



Partner in Growing



User Manual

Original document

Version 2015-1



Big Bale

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 intended to be used for emptying pallets with bales into a Javo pot machine only. This machine is meant for processing substrate and other materials that are described in this manual only. 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	2,2 kW
Weight	±1380 kg
Length x width x height	3480 x 1696 x 2195 mm
Free dump height	830 mm
Width on free dump height	778 mm
width discharge	1350 mm at 1180 mm height
Max. pallet width	1200 mm
Maximum Bale height	2500 mm
Subsoiler standard	Grossness ground adjustable in 6 steps
Year of construction	See type plate
Type product	As agreed in the order confirmation.

1.1 Type plate

The type plate is placed onto the main cabinet door.

JAVO Partner in Growing		CE
Westeinde 4 www.javo.eu	2211 XP Noorwijkerhout	Nederland info@javo.eu
Type		
Machine nr.		
Bouwjaar		
<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. Untill 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 splashproof. 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 jewelry 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 personell 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 Safety devices on the machine








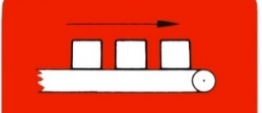



Caps and doors are screening moving parts. Always place back caps and close doors before the machine is turned on. Caps and doors should remain closed while operating the machine.

The motors of the machine are protected against overload by thermal switches. These switches are located in the control box.

2.3 Explanation of icons and symbols

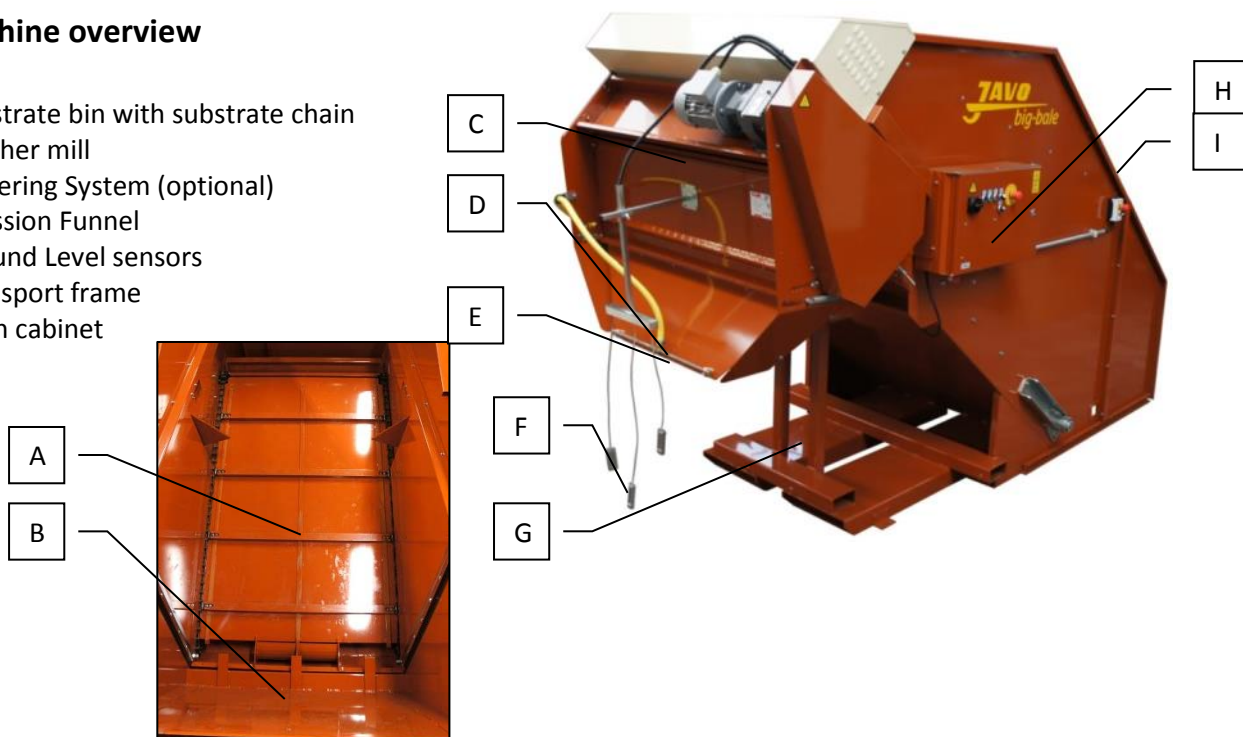
Pictogram	Meaning
	Read and understand this manual before using the machine and / or performing maintenance.
	Remove Power (mains).
	Wear during all work on or with the machine safety shoes and safety glasses.
	Wear during cleaning and maintenance work on this machine also safety gloves and protective 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 			

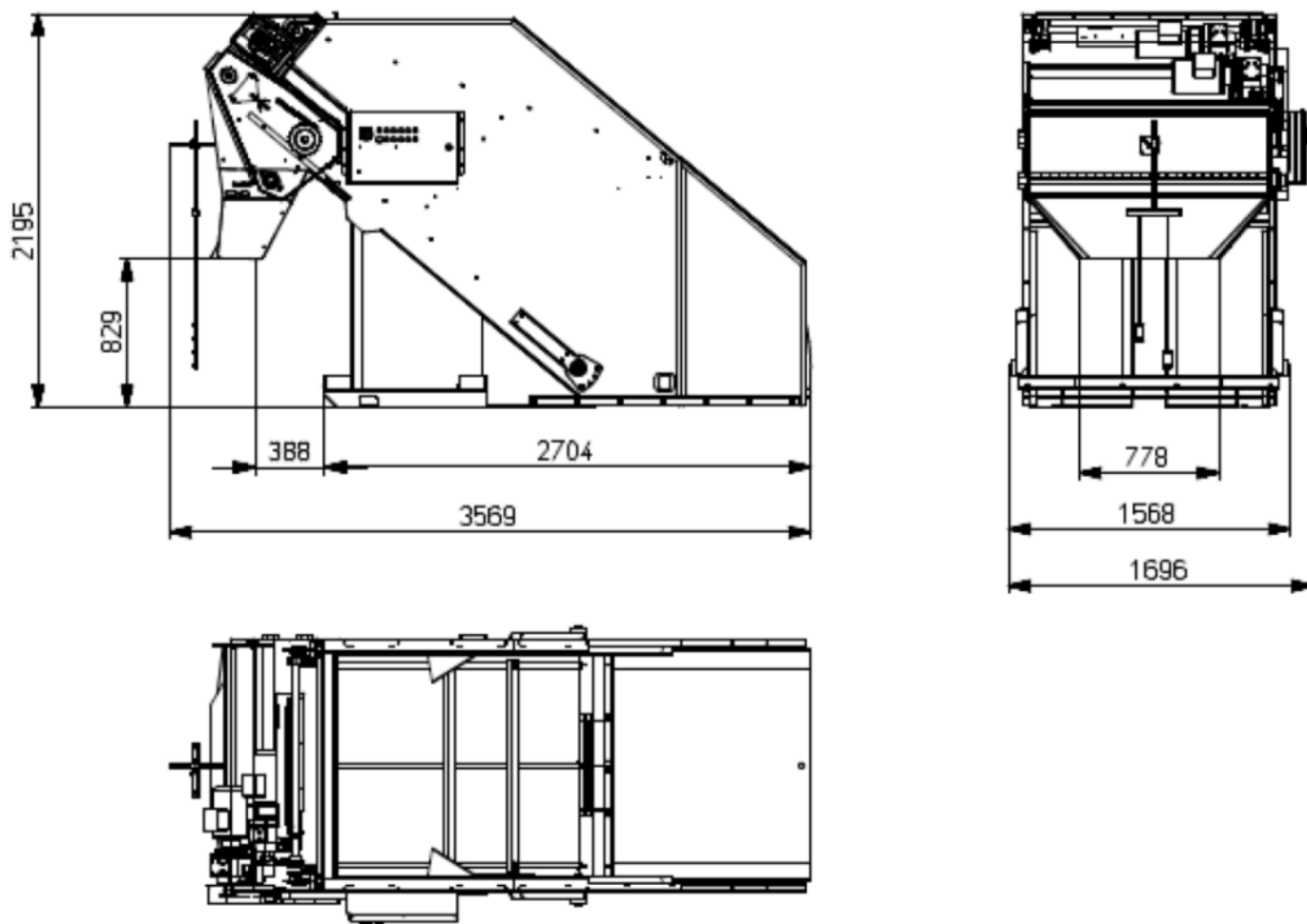
3 Description of the machine

3.1 Machine overview

- A. Substrate bin with substrate chain
- B. Crusher mill
- C. Watering System (optional)
- D. Emission Funnel
- E. Ground Level sensors
- F. Transport frame
- G. Main cabinet
- H. HMI



3.2 Outline drawing with main dimensions



3.3 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
4 meter 5x1.5 cable incl. 16A plug	900965	
Continuous socket	900966	Nonstandard
Level control	GDUN	Highly recommended to any Big Bale machine
Irrigation system	GDUG	Spray Bar for outflow posted incl. Electric valve and shut-off valve.
increase set	200-180	350mm additional increase
Heavy air wheels front	GDUW	2 height adjustable wheels incl. Transport bar
Solid rear castors	GDUW1	To be mounted on the transport bar (not included)
Breaker plate fine	200-108-A-B	Fine grinding and dosing of substrate

3.4 Operation

The process of the machine starts with the Big Bale Machine, which is filled with a bale. By using the substrate chain, the substrate is conveyed upward to the breaker mill.

The breaker mill breaks the compressed substrate and leaves it through the funnel.

The Javo Big Bale ought to be in line with another Javo machine. The substrate level sensors hanging in the substrate bin of the connected machine. The substrate level sensors determine when substrate must be added to the attached machine.

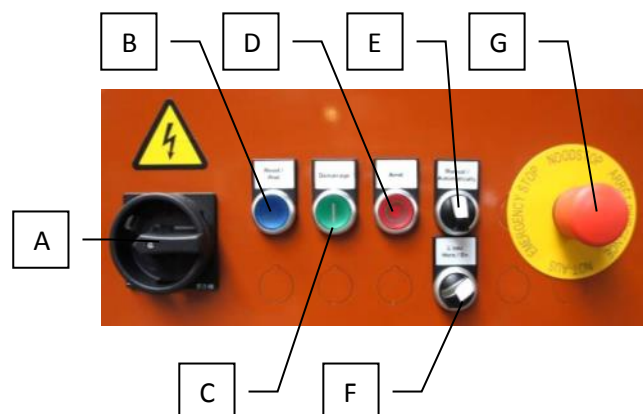
3.5 Machine workstations

The Javo Big Bale has a workplace on the side of the machine. With the control buttons on the side, the Big Bale is tilted, using the tilting plate. The Big Bale can be linked to another Javo machine, which might have workplaces.

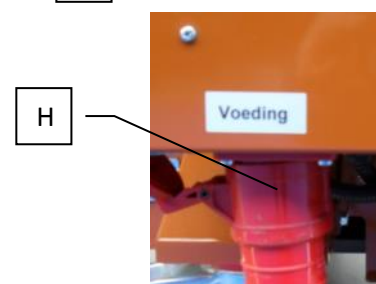
3.6 Controls

At the electrical cabinet of the machine, these buttons and connectors are placed:

- A. Main switch
- B. Reset button
- C. Start button
- D. Stop button
- E. Manual / Automatic
- F. Adding water (optional)
- G. Emergency stop button

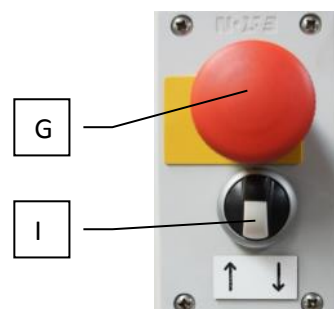


- H. Main power IN



The machine is equipped with 2 emergency stop buttons (on the control box and at the local HMI).

- I. Movement manual up / down



4 Transport



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

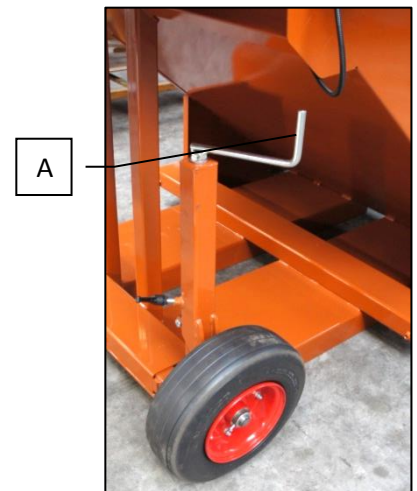
On delivery of the machine, a Javo mechanical engineer must be present to unload the machine from the (freight) wagon.

Prior to moving the machine, the power, pneumatics and water should be disconnected. Make sure the cables are stowed sufficiently.

The machine can be moved with a forklift truck. The machine is provided with insertion holes for forklift truck spoons.

If the machine needs to be moved without a forklift truck:

1. Ensure that the distance to be covered is free, so the machine can be moved without any obstacles to the desired position.
2. Insert the optional supplied two wheels into the holes underneath the discharge.
3. Turn crank (A), both wheels evenly down.



4. Place the rod with casters at the rear of the Big Bale machine .



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.



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 (air, 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.

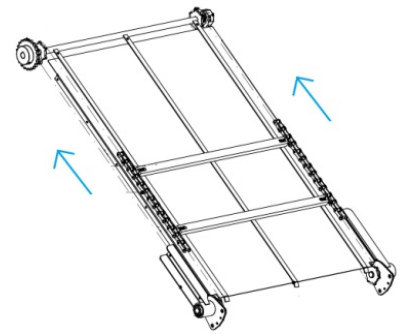
5.4 Check rotation direction



*Check the rotation direction before you start working with the machine.
The machine is provided with a phase sequence switch.*

Procedure:

1. Connect the power cable.
2. Start the substrate chain.
 - a. Turn on the main switch.
 - b. Press the reset button emergency stop circuit.
 - c. Start the elevator with the elevator button.
3. Check the direction of rotation of the elevator.
 - a. The desired direction of rotation shown in the picture.
4. Stop the big bale by pushing the stop button.
5. Turn off the main switch.
6. When rotation direction is incorrect:
 - a. Remove the plug from the socket.
 - b. Open the plug and switch 2 of the 3 phases in the plug. This should only be carried out by suitably qualified personnel.



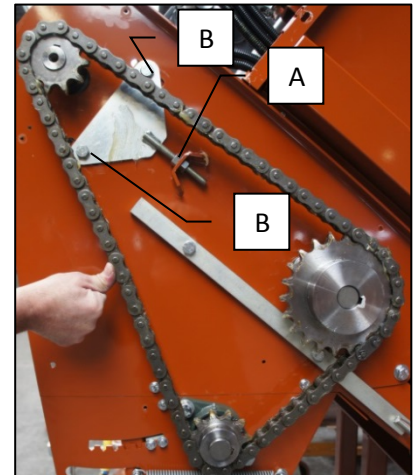
5.5 Check drive chain tension



Before you start working with the machine, check the tension of the drive chain.

procedure:

1. Turn off the machine.
2. Remove the cover.
3. Check the drive chain tension. The correct tension is obtained when the chain can be moved $\pm 10\text{mm}$ in the middle.
4. If necessary, adjust the chain tension.
 - a. The tension can be adjusted using the tightening nuts, located on both sides of the machine.
 - b. Loosen 2 screws (B).
 - c. Tighten the bolts (A) on both sides of the machine evenly.
 - d. Tighten 2 screws (B).
5. Place the cover back on the machine and tighten the screws.



The tension of the chain should not be too tight.

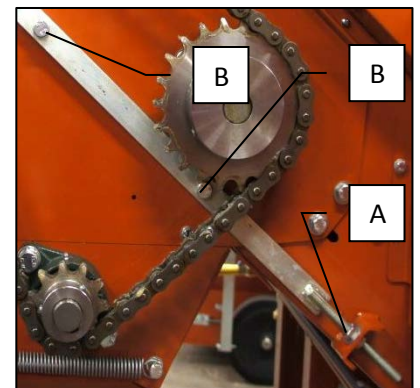
5.6 Check substrate chain tension



Before you start working with the machine, check the tension of the substrate chain.

procedure:

1. Check the substrate chain tension. The correct tension is obtained when the chain can be moved $\pm 20\text{mm}$ in the middle.
2. If necessary, adjust the chain tension.
 - a. The tension can be adjusted using the two tightening nuts, located on both sides of the machine.
 - b. Tighten the bolts (A) on both sides of the machine evenly.



The tension of the chain should not be too tight.

5.7 Set the emission Funnel

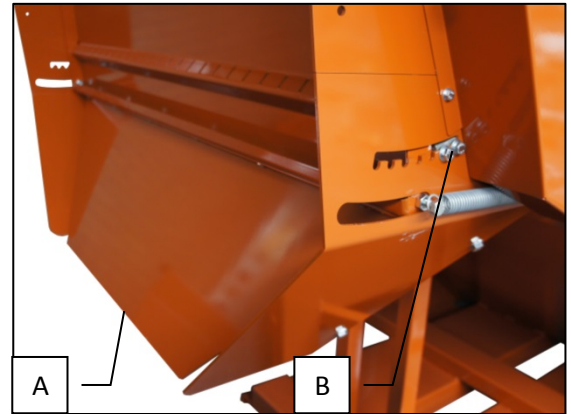


Set the emission funnel before you start working with the machine.

The coarseness of the substrate can be adjusted as the emission funnel (A) is adjusted forwards or backwards.

procedure:

1. Unscrew the four screws (B).
2. Move cover (A) back and adjust the blocks to the correct position.
 - a. The further the tension spring is stretched, the coarser, the substrate will be.
3. Tighten the four screws (B).



5.8 Set the substrate level sensors

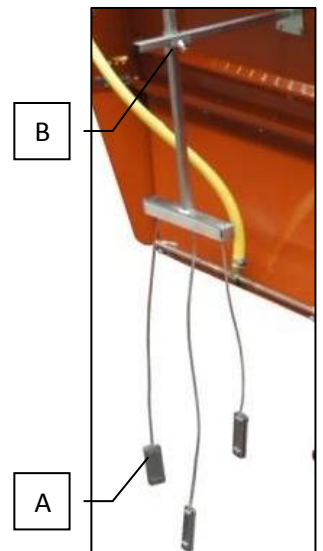


Set the substrate level sensors before you start working with the machine.

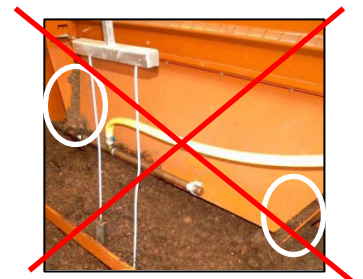
The substrate level sensors (A) hang in the substrate bin of the coupled machine. These ensure that if the substrate level is too low, substrate to replenishment. The substrate level sensors are adjustable in height and depth.

procedure:

1. Loosen the cross piece M8 bolts (B).
 - a. The level sensors can now be adjusted in height and depth.
2. Tighten the cross piece M8 bolts (B).



Substrate should not built up into the funnel. The substrate level sensors must therefore be positioned low enough.



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.



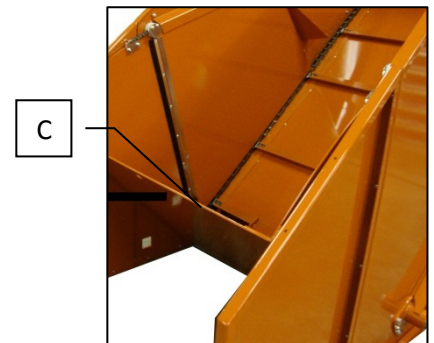
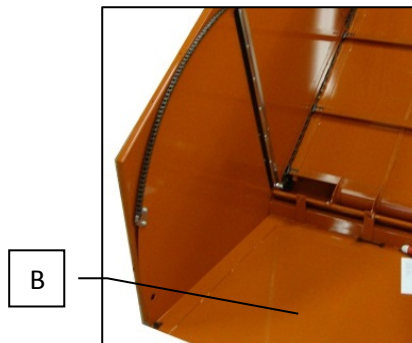
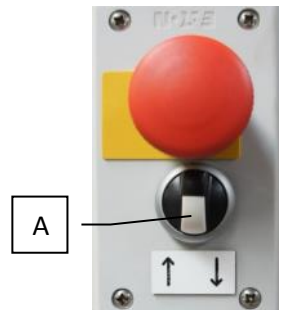
If a machine part is damaged or not working in the prescribed manner, work must be interrupted immediately. Resumption allowed only when the machine part is repaired or replaced and checked. Consult your dealer if the machine is not functioning properly.

6.1 Placing Substrate into the big bale machine

The Big Bale machine should be filled with substrate. The substrate is packed and compressed, this is called a 'Big Bale'.

procedure:

1. Remove the plastic wrapped around the substrate.
2. Place the tilt valve of the big bale machine in its lowest position by turning the 2-position switch (A) to the right (arrow down).
 - a. The starting position of the big bale machine is when the tilt valve is located on the floor (B).
 - b. The tilt valve automatically stops when it reaches the floor.
3. Remove the plastic cover wrapped around the substrate.
4. Place the 'Big Bale' with pallet up to the endstop of the tilt valve.
5. Press the 2-position switch to the left (arrow up) until the highest position is reached.
 - a. Only when reaching the highest position (C), the floor chains will start.

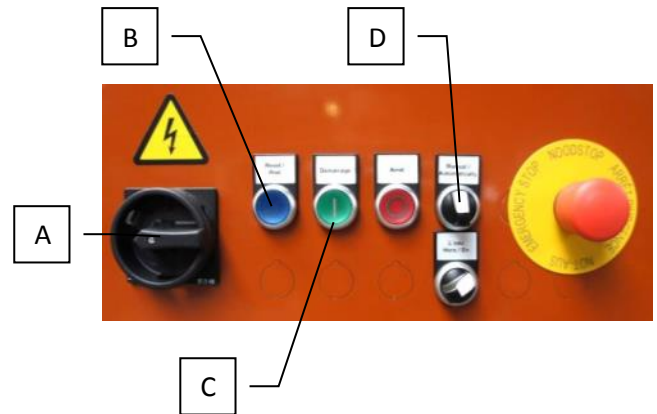


6.2 Start

The machine can be started in different ways, depending on the manner in which the machine is turned off in advance. The various options are explained below.

Start procedure:

1. Turn off the main switch (A) at the electrical cabinet.
2. Press the blue reset button (B).
3. Press the green button (C) on the control panel to start the machine.



Automatic operation

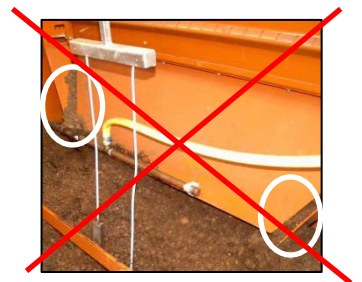
By switching switch (D) to AUTO, the Big Bale reacts to the substrate level sensors. The Big Bale will now automatically take care of giving the correct amount of substrate.

Manual operation

By switching and holding switch (D) to MANUAL, substrate is provided as long as the switch is held. The machine operator will have to remain at the switch to operate it.



Substrate should not built up into the funnel. The substrate level sensors must therefore be positioned low enough.



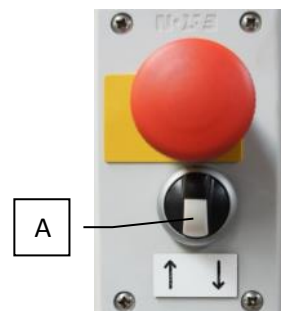
6.3 Manual operation

The tilt valve can be adjusted using switch (A).

6.4 Stop

Stop procedure:

1. Press the red stop button on the control panel.



6.5 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 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.



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

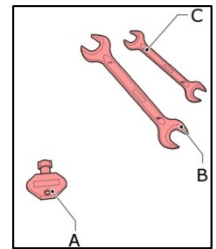


Inform operating personnel before start maintenance. Interrupt if possible the power (mains), before the machine is investigated or maintained by turning off the main switch and locking it and pull the plug from the socket. If work must be done with power supply (mains) voltage on the machine, work with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

7.1 Required tools and equipment

A set of keys is included with the machine, consisting of:

- A. Door key
- B. Spanner 17-19mm
- C. Spanner 10-13mm



7.2 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.
Machine	Day	Cleaning. Spray with compressed air; Never clean with water.
Machine	Day	Clean the downside of the transport chain before a new bale is placed. Remove all the substrate from the bottom corners. If this is not done, the machine may be damaged beyond repair.
Chains	Week	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.
Bearings	320 hours	Grease with a grease gun 1 to 2 strokes of grease to each grease fitting.
Electrical installation	Year	Check for damage.
Electric motors	Year	Remove dust.

7.3 Test safety circuit

Procedure:

1. Start the machine.
2. Press the emergency stop button. The machine is now disabled.
3. Pull the Emergency Stop button. The machine remains off.
4. Press the reset button emergency stop circuit. All possibly connected conveyors start moving.
5. Start the machine



The machine must not be used when going through the above process, the machine responds differently than described above. Warn directly Javo BV.

7.4 Fault list

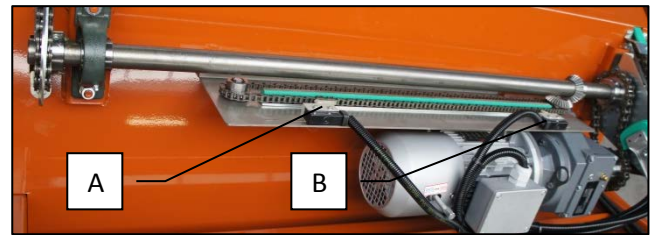
Problem	Possible cause	Action / Solution
Fault lamp remains lit	Phase is wrongly connected	turn a phase of the incoming power
Motor fault	mains voltage deviates more than 10% of the rated motor voltage	Provide the correct voltage
	Too high cooling air temperature	Provide cool air
	Poor cable connection	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
Thermal fuses are falling out	Motor defect	Call a mechanic
	Mechanical blockage of elevator	Remove blockages
	Motor is connected incorrectly	Connect the motor correct
The elevator chain is not moving	Obstacles in chain	Remove obstacles
	Substrate freezes in elevator	Remove excess soil from elevator paddles
Machine does not start	Emergency stop button is not pulled	Pull Emergency Stop button and reset the safety circuit by pressing the reset button
	Emergency stop button not reset	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 in-line machine is not ready so that the emission is not released	Clear the emission in second machine in line.
Tilt Valve does not go far enough down or up	Stop switch not properly set	See section 7.5

7.5 Set stop switches tilt valve

If the machine is not placed on a horizontal surface it may be that the tilt valve stop switches must be readjusted. A cam is placed on the chain which operates two end switches.

procedure:

1. Set the tilt valve in the lowest position.
2. Turn off the machine.
3. Remove the white cover.
4. Move switch (B) to move into bottom position of the tilt valve.
5. Move switch (A) to move into the top position.
6. Place the white cover back on the machine and tighten the screws.



7.6 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.

7.7 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.

7.8 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.



7.9 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: *Big Bale*
Type: *substrate 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	NEN-EN 13850	Safety of machinery - Emergency stop - Principles for design

The Netherlands, Noordwijkerhout,
March 2015

Cees Bouwmeester
Director