



# 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.

### Website: www.javo.se

### E-Mail: info@tradgardsteknik.se

Туре	
Machine nr.	
Bouwjaar	
V kW	
A Hz	<u> </u>

### 2 Safety

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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.		
4	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.		
$\bigotimes$	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	Speed ground feeder			
		(curved)	(straight)			
Speed pot belt (curved)	Speed pot belt (straight)	Brush disc Rotofill	Tray belt Rotofill			
PD-B	$\stackrel{\scriptscriptstyle \perp}{\leftarrow}  \overline{}  \stackrel{\scriptscriptstyle +}{\rightarrow}$					
Rotor Rotofill						



# 3 Description of the machine

### 3.1 Machine overview

- 1. Pre collection belt.
  - 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.
  - 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.

	Bufferband / Afvoerband
1 Voorverzamelband	2 Band In alduwer / Aanvoerband
	3 Afduwer

### 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").

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## 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.



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### 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.
<ul><li>B) Change of kind</li></ul>	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.



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

Α		Patter in Clowing	Instellingen	X
	G	Programma opties	Overige opties	
В	н	Wijzig huidig	Languages	
С		Laden	— Blok Status	
D		Kopieren	Reset Tellers	
F	]	Verwijderen	Datum & Tijd	
-	к —	Doorvoerstand	Javo Menu	
F				

### Buttons:

A)	Exit	
		By pressing this button this screen will be closed.
B)	Change current	By pressing this button you will navigate to the screen where you can change settings of the current program.
C)	Load	By pressing this button you will navigate to the screen where you can load programs that where saved earlier.
D)	Сору	By pressing this button you will navigate to the screen where you can copy an earlier saved program to an empty program.
E)	Remove	By pressing this button you will navigate to the screen where you can remove saved programs.
F)	Transit	By pressing this button the machine will function as a conveyor. Please note that the pots are not counted and not pushed.
G)	Languages	By pressing this button the language selection screen appears. It contains languages such as Dutch, English, and German. Additional languages are available as options.
G)	Block Status	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.
H)	Reset Counters	By pressing this button the Reset Counters screen appears. It contains the row and pot-counters that can be reset.
I)	Date & Time	By pressing this button a small screen appears. To this is displayed, the date and time, it can be adjusted.
1)	Javo Menu	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.

1	Partner in Glowing	
2	Pot Rij Blok Basis	1 Basis 2
3	Tijd vrijgave afvoerband	00.0 sec.
4	Pottenafvoer vanaf LINKS	RECHTS
5	Tijd verzamelaar vol stop band	000.0 sec.
6	Startpositie afduwer	<b>0000</b> mm
7		Opslaan
8		

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.	Basic 1	Basis 1 screen of the progam settings screen.
3.	Potssupply from	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.
4.	Time release exit conveyor	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.
5.	Pot discharge from	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.
6.	Time collector full stop belt	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.
7.	Start position pusher	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.
8.	Save	Save all changes.



1	Partner in Growing	Instellin	gen	X				
2	Pot Rij Blok Basis 1 Basis							
3	Watergeef startpositie							
	Watergeef tijd		000.0	sec.				
4	Watergeef opties	VERSTEK	STOP BAND					
5	Verzamelaar STAPPEN	MECHANISCH	STOPCILINDE	R				
6	Stopcilinder actief	UIT na	000.0	mm				
7			Opslaar	ı				
8								

- 1. Exit
- 2. Basic 2
- 3. Water startposition
- 4. Water time
- 5. Water options
- 6. Collector
- 7. Stop cylinder active
- 8. Save

By pressing this button this screen will be closed.

Please note the changed settings are not saved.

Basis 2 screen for program settings appears.

Position of the spraybeem in mm. This should be measured from the start point of the belt.

Amount of seconds of watering with the spraybeem when a row is in position.

- Mitre, Stop belt.
- Steps, mechanical, stop cylinder.
- on/off, active after a set distance.
- Save all changes.



1 —	Partner in Glowing	nstellingen	
2	Pot Rij P	Basis :	1 Basis 2
	Aantal rijen blok 1		0000
3 —	Aantal rijen blok 2		0000
4 —	Hartafstand tussen blokken		000.0 mm
5 —	Begin blok 1 met verstek rij		OFF
6 —	Begin blok 2 met verstek rij		OFF
7 —			Opslaan
8			

1. Exit

Please note the changed settings are not saved.

- 2. Block
- 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

- By pressing this button this screen will be closed.
- Blok screen for program settings appears.
- Number of rows from which a block is constructed.
- Number of rows from which a block is constructed.
- Centre between blocks 1 and 2.
  - On / off. When blocks are placed in absentia, block 1 begins with miter if this option is enabled.
  - On / off. When blocks are placed in absentia, block 2 begins with miter if this option is enabled.
  - Save all changes.



1 —	Partner in Glowing	gen 🔀
2 —	Pot Rij Blok I	Basis 1 Basis 2
3 —	Potten per rij	0000
	Rij centreer afduwpositie	0000 mm
4 —	Aantal mm hoogtoeren centreren	<b>0000</b> mm
5 —	Verstek - 1 UIT ELKE RIJ U	JIT <b>0000</b> mm
6 —	Hartafstand tussen rijen afvoerband	<b>000.0</b> mm
7 —		Opslaan
8 -		

1.	Exit	By pressing this button this screen will be closed.
		Please note the changed settings are not saved.
2.	Row	Row screenvan for program settings appears.
3.	Pots per row	Number of pots from which a row is built up.
4.	Row center push position	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.
5.	High speed cent.	A distance that centering takes place at high speed.
6.	Miter	Distance -1 off or each row off.
7.	Centre distance betw. rows	Centre distance between rows at the exit conveyor.
8.	Save	Save all changes.



1	Partner in Glowing	Instellingen	
2	Pot Rij	Blok Basis	1 Basis 2
	Туре	РОТ	TRAY
3	Pot / Tray - maat		<b>0000</b> mm
4	/ Transportafstand		000.0 mm
5	Pottenteller vertraging		00.00 sec.
6	Overshoot eerste Pot / Tray		<b>0000</b> mm
7	_/		Opslaan
8			

1. Exit

2. Pot

3. Type

- By pressing this button this screen will be closed.
- Please note the changed settings are not saved.
  - Pot screen for program settings appears.
- Pot or Tray selection.
- 4. Pot / Tray dimensions Dimensions of pots or trays.
- 5. Transport distance Distance of transport before pushing out.
- 6. Pots Counter delay
- 7. Overshoot 1st pot / tray
- 8. Save

- Compensation for the number of mm that the first pot or tray extending
- to the 2nd pot. Save all changes.

Sensor delay.



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.



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# Example 1

Programma Instellinger	1:	1		1	
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 mmAantal potten per rij: 7 pottenPot transportafstand: 150 mm	Vers Rij C Aant	tekmaat entreer a al rijen b	fduwp lok 1	: ositie : : : !	75 mm L50 mm 5 rijen	Aan Hari Hari	tal rijen b afstand t afstand t	olok 2 ussen rij ussen ble	en okken	: 5 rijen : 100 mm : 200 mm
Verstek instelling : -1										
Image: selection of the se		Rij centreer afduwpositie		Pot transport afstand	Pot transport afstand	Pot transport afstand	Pot transport afstand	Pot transport afstand	Pot transport afstand	
						Afduw	/er			



### 6.2.7 Blok Status screen

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

1	Partner in Growing	Blok Status	X
2	Begin met blok		Blok 1
3	Wissel verstek volgende rij		Wissel verstek

In this screen, the following will be visible:

- 1. Exit
- 2. Start with blok
- 3. Exchange miter next row

Please note the changed settings are not saved. The choice is block 1 or 2, there will always be started with the selected block.

By pressing this button this screen will be closed.

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
- name/text
  Arrow down

By pressing this button this screen will be closed.

Increases the program number you want to load.

By pressing this button the selected program will be loaded.

- Please note the changed settings are not saved.
- ne/text Here you can see the name / text of the program you have select
  - 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
- 6. Load



### 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 overwrited.

### 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 choosen program will be copied.





### Buttons:

- A) Exit
- F) Program name
- B) Arrow down
- C) Program number
- D) Arrow up
- E) Save

By pressing this button this screen will be closed.

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

Decreases the program number you want to save.

- This is an entry field, if you press it a window will appear where you can fill in the required program number to save.
- Increases the program number you want to save.
  - By pressing this button the choosen program will be saved with name.

### 6.2.10 Remove program screen

Partner in Growing

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



In this screen, the following will be visible:

1) Program name

Name of the program that has to be removed.

By pressing this button this screen will be closed.

Decreases the program number you want to remove.

Buttons :

- A) Exit
- B) Arrow down
- C) Program number
- D) Arrow up
- E) \*Remove
- F) \*Remove all programs

can fill in the required program number to remove. Increases the program number you want to remove. By pressing this button the chosen program will be removed. By pressing this button all program will be removeds Note: These actions can not be undone!Password screen

This is an entry field, if you press it a window will appear where you

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.



In this screen, the following will be visible:

A) Password

By filling out the password, mechanics of Javo can change hardware Settings.

### Buttons:

B) Exit

By pressing this button this screen will be closed.



### 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.

A	Farther in Glowing 4 Handbediening 1	./2 X
В		UIT
С	Aanvoerband( in afduwer )	UIT
D		OPEN
E	Afduwer Hoogtoeren	UIT
F		$\geq$

Buttons:

- A) Exit
- B) Pre collecting belt
- C) Entry conveyor (in pusher)
- D) Stop cylinder

F) Next screen

E) Pusher high speed

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.

Α	Partner in Glowing Handbediening 2	/2 ×
В	Afduwer Vooruit	UIT
С	Afduwer Achteruit	UIT
D		UIT
E	Klep Watergeven	DICHT
F	- <del>C</del>	

### 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.

E) \//



### 6.2.12 Reset counters screen

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

А	Partner in Glowing	Reset Tellers	×
В	Actueel aantal getelde Potten	00000000	Reset
С	Actueel aantal rijen blok1	00000000	Reset
D	Actueel aantal rijen blok2	00000000	Reset
Ε	Aantal Potten per uur	99999999	Reset
F	Aantal Potten per soort Totaal	00000000	Reset
G	Aantal Potten Totaal	00000000	Reset

Buttons:

- A) Exit
- B) Actual number counted pots
- C) Actual number rows block 1
- D) Actual number rows block 2
- E) Number of pots per hour
- By pressing this button the row counter for block 1 is reset. By pressing this button the row counter for block 2 is reset. 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 veriety is reset.
- G) Number of pots total

By pressing this button the pot counter per veriety is reset. By pressing this button the pot counter total is reset.

By pressing this button this screen will be closed. By pressing this button the pot counter is reset.

Α	J	Partner in Glowing	Sto	×	
1		13:14	Alarm	Message	
	*	13:14	Alarm	Message	
2		13:14	Alarm	Message	
	*	13:14	Alarm	Message	
		13:14	Alarm	Message	
	×	13:14	Alarm	Message	
		13:14	Alarm	Message	
	×	13:14	Alarm	Message	•

### 6.2.13 Fault messages screen

In this screen, the following will be visible:

- 1) Alarm time
- 2) Alarm message

This is the time when an alarm / fault occurred. 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 B) Date

C) Time

By pressing this button this screen will be closed.

By pressing this button you can adapt the date.

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
- 2. Taalkeuze

By pressing this button this screen will be closed. Please note the changed settings are not saved.

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

Please note the changed settings are not saved. 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

Partner in Growing



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 commisioning".
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	Provide the correct voltage	
	rated motor 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	Ensure proper inlet and outlet of the cooling air	
	air passage		
The motor hums	Defect winding	Repair or replace the motor winding	
and takes too	Loose wire	Lock wire	
much power			
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	Make sure the sensor is attached well, the	
	working properly. The sensor may have failed or	sensor must be in a distance up to 2 mm of the	
	is not properly adjusted	nulse wheel If it is too far from the wheel too	
		four pulses may be counted	
	The pulse counter of the conveyor belt is not	new pulses may be counted.	
	working properly, by missing pulses, the	Make sure that the sensor is attached well, the	
	conveyor belt cannot function properly. The	sensor is located on the rear side of the motor	
	sensor may have failed or is not properly	of the infeed conveyor.	
	adjusted.		
	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	The sensors which detect whether the pusher is	See section 7.3	
move	in position, do not function properly.		
Machine does not	Emergency stop button not reset. Red light is lit	Pull Emergency Stop button and reset the safety	
start	continuously	circuit by pressing the reset button.	
	Emergency stop button not reset. Red light is lit	Reset the safety circuit by pressing the reset	
	continuously	button.	
	Breaker tripped in main cabinet	See why circuit breaker has tripped. Remove	
		obstacles to conveyors. Switch on the machine	
	Cable length too large cousing veltage larg	arter solving the problem.	
	Voltage fluctuations caused by other devices on	Reduce capie length.	
	the same group		
	A second machine in line is not ready	Check second machine	
	r second machine in file is not ready	encer second machine.	

# 7.3 Sensor pusher broken

Partner in Growing

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.
  - 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 reordering 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.se) 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.)

# *TRÄDGÅRDSTEKNIK AB Helsingborgsv., Varalöv 262 96 ÄNGELHOLM*

Declares that:

Machine:JOR with buffer beltType: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		