning the bolts on both sides of the belt (A).



5.6 Check software settings



Check the software settings before you start working with the machine.

Procedure:

1. Switch on the main switch and wait until the software is started.
 - a. The first screen that appears is the "start-up screen". It displays information about the type of machine.
 - b. Touch the screen to go to the main screen of the machine.
2. Check the software settings (see section "Software").

6 Operation



Follow all instructions described in this manual, in particular chapter safety.



Keep hands, hair, loose clothing and / or jewelry away from moving parts of the machine. Wear appropriate clothing without loose parts. Wear non-slip work shoes.



As long as the machine is on, no connection or safety devices may be removed. The machine may only be used when all protective devices and safety-related facilities are available and ready for use.

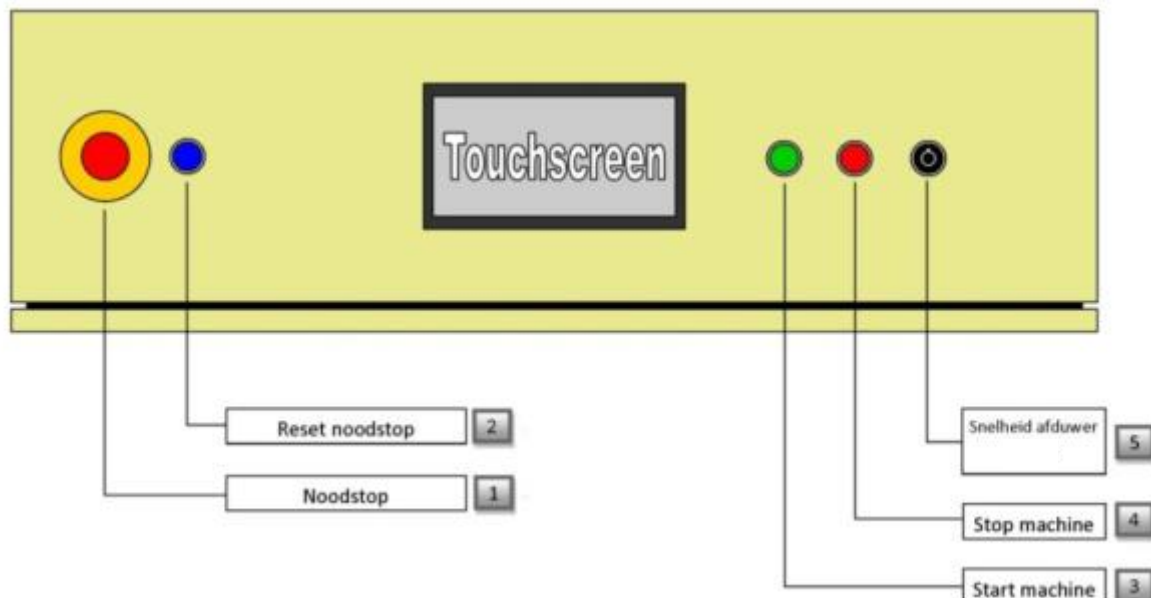


If a machine part is damaged or not working in the prescribed manner, work must be interrupted immediately. Resumption allowed only when the machine part is repaired or replaced and checked. Consult your dealer if the machine is not functioning properly.

6.1 Start

Start procedure:

1. Switch on the main switch at the main cabinet.
2. Wait for the software to start-up.
 - a. The first screen that appears is the "start-up screen". It displays information about the type of machine.
 - b. Touch the screen to go to the main screen of the machine.
3. Push the blue reset button.
4. Set the software settings (see section "Software").
5. Push the green button to start the machine.
 - a. The light in the knob will lit when the machine is started.



6.2 Software

6.2.1 Touch screen

The display which is built in to the control box is a touch screen.



Do not press too hard on the keys. If you do this, the screen may become damaged and not functioning properly. Do not use sharp objects to press keys.

6.2.2 Quick Setup

To set the machine properly, follow these steps:

1. Press the "Settings" button - bottom left of the display.
2. Press the "change current" button - top left of the display in the Settings screen.
3. Next, you need to complete all the parameters that are displayed on the screen.



Please note: there are 3 screens where parameters must be completed. Go to the next screen through the arrow at the bottom right.

4. If you have entered the parameters, you must save it. Do this by pressing the "Save" button (at the bottom middle of the screen).
 - a. The screen where you can fill in the name and the program number will appear.
 - b. Increase or decrease the program number by using the arrow keys.
 - c. Touch the empty text field to add a name or text to the program.
 - d. Press the save button - bottom middle of the screen.
 - e. The program that you set has been taken into operation by the machine.

6.2.3 Startup screen

After starting the machine, this screen appears. This screen is followed by the main screen after a few seconds.

In this screen, the following will be visible:

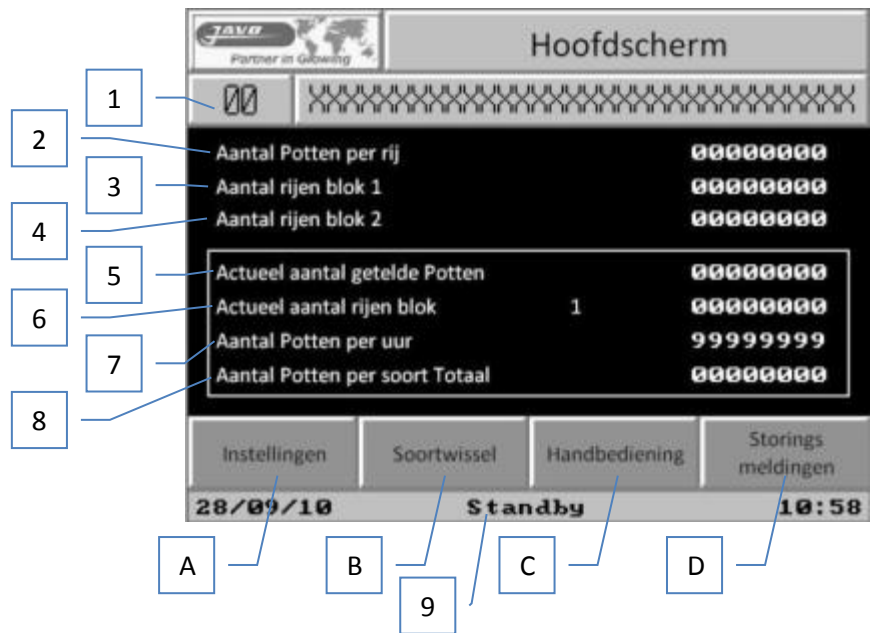
1. The company logo of Javo.
2. The name of the machine.
3. The address of Javo.

By touching the screen, you will navigate to the main screen.



6.2.4 Main screen

After starting the machine, this screen appears after a few seconds.



In this screen, the following will be visible:

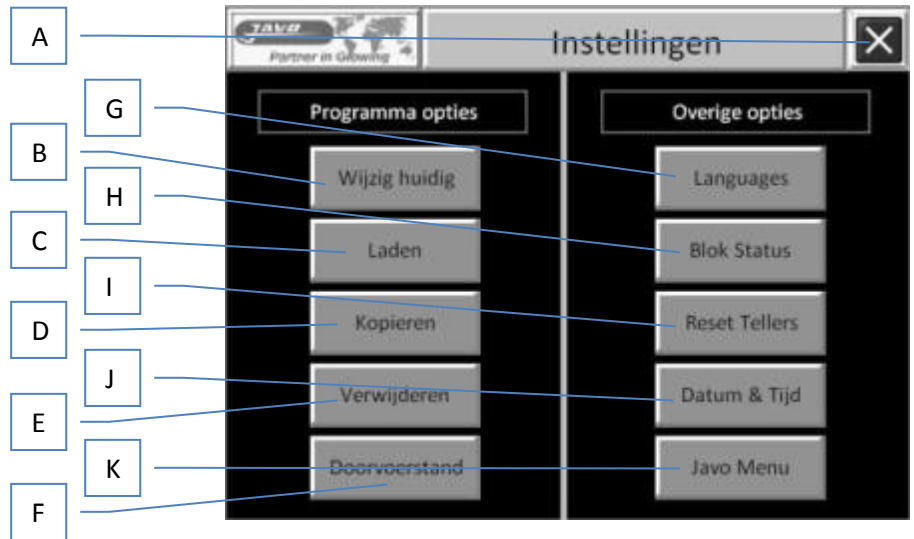
- | | |
|---------------------------------|---|
| 1. Program | The program that is active at the time, number and name. |
| 2. Number of pots per row | The number of pots / trays per row which is set in the program. |
| 3. Number of rows block 1 | Actual number of rows of block 1 that is set in the program. |
| 4. Number of rows block 2 | Actual number of rows of block 2 which is set in the program. |
| 5. Number of counted pots | Current number of counted pots / trays, when the machine is in operation. |
| 6. Number of counted rows block | Current number of counted rows in a block when the machine is in operation. |
| 7. Total amount of pots | Total counted number of pots / trays when the machine is in operation. |
| 8. Number of pots per hour | Approximate number of pots or trays per hour. |
| 9. Status machine | Status of the machine : precollecting, center row, push off etc. |

Buttons:

- | | |
|-------------------|--|
| A) Settings | By pressing this button the screen "Settings" appears. This shows the program and other displayed options. |
| B) Change of kind | By operating this button, the machine will complete the current block. Pots / trays are centered on the conveyor belt and pushed over. It will then transport the block and start a new one. |
| C) Manual | By pressing this button the machine will turn off, at the same time screen "Manual" appears. |
| D) Error Messages | By pressing this button, the screen "fault messages" appears. This screen shows which faults are active. Also displayed is the time of the occurrence of the fault. |

6.2.5 Settings screen

After pushing the settings button in the main screen, this screen appears.



Buttons:

- A) Exit
- B) Change current
- C) Load
- D) Copy
- E) Remove
- F) Transit
- G) Languages
- G) Block Status
- H) Reset Counters
- I) Date & Time
- J) Javo Menu

By pressing this button this screen will be closed.

By pressing this button you will navigate to the screen where you can change settings of the current program.

By pressing this button you will navigate to the screen where you can load programs that were saved earlier.

By pressing this button you will navigate to the screen where you can copy an earlier saved program to an empty program.

By pressing this button you will navigate to the screen where you can remove saved programs.

By pressing this button the machine will function as a conveyor. Please note that the pots are not counted and not pushed.

By pressing this button the language selection screen appears. It contains languages such as Dutch, English, and German. Additional languages are available as options.

By pressing this button the Blok Status screen appears. It displays the status of the block. If an error occurs, the block can be reset here.

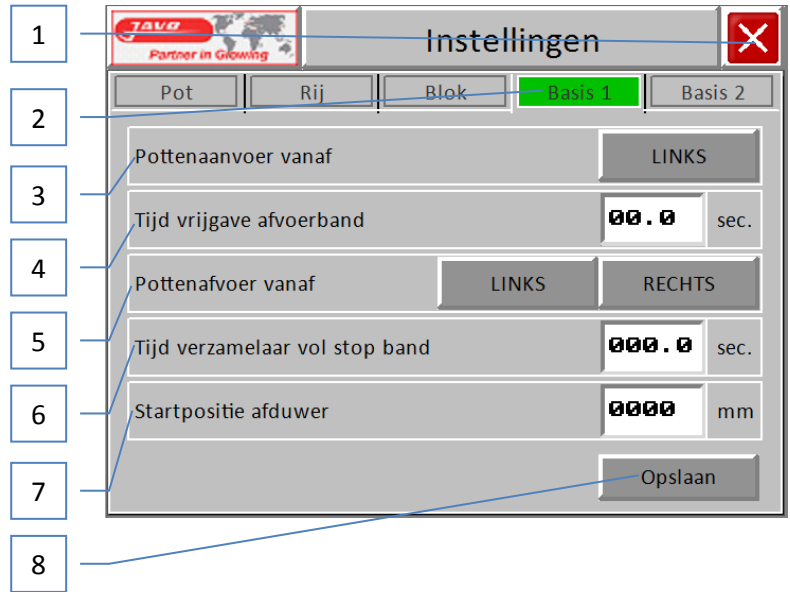
By pressing this button the Reset Counters screen appears. It contains the row and pot-counters that can be reset.

By pressing this button a small screen appears. To this is displayed, the date and time, it can be adjusted.

By pressing this button the Javo Menu screen appears. This menu is meant only for employees of Javo and therefore it is password protected.

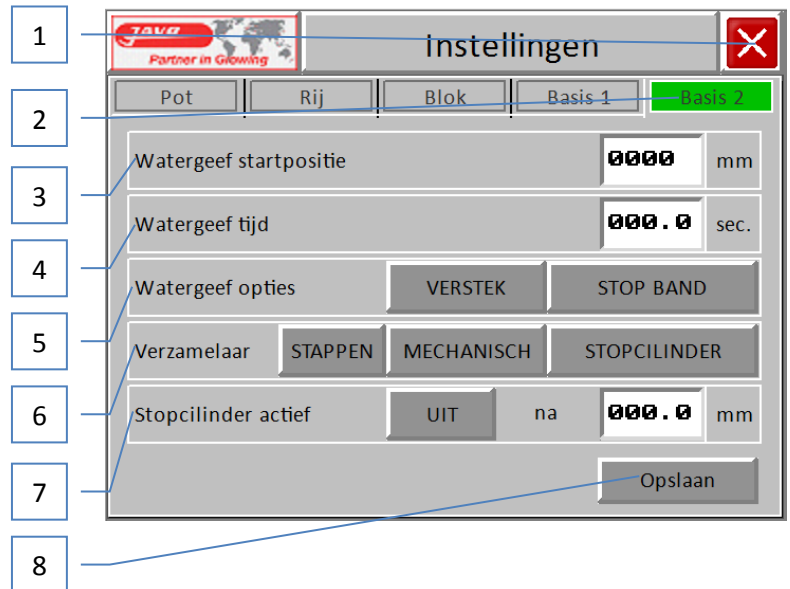
6.2.6 Program settings

After pushing the Program Settings button in the Settings screen, this screen appears.



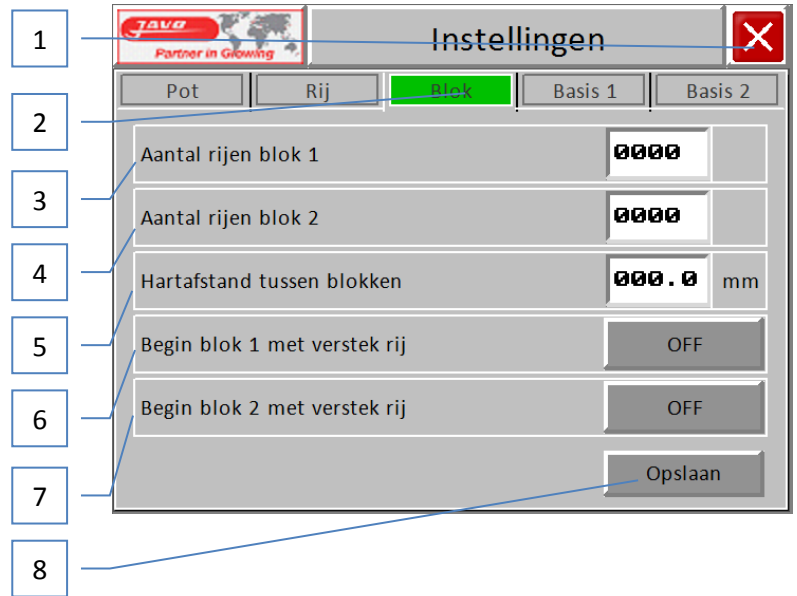
In this screen, the following will be visible:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Exit 2. Basic 1 3. Pot supply from 4. Time release exit conveyor 5. Pot discharge from 6. Time collector full stop belt 7. Start position pusher 8. Save | <p>By pressing this button this screen will be closed.
Please note the changed settings are not saved.</p> <p>Basis 1 screen of the program settings screen.</p> <p>Pots are supplied from the left or right side of the machine. The conveyor moves in the opposite direction and other photocells are used for counting and security.</p> <p>Time the photocell on the side of the belt must be free before pots are pushed off again, or may be transported, normally about 5 sec.</p> <p>Pots are discharged from the left or right of the machine, the conveyor moves in the opposite direction and other photocells are used for counting and security.</p> <p>Time the photocell on the side of the belt must be free before pots are pushed off again, or may be transported, normally about 5 sec.</p> <p>Position in mm in which the pusher must start, this setting is only important if the pusher has a belt drive instead of a crankshaft.</p> <p>Save all changes.</p> |
|--|---|



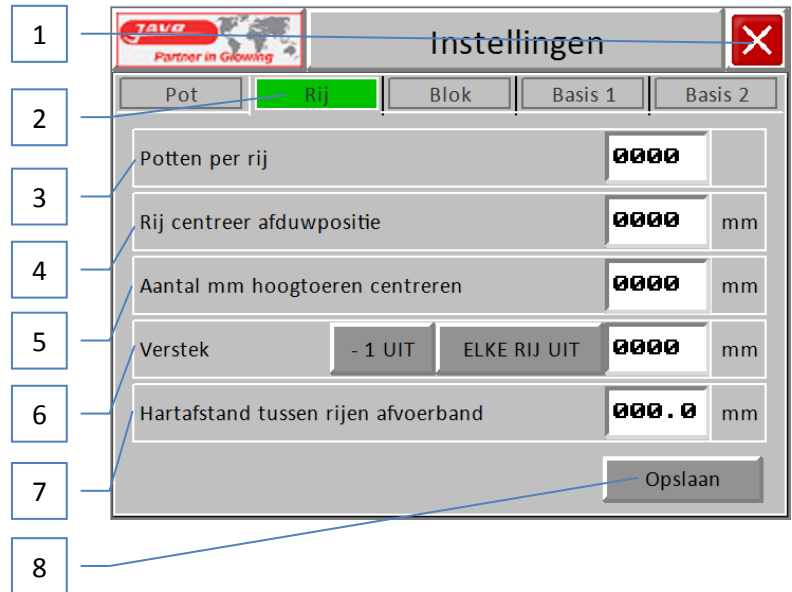
In this screen, the following will be visible:

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Exit 2. Basic 2 3. Water startposition 4. Water time 5. Water options 6. Collector 7. Stop cylinder active 8. Save | <p>By pressing this button this screen will be closed.
Please note the changed settings are not saved.</p> <p>Basis 2 screen for program settings appears.</p> <p>Position of the spraybeam in mm. This should be measured from the start point of the belt.</p> <p>Amount of seconds of watering with the spraybeam when a row is in position.</p> <p>Mitre, Stop belt.</p> <p>Steps, mechanical, stop cylinder.</p> <p>on/off, active after a set distance.</p> <p>Save all changes.</p> |
|--|--|



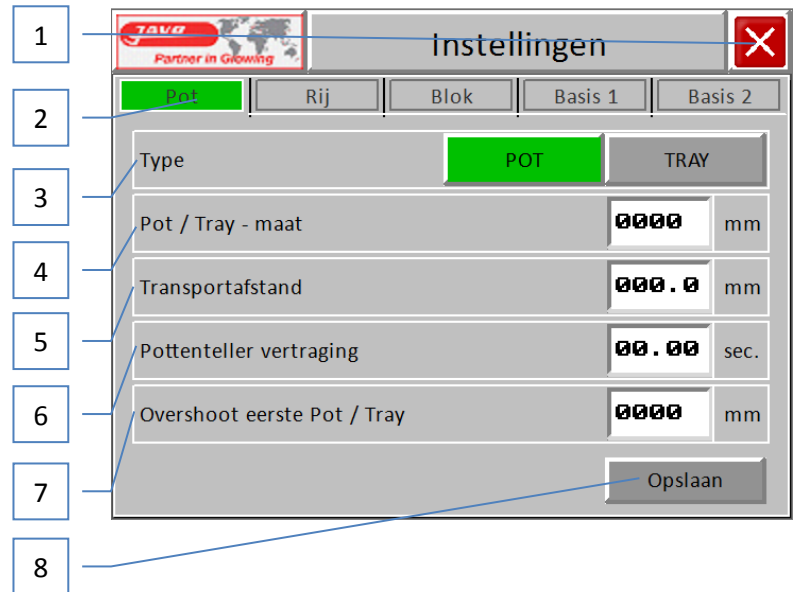
In this screen, the following will be visible:

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Exit 2. Blok 3. Amount of rows block 1 4. Amount of rows block 2 5. Centre between blocks 6. Start block 1 with miter 7. Start block 2 with miter 8. Save | <p>By pressing this button this screen will be closed.
Please note the changed settings are not saved.</p> <p>Blok screen for program settings appears.</p> <p>Number of rows from which a block is constructed.</p> <p>Number of rows from which a block is constructed.</p> <p>Centre between blocks 1 and 2.</p> <p>On / off. When blocks are placed in absentia, block 1 begins with miter if this option is enabled.</p> <p>On / off. When blocks are placed in absentia, block 2 begins with miter if this option is enabled.</p> <p>Save all changes.</p> |
|---|--|



In this screen, the following will be visible:

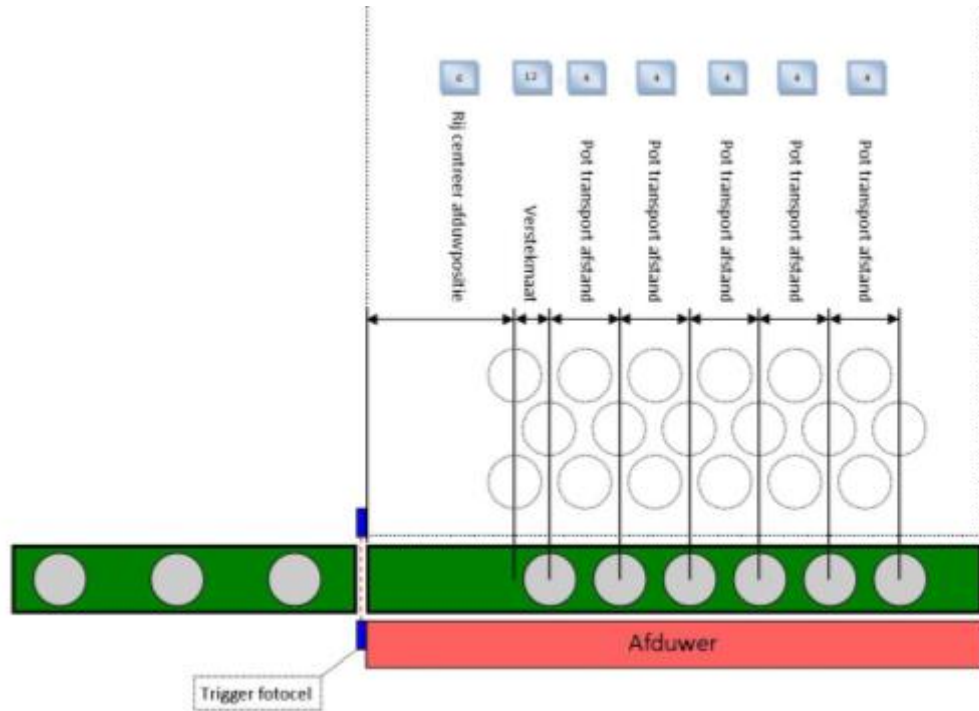
- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Exit 2. Row 3. Pots per row 4. Row center push position 5. High speed cent. 6. Miter 7. Centre distance betw. rows 8. Save | <p>By pressing this button this screen will be closed.
Please note the changed settings are not saved.</p> <p>Row screenvan for program settings appears.</p> <p>Number of pots from which a row is built up.</p> <p>Number of mm that the row is to be moved before it may be pushed on the discharge conveyor, so the blocks of rows can be placed on the right or left side of the discharge conveyor.</p> <p>A distance that centering takes place at high speed.</p> <p>Distance -1 off or each row off.</p> <p>Centre distance between rows at the exit conveyor.</p> <p>Save all changes.</p> |
|--|--|



In this screen, the following will be visible:

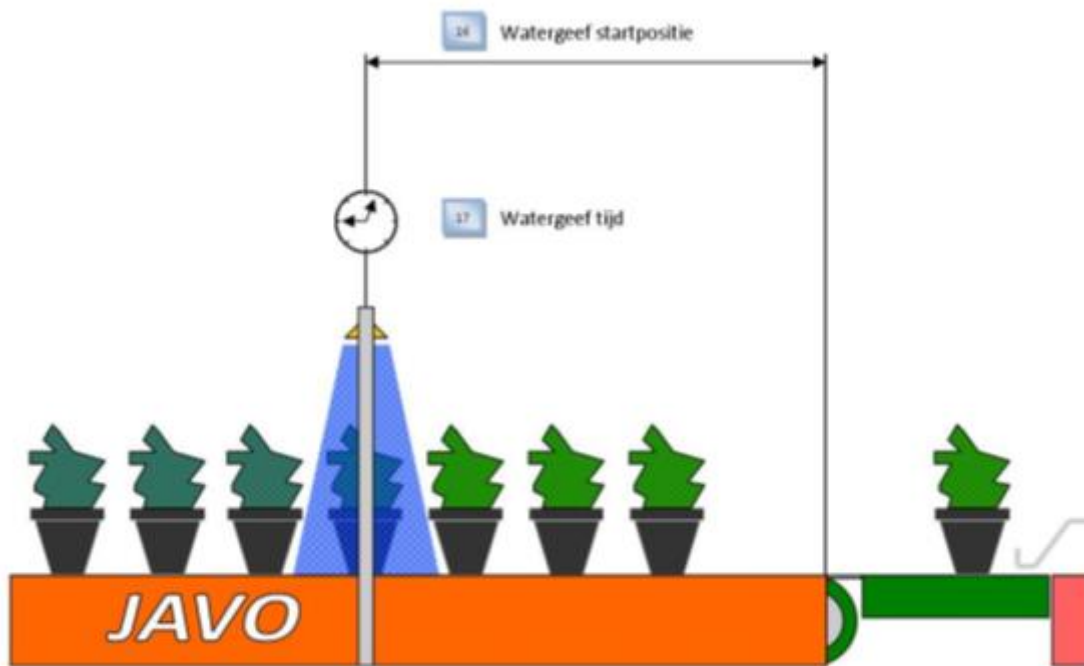
- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Exit 2. Pot 3. Type 4. Pot / Tray dimensions 5. Transport distance 6. Pots Counter delay 7. Overshoot 1st pot / tray 8. Save | <p>By pressing this button this screen will be closed.
Please note the changed settings are not saved.</p> <p>Pot screen for program settings appears.</p> <p>Pot or Tray selection.</p> <p>Dimensions of pots or trays.</p> <p>Distance of transport before pushing out.</p> <p>Sensor delay.</p> <p>Compensation for the number of mm that the first pot or tray extending to the 2nd pot.</p> <p>Save all changes.</p> |
|--|---|

Below you can see in the picture which settings should be done. Blue / light gray track surfaces indicate which setting is meant. These numbers are used throughout this manual to make clear which setting belongs.



On the next pages are examples of how you can set blocks.

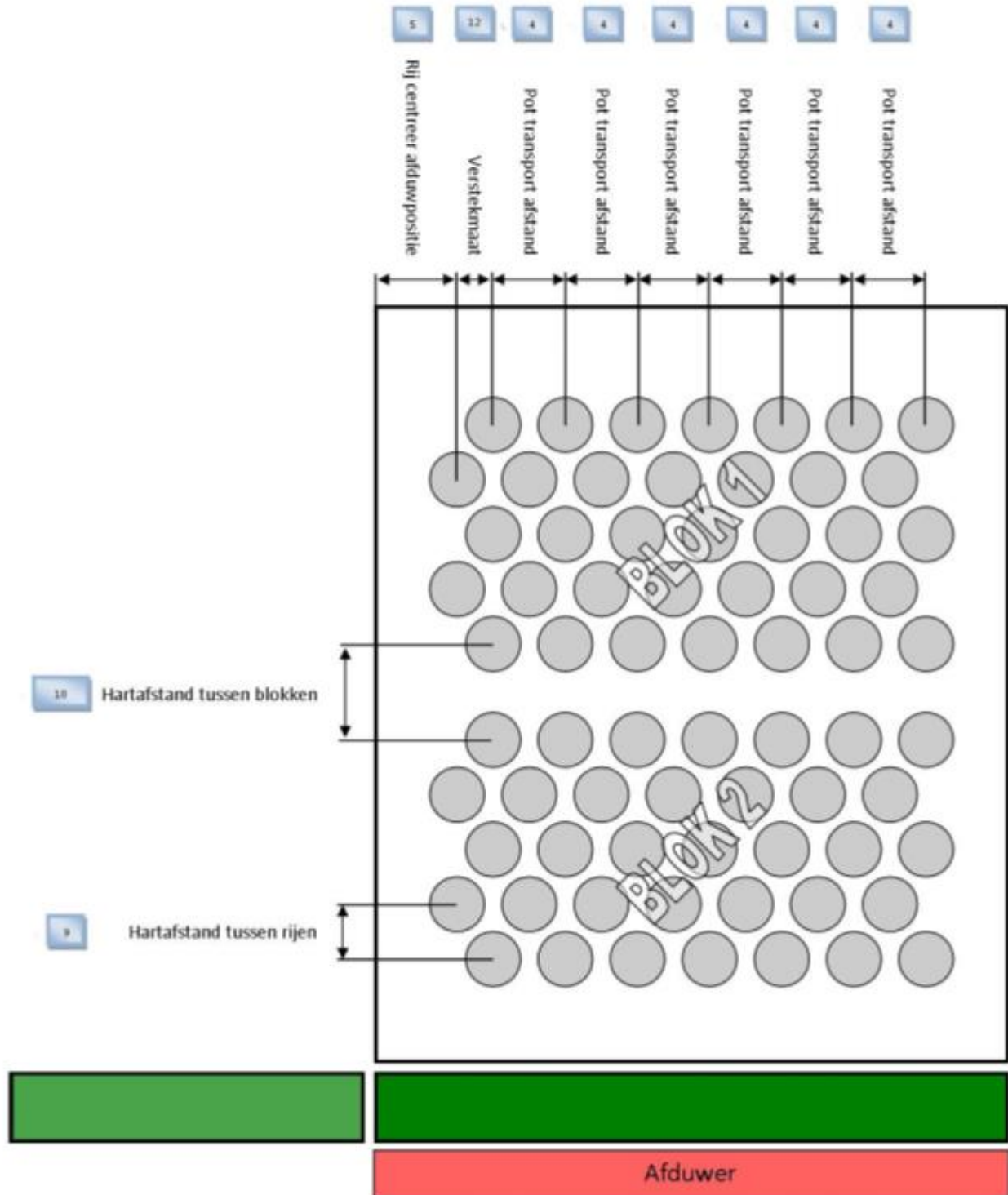
Watering is always set in the software, however, this is an option so this does not have to be mechanically installed. The numbers to the institutions, can be found on: Screen> Application settings.



Example 1

Programma Instellingen :					
Potmaat	: 100 mm	Verstekmaat	: 75 mm	Aantal rijen blok 2	: 5 rijen
Aantal potten per rij	: 7 potten	Rij Centreer afduwpositie	: 150 mm	Hartafstand tussen rijen	: 100 mm
Pot transportafstand	: 150 mm	Aantal rijen blok 1	: 5 rijen	Hartafstand tussen blokken	: 200 mm

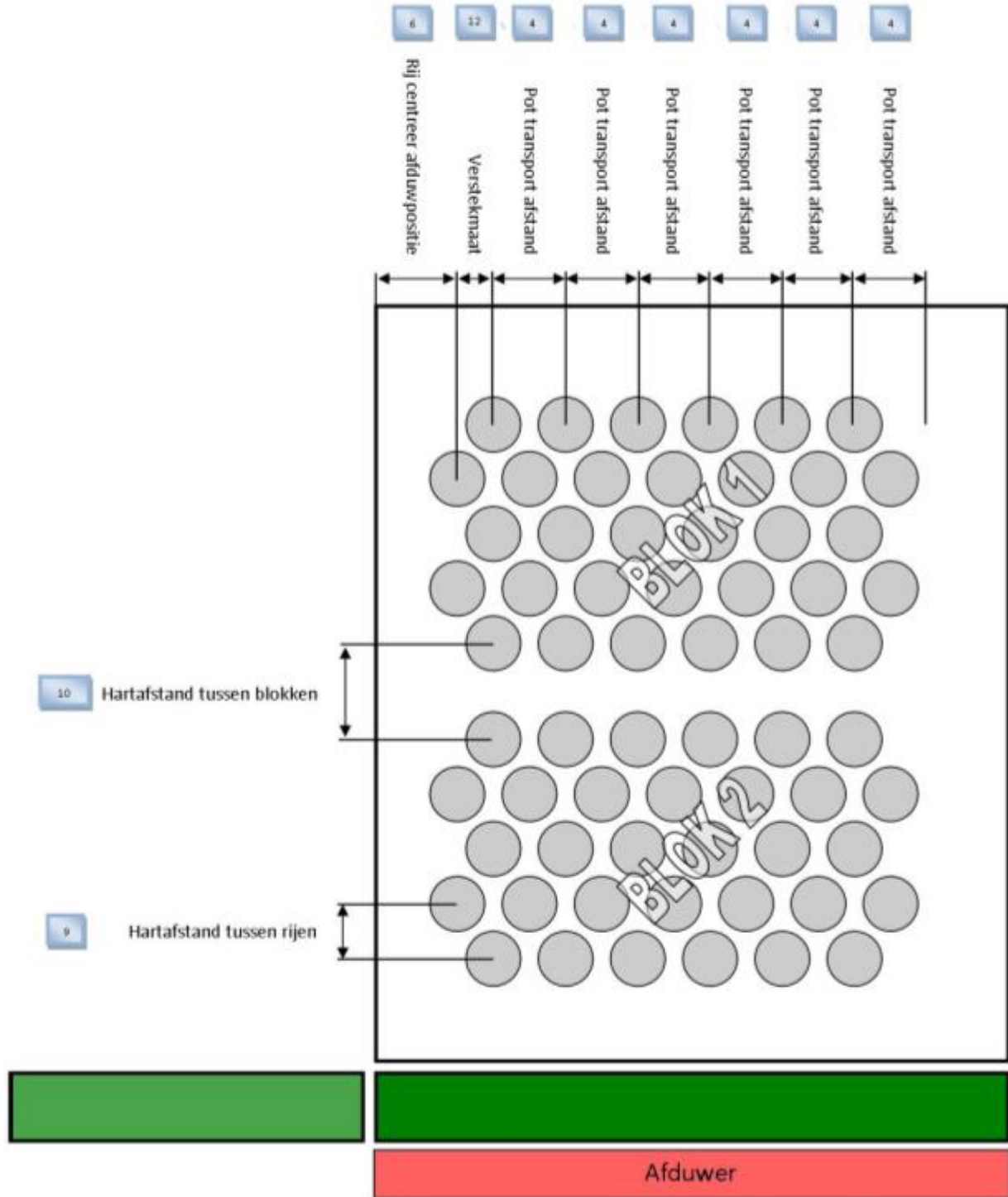
Verstek instelling : Normaal



Example 2

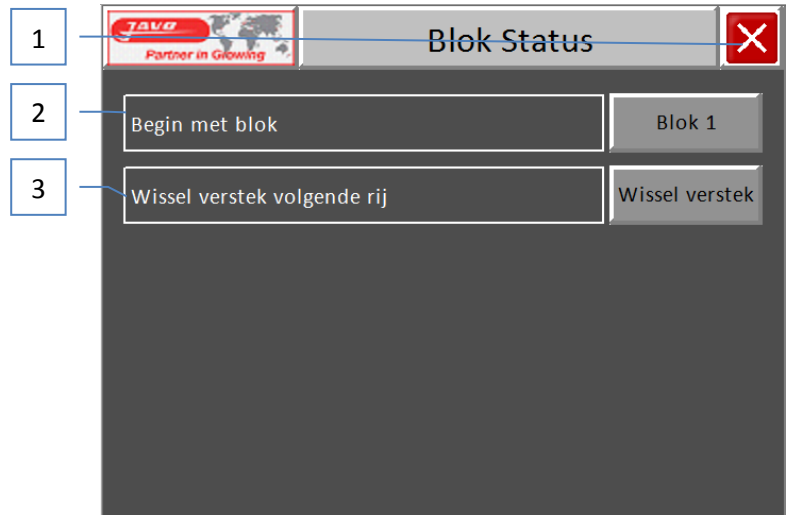
Programma Instellingen :					
Potmaat	: 100 mm	Verstekmaat	: 75 mm	Aantal rijen blok 2	: 5 rijen
Aantal potten per rij	: 7 potten	Rij Centreer afduwpositie	: 150 mm	Hartafstand tussen rijen	: 100 mm
Pot transportafstand	: 150 mm	Aantal rijen blok 1	: 5 rijen	Hartafstand tussen blokken	: 200 mm

Verstek instelling : -1



6.2.7 Blok Status screen

After pushing the Blok Status button in the settings screen, this screen appears.

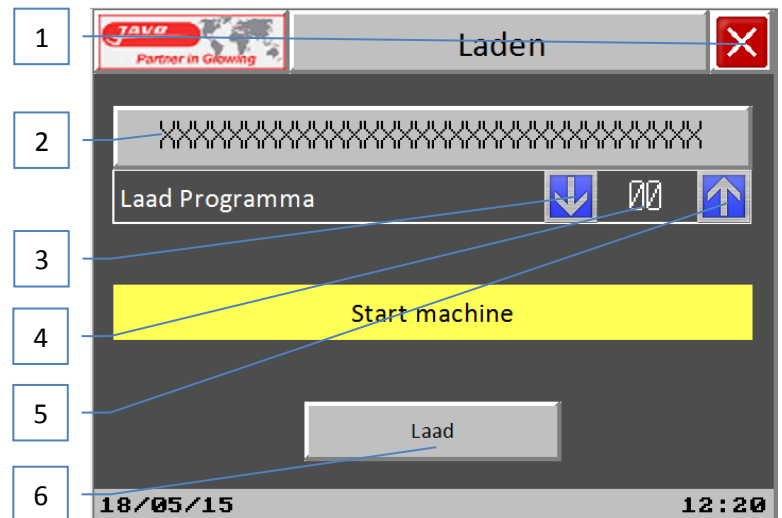


In this screen, the following will be visible:

- | | |
|----------------------------|--|
| 1. Exit | By pressing this button this screen will be closed. Please note the changed settings are not saved. |
| 2. Start with blok | The choice is block 1 or 2, there will always be started with the selected block. |
| 3. Exchange miter next row | The miter of the next row can be changed. This may be necessary if there is an error. Then, the miter will again be determined by the machine. |

6.2.8 Load programm screen

After pushing the Load button in the settings screen, this screen appears.

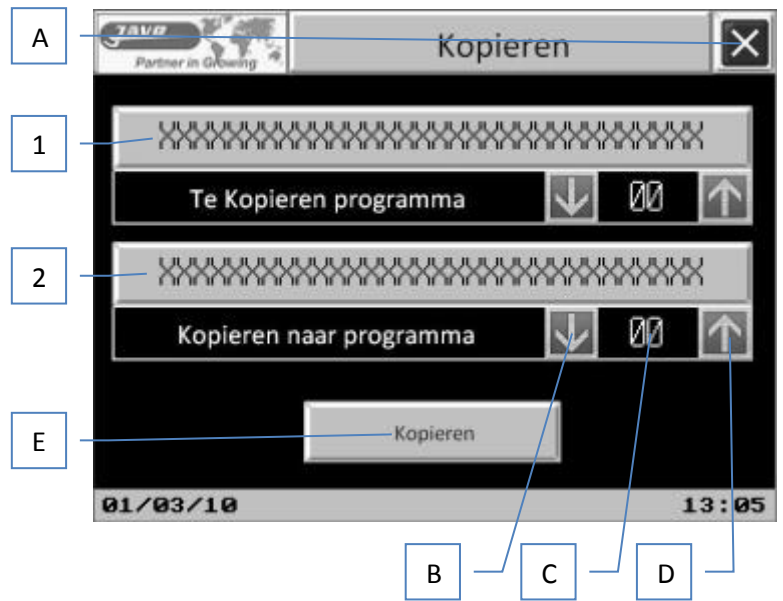


In this screen, the following will be visible:

- | | |
|-------------------|---|
| 1. Exit | By pressing this button this screen will be closed. Please note the changed settings are not saved. |
| 2. name/text | Here you can see the name / text of the program you have select |
| 3. Arrow down | Decreases the program number you want to load. |
| 4. Program number | This is an entry field, if you press it a window will appear where you can fill in the required program number to load. |
| 5. Arrow up | Increases the program number you want to load. |
| 6. Load | By pressing this button the selected program will be loaded. |

6.2.9 Copy program screen

After pushing the Copy button in the settings screen, this screen appears.



In this screen, the following will be visible:

- 1) Program to copy
- 2) Copy to program

Name/text of the program to copy.

Name/text of the program in which the copy should be saved.

Please note that once a program is copied, the old program, if it exists, is overwritten.

Buttons:

- A) Exit
- B) Arrow down
- C) Program number
- D) Arrow up
- E) Copy

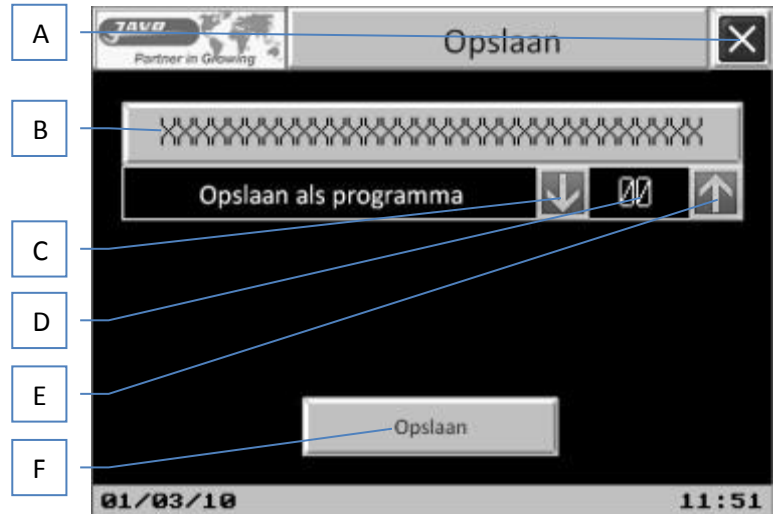
By pressing this button this screen will be closed.

Decreases the program number you want to copy.

This is an entry field, if you press it a window will appear where you can fill in the required program number to copy.

Increases the program number you want to copy.

By pressing this button the chosen program will be copied.



Buttons:

- | | |
|-------------------|---|
| A) Exit | By pressing this button this screen will be closed. |
| F) Program name | This is an entry field, if you press it a window will appear where you can fill in the required program number to save. |
| B) Arrow down | Decreases the program number you want to save. |
| C) Program number | This is an entry field, if you press it a window will appear where you can fill in the required program number to save. |
| D) Arrow up | Increases the program number you want to save. |
| E) Save | By pressing this button the chosen program will be saved with name. |

6.2.11 Manual screen

After pushing the Javo Menu button in the Settings screen, this screen appears.

This menu is meant only for employees of Javo and therefore it is password protected.



Buttons:

- A) Exit
- B) Pre collecting belt
- C) Entry conveyor (in pusher)
- D) Stop cylinder
- E) Pusher high speed
- F) Next screen

By pressing this button this screen will be closed.

By pressing this button the pre collecting belt starts moving.

By pressing this button the entry conveyor belt starts moving.

By pressing this button the stop cylinder is activated.

By pressing this button the pusher will move in high speed. This can be used for determining the correct stop place of the pusher.

By pressing this button the next screen appears.



Buttons:

- A) Exit
- B) Pusher forwards
- C) Pusher backwards
- D) Exit conveyor (broad belt)
- E) Water valve
- F) Next screen

By pressing this button this screen will be closed.

By pressing this button the pusher will move forward until the sensor "pusher forward" is exited.

Note: because the pusher moves through a crankshaft, it may be that the pusher goes backwards first until the sensor "pusher backward" is exited.

By pressing this button the pusher will move backwards until the sensor "pusher backward" is exited.

Note: because the pusher moves through a crankshaft, it may be that the pusher goes forward first until the sensor "pusher forward" is exited.

By pressing this button the exit conveyor will start moving.

By pressing this button the water valve will open.

By pressing this button the next screen appears.

6.2.12 Reset counters screen

After pushing the Reset Counters button in the settings screen, this screen appears.



Buttons:

- | | |
|-------------------------------------|---|
| A) Exit | By pressing this button this screen will be closed. |
| B) Actual number counted pots | By pressing this button the pot counter is reset. |
| C) Actual number rows block 1 | By pressing this button the row counter for block 1 is reset. |
| D) Actual number rows block 2 | By pressing this button the row counter for block 2 is reset. |
| E) Number of pots per hour | By pressing this button the pot counter per hour is reset. The calculation of the number of pots per hour is calculated back from that point again. |
| F) Number of pots per variety total | By pressing this button the pot counter per variety is reset. |
| G) Number of pots total | By pressing this button the pot counter total is reset. |

6.2.13 Fault messages screen



In this screen, the following will be visible:

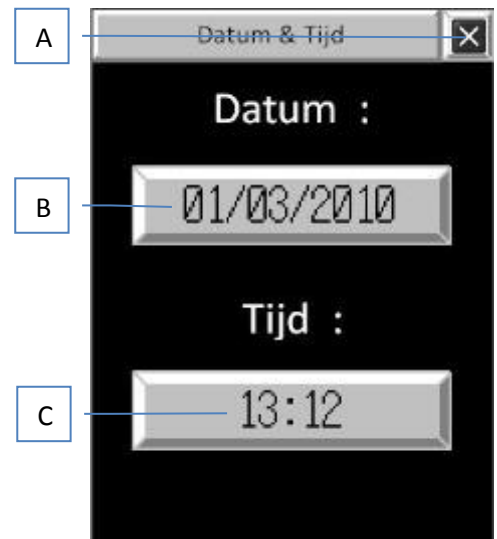
- | | |
|------------------|---|
| 1) Alarm time | This is the time when an alarm / fault occurred. |
| 2) Alarm message | This is the alarm or failure that has occurred, such as for example:
* 14:30 Sensor side belt interrupted |

Buttons:

- | | |
|---------|---|
| A) Exit | By pressing this button this screen will be closed. |
|---------|---|

6.2.14 Date & Time screen

After pushing the Date & Time button in the Settings screen, this screen appears.



Buttons:

- | | |
|---------|---|
| A) Exit | By pressing this button this screen will be closed. |
| B) Date | By pressing this button you can adapt the date. |
| C) Time | By pressing this button you can adapt the time. |

6.2.15 Language selection screen

After pushing the Languages button in the Settings screen, this screen appears.

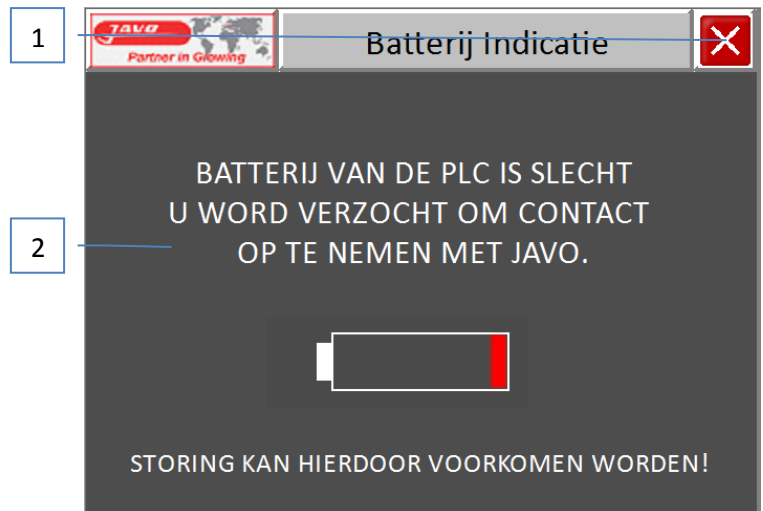


In this screen, the following will be visible:

- | | |
|--------------|--|
| 1. Exit | By pressing this button this screen will be closed.
Please note the changed settings are not saved. |
| 2. Taalkeuze | By pressing this button the software language will be adapted to the chosen language (all text in the touch screen). |

* Note: The ability to set multiple languages is optional and should be installed at the factory. Possibly also: implementing later by a Javo mechanic.

6.2.16 Battery indication screen



In this screen, the following will be visible:

- | | |
|-----------------------|--|
| 1. Exit | By pressing this button this screen will be closed.
Please note the changed settings are not saved. |
| 2. Battery indication | PLC battery is almost empty, this battery is crucial for correct functioning of the PLC. Make sure this battery is replaced. |

6.3 Stop

Stop procedure:

1. Push the red stop button.
2. Switch off the main switch.

6.4 Emergency stop

Emergency stop procedure:

1. Press the red emergency stop button on the machine to activate the emergency stop.

Restart after emergency stop procedure:

1. Ensure that the cause of the emergency is resolved.
2. Pull the red emergency stop button to reset.
3. Press the reset button.
4. Press the green button on the control panel to start the machine.



7 Maintenance



Follow all instructions described in this manual, in particular chapter safety.



Maintenance of this machine must be performed in compliance with warnings on the machine and in accordance with the user manual by qualified personnel.



Keep hands, hair, loose clothing and / or jewelry away from moving parts of the machine. Wear appropriate clothing without loose parts. Wear non-slip work shoes.



As long as the machine is on, no connection or safety devices may be removed. The machine may only be used when all protective devices and safety-related facilities are available and ready for use.



Always unplug the plug from the socket before starting maintenance. Wear personal protective equipment (see section 2.3).



Inform operating personnel before start maintenance. Interrupt if possible the power (mains), before the machine is investigated or maintained by turning off the main switch and locking it and pull the plug from the socket. If work must be done with power supply (mains) voltage on the machine, work with an additional person who can operate the emergency stop.

7.1 Preventive Maintenance

For the following maintenance instructions normal use is considered. With heavy use, or use under extreme conditions, maintenance should be performed at shorter intervals.

Item	1x per...	Comments
Machine	Day	Check if moving parts are functioning correctly and not clamping and / or parts are broken or damaged in such a way that the operation is adversely affected. Have damaged parts repaired before use.
Touch screen	Day	Clean the screen. Use a soft dry cloth. If the dirt is firmer, you can clean with a damp cloth. Do not use a wet cloth.
Belt	Day	Check tension. See section "Mounting, installation and commissioning".
Safety components	Week	Test the safety circuit. See section "Test safety circuit".
Pictograms	Week	Check readability and replace if necessary.
Electrical installation	Year	Check for damage.
Electric motors	Year	Remove dust.

7.2 Fault list

Problem	Possible cause	Action / Solution
Motor fault	mains voltage deviates more than 10% of the rated motor voltage	Provide the correct voltage
	Too high cooling air temperature	Provide cool air
	Poor cable connection	check the cable connection and repair if necessary
	Blown fuse	Replace fuse
	Too little cooling air caused by a clogged cooling air passage	Ensure proper inlet and outlet of the cooling air
The motor hums and takes too much power	Defect winding	Repair or replace the motor winding
	Loose wire	Lock wire
Fuses are blown	Short circuit in wiring or motor	Rectify the short circuit
	Motor is connected incorrectly	Connect the motor correct
Belt is not moving	Pretension of the belt is too low (belt slips)	Adjust belt tension
	motor or drive is not operating	Check motor and drive mechanism. check input 06 channel 0. The light should lit underneath. If this is not the case then there may be a cable broken in one of the cables, contact Javo.
	The pulse counter of the conveyor belt is not working properly. The sensor may have failed or is not properly adjusted.	Make sure the sensor is attached well, the sensor must be in a distance up to 2 mm of the pulse wheel. If it is too far from the wheel too few pulses may be counted.
	The pulse counter of the conveyor belt is not working properly, by missing pulses, the conveyor belt cannot function properly. The sensor may have failed or is not properly adjusted.	Make sure that the sensor is attached well, the sensor is located on the rear side of the motor of the infeed conveyor.
	Sensor end exit conveyor is exited	See section 7.4
	Sensor side exit conveyor is exited	See section 7.5
	Sensor pot counter is exited too long	See section 7.6
	A pot is fallen of for collecting belt (or fallen)	Remove the plant if it is for the sensor, then start the machine.
Pusher does not move	The sensors which detect whether the pusher is in position, do not function properly.	See section 7.3
Machine does not start	Emergency stop button not reset. Red light is lit continuously	Pull Emergency Stop button and reset the safety circuit by pressing the reset button.
	Emergency stop button not reset. Red light is lit continuously	Reset the safety circuit by pressing the reset button.
	Breaker tripped in main cabinet	See why circuit breaker has tripped. Remove obstacles to conveyors. Switch on the machine after solving the problem.
	Cable length too large causing voltage loss	Reduce cable length.
	Voltage fluctuations caused by other devices on the same group	Ensure the correct voltage. Turn off other devices
	A second machine in line is not ready	Check second machine.

7.3 Sensor pusher broken

The sensors which detect whether the pusher is in position, do not function properly. The sensors must react within a certain period of time. If this is not the case, the sensor may be defect or no longer properly adjusted.

Procedure:

1. Stop the machine.
2. Switch off the main switch.
3. Check if the sensors are adjusted properly.
 - a. Maximum distance between sensor and steel frame of the pusher is 3 mm.



7.4 Sensor end of exit belt is exited

The end of exit belt conveyor sensor, which checks whether the belt is free to transport is exited. This may be because the belt is full of plants. Also, the sensor may be defective or is not properly adjusted.



Procedure:

1. Stop the machine.
2. Switch off the main switch.
3. Check if the sensor reacts properly.
 - a. *This can be done by moving your hand across the sensor. The light on the top of the sensor would have to blink. If this is not the case, it may be that the sensor mirror (which is mounted on the other side of the conveyor belt) is not in line with the sensor.*
4. Unscrew the sensor.
5. Align the sensor with the mirror.
6. Tighten the sensor.

If the problem is not resolved please contact Javo.

7.5 Sensor side of exit belt is exited

The side of exit belt sensor, which checks whether the belt is free for transport is exited. This may be because there is something on the side of the belt (potting soil, pots, fallen plant, forklift). Also, the sensor may have failed or is not properly adjusted.



Procedure:

1. Check if the sensor reacts properly. This can be done by moving your hand across the sensor.
2. The light on the top of the sensor would have to blink. If this is not the case, it may be that the sensor mirror (which is mounted on the other side of the conveyor belt) is not in line with the sensor.
3. Stop the machine.
4. Switch off the main switch.
5. Unscrew the sensor.
6. Align the sensor with the mirror.
7. Tighten the sensor.

If the problem is not resolved please contact Javo.

7.6 Sensor pot counter is exited too long

The sensor for the pot counter is exited too long. The sensor may be polluted or the sensor is not adjusted properly.



Procedure:

1. Check if the sensor reacts properly. This can be done by moving your hand across the sensor.
2. The light on the top of the sensor would have to blink. If this is not the case, it may be that the sensor mirror (which is mounted on the other side of the conveyor belt) is not in line with the sensor.
3. Stop the machine.
4. Switch off the main switch.
5. Unscrew the sensor.
6. Align the sensor with the mirror.
7. Tighten the sensor.

If the problem is not resolved please contact Javo.

7.7 Drawings and schemes

The drawings accompanying this machine are supplied in a separate file. The wiring diagrams are included in the electrical cabinet of the machine.

7.8 Spare parts

Only original spare parts and accessories of Javo BV may be used on the machine.

Javo BV advises you to take certain parts in stock because of wear sensitivity and / or any expected downtime for re-ordering of the parts.

The spare parts list can be found on the assembly drawings. These can be found on JavoNet.

When ordering (spare) parts at Javo BV, the following information must be included: drawing number, item number, desired length (if applicable) and the desired number of pieces.

7.9 JavoNet

We recommend you to register your machine on JavoNet. This way you get online access to all technical drawings and documents pertaining to your machine.

Visit our website (www.javo.eu) for more information and to request an account.



7.10 Customer support and advice

Our technical department will answer your other questions about repair and maintenance of your machine and spare parts. We can help you with any questions regarding the purchase, use and settings of products and accessories.

8 Disposal of machine or machine parts



Follow all instructions described in this manual, in particular chapter safety.

Perform the following steps when disposing the machine:

1. Decommission the machine and remove electric and pneumatic power.
2. Drain and remove all consumables.
3. Scrap the machine according to the local legislation.

9 EG-conformity statement

EG-conformity statement for machines (directive 2006/42/EG, annex II, under A.)



Javo BV
Westeinde 4
2211XP Noordwijkerhout
The Netherlands

Declares that:

Machine: **JOR with buffer belt**
Type: **Transport system**

is in accordance with the **Machine directive 2006/42/EG** and complies with the provisions of the **EMC-directive 2004/108/EEG**

Complies with the harmonized European Standards:

Harmonized European standard	definition	Harmonized European standard	definition
NEN-EN-ISO 12100:2010	Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology	NPR-ISO/TR 14121-2:2010	Safety of machinery - Risk assessment - Part 2: Practical guidance and examples of methods
NEN-EN-IEC 60204-1	Safety of machinery - Electrical equipment of machines - Part 1: General requirements		

The Netherlands, Noordwijkerhout,
March 2015

Cees Bouwmeester
Director