

# ***Instruction Manual***



## **FERTILIZA**

Fertilizer Spreader With Precision Agriculture





## PRESENTATION

**W**e appreciate the preference and would like to congratulate you for the excellent choice you just made, since you have acquired a product manufactured with **BALDAN IMPLEMENTOS AGRÍCOLAS S/A** technology.

This manual will guide you through the procedures required since its acquisition until operational procedures of usage, safety and maintenance.

**BALDAN** assures that it has delivered this implement for resale in full and in perfect conditions.

Resale was responsible for the custody and maintenance during the period in its possession, and also for the assembly, retightening, lubrication and overhaul.

During the technical delivery, dealer should guide the user regarding maintenance, safety, their obligations in eventual technical assistance, strict compliance with the warranty term and reading the instructions manual.

Any technical assistance request while in warranty should be made to the dealer from whom you have purchased it.

We reiterate the need for a careful read of the warranty certificate and compliance of all items from this manual, because by doing so you will increase the life of your device.



# ***Instruction Manual***



## **FERTILIZA**

Fertilizer Spreader With Precision Agriculture

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.  
CNPJ: 52.311.347/0009-06  
Insc. Est.: 441.016.953.110



Scan the QR Code on the  
identification plate of your  
device and access this  
Instruction Manual online.





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**BALDAN WARRANTY**

**BALDAN IMPLEMENTOS AGRÍCOLAS S/A** ensures the dealer normal performance of the implement for a period of six (6) months as of the delivery date on the retail invoice to the first final consumer.

During this period, **BALDAN** undertakes to repair defects in material and/or of manufacture of its liability, including labor, freight and other expenses of the dealer's liability.

In the warranty period, request and replacement of eventual defective parts shall be made to the dealer of the area, who will submit the faulty piece to **BALDAN** analysis.

When this procedure is not possible and the resolving capacity of the dealer is exhausted, the dealer will request the support of **BALDAN** Technical Assistance through a specific form distributed to dealers.

After analyzing the replaced items by **BALDAN** Technical Assistance, and concluding that it is not a warranty, then the dealer will be responsible for the costs related to the replacement; as well as material expenses, travel including accommodation and meals, accessories, lubricant used and other expenses arising from the call out to Technical Assistance, and **BALDAN** company is authorized to carry the respective invoice in the name of the resale.

Any repairment carried in the product within the dealer warranty deadline will only be authorized by **BALDAN** upon previous budget presentation describing parts and workforce to be executed.

The product is excluded from this term if it is repaired or modified by representatives not belonging to the **BALDAN** dealer network, as well as the application of non-genuine parts or components to the user's product.

This warranty is void where it is found that the defect or damage is caused by improper use of the product, failure to follow instructions or inexperience of the operator.

It is agreed that this warranty does not cover tires, polyethylene tanks, cardan, hydraulic components, etc., which are equipment guaranteed by their manufacturers.

Manufacturing and/or material defects, object of this warranty term, will not constitute, under any circumstances, grounds for termination of a purchase agreement, or for indemnification of any nature.

**BALDAN** reserves the right to change and/or perfect the technical characteristics of its products, without previous notice, and without obligation to proceed in the same way with the products previously manufactured.

## GENERAL INFORMATION

### OWNER

**FERTILIZA** instructions manual has the purpose of guiding the user on all parts of the product, functions, operations, and maintenances.

Before starting the works with **FERTILIZA**, carefully read the instructions manual and make sure to fully comprehend it. Read or explain all the procedures above to the operator who cannot read.

The instructions manual is an essential part of **FERTILIZA** and that is why it should be preserved and always be available to the operator for consultation, because behind all required information, use instructions, preservation over its service life and warranty certificate.

**BALDAN IMPLEMENTOS AGRÍCOLAS S/A** is not responsible for any damaged caused by accident due to usage, transportation, or in the improper or incorrect transportation of its implement, whether by negligence and/or inexperience of any person.

Only people with complete knowledge of the tractor and the implement should carry their transportation and operation.

**BALDAN** is not responsible for any damaged caused in unpredictable or unrelated situations to the normal use of the implement.

*The incorrect handling of this equipment may result in severe or fatal accidents. Before running the equipment, carefully read the instructions contained in this manual. Make sure that the person responsible for the operation is instructed as the correct and safe handling. Also make sure that the operator has read and understood the instructions manual of the product.*



#### NR-12 ATTACHMENT XI - MACHINES AND IMPLEMENTS FOR AGRICULTURAL AND FOREST USE.

*This Attachment applies to the project steps, manufacturing, import, commercialization, exposure and assignment of stationary or non-stationary machinery and implements for agricultural and forest use, as well as to storage and drying machines and equipment and their conveyors, such as silos and dryers.*

#### NR-31 - SAFETY AND HEALTH AT WORK IN AGRICULTURE, LIVESTOCK FORESTRY, FOREST EXPLORATION AND AQUACULTURE.

*This Regulatory Standard has the purpose of establishing precepts to be observed in the organization and work environment, compatible to the planning and development of agriculture, livestock, forestry, forest exploitation and aquaculture with safety and health and work environment.*

MR. OWNER OR OPERATOR OF THE EQUIPMENT.

*Read and carefully comply with provisions of NR-31.*

*More information, see the site and read in full NR-12 Attachment XI and NR-31.  
<http://portal.mte.gov.br/legislacao/normas-regulamentadoras-1.htm>*



**THIS SYMBOL INDICATES IMPORTANT SAFETY WARNING. IN THIS MANUAL, WHENEVER YOU FIND IT, READ THE FOLLOWING MESSAGE CAREFULLY AND PAY ATTENTION TO THE POSSIBILITY OF PERSONAL ACCIDENTS.**

**ATTENTION**

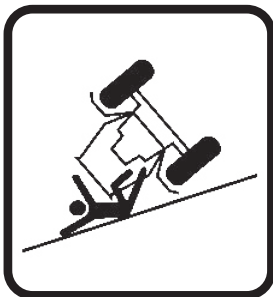
- Carefully read the instructions manual to learn about the recommended safety practices.
- Regularly refer to the instruction manual.

**ATTENTION**

- Only start to operate the tractor when you are properly seated and with the seat belt locked.

**ATTENTION**

- Do not work with the tractor if the front is light. Should there be a trend to lift, add weights or ballasts to the front or the front wheels.

**ATTENTION**

- There are risks of severe injuries due to tipping when working in sloped terrains.
- Do not over speed.

**ATTENTION**

- Do not transport people or equipment on the tractor.

**ATTENTION**

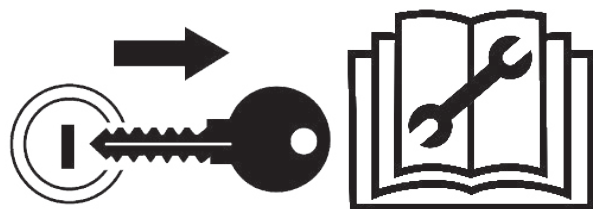
- Before performing any maintenance in your equipment, make sure it is properly stopped.
- Avoid being run over.

**SAFETY RULES**



## SAFETY RULES

### ⚠ ATTENTION



- Remove the ignition key before performing any type of maintenance in Fertiliza.

Protect yourself against possible injuries or death caused by Fertiliza unexpected start-up.

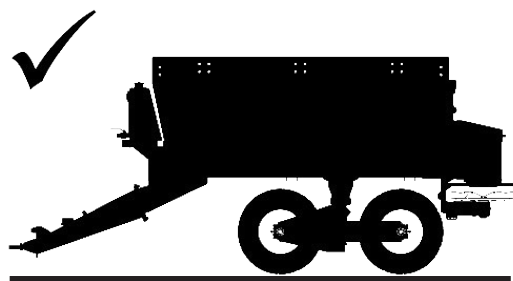
- Do not start the tractor up if Fertiliza is not properly engaged.

### ⚠ ATTENTION

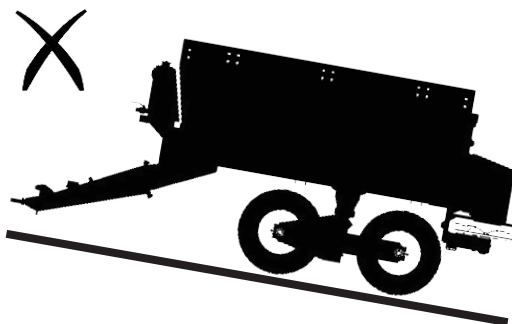


- Before beginning the work or transportation of Fertiliza, check if there are people or blockages close to it.

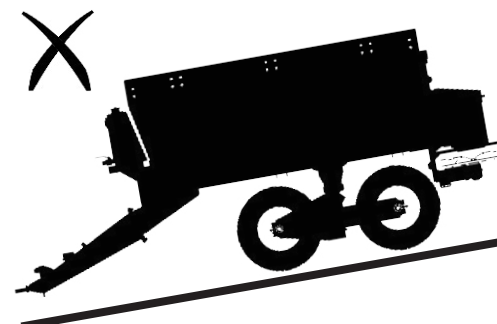
### ⚠ ATTENTION



**FLAT LOCATION**



**UPHILL**



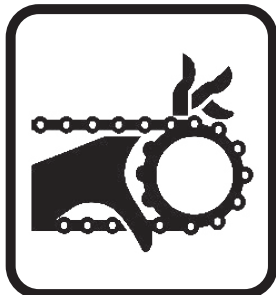
**DOWNHILL**

Only stop Fertiliza in a flat location.

Do not park Fertiliza uphill or downhill.



*THIS SYMBOL INDICATES IMPORTANT SAFETY WARNING. IN THIS MANUAL, WHENEVER YOU FIND IT, READ THE FOLLOWING MESSAGE CAREFULLY AND PAY ATTENTION TO THE POSSIBILITY OF PERSONAL ACCIDENTS.*

**! ATTENTION**

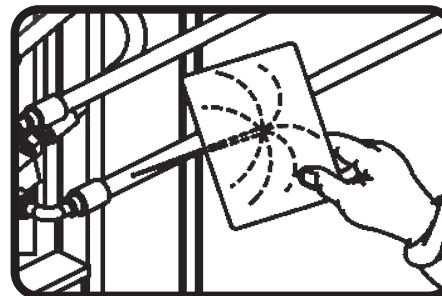
- Do not operate the distributor if the transmissions protections are not properly xated.
- Only remove the protections to replace gears and immediately reinstall them.
- When performing any service in the transmission of the distributor, disable the ratchets.
- Do not perform adjustments with the distributor in motion.

**! ATTENTION**

- Hydraulic oil works under pressure and may cause serious injuries if there are any leakages. Periodically check the conservation status of the hoses. If there are any sign of leakage, replace them immediately.
- Before connecting or disconnecting the hydraulic hoses, relief the system pressure by activating the control with the tractor power switched off.

**! ATTENTION**

- Always keep yourself distant from the active elements of the distributor (discs), they are sharp and may cause accidents.
- When performing any service in the discs, use safety gloves on the hands.

**! ATTENTION**

- When searching for a possible leakage on the hoses, use a piece of cardboard or wood, never use your hands.
- Avoid incision of uid in the skin.



**THIS SYMBOL INDICATES IMPORTANTE SAFETY WARNING. IN THIS MANUAL, WHENEVER YOU FIND IT, READ THE FOLLOWING MESSAGE CAREFULLY AND PAY ATTENTION TO THE POSSIBILITY OF PERSONAL ACCIDENTS.**

**SAFETY RULES**

# SAFETY RULES

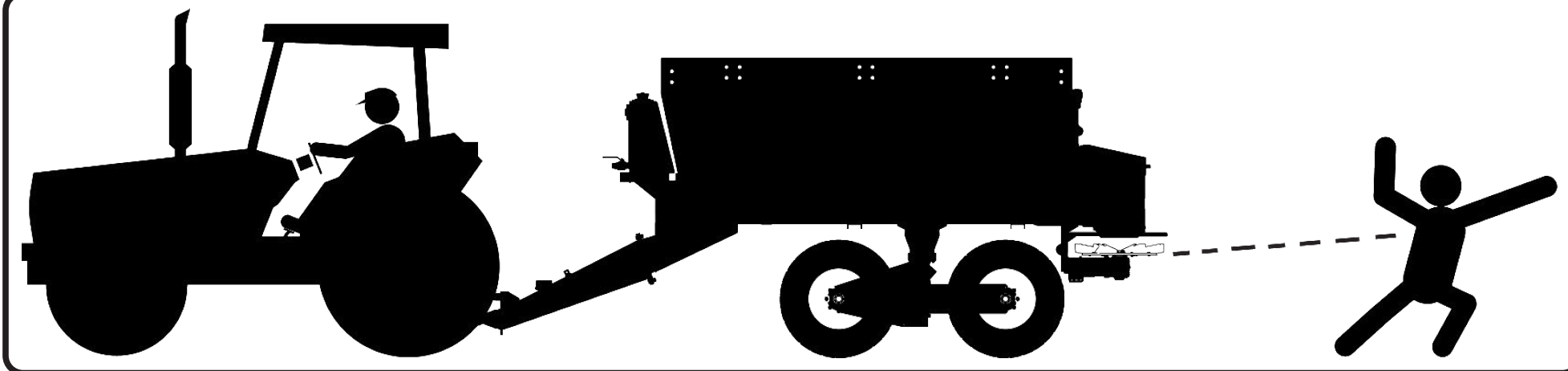


## ATTENTION

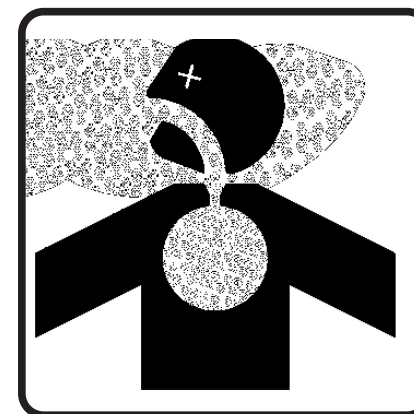
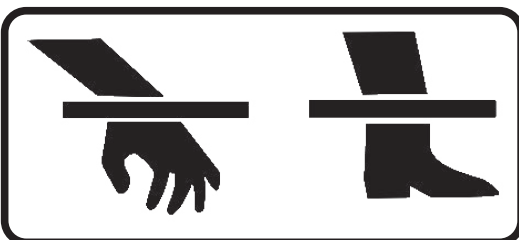
ROTATING DISCS  
KEEP DISTANCE.

To prevent intoxications, injuries or death when the equipment is running and rotating discs are spinning.

- Stop the equipment if there are people under 50 meters.
- Do not be exposed to product drift.

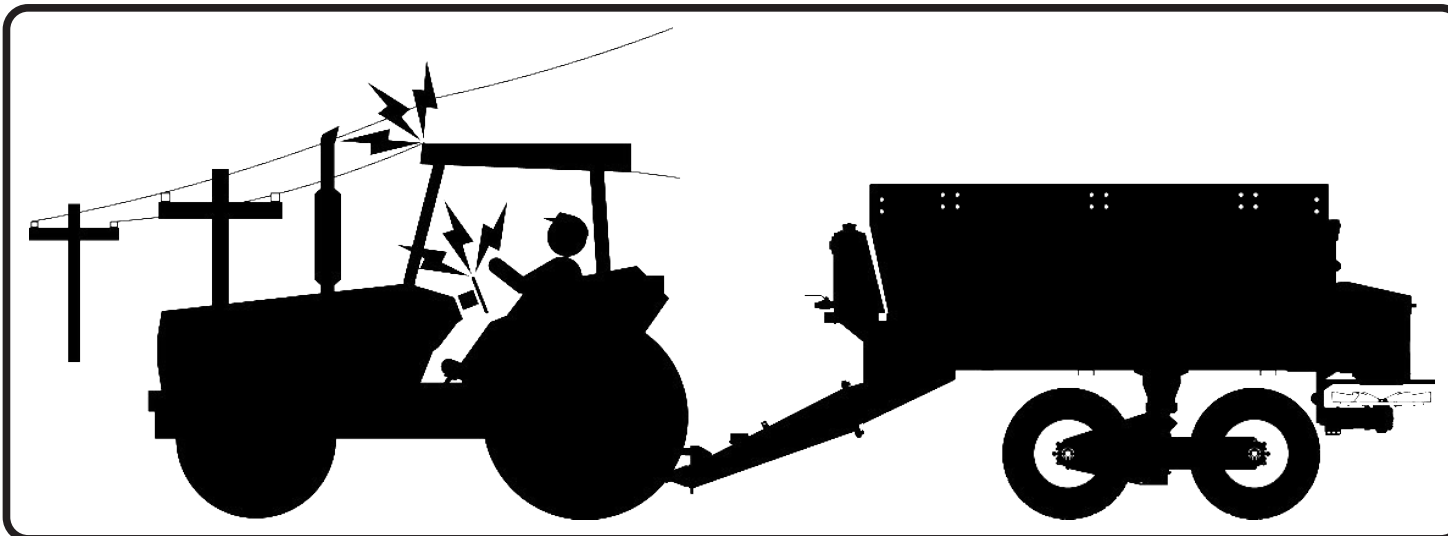


- Do not place hands or feet on discs.
- Do not be exposed to the air coming out of rotating discs.
- During handle and application, use required personal protective equipment (PPE).
- Wash your hands thoroughly after handling the products.
- In case of intoxication due to inhalation or aspiration, keep the person in a ventilated area and immediately seek medical advice, taking the label or the packaging of the product.



**INTOXICATION SYMPTOMS:** Weakness, headache, chest pressure, chest tightness, blurred vision, unresponsive pupils, abundant salivation, sweating, nausea, vomiting and abdominal cramps.

**! ATTENTION**



- Be careful when driving or working with Fertiliza under power lines, low tree branches and other high obstructions, avoiding serious injury or even death.
- Before transiting or working with Fertiliza, make a full assessment of the location.

**! ATTENTION**



- There is risk of possible injuries to the operator and expectators during operations with Fertiliza due to the following reasons:
- Contact with distributors discs.
- Engagement of the body in the drive shaft and rotary shaft.

**! ATTENTION**



- Avoid heating parts near the uid lines.
- Heating may generate fragility in the material, rupture and exit of the pressurized uid, causing burns and injuries.

**SAFETY RULES**

## SAFETY RULES

### ⚠ ATTENTION



- When operating Fertiliza, do not allow people remaining on top of it.

### ⚠ ATTENTION



- When providing maintenance on the suspended conveyor, support it safely.
- Do not support the conveyor on hollow bricks, piles or cement blocks that may collapse under load.

### ⚠ ATTENTION



- Do not perform adjustments while Fertiliza is in motion.
- When performing any service on Fertiliza, switch off the tractor and remove the ignition key.

### ⚠ ATTENTION



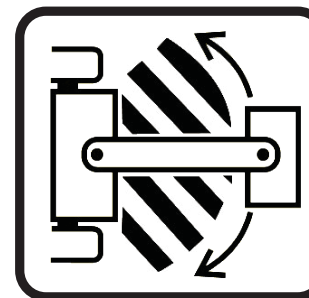
- Avoid skin contact with hot surfaces on Fertiliza.

### ⚠ ATTENTION



- Always maintain places of access and work free of residues such as oil or grease to prevent accidents.

### ⚠ ATTENTION



- Maintain the articulation area free while Fertiliza is running.
- In closed curves, avoid the tractor wheels from touching the header.



ALCOHOLIC BEVERAGE OR SOME MEDICATIONS MAY CAUSE LOSS OF REFLEXES AND CHANGE THE OPERATOR'S PHYSICAL CONDITIONS. FOR THIS REASON, NEVER OPERATE THIS EQUIPMENT UNDER ANY OF THESE SUBSTANCES.

**! ATTENTION**



• Do not climb or remain on the distributor discs under any circumstance.

Ignoring this warning may cause severe accidents or death.

**! ATTENTION**



• Do not climb or remain on the conveyor under any circumstance. Ignoring this warning may cause severe accidents or death.

**! ATTENTION**

• While in Fertiliza transport, do not exceed the 16 km/h or 10 MPH speed, avoiding risk of damages and accidents.



**! ATTENTION**

• Careful when handling Fertiliza support since there is risk of accidents.



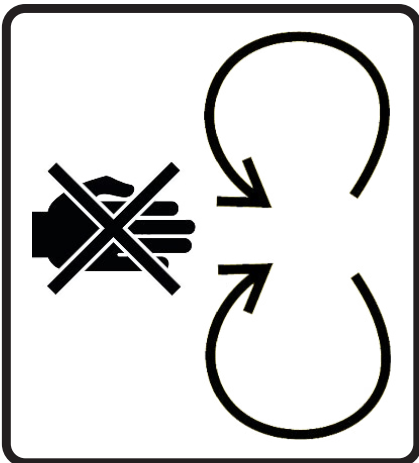
**FOLLOW ALL RECOMMENDATIONS, WARNINGS AND SAFE PRACTICES RECOMMENDED IN THIS MANUAL, UNDERSTAND THE IMPORTANCE OF YOUR SAFETY. ACCIDENTS MAY LEAD TO DISABILITY OR INCLUDING DEATH. REMEMBER, ACCIDENTS CAN BE AVOIDED!**

**SAFETY RULES**



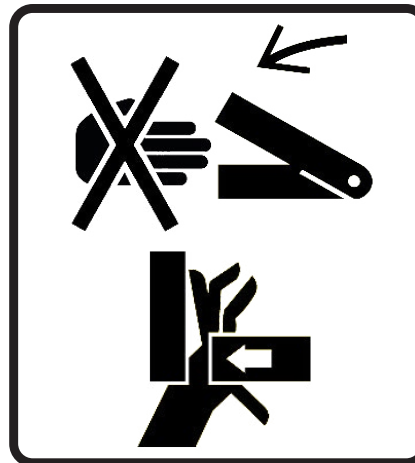
## SAFETY RULES

### ! ATTENTION



- Keep distance from mechanisms in motion (cardans, gears, conveyors, and especially distributor discs).

### ! ATTENTION



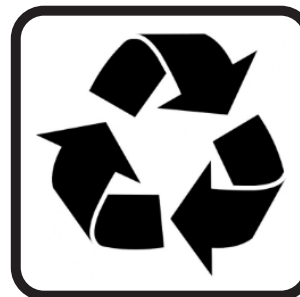
- To maneuver Fertiliza, use the pin to lock the wheel system. When placing the pin, be careful to not press your hands.
- Check the procedure for locking the wheel system on page 46.

### ! ATTENTION



- Never weld the wheel mounted with tire, the heat may cause air pressure increase and provoke the explosion of the tire.
- When inflating the tire, position yourself besides the tire, never in front of it.
- To fill the tire, always use containment device (filling cage).

### ! ATTENTION



- Dispose residues inappropriately affects the environment and the ecology since you will be polluting rivers, canals or the soil.
- Inform yourself about the proper way of recycling or disposing residues.

**PROTECT THE ENVIRONMENT!**



**FOLLOW ALL RECOMMENDATIONS, WARNINGS AND SAFE PRACTICES RECOMMENDED IN THIS MANUAL, UNDERSTAND THE IMPORTANCE OF YOUR SAFETY. ACCIDENTS MAY LEAD TO DISABILITY OR INCLUDING DEATH. REMEMBER, ACCIDENTS CAN BE AVOIDED!**

### PPE EQUIPMENT



## ATTENTION

*Do not work with FERTILIZA without first putting PPEs (Safety Equipment) on. Ignoring this warning may cause damages to health, severe accidents or death.*

When performing certain procedures with **FERTILIZA**, put the following PPEs (Safety Equipment) on:



## ⓘ IMPORTANT

*Safe practice should be performed in all work steps with FERTILIZA, thus avoiding accidents such as objects impact, fall, noises, cuts and ergonomics, that is, the person responsible for operating FERTILIZA is subject to internal and external damages to his/her body.*




















## OBSERVATION


















*All PPEs (Safety Equipment) should have certificate of authenticity.*



## SAFETY RULES
















## WARNINGS

- 01 -  When operating the equipment, do not allow people to stay very close, inside it or on it.
- 02 -  When operating the equipment, observe if there are no people positioned on the throwing line of the distributor discs.
- 03 -  When conducting any check inside FERTILIZA, do not lean on the distributor discs.
- 04 -  Do not go inside FERTILIZA, especially when it is with the power plug on.
- 05 -  Do not perform adjustments when Fertiliza is in operation.
- 06 -  When performing and assembly and disassembly service at FERTILIZA, use protection equipment.
- 07 -  Do not travel on highways especially at night. Use warning signs throughout the route.
- 08 -  If there is needs to trac with FERTILIZA on highways, consult rst with trac bodies.
- 09 -  Do not use loose clothing because they may get entangled in the equipment.
- 10 -  When starting the tractor motor, be properly seated in the operator seat and aware of the correct and safe handling of both the tractor and the implement. Always put the gearshit in neutral position, unplug the power take-o switch and place the hydraulic controls in neutral position.
- 11 -  Do not start the motor in a closed environment or with no proper ventilation since the exhaust gases are harmful to health.
- 12 -  When maneuvering the tractor to hitch the implement, make sure you have enough space and there are not manu people close to it. Always maneuver in a reduced gear and be prepared for an emergency stop.
- 13 -  Do no remove the distributors discs' protection.
- 14 -  When working in sloped terrains, proceed with care, always trying to maintain the required stability. If you start to unbalance, reduce acceleration and turn the wheels of the tractor to the slope face of the terrain.
- 15 -  Do not stay in the product throwing line.
- 16 -  Do not approach the moving distributors discs.
- 17 -  Always conduct the tractor in speeds compatible to the safety, especially during works in bumpy lands or slopes. Always keep the tractor hitched.

- 18 -  When conducting the tractor in highways, always keep the brake pedals interconnected and use safety signaling.
- 19 -  Do not work with the tractor if the front is light. Should there be a trend to lift, add weights or ballasts to the front or the front wheels.
- 20 -  When leaving the tractor, put the gear lever in neutral position and apply parking brake.
- 21 -  Do not allow FERTILIZA to be used by people who have not been trained, that is, who do not know how to properly operate it.
- 22 -  Do not transport or work with FERTILIZA around obstacles, rivers or streams.
- 23 -  Only operate FERTILIZA if all positions are properly installed.
- 24 -  Do not remove under any circumstance the protection components of FERTILIZA.
- 25 -  The inappropriate usage of FERTILIZA, especially in uneven lands, downhill, or uphill may cause tipping. Pay close attention in case of rain, snow, ice or any other case of slippery terrain. If necessary, get o the tractor and check the consistence of the ground.
- 26 -  The transportation of people on machines self-propelled and implements is forbidden.
- 27 -  Alterations of the original FERTILIZA characteristics are not authorized since they may change safety, operation and aect service life.
- 28 -  Carefully read all safety information herein and in FERTILIZA.
- 29 -  Read or explain all the procedures above to the operator who cannot read.
- 30 -  Always check if FERTILIZA is in perfect usage conditions. In case of any irregularity that may interfere in FERTILIZA operation, arrange due maintenance before any work or transport.
- 31 -  All loading or inspection must be performed with FERTILIZA stopped and turned o and using the safe access means.
- 32 -  Access, maintenance and especially inspection in FERTILIZA risk zones should only be performed by trained and qualied worker, respecting all safety guidance.
- 33 -  Periodically check all FERTILIZA components before using it.
- 34 -  Due to the equipment used and work conditions on eld or in maintenance areas, precautions are required. Baldan does not have direct control on precautions, therefore, it is the owner responsibility to put into practice the safety procedures while working with FERTILIZA.

## **WARNINGS**

## WARNINGS

- 35 -  When covering FERTILIZA with a tarpaulin, do not move around in the edges of the dumpster, use the stairs and avoid the risk of falling and suering an accident.
- 36 -  Do not try to get o FERTILIZA while in motion, not even in the case of tipping because you may get crushed.
- 37 -  If there is the need to access FERTILIZA dumpster, rst make sure that the transmission elements are disconnected from the tractor.
- 38 -  It is forbidden to access FERTILIZA dumpster during usage.
- 39 -  Avoid loads higher than the specied capacity for each FERTILIZA model. Ignoring this warning may cause damages to FERTILIZA and put your safety at risk.
- 40 -  Always put FERTILIZA tires on before disengaging it from the tractor.
- 41 -  Check the minimum power of the tractor recommended for each model of FERTILIZA. Only use tractor with power and ballast compatible with the load and topography of the land.
- 42 -  Use the same gear required to go up (engine brake) when using FERTILIZA in descent (downhill).
- 43 -  Always maintain the steps of the ladder and handrails free of residues (oil, grease, etc.), which may cause severe accidents or death.
- 44 -  FERTILIZA maintenance should only be performed by specialized people. Before beginning maintenance, disconnect all FERTILIZA drive systems.
- 45 -  During FERTILIZA transportation, drive in speeds compatible to the land and never exceeding 16 km/h, since it reduces maintenance and, therefore, increases FERTILIZA service life.
- 46 -  FERTILIZA speed may be dierent than the speed of the tractor, depending on the depending on wheel slip, tilt and precision of the wheel sensors.
- 47 -  We recommend the distribution of products in speeds between 4 to 15 km/h. Speeds outside this interval may generate values above the hydraulic capacity of the system.
- 48 -  Alcoholic beverage or some medications may cause loss of reexes and change the operator's physical conditions. For this reason, never operate this equipment under any of these substances.
- 49 -  Read or explain all the procedures above to the operator who cannot read.

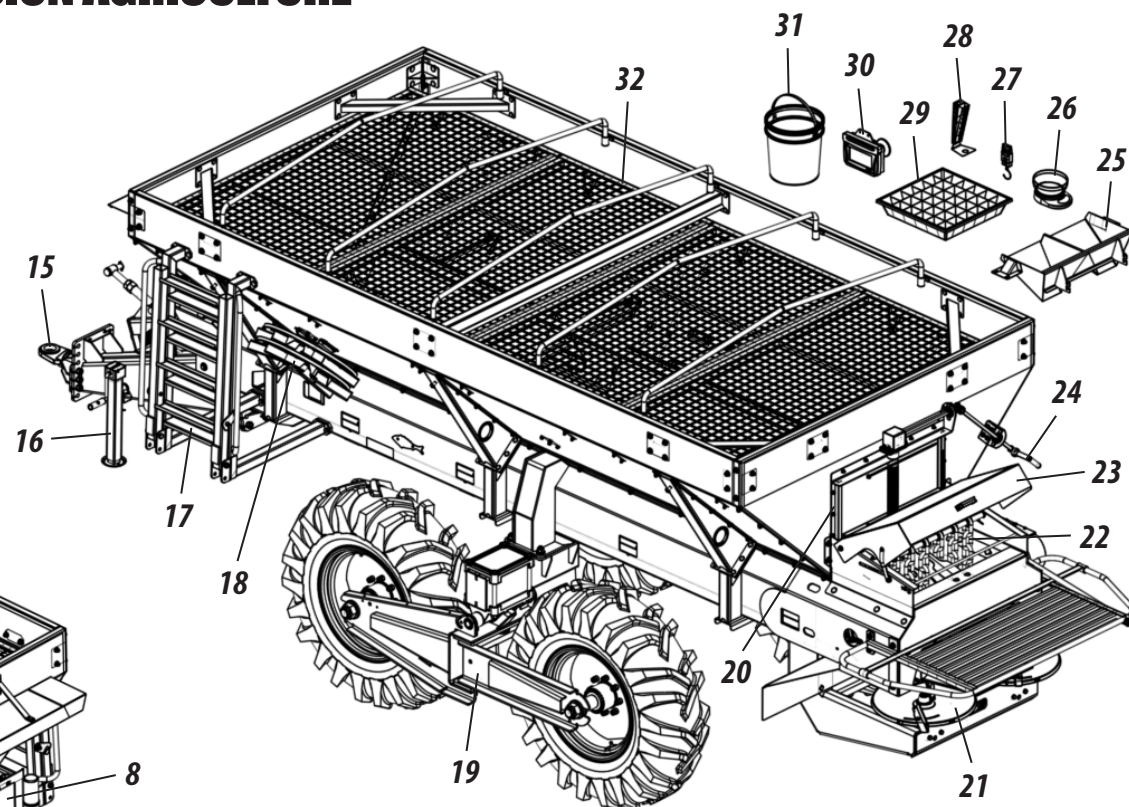
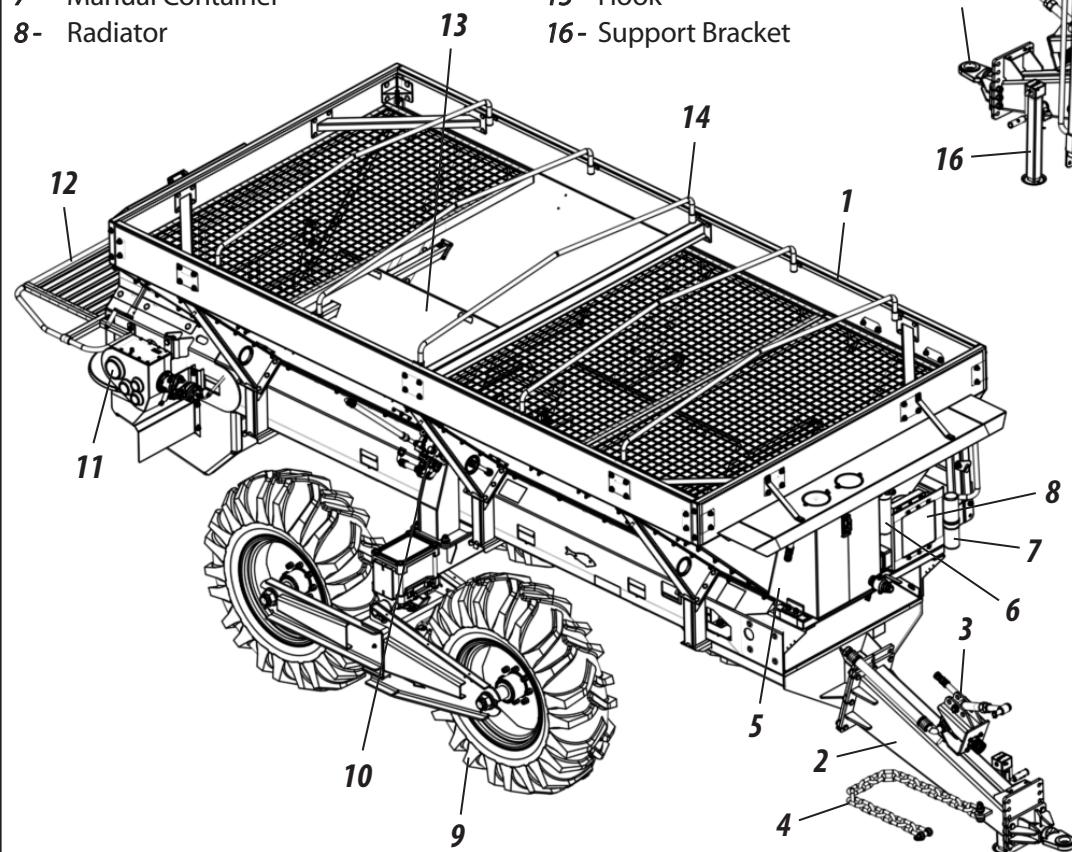
*In case of doubts, refer to Post-Sale*  
 Telephone: 0800-152577/ E-mail: posvenda@baldan.com.br



### FERTILIZA - FERTILIZER SPREADER WITH PRECISION AGRICULTURE

- 1- Dumpster
- 2- Header Hook
- 3- Hydraulic Pump
- 4- Safety Chain
- 5- Oil Tank
- 6- Oil Filter
- 7- Manual Container
- 8- Radiator

- 9- Tire
- 10- Control Block
- 11- Transmission System
- 12- Protection Grid
- 13- Deflector
- 14- Pipe for tarpaulin
- 15- Hook
- 16- Support Bracket



- 17- Ladder
- 18- Powder Distributor Disc
- 19- Wheelset System
- 20- Gate
- 21- Grain and Seed Distribution Disc
- 22- Chains
- 23- Protection Cover
- 24- Handle

- 25- Collection Hopper
- 26- Digital Scale
- 27- Portable Digital Scale
- 28- Pluviometer
- 29- Tray
- 30- Signal receiver
- 31- Plastic Bucket
- 32- Protection Screen

## COMPONENTS



# TECHNICAL SPECIFICATIONS

## FERTILIZA - FERTILIZER SPREADER WITH PRECISION AGRICULTURE

Model	Length Total (mm)	Width Total (mm)	Height Total (mm)	Load Capacity (m <sup>3</sup> )	Flow (kg/ha)	Wheelset	Adjustable Gauge (m)	Approximate Weight (kg)	Approximate Power (cv)
<b>FERTILIZA 6m<sup>3</sup></b>	6373	2600	2696	6m <sup>3</sup>	15kg/ha - 8000kg/ha	Tire 12.5/80-18" TL 10 Rim W 9,00" x 18"	1,80 to 3,20	4272	90
<b>FERTILIZA 8m<sup>3</sup></b>	7432	2600	2775	8m <sup>3</sup>	15kg/ha - 8000kg/ha	Tire 14.9.24 12 Rim W12"x 24"	1,80 to 3,20	4869	110

Distribution Disks .....	Grains / Powder Products
Work Speed .....	4 - 15km/h
Distribution Width (grains) .....	36m
Distribution Width (powder) .....	14m
Oil Reservoir .....	80 lts
Pump: Flow .....	60 L/min
Maximum Pressure .....	172,4 Bar
Minimum Rotation .....	540rpm

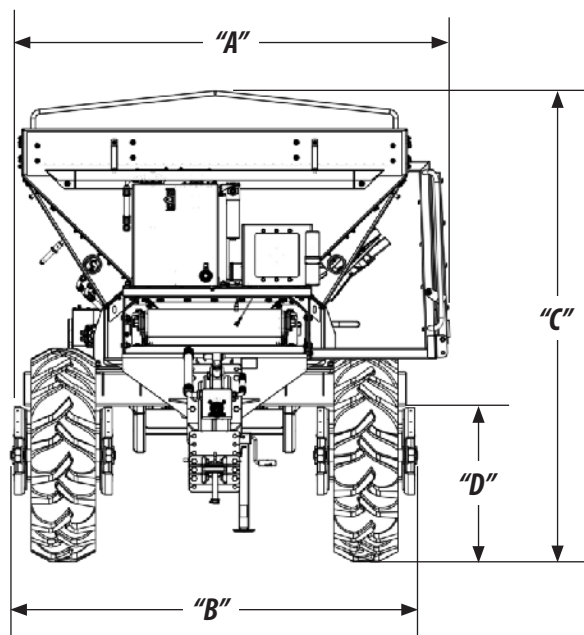
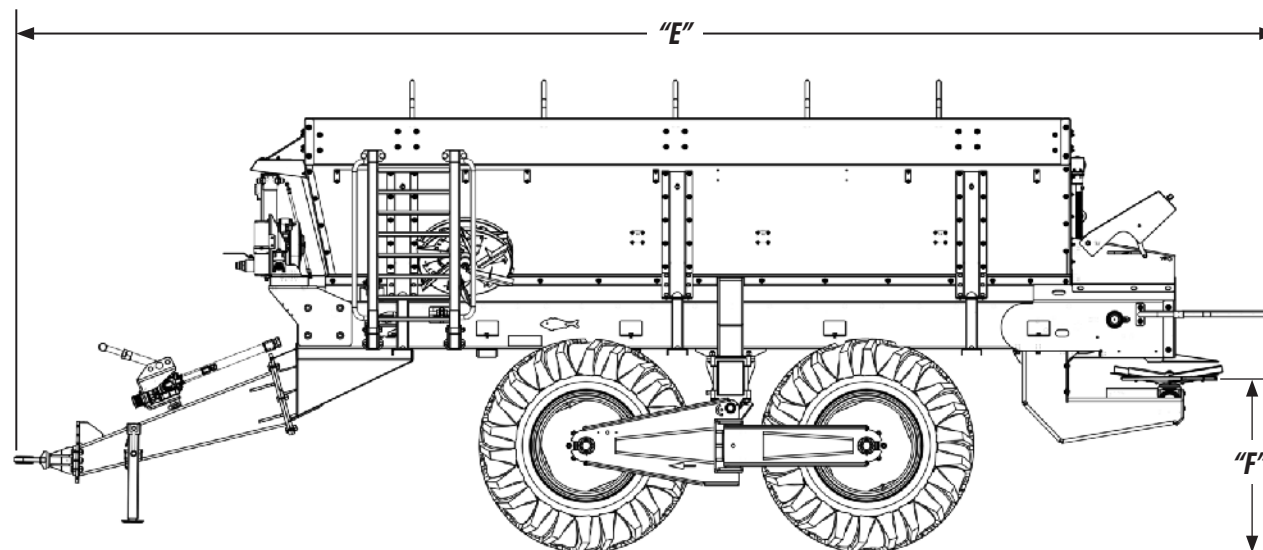
Baldan reserves the right to change and/or perfect the technical characteristics of its products, without previous notice, and without obligation to proceed in the same way with the products previously manufactured. Technical specifications are approximate and informed under normal work conditions.

### FERTILIZA INTENDED USE

- **FERTILIZA** was solely developed for the distribution of correctives and fertilizers.
- **FERTILIZA** should only be conducted and triggered by a properly instructed operator.

### NON-ALLOWED USE OF FERTILIZA

- To avoid damages, severe accidents or death, do NOT transport objects or people in the dumpster or in any other part of **FERTILIZA**.
- Do NOT use **FERTILIZA** dumpster for products other than the intended use.
- It is NOT allowed to use **FERTILIZA** to engage, tow or push other implements or accessories.
- **FERTILIZA** should be used by an experienced operator who perfectly knows all the driving and command techniques.

**MEASUREMENTS**

**"FERTILIZA FRONT VIEW"**

**"FERTILIZA SIDE VIEW"**

<i>Model</i>	<i>Measurement "A" (mm)</i>	<i>Measurement "B" (mm)</i>	<i>Measurement "C" (mm)</i>	<i>Measurement "D" (mm)</i>	<i>Measurement "E" (mm)</i>	<i>Measurement "F" (mm)</i>
<b>FERTILIZA 6m<sup>3</sup></b>	2600	2350	2696	844	6373	933
<b>FERTILIZA 8m<sup>3</sup></b>	2600	2350	2775	921	7432	1010

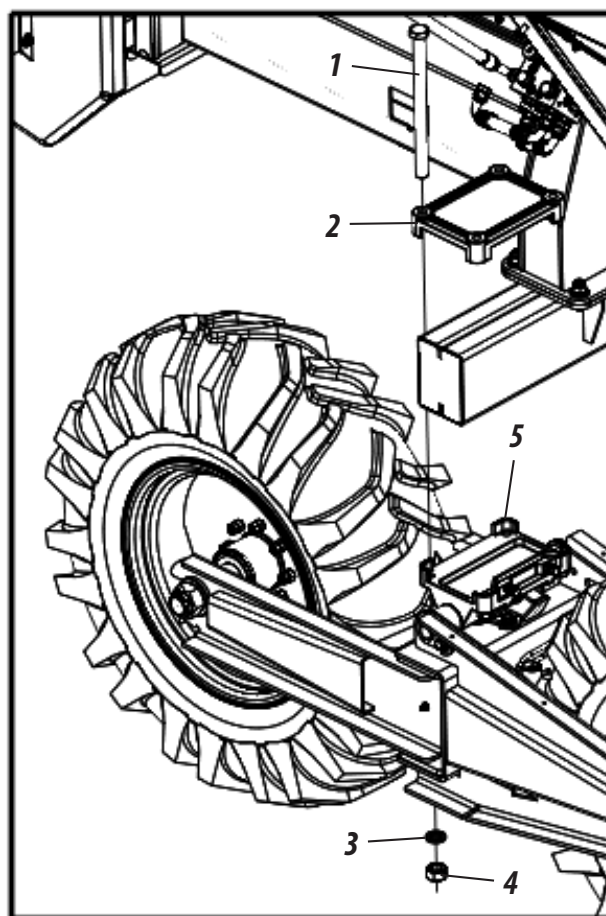
**TECHNICAL SPECIFICATIONS**

# ASSEMBLY

## REPLACEMENT OF SUPPORT FOR TRANSPORT - PART I

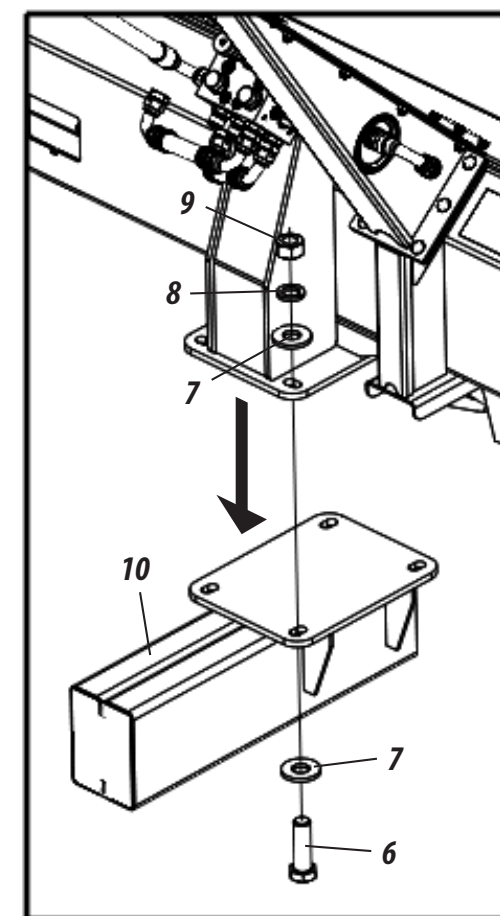
To ease the logistics, loading and unloading, **FERTILIZA** leaves the factory mounted with the transport supports (10). When unloading **FERTILIZA** in the eld, the transport supports should be replaced by the rocker arm xing bracket accompanying it, proceed as follows:

- 1- First, loosen the screws (1), the foot mounting (2), pressure washers (3), and nuts (4) and remove the wheel carrier (5).
- 2- Next, loosen the screws (6), plain washers (7), pressure washers (8), and nuts (9) and remove the transport support (10).



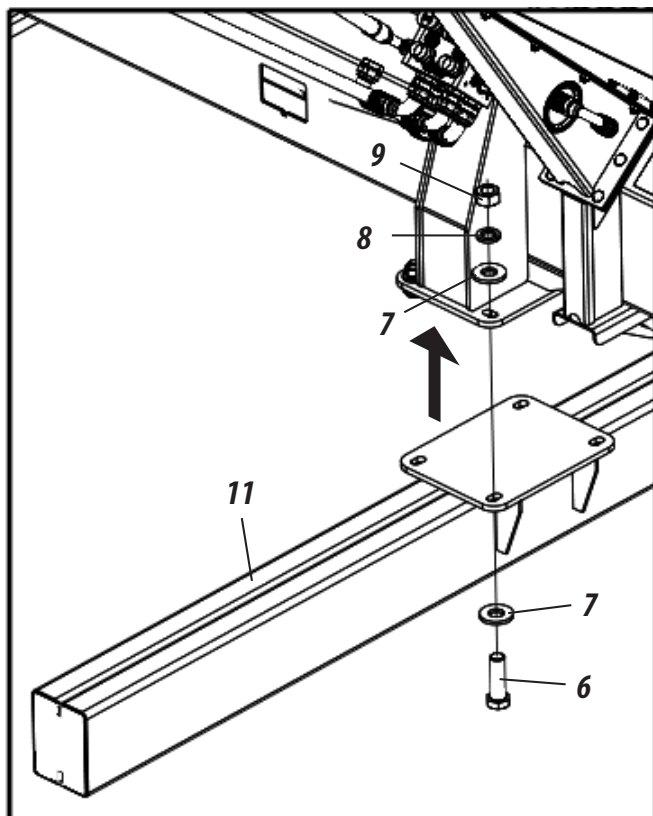
### ⓘ IMPORTANT

*To replace the transport supports, lean FERTILIZA frame on the anvils. Before beginning the replacement of the supports for transportation, look for an ideal place to ease their exchange.*

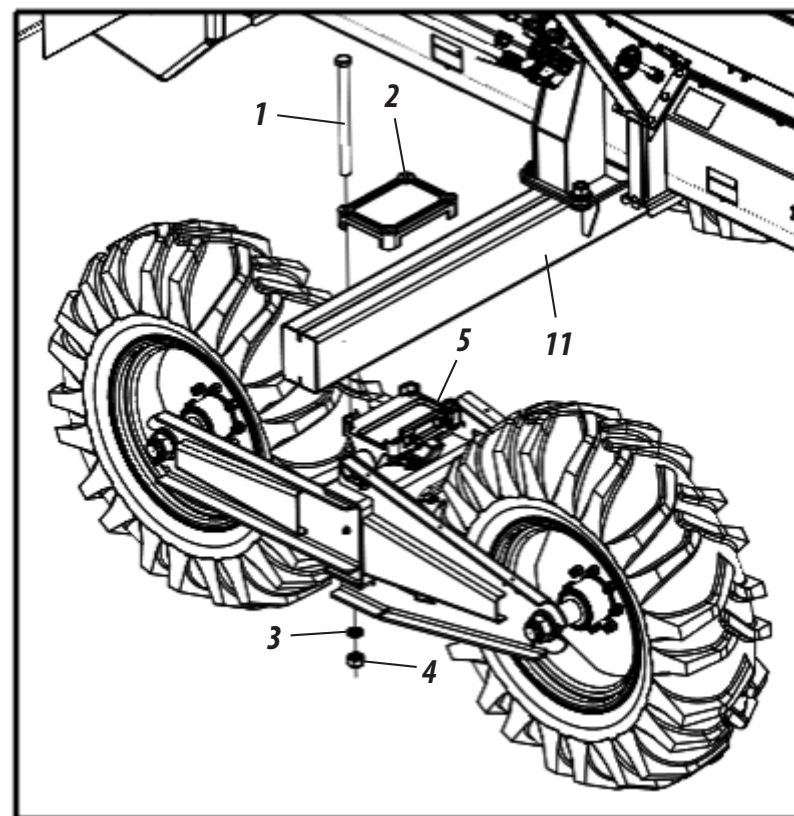


### REPLACEMENT OF SUPPORT FOR TRANSPORT - PART II

- 3- Then, engage the rocker arms xing bracket (11), securing them through screws (6), plain washers (7), pressure washers (8), and nuts (9).



- 4- Finally, engage the wheel support (5) in the rocker arms xing bracket (11), securing them through screws (1), the foot mounting (2), pressure washers (3), and nuts (4).



### ⓘ IMPORTANT

*When mounting the wheel support (5), check the positioning of the front and rear tires grips, which should be facing the rear side of Fertiliza, allowing the tire to ply uctuation on the ground, facilitating the monitoring of soil irregularities and avoiding compaction.*

### 👁 OBSERVATION

*When mounting the wheel support (5), adjust the gauge according to instructions in page 33.*



### ATTENTION

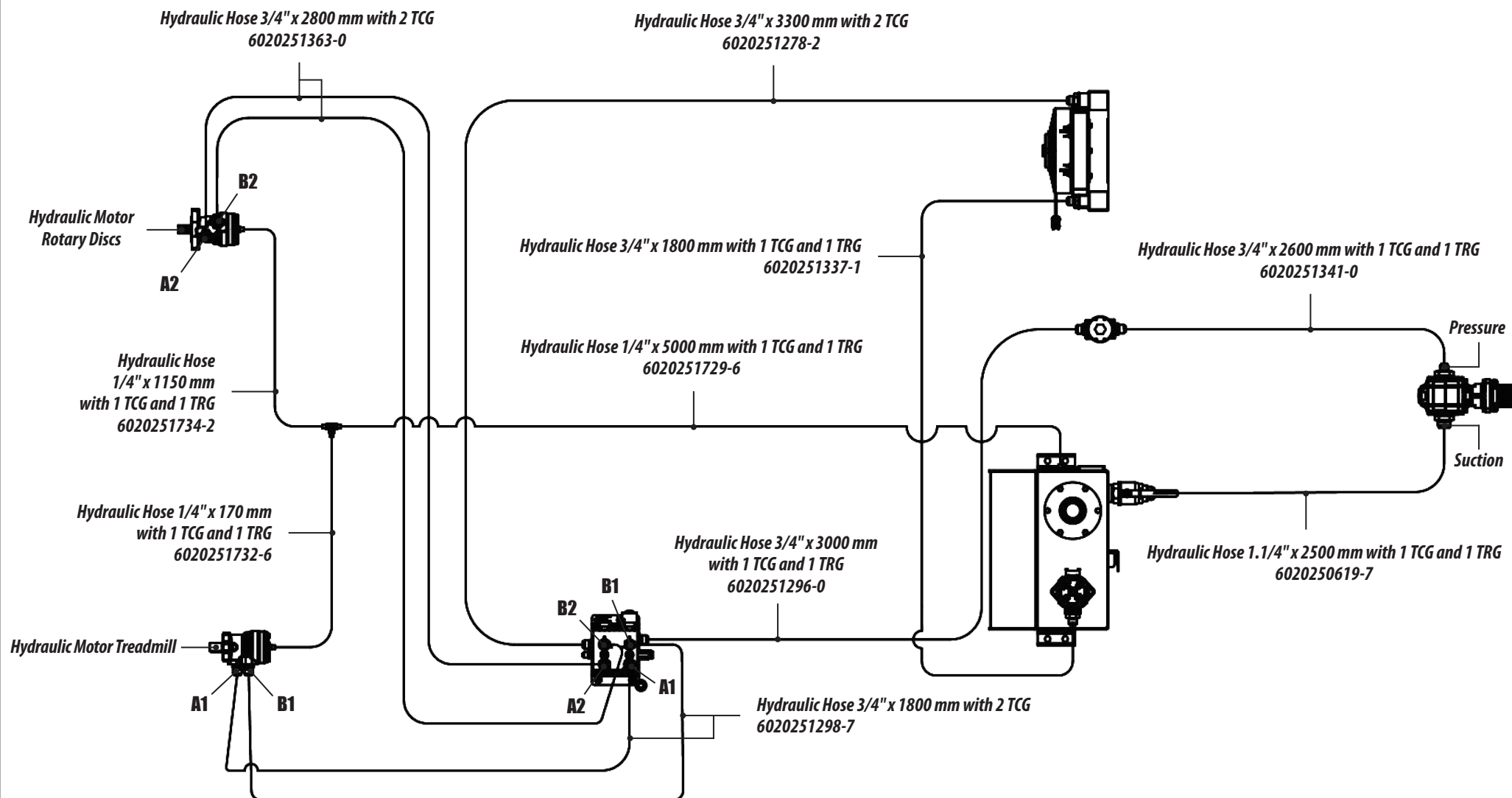
*Do not allow people, animals or children to stay close or under FERTILIZA during the transportation supports replacement procedure. Ignoring this warning may cause severe accidents or even death.*

## ASSEMBLY

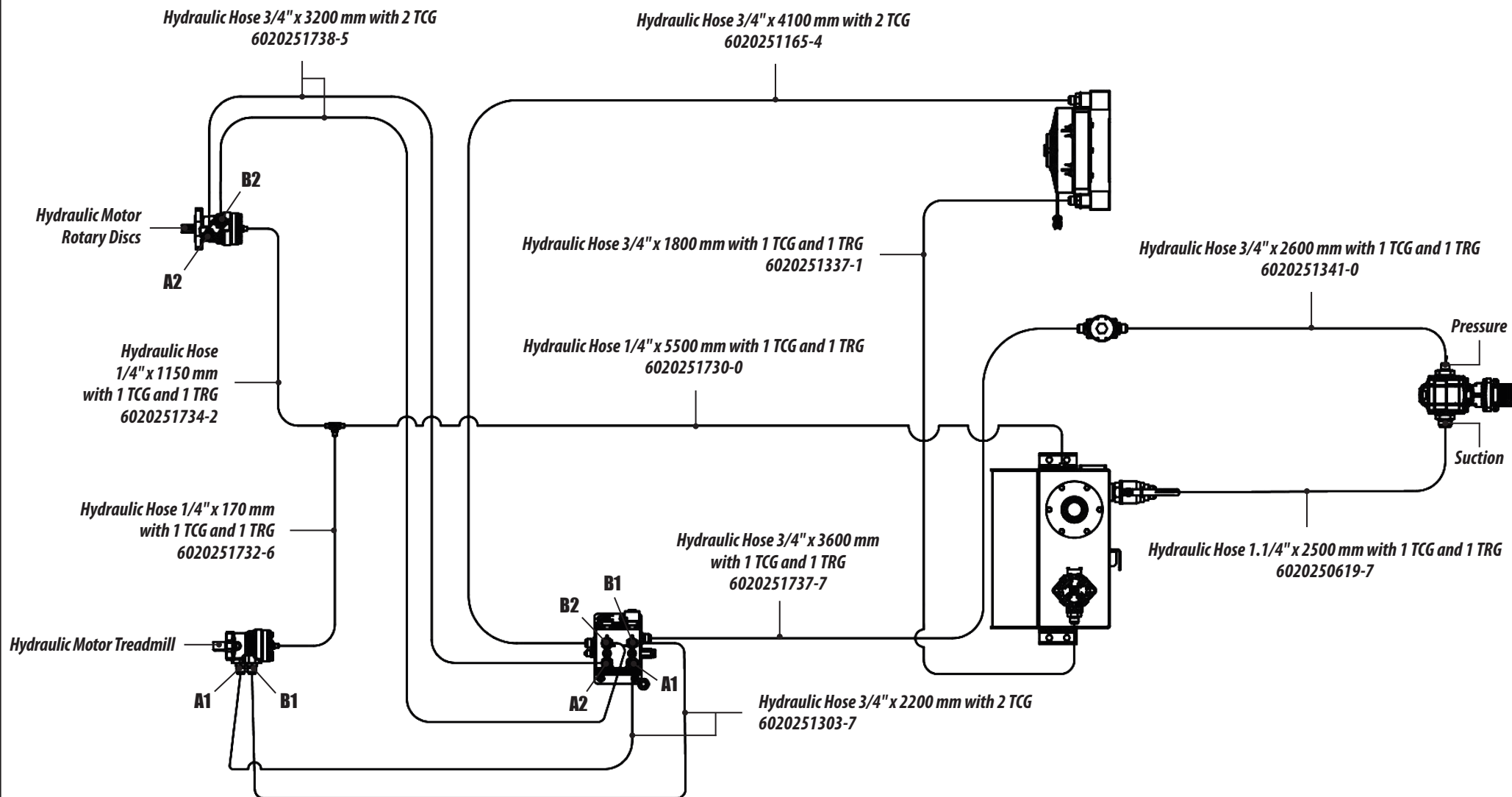
# ASSEMBLY

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

## HIDRAULIC SYSTEM ASSEMBLY "FLOATING RATE" - FERTILIZA 6M<sup>3</sup>



## HIDRAULIC SYSTEM ASSEMBLY "FLOATING RATE" - FERTILIZA 8M<sup>3</sup>



# ASSEMBLY



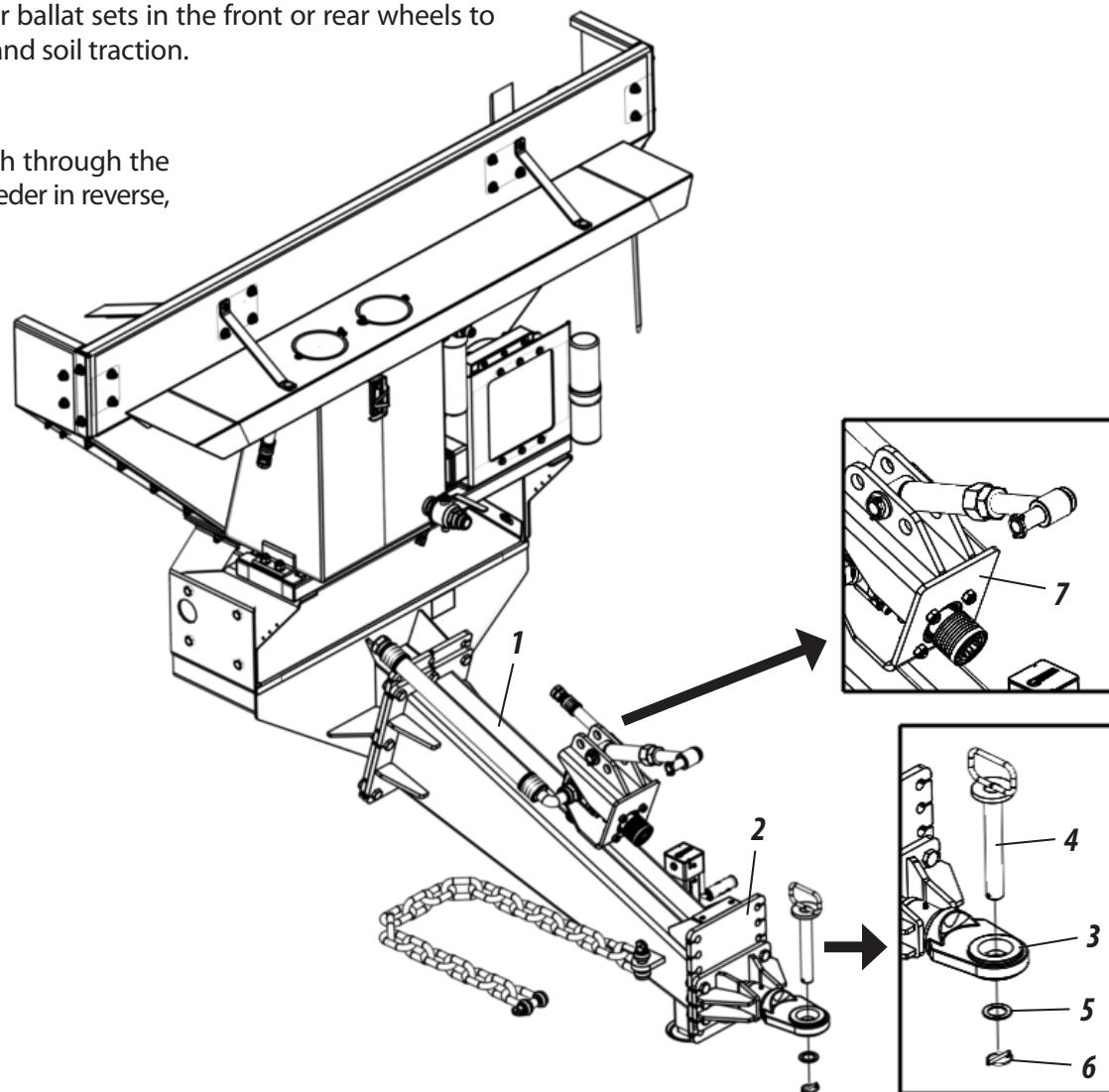
# HITCH

## TRACTOR HITCH - PART I

Before engaging **FERTILIZA** in the tractor, check if the tractor has weight or ballast sets in the front or rear wheels to avoid lifting the tractor. Rear wheels will give greater stability to the tractor and soil traction.

To engage **FERTILIZA**, proceed as follows:

- 1- Level the Header Hook (1) of **FERTILIZA** in relation with the tractor hitch through the adjustments (2) of the Hook (3). Next, slowly approach the tractor to the seeder in reverse, being aware when to use the brakes.
- 2- Engage **FERTILIZA** hitch to the tractor by attaching it through the hitch pin (4), plain washer (5) and lock (6).
- 3- Engage the pump (7) in the tractor's TDP.



### IMPORTANT

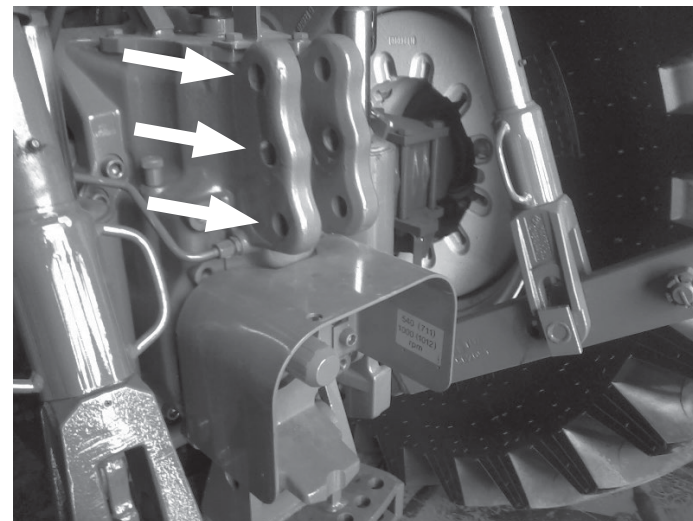
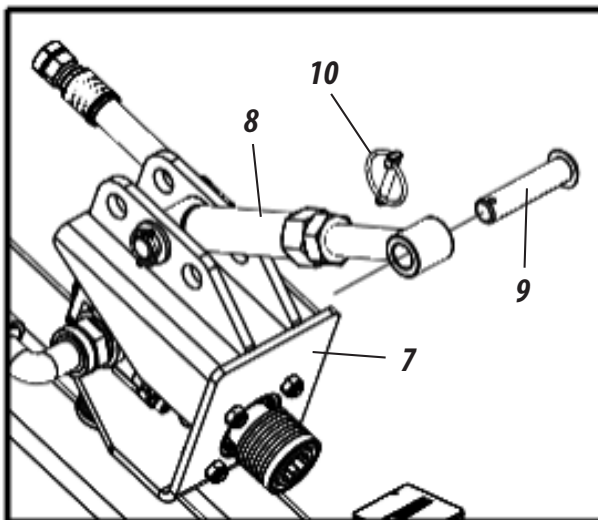
*When hitching FERTILIZA up, look for a safe place and easy access, always use low gear with low acceleration.*

### TRACTOR HITCH - PART II

- 4- After engaging **FERTILIZA**, secure the adjuster (8) to the various tractor hitching points through the pin (9) and ring lock (10).

### ⚠ ATTENTION

*The adjuster (8) is used to secure the support and the hydraulic pump (7), not letting them loose or rotating, that's why we recommend to not work with Fertiliza without rst securing the adjuster (8) in the tractor.*



- 5- Finalize the hitching of **FERTILIZA** to the tractor securing the safety chain (11) in the tractor.

### ⚠ ATTENTION

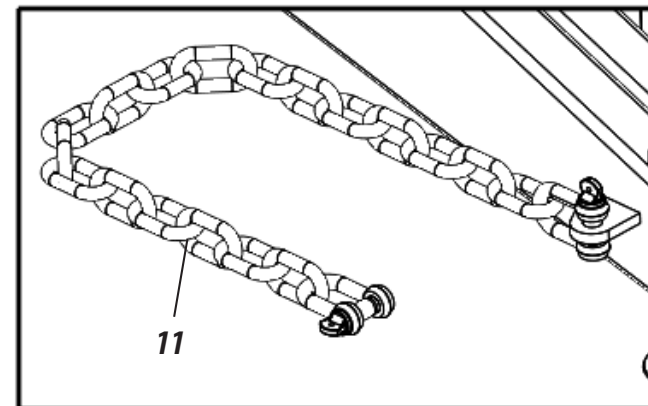
*The safety chain (11) provides greater safety during works preventing the Fertilizer from disengaging from the tractor in case of breakage of the hitch pin. This way, we recommend to not work with Fertiliza without securing the safety chain (11) rst.*

### 🔍 IMPORTANT

*When performing the hydraulic pump (7) coupling in the tractor's TDP, open the hydraulic oil reservoir suction register. Ignoring this warning may cause damages to the hydraulic pump (7).*

### 👁 OBSERVATION

*When completing Fertiliza hitching, level it according to the instructions in the following page.*



## HITCH

# LEVELLING

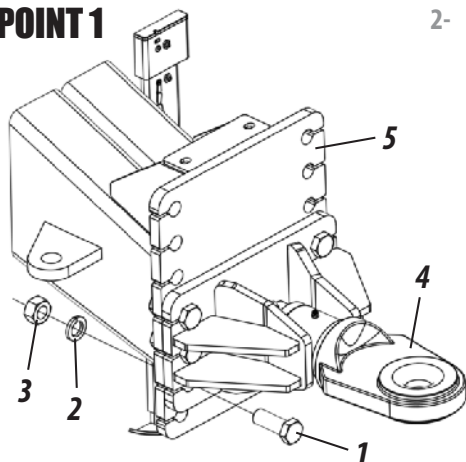
## DISTRIBUTOR LEVELLING

**FERTILIZA** offers 2 levelling points: **Point 1:** Hook and **Point 2:** Base of the Header Hook.

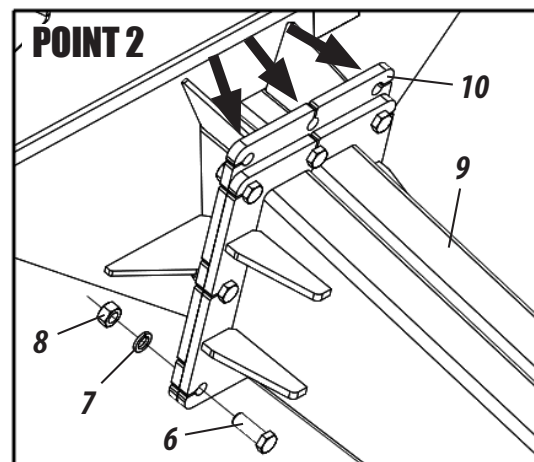
To level **FERTILIZA**, proceed as follows:

- 1- First, place the tractor and Fertiliza in a plain location.

### POINT 1



- 2- After, adjust in point 1, loosening the screws (1), pressure washers (2) and nuts (B), adjust the shackle (4) in the header's holes (5).



- 3- Then, if necessary, adjust in point 2, loosening the screws (6), pressure washers (7) and nuts (8), adjust the header (9) in the upper point of the base (10).

- 4- After levelling, observe **FERTILIZA** from the side, verifying the longitudinal levelling (length) in relation to the ground.



## ATTENTION

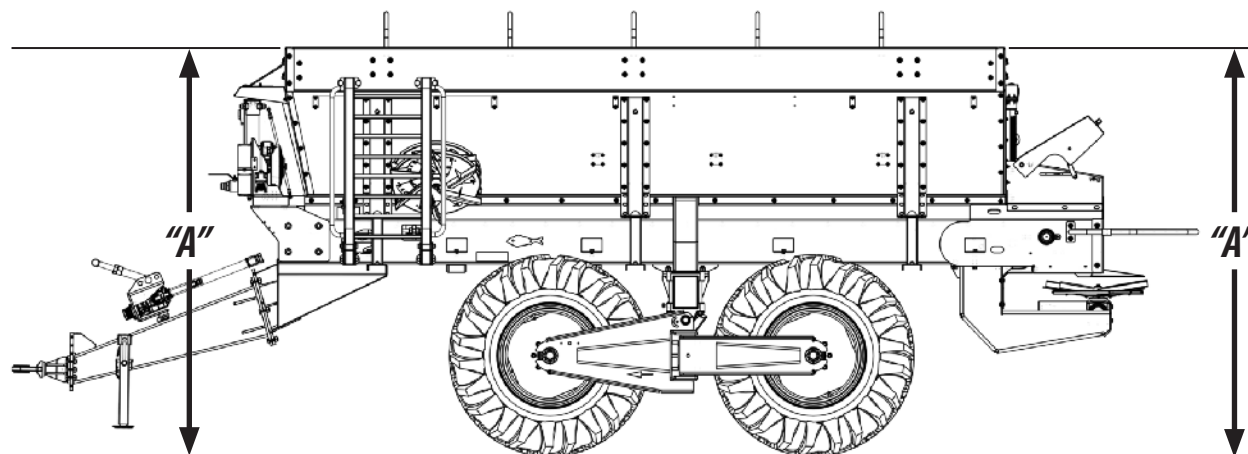
*If Fertiliza is not properly leveled, it will not have a good performance and may suffer structural damages.*



## IMPORTANT

*Read the instructions manual of the tractor and make sure of the positions in which you can work with the drawbar.*

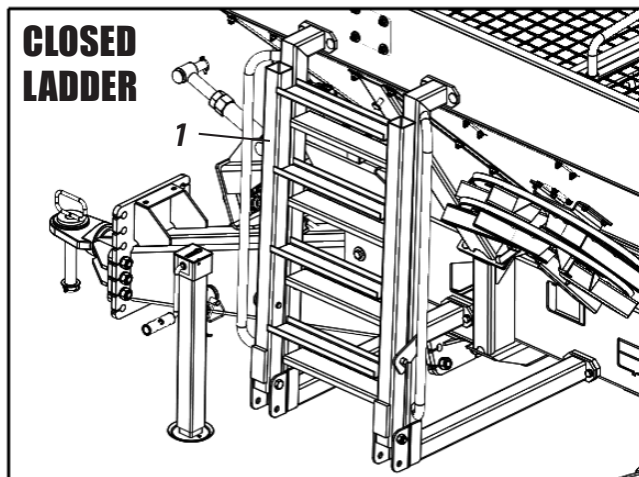
## LONGITUDINAL LEVELLING



### USE OF LADDER - FERTILIZA 6m<sup>3</sup> AND FERTILIZA 8M<sup>3</sup>

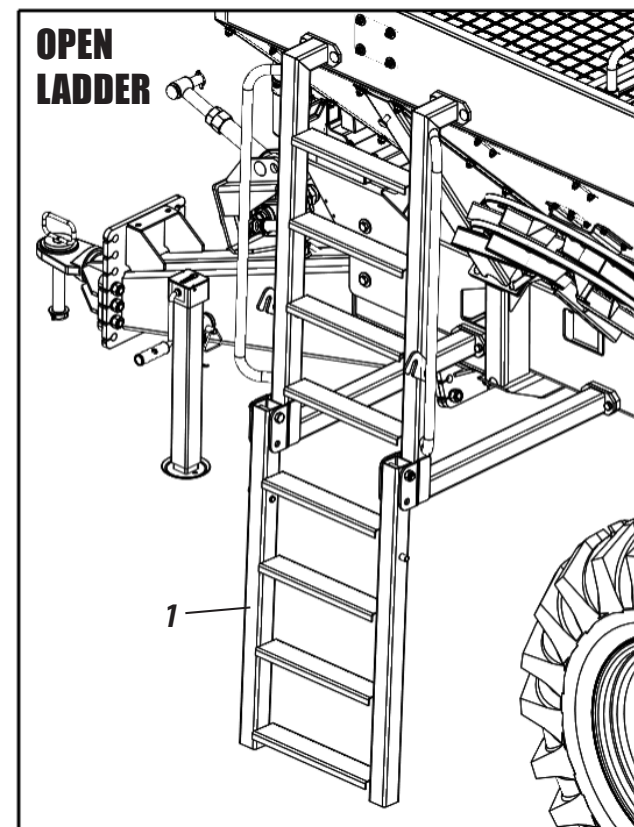
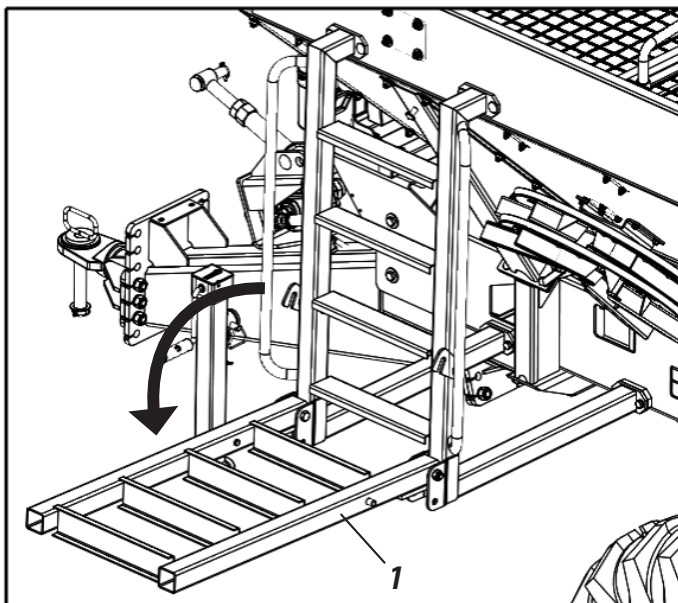
**FERTILIZA** has ladder (1), which should be used only when loading it or when performing maintenance in the fertilizer storage. To use it, proceed as follows:

- 1- Lift the lock (2), unlocking the ladder (1).
- 2- Next, articulate the ladder (1) by lowering it.
- 3- When nish using the ladder (1), do the reverse by closing and locking it.



**CLOSED  
LADDER**

**WORK OR TRANSPORT POSITION**



**OPEN  
LADDER**

**POSITION FOR LOADING OR  
PERFORM MAINTENANCE IN TANK**



### ATTENTION

*Do not stay on the ladder when Fertiliza is in operation or being transported.*

*Do not operate or transport Fertiliza with the open ladder.*

*Only use the ladder to go up Fertiliza because it has anti slip steps. Ignoring these warnings may cause severe accidents or death.*



### IMPORTANT

*To access or perform maintenance in the dumpster, always use the stair.*

## LADDER

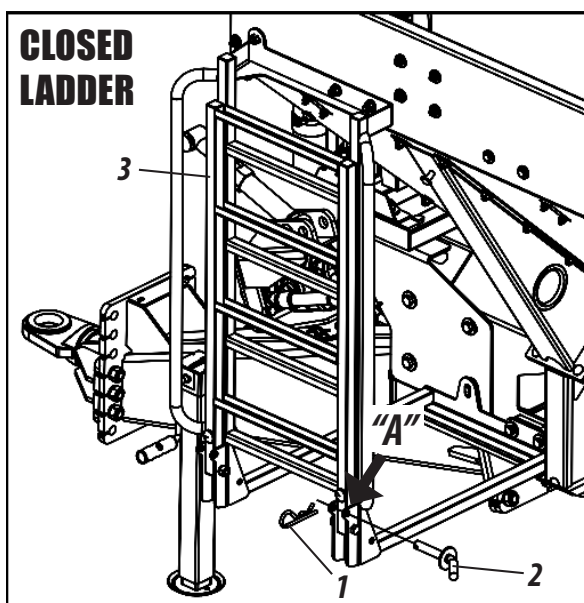


# LADDER

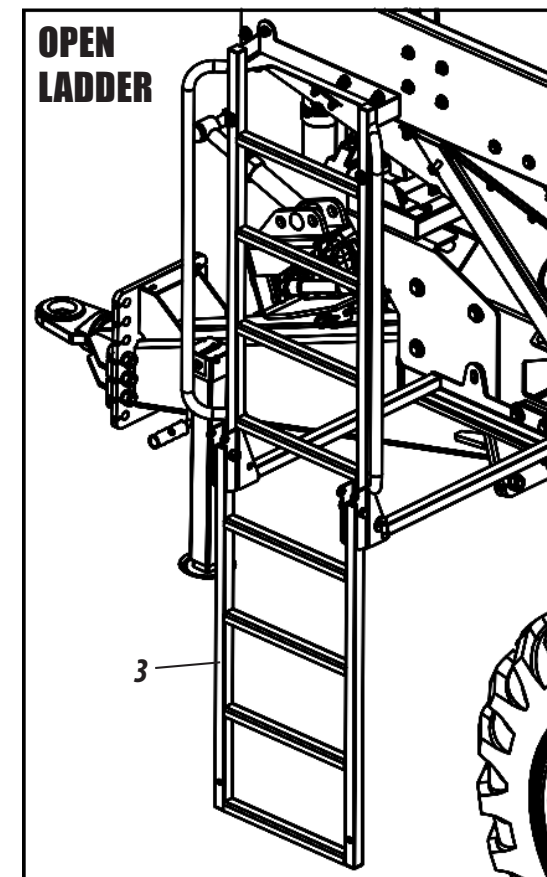
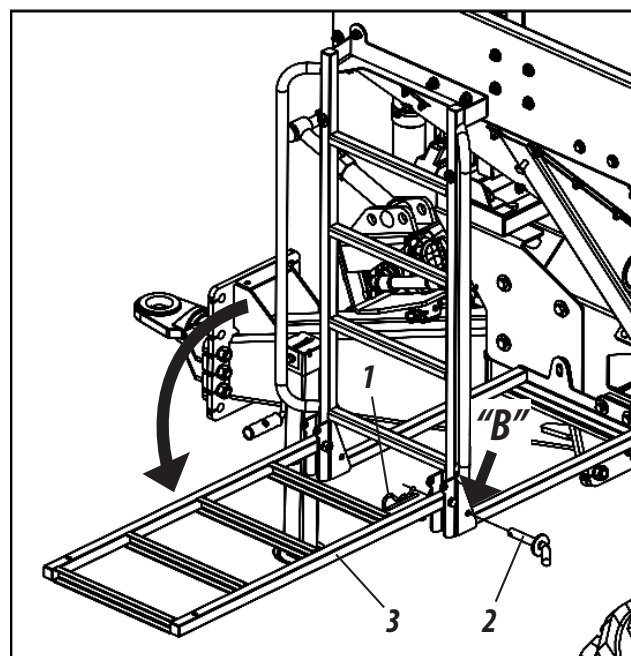
## USE OF LADDER - FERTILIZA 6m<sup>3</sup> WITH TIRES 12.4.24 / RIM W 10" X 24"

**FERTILIZA** has ladder (1), which should be used only when loading it or when performing maintenance in the fertilizer storage. To use it, proceed as follows:

- 1- Release the lock (1) and remove the pin (2) from point "A" unlocking the ladder (3).
- 2- Then, articulate the ladder (3) by lowering it and place the pin (2) and lock (1) in point "B".
- 3- When you are finished using the ladder (1), do the reverse, closing and locking it.



**WORK OR TRANSPORT POSITION**



**POSITION FOR LOADING OR  
PERFORM MAINTENANCE IN TANK**



### ATTENTION

*Do not stay on the ladder when Fertiliza is in operation or being transported.*

*Do not operate or transport Fertiliza with the open ladder.*

*Only use the ladder to go up Fertiliza because it has anti slip steps. Ignoring these warnings may cause severe accidents or death.*



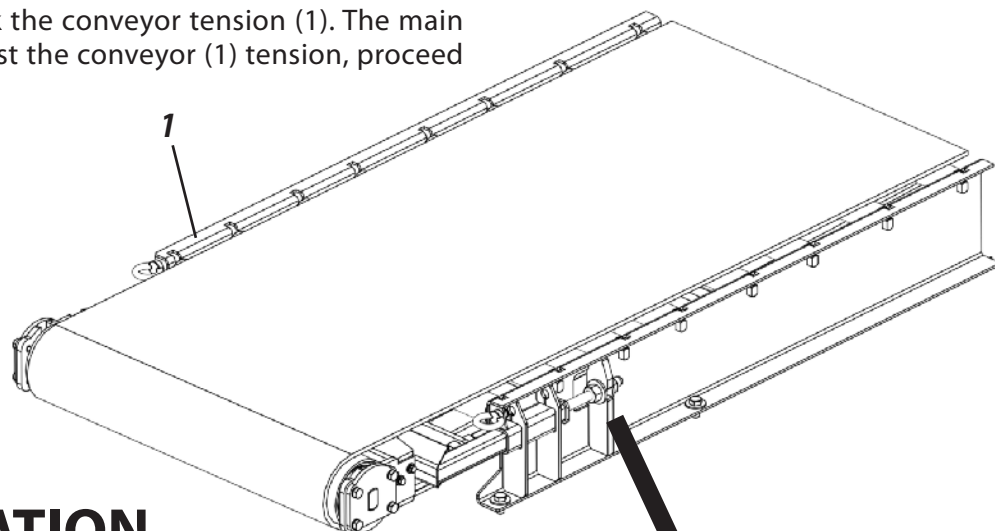
### IMPORTANT

*To access or perform maintenance in the dumpster, always use the stair.*

## CONVEYOR TENSION ADJUSTMENT

Before placing any type of product on **FERTILIZA** tank, we recommend to check the conveyor tension (1). The main consequence of a lack of a proper tensioning is the conveyor skating (1). To adjust the conveyor (1) tension, proceed as follows:

- 1- First, turn o Fertiliza and the tractor's motor.
- 2- Then, make sure Fertiliza is empty, if not, empty it.
- 3- After, press the conveyor from the bottom up and observe if there is a gap of up to 50 mm in relation to the bottom of Fertiliza (base of the conveyor).
- 4- If there is a larger gap, adjust the tension of the conveyor through the stretchers (2), loosening or tightening the locknut (3) adjusting the bearing position (4).



### **ATTENTION**

*When adjusting the conveyor tension, adjust both sides evenly, avoiding the conveyor misalignment.*

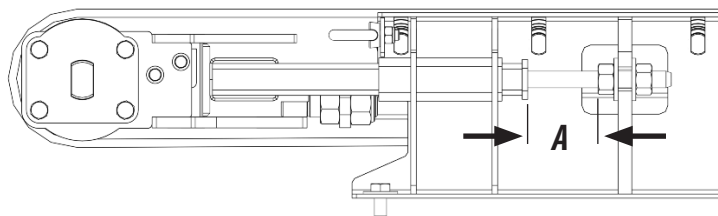
*In the rst hours of work, check the conveyor tension and then perform a daily check.*

### **OBSERVATION**

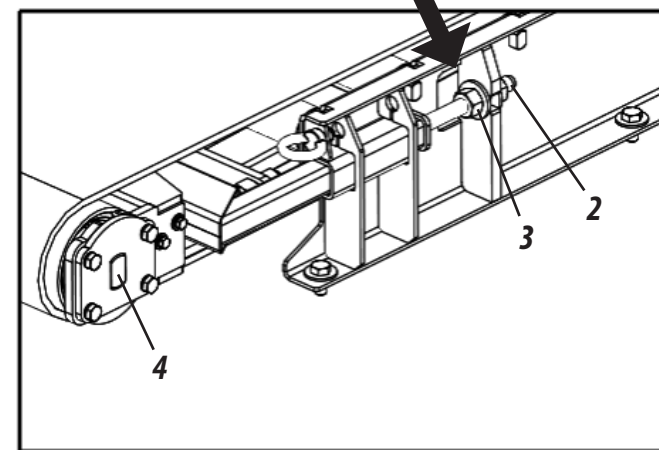
*Before loading Fertiliza with any product, check its purity, avoiding objects such as rocks or other materials from damaging the rubber conveyor during distribution.*

### **IMPORTANT**

*When there is no possibility of stretching the conveyors because the tensioners have reached the end of the thread stroke, replace the conveyor.*



Use **distance "A"** as a parameter, which should be the same on both sides.



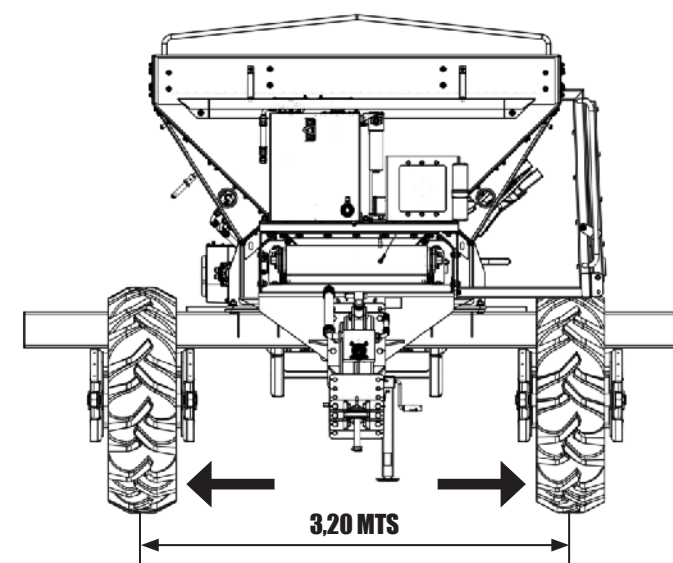
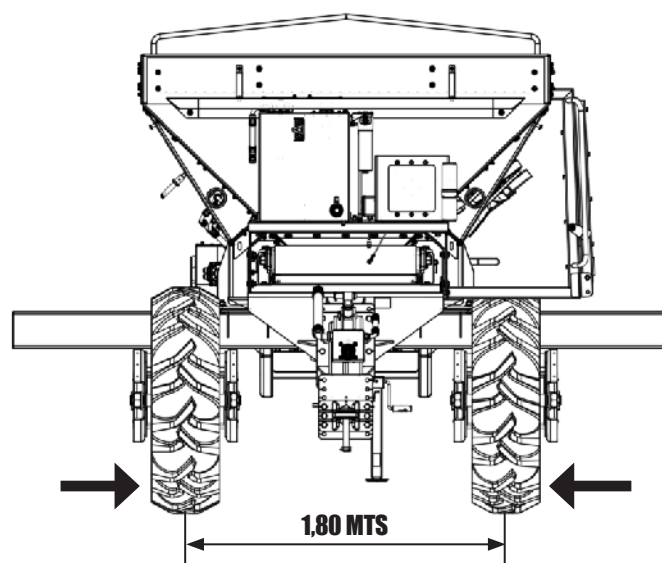
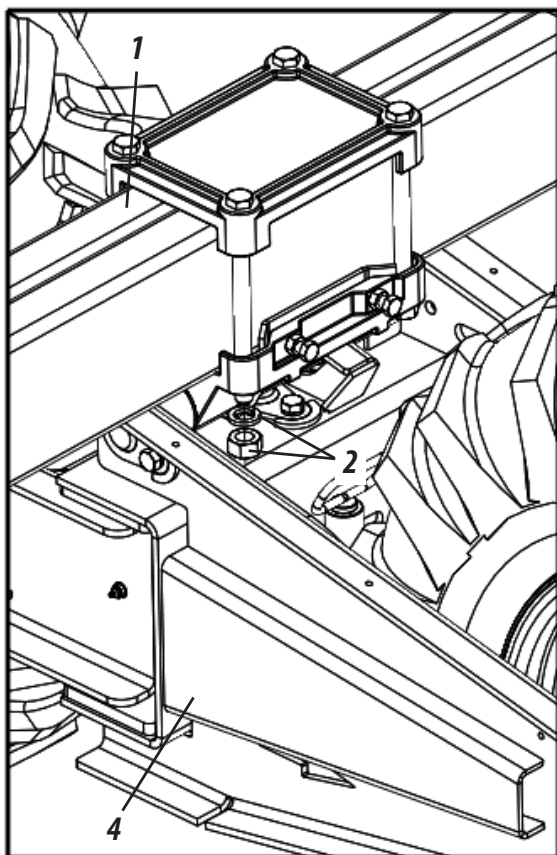
## ADJUSTMENTS

# ADJUSTMENTS

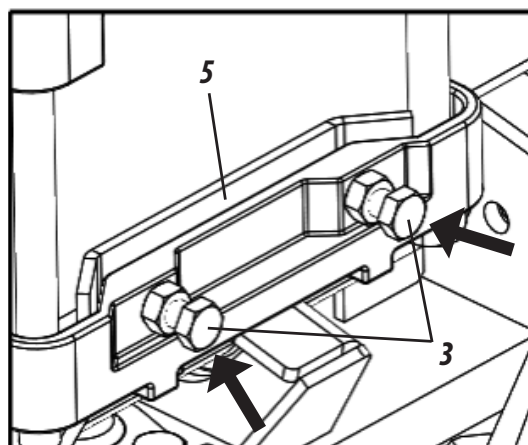
## GAUGE ADJUSTMENT

**FERTILIZA** has a gauge adjustment system 1.80 to 3.20 meters to match the spacing of the planting lines from various cultures. To adjust the gauge, proceed as follows:

- 1- First, make sure that Fertiliza tank is empty, if not, empty it.



- 2- Next, in a steady surface, lift one side at a time of **FERTILIZA** with a jack supporting the rocker arm bracket (1).



- 3- Then, loosen the nuts and washers (2) and screws (3) and displace the wheels set (4) to the gauge desired position.
- 4- Soon after positioning the wheels set (4), retighten nuts and washers (2).
- 5- After, tighten the screws (3) adjusting the support bar (5) to the rocker arm bracket (1), eliminating the gap.
- 6- Complete it lowering the ground besides **FERTILIZA** that was suspended. Proceed in the same way on the other side of **FERTILIZA**.



**IMPORTANT**

*When adjusting the gauge, it should be measured on both sides.*



## DISTRIBUTION ADJUSTMENT

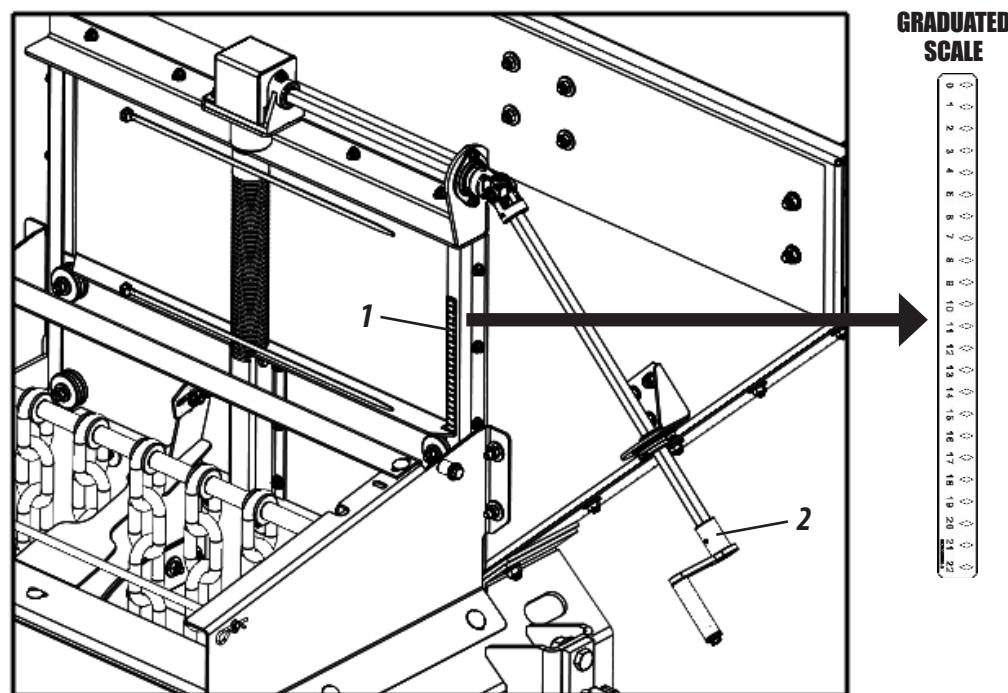
Distribution of fertilizers, seeds, or correctives is bound to several factors, such as gate opening, conveyor speed, **FERTILIZA** travelling speed, and adjustment of the disc's vanes dening the width of the distribution. **FERTILIZA** can be provided in three distribution adjustment options:

1. Distribution system with xed rate and interface for controlling the oil ow of the hydraulic system according to variation of tractor's speed, maintaining application rate constant and uniform.
2. Distribution system with oating rate with GPS, monitor with mapping system allowing the application of the product according to productivity maps or harvest yield, in the precision agriculture concept.
3. Distribution system with oating rate with GPS, monitor with mapping system, interface system with the hydraulic system, providing the application of specic rates in each point of the eld, based on yeld maps prepared during harvest, in the precision agriculture concept.

## FLOW GATE ADJUSTMENT

**FERTILIZA** has ow gate that, through a graduated scale (1), adjusts the amount of product to be distributed. To adjust the product ow, proceed as follows:

- 1- Turn the handle (2), adjusting the opening or closing of the gate according to the graduated scale (1).



## ADJUSTMENTS

# ADJUSTMENTS

## TYPES OF CALCULATIONS

For greater precision in distribution, measure the quantity to be distributed on site, because there is a condition on each land, in addition to the characteristics of the products to be distributed that may change, such as specific weight, granulometry, moisture conditions and others. Use the formulas below, according to the required information.

## RULE OF THREE

Use the rule of three beside to calculate the distribution:

**Formula:** 
$$\begin{array}{ccc} 2000 \text{ m}^2 & \swarrow \searrow & 50 \text{ kg} \\ 10000 \text{ m}^2 & \nwarrow \nearrow & X \end{array}$$
 **Where:**  $X = \frac{10.000 \times 50}{2.000} = 250 \text{ kg/ha}$

## WORK SPEED

To convert the timed interval in km/h, use the following calculation:

**Formula:** 
$$\text{Km/h} = \frac{\text{Distance travelled} \times 3.6}{\text{Spent time in seconds}} = \text{Speed km/h}$$

**Where:** 
$$\text{Km/h} = \frac{50 \text{ meters} \times 3.6}{25 \text{ seconds}} = 7.2 \text{ km/h}$$

**Note:** The value 3.6 is the conversion factor from meters per second to km/h.

## DOSAGE OF KILOS PER MINUTE

Use the following formula to calculate dosage in pounds per minute to be distributed by Fertiliza regarding: **Work width / Work speed and Dosage per hectare to be distributed.**

**Formula Data:** VT - Work Speed  
LT - Work Width  
D - Dosage

**Where:** 
$$\text{Km/h} = \frac{7 \text{ km/h} \times 40 \text{ m} \times 450 \text{ kg/ha}}{600} = 210 \text{ kg}$$

**Formula:** 
$$\text{Output in kg/minute} = \frac{\text{VT} \times \text{LT} \times \text{D (kg/ha)}}{600} = \text{Value kg}$$

**Collect the product distributed and the timed interval.**

### EXCLUSIVE COMPONENTS FOR EACH TYPE OF PRODUCT

**FERTILIZA** has two work settings that, according to the necessity, may be set:

- **Setting 1:** Powder distribution.
- **Setting 2:** Grains and seed distribution.

Each setting has differentiated components in the dispenser set that should be properly assembled for **FERTILIZA** operation.

### SETTING 1: POWDER DISTRIBUTION

For the powder distribution, it is fundamental that the components below are assembled in **FERTILIZA** distributor set.

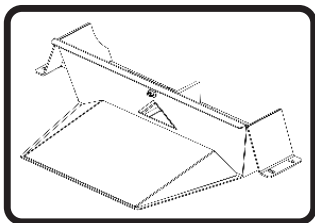
#### DISPERSER CHAINS

The dispenser set has a disperser chain set positioned next to the ow gate with the purpose of dissociate the powder products (limestone, plaster, etc.), allowing a homogeneous distribution. When using **FERTILIZA** for the application of powder products, the chains should remain loose.

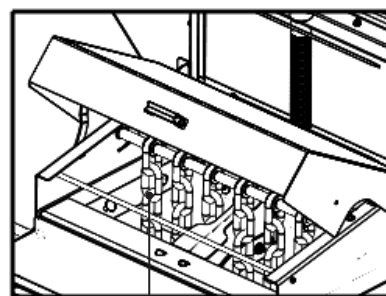
#### POWDER DISTRIBUTOR DISCS (LIMESTONE AND PLASTER)

The powder distributors discs should be secured in the triple box through angles, pressure washers and screws, using caution to t the grooves of the discs to the splines.

### ! ATTENTION

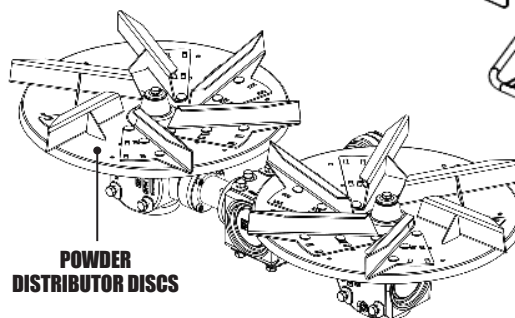


*When assembling the conguration for powder distribution, remove the deector for grainy products and seeds that is factory installed in **FERTILIZA**. Its non-removal will aect the powder distribution.*

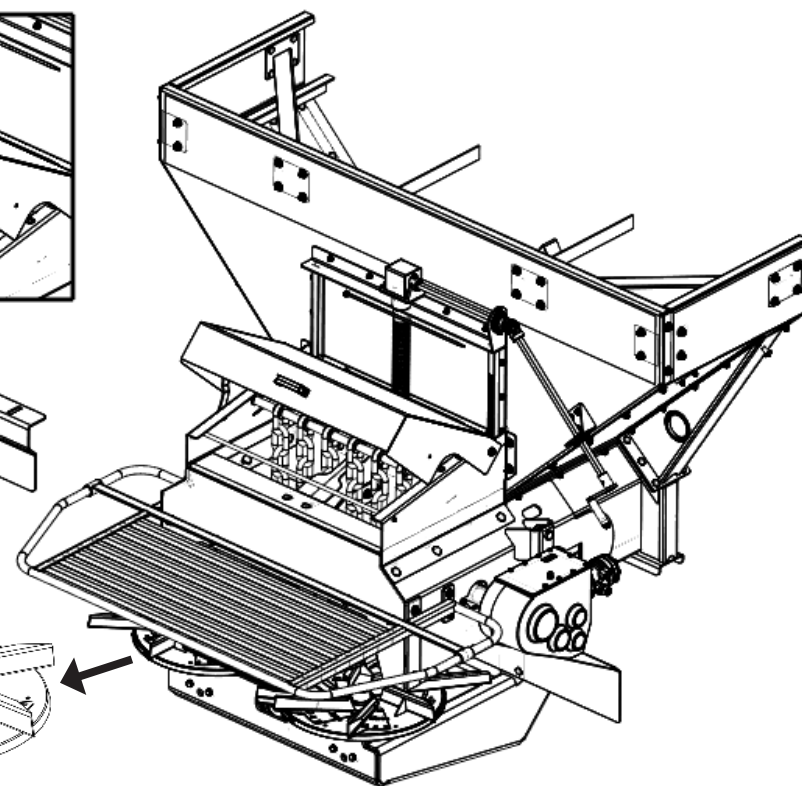


DISPERSER CHAINS  
(LOOSE)

DEFLECTOR BAFFLE



POWDER  
DISTRIBUTOR DISCS



## ADJUSTMENTS

# ADJUSTMENTS

## SETTING 2: GRAIN AND SEED DISTRIBUTION

For the grain and seed distribution, it is fundamental that the components below are assembled in **FERTILIZA** distributor set.

### DISPERSER CHAINS

The dispenser set has a disperser chain set positioned next to the ow gate with the purpose of dissociate the powder products (limestone, plaster, etc.), allowing a homogeneous distribution. When using **FERTILIZA** for the application of grainy products or seeds, the chains should remain tighten.

### GRAIN OR SEED DISTRIBUTION DISCS

The grain or seed distributors discs should be secured in the triple box through angles, pressure washers and screws, using caution to fit the grooves of the DISCS to the splines.

### FLOW DIVIDER PLATE

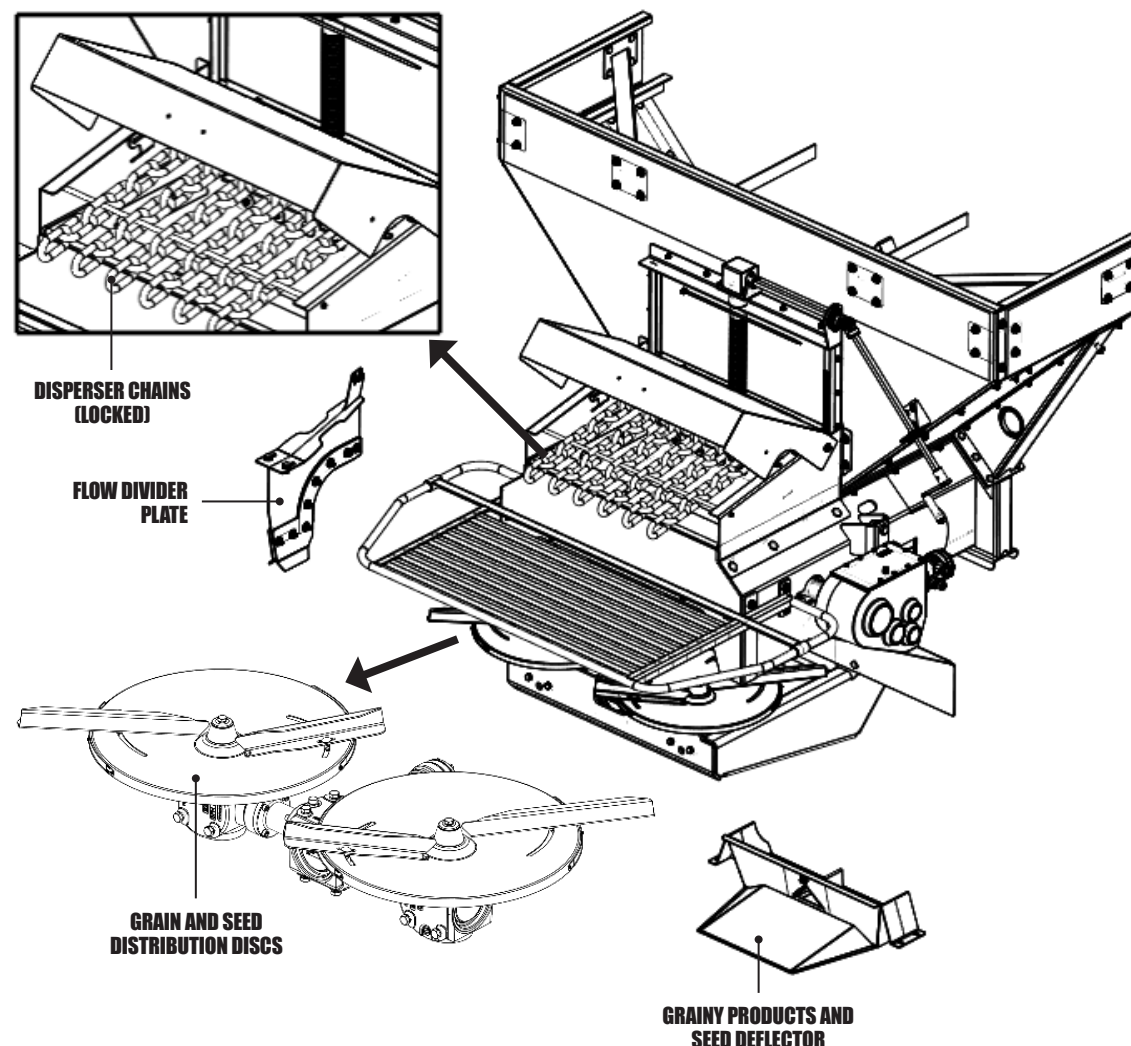
The ow divider plate is used to equalize the amount of grainy products at the deposition hopper to the distributor discs during the operation.

The ow divider plate should be jointly assembled with the deflector for grainy products or seed.

### GRAINY PRODUCTS AND SEED DEFLECTOR

The grainy products and seed deector has the purpose of directing the product to the discs allowing the vanes discs to perform the distribution in the area determined evenly.

The grainy products and seed deector should be assembled jointly with the ow divider plate, which is positioned in the output center of the conveyor to equalizer the amount of grainy product and seed to the deflector set.

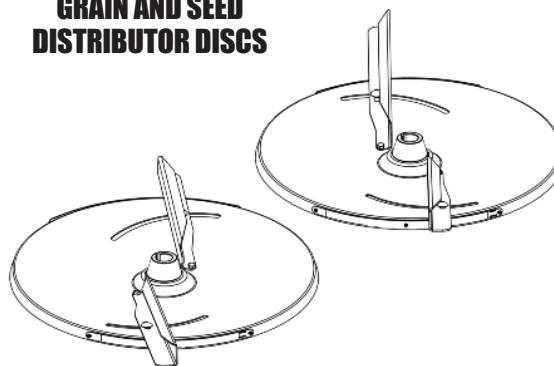


### DISTRIBUTOR DISCS

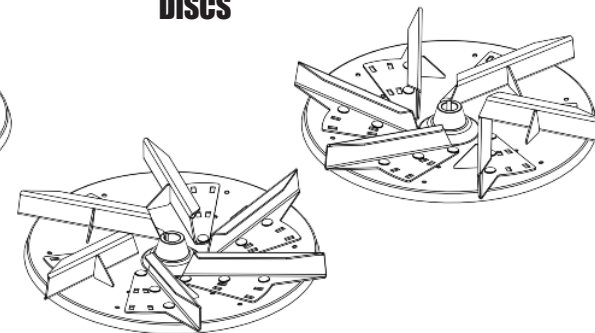
FERTILIZA leaves the factory with 2 types of distributor discs: **GRAIN AND SEED DISTRIBUTOR DISCS** and **POWDER DISTRIBUTOR DISCS**.

**GRAIN AND SEED DISTRIBUTOR DISCS** are factory-mounted in FERTILIZA and the **POWDER DISTRIBUTOR DISCS** are secured to its side.

**GRAIN AND SEED DISTRIBUTOR DISCS**



**POWDER DISTRIBUTOR DISCS**



### POSITION OF VANES IN THE GRAIN AND SEED DISTRIBUTION DISCS

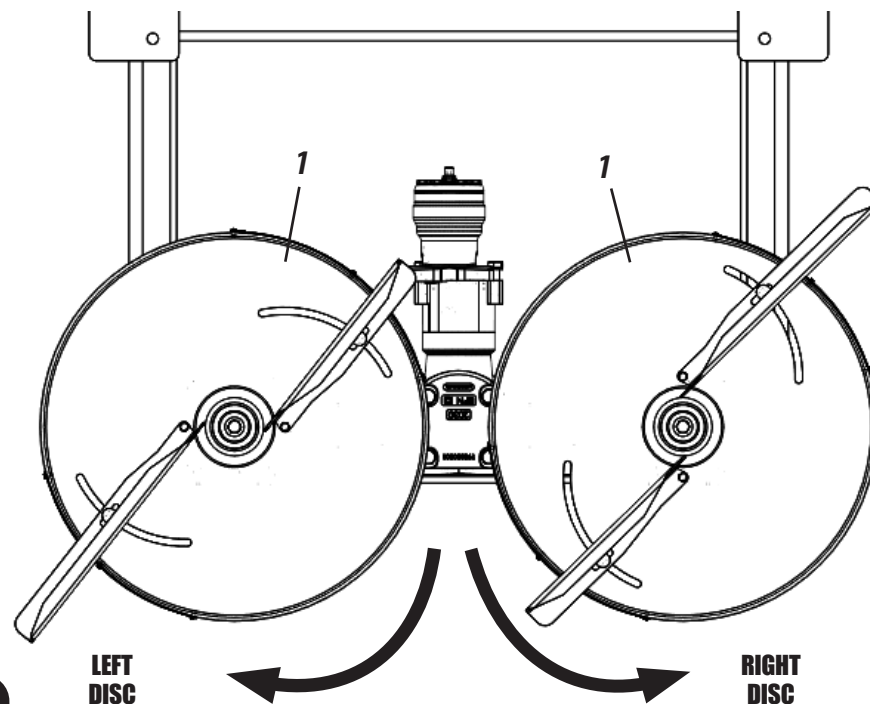
To ensure the uniformity in the distribution, the correct assembly of the distributors discs (1) is indispensable.

### ⚠ ATTENTION

*The vanes should respect the rotation direction of the triple box, shown in the direction of the arrows in figure side, that is, the aps should be facing out. If the left disc vanes are assembled on the right disc and vice versa, the distribution will be totally wrong.*

*When replacing the disc's vanes, pay attention since there is a set for the left disc and another for the right one. They could be easily inverted because they fit on either side, however, they should follow according to figure side for a proper operation.*

*For grainy products, it is indispensable the use of the sieve to provide a more uniform distribution.*



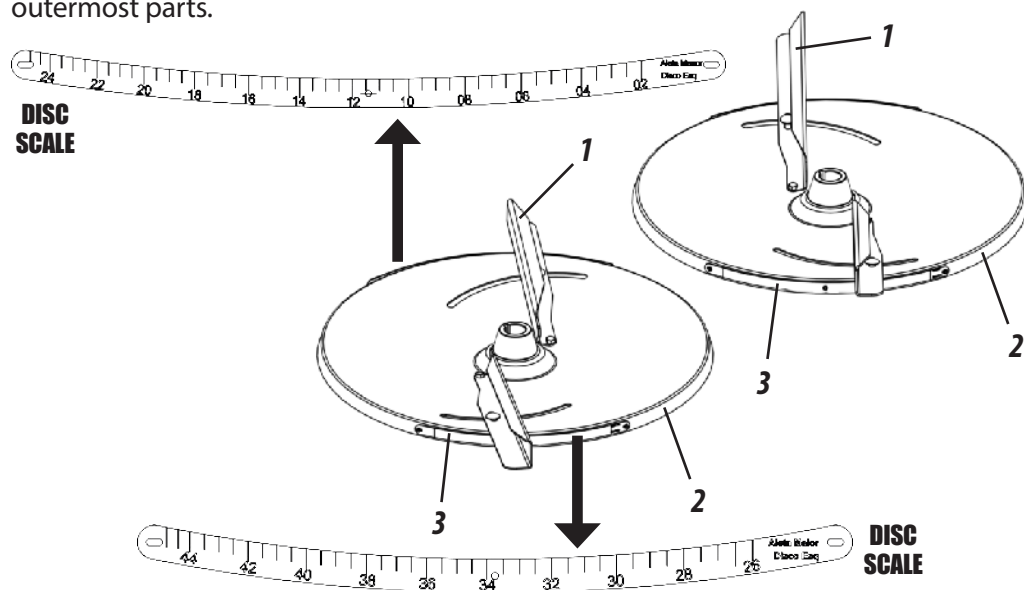
### ADJUSTMENTS



# ADJUSTMENTS

## ADJUSTMENT OF VANES IN THE GRAIN AND SEED DISTRIBUTION DISCS

The adjustment of the vanes (1) of the distributors discs (2) are performed respecting the scale (3) attached to the side of the distributor discs (2), this way, the higher the number in the scale (3), larger the work width will be. The shorter vanes (1) distribute the product predominantly in the central strip of the prole, while the longer vanes (1) distribute in the outermost parts.



**Example:** To work with UREA 45% N with 24 m work width, the vanes with adjustment should be used:

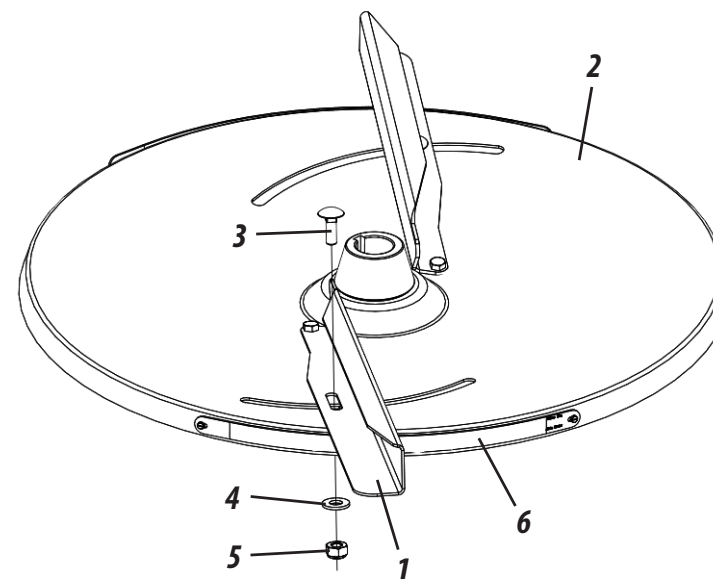
- Position of the smaller vane: **06**
- Position of the larger vane: **39**

Product	Diameter Grain (mm)	Specific grain weight (kg/l)	Work Width				
			24	27	30	32	36
UREA / UREA 45% N	2,28	0,78	06/39	-	-	-	-

## ANGLE ADJUSTMENT OF VANES IN THE GRAIN AND SEED DISTRIBUTION DISCS

To adjust the angle of the vanes (1) of the distributor discs (2), proceed as follows:

- 1- Loosen the screws (3), pressure washers (4), and nuts (5).
- 2- Next, adjust the vanes (1) respecting the scale (6).
- 3- Then, loosen the screws (3), pressure washers (4), and nuts (5).

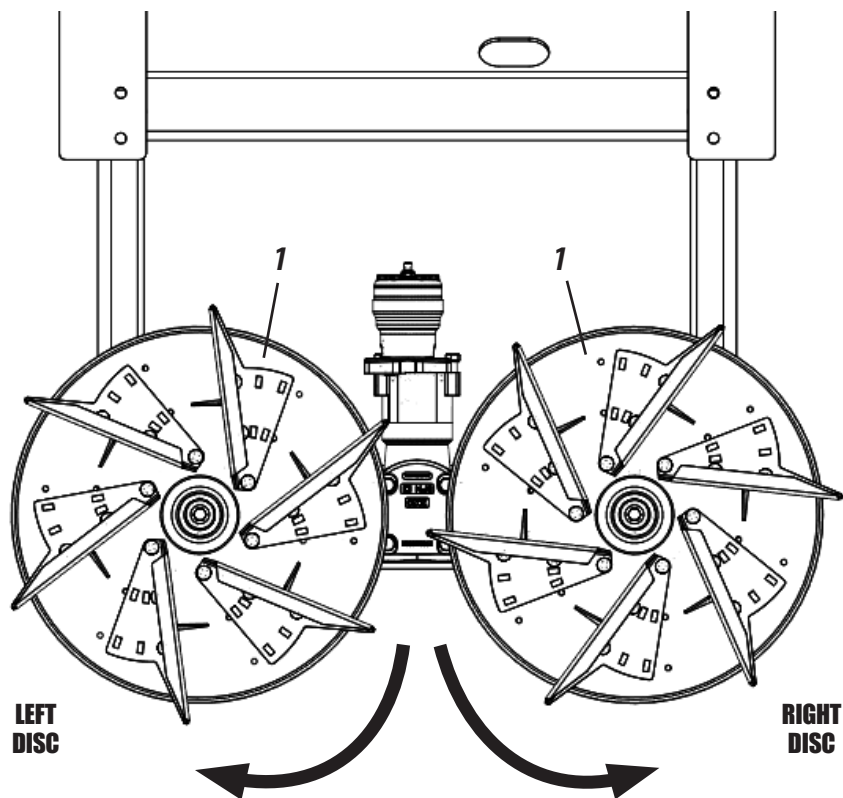


## ! ATTENTION

*Before performing the vanes adjustment (1), make sure that the tractor motor is o and that the ignition key has been taken out. Only perform adjustment of the vanes (1) when the distributor discs (2) are stopped.*

### POSITION OF VANES IN THE POWDER DISTRIBUTION DISKS

To ensure the uniformity in the distribution, the correct assembly of the distributors discs (1) is indispensable, **according to figure below.**



**! ATTENTION**

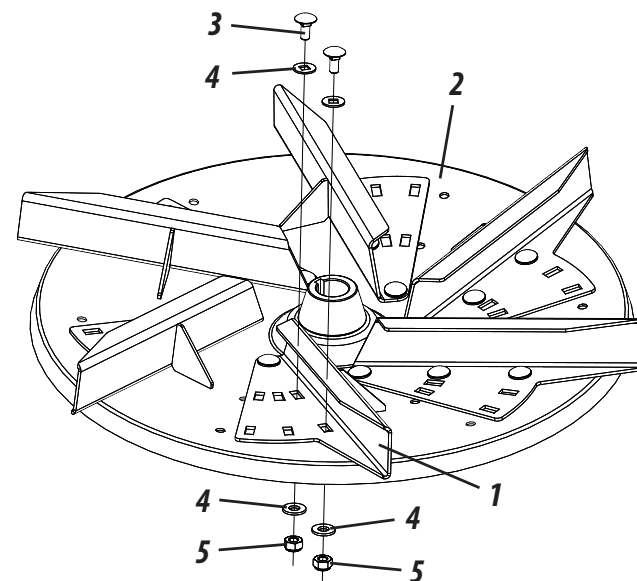
*For powder and seeds, it is indispensable the use of the sieve to provide a more uniform distribution.*

### ADJUSTMENTS

### ADJUSTMENT OF VANES IN THE POWDER DISTRIBUTION DISKS

To adjust the angle of the vanes (1) of the distributor discs (2), proceed as follows:

- 1- Loosen the screws (3), pressure washers (4), and nuts (5).
- 2- Next, adjust the vanes (1) according to the work necessity.
- 3- Then, tighten the screws (3), plain washers (4), and nuts (5).



**! ATTENTION**

*Before performing the vanes adjustment (1), make sure that the tractor motor is o and that the ignition key has been taken out. Only perform adjustment of the vanes (1) when the distributor discs (2) are stopped.*



# ADJUSTMENTS

## ANGLE ADJUSTMENT OF VANES IN THE POWDER DISTRIBUTOR DISCS



### ATTENTION

*Before performing the vanes adjustment (1), make sure that the tractor motor is o and that the ignition key has been taken out. Only perform adjustment of the vanes (1) when the distributor discs (2) are stopped.*

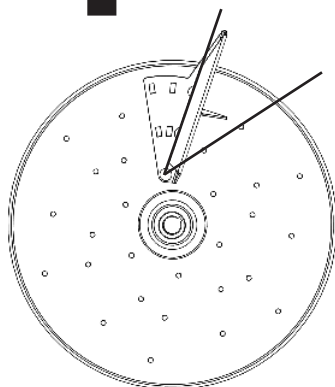
### POSITION OF VANES

To obtain the desired distance in distribution, check the possible vanes settings below.

#### LIMESTONE DISTRIBUTION:

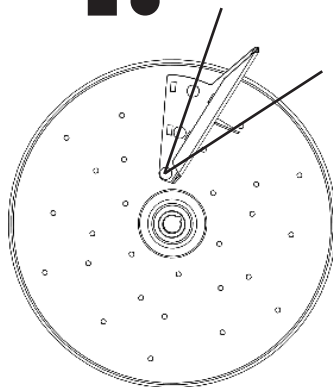
- SHORT Distribution: 7m
- AVERAGE Distribution: 10m
- LONG Distribution: 14m

**POSITION "A"**

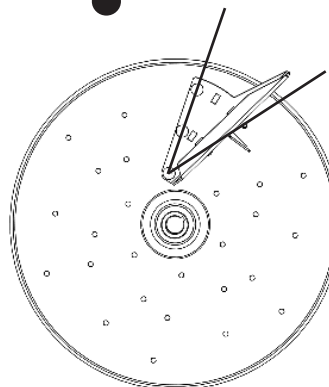


**■ LONG DISTRIBUTION**

**POSITION "B"**

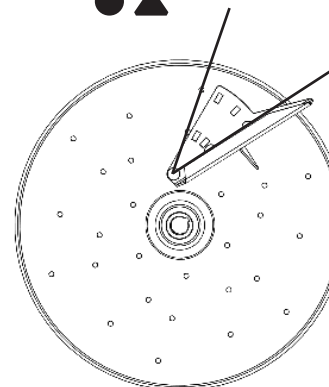


**POSITION "C"**



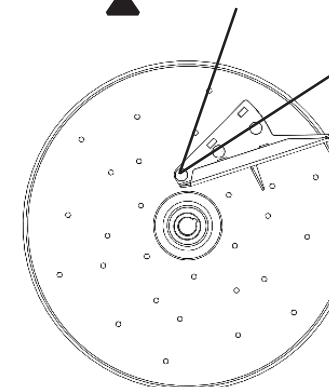
**● AVERAGE DISTRIBUTION**

**POSITION "D"**



**▲ SHORT DISTRIBUTION**

**POSITION "E"**



### IMPORTANT

*The adjustment of the vanes is according to the desired distribution width. Check the correct way to assemble the discs, which ensure uniform distribution.*

- GRAIN AND SEED DISTRIBUTOR DISCS (See page 38).
- POWDER DISTRIBUTOR DISCS (See page 40).

## DISTRIBUTION ADJUSTMENT

Fertilizers and seeds tables are indicative, that is, they are approximate to give notion of how to start the adjustment, because factors such as brand, type, density, fertilizer moisture and even the speed of movement during work are factors that can give variations in the distribution.



## ATTENTION

*Baldan is not responsible for any damages caused by improper adjustments of the devices related to the distribution of fertilizers, seeds or correctives with FERTILIZA.*

## ADJUSTMENT TABLE OF THE FERTILIZER DISTRIBUTION VANES

Product	Diameter Grain (mm)	Specic grain weight (kg/l)	Work Width				
			24	27	30	32	36
UREIA / UREA 45% N	2,28	0,78	06/39	-	-	-	-
UREIA / UREA 45% N	2,16	0,78	07/42	-	-	-	-
UREIA / UREA 46% N MANAH	2,23	0,76	11/39	12/43	28m 12/44	-	-
NPK 5-20-20 ROULLIER	2,71	1,06	-	-	12/40	12/43	-
NPK 10-10-10	-	-	-	-	06/41	06/42	-
NPK 5-20-20 MANAH	3,09	1,09	-	-	06/36	06/38	06/44
NPK 7-11-19 MANAH	2,89	0,99	-	-	09/41	13/42	14/43
AMMONIUM SULFATE 20% N	2,29	1,14	-	08/45	28m 08/45	-	-
AMMONIUM SULFATE 20% N	2,08	1,09	-	09/43	-	-	-
AMMONIUM NITRATE 2,0% N	2,17	0,98	-	-	28m 06/40 30m 07/43	-	-
SULFAMMO Hydrogenated 26% ROULLIER	3,09	0,91	-	-	13/41	13/44	13/44
Kcl 60,5%K20 Potassium Chloride	3,03	1,11	-	-	06/37	06/41	08/45
NK 30-00-20 MANAH	2,35	0,80	11/39	12/43	12/44	-	-
PK 00-20-30 SERRANA	2,43	1,26	-	-	06/36	06/40	-
NK 30-00-01 MANAH	2,23	1,26	06/39	-	06/40	07/43	07/44
FOSTAG 567 M4 PK 0-12-28	-	-	-	-	06/40	07/43	07/44
NK 36-00-12 MANAH	2,36	0,83	10/39	11/42	28m 12/43	-	-
PHOSPHAT 00-18-00 SERRANA	2,87	1,24	-	-	09/40	09/43	13/45

## ADJUSTMENTS

# ADJUSTMENTS

## ADJUSTMENT TABLE OF DISTRIBUTION VANES - SEEDS

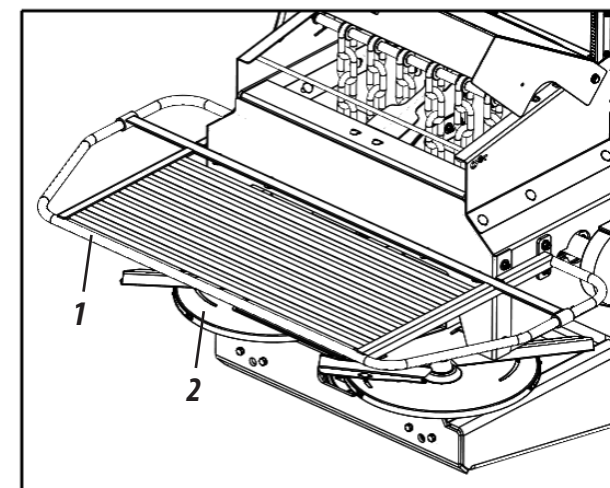
Product	Diameter Grain (mm)	Specic grain weight (kg)	Work Width							
			9	10	12	15	16	18	20	21
SUNFLOWER	-	-	-	-	-	07/40	07/40	09/45	-	-
YELLOW MUSTARD	-	-	-	-	19/42	19/43	19/43	-	-	-
CANOLA	-	-	-	-	19/44	20/45	-	-	-	-
RADISH	-	-	-	-	-	-	-	10/51	12/45	28m 12/45
VETCH	-	-	-	-	-	-	-	13/36	17/40	28m 17/40
MILLET	2,05	0,86	-	-	-	-	-	-	10/49	-
MILLET	1,73	0,7	-	-	-	07/39	08/40	-	-	-
ALFAFA	-	-	12/35	13/37	13/45	-	-	-	-	-

## DISTRIBUTORS DISCS PROTECTION

The protection (1) is factory-original in the distributor discs (2) of **FERTILIZA**. The protection (1) is a safety item that not only avoids the contact of people with the distributors discs (2), especially when they are in operation, it also protects the distributor discs (2) from damages in case of maneuvers in small areas.

### ATTENTION

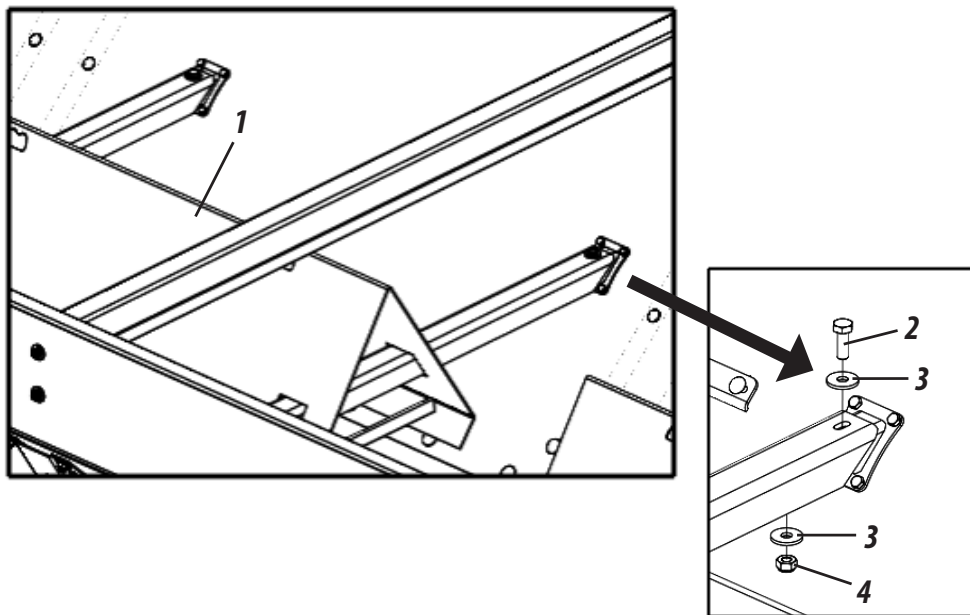
*It is not allowed to use the protection (1) as platform or access ladder to FERTILIZA.*  
*It is not allowed to remove the protection (1) under any circumstance.*  
*Do not climb or remain on the protection (1).*  
*Ignoring this warning may cause severe accidents and even death.*



### USE OF DEFLECTOR

**FERTILIZA** leaves the factory assembled with the deflector (1). This deflector avoids the overload on the conveyor, allowing a milder operation.

Before starting the works with **FERTILIZA**, check if the deflector (1) is properly secured, tightening the screws (2), washers (3) and nuts (4) preventing the deflector (1) from coming off, damaging the conveyor and **FERTILIZA**.



### ⚠ ATTENTION

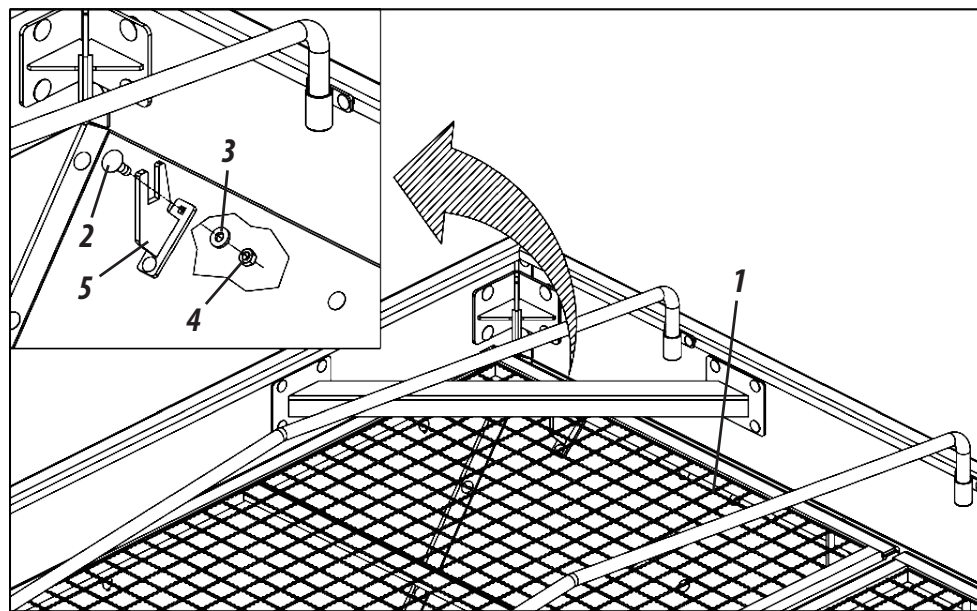
*For a longer service life and good operation of the conveyor, the deflectors should be kept in the working position, relieving the load on the conveyor and, therefore, avoiding its skating. In the same way, the sieves should not be removed since they serve as protection, preventing stranger elements from falling together with the used products.*

## ADJUSTMENTS

### PROTECTION SCREENS

**FERTILIZA** leaves the factory assembled with the protection screens (1). These screens prevent foreign objects or impurities from going inside the tank.

Before starting the works with **FERTILIZA**, check if the protection screens (1) are properly secured, tightening the screws (2), washers (3) and nuts (4) preventing the supports (5) from coming off, damaging **FERTILIZA**.



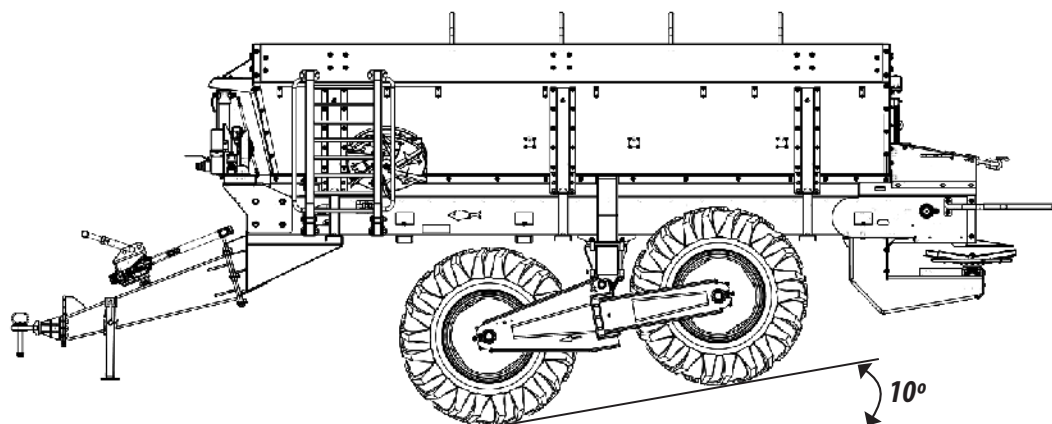
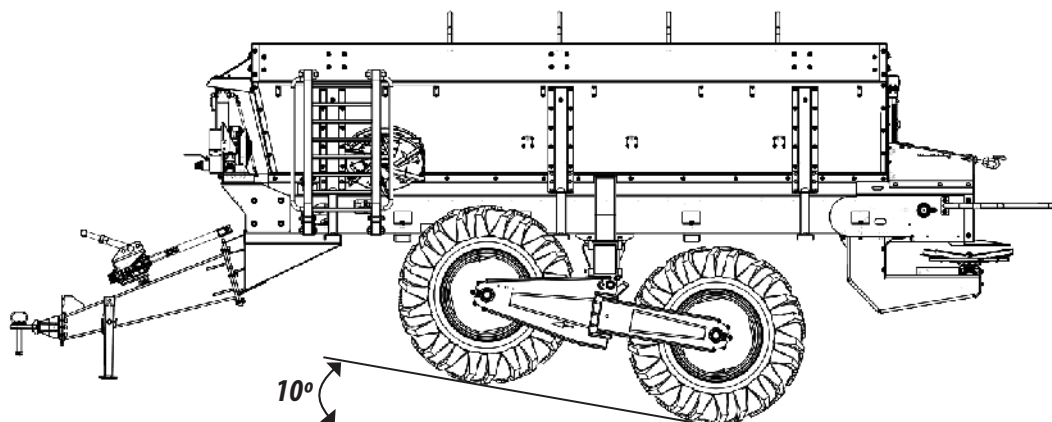
### ⚠ IMPORTANT

*Do not climb or remain on the protection screens (1). Ignoring this warning may cause severe accidents and even death.*

## ADJUSTMENTS

### TANDEM WHEEL SYSTEM

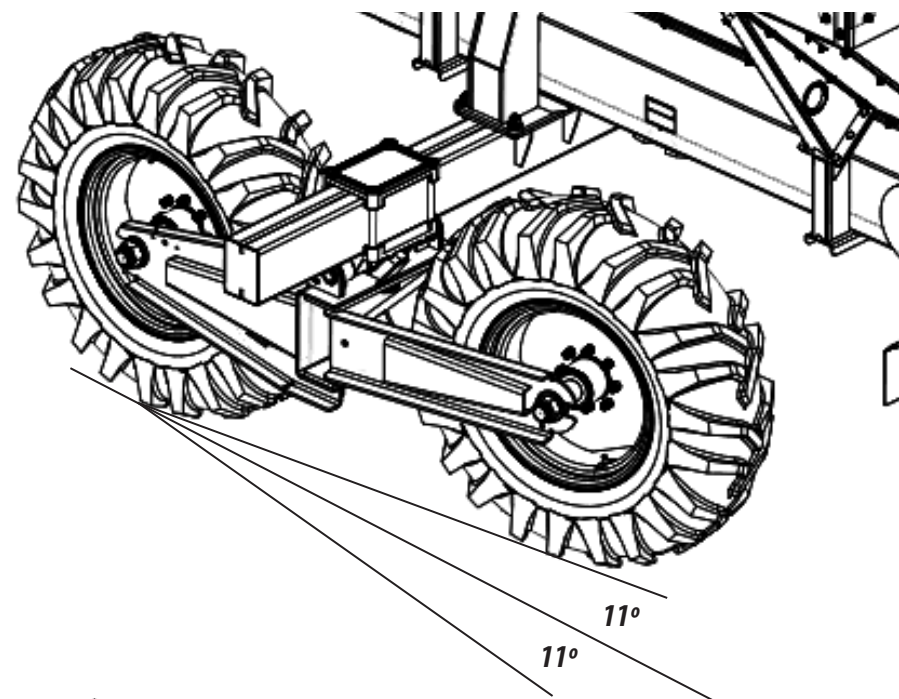
**FERTILIZA** uses wheel system with the purpose of compensating irregularities of the land, evenly distributing the load on the wheels, providing greater work stability in uneven soils.



### CROSS SYSTEM

**FERTILIZA** uses the cross system that allows the wheel system to move lightly and safely in all types of land, avoiding soil compaction.

The cross system allows lateral movement at an angle of up to  $11^\circ$  to both sides, reducing impacts provoked by soil irregularities, thus not affecting **Fertiliza** distribution and structure



### ! ATTENTION

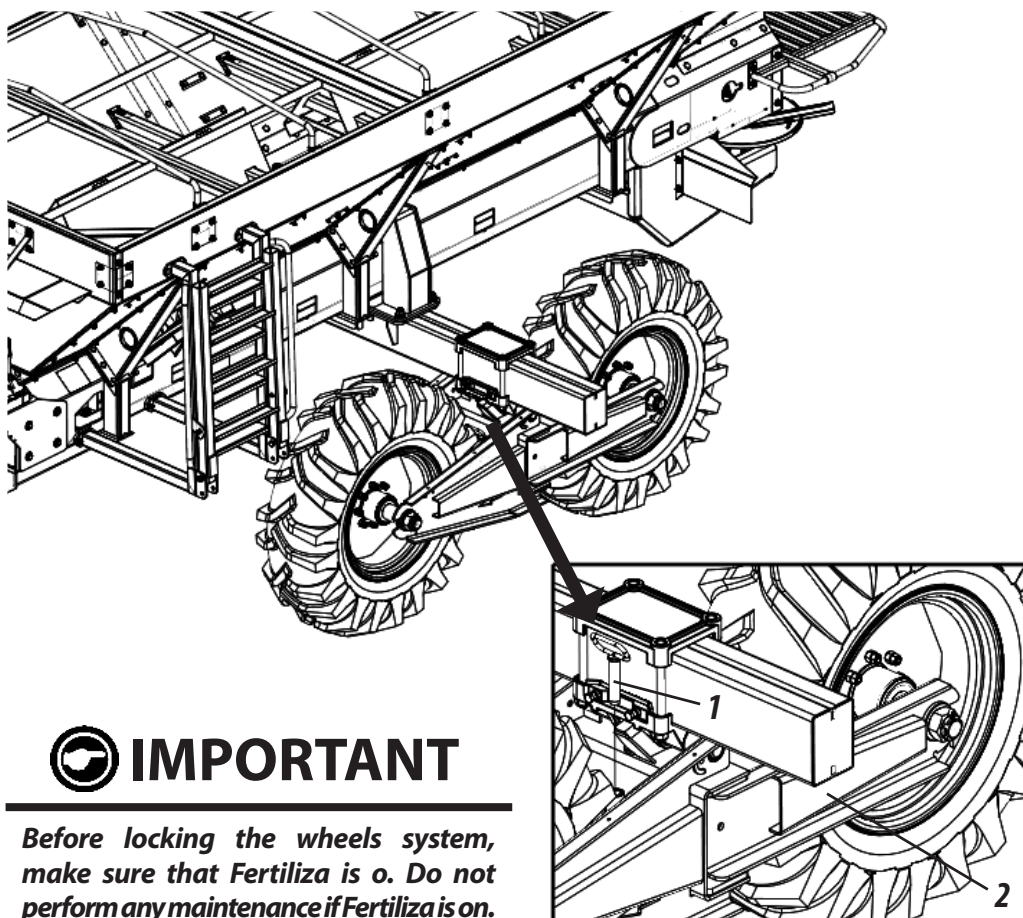
*When maneuvering in reverse, lock the wheel system as instructed on the following page, preventing it from lateral movement by forcing the pivot system and damaging the wheel assembly.*



### WHEEL SYSTEM LOCK

When maneuvering in reverse, lock the wheel system preventing it from lateral movement forcing the pivot system and damaging the wheel set. To lock the wheel system, proceed as follows:

- 1- Place the pin (1) on the wheel carriers (2). Perform this procedure on both sides of Fertiliza.



### ⚠ IMPORTANT

*Before locking the wheels system, make sure that Fertiliza is o. Do not perform any maintenance if Fertiliza is on.*

## ADJUSTMENTS

### ⚠ ATTENTION

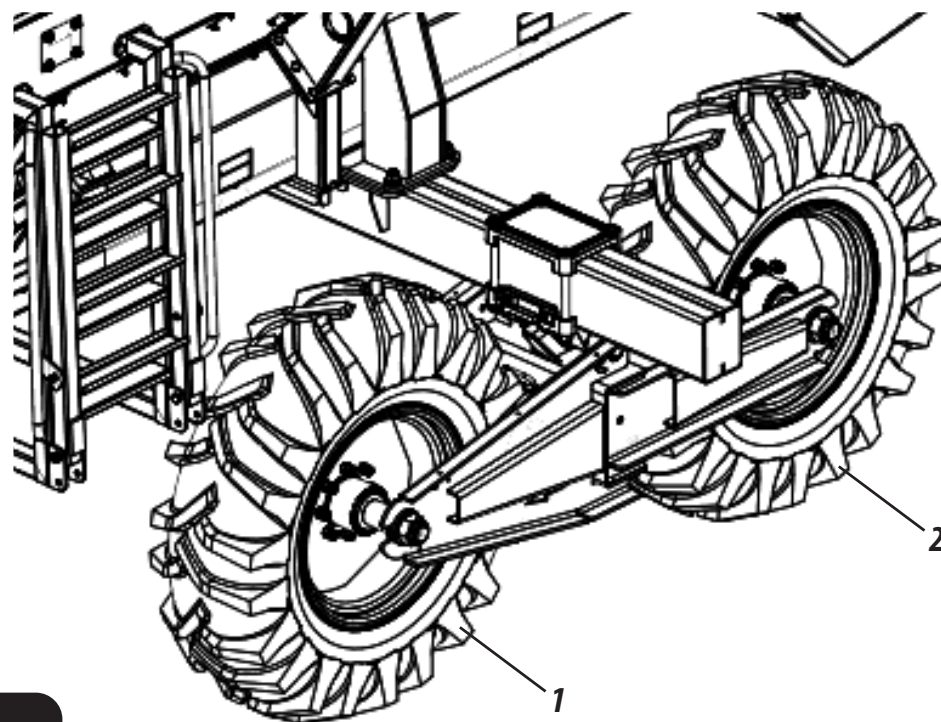
*When removing the pin (1), the wheel carriers (2) may move. Double the attention in this moment to avoid accidents.*

### ⚠ IMPORTANT

*When completing the reverse maneuver, unlock the wheel's system by removing the pins (1) of the wheels system (2). Do not work on Fertiliza with the wheel's system (2) locked.*

### TIRES POSITION

In order for the front and rear tires to exert uctuation on the ground, accompanying the irregularities of the tire avoiding compaction, the position of the front (1) and rear (2) tires grips should always be towards the rear of Fertiliza.





# ADJUSTMENTS

## FLOW ADJUSTMENT WITH USE OF TRAYS - PART I

The uniformity of distribution of fertilizers, correctives or seeds is related to the characteristics of the applied products, such as the degree of **SEGREGATION** (separation and accommodation of the particles by size and density), **HYDROSCOPICITY** (absorption of the humidity of the product that can cause difficulty in handling and distribution, delivery, etc.), **FLUIDITY** (flow capacity), **GRANULOMETRY** (product grain size). SOURCE: Anda [http://www.anda.org.br/multimedia/bo-letim\\_04.pdf](http://www.anda.org.br/multimedia/bo-letim_04.pdf).

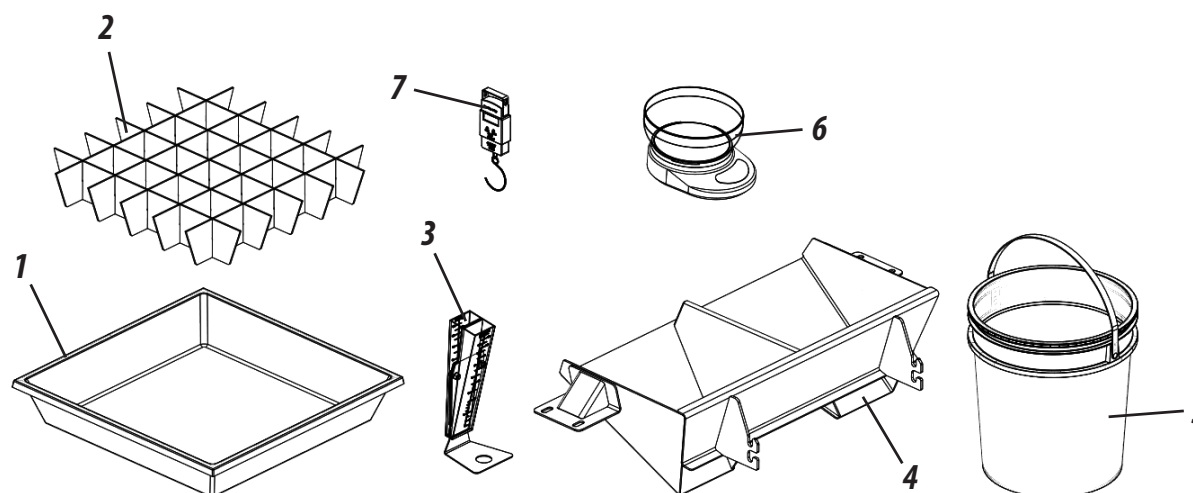
The variation of these components directly affects the uniformity of distribution and consequently the range achieved for each product. Therefore, even if the pre-set tables for **FERTILIZA** adjustment are used, it is necessary to adjust in the application moment, adding all the characteristics at the moment. That is why it is very important to adjust the flow using trays before beginning any product application, in order to be safe and certain that the adjustment is correct.

### PURPOSE

The purpose is to adjust the required flow for the application of any product in the desired amount (kg/ha) adjusting the achieved range and overlapping required to obtain an even application.

### REQUIRED MATERIAL FOR TRAYS COLLECTION

Item	Description	Amount
01	Tray	08
02	Collection Grid	08
03	Measurer Set (Pluviometer)	01
04	Sample Collector	01
05	Bucket	02
06	Digital Scale	01
07	Portable Digital Scale	01
-	Measuring tape (not supplied with FERTILIZA)	01



**FLOW ADJUSTMENT WITH USE OF TRAYS - PART II**
**PROCEDURE**

First, adjust **FERTILIZA**'s gate opening according to the table value to be distributed so that the adjustment procedure can start as close as possible to the ideal. Next, the product application range should also be set, as long as this range is compatible with the maximum possible of the product (example: limestone reaches a maximum of 14 m).

After, place the trays in sets of 4, in line, with one line in the direction of the tractor path and one-line parallel to this first one, at a distance that is half the desired range, that is, if the product should reach 36 m, the trays should be 18 meters apart so the application of the product is in the middle of a tray line and the other in the 18 m signaled to verify overlapping (measure distances with measuring tape).

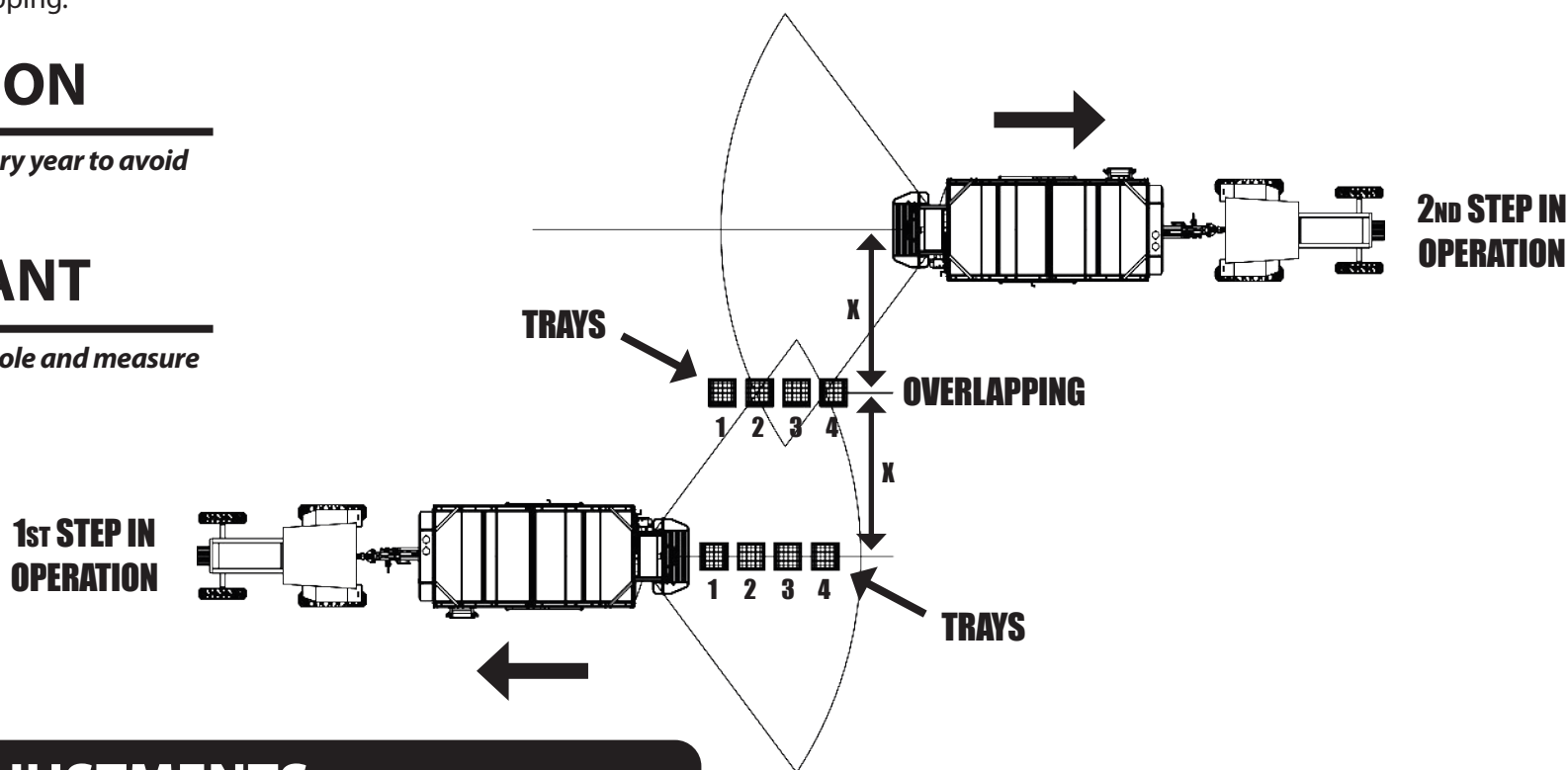
It is important that the distribution system is triggered 50 m before and continues in operation 50 m after the trays, so that there is time for the distribution system to get into operation and not influence the results due to discontinuity or deactivation of the application before the end of the harvest. It should go forward and backward in the desired range to check overlapping.


**ATTENTION**

*Do not always use the same trail every year to avoid the product's concentration.*


**IMPORTANT**

*Only use the trays to calibrate the prole and measure the application width.*


**ADJUSTMENTS**

# ADJUSTMENTS

## CHECKING DISTRIBUTION RANGE AND BY-PASS

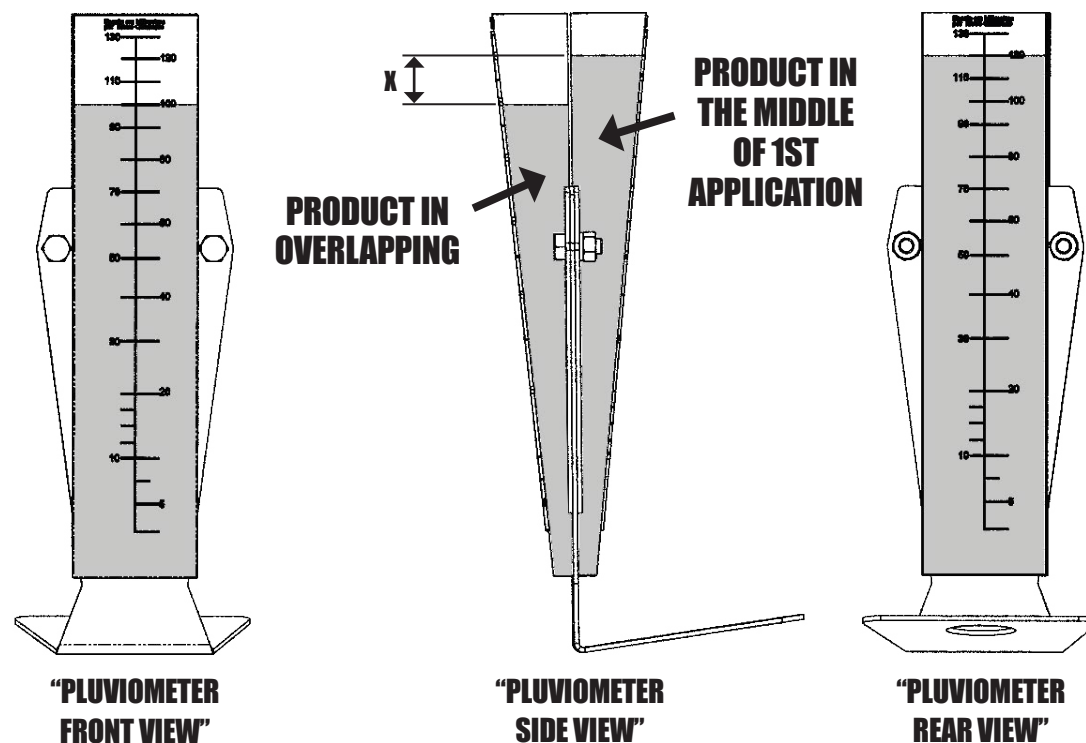
When finishing the application of the product over the dened area, collect the product of 4 trays placing it on one of the collector glass and the other 4 trays on another collector glass. It is very important to highlight which glass represents by-pass and which one represents the tray line below **FERTILIZA** since the levelling of the products inside the glasses indicates if the range can be increased or reduced.

The content of the glass with the overlapping product should be levelled with the content of the glass with product from the middle of the application.

### EXAMPLE:

If the amount of product in the overlapping glass is smaller than in the application middle (figure 35), it means that the range is beyond ideal for application. In reality, the ideal overlapping is not taking place and is necessary to reduce the application range, that is, the distance, and then perform a new collection.

If the amount of product in the overlapping glass is higher than in the application middle, it means that is necessary to increase the application range and perform a new collection later.



## CHECKING PRODUCT FLOW

Verification of products ow should be performed by relating the desired amount of product (kg/ha) with the amount collected from the trays. It is known that 1 ha is equal to 10,000 m<sup>2</sup> of area and that trays have a total area of 2 m<sup>2</sup> (each tray has 0.25 m<sup>2</sup>).

**EXAMPLE:** It is intended to distribute 2500 kg/ha of limestone. What is the exact adjustment and which weight should be put on trays to measure the system?

- **FERTILIZA** is adjusted and the limestone is distributed in both lines, as previously described. The products from the 8 trays are collected and weighted (e.g.: 0.8 kg).

- The following rule is used for calculation:

$$Pb = \frac{V \times A}{10.000} \quad (\text{kg})$$

### WHERE:

**Pb** - Value of weight to be collected (kg)

**V** - Necessary distribution rate (kg/ha)

**A** - Area of trays (m<sup>2</sup>)

**10.000** - Conversion area equivalent to 1 ha

### CALCULATING:

$$Pb = \frac{2500 \times 2}{10.000} = 0,5(\text{kg})$$

### INTERPRETATION:

Interpreting the result of the calculation, it can be veried that, for a 2500 kg/ha ow, it is necessary to collect the weight of 0.5 kg in the 8 trays. As in this example, the value was 0.8 kg, so it is concluded that the gate opening should be reduced and a new collection performed, until the 0.5 kg rate is reached.

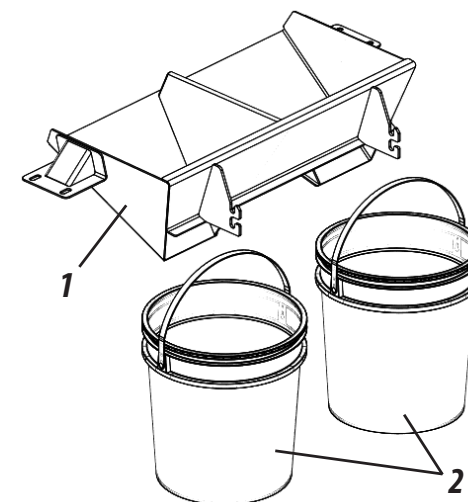
## COLLECTION METHOD

### SAMPLE COLLECTOR KIT (BUCKETS)

Another way of adjusting the ow of products in the distribution is using the sample collectors.

To do that, the sample collector kit is used (buckets).

Item	Description	Amount
01	Sample Collector	01
02	18 liters' buckets	02



## ADJUSTMENTS

# ADJUSTMENTS

## PROCEDURE TO COLLECT SAMPLES - PART I

- 1- Set the product to be applied, the dosage in [kg/ha] and the distribution width (choose the work width in the tables and the disc to be used, already observing the position of the vanes in the disc).
- 2- Remove (disassemble) the distribution discs of the machine along with the deector set for fertilizer. Assemble the sample collectors set to perform the product collection.
- 3- Supply **FERTILIZA** with the product to be applied and demarcate the 50 m path to simulate the application. Observe that the distance of the products output gate up to the fall from above the conveyor should be lled with products, that is, before performing the collection in the delimited path (50 m) normally distribute the product (walk with the equipment in operation) so that the start time of the product fall does not compromise the application in the 50m;Após a conclusão do item 3, certifique-se que os baldes estão vazios e inicie a aplicação nos 50 m demarcados na velocidade desejada;
- 4- After completing item 3, certify that the buckets are empty and begin the application in the 50 m marked in the desired speed;
- 5- Weight the product collected in the two buckets and perform the following relations:

$$Q = \frac{(\text{Larg. distrib.} * 50) * (\text{qtde a distribuir [kg]})}{10.000}$$

**WHERE:** Q = quantity to be collected in the 2 buckets;

The result of this calculation should be the collected weight in both buckets and that will amount to the desired in [kg/ha]. If the calculated weight is not obtained, the gate opening should be increased and the procedure repeated.

### EXAMPLE:

Procedure to apply 70 [kg/ha] of urea 45% N PRILLIS, 2.28 mm grains diameter and specic weight of 0.78 [kg/l].

- 1- Application conditions
  - a) Dosage: 70 [kg/ha];
  - b) Discs 18-24 Fertilizers;
  - c) Distribution width 24m;
  - d) Position of the vanes: 17/49;
    - I. Smaller vane 17;
    - II. Larger vane 49;

**PROCEDURE TO COLLECT SAMPLES - PART II**

- 2- Remove (disassemble) the distribution discs of the machine along with the deector set for fertilizer. Assemble the sample collectors set to perform the product collection;
- 3- Supply **FERTILIZA** with the product to be applied and demarcate the 50 m path to simulate the application. Observe that the distance of the products output gate up to the fall from above the conveyor should be lled with products, that is, before performing the collection in the delimited path (50 m) normally distribute the product (walk with the equipment in operation) so that the start time of the product fall does not compromise the application in the 50m;
- 4- After completing item 3, certify that the buckets are empty and begin the application in the 50 m marked in the desired speed;
- 5- Weight the product collected in the two buckets and perform the following relations:

$$Q = \frac{(24 \text{ m} \times 50 \text{ m}) * \left(\frac{70 \text{ kg}}{\text{ha}}\right)}{10.000} = 8,4 \text{ kg}$$

**WHERE:** Q = quantity to be collected in the 2 buckets, [kg];

In the 50 m path, estimating a distribution width of 24 m. 8.4 kg should be collected on both buckets to obtain a 70 kg/ha dosage.

**ADJUSTMENTS**



## MANAGEMENT SYSTEM

**FERTILIZA** can be acquired in 2 forms:

- 1- Without a management system, but with electric and hydraulic systems already installed for future the acquisition of a management system.
- 2- With a management system (Raven CR7, Agrosystem MC-TF or Trimble CFX-750).

## RAVEN CR7/AGROSYSTEM MC-TF/TRIMBLE CFX-750

The Raven CR7, Agrosystem MC-TF or Trimble CFX-750 systems manage the application of conditioners and fertilizers to the soil, providing monitoring and control of the following information:

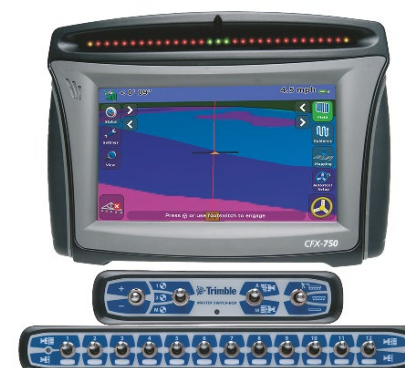
- Applications maps reading
- Applications at fixed and variable rates
- Includes a light bar (maintaining alignment in spreading)
- Applied area (ha)
- Applied quantity (ha)
- Daily application report
- Fertiliza's wireless management system in the field
- Automatic shutdown of work in already applied areas.



**RAVEN CR7**



**AGROSYSTEM MC-TF**



**TRIMBLE CFX-750**



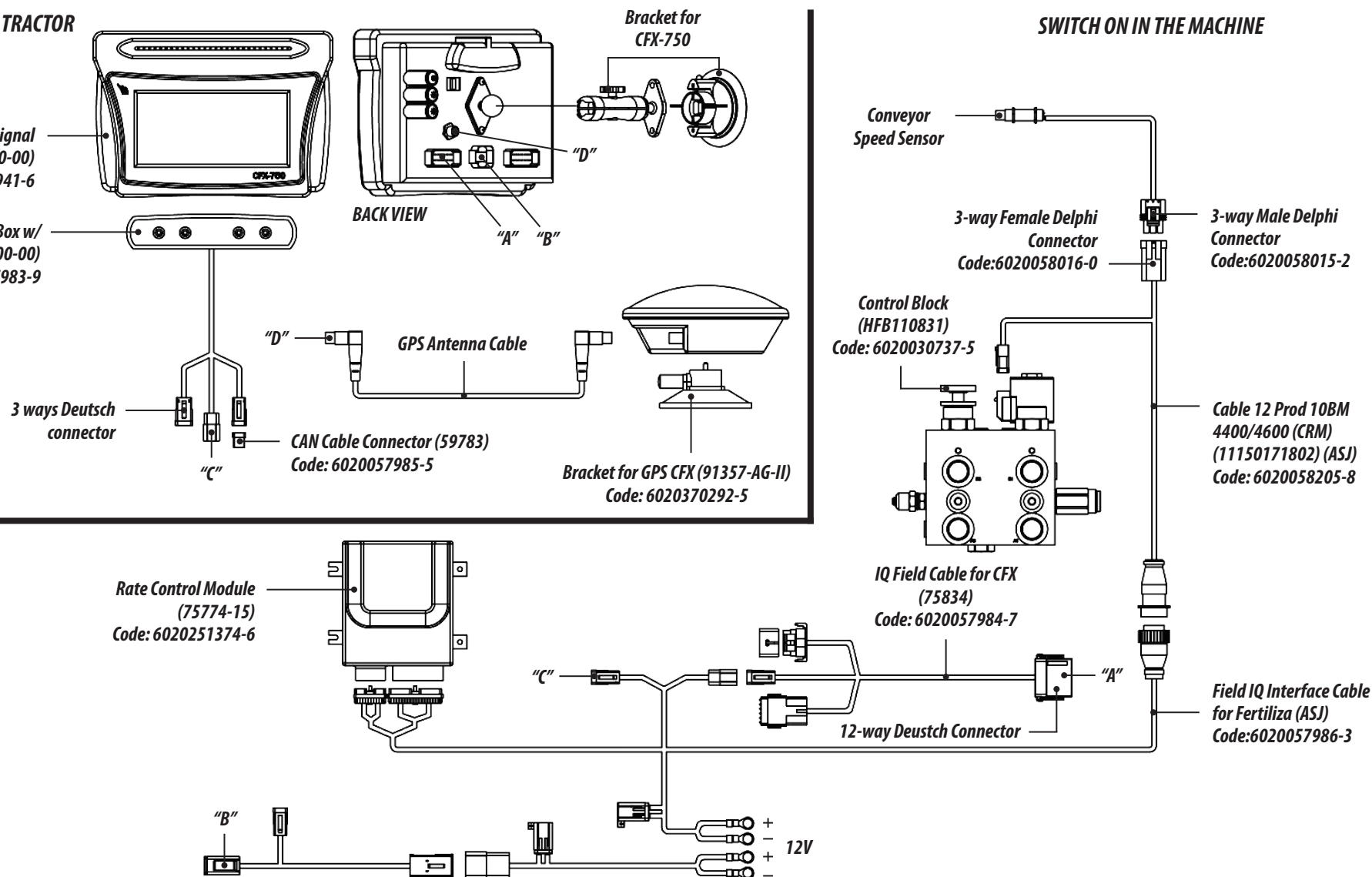
## ATTENTION

*Fertiliza is not delivered with the 3 systems above, that is, it is equipped with only 1 of them, which will be chosen at purchase.*

### ASSEMBLING THE TRIMBLE CFX-750 ELECTRONIC SYSTEM (VARIABLE RATE) - FERTILIZA 6M<sup>3</sup>/8M<sup>3</sup>

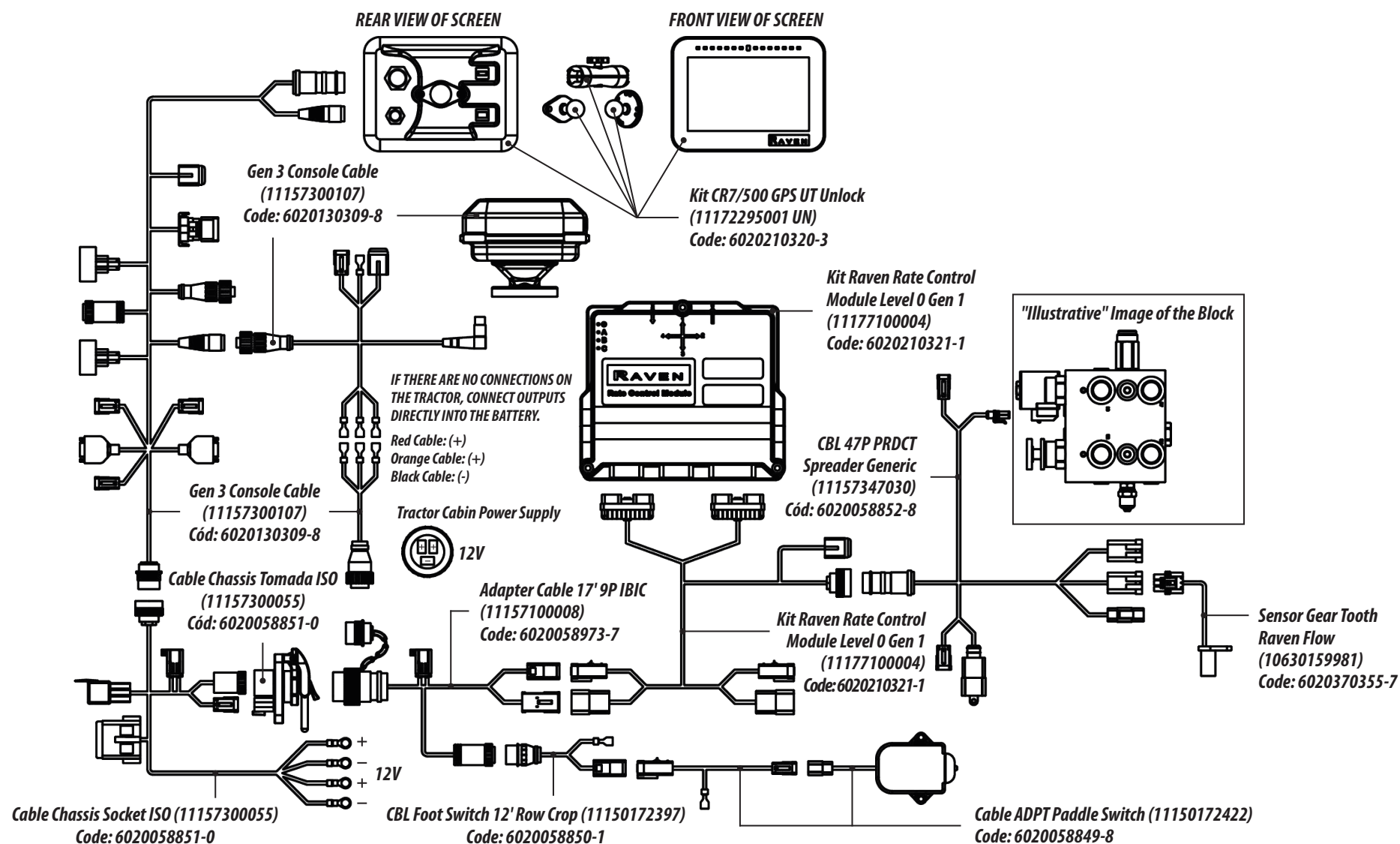
#### CONNECTION ON THE TRACTOR

#### SWITCH ON IN THE MACHINE

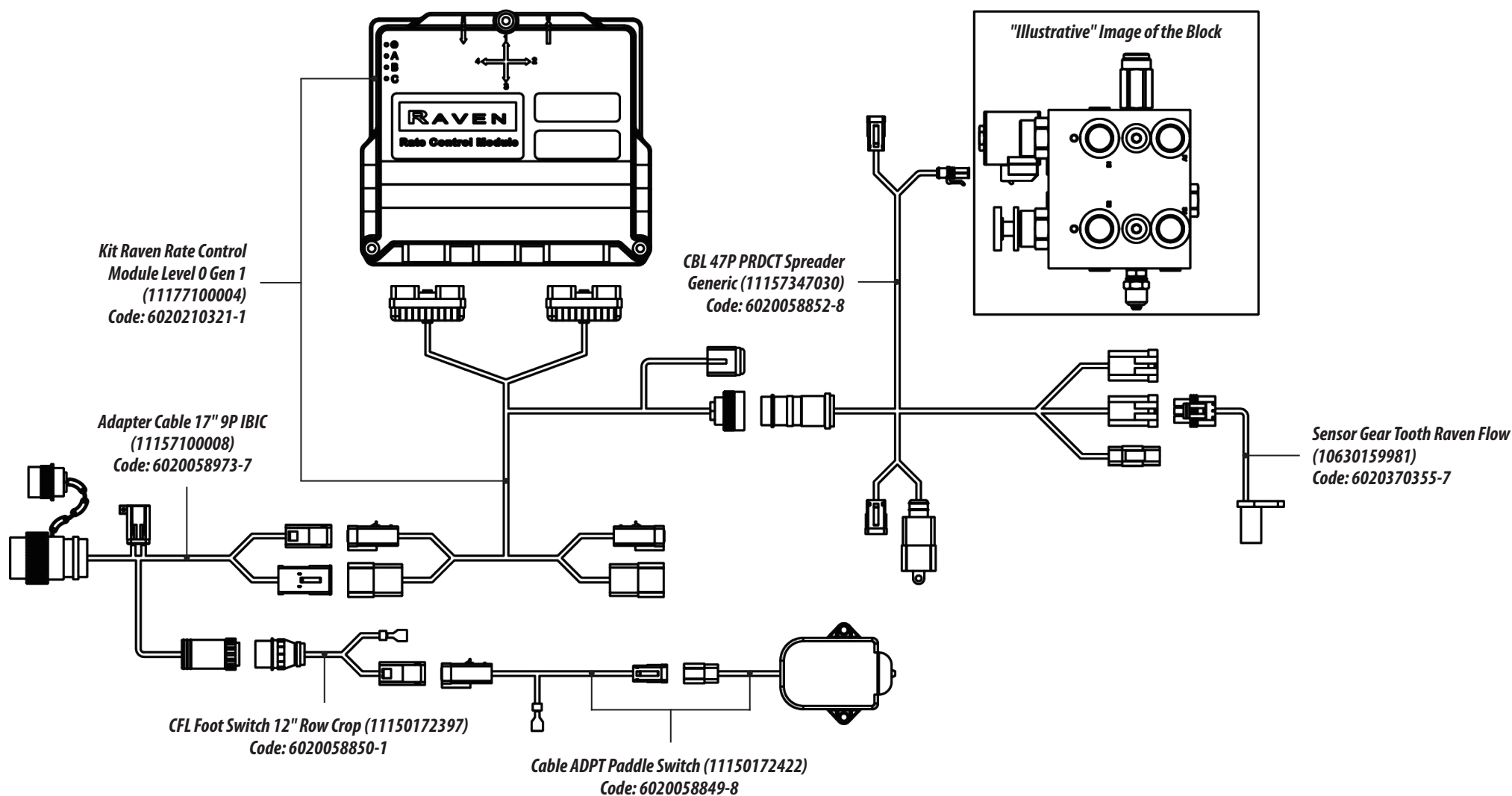


# SYSTEMS

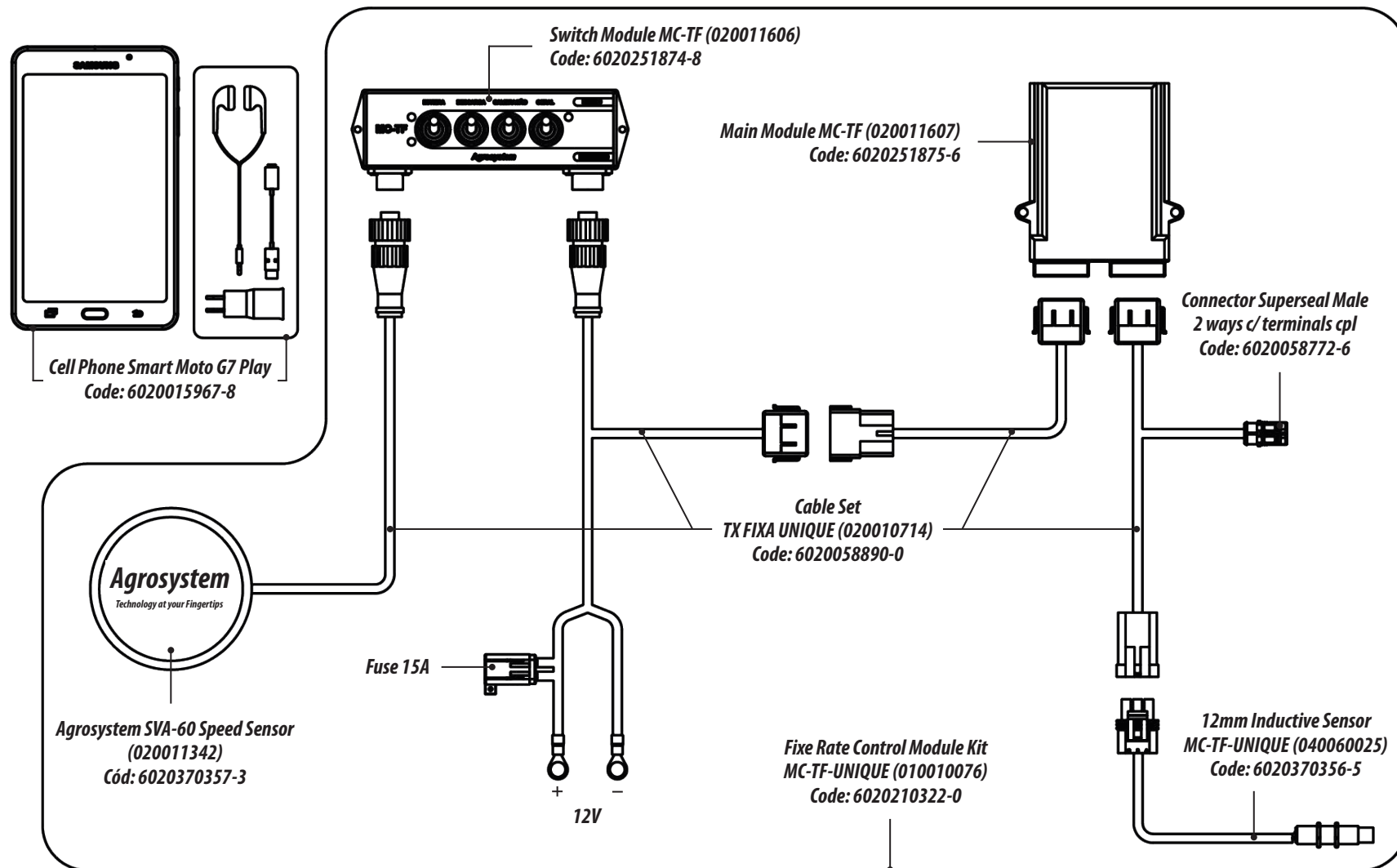
## ASSEMBLING OF RAVEN CR7 ELECTRONIC SYSTEM (VARIABLE RATE) - FERTILIZA 6M<sup>3</sup>/8M<sup>3</sup>



ASSEMBLING OF THE ISOBUS RAVEN CR7 ELECTRONIC SYSTEM (VARIABLE RATE) - FERTILIZA 6M<sup>3</sup>/8M<sup>3</sup>



## ASSEMBLING THE AGROSYSTEM MC-TF ELECTRONIC SYSTEM (FIXE RATE) - FERTILIZA 6M<sup>3</sup>/8M<sup>3</sup>



TRIMBLE CFX-750 SYSTEM

SYSTEM COMPONENTS:



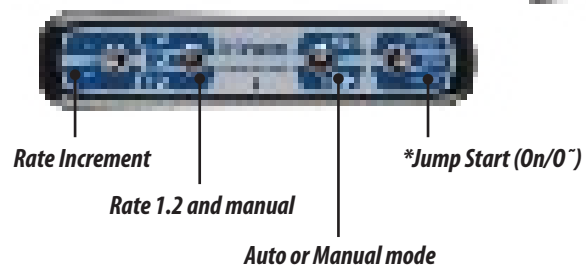
Item	Description	Codes
01	CXF-750	94110-70
02	RAM Support and screws	61958
03	Quick reference card	78838-70-ENG
04	Compact Disc	78821-70
05	GPS Antenna Cable	50449
06	bus/Can power cable	77282
07	Power cable	67258
08	AG25 Antenna	77038
09	AG25 antenna support plate	62034



## TRIMBLE GPS SYSTEM SETTING

### SYSTEM ICONS:

To interact with the system, touch the screen with the ngers.



ICON	DESCRIPTION	ICON	DESCRIPTION
	System and Monitor Setup		Menu
	Autopilot Setup		Set
	GPS Setup/ GLONASS		Status
	Data Setup		Conguration "Wizard"
	Internal help		Delete
	Setting screens for access		Edit item
	Next page		Cancel changes
	Previous page		Accept / save changes
	Conguration complete		Warning general
	Critical Warning		Information

**\*Jump Start:** Enable the system in a manual speed mode, used a lot when entering an area, allows application of the ideal dose.

### TRIMBLE GPS SYSTEM CALIBRATION - PART I

ICON	DESCRIPTION
	Turn section control off
	Turn application on
	Turn application off

Table 09

- 1- On the display, touch (settings)- implement;
- 2- And then Calibration;
- 3- Select location;
- 4- Select calibration of rate controller Mechanism calibration;
- 5- On the device's Limits screen, touch on ;
- 6- Calibration of the mechanism, touch on ;
- 7- Self-adjustment of the system, click on YES if valve PWM was selected in Setup;
- 8- Turn the master key ON/OFF in FieldIQ and the system will calibrate by itself;
- 9- Calibration parameters will be provided, touch in ;
- 10- Selection Flow Calibration, afterwards ;
- 11- On screen System Calibration, touch in ;













#### SECTION STATUS:

GREEN: On and applying

YELLOW: On but not applying

RED: Off







## TRIMBLE GPS SYSTEM CALIBRATION - PART II

- 12- From screen Feedback Setup, touch on  ;
- 13- From screen Calibration Constant Setup, touch on  ;
- 14- Inspire Material Amount data to dismiss, target speed, target rate, and then click in  ;
  - A. Target Speed is the speed applied by the vehicle;
  - B. Target Rate is the product ow that the system will apply in calibration;
- 15- Turn the master key ON/OFF in FieldIQ and the system will calibrate by itself;
- 16- A message to turn the Master Key o will appear and then click in  ;
- 17- Weigh the discharged volume and type the value on screen, next click in  ;
- 18- A screen with adjusted constant will appear;
- 19- Accept Results, click in YES and then in  ;
- 20- It is recommended to carry out 3 calibrations for performance of the system, in Run Another Calibration, click in YES and then in  ;
- 21- After three calibrations, select NO and then in  ;
- 22- To learn the information on the calibration, click in Operation Info and then in  ;
- 23- To return to the work screen, select  .

**STARTING WORK WITH TRIMBLE GPS SYSTEM - PART I**

To start a work, it will be necessary to create a new area or continue working with the previous area. An "Area" is a specied land area where the fertilizer or limestone will be applied.

**CREATING A NEW AREA:**

- 1- On the display, touch in  (Area);
- 2- Touch YES and then  ;
- 3- From screen Create New or select old area, touch on Create New Area and then  ;
- 4- If there is auto pilot, select Type of Guide and select the standard to be used;
  - A.** Straight AB
  - B.** Line A+
  - C.** Identical curve;
  - D.** Adaptive curve;
  - E.** Pivot;
  - F.** Header;
  - G.** FreeForm;
- 5- After selected, click in  ;
- 6- Record a new limit, select NO and then  ;
- 7- Conrm setup clicking in  ;
- 8- In records Maintenance, optionally, you may record operational and environmental information on each area to be created, including:
  - Operator
  - Farm Location
  - Application Method

## STARTING WORK WITH TRIMBLE GPS SYSTEM - PART I

- Wind direction
- Temperature
- Target plagues
- EPA license number
- Vehicle
- Wind speed
- Sky conditions
- Humidity
- Material applied
- Year of crop
- Implement
- Speed of wind burst
- Soil conditions
- Harvest

9- Click in  ;

10- The area was opened and you return to the work screen;

11- The dosage should be adjusted in FieldIQ Rate Increment.

12- The machine is ready to apply;

13- Turn the master key on.



The application rate will change here



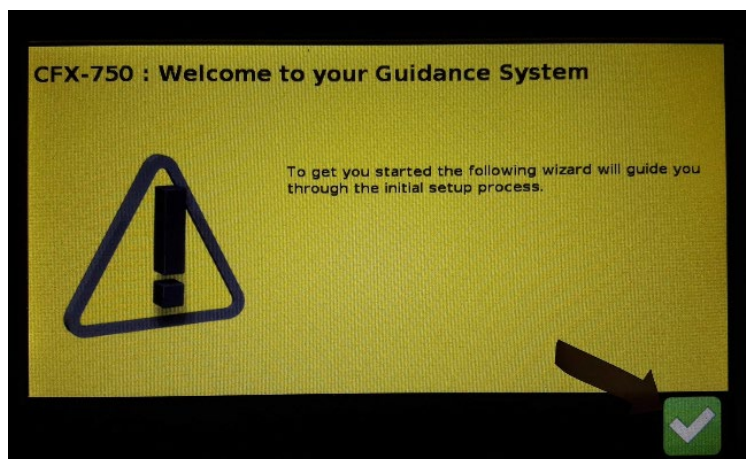
### ATTENTION

*Every time there is a change in the material to be applied, BALDAN recommends a system calibration. Otherwise, the humidity and granulation differences may harm the good distribution performance and, therefore, the subsequent productivity of the crop.*

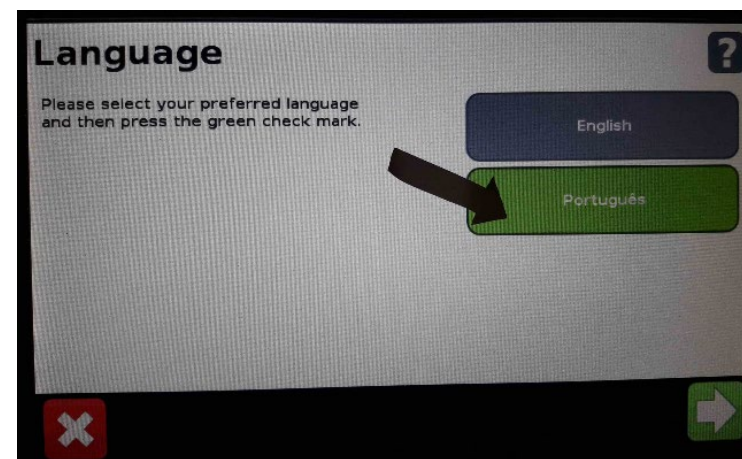
## INITIAL SETUP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART I

To configure the **Trimble CFX-750** system, follow the sequence of the following screens.

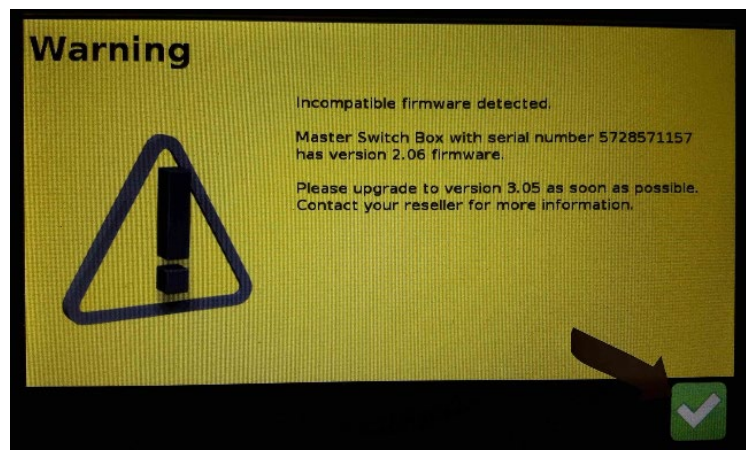
### SCREEN 1



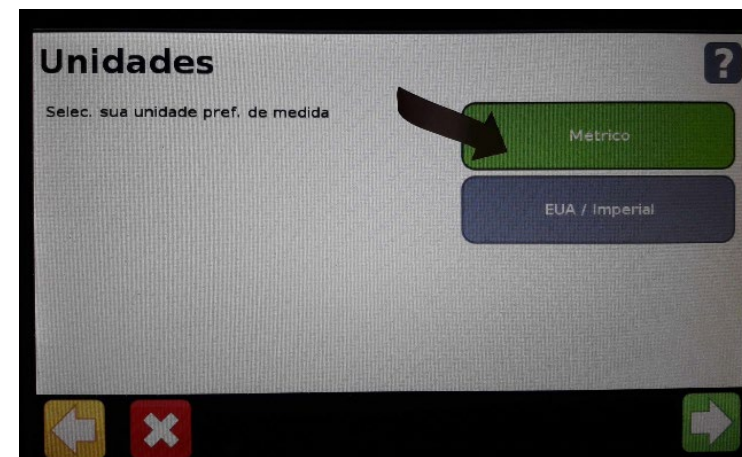
### SCREEN 3



### SCREEN 2



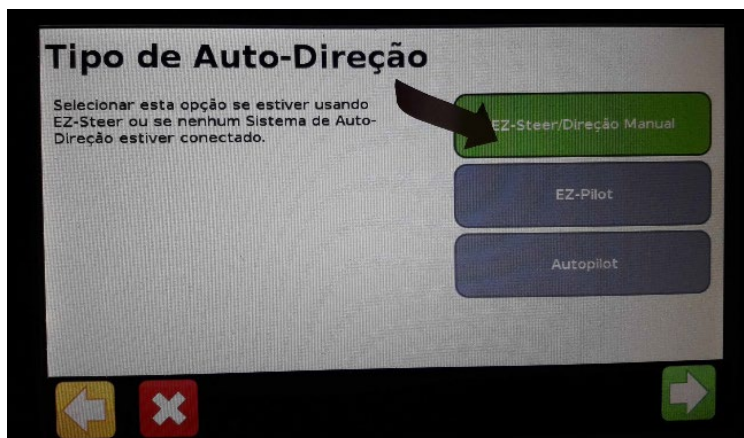
### SCREEN 4





## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART II

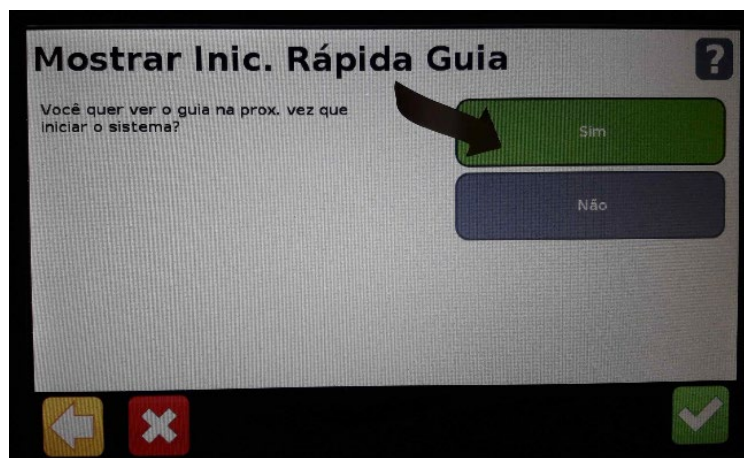
SCREEN 5



SCREEN 7



SCREEN 6

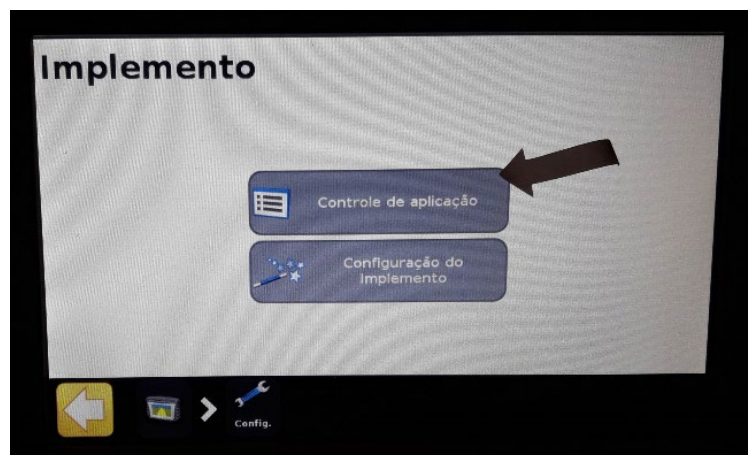


SCREEN 8

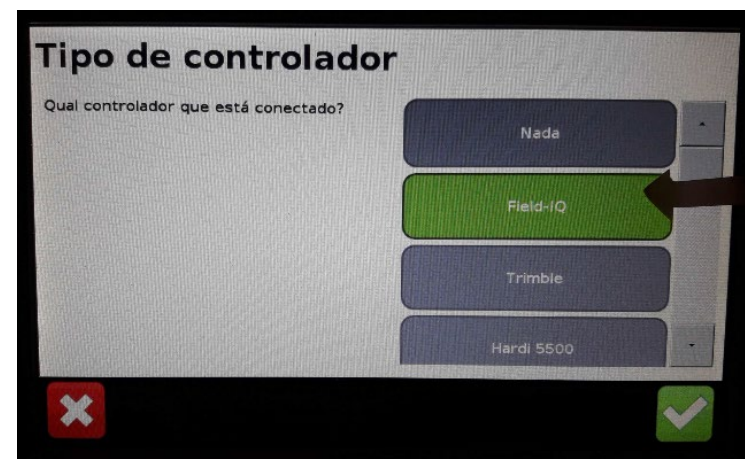


INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART III

**SCREEN 9**



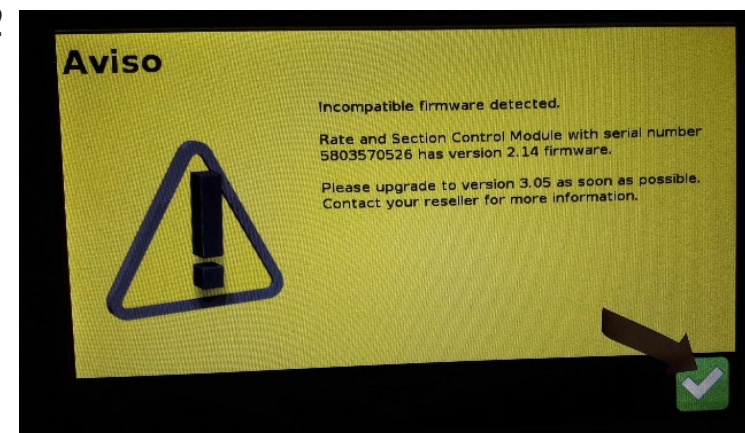
**SCREEN 11**



**SCREEN 10**



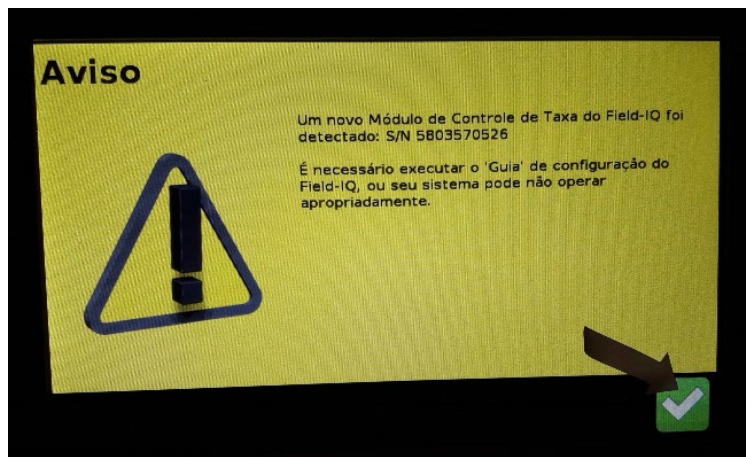
**SCREEN 12**



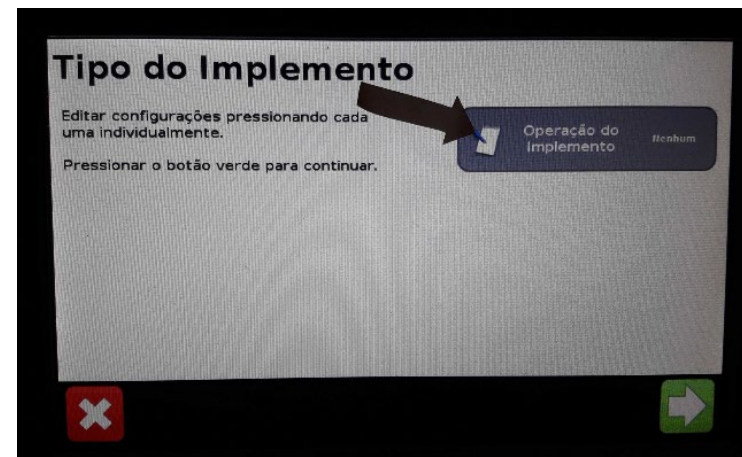


## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART IV

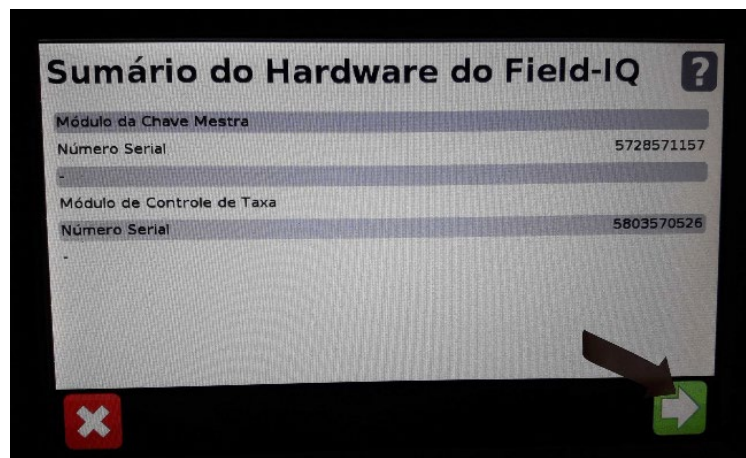
SCREEN 13



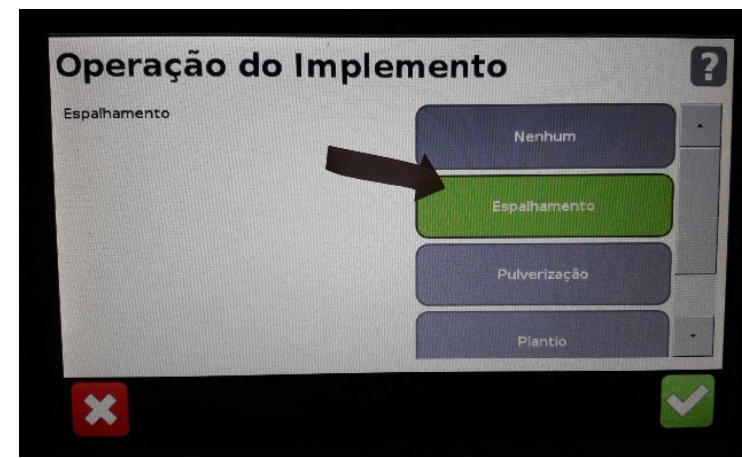
SCREEN 15



SCREEN 14

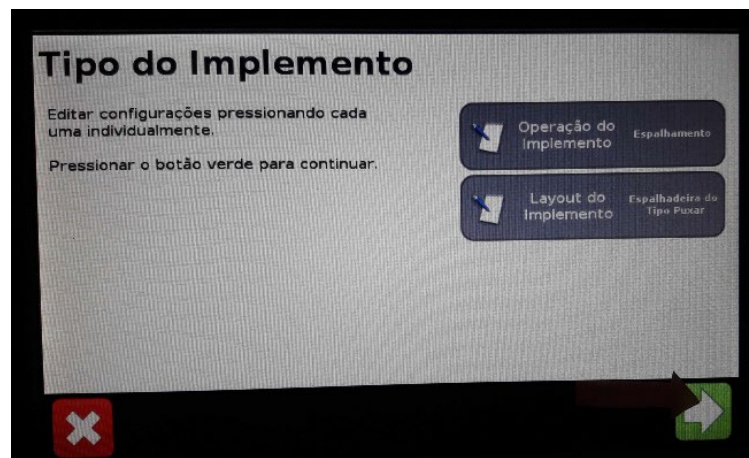


SCREEN 16

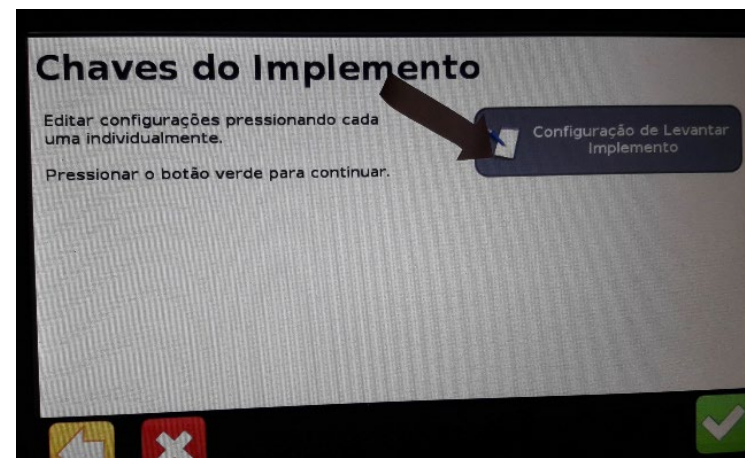


## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART V

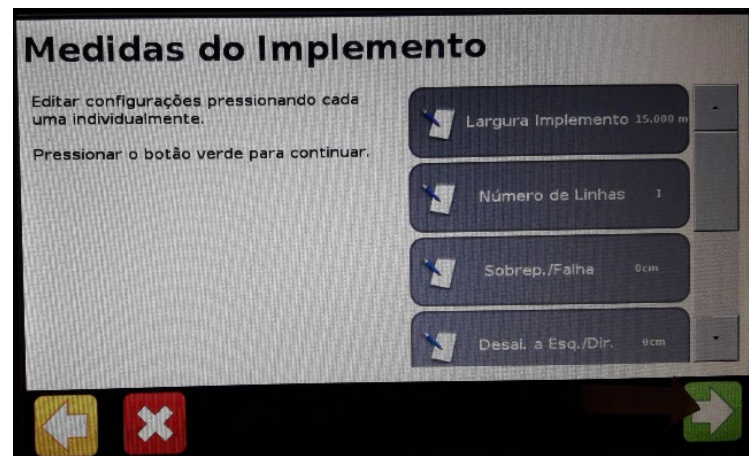
### SCREEN 17



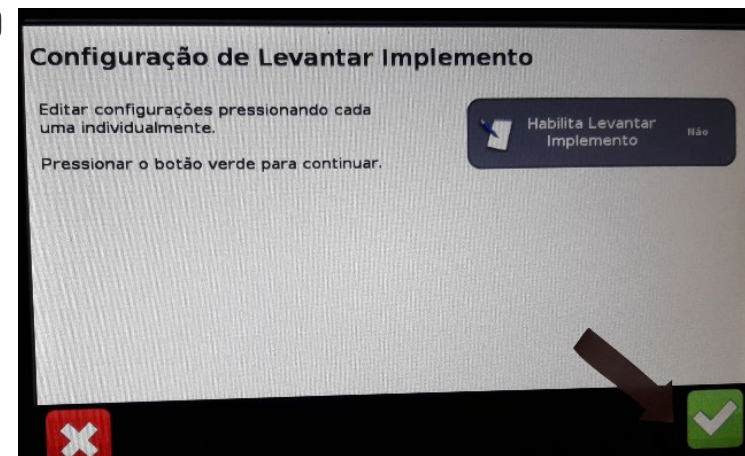
### SCREEN 19



### SCREEN 18



### SCREEN 20

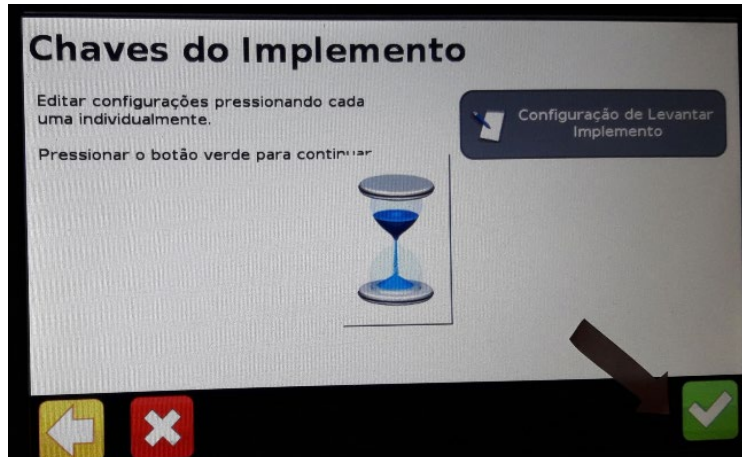


Enter the position and dimension values for implement and tractor.  
For implement width (product application width) and line number insert the value of 1.

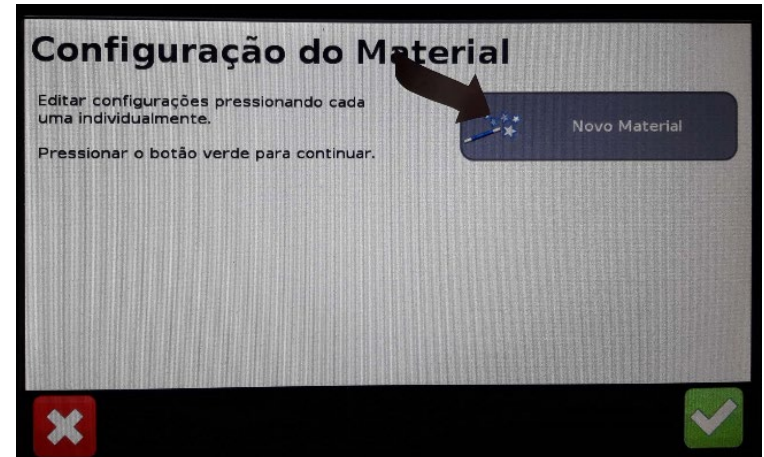


## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART VI

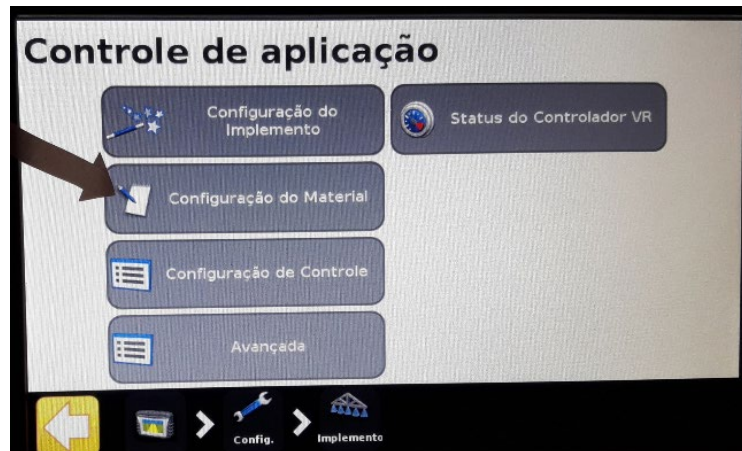
SCREEN 21



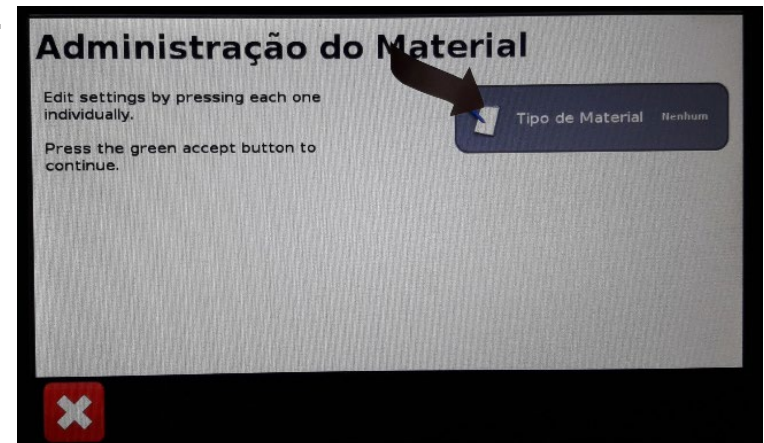
SCREEN 23



SCREEN 22

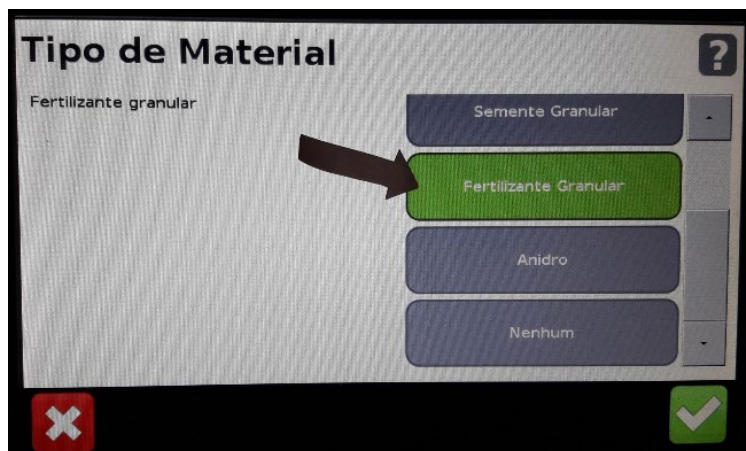


SCREEN 24

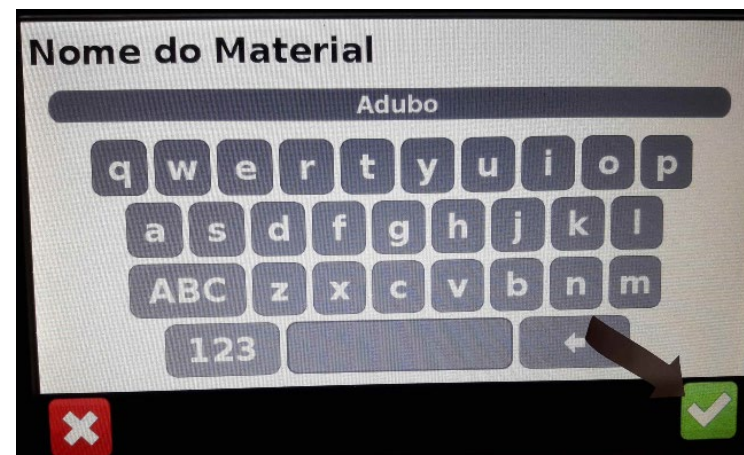


## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART VII

**SCREEN 25**

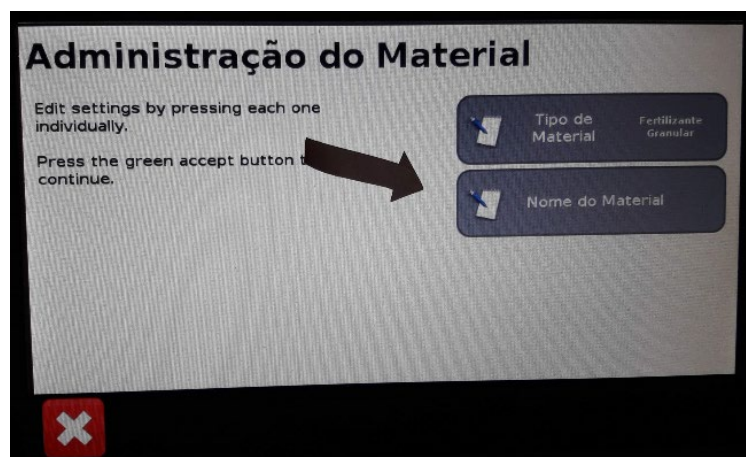


**SCREEN 27**

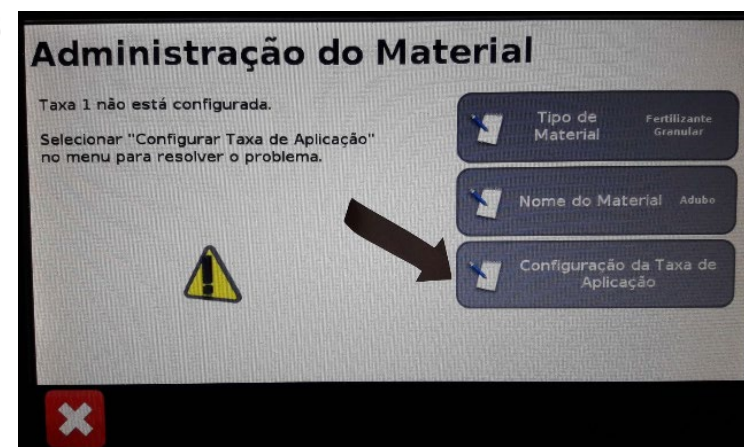


Insira o nome do material a ser aplicado (por exemplo: adubo).

**SCREEN 26**



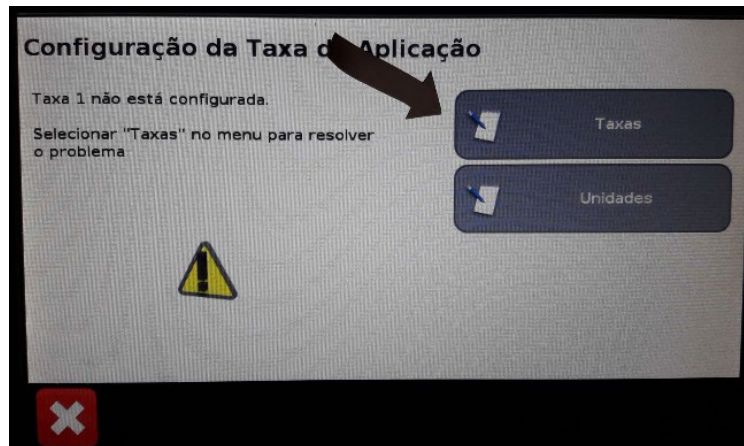
**SCREEN 28**



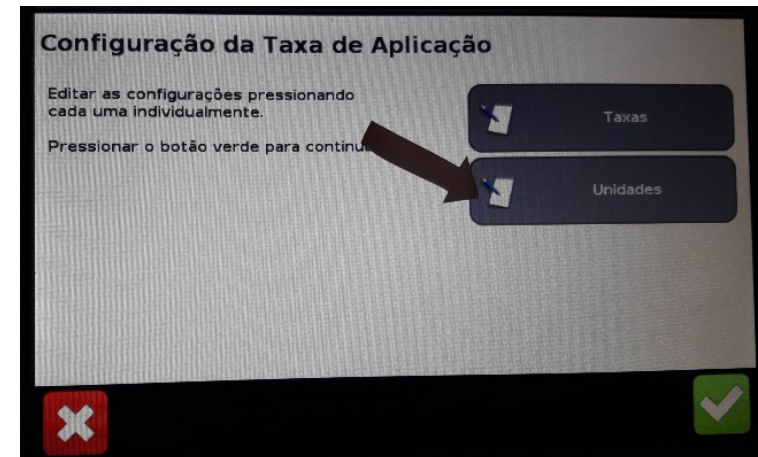


## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART VIII

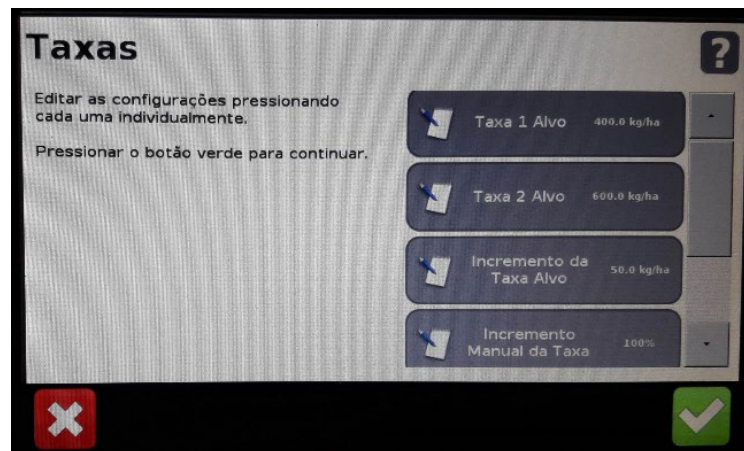
SCREEN 29



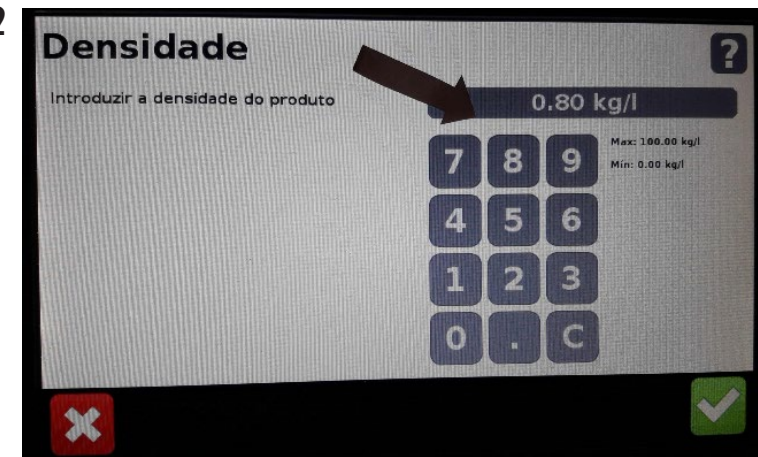
SCREEN 31



SCREEN 30



SCREEN 32



Enter the values as shown in the screen below.

**NOTE:** The values are variable according to type of work and application.

Enter product density for best assertiveness in calibration.



## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART IX

**SCREEN 33**

### Unidades

Editar configurações pressionando cada uma individualmente.  
Pressionar o botão verde para continuar.

Densidade 0.00 kg/l

**SCREEN 35**



### Administração do Material

Editar as configurações pressionando cada uma individualmente.  
Pressionar o botão verde para continuar.

Tipo de Material Fertilizante Granular

Nome do Material Adubo

Configuração da Taxa de Aplicação



**SCREEN 34**

### Configuração da Taxa de Aplicação

Editar as configurações pressionando cada uma individualmente.  
Pressionar o botão verde para continuar.

Taxas

Unidades

**SCREEN 36**

### Configuração da Operação




Editar configurações pressionando cada uma individualmente.  
Pressionar o botão verde para continuar.

Velocidade de Desligar 0.50 Kph

Velocidade Mínima de Substituição 0.00 Kph

Aplicar Latência ao Limite Não

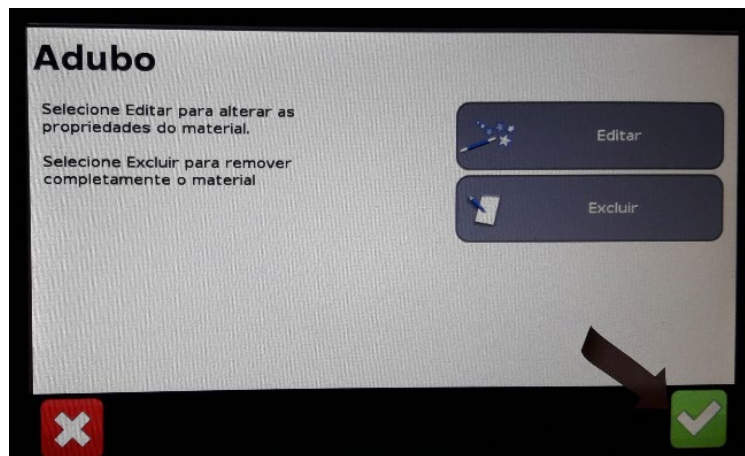
Pular p/ a Taxa Ligado

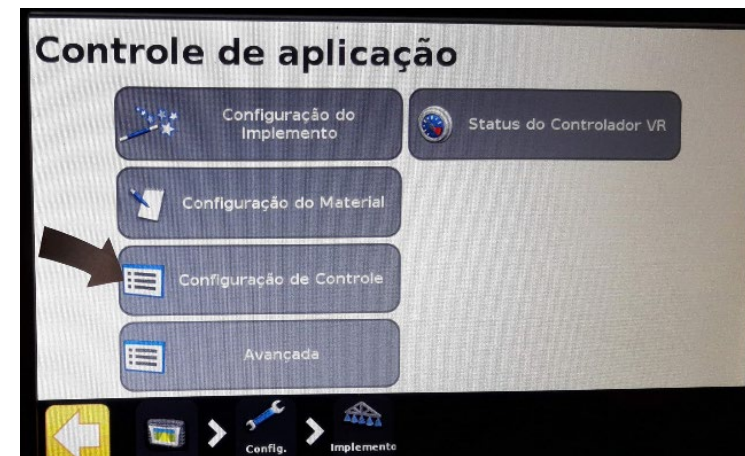


## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART X

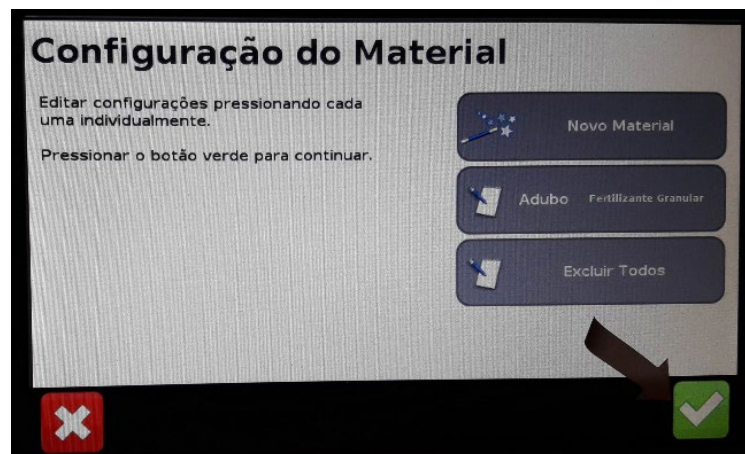
**SCREEN 37**



**SCREEN 39**

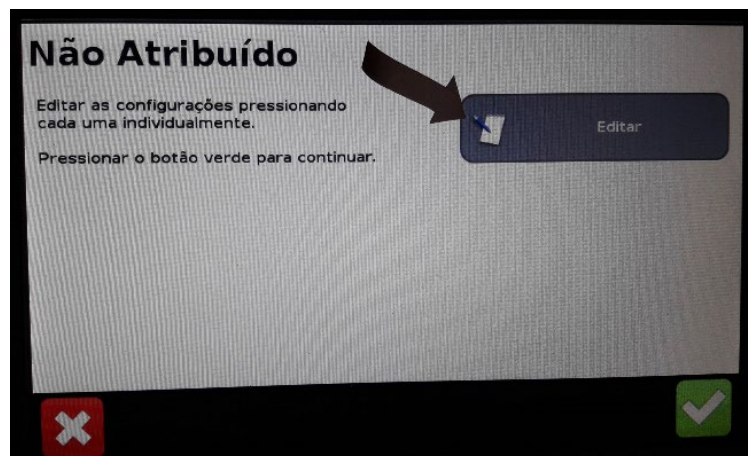
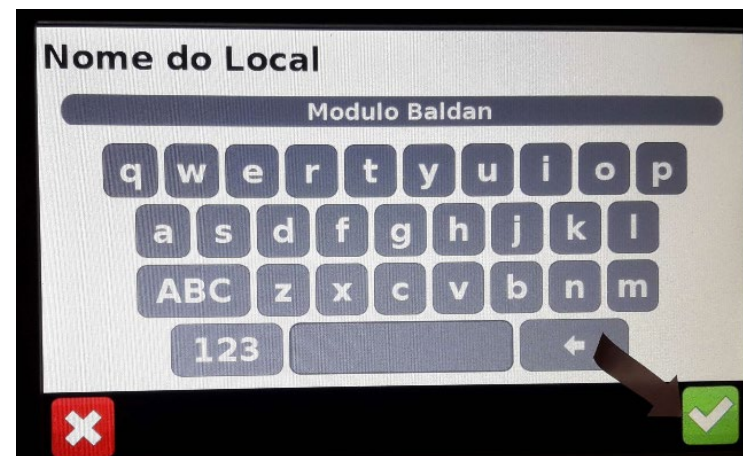
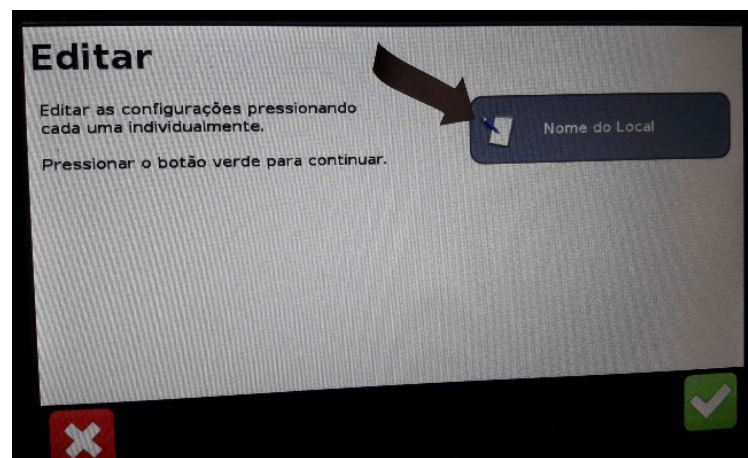
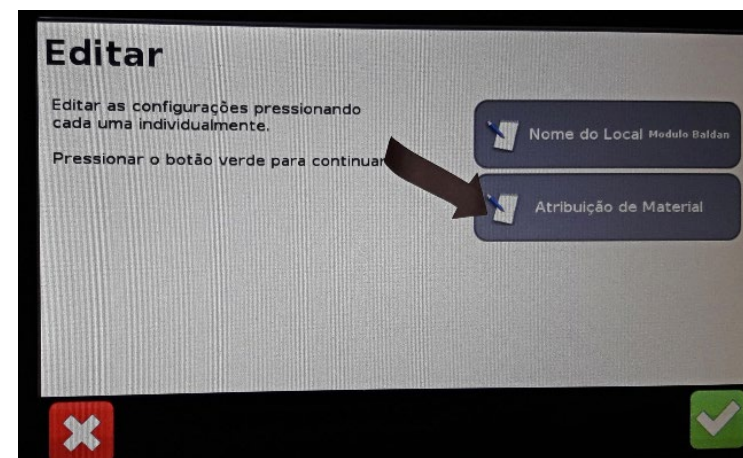


**SCREEN 38**



**SCREEN 40**

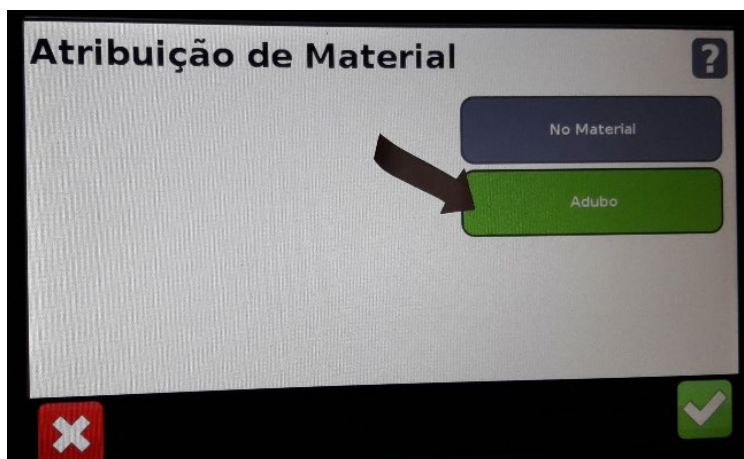


**INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XI**
**SCREEN 41**

**SCREEN 43**

**SCREEN 42**

**SCREEN 44**


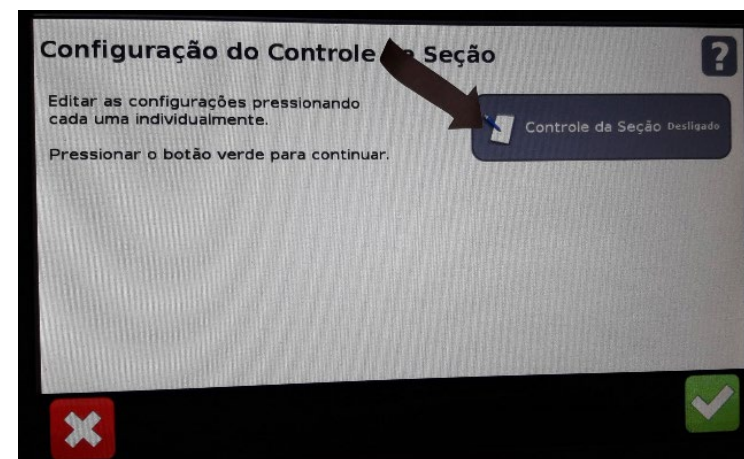


## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XII

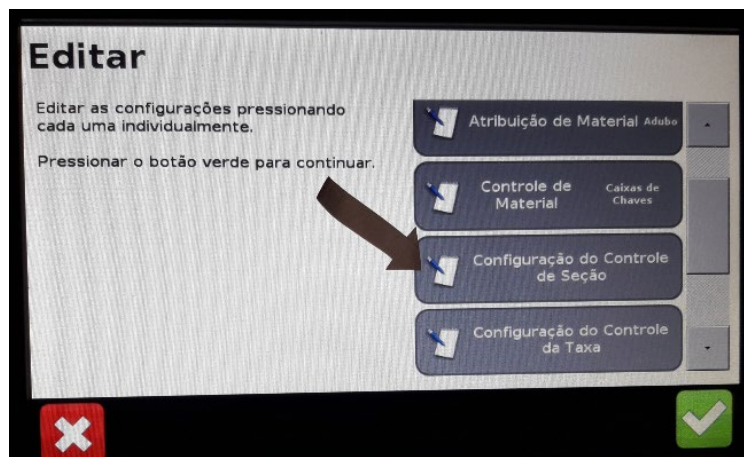
SCREEN 45



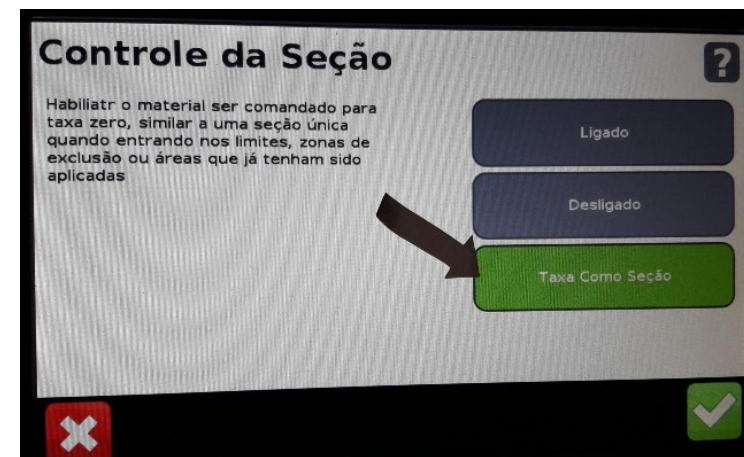
SCREEN 47

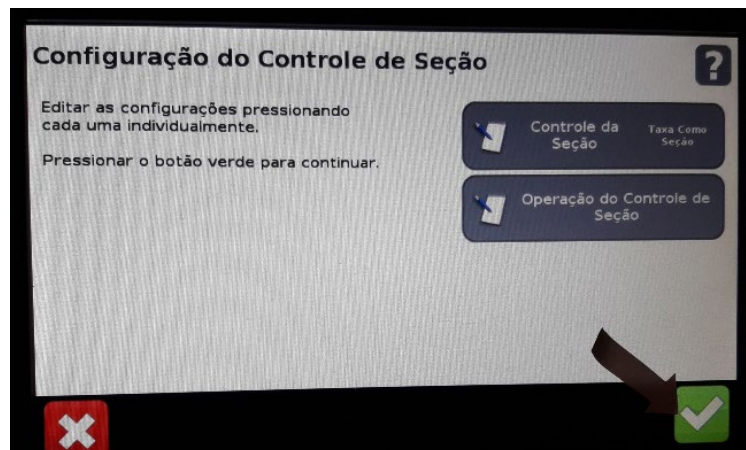
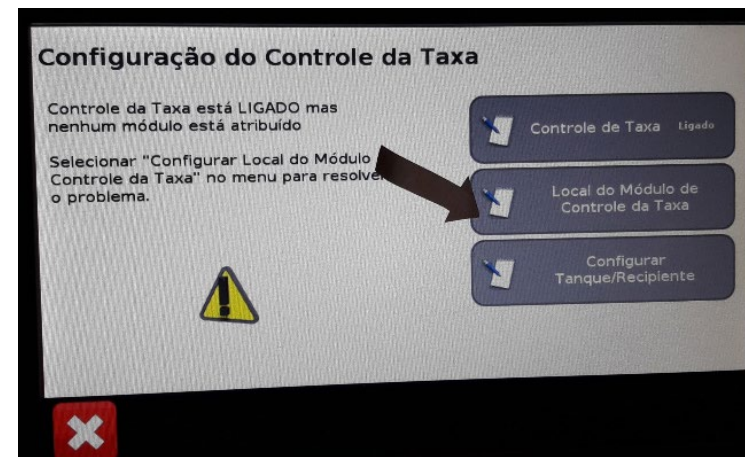
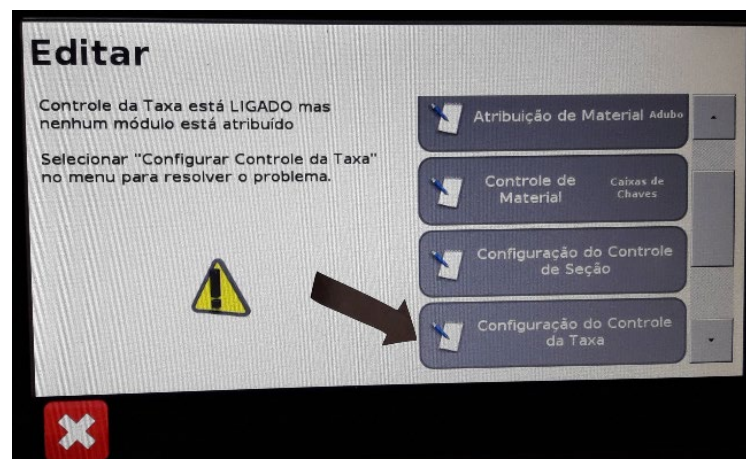
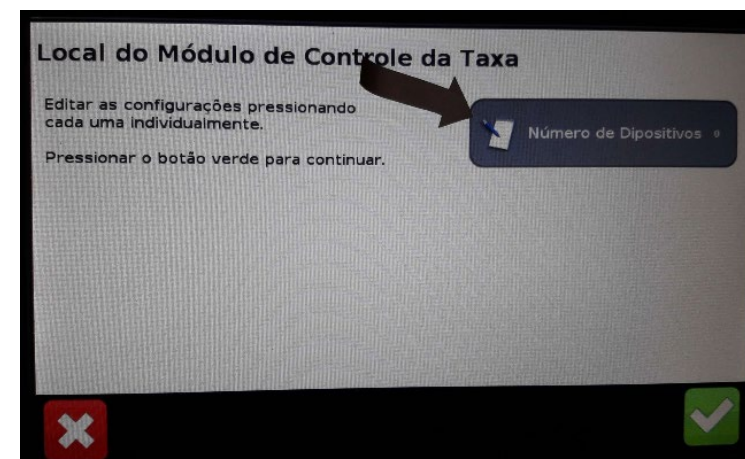


SCREEN 46



SCREEN 48



**INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XIII**
**SCREEN 49**

**SCREEN 51**

**SCREEN 50**

**SCREEN 52**




## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XIV

**SCREEN 53**

### Número de Dispositivos

Introduzir o número total de dispositivos para o local atual

1

Max: 4  
Min: 0

7	8	9
4	5	6
1	2	3
0		C

✖ ✔

**SCREEN 55**

### Módulo

Módulos

✖ ✔

**SCREEN 54**

### Local do Módulo de Controle da Taxa

Módulo de Controle da Taxa não está atribuído

Selecionar quaisquer botões do "Módulo" listados como Não-Atribuídos no menu para resolver o problema.

Número de Dispositivos 1

Módulo Não Atribuído

⚠

✖ ✔

**SCREEN 56**

### Módulos

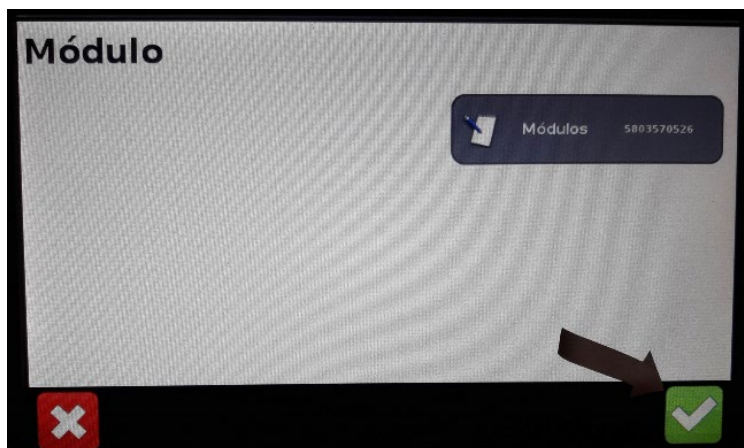
Nada

5803570526

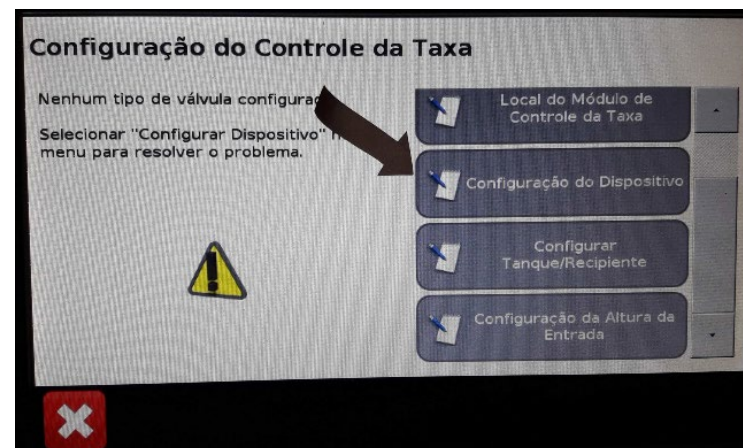
✖ ✔

INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XV

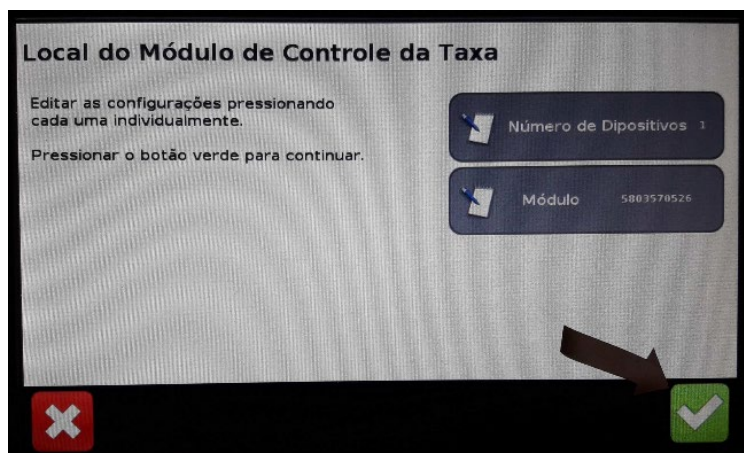
**SCREEN 57**



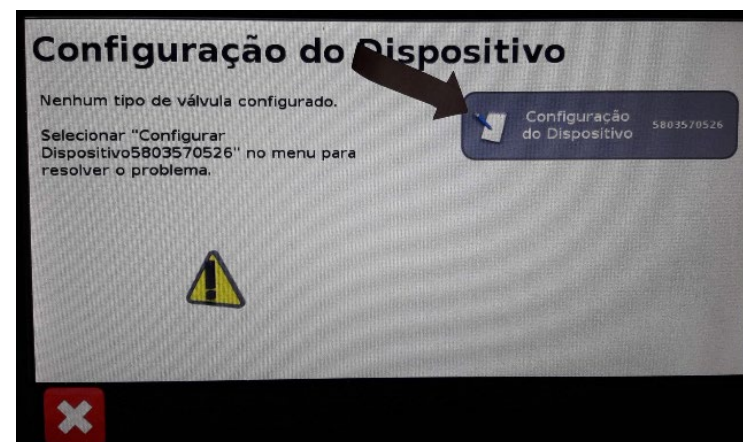
**SCREEN 59**



**SCREEN 58**



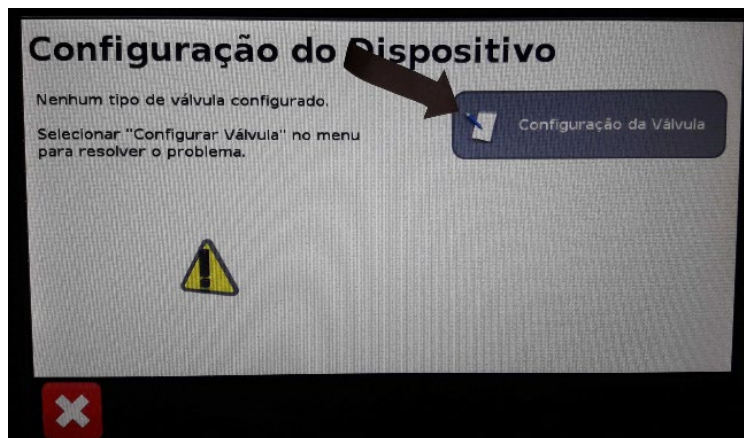
**SCREEN 60**



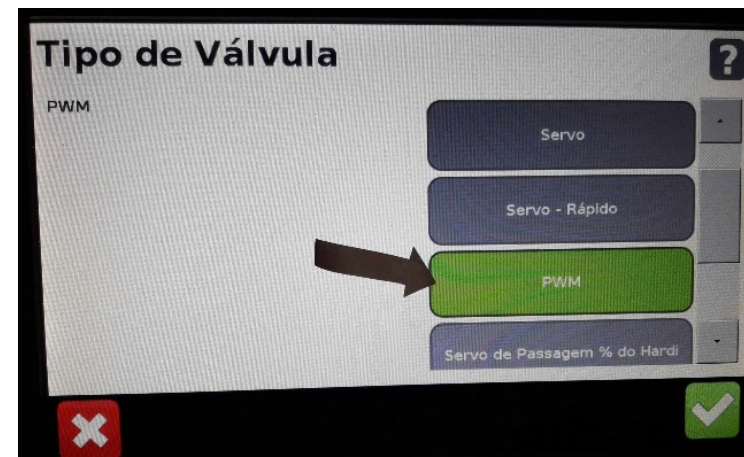


## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XVI

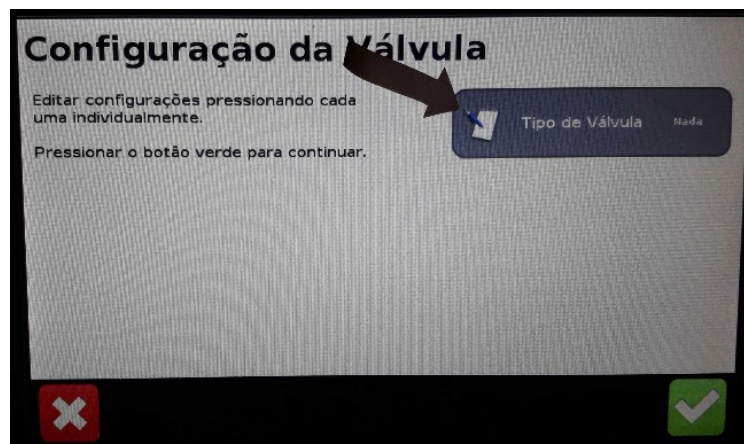
SCREEN 61



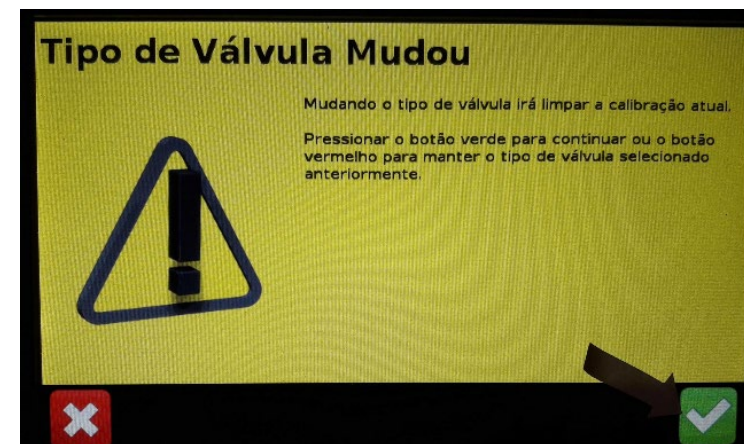
SCREEN 63



SCREEN 62

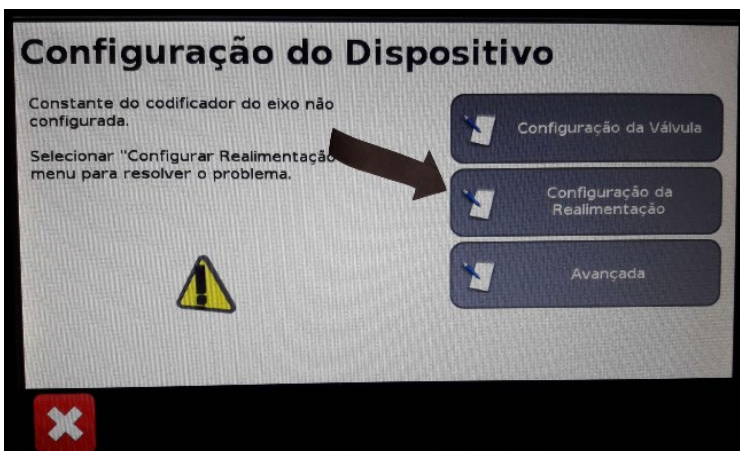


SCREEN 64



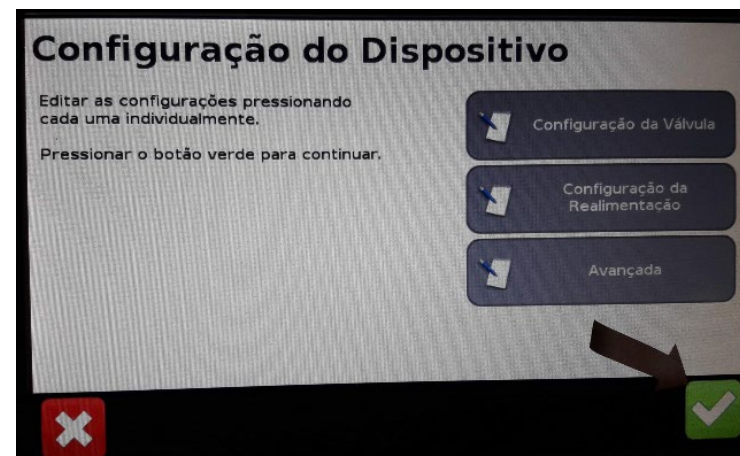
INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XVII

**SCREEN 65**

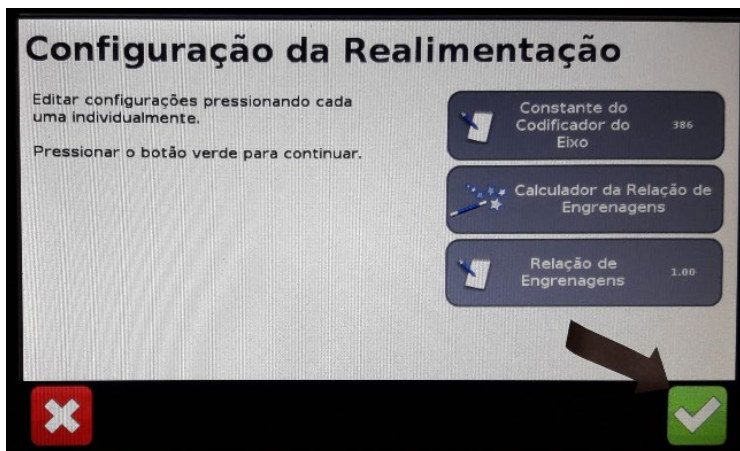


Fixed values: Axis encoder constant = 386 / Ratio of gears = 1.

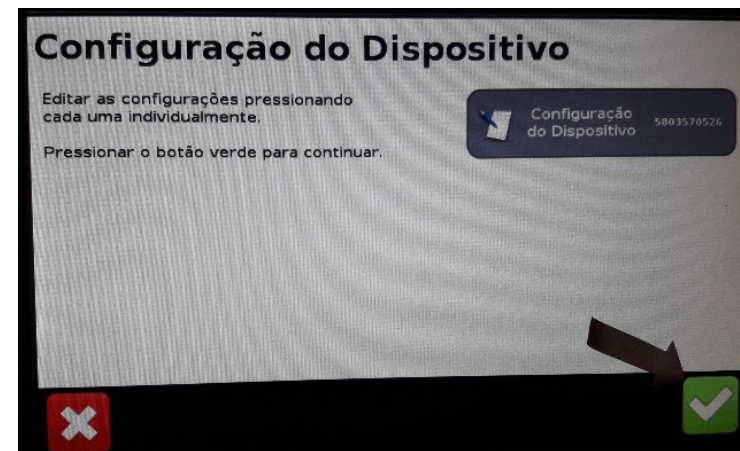
**SCREEN 67**



**SCREEN 66**



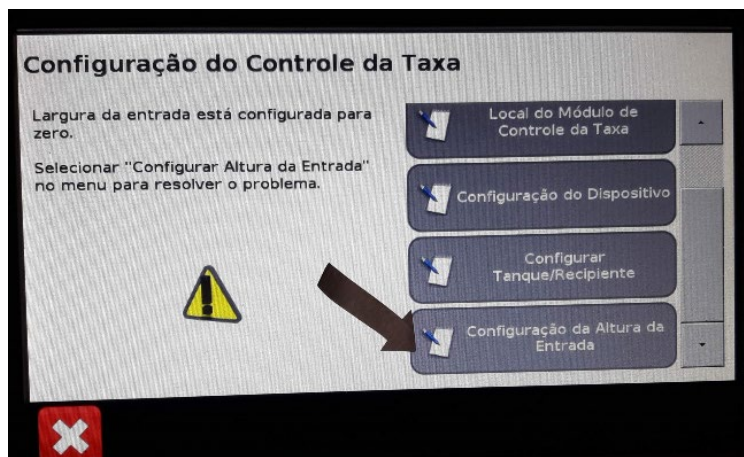
**SCREEN 68**





## INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XVIII

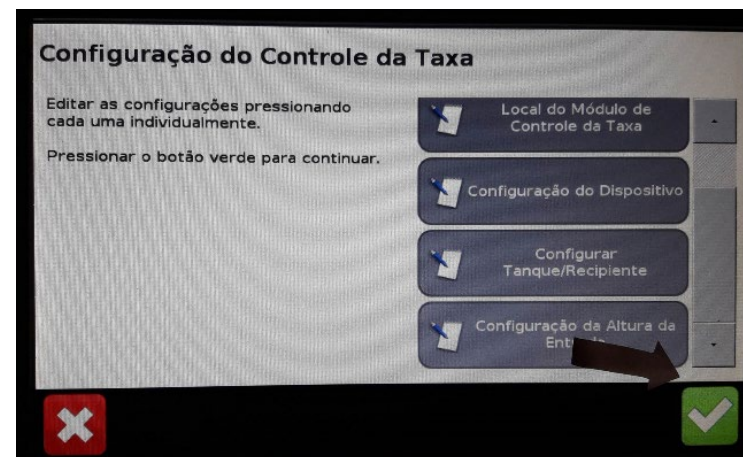
### SCREEN 69



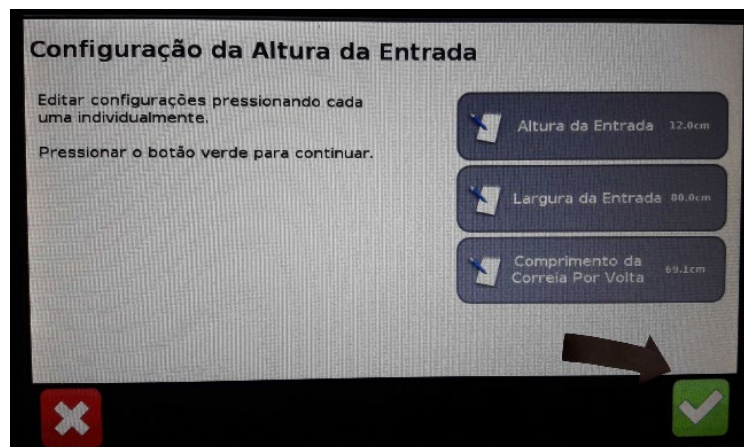
Fixed values: Opening width = 80 cm/Belt length per lap = 69.1 cm.

**NOTE:** The opening height is the actual opening height of the tailgate (it will change according to the application of product).

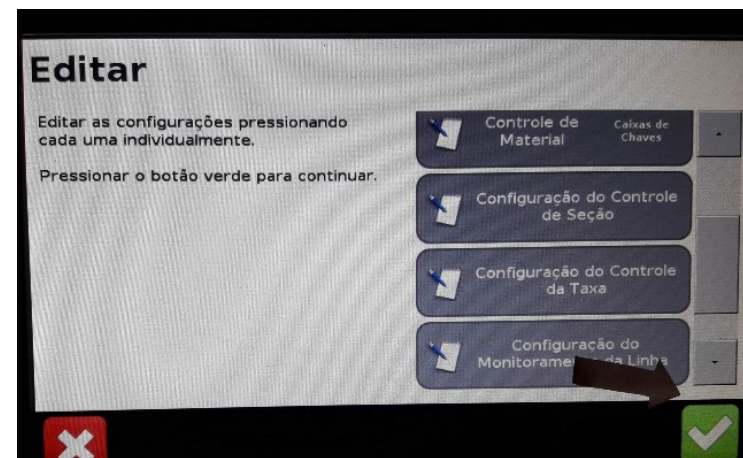
### SCREEN 71



### SCREEN 70

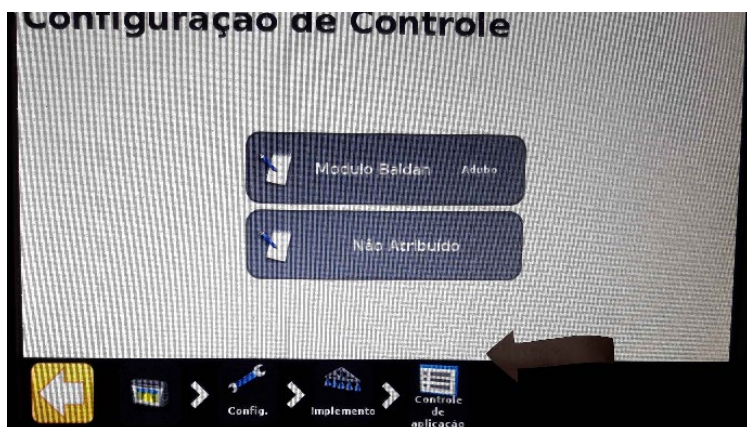


### SCREEN 72



INITIAL SET UP INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART XIX

**SCREEN 73**

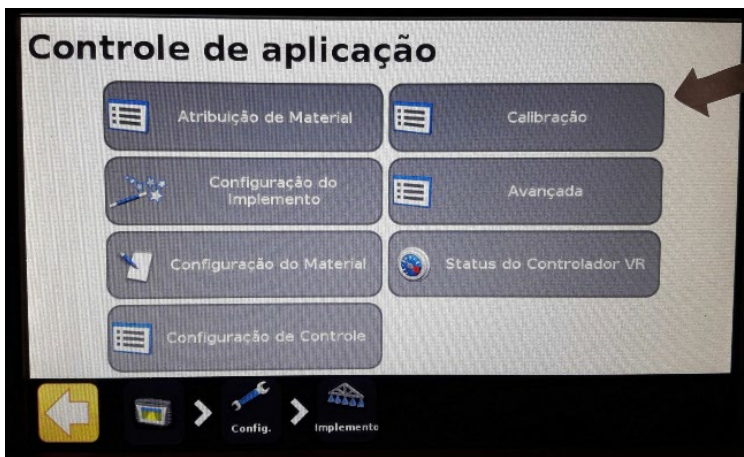




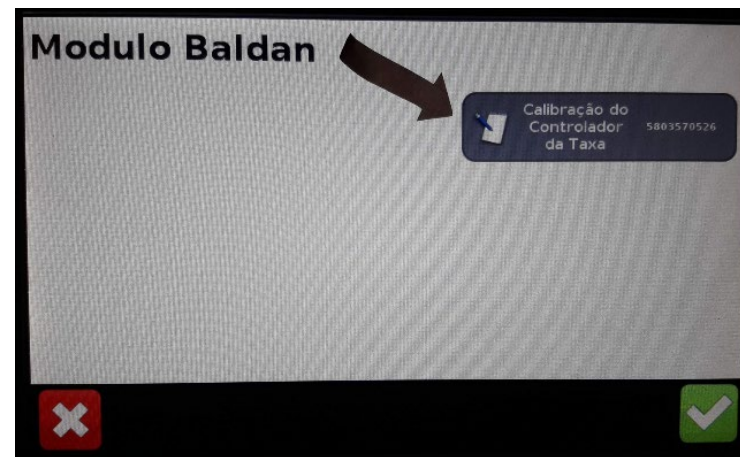
## CALIBRATION INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART I

Calibration screens will only be available after the initial settings on pages 64 through 82.

**SCREEN 1**

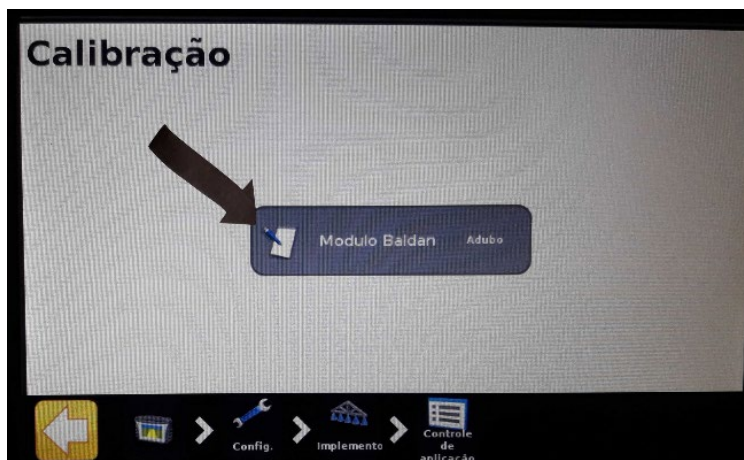


**SCREEN 3**

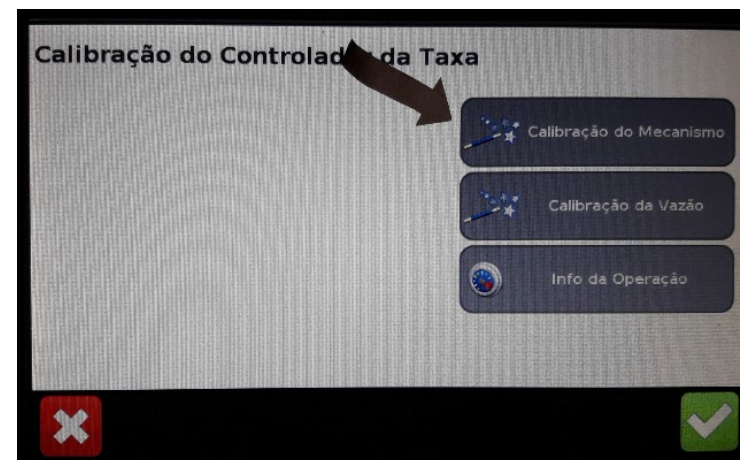


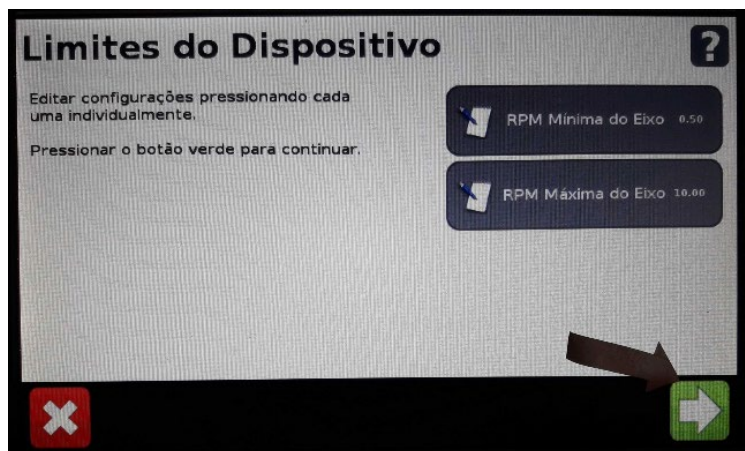
Calibration should be performed only once (at the factory or if the system has been restored).

**SCREEN 2**

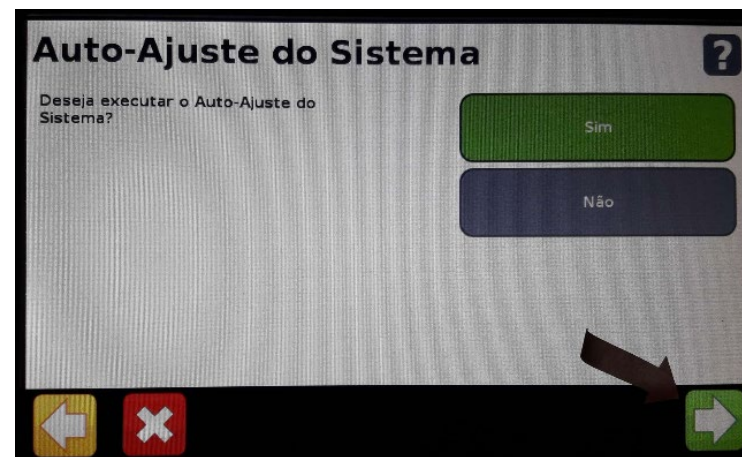


**SCREEN 4**

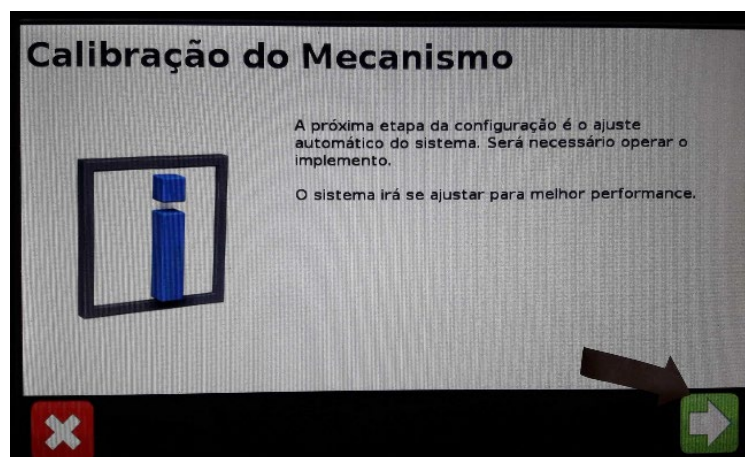


**CALIBRATION INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART II**
**SCREEN 5**


Fixed values as shown above.

**SCREEN 7**


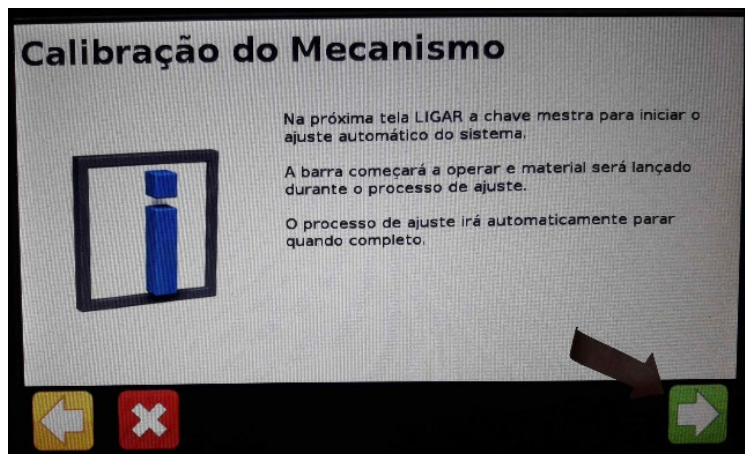
Turn on the tractor and set the TDP to 540 RPM.

**SCREEN 6**

**SCREEN 8**

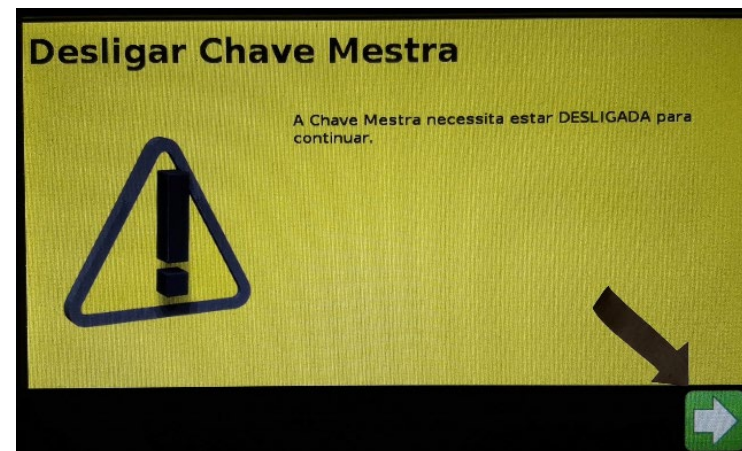



## CALIBRATION INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART III

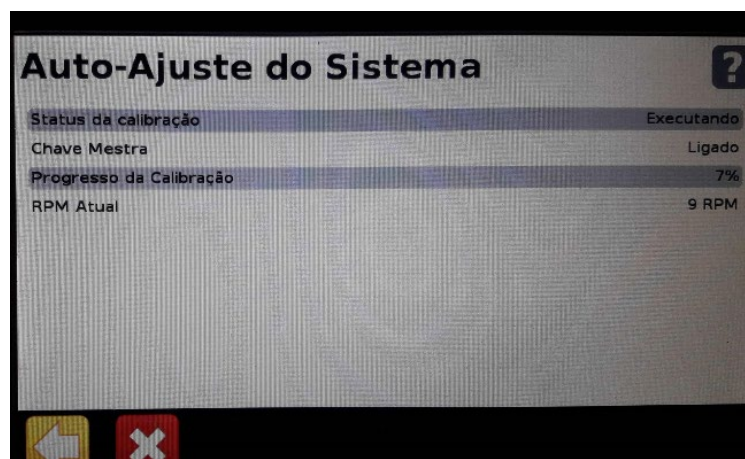
SCREEN 9



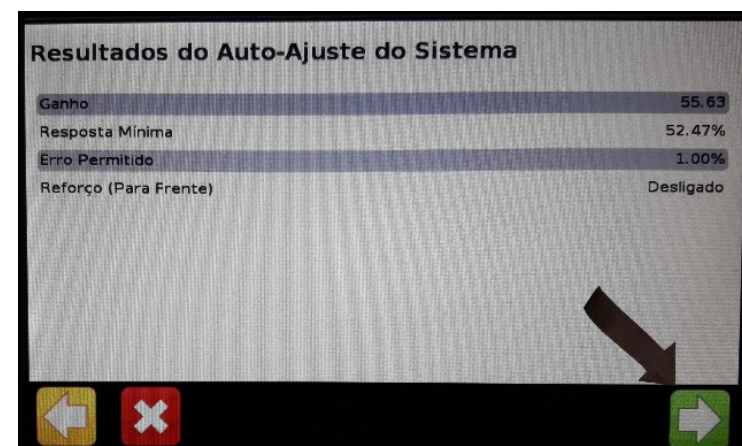
SCREEN 11



SCREEN 10

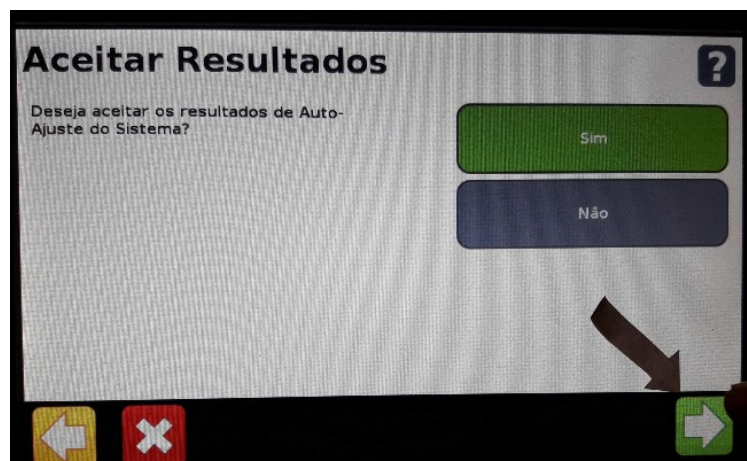


SCREEN 12

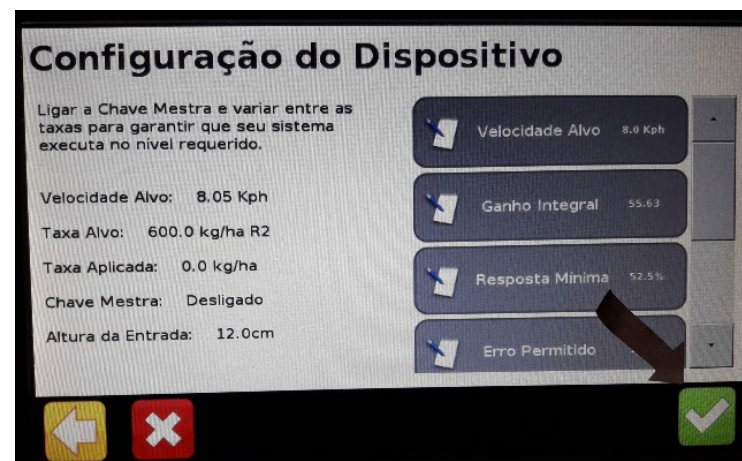


CALIBRATION INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART IV

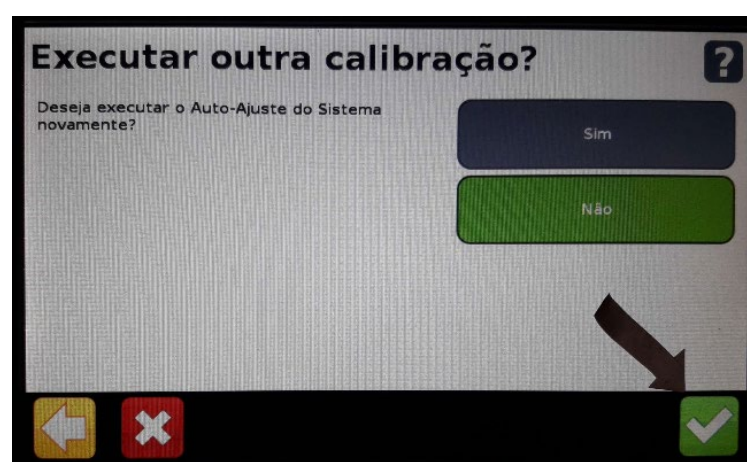
**SCREEN 13**



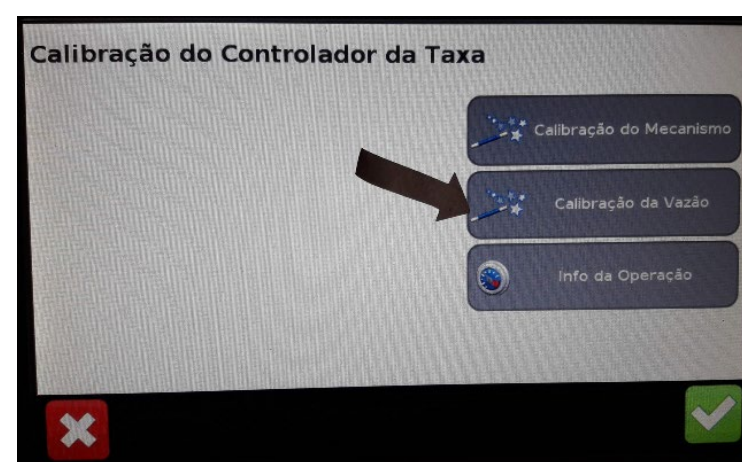
**SCREEN 15**



**SCREEN 14**



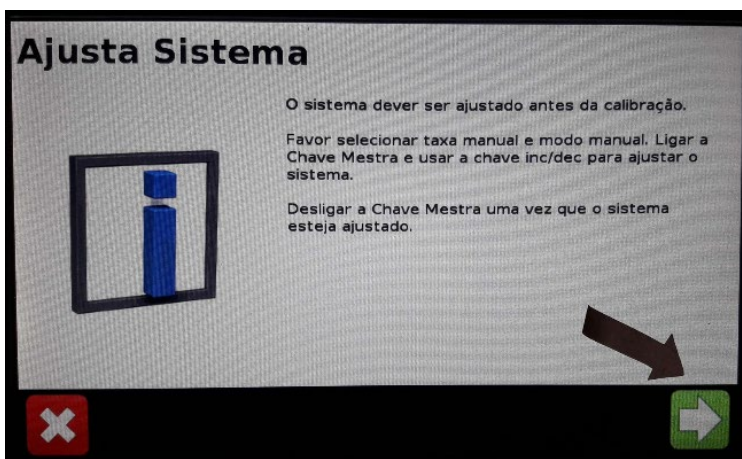
**SCREEN 16**



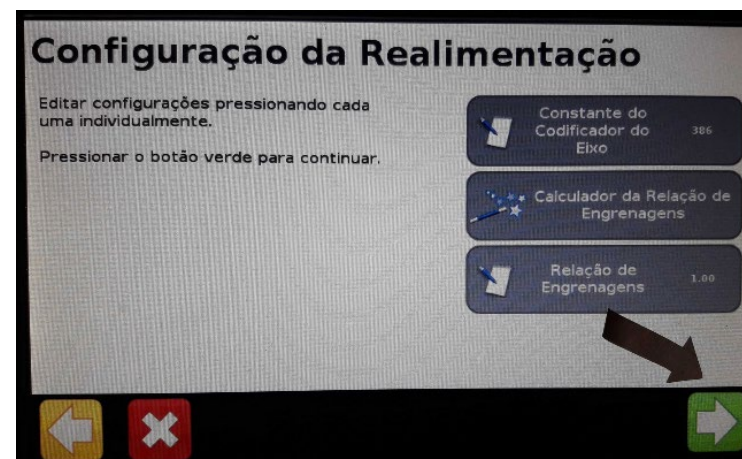


## CALIBRATION INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART V

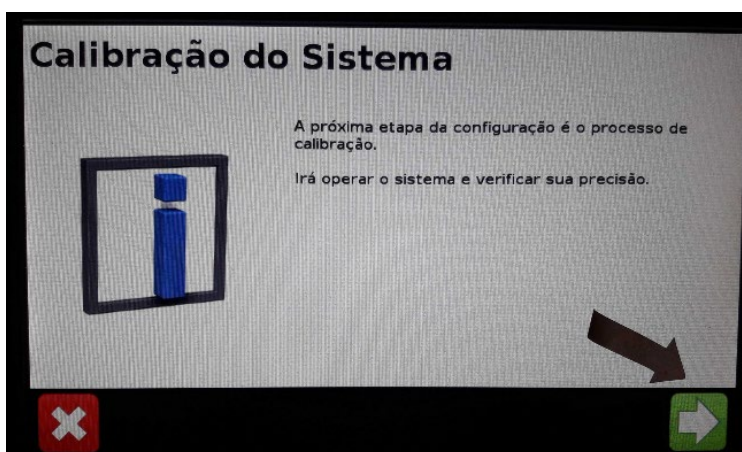
SCREEN 17



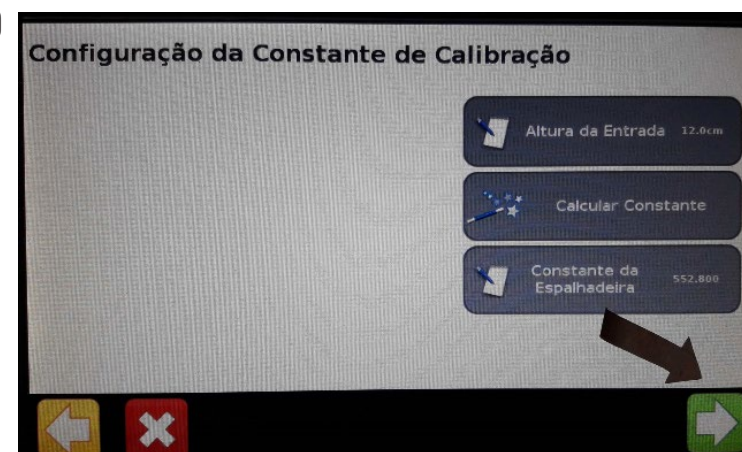
SCREEN 19



SCREEN 18

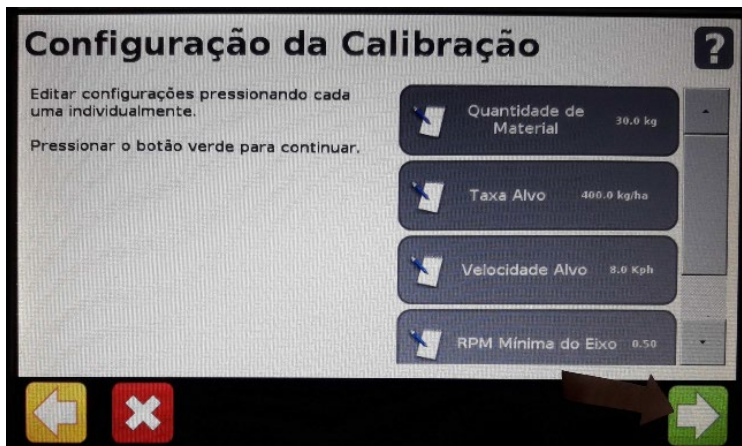


SCREEN 20



## CALIBRATION INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART VI

### SCREEN 21



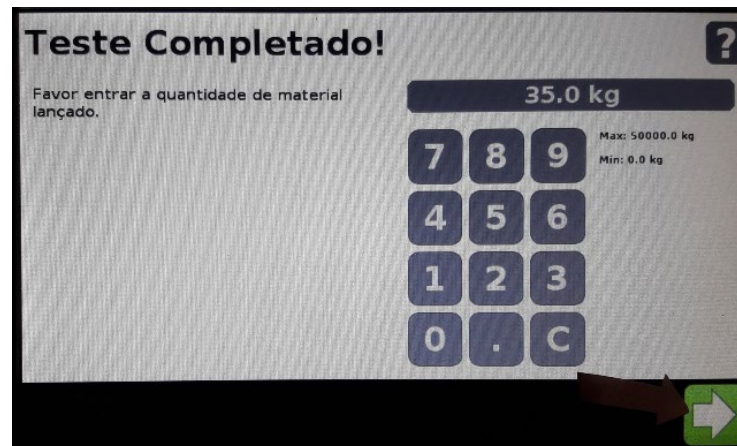
**Configuração da Calibração**

Editar configurações pressionando cada uma individualmente.  
Pressionar o botão verde para continuar.

- Quantidade de Material: 30.0 kg
- Taxa Alvo: 400.0 kg/ha
- Velocidade Alvo: 8.0 Kph
- RPM Mínima do Eixo: 0.50

Adjust the values according to the product applied, example above.

### SCREEN 23



**Teste Completado!**

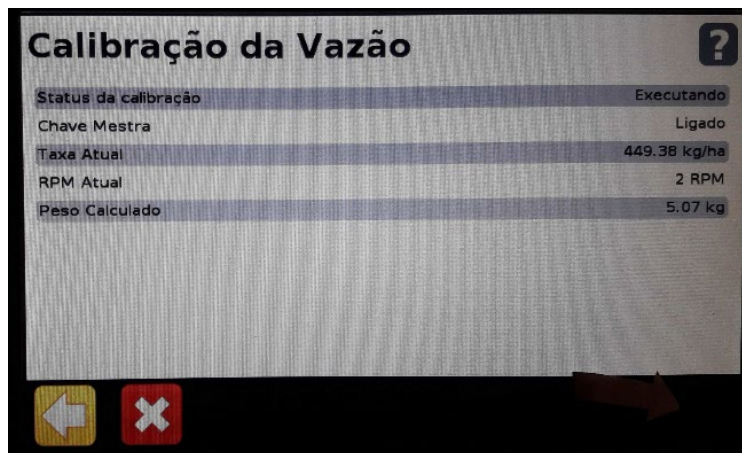
Favor entrar a quantidade de material lançado.

35.0 kg

Max: 50000.0 kg  
Min: 0.0 kg

Enter the weight of the collected product.

### SCREEN 22



**Calibração da Vazão**

Status da calibração: Executando

Chave Mestra: Ligado

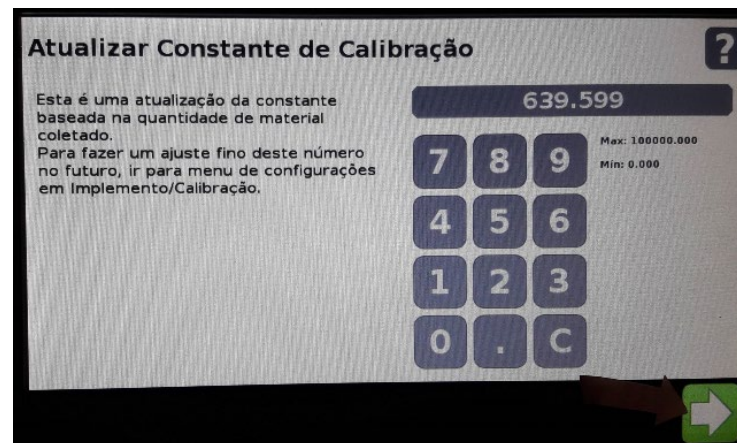
Taxa Atual: 449.38 kg/ha

RPM Atual: 2 RPM

Peso Calculado: 5.07 kg

Turn on the tractor and set the TDP to 540 RPM.

### SCREEN 24



**Atualizar Constante de Calibração**

Esta é uma atualização da constante baseada na quantidade de material coletado.  
Para fazer um ajuste fino deste número no futuro, ir para menu de configurações em Implemento/Calibração.

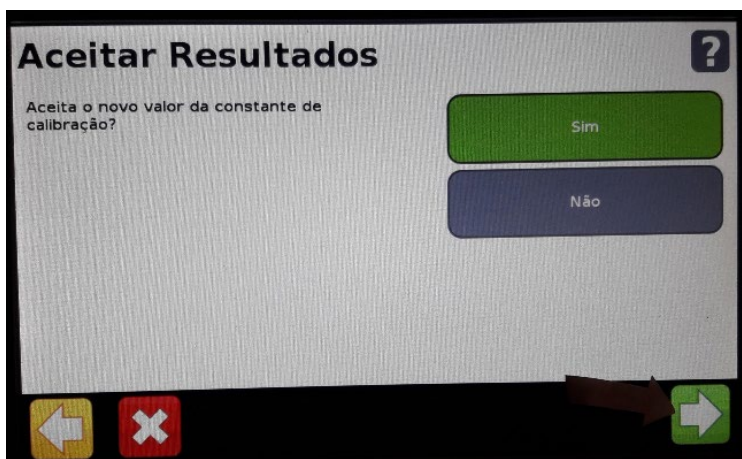
639.599

Max: 100000.000  
Min: 0.000



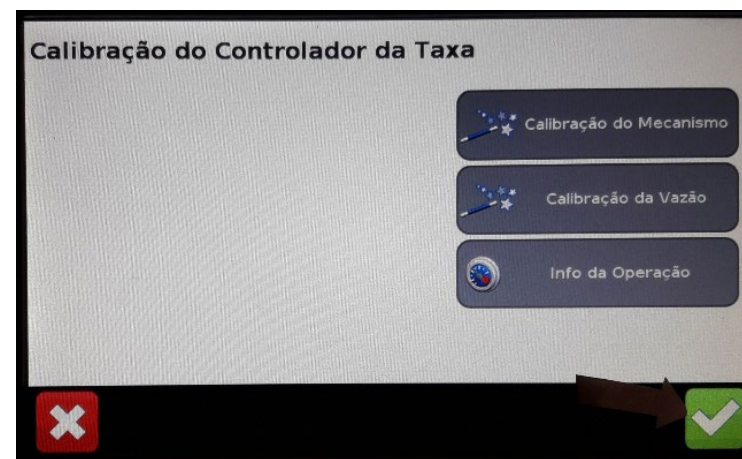
## CALIBRATION INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART VII

**SCREEN 25**

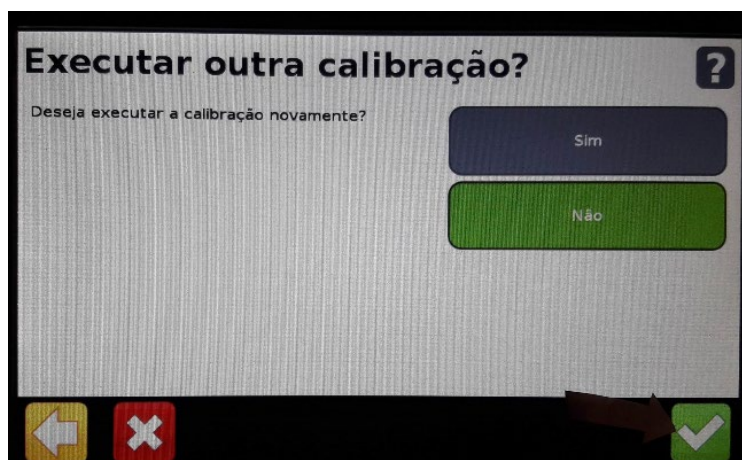


Calibrate at least 3 times for quantities greater than 50 kg.

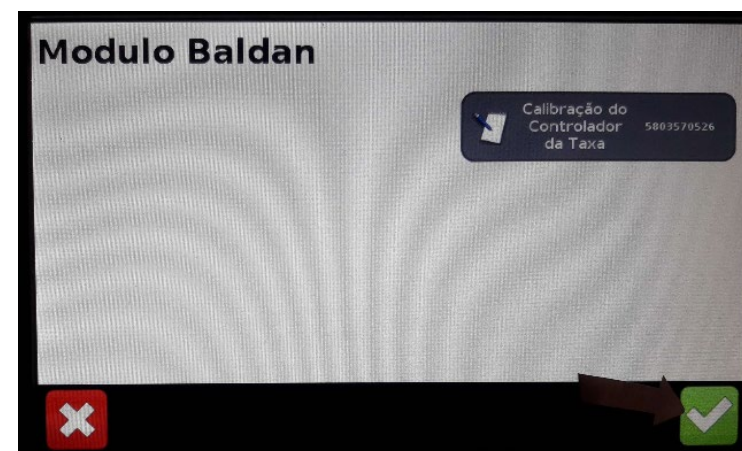
**SCREEN 27**



**SCREEN 26**

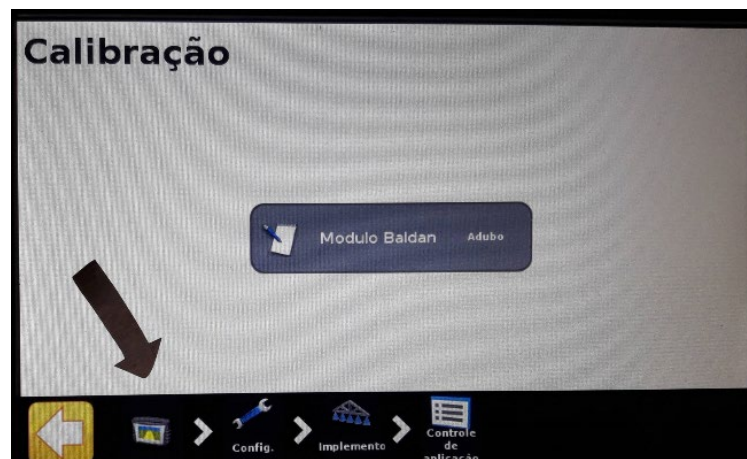


**SCREEN 28**



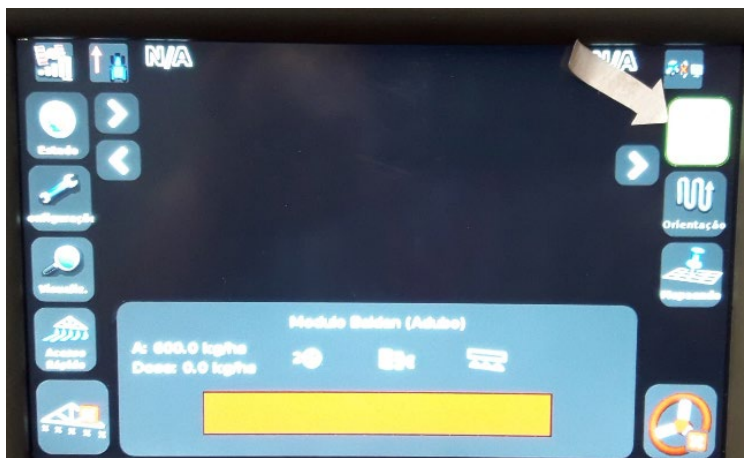
CALIBRATION INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART VIII

**SCREEN 21**

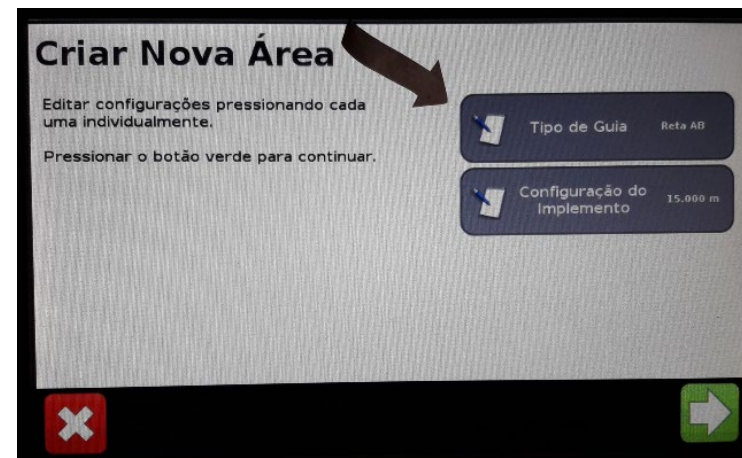


## WORK AREA OPENING - TRIMBLE CFX-750 SYSTEM - PART I

SCREEN 1

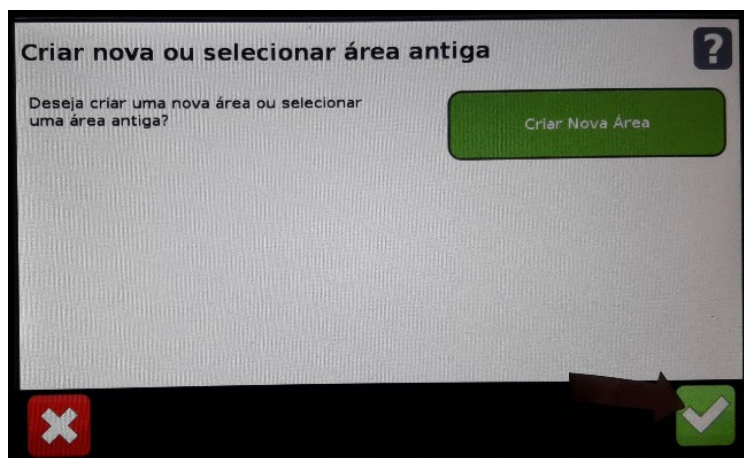


SCREEN 3

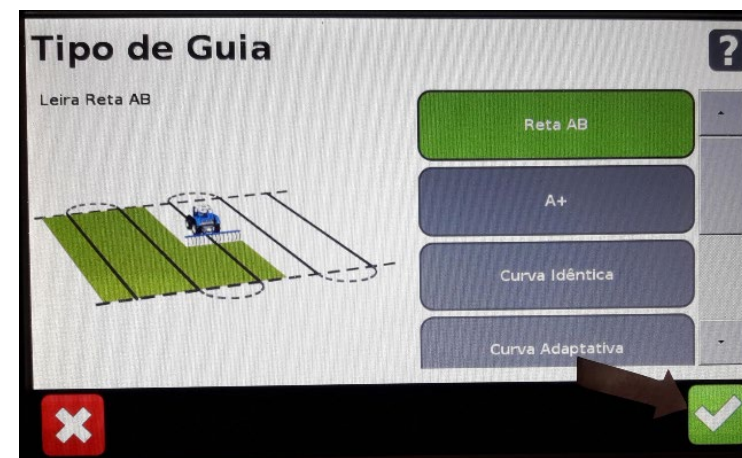


Choose the type of guide you want to work with.

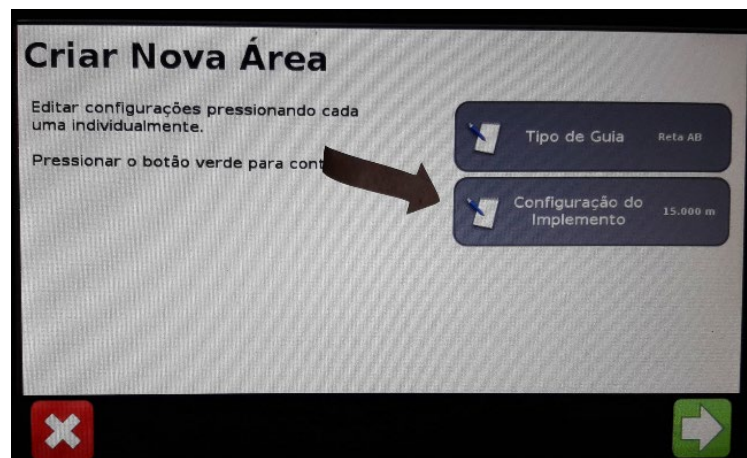
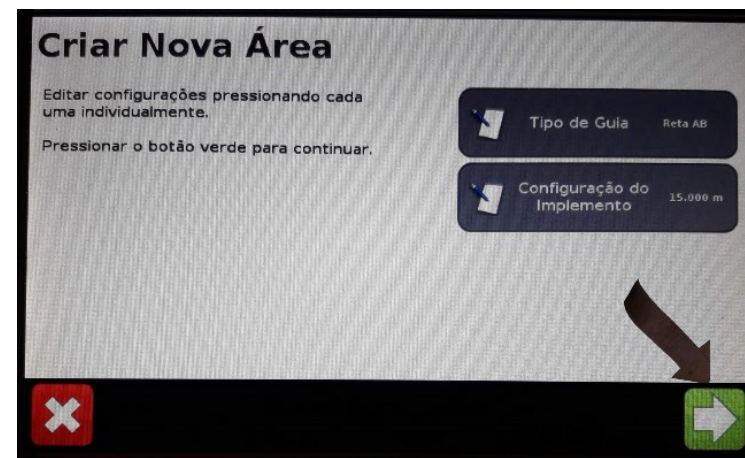
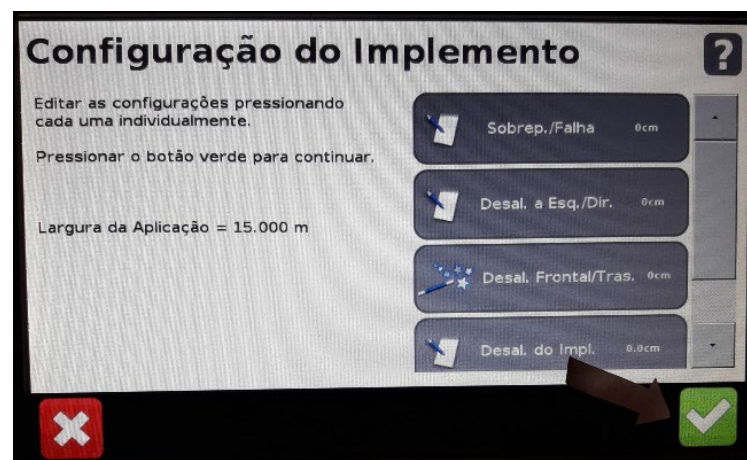
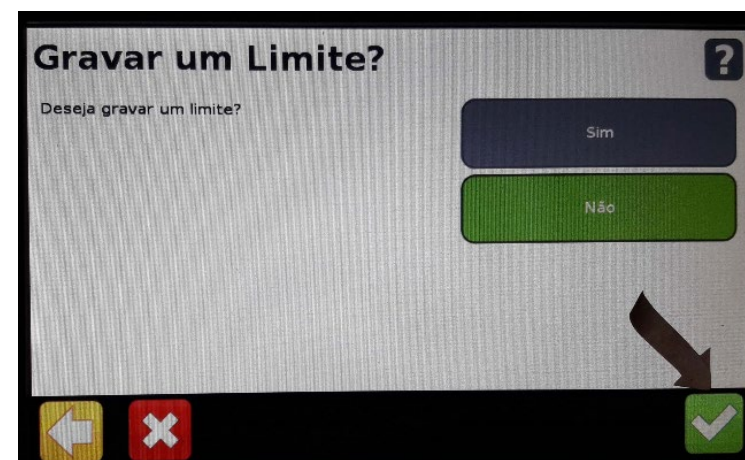
SCREEN 2



SCREEN 4





**WORK AREA OPENING - TRIMBLE CFX-750 SYSTEM - PART II**
**SCREEN 5**

**SCREEN 7**

**SCREEN 6**

**SCREEN 8**




## WORK AREA OPENING - TRIMBLE CFX-750 SYSTEM - PART III

### SCREEN 9

**Confirme Configuração** ?

Editar configurações pressionando cada uma individualmente.  
Pressionar o botão verde para continuar.

Cliente	balcan
Fazenda	teste
Área	071418_0001
Evento	Event_071418_0001

← × →

Enter values as shown above.

### SCREEN 10

**Manutenção de Registros** ?

Editar configurações pressionando cada uma individualmente.  
Pressionar o botão verde para continuar.

Operador	cencia
Número de Licença EPA	Default_EPA
Ano da Colheita	Default_HarvestYear
Local da Fazenda	Default_Location

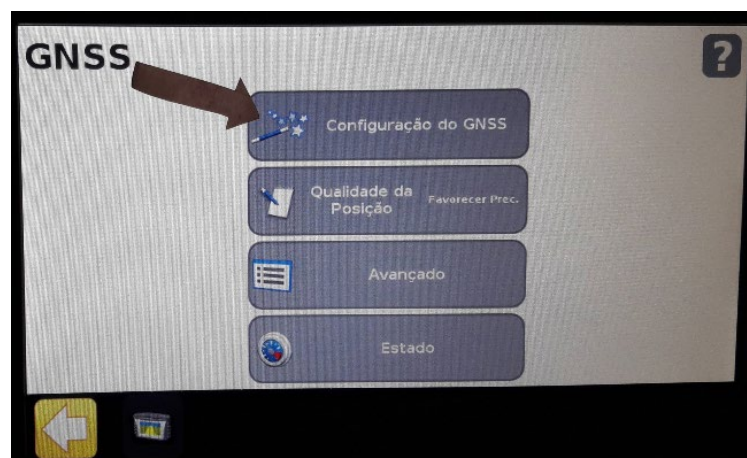
← × ✓

### CHANGING GPS SIGNAL - TRIMBLE CFX-750 SYSTEM - PART I

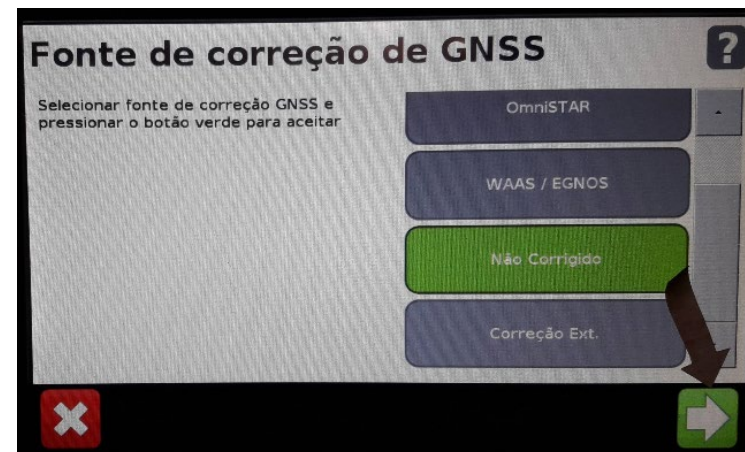
SCREEN 1



SCREEN 2

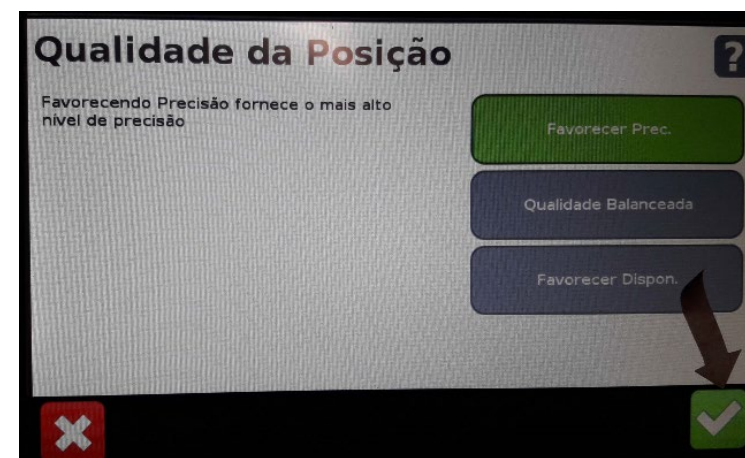


SCREEN 3



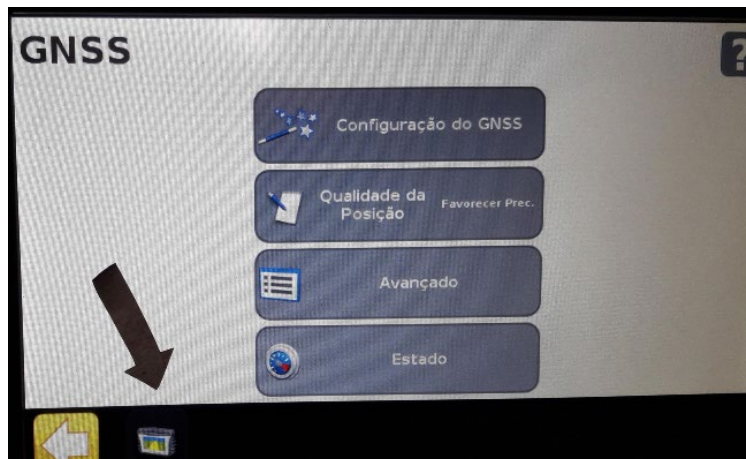
The example above shows an option free for signal usage.

SCREEN 4



## CHANGING GPS SIGNAL - TRIMBLE CFX-750 SYSTEM - PART II

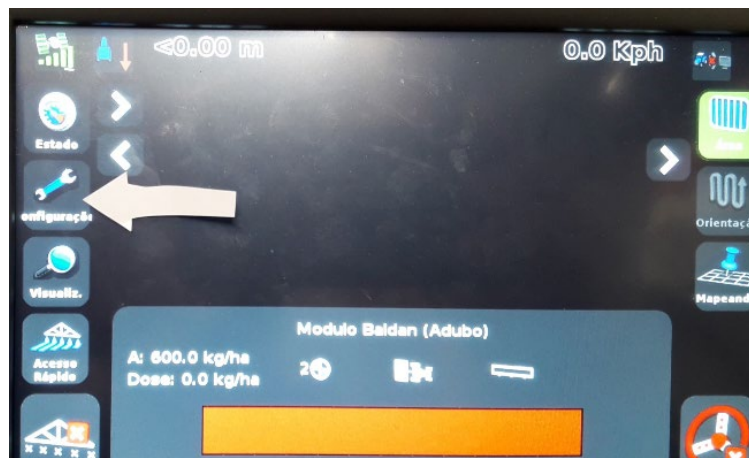
### SCREEN 5



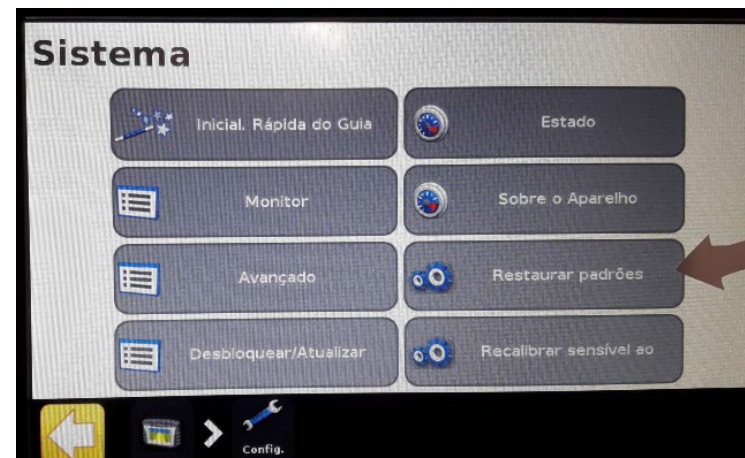


### SYSTEM RESTORATION - TRIMBLE CFX-750 SYSTEM

SCREEN 1



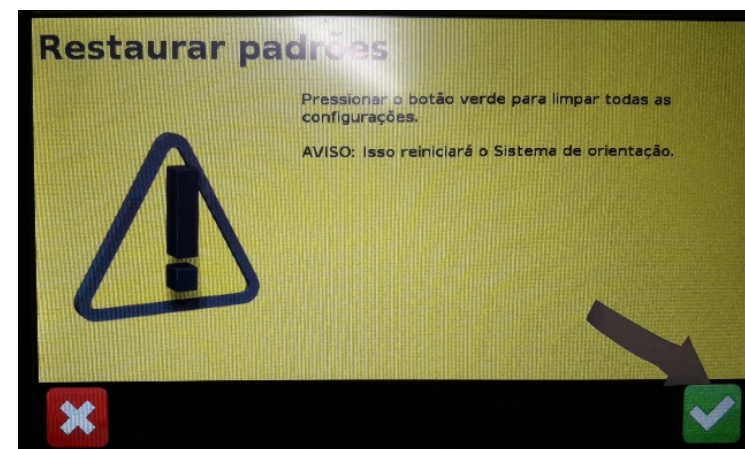
SCREEN 3



SCREEN 2



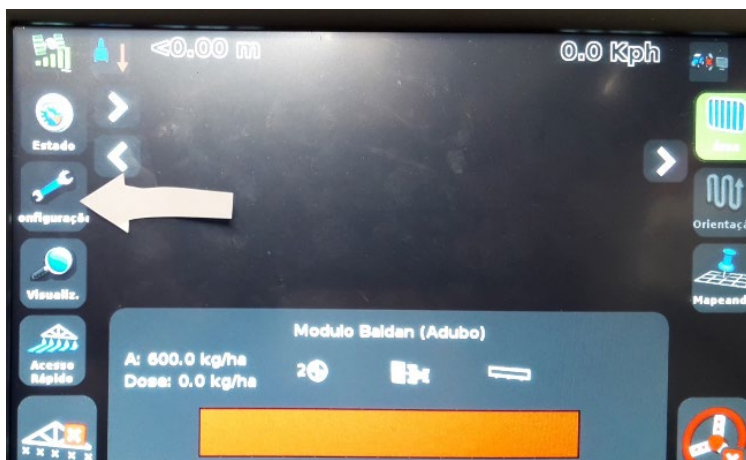
SCREEN 4



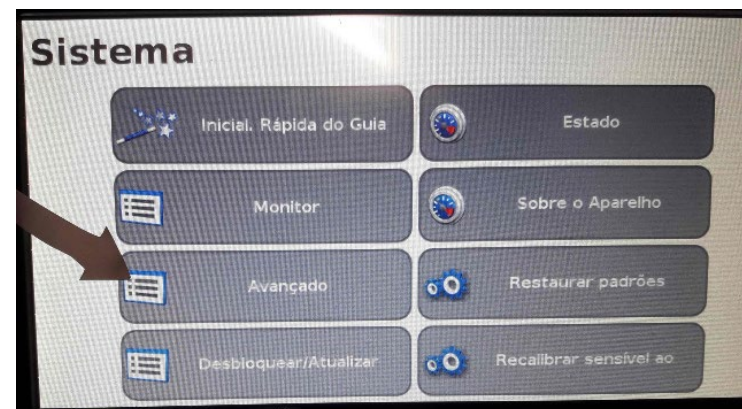


## INSERT MACHINE SETTINGS STORED IN FLASH DRIVE - TRIMBLE CFX-750 SYSTEM - PART I

SCREEN 1



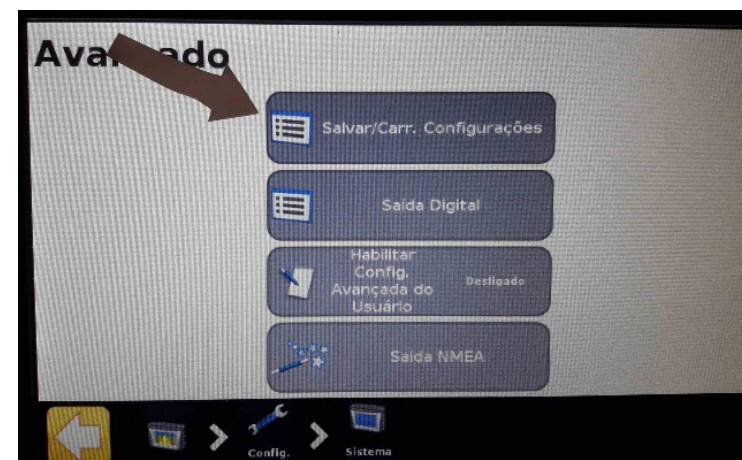
SCREEN 3



SCREEN 2

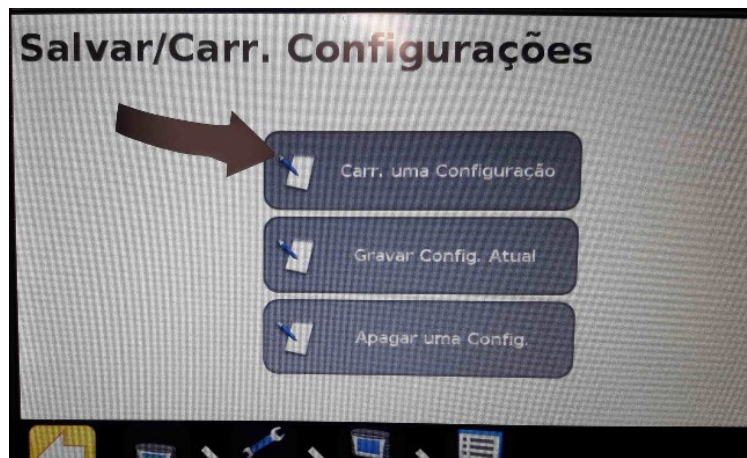


SCREEN 4

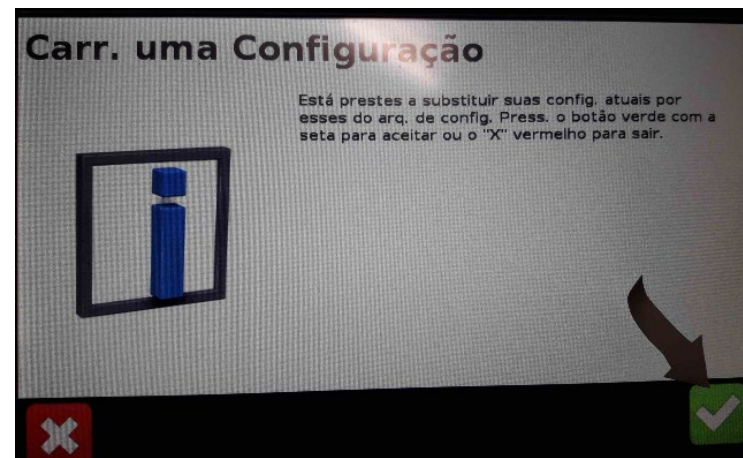


INSERT MACHINE SETTINGS STORED IN FLASH DRIVE - TRIMBLE CFX-750 SYSTEM - PART II

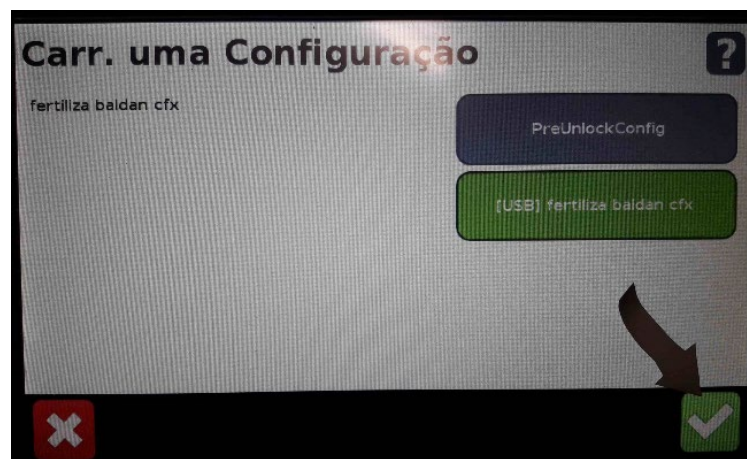
**SCREEN 5**



**SCREEN 7**



**SCREEN 6**



**SCREEN 8**





## UPDATE INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART I

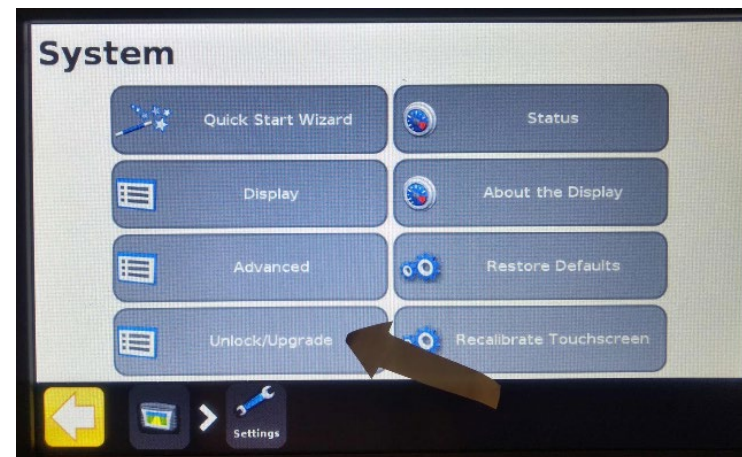
To update the monitor software, insert the Flash Drive containing the update and language files (Portuguese) into the back USB port of the monitor.

**NOTE:** Files must be in the root folder of the Pen Drive and save the settings for backup before performing this procedure.

SCREEN 1



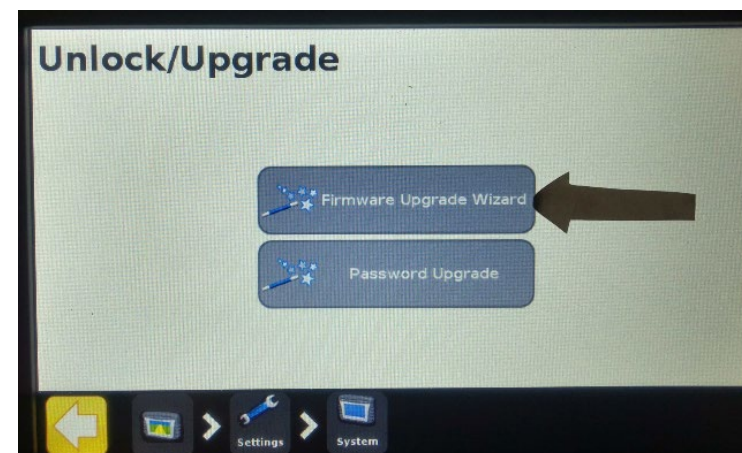
SCREEN 3



SCREEN 2

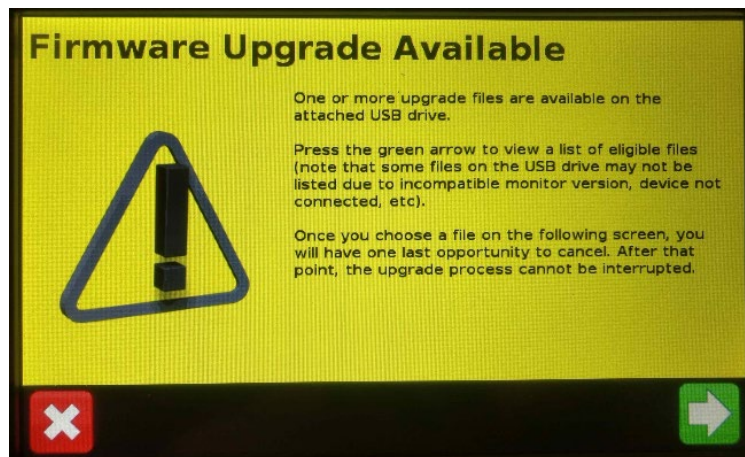


SCREEN 4

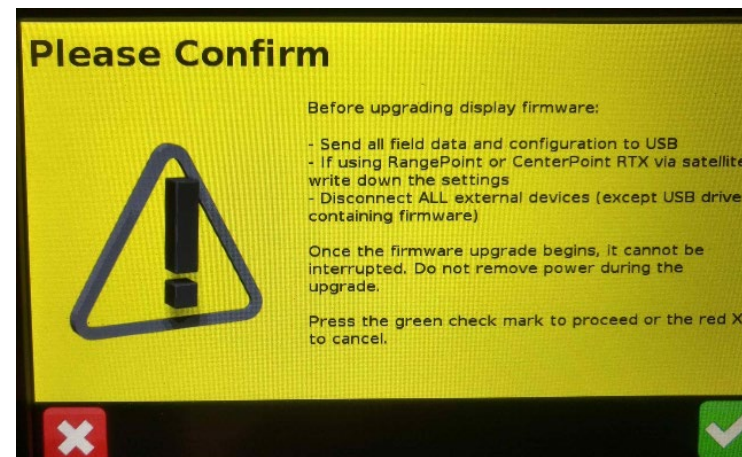


## UPDATE INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART II

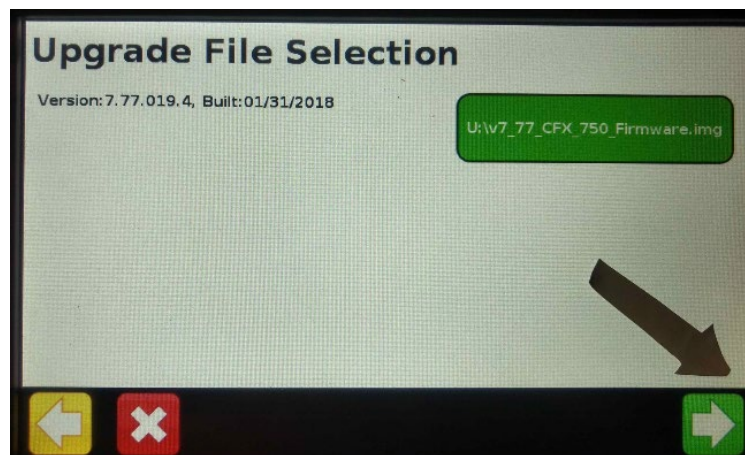
**SCREEN 5**



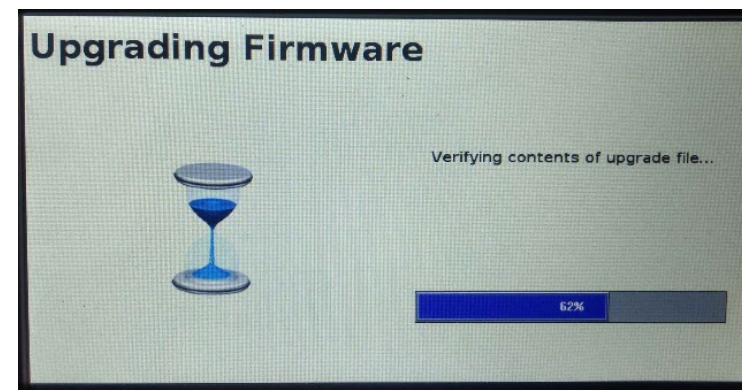
**SCREEN 7**



**SCREEN 6**



**SCREEN 8**



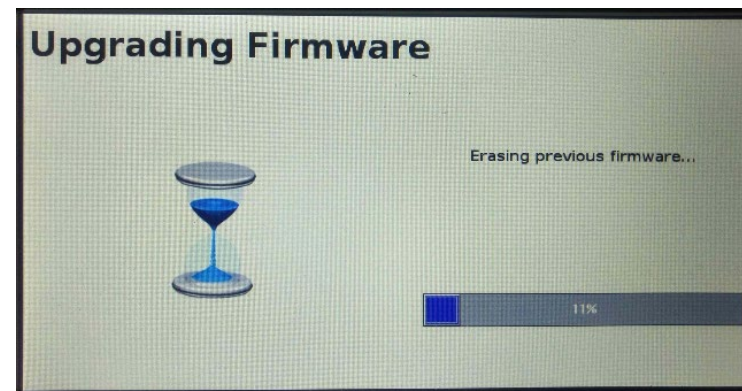


## UPDATE INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART III

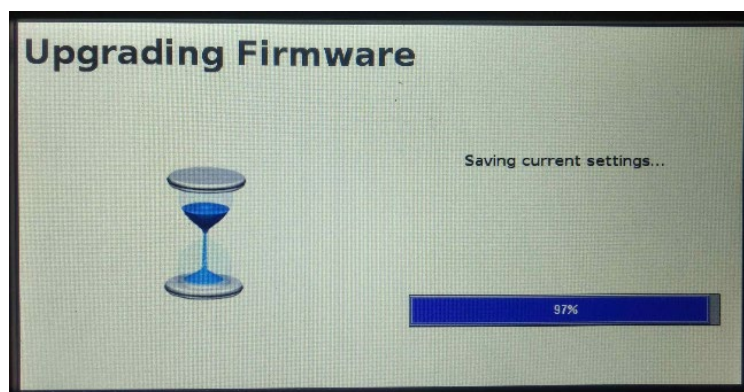
**SCREEN 9**



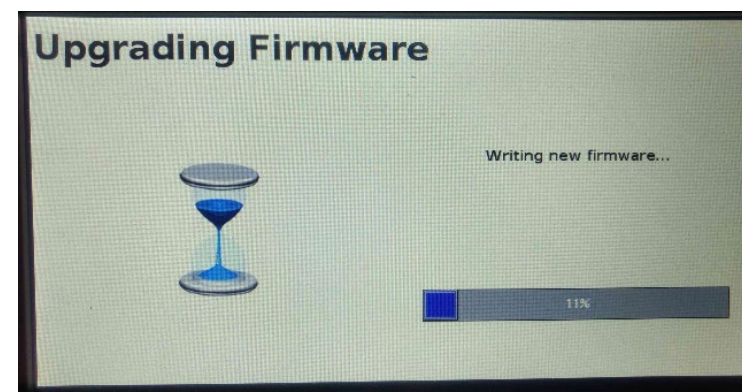
**SCREEN 11**

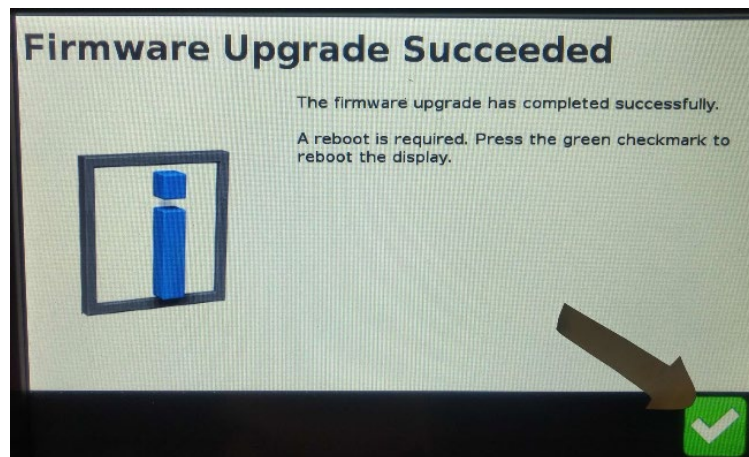
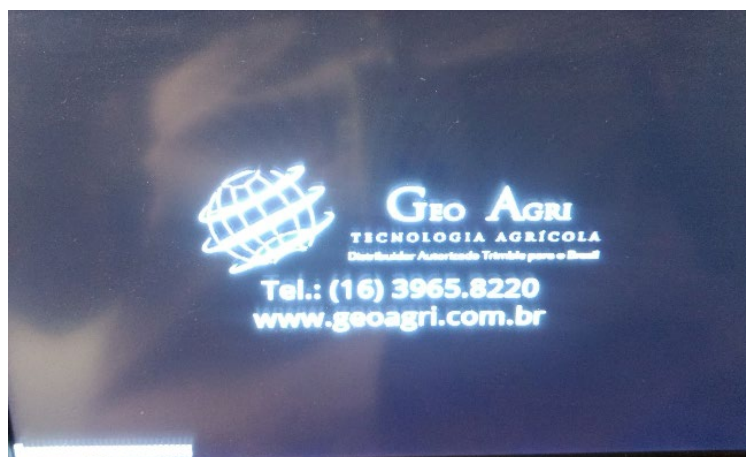


**SCREEN 10**



**SCREEN 12**



**UPDATE INSTRUCTIONS - TRIMBLE CFX-750 SYSTEM - PART III****SCREEN 13****SCREEN 14**

## SETTINGS - RAVEN CR7/ISOBUS SYSTEM - PART I

### SETTINGS PAGE

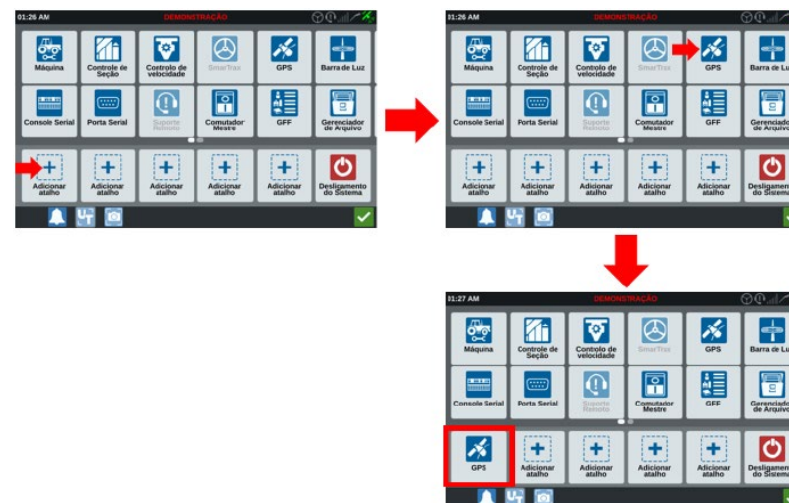
Press the button on the settings page.



To view other settings, slide the page left or right.

### ADD SHORTCUT

You can add shortcuts to the most commonly used settings. Select one of the "Add Shortcut" buttons and then select the setting you want to assign.



### REMOVE SHORTCUT

You can remove a shortcut by selecting it and then pressing the small button





## SETTINGS - RAVEN CR7/ISOBUS SYSTEM - PART II

### CONFIGURATION ORDER

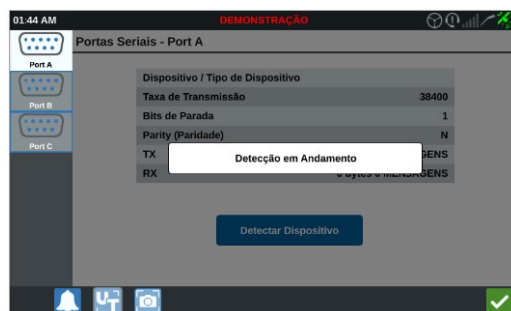
This is a suggested order for an initial basic setting. It is important that these items are set up before operation. Your CR7 will guide you through some of these settings on the first system boot. Please check the set-up items and set up the ones that are still necessary.



### 1. SERIAL PORT

Your CR7 will automatically detect your 500S<sup>tm</sup> or 600S<sup>tm</sup> Raven antenna. If GPS is not detected, you can choose PORT A and press the "Detect Device" button. After detection, your GPS device will be listed in the Devices section.

If your device is still not detected, check for correct voltage. The receiver must also be connected to the 3-pin round connector (Specific Input for GPS Receiver Connection on CR7<sup>tm</sup>) or the 9-pin COM1/DGPS connector (for cable adaptors for Raven's previous field computers).



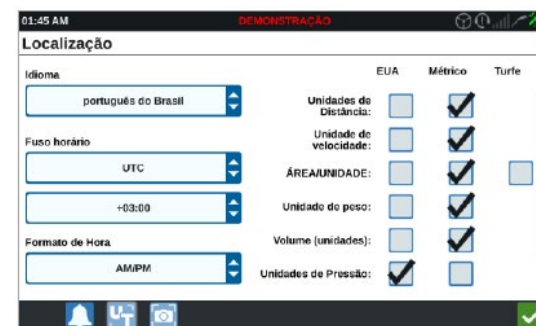
### 2. GPS

If your CR7 is connected to a Raven 500S<sup>tm</sup> or 600S<sup>tm</sup> antenna you can set up differential values. It is recommended to keep it in Auto unless otherwise noted. The other COM ports should not require setting up. You can also view information about satellites by pressing the information button.



### 3. LOCATION

You can set up Language, Time Zone, and application units in this section. You can choose any combination of units based on your operation needs/preferences.

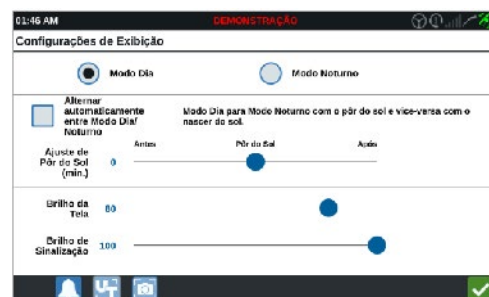




## SETTINGS - RAVEN CR7/ISOBUS SYSTEM - PART III

### 4. SCREEN

You can set up two displays for daytime or nighttime operations by customizing screen and lightbar brightness for each one. The brightness setting for the lightbar affects both the built-in lightbar and an external lightbar (if connected).

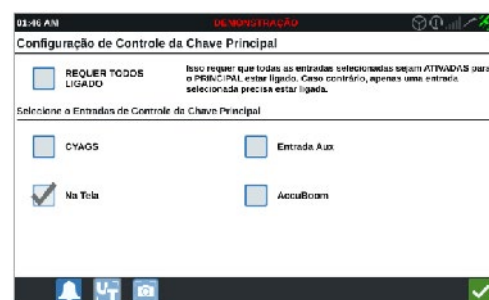


At any time, you can switch between day and night mode by returning to this page or by simply adding a specific widget (indicated at the side) to the work screen.



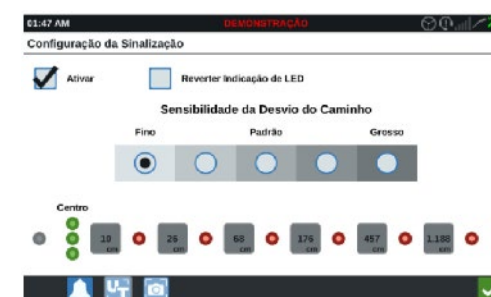
### 5. MASTER SWITCH

You can connect an external or implement switch to your CR7™ or also use a Master Switch widget to enable covered area mapping. You can also configure how these switches will work, jointly or separately, as required.



### 6. LIGHTBAR

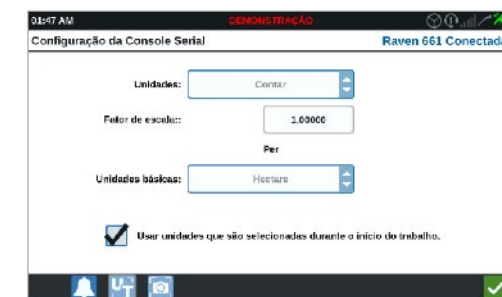
You can set up the sensitivity that your lightbar red lights (CR7™ or external) will light up. You can also revert the indication if necessary.



### 7. CONSOLE SERIAL

If your CR7™ is connected to a Raven Serial Console (SCS4xx or SCS6xx) then you need to check the units, scaling factor, and base units as this information is not transferred from your serial console to the CR7™.

Check the CR7™ Serial Console tab for additional information on how to set up the correct units when you performing product control.



## SETTINGS - RAVEN CR7/ISOBUS SYSTEM - PART IV

### 8. MACHINE

If you did not set up your machine with the installation wizard, you can set it up here. Select New Setting option and continue with the indicated procedures. For more information, refer to the Machine Setting Guide on the CR7<sup>™</sup>.



If you took your CR7<sup>™</sup> to another machine, you will need to configure this new machine. To do this, press the Reset button to create a new machine, just like you did the first time.



If you just need to update the machine measurements, select the edit button.

## SETTING UP THE MACHINE IN THE CR7 - RAVEN CR7/ISOBUS SYSTEM - PART I

### FIRST START UP

The first start-up sequence consists of several screens:

- 11:56 AM** - Configuração de Primeira Execução: Selecione o Idioma. A dropdown menu shows "português do Brasil".
- 09:02 AM** - Configuração de Primeira Execução: "Selecionar Fuso Horário". A dropdown menu shows "UTC" and a time offset of "-03:00".
- 09:02 AM** - Configuração de Primeira Execução: Selecionar unidades. A table for selecting units is shown:

	EUA	Métrico	Turfe
Unidades de Distância:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unidade de velocidade:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ÁREA/UNIDADE:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unidade de peso:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Volume (unidades):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unidades de Pressão:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- 09:03 AM** - Configuração de Primeira Execução: Produtor / Fazenda. Fields for "Nomeie o Produtor Padrão" (Raven) and "Nomeie a Fazenda Padrão" (Fazenda Raven).
- 09:03 AM** - Configuração de Primeira Execução: Configurar a Máquina. Buttons for "Início Rápido" and "Criar a Configuração Detalhada da Máquina".

### QUICK GUIDE

The installation wizard will guide you through the initial configuration of the machine. But if you need to check these settings, or change them, go to the Machine icon on the settings page.



### CREATING MACHINE SETTINGS

You can enter detailed measurements of your tractor or spray products the first time you perform the installation or later when you want to change the machine's measurements/settings.

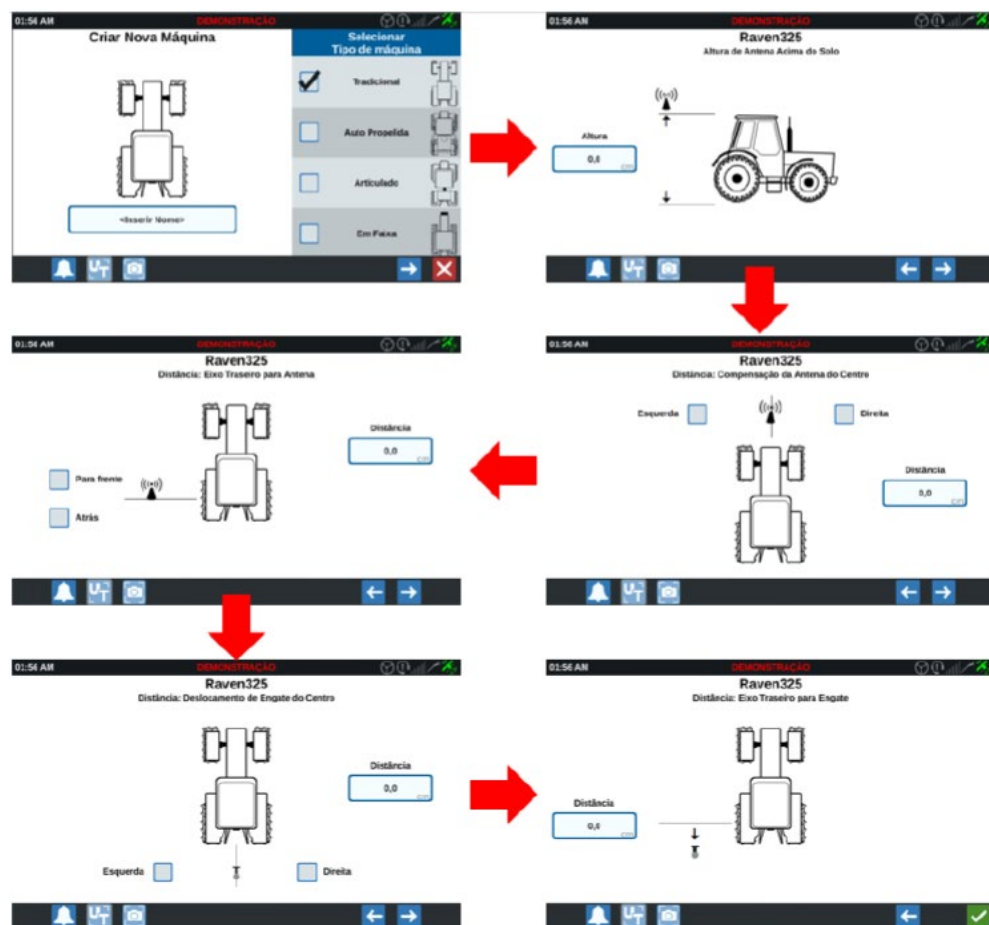
The CR7™ Measurement Checklist will help you with the necessary steps to finish the installation. Select the New Configuration button and then press Create New Machine.

The process for creating machine settings involves two main screens:

- Selecionar Máquina** (01:47 AM): Shows a "Nova Configuração" button with a plus icon. Below it, "Largura de Orientação: 0,00 m" is displayed.
- Equipamento Montado em** (01:56 AM): Shows a large empty box for equipment configuration, with a "Novo Equipamento" button at the bottom.

## SETTING UP THE MACHINE IN THE CR7 - RAVEN CR7/ISOBUS SYSTEM - PART II

On the left side, select Machine Type and enter its name. Click the blue arrow to advance and proceed with the installation. See the example for a conventional tractor.



## MOUNTED EQUIPMENT (TRACTORS/SPRAYERS)

You will need to add/mount equipment to your machine. Some examples are spray bars (for sprayers), any implement mounted to tractors or Raven Serial Consoles (Tractors and Sprayers).

Select the Edit button and then press Mount Equipment.

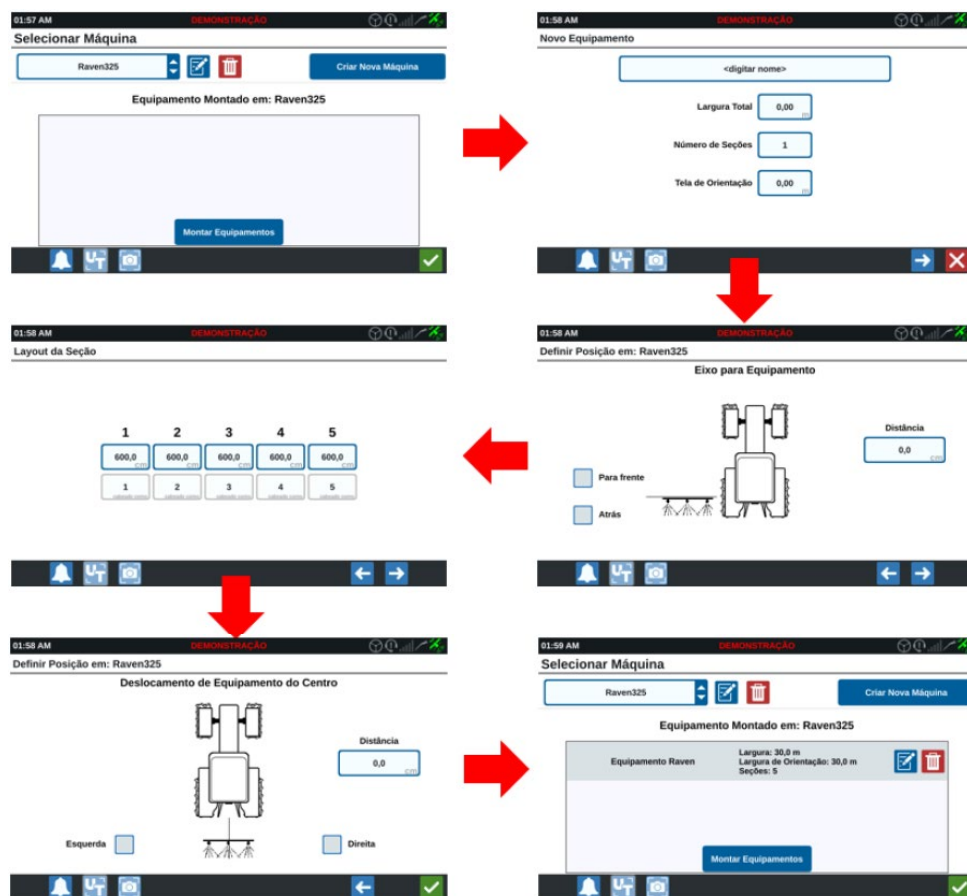




## SETTING UP THE MACHINE IN THE CR7 - RAVEN CR7/ISOBUS SYSTEM - PART III

### MOUNTED EQUIPMENT (TRACTORS/SPRAYERS) CONTINUED

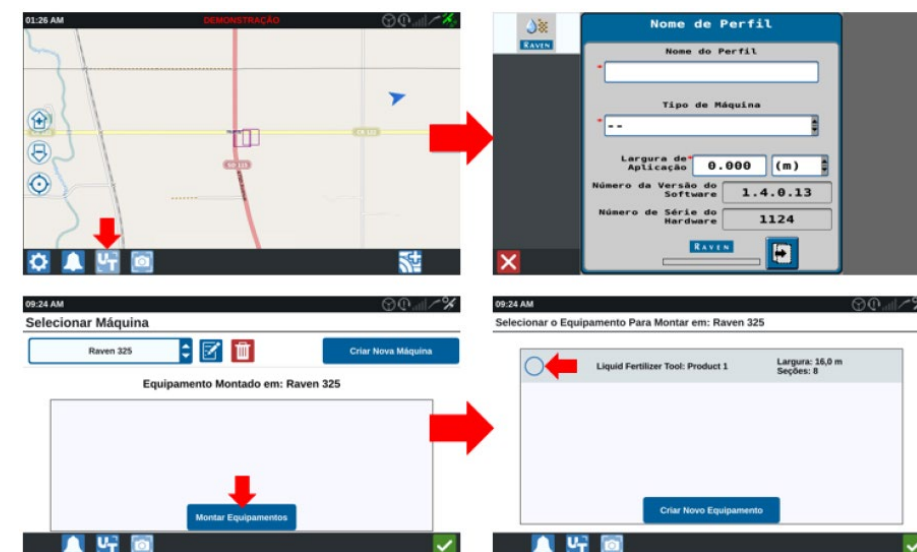
The CR7™ *Measurement Checklist* will help you with the necessary steps to set up your machine. Press Create New Equipment and follow the indicated set up steps.



### ISO MOUNTED EQUIPMENT

If you have a Raven Rate Control Module (RCM) or Hawkeye® system first you will need to set up your ISO equipment via the Universal Terminal.

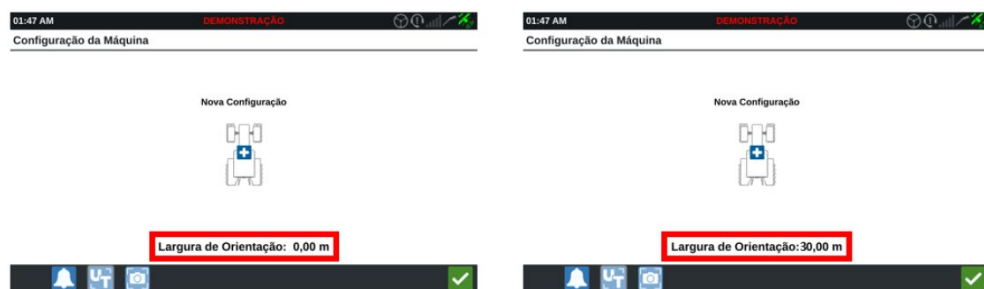
After you finish setting up through the Virtual Terminal, your equipment will be available in the implement inventory.



## SETTING UP THE MACHINE IN THE CR7 - RAVEN CR7/ISOBUS SYSTEM - PART IV

### CHANGING MOUNTED EQUIPMENT (TRACTORS)

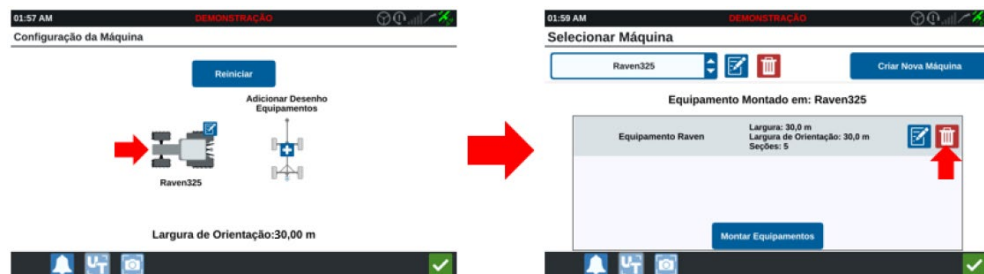
You can check for mounted equipment in Orientation Width in machine settings.



No mounted equipment

A mounted equipment

To change the mounted equipment, select the Edit button on the machine and then the Delete button to uncouple and return the equipment to the inventory.



At the end, confirm the action you really want to uncouple this equipment.

Press the Mount Equipment button and then select the equipment you want to dock or create a new one by pressing Create New Equipment.



### DELETING INVENTORY EQUIPMENT

If you do not own an equipment you previously set up in CR7™, you can delete it from the inventory. Initially, uncouple the equipment from the machine, making it return to the inventory (only if you have not yet replaced the machine). With the implement back to inventory, select it and click the Delete button of the equipment you want to remove.

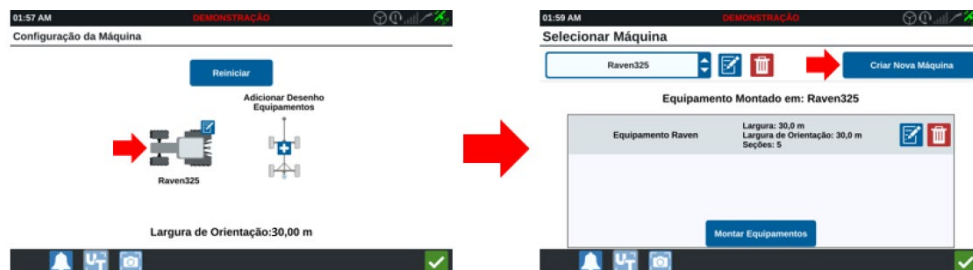


# RAVEN

## SETTING UP THE MACHINE IN THE CR7 - RAVEN CR7/ISOBUS SYSTEM - PART V

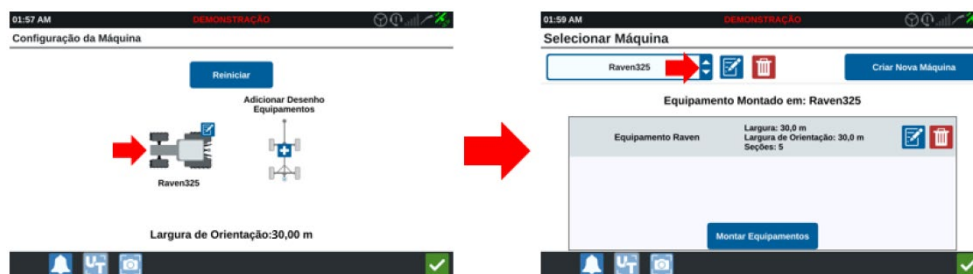
### CREATING A NEW MACHINE (MOVE CR7)

You can save different types of machine in which you use CR7™ and interchange the equipment mounted on them. After changing your machine CR7™, press the Edit button and then Create New Machine. You will be guided by the setup of this new machine, as shown in the section *Creating Machine Settings* in this guide.



### CHANGING MACHINE SETTINGS

To change the settings of the machine you are moving in your CR7™ press under the machine and then select the desired setting. You can then select the equipment that will be mounted into this other machine.

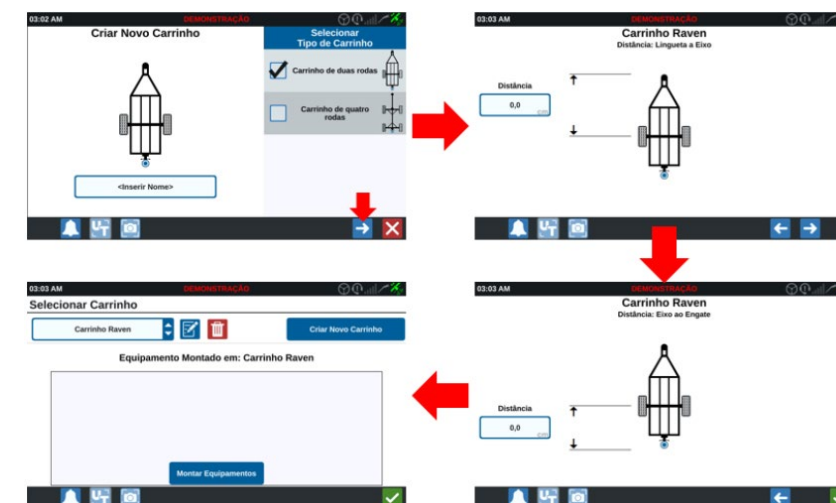


### COUPLED WHEELED EQUIPMENT (TRACTORS)

If you have a **wheeled equipment** to be attached to the tractor, you need to add it to your machine settings. Select Add Equipment Design and then Create New Cart.



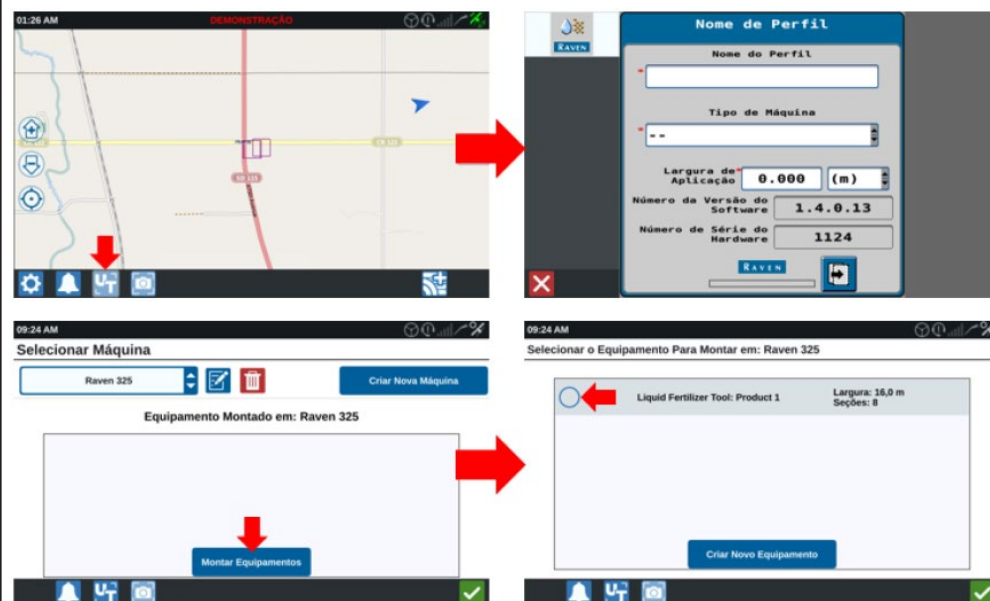
Choose between the options of *Two-Wheel Cart* and *Four-Wheel Cart* and name this equipment. Press Next and proceed with the setting up process as required.



## SETTING UP THE MACHINE IN THE CR7 - RAVEN CR7/ISOBUS SYSTEM - PART VI

### COUPLED WHEELED ISO EQUIPMENT

If you have a Raven Rate Control Module (RCM) or a Hawkeye® System and it is mounted to a **wheeled equipment**, you must first set it up in the Universal Terminal area. Then, the equipment will be available in the equipment inventory.

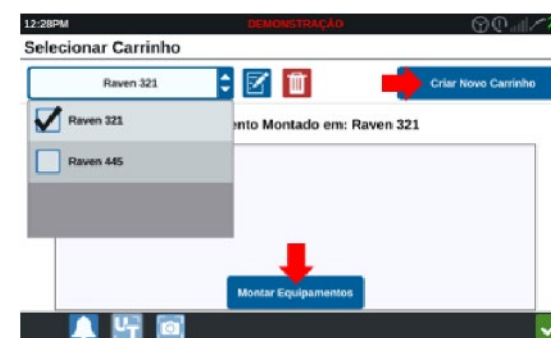


### CHANGING COUPLED WHEELED EQUIPMENT

To change coupled wheeled equipment, press under the cart and then, in the list that appears in the upper left corner, select the cart you want to couple.



If you have not yet added any cart to the inventory, press Create New Cart and configure your device. When done, be sure to couple it.

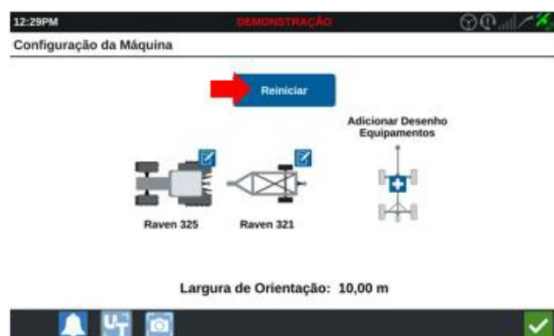




## SETTING UP THE MACHINE IN THE CR7 - RAVEN CR7/ISOBUS SYSTEM - PART VII

### UNCOUPLING WHEELED EQUIPMENT

If you want to remove all carts from your equipment inventory, or want to delete the last one you added, press the Reset button.



After resetting, you will need to reload the machine settings. Select New Setting and then select the machine that is using your CR7™.



Now you can add any of your other equipment to the machine because your inventory is still available.



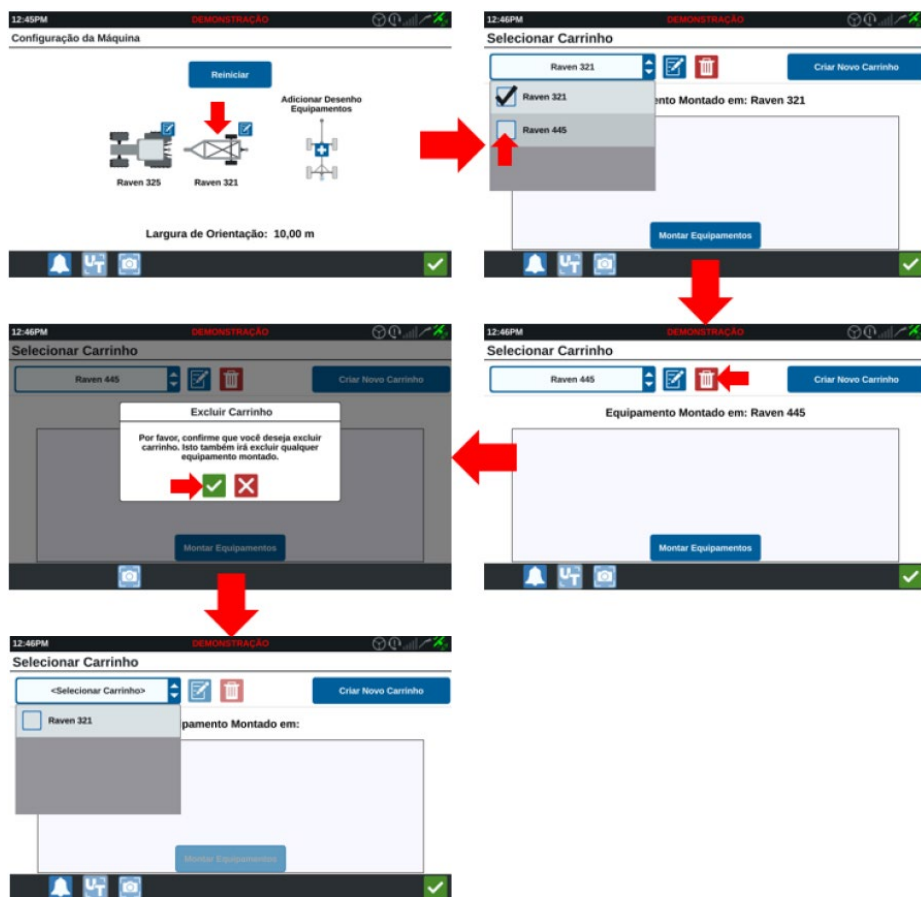
## SETTING UP THE MACHINE IN THE CR7 - RAVEN CR7/ISOBUS SYSTEM - PART VII

### DELETING UNCOUPLED WHEELED EQUIPMENT

If you no longer have a certain **wheel equipment**, press under the cart and then select the cart you want to remove. Press the delete button.

### DELETE COUPLED WHEELED EQUIPMENT

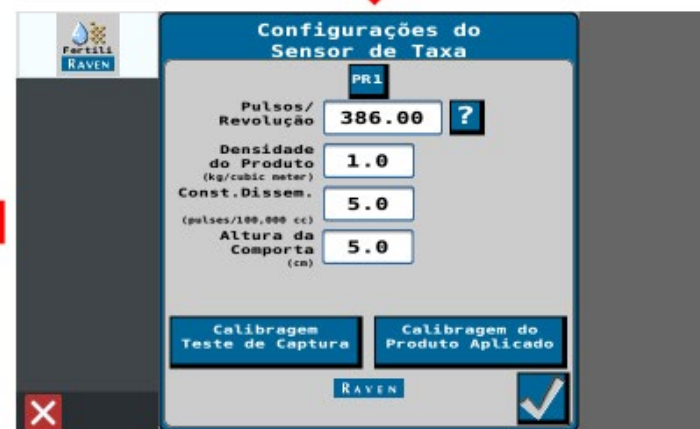
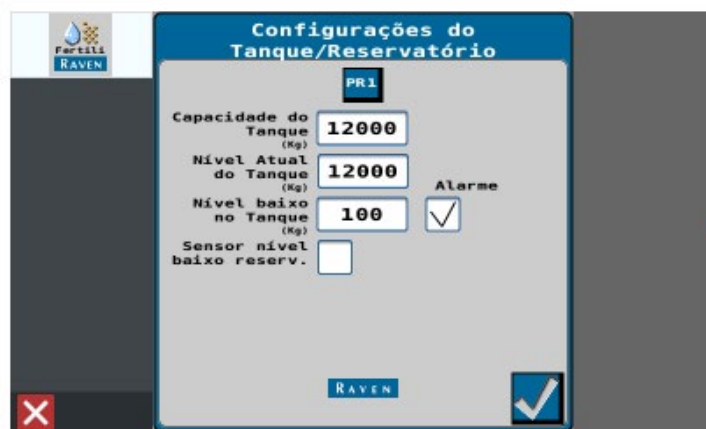
If you will no longer use a certain **wheeled equipment** that is still attached to your machine, you will need to select another equipment before removing it. Press under the coupled cart and then select another cart to couple. Once the cart you want to delete is no longer coupled, follow the procedures in the section *Deleting Uncoupled Wheeled Equipment*.



# RAVEN

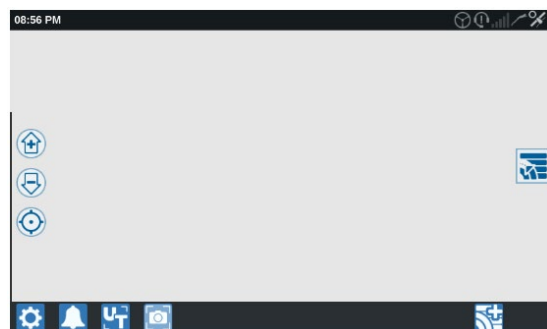
## SETTING UP INSTRUCTIONS - RAVEN CR7/ISOBUS SYSTEM

On the settings screen within the virtual terminal, set up the options Control Valve Installation, Rate Sensor Settings, and Tank Settings as shown in the images below.



### WORK SETTINGS - RAVEN CR7/ISOBUS SYSTEM - PART I

#### MAIN SCREEN

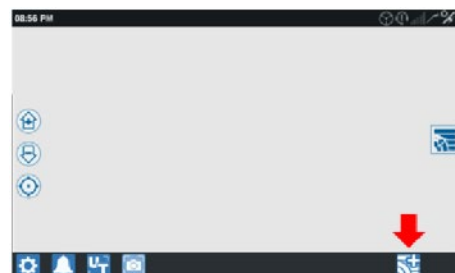


The main screen is gray because no street map has been loaded. See the Street Maps quick guide to see how to create and upload a map into the CR7™.

	Zoom +		Terminal Universal (UT)
	Zoom -		Novo trabalho em um novo campo
	Configurações		Novo trabalho em um campo já existente/ Retomar um trabalho
	Alarmes		

#### NEW WORK IN A NEW FIELD

Select the New Work button in New Field. All works in the CR7™ must be assigned to a field. Enter Producer, Farm, field name and your work name. Press the Next button.



08:57 PM  
Novo Trabalho em Novo Campo

Produtor

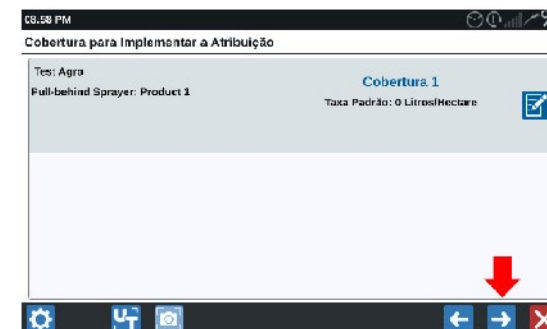
Fazenda

Campo

Nomeie o Seu Trabalho

#### PRODUCT CONTROL

If you are not performing product control, just press the Next button to access the work.



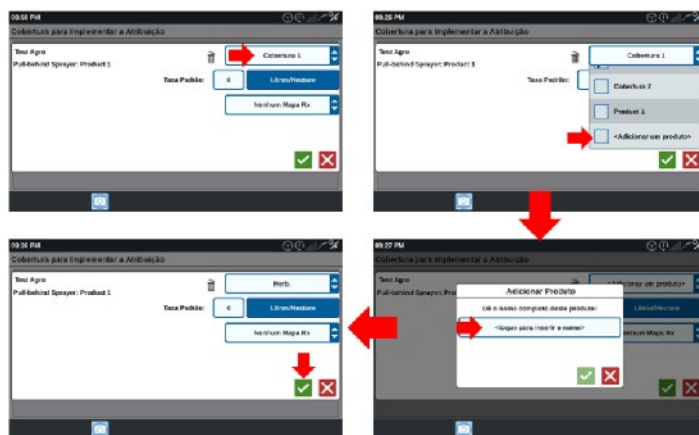
However, if you are performing product control, press the Edit button to enter details of your work.



You can enter the name of a product, a grain blend or any description by selecting the Product, as indicated in the pictures below. You can choose one of the existing products or press <Add product> to create a new one. Then, press the OK button.



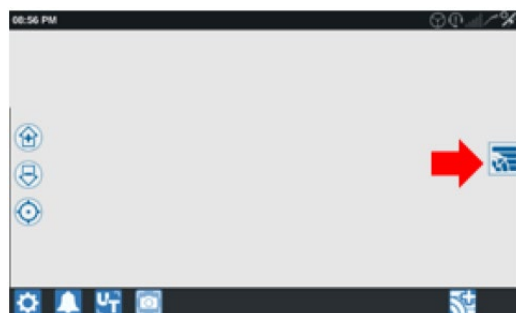
## WORK SETTINGS - RAVEN CR7/ISOBUS SYSTEM - PART II



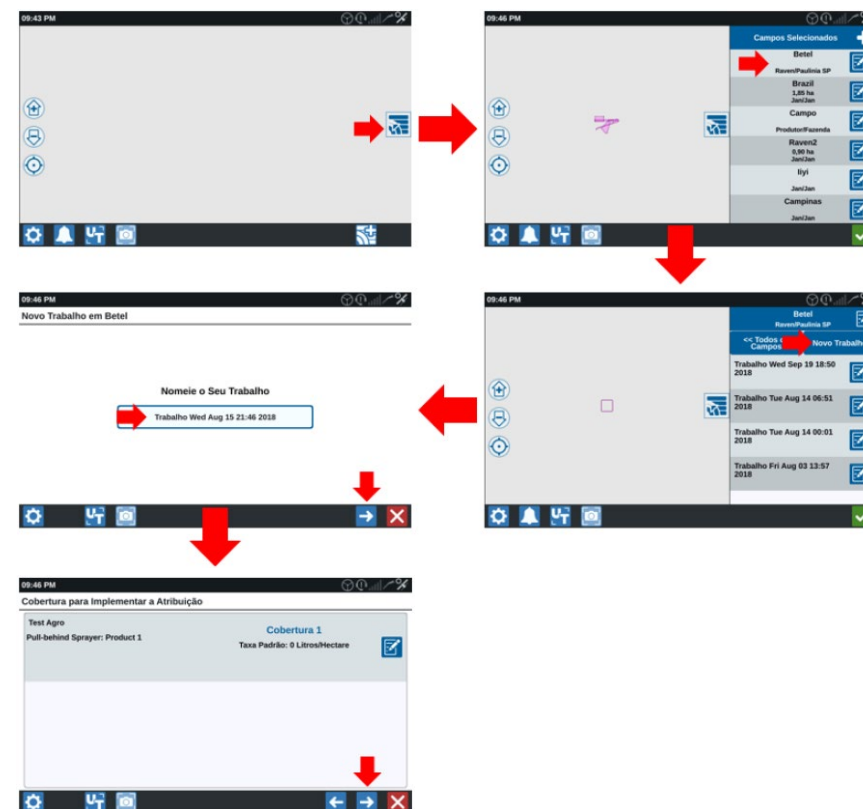
If you are performing product control with a Serial Raven Console (SCS 44x/66x), please see the CR7™ quick guide - Serial Console Settings for more information on how to configure the application units.

### NEW WORK IN AN EXISTING FIELD

From the start screen of your CR7™, select the icon



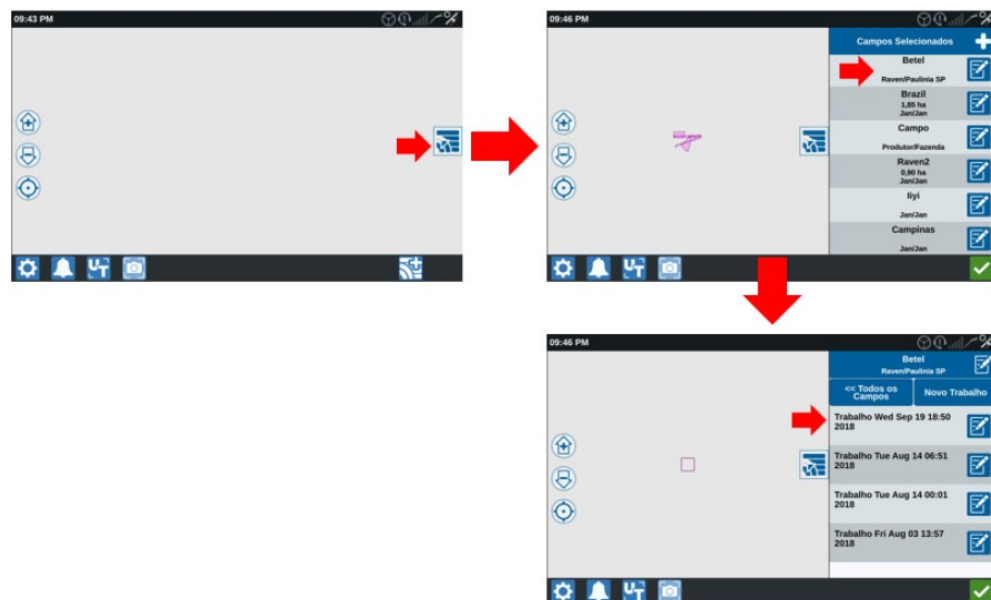
Select the field where you want to start a new work. Press New Work, name it, and then press the Next button. See the Product Control section of this quick guide for more information on this next page.




## WORK SETTINGS - RAVEN CR7/ISOBUS SYSTEM - PART III

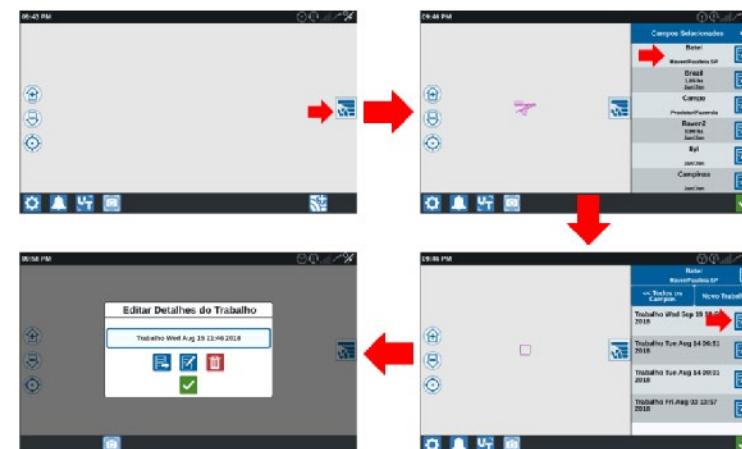
### RESUME WORK IN AN EXISTING FIELD


From the start screen of your CR7™, select the icon 

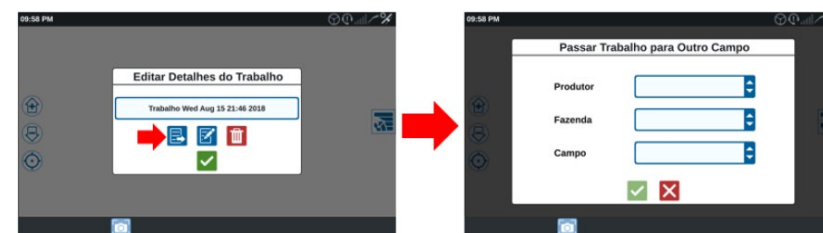



### EDIT WORK DETAILS

At the start screen of your CR7™, select the icon , choose a field, then press the Edit button of the work whose details you want to edit.



You can change *Producer*, *Farm* and *Field* associated with this work by pressing the symbol .

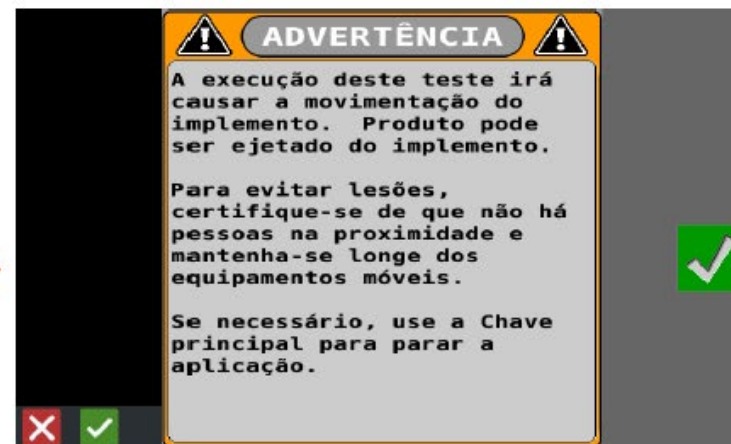
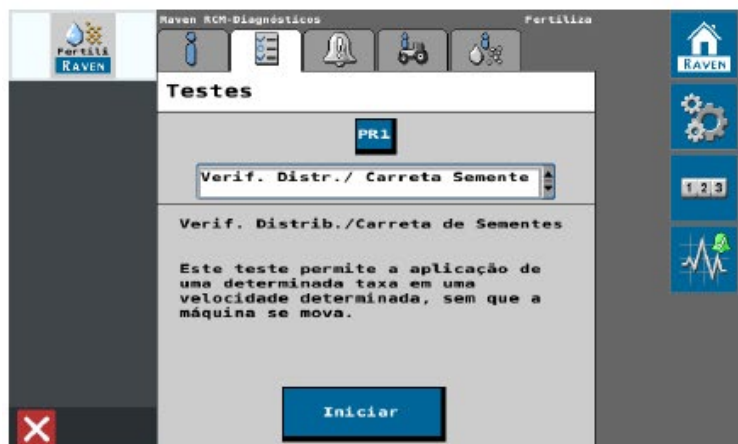


If you are performing product control, select the icon  and edit the default rate, units of measure, and add or remove prescription maps for a specific work.



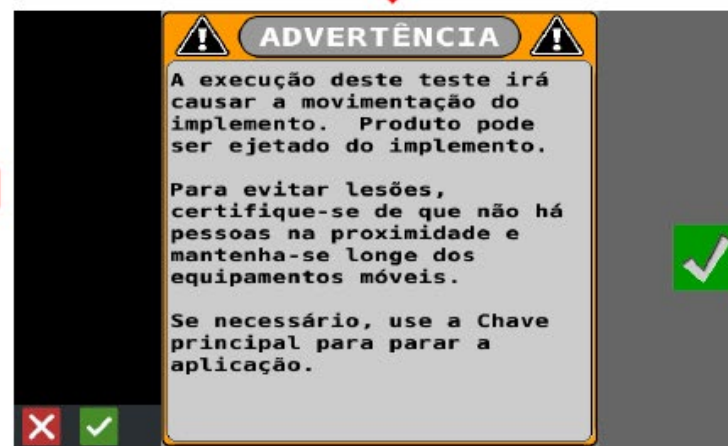
## STATIC TESTING - RAVEN CR7/ISOBUS SYSTEM - PART I

On the UT diagnostics screen, choose the Testing option. Then the check seed spreading/cart option and follow the steps below:



### STATIC TESTING - RAVEN CR7/ISOBUS SYSTEM - PART II

Another important static test to check if the entire system is working can be done on the UT work screen, so choose a simulated speed (as shown below) and ensure that there are no people in the surroundings and stay away from moving parts like dishes discs and belt.

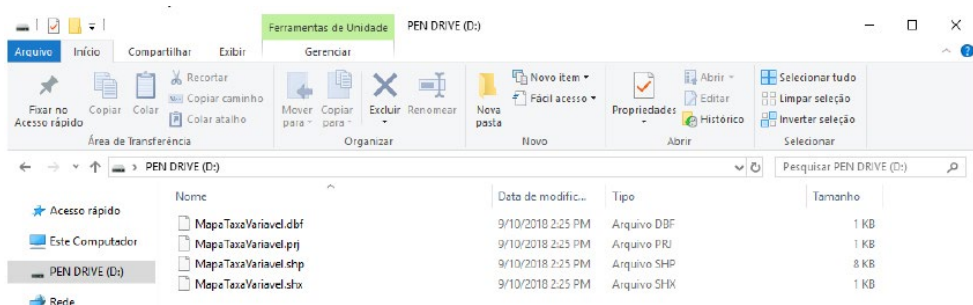




## APPLICATION AT VARIABLE RATE - RAVEN CR7/ISOBUS SYSTEM - PART I

### LOCATION OF PRESCRIPTION MAPS (USB)

Prescription maps (.shp, .shx, and .dbf) should be copied to the root of your thumb drive.



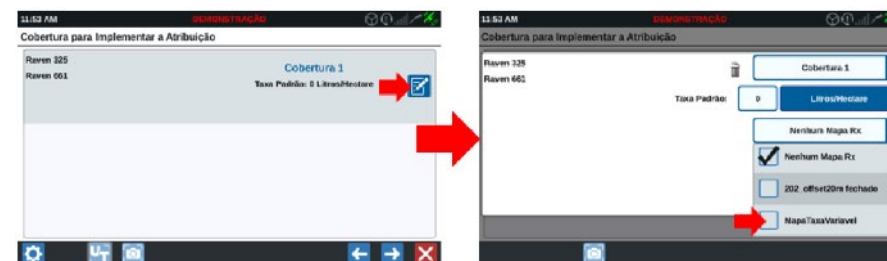
### LOADING A PRESCRIPTION MAP

Insert your flash drive into the CR7™ and then press Manager and File on the settings page. Select the USB option as source, select the Prescriptions option, and then choose your file. Select the Copy button.



### ASSIGNING A PRESCRIPTION MAP TO A WORK

When starting a work, you must provide its details. After you provide Producer, Farm, and Field details and name the work, you are directed to a page named "Coverage to Implement Assignment". On this screen, press the Edit button. Press under "No RX Map" and then select the prescription map you want to use for this work. If you are making an application with more than one product, then all of your active products will be listed. Press the Edit button to assign only the products you want for the map you have selected.



Then in the second column of options that appeared, press under the "Select Classification Column" option and select the Rate option. Check the details of your work, and if everything is OK select the OK button and then the Next button to start work.



### APPLICATION AT VARIABLE RATE - RAVEN CR7/ISOBUS SYSTEM - PART II

#### ASSIGNING A PRESCRIPTION MAP TO A WORK (CONTINUED)

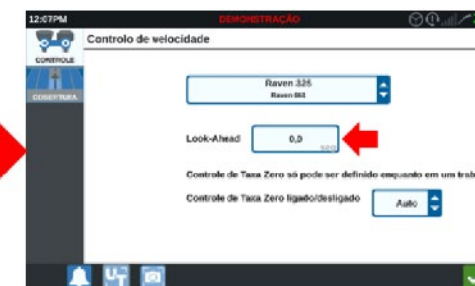
Your Product Rate widget will indicate that your rate is based on data from the prescription file you uploaded, and according to the zone on the map you are on.



#### LOOK-AHEAD SETTINGS IN THE PRESCRIPTION MAP

You can change the response rate when you move from one prescription zone to another. Look-Ahead scans areas in front of the machine, which you have not yet reached, but will do so soon. In this way, valve adjustment and control are carried out before the rate changes, helping to reach the rate more quickly.

On the settings page, select the Speed Control icon and then adjust the Look-Ahead option, with value in seconds.



## AGROSYSTEM SYSTEM - PART I

### SETTING THE DEVICE:

To start the software operation, it is necessary to provide two main data: the module's password and MAC address.

The default password is "admin" which enables the user to access all system features. This option is especially indicated to technicians at the startup of the equipment or to most experienced users, since it allows changing constants that define the basis of the module operation.

With any other password, the software will limit the setup options, giving access only to the data required for the normal operation of the equipment.



**AGROSYSTEM SYSTEM - PART II**

Then, enter a valid MAC address.

This address refers to the module in operation. The address syntax follows an established rule and consists of 6 sets of 2 alphanumeric characters separated by colons (as in the example below).

The address is printed on a label attached to the MC-TF module and must be entered exactly as printed, with no spaces.

The option to enter the address is accessed by the Settings key of your smartphone. From the first connection, the address is recorded and represents the default value.





## AGROSYSTEM SYSTEM - PART III

### HOME SCREEN AND BASIC OPERATION:

The figure below depicts the initial screen of the application and its features.

Start the operation, connect the application to the MC-TF module.

The connection is established by touching the connect "button".

The Home screen shows 3 displays and a button bar:

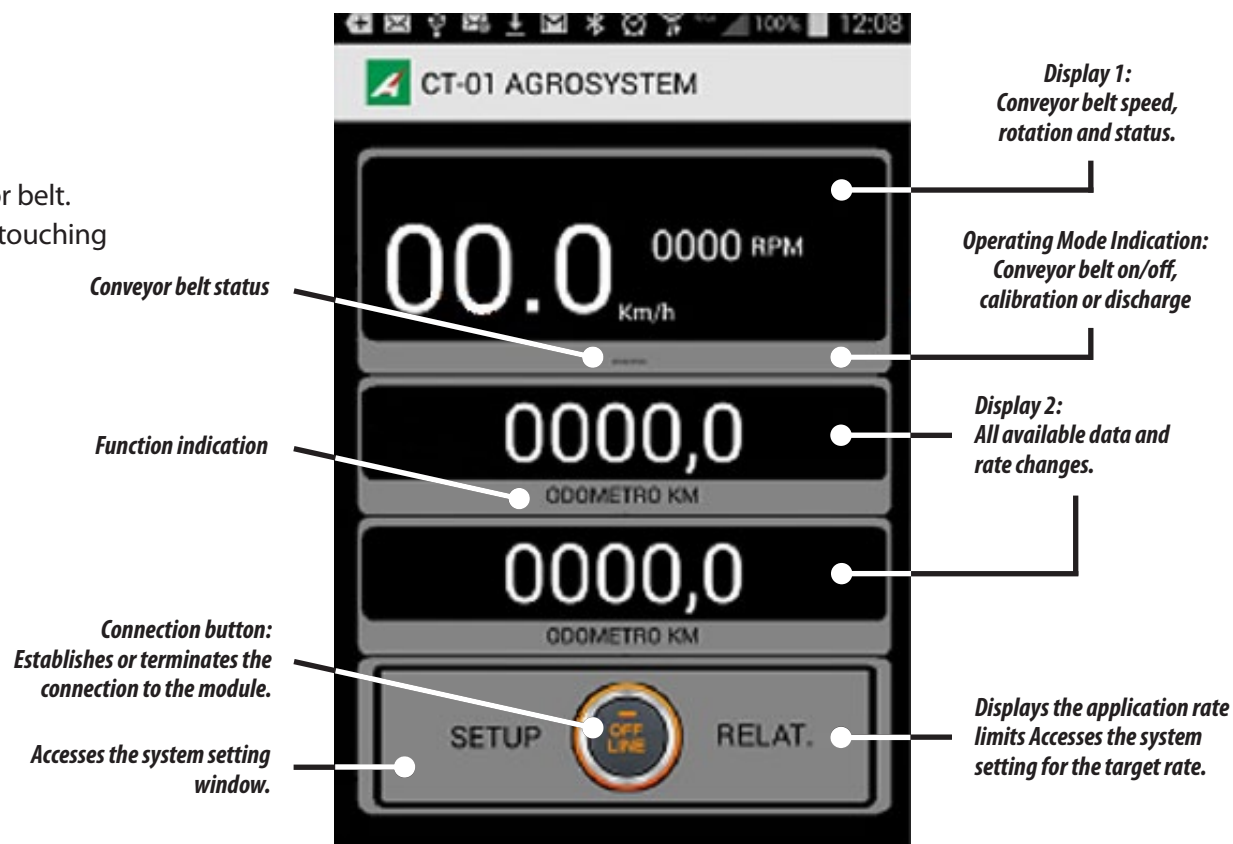
Setup, Connection and Reports.

Display 1 shows the speed and rotation information of the conveyor belt.

Displays 2 and 3 can be changed to show different information by touching the function display at the bottom of the window.

The following information can be selected:

- Odometer in Km \*;
- Odometer in Ha \*;
- Conveyor belt tachometer (RPM);
- Disk tachometer (RPM);
- Target Rate in Kg/ha;
- Target disk rotation (RPM).



\* The odometers can be reset by pressing on the numbers of the display 10 times in a row.

The "Reports" button displays the minimum and maximum speed limits at which the system will be able to properly modulate the conveyor belt.

**AGROSYSTEM SYSTEM - PART IV****SETUP SCREEN:**

The setup screen enables the user to change (with the administrator password) all the operating parameters of the module. Namely:

- Maximum operating speed of the equipment (in km h);
- Width considered as valid application range (in mts).
- Number of conveyor belt feedback teeth (pulses/revolution);
- Number of disk feedback teeth (pulses/revolution);
- Proportional and integral constants of the PIO control. This data may vary depending on the machine model used;

The following screen shows some data calculated from the setup information and others obtained by the conveyor belt automatic setting procedure.

The application speed limits are defined by the maximum and minimum rotation of the conveyor belt.

Thus, there are two ways to achieve such information: one by directly entering the data, and the other by means of the conveyor belt automatic setting procedure.

This procedure will be required at the startup of the machine or module (machine manufacturers may determine this data, thus, dismissing this procedure) or for fault diagnosis.

SETUP		
Velocidade Maxima :	30	Km/h
Largura de Aplicacao :	16	Mts
Esteira:	9	Pulsos/Volta
Pratos:	9	Pulsos/Volta
Controle PID	KP= 0,400	KP+ KP-
Controle PID	KI= 0,050	KI+ KI-
Dados Calculados:		
Relacao	0,180	Rpm Est/vel.
Esteira	000,0	RPM max
	000,0	RPM min
AUTO CONFIG. ESTEIRA CALC. SAIR		

## AGROSYSTEM SYSTEM - PART V

Upon selecting the "CONVEYOR BELT AUTOMATIC SETTING" option, a warning window is displayed next, and a new validation is required.

For this procedure, the system initiates the opening of the proportional valve to the operational limit, accelerating the conveyor belt to maximum rotation. The test requires a few minutes to complete and should be performed observing the required safety procedures.

At the end of the procedure, new minimum and maximum rotation values are defined and a new ratio may be calculated by touching the "CALC" button. The new data is transferred to the module by touching "EXIT".

This procedure can adjust the module to the actual working conditions provided by the machine and, if necessary, also provide data for fault checking and determination of operating limits.

When a new ratio is validated, a new sampling will be required.

### **ATTENTION**

*For this procedure, the FERTILIZA bucket must be completely empty.*



**AGROSYSTEM SYSTEM - PART VI****CALIBRATION PROCEDURE:**

The sampling procedure is performed through the MC-TF module's button set (calibration button).

When started, the conveyor belt will rotate the equivalent of the machine's movement by 50 meters.

**ATTENTION**

*The movement of the conveyor belt can lead to accidents. The user must observe the proper safety procedures for a risk-free operation.*

**AGROSYSTEM**



## AGROSYSTEM SYSTEM - PART VII

### CALIBRATION PROCEDURE:

At the end of the procedure, a new Android screen is displayed:

The value obtained from the sample (kg) can be entered.

By touching the “calculate” button, the new application rate will be displayed (Kg/Ha).

This calculation formula is as follows:

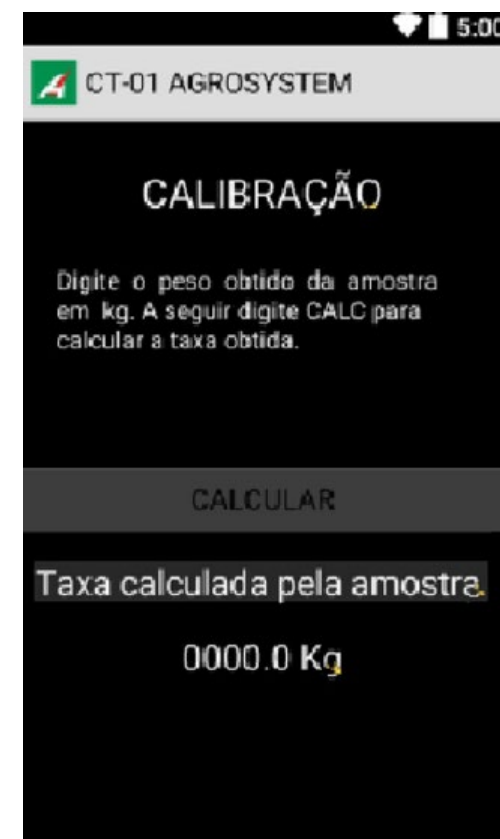
$$TA = \frac{AM * 10000}{(LA * 50)}$$

#### Where:

**TA** = Target rate (kg/ha)

**AM** = Weight obtained from the sample [kg]

**LA** = Width of application [mts]



**AGROSYSTEM SYSTEM - PART VIII**

In the home screen, in displays 2 and 3, it is possible to select the target rate information. The rate change option will only be available with the conveyor belt switched off.

The user may change parameters by touching the arrow keys at the bottom of each display. The data transfer to the MC-TF module is automatically made 5 seconds after the changes are completed.

The ability to change rates directly through Android makes the operation of the machine easier. The task can be performed without resorting to new adjustments of the gate and, as a result, new samplings.

When the target rate is increased, it forces the system to work at higher rotations on the conveyor belt, thus decreasing the maximum speed of application.

Based on the data entered, the application speed limits are calculated. Using the "REPORTS" button, the user may visualize the possible minimum and maximum speed values.

**AGROSYSTEM**

# OPERATIONS

## RECOMMENDATIONS FOR THE OPERATION

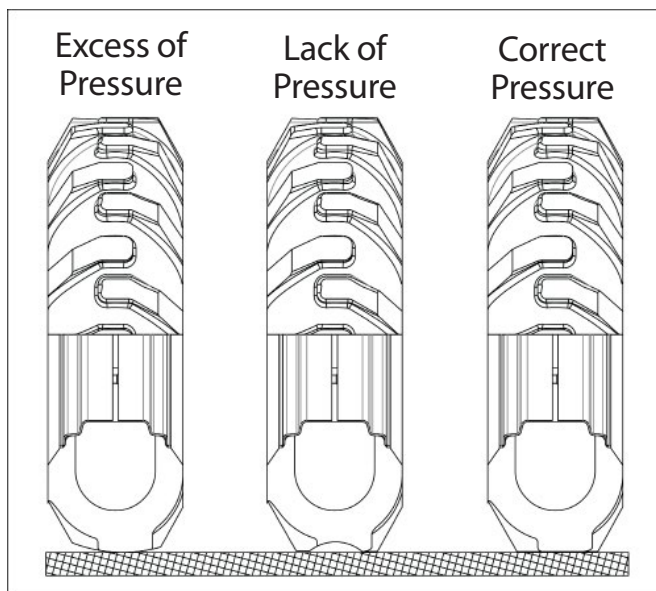
- 01 - Before starting work, do a thorough review at **FERTILIZA**. All points of the machine should be lubricated, check the oil level from the multiplier box and retighten nuts and screws. Also check the locking of pins and cotters.
- 02 - The ideal work rotation is 540 rpm on TDP. Check the corresponding rotation on the motor, in the tractor manual. This rotation on the traction motor changes from tractor to tractor.
- 03 - Before loading **FERTILIZA**, check if there are not foreign objects inside the dumpster, observe if its hitch is complete and levelled. Place the support bracket in the transport position and maintain the drawbar of the tractor xed.
- 04 - Always check the conveyor belt tension.
- 05 - Recommended average speed is 6 to 7 km/h.
- 06 - The distance between the strokes should be constant so that the distribution uniformity is not compromised.
- 07 - **FERTILIZA** should function with protections and safety devices. Do not work without safety protections or devices.
- 08 - During all the work, maintain the motor rotation constant, avoiding the tractor's average speed variation to avoid ineciency or product distribution failures.
- 09 - Do not transport **FERTILIZA** loaded because it may damage it. Load **FERTILIZA** only on the work site.
- 10 - Do not move from one area to another with **FERTILIZA** loaded.
- 11 - If **FERTILIZA** is loaded and by any reason remains on the eld, put a tarpaulin to avoid possible humidity.
- 12 - When loading **FERTILIZA** with bag or wheel loader, position yourself on their sides. Do not allow any person or animal to stay on the risk area.
- 13 - When loading **FERTILIZA** with a wheel loader, let the material freely ow without hitting the wheel loader in **FERTILIZA** dumpster, thus avoding damages to the latter.
- 14 - During work, do not allow people or animals to remain within the eld of action of the haul of fertilizer by the distributor discs.
- 15 - The weight of the product is related to its granulometry and density.

### TIRES PRESSURE

- 1- The tires should always be properly calibrated avoiding early wear and tear due to excess or lack of pressure and ensuring accuracy in the distribution.
- 2- Before calibrating the tires, check the model used on your **FERTILIZA** and check below the proper calibration.

#### FERTILIZA 6M<sup>3</sup>

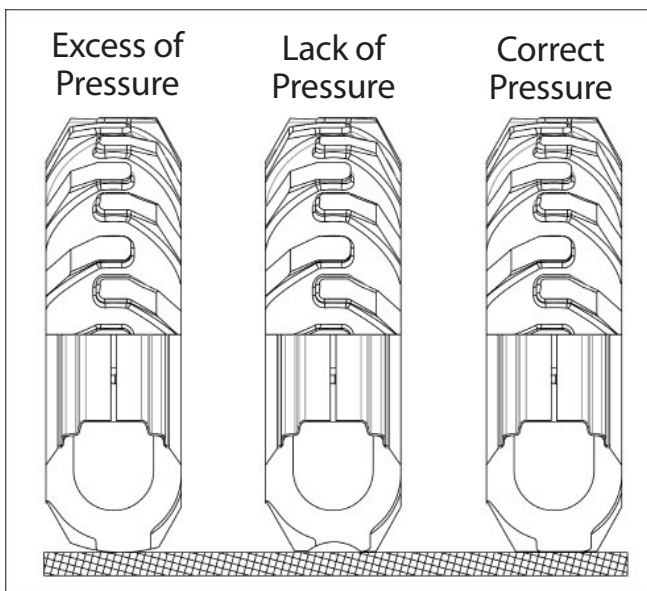
**TIRES 12.5/80-18" TL 10 LINERS / RIM W 9,00" X 18"**



**USE: 45 LBS/POL<sup>2</sup>**

#### FERTILIZA 6M<sup>3</sup>

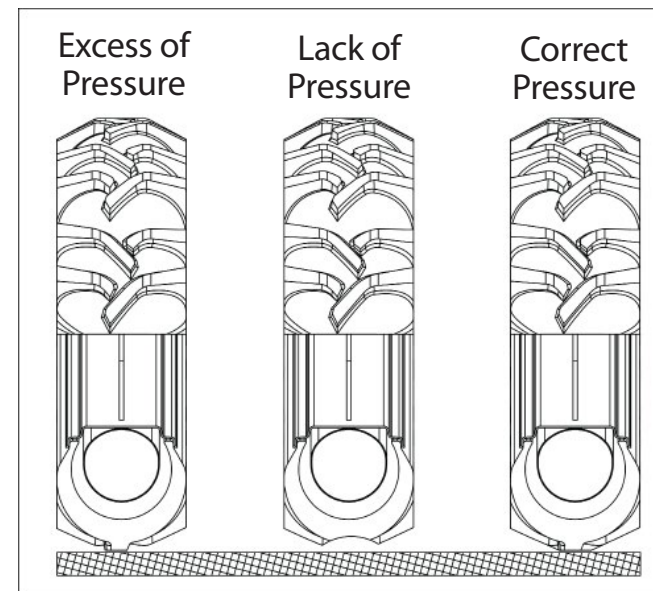
**TIRES 12.4.24 / RIM W 10" X 24"**



**USE: 31 LBS/POL<sup>2</sup>**

#### FERTILIZA 8M<sup>3</sup>

**TIRES 14.9.24 12 LINERS / RIM W 12" X 24"**



**USE: 48 LBS/POL<sup>2</sup>**

### ⓘ IMPORTANT

*When calibrating tires, do not exceed the recommended calibration.*

*The pressure of the tractor tires should be performed according to the manufacturer's recommendation.*

### ⚠ ATTENTION

*Never weld the wheel mounted with tire, the heat may cause air pressure increase and provoke the explosion of the tire.*

*When filling the tire, position yourself besides the tire, never in front of it.*

*To fill the tire, always use containment device (armor cage).*

## MAINTENANCE



# MAINTENANCE

## LUBRICATION

- 1- Lubrication is indispensable for a good performance and greater durability of **FERTILIZA** moving parts, contributing to the maintenance cost savings.
- 2- Before starting the operation, carefully lubricate all grease cups, always observing the lubrication intervals in the following pages. Make sure of the lubricant quality regarding its efficiency and purity, avoiding products contaminated by water, dirt and other agents.

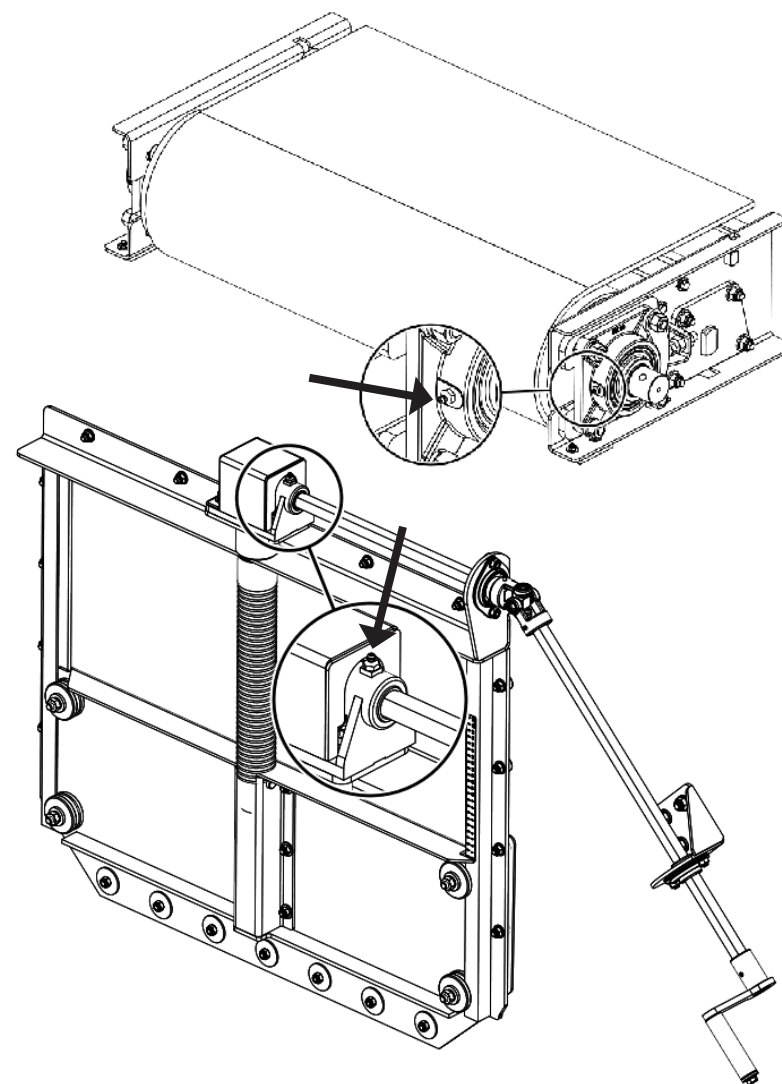
MANUFACTURER	RECOMMENDED GREASE TYPE
Petrobrás	Lubrax GMA-2
Atlantic	Litholine MP 2
Ipiranga	Ipiflex 2
Castrol	LM 2
Mobil	Grease MP
Texaco	Marfak 2
Shell	Alvania EP 2
Esso	Multi H
Bardahl	Maxlub APG-2EP
Valvoline	Palladium MP-2
Petronas	Tutela Jota MP 2 EP
	Tutela Alfa 2K
	Tutela KP 2K



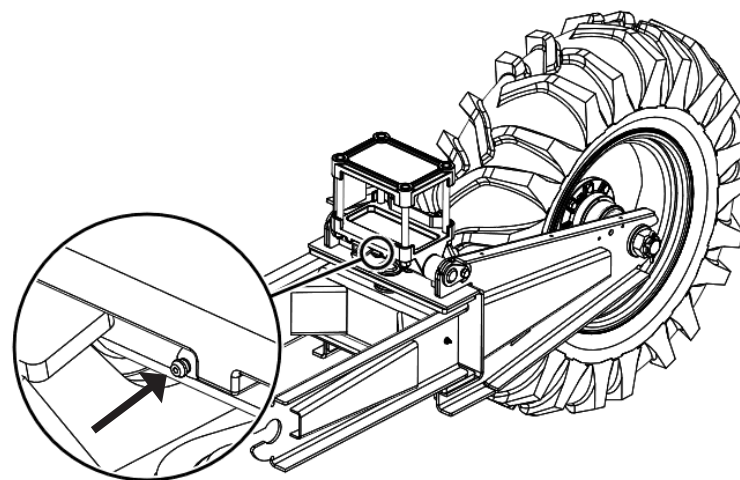
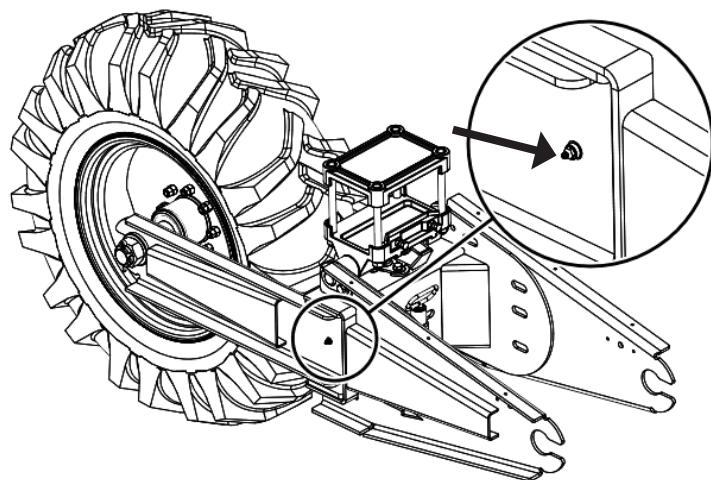
**IMPORTANT**

*If there are other equivalent lubricants and/or Grease brands listed in this table, consult technical manual of the own lubricant manufacturer.*

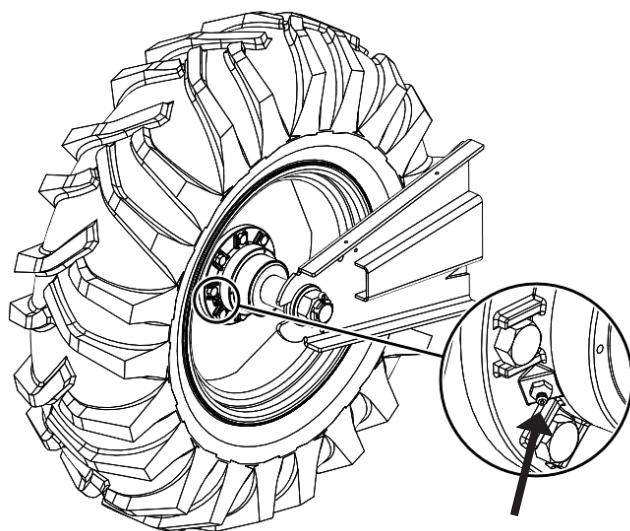
## LUBRICATE EVERY 08 WORKING HOURS



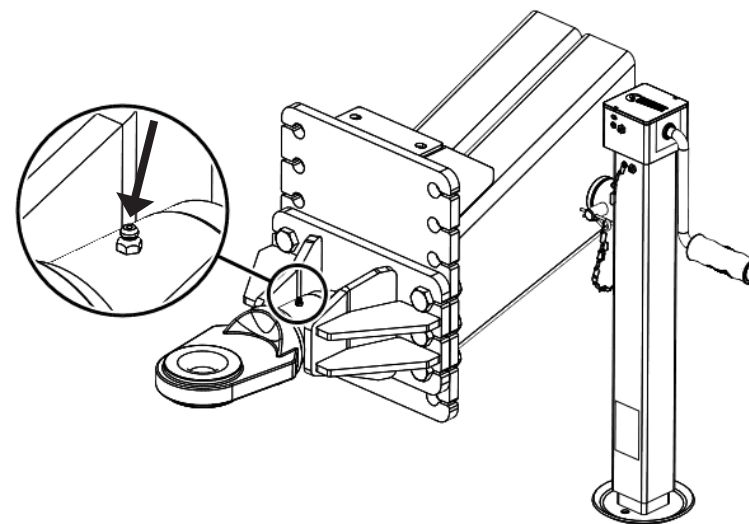
LUBRICATE EVERY 10 WORKING HOURS



LUBRICATE EVERY 24 WORKING HOURS



LUBRICATE EVERY 30 WORKING HOURS

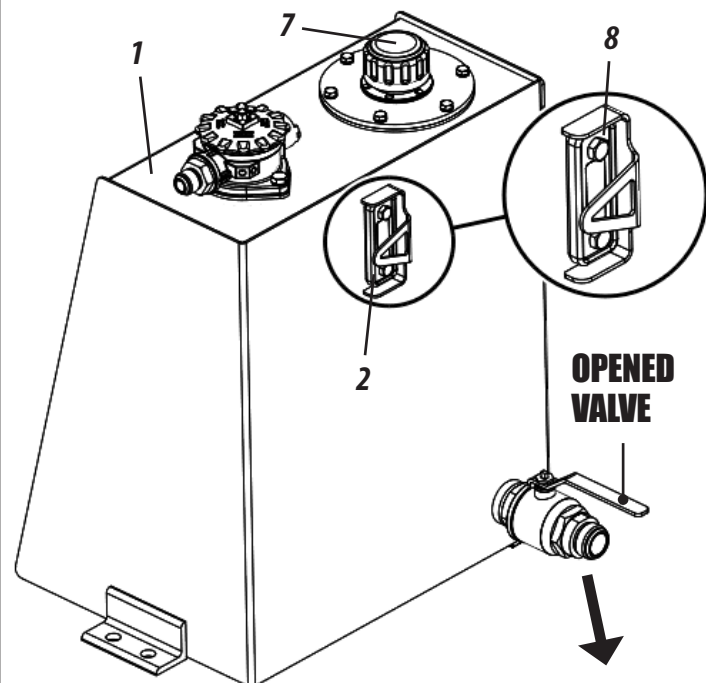


**MAINTENANCE**

# MAINTENANCE

## TANK OIL CHANGE

Periodically check the oil level of the oil tank (1) through the level indicator (2) and refill it whenever required.



- 4- After, loosen the nut (5), turn the cover (6) and open it, remove the air filter cover (7), fill up with the hydraulic oil recommended below, remembering that the oil tank capacity is of 80 liters.
- 5- Next, replace the air filter cover (7), turn the cover (6), close it and tighten the nut (5). After, open drain valve and turn on the tractor, leaving Fertiliza running for a few minutes, moving all functions in a low gear in order to fill the entire piping and motor.
- 6- After operation, check the oil level through the level indicator (2) window (8). If necessary, put more oil in the tank (1) until the window (8) level is reached.



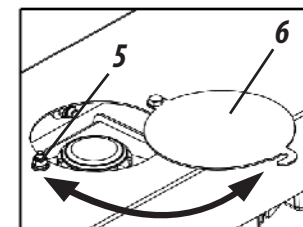
### IMPORTANT

*Check that there are no impurities in the oil. At the inlet of the tank (1), there is a sieve that we recommend to clean it.*



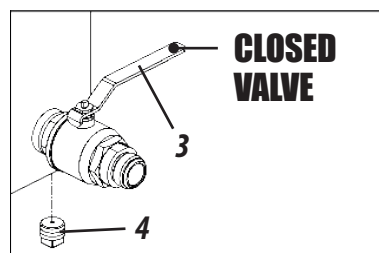
### OBSERVATION

*Do not put oil above the level. Use only the recommended oil: Tellus 68 ISO-HL.  
Change the oil every 1200 working hours.*



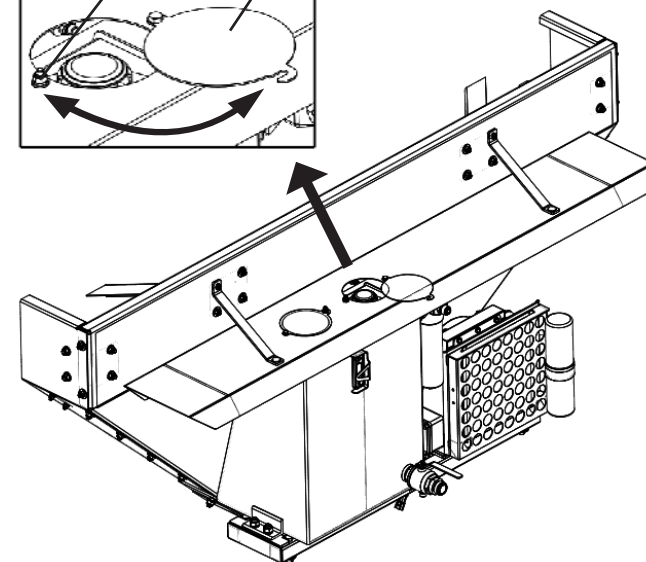
To perform the tank oil change (1), proceed as follows:

- 1- First, close the oil tank (1) valve (3).
- 2- Then, remove the drainage plug (4) until all oil in the tank (1) is depleted.
- 3- Next, perform a general clean on the inside of the oil tank (1) and restore the drainage stopper (4).



### ATTENTION

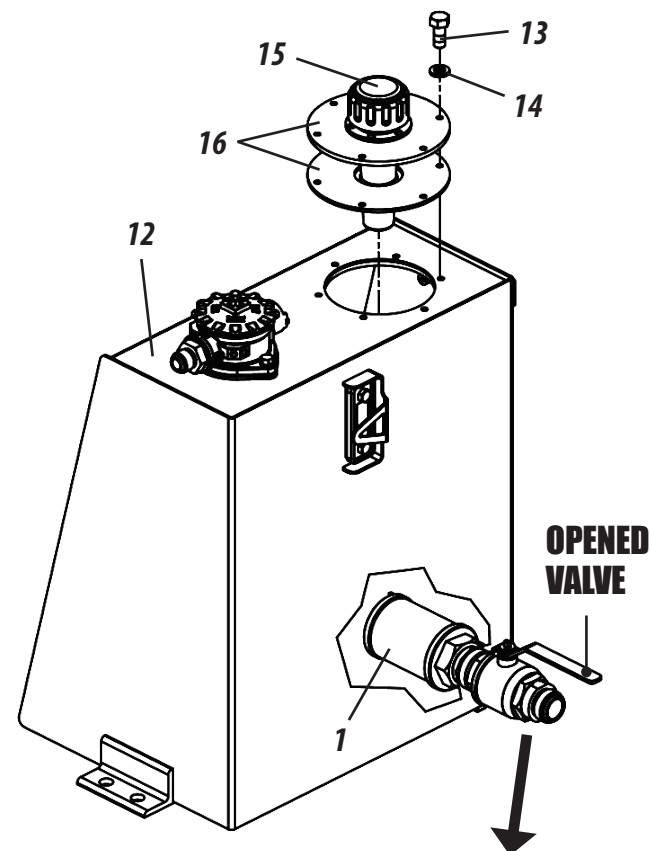
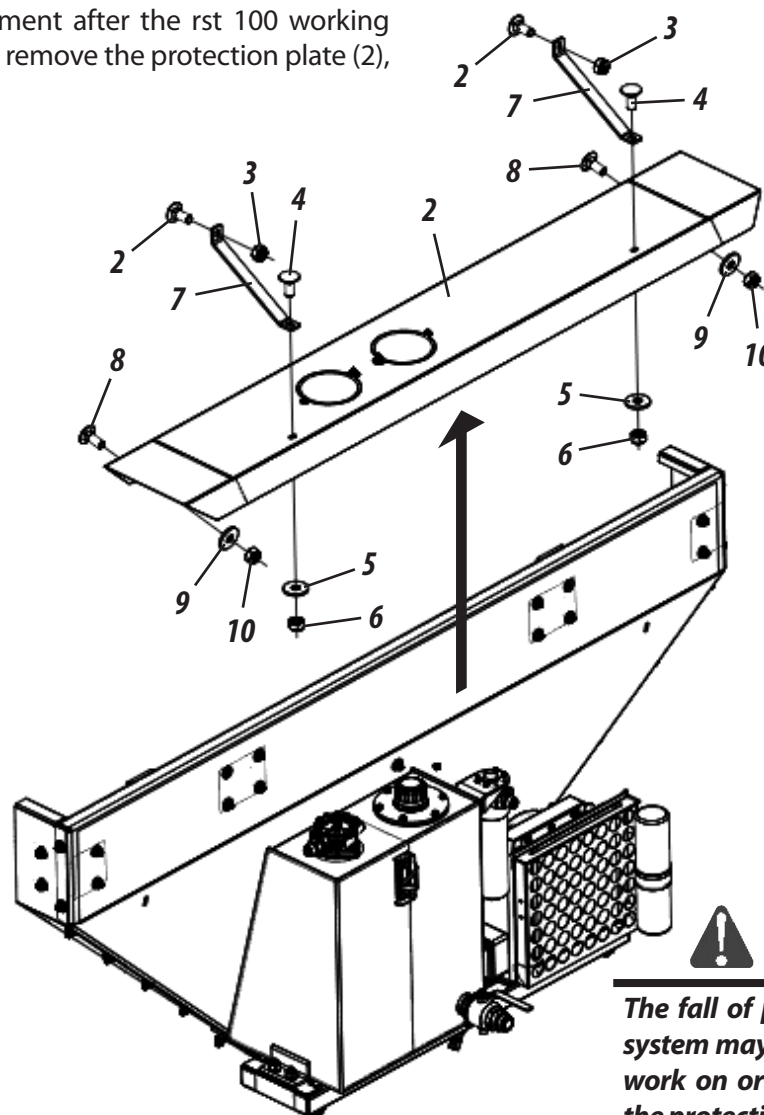
*Do not start the tractor engine when the oil in the tank is running out.  
Ignoring this warning may damage the system hydraulic motor.*



### SUCTION FILTER REPLACEMENT

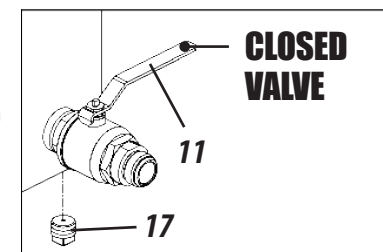
Proceed with the suction filter (1) replacement after the first 100 working hours. Before replacing the suction filter (1), remove the protection plate (2), to do that, proceed as follows:

- 1- Loosen the screws (2), nuts (3), screws (4), plain washers (5), nuts (6) and remove the plates (7).
- 2- Next, loosen the screws (8), plain washers (9), and nuts (10) and remove the plate (2).
- 3- Then, close the oil tank (12) valve (11).
- 4- Next, loosen the screws (13), pressure washers (14) and remove the air filter (15), the angle and the mounting gasket (16).
- 5- Then, make a general cleaning on the inside of the oil tank (12) and replace the suction filter (1).
- 6- Then, replace the drain plug (17), mount the flange and fixing gasket (16) and the air filter (15).
- 7- Subsequently, restore the drainage plug (17), assemble the angle and the mounting gasket (16) and the air filter (15).
- 8- After, remove the air filter cover (15) and fill up with the hydraulic oil.
- 9- Finish it by reinstalling and securing the protection plate (2).



### ATTENTION

*The fall of products above the hydraulic system may damage it. Therefore, do not work on or transport FERTILIZA without the protection plate (2).*



## MAINTENANCE

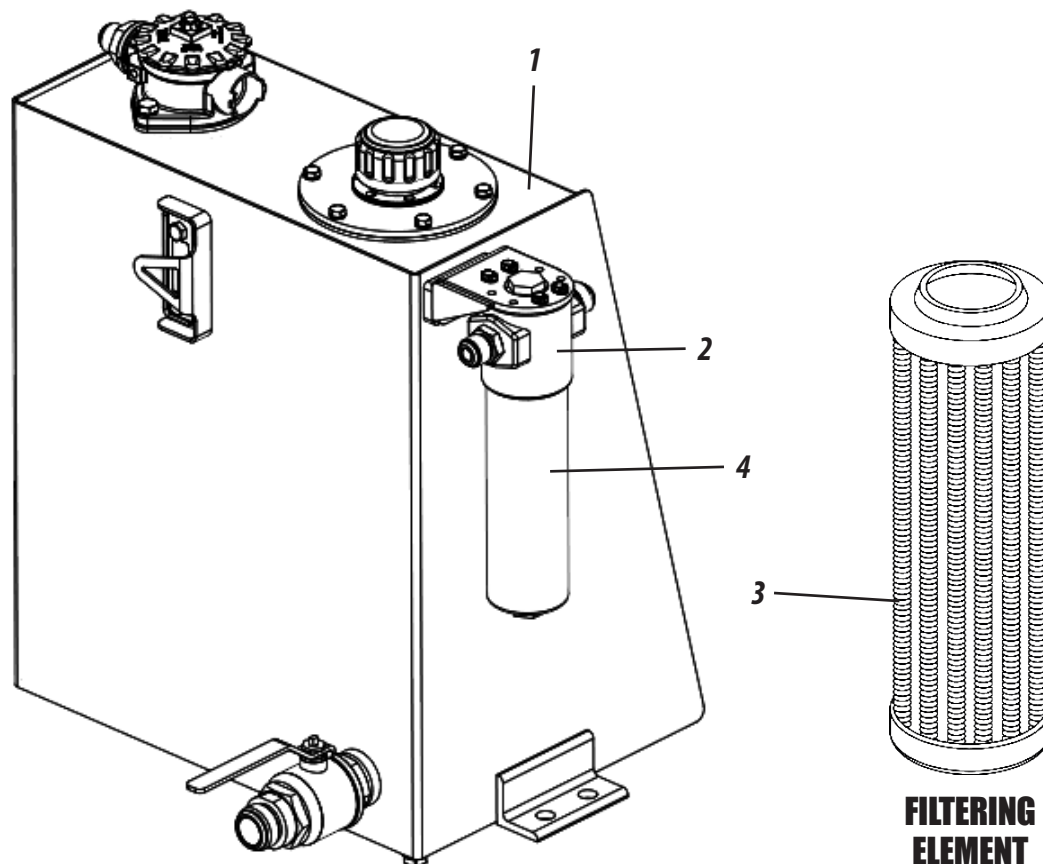


# MAINTENANCE

## FILTERING ELEMENT REPLACEMENT

The oil tank (1) has the pressure filter (2). In order to maintain the effectiveness of the filtration, it is necessary to change the filter (3) located inside the pressure filter (2) between 100 and 200 hours. To replace the filtering element (3), proceed as follows:

- 1- First, release the cover (4) of the oil pressure filter (2).
- 2- Then, replace the filtering element (3).
- 3- After, replace the cover (4) of the oil pressure filter (2).



**FILTERING  
ELEMENT**

### **ATTENTION**

*Do not start the tractor engine when performing the replacement of the filtering element.*

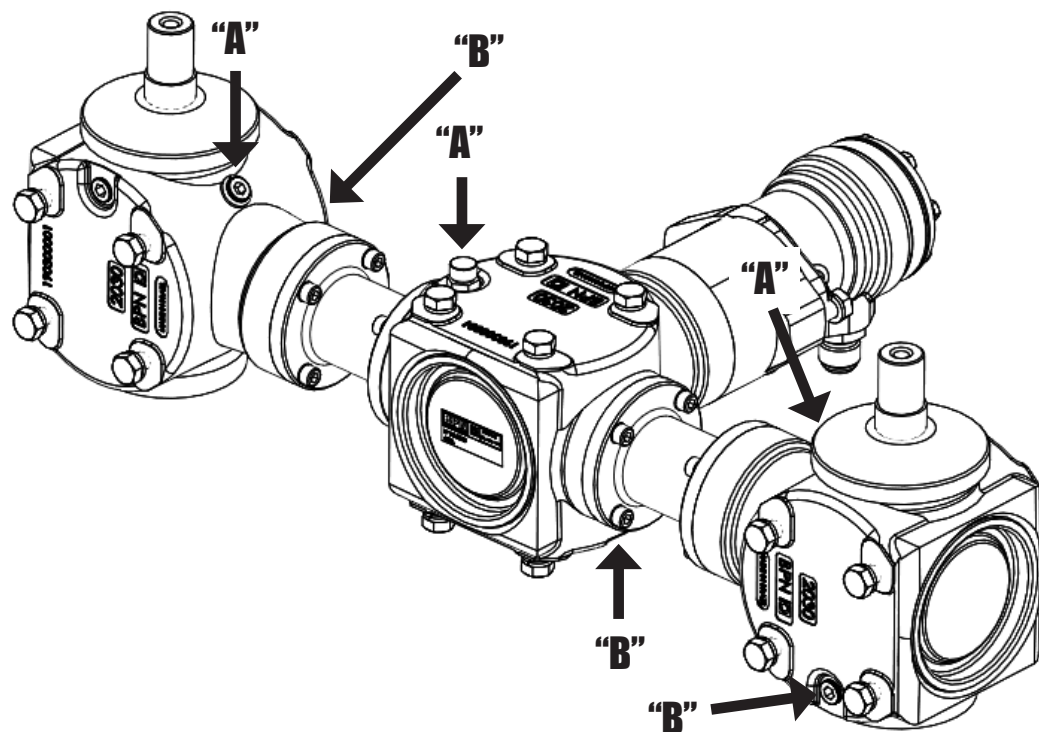
### **OBSERVATION**

*For even better accuracy of changing the filter (3), we recommend checking it periodically. The higher the accuracy of changing the filter (3), the lower the risk of oil contamination.*

**TRIPLE BOX OIL REPLACEMENT**

Periodically check the oil level of the triple box since it cannot run on low oil level or contaminated oil. Refill the triple box whenever necessary through the "A" plug of each box forming the set.

- 1- First, remove the drainage plug "B" of each box forming the set and let all oil from the triple box deplete. Next, reinstall them.
- 2- Then, remove the "A" plug of each box forming the set and fill the triple box with 3 liters of oil (1 liter in each box forming the set) allowing the air outlet and settling of the oil in the entire transmission. Next, reinstall them.

**⚠ ATTENTION**

*The total amount of oil in triple box is 3 liters (1 liter for every box forming the set).*

*Perform the first oil change after 50 working hours.*

*Perform the periodical oil change every 500 hours observing if there are no leakages.*

*Only use the specified oil: SAE 90 EP (with extreme pressure additives). When using a specific oil brand, avoid completing the oil level with different brand and specification.*

**🔧 IMPORTANT**

*When finishing the crop, we recommend clean the triple box external surface and apply oil to prevent corrosion.*

*When Fertiliza is not in use, it should be maintained in a covered area, avoiding the rain and sun effects, especially on the triple box.*

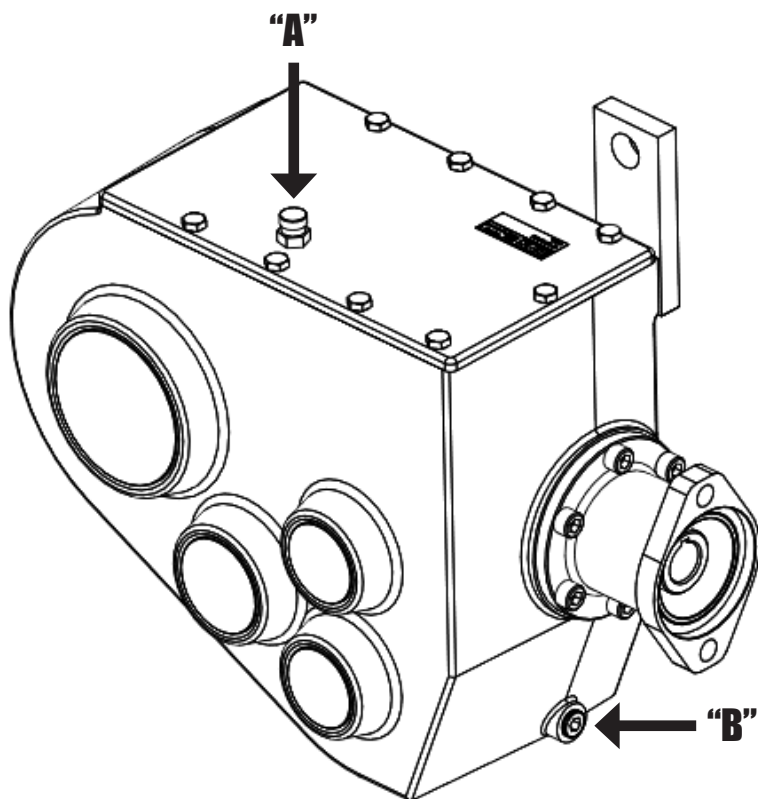
**MAINTENANCE**

# MAINTENANCE

## REDUCING BOX OIL EXCHANGE

Periodically check the oil level of the gearbox since it cannot run on low oil level or contaminated oil. Refill the gearbox whenever necessary through the "A" plug.  
To change the gearbox oil, proceed as follows:

- 1- First, remove the drainage plug "B" let all oil from the gearbox deplete. Then, reinstall the drainage plug "B".
- 2- Then, remove the "A" plug fill the gearbox with 7 liters of oil. Next, reinstall plug "A".



## ⚠ ATTENTION

*The total amount of oil of the gearbox is 7 liters.  
Perform the first oil change after 50 working hours.  
Perform the periodical oil change every 500 hours observing if there are no leakages.  
Only use the specified oil: SAE 90 EP (with extreme pressure additives).*

## 🔄 IMPORTANT

*When finishing the crop, we recommend clean the gearbox external surface and apply oil to prevent corrosion.  
When Fertiliza is not in use, it should be maintained in a covered area, avoiding the rain and sun effects, especially on the gearbox.*

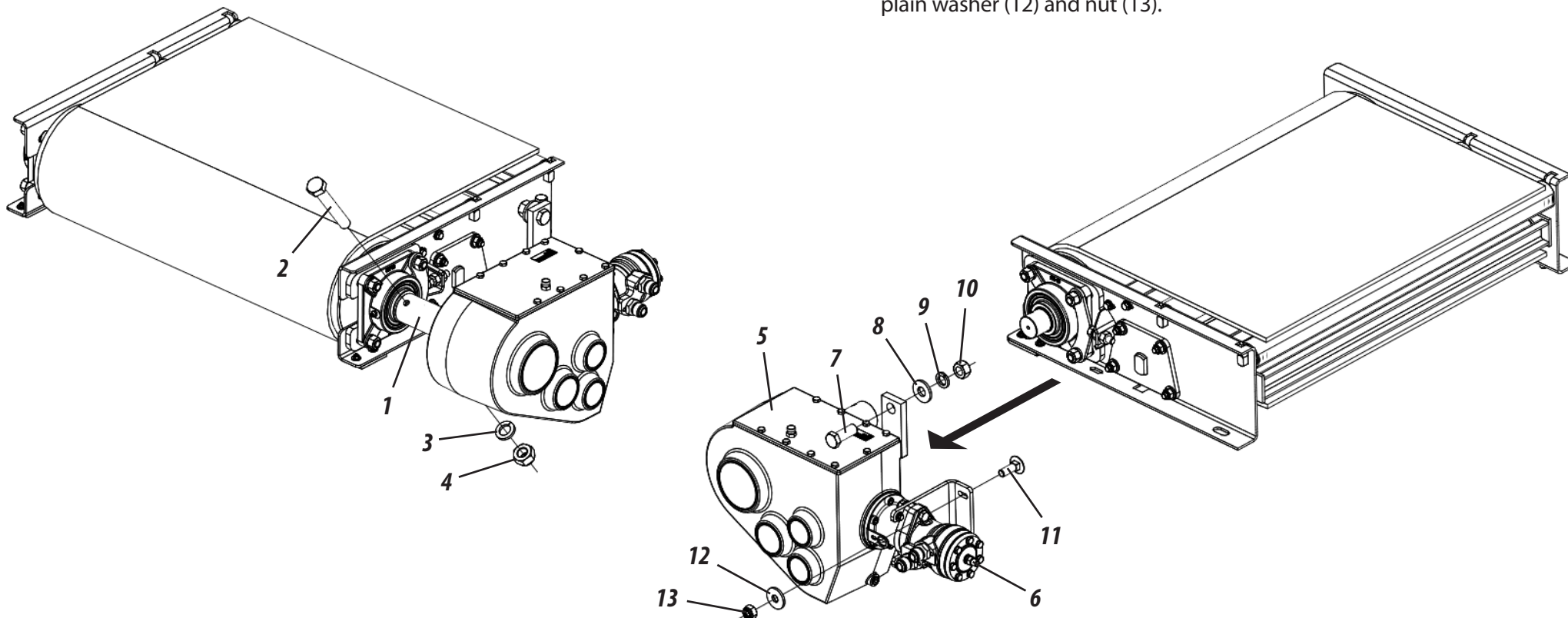
## 👁 OBSERVATION

*Plug "A" serves as a breather as well since it has level stick to monitor the oil level, which should be completed whenever necessary.  
When using a specific oil brand, avoid completing the oil level with different brand and specification.*

## CONVEYOR REMOVAL - PART I

To facilitate maintenance, **FERTILIZA** has a conveyor removal system on its front part, not requiring any component to be dismantled. To perform maintenance in the conveyor, proceed as follows:

- 1- First release the bushing (1) of the rear shaft of the conveyor through the screw (2), pressure washer (3), and nut (4).
- 2- Next, loosen the gearbox (5) and the hydraulic motor (6) through the screw (7), plain washer (8), pressure washer (9), nut (10), and the screw (11), plain washer (12) and nut (13).



**IMPORTANT** | Before any procedure, make sure that the tractor is off and **FERTILIZA** is engaged.  
Do not perform any maintenance with the tractor running and **FERTILIZA** disengaged.

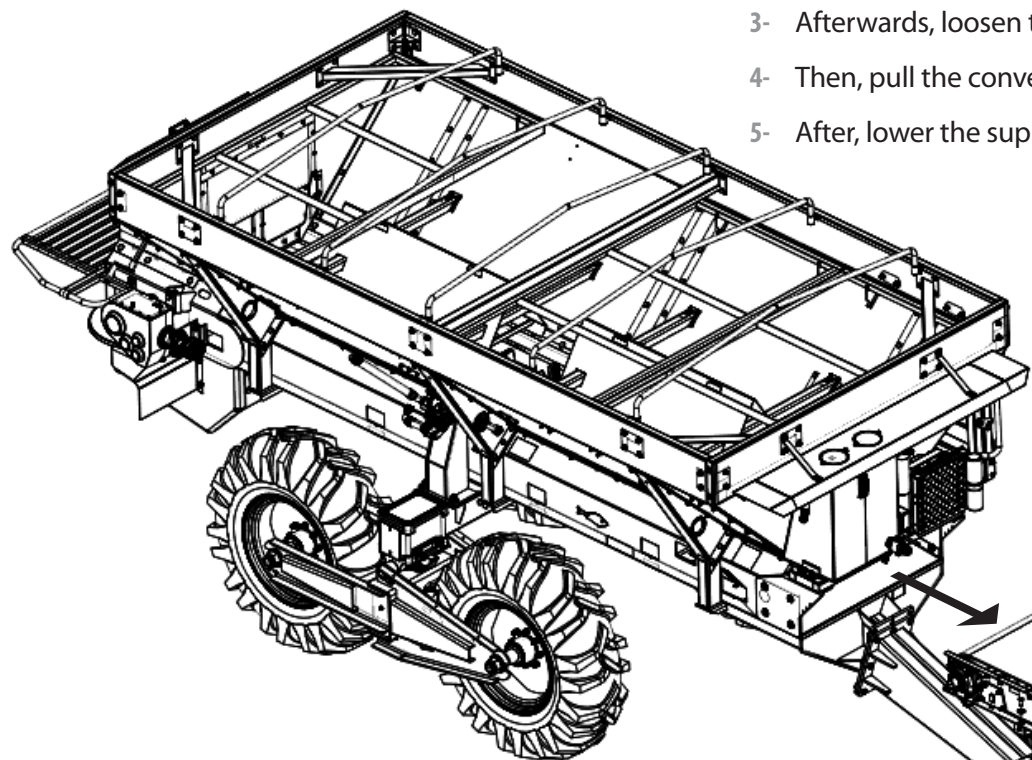
## MAINTENANCE



# MAINTENANCE

## CONVEYOR REMOVAL - PART II

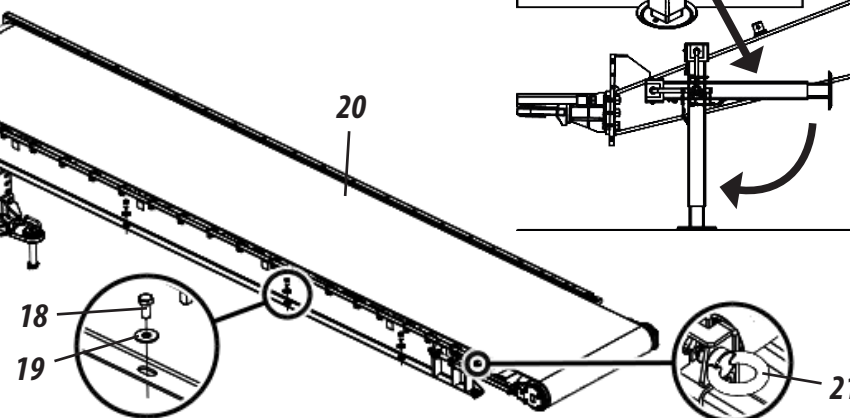
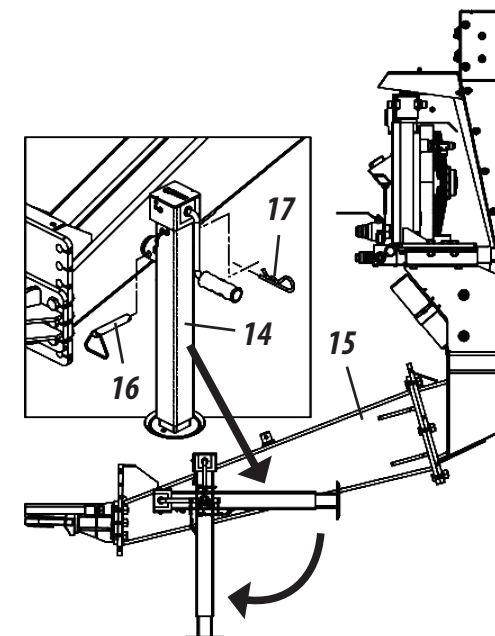
- 3- Afterwards, loosen the screws (18) and plain washers (19) in FERTILIZA sides to release the conveyor (20).
- 4- Then, pull the conveyor (20) through the pull handles (21) located on its front part.
- 5- After, lower the support (14) of the header hook (15) by locking it with the pin (16) and lock (17).



## OBSERVATION

*Fertiliza 8m<sup>3</sup> requires 8 screws in total (4 on each side).*

*Fertiliza 16m<sup>3</sup> requires 10 screws in total (5 on each side).*



## ATTENTION

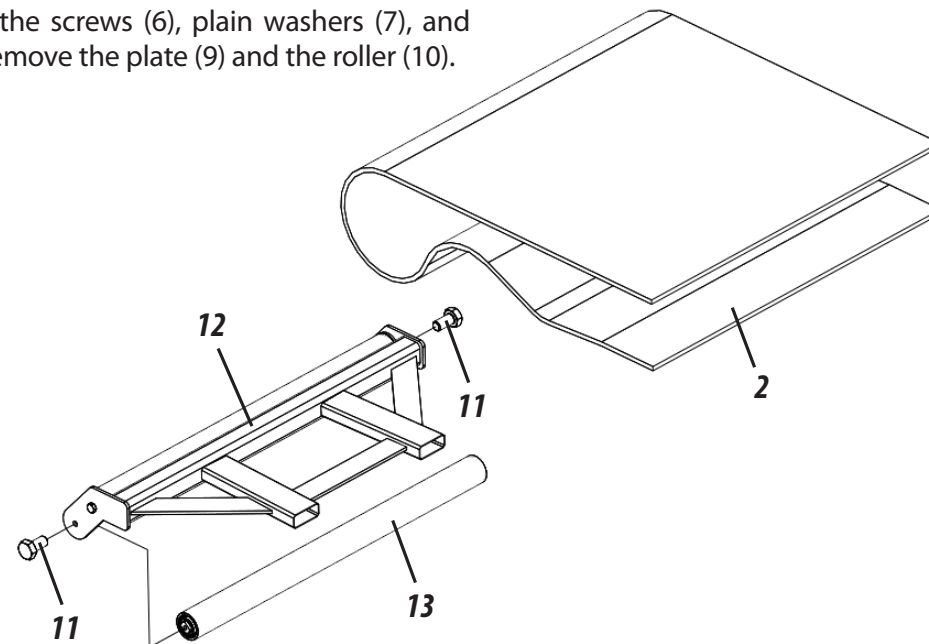
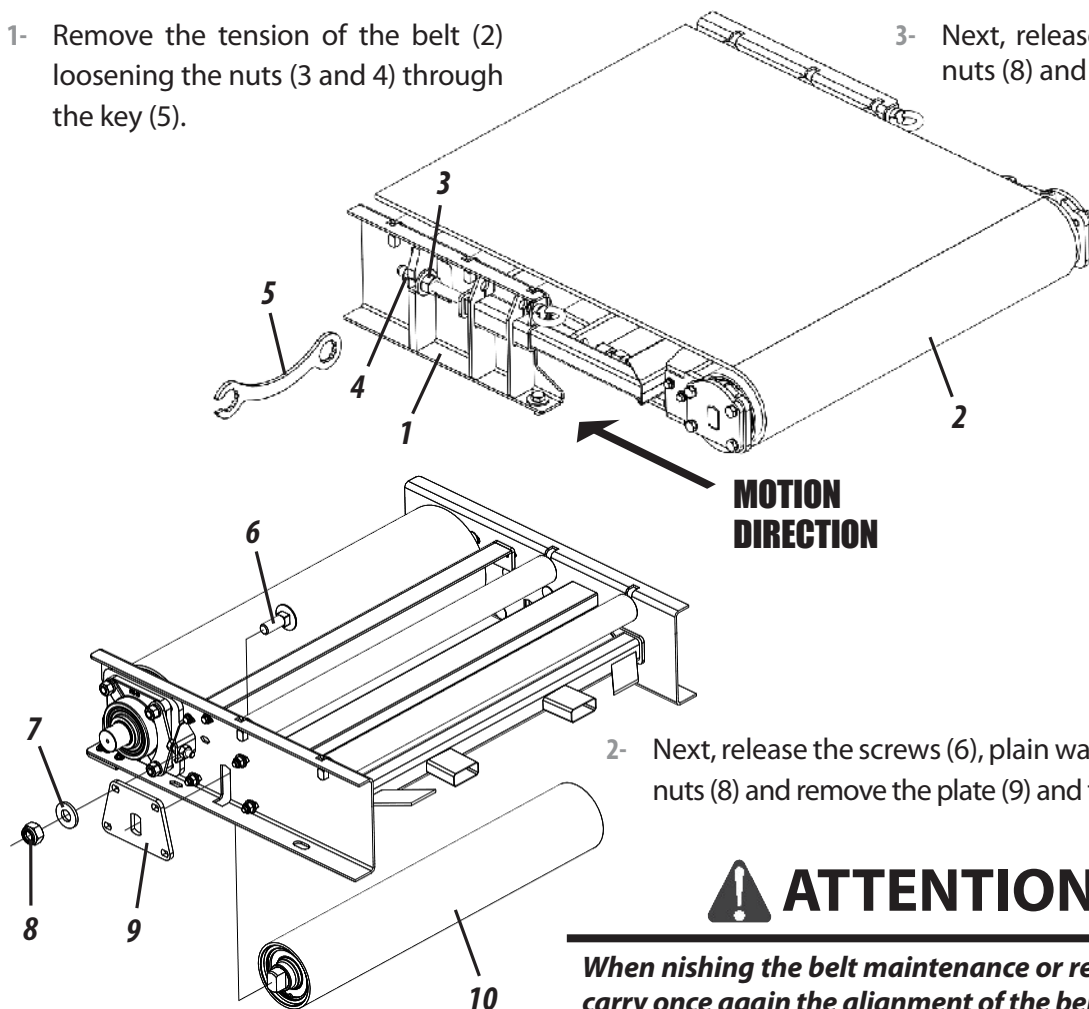
*When providing maintenance on the suspended conveyor, support it safely. Do not support the conveyor on hollow bricks, piles or cement blocks that may collapse under load. Do not remove the conveyor without lowering the support (14). Ignoring this warning may cause severe accidents and even death.*

### CONVEYOR REPLACEMENT

The conveyor (1) has a belt (2) that should be replaced when presenting excessive superficial wear and tear and when the conveyor limit reached its limit. To replace the belt (2), proceed as follows:

- 1- Remove the tension of the belt (2) loosening the nuts (3 and 4) through the key (5).

- 3- Next, release the screws (6), plain washers (7), and nuts (8) and remove the plate (9) and the roller (10).



- 2- Next, release the screws (6), plain washers (7), and nuts (8) and remove the plate (9) and the roller (10).

### ⚠ ATTENTION

*When nishing the belt maintenance or replacement, carry once again the alignment of the belt according to instructions in the following page.*

### 🚫 IMPORTANT

*When performing maintenance on any part of the conveyor (2), use safety equipment (PPE). Prevent accidents.*

### 👁 OBSERVATION

*When nishing the belt (2) replacement or maintenance, carry the reverse process and mount the conveyor (1) again.*

## MAINTENANCE

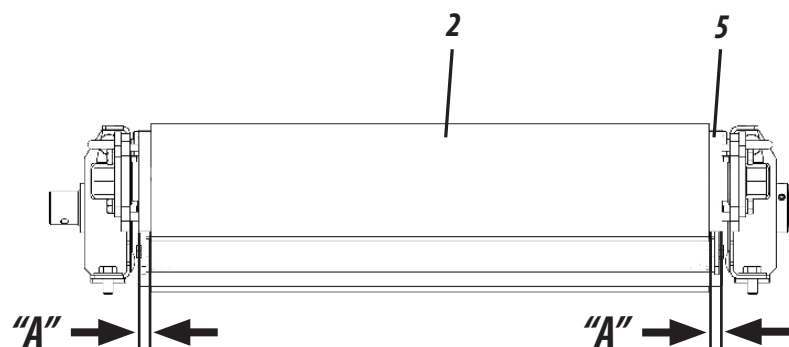
# MAINTENANCE

## BELT ALIGNMENT

The conveyor (1) already leaves the factory tested and with the belt (2) aligned, however, we recommend to check if the belt (2) is still aligned when providing maintenance to the belt (2) or replacing it, and also before starting the field works, if not, align it. To align the belt (2), proceed as follows:

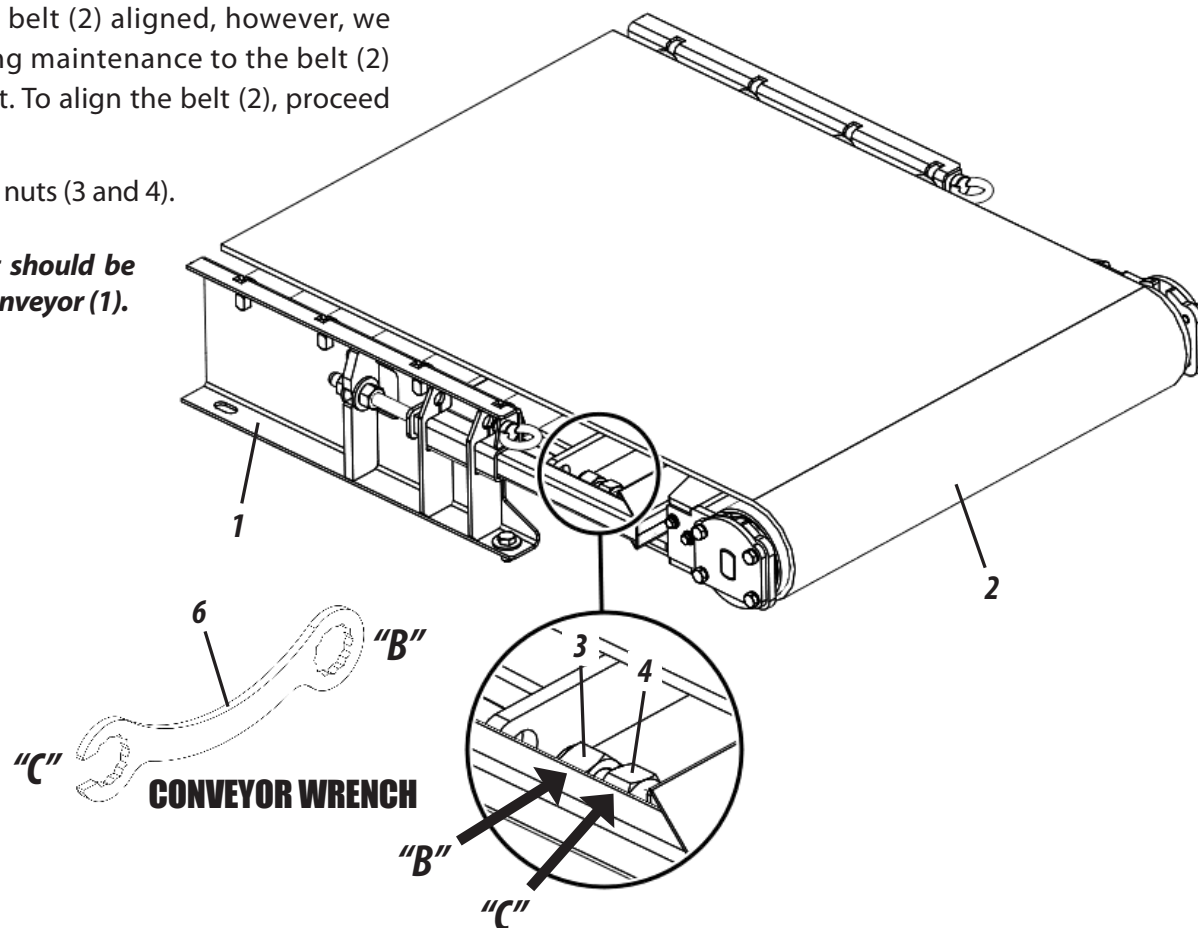
- 1- Using the wrench (6), adjust the alignment of the belt (2) through nuts (3 and 4).

**IMPORTANT** | *The nuts (3 and 4) adjustment should be the same on both sides of the conveyor (1).*



**! ATTENTION**

Check the alignment observing if "A" distances between the belt (2) and the larger roller (5). Both distances should be the same.



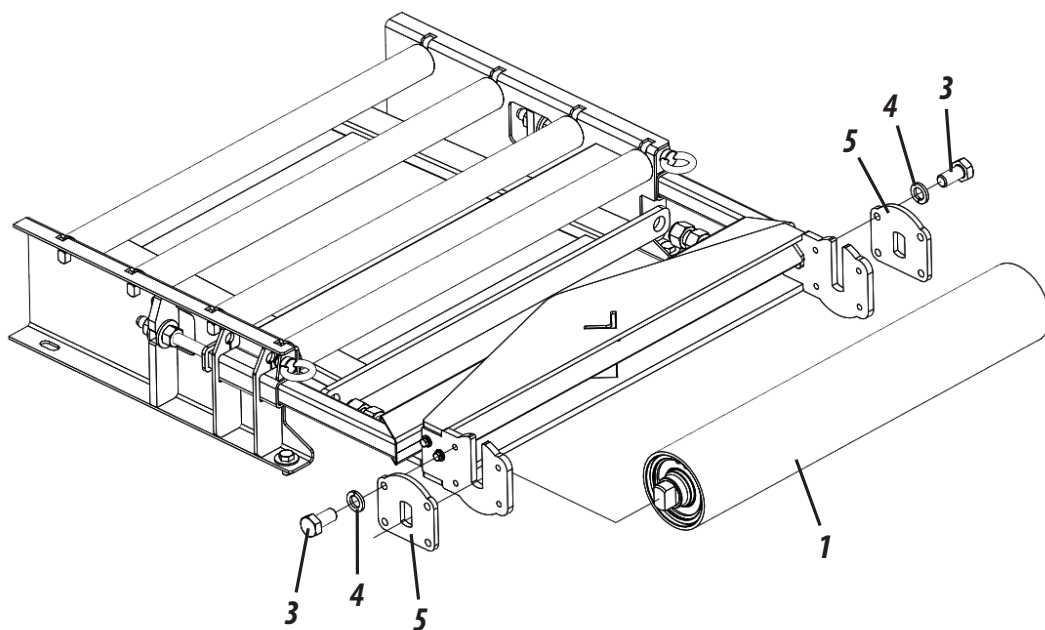
**🔍 OBSERVATION**

The wrench (6) should be used on the "B" side for the nut (3) and "C" side for the nut (4).

**FRONTAL ROLLER MAINTENANCE**

To perform maintenance in the front roller (1) of the conveyor (2), proceed as follows:

- 1- First, remove the belt to do it, proceed with instructions in page 93.
- 2- Next, release the screws (3), pressure washers (4), and remove the plates (5).
- 3- Then, decouple the frontal roller (1) and replace it.
- 4- Finish it by reassembling all components.

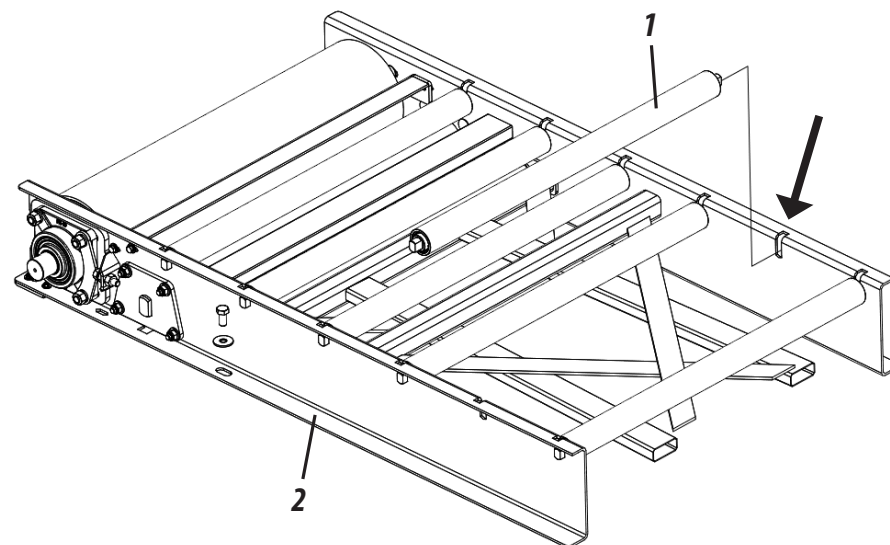
**ⓘ IMPORTANT**

*When performing maintenance on any part of the conveyor (2), use safety equipment (PPE). Prevent accidents.*

**MAINTENANCE****CENTRAL ROLLERS MAINTENANCE**

Central rollers (1) serve as base for the conveyor (2) supporting the weight of the product to be distributed. To perform maintenance in central rollers (1), proceed as follows:

- 1- Lift the belt and perform maintenance or replacement of the central rollers (1).

**⚠ ATTENTION**

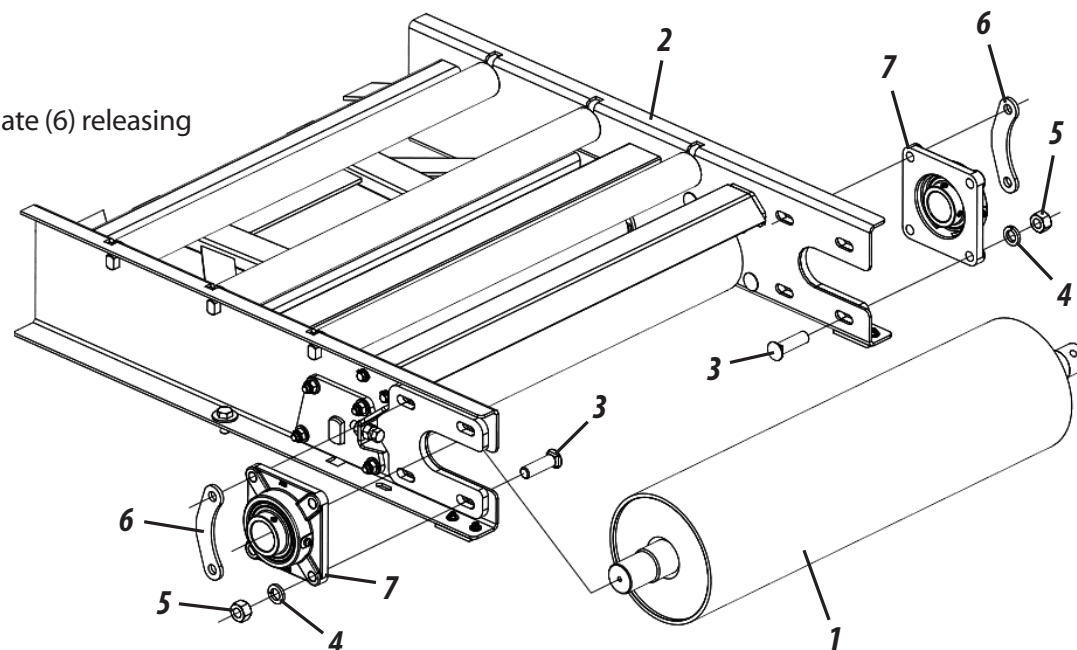
*Respect FERTILIZA load capacity when loading it. Avoid overload.  
The service life of the central rollers is quickly reduced with overload.*



## REAR ROLLER MAINTENANCE

To perform maintenance in the rear roller (1) of the belt (2), proceed as follows:

- 1- First, remove the belt to do it, proceed with instructions in page 142.
- 2- Next, release the screws (3), pressure washers (4), and nuts (5), remove the plate (6) releasing the bearing. (7).
- 3- Then, decouple the rear roller (1) and replace it.
- 4- Finish it by reassembling all components.

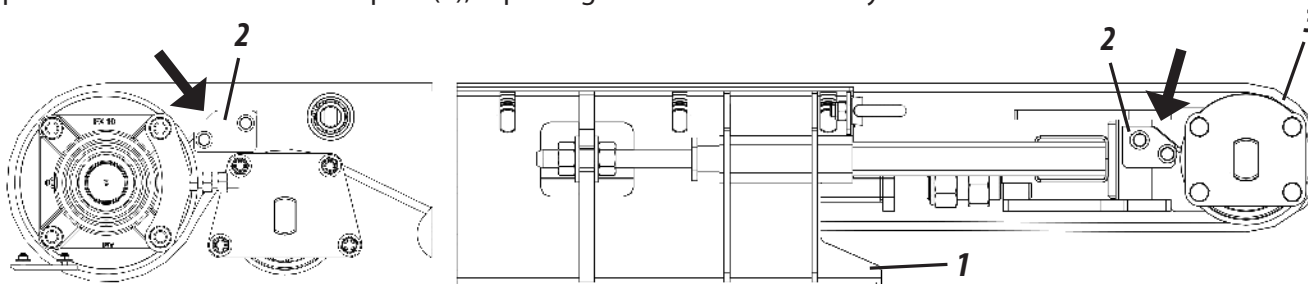


## IMPORTANT

*When performing maintenance on any part of the conveyor (2), use safety equipment (PPE). Prevent accidents.*

## CONVEYOR SCRAPERS IDENTIFICATION

The conveyor (1) has scrapers (2) that maintain efficiency in the belt tensioning (3) and the cleanliness of the driven and conducting cylinders. Periodically check the preservation state of the scrapers (2), replacing them when necessary.



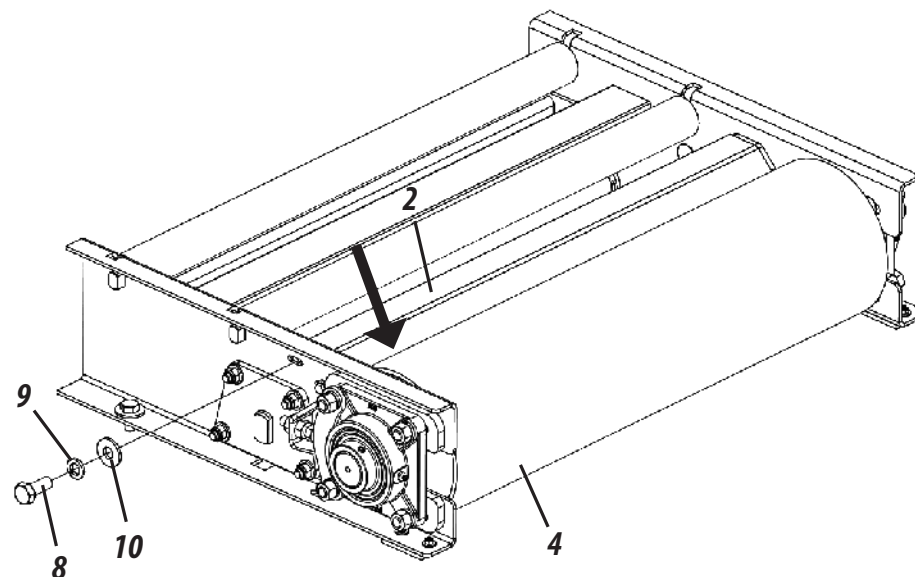
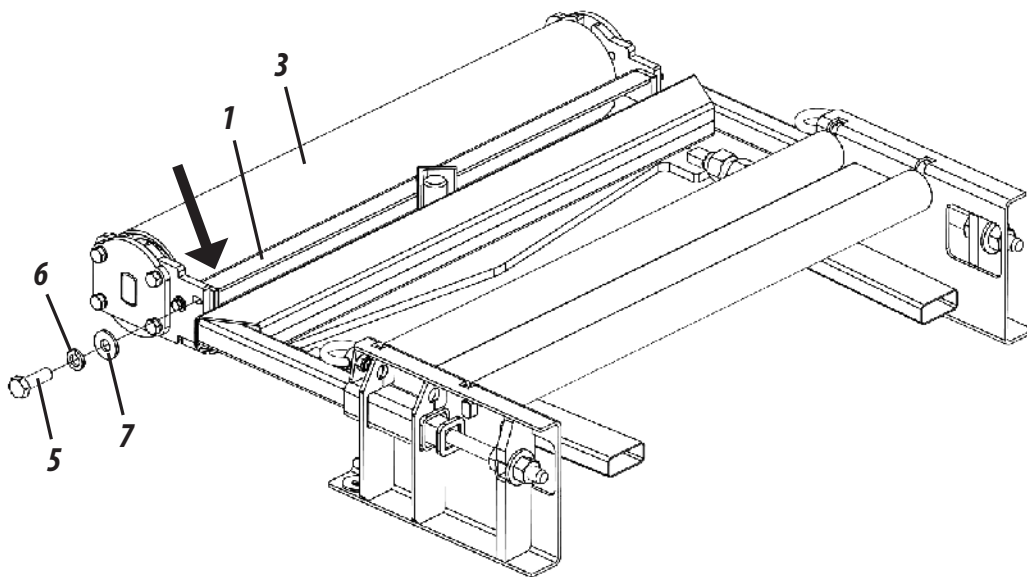
## OBSERVATION

*Clean the scrapers (2) whenever necessary.*

**ADJUSTMENT OF SPACING BETWEEN SCRAPERS AND CYLINDERS**

Periodically check the spacing adjustment between scrapers (1 and 2) and cylinders (3 and 4). To adjust the spacing, proceed as follows:

- 1- Loosen the screws (5), pressure washers (6), and plain washers (7), adjust the gap between the scraper (1) and the cylinder (3) and retighten them.
- 2- Then, loosen the screws (8), pressure washers (9), and plain washers (10), adjust the gap between the scraper (2) and the cylinder (4) and retighten them.

**ⓘ IMPORTANT**

*When performing maintenance on any part of the conveyor (2), use safety equipment (PPE). Prevent accidents.*

**ⓘ OBSERVATION**

*Clean the scrapers (1 and 2) whenever necessary.*

**MAINTENANCE**

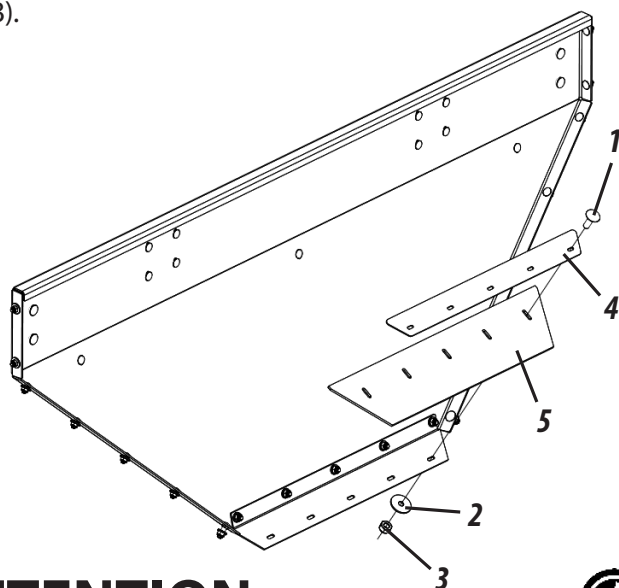
# MAINTENANCE

## TARPAULINS

Periodically check frontal and side tarpaulin. If they are not in good condition, ip their side or replace them for new ones, to do that proceed as follows:

### FRONTAL TARPAULIN

- 1- Loosen the screws (1), plain washers (2), and nuts (3).
- 2- Next, remove the plate (4) and the protection rubber (5).
- 3- Then, flip or replace the protection rubber (5).
- 4- Finish it by securing the protection rubber again (5) and the plate (4) with the screws (1), plain washers (2) and nuts (3).

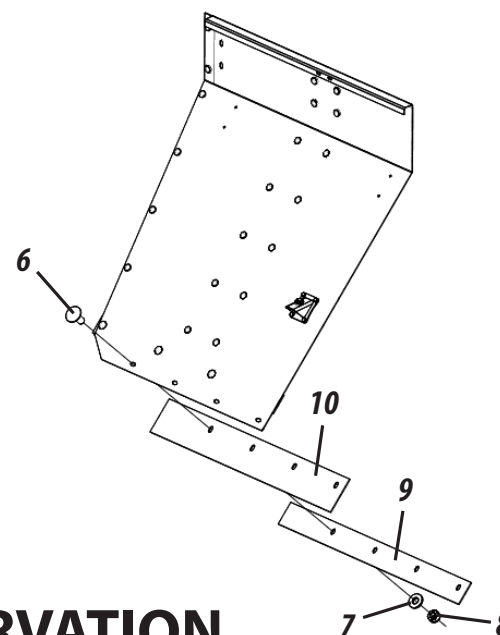


### ⚠ ATTENTION

Assemble the protection rubber (5) over the two side tarpaulins.

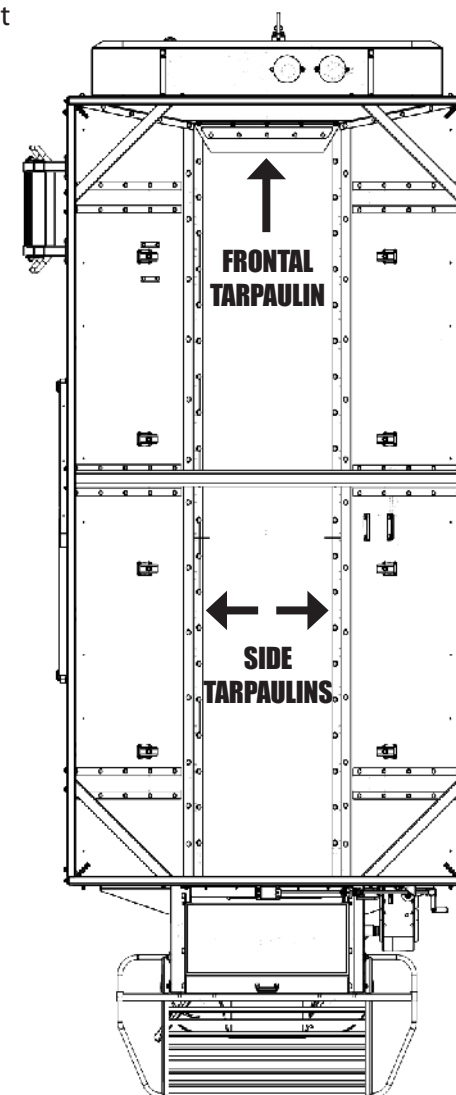
### SIDE TARPAULIN

- 1- First, loosen the screws (6), plain washers (7), and nuts (8).
- 2- Next, remove the plate (9) and the side protection rubber (10).
- 3- Then, flip or replace the side protection rubber (10).
- 4- Finish it by securing the side protection rubber again (10) and the plate (9) with the screws (6), plain washers (7) and nuts (8).



### 👁 OBSERVATION

The protection rubber (5) flipping or replacement procedure and side protection rubber (10) should be performed with the conveyor placed outside FERTILIZA.



**OPERATIONAL MAINTENANCE - PART I**

<i>PROBLEMS</i>	<i>PROBABLE CAUSES</i>	<i>SOLUTIONS</i>
There is no product flow over the discs or the quantity is insufficient.	The gate may be closed.	Adjust the gate opening according to the table.
	Foreign objects locking the conveyor.	Check and clean the conveyor.
	Conveyor, transmission chain or fuse broken.	Check and mend the conveyor, the chain or replace the fuse.
Product distribution in the soil is not uniform.	Distance between one stroke and the other is too far.	Reduce the distance between the strokes and operate according to the recommended distance.
	Wrong position of vanes on discs, distributors.	Check the position of the vanes if they are not inverted according to the rotating direction of the distributor discs. If they are inverted, proceed with their correct assembly.
	Opening of the proportional valve is not adequate.	Adjust the correct ow of the valve.
	Wind too strong.	Wait until the wind reduces.
Position of vanes on distributor discs.	Position of ns on distributor discs.	Adjust the vanes on the discs for more open position.
Excessive vibration or noise during operation.	Foreign objects inside Fertiliza.	Check and remove them if any.
	Loosen or damaged bearings.	Retighten the bearings or replace them if they are damaged.
	Adjustment of conveyor.	Tension the conveyor belt.
	Rotation in PTO (w/ independent system).	Maintain rotation in 540 rpm.
Recommended dosage is not obtained.	Dosing system. Work speed above recommended.	Increase gate ow. Reduce work speed.
Dosage higher than recommended.	Dosing system. Work speed above recommended.	Increase gate ow. Reduce work speed to the recommended one.
Breaking the fuse frequently.	Conveyor operating at overspeed. Foreign objects locking the conveyor.	Reduce the belt speed and increase the gate ow. Check and proceed to clean the conveyor.
Leakages in hoses with xed terminals.	Insucient tightening.	Carefully retighten.
	Lack of sealing material on thread.	Use thread sealing tape and carefully retighten.

**MAINTENANCE**



## OPERATIONAL MAINTENANCE - PART II

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
Hydraulic motor not running.	Pressure lower than 180 kgf/cm <sup>2</sup> .	Adjust the relief valve pressure of the hydraulic command to 180 kgf/cm <sup>2</sup> .
	Hydraulic oil level too low.	Complete the hydraulic oil level.
	Oil with impurities.	Clean or change the oil lter; change the oil if contaminated.
	Uneven plugs pressure.	Adjust and replace if necessary.
	Inverted drive direction.	Reverse hoses coupling at the tractor control body.
Tires are damaged.	Work area with rocks, stubs or remaining of culture with stems that spike the tire.	Eliminate the elements causing damages to the tires before FERTILIZA usage period.
	Tires are not with proper pressure, generating deformations.	Maintain proper tires pressure.
Fast hitch does not adapt.	Dierent types of hitches.	Change them for males and females of the same type.
Oil leakages on the hydraulic motor.	Insucient tightening.	Carefully retighten.
	Lack of sealing material on thread.	Use thread sealing tape and carefully retighten.
	Damaged repairs.	Replace repairs.
	Seal rings with defect.	Replace the rings.
	Oil temperature above 80° C.	Interrupt work until temperature drop.
Hydraulic system does not trigger hydraulic motors.	Error in the input and return hydraulic hoses coupling.	Couple the hydraulic hoses correctly in the input and return.
	Connections are damaged (fast hitching, leakage, etc.).	Change quick hitch or damaged hydraulic hoses.
Leakage on quick hitch.	Insucient tightening.	Carefully retighten.
	Lack of sealing material on thread.	Use thread sealing tape and carefully retighten.
	Damaged repairs.	Replace repairs.

## OPERATIONAL MAINTENANCE - PART III

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
Slow operation of the hydraulic system.	Low level of oil in tank.	Complete with recommended oil until the level.
	Oil viscosity too high.	Replace hydraulic oil.
	Leakages.	Replace repairs of hydraulic motors, valves. Replace damaged hoses and hydraulic connections.
Leakages in hoses with xed terminals.	Insucient tightening.	Carefully retighten.
	Lack of sealing material on thread.	Use thread sealing tape and carefully retighten.
Weird noise on wheels.	Loosen wheels or loosen wheel hub.	Retighten the wheel's nuts and adjust the rollers of the wheel hub.
The product is not being applied in the desired volume.	Hydraulic system has faults.	Review hydraulic system, detect faults and correct.
Weird noise.	Breakage of rollers or transmission system.	Identify the occurrence and replace damaged parts.

## CARES

- 1- Before each work, check the condition of all pins and screws. Where necessary, retighten or replace them.
- 2- Movement speed should be carefully controlled according to the terrain's conditions.
- 3- **FERTILIZA** is used in several applications, requiring knowledge and attention in its handling.
- 4- Only local conditions can determine the best way to operate the **FERTILIZA**.
- 5- When assembling or disassembling parts of the **FERTILIZA**, use appropriate methods and tools.
- 6- Carefully observe the lubrication intervals in the various lubrication points of the **FERTILIZA**. Respect the lubrication intervals.
- 7- Always check if the parts have wears. If there is a need for replacement, **always demand Baldan original parts**.



**IMPORTANT**

*Proper and periodic maintenance are necessary to ensure the long life of the FERTILIZA.*

# MAINTENANCE

# MAINTENANCE

## GENERAL CLEANING

- 1- When storing the **FERTILIZA**, perform a general cleaning and wash it thoroughly with water only. Make sure the paint has not worn out, if this has happened, apply a general coat and protective oil and fully lubricate the **FERTILIZA**. Do not use burned oil or other abrasive.
- 2- Remove transmission chains and keep them immersed in oil until the next work.
- 3- Completely lubricate the **FERTILIZA**. Check all moving parts of the **FERTILIZA**, for wear and tear or gaps, make the required adjustments or parts replacements, leaving the machine ready for the next work.
- 4- When the **FERTILIZA** is not in use, clean any product residues remaining after use, such as limestone, fertilizers, dirt, etc.
- 5- Spray the entire **FERTILIZA** with castor oil or preservative oil, never use burnt oil.
- 6- After all maintenance precautions, store your **FERTILIZA** in a plain surface, at a covered and dry location, away from animals and children.
- 7- Replace any damaged or missing stickers, especially warnings. Make everyone aware of the importance and risks of accidents when instructions are not followed.
- 8- We recommend washing the **FERTILIZA** with water only on the beginning of works.



## ATTENTION

*Do not use abrasives or chemical products to wash the distributor, as it may damage its painting and adhesives.*

## DISTRIBUTOR CONSERVATION - PART I

To prolong the life and appearance of the **FERTILIZA** for longer, follow the instructions below:

- 1- Fertilizers and their additives are highly corrosive and their formulation is increasingly aggressive to the distributor's components.
- 2- Wash and clean all distributor components during and at the end of the work season.
- 3- Use neutral products to clean the distributor following the safety and handling guidelines provided by the manufacturer.
- 4- Always carry out maintenance during the periods indicated in this manual.

### DISTRIBUTOR CONSERVATION - PART II

The practices and care below if adopted by the owner or operator make a difference to the conservation of the **FERTILIZA**.

- 1- Be careful when performing high-pressure washing; do not direct the water jet directly into the connectors and electrical components. Isolate all electrical components;
- 2- Use only NEUTRAL detergent and water (pH equal to 7);
- 3- Apply the product, following the manufacturer's instructions strictly, on the wet surface and in the correct sequence, respecting the time of application and washing;
- 4- Stains and dirt not removed with the products should be removed with the aid of a sponge.
- 5- Rinse the machine with clean water to remove any chemical residues.
- 6- Do not use:
  - Detergents with a basic active ingredient (pH greater than 7), can attack/stain the paint on the distributor.
  - **Detergents with acid active ingredient (pH less than 7), act as stripper/remover of zinc coating (the protection of parts against oxidation).**
- 8- After drying, lubricate all chains and greases according to the recommendations in the operator's manual.
- 9- Spray all the machine, especially the zinc parts, with protective oil, following the manufacturer's application guidelines. The protective also prevents dirt from adhering to the machine, facilitating subsequent washings.
- 10- Observe curing (absorption) time and application intervals as recommended by the manufacturer.

### ATTENTION

**Do not use any other type of oil to protect the harrow (used hydraulic oil, "burnt" oil, ATTENTION diesel oil, castor oil, kerosene, etc.).**

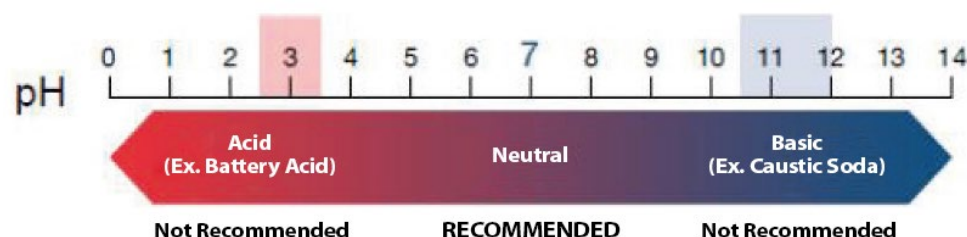
### IMPORTANT

*We recommend the following protective oils:*

- Bardahl: Agro protective 200 or 300
- ITWChemical: Zoxol DW - Series 4000

### OBSERVATION

*Ignoring the conservation measures mentioned above may result in the loss of warranty for painted or zinc-coated components which may exhibit oxidation (rust).*



- 7- Allow the machine to dry in the shade so that it does not accumulate water in its components. Very fast drying can cause stains on your paint.

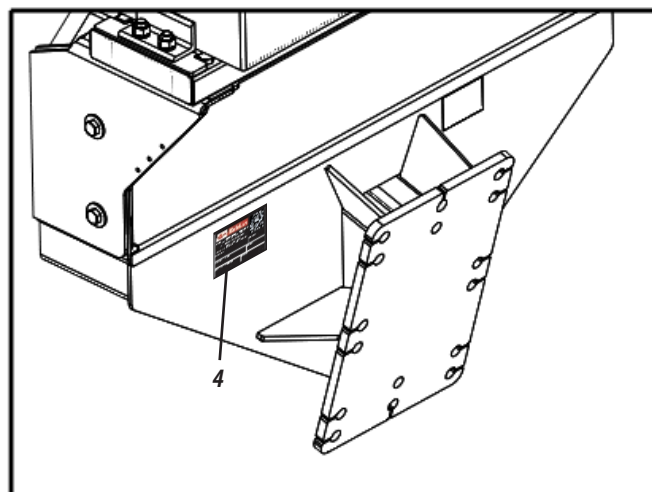
## MAINTENANCE



# IDENTIFICATION

## PRODUCT IDENTIFICATION

- 1- To consult the parts catalogue or request Baldan technical assistance, always identify the model (1), serial number (2) and manufacture date (3), which can be found on the **FERTILIZA** identification label (4).
- 2- **ALWAYS DEMAND BALDAN ORIGINAL PARTS.**



Identify the data below to always have correct information about the life of your **FERTILIZA**.

Owner: \_\_\_\_\_

Dealer: \_\_\_\_\_

Farm: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

Certificate of Warranty No.: \_\_\_\_\_

Model: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Purchase Date: \_\_\_\_\_ Invoice No.: \_\_\_\_\_

## ! ATTENTION

*The drawings herein are merely illustrative. To allow a better view and detailed instruction, the safety devices in some drawings of this manual were removed (covers, protections, etc.). Never operate Fertiliza without these devices.*



## PUBLICATIONS

Code: 60550106496  
CPT: FERTILIZA05920A



## CONTACT

*In case of doubts, refer to Post-Sale.*  
Telephone: 0800-152577  
Email: posvenda@baldan.com.br

**NOTES**

## NOTES

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

## CERTIFICATE OF WARRANTY

**BALDAN IMPLEMENTOS AGRÍCOLAS S/A** ensures the dealer normal performance of the implement for a period of six (6) months as of the delivery date on the retail invoice to the first final consumer. During this period, **BALDAN** undertakes to repair defects in material and/or of manufacture of its liability, including labor, freight and other expenses of the dealer's liability.

In the warranty period, request and replacement of eventual defective parts shall be made to the dealer of the area, who will submit the faulty piece for **BALDAN** analysis.

When this procedure is not possible and the resolving capacity of the dealer is exhausted, the dealer will request the support of **BALDAN Technical Assistance** through a specific form distributed to dealers. After analyzing the replaced items by Baldan Technical Assistance, and concluding that it is not a warranty, then the dealer will be responsible for the costs related to the replacement; as well as material expenses, travel including accommodation and meals, accessories, lubricant used and other expenses arising from the call out to Technical Assistance, and Baldan company is authorized to carry the respective invoice in the name of the resale. Any repair carried in the product within the dealer warranty deadline will only be authorized by **BALDAN** upon previous budget presentation describing parts and work to be performed.

The product is excluded from this term if it is repaired or modified by representatives not belonging to the **BALDAN** dealer network, as well as the application of non-genuine parts or components to the user's product. This warranty is void where it is found that the defect or damage is caused by improper use of the product, failure to follow instructions or inexperience of the operator.

It is agreed that this warranty does not cover tires, polyethylene tanks, cardan, hydraulic components, etc., which are equipment guaranteed by their manufacturers. Manufacturing and/or material defects, object of this warranty term, will not constitute, under any circumstances, grounds for termination of a purchase agreement, or for indemnification of any nature.

**BALDAN** reserves the right to change and/or perfect the technical characteristics of its products, without previous notice, and without obligation to proceed in the same way with the products previously manufactured.

## INSPECTION AND DELIVERY CERTIFICATE

- **SERVICE BEFORE DELIVERY:** This implement was carefully prepared by the sale organization, with all its parts inspected according to the manufacturing prescriptions.
- **DELIVERY SERVICE:** The user was informed about the current warranty terms and instructed on the usage maintenance precautions.
- I confirm that the user has been informed about the current warranty terms and instructed on the usage maintenance precautions.

Implement: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date: \_\_\_\_\_ Tax Number: \_\_\_\_\_

Dealer: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ CEP: \_\_\_\_\_

Owner: \_\_\_\_\_ Telephone: \_\_\_\_\_

Address: \_\_\_\_\_ Number: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

E-mail: \_\_\_\_\_

Sale Date: \_\_\_\_\_

Signature / Dealer Stamp \_\_\_\_\_

1st copy - Owner

**CERTIFICATE**



# CERTIFICATE

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

## INSPECTION AND DELIVERY CERTIFICATE

- **SERVICE BEFORE DELIVERY:** This implement was carefully prepared by the sale organization, with all its parts inspected according to the manufacturing prescriptions.
- **DELIVERY SERVICE:** The user was informed about the current warranty terms and instructed on the usage maintenance precautions.
- I confirm that the user has been informed about the current warranty terms and instructed on the usage maintenance precautions.

Implement: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date: \_\_\_\_\_ Tax Number: \_\_\_\_\_

Dealer: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ CEP: \_\_\_\_\_

Owner: \_\_\_\_\_ Telephone: \_\_\_\_\_

Address: \_\_\_\_\_ Number: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

E-mail: \_\_\_\_\_

Sale Date: \_\_\_\_\_

Signature / Dealer Stamp \_\_\_\_\_

2nd copy - Dealer

## INSPECTION AND DELIVERY CERTIFICATE

- **SERVICE BEFORE DELIVERY:** This implement was carefully prepared by the sale organization, with all its parts inspected according to the manufacturing prescriptions.
- **DELIVERY SERVICE:** The user was informed about the current warranty terms and instructed on the usage maintenance precautions.
- I confirm that the user has been informed about the current warranty terms and instructed on the usage maintenance precautions.

Implement: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date: \_\_\_\_\_ Tax Number: \_\_\_\_\_

Dealer: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ CEP: \_\_\_\_\_

Owner: \_\_\_\_\_ Telephone: \_\_\_\_\_

Address: \_\_\_\_\_ Number: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

E-mail: \_\_\_\_\_

Sale Date: \_\_\_\_\_

Signature / Dealer Stamp \_\_\_\_\_

3rd copy - Manufacture

Please send completed within 15 days.

1.74.05.0059-5  
AC MATÃO  
ECT/DR/SP

**RESPONSE CARD**

NO STAMPING IS REQUIRED

THE STAMP WILL BE PAID BY:



**BALDAN IMPLEMENTOS AGRÍCOLAS S/A.**

Av. Baldan, 1500 | Nova Matão | CEP: 15993-900 | Matão-SP | Brasil  
Phone: (0\*\*16) 3221-6500 | Fax: (0\*\*16) 3382-6500  
Home Page: [www.baldan.com.br](http://www.baldan.com.br) | e-mail: [sac@baldan.com.br](mailto:sac@baldan.com.br)  
Export: Phone: 55 16 3321-6500 | Fax: 55 16 3382-4212 | 3382-2480  
e-mail: [export@baldan.com.br](mailto:export@baldan.com.br)





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