Instruction Manual

DEMETRA

Sugar Cane Precision Row Crop Planter

BALDAN

▪ Presentation

We thank you for your preference and congratulate you on the excellent choice you have just made, as you have purchased a product manufactured with **BALDAN IMPLEMENTOS AGRÍCOLAS S/A** technology.

This manual will guide you through the procedures that are required from your purchase to the procedures operational use, safety and maintenance.

BALDAN guarantees that it has delivered this implement to the dealer complete and in perfect condition.

The dealer took responsibility for its safekeeping and conservation during the period it was in his possession, and also for the assembly, retightening, lubrication, and general overhaul.

In the technical delivery, the dealer must guide the user customer about maintenance, safety, his obligations in eventual technical assistance, the strict observance of the warranty term and the reading of the instruction manual.

Any request for warranty service should be made to the dealer where it was purchased.

We reiterate the need to read the warranty certificate carefully and to observe all the items in this manual, as this will increase the life of your implement.

Instruction
Manual

DEMETRA

Sugar Cane Precision Row Crop Planter

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.

BALDAN

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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 deadRow 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

• To the owner

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.

⚠ ATTENTION

NR-31 - SAFETY AND HEALTH AT WORK IN AGRICULTURE, LIVESTOCK FARMING, 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.

For more information, refer to the site and read NR-31 in full.
http://portal.mte.gov.br/legislacao/normas-regulamentadoras-1.htm

▪ Safety rules

• To the operator

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 tolearn about the recommended safety practices.

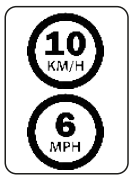
⚠ ATTENTION

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

⚠ ATTENTION

Do not perform adjustments while the seeder in operation. When performing any service on the seeder, switch off the tractor first. Use appropriate tools.

⚠ ATTENTION



When transportation the seeder, do not exceed 10Km/h or 6 MPH, avoinding risks of injury and accident.

⚠ ATTENTION

Do not transport people on the tractor or over the equipment.

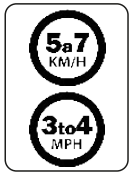
⚠ ATTENTION

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

⚠ ATTENTION

When checking hoses for leaks, use a piece of cardboard or wood, never use your hands. Avoid incision of fluid in the skin.

⚠ ATTENTION



When working with the seeder, do not exceed of 5 to 7 Km/h or 3 to 4 MPH, avoiding risks of injury and accidents.

⚠ ATTENTION

Do not work with the tractor if the front has insufficient ballast to the rear equipment. Should there be a trend to lift, add weights or ballasts to the front or the front wheels.

⚠ ATTENTION

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

⚠ ATTENTION

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

⚠ ATTENTION

Before working on or transporting the seeder, check for people or obstructions near the machine.

▪ Safety Rules

⚠ ATTENTION | FOLLOW ALL RECOMMENDATIONS, WARNINGS, AND RECOMMENDED SAFETY PRACTICES IN THIS MANUAL, UNDERSTAND THE IMPORTANCE OF YOUR SAFETY. ACCIDENTS MAY CAUSE DISABILITIES OR EVEN DEATH. REMEMBER, ACCIDENTS CAN BE AVOIDED!

⚠ ATTENTION

Avoid heating parts near fluid Rows.
The heating can cause the material to be brittle, ruptures, and discharges of the pressurized fluid, which can cause burns and injuries.

⚠ ATTENTION

Never use chemical products without proper protection, thus avoiding contact with the skin.

⚠ ATTENTION

Pressurized hydraulic oil under may cause serious injury if leaks occur.
Periodically check the condition of the hoses. If there is evidence of leaks, replace them immediately. Before connecting or disconnecting hydraulic hoses, relieve system pressure by activating the control with the tractor off.

⚠ ATTENTION

Keep the articulation area free while the seeder is in operation.
In sharp turns, keep the tractor wheels from touching the head.

⚠ ATTENTION

Be careful when handling the seeder support foot, as there is a risk of accidents.

⚠ ATTENTION

Do not operate the seeder if the transmission guards are not properly attached.
Only remove guards to proceed with gear replacement, put them back immediately.
Do not make adjustments with the seeder in motion.

⚠ ATTENTION

Improper waste disposal affects the environment and ecology as it will pollute rivers, canals, or the soil.
Find out how to properly recycle or dispose of waste

PROTECT THE ENVIRONMENT!

⚠ ATTENTION

Always stay away from the active elements of the seeder (discs), they are sharp and can cause accidents.
When carrying out any work on discs, wear safety gloves on your hands.

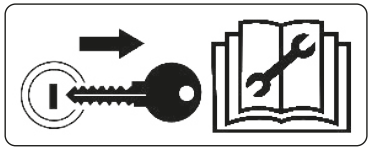
⚠ ATTENTION

Never weld the wheel with a mounted tire, as heat can increase air pressure and cause the tire to explode.
When inflating a tire, position yourself next to the tire, never in front of it.
When inflating the tire, always use a containment device (inflation cage).

▪ Safety Rules

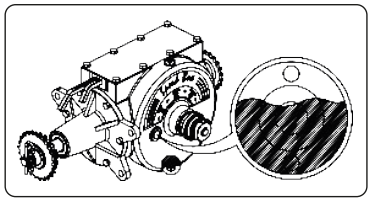
⚠ ATTENTION | FOLLOW ALL RECOMMENDATIONS, WARNINGS, AND RECOMMENDED SAFETY PRACTICES IN THIS MANUAL, UNDERSTAND THE IMPORTANCE OF YOUR SAFETY. ACCIDENTS MAY CAUSE DISABILITIES OR EVEN DEATH. REMEMBER, ACCIDENTS CAN BE AVOIDED!

⚠ ATTENTION



Remove the ignition key before performing any maintenance on the seeder. Protect yourself from possible injury or death, caused by an unexpected start of the seeder.
If the seeder is not properly engaged, do not start the tractor.

⚠ ATTENTION



Check the oil level daily.
Change the Speed Box oil after the first 30 hours of work, then every 1500 hours, always using ISO VG 150 mineral oil at 40°C (amount of oil used 1.8 liters).
Only use the original fuse from the factory, as only this one has a controlled hardness.

⚠ ATTENTION

The degradation of the environment reflects on everyone. May our daily actions come to recover it. Make sure chemical handling does not contribute to this degradation.

⚠ ATTENTION

Always observe the recommendations on the chemical's packaging before buying and using it. Failure to read these recommendations may result in incorrect use of the product, thus affecting people, animals and yourself, causing serious illness or even death.
When emptying the chemical packaging, do not throw it into rivers or lakes, proceed as instructed on the packaging, without information, contact the competent agency in your region.
Observe the triple wash recommendation on chemical packaging.

⚠ ATTENTION

Avoid accidents caused by the intermittent action of Row markers.
When activating the seeder, check that there are no people under the Row markers or in their area of action.

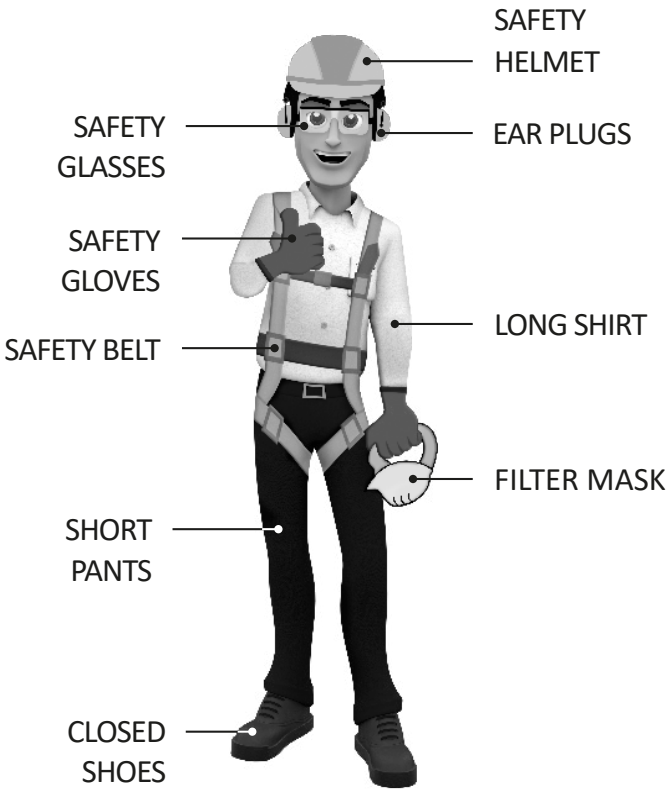
▪ Safety standards

• PPE Equipment

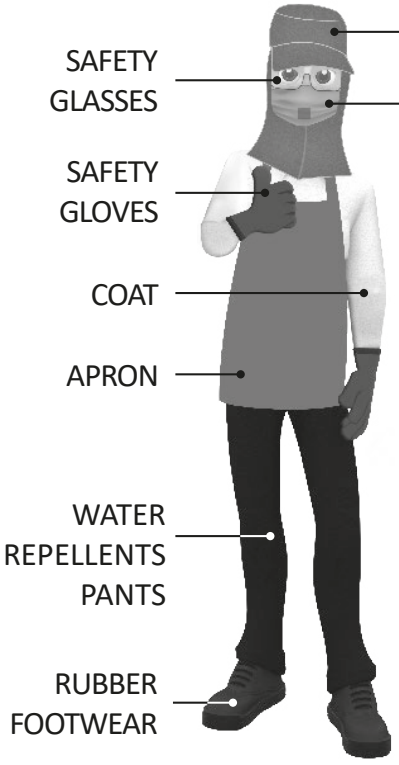
⚠ ATTENTION | **DO NOT WORK WITH THE PLANTER WITHOUT FIRST WEARING PPE (SAFETY EQUIPMENT). IGNORING THIS WARNING MAY CAUSE HEALTH DAMAGES, SERIOUS ACCIDENT, OR DEATH.**

When performing certain procedures with the seeder, place the following PPE (Safety Equipment) below:

PPEs - OPERATION AND MAINTENANCE



PPE - PREPARATION AND APPLICATION OF THE SYRUP



❗ IMPORTANT

For the specific case of pesticides, different PPEs are mandatory according to the worker's exposure in the stages of transportation, storage, preparation and application of the mixture. All PPE must have a certificate of authenticity.

🔍 NOTE | **All PPE must have a certificate of authenticity.**

▪ Warnings

⚠ When operating the seeder, do not allow people to remain too close or on top of it.

⚠ When servicing the machine, wear PPE.

⚠ Do not wear loose clothing, as they may become entangled in the seeder.

⚠ When starting the tractor engine, be properly seated in the operator's seat and aware of the full knowledge of the correct and safe handling of both the tractor and the seeder. Always put the shift lever in the neutral position, disconnect the control gear from the PTO and put the hydraulic controls in the neutral position.

⚠ Do not start the tractor engine indoors without adequate ventilation as exhaust fumes are harmful to health.

⚠ When maneuvering the tractor to engage the seeder, make sure you have the necessary space and that no one is very close, always do the maneuvers at idle and be prepared to brake in an emergency.

⚠ Do not make adjustments with the seeder in operation.

⚠ When working on slopes, be careful to always maintain the required stability. In the event of imbalance, reduce acceleration, turn the wheels to the side of the slope and never raise the seeder.

⚠ Always drive the tractor at safety compatible speeds, especially when working on rough or sloping terrain, always keep the tractor hitched.

⚠ When driving the tractor on roads, keep the brake pedals interconnected.

⚠ Do not work with the tractor with a light rear. If the rear tends to lift, add more weights to the rear wheels.

⚠ When leaving the tractor, shift to neutral and set the parking brake.

⚠ Any and all maintenance on the seeder must be done with the seed stopped and the tractor turned off.

⚠ All refueling or inspection must be done with the seeder stopped and the tractor turned off, using the means of safe access.

⚠ Do not drive on highways, especially at night. Use warning signs all along the way.

⚠ If it is necessary to travel with the seeder on highways, consult the traffic authorities.

⚠ Do not allow people who have not been trained to use the seeder, that is, who do not know how to operate it correctly.

⚠ Do not transport or work with the seeder close to obstacles, rivers or streams.

▪ Warnings

⚠ The transportation of people on self-propelled machines and implements is forbidden.

⚠ Transporting people on self-propelled machines and implements is prohibited.

⚠ Changes to the original characteristics of the seeder are not authorized, as they may alter safety, operation, and affect the useful life.

⚠ Read carefully all the safety information in this manual and on the seeder.

⚠ Only operate the seeder if all guards are installed and correctly.

⚠ Do not under any circumstances remove the seeder protection components.

⚠ Always check that the seeder is in perfect condition. In case of any irregularity that could interfere with the operation of the seeder, provide proper maintenance before any work or transport.

⚠ Maintenance and especially inspection in risk areas of the seeder, must be carried out only by a trained or qualified worker, observing all safety guideRows. Before starting maintenance, disconnect all drive systems from the seeder.

⚠ Periodically check all components of the seeder before using it.

⚠ According to the equipment used and the working conditions in the country or in areas of maintenance, precautions are necessary. Baldan has no direct control over precautions, so it is the responsibility of the owner to put the safety procedures into practice while working with the seeder.

⚠ Check the minimum tractor power recommended for each seeder model. Only use tractors with power and ballast compatible with the load and terrain topography.

⚠ During the transport of the seeder, travel at speeds compatible with the terrain and never exceeding 10 km/h, this reduces maintenance and consequently increases the life of the seeder.

⚠ Alcoholic beverages or some medications may cause loss of reflexes and change the operator's physical condition. Therefore, never operate this seeder under the use of these substances.

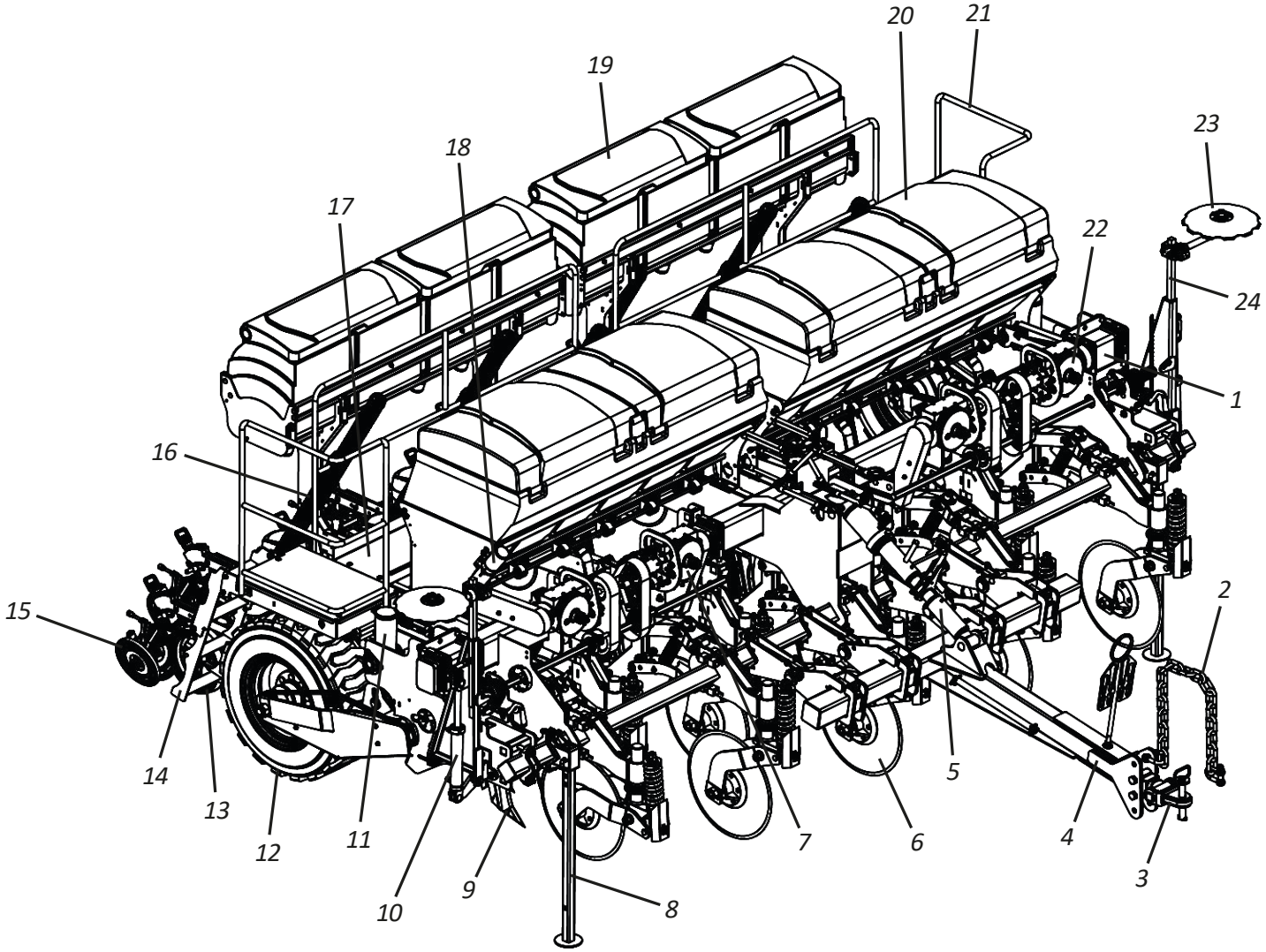
⚠ Read or explain all procedures in this manual to a user who cannot read.

If in doubt, contact After Sales.
Telephone: 0800-152577 / E-mail: posvenda@baldan.com.br

▪ Components

• DEMETRA - Sugar Cane Precision Row Crop Planter - Without Inoculant System

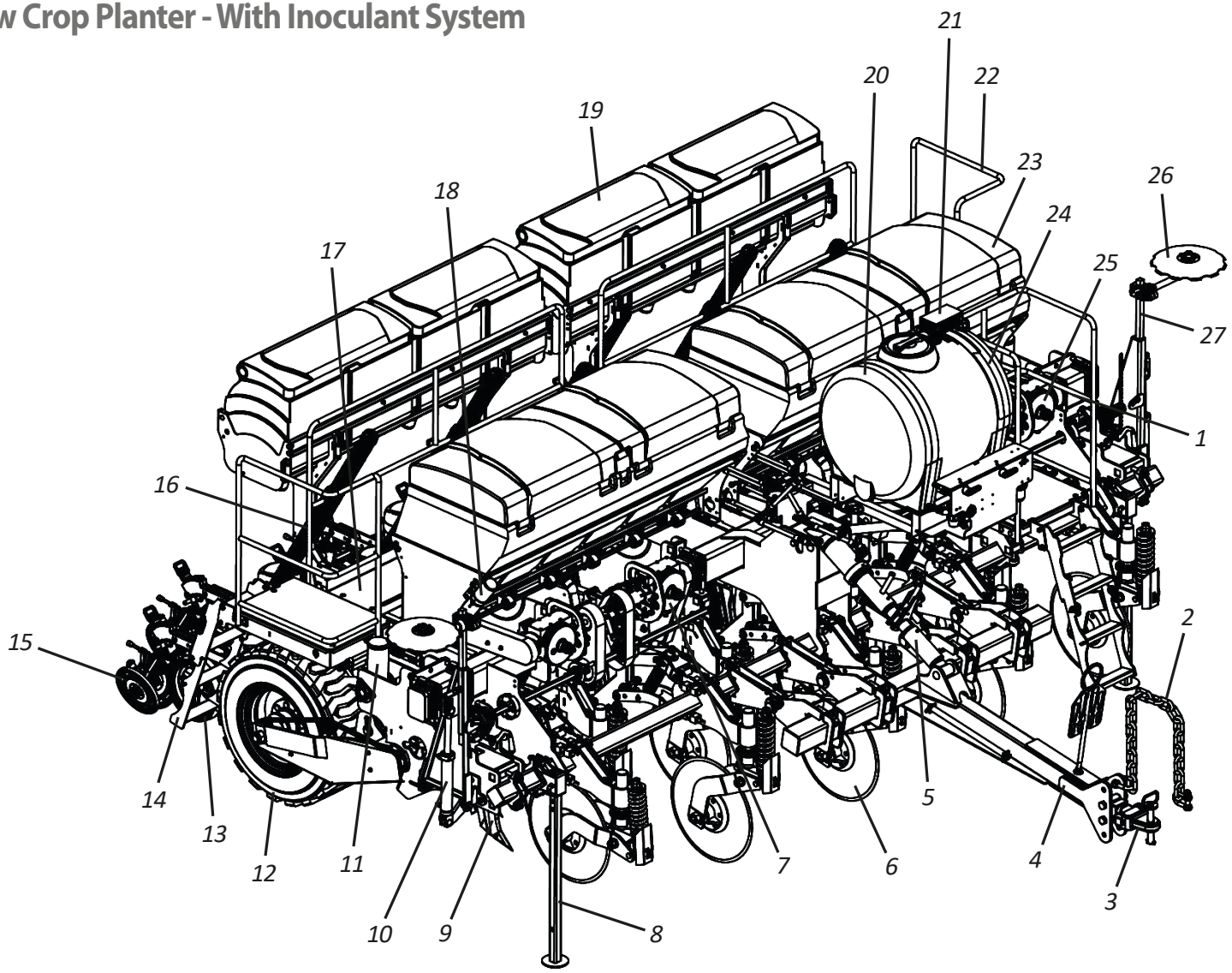
1. Main Frame
2. Safety chain
3. Shackle
4. Hitch Drawbar
5. Regulator
6. Cutting Disc
7. Speed Box (Fertilizer)
8. Support
9. Furrower
10. Row Marker Cylinder
11. Tire Drive Cylinder
12. Tire
13. Depth Limiting Wheel
14. Stair
15. Wheel type “V”
16. Seed Conductor
17. Platform
18. Manual Container
19. Seed Hopper
20. Fertilizer Hopper
21. Platform Handrail
22. Speed Box (Seed)
23. Row Marker Disc
24. Row Marker



▪ Componentes

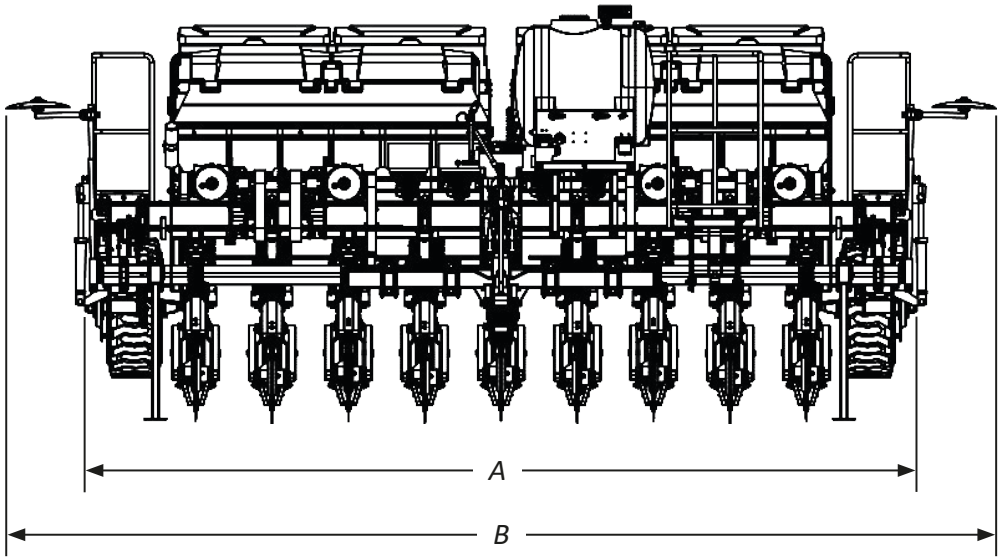
• DEMETRA - Sugar Cane Precision Row Crop Planter - With Inoculant System

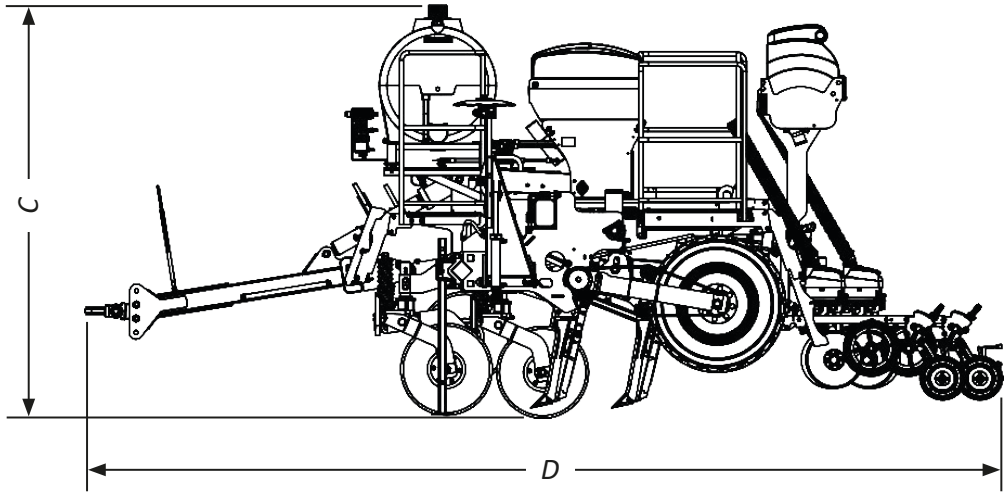
1. Main Frame
2. Safety Chain
3. Shackle
4. Hitch Drawbar
5. Regulator
6. Cutting Disc
7. Speed Box (Fertilizer)
8. Support
9. Furrower
10. Row Marker Cylinder
11. Tire drive cylinder
12. Tire
13. Depth limiting wheel
14. Stair
15. Wheel Type "V"
16. Seed Conductor
17. Platform
18. Manual Container
19. Seed Hopper
20. Main Tank 300 liters
21. Agitator valve
22. Platform Handrail
23. Fertilizer Hopper
24. Clean water tank 30 liters
25. Speed Box (Seed)
26. Row Marker Disc
27. Row Marker

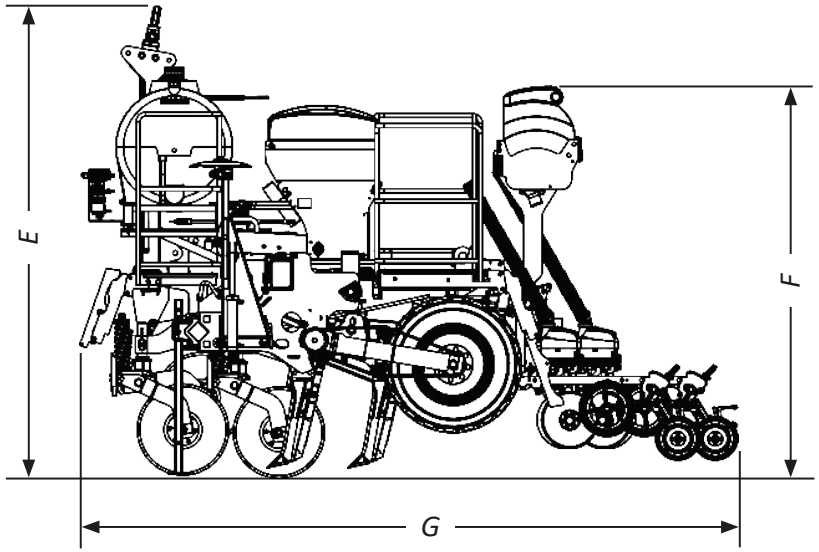


▪ Dimensions

• DEMETRA







Model	Nr of Rows	Measure A (mm)	Measure B (mm)	Measure C (mm)	Measure D (mm)	Measure E (mm)	Measure F (mm)	Measure G (mm)
DEMETRA 4500	7	4757	5750	2715	6095	3118	2587	4375
DEMETRA 5500	9	5341	6441	2715	6095	3118	2587	4375

▪ Specifications

• DEMETRA - Sugar Cane Precision Row Crop Planter

Model	Nr of Rows	Useful Width (mm)	Working Width (mm)	Fertilizer Hopper capacity (L)	3rd Seed Hopper capacity (L)	Main Tank capacity (L)	Clean water tank capacity (L)	Estimate Weight (Kg)		Tractor power (Cv)
								Without Inoculant System	With Inoculant System	
DEMETRA 4500	7	3000	3500	1240	810	300	30	5485	5600	165 - 195*
DEMETRA 5500	9	4000	4500	1500	972	300	30	6265	6380	210 - 250*

Working depth (mm) 300
Spacing between Rows (mm) 500
Wheelset ..... 14-17.5 14PR 139B TR-10 TL R-4

(*) Approximate power Cv depends on normal planting situations and may vary according to the type of soil, topography etc.

Baldan reserves the right to change and/or improve the technical characteristics of its products, without prior notice, and without ob ligation to do so with previously manufactured products. Technical specifications are estimates and reported under normal working conditi ons

INTENDED USE OF DEMETRA

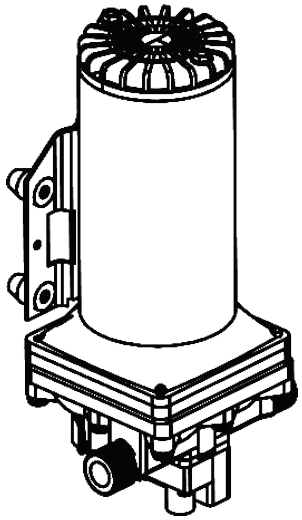
DEMETRA was developed for work on sugar cane stubble in crop rotation.
DEMETRA must only be driven and operated by a properly instructed operator..

PROHIBITED USE OF DEMETRA

To avoid damage, serious accident or death, DO NOT transport people on any part of **DEMETRA**
It is NOT permitted to use **DEMETRA** to attach, tow, or push other implements or accessories.
DEMETRA should NOT be used by an inexperienced operator who does not know all the driving, command and operation techniques.

Specifications

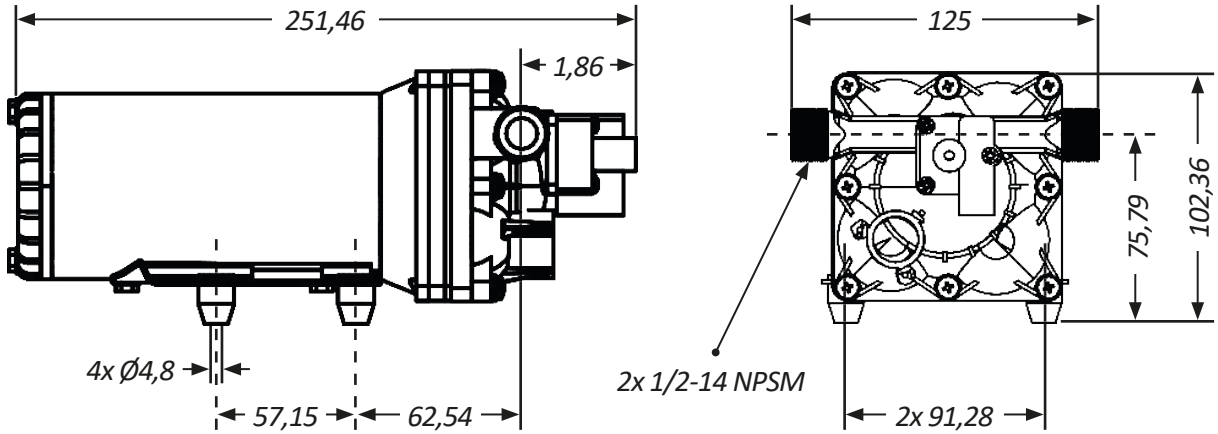
• Electric pump - Part I



MODEL NUMBER: 5059-1311-D011
PUMP TYPE: Positive Displacement - 4 Diaphragm Chambers
SAFETY VALVE: (1 - Track) Prevents Reverse Flow
CAME: 2.0 Degrees
ENGINE: Permanent Magnet, 71-Series 10-16.5-L
VOLTAGE: 12 VDC Rated
PRESSURE SWITCH: Adjustable Shutdown (Range 40-60 PSI)
Factory setting: 60 PSI, 45 PSI alloy ± 5 PSI
LIQUID TEMPERATURE: 49°C Max.
SUCTION: Auto-sweep up to 2.4m vertical,
Max. Inlet Pressure 30 PSI (2.1 Bar)

SAÍDAS: ½" NPS male
MATERIAIS DE CONSTRUÇÃO:
PLÁSTICOS: Polypropylene
VÁLVULAS: Viton
DIAFRAGMA: Santoprene
BASE: Zinc-plated Steel
PESO LÍQUIDO: 2,7 Kg
CICLO DE SERVIÇO: Flashing (See Temperature Curve)
APLICAÇÕES TÍPICAS: Agricultural Spraying

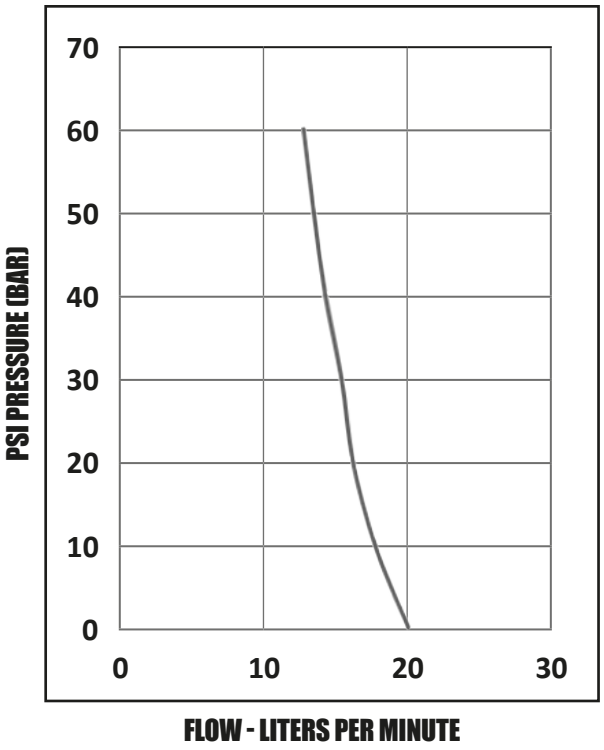
DIMENSIONS:



Specifications

• Electric pump - Part II

TYPICAL PERFORMANCE:



Specifications subject to change without notice.

Pressure (PSI)	Flow (LPM)	Current (AMPS)	Voltage (VOLTS)
0	20.1	6.5	12
10	17.8	9.0	12
20	16.3	11.8	12
30	15.5	12.4	12
40	14.4	14.0	12
50	13.6	15.4	12
60	12.9	17.0	12

ELECTRIC PUMP

- It can work dry;
- Co-molded diaphragm;
- 4 Diaphragm chambers;
- Resistant to corrosive and abrasive chemicals;
- Flow of 20.1 L/m
- Regulated pressure switch 50PSI
- Voltage 12 VDC
- 17 Amps

APPLICATION RECOMMENDATIONS:

- Work pressure: 10 to 20 PSI
- Application rate (L/HC)

NOTE: At times when the density of the product increases (we recommend up to 1.2), it is necessary to increase the volume of water, consequently replace the filter mesh and replace the nozzle for a higher flow rate.

-Filters:
Mesh #100 #80 #50

- Nozzles:
SERIES IJ - IJ 005 and 50005, IJ 01 and 50001, IJ 015, IJ 02.

RECOMMENDATIONS FOR A BETTER PUMP USEFUL LIFE:

- It is recommended to clean the filters by running the clean water system at the end of the workday, as instructed on pages 58 and 59.
- On average the brush motor useful life is 3,000 hours.

▪ Assembly

DEMETRA leaves the factory semi-assembled, lacking the assembly of some components that must be assembled according to the instructions below.

⚠ **DEMETRA** must be assembled by resale, through trained and qualified people for this job.

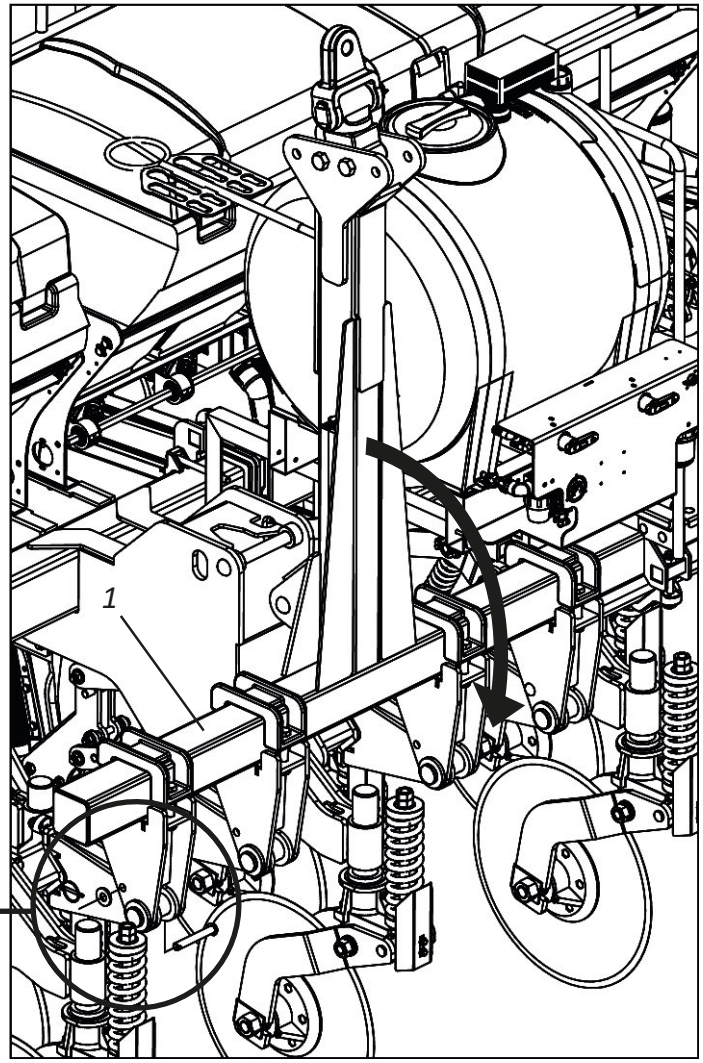
⚠ Before starting the **DEMETRA** assembly, look for an ideal location, where it will be easier to identify the parts and assemble them.

⚠ Do not wear loose clothing, as they may get caught in **DEMETRA**. Use PPE (Safety Equipment).

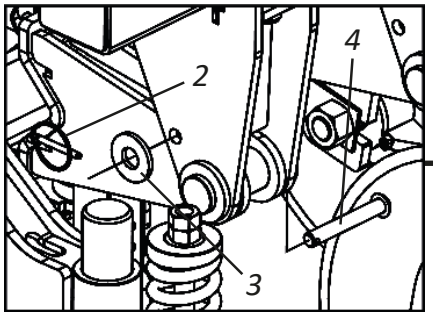
• Assembling the coupling head - Part I

To assemble the coupling head (1) in **DEMETRA**, proceed as follows:

01 - Remove the ring locks (2), flat washers (3) and pins (4) according to **detail "A".**



DETAIL "A"

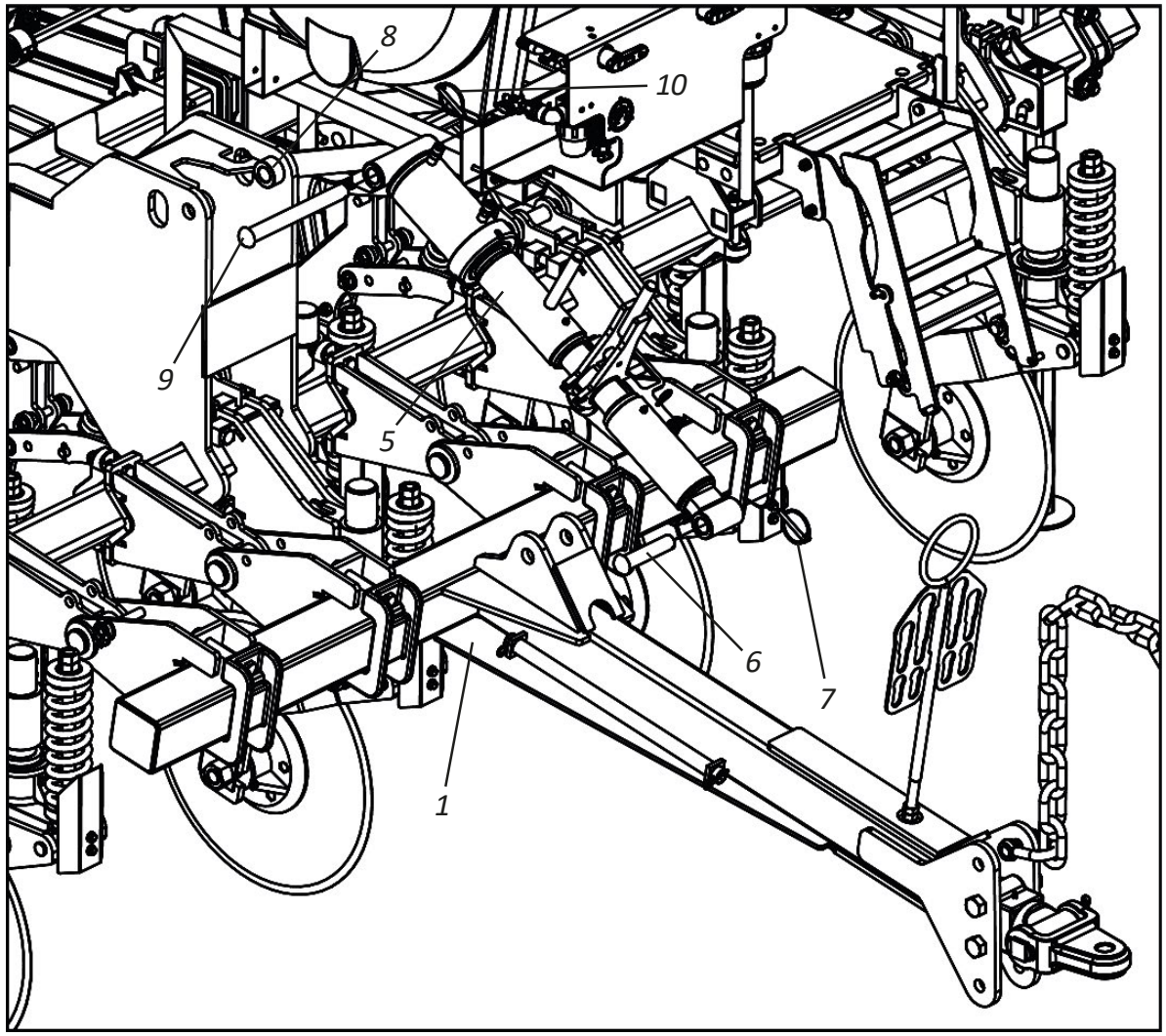


▪ Assembly

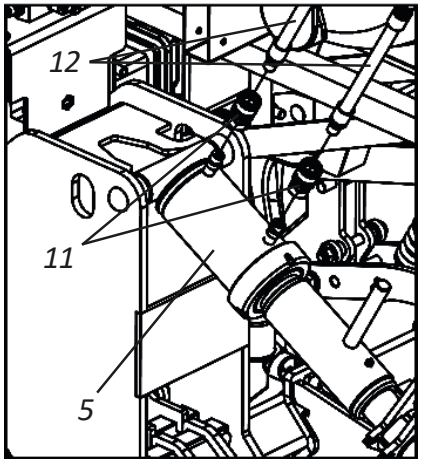
• Assembling the coupling head - Part II

02 - Then, insert the regulator (5) in the coupling head (1), fixing it with the pin (6) and lock with the ring (7) and in the upright support (8) with the pin (9) and lock with ring (10).

03 - Next, couple the quick couplings (11) and the hydraulic hoses (12) to the hydraulic regulator (5), according to **detail "B".**



DETAIL "B"

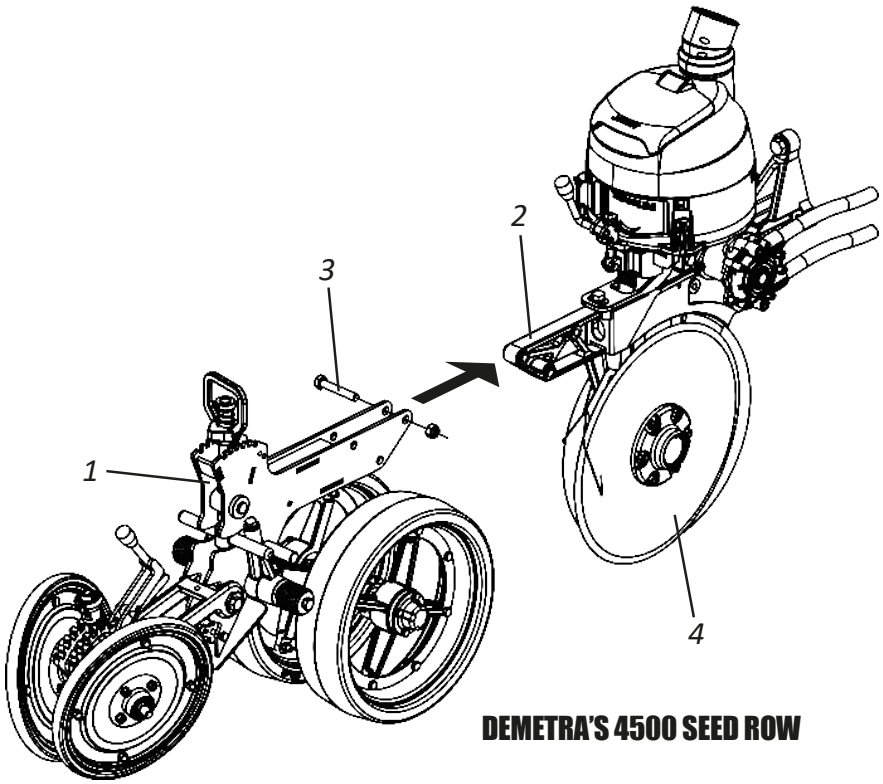


▪ Assembly

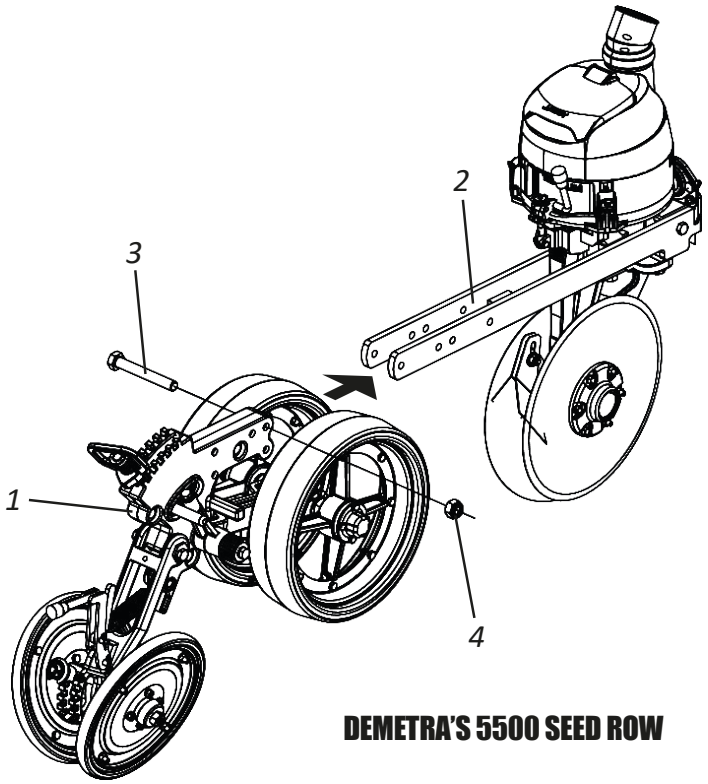
• Rows Assembly

To assemble the row, proceed as follows:

01 **-** Couple the cart (1) to the Row (2), securing it using the screws (3) and nuts (4).



DEMETRA'S 4500 SEED ROW

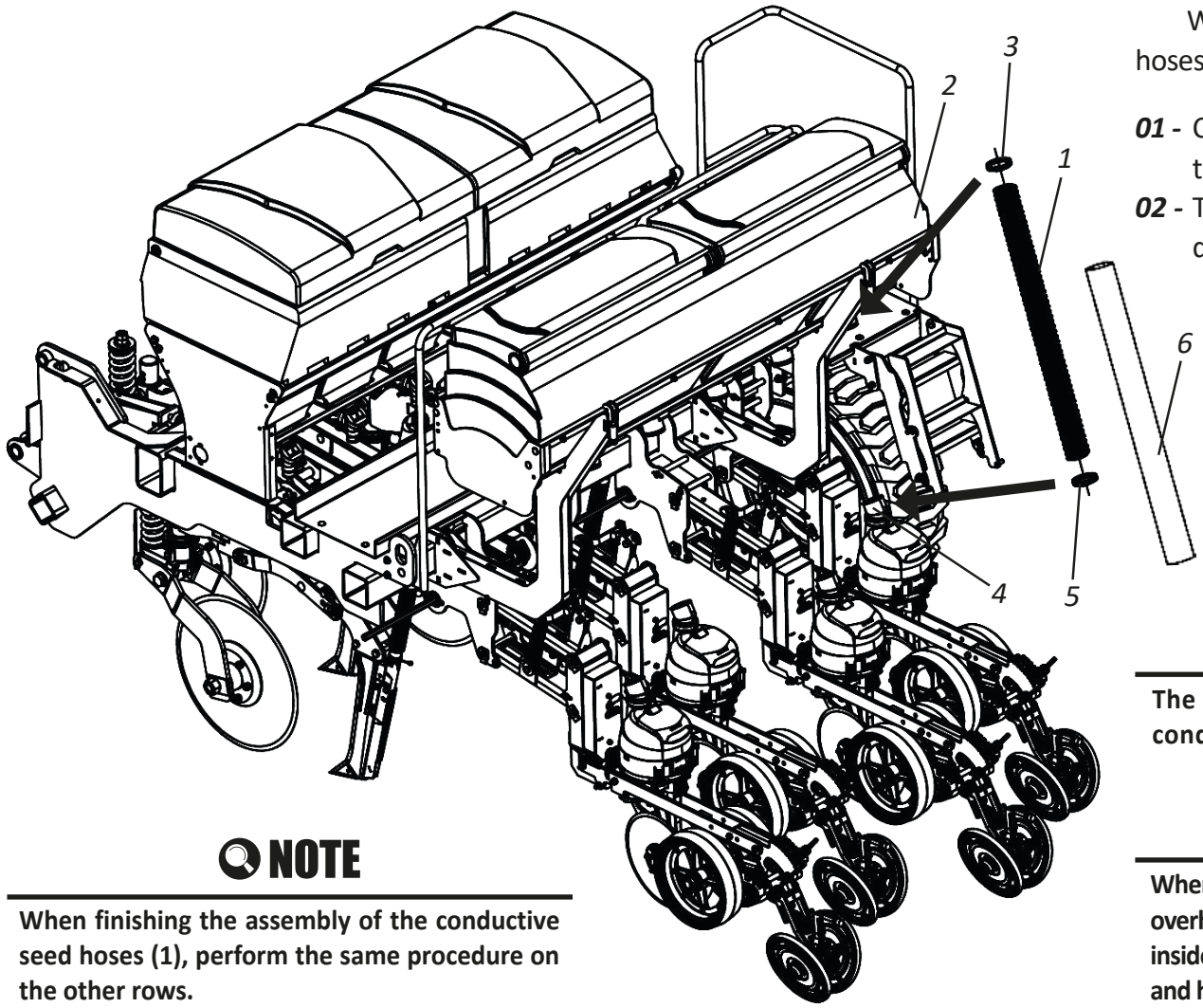


DEMETRA'S 5500 SEED ROW

⚠ ATTENTION **When finishing the assembly of the Rows, make a general overhaul of the seeder, check if there are no objects (nuts, screws or others) inside the deposits. Retighten all bolts and nuts, check all pins, cotter pins and locks, check all hoses.**

▪ Assembly

• Mounting the conductive seed hoses



When finishing the assembly of the Rows, fix the conductive seed hoses (1), for this, proceed as follows:

01 - Couple the conductive seed hose (1) in the upper seed deposit (2), through the clamp (3).

02 - Then, connect the conductive seed hose (1) to the lower seed deposit (4), fixing through the clamp (5).

NOTE

When finishing the assembly of the conductive seed hoses (1), perform the same procedure on the other rows.

IMPORTANT

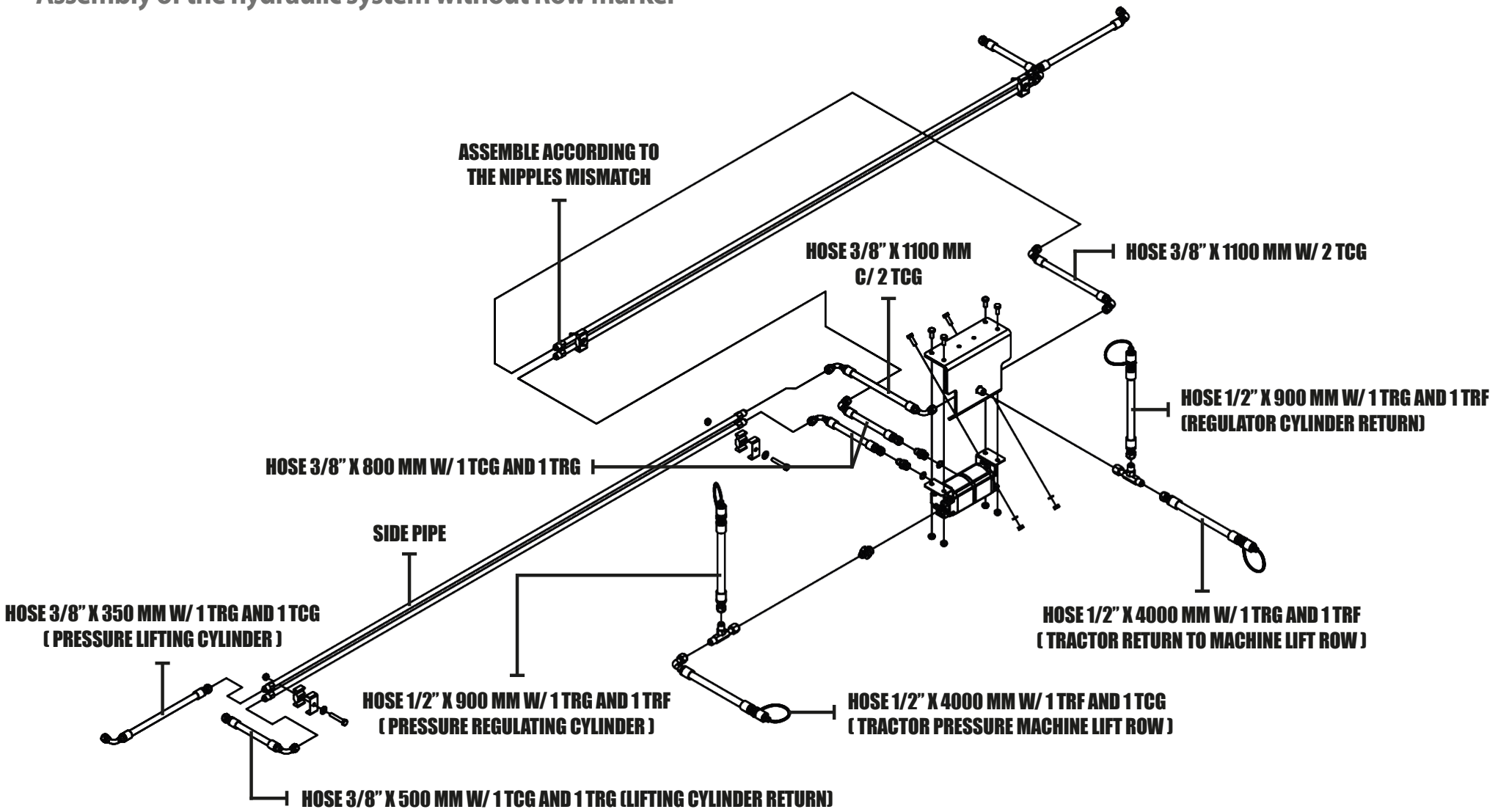
The Demetra 4500 comes with covers (6) to be placed on the seed conductor hoses (1) and fixed together using the clips (3 and 5).

ATTENTION

When finishing the assembly of the conductive seed hoses (1), make a general overhaul on the seeder, check that there are no objects (nuts, screws or others) inside the tanks. Retighten all screws and nuts, check all pins, cotter pins, locks, and hoses.

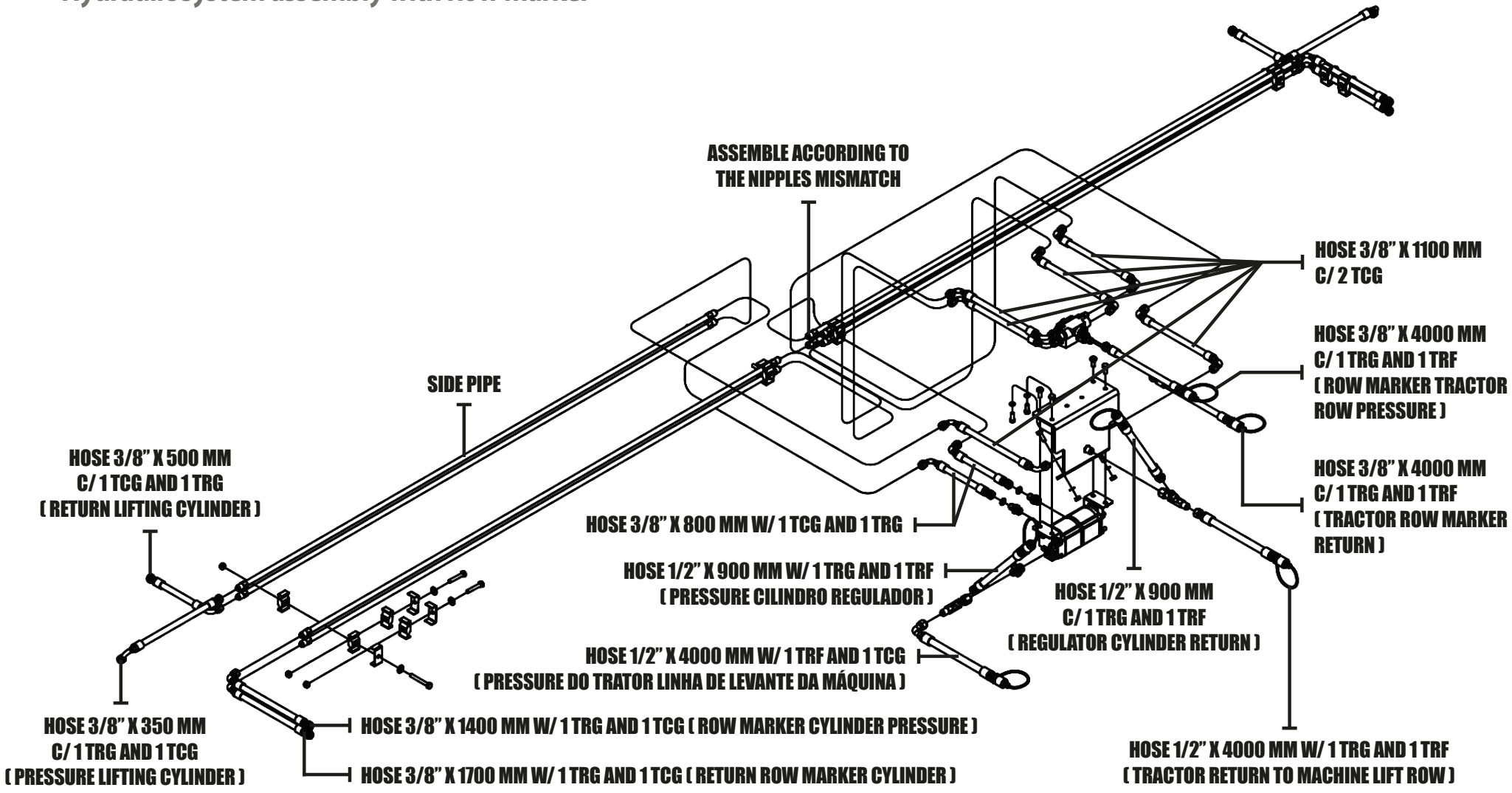
▪ Assembly

- Assembly of the hydraulic system without Row marker



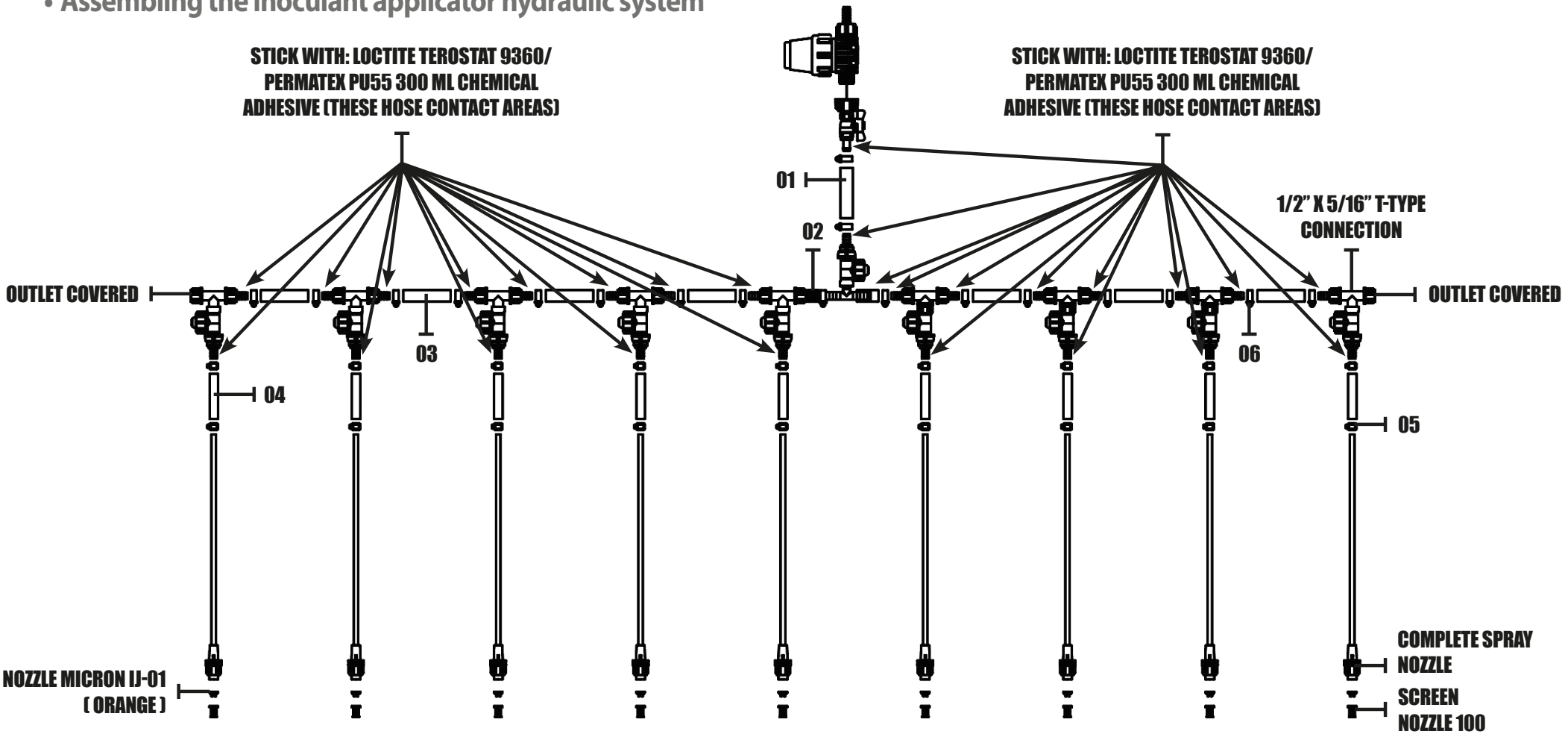
▪ Assembly

• Hydraulic system assembly with Row marker



▪ Assembly

• Assembling the inoculant applicator hydraulic system



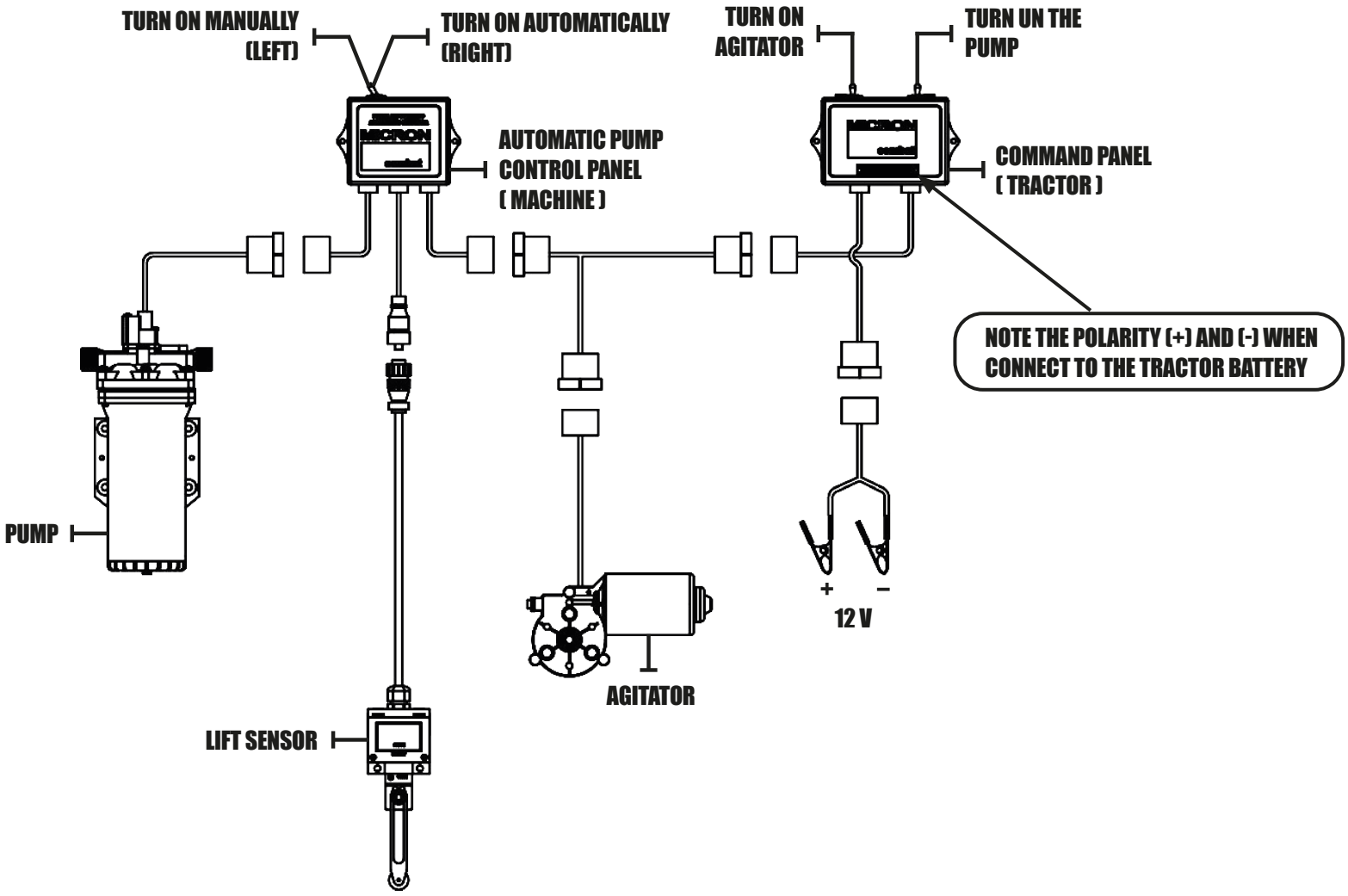
Item	Description
01	Spray Hose 450 PSI Ø1/2" (Larger)
02	100 mm hose 450 PSI Ø1/2" Spray (Piece)

Item	Description
03	1000 mm hose 450 PSI Ø1/2" Spray
04	2000 mm hose 450 PSI Ø5/16" Spray

Item	Description
05	Worm clamp Ø12 to Ø16mm with band width 9/10 mm
06	Worm clamp Ø14 to Ø22mm with 9/10mm band width

▪ Assembly

• Assembling the electronic inoculant applicator system



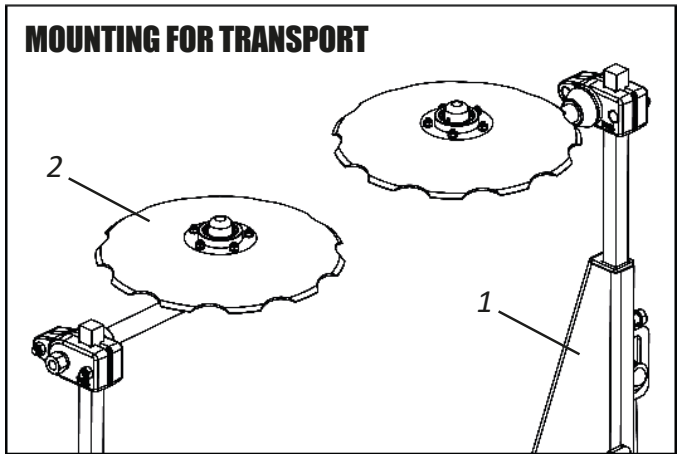
▪ Assembly

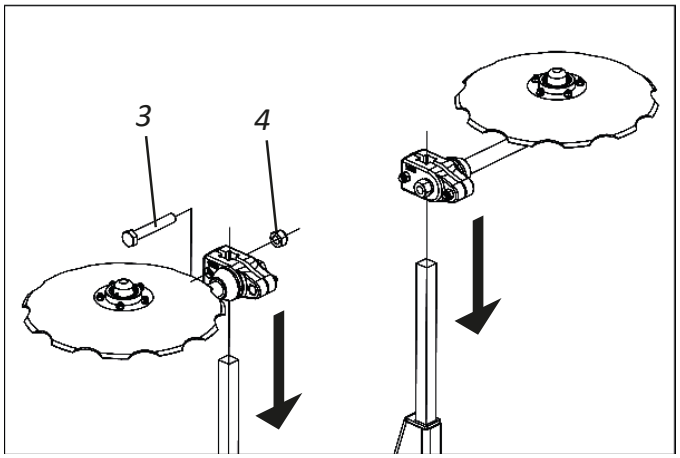
• Assembly of the Row marker cutting disc

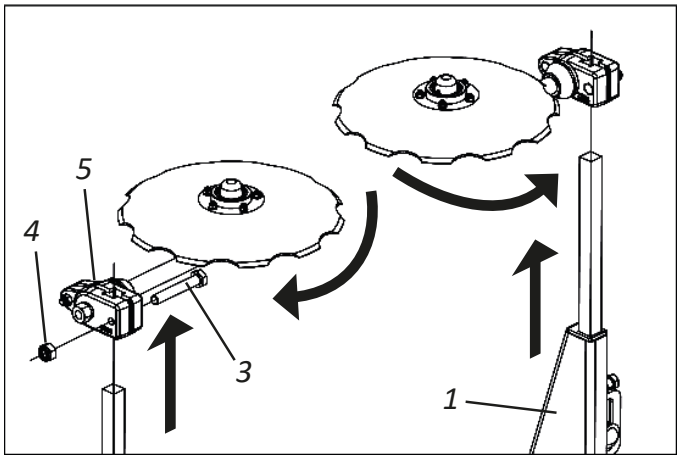
DEMETRA leaves the factory with the Row markers (1) mounted. The disks (2) are mounted inversely to their respective markers to avoid the risk of accidents in the transport of the seeder. Before beginning to work with the seeder, invert the discs (2) of the Row markers (1), to do so proceed as follows:

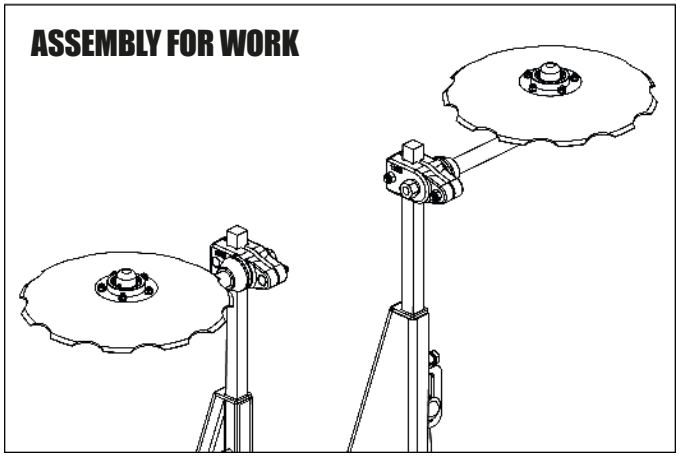
01 - Loosen the screws (3) and nuts (4).

02 - Then, remove the disc supports (5), turn them 180° and mount them again on the Row markers (1) fixing through the screws (3), pressure washers (4) and nuts (4).









⚠ ATTENTION

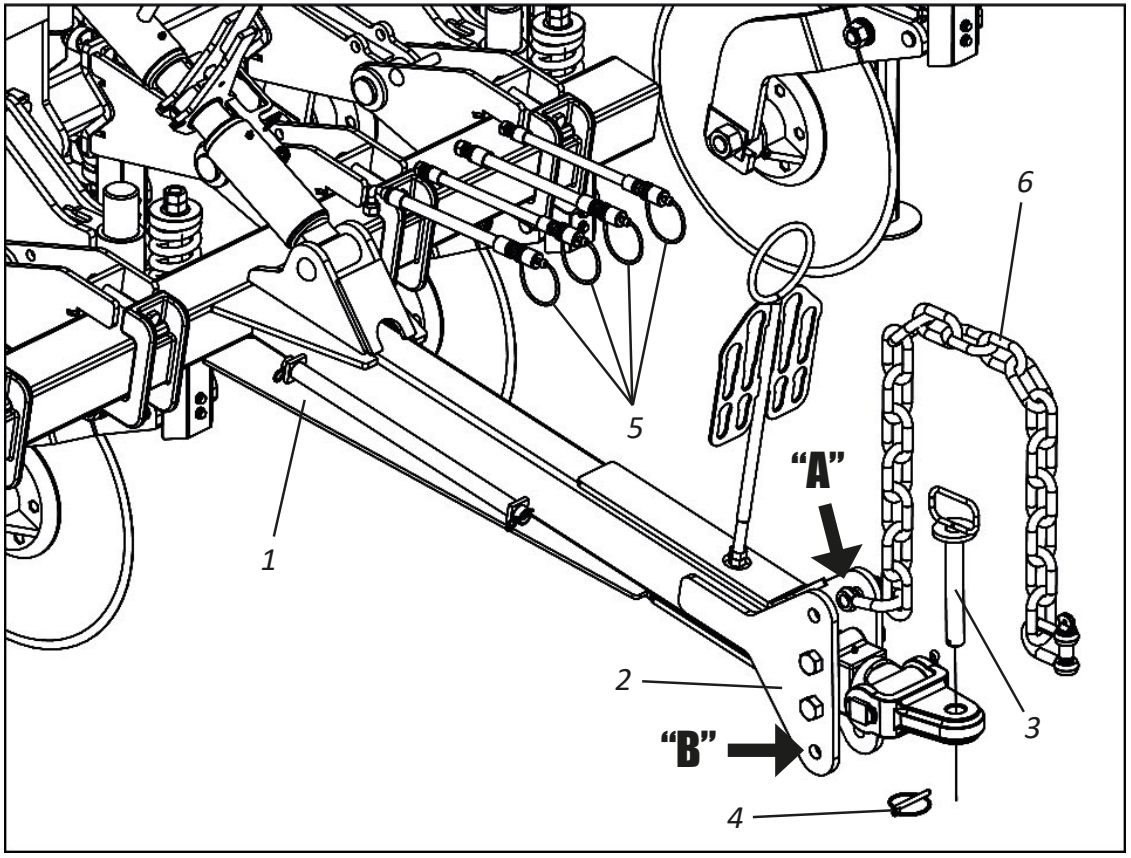
DEMETRA discs are sharp and can cause accidents. When reversing the position of the Row marker discs, use PPE equipment (Safety Equipment) mainly gloves on your hands.

▪ Hitch

• Tractor hitch - Part I

Before coupling **DEMETRA** to the tractor, check that the tractor is equipped with a set of weights or ballast on the front or on the front wheels so as not to lift the tractor. The rear wheels will give the tractor greater stability and traction on the ground. To couple **DEMETRA**, proceed as follows:

01 - Level the coupling head (1) of the seeder in relation to the tractor coupling through the adjustments (2) of the coupling shackle. Then, slowly approach the seeder to the tractor in reverse, paying attention to the application of the brakes.



02 - Then, hitch the seeder to the tractor, fastening it through the coupling pin (3) and lock (4).

03 - Then attach the hoses (5) to the tractor quick coupling.

04 - Finish the **DEMETRA** coupling, fastening the safety chain (6) on the tractor.

⚠ ATTENTION

The safety chain (6) provides greater safety during work or transport, preventing the DEMETRA from disengaging from the tractor in case the coupling pin (3) breaks. Do not work on or transport the DEMETRA without securing the safety chain (6). Ignoring this warning could result in serious accidents or death.

If you change the position of the coupling shackle to hole "A", move the safety chain (6) to hole "B".

❗ IMPORTANT

Before connecting or disconnecting the hydraulic hoses, turn off the engine and relieve pressure from the hydraulic system by fully operating the control levers. When relieving system pressure, make sure that no one is close to the equipment's movement area.

▪ Hitch

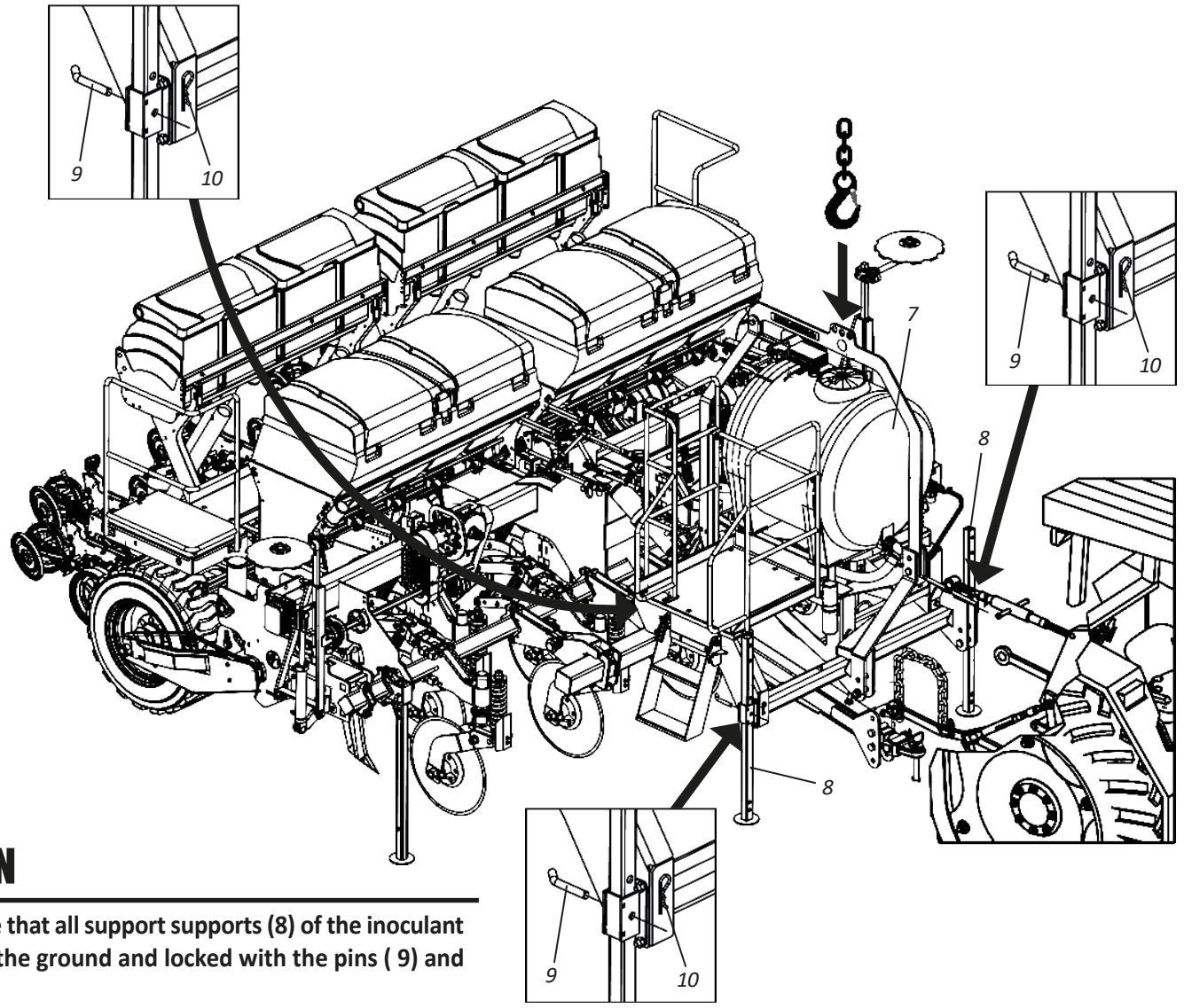
• Tractor hitch - Part II

After attaching the seeder, if you have purchased the **DEMETRA** 7-line version, attach the inoculant tank to the tractor. To do this, proceed as follows:

05 - Assemble the inoculant tank lifting system (7) according to the instructions on page 103.

06 - Then, lift the inoculant tank (7) according to the instructions on page 104.

07 - Then, lower the inoculant tank (7) onto the **DEMETRA** hitch header, aligning the inoculant tank chassis (7) with the 3rd point and the tractor's stabilizing arms; then, lower the front and rear support supports (8) to the ground, locking them using the pins (9) and latches (10).



⚠ ATTENTION

Release the inoculant tank (7) lifting chain only after making sure that all support supports (8) of the inoculant tank (7) are at the same height setting, properly supported on the ground and locked with the pins (9) and latches (10).

▪ Hitch

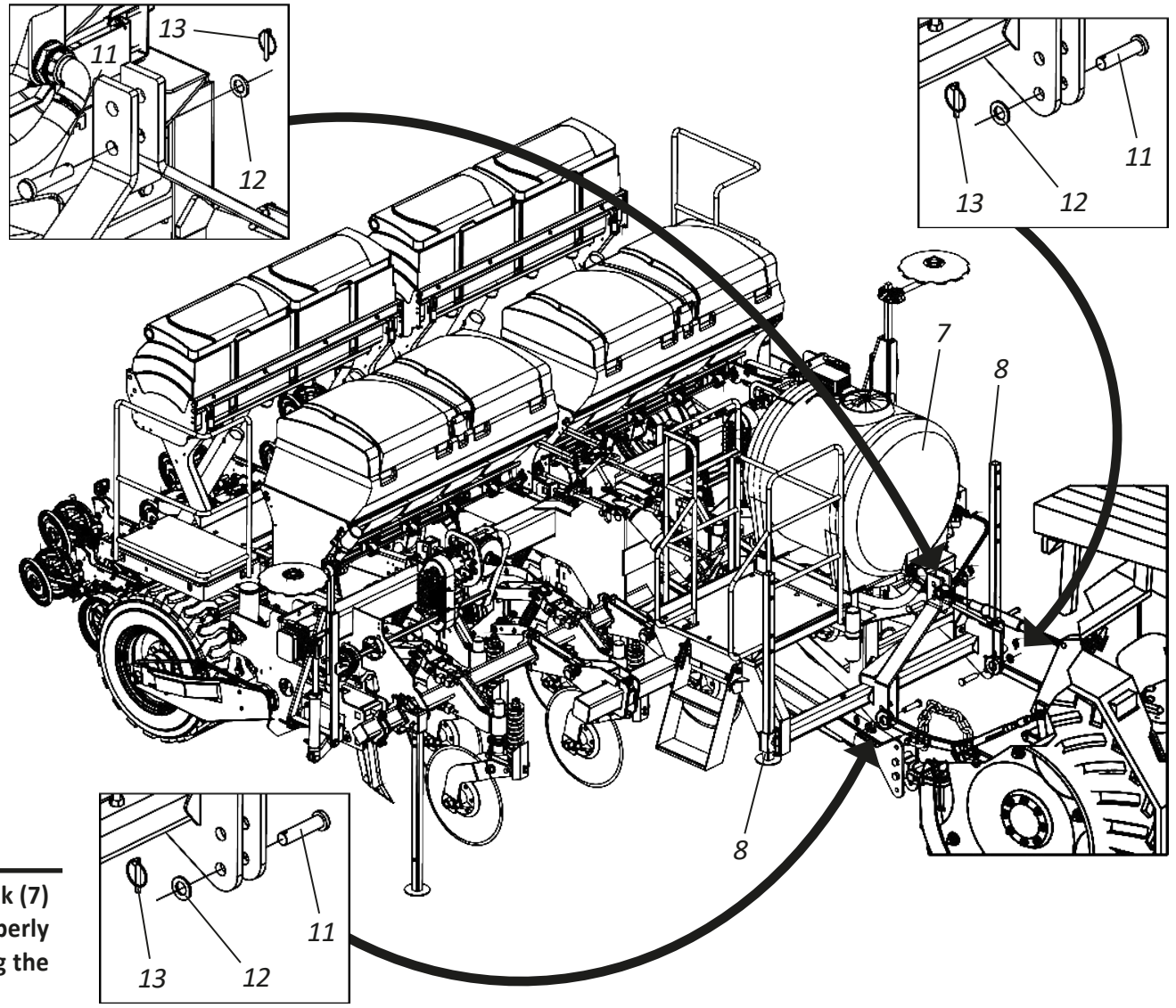
• Tractor hitch - Part III

08 - Then, in reverse gear, couple the 3rd point and the tractor's stabilizing arms to the inoculant tank chassis (7) using the pins (11), flat washers (12) and locks (13) to secure them.

09 - Then, lift the front and rear support supports (8), locking them.

10 - Then, in reverse gear, couple the 3rd point and the tractor's stabilizing arms to the inoculant tank chassis (7) using the pins (11), flat washers (12) and locks (13) to secure them.

11 - Then, lift the front and rear support supports (8), locking them.



⚠ ATTENTION

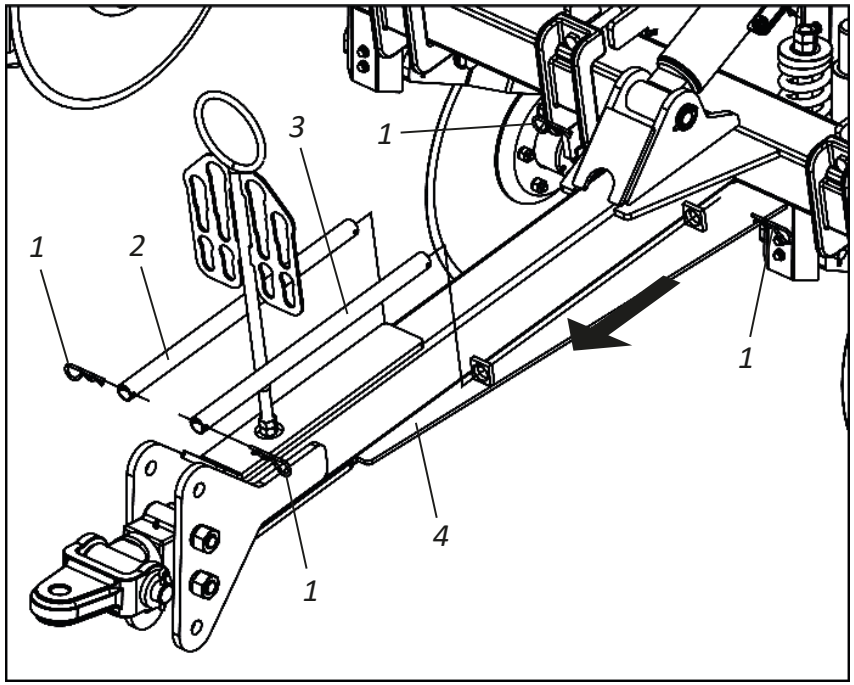
Lift the front and rear support supports (8) of the inoculant tank (7) only after making sure that the inoculant tank chassis (7) is properly fixed to the 3rd point and to the tractor's stabilizing arms using the pins (11), flat washers (12) and locks (13).

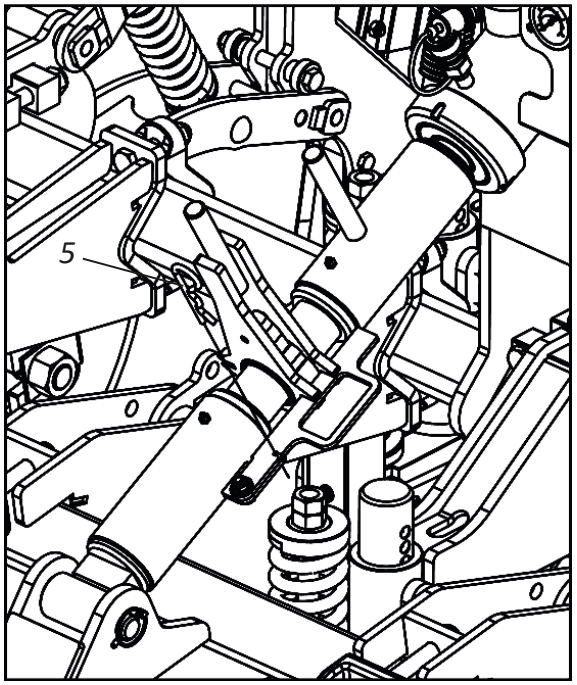
▪ Leveling

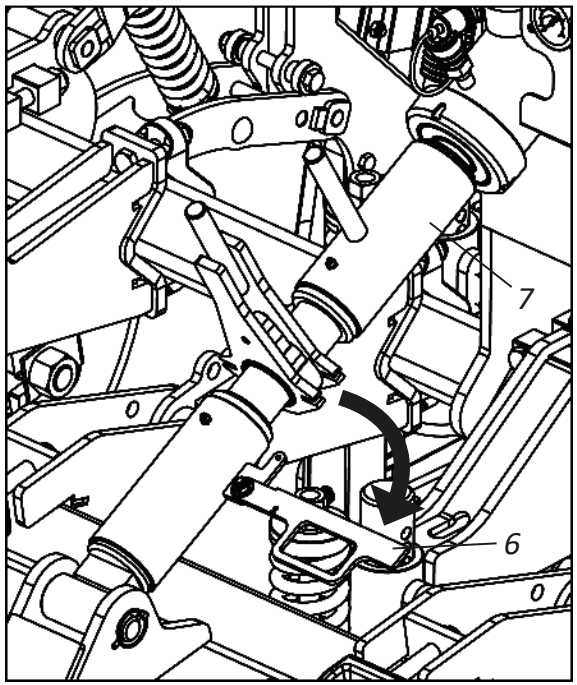
• Seeder leveling - Part I

At the end of the **DEMETRA** coupling, level it out, to do this, proceed as follows:

01 - Place the tractor and the **DEMETRA** in a flat place.
02 - Then release the latches (1) and remove the tubes (2 and 3) from the header (4).
03 - Then, release the lock (5) and turn the clamping lock (6) to unlock the regulator (7).







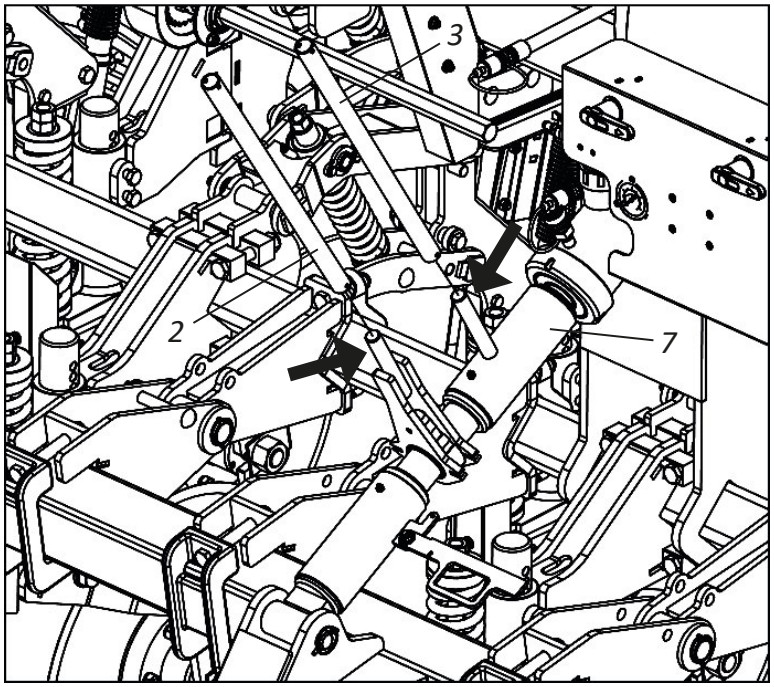
⚠ ATTENTION **Unlock the regulator (7) before starting the leveling of the DEMETRA to avoid damaging it.**

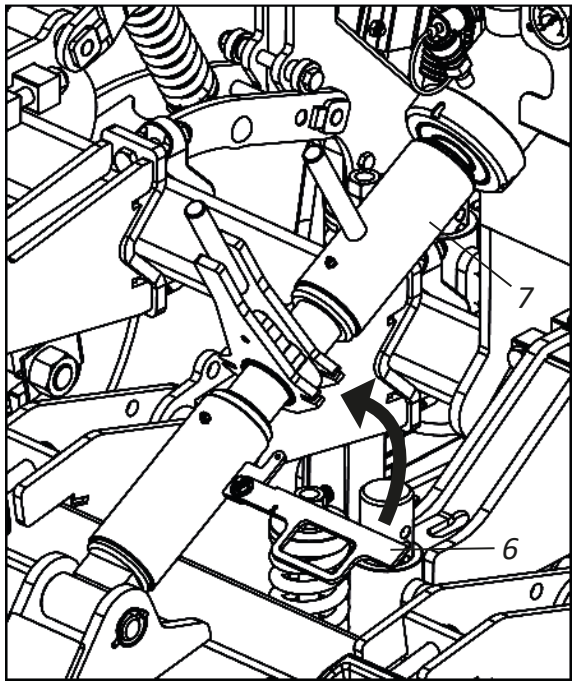
NOTE **The leveling regulation varies according to the tractor model.**

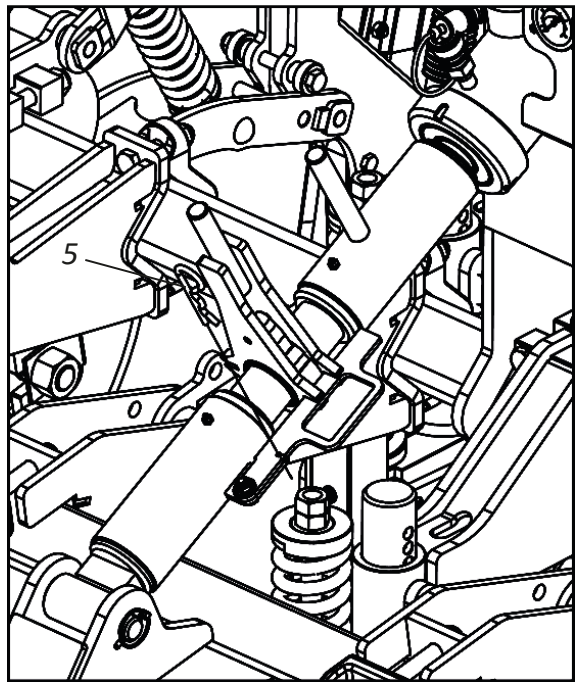
▪ Leveling

• Seeder Leveling - Part II

04 - Then attach the pipe (2) to the center of the regulator (7) and the pipe (3) to the base of the regulator (7).
05 - Then, with one hand, hold the tube (3) and with the other hand move the tube (2) starting the leveling of the **DEMETRA.**
06 - When leveling is complete, turn the fixing lock (6) and place the lock (5) to lock the regulator (7) again.







⚠ ATTENTION

It is essential to hold the bar (3) during the movement of the bar (2) so that the regulator (7) opens or closes equally. Lock the regulator (7) to prevent it from turning during Demetra's work or transport, causing damage or serious accidents.

❗ IMPORTANT

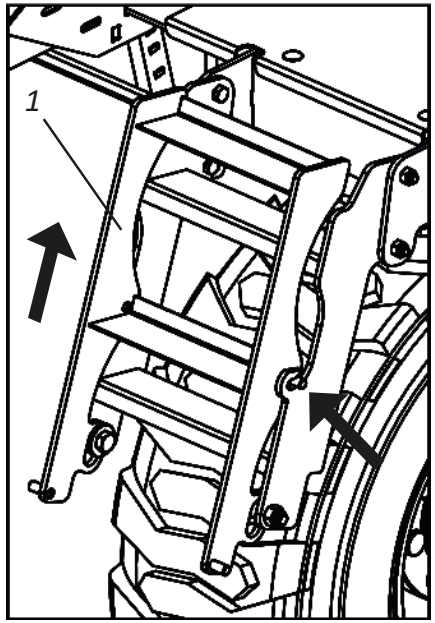
When leveling is complete, reattach the tubes (2 and 3) to the header (4) using the locks (1).

▪ Ladder

• Use of the ladder

The articulated ladder (1) should only be used when filling or servicing the **DEMETRA**'s tanks.
In order to use the folding ladder (1), proceed as follows:

01 - Lift the ladder (1), unlocking it.
02 - Then articulate the ladder (1) by opening it.



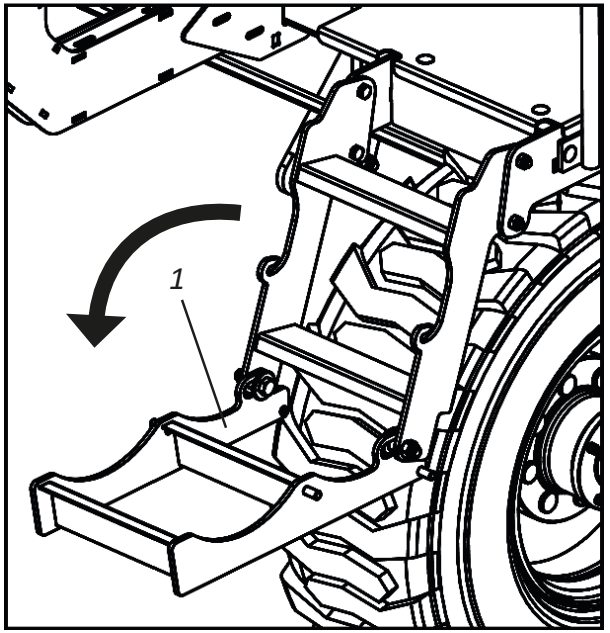
CLOSED LADDER: POSITION FOR WORK OR TRANSPORT

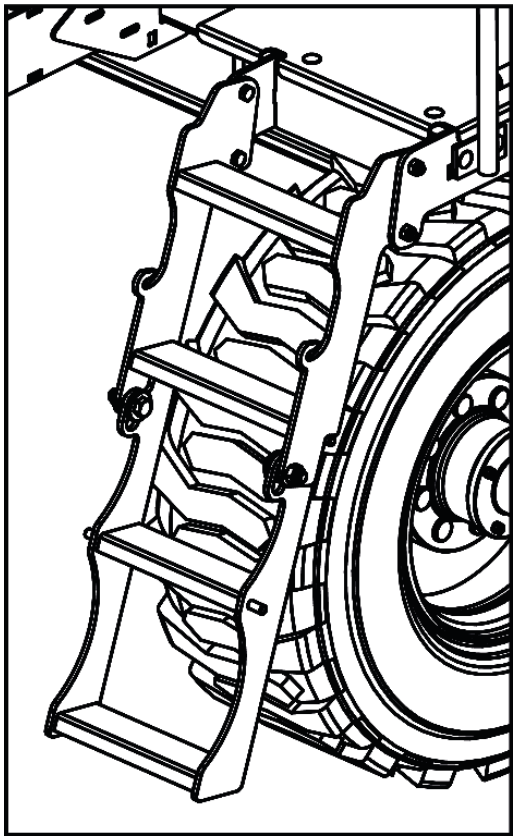
⚠ ATTENTION

Do not remain on the ladder when the seeder is working or transported.

Do not work or transport the DEMETRA while the ladder is open.

Do not transport people on the platform, ladder or any other part of the seeder. Ignoring these warnings could result in serious accidents or even death.





OPEN LADDER: POSITION FOR MAINTENANCE OR SUPPLYING THE TANK

❗ IMPORTANT

For access to the platform, refueling, or maintenance in the tanks, use the folding ladder (1).
Before using the articulated ladder (1), make sure that the seeder is stopped and the tractor is switched off.
The articulated ladder (1) complies with NBR standards.

▪ Spacing

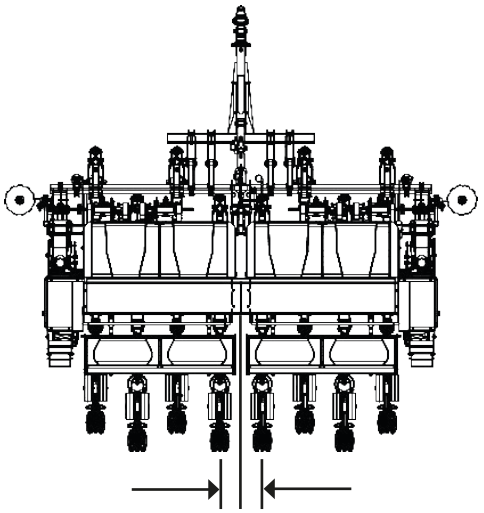
• Rows spacing

The **DEMETRA** is supplied with spacing according to the number of rows ordered, and new spacing can be made according to the type of crop desired.

• Position of the Rows on the Main Frame

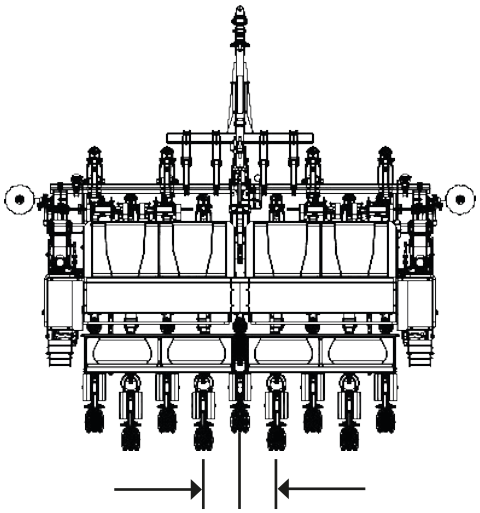
NUMBER OF EVEN ROWS

Mark the center of the **DEMETRA** and divide 1/2 (half) spacing to the left and 1/2 (half) to the right, fixing the first two Rows at these points. Then, starting from these, make the assembly of the other Rows with the desired spacing.



NUMBER OF ODD ROWS

Attach a Row in the center of the **DEMETRA** chassis and starting from this, assemble the others with Rows with the desired spacing.



• Spacing tables in millimeters

Check the table for possible spacings, observing the assembly instructions above to assemble the number of even or odd rows.

⚠ ATTENTION **Any spacing other than that shown on this page, the product engineering department should be consulted.**

Model	*Rows*	*Spacing*
DEMETRA 4500 7 rows	5	600 / 650
	6	550
	7	500

Model	*Rows*	*Spacing*
DEMETRA 5500 9 rows	5	850 / 900 / 950
	6	700 / 750 / 800
	7	600 / 650
	8	550
	9	500

▪ Adjustments

• Row markers adjustment

The adjustment of the Row markers is important to obtain evenly spaced planting, making so that the edge Row of the seeder is at the same spacing as the last planted Row, facilitating future operations. To adjust the Row markers, proceed as follows:

01 - First of all, you must know the Row spacing, the number of Rows to be used in the operation

02 - and the tractor's front gauge. Use the formula below, followed by an example.

EXAMPLE: For a planting with 9 rows in the seeder, spacing of 0.50 mts and the front gauge of the tractor with 1.43 mts, determine:

Fórmula: $D = \frac{Ex\ (N+1\ -B)}{2}$

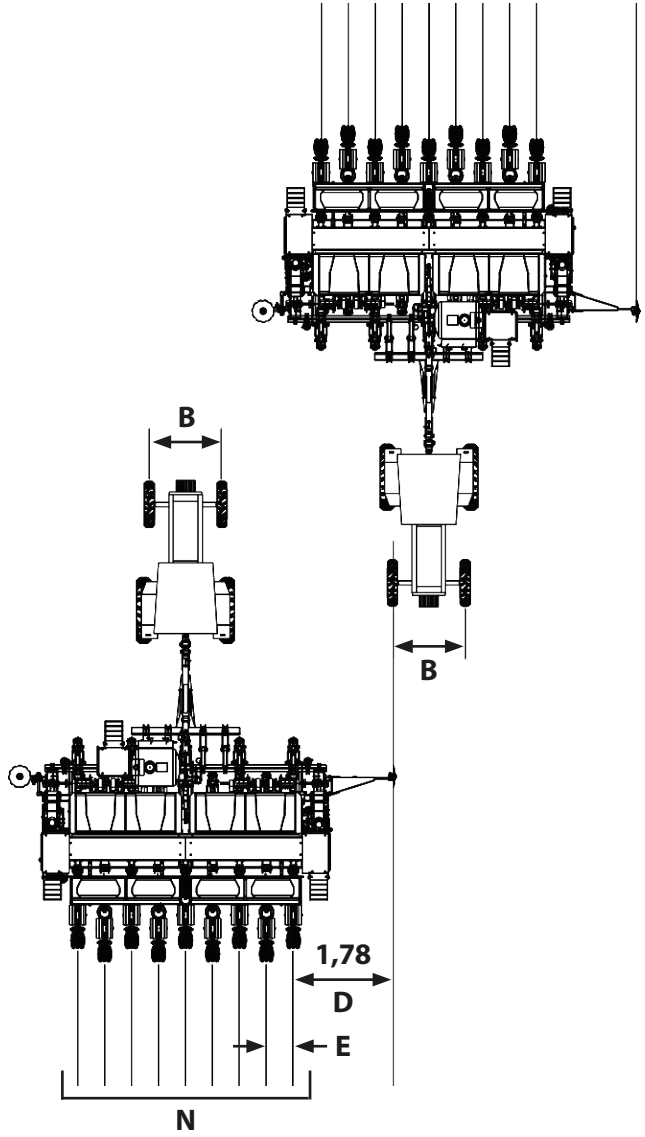
Resolve: $X = \frac{0{,}50 \times 10 - 1{,}43}{2}$

$D = 1{,}78$ **meter**

WHERE:
E = Row spacing (mts)
N = Number of seeder rows
B = Front gauge of tractor
D = Marker distance

03 - Set the 1.78 m Row marker disc to the center of the first planting Row.

04 - The Row markers are alternative, lower one after the other, so if during the planting before finishing the Row there is a need to interrupt the work, activate the piston so that the seeder goes up and down twice to continue working with the marker on the right side.



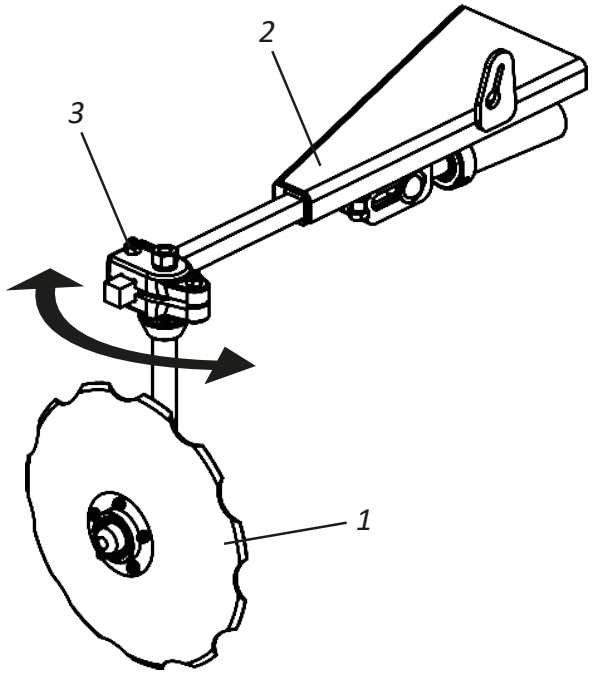
⚠ ATTENTION **Avoid accidents caused by the intermittent action of Row markers. When activating the seeder, check that there are no people under the Row markers or in their area of action.**

▪ Adjustments

• Adjusting the Row marker discs

The discs (1) of the Row markers (2) have angular adjustment to facilitate the demarcation work on the ground. To adjust the disks (1) of the Row markers (2), proceed as follows:

01 - SLoosen the nut (3), turn the disc (1) to the desired position.
02 - Then, retighten the nut (3) fixing the disc (1) in the desired position.

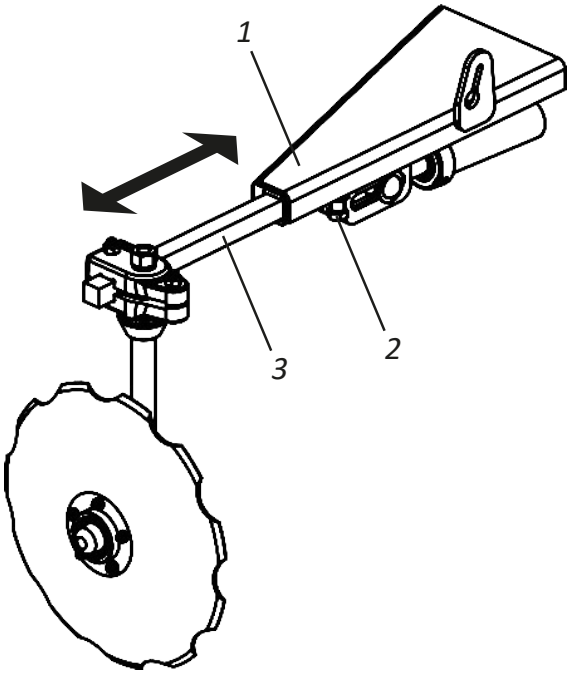


⚠ ATTENTION | **Before making any adjustments to the Row marker, make sure it is on the ground, the seeder is stopped and the tractor is off.**

• Adjusting the line marker bar

The line markers (1) have distance regulation to be adjusted according to the number of lines, spacing and gauge of the tractor. To adjust the distance of the line markers (1), proceed as follows:

01 - Loosen the screw (2), move the bar (3) in the desired position.
02 - Then, retighten the screw (2) fixing the bar (3) in the desired position.



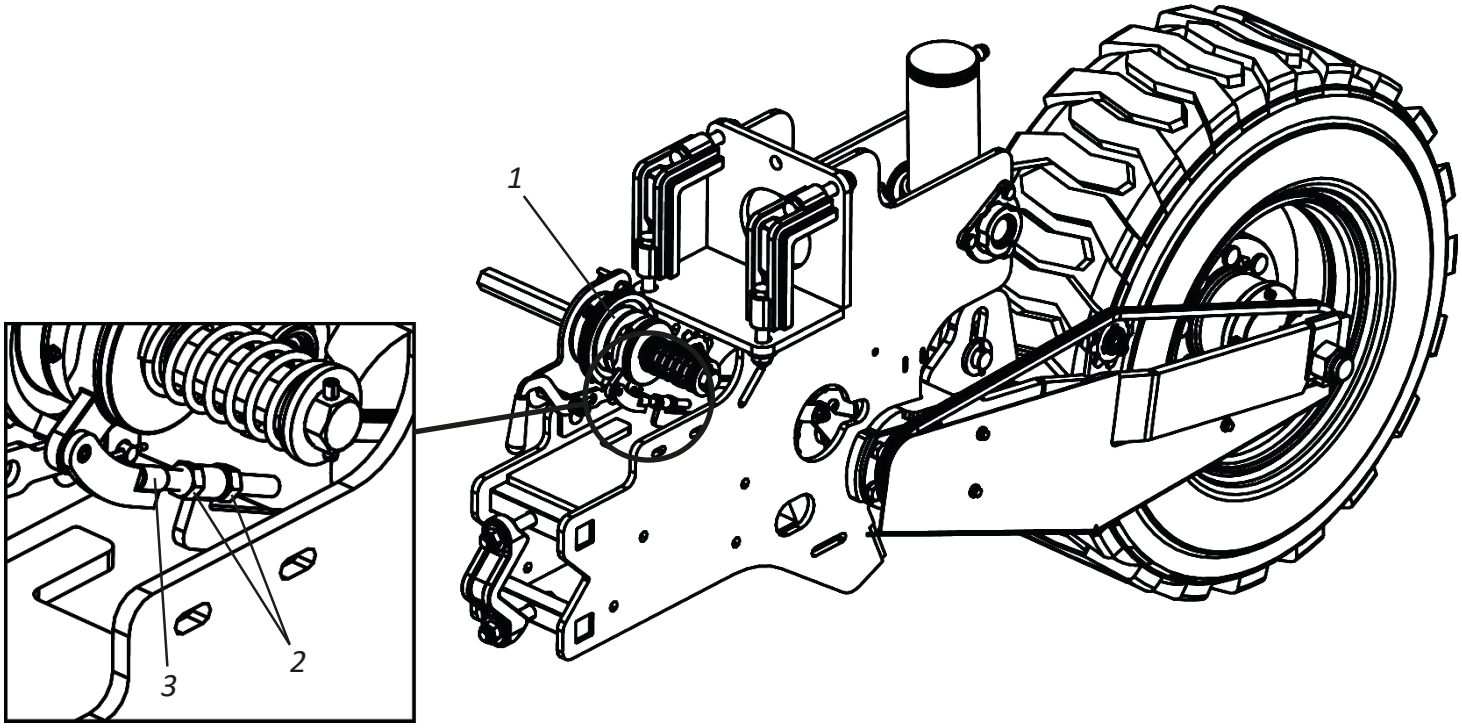
❗ IMPORTANT | **To find out the distance to be set at the Row marker, calculate it as instructed on the previous page.**

▪ Adjustments

• Ratchet Adjustment

When placing the shims on the hydraulic cylinder to limit the disc depth as instructed on page 49, then adjust the ratchet (1) from according to the work need, thus ensuring the drive of the transmission system.To adjust the turnstile (1), proceed as follows:

01 - Loosen the nuts and lock nuts (2), adjust the rod (3) for the correct actuation of the ratchet disarming system (1).
02 - Then retighten the nuts and lock nuts (2).



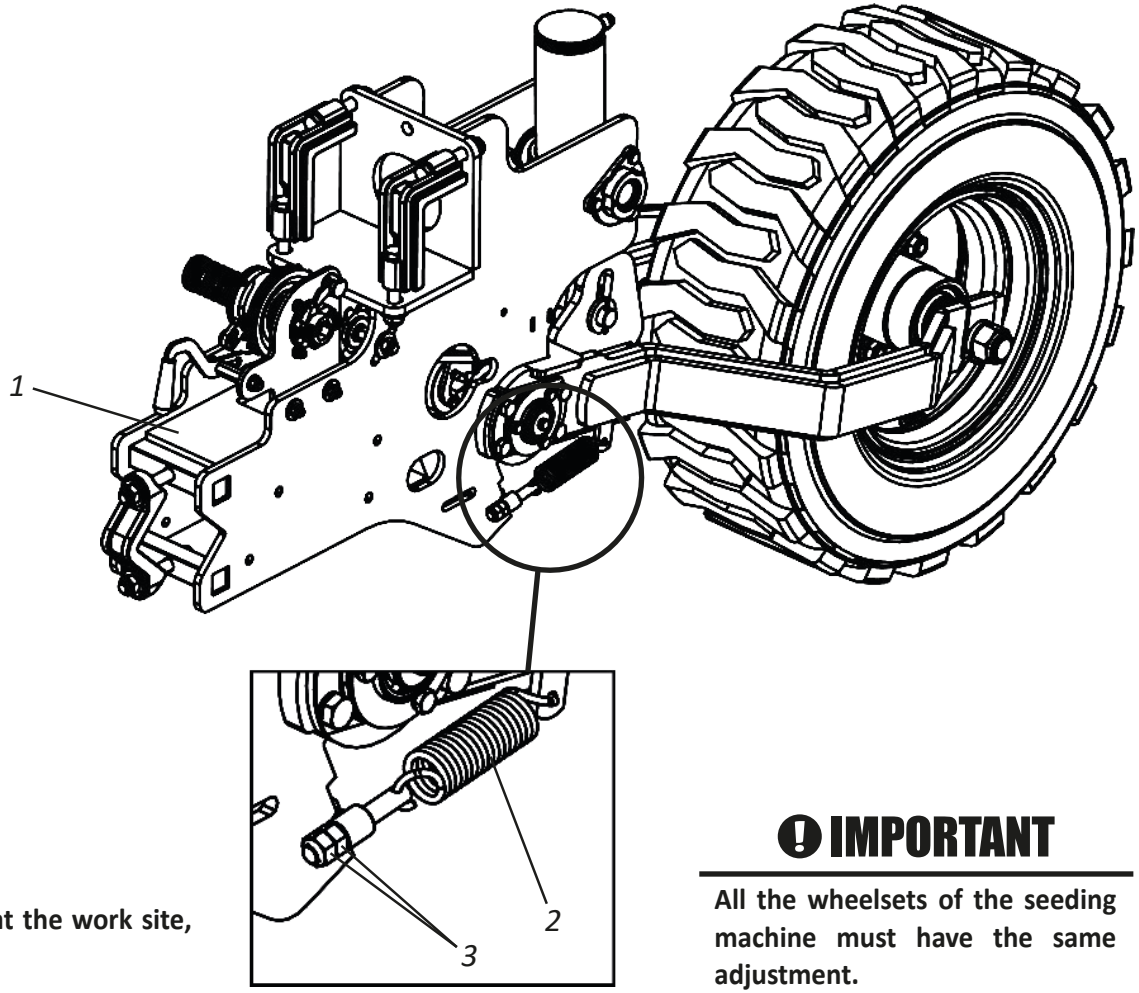
⚠ ATTENTION | Failure to observe this setting may cause the ratchet to ratchet.

❗ IMPORTANT | When making the ratchet adjustment, repeat this procedure for all the seeder's ratchets.

▪ Adjustments

• Traction spring adjustment

The wheelsets (1) are equipped with traction springs (2) for greater tire adherence to the ground. If required, adjust the adherence of the tires to the type of soil to be worked on, using the nuts (3).



⚠ ATTENTION | **The tires' adherence to the ground must be observed at the work site, analyzing the type of ground to be worked on.**

❗ IMPORTANT

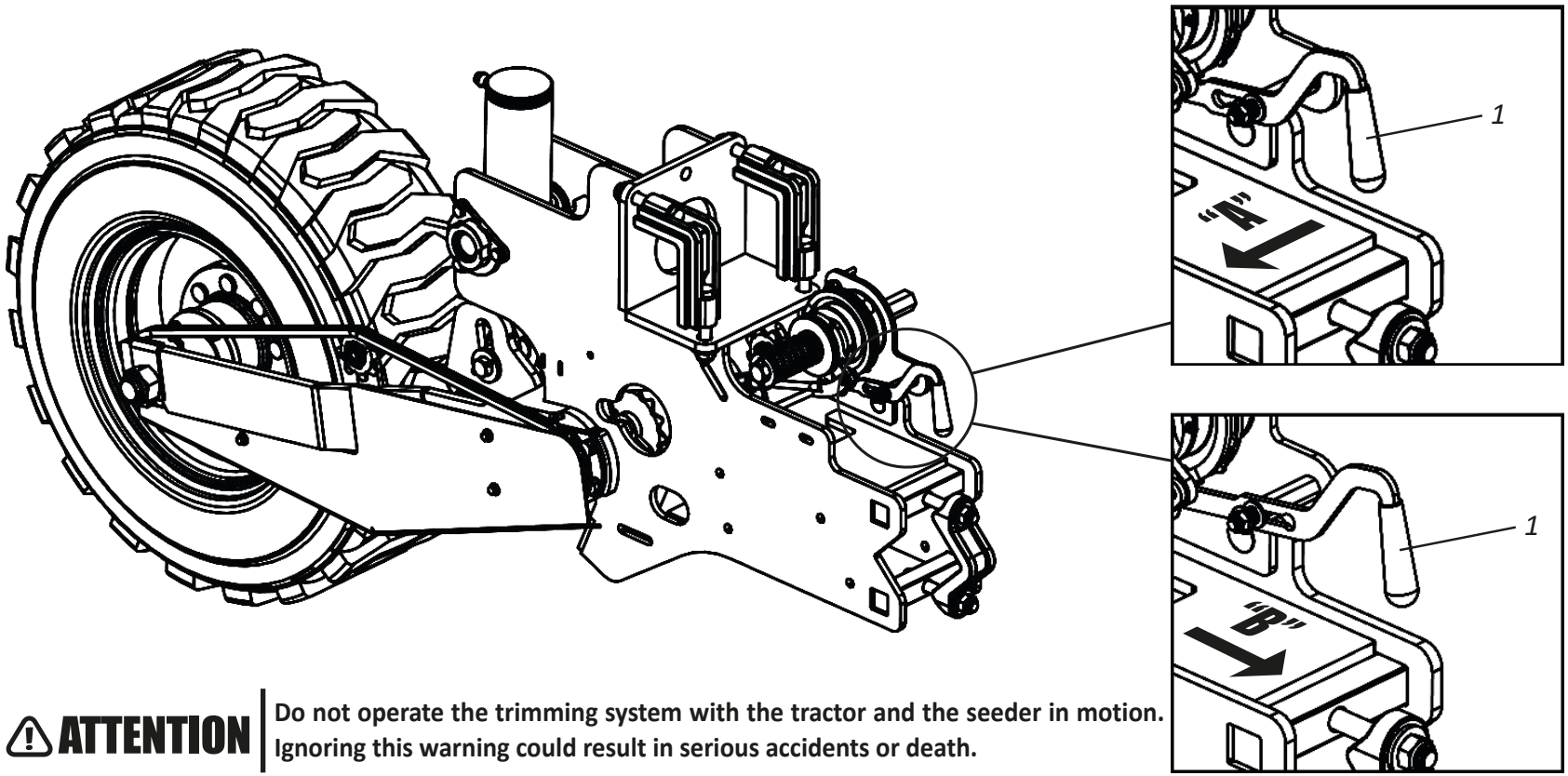
All the wheelsets of the seeding machine must have the same adjustment.

▪ Systems

• Trimming system

The **DEMETRA** leaves the factory with a finishing system that allows planting with only one side of the seeder, that is, half the rows. To the trimming, proceed as follows:

01 **-** Choose the side of the seeder to be finished off.
02 **-** Then, with the tractor and the seeding machine stopped, pull the lever (1) in direction **"A"** and then in direction **"B"** to activate the harnessing system.



⚠ ATTENTION **Do not operate the trimming system with the tractor and the seeder in motion. Ignoring this warning could result in serious accidents or death.**

▪ Systems

DEMETRA has special **IJ SERIES** nozzles. The ORANGE nozzle leaves the factory assembled at **DEMETRA**, while the LILACA, GREEN and YELLOW nozzles are in the packing box along with their respective tables.

• IJ SERIES Nozzles

CHARACTERISTIC:

The **IJ SERIES** special nozzles are solid jet nozzles for spraying in the planting ridge. In the volumes shown in liters/hectare, the achieved width is only that of the ridge (approximately 10 cm).

FACTORY ASSEMBLED:

ORANGE

PACKING BOX:

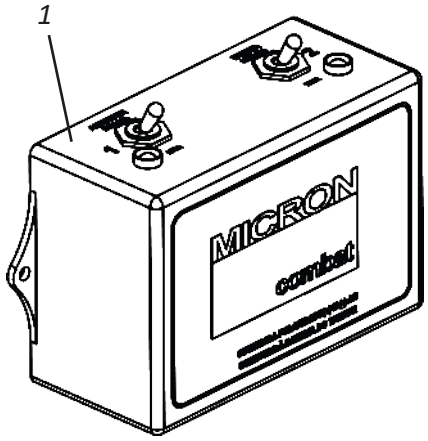
LILAC GREEN YELLOW

NOTE

Distribution tables for the IJ SERIES special nozzles, see pages 60 and 66.

• Agitator and pump control panel

DEMETRA has an agitator and pump control panel (1) that is used to start the system (agitator and pump).



ATTENTION

The agitator and pump control panel (1) must be installed on the tractor. When installing, observe the polarity (+) and (-) when connecting to the tractor battery.

NOTE

For assembling the agitator and pump control (1), proceed as instructed on page 32.

▪ Systems

• Inoculant Control Panel

DEMETRA has a control panel. Through the control panel several adjustments are made, such as: Application, system wash, stirring, and suction filter cleaning.

COMPONENTS:

01 - Line Filter Valve
02 - Line Filter
03 - Pressure regulator
04 - Manometer
05 - Suction Valve
06 - Return Valve
07 - Stirrer Valve
08 - Suction Filter

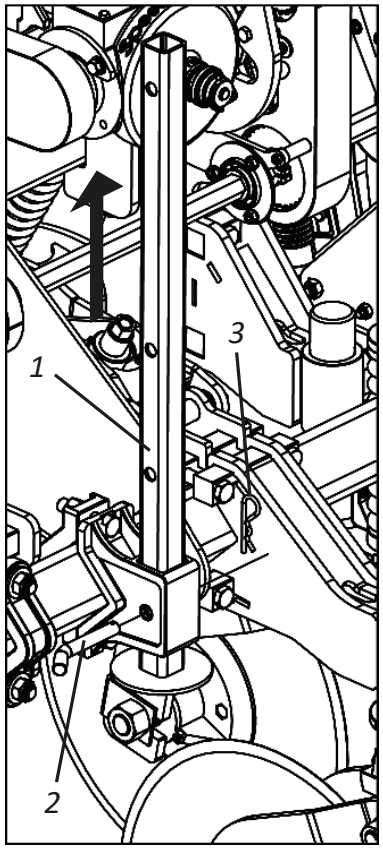
CONTROL PANEL

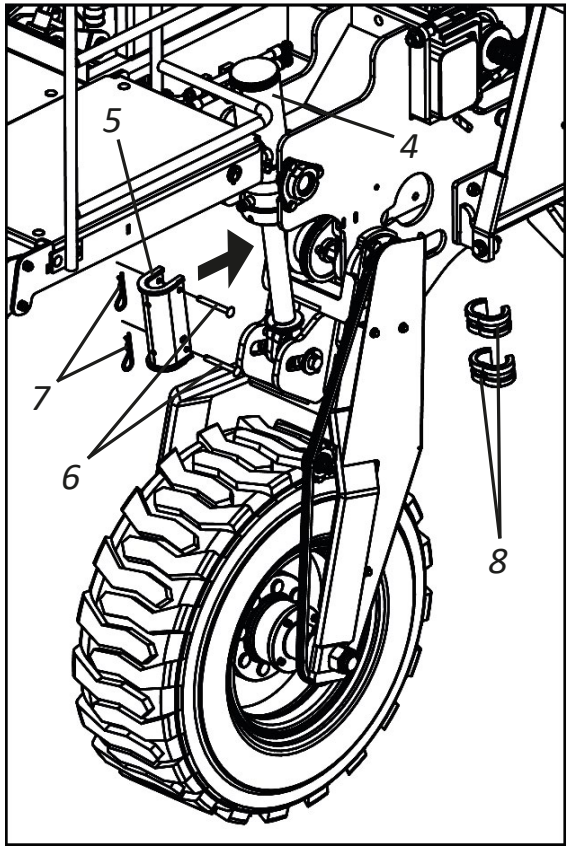
▪ Transportation

• Preparing for transport

To transport **DEMETRA**, proceed as follows:

01 - Retract the support bracket (1) and secure it with the pin (2) and lock (3).
02 - Then, lift the Rows by fully actuating the stroke of the hydraulic cylinder (4), place the locks (5) on their tynes, locking them with the pins (6) and locks (7).
03 - Then, check that the **DEMETRA** is level with respect to the ground; if not, level it as instructed on pages 35 and 36.





⚠ ATTENTION

We recommend not to transport the DEMETRA loaded, but to refill it at the job site. If the DEMETRA is going to remain in the field for any reason, we recommend covering it with a waterproof tarp to avoid humidity.

❗ IMPORTANT

If you have previously worked with DEMETRA and used the limit rings (8) on the hydraulic cylinders (4), they must be removed to place the locks (5).

🔍 NOTE

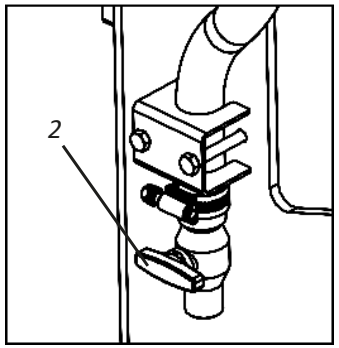
DEMETRA will be in the transport position when all the procedures on this page have been performed. Do not transport the DEMETRA with the ladder open, follow the guideRows on page 39.

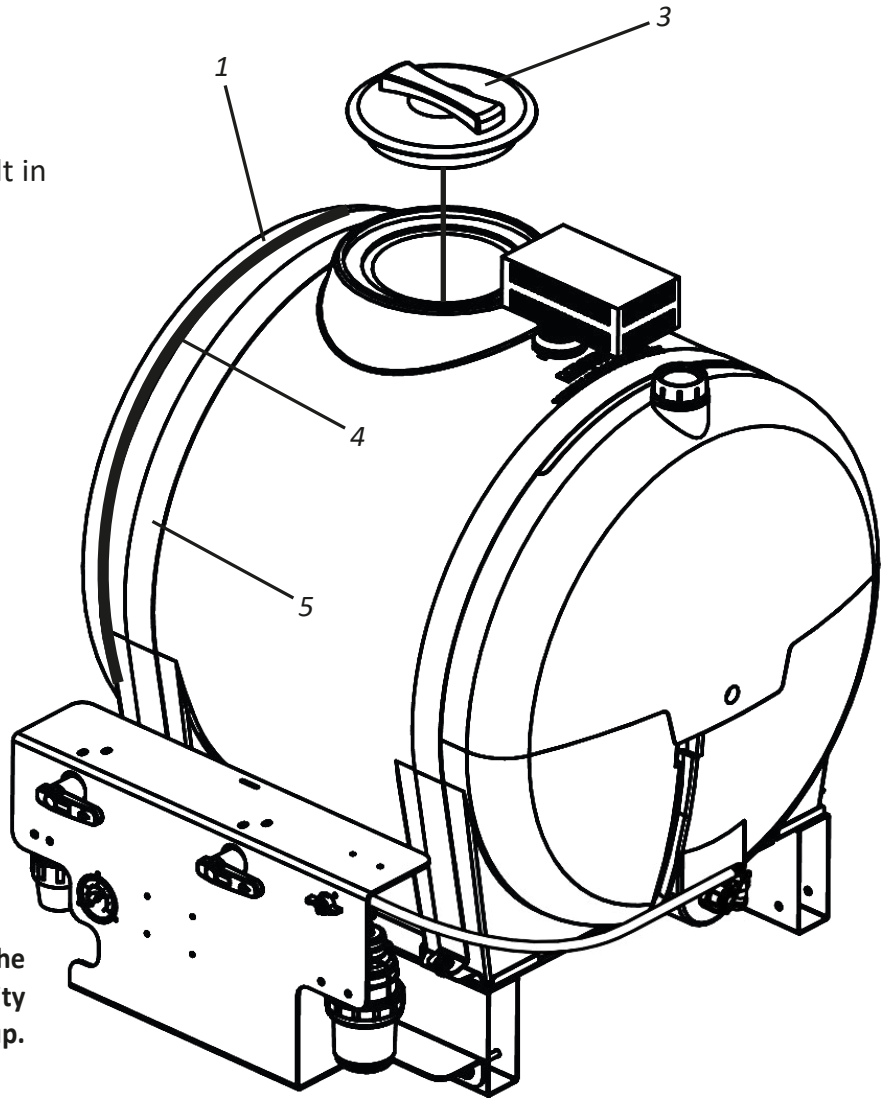
▪ Work

• 300 liter tank filling - Syrup

To fill the 300 liter (1) tank, proceed as follows:

01 - Close the damper (2) if it is open.
02 - Then, remove the cap (3) and refill it, observing the level hose (4) and the marking belt in liters (5).
03 - When you have finished filling, replace the cap (3).





NOTE

Once the 300 liter (1) tank has been filled, fill up the 30 liter (clean water) tank according to the following page.

ATTENTION

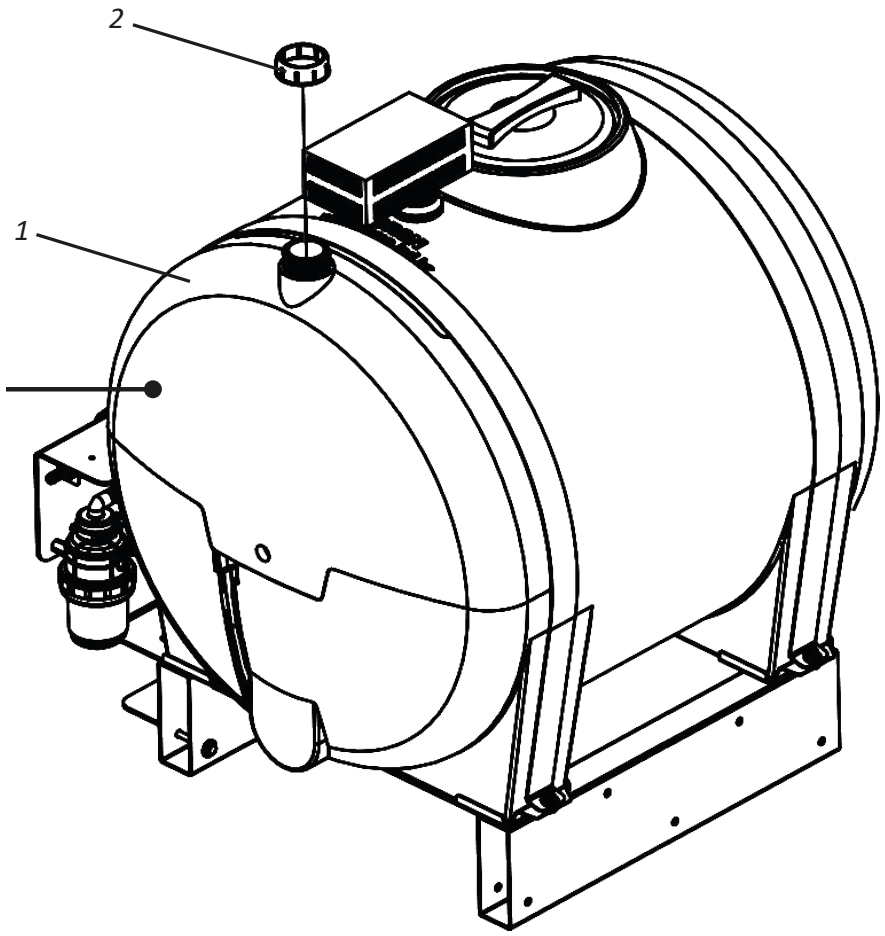
We recommend preparing the syrup before filling the 300 liter tank, mixing the products and water before placing in the tank. Fill the tank to 1/3 of its capacity with clean water, add the products, stir the syrup - turn on the mechanical syrup. Complete with water and shake again.

▪ Work

• 30 liter tank filling - Clean water

DEMETRA has a 30 liter (1) tank for “non-potable” clean water. When the washing system is turned on (see pages 55 and 56), clean water will clean the hoses and nozzles (see page 31) after the job is done. In order to fill the 30 liter tank (1), proceed as follow:

01 **-** Remove the cap (2).
02 **-** Then refill with clean water.
03 **-** When you have finished filling, replace the cap (2).



⚠ ATTENTION

The 30 liter (1) tank for “ non-drinking” clean water is used only for cleaning the hoses and nozzles, and should not be ingested under any circumstances, as it is unfit for human consumption. Ignoring this warning could cause health risks.

NOTE

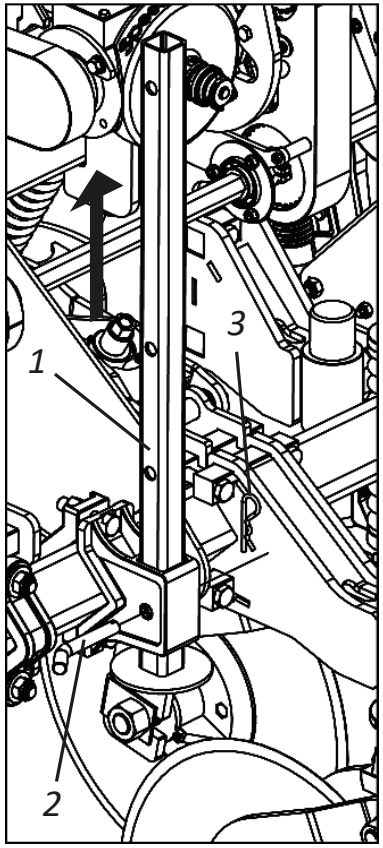
Once the 30 liter (1) tank has been filled, set the DEMETRA to work as instructed on page 55.

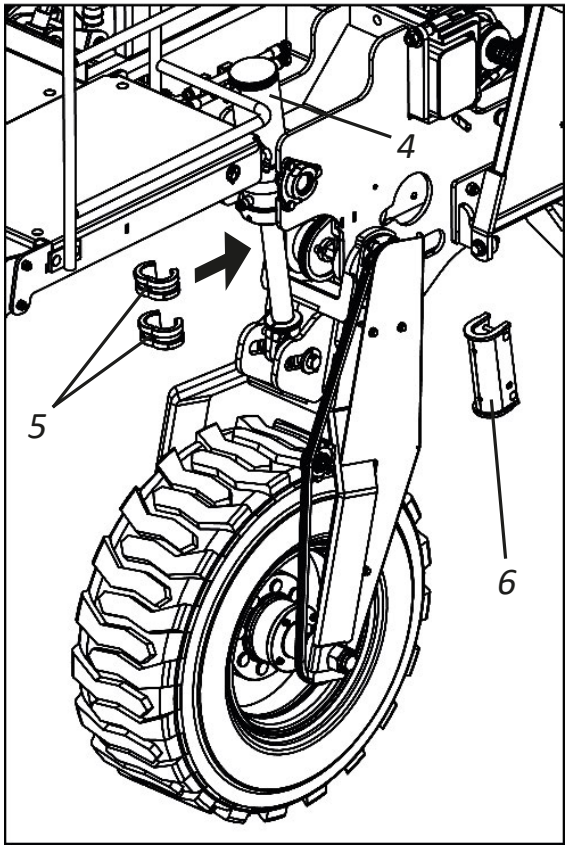
▪ Work

• Preparing for work

Before working with **DEMETRA**, proceed as follows:

01 - Retract the support bracket (1) and secure it with the pin (2) and lock (3).
02 - Then, raise the Rows by fully activating the stroke of the hydraulic cylinder (4) and place the limiting rings (5) on its rodas your need for work.
03 - Then, check that **DEMETRA** is leveled with respect to the ground; if not, level it as instructed on pages 35 and 36.





⚠ ATTENTION

After attaching the limiting rings (5), the DEMETRA will always operate at the same depth in both hard and loose terrain, because the limiting rings (5) are limiting the course of the hydraulic cylinders (4), that is, preventing the oscillation of the wheels.

❗ IMPORTANT

If you have previously transported DEMETRA and used the locks (6) on the hydraulic cylinders (4), they must be removed to place the limit rings (5).

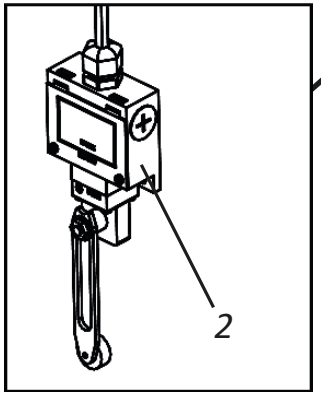
🔍 NOTE

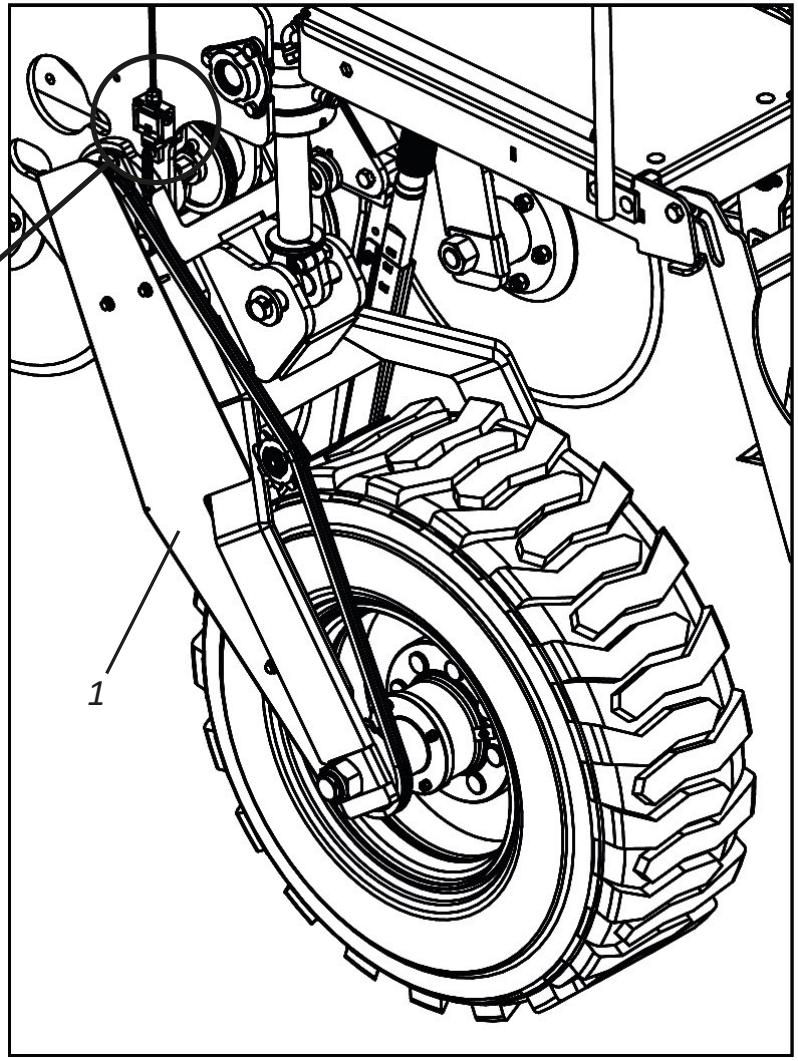
DEMETRA will be in working position when all the procedures on this page have been performed. Do not work with DEMETRA with the ladder open, follow the instructions on page 39.

▪ Work

• Application of inoculant

DEMETRA when equipped with the inoculant system, has in the left hand wheel set (1) the lift sensor (2) that triggers the application of inoculant when lowering the seeder; The application of inoculant can be triggered manually or automatically when lowering the seeder, being at the operator's discretion to define according to his/her needs.





⚠ ATTENTION

In order to activate the manual or automatic application of inoculant, proceed as instructed on pages 53 and 54.

NOTE

Indications on the right and left side are made by looking at the DEMETRA from behind.

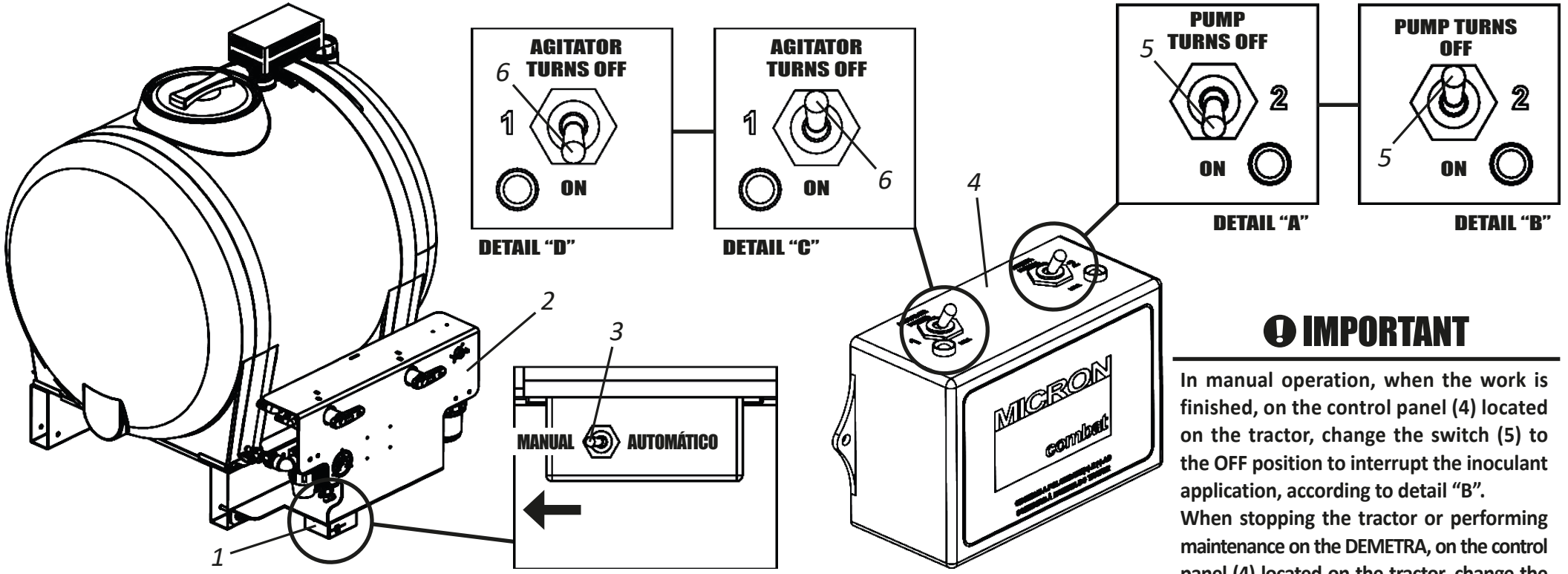
▪ Work

• Manual activation of inoculant application

In order to activate the manual triggering of inoculant application, proceed as follows:

01 **-** On the control panel (1) located below the control panel (2), switch the switch (3) to the **MANUAL** position.

02 **-** Then, before starting the work, on the control panel (4) located on the **TRACTOR**, change the switch (5) to the **ON** position, according to **detail "A"**.



⚠ ATTENTION **In manual operation, the inoculant application will not start the moment the DEMETRA is lowered, but the moment the switch (5) of the control panel (4) located on the TRACTOR is turned to the ON position.**

❗ IMPORTANT

In manual operation, when the work is finished, on the control panel (4) located on the tractor, change the switch (5) to the OFF position to interrupt the inoculant application, according to detail "B".

When stopping the tractor or performing maintenance on the DEMETRA, on the control panel (4) located on the tractor, change the switch (6) to the OFF position according to detail "C"; when the maintenance is finished, change the switch (5 and 6) to the ON position.

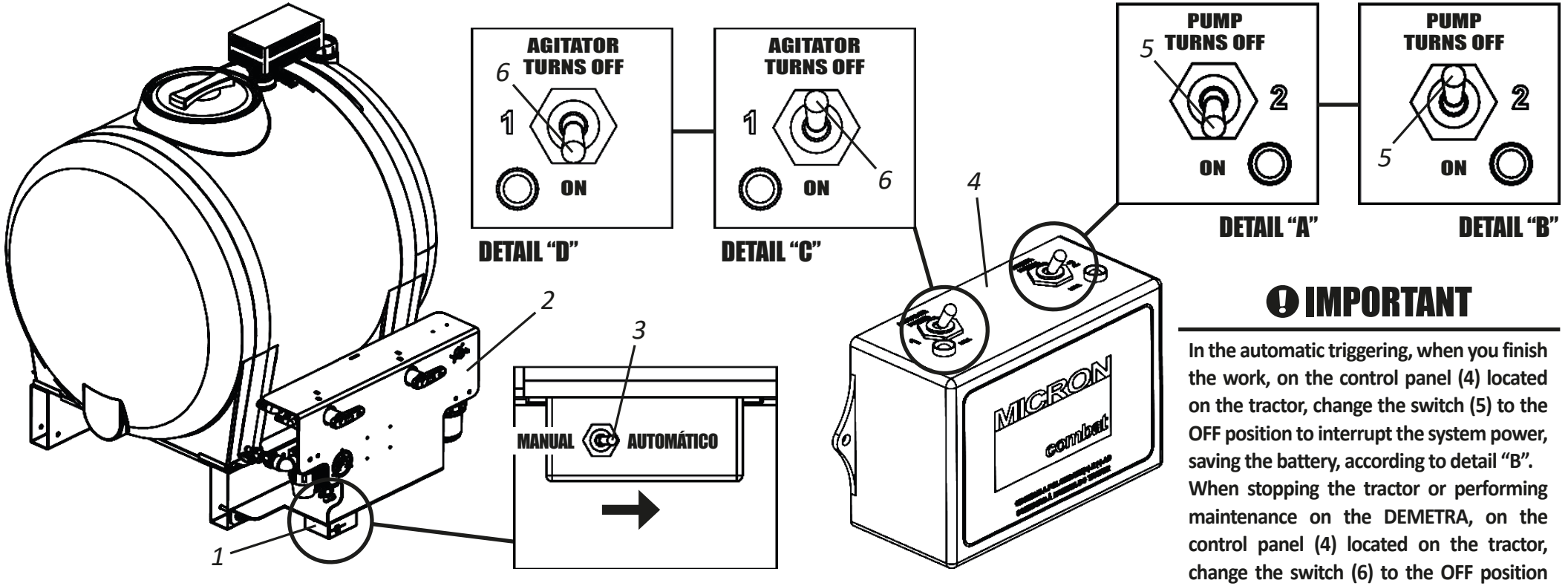
▪ Work

• Automatic triggering of inoculant application

In order to activate the automatic triggering of inoculant application, proceed as follows:

01 **-** On the control panel (1) located below the control panel (2), switch the switch (3) to the **AUTOMATIC** position.

02 **-** Then, before starting the work, on the control panel (4) located on the **TRACTOR**, change the switch (5) to the **ON** position, according to **detail "A"**.



⚠ ATTENTION | **In the automatic triggering the inoculant pouring will begin the moment the DEMETRA is lowered, that is, before starting work.**

❗ IMPORTANT

In the automatic triggering, when you finish the work, on the control panel (4) located on the tractor, change the switch (5) to the OFF position to interrupt the system power, saving the battery, according to detail "B". When stopping the tractor or performing maintenance on the DEMETRA, on the control panel (4) located on the tractor, change the switch (6) to the OFF position according to detail "C"; when the maintenance is finished, change the switch (5 and 6) to the ON position.

▪ Work

• Work definitions

Before setting up the **DEMETRA** to start working, follow the instructions below:

01 - Define the spacing to be worked (**possible spacings** see page 38).
02 - Define the working speed according to the planting area.
03 - Define the application rate L/ha according to agronomic recommendations.
04 - Check the table for the application rate and the color of the nozzle corresponding to this rate.
05 - Choose which nozzle to use for the job (**nozzle models** see page 44).
06 - Regulate the BAR pressure on the pressure gauge, as instructed on the following page.

EXAMPLE:

Using **DEMETRA** with **50cm** row spacing at a speed of **6km/h** applying **40L/ha** using the **orange IJ SERIES** nozzles, the pressure to be used is **1.00 BAR**.

NOTE

Once the work settings are defined, proceed with the adjustments in the DEMETRA, according to the instructions on the following pages.

CERAMIC NOZZLE MICRON IJ 01 AND 50001 (COLOR: ORANGE)
ROW SPACING 50 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	38.4	34.9	32.0	29.6	27.4	25.6	24.0	22.6
15	1.00	200	48.0	43.6	40.0	36.9	34.3	32.0	30.0	28.2
20	1.33	240	57.6	52.4	48.0	44.3	41.1	38.4	36.0	33.9

▪ Work

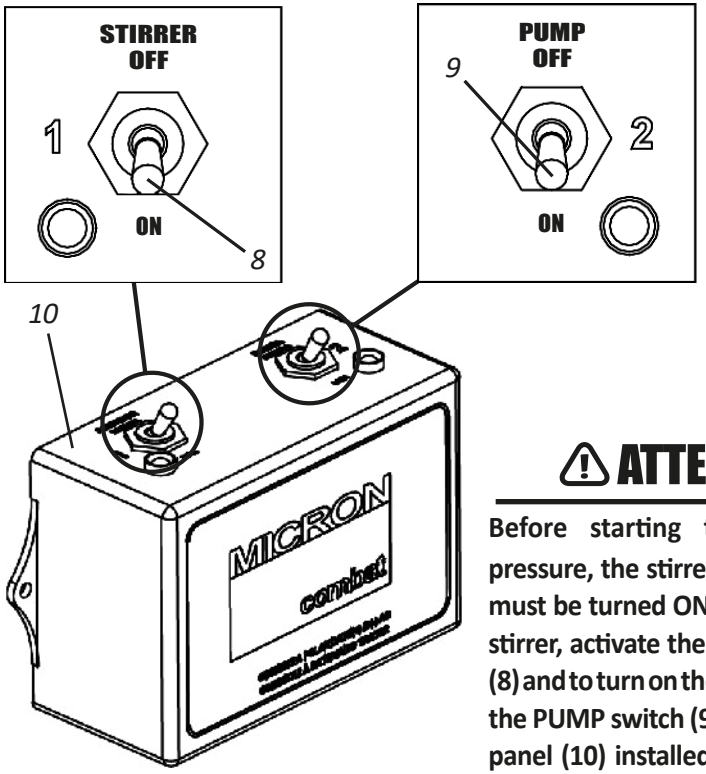
• Pressure regulation (BAR)

In order to adjust the pressure BAR on the pressure gauge (1) of the control panel (2), proceed as follows:

01 - Make sure the control panel (2) is in **APPLICATION** mode.

- In **APPLICATION** mode, the stopcock (3) must be **OPEN**, the crank (4) in the **SYRUP** position, the crank (5) in the **TANK** position, and the stopcock (6) in the **OPEN** position.

02 - Then, looking at the pressure gauge (1) turn the pressure regulator (7) **CLOCKWISE** to increase pressure and **COUNTERCLOCKWISE** to decrease pressure.



⚠ ATTENTION

Before starting to adjust the pressure, the stirrer and the pump must be turned ON. To turn on the stirrer, activate the STIRRER switch (8) and to turn on the pump,activate the PUMP switch (9) on the control panel (10) installed on the tractor.

❗ IMPORTANT | **To start working with DEMETRA, the control panel (2) must be set to APPLICATION mode.**

▪ Work

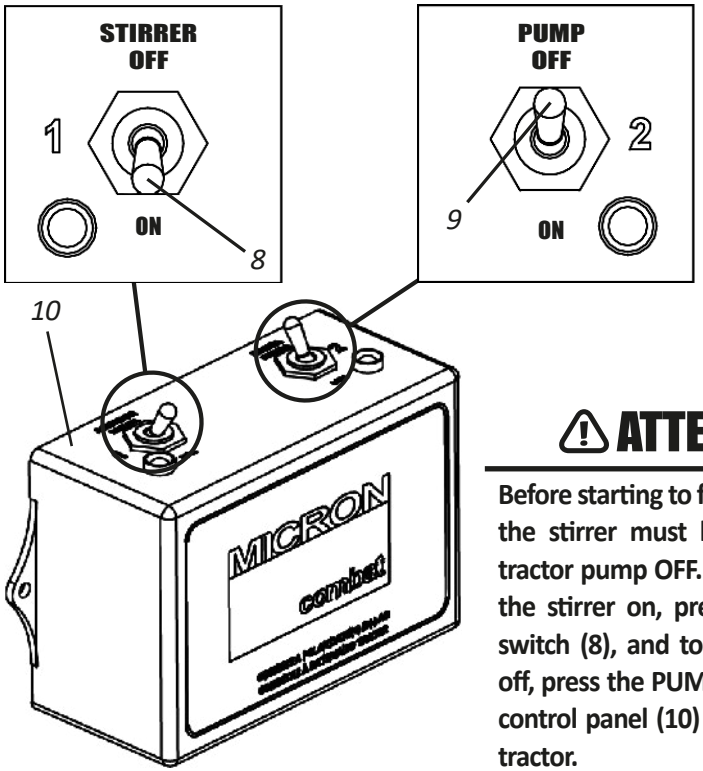
• Adjustment for flushing the system - Part I

In order to flush the system, proceed as follows:

01 - Make sure the control panel (1) is in **SYSTEM FLUSHING** mode.

- In the **WASHING SYSTEM** mode, the stopcock (2) must be **OPEN**, the crank (3) in the **CLEAN WATER** position, the crank (4) in the **PUMP** position, and the cock (7) in the **CLOSED** position.

02 - Then proceed to flush the system according to the instructions on the following page:



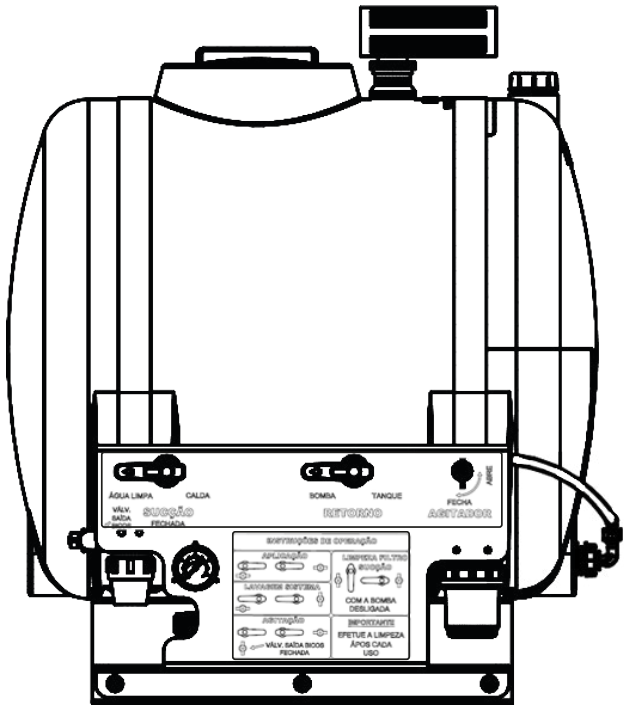
⚠ ATTENTION

Before starting to flush the system, the stirrer must be ON and the tractor pump OFF. In order to turn the stirrer on, press the STIRRER switch (8), and to turn the pump off, press the PUMP key (9) on the control panel (10) installed on the tractor.

▪ Work

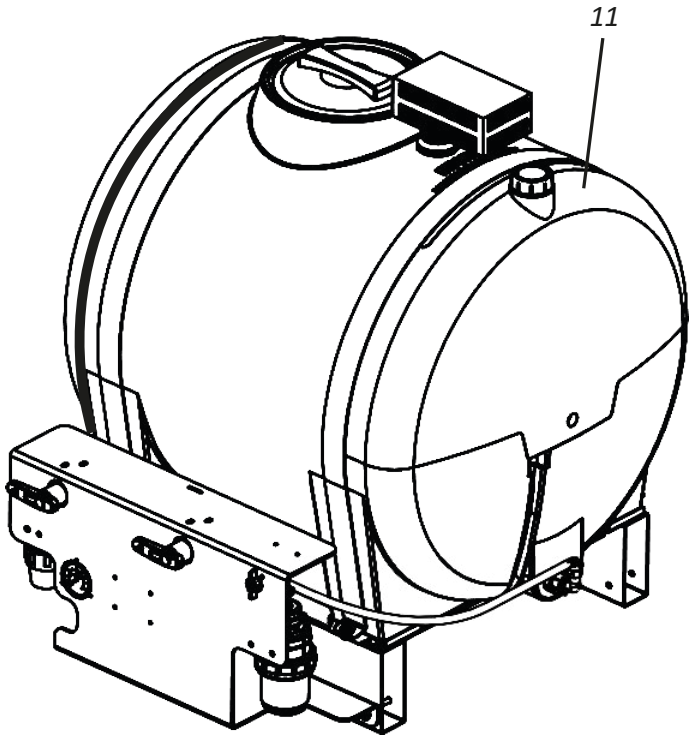
• Adjustment for flushing the system - Part II

A) Turn on the pump and wait for clean water to come out of the nozzles.
B) Then, turn off the pump.



ATTENTION

Before starting the system flushing process, make sure that the 30 liter (11) tank is filled with water. Failure to observe this can burn out the pump.



IMPORTANT

When you are finished washing, remember to return the valves to their original position before reapplying products and returning the system to its original pressure.

NOTE

We recommend that this operation be performed every day before stopping the DEMETRA, and depending on the product, at every refueling.

▪ Work

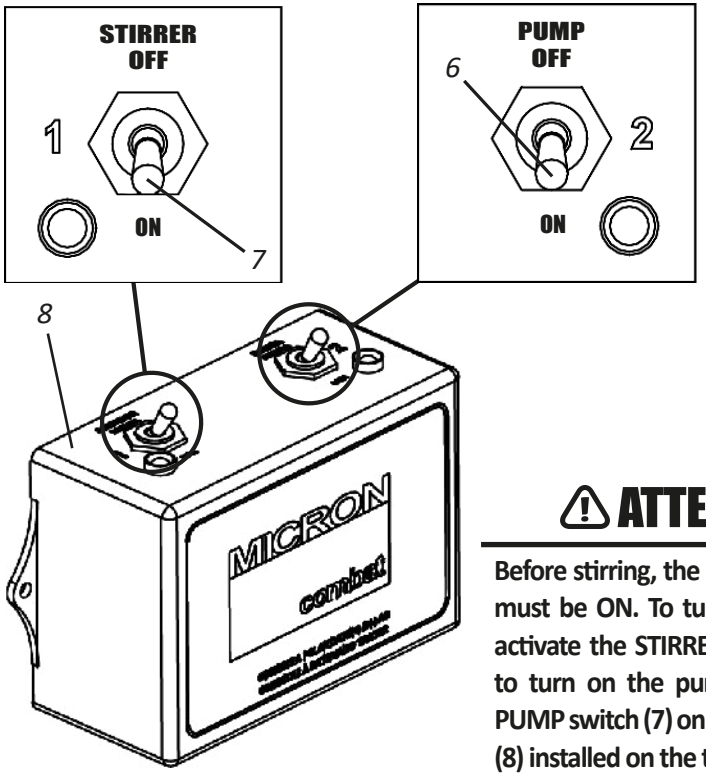
• Adjustment for stirring

When the product to be applied is dense, first activate the **STIRRING** system to homogenize the product, to do so, proceed as follows:

01 - Make sure the control panel (1) is in **STIRRING** mode.

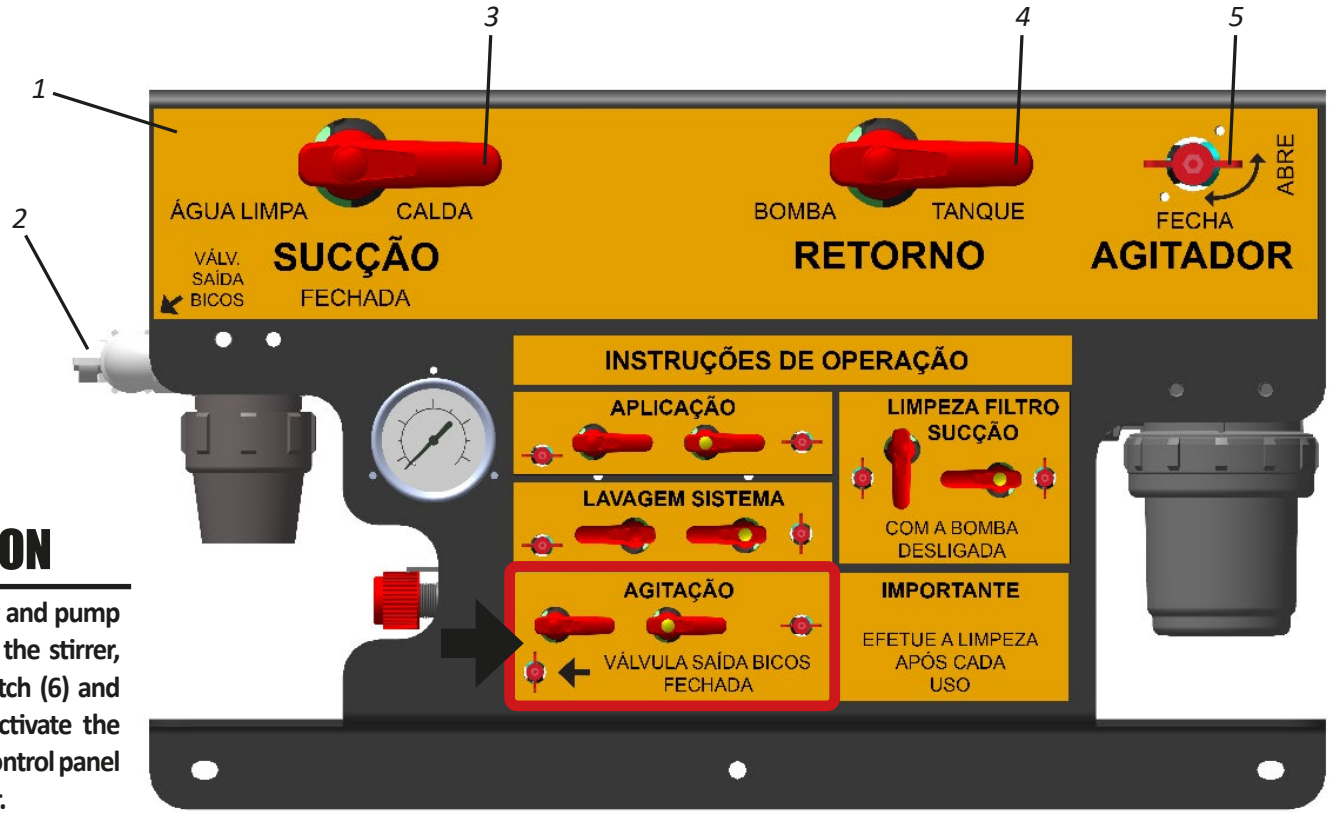
- In **STIRRING** mode, the stopcock (2) must be **CLOSED**, the handle (3) in the **SYRUP** position, the handle (4) in the **TANK** position and the stopcock (5) in the **OPEN** position.

02 - Then activate the **STIRRING** system.



⚠ ATTENTION

Before stirring, the stirrer and pump must be ON. To turn on the stirrer, activate the STIRRER switch (6) and to turn on the pump, activate the PUMP switch (7) on the control panel (8) installed on the tractor.



▪ Work

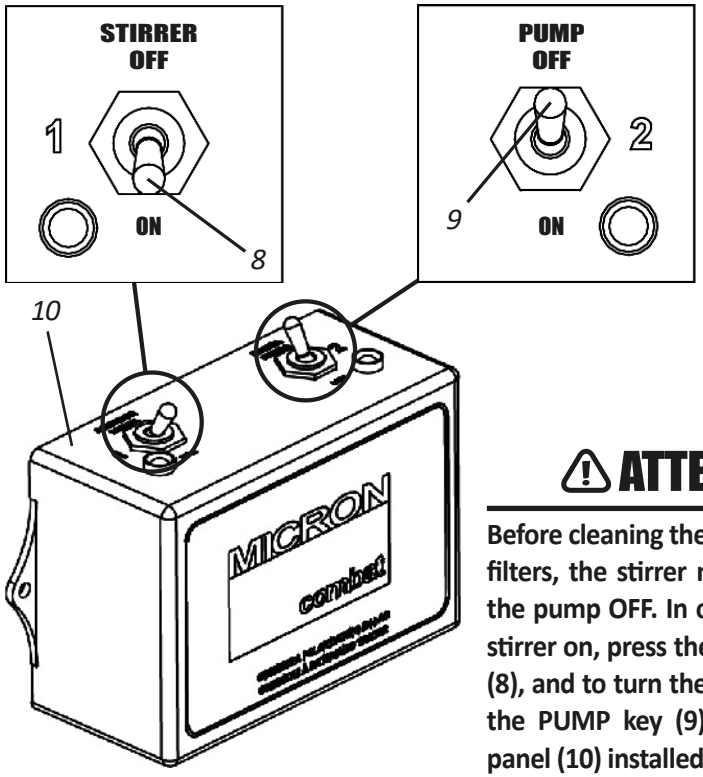
• Regulation for cleaning the suction and line filters - Part I

In order to clean the suction (1) and line (2) filters of the control panel (3), proceed as follows:

01 - Make sure that the control panel (3) is in **SUCTION FILTER CLEANING** mode..

- In the **SUCTION FILTER CLEANING** mode, the stopcock (4) must be **CLOSED**, the crank (5) in the **CLOSED SUCTION** position, the crank (6) in the **PUMP** position, and the stopcock (7) in the **CLOSED** position.

02 - Then proceed to clean the suction filters (1) and line (2) according to the instructions on the following page:



⚠ ATTENTION

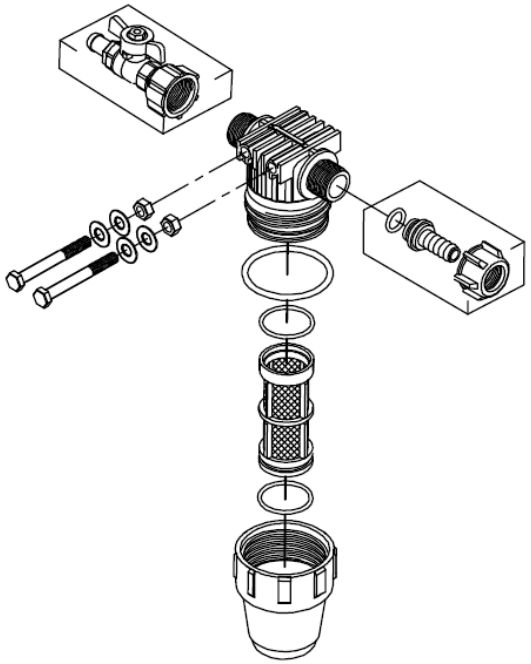
Before cleaning the suction and line filters, the stirrer must be ON and the pump OFF. In order to turn the stirrer on, press the STIRRER switch (8), and to turn the pump off, press the PUMP key (9) on the control panel (10) installed on the tractor.

▪ Work

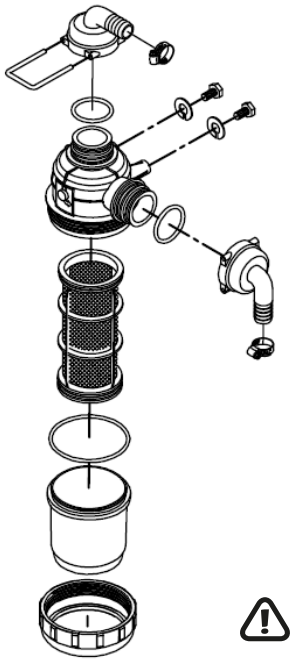
• Adjustment for cleaning the suction and Row filters - Part II

A) Turn off the pump. Keep the mechanical agitator on.
B) Clean the Suction and Row filters.
C) Unscrew the filter cups as shown in the figure below.
D) Then wash the filter element with water.
E) Then return the filter element and filter bowl.
F) Return the suction valve to its initial position.

ROW FILTER



SUCTION FILTER



⚠ ATTENTION | **Before starting cleaning the suction (1) and Row (2) filters, wear PPE equipment (especially gloves). Ignoring this warning can cause serious illness or even death.**

▪ Tables

• IJ Series Nozzles Table - Part I

MICRON CERAMIC NOZZLE IJ 005 AND 50005 (COLOR: LILAC)

ROW SPACING 50 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	19	17	16	15	13	12	12	11
15	1.00	100	24	21	20	18	17	16	15	14
20	1.33	120	29	26	24	22	20	19	18	17

ROW SPACING 55cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	18	16	15	13	12	12	11	10
15	1.00	100	22	20	19	17	16	15	14	13
20	1.33	120	27	24	22	20	19	18	17	16

ROW SPACING 60cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	16	15	13	12	11	11	10	9
15	1.00	100	20	18	17	15	14	13	13	12
20	1.33	120	24	22	20	18	17	16	15	14

CERAMIC NOZZLE MICRON IJ 01 AND 50001 (COLOR: ORANGE)

ROW SPACING 50 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	38	35	32	30	27	26	24	23
15	1.00	200	48	43	40	37	34	32	30	28
20	1.33	240	58	52	48	44	41	39	36	34

ROW SPACING 55cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	35	32	30	28	25	24	22	21
15	1.00	200	44	40	37	34	32	30	28	26
20	1.33	240	53	48	44	41	38	36	33	31

ROW SPACING 60cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	32	29	27	25	23	21	20	19
15	1.00	200	40	37	33	31	29	27	25	24
20	1.33	240	48	44	40	38	34	32	30	28

Tables

• IJ Series Nozzles Table - Part II

MICRON CERAMIC NOZZLE IJ 005 AND 50005 (COLOR: LILAC)

ROW SPACING - 65cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	14	14	12	11	10	10	9	8
15	1.00	100	18	16	15	13	12	11	12	11
20	1.33	120	21	20	18	16	15	14	13	12

ROW SPACING - 70cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	14	13	12	11	10	9	8	7
15	1.00	100	17	16	14	13	12	10	10	10
20	1.33	120	20	19	17	16	15	13	12	11

ROW SPACING - 75cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	13	12	11	10	9	7	7	6
15	1.00	100	16	15	13	12	11	9	8	9
20	1.33	120	19	17	16	15	14	11	10	9

CERAMIC NOZZLE MICRON IJ 01 AND 50001 (COLOR: ORANGE)

ROW SPACING - 65cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	30	27	25	23	21	20	18	17
15	1.00	200	38	34	31	29	27	25	23	22
20	1.33	240	45	40	36	35	32	30	28	26

ROW SPACING - 70cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	28	25	23	21	19	19	17	16
15	1.00	200	34	31	29	27	25	23	21	20
20	1.33	240	42	37	34	32	30	28	26	24

ROW SPACING - 75cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	26	23	21	20	18	17	16	15
15	1.00	200	32	29	27	25	23	21	20	19
20	1.33	240	39	35	32	30	27	26	24	23

▪ Tables

• IJ Series Nozzles Table - Part III

MICRON CERAMIC NOZZLE IJ 005 AND 50005 (COLOR: LILAC)

ROW SPACING 80cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	12	11	10	9	8	6	6	5
15	1.00	100	15	14	12	11	10	8	6	8
20	1.33	120	18	15	15	14	13	11	8	8

ROW SPACING 85cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	12	11	10	9	8	6	7	6
15	1.00	100	14	13	12	11	10	9	7	7
20	1.33	120	17	15	14	13	12	10	9	8

ROW SPACING 90cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	11	10	9	8	8	5	7	6
15	1.00	100	13	12	11	10	10	9	8	6
20	1.33	120	16	15	13	12	11	10	9	7

CERAMIC NOZZLE MICRON IJ 01 AND 50001 (COLOR: ORANGE)

ROW SPACING 80cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	24	21	19	19	17	16	15	14
15	1.00	200	30	27	25	23	21	19	19	18
20	1.33	240	37	33	30	28	24	24	22	22

ROW SPACING 85cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	22	19	18	21	19	17	14	13
15	1.00	200	29	25	23	21	20	19	18	17
20	1.33	240	35	31	29	27	24	22	21	20

ROW SPACING 90cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	21	19	18	16	15	14	13	13
15	1.00	200	27	24	22	20	19	18	17	16
20	1.33	240	32	29	27	25	23	21	20	19

▪ Tables

• IJ Series Nozzles Table - Part IV

MICRON CERAMIC NOZZLE IJ 005 AND 50005 (COLOR: LILAC)

ROW SPACING 95cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	80	10	9	8	7	7	4	6	5
15	1.00	100	12	11	10	9	9	8	8	5
20	1.33	120	15	14	12	11	10	9	8	7

CERAMIC NOZZLE MICRON IJ 01 AND 50001 (COLOR: ORANGE)

ROW SPACING 95cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	160	20	18	16	14	12	10	12	12
15	1.00	200	25	23	21	19	18	17	16	15
20	1.33	240	29	27	25	23	22	20	19	18

CERAMIC NOZZLE MICRON IJ 015 (COLOR: GREEN)

ROW SPACING 50 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	58	52	48	44	41	38	36	34
15	1.00	300	72	65	60	55	51	48	45	42
20	1.33	360	87	79	72	66	62	58	54	51

CERAMIC NOZZLE MICRON IJ 02 (COLOR: YELLOW)

ROW SPACING 50 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	77	70	64	59	55	51	48	45
15	1.00	400	96	87	80	74	68	64	60	56
20	1.33	480	115	105	96	88	82	77	72	68

▪ Tables

• IJ Series Nozzles Table - Part V

CERAMIC NOZZLE MICRON IJ 015 (COLOR: GREEN)

ROW SPACING 55cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	53	48	44	41	38	35	33	31
15	1.00	300	66	60	55	51	47	44	42	39
20	1.33	360	80	72	66	61	57	53	50	47

ROW SPACING 60CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	48	43	40	37	34	32	30	28
15	1.00	300	60	54	50	46	43	40	38	35
20	1.33	360	72	65	60	55	51	48	45	42

ROW SPACING 65 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	44	40	37	34	31	29	28	26
15	1.00	300	55	50	46	42	40	37	35	32
20	1.33	360	66	60	55	51	47	44	41	39

CERAMIC NOZZLE MICRON IJ 02 (COLOR: YELLOW)

ROW SPACING 55cm

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	71	78	59	55	50	47	44	42
15	1.00	400	88	80	73	68	63	59	55	52
20	1.33	480	106	96	43	81	75	71	66	62

ROW SPACING 60 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	64	85	53	50	45	42	40	38
15	1.00	400	80	73	66	62	57	53	50	47
20	1.33	480	96	87	80	74	68	64	60	56

ROW SPACING 65 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	59	78	49	46	41	39	37	35
15	1.00	400	74	67	61	57	52	49	46	43
20	1.33	480	88	80	74	68	63	59	55	52

▪ Tables

• IJ Series Nozzles Table - Part VI

CERAMIC NOZZLE MICRON IJ 015 (COLOR: GREEN)

ROW SPACING 70 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	41	36	34	31	29	27	25	24
15	1.00	300	51	46	42	39	36	34	32	30
20	1.33	360	61	55	51	47	43	41	38	36

ROW SPACING 75 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	38	35	32	29	27	21	20	19
15	1.00	300	48	44	40	37	34	26	25	23
20	1.33	360	58	52	48	44	41	32	30	28

ROW SPACING 80 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	35	33	30	27	25	20	19	18
15	1.00	300	45	41	37	35	32	24	23	21
20	1.33	360	54	49	45	41	38	30	28	26

CERAMIC NOZZLE MICRON IJ 02 (COLOR: YELLOW)

ROW SPACING 70 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	54	72	45	42	38	36	34	32
15	1.00	400	68	62	56	52	48	45	42	40
20	1.33	480	81	74	68	63	58	54	51	47

ROW SPACING 75 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	51	46	42	39	36	28	26	25
15	1.00	400	64	58	53	49	46	35	33	31
20	1.33	480	77	70	64	59	54	42	40	38

ROW SPACING 80 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	48	43	39	36	34	26	24	23
15	1.00	400	60	54	49	46	43	33	31	29
20	1.33	480	72	65	60	55	50	39	37	35

▪ Tables

• IJ Series Nozzles Table - Part VII

CERAMIC NOZZLE MICRON IJ 015 (COLOR: GREEN)

Row SPACING 85 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	33	31	28	25	24	18	18	17
15	1.00	300	42	39	35	32	30	23	22	20
20	1.33	360	51	46	42	39	36	28	26	25

Row SPACING 90 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	32	29	26	25	23	21	20	19
15	1.00	300	40	36	33	31	29	27	25	23
20	1.33	360	48	44	40	37	35	32	30	28

Row SPACING 95 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	240	30	27	25	24	22	20	19	18
15	1.00	300	38	34	31	29	27	26	24	22
20	1.33	360	45	42	38	35	33	30	28	27

CERAMIC NOZZLE MICRON IJ 02 (COLOR: YELLOW)

Row SPACING 85 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	45	40	37	34	32	25	23	22
15	1.00	400	56	51	46	43	40	31	29	27
20	1.33	480	68	61	56	52	47	37	35	33

Row SPACING 90 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	42	38	35	33	30	28	26	25
15	1.00	400	53	48	44	41	38	35	33	31
20	1.33	480	64	58	53	49	46	42	40	38

Row SPACING 95 CM

PRESSURE		FLOW/NOZZLE	TRACTOR SPEED (Km/h)							
			5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
PSI	BAR	ml / min	LITERS PER HECTARE (L/ha)							
10	0.66	320	40	36	33	31	28	27	25	24
15	1.00	400	50	45	42	39	36	33	31	29
20	1.33	480	61	55	50	46	44	40	38	36

▪ Tank

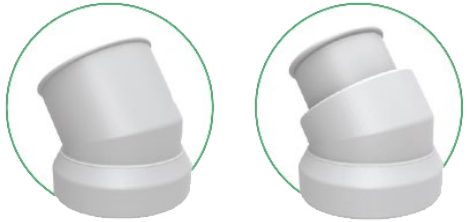
• Seed Reservoir (Popcorn Maker)

DEMETRA leaves the factory with the seed Reservoir (Popcorn Maker).

The Seed Reservoir (Popcorn Maker) has a compact (6 liters) and robust design. Provides easy seed runoff and makes it easy to change the discs and rings.

• Learn about the seed reservoir (Popcorn Maker)

We have nozzles available for:



Nozzle 360° to hose of **3”**

Nozzle 360° to hose of **2.5”**

NOZZLE 360°

Coupled to the hard hose*, it avoids kinking (sagging), flow cut during the supply and allows the total flow of the seeds from the central box.

***When purchasing the Popcorn Maker, choose which nozzle fits the hose it has - 3” or 2.5”.**

INSTALLATION

No adjustments or drilling required when mounting with the Titanium Mechanical Batcher.*

***Exclusive mounting on Titanium.**

HARDINESS

Resistant and waterproof, made from the same raw material as Titanium, it prevents rainwater and dust from entering.

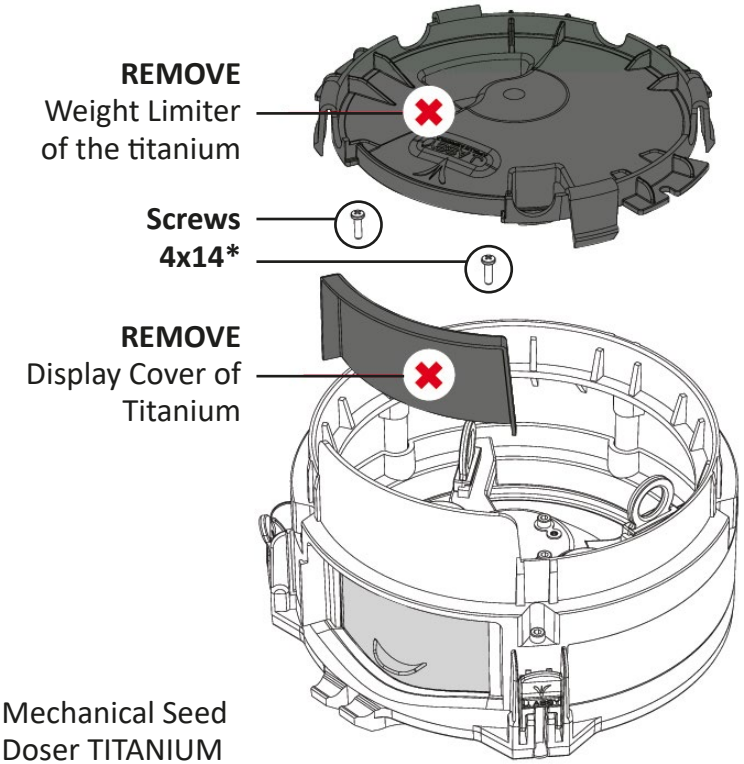
▪ Tank

• The installation of the seed reservoir (Popcorn Maker)

Before starting the installation:

1 **Remove the weight stop, the two 4x14* Phillips screws, and the display cover from the Titanium.**

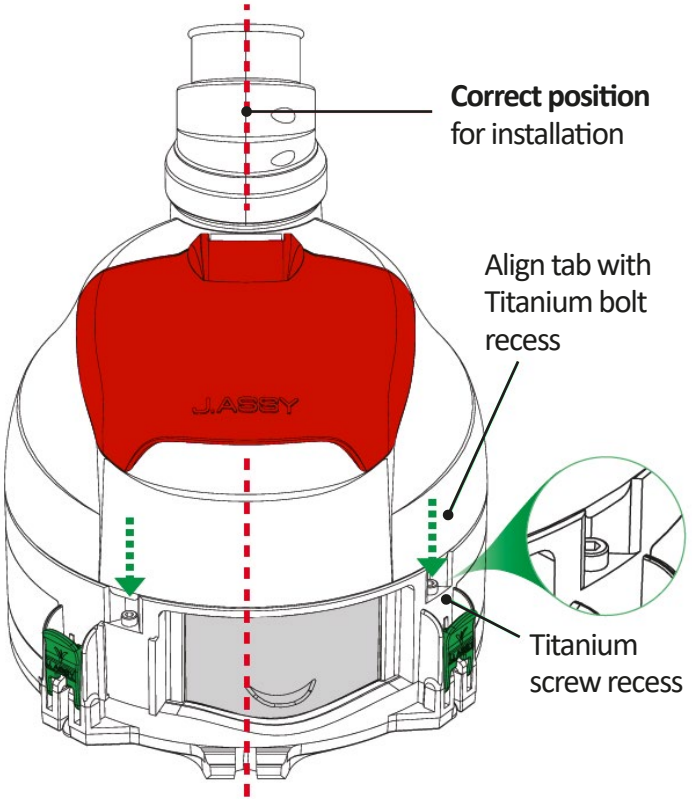
*Reserve the **4x14 screws** for **STEP 3.**



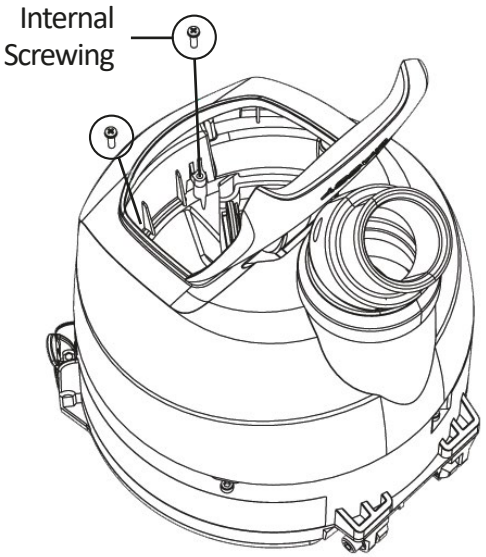
Mechanical Seed Doser TITANIUM

• Installing the Popcorn Maker in TITANIUM

2 **Align the tabs of the Popcorn Maker with the recesses of the Titanium screws** and place them into the vertical until it snaps into place and you hear a “click”.



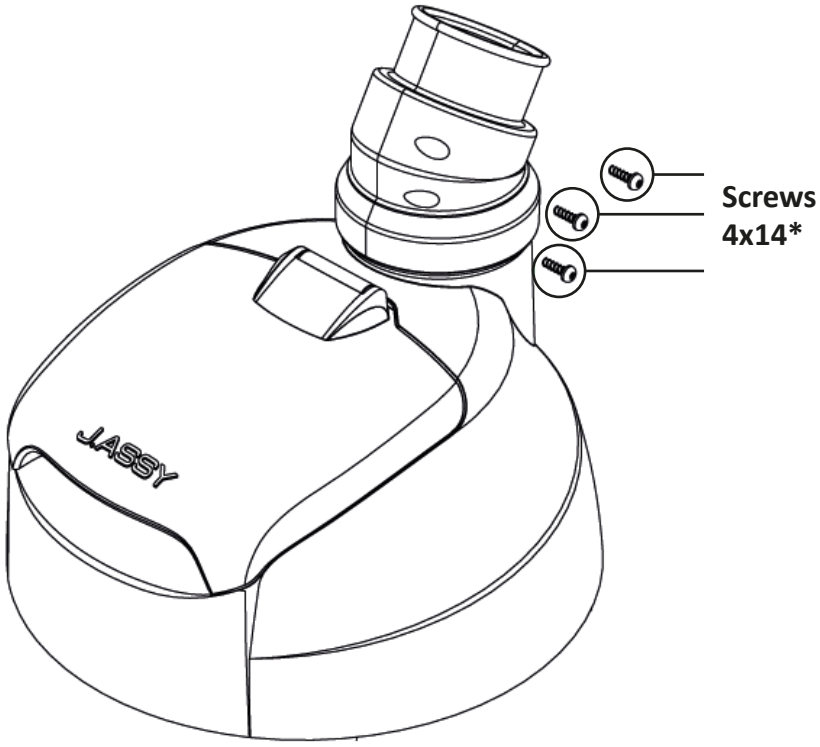
3 Open the lid of the Popcorn Maker and put in the **two 4x14 Phillips screws** (removed from the Titanium display cover).



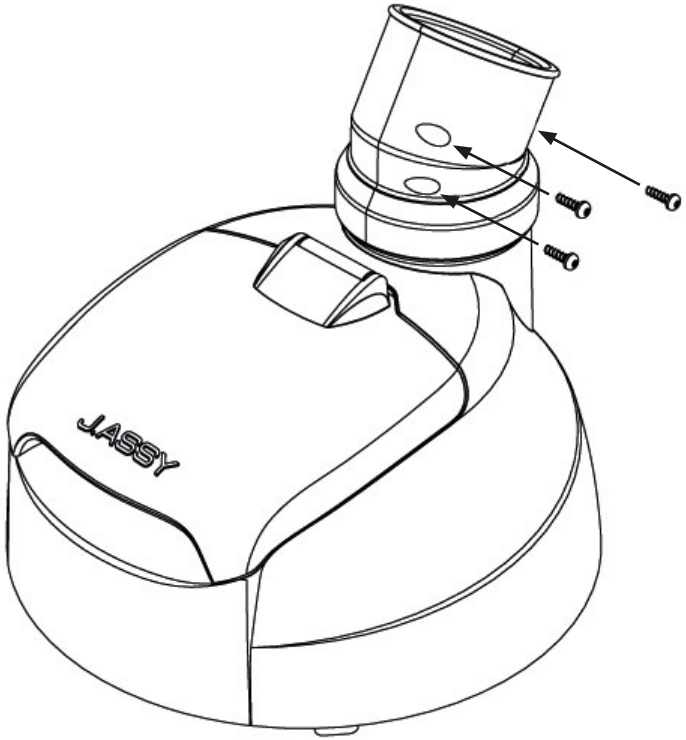
▪ Tank

• Changing the Popcorn Maker Nozzle

4 Remove **the three 4x14* Phillips screws** and remove the old nozzle.



5 Position the new nozzle and insert **the three 4x14 Phillips screws** (removed from the old nozzle).



The seed reservoir (Popcorn Maker) is ready for use.

Note: waterproofness against rain is not guaranteed after exchanging the nozzle.

▪ Batcher

• Batcher TITANIUM - Part I

DEMETRA leaves the factory with the seed batcher **TITANIUM**.

TITANIUM is the mechanical metering unit that provides seed distribution with a high rate of reduction of double seeds and crop failures:

COTTON | PEANUT | CANOLA | BEAN

SUNFLOWERS | CORN | SOYBEAN | SORGHUM

In order to ensure the **TITANIUM** batcher's full efficiency, use only the Apollo discs.

Front - Soybean Disc

APOLLO RAMPFLOW ®

(WAVY RAMP)

Apollo discs, of corn and soybean, with Rampflow technology.

When choosing the ring, it is also important to note that **TITANIUM** uses a unique ring, and no other type is compatible.

Apollo Rings

DISPLAY

It allows the viewing of the moving disk, assisting in the correct choice of disk and ring. In addition to allowing the monitoring of performance during planting.

▪ Batcher

• TITANIUM Batcher - Part II

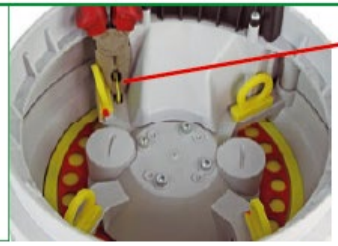
ESCOVAFLEX

It expels the seeds that did not fall by gravity. Its contact is equal, providing less friction and less mechanical damage to the seed.

POLIFLOWS

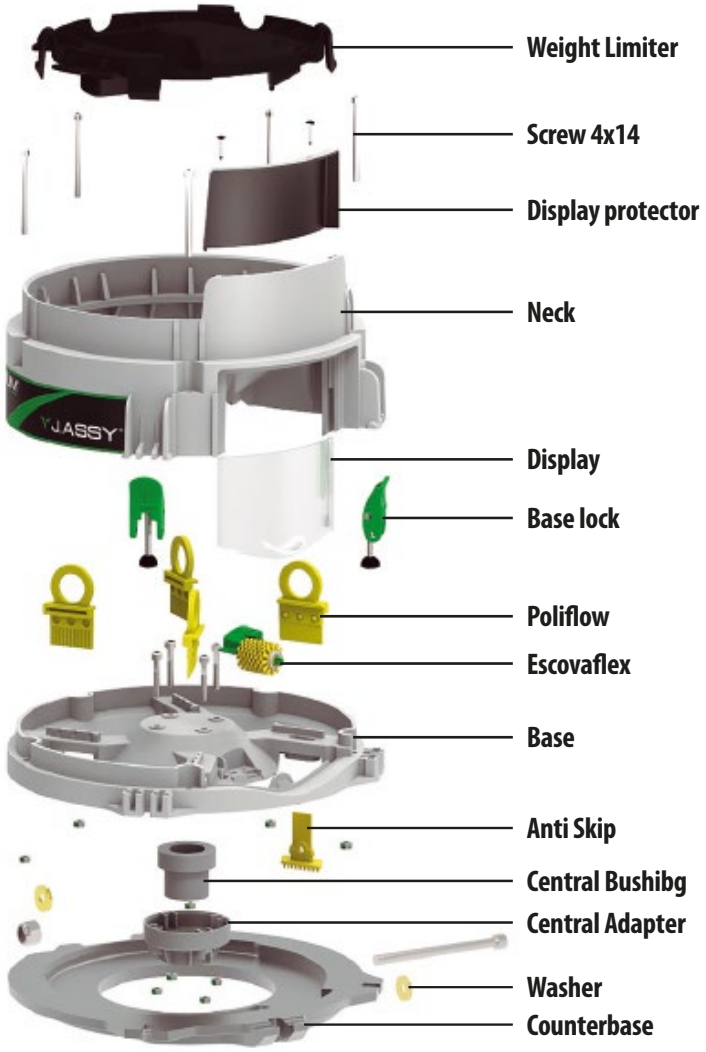
Organizers that guide the seeds precisely into the disk holes provide reduced doubles, failures, and minimize mechanical damage.

ANTI SKIP



It keeps the seeds in the holes after the last stage of the organization, in cases of skipping caused by the irregularity of the soil.

• TITANIUM Components



▪ Disks and Batcher Rings

• Discs and Rings - Standard (TITANIUM)

DEMETRA leaves the factory with some discs and standard rings.

CORN

1 DISC

28 Holes - ø12mm (Orange) - Thickness 4.0mm

4 RINGS

Yellow (Smooth) - Thickness 4.0mm
Green (Recess 1.0) - Thickness 4.0mm
Gray (Recess 1.6) - Thickness 4.0mm
Dark Blue (Recessed 2.5) - Thickness 4.0mm

SOYBEAN

2 DISCS

90 Holes - ø8mm (Orange) - Thickness 4.5mm
90 Holes - ø9mm (Lilac) - Thickness 5.5mm

2 RINGS

Lilac (Smooth) - Thickness 3.0mm
Purple (Recess 0.8) - Thickness 3.0mm

2 RINGS

Orange (Smooth) - Thickness 4.0mm
Light Orange (Recess 1.0) - Thickness 4.0mm

▪ Disks and Batcher Rings

• The right choice of discs and rings

Due to the diversity of shapes found in seeds, we have developed specific disc and ring models for each crop.

In order to guarantee the quality of the planting, in the choice of the disk is necessary to observe if the seeds:

It is well lodged in the hole of the disk, so that no two seeds fit in the same hole and don't get stuck.

Don't get exposed above of the disk.

IMPORTANT:

By choosing the right disk, the seeds will be well lodged in the holes and will not be above the disk.

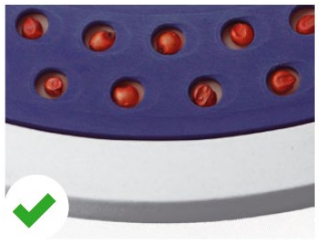
• Correct choice of disc

Example with the CORN DISK

Correctly housed seeds.

Seeds too tight or larger than the disk holes

Example with the SORGO DISK



Correctly housed seeds.

Loose seeds in the holes and occurrence of double.

Example with the SOY DISK

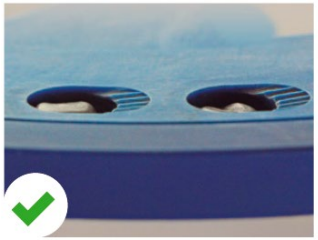
Correctly housed seeds.

Loose seeds in the holes and occurrence of double.

Disks and Batcher Rings

• Correct choice of RING

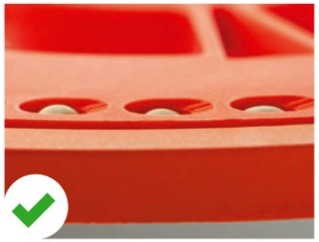
Example with the CORN RING



Seeds close to the edge of the set.

Exposed seeds.

Example with the SOY RING



Seeds close to the edge of the set.

Exposed seeds.

• Use of GRAPHITE

The graphite is essential for the system to work and also for perfect seed distribution, reducing doubles and failures, broken seeds, and system wear.

⚠ ATTENTION

If Demetra is equipped with a tank, never mix the graphite with the treatment, as the liquid treatment removes the lubricating function of the graphite.

Mix the graphite evenly, graphite evenly.

Do not sprinkle just on top of the seeds. Mix in all of them evenly.

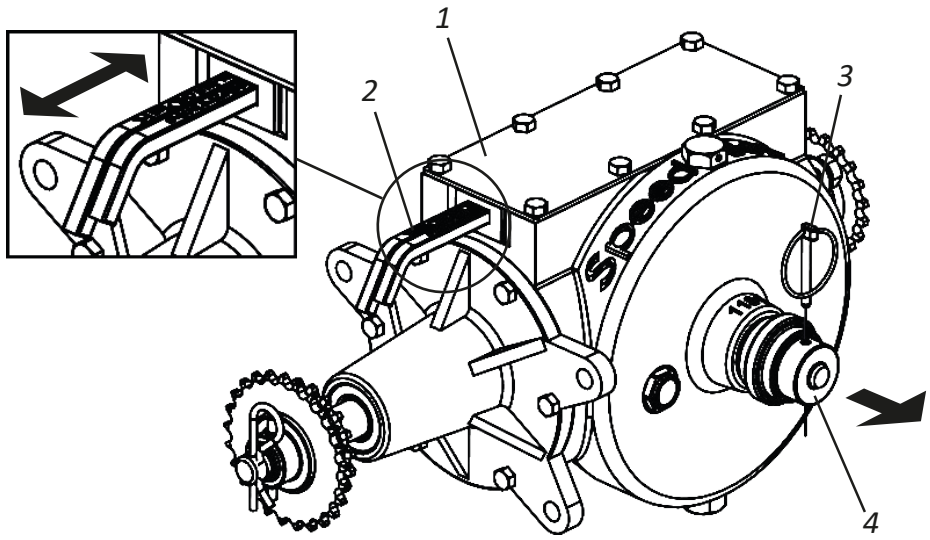
IMPORTANT Check with the manufacturer of your graphite to use the correct amount.

▪ Seed dispensing system

• Speed Box

The **DEMETRA** is equipped with the Speed Box system (1), which activates the distribution system with simple adjustments, ensuring the exchange of fast rotations. To adjust the seeds, proceed as follows:

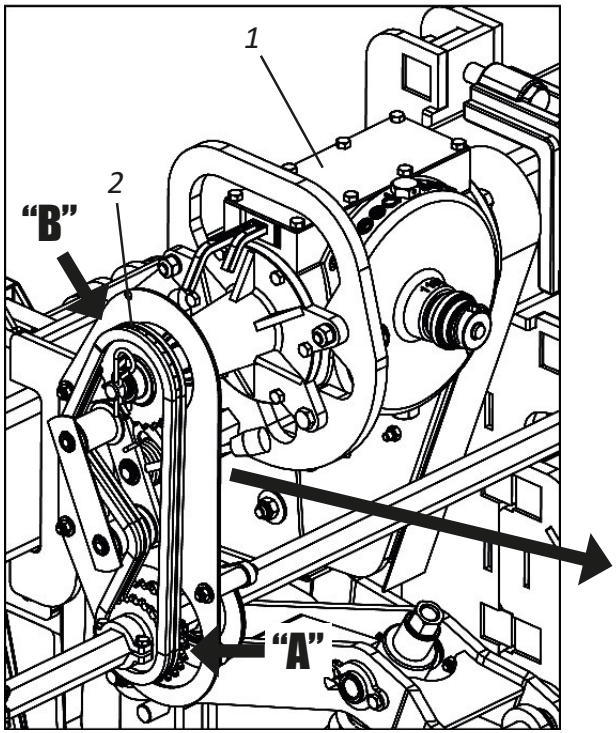
01 - Select the desired quantity in the tables and check the corresponding combination on the levers (2). **EXAMPLE:** Position **F2** in the table, indicates that the lever with letters must be in the **"F"** position and the lever with numbers must be in the **"2"** position.



02 - To move the levers, remove the lock (3), pull the handle (4), then adjust the levers according to the example above. When combining is complete, return the handle (4) and replace the lock (3).

• Regulation for seed dispensing

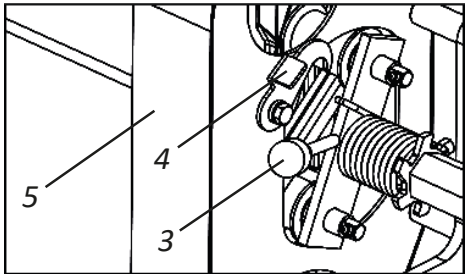
Seed adjustment is done through the Speed Box (1). To obtain more adjustments, reverse the current in the **"A"** and moved **"B"** drive gears. In order to reverse the chain (2) on the gears, proceed as follows:



01 - Turn the tensioner (3), taking the tension off the chain (2), and lock the turnbuckle (3) by means of the latch (4) located on the back of the protection cover (5).

02 - EThen reverse the chain (2) as needed to work.

03 - Then, hold the tensioner (3), release the lock (4), releasing it, returning the tension to the chain (2).



⚠ ATTENTION **After changing the gears, check the chain tension (2); if more pressure is needed in the tensioner (3), proceed as instructed on page 104.**

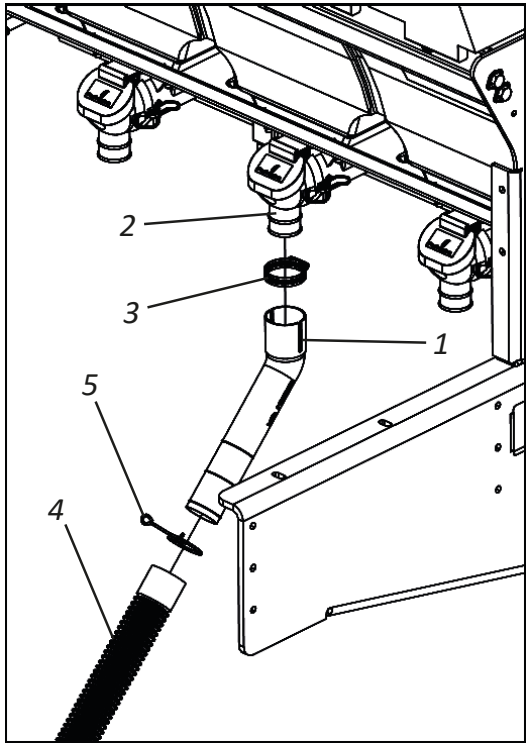
SEED Distribution Table per Rowar meter - DEMETRA																	
Ratchet hex shaft gear								20	Speed Box inlet gear								25
Speed Box Combination	Number of Holes in the Seed Dispenser Disc																
	17	18	19	20	24	26	28	30	38	40	48	50	62	64	72	90	100
F - 1	1,2	1,2	1,3	1,4	1,7	1,8	1,9	2,1	2,6	2,8	3,3	3,5	4,3	4,4	5,0	6,2	6,9
F - 2	1,3	1,4	1,5	1,6	1,9	2,0	2,2	2,3	3,0	3,1	3,7	3,9	4,8	5,0	5,6	7,0	7,8
E - 1	1,5	1,6	1,6	1,7	2,1	2,3	2,4	2,6	3,3	3,5	4,2	4,3	5,4	5,5	6,2	7,8	8,7
F - 3	1,5	1,6	1,7	1,8	2,1	2,3	2,5	2,7	3,4	3,6	4,3	4,5	5,5	5,7	6,4	8,0	8,9
E - 2	1,7	1,8	1,9	1,9	2,3	2,5	2,7	2,9	3,7	3,9	4,7	4,9	6,0	6,2	7,0	8,8	9,7
D - 1	1,8	1,9	2,0	2,1	2,5	2,7	2,9	3,1	3,9	4,2	5,0	5,2	6,4	6,6	7,5	9,3	10,4
F - 4	1,8	1,9	2,0	2,1	2,5	2,7	2,9	3,1	3,9	4,2	5,0	5,2	6,4	6,6	7,5	9,3	10,4
E - 3	1,9	2,0	2,1	2,2	2,7	2,9	3,1	3,3	4,2	4,5	5,3	5,6	6,9	7,1	8,0	10,0	11,1
D - 2	2,0	2,1	2,2	2,3	2,8	3,0	3,3	3,5	4,4	4,7	5,6	5,8	7,2	7,5	8,4	10,5	11,7
C - 1	2,1	2,2	2,3	2,4	2,9	3,2	3,4	3,6	4,6	4,8	5,8	6,1	7,5	7,8	8,7	10,9	12,1
F - 5	2,1	2,2	2,4	2,5	3,0	3,2	3,5	3,7	4,7	5,0	6,0	6,2	7,7	8,0	9,0	11,2	12,5
E - 4	2,2	2,3	2,5	2,6	3,1	3,4	3,6	3,9	4,9	5,2	6,2	6,5	8,1	8,3	9,3	11,7	13,0
D - 3	2,3	2,4	2,5	2,7	3,2	3,5	3,7	4,0	5,1	5,3	6,4	6,7	8,3	8,5	9,6	12,0	13,4
C - 2	2,3	2,5	2,6	2,7	3,3	3,5	3,8	4,1	5,2	5,5	6,5	6,8	8,5	8,7	9,8	12,3	13,6
B - 1	2,4	2,5	2,6	2,8	3,3	3,6	3,9	4,2	5,3	5,5	6,6	6,9	8,6	8,9	10,0	12,5	13,8
A - 1	2,6	2,8	3,0	3,1	3,7	4,1	4,4	4,7	5,9	6,2	7,5	7,8	9,7	10,0	11,2	14,0	15,6
A - 2	3,0	3,2	3,3	3,5	4,2	4,6	4,9	5,3	6,7	7,0	8,4	8,8	10,9	11,2	12,6	15,8	17,5
B - 3	3,0	3,2	3,4	3,6	4,3	4,6	5,0	5,3	6,8	7,1	8,5	8,9	11,0	11,4	12,8	16,0	17,8
C - 4	3,1	3,3	3,5	3,6	4,4	4,7	5,1	5,5	6,9	7,3	8,7	9,1	11,3	11,6	13,1	16,4	18,2
D - 5	3,2	3,4	3,6	3,7	4,5	4,9	5,2	5,6	7,1	7,5	9,0	9,3	11,6	12,0	13,5	16,8	18,7
E - 6	3,3	3,5	3,7	3,9	4,7	5,1	5,5	5,8	7,4	7,8	9,3	9,7	12,1	12,5	14,0	17,5	19,5
A - 3	3,4	3,6	3,8	4,0	4,8	5,2	5,6	6,0	7,6	8,0	9,6	10,0	12,4	12,8	14,4	18,0	20,0
B - 4	3,5	3,7	3,9	4,2	5,0	5,4	5,8	6,2	7,9	8,3	10,0	10,4	12,9	13,3	15,0	18,7	20,8
C - 5	3,7	3,9	4,1	4,4	5,2	5,7	6,1	6,5	8,3	8,7	10,5	10,9	13,5	14,0	15,7	19,6	21,8
D - 6	4,0	4,2	4,4	4,7	5,6	6,1	6,5	7,0	8,9	9,3	11,2	11,7	14,5	15,0	16,8	21,0	23,4
A - 4	4,0	4,2	4,4	4,7	5,6	6,1	6,5	7,0	8,9	9,3	11,2	11,7	14,5	15,0	16,8	21,0	23,4
B - 5	4,2	4,5	4,7	5,0	6,0	6,5	7,0	7,5	9,5	10,0	12,0	12,5	15,5	16,0	17,9	22,4	24,9
C - 6	4,6	4,9	5,2	5,5	6,5	7,1	7,6	8,2	10,4	10,9	13,1	13,6	16,9	17,5	19,6	24,5	27,3
A - 5	4,8	5,0	5,3	5,6	6,7	7,3	7,9	8,4	10,7	11,2	13,5	14,0	17,4	17,9	20,2	25,2	28,0
B - 6	5,3	5,6	5,9	6,2	7,5	8,1	8,7	9,3	11,8	12,5	15,0	15,6	19,3	19,9	22,4	28,0	31,2
A - 6	6,0	6,3	6,7	7,0	8,4	9,1	9,8	10,5	13,3	14,0	16,8	17,5	21,7	22,4	25,2	31,6	35,1

SEED Distribution Table per Rowar meter - DEMETRA																	
Ratchet hex shaft gear								25	Speed Box inlet gear								20
Speed Box combination	Number of Holes in the Seed Dispenser Disc																
	17	18	19	20	24	26	28	30	38	40	48	50	62	64	72	90	100
F - 1	1,8	1,9	2,1	2,2	2,6	2,8	3,0	3,2	4,1	4,3	5,2	5,4	6,7	6,9	7,8	9,7	10,8
F - 2	2,1	2,2	2,3	2,4	2,9	3,2	3,4	3,7	4,6	4,9	5,8	6,1	7,5	7,8	8,8	11,0	12,2
E - 1	2,3	2,4	2,6	2,7	3,2	3,5	3,8	4,1	5,1	5,4	6,5	6,8	8,4	8,7	9,7	12,2	13,5
F - 3	2,4	2,5	2,6	2,8	3,3	3,6	3,9	4,2	5,3	5,6	6,7	7,0	8,6	8,9	10,0	12,5	13,9
E - 2	2,6	2,7	2,9	3,0	3,7	4,0	4,3	4,6	5,8	6,1	7,3	7,6	9,4	9,7	11,0	13,7	15,2
D - 1	2,8	2,9	3,1	3,2	3,9	4,2	4,5	4,9	6,2	6,5	7,8	8,1	10,1	10,4	11,7	14,6	16,2
F - 4	2,8	2,9	3,1	3,2	3,9	4,2	4,5	4,9	6,2	6,5	7,8	8,1	10,1	10,4	11,7	14,6	16,2
E - 3	3,0	3,1	3,3	3,5	4,2	4,5	4,9	5,2	6,6	7,0	8,3	8,7	10,8	11,1	12,5	15,7	17,4
D - 2	3,1	3,3	3,5	3,7	4,4	4,7	5,1	5,5	6,9	7,3	8,8	9,1	11,3	11,7	13,1	16,4	18,3
C - 1	3,2	3,4	3,6	3,8	4,5	4,9	5,3	5,7	7,2	7,6	9,1	9,5	11,7	12,1	13,6	17,0	18,9
F - 5	3,3	3,5	3,7	3,9	4,7	5,1	5,5	5,8	7,4	7,8	9,3	9,7	12,1	12,5	14,0	17,5	19,5
E - 4	3,4	3,7	3,9	4,1	4,9	5,3	5,7	6,1	7,7	8,1	9,7	10,1	12,6	13,0	14,6	18,3	20,3
D - 3	3,5	3,8	4,0	4,2	5,0	5,4	5,8	6,3	7,9	8,3	10,0	10,4	12,9	13,4	15,0	18,8	20,9
C - 2	3,6	3,8	4,0	4,3	5,1	5,5	6,0	6,4	8,1	8,5	10,2	10,7	13,2	13,6	15,3	19,2	21,3
B - 1	3,7	3,9	4,1	4,3	5,2	5,6	6,1	6,5	8,2	8,7	10,4	10,8	13,4	13,8	15,6	19,5	21,6
A - 1	4,1	4,4	4,6	4,9	5,8	6,3	6,8	7,3	9,3	9,7	11,7	12,2	15,1	15,6	17,5	21,9	24,3
A - 2	4,7	4,9	5,2	5,5	6,6	7,1	7,7	8,2	10,4	11,0	13,1	13,7	17,0	17,5	19,7	24,6	27,4
B - 3	4,7	5,0	5,3	5,6	6,7	7,2	7,8	8,3	10,6	11,1	13,4	13,9	17,3	17,8	20,0	25,0	27,8
C - 4	4,8	5,1	5,4	5,7	6,8	7,4	8,0	8,5	10,8	11,4	13,6	14,2	17,6	18,2	20,5	25,6	28,4
D - 5	5,0	5,3	5,6	5,8	7,0	7,6	8,2	8,8	11,1	11,7	14,0	14,6	18,1	18,7	21,0	26,3	29,2
E - 6	5,2	5,5	5,8	6,1	7,3	7,9	8,5	9,1	11,6	12,2	14,6	15,2	18,9	19,5	21,9	27,4	30,4
A - 3	5,3	5,6	5,9	6,3	7,5	8,1	8,8	9,4	11,9	12,5	15,0	15,7	19,4	20,0	22,5	28,2	31,3
B - 4	5,5	5,8	6,2	6,5	7,8	8,4	9,1	9,7	12,3	13,0	15,6	16,2	20,1	20,8	23,4	29,2	32,5
C - 5	5,8	6,1	6,5	6,8	8,2	8,9	9,5	10,2	13,0	13,6	16,4	17,0	21,1	21,8	24,5	30,7	34,1
D - 6	6,2	6,6	6,9	7,3	8,8	9,5	10,2	11,0	13,9	14,6	17,5	18,3	22,6	23,4	26,3	32,9	36,5
A - 4	6,2	6,6	6,9	7,3	8,8	9,5	10,2	11,0	13,9	14,6	17,5	18,3	22,6	23,4	26,3	32,9	36,5
B - 5	6,6	7,0	7,4	7,8	9,3	10,1	10,9	11,7	14,8	15,6	18,7	19,5	24,2	24,9	28,0	35,1	39,0
C - 6	7,2	7,7	8,1	8,5	10,2	11,1	11,9	12,8	16,2	17,0	20,5	21,3	26,4	27,3	30,7	38,3	42,6
A - 5	7,4	7,9	8,3	8,8	10,5	11,4	12,3	13,1	16,7	17,5	21,0	21,9	27,2	28,0	31,6	39,4	43,8
B - 6	8,3	8,8	9,3	9,7	11,7	12,7	13,6	14,6	18,5	19,5	23,4	24,3	30,2	31,2	35,1	43,8	48,7
A - 6	9,3	9,9	10,4	11,0	13,1	14,2	15,3	16,4	20,8	21,9	26,3	27,4	34,0	35,1	39,4	49,3	54,8

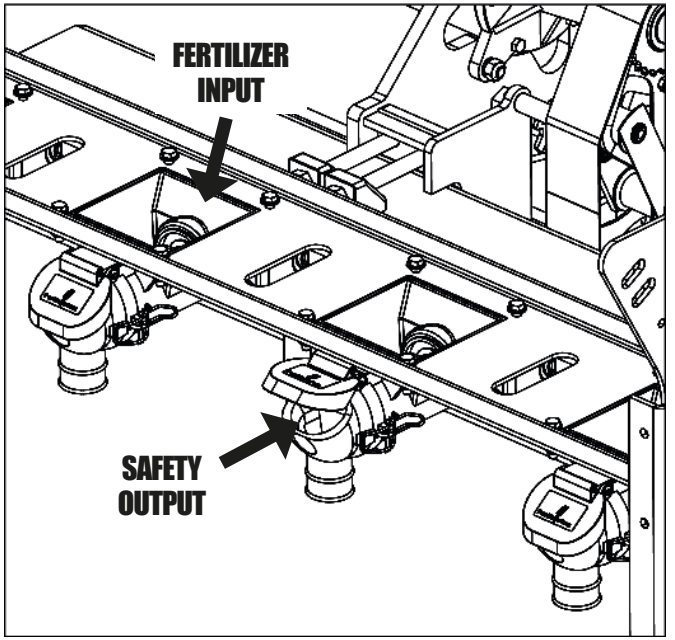
▪ Fertilizer dispensing system

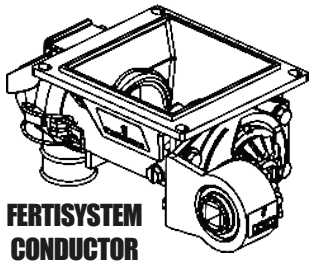
• Fertisystem fertilizer conductor

To carry the fertilizer from the dispenser to the ground, fit the spouts in degree (1) to the fertisystem conductor outlets (2) through the clips (3). Then place the hoses (4) on the nozzles in degree (1) through the lock spring (5).



The Fertisystem system has safety outputs that guarantee the proper functioning of the system without damaging it. In case of clogging of the hose and the batcher, clean the batcher until the end of the hose near the furrower rod or double disc, as the system may become clogged by roots, pieces of plastic and other objects.





⚠ ATTENTION

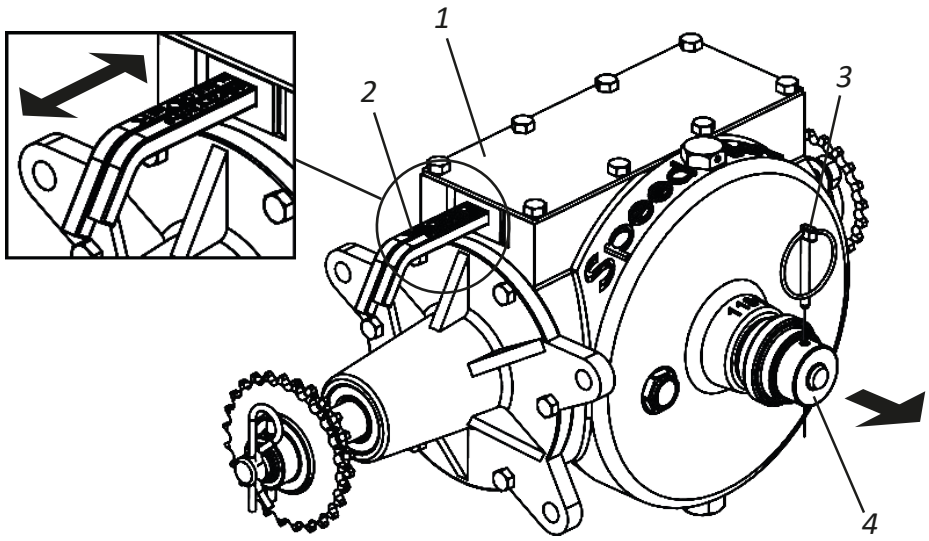
Check batchers and hoses daily and clean their outlets. When the fertilizer has impurities or is damp, clean it more often.

▪ Fertilizer dispensing system

• Speed Box

The **DEMETRA** is equipped with the Speed Box system (1), which activates the distribution system with simple adjustments, ensuring the exchange of fast rotations. To adjust the fertilizer, proceed as follows:

01 - Select the desired quantity in the tables and check the corresponding combination on the levers (2). **EXAMPLE:** Position **F2** in the table, indicates that the lever with letters must be in the **"F"** position and the lever with numbers must be in the **"2"** position.



02 - To move the levers, remove the lock (3), pull the handle (4), then adjust the levers according to the example above. When combining is complete, return the handle (4) and replace the lock (3).

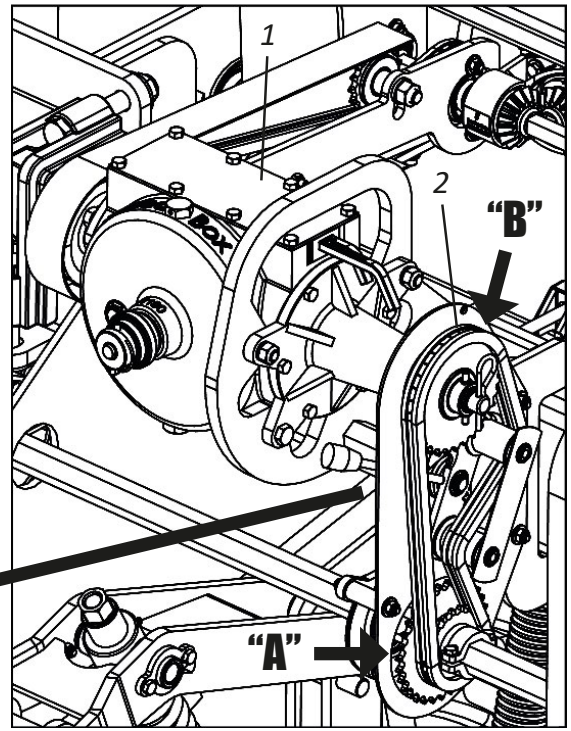
• Regulation for fertilizer dispensing

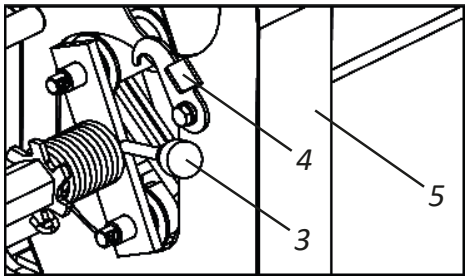
The fertilizer adjustment is done through the Speed Box (1). To obtain more adjustments, reverse the current in the **"A"** and moved **"B"** drive gears. In order to reverse the chain (2) on the gears, proceed as follows:

01 - Turn the tensioner (3), taking the tension off the chain (2), and lock the turnbuckle (3) by means of the latch (4) located on the back of the protection cover (5).

02 - Then reverse the chain (2) as needed to work.

03 - Then, hold the tensioner (3), release the lock (4), releasing it, returning the tension to the chain (2).





⚠ ATTENTION **After changing the gears, check the chain tension (2); if more pressure is needed in the tensioner (3), proceed as instructed on page 104.**

FERTILIZER distribution table per Rowar meter - DEMETRA															
Ratchet hex shaft gear						20	Speed Box inlet gear								31
Speed Box combination	Grams 50 m	415	430	450	500	550	600	650	700	750	800	850	900	950	1000
F - 1	276	133	128	123	110	100	92	85	79	74	69	65	61	58	55
F - 2	311	150	145	138	124	113	104	96	89	83	78	73	69	65	62
E - 1	345	166	161	153	138	126	115	106	99	92	86	81	77	73	69
F - 3	355	171	165	158	142	129	118	109	101	95	89	84	79	75	71
E - 2	388	187	181	173	155	141	129	119	111	104	97	91	86	82	78
D - 1	414	200	193	184	166	151	138	127	118	110	104	97	92	87	83
F - 4	414	200	193	184	166	151	138	127	118	110	104	97	92	87	83
E - 3	444	214	206	197	178	161	148	137	127	118	111	104	99	93	89
D - 2	466	225	217	207	186	169	155	143	133	124	117	110	104	98	93
C - 1	483	233	225	215	193	176	161	149	138	129	121	114	107	102	97
F - 5	497	240	231	221	199	181	166	153	142	133	124	117	110	105	99
E - 4	518	250	241	230	207	188	173	159	148	138	129	122	115	109	104
D - 3	533	257	248	237	213	194	178	164	152	142	133	125	118	112	107
C - 2	544	262	253	242	217	198	181	167	155	145	136	128	121	114	109
B - 1	552	266	257	245	221	201	184	170	158	147	138	130	123	116	110
A - 1	621	299	289	276	249	226	207	191	178	166	155	146	138	131	124
A - 2	699	337	325	311	280	254	233	215	200	186	175	164	155	147	140
B - 3	710	342	330	316	284	258	237	218	203	189	178	167	158	149	142
C - 4	725	349	337	322	290	264	242	223	207	193	181	171	161	153	145
D - 5	746	359	347	331	298	271	249	229	213	199	186	175	166	157	149
E - 6	777	374	361	345	311	282	259	239	222	207	194	183	173	164	155
A - 3	799	385	372	355	320	291	266	246	228	213	200	188	178	168	160
B - 4	828	399	385	368	331	301	276	255	237	221	207	195	184	174	166
C - 5	870	419	405	387	348	316	290	268	249	232	217	205	193	183	174
D - 6	932	449	434	414	373	339	311	287	266	249	233	219	207	196	186
A - 4	932	449	434	414	373	339	311	287	266	249	233	219	207	196	186
B - 5	994	479	462	442	398	362	331	306	284	265	249	234	221	209	199
C - 6	1087	524	506	483	435	395	362	335	311	290	272	256	242	229	217
A - 5	1118	539	520	497	447	407	373	344	320	298	280	263	249	235	224
B - 6	1243	599	578	552	497	452	414	382	355	331	311	292	276	262	249
A - 6	1398	674	650	621	559	508	466	430	399	373	350	329	311	294	280

FERTILIZER distribution table per Rowar meter - DEMETRA															
Ratchet hex shaft gear						31	Speed Box inlet gear								20
Speed Box combination	Grams 50 m	415	430	450	500	550	600	650	700	750	800	850	900	950	1000
F - 1	663	320	309	295	265	241	221	204	190	177	166	156	147	140	133
F - 2	746	360	347	332	299	271	249	230	213	199	187	176	166	157	149
E - 1	829	400	386	369	332	302	276	255	237	221	207	195	184	175	166
F - 3	853	411	397	379	341	310	284	262	244	227	213	201	190	180	171
E - 2	933	450	434	415	373	339	311	287	267	249	233	220	207	196	187
D - 1	995	480	463	442	398	362	332	306	284	265	249	234	221	210	199
F - 4	995	480	463	442	398	362	332	306	284	265	249	234	221	210	199
E - 3	1066	514	496	474	427	388	355	328	305	284	267	251	237	224	213
D - 2	1120	540	521	498	448	407	373	344	320	299	280	263	249	236	224
C - 1	1161	560	540	516	464	422	387	357	332	310	290	273	258	244	232
F - 5	1194	576	555	531	478	434	398	367	341	318	299	281	265	251	239
E - 4	1244	600	579	553	498	452	415	383	355	332	311	293	276	262	249
D - 3	1280	617	595	569	512	465	427	394	366	341	320	301	284	269	256
C - 2	1306	629	608	581	522	475	435	402	373	348	327	307	290	275	261
B - 1	1327	639	617	590	531	483	442	408	379	354	332	312	295	279	265
A - 1	1493	719	694	663	597	543	498	459	427	398	373	351	332	314	299
A - 2	1679	809	781	746	672	611	560	517	480	448	420	395	373	354	336
B - 3	1706	822	794	758	682	620	569	525	487	455	427	401	379	359	341
C - 4	1742	839	810	774	697	633	581	536	498	464	435	410	387	367	348
D - 5	1791	863	833	796	717	651	597	551	512	478	448	421	398	377	358
E - 6	1866	899	868	829	746	679	622	574	533	498	467	439	415	393	373
A - 3	1919	925	893	853	768	698	640	591	548	512	480	452	427	404	384
B - 4	1990	959	926	885	796	724	663	612	569	531	498	468	442	419	398
C - 5	2090	1007	972	929	836	760	697	643	597	557	522	492	464	440	418
D - 6	2239	1079	1041	995	896	814	746	689	640	597	560	527	498	471	448
A - 4	2239	1079	1041	995	896	814	746	689	640	597	560	527	498	471	448
B - 5	2388	1151	1111	1062	955	869	796	735	682	637	597	562	531	503	478
C - 6	2612	1259	1215	1161	1045	950	871	804	746	697	653	615	581	550	522
A - 5	2687	1295	1250	1194	1075	977	896	827	768	717	672	632	597	566	537
B - 6	2986	1439	1389	1327	1194	1086	995	919	853	796	746	702	663	629	597
A - 6	3359	1619	1562	1493	1344	1221	1120	1033	960	896	840	790	746	707	672

▪ Calculations

• Practical calculation for fertilizer dispensing

01 - Determine the spacing between Rows and the amount of fertilizer to be distributed per bushel (Aa) or hectare (Ha).

02 - **Example:** Seeder with a spacing of 500 mm, to distribute 500 kg of fertilizer per Ha, use the formula below:

Fórmula: $X = \frac{E \times Q}{A} \times D$

WHERE:

E = Spacing between Rows (mm)
Q = Amount of fertilizer to be distributed (kg)
A = Area to be fertilized (m^2)
D = 50 meters distance (test)
X = Fertilizer grams to 50 meters

Resolve: $X = \frac{500 \times 500}{10.000} \times 50$

$X = 25 \times 50 = 1250$

X = 1250 grams to 50 meters per row

• Practical test to measure the amount of fertilizer and seed dispensing

01 - For greater precision in the distribution of fertilizer or seed, make the quantity test to be distributed at the planting site, because for each land there is a condition.

02 - Mark the test distance in the table, we chose 50 Rowar meters.

03 - Fill the seeder tanks at least halfway. Run an average of 10 meters outside the test area so that the fertilizer and seeds fill the batchers.

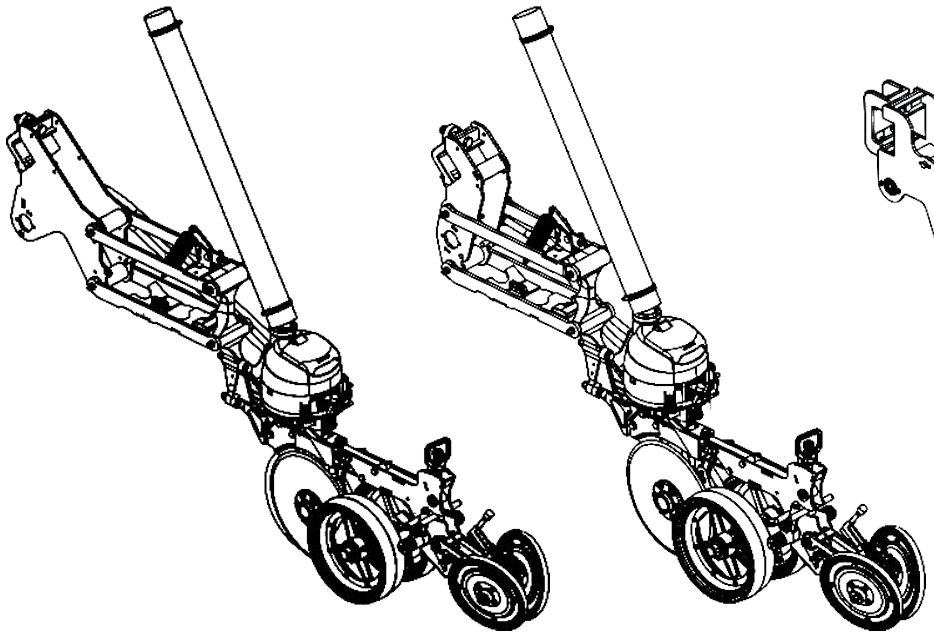
04 - Seal the exit of the seed nozzles and place containers for collection in the fertilizer outlets. Move the tractor in the demarcated area, always at the same speed you will plant, from 5 to 7 km/h.

05 - After going through the marked space, remove the seal from the seed spout and collect them for counting and also collect the fertilizer to weigh the collected quantity. If necessary, increase or decrease the amount of seed and fertilizer to be distributed, check the table

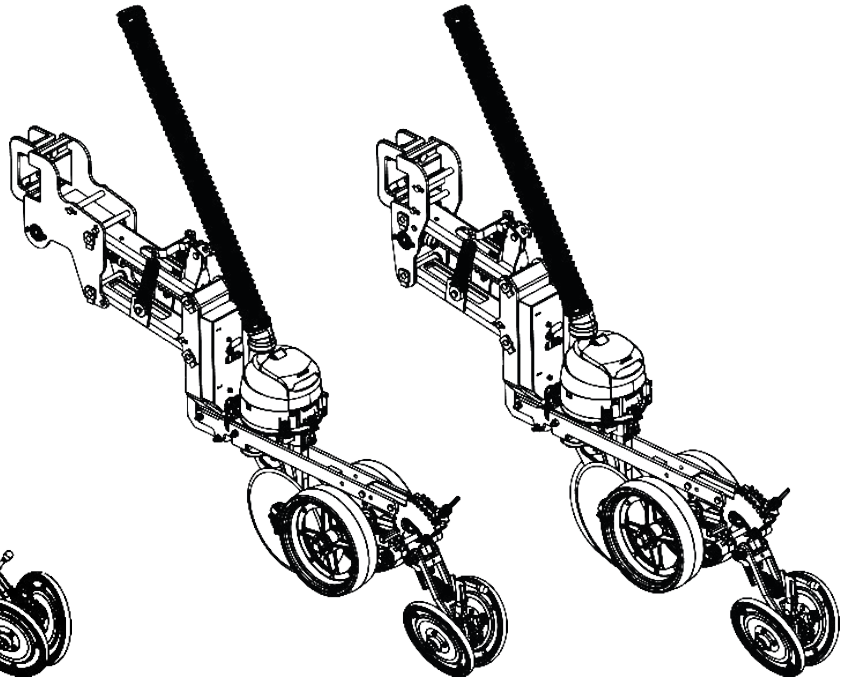
⚠ ATTENTION | **We suggest that a practical test be carried out on the dispensing of the fertilizer and seed, over 50 m, to later compare the results of the fertilizer and the seed.**

▪ Planting rows

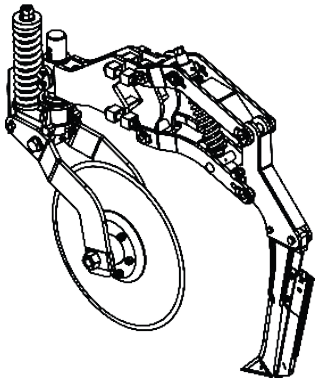
• Planting rows models



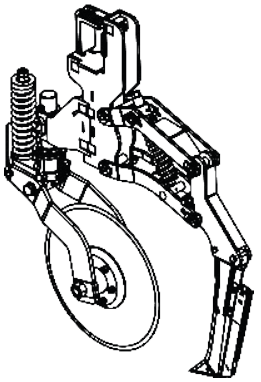
BIGGER AND SMALLER PANTOGRAPH ROWS
FOR 3RD DEMETRA TANK VERSION 4500



BIGGER AND SMALLER PANTOGRAPH ROWS
FOR 3RD DEMETRA TANK VERSION 5500



FRONT FERTILIZER CART
WITH FURROWER



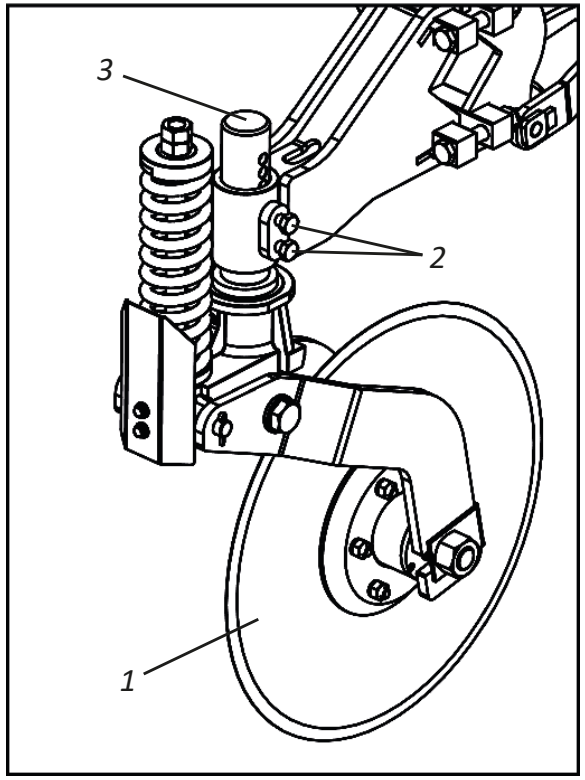
REAR FERTILIZER CART
WITH FURROWER

▪ Adjusting the Rows

• Adjusting the cutting disc depth

To adjust the depth of the cutting disc (1), proceed as follows:

01 - Loosen the screws (2) and move the shaft (3) to the desired adjustment.
02 - Then, retighten the screws (2).



⚠ ATTENTION

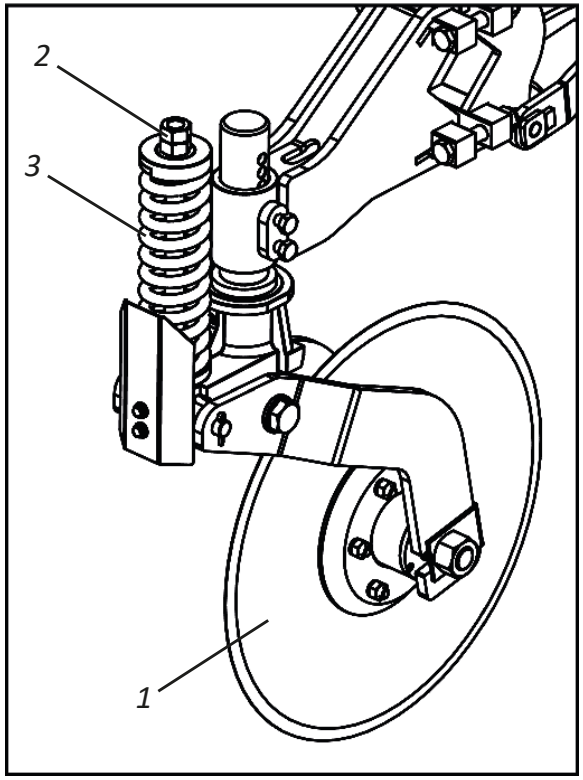
When adjusting the pressure of the cutting disc, take care not to cancel the articulating action of the cutting disc.

• Adjusting the cutting disc pressure

To adjust the pressure of the cutting disc (1), proceed as follows:

01 - Turn the nut (2) **CLOCKWISE** to increase pressure on the spring (3).
02 - Turn the nut (2) **COUNTERCLOCKWISE** to decrease pressure on the spring.

PRESSURE REGULATION
(+) INCREASED SPRING PRESSURE:
INCREASED PRESSURE OF CUTTING DISC IN THE SOIL.
(-) DECREASED SPRING PRESSURE:
DECREASED PRESSURE OF CUTTING DISC IN THE SOIL.

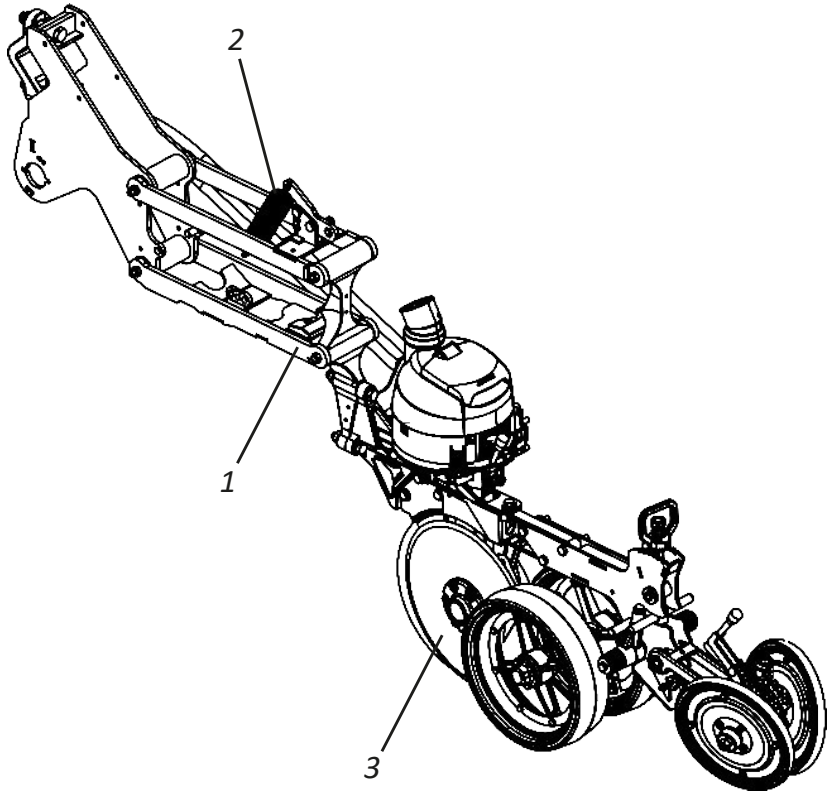


❗ IMPORTANT | **The depth and pressure adjustments of the cutting disc must be made in the field before starting work, observing the type of soil to be worked, to obtain a better performance of the seeder.**

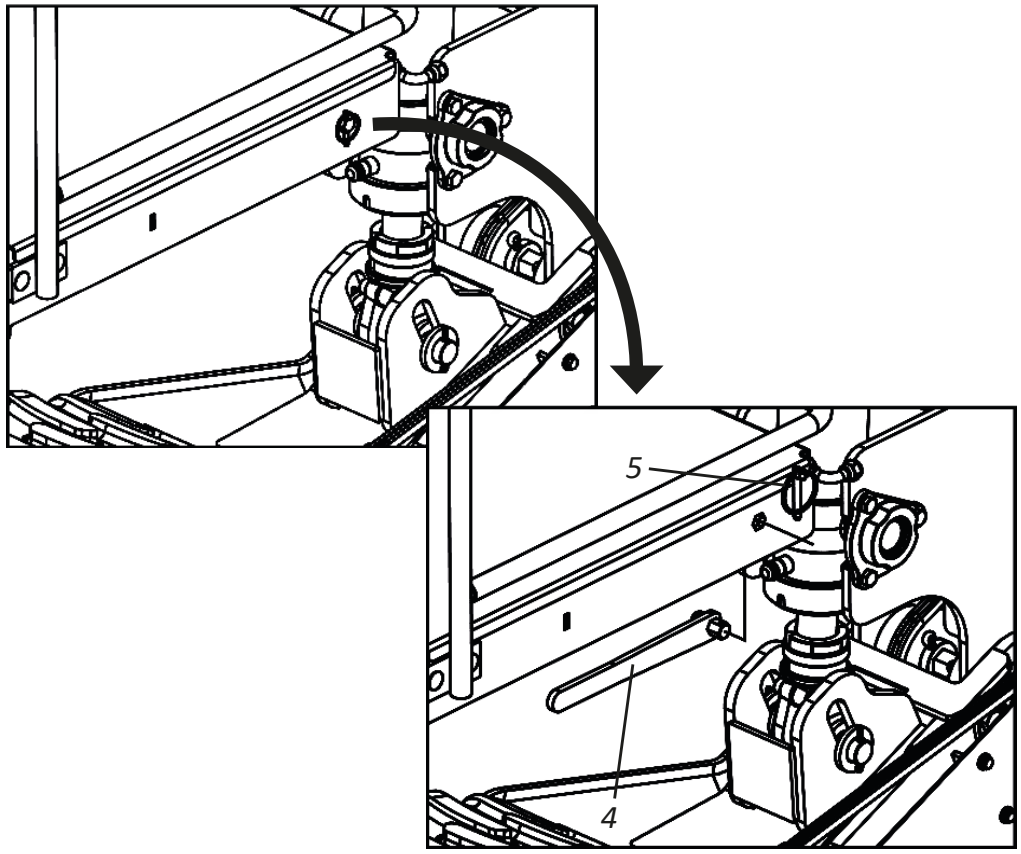
▪ Adjusting the Rows

• Spring Pressure Adjustment (DEMETRA 4500) - Part I

The Row (1) has a pressure spring (2) that, when regulated to give more or less pressure, will increase or decrease the force on the double disk (3). To adjust the pressure on the springs, proceed as follows:



01 - Take the key (4) that is fixed on the side of the seeder, releasing it through the ring lock (5).



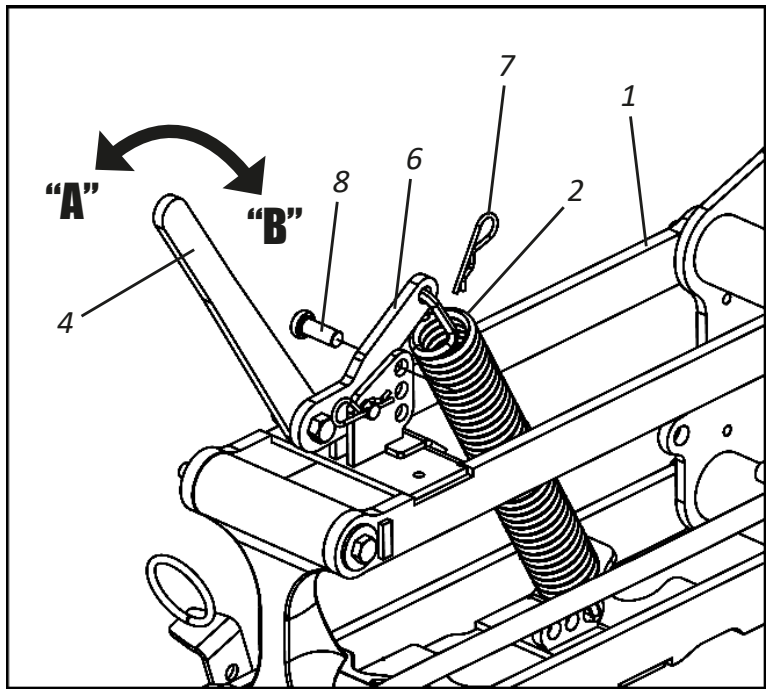
NOTE **This adjustment, giving more or less pressure in the spring, should be made in the field before starting work, observing the type of soil to be worked, to obtain a better performance from the seeder.**

▪ Adjusting the rows

• Spring Pressure Adjustment (DEMETRA 4500) - Part II

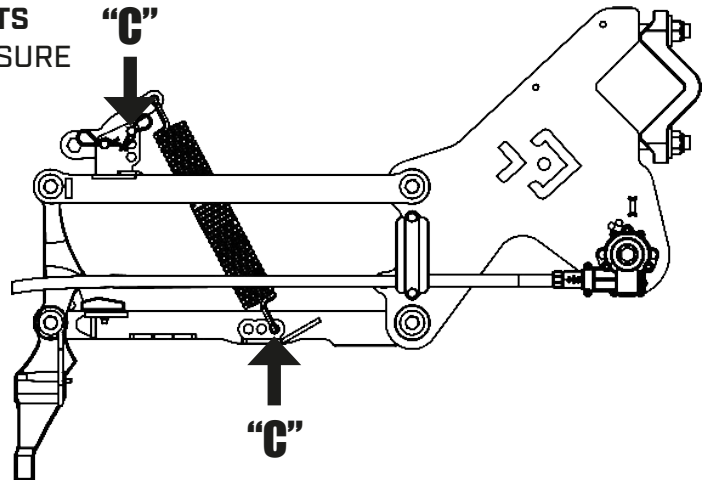
02 - Then, place the key (4) on the lever (6) of the line (1), release the lock (7), remove the pin (8). Then, move the key (4) adjusting the lever (6) to the desired position.

03 - Finish by locking the lever (6) again with the pin (8) and lock (7).

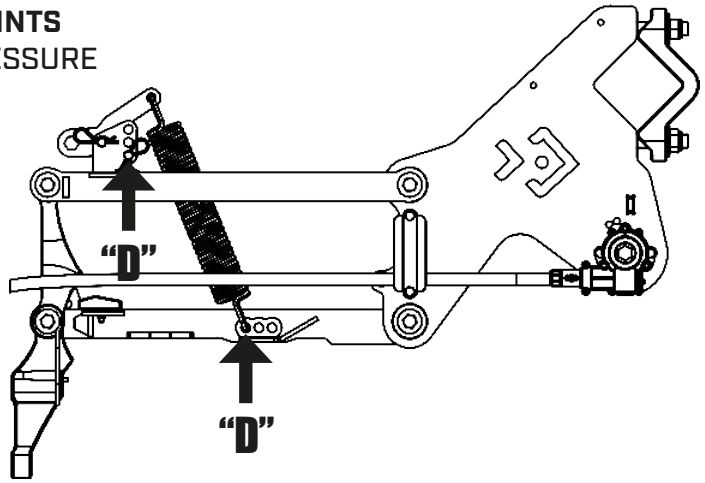


LEVER POSITION "A"	HIGHER SPRING PRESSURE.
LEVER POSITION "B"	LOWER SPRING PRESSURE.

"C" POINTS
MORE PRESSURE



"D" POINTS
LESS PRESSURE



⚠ ATTENTION

When adjusting the spring pressure (2), check which of the adjustment points "C" and "D" best meet your work needs. This adjustment must be made in the field before starting work, observing the type of soil to be worked.

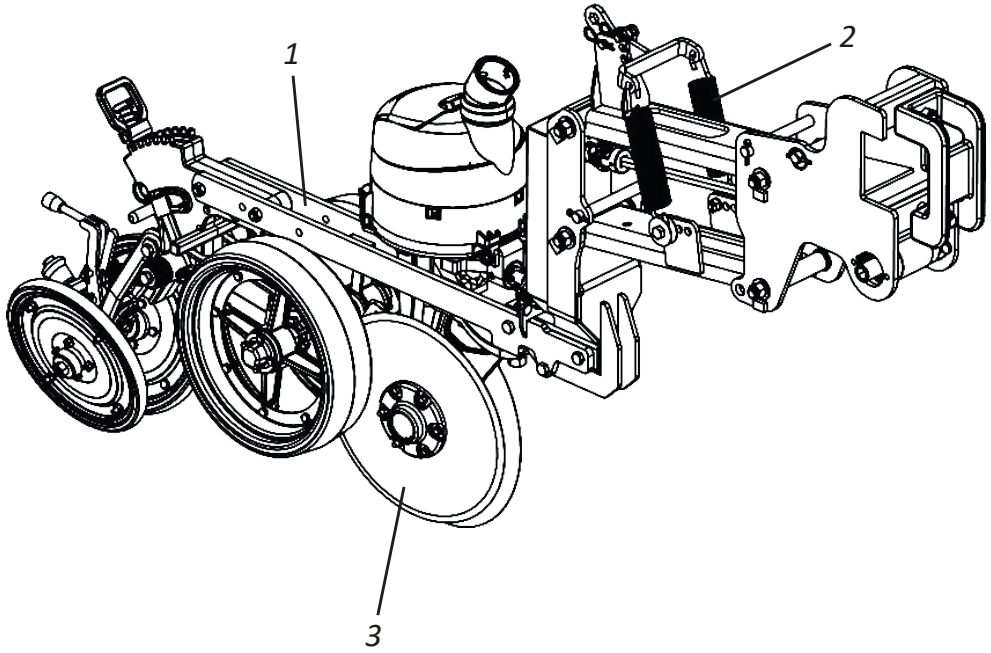
❗ IMPORTANT

Check the working depth of each row several times during planting, especially on land where there are variations in humidity, soil or other conditions.

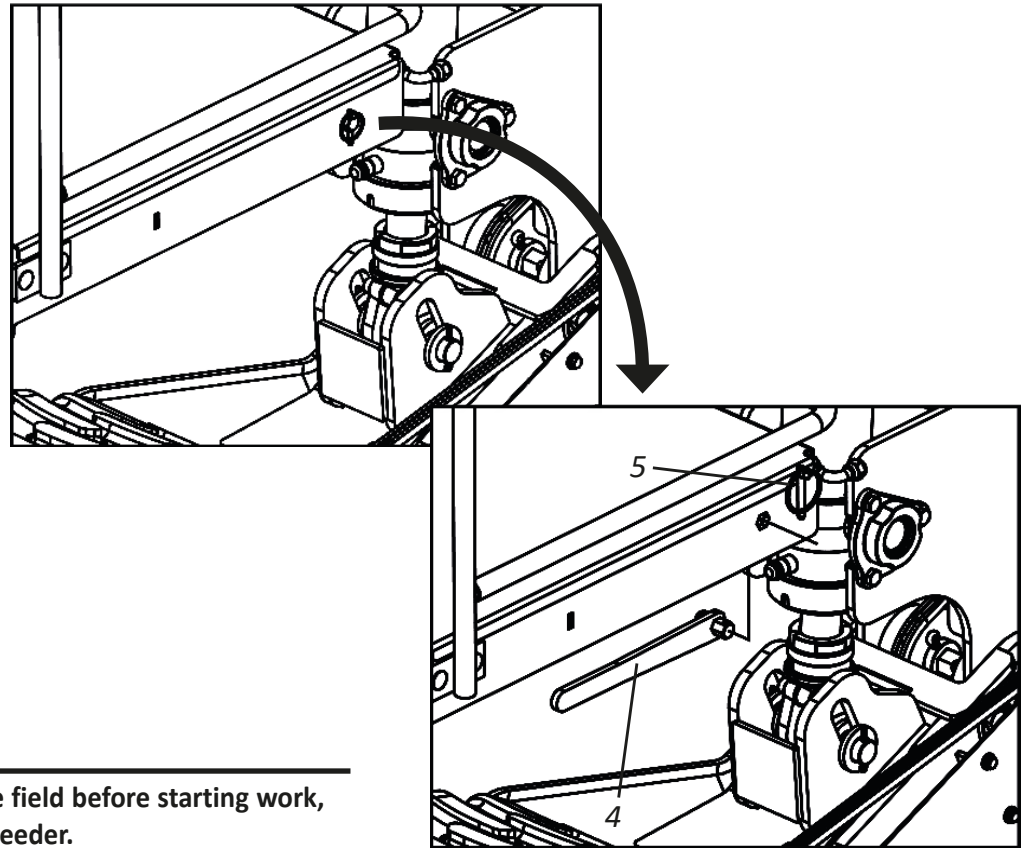
▪ Adjusting the rows

• Spring Pressure Adjustment (DEMETRA 5500) - Part I

The Row (1) has a pressure spring (2) that, when regulated to give more or less pressure, will increase or decrease the force on the double disk (3). To adjust the pressure on the springs, proceed as follows:



01 - Take the key (4) that is fixed on the side of the seeder, releasing it through the ring lock (5).



NOTE

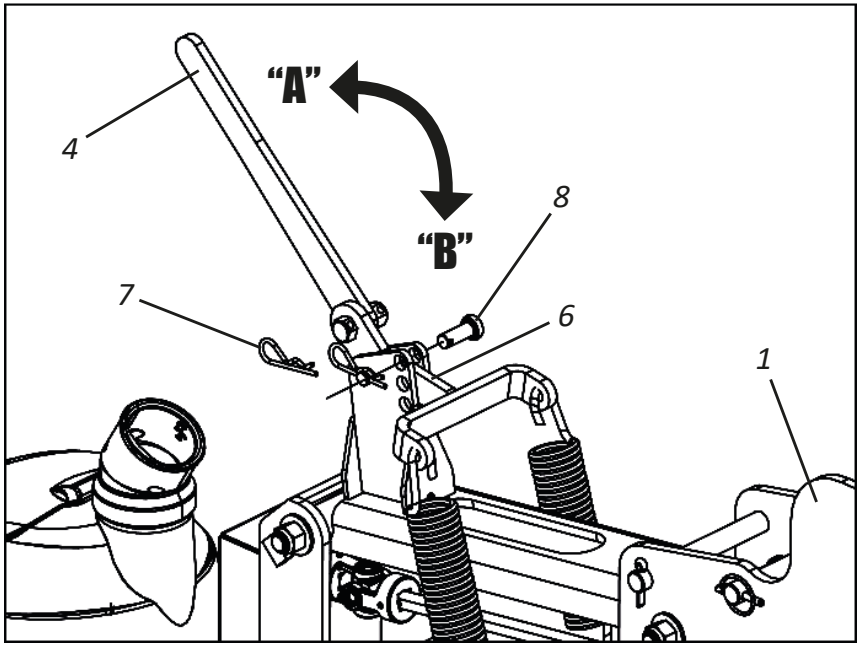
This adjustment, giving more or less pressure in the spring, should be made in the field before starting work, observing the type of soil to be worked, to obtain a better performance from the seeder.

▪ Adjusting the Rows

• Spring Pressure Adjustment (DEMETRA 5500) - Part II

02 - Then put the key (4) on the lever (6) of the Row (1), release the lock (7), remove the pin (8). Then, move the key (4) by adjusting the lever (6) to the desired position.

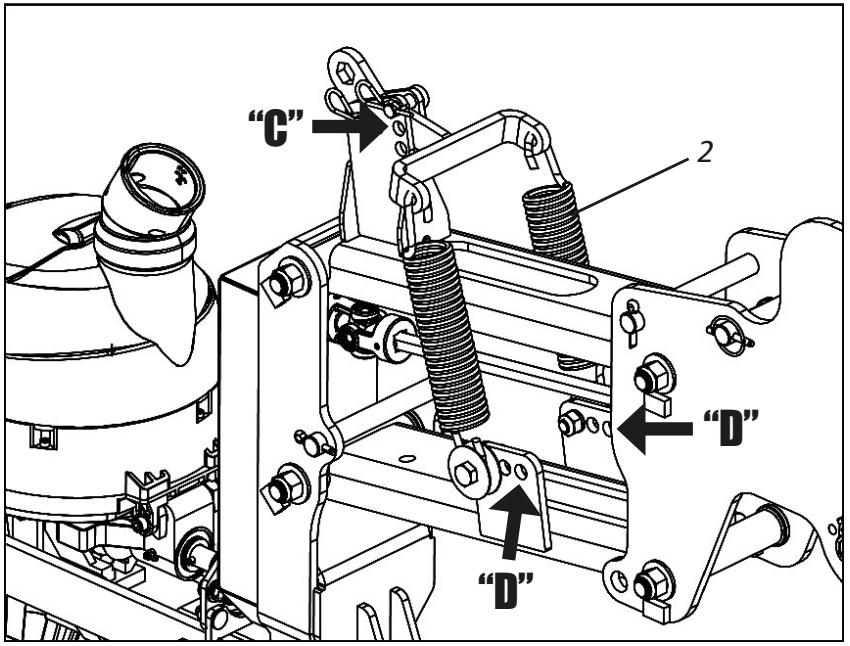
03 - Finish by locking the lever (6) again, with the pin (8) and lock (7).



POSITION "A"	MORE PRESSURE ON THE SPRING.
POSITION "B"	LOWER SPRING PRESSURE.

⚠ ATTENTION

When adjusting the spring pressure (2), check which of the adjustment points "C" best meets your work needs. If these adjustments still do not achieve the desired result, make a new adjustment, now at the "D" adjustment points. The two springs shoes must have the same adjustment.



POSITION "C"	1ST ADJUSTMENT OPTION.
POSITION "D"	2ND ADJUSTMENT OPTION.

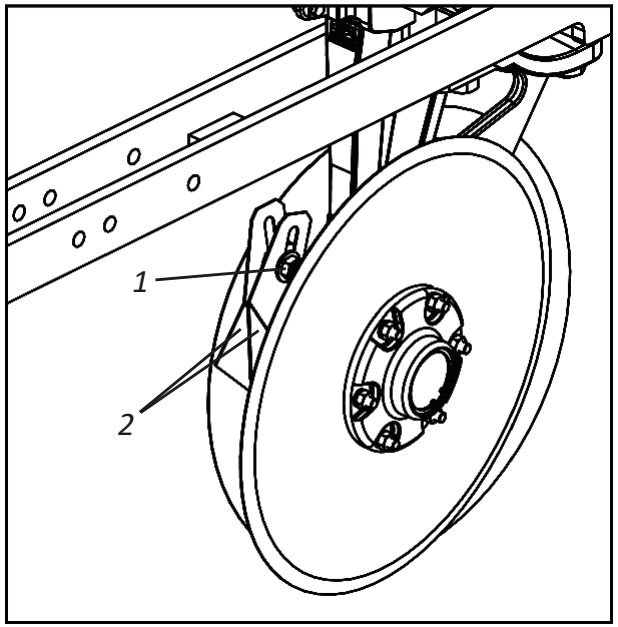
❗ IMPORTANT **Check the working depth of each row several times during planting, especially on land where there are variations in humidity, soil, or other variations.**

▪ Adjusting the Rows

• Double disc cleaners adjustment

The double disc features flexible, adjustable wipers to remove dirt adhering to the discs. To adjust the wipers, proceed as follows:

01 - Loosen the screw (1), adjust the cleaners (2) in the ideal position and retighten the screw.



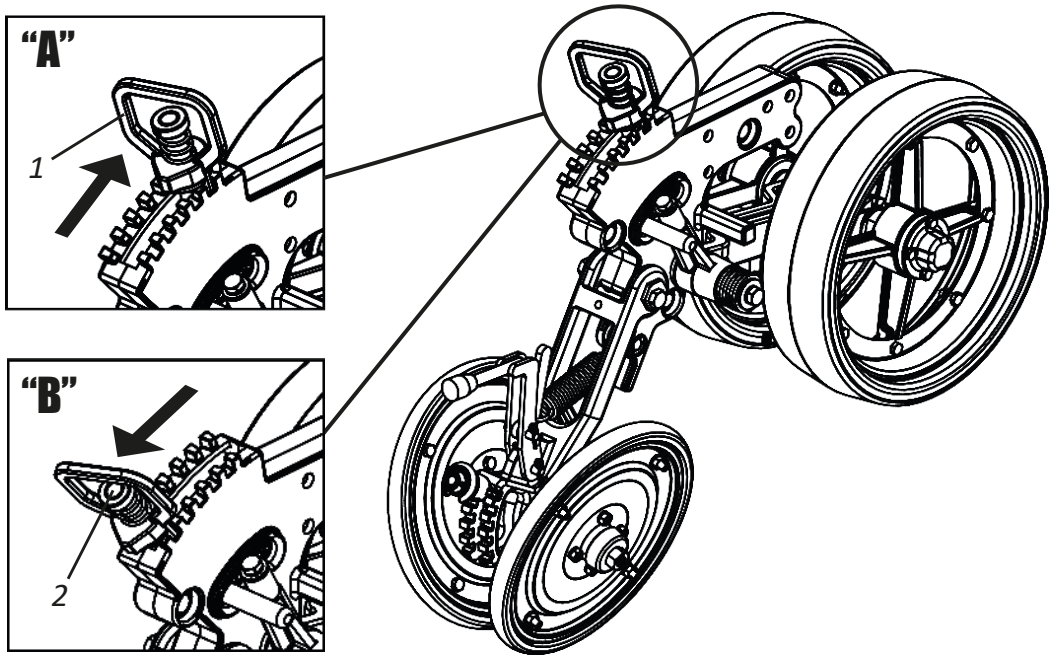
IMPORTANT

When finishing the adjustment, repeat the procedure on all Rows, avoiding variation between them.

• Adjusting the oscillating depth wheel

The limiting wheels with oscillating depth, have a single support point that allows their oscillation, if an obstacle or irregularities appears in the ground in their path they will rise to overcome it, immediately returning to the initial position without lifting the double disc from its position. The seed depth is set individually by the depth limiting wheels. For this adjustment, proceed as follows:

01 - Pull the handle (1) up, move the regulator (2) to the desired point, adjusting the depth wheel (3), then lower the handle (1) locking the regulator (2).



NOTE **The oscillating cart offers a total of 11 adjustment points, 6 in the "A" direction and 5 in the "B" direction interspersed.**

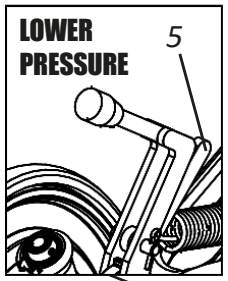
▪ Adjusting the Rows

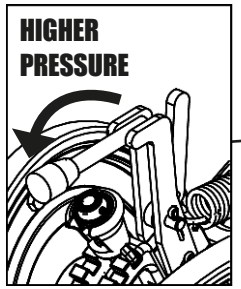
• Adjusting the "V" compactor wheel - Part I

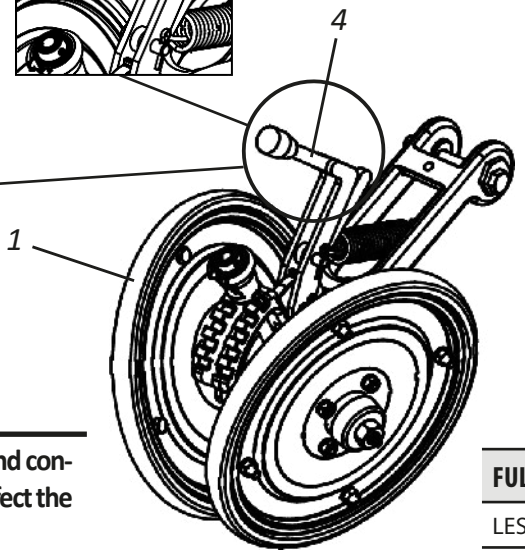
The "V" compacting wheels (1) are used to close the ridge laterally, causing the soil to be immediately placed over the seed, avoiding excess compaction and removing air pockets, facilitating germination and plant development. To adjust the greater or lesser angle of closing of the "V" compacting wheels (1), pull the handle (2) upwards, move the regulator (3) to the desired point, then lower the handle (2) locking the regulator (3). The "V" compacting wheels have 5 adjustment points.

HIGHER PRESSURE:	SHIFT THE HANDLE (2) BACK, GIVING MORE PRESSURE TO THE WHEEL (1).
LOWER PRESSURE:	SHIFT THE HANDLE (2) FORWARD, GIVING LESS PRESSURE TO THE WHEEL (1).

The "V" compactor wheel (1) can also be adjusted to its pressure using the lever (4), **as shown in the figure below.**



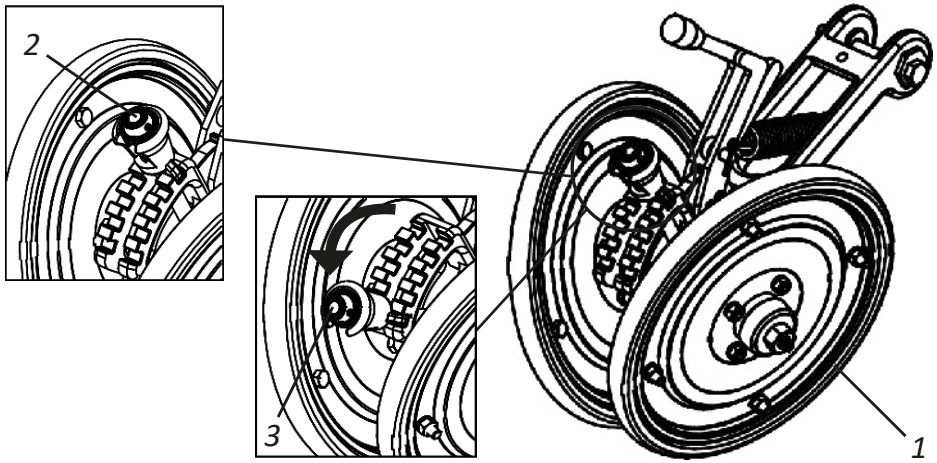




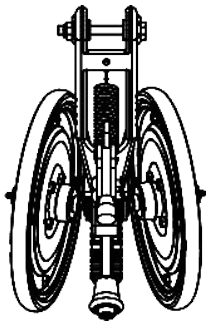
HIGHER PRESSURE:
MOVE THE LEVER (4) BACKWARDS, GIVING MORE PRESSURE ON THE WHEEL (1).
LOWER PRESSURE:
TIGHTEN THE LEVER (5) SHIFT THE LEVER (4) FORWARD, GIVING LESS PRESSURE ON THE WHEEL (1).

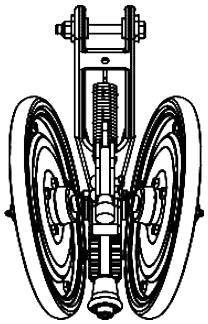
⚠ ATTENTION

Make the same adjustment for all "V" compacting wheels and consider the type of soil, seed and planting depth, so as not to affect the free emergence of the plants.



ANGLE OF "V" WHEELS





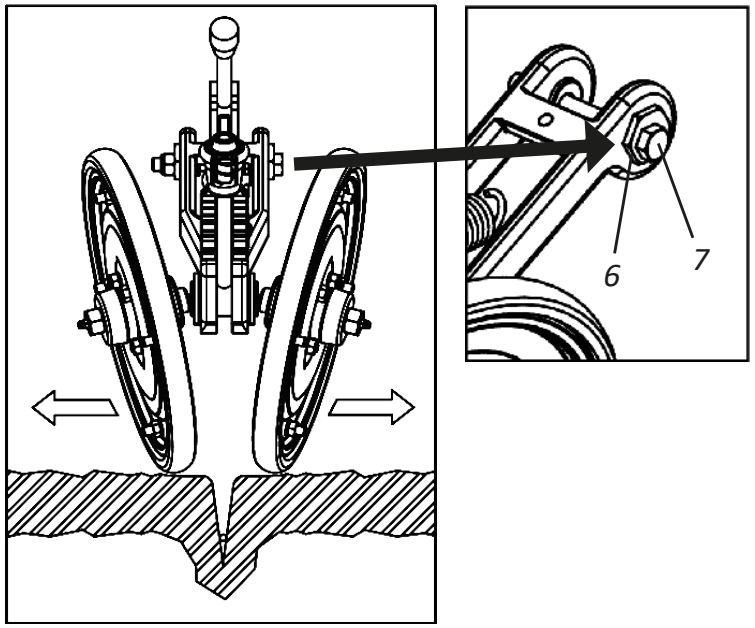
FULLY CLOSED ANGLE POSITION	POPEN ANGLE POSITION
LESS EARTH OVER THE SEED.	MORE EARTH OVER THE SEED.

▪ Adjusting the Rows

• Adjusting the "V" Compactor Wheel Part II

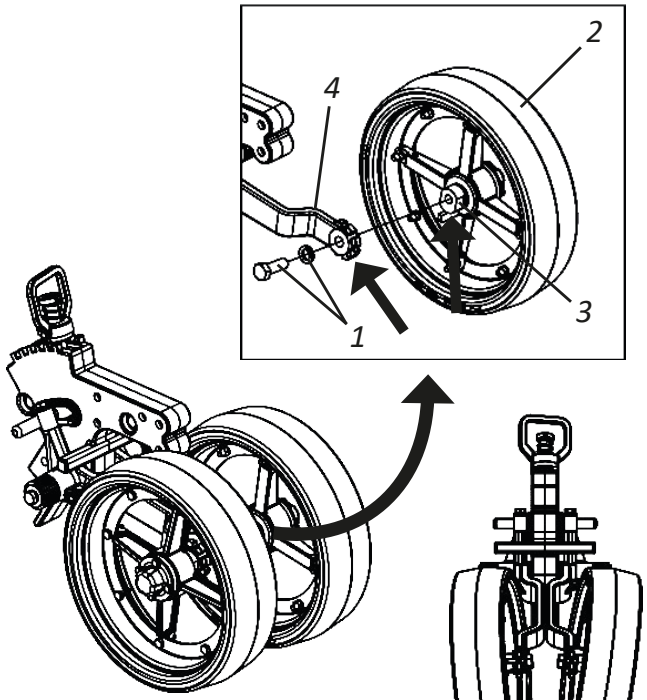
For horizontal displacement of the wheels, they were developed with eccentric bushings (5). For this adjustment, proceed as follows:

01 - Loosen the screws (7), rotate the said bushings (6), with a spanner to actuate the wheels and align them with the ridge, placing more or less soil on the side of the seed.



• Adjusting the oscillating depth wheel angle

The angle of the depth limiting wheels (1) has the purpose of pressing the ridge causing the soil to be immediately replaced on the seed, avoiding excessive compaction, facilitating the germination and development of the plant. To obtain the adjustments on the wheels, proceed as follows:

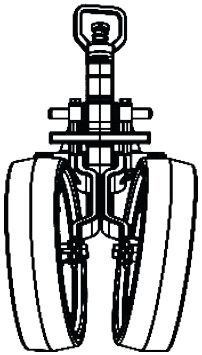


01 - Loosen the screws and washers (1), remove the wheel (2), adjust the wheel adjustment point (3) on the wheel support shaft adjustment (4), then secure the wheel (2) again with the washers and screws (1).

⚠ ATTENTION

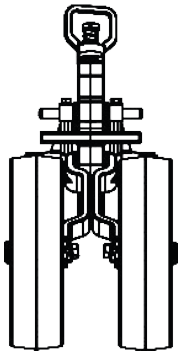
Do the same procedure for the other wheel support (4) and for all wheels with oscillating depth.

WHEEL ANGLE



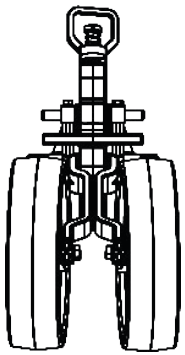
FULLY CLOSED ANGLE POSITION

LESS EARTH OVER THE SEED.



PARALLEL POSITION

FOR DEPTH CONTROL ONLY.



OPEN ANGLE POSITION

MORE EARTH OVER THE SEED.

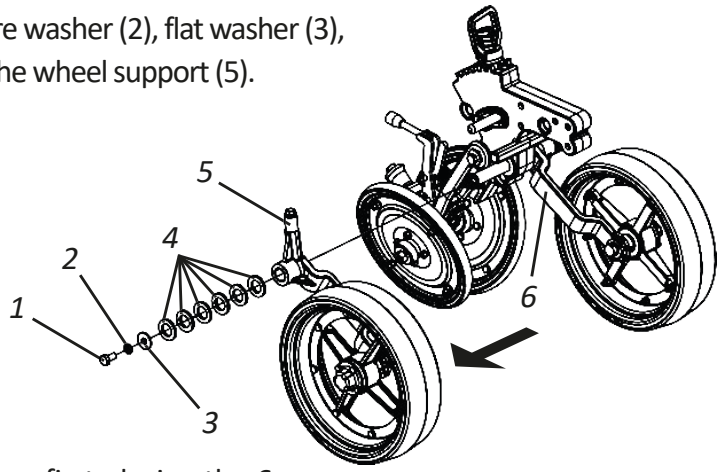
▪ Adjusting the Rows

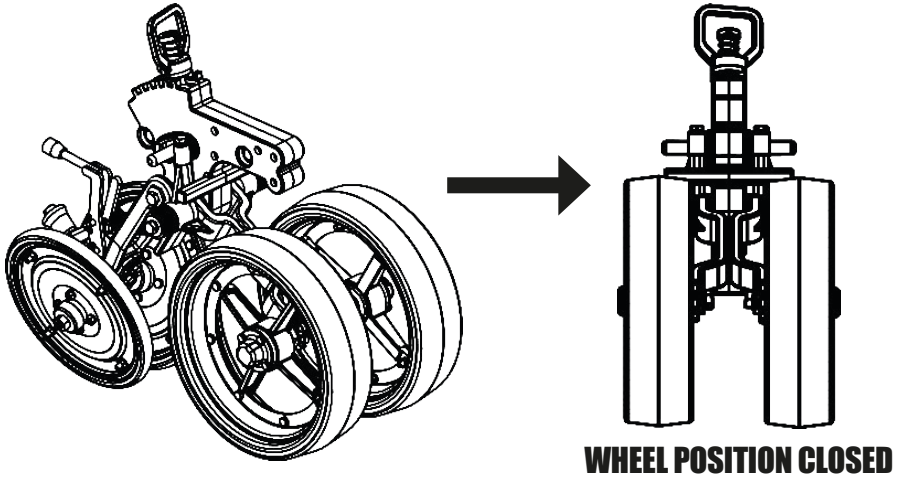
• Opening adjustment of the oscillating depth wheel

The oscillating depth wheels have an opening and closing system to better adapt to terrains with dense stubble or with higher and lower humidity. The oscillating depth wheels leave the factory in the closed position. To open the wheels with oscillating depth, proceed as follows:

01 - Loosen the screw (1), pressure washer (2), flat washer (3),

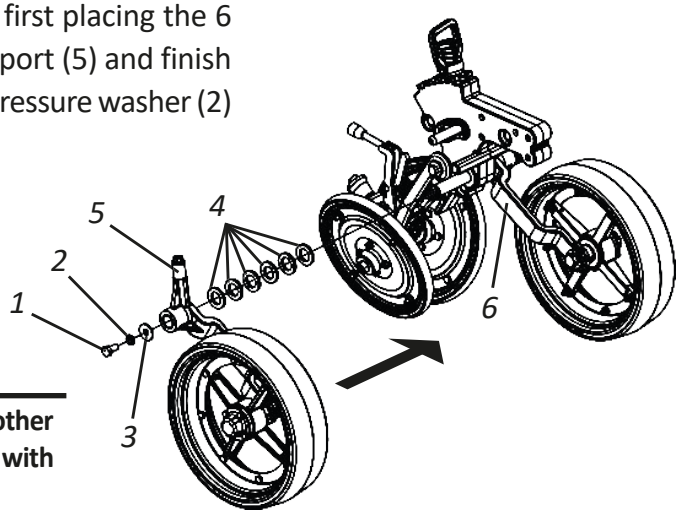
02 - remove the 6 shims (4) and the wheel support (5).

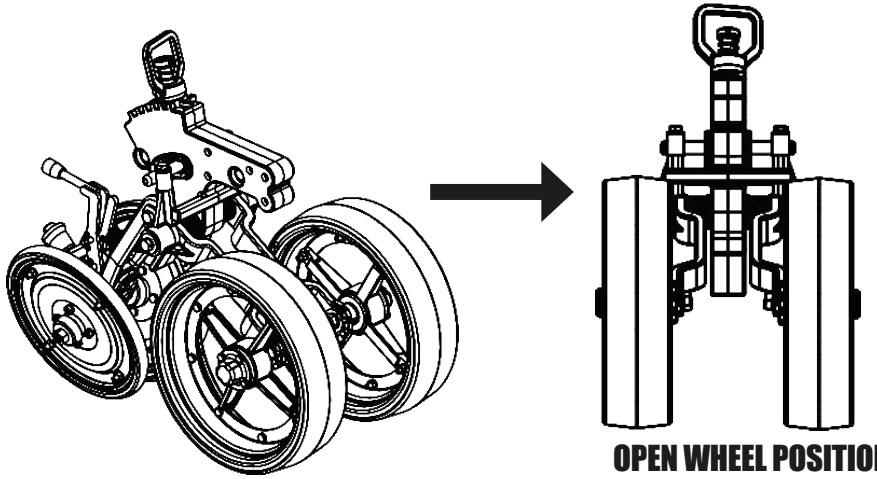




WHEEL POSITION CLOSED

03 - Then, do the reverse process, first placing the 6 blocks (4), then the wheel support (5) and finish by placing the flat washer (3), pressure washer (2) and the screw (1) tightening.





OPEN WHEEL POSITION

NOTE

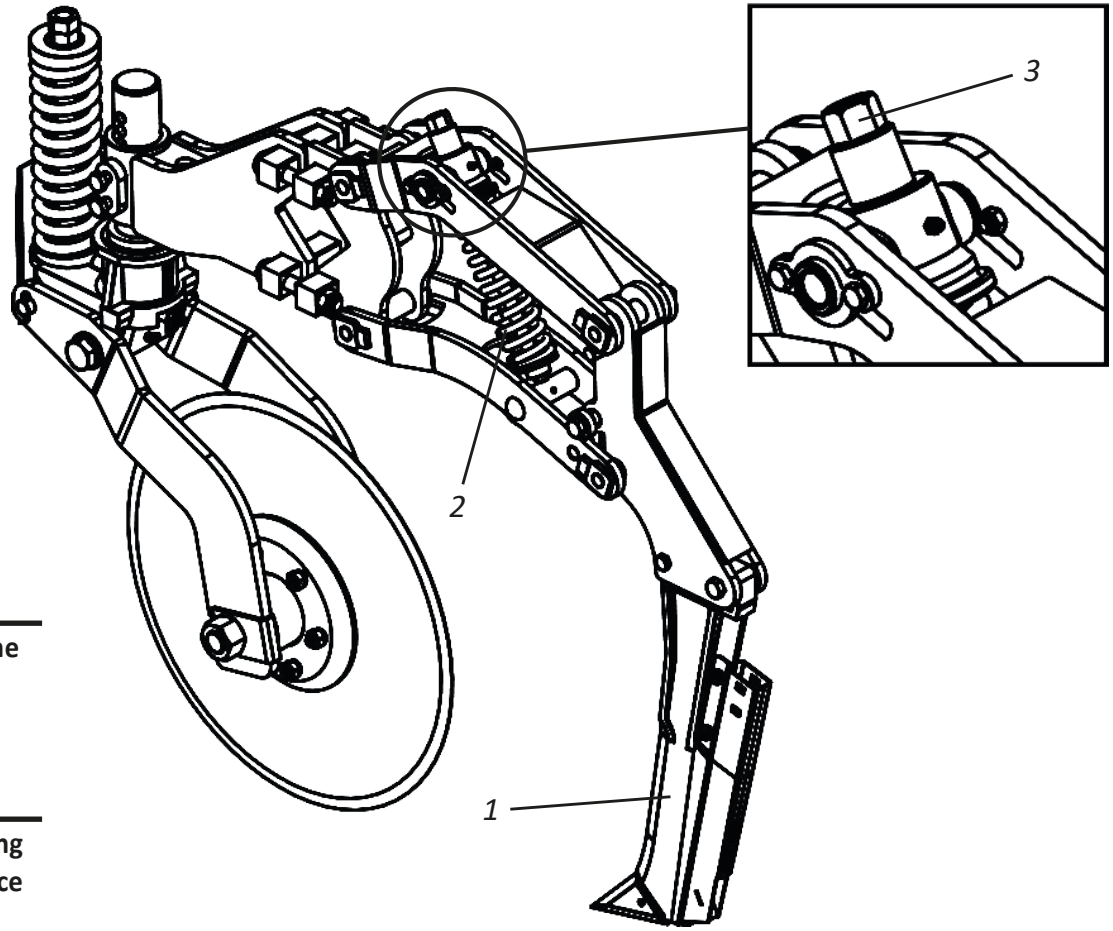
Do the same procedure for the other wheel support (6) and for all wheels with oscillating depth.

▪ Adjusting the Rows

• Furrower pressure regulation

DEMETRA leaves the factory with pre-established furrower pressure regulation. If you need another adjustment for better adjustment of the furrowers (1) to the type of soil to be worked on, proceed as follows:

FOR GREATER PRESSURE ON THE SPRING (2)
Turn the nut (3) to the right (clockwise).
FOR LOWER SPRING PRESSURE (2)
Turn the nut (3) to the left (counterclockwise).



IMPORTANT

When regulating the pressure of a furrower, all the others must have the same regulation, avoiding variations in the same.

NOTE

The pressure adjustment of the furrowers must be done in the field before starting the work, observing the type of soil to be worked, to obtain a better performance of the seeder.

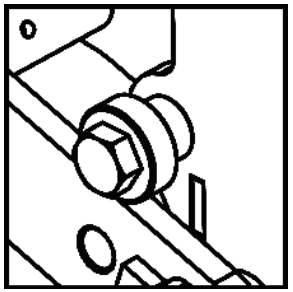
▪ Adjusting the Rows

• Furrower depth adjustment

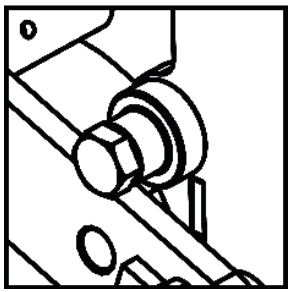
DEMETRA leaves the factory with pre-established furrower pressure regulation. In case you need more depth for better performance of the furrowers (1) to the type of soil to be worked, proceed as follows:

01 - Loosen the nut (2) and remove the screw (3).

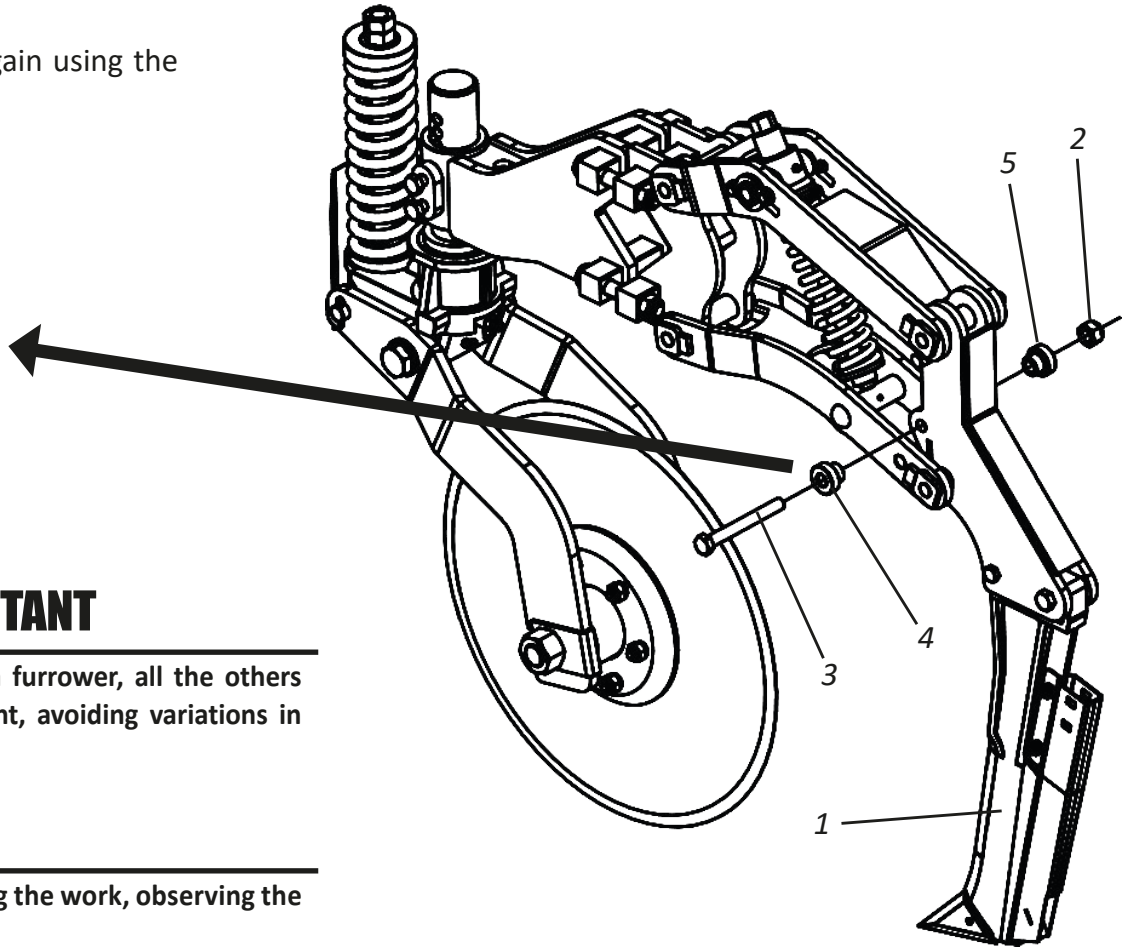
02 - Then, invert the position of the bushings (4 and 5) and fix them again using the screws (6) and nuts (7).



FACTORY POSITION BUSHINGS



INVERTED POSITION BUSHINGS



⚠ ATTENTION

When reversing the position of the bushings (4 and 5), the furrower (1) will reach 50 mm more in depth.

❗ IMPORTANT

When adjusting the depth of a furrower, all the others must have the same adjustment, avoiding variations in them.

🔍 NOTE

The depth adjustment of the furrowers must be done in the field before starting the work, observing the type of soil to be worked, to obtain a better performance of the seeder.

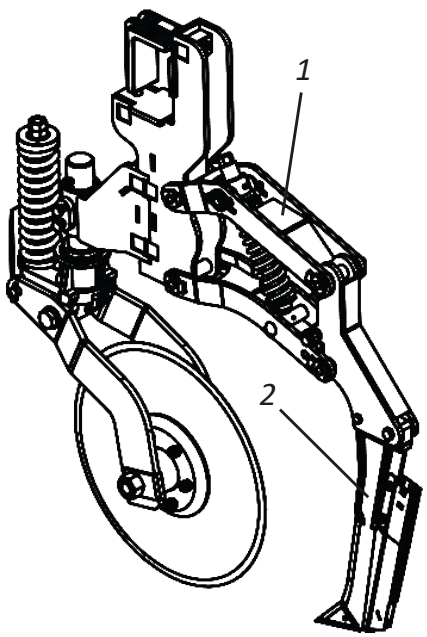
▪ Adjusting the Rows

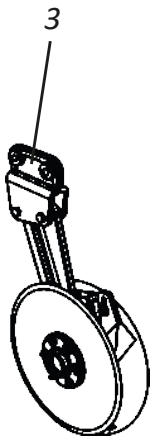
• Replacing the furrower with the double disk adapter (Optional)

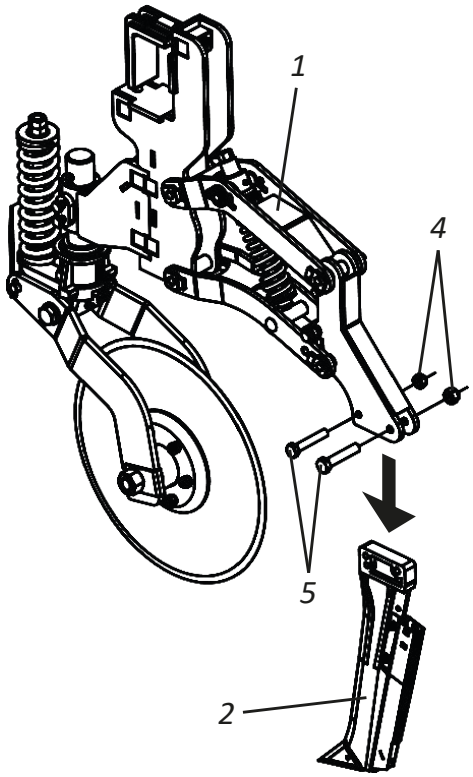
DEMETRA leaves the factory with the fertilizer carts (1) assembled with a furrower (2). Due to the working conditions, the double disk adapter (3) can be optionally purchased to be coupled in place of the furrower (2). In order to exchange the furrower (2) for the double disk adapter (3), proceed as follows:

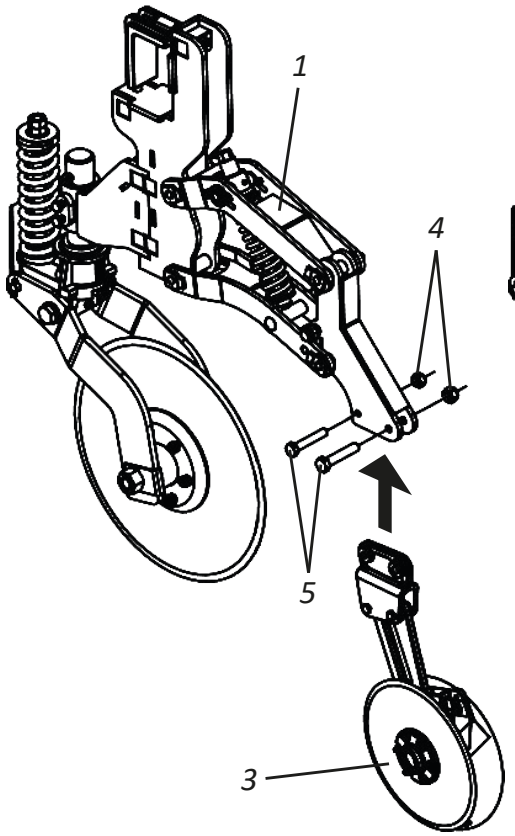
01 - Loosen the nuts (4), screws (5) and remove the furrower (2).

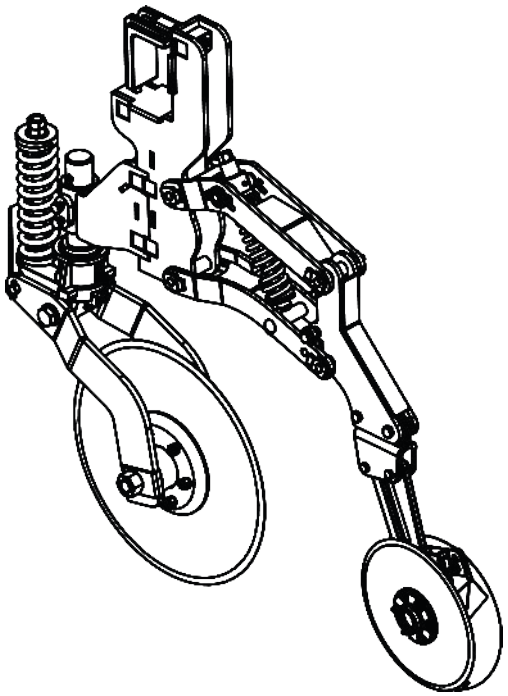
02 - EThen attach the double disk adapter (3), securing it by means of the screws (5) and nuts (4).











ASSEMBLED FERTILIZER CART WITH DOUBLE DISK ADAPTER

NOTE | **Repeat the above procedure to mount the other double disk adapters (3) on the other fertilizer carts (1).**

▪ Operations

• Recommendations for operation

The preparation of the **DEMETRA** and the tractor will allow you to save time in addition to a better result in field work. The following suggestions may be helpful to you.

01 - After the first day of work with the **DEMETRA**, retighten all screws and nuts. Check the condition of the pins and locks.
02 - Do not maneuver or reverse with the Rows lowered to the ground.
03 - Observe lubrication intervals.
04 - When filling the tanks make sure that there are no objects inside them, such as nuts, bolts, etc. Always use seeds free of impurities.
05 - Always observe the functioning of seed dispensing mechanisms and also the regulations established at the beginning of planting.
06 - Keep the **DEMETRA** always level, the tractor drawbar must remain fixed, and the working speed must remain constant.
07 - Always check the seed depth and the pressure of the compacting wheels.
08 - Note the position of the fertilizer in relation to the seed in the soil.
09 - Do not make sharp turns with the **DEMETRA** while working, especially in no-till farming. Row components may be damaged.
10 - Do not partially activate the hydraulic cylinders. The drive for both raising and lowering the **DEMETRA** must always be complete.
11 - Do not disengage any hoses without first relieving circuit pressure. To do this, operate the control levers a few times with the engine off.
12 - After the hitch and leveling are done, the next adjustments will be made directly in the work field, analyzing the terrain in its texture, humidity, and the types of operations to be performed with the **DEMETRA**.
13 - Observe the working and transport speeds specified on page 13. We do not advise exceeding speeds to maintain service efficiency and avoid possible damage to the **DEMETRA**.
14 - When carrying out any checking or maintenance on the **DEMETRA**, it must be lowered to the ground and the tractor engine shut down.
15 - The DEMETRA has several adjustments but only local conditions can determine the best adjustment.
16 - Indications on the right and left side are made by looking at the **DEMETRA** from behind.
17 - Only fill the **DEMETRA** at the workplace.
18 - Do not transport or work with an overloaded **DEMETRA**.
19 - DEMETRA operates most efficiently in the range of 5 to 7 km/h.

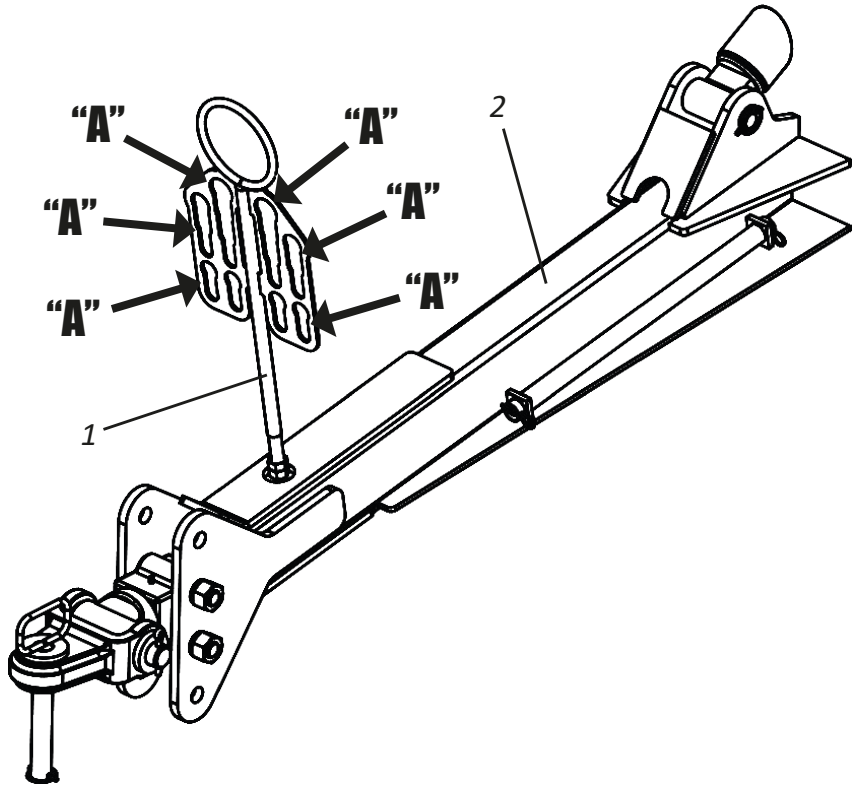
In case of doubt, never operate or handle DEMETRA, consult Post Sales.
Phone: 0800-152577 / Email: posvenda@baldan.com.br

▪ Maintenance

The **DEMETRA** has been developed to provide you with maximum yield under terrain conditions. Experience has shown that periodic maintenance of certain parts of the **DEMETRA** is the best way to help you to avoid problems, so we suggest checking.

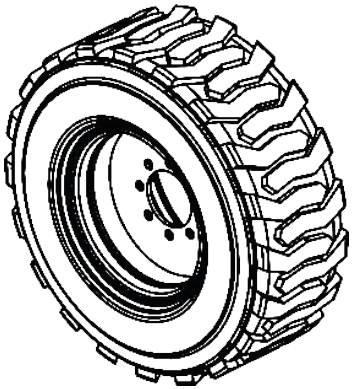
• Hose support with coupling fittings

When disconnecting the hydraulic hoses from the tractor, to prevent them from touching the ground, fit them into the **holes "A"** of the hose support (1) of the coupling header (2).



• Tire pressure

The tires must always be correctly calibrated, avoiding premature wear due to excess or lack of pressure and ensuring distribution precision.



TIRES 14-17.5 14PR 139B TR-10 TL R-4
USE: 80 LBS/POL²

IMPORTANT

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

NOTE

Tractor tire pressure should be as recommended by the manufacturer.

ATTENTION

Never weld the wheel with a mounted tire, as heat can increase air pressure and cause the tire to explode.

When inflating a tire, position yourself next to the tire, never in front of it.

When inflating the tire, always use a containment device (inflation cage). Assemble the tires with suitable equipment. The service should be performed only by persons qualified for the job.

▪ Maintenance

• Lubrication

Lubrication is essential for the good performance and durability of the **DEMETRA** moving parts, contributing to savings in maintenance costs.

Before operating, carefully lubricate all grease fittings, always observing the lubrication intervals on the next page. Ensure the quality of the lubricant, regarding its efficiency and purity, avoiding using products contaminated by water, earth and other agents.

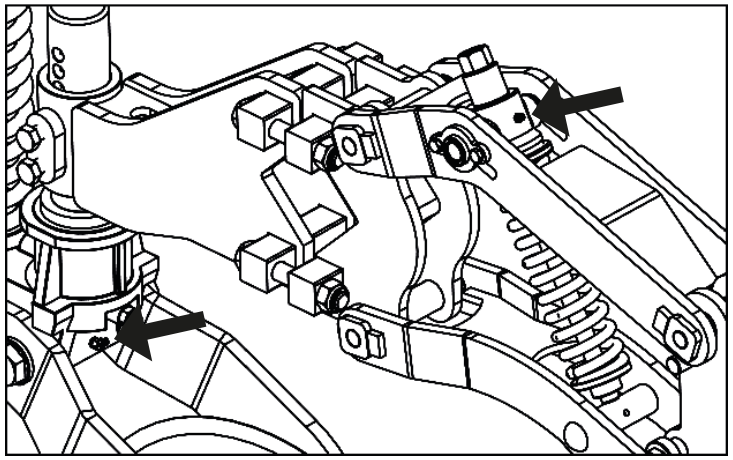
• Table of greases and equivalents

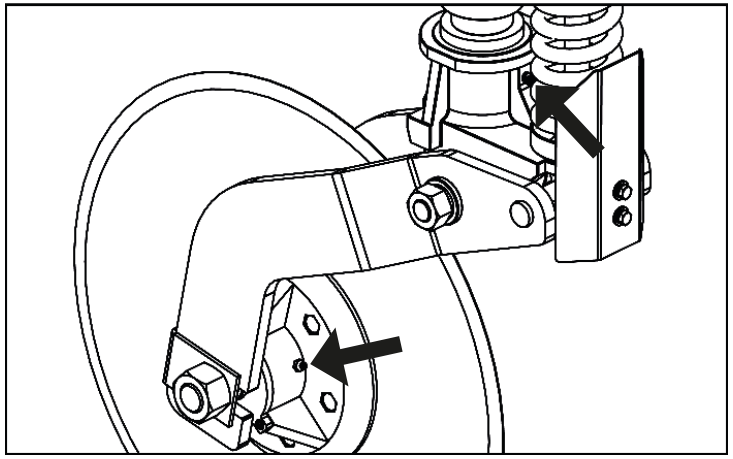
Manufacture	Recommended grease types
Petrobrás	Lubrax GMA-2
Atlantic	LithoRow MP 2
Ipiranga	Ipiflex 2
Castrol	LM 2
Mobil	Grease MP
Texaco	Marfak 2
Shell	Alvania EP 2
Esso	Multi H
Bardahl	Maxlub APG-2EP
ValvoRow	Palladium MP-2
Petronas	Tutela Jota MP 2 EP
	Tutela Alfa 2K
	Tutela KP 2K

⚠ ATTENTION

For manufacturers and/or equivalent brands not listed in the table, check the manufacturer's technical manual.

• Lubrication every 10 hours of work - Part I

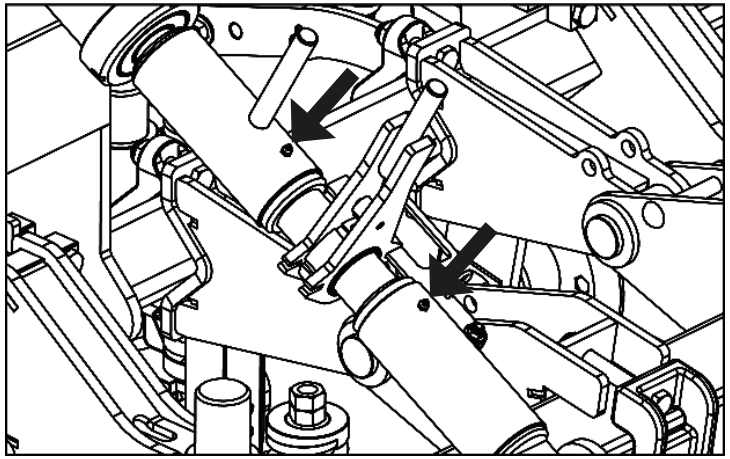


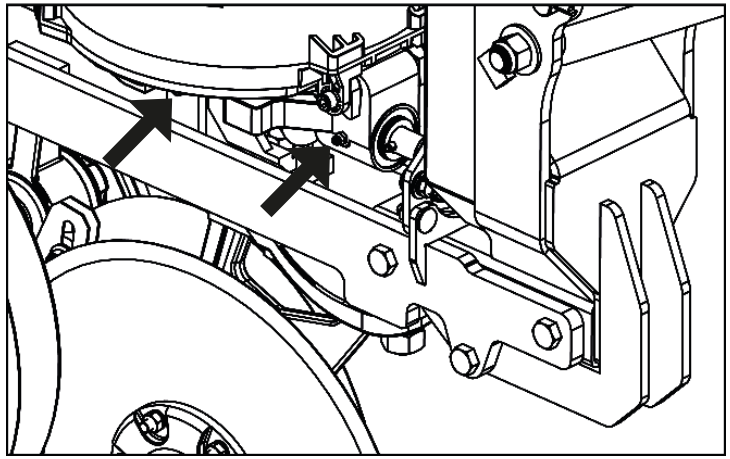


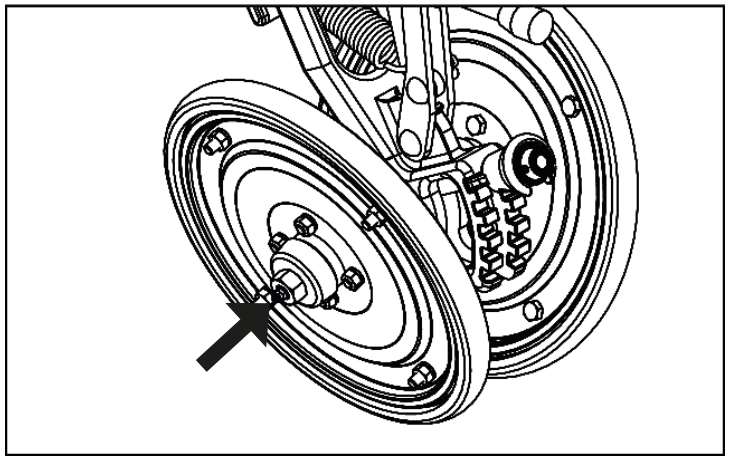
⚠ ATTENTION **When lubricating DEMETRA, do not exceed the amount of new grease. Insert a sufficient amount.**

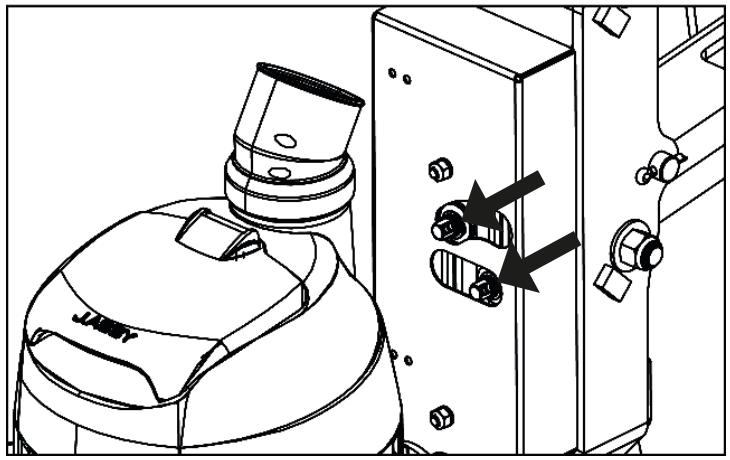
▪ Maintenance

- Lubrication every 10 hours of work - Part II





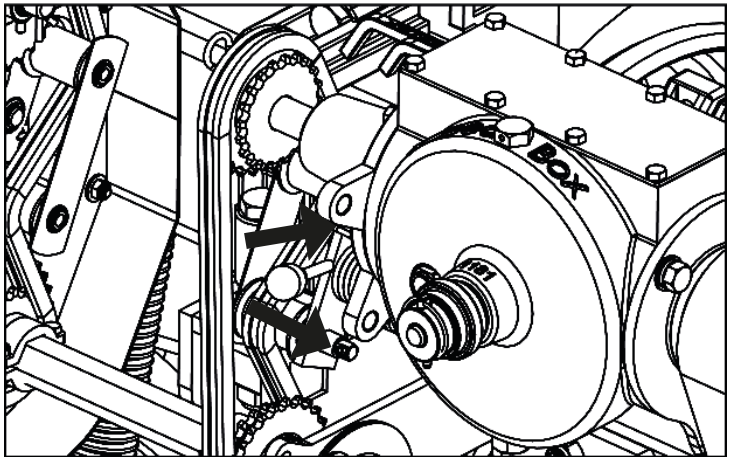




⚠ ATTENTION | When lubricating DEMETRA, do not exceed the amount of new grease. Insert a sufficient amount.

▪ Maintenance

• Lubrication every 10 working hours - Part III

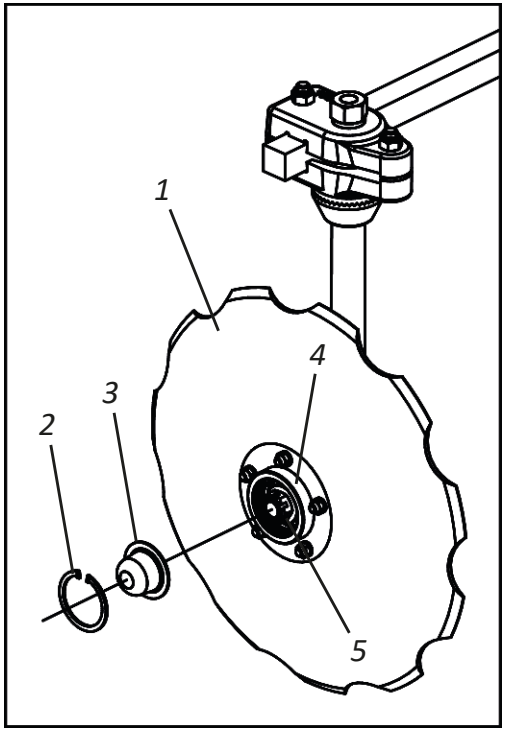


In order to lubricate the hub of the Row markers (1), proceed as follows:

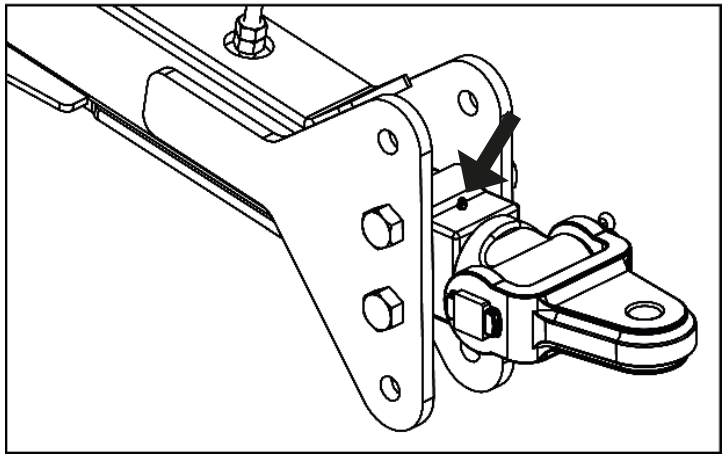
01 - Remove the retaining ring (2) and the hubcap (3) from the hub (4).
02 - Next, examine the bearings, if any
03 - clearance, adjust them through the castle nut (5).
04 - Insert new grease in the cap (3), put it back on
05 - hub (4) by securing it through the retaining ring (2

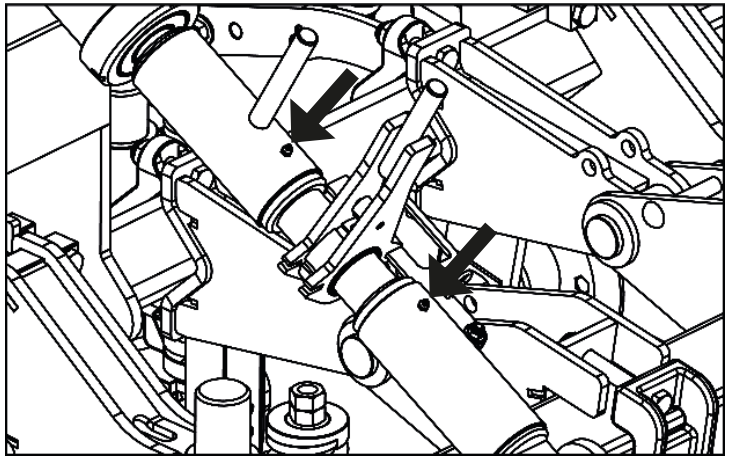
⚠ ATTENTION

When lubricating DEMETRA, do not exceed the amount of new grease. Enter a sufficient amount.



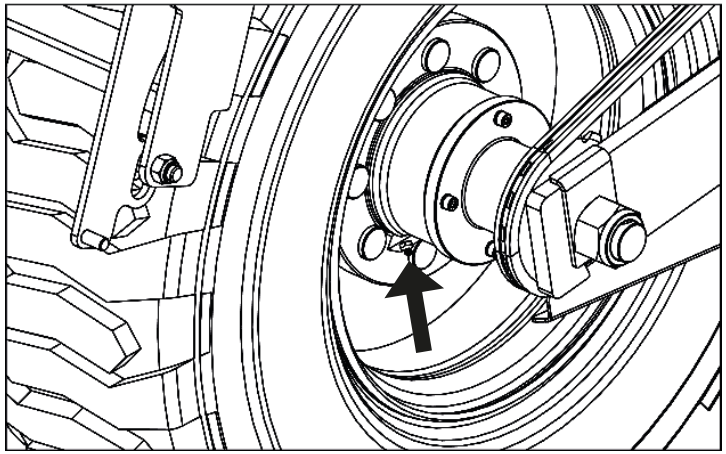
• Lubrication every 30 working hours

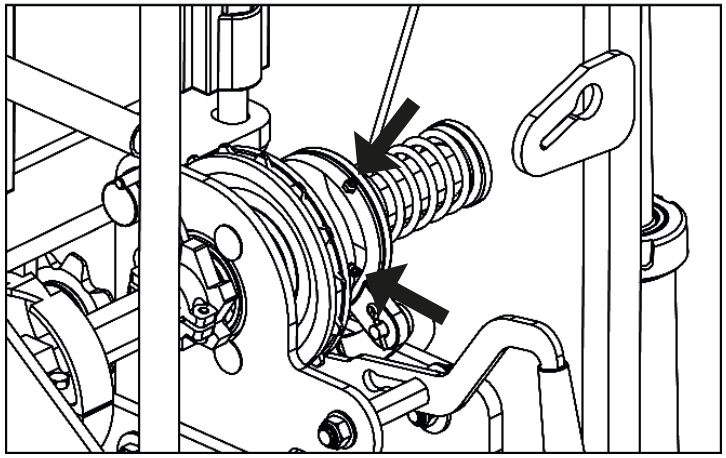




▪ Maintenance

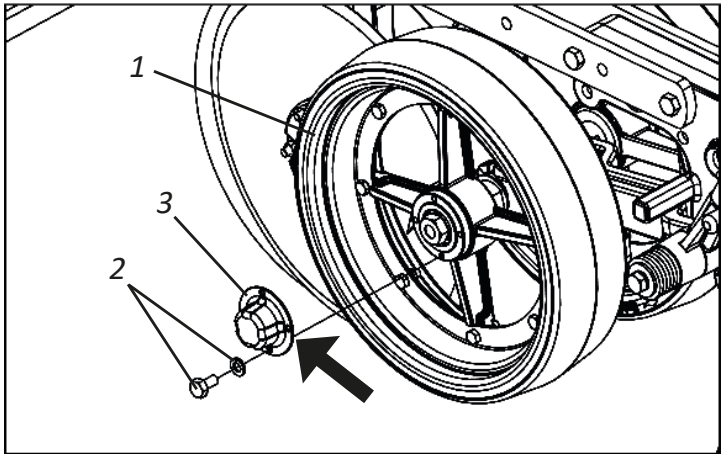
• Lubrication every 60 hours of work





• Lubrication every 200 hours of work

To lubricate the compacting wheels (1), loosen the screws and washers (2), remove the cap (3) and add new grease. Replace the hub (3) on the compactor wheels (1) and secure it with the screws and washers (2).



⚠ ATTENTION | **When lubricating DEMETRA, do not exceed the amount of new grease. Insert a sufficient amount.**

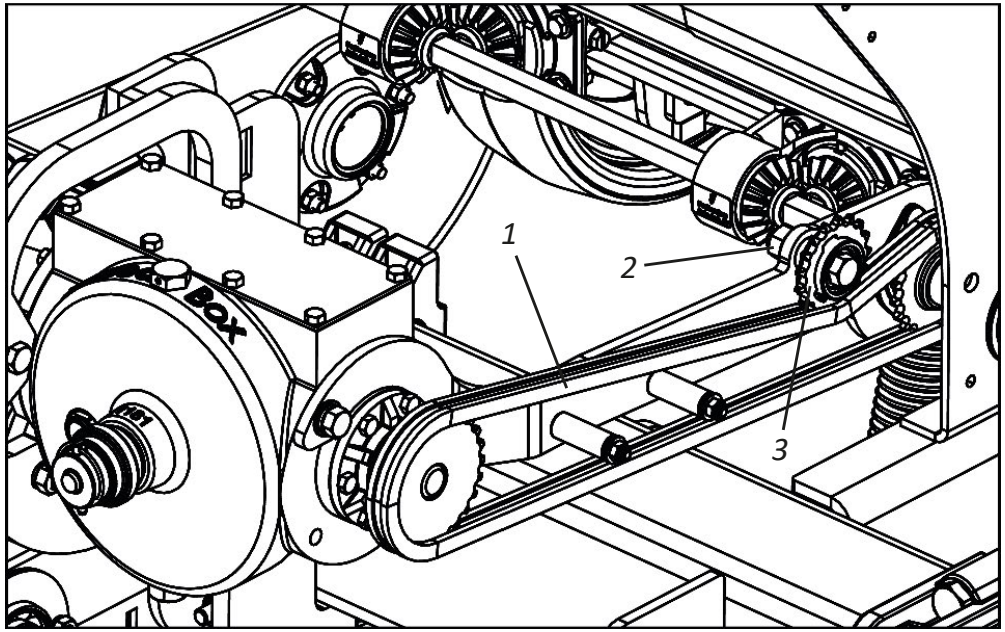
❗ IMPORTANT | **Before opening the shell (8), clean the outside of it.**

▪ Maintenance

• Current tension

In order to tension the current (1), proceed as follows:

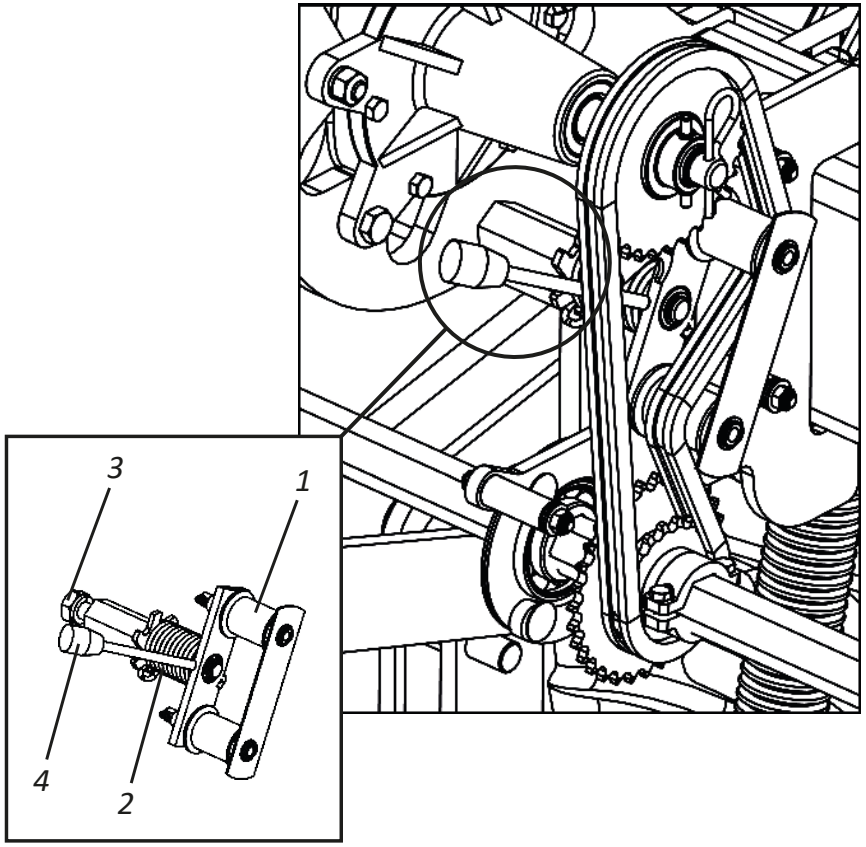
01 - SLoosen the nut (2), slide the stretcher (3) adjusting the current tension (1).
02 - Then retighten the nut (2).



⚠ ATTENTION **Check the tension of the currents daily, the normal play should be + - 1 cm in the center of the currents.**

• Oscillating stretcher

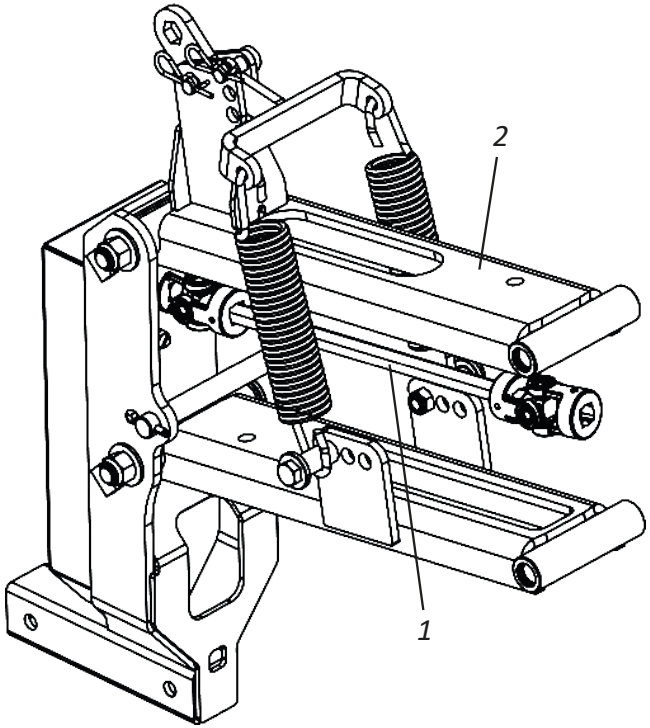
The stretcher (1) is equipped with a torsion spring (2) for greater flexibility. If more pressure is required on the stretcher, loosen the inner nut (3), turn the shaft (4) passing the spring clip (2) to the other tooth of the shaft rosette and retighten the inner nut (3).

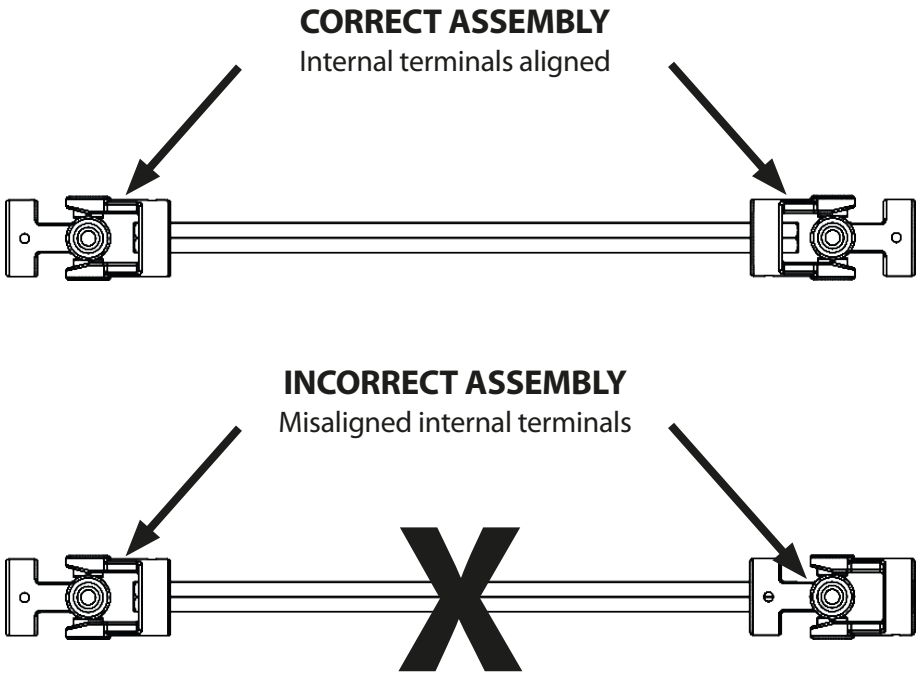


▪ Maintenance

• Exchange or maintenance of the cardan on the line (DEMETRA 5500)

When changing or servicing the cardan (1) on the line (2), assemble it correctly as instructed below.





⚠ ATTENTION | **Any misalignment between the internal terminals, the assembly must be considered incorrect. The incorrect assembly of the cardan causes excessive vibration, damaging the transmission.**

▪ Maintenance

• Operational maintenance - Part I

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
During planting, fertilizer begins to leak from the safety outlets.	Clogged hoses or pieces of plastic in the fertilizer conducing spirals.	Unclog the hose or remove the upper channel that gives access to the spiral, rotate the shaft in the opposite direction until the foreign body that is stuck loosens.
Fertilizer hub shaft does not rotate.	Spiral blocked by wet fertilizer or excess fertilizer in the closed Row.	Unclog the spirals, check if you have a loose gutter and the fertilizer may be entering by their sides.
A planting Row is less deep than the other.	Different pressure settings on the depth limiting wheels or in the springs of the Row.	Set all wheels to equal depth and regulate the pressure of the Row springs.
The ridge is too open during planting.	Sticky soil that sticks to the discs or excessive speed of work.	Decreases work speed.
Strange noise when operating or walking with the loaded sower.	Loose wheels or wheel hub.	Re-tighten the wheel nuts. Adjust the wheel hub bearings.
The sower leaves the planting Row, sometimes to one side, sometimes to the other, sideways.	Tractor drawbar loose.	Use the pin that comes with the seeder. Secure the tractor drawbar in the center hole.
It is not covering the ridge.	Poorly adjusted covering wheels or damp grounds.	Adjust the covering wheel by moving it sideways in relation to the ridge.
The hydraulic cylinders stop operating, lifting the sower and then doesn’t lower or vice versa.	Different quick coupler, sphere male type and female needle type or vice versa.	Proceed by changing the quick coupler, placing two of the same type.
Broken seeds.	High planting speed.	Decrease work speed.
	Inadequate disc thickness.	Use suitable disc (hole thickness and diameter).
	Poorly placed disc. The seed sieve is not suitable for the disc used.	Insert the disc properly (note the sentence: **THIS SIDE DOWN**).
	Using moist seeds.	Using dry seeds.

▪ Maintenance

• Operational maintenance - Part II

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
Damaged tires.	Work area with stones, stumps or crop remains with stems that cause tire cutting.	Eliminate the elements that cause damage to the tires before period of use of **DEMETRA**.
	Tires are not inflated, causing deformations.	Maintain proper tire pressure.
Strange noise on wheels.	Loose wheels or wheel set.	Retighten the wheel nuts and adjust the bearing wheel hub.
	Bearings breakage.	Identify the occurrence and replace the damaged parts.
Quick coupling does not fit.	Couplings of different types.	Exchange them for males and females of the same type.
Leak in hydraulic hoses.	Sealing material on the screw thread is missing.	Use thread-sealing tape and retighten carefully.
	Insufficient tightening.	Retighten carefully.
	Damaged terminals.	Replace terminals.
Leak in quick couplers.	Insufficient tightening.	Retighten carefully without excess.
	Damaged repairs.	Replace repairs.
Quick couplings do not couple.	Couplings of different brands.	Use couplings of the same brand.
	Mixture of needle couplings with ball couplings.	Always use couplings of the same type.
	System pressure.	Relieve pressure to couple.
Lack of pressure in the spraying system.	Electrical pump diaphragm rupture.	Check the electric pump.
	Problem with the electric pump valves.	Check the valve's internal parts.

▪ Maintenance

• Operational maintenance - Parte III

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
It can't spray.	Lack of syrup in the tank.	Put syrup in the tank.
	Closed flow regulating valve.	Adjust the flow regulating valve according to the tables on pages 62 to 68.
	Clogged hoses, filters, and nozzles.	Disassemble and clean.
Red light on the monitoring panel of flow.	Spray Row obstruction (hoses, filters, nozzles, and flow sensors).	Check and clean the hoses, filters, nozzles and flow sensors.
Irregular flow.	Object obstructing hose, hose with bend or folded.	Check the outlet hoses of the electric pump and the electronic flow monitoring system.
	Problems with leakage.	Check the spray circuit for leaks and pass chemical adhesive as per instructions on page 31.
	Problems with the pump.	Check if there is any object obstructing the passage of liquid to the pump.

▪ Maintenance

• Fertisystem batcher accessories

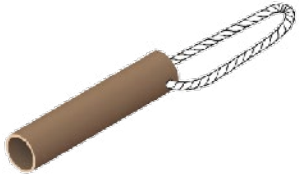
The Fertisystem feeder is assembled with a level regulator “cross cover” and a worm spring (step 2”).

LEVEL REGULATOR CROSS-LID

ENDLESS SPRING (STEP 2”)

The Fertisystem feeder includes the following accessories: maintenance tube, fixing tube e blocking tube.

MAINTENANCE TUBE

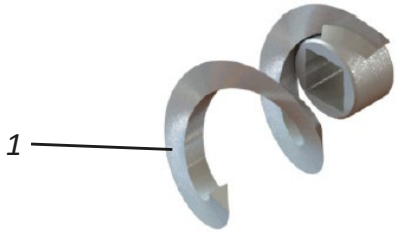


FIXING TUBE

BLOCKING TUBE

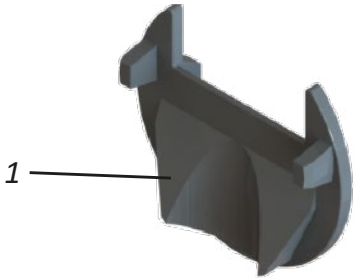
• Endless spring

At **DEMETRA** the Fertisystem batcher leaves the factory assembled with the endless spring 2” (1).



• Level Regulator “Cross Cover”

The Fertisystem dispenser leaves the factory fitted with the “Cross-Lid” level regulator (1). The uniformity and precision in the distribution is due to the level regulator “Cross-Lid” (1), which has the function of canceling the pulsating effect of the endless spring cycle and also controlling the dosage.



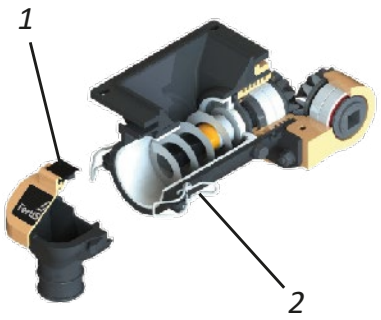
⚠ ATTENTION **Never operate without the “Cross-Lid” level regulator (1). Check that it is well positioned in the nozzle.**

▪ Maintenance

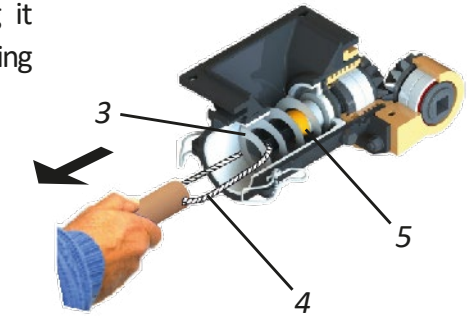
• Maintenance or replacement of the Fertisystem dosing spring

After planting, do not leave fertilizer in the tank. To maintain or replace the worm-spring or to clean or repair the internal part of the Fertisystem batcher, proceed as follows:

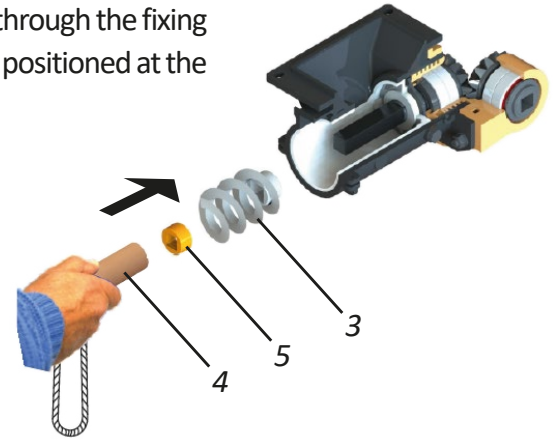
01 - Disengage the nozzle (1) through the stainless steel lock (2).

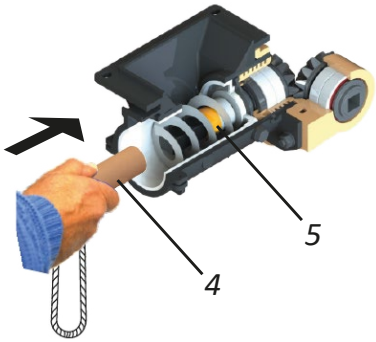


02 - Then, remove the endless spring (3), pulling it through the cord of the fixing tube (4), also removing the locking ring (5).



03 - After cleaning, replace the endless spring (3), together with the locking ring (5), through the fixing tube (4), making sure that the endless spring (3) and the locking ring (5) are well positioned at the base of the shaft (6).



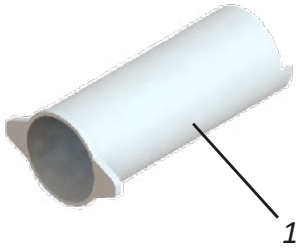


⚠ ATTENTION **Keep the worm spring in place with the locking ring. This procedure will avoid damaging the cross cover when not using the seeder with the fertilizer or when transporting the seeder. In case of wear or lack of tightening "pressure" of the lock ring (5), replace it.**

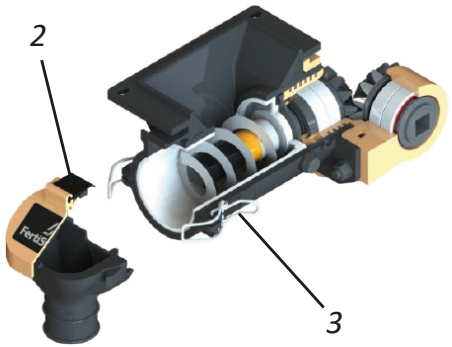
▪ Maintenance

• Fertisystem batcher maintenance tube

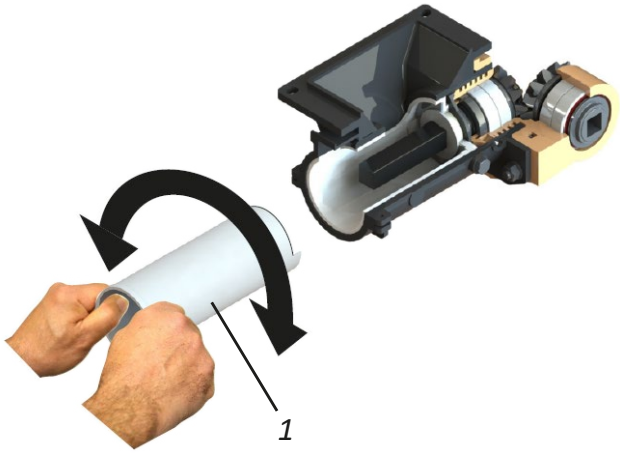
To maintain or change the endless springs in the Fertisystem feeder without the need to remove the fertilizer from the tank, use the maintenance tube (1), to do this, proceed as follows:



01 - Disengage the nozzle (2) through the stainless steel lock (3).



02 - Then, introduce the maintenance tube (1) in rotating movements, promoting the displacement of the fertilizer to the bottom of the batcher. Then perform the necessary maintenance.

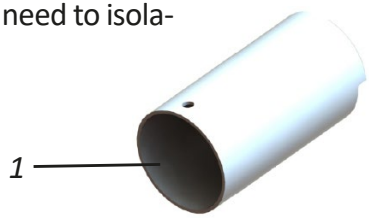


NOTE | **The maintenance tube (1) has an end cut angle to facilitate this operation.**

▪ Maintenance

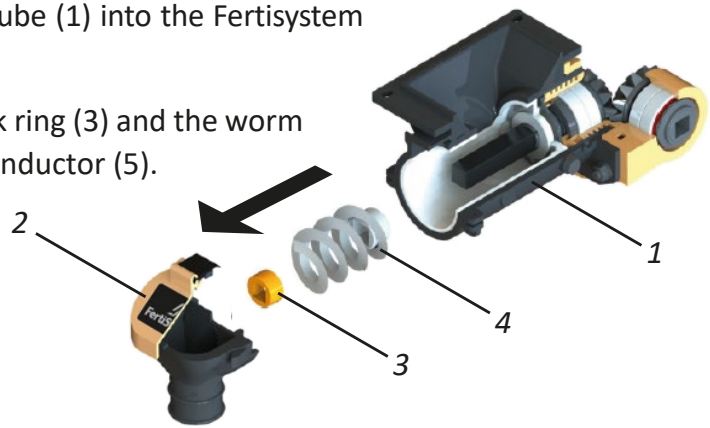
• Fertisystem Batcher Blocker Tube

DEMETRA comes with a blocking tube (1) so that when you need to isolate some planting Rows, fertilizer distribution does not occur.

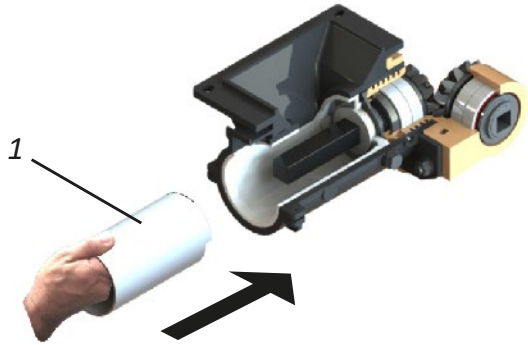


In order to place the blocking tube (1) into the Fertisystem doser, proceed as follows:

01 - Remove the nozzle (2), the lock ring (3) and the worm spring (4) of the fertisystem conductor (5).



02 - Then insert the locking tube (1).



03 - Then, replace the nozzle (2).

• Springs and caps (optional) - Fertisystem batcher

DEMETRA leaves the factory with a 2” pitch worm spring and transversal cover (standard), but optionally the seeder can be supplied with a 1” pitch worm spring and a high-flow cover.

ENDLESS SPRING (STEP 1”)

HIGH FLOW COVER

NOTE

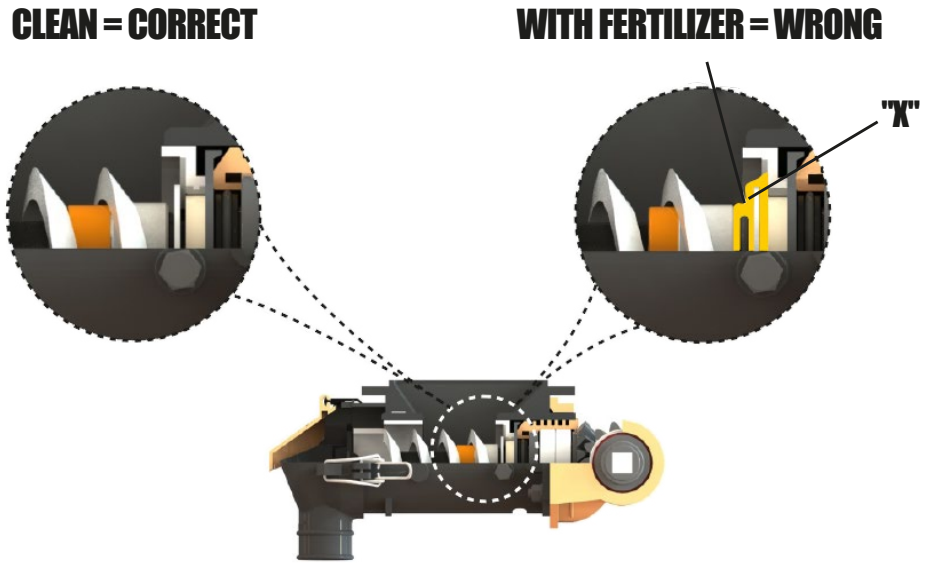
Always fill the fertilizer tank at the work location. Avoid any kind of impurity in the fertilizer tank. Carry out a measurement of dosage daily.

▪ Maintenance

• Cleaning the Fertisystem doser

We consider it mandatory to clean parts and components of the Fertisystem dispenser that maintain direct and indirect contact with fertilizers, since they are highly corrosive and abrasive, and can promote oxidation and destructible chemical reactions, through the effects of acidity, salinization and others, chemical fertilizers.

After planting is complete, disconnect the nozzle (1), the endless springs (2) and wash the sets thoroughly, keeping them free of fertilizers until new use, making the assemblies correctly.



⚠ ATTENTION

Make sure that there is no fertilizer in the "X" area between the washers and the sealing felt.

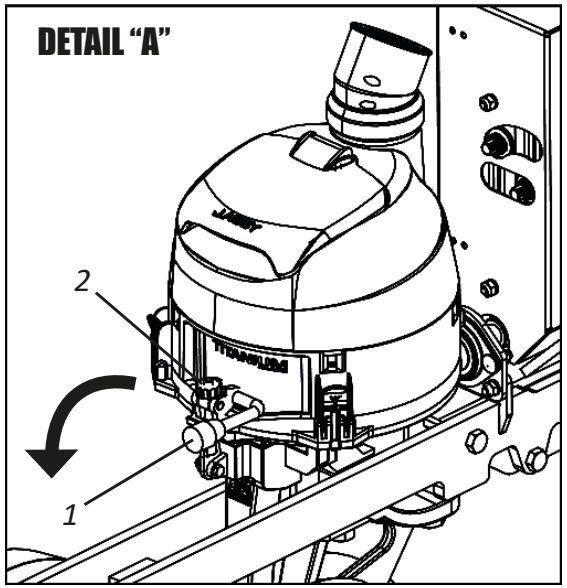
In case of extreme need to use the fertilizer out of specification and/or with excess moisture, perform daily cleaning of the endless springs and other components. Do not carry out maintenance or cleaning in the bearing area, in the endless springs and in the gears while the subsoiler is in motion.

▪ Maintenance

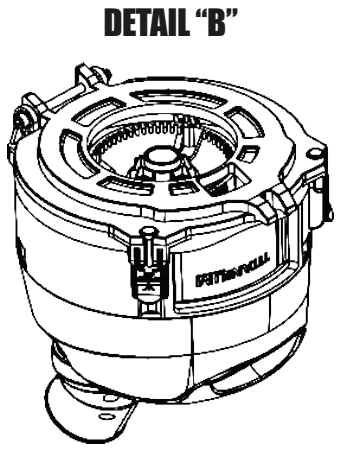
• Correct way to put the discs and rings on the Titanium batcher - Part I

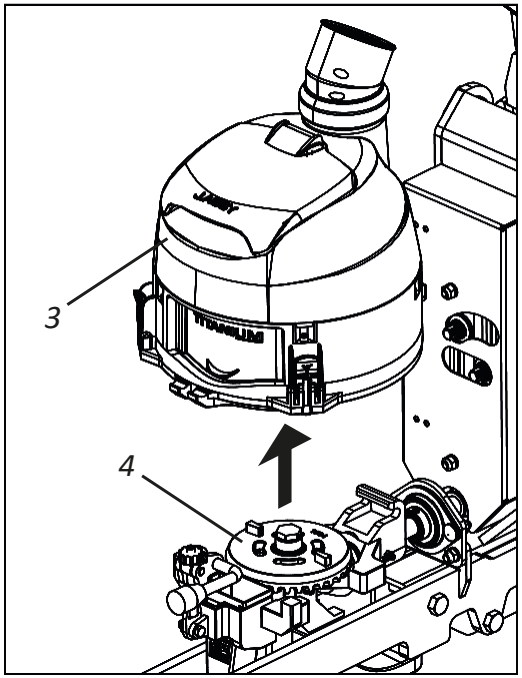
In order to place the discs and rings correctly on the **TITANIUM** feeder, proceed as follows:

01 - Lower the lever (1) to disarm the **TITANIUM** feeder's lock (2), according to **detail "A".**

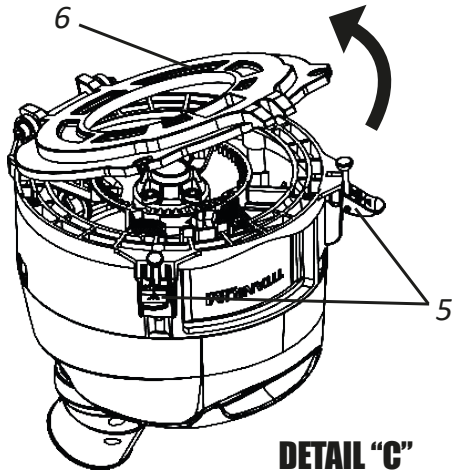


02 - Then, remove the seed box (3) from the Row (4), turn it so that the base of the **TITANIUM** batcher is facing up, as shown in **detail "B".**





03 - Then, release the latches (5) and open the counter base (6) of the **TITANIUM** feeder, according to **detail "C".**

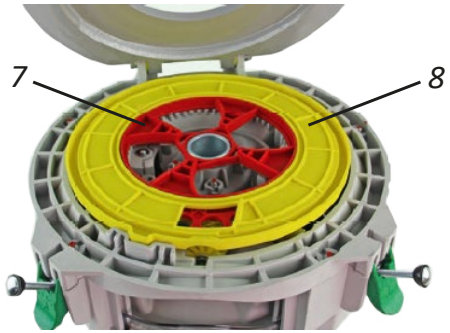


▪ Maintenance

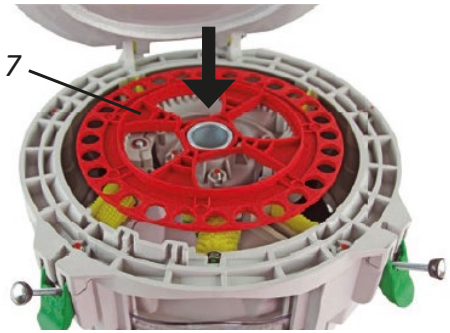
• Correct way to put the discs and rings on the Titanium batcher - Part II

04 - Then place the disk (7) and the ring (8), as shown in **detail "D".**

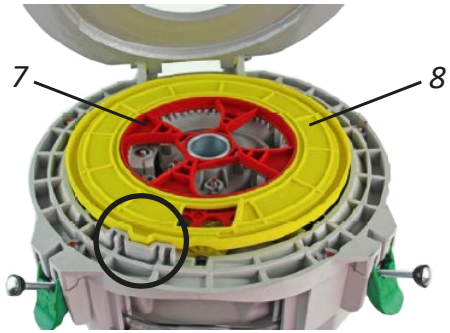
- When placing the disk (7), fit its central hole into the centering sleeve, according to **detail "E".**
- When placing the ring (8), fit it onto the disk (7), obeying the positioning, according to **detail "F".**



DETAIL "D"

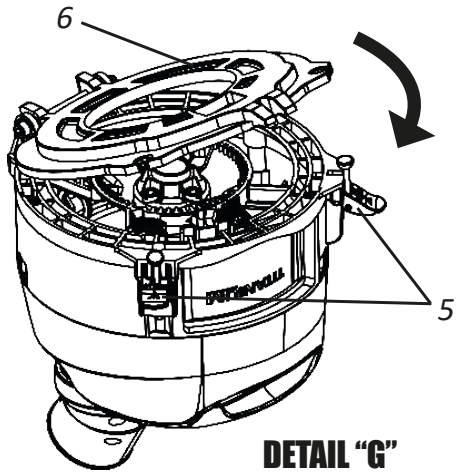


DETAIL "E"

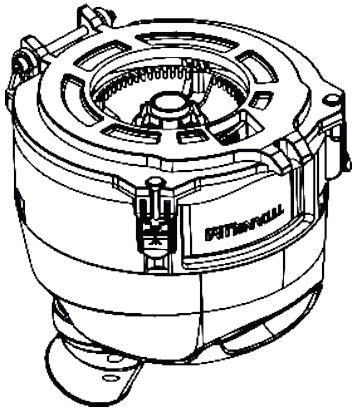


DETAIL "F"

05 - Then, close the counter base (6), secure the latches (5) to close the batcher **TITANIUM,** according to **detail "G".**



DETAIL "G"



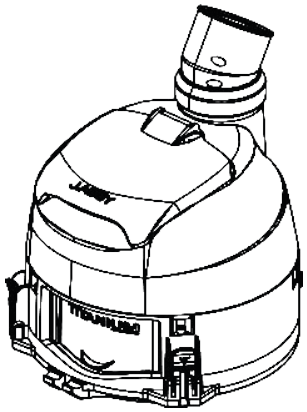
⚠ ATTENTION | **If it is difficult to close the TITANIUM feeder, follow the instructions on page 117.**

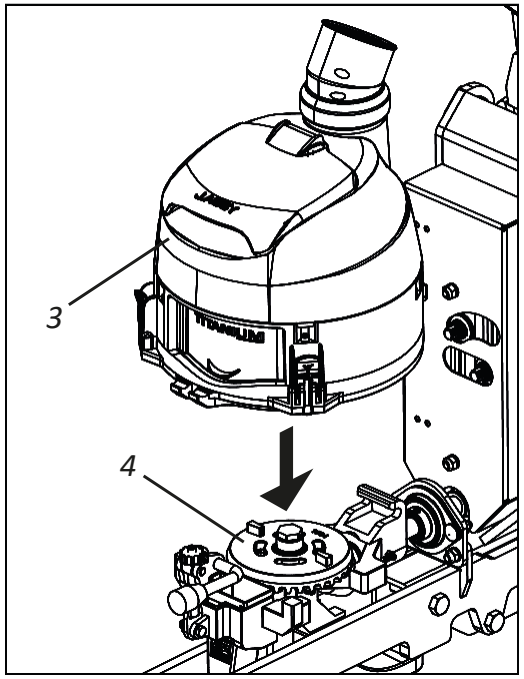
▪ Maintenance

• Correct way to put the discs and rings on the Titanium batcher - Part III

06 - Then, rotate the seed box (3), as shown in **detail "H"** and put it back on the Row (4).

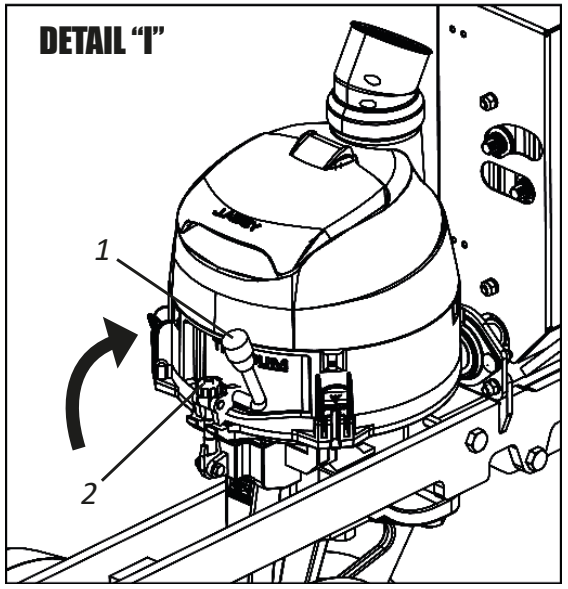
DETAIL "H"





07 - Then, lift the lever (1) to arm the lock (2) fixing the batcher **TITANIUM**, according to **detail "I"**.

DETAIL "I"



NOTE **For the correct choice of disks and batcher rings, follow the manufacturer's instructions on pages 75 and 76.**
In order to change the batcher discs and rings, follow the manufacturer's instructions on pages 119 and 120.

▪ Maintenance

• Titanium Closing Care

If you are having difficulties closing the **TITANIUM** feeder, follow these steps:

1 Check that the disk and ring are positioned correctly.

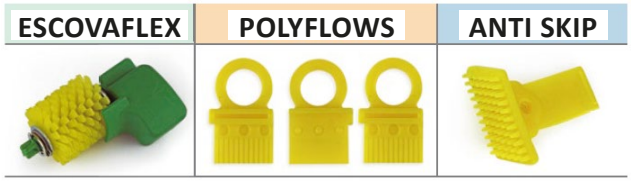
2 Check if there is dirt on the **TITANIUM** counter base, and if there is, clean it as indicated in the manual.

3 Make the adjustment of the latches, providing ease when opening the **TITANIUM** batcher and also providing a light grip when closing.

4 Never leave the locks loose, as this can directly influence plantability in cases of disc and ring looseness.

▪ Maintenance

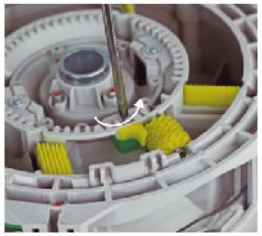
• The importance of exchange and how to do it



It is important to reinforce that some factors contribute to the premature wear of the **ESCOVAFLEX**, the **POLYFLOWS**, and the **ANTI SKIP**, such as the lack of graphite and the incorrect choice of disc and ring. When damaged, they lose efficiency and can harm your planting.

• How to change the Escovaflex

01 - The change must be made with a **Philips screwdriver N. 02.**



02 - Turn the **ESCOVAFLEX** counterclockwise as indicated. Lift the back diagonally.

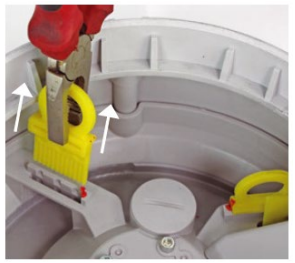
The side of the support must fit into the base.

Escovaflex with wear, need for replacement.

• How to change the Poliflow

01 - The change can be done manually or with universal pliers. Remove the weight limiter.

Example of how to remove **POLIFLOW.**



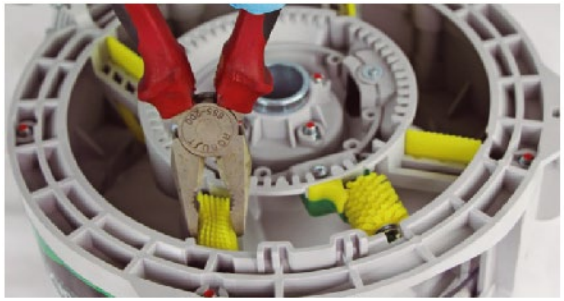
02 - Pull the **POLIFLOW** with your finger or with pliers. When fitting the **POLIFLOW,** make sure it is in the correct position. Insert it until the faces come together (yellow and gray), see below:

Poliflow with wear, need for replacement.

▪ Maintenance

• How to change the Anti Skip

01 - Use universal pliers to perform the change, as indicated in the image below:



02 - With pliers, fit the **ANTI SKIP** inside the base and pull until fully fit.

Anti Skip with wear, need to change.

• Changing discs and rings at each new planting - Part I

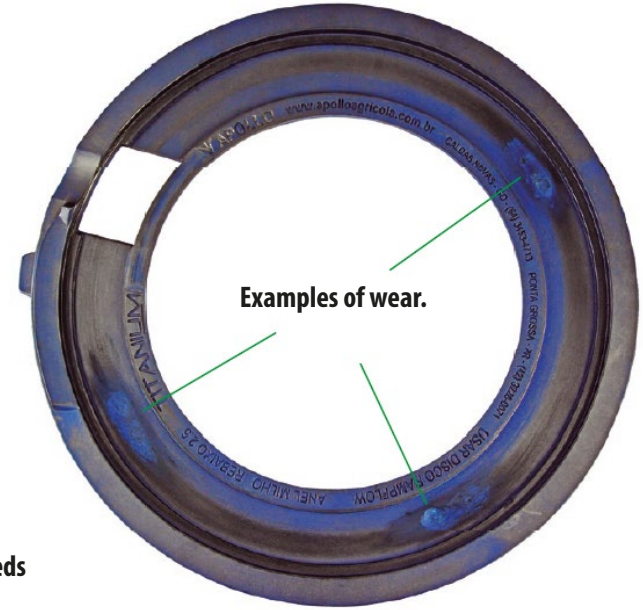
Not using graphite, **choosing the wrong disc/ring**, and **working hours** directly influence the wear of discs and rings.

IMPORTANT:

In order to maintain the excellence and efficiency of the **TITANIUM** batcher, change the disk and the ring at each new planting.

In tests performed, it was concluded that this wear can increase the number of double seeds in the same hole of the disk. **See the example below:**

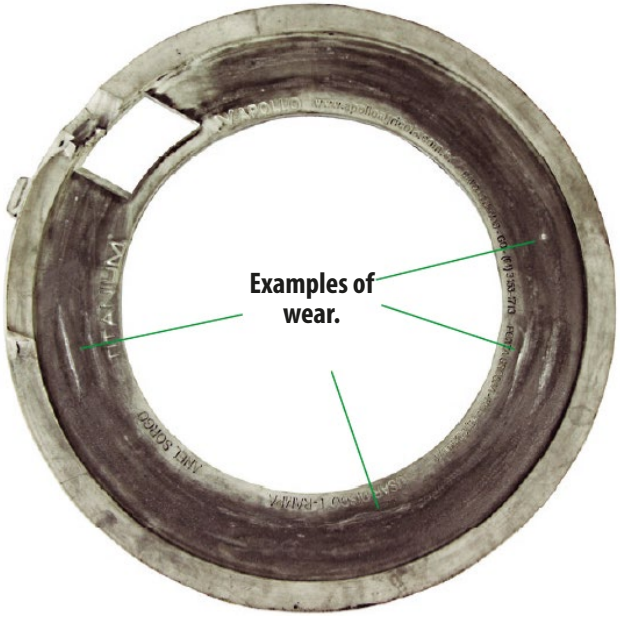
The wear can cause doubles (two seeds in the same hole of the disk).



▪ Maintenance

• Changing discs and rings at each new planting - Part II

Example of wear on the RING.



Very **evident wear** in this area that **can cause doubles** (two seeds in the same hole of the disk).

• Care

01 - Before each work, check the condition of all hoses, pins, screws, and discs. When necessary, retighten or replace them.

02 - The speed of travel must be carefully controlled according to terrain conditions.

03 - The **DEMETRA** is used in several applications, requiring knowledge and attention during its handling.

04 - Only local conditions will be able to determine the best form to operate the **DEMETRA**.

05 - When assembling or disassembling any part of the **DEMETRA**, use suitable methods and tools.

06 - Carefully observe the lubrication intervals at the various **DEMETRA** lubrication points. Observe the lubrication intervals.

07 - Always check if the parts are worn. If replacement is required, always require original Baldan parts.

08 - Always keep the tires at **DEMETRA** calibrated.

09 - Keep the **DEMETRA** discs sharp.

IMPORTANT | **Proper and periodic maintenance is necessary to ensure DEMETRA's long life.**

• Care during planting

01 - The fertilizer has great moisture absorption power and this speeds up the oxidation process, so avoid spillage and accumulation of fertilizer while loading the **DEMETRA**.

02 - Use a blower, compressed air or a broom to remove excess of fertilizer from the seeding machine at the end of the day.

03 - To avoid fertilizer effects, protect **DEMETRA** by storing it in the shed or covering it with canvas (in the best possible way) during rain and/or night periods, to protect it from moisture.

▪ Maintenance

• General cleaning

01 - At the end of planting, proceed as follows:

- Remove the transmission chains and keep them bathed in oil until the next planting.
- Remove the hoses by immediately washing them with mild soap and water. Do not use other chemicals.

02 - Before storing the **DEMETRA**, drain the tank. Never store **DEMETRA** with the tank filled with product or water.

03 - When exhausting the tank, check the disposal guideRows described on the packaging of each product used.

04 - Before storing the **DEMETRA**, perform a general cleaning and wash it thoroughly with water only. Check that the paint has not worn out, if this has happened, apply a general coat, apply protective oil, and lubricate **DEMETRA** completely. Do not use burnt oil or other abrasive.

05 - Lubricate **DEMETRA** completely. Check all the moving parts of the **DEMETRA**, if they show wear or looseness, make the necessary adjustment or replacement of the parts, leaving the seeder ready for the next work.

06 - After all maintenance work, store the seeder in a covered, dry place, properly supported.

Avoid: - The discs from directly contacting the ground.
- That the hydraulic hoses are properly plugged.

07 - When connecting or disconnecting hydraulic hoses, do not let their ends touch the ground. Before connecting the hydraulic hoses, clean the connections with a clean cloth without loose threads. **Do not use tow!**

08 - Replace all damaged or missing stickers, especially warnings. Make everyone aware of their importance and the dangers of accidents when instructions are not followed.

09 - After all maintenance care, store your **DEMETRA** on a flat surface, covered and dry, away from animals and children.

10 - Make sure that the tanks are properly capped.

11 - We recommend washing the **DEMETRA** only with water at the beginning of the work.

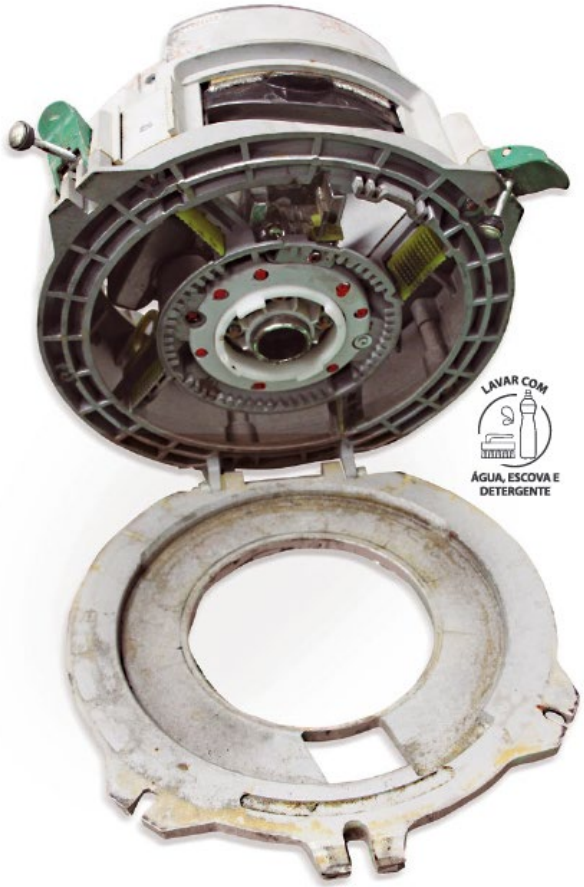
⚠ ATTENTION | **Do not use chemicals or abrasives to wash DEMETRA, as this may damage the paint and adhesives on it.**

▪ Maintenance

• Titanium Cleaning

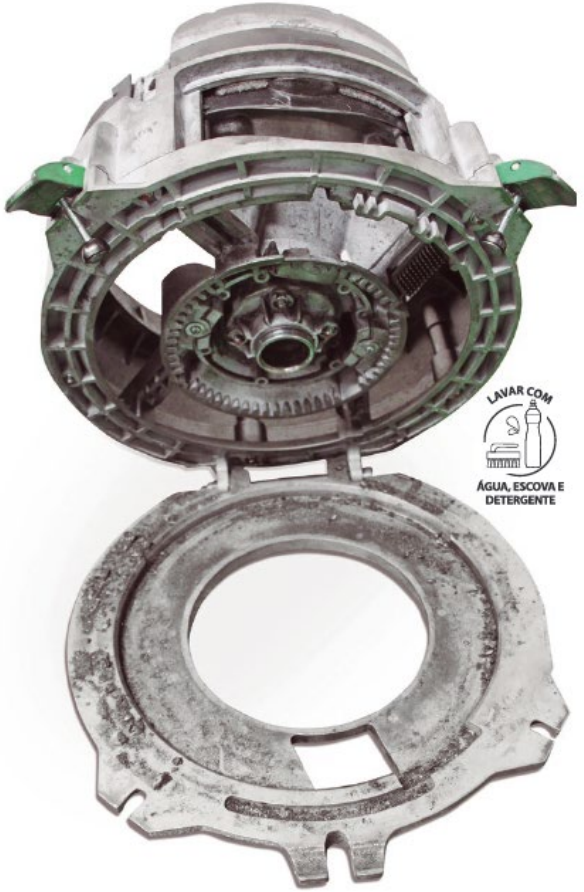
After the end of each planting, it is necessary to clean the **TITANIUM** Disk Housing and Batcher Ring. It must be washed with water, brush and neutral detergent.

Example of TITANIUM with land.



Counter base of the **TITANIUM** dosing pump dirty and crusted.

Example of TITANIUM with graphite.

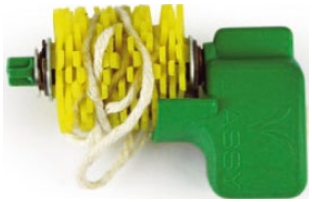


Counter-base of the **TITANIUM** batcher dirty with graphite.

▪ System

• Troubleshooting - Titanium

01 **- The ESCOVAFLEX stuck with a rolled up string, how can it be solved?**



In extreme cases the ESCOVAFLEX can lock up, so always check through the display that it is working properly. If a string gets stuck, (as shown in the picture beside), remove the string, check the conservation status of the ESCOVAFLEX and, if necessary, replace it with a new one before continuing planting.

---

02 **- Regarding seed treatment, do I have any limitations in using the TITANIUM batcher or not?**

Yes, oil treatments, liquid inoculants, directly in the box of seeds can greatly compromise the plantability of the system.

---

03 **- With the TITANIUM batcher can I plant at a higher speed?**

No, always use the speed recommended by the planter manufacturer. The batcher was developed to improve plantability, and one of the main factors compromising plantability is speed.

---

04 **- Can I plant without graphite?**

No, never do a planting without graphite. The graphite is responsible for lubricating the system, avoiding mechanical damage and reducing wear on the discs and rings.

05 **- Can I graffiti along with the treatment?**

Yes, oil treatments, liquid inoculants, directly in the box of seeds can greatly compromise the plantability of the system.

---

06 **- Can I replace the graphite (powder) with inert talc?**

No, graphite should never be replaced or used in smaller amounts than indicated, because it is responsible for lubricating the system and distributing the seeds well.

---

07 **- I started planting soybeans, I am noticing some broken seeds in the display, what to do?**

This is a symptom of missing graphite or incorrect choice of disc and ring.

---

08 **- Can I inoculate directly into the TITANIUM batcher seed box?**

No, liquid inoculant compromises the function of the distribution set.

---

09 **- Posso trabalhar sem o limitador de peso?**

No, the limiter prevents the overload of weight inside the tank to ensure a correct seed distribution. Work without the limiter only when using the Seeds Reservoir (Popcorn Maker) J.Assy.

▪ Maintenance

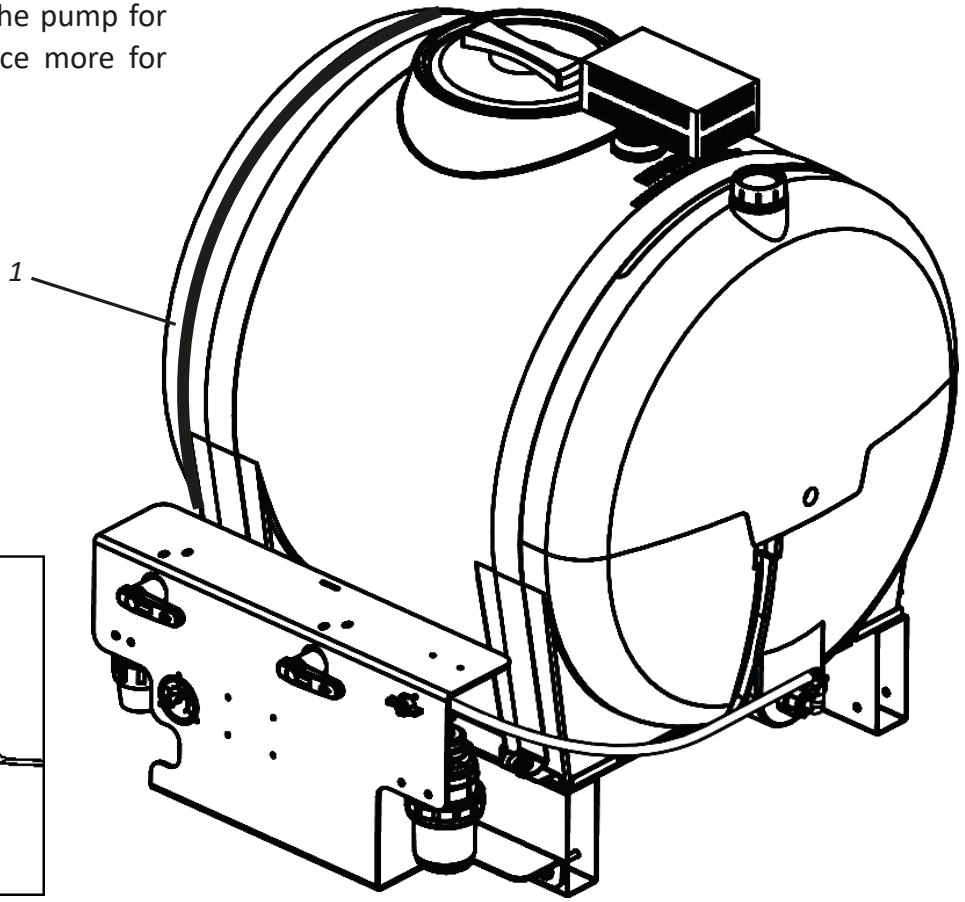
• 300 liter tank washing

After each use of **DEMETRA**, clean the 300 liter (1) tank for better conservation and durability. Depending on the product to be used, we recommend that this cleaning is also performed on every refill. To clean the 300 liter (1) tank, proceed as follows:

01 - Completely empty the product used into the 300 liter tank (1) by opening the damper (2).

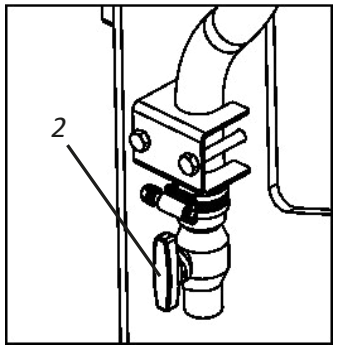
02 - Then, with a clean water hose, wash the 300 liter (1) tank internally and run the pump for internal cleaning of the pump, hoses, and nozzles. Repeat this operation once more for complete elimination of residues of the product used.

03 - Then completely drain the water from the 300 liter (1) tank.



⚠ ATTENTION

When emptying the 300 liter (1) tank, do not throw the chemical into rivers, lakes, or onto the ground. Proceed with the disposal according to the instructions on the packaging; if you have no information, contact the competent authority in your region. Improper waste disposal affects the environment and ecology.



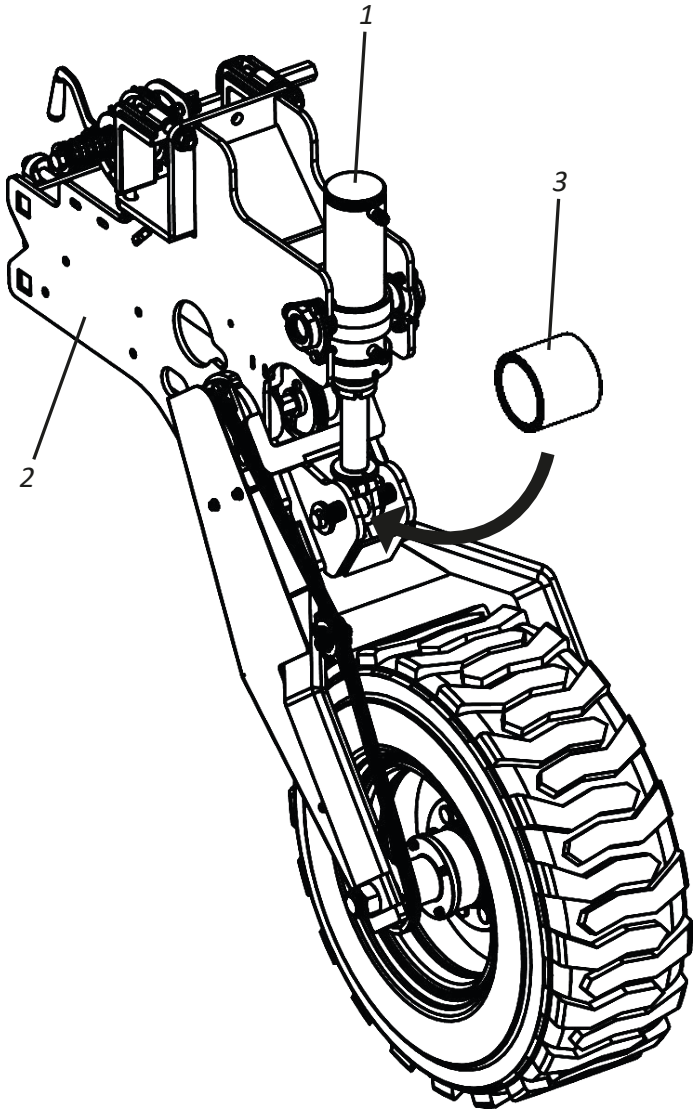
❗ IMPORTANT

Proper maintenance will keep your DEMETRA always ready for use, with greater durability and better return on your investment.

▪ Maintenance

• Hydraulic wheel cylinder bushing

When removing the hydraulic cylinder (1) from the wheel (2) for replacement or maintenance, don't forget to put the bushing (3) onto the piston rod of the hydraulic cylinder (1) when you mount it back onto the wheel (2).



⚠ ATTENTION **Do not mount the hydraulic cylinder (1) on the wheel (2) without fitting the bushing (3). Failure to comply will cause damage to DEMETRA.**

▪ Maintenance

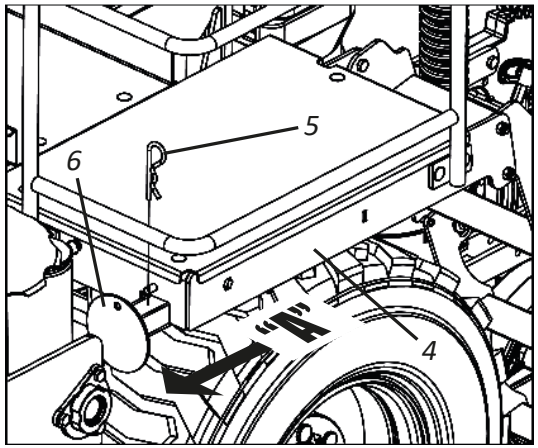
• Changing or Repairing Tires - Part I

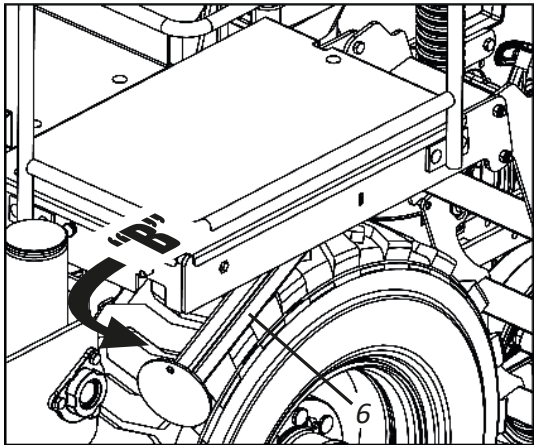
In order to change or repair your tires, proceed as follows:

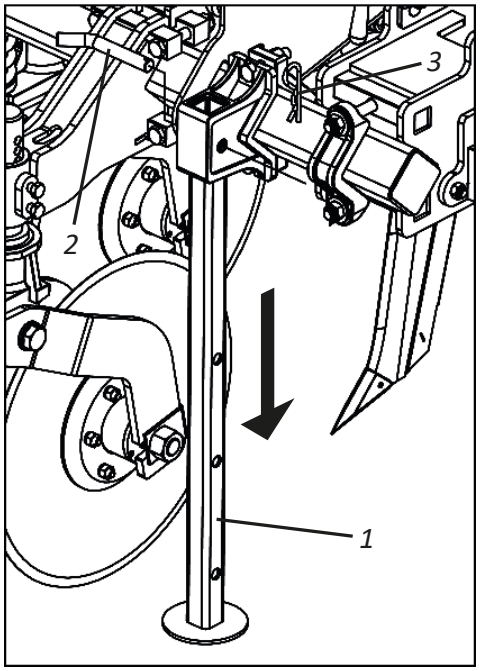
01 - Lower the front support bracket (1) securing it by means of the pin (2) and lock (3).

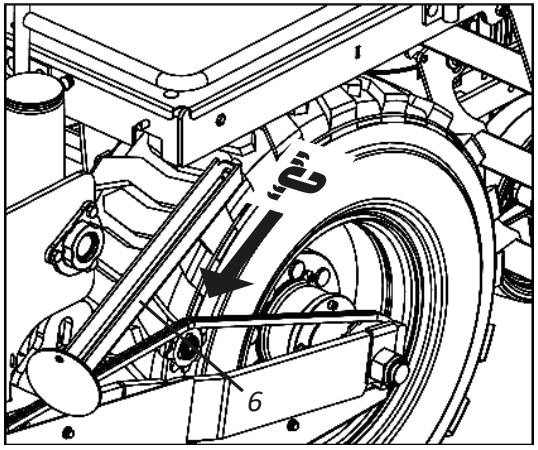
02 - Then, on the left platform (4), release the lock (5), pull the rear support bracket (6) in direction **"A"** until it disengages from the pin; at this point the rear support bracket (6) will tilt downwards.

03 - Next, pull the rear support bracket (6) in direction **"B"** and then in direction **"C"**, removing it.









⚠ ATTENTION

Antes de trocar ou reparar os pneus, certifique-se que a DEMETRA esteja devidamente apoiada. A não observância pode causar danos ou graves acidentes.

NOTE

As indicações de lado esquerdo ou direito são feitas observando a DEMETRA por trás.

▪ Maintenance

• Tire Replacement or Repair - Part II

04 - Then, retract the hydraulic cylinder (7) completely by suspending the tire (8) that will be replaced or repaired.

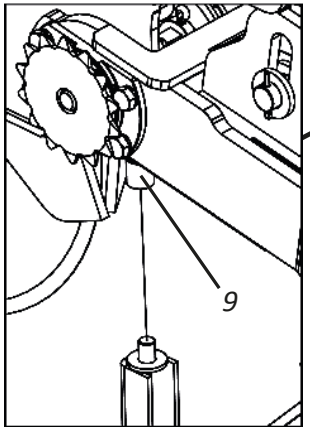
05 - Then, support the **DEMETRA** at the rear, coupling the rear support bracket (6) to the bushing (9) underneath the wheelset, according to **detail "A".**

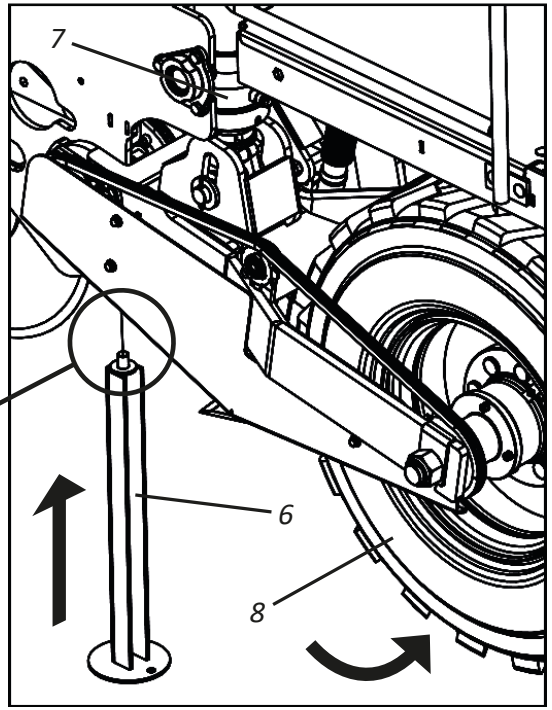
06 - Then loosen the screws (10), lock washers (11), plain washers (12), remove the protective cover (13), and loosen the chain (14).

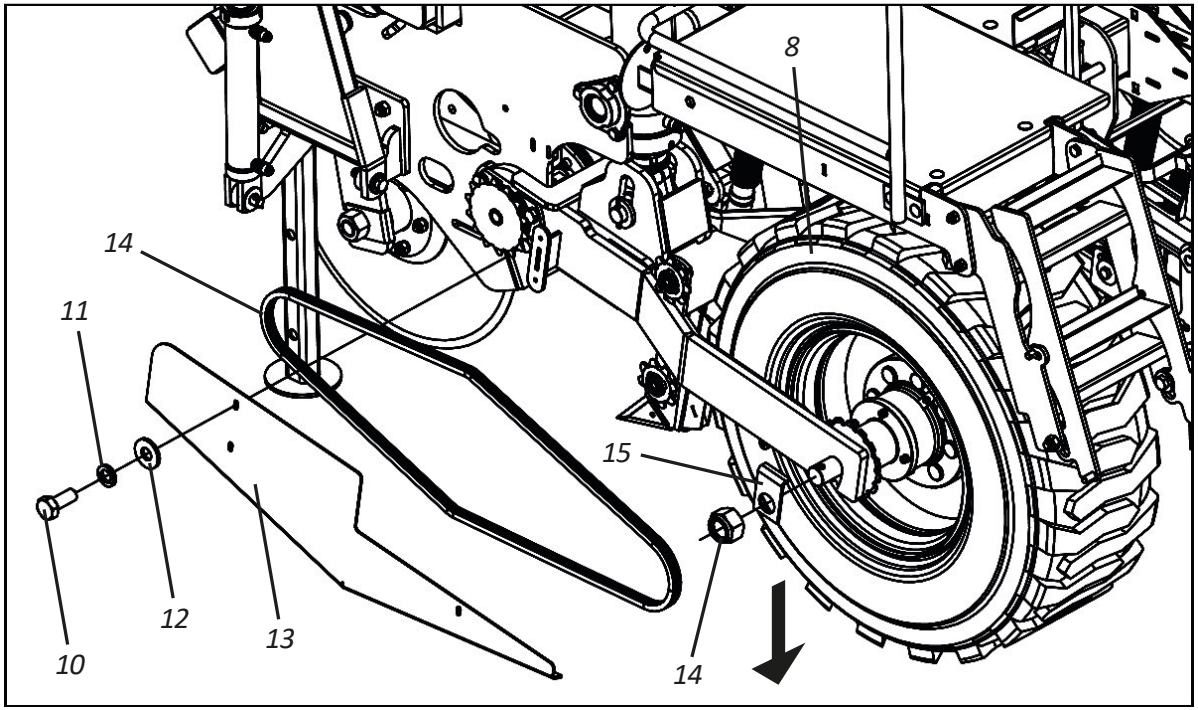
07 - Then loosen the nuts (14), locks (15), remove the tire (8), and change or service it.

08 - When the tire (8) has been replaced or repaired, replace the chain (14) and the protection cover (13), securing them with flat washers (12), lock washers (11), and screws (10). Then, lower the tire (8) to the ground to lift the **DEMETRA**, remove the rear support bracket (6) and put it back on the left platform (1) securing it by means of the lock (5). Finish by lifting the front support brackets.

DETAIL "A"







▪ Maintenance

• Seeder Conservation - Part I

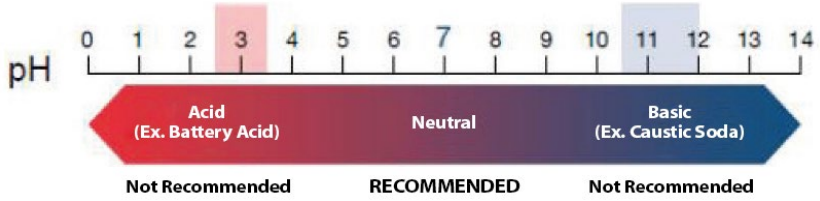
To extend the life and appearance of **DEMETRA** for longer, please follow the instructions below.:

01 - Fertilizers and their additives are highly corrosive and their formulation is increasingly aggressive to seeder components.
02 - Wash and clean all seeder components during and at the end of the working season.
03 - Use neutral products to clean the seeder, following the safety and handling guideRows provided by the manufacturer.
04 - Always perform maintenance within the periods indicated in this manual.

• Seeder Conservation - Part II

The practices and precautions below if adopted by the owner or operator make a difference to the conservation of DEMETRA.

01 - Be careful when washing with high PRESSURE; do not direct the water jet directly on connectors and electrical components. Isolate all electrical components;
02 - Use only water and NEUTRAL detergent (pH equal to 7);
03 - Apply the product, strictly following the manufacturer's instructions, on the wet surface and in the correct sequence, respecting the time of application and washing;
04 - Stains and dirt not removed with the products must be removed with the aid of a sponge.
05 - Rinse the machine with clean water to remove all chemical residue.
06 - do not use: - Detergents with basic active principle (pH greater than 7) can damage/stain the seeder's paint.
- Detergents with acid active principle (pH less than 7), act as a stripper/zinc remover (the protection of parts against oxidation).



07 - Allow the machine to dry in the shade so that water does not accumulate in its components. Drying too quickly can cause stains on your paint..

▪ Maintenance

• Seeder conservation - Part III

08 - After drying lubricate all chains and grease fittings according to operator manual recommendations.

09 - Spray the entire machine, especially the zinc-coated parts, with protective oil, following the manufacturer's application guideRows. The protector also prevents dirt from sticking to the machine, facilitating subsequent washing.

10 - Observe the cure time (absorption) and application intervals as recommended by the manufacturer.

⚠ ATTENTION

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

IMPORTANT

We recommend the following protective oils:
- Bardahl: Protective Agro 200 or 300
- ITWChemical: Zoxol DW - Series 4000

NOTE

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

▪ Lifting

• Warnings for lifting - Part I

⚠ Carefully read all the information contained on pages 130 to 134 before starting the DEMETRA lifting procedure as instructed on page 135.

⚠ Before starting the DEMETRA lift, look for a safe and easily accessible location that is clean and free of oil, grease, and not wet, as there is a danger of accidents.

⚠ To avoid serious injury or death while lifting DEMETRA, use PPE (Personal Protective Equipment).

⚠ NDo not drag hooks, chains or slings as they can cause damage which should be avoided.

⚠ Before starting the DEMETRA lift, make sure there are no people near, on or under it. NEVER stay on top of or under suspended DEMETRA. Ignoring this warning could cause serious injury or death.

⚠ When lifting the DEMETRA, prevent it from screwing in any place. Do not subject the equipment to unnecessary efforts.

⚠ Never secure the load on the end of the hook. Use large eyebolts or fasten with a suitable shackle.

⚠ Never try to force a large ring to be attached to a smaller hook, use a hook with a suitable opening.

⚠ Raise the DEMETRA a few centimeters off the ground and check that the attachment is secure and that the angles and tensions in the sling legs are correct, before starting the movement.

⚠ Move DEMETRA with due care. Gently lower it to avoid jolts or collisions.

⚠ SIf necessary, move the hook only with your fingertips; never put your hand inside it, as your fingers may be pinched by the load.

⚠ On attachments with lifting eyes, ensure that the eyes are properly positioned. The hook ends must be positioned to the outside of the load.

⚠ Before lifting the DEMETRA, make sure its weight is evenly distributed.

⚠ Never lift the DEMETRA using a strap that is used to secure the load. These materials are only sized for securing cargo and will not support its weight. For lifting, use only GRADE 8 or 10 chains with a load capacity compatible with the weight of the DEMETRA to be lifted.

⚠ The accessories must have the same load capacity as the chain; Do not repair broken chains with wires, screws or welding. Replace any chain that shows any damage.

⚠ When lifting with multiple Rows on a single hook, the lifting angle should not exceed 90°. The hook can be damaged and there is a risk of opening the hook latch.

⚠ Do not twist fastening a chain link with a hook, always use a load ring.

▪ Lifting

• Warnings for lifting - Part II

⚠ Never move DEMETRA with the twisted chain.

⚠ Make sure the responsible person is instructed in the correct DEMETRA lift. Read or explain all procedures to the person who cannot read.

⚠ Baldan is not responsible for any damage caused in unpredictable situations or situations outside the normal DEMETRA lift.

⚠ Incorrect DEMETRA lifting can result in serious or fatal accidents and damage to the seeder.

⚠ Alcoholic beverages or some medications can cause loss of reflexes and change the physical conditions of the person responsible and the people involved in the DEMETRA lift, so never lift the same under the use of these substances.

▪ Lifting

• Inspection of locking hooks, chains and Rows

01 - Periodic in-depth examination should be done at least every 12 months or more often according to regulations and the type of use of hooks, chains and slings.
02 - Regular inspection includes both functional checks and periodic maintenance.
03 - Inspections of hooks, chains and slings must be carried out by persons who have knowledge of the design, use and maintenance of these materials.
04 - Before inspecting a chain, clean it thoroughly, removing the dirt and oil. All cleaning methods that do not attack the base material of the chain are acceptable.
05 - Chains and slings that have been overloaded must be discarded. Permanent stretching is not allowed.
06 - Chains that have cracks or cavities must be discarded.
07 - When a twisted chain is overloaded it develops permanent deformations. In this case, this chain must be replaced immediately.
08 - If the chain contains deformed links or deep corrosion, it must be replaced immediately.
09 - Damage or wear on hooks, chains and slings must be reported to your superior, who in this case must remove them from use for repair or replacement.
10 - Hooks, chains and slings that remain unused for a period of time should be inspected before being used again.

• Storage

01 - Adequate storage should be provided preferably at room temperature. Good storage preserves hooks, chains and slings and makes locating easier.
02 - Hooks, chains and slings stored for a long time must be protected against corrosion.
03 - Hooks, chains and slings that remain unused for a period of time should be inspected before being used again.

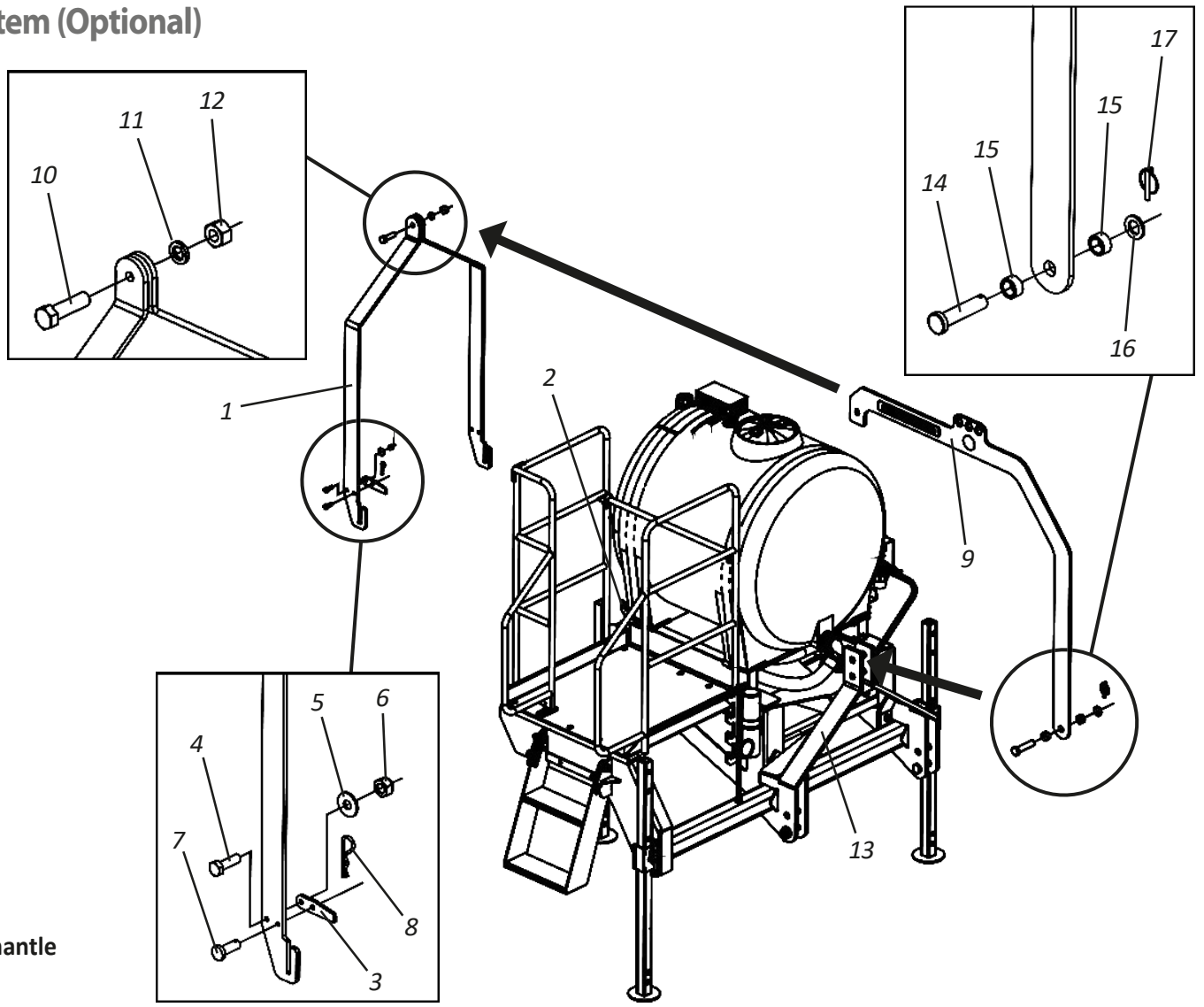
If you have any questions about inspection and storage of hooks, chains and slings, consult the manufacturer's manual.

▪ Lifting

• Assembly of the inoculant tank lifting system (Optional)

To assemble the lifting system, proceed as follows:

01 - Hook the rear support (1) to the tank support (2).
02 - Then, fix the plate (3) to the rear support (1) using the screw (4), flat washer (5), nut (6), pin (7) and lock (8).
03 - Then, attach the front support (9) to the rear support (1) using the screw (10), pressure washer (11) and nut (12).
04 - Finish by fixing the front support (9) to the frame (13) using the pin (14), bushings (15), flat washer (16) and lock (17).

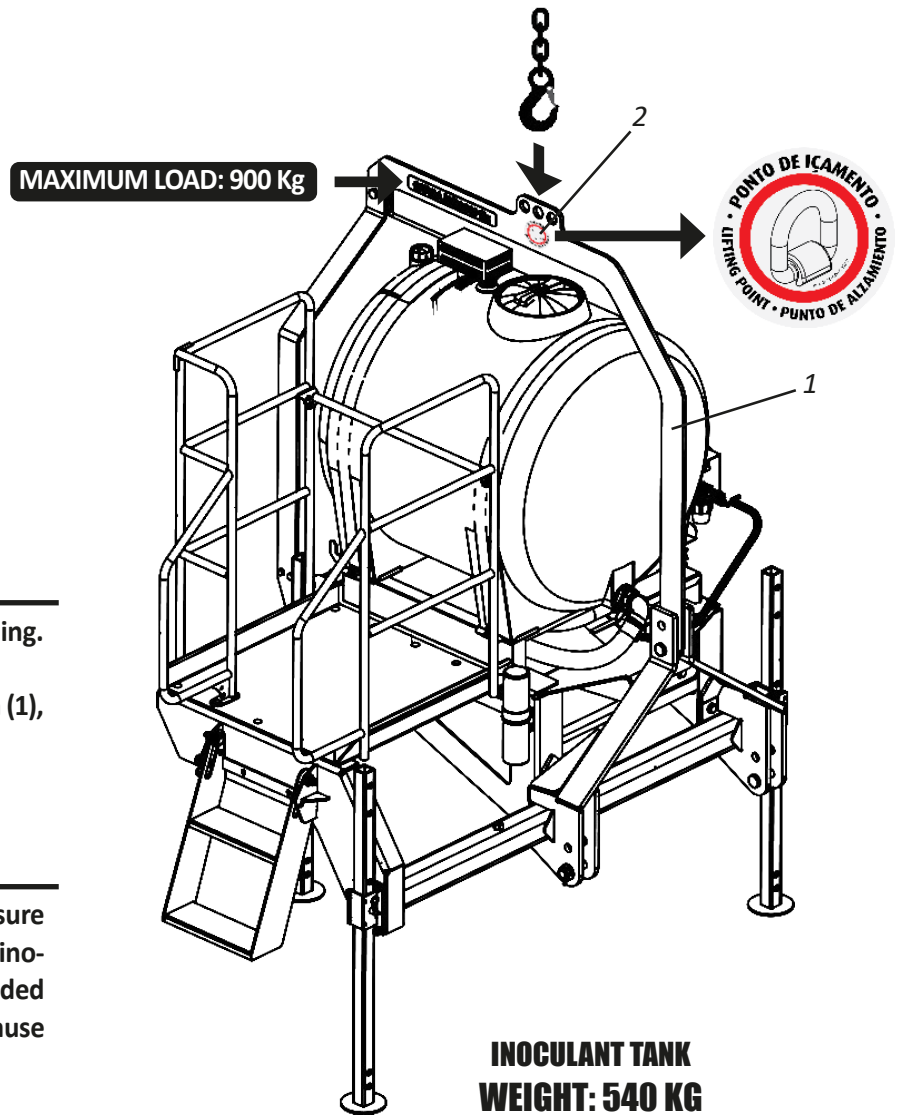


NOTE **When finishing lifting the inoculant tank, dismantle the lifting system.**

▪ Lifting

• Lifting the inoculant tank (Optional)

The inoculant tank has 3 lifting points located on the lifting support (1) identified by the sticker (2) fixed below these points. When loading, unloading, coupling to the tractor or maintaining the inoculant tank, if lifting is necessary, it is essential to use the lifting support (1) to avoid damage to the inoculant tank, serious accidents or even death.



⚠ ATTENTION

Before starting to lift the inoculant tank, check its WEIGHT to use the appropriate hook, chain and sling. Make sure when engaging the hook that the weight of the inoculant tank is evenly distributed.
DO NOT lift the inoculant tank without first assembling the lifting system (1). To assemble the lifting system (1), proceed as instructed on the previous page.

❗ IMPORTANT

Use standard hooks and chains, that is, those that meet safety standards.
The hooks and chains used to lift the inoculant tank must be GRADE 8 or 10 with a load capacity compatible with the weight of the inoculant tank to be lifted.

🔍 NOTE

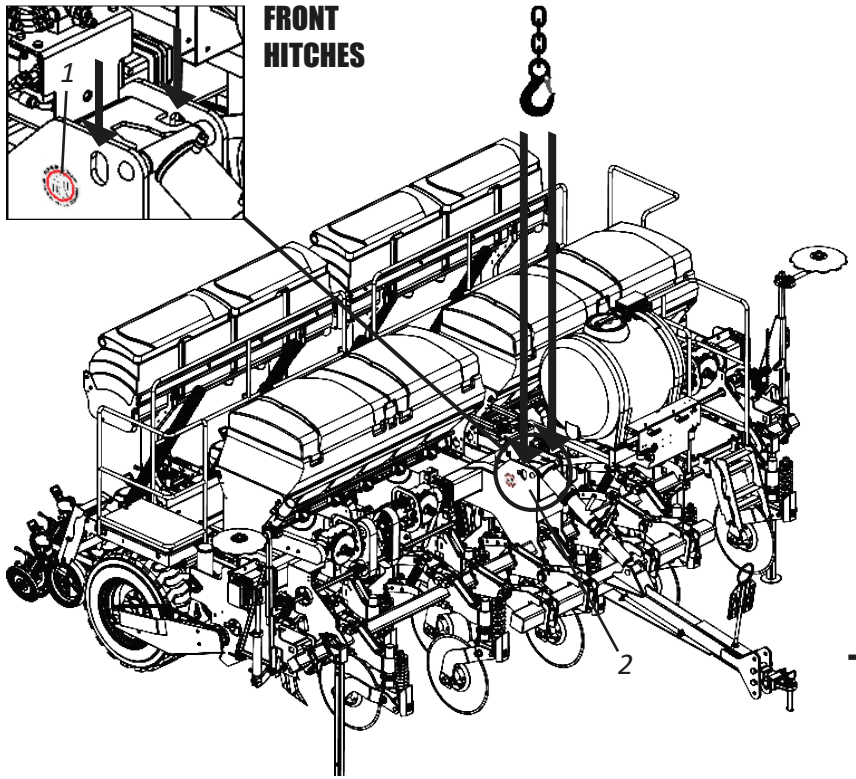
Before starting to lift the inoculant tank, make sure that there are no people near, on or under the inoculant tank. NEVER stand on or under the suspended inoculant tank. Ignoring these warnings could cause serious accidents or death.

▪ Lifting

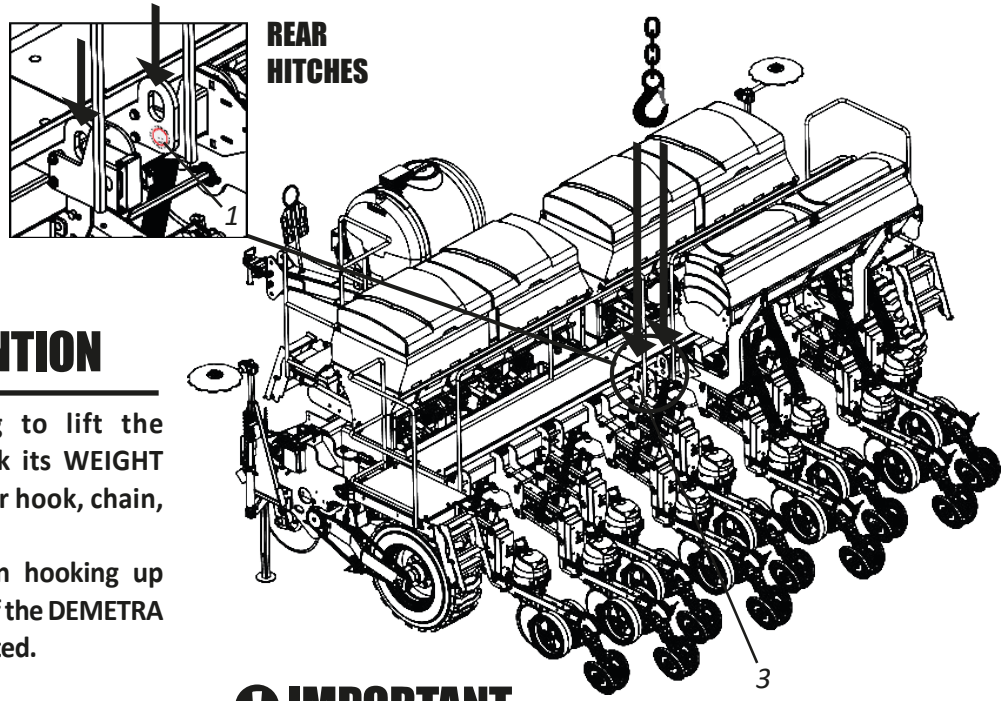
• Lifting the DEMETRA

DEMETRA has lifting points identified by means of the sticker (1) attached to the side of these points.
Observing all the guideRows on pages 130 to 134, lift the **DEMETRA** for this, proceed as follows:

Model	No. of Rows	Estimate Weight (Kg)	
		Without Inoculant System	With Inoculant System
DEMETRA 5500	9	6265	6380



01 - Attach the hooks to the brackets (2) at the front and to the brackets (3) at the rear of the **DEMETRA**, as instructed below.



⚠ ATTENTION

Before starting to lift the DEMETRA, check its WEIGHT to use the proper hook, chain, and sling.
Make sure when hooking up that the weight of the DEMETRA is evenly distributed.

❗ IMPORTANT

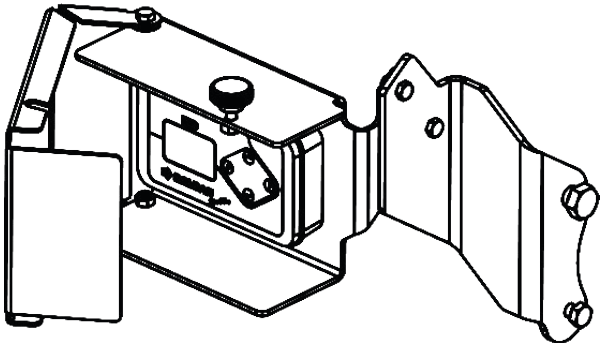
Use standard hooks and chains, that is, that meet safety standards.
The hooks and currents used for lifting the DEMETRA must be GRADE 8 or 10 with capacity of load compatible with the weight of the DEMETRA to be lifted.

Optional

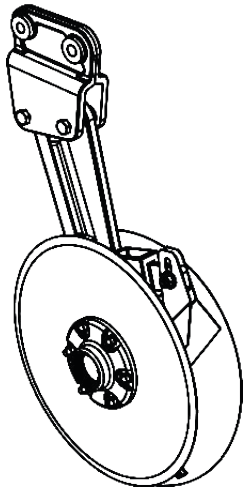
• Optional accessories - Part I

The **DEMETRA** has options that can be purchased according to the need for work.

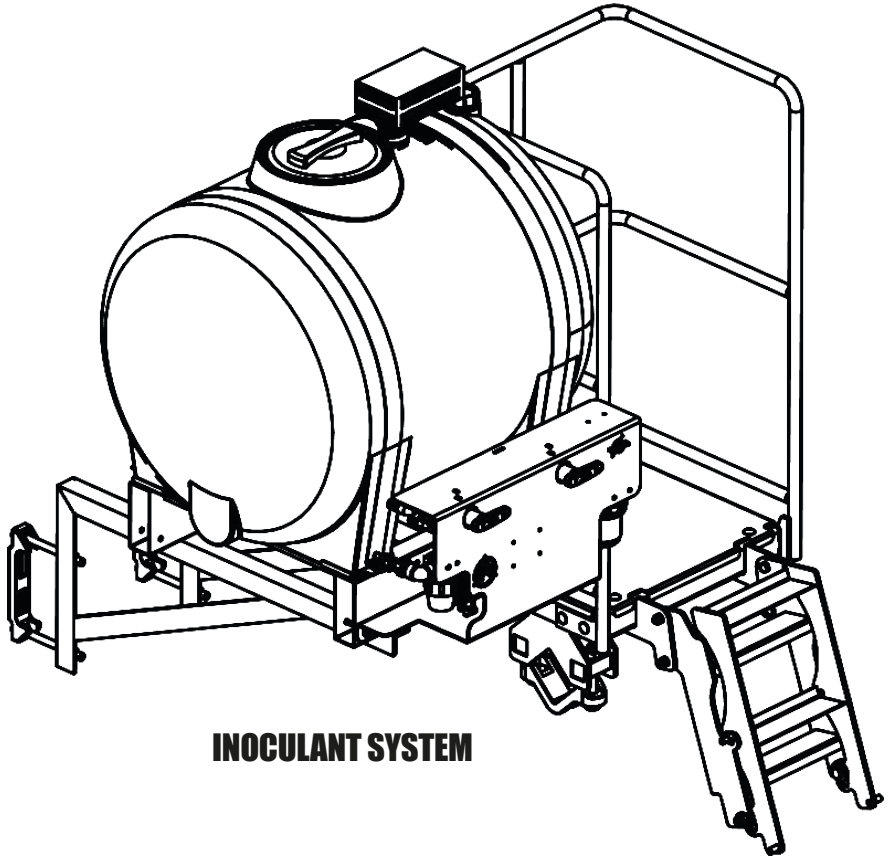
PM 400 ELECTRICAL SYSTEM



ETD (ELECTRONIC DOSING TABLE)



DOUBLE DISK ADAPTER (RIGHT AND LEFT)

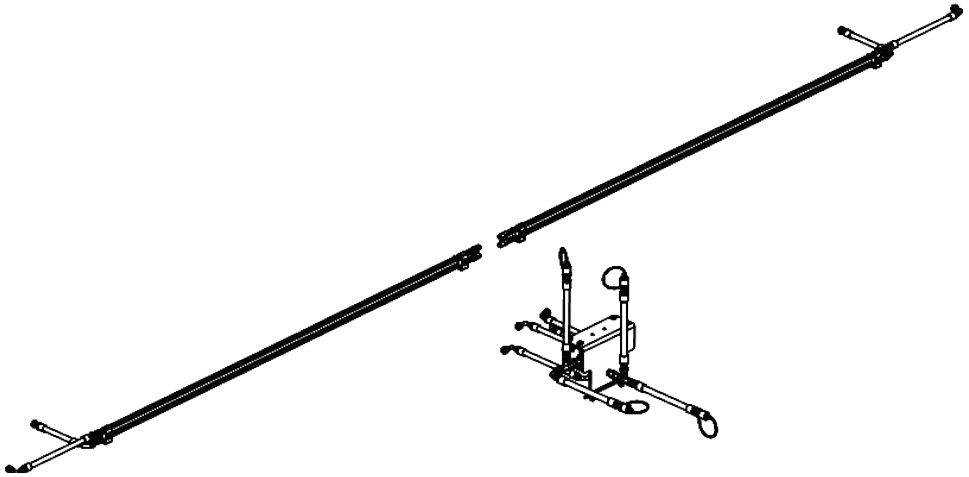


INOCULANT SYSTEM

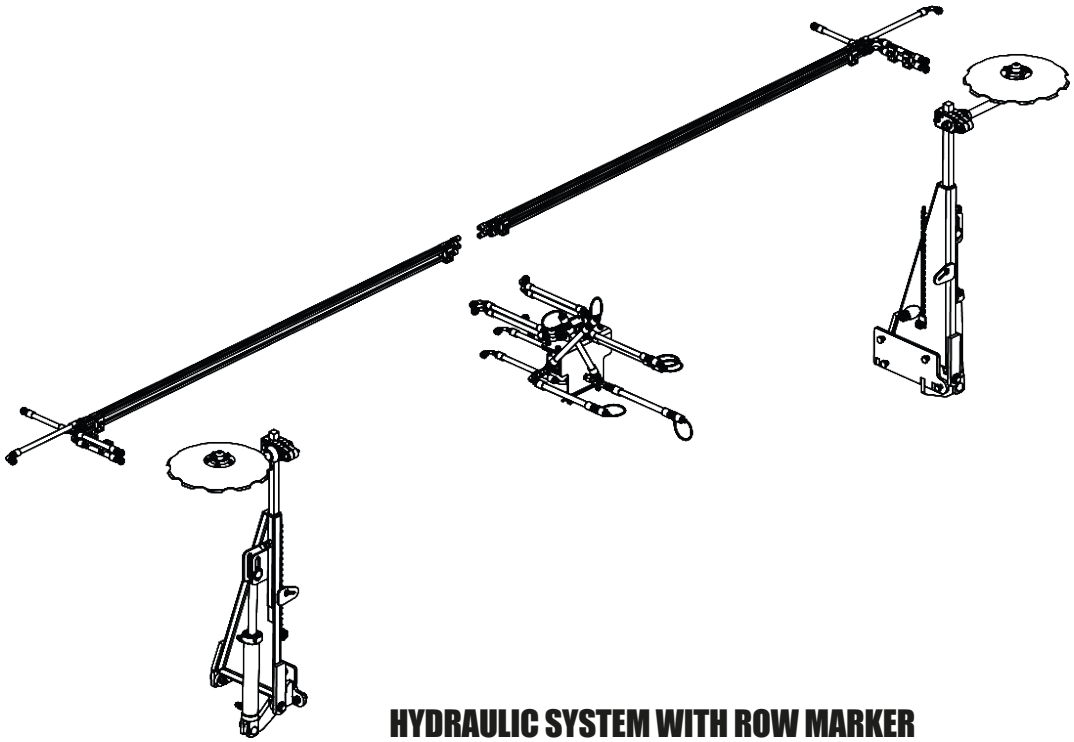
Optional

• Optional accessories - Part II

The **DEMETRA** has options that can be purchased according to the need for work.



HYDRAULIC SYSTEM WITHOUT ROW MARKER



HYDRAULIC SYSTEM WITH ROW MARKER

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Presentation

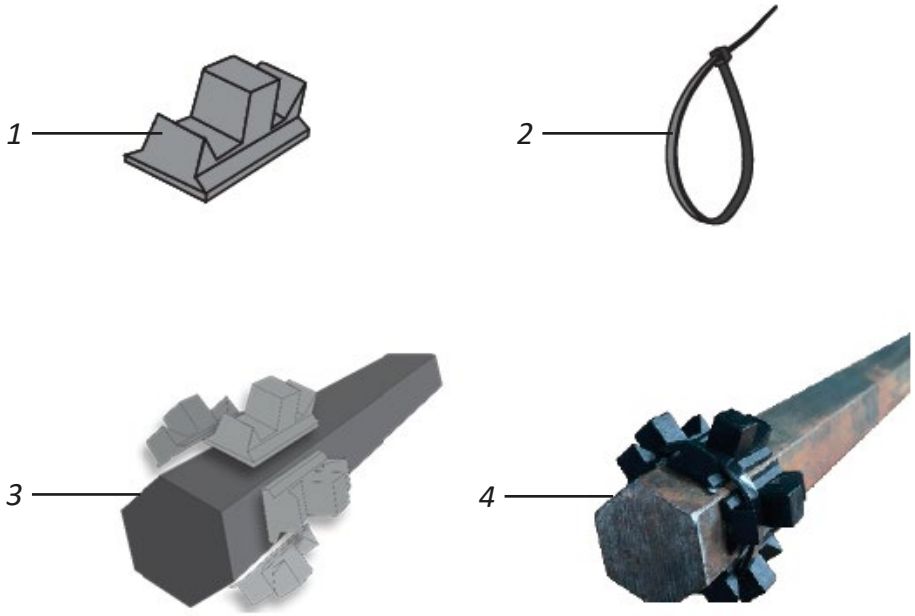
The **ETD** is an electronic device that can be connected to planters, seeders, and fertilizers to assist the operator in configuring the best gear ratio so that the correct dosage of seeds and fertilizers occurs, according to the needs of each area/plot, based on the adjustments previously done in the field and calibrations before planting. It allows to perform other additional functions such as the registration of planted hectares, hours actually worked and planting speeds above specified, and this important information is recorded and shown on the **ETD** electronic device display.

⚠ ATTENTION | **To use the ETD (Electronic Dosing Table), refer to the instruction manual on the following pages.**

▪ Operation manual ETD (Electronic Dosing Table) - Optional

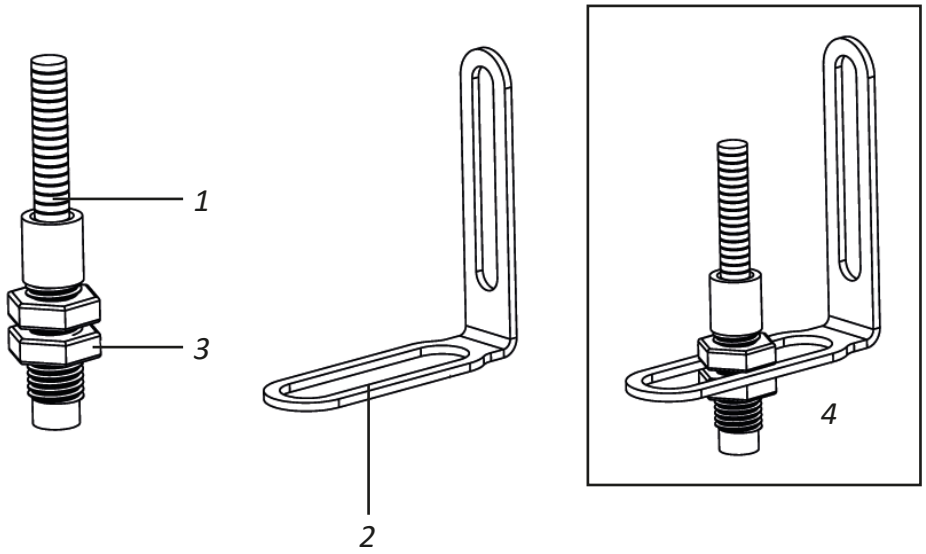
• Assembling the magnets on the main shaft

The magnets (1) must be installed on the planter's primary shaft, after the shutdown ratchet, as this way, hours and hectares of when the machine is in transport will not be counted. A magnet must be installed on each face of the shaft (3), securing them with two nylon clamps (4) so that whoever is properly fixed and positioned (4).



• Assembling the speed sensor

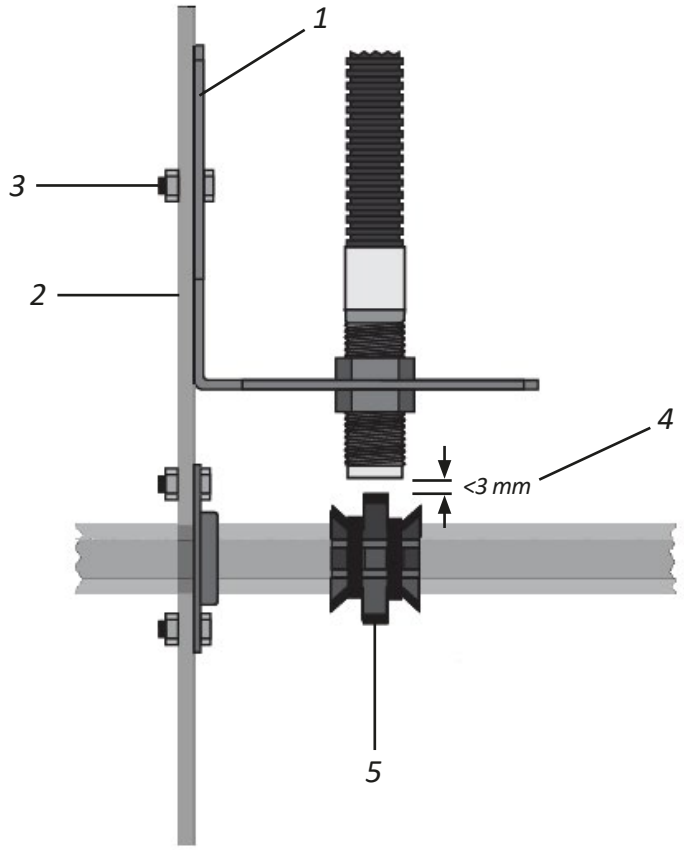
Mount the sensor (1) on the support (2) fixing by the nuts (3) according to the image (4).



▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Speed sensor installation

Attach the sensor support (1) to the machine chassis (2) using the M8x30 screw (3) making sure that the distance between the sensor and the magnets is less than 3 mm (4). It is extremely important to align the speed sensor and the magnets on the primary shaft (5).



• Identification

A - Display
B - Function key
C - Decrease item
D - Login
E - Increase item

The ETD has four keys
Function F key **The Function F key is used to change between the four main functions of the ETD, which are:** **F1: Seed Rate** **F2: Fertilizer Rate** **F3: Hobbs Meter** **F4: Hectometer** **Within the menus, the Function F key assumes the "back" function, which facilitates navigation.**

Teclas
The keys ▼ and ▲ are used to increase the numeric items of the interface. The icon with arrows above and below the interface indicates the item to be controlled by the keys. **Keys ▶**  **The key ▶ is used as a "enter" function. This key allows you to enter the options that are shown in the lower right corner of the interface.**

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Settings menu

The settings menu (1) can be accessed through the Function F key, when pressed for more than 2 seconds.

The settings menu has 7 items. The keys ▲▼ (2) are used to navigate between menu items.

The Select key ▶ (3) is used to select the highlighted item. Just click on the “F” key (4) to exit the settings menu

To select the start of the calibration click ‘Yes’ ▶ (1).

• Sensor calibration

When starting the sensor calibration (2), the machine must be moved for exactly 100 meters (3) and stopped.

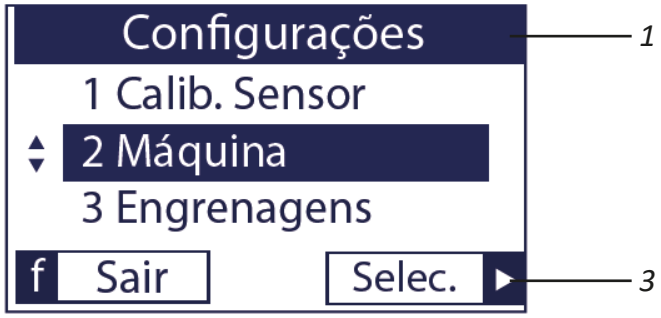
The number of pulses (4) counted by the sensor is shown on the screen. To complete the calibration, the operator must press ▶ the (5) “Ready” key.

The calibration of the sensor is important for the ETD to determine the number of hectares worked, the machine’s working speed and also the distance covered in the fertilizer calibration.

If, during displacement, the number of pulses corresponding to the end of the 100m is not displayed, the displacement of the sensor or magnets may have occurred, making it impossible to read the pulses during the displacement. In this case, it is necessary to carry out the adjustment of these components according to the assembly diagram, item 4 “INSTALLING THE SPEED SENSOR”, previous page.

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Machine



In the machine configuration (1), click 'Select' ▶ (2) to enter the number of Rows using the buttons ▲▼ (3).

Number of Rows, range of values: 01 ~ 80.

After selecting the number of Rows contained in the machine, press the 'Next' key ▶ (4) to select the Row spacing using the buttons ▲▼ (5).

• Sensor calibration

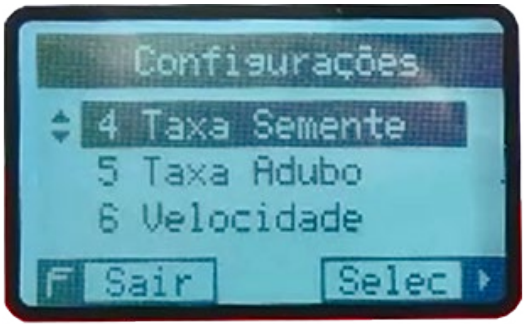
When clicking on "Save" ▶ (6), the system saves the settings and displays the following message.

This information is very important for the presentation of the worked hectares and also for the calibration of fertilizer rates.

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Seed rate - Part I

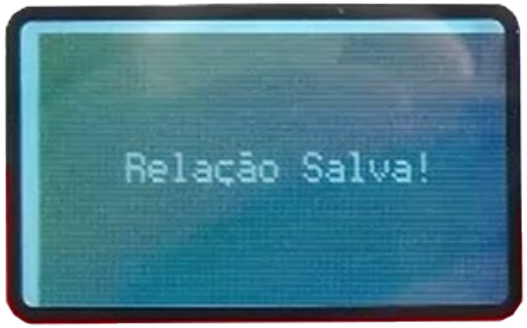
1) Select Seed Rate and click Select.



2) Then select CD Gears and click Select.

3) Then keep the list below.

4) Click Fn to save.



5) Then select CD Gears and click Select.

6) Then select Seed Rate and click Select.

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Seed rate - Part II

7) Then select Change Disk and click Select.

8) Then, insert the number of holes in the disc according to the crop to be worked.

9) Then click save.

10) Next, select Register Table and click Select.

11) IMPORTANT: Look in the Seed physical table on the disk you will be working on and choose the average value. **Example:** B1.

12) Then type B1 and click Next.

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Seed rate - Part III

13) Then keep the CxD Ratio and click next.

14) Then keep the amount of holes placed previously and click next.

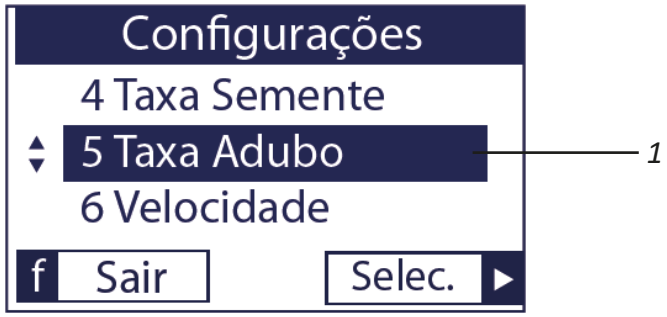
15) **NOTE:** Note that the seed rate value 4.9 corresponds to relation B1 in the SPEED BOX table; if it is different, redo the previous steps.

16) Then, if the value is correct, click on save.

Then select Fn (exit) and go to the FERTILIZER settings as instructed on the following pages.

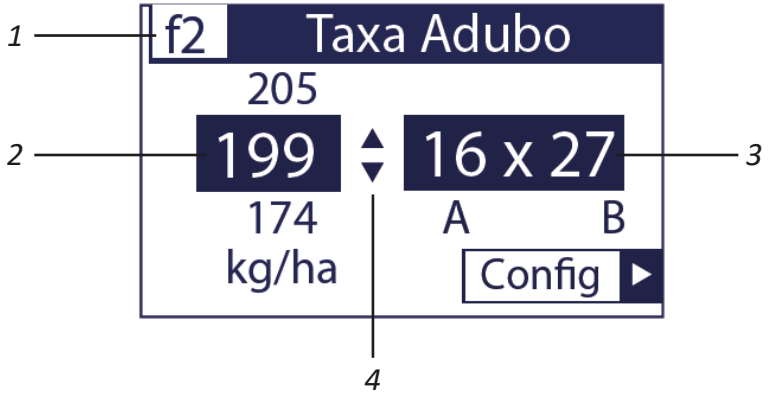
▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Fertilizer rate

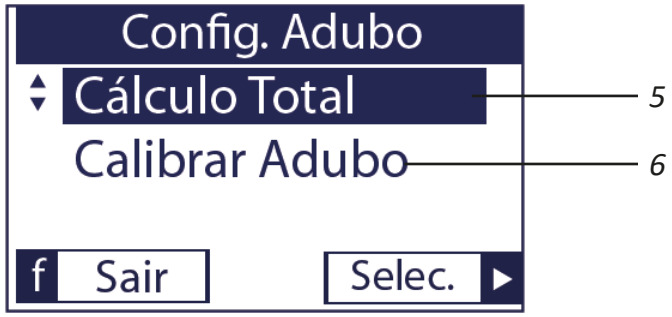


The F2 (1) screen indicates the fertilizer rate (2) in kg per hectare obtained with a specific gear ratio. Fertilizer rates are calculated according to the fertilizer calibration, the gear configuration (3) and the spacing between Rows. The ▼ and ▲ keys (4) allow the user to navigate between the rate options in Kg/ha.

Fertilizer Rate: ETD

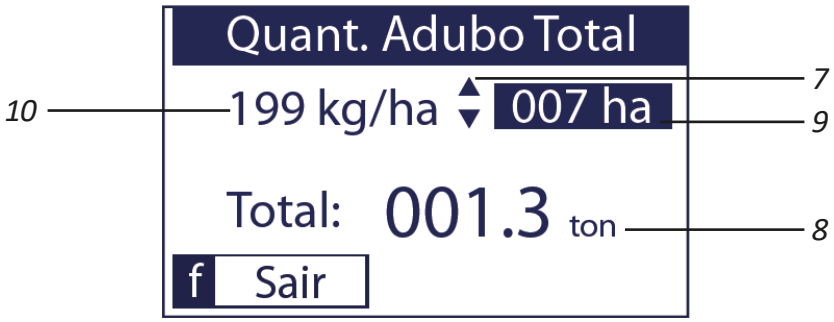


The fertilizer rate menu has two items: Total Calculation (5) and Calibrate Fertilizer (6).



• Total calculation

In total calculation (5), the user can calculate the amount of total fertilizer in tons (8) required for planting a given area, in hectares. The last fertilizer rate selected on the function screen F2 (9), selected using the key ▲▼ (10) is used as a reference for the calculation.

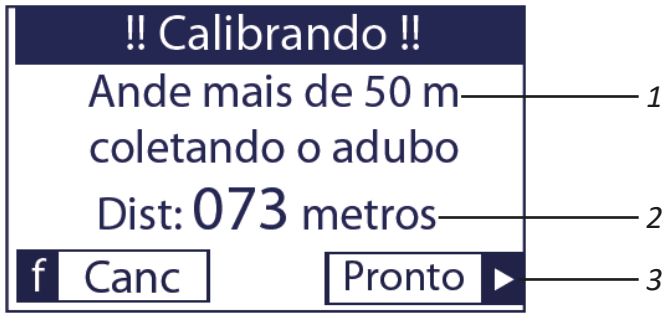


▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Calibrate fertilizer - Part I

The fertilizer calibration (11) has 3 steps. First, you must inform the gear ratio (12) used on the machine at the time of calibration. **EXAMPLE:** In the SPEED BOX, configure the option Mot **6** and Mov **F**, then inform the same configuration in the ETD; then walk 50 m collecting at least 3 fertilizer outlets, make the average and enter the value in the electronic table).

On the next screen, the operator must walk with the machine collecting the fertilizer over a distance greater than 50 meters (1). It is important that the sensor is already calibrated so that the distance covered is measured correctly. The distance traveled is displayed instantly (2).



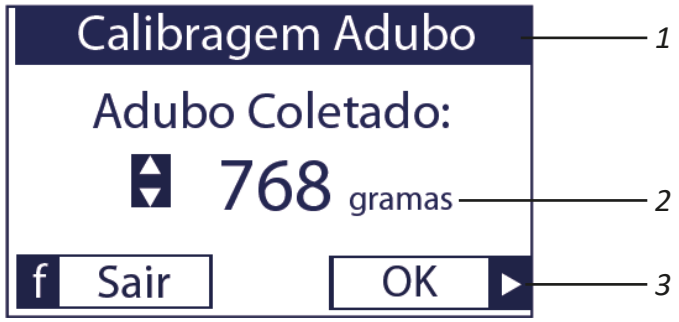
After covering the required distance, click on Ready (3).

NOTE: The minimum distance to be covered is 50 meters, if this distance is insufficient, the screen for entering the weight of the collection will not be enabled and the following warning will be displayed:

▪ Operation manual ETD (Electronic Dosing Table) - Optional

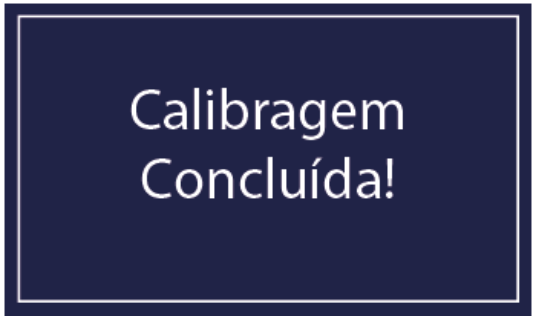
• Calibrate fertilizer - Part II

On the next screen (1), the total weight of the collected fertilizer (2) in a row or the average of the collection, always in grams, is reported.

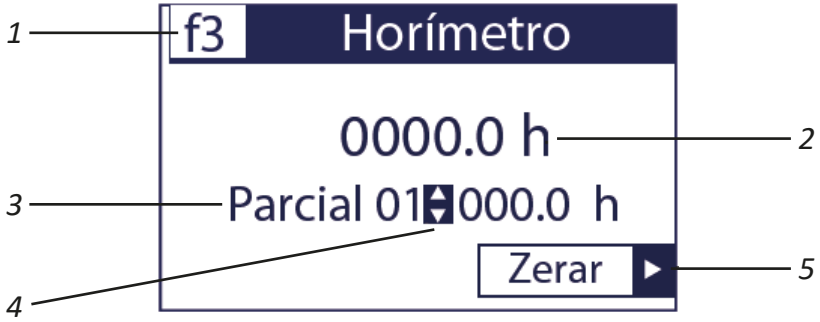


Fertilizer collected, value range: 10 ~ 9000 Grams.

Click on 'OK' (3) the 'calibration completed' message is displayed.



• F3 Hobbs Meter



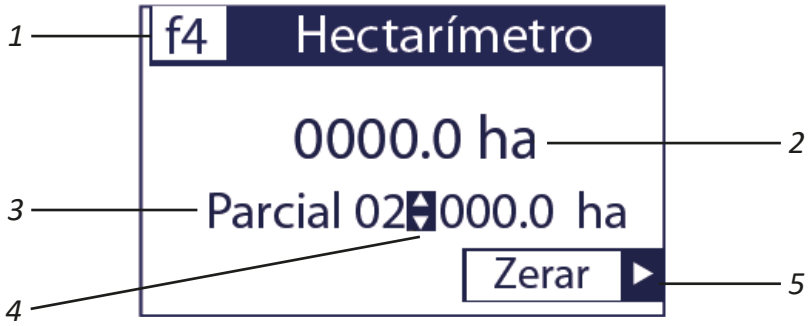
The F3 screen (1) indicates the total number of hours (2) of work with the ETD in three partials (3), which can be related to the keys (4)

To reset a certain partial, the Reset key (5) must be held down for more than 2 seconds.

The hours counted refer only to the time that the machine was in effective work, that is, with the ratchet turned on. Thus, hours of handling the ETD or traveling with the machine in the transport position will not be counted.

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• F4 Hectometer



Screen F4 (1) indicates the total number of hectares worked (2) with the ETD, also in 3 partial ones (3), which can be selected using the keys ▲▼ (4).

• Settings menu - Part I

The settings menu (1) can be accessed through the Function F key, when pressed for more than 2 seconds.

The settings menu has 7 items. The keys ▲▼ (2) are used to navigate between menu items.

The Select key ▶ (3) is used to select the highlighted item. Just click on the “F” key (4) to exit the settings menu.

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Settings menu - Part II

To select the start of the calibration click 'Yes' ▶ (1).

• Sensor calibration

When starting the sensor calibration (2), the machine must be moved for exactly 100 meters (3) and stopped.

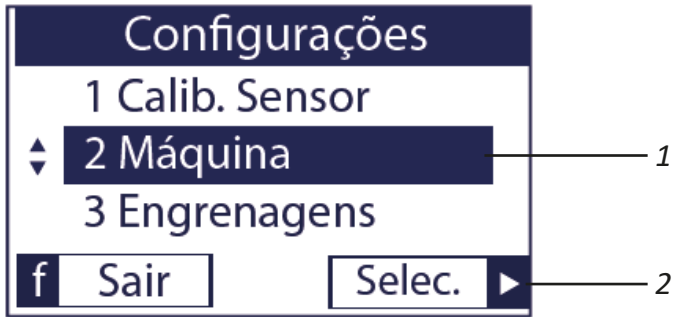
The number of pulses (4) counted by the sensor is shown on the screen. To complete the calibration, the operator must press the (5) "Ready" key ▶ .

The calibration of the sensor is important for the ETD to determine the number of hectares worked, the machine's working speed and also the distance covered in the fertilizer calibration.

If, during displacement, the number of pulses corresponding to the end of the 100m is not displayed, the displacement of the sensor or magnets may have occurred, making it impossible to read the pulses during the displacement. In this case, it is necessary to carry out the adjustment of these components according to the assembly diagram, item 4 "INSTALLING THE SPEED SENSOR", page 140.

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Machine



In the machine configuration (1), click 'Select ▶ (2) to enter the number of Rows using the buttons ▲▼ (3).

Number of Rows, range of values: 01 ~ 80.

After selecting the number of Rows contained in the machine, press the 'Next' key ▶ (4) to select the Row spacing using the buttons ▲▼ (5).

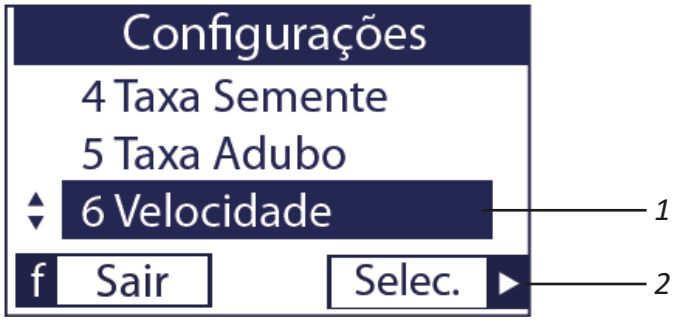
Spacing, range of values: 01 ~ 99 cm.

When clicking on "Save" ▶ (6), the system saves the settings and displays the following message.

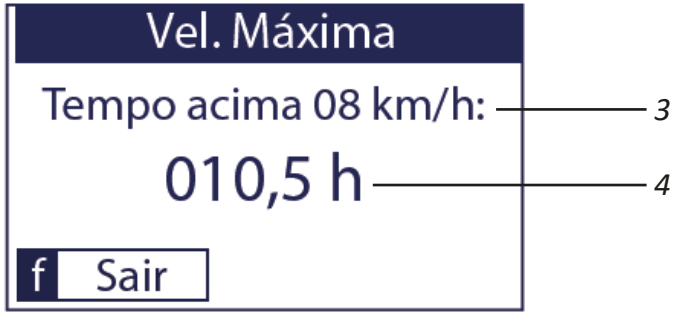
This information is very important for presenting the hectares worked and also for calibrating fertilizer rates.

▪ Operation manual ETD (Electronic Dosing Table) - Optional

• Time above maximum speed



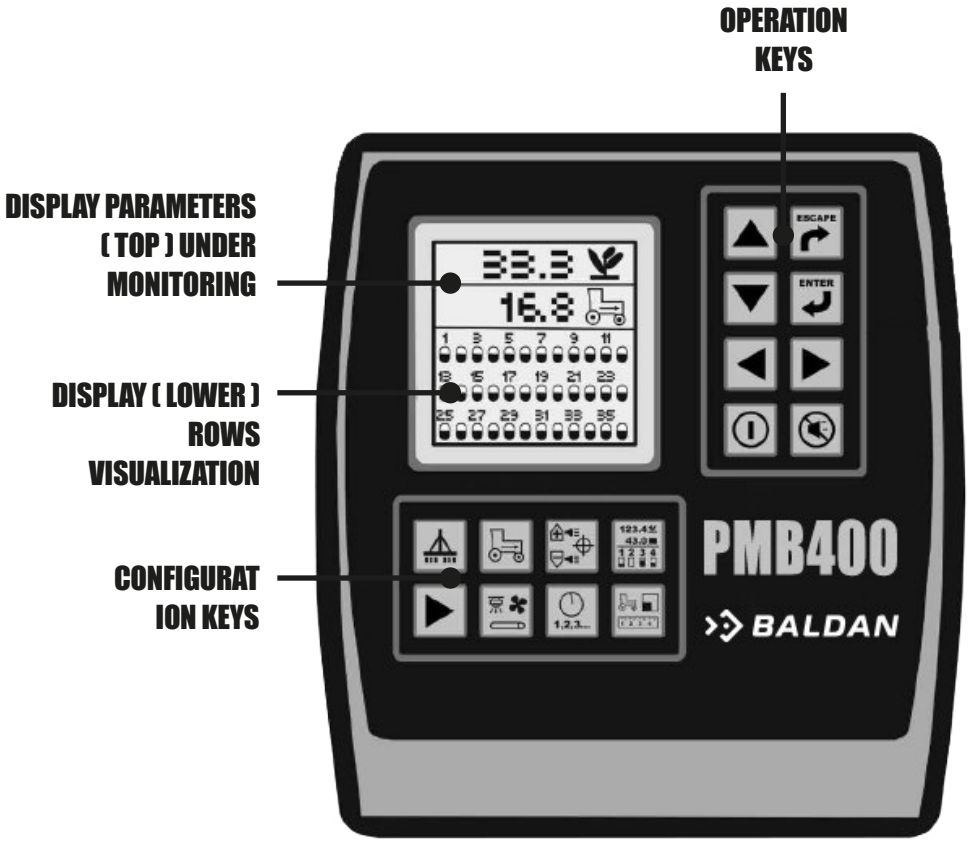
By clicking on 'Select.' ▶ (2) in the 'Speed' setting (1) it will be shown for how many hours (4) the machine has been working above the limit speed (3).



▪ Operating manual PMB 400

• PMB 400

• Monitor overview



FRONT VIEW OF MONITOR

▪ Operating manual PMB 400

• Navigation keys - Part I

 **ON / OFF**

Press  to activate the monitor. When turned on, the monitor carries out internal tests, lights up the display, sounds an alarm and determines which sensors are connected to the system.
Pressing the key for one second, when the display is on, the system will be turned off regardless of what is shown on the display.

 **ALARM CANCELLATION**

When pressing the key during normal operation, the monitor recognizes the alarm conditions that are being shown on the display.
When pressing the key during the alarm event, the audible warning will be canceled but the visual information will continue to be displayed.

ENTER

By pressing 

you will move from the main operation screen to the main menu or the selected screen. Once the item is selected, when the key 

pressed, the navigation mode will be modified to change the data.

 **NOTE:** After having changing the data, the ESC key will accept the change.

▪ Operating manual PMB 400

• Navigation keys - Part II

ESC (EXIT)

When pressing the key 

for two seconds on the OPERATION SCREEN, the accumulated area located at the top of the screen will be reset. The key 

can be used to return to OPERATION mode.

NOTE: After having made the data change, the ESC key will accept the change.

UP ARROW AND DOWN ARROW

On the OPERATION SCREEN the arrow keys are used to manually select the parameters that are being displayed at the top of the display.

NOTE: These keys will be inactive if all configured parameters are being displayed.
When in a settings screen, ARROWS are used to navigate between options or to change a digit/option.

LEFT ARROW AND RIGHT ARROW

On the OPERATION SCREEN the arrow keys are used to manually select the Rows that are being displayed at the bottom of the display.

NOTE: These keys will be inactive if all configured parameters are being displayed.
When in a settings screen, ARROWS are used to navigate between options.

Operating manual PMB 400

• Settings keys - Part I

SETTING THE PLANTER

This key is used to set:

- Number of Rows;
- Row spacing;
- Planter width (optional)
- Row status (seed, fertilizer, blocked or disabled).

See “Planter Configuration” for more information.

SETTING THE TRAVEL SPEED

This key is used to:

- Perform the travel speed calibration;
- Enter the manual travel speed data (used if there is no speed sensor available);
- Configure the speed limit alarm.

See more information in “Setting the Travel Speed”.

▪ Operating manual PMB 400

• Settings keys - Part II

LIMIT CONFIGURATION

This key is used to set:

- Maximum / Minimum Population Variation Limits (optional).
- Estimated target population (optional).
- Population adjustment factor, for sensors that comprise less than 100% of the total seeds (optional).
- Response rate, to increase or decrease the response rate (optional).

See more information in “Limits Configuration”.

DISPLAY AND SERVICE CONFIGURATION

This key is used to:

- Access security functions, Row indicators, services and sub-menus;
- Selection of Metric / English units;
- Intensity of the display illumination;
- Alarm volume;
- Font and Icon Size;
- Sound Intensity.

See more information in “Setting the Travel Speed”.

▪ Operating manual PMB 400

• Settings keys - Part III

OPERATION

This key is used for the user to return to the OPERATION SCREEN.
See “Operation” for more information.

ACCESSORIES SETTINGS

This key is used to configure the selection of Fan (RPM), Shaft (RPM) or Flow (Grains per minute).
See “Setting the Accessories” for more information.

SEED COUNT MODE

This key takes the user to the SEED COUNTING screen.
This mode allows the user to test the planter before operating in the field and shows the seed count for each row in use.
See more information in “Seed Counting Mode”.

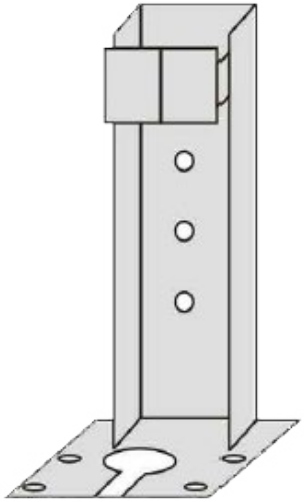
AREA, SPEED, AND DISTANCE MODE

This key takes the user to the SPEED, AREA and DISTANCE screen.
This mode allows the user to use the monitor for operations without planting. This mode is also used to start, to clear the three independent area markers (planting area 1, planting area 2 and total area) and distance (Rowar meter).
See “Speed Area Mode” for more information.

▪ Operating manual PMB 400

• Installation and configuration - Part I

Before shipping, the monitor is tested and inspected to ensure that the unit is operating in full condition and meets all measurement specifications. After unpacking the product, inspect for damage that may have occurred during transportation. Save all packing materials until all inspection has been done. If any damage is found, immediately file a claim with the carrier. Also notify your sales representative.
Install the mounting bracket in the chosen location using suitable tools. Then Install the bracket on the console by sliding it into the slots until the lock fits.



SUPPORT

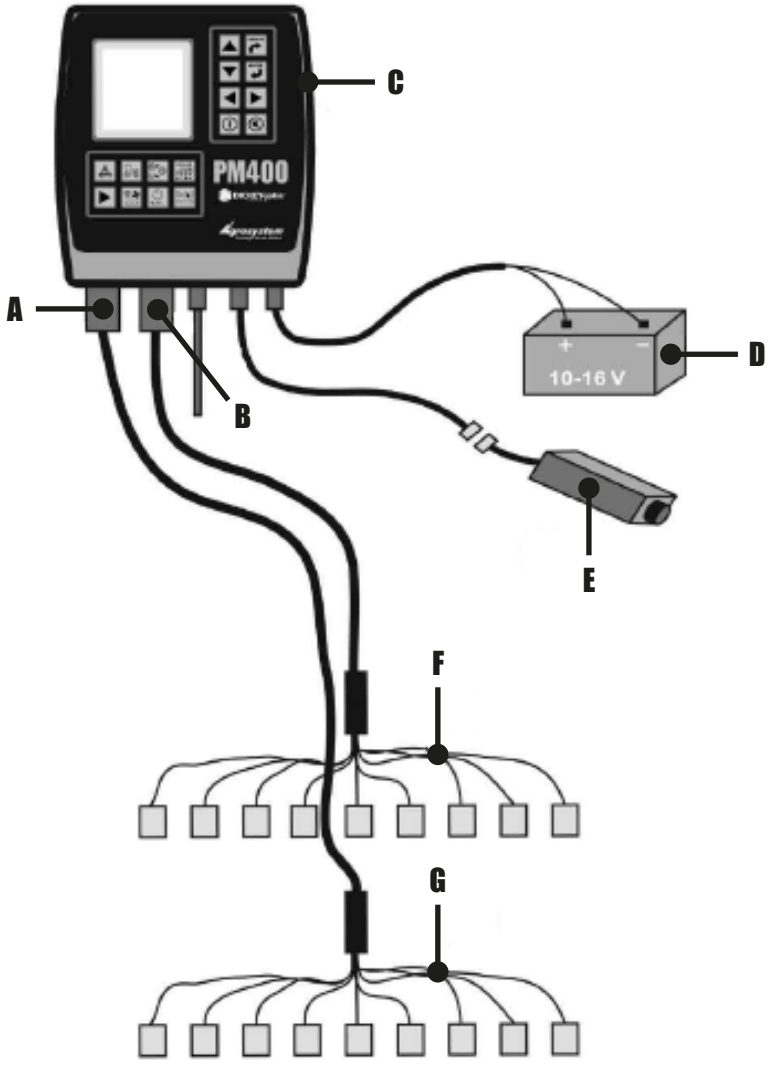
NOTE: The console must not obstruct or interfere with the operation of the tractor.
When mounting on a vertical surface, a strap can be used to retain cables at the bottom of the bracket.

⚠ ATTENTION **To prevent damage, make sure that the console is properly seated in the bracket.**

▪ Operating manual PMB 400

• Installation and Configuration - Part II

The planting monitor has two inputs for connecting the planter's electrical harnesses.
Input **(A)** monitors from the 1st to the 24th sensor. Input **(B)** monitors from 25th to 36th sensor.



MONITOR INSTALLATION SCHEME

⚠ ATTENTION

The planter configuration and the travel setting the speed are essential for the planting monitor to function.
To perform these settings, see "Setting the Planter" and "Setting the Travel Speed".

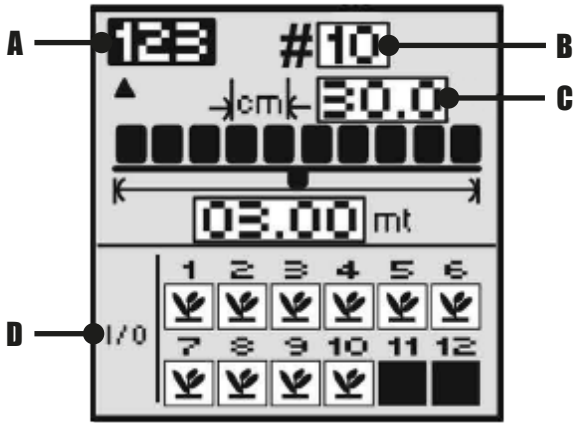
If you have an 11-Row planter and a monitor with two electrical harnesses with 12 sensors each: The electrical harness for the seed Row sensors must be connected to connection **(A)** and the electrical harness for the fertilizer sensors to connection **(B)**.
But if you have an 11-row planter and a monitor with an electrical harness with 24 sensors: You connect the harness to connection **(A)**, sensors 1 to 12 in the seed Rows and sensors 13 to 24 in the fertilizer batchers.

NOTE: You can monitor up to 36 seed Rows, using two harnesses or up to 18 seed Rows and 18 fertilizer Rows.

▪ Operating manual PMB 400

• Setting the planter - Part I

To select the “Planter Configuration” screen, press  , and remember that the monitor stores up to 03 different planter configurations.



SCREEN: SETTING THE PLANTER

01 **-** In field **A** press  , select a planter configuration number using  confirm by pressing  again;

02 **-** In field **B** use  to select the number of Rows and press  to change the number of Rows;

 **NOTE:** Inform only the number of SEED Rows to be monitored.

03 **-** Use to select digits and  increase or decrease values:

04 **-** Press  to accept the new number;

05 **-** In field **C**, Row spacing, proceed to field **B**.

06 **-** In field **D**, use  to select the Row to be monitored,  to specify the type of monitoring and press  to confirm:

 - Used to monitor seed dosage;

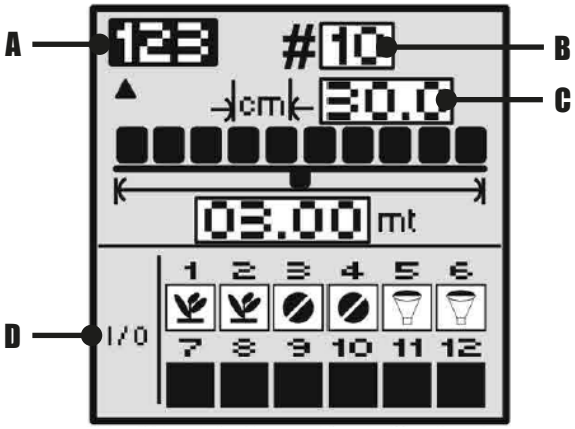
 - Used when the sensor is installed on the Row, but it is turned off;

 - Used to monitor fertilizer dosage (flow);

 - Used when the Row is removed.

▪ Operating manual PMB 400

• Setting the planter - Part II



SCREEN: SETTING THE PLANTER

At the end of the configuration, press ENTER or ▶ (operation) to return to the OPERATION SCREEN.

• Setting the travel speed - Part I

To select the Travel SETTING THE SPEED screen, press  .

To perform a new setting:

⚠ ATTENTION | **The tractor must be in motion before calibration STARTS.**

01 - Select ▶ **(B)** and press ENTER, to start the calibration of 122 meters.

SCREEN: SETTING THE SPEED

NOTE: After calibration has started, the button will switch to ■ **(B).**

▪ Operating manual PMB 400

• Setting the Travel Speed - Part II

02 - Drive for 122 meters (400 feet) and press 

to STOP calibration.

03 - The new calibration factor will be displayed in the window. Press 

to accept this value or 

to reject the value.

At the end of the configuration press 

or  (operation) to return to the PROTECTION SCREEN.

To enter a travel speed constant manually:

01 - Press  to highlight the displacement speed constant value **(A)**.

02 - Press 

to modify the constant.

03 - Press  to select the digits, increasing or decreasing the values.

04 - Press 

to accept the new number.

When the new values have been entered, press 

or  (operation) to return to the OPERATION SCREEN.

 **NOTE:** It is important to set the travel speed in the planting area.

⚠ ATTENTION **Any value other than zero will activate the travel speed. Adjust the speed manually to zero in order to disable.**

 **NOTE:** To check if the calibration number obtained is correct, go to the speed/area/distance screen and check the speed indicated on the tractor indicator.

We recommend averaging the values of the 3 calibration constants.

 **NOTE:** Calibration on a smooth soil is different from calibrating a soil with stubble.

Whenever you are planting in soil other than the one performed the calibration, perform the calibration process again.
If your planter is not equipped with a travel speed sensor, the operator can enter a value for planting with simulated speed by manually changing the value of the speed field **(C)**.
In the limit field **(D)**, the operator can enter the limit value for excess travel speed.

▪ Operating manual PMB 400

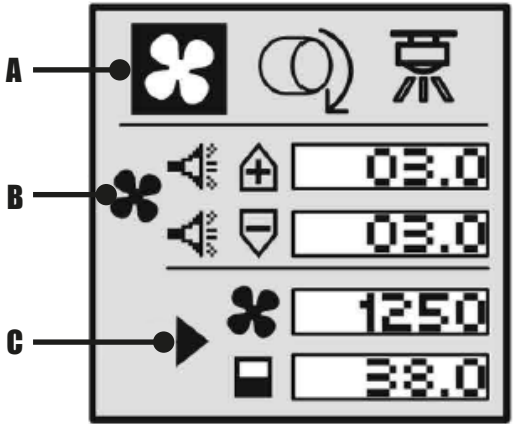
• Setting the Accessories - Part I

To add an auxiliary sensor with its performance characteristics (calibration values, limits, etc.) for monitoring, it must be activated through the calibration constant.
If minimum and maximum alarms are desired, limits can be added to the calibrated sensors. The fan, shaft or flow sensor can be monitored with high or low alarm values or no value.

• Shaft and Fan

01 **-** Select the accessory **(A)**, go to the START button **(B)** and press 

. After calibration has started, the button will switch to STOP **(B)** and the factor will start to accumulate.



SCREEN: SETTING THE SPEED

02 **-** During the rotation count, turn the shaft or fan on the number total rotations.

03 **-** Stop the calibration by pressing 

. The factor will stop accumulating.

04 **-** Using  , select the number of turns box (under the calibration number) and change the number of turns turned with  .

05 **-** Configure the maximum/minimum limits **(B)**.

When the new values have been entered, press 

or  (operation) to return to the OPERATION SCREEN.

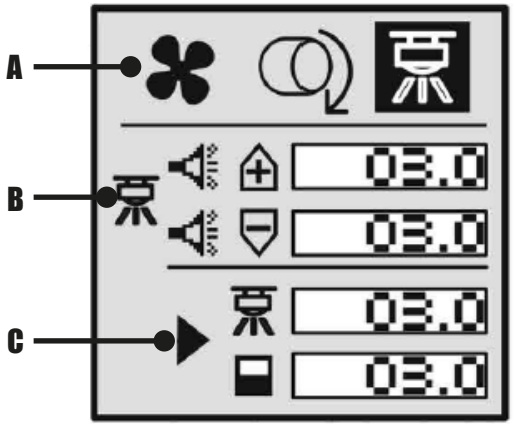
▪ Operating manual PMB 400

• Setting the Accessories - Part II

• Flow

It is worth remembering that an adequate method is needed to determine the volume of material (scale, graduated glass or a collecting shell) to calibrate the monitor.

01 - Select the accessory **(A)**, go to the START button **(B)** and press ENTER. After calibration has started, the button will switch to STOP **(B)** and the factor will start to accumulate.



SCREEN: SETTING THE SPEED

02 - Once the desired quantity is dispensed, stop dispensing. The factor will stop accumulating.

03 - Measure the amount of material that was distributed.

04 - Using ◀ ▶, select the tank volume box (below the calibration number) and change the distributed volume with ▲ ▼.

05 - Configure the maximum/minimum limits **(B)**.

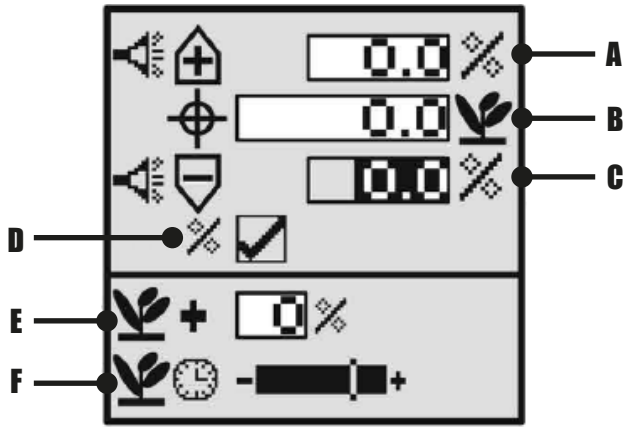
When the new values have been entered, press ESCAPE or ▶ (operation) to return to the OPERATION SCREEN.

▪ Operating manual PMB 400

• Setting the seed population

Press  to access the SETTING THE SEED POPULATION screen. This screen allows the user to define different population characteristics.

01 - Define the desired target population of seeds **(B)**.



SCREEN: POPULATION CONFIGURATION

NOTE: If no population value is selected, the monitor will use the population average as the calculation basis for alarm and Row indicators.

02 - Define the values for the maximum **(A)** and minimum **(C)** limits that be accepted as a percentage or basic values;

NOTE: If you use basic values, it is important to note that the comma indicates thousands.

03 - Define, if necessary, the adjustment factor **(E)** for more or less population;

NOTE: The population adjustment factor is available to provide the result and show the population as close to the real. This is useful when the sensors do not detect double, triple, etc.

04 - In field **(F)**, slide to the right to obtain a high population response rate and to the left for a low population response rate.

NOTE: This feature is used to ensure uniformity in the display of the seed population for planters with few rows versus planters with many rows.

▪ Operating manual PMB 400

• Setting auxiliary Modes

The lift switch can be used to more accurately monitor the area accumulator. It automatically disables the counter while the planter is not planting, thus avoiding accumulating the non-planted area.

⚠ ATTENTION | **Alarms are disabled in these modes.**

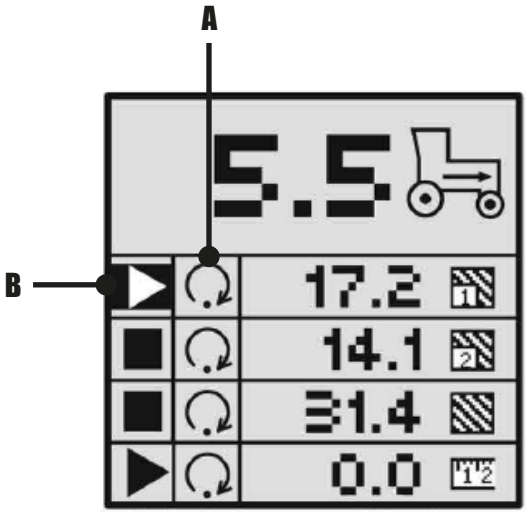
• Speed, Area and Distance

In this mode, the travel speed, the area and the distance covered are displayed. The mode includes start/stop/restart for monitoring.

To enter this mode press the key  .

01 - Select button  **(B)**;

02 - Start the count by pressing  . After counting has started, the button will switch to  (STOP) and the factor will start to accumulate;



SCREEN: SPEED, AREA AND DISTANCE

03 - Press  (the count will pause).

04 - Press  again. The factor accumulate again.

To reset the counter:

01 - Press  to select the (RESET) button  ;

02 - Press  .

▪ Operating manual PMB 400

• Seed Count

The seed counting mode can be used to determine the performance of the rows when operating the planter in stationary mode.

To enter this mode press the key 

.

01 - Select button  **(B)**;

02 - Start the count by pressing 

. After counting has started, the button will switch to  (STOP) and the factor will start to accumulate;

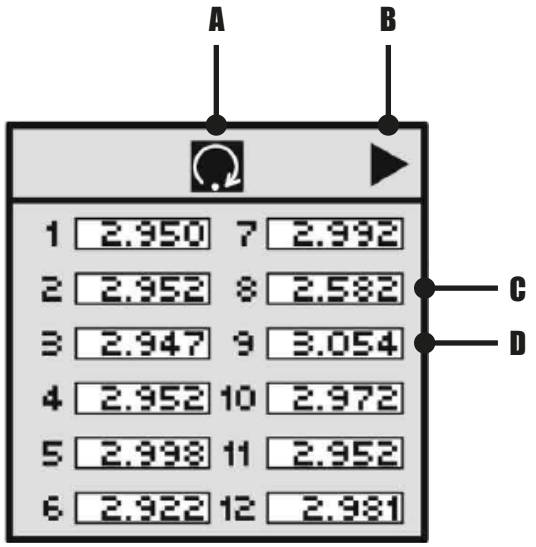
03 - Press 

(the count will pause).

04 - Press 

again. The factor accumulate again.

In the example opposite, Row 8 **(C)** is marking less seeds than desired, while in Row 9 **(D)** it is marking more seeds.



SCREEN: SEED COUNT

To reset the counter:

There are two ways to reset the counter.

01 - Press  to select the (RESET) button  and press 

;

02 - Press 

to exit seed counting mode and press 

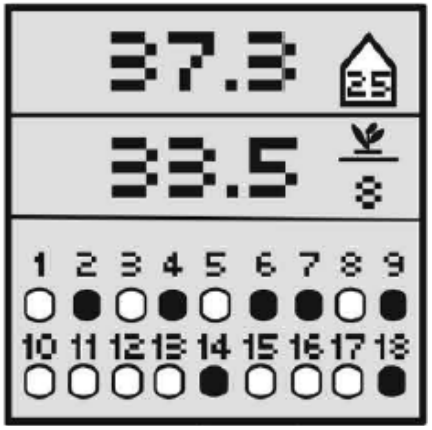
.

▪ Operating manual PMB 400

• Setting the Display - Top Half of the Operation Screen

Through the user interface settings it is possible to select the functions that can be displayed on the screen. If more functions are selected than the screen availability, then the keys  are used to scroll between the functions, and it is possible to view up to 25 functions. See the example. If 8 functions are selected:

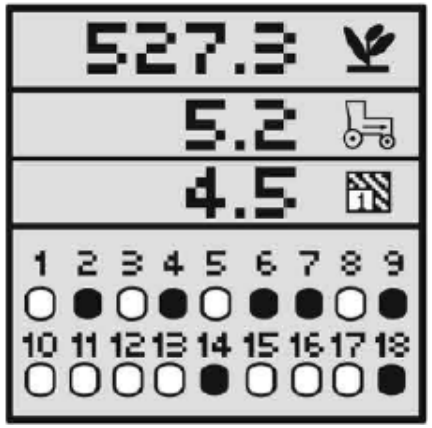
- Average Plant Population.
- Travel Speed.
- Planting Area 1.
- Total Area.
- Fan RPM.
- Maximum/Average/Minimum Population.
- Spacing between seeds.
- Checking Seed Variation by Distance.



SCREEN: TOP DISPLAY

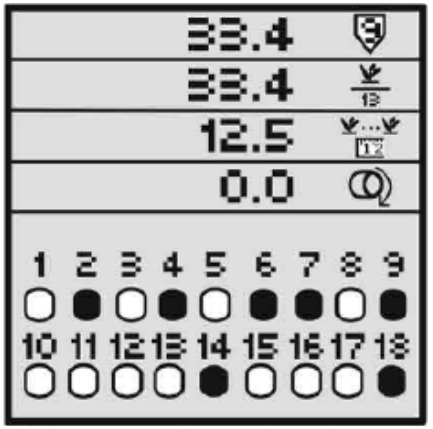
If the screen is set to display 3 functions, the operation screen will display functions 1, 2 and 3.

When  is pressed, the screen will show functions 2, 3 and 4.



SCREEN: TOP DISPLAY

The next touch on the  screen will show functions 3, 4 and 5. Returning to item 1 when the screen is showing functions 7, 8 and 1.

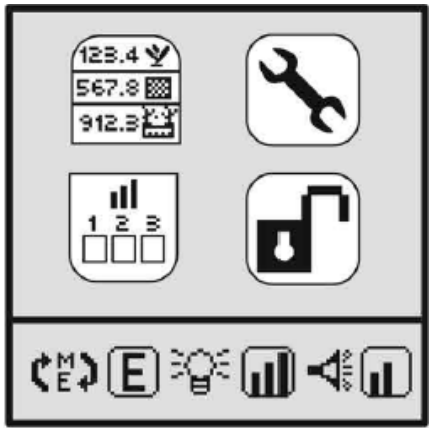


SCREEN: TOP DISPLAY

▪ Operating manual PMB 400

• Number of Functions to Display

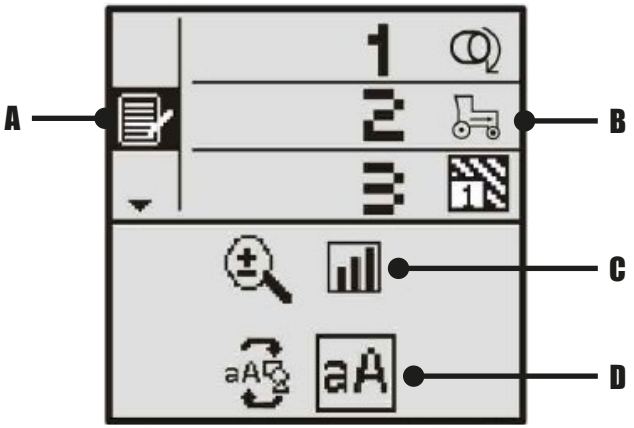
01 - Press  to enter the display settings screen;



SCREEN: TOP DISPLAY SETTING

02 - Press  to enter the settings screen;

03 - Select the functions to display option **(A)** and press  ;



SCREEN: NUMBER OF FUNCTIONS

04 - Use the arrows  to choose the functions **(B)** that will be visible on the operation screen;

05 - Select the option of the number of functions to display **(C)**;

06 - Press  ;

07 - Use  to change the number of functions to display on the screen.

08 - Select the graphic/text mode **(D)**;

09 - Press  ;

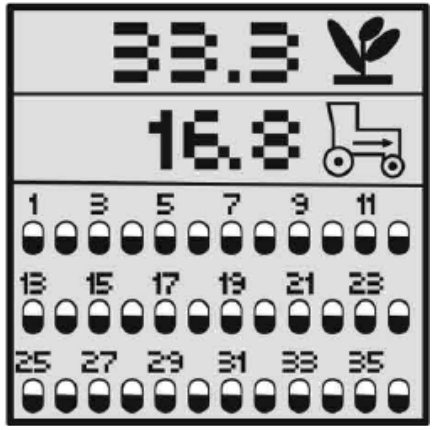
10 - Use  to change mode.

When the new values have been entered, press  or  (operation) to return to the OPERATION SCREEN.

▪ Operating manual PMB 400

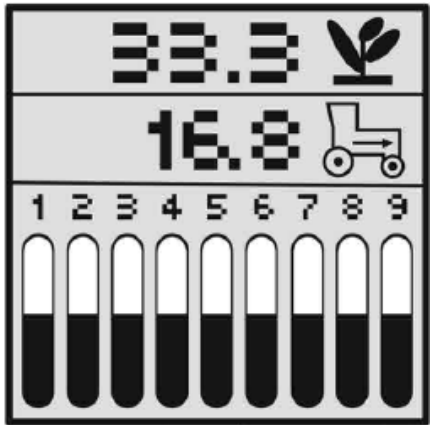
• Setting the Display - Lower Half of the Operation Screen

The number of connected Rows shown in the lower half of the screen is defined by the user, thus varying the size of the numbers.



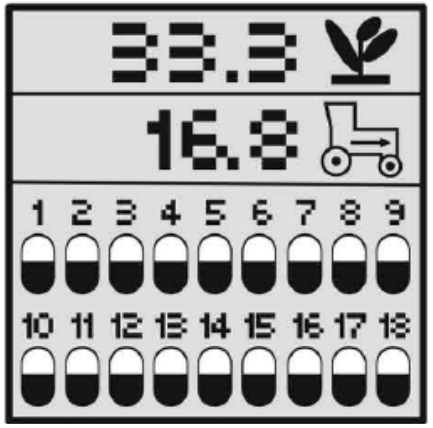
SCREEN: GRAPHIC WITH 36 ROWS

The monitor will automatically count through the Rows at 3-second intervals when the Row is connected.



SCREEN: GRAPHIC WITH 09 ROWS

The operator can use usar  to manually select which Row to monitor. Automatic counting will restart in 10 seconds after manual selection.



SCREEN: GRAPHIC WITH 18 ROWS

▪ Operating manual PMB 400

• Indicator type to display

01 - Press  to enter the display settings screen.

02 - Select  to enter the settings screen and choose the option to display the indicator;

03 - Press  ;

04 - Use  to change the indicator mode:

 - Bar chart

 - Symbols

 - Symbols flashing in proportion to the planting rate

 - Cleaning pressure gauge

05 - Select the option of the number of indicators to display **(A)** on the operation screen;

06 - Press  ;

07 - Use  to change the number of indicators to display **(A)** on the operation screen.

When the new values have been entered, press  or  (operation) to return to the OPERATION SCREEN.

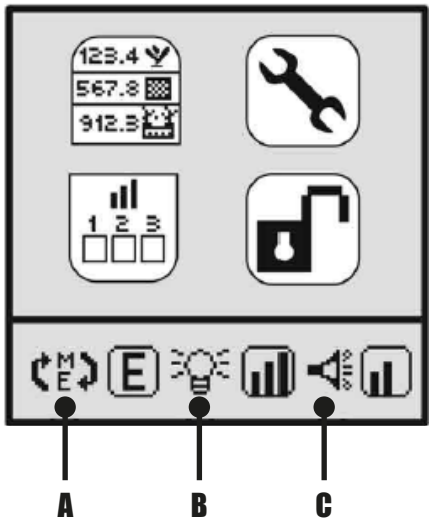
▪ Operating manual PMB 400

• Setting the Measurement System, Display, Lighting and Alarm Volume

Press  to configure the measurement system, display illumination and alarm volume.

NOTE: At the bottom of the screen are icons for settings.

SCREEN: SETTINGS



01 - Press  to configure the measurement system, the display lighting the volume of the alarms.

02 - Switch between METRIC and ENGLISH as desired;

03 - Press  to accept the new configuration;

04 - Select the display lighting icon **(B)** using  and pressione  ;

05 - Use  to select the lighting level of the display. There are 03 lighting levels that can be chosen.

06 - Press  to accept the new configuration;

07 - Select the alarm volume icon **(c)** usando  and press  ;

08 - Use  to select the alarm volume level. There are 03 volume levels that can be chosen;

09 - Press  to accept the new configuration.

When the new values have been entered, press  or  (operation) to return to the OPERATION SCREEN.

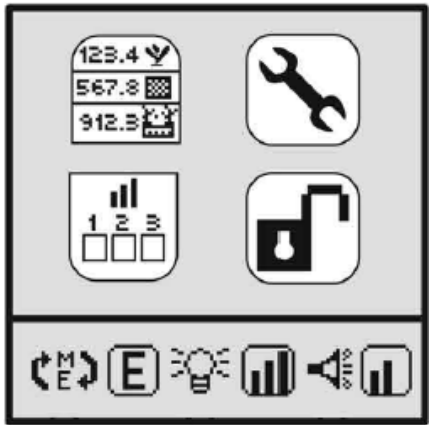
▪ Operating manual PMB 400

• Setting the Security Password - Part I

The monitor's security system allows a security password to be entered, protecting the system from access by unauthorized persons to change settings data.

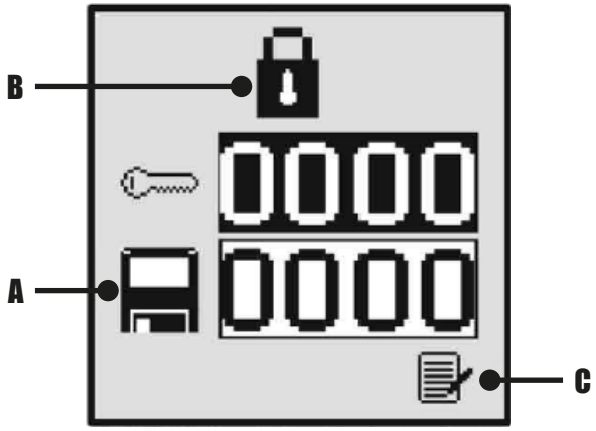
NOTE: A screen list allows the operator to lock screens individually to ensure they are not modified.

Press  to enter the display settings screen and choose  :



SCREEN: DISPLAY CONFIGURATION

01 - Select the disk icon **(A)** using  ;



SCREEN: PASSWORD SETTING

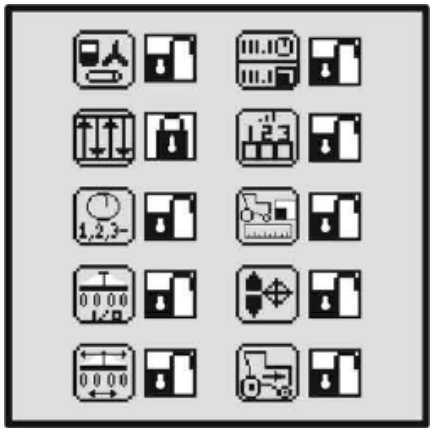
02 - Press  to enter the password;

03 - Modify the digits with  and press  to accept the new password;

04 - To lock the screens individually, select the icon **(B)** and press  to enter the list of screens;

▪ Operating manual PMB 400

• Setting the Security Password - Part II



SCREEN: PASSWORDS BY FUNCTION

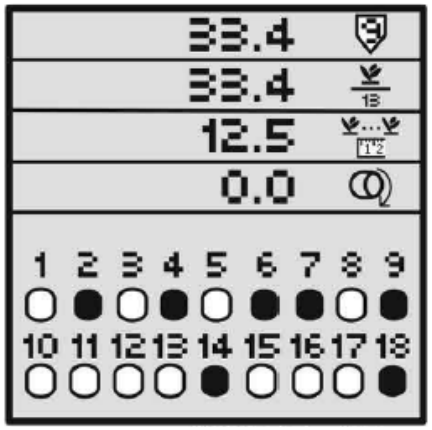
05 - Using  , lock or unlock the desired screens, closing or opening the lock icon next to each screen;

06 - Press  to return to the password screen;

07 - Select the lock **(c)** and press  to switch from unlocked to locked. The selected screens will be locked and you will need to enter the password to make the changes.

• General Information on Function Monitoring - Part I

The operator can choose 2, 3 or 4 functions for simultaneous monitoring and can select several others to be viewed.



SCREEN: DISPLAY

The monitor's operation screen provides monitoring functions.
No matter where the user has navigated in the settings screens, security or auxiliary modes, pressing the key  repeatedly the system will return to the operation screen. The operation screen is divided into two halves, upper and lower.
The upper half provides the user-definable output parameters (population, area, speed, etc.) while the lower half is dedicated to Row information.

▪ Operating manual PMB 400

• General Information on Function Monitoring - Part II

NOTE: For more information and how to configure the operation screen, see “Settings on the Operation Screen”.

AVERAGE PLANT POPULATION

The function shows the average plants per row in seeds per hectare or seeds per acre that are set for population. The population response rate and population adjustment can be modified on the target settings screen.

NOTE: This function can be identified with a symbol or text, depending on the text/graphic setting.

MAXIMUM/AVERAGE/MINIMUM POPULATION

The function alternates the display in minimum, average and maximum population every 2 seconds, indicating the corresponding Row.
When maximum or minimum populations are being shown, the corresponding symbol is shown with the Row number.

ROW POPULATION CHECK

The function shows the population of each row of the planter. The monitor switches between the active Rows every 2 seconds. After the last Row is displayed, the monitor returns to the first active Row and starts another verification sequence.

SPACE BETWEEN SEEDS

The function shows variation in seed spacing.
This function can be identified with a symbol or text, depending on the text/graphic setting.

MAXIMUM/AVERAGE/MINIMUM SPACING

The function switches the display in minimum, medium and maximum spacing every 2 seconds.
When maximum or minimum spacing is being shown, the corresponding symbol is shown with the Row number.

▪ Operating manual PMB 400

• General Information on Function Monitoring - Part III

CHECKING SPACE BETWEEN SEEDS

The function shows the spacing between the seeds of each row. The monitor switches between the active Rows every 2 seconds. After the last Row is displayed, the monitor returns to the first active Row and starts another verification sequence.

SEED VARIATION BY DISTANCE

The function shows the variation of the seed population of each row of the planter in spacing of seeds by distance according to the configuration. This function can be identified with a symbol or text, depending on the text/graphic setting.

MAXIMUM/AVERAGE/MINIMUM SEED VARIATION BY DISTANCE

The function switches the display in minimum, average and maximum variation every 2 seconds.
When maximum or minimum variations are being shown, the corresponding symbol is shown with the Row number.

CHECKING SEED VARIATION BY DISTANCE

The function shows the variation between the seeds of each row. The monitor switches between the active Rows every 2 seconds. After the last Row is displayed, the monitor returns to the first active Row and starts another verification sequence.

PLANTING AREA 1

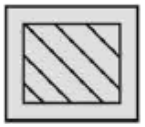
The function shows the planting area in hectares or acres, depending on the selected unit.
This function will identify a planting area chosen for marking, where it can be reset or stored.
It can be identified with a symbol or text, depending on the text/graphic setting.

▪ Operating manual PMB 400

• General Information on Function Monitoring - Part IV

PLANTING AREA 2

The function shows the planting area in hectares or acres, depending on the selected unit.
This function will identify another planting area chosen for marking, as the operator will be able to choose any area, regardless of Planting Area 1, and may also zero or store that area.
It can be identified with a symbol or text, depending on the text/graphic setting.



TOTAL PLANTING AREA

The function shows the total planting area in hectares or acres, depending on the selected unit.
The Total Area can also be reset to zero, and can start marking again.
This function can be identified with a symbol or text, depending on the text/graphic setting.

NOTE: The Total Planting Area is stored in the Tools option in the "Display and Service Settings" menu 

.

DISPLACEMENT SPEED

The function shows the displacement speed of the planter in Miles per hour (mph) or Kilometers per hour (Km/h), depending on the selected unit.
This function can be identified with a symbol or text, depending on the text/graphic setting.

AREA PER HOUR

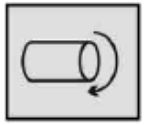
The function shows the area rate per hour in hectares per hour (Ha/h) or acres per hour (AC/h), depending on the selected unit.
This function can be identified with a symbol or text, depending on the text/graphic setting.

FAN RPM

The function shows the fan speed in revolutions per minute (rpm).
This function can be identified with a symbol or text, depending on the text/graphic setting.

▪ Operating manual PMB 400

• General Information on Function Monitoring - Part V



SHAFT RPM

The function shows the rotation of the shaft in revolutions per minute (rpm). This function can be identified with a symbol or text, depending on the text/graphic setting.

FLOW

The function shows the material flow rate in gallons per acre (g/ac) or liters per hectare (l/ha).
This function can be identified with a symbol or text, depending on the text/graphic setting.

• Alarms

Two audible alarm beeps are emitted during navigation or data entry indicating some illegal operation or wrong keystroke.
The warning screen for illegal operation appears on the display, informing the operator of the type of problem.
Every audible alarm is accompanied by a visual alarm, which informs the type of problem that is occurring

Whenever an audible warning or a warning screen appears on the display, it indicates that a problem is occurring. Correct the problem before continuing planting.

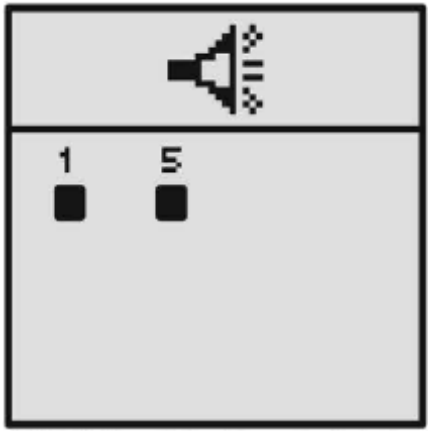
⚠ ATTENTION

The key  **can be used to cancel this alarm, but not to solve the problem.**

• Alarm Types - Part I

• Row Block

When the fertilizer Row becomes clogged or the seed falls is blocked, two alarm beeps are emitted and the warning screen shows the Rows that are in trouble.



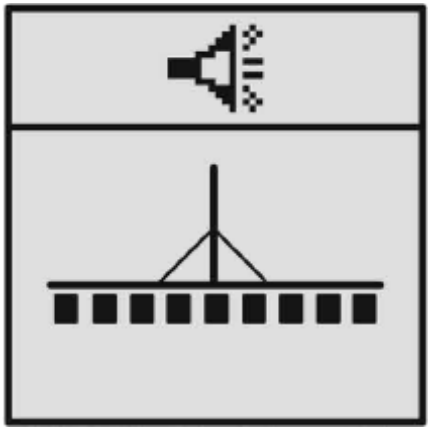
SCREEN: ROW BLOCK

▪ Operating manual PMB 400

• Alarm Types - Part II

• Failure on All Rows

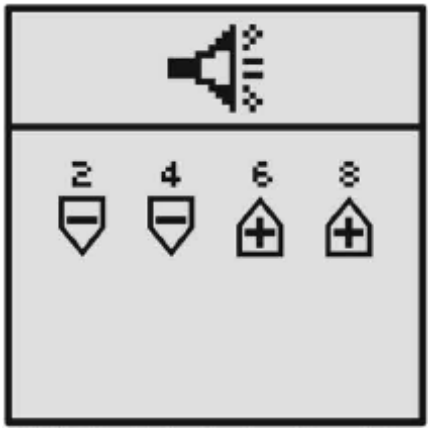
Eight audible alarm beeps are heard and the failure warning screen on all Rows will be displayed, which may indicate the planter's lift.



SCREEN: ROW FAILURE

• High/Low Population Limits Exceeded

The alarm sounds a whistle-like sound and the limit exceeded warning screen is displayed.



SCREEN: UPPER AND LOWER LIMITS

The symbols shown on the screen alert you if the limit has been exceeded  for (more) or for  (less) and the numbers indicate which seed Rows have exceeded the limits.

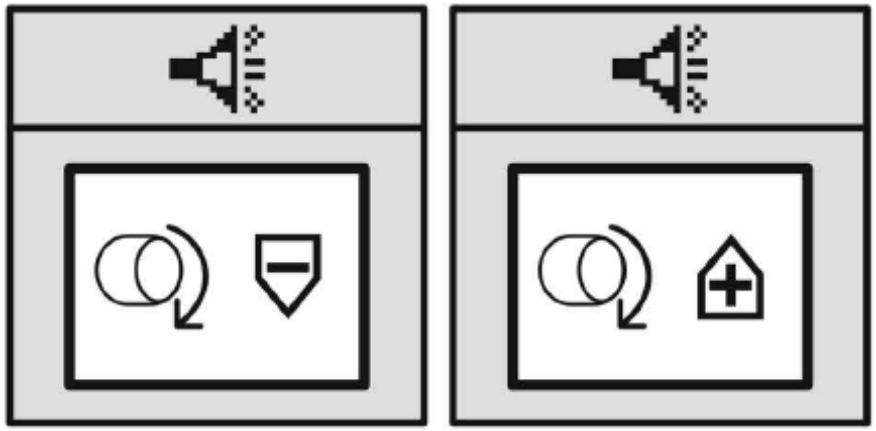
Operating manual PMB 400

• Alarm Types - Part III

• Accessory High/Low Exceeded (Optional)

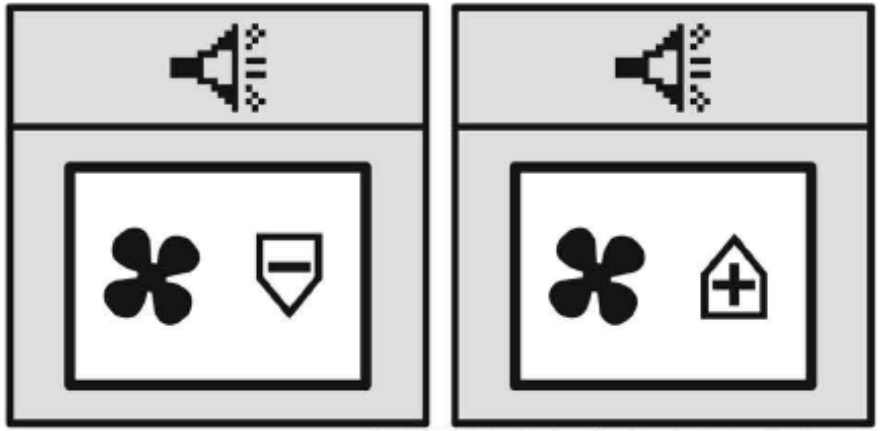
The alarm sounds constantly until the symptom is resolved and the limit exceeded warning screen is displayed:

- Warning display of fan speed limit exceeded;



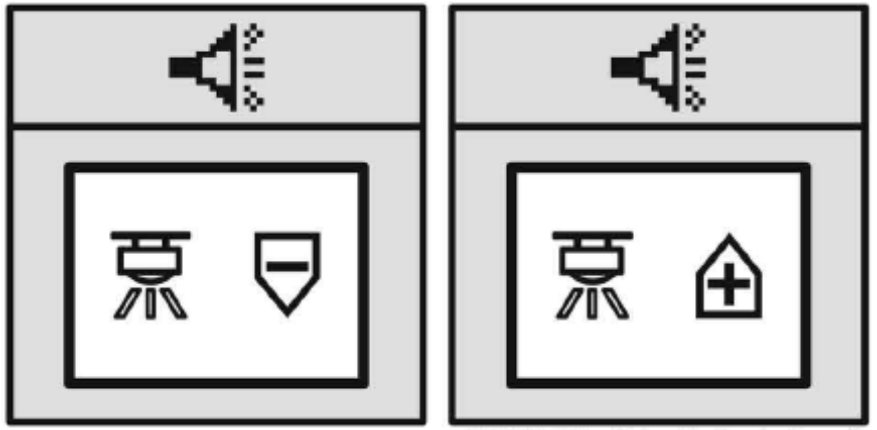
SCREEN: FAN ROTATION LIMIT

- Warning display of shaft rotation limit exceeded;



SCREEN: SHAFT ROTATION LIMIT

- Pressure limit warning display exceeded;



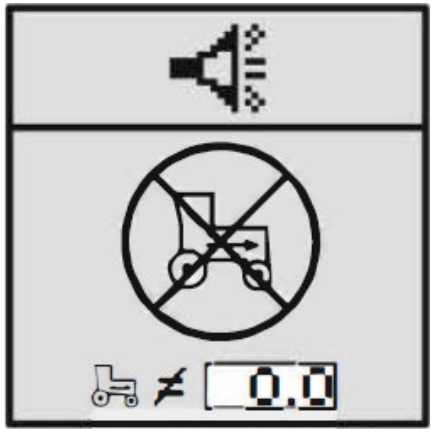
SCREEN: PRESSURE LIMIT

▪ Operating manual PMB 400

• Alarm Types - Part IV

• Lack of Travel Speed

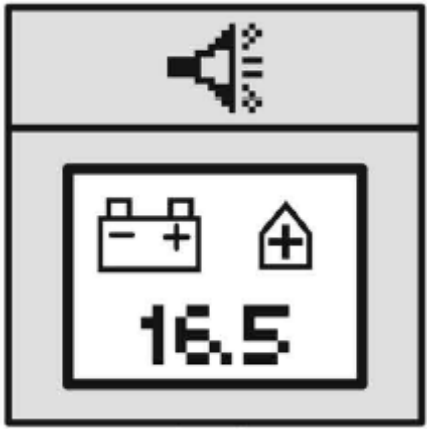
When planting without marking the machine's travel is detected, the alarm sounds until the problem is solved. The travel speed warning screen will be displayed.



SCREEN: LACK OF SPEED

• Self-test Failure

When it is detected that the battery voltage is insufficient or exceeds the maximum voltage limit, the self-test alarm sounds. The self-test failure warning screen will be displayed.



SCREEN: SELF-TEST FAILURE

• Maximum Travel Speed Exceeded (Optional)

When detected, the audible alarm sounds until the travel speed is adjusted within the configured range. The Maximum Speed Exceeded warning screen will be displayed.

SCREEN: SPEED FAILURE

▪ Operating manual PMB 400

• Troubleshooting - Part I

ERROR: THE MONITOR DOES NOT TURN ON.

PROBABLE CAUSE: Monitor fuse blown.

CORRECTIVE ACTION: Inspect the fuse (located near the battery). If necessary, replace with a fuse of a maximum of 7.5 A. If the fuse blows again, inspect all harnesses for dents or breaks that could cause a short circuit with the grounding.

PROBABLE CAUSE: Bad battery connection.

CORRECTIVE ACTION: Make sure that the connections are clean and tightened correctly. Inspect the harnesses for damage.

PROBABLE CAUSE: Low battery voltage.

CORRECTIVE ACTION: The monitor voltage must be at least 10V. If it is lower, recharge or replace the battery.

ERROR: Row FAILURE OR HIGH/LOW ALARM IN Row PLANTING PROPERLY.

PROBABLE CAUSE: Seed sensor covered with dirt.

CORRECTIVE ACTION: Clean the sensor using the brush that came with the equipment.

PROBABLE CAUSE: Defect in the sensor or harness.

CORRECTIVE ACTION: Turn on the sensor and see the troubleshooting LED. If the sensor does not have an LED, replace the harness connection with a nearby sensor to determine if the sensor is damaged.

PROBABLE CAUSE: Defective monitor.

CORRECTIVE ACTION: Contact Agrosytem.

▪ Operating manual PMB 400

• Troubleshooting - Part II

ERROR: TANK ALARM DOES NOT SOUND WHEN EMPTY.

PROBABLE CAUSE: Tank sensor covered with dirt.

CORRECTIVE ACTION: Clean the sensor using the brush that came with the equipment.

PROBABLE CAUSE: Short-circuit sensor or harness failure.

CORRECTIVE ACTION: Change the harness connection with another sensor to determine if the problem is with the sensor or the harness.

PROBABLE CAUSE: Defective monitor.

CORRECTIVE ACTION: Contact Agrosytem.

ERROR: TANK ALARM SOUNDS WHEN FULL.

PROBABLE CAUSE: Broken sensor or harness failure.

CORRECTIVE ACTION: Monitor detected a different number of sensors than the I/O Row configuration. Make sure that all Rows are being detected d uring the self test. Replace defective sensors.

PROBABLE CAUSE: Defective monitor.

CORRECTIVE ACTION: Contact Agrosytem.

▪ Operating manual PMB 400

• Troubleshooting - Part III

ERROR: SYSTEM VOLTAGE ALARM.

PROBABLE CAUSE: Low battery voltage.

CORRECTIVE ACTION: The monitor voltage must be at least 10V. If it is lower, recharge or replace the battery.

PROBABLE CAUSE: Battery faulty contact.

CORRECTIVE ACTION: Check that the connections are clean and tight.

PROBABLE CAUSE: Damaged harness.

CORRECTIVE ACTION: Inspect all harnesses for damage or breakage that can cause a short circuit.

ERROE: AUXILIARY MODE ALARM SOUND WHEN THE SHAFT, FAN, OR FLOW ARE IN PROGRESS.

PROBABLE CAUSE: Sensor failure.

CORRECTIVE ACTION: Shaft, fan, or flow sensor not operating. Replace the defective sensor.

PROBABLE CAUSE: Wrong calibration number.

CORRECTIVE ACTION: Incorrect calibration sensor number. Check the calibration number on the accessories setup screen.

PROBABLE CAUSE: Incorrect sensor limits.

CORRECTIVE ACTION: Sensor limits are incorrect. Check the limits on the setting the accessories screen.

PROBABLE CAUSE: Defective monitor.

CORRECTIVE ACTION: Contact Agrosytem.

▪ Operating manual PMB 400

• Troubleshooting - Part IV

ERROR: TRAVEL SPEED ALARM SOUND WITH THE MACHINE IN MOTION.

PROBABLE CAUSE: Travel speed sensor failure.

CORRECTIVE ACTION: Travel speed sensor is not detected. Replace the defective sensor.

ERROR: MONITOR FAILURE.

PROBABLE CAUSE: Defective monitor.

CORRECTIVE ACTION: Contact Agrosytem.

ERROR: ALARME DE VELOCIDADE MÁXIMA EXCEDIDA SOANDO.

PROBABLE CAUSE: Maximum travel speed alarm set to slow.

CORRECTIVE ACTION: Set the travel speed limit to faster or zero to disable.

PROBABLE CAUSE: Incorrect speed constant.

CORRECTIVE ACTION: Speed sensor has not been calibrated, RADAR sensor angle has been changed, or an incorrect constant has been entered. Use SPEED - AREA - DISTANCE mode to determine if the speed is correct. If it is incorrect, re-calibrate the speed constant.

ERROR: SELF-TEST ALARM.

PROBABLE CAUSE: Defective monitor.

CORRECTIVE ACTION: Contact Agrosytem.

▪ Identification

• Identification plate

To see the parts catalog or to request technical assistance from Baldan, always inform model (01), serial number (02) and date of manufacture (03), which is on your **DEMETRA** nameplate.

⚠ ATTENTION

The drawings in this Instruction Manual are merely illustrative.
In order to provide a better view and detailed instruction, some drawings in this manual have been removed from parts and safety devices (covers, protections, etc.). Never operate DEMETRA without these devices.

CONTACT

In case of doubts, never operate or handle your equipment without referring to Post-Sales.
Telephone: 0800-152577
e-mail: posvenda@baldan.com.br

PUBLICATIONS

Código: 60550108880 | CPT: DEMETRA13121B

• Product Identification

Please make the correct identification of the data below, to always have information about the service life of your equipment.

Owner: _____

Dealer: _____

Property: _____

City: _____

State: _____

Certificate of Warranty no.: _____

Implement: _____

Serial No: _____

Purchase Date: _____

Invoice: _____

PEÇAS ORIGINAIS BALDAN
ORIGINAL PARTS · PIEZAS ORIGINALES

▪ Notes:

▪ Notes:

▪ 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 deadRow 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: _____

Telephone: _____ CEP: _____

City: _____ State: _____

Owner: _____

Telephone: _____

Address: _____ Number: _____

City: _____ State: _____

E-mail: _____

Sale date: _____

Signature / Dealer Stamp _____

1st copy - Owner

▪ 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.

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Implement: _____ Serial Number: _____

Date: _____ Tax Number: _____

Dealer: _____

Telephone: _____ CEP: _____

City: _____ State: _____

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: _____

Telephone: _____ CEP: _____

City: _____ State: _____

Owner: _____

Telephone: _____

Address: _____ Number: _____

City: _____ State: _____

E-mail: _____

Sale date: _____

Signature / Dealer Stamp _____

3rd copy - Manufacturer (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

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

Av. Baldan, 1500 | Nova Matão | CEP: 15993-900 | Matão-SP | Brasil

Phone: (016) 3221-6500 | Fax: (0**16) 3382-6500**

Home Page: www.baldan.com.br | e-mail: sac@baldan.com.br

Export: Phone: 55 16 3321-6500 | Fax: 55 16 3382-4212 | 3382-2480

e-mail: export@baldan.com.br

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