Instruction Manual

SPE TOP LINE

Precision Row Crop Planter

BALDAN

PRESENTATION

We appreciate your purchase and congratulate you for the excellent choice you just made because you have purchased a product manufactured with technology from **BALDAN IMPLEMENTOS AGRÍCOLAS S/A.**

This instruction manual will guide you through the procedures that are necessary since its acquisition up to the operating procedures of use, security and maintenance.

BALDAN ensures that has delivered this farming implement to the dealer in perfect conditions.

The dealer is responsible for the custody and maintenance of this farming implement and also for the assemblage, retightening, lubrication and overhaul.

In the technical delivery, the dealer must advise the user on its maintenance, security, its obligations under any technical assistance, the strict observance of the guarantee and reading of the instruction manual.

Any request for technical assistance under warranty should be made to the dealer where it was purchased.

We reiterate the need for careful reading of the **Warranty Certificate** and observance of all items in this instruction manual, as doing so, the useful life of your farming implement will increase.

Instruction
Manual

SPE TOP LINE

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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PRODUCT WARRANTY

BALDAN IMPLEMENTOS AGRÍCOLAS S/A, guarantees the normal operation of the implement to the dealer for a period of 6 (six) months from the date of delivery on the resale invoice to the first final consumer.

During this period, **BALDAN** commits itself to repair material and / or manufacturing defects under its responsibility, with labor, freight and other expenses incurred by the dealer.

During the warranty period, the request and replacement of any defective parts must be made to the dealer in the region, who will send the defective part for analysis to **BALDAN**.

When such a procedure is not possible and the reseller has no capacity for resolution, he will request support from **BALDAN** Technical Assistance, using a specific form distributed to resellers.

After analyzing the replaced items by **BALDAN** Technical Assistance, and concluding that, this is not a guarantee, then the reseller will be responsible for the costs related to the replacement; as well as material, travel expenses including accommodation and meals, accessories, used lubricant and other expenses arising from the call for Technical Assistance, **BALDAN** being authorized to make the respective billing in the name of the resale.

Any repairs made to the product that are within the warranty period by the dealer will only be authorized by **BALDAN** upon presentation of a budget describing parts and labor to be performed.

Excluded from this term is the product that undergoes repairs or modifications to officers who do not belong to the BALDAN dealer network, as well as the application of non-genuine parts or components to the user's product.

This warranty will become void when it is found that the defect or damage is the result of 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, cardans, hydraulic components, etc., which are equipment guaranteed by their manufacturers.

Defects in manufacturing and or material, which are the subject of this warranty term, will not, under any circumstances, constitute grounds for termination of the purchase and sale contract, or for indemnity of any nature.

BALDAN reserves the right to change and or improve the technical characteristics of its products, without prior notice, and without obligation to do so with previously manufactured products.

WARRANTY

GENERAL INFORMATION

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.

Incorrect handling of this equipment can result in serious or fatal accidents. Before putting the equipment into operation, carefully read the instructions contained in this manual. Make sure that the person responsible for the operation is instructed in the correct and safe handling. Also make sure that the operator has read and understood the product instruction manual.

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

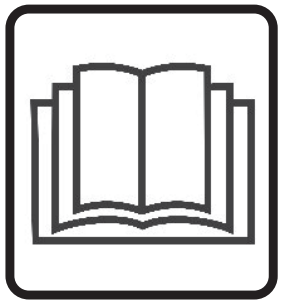
This Regulatory Standard aims to establish the precepts to be observed in the organization and in the work environment, in a manner compatible with the planning and development of agriculture, livestock, forestry, forestry and aquaculture activities with the safety and health and environment of the job.

MR. OWNER OR OPERATOR OF THE EQUIPMENT.
Read and carefully comply with provisions of NR-31.

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

THIS SYMBOL INDICATES AN IMPORTANT SAFETY WARNING. IN THIS MANUAL, WHENEVER YOU FIND IT, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ATTENTIVE AS TO THE POSSIBILITY OF PERSONAL ACCIDENTS.

ATTENTION



• Read the instruction manual carefully for recommended safety practices.

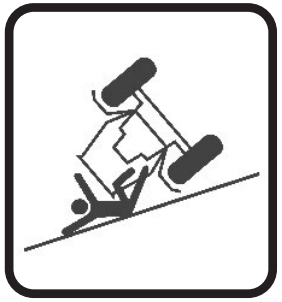
ATTENTION

• Only start operating the tractor when it is properly accommodated and with the seat belt fastened.

ATTENTION

• Do not work with the tractor if the front is light. If there is a tendency to lift, add weights or ballast to the front or front wheels.

ATTENTION



• There is a risk of s erious injury from tipping over when working on slopes.

• Do not use excessive speed.

ATTENTION

• Do not transport people on the tractor or equipment.

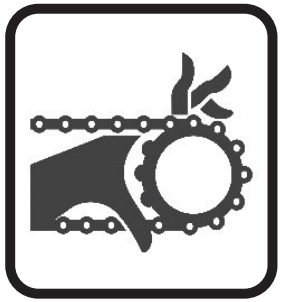
ATTENTION

• Before performing any maintenance on your equipment, make sure that it is properly stopped. Avoid getting hit.

SAFETY RULES

SAFETY RULES

⚠ ATTENTION

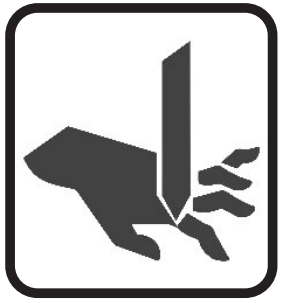


- Do not operate the seeder if the transmission protections are not properly fixed.
- Only remove the guards to change gears, replace them immediately.
- When doing any work on the seeder transmission, disable the ratchets.
- Do not make adjustments with the seeder in motion.

⚠ ATTENTION

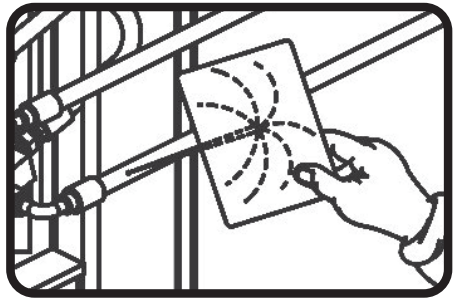
- Hydraulic oil works under pressure and can cause serious injury if there are leaks. Periodically check the condition of the hoses. If there is evidence of leakage, replace it immediately.
- Before connecting or disconnecting the hydraulic hoses, relieve the system pressure by activating the command with the tractor off.

⚠ 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 the discs, wear safety gloves in your hands.

⚠ ATTENTION



- When looking for a possible leak in the hoses, use a piece of cardboard or wood, never use your hands.
- Avoid incision of fluid in the skin.

⚠ *THIS SYMBOL INDICATES AN IMPORTANT SAFETY WARNING. IN THIS MANUAL, WHENEVER YOU FIND IT, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE CAREFUL AS TO THE POSSIBILITY OF PERSONAL ACCIDENTS.*

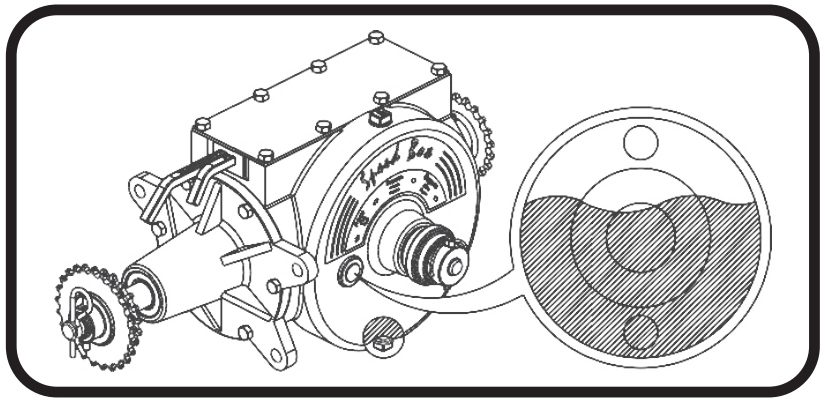
ATTENTION

- Avoid accidents caused by intermittent action of rows mark
- Make sure if has anybody closer to the row mark.

ATTENTION

- When operating the seed drill, do not allow the permanence of people on the machine.
- Do not stay on the platforms with the machine in motion.

ATTENTION



- Check the oil level daily.
- Replace the oil in the gearbox (Speed Box) 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).
- Use only factory original fuse, because only this one has controlled hardness.

THIS SYMBOL INDICATES AN IMPORTANT SAFETY WARNING. IN THIS MANUAL, WHENEVER YOU FIND IT, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ATTENTIVE AS TO THE POSSIBILITY OF PERSONAL ACCIDENTS.

SAFETY RULES

WARNINGS

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

02 - ⚠ When carrying out any assembly and disassembly service on the disks, use gloves in your hands.

03 - ⚠ Do not wear loose clothing, as they may get caught in the equipment.

04 - ⚠ When starting the tractor engine, be properly seated in the operator's seat and aware of complete knowledge of correct and safe handling of both the tractor and the implement. Always put the gearshift lever in neutral, disconnect the PTO control and put the hydraulic controls in neutral.

05 - ⚠ Do not start the engine indoors or without adequate ventilation, as the exhaust gases are harmful to health.

06 - ⚠ When maneuvering the tractor to hitch the implement, make sure you have the necessary space and that there are no people very close. Always maneuver in low gear and be prepared to brake in an emergency.

07 - ⚠ Do not make adjustments with the implement in operation.

08 - ⚠ When working on slopes, proceed with care, always trying to maintain the necessary stability. In the event of an imbalance beginning, reduce the acceleration and turn the tractor wheels to the side of the slope of the terrain.

09 - ⚠ Always drive the tractor at speeds compatible with safety, especially when working on rough terrain or slopes. Always keep the tractor engaged.

10 - ⚠ When driving the tractor on roads, keep the brake pedals interconnected and use safety signs.

11 - ⚠ Do not work with the tractor if the front is light. If there is a tendency to lift, add weights to the front or front wheels.

12 - ⚠ When leaving the tractor, put the gear lever in neutral and apply the parking brake.

13 - ⚠ Alcoholic beverages or some medications can cause loss of reflexes and alter the operator's physical condition. Therefore, never operate this equipment while using these substances.

14 - ⚠ Read or explain all of the above procedures to the user who cannot read.

Em caso de dúvidas, consulte o Pós Venda
Telefone: 0800-152577 / E-mail: posvenda@baldan.com.br

SPE TOP LINE
PRECISION ROW CROP PLANTER

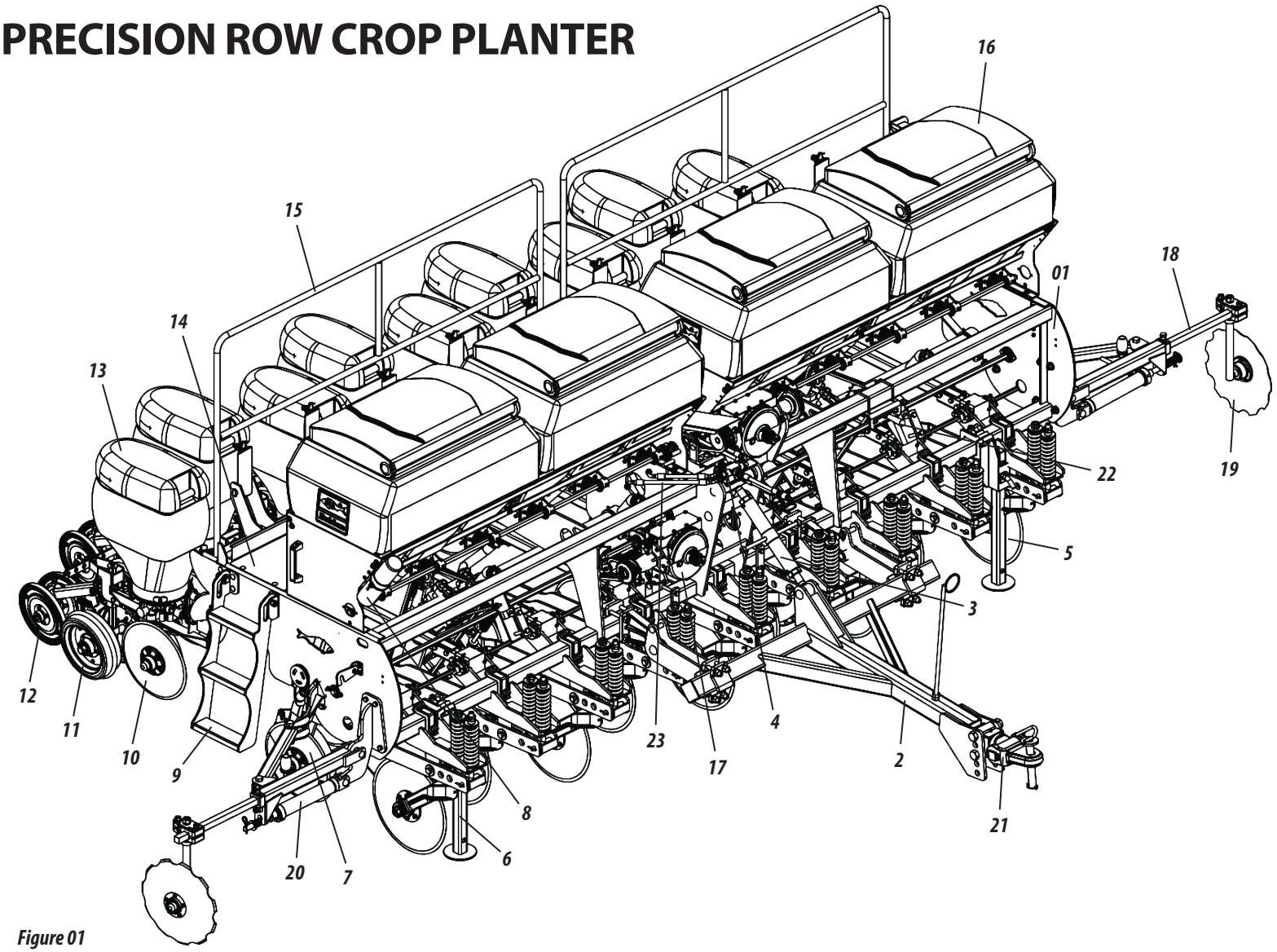


Figure 01

1 - Chassi
2 - Coupling Header
3 - 3rd Coumpling Point Ragulator
4 - Valve
5 - Cutting Disc
6 - Support
7 - Double Disc of Fertilizer
8 - Container For Instruction Manual
9 - Stair
10 - Double Disc of Seed
11 - Depth Limiting Wheel
12 - Wheel Type "V"
13 - Seed Hopper
14 - Platform
15 - Platform Handrail
16 - Fertilizer Hopper
17 - Speed Box
18 - How Marker
19 - How Marker Disc
20 - How Marker Cylinder
21 - Coupling Shackle
22 - Lockout Lever
23 - Hydraulic Hose

COMPONENTS

TECHNICAL SPECIFICATIONS

Table 01

Model	Nº of Rows	Useful width (mm)	Total width (mm)	Fertilizer tank capacity (L)	Number of wheels		Approximate weight (kg)	Tractor power (hp)
				Polyethylene	Standard	Optional		
SPE Top Line 4000	7	3000	3550	900	2	-	2400	85
SPE Top Line 4500	9	4000	4450	1200	2	4	3000	110

Seed Tank Capacity (L) 45
Total length (mm) 4900
Total height (mm) 2160
*Minimum rows spacing (mm) * 450*
Wheels ..... Militar 7.0 x 16 x 10L

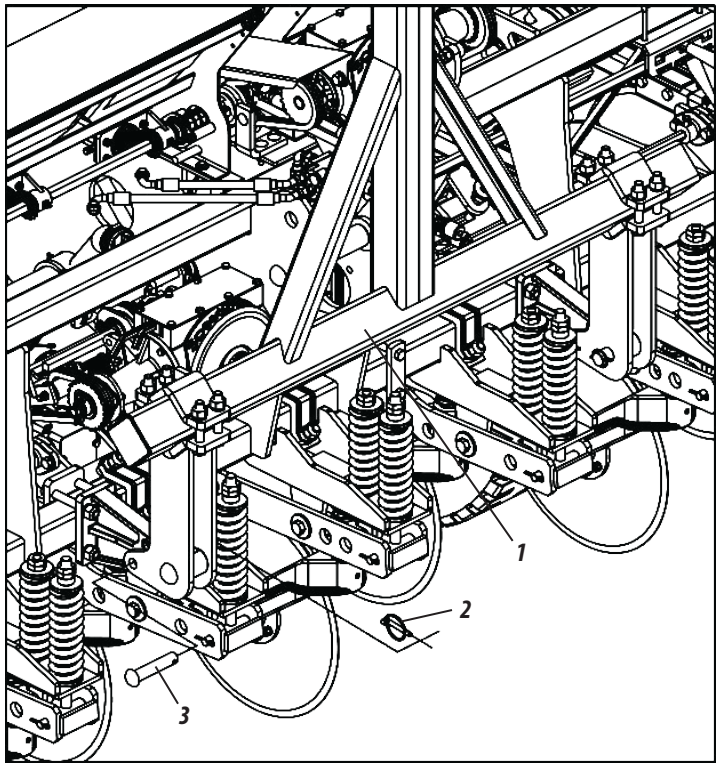
Baldan reserves the right to change and or improve the technical characteristics of its products, without prior notice, and without obligation to do so with previously manufactured products. Technical specifications are approximate and reported under normal working conditions.

The Baldan seeders model **SPE Top Line** leave the factory semi-assembled, with only a few components missing and which must be assembled as follows:

COUPLING HEADER ASSEMBLY (FIGURES 02)

To assemble the coupling header on the **SPE Top Line** seeder 4000/4500, proceed as follows:

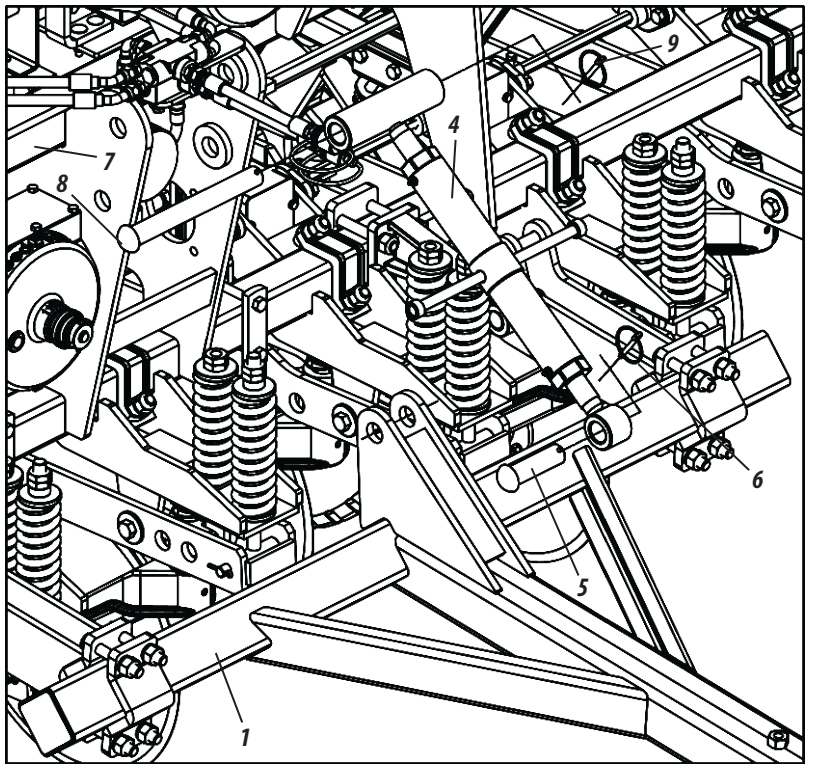
1- Place the coupling header (1) in the working position, removing the lock with ring (2) and the pin (3) that were placed for transporting the seeder.



IMPORTANTE

Before starting the coupling header assembly, look for an ideal location where it is easy to identify the components and assemble the coupling header.

2- Then, insert the regulator (4) in the coupling header (1), fixing it with the pin (5) and lock with the ring (6) and in the upright support (7) with the pin (8) and lock with ring (9).



Figures 02

ASSEMBLY

COMPACTATION WHEELS ASSEMBLY (FIGURES 03)

To mount the "V" wheel support (1), proceed as follows:

1- Couple the "V" wheel support (1) to the depth wheel cart (2), fixing it with the screw (3), bushings (4), washer (5) and nut (6).

2- Then place the lever (7) fully forward and engage the spring (8) on the support (2).

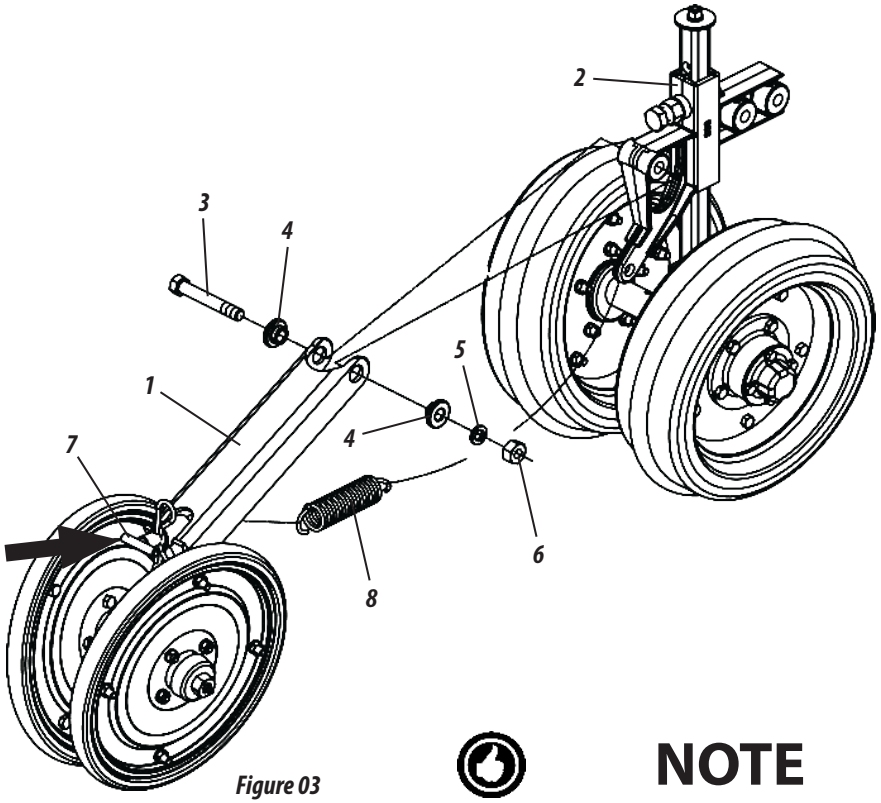


Figure 03

NOTE

Perform the same Assembly procedure on the other carts.

LINES ASSEMBLY (FIGURES 04)

To assemble the lines (1), proceed as follows:

1- IInsert the trolley (2) between the thread plates (1), fixing it with the screws (3), lock washers (4) and nuts (5).

ATTENTION

When finishing the Assembly of the lines, 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 and latches, check all hoses.

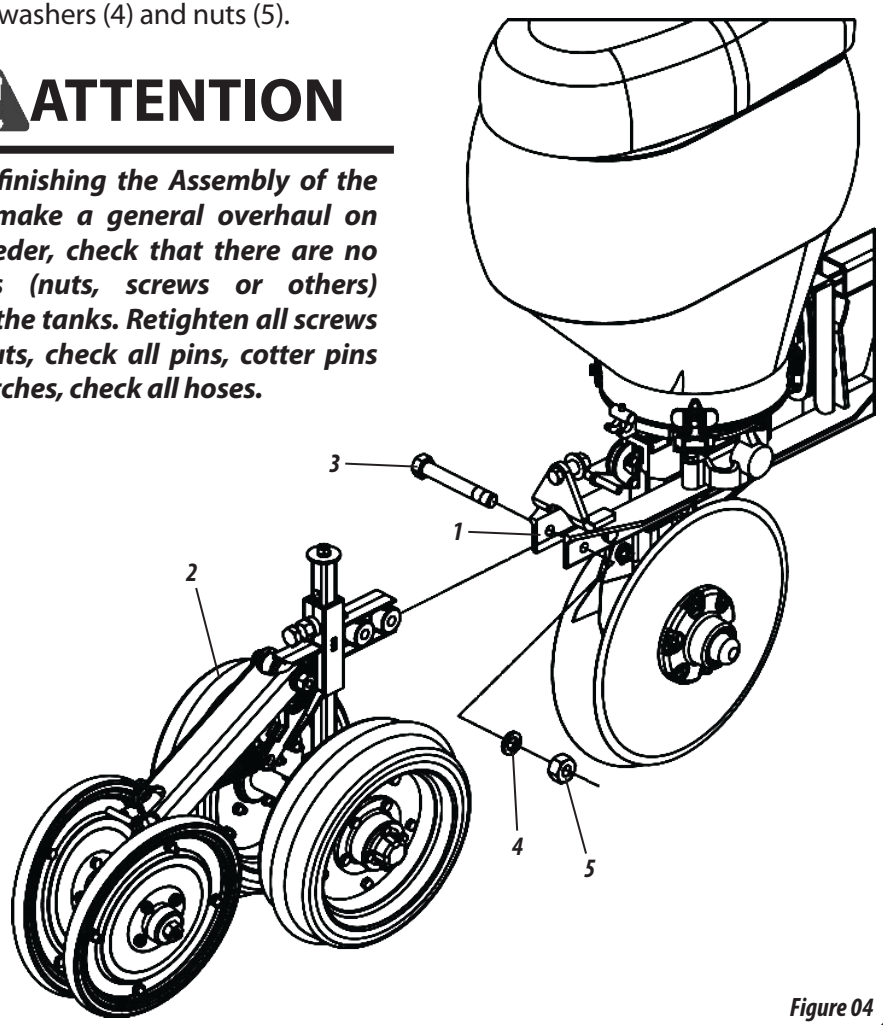
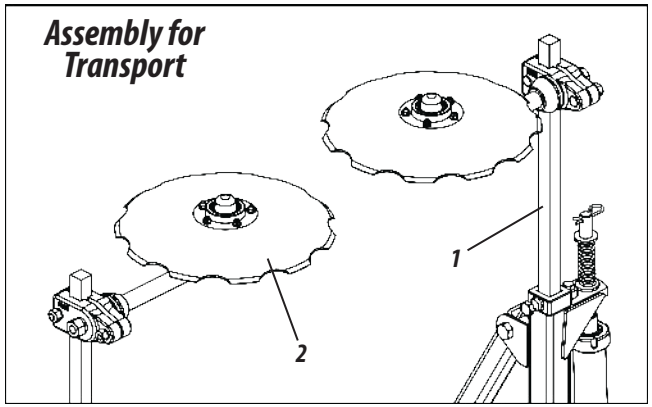
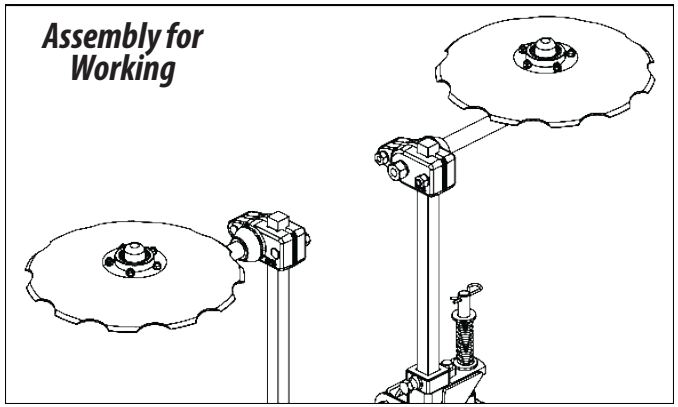


Figure 04

HOW MARKER DISC ASSEMBLY (FIGURES 05/06)

The seeders leave the factory with the line 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, as shown in **Figures 05**.

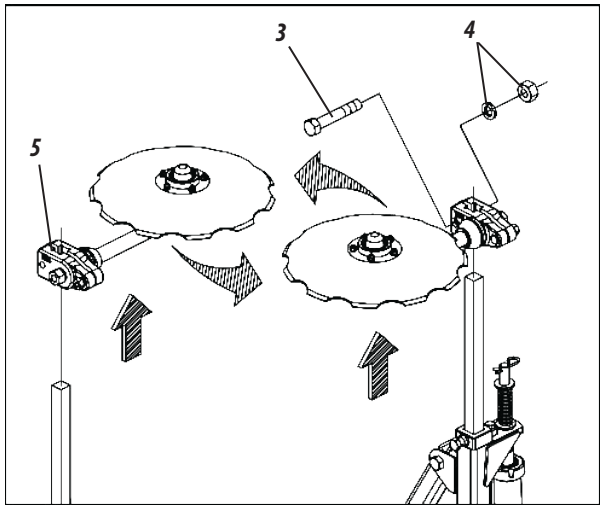


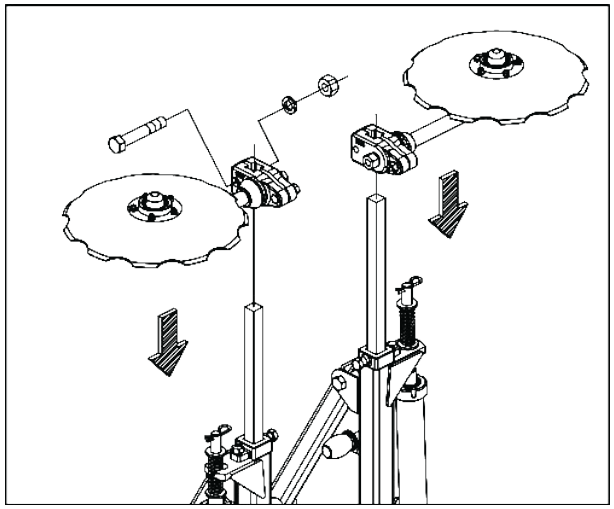


Figures 05

Before starting to work with the seeder, change the discs (2) in the row markers (1), to do this, proceed as follows:

1- Loosen the screws (3), washers and nuts (4), remove the disc supports (5) and mount them on the markers opposite to the ones originally assembled**, as shown in Figures 06.**





Figures 06

IMPORTANTE

Before starting the Assembly of the line marker, look for a safe and easily accessible place where it facilitates the Assembly of it.

COUPLING

HITCH TO TRACTOR (FIGURE 07)

Before coupling the seeder to the tractor, check that the tractor is equipped with a set of weights or ballast on the front or on the front wheels to avoid lifting the tractor. The rear wheels will give the tractor greater stability and traction to the ground:

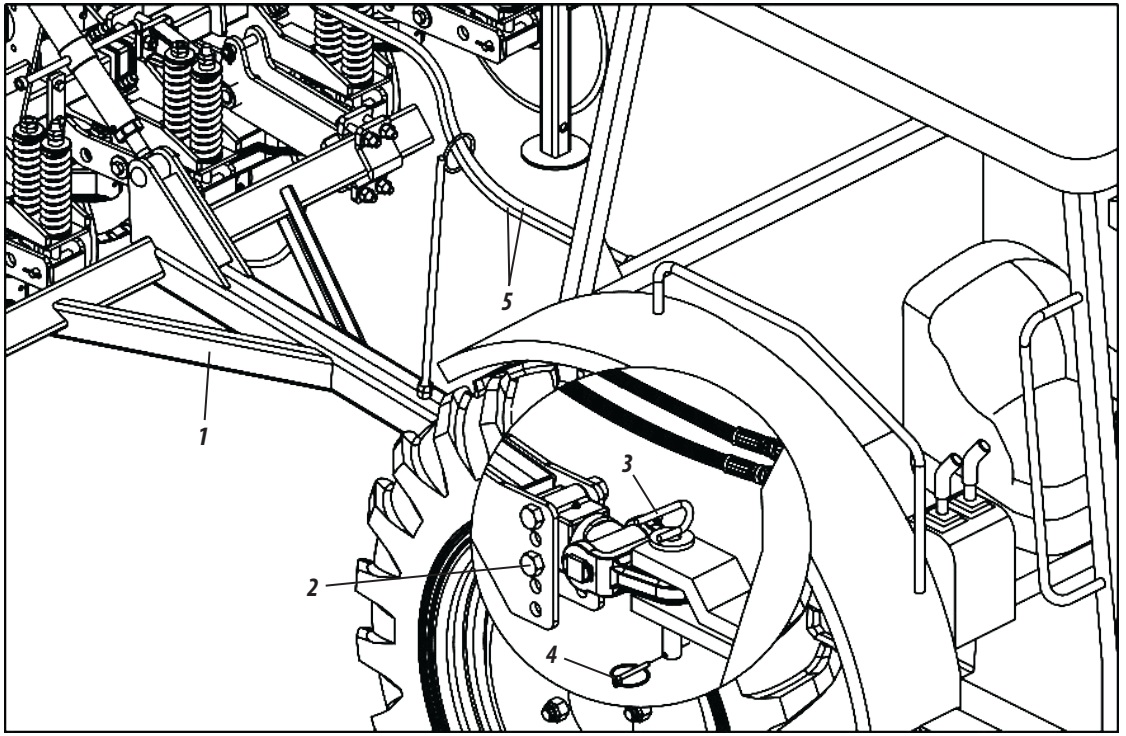
To attach the seeder, proceed as follows:

1- Level the coupling header (1) of the seeder in relation to the tractor coupling through the settings (2) of the coupling jumle. Then, slowly approach the tractor to the tractor in reverse, paying attention to the application of the brakes.

2- Proceed the coupling of the seeder to the tractor, fixing it through the coupling pin (3) and lock (4).

3- Couple the hoses (5) to the tractor's quick coupling, **as shown in Figure 07**.

Figure 07



⚠ ATTENTION

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.

IMPORTANTE

When hitch the seeder, look for a safe and easily accessible place, always use reduced gear with low acceleration.

PREPARATION FOR WORK (FIGURES 08/09/10/11)

Before working with the seeder, proceed as follows:

1- Collect the support bracket (1) and secure with the pin (2) and lock (3).

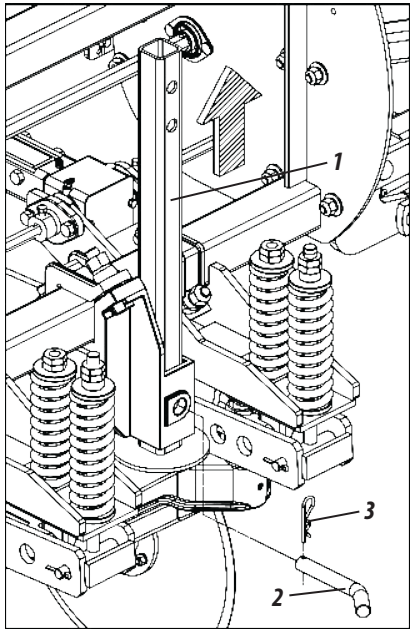


Figure 08

2- With the seeder down, check that it is level with respect to the ground, otherwise, level it using the header regulator (4).

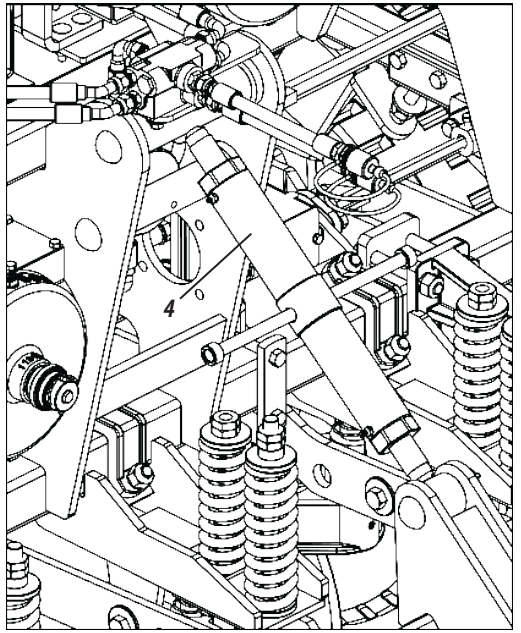


Figure 09

3- Then, lift the lines by fully activating the stroke of the hydraulic cylinder and place the depth gauge (5) on the cylinder rod (6).

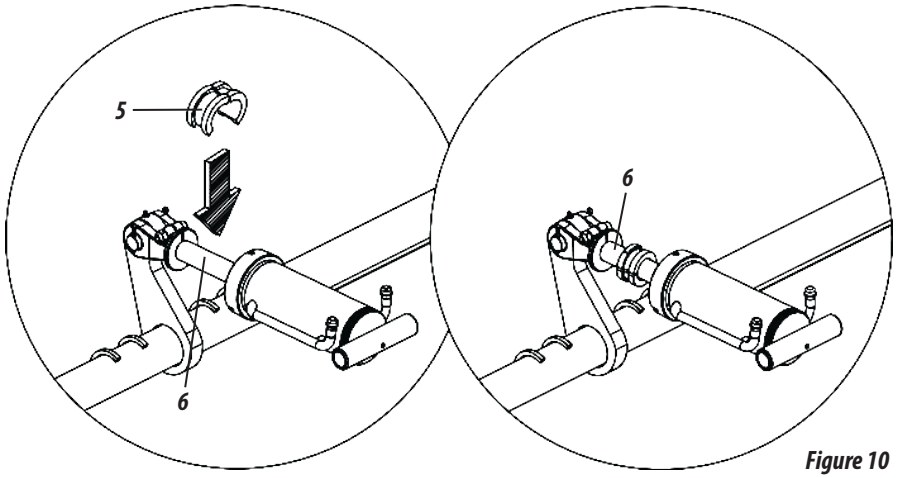


Figure 10

IMPORTANTE

Do not transport the loaded seeder as it may damage the equipment. We recommend that you supply it only at the workplace. If the seeder is going to remain in the field for any reason, we recommend covering it with waterproof tarpaulin to avoid moisture.

WORK / TRANSPORT

4- Then lift the ladder (7), locking it.

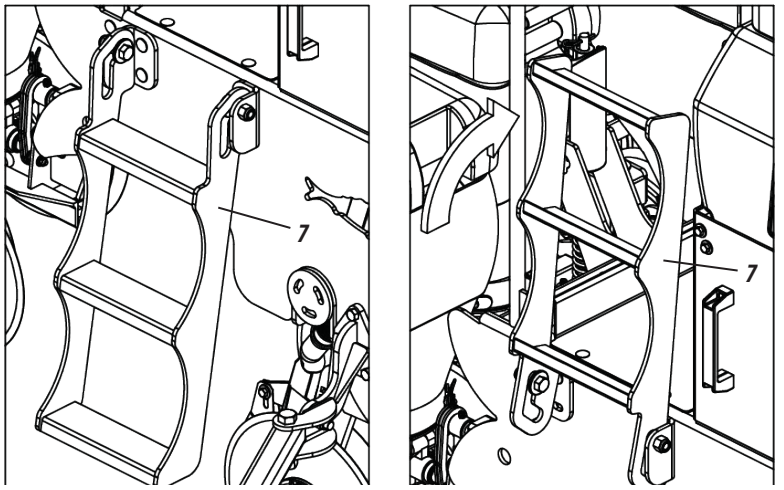
⚠ ATTENTION

Do not stay on the ladder when the seeder is working or being transported.
Do not work or transport the seeder with the ladder open.
Do not transport people on the platform, ladder or any other part of the seeder.
ignoring these warnings could result in serious accidents.

IMPORTANTE

To access or fill the tank, always use the ladder.

The articulated ladder (7) complies with the NBR standards.



Figures 11

Supply position or Warehouse maintenance

Position for work or transport

PREPARATION FOR TRANSPORT (FIGURES 12/13/14/15)

Before transporting the seeder, proceed as follows:

1- Collect the support bracket (1) and secure with the pin (2) and lock (3).

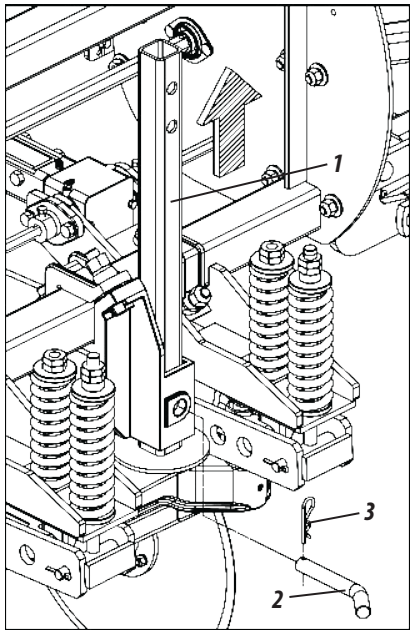


Figure 12

2- With the seeder down, check that it is level with respect to the ground, otherwise, level it using the header regulator (4).

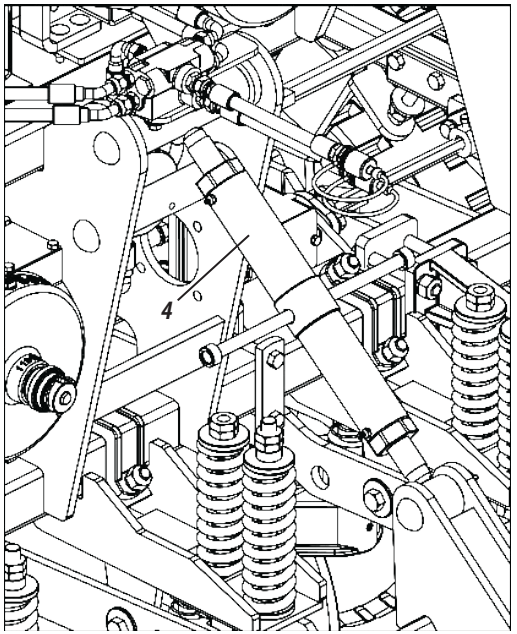


Figure 13

3- Then, lift the lines by fully activating the stroke of the hydraulic cylinder and place the lock (5) on the cylinder rod (6) locking with the pin (7) and lock (8).

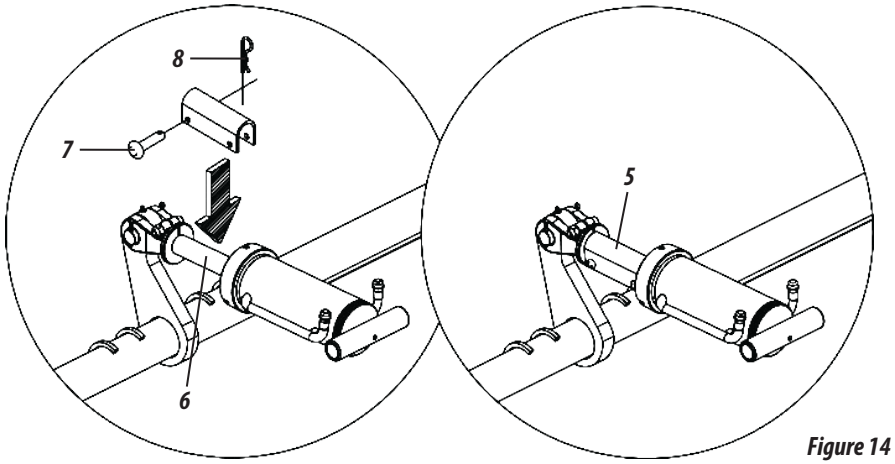


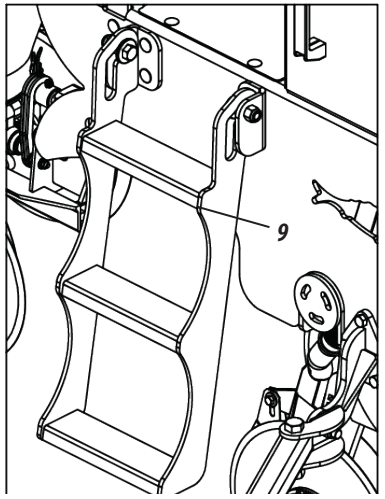
Figure 14

IMPORTANTE

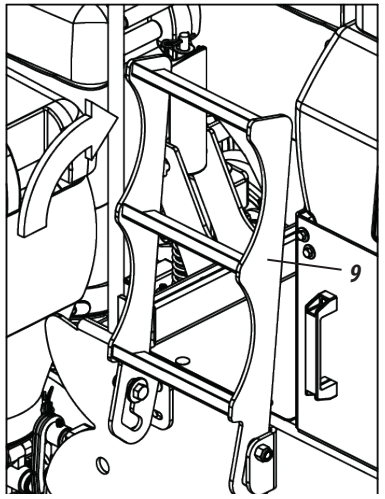
Do not transport the loaded seeder as it may damage the equipment. We recommend that you supply it only at the workplace. If the seeder is going to remain in the field for any reason, we recommend covering it with waterproof tarpaulin to avoid moisture.

4- Then lift the ladder (9), locking it.

Figures 15



Supply position or Hopper maintenance



Position for work or transport

ATTENTION

Do not stay on the ladder when the seeder is working or being transported.
Do not work or transport the seeder with the ladder open.
Do not transport people on the platform, ladder or any other part of the seeder.
ignoring these warnings could result in serious accidents.

IMPORTANTE

To access or fill the tank, always use the ladder.

The articulated ladder (7) complies with the NBR standards.

PREPARATION FOR WORK

PLANNING FOR PLANTING (FIGURE 16)

Due to factors such as germination index, physical purity, vigor (provided in the seed packaging), in addition to pests and diseases that can occur during the crop cycle, the number of plants in the harvest is less than the number of seeds effectively distributed in the crop. planting.

In addition, local working conditions must also be considered, since the seeder tires may slip or slip during planting. See how to calculate the seeder sliding index.

1- The sliding index of the seeder is obtained by comparing the number of turns of the empty seeder tire with the number of turns of the supplied seeder tire, moving it across the terrain.

2- With the sowing machine empty and attached to the tractor, mark a starting point on the ground and on the sowing tire. Then, move the seeder until 10 (ten) turns of the tire are completed. Take the measurement and note the distance covered.

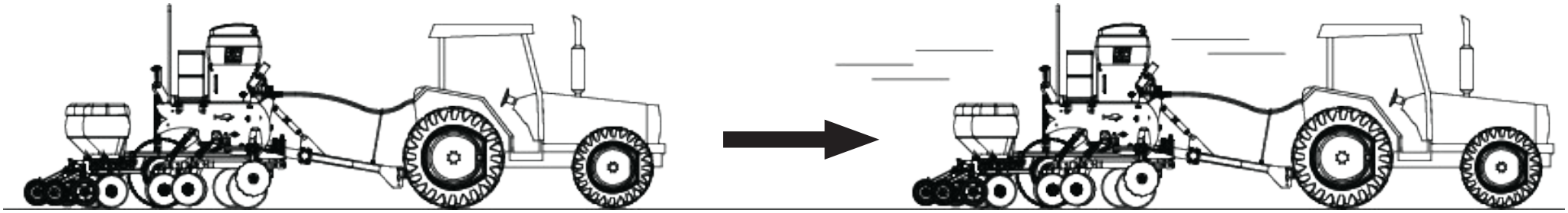


Figure 16

3- Then, fill the seeder, repeat the previous procedure and note the distance covered.

4- With the data in hand, make the formula below.

$$\text{Fórmula: } \frac{DCC \times DSC \times 100}{DSC}$$

Dados da Fórmula:
DCC = Distance with Load
DSC = No Load Distance

ATTENTION ***The seeder tires must have the same design and the same pressure calibration. The wheels must have the same pressure regulation on the springs.***

NEW SPACES (FIGURES 17/18/19)

There are cultures that need to remove the lines to make the new spacing, for this, proceed as follows:

1- Lift the seeder by actuating the hydraulic cylinder (1).

2- Then, support the seeder on the rear so that it is stabilized.

3- Then, lower the support brackets (2) and secure it with the pin (3) and lock (4), **as shown in Figure 17.**

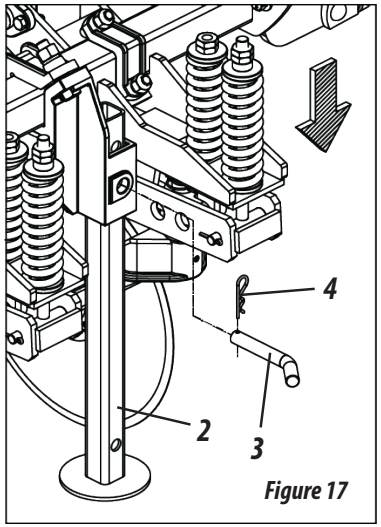


Figure 17

4- Then, before lowering the hydraulic cylinder (1), place the limiting rings (5) on the rods (6) of the cylinders, this will prevent the suspended weight of the lines from becoming greater, **as shown in Figure 18.**

5- To adjust the new spacing, loosen the screws (1), releasing the locks (2) of the lines that will be adjusted the spacing.

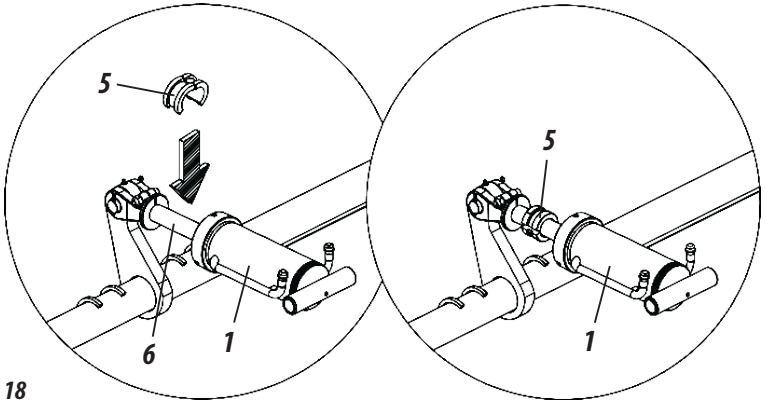


Figure 18

6- Then, loosen the screws (3), bushing (4), flat washer (5), pressure washer (6) and nut (7), removing the spacer bars (8).

7- Then, loosen the nuts (9) and lock washers (10) from the clamp (11), remove or adjust the lines (12) to the desired spacing.

8- When finishing adjusting the lines (12), retighten the nuts (9) and lock washers (10) of the clamp (11) and the screws (1) of the locks (2).

9- Finally, replace the spacer bars (8), adjusting them to the new spacing and insert the screw (3) with the bushing (4), washer (5), pressure washer (6) and nut (7).

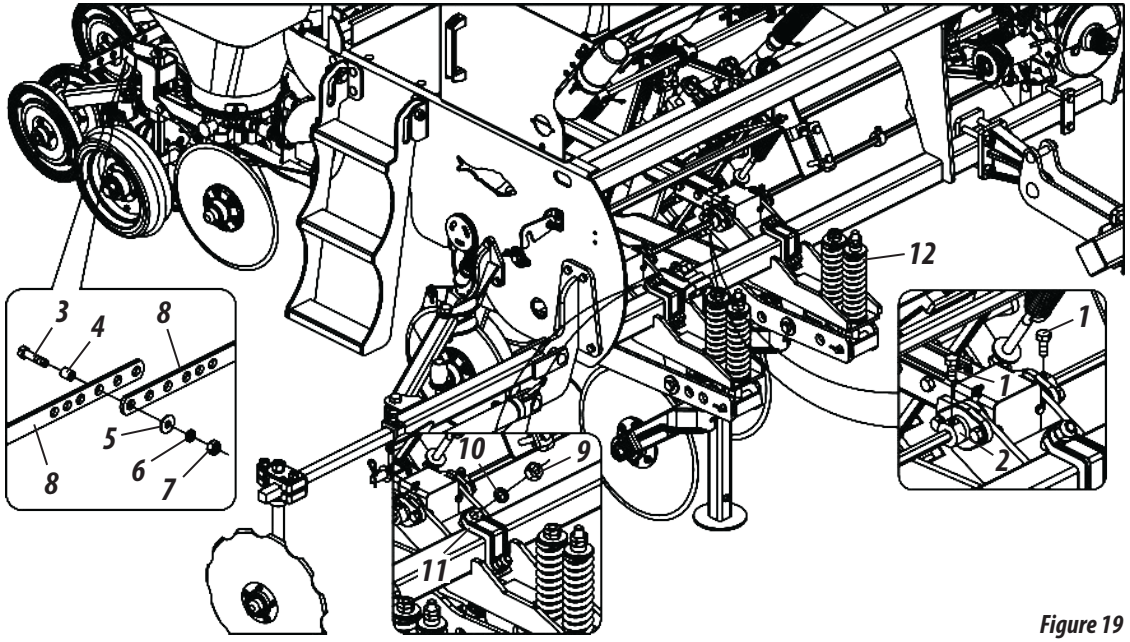


Figure 19

ATTENTION ***Before removing the lines for the new spacing, make sure that the seeder is properly supported. Avoid accidents.***

ADJUSTMENTS

1- When removing the lines to adjust the new spacing, also remove their respective fertilizer conductive spouts (13) through the clip (14) and close the tank outlets, placing the plug (15) and locking with the clip (16).

2- Then close the tank entrances, placing the cover (17), **as shown in Figure 20.**

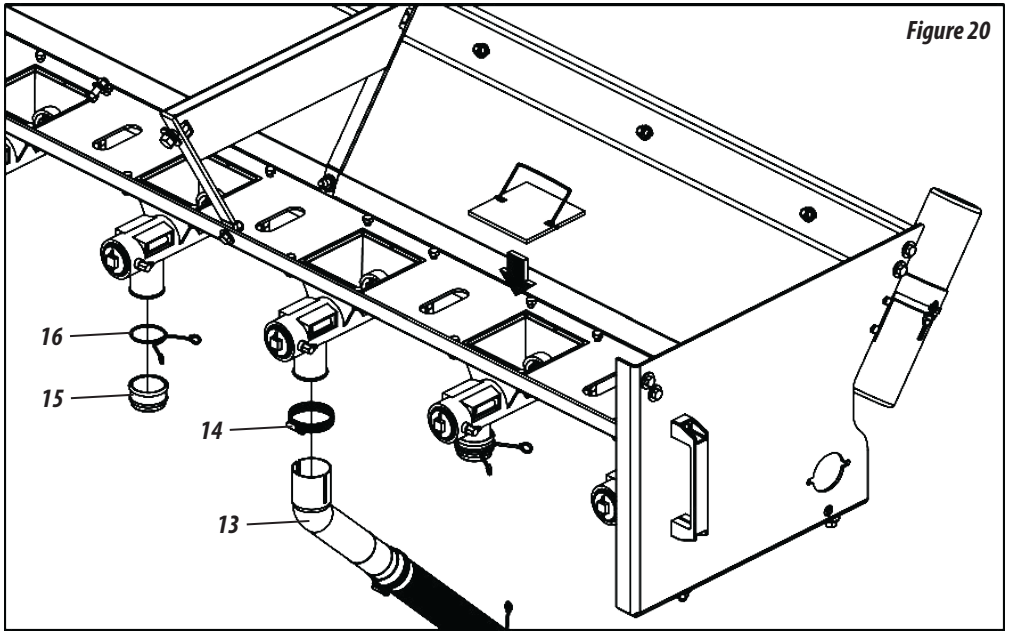


Figure 20

NOTE

Proceed daily to clean the closed outlets, removing the plug (15) so that the fertilizer is not compacted.

WHEEL POSITION (FIGURES 21)

To modify the position of the wheels, proceed as follows:

1- Loosen the screws (1) of the ratchet support (2) and the screws (3) of the clamps (4) of the wheel support (5).

2- Then, loosen the screws (6) of the clamps (7), releasing the whole assembly to move it.

3- Then, slide the wheel and ratchet assemblies.

4- Observe the alignment of the wheel and ratchet gears with the drive chain (8).

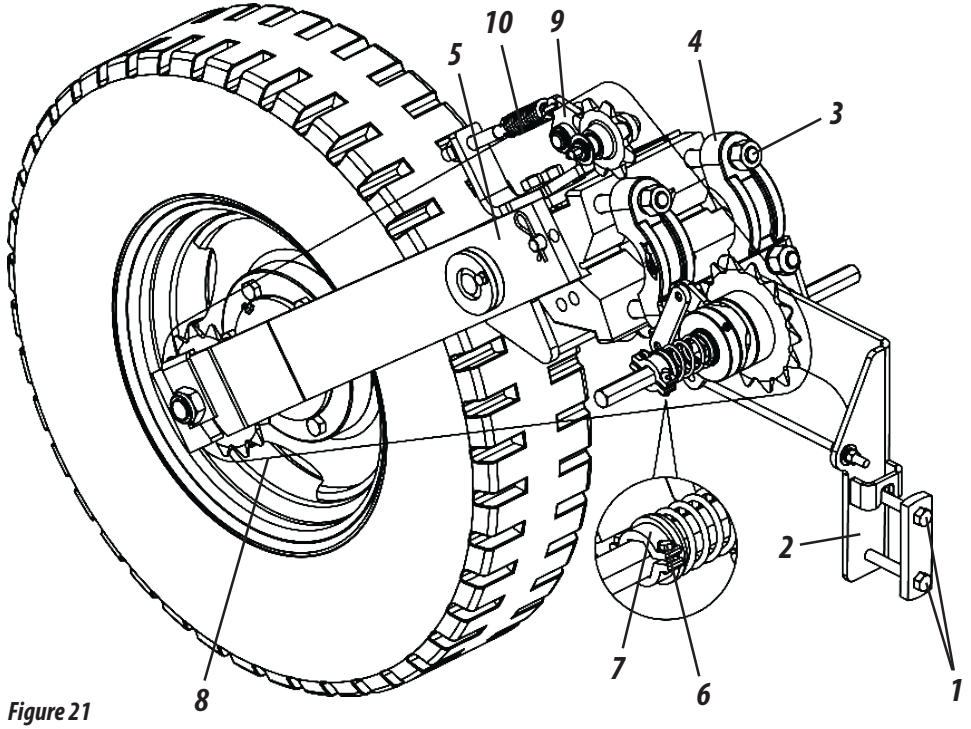


Figure 21

ATTENTION

The minimum spacing between lines in the wheels is 450 mm.

To finish moving the wheels, relieve the pressure of the tensioner (9) by removing the spring (10). When you finish moving the wheels, adjust the tensioner pressure (9) again, replacing the spring (10).

MILLIMETERS SPACING TABLES (TABLES 02)

The **SPE Top Line** model seeders are provided with spacing according to the number of lines requested, and new spacing can be made according to the type of culture desired.

Model	Nº of Rows	Espacing (mm)	Useful Width (mm)
4000	4	700 / 750 / 800 / 850 / 900 / 950 / 1000	3000
	5	550 / 600 / 650 / 700 / 750	3000
	6	500 / 550 / 600	3000
	7	450 / 500	3000

Tables 02

Model	Nº of Rows	Espacing (mm)	Useful Width (mm)
4500	4	900 / 950 / 1000	4000
	5	850 / 900 / 950 / 1000	4000
	6	700 / 750 / 800	4000
	7	550 / 600 / 650	4000
	8	450 / 550	4000
	9	450 / 500	4000

ADJUSTMENTS

ROW MARKER ADJUSTMENT (FIGURE 22)

The adjustment of the line markers is important to obtain a planting with uniform spacing, making the line at the end of the seeder stay in the same spacing as the last planted line, facilitating future operations. To adjust the line markers, proceed as follows:

1- First, you must know the spacing between lines, the number of lines to be used in the operation and the front gauge of the tractor. Use the formula below, followed by an example.

EXAMPLE: For a planting with 09 rows in the seeder, spacing of 0.45 mts and the front gauge of the tractor with 1.43 mts, determine:

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

Resolve: $X = \frac{0{,}45 \times 10 - 1{,}43}{2}$

D = 1,53 metros

BEING:

E = *Line spacing (mts)*
N = *Number of seeder lines*
B = *Tractor front gauge*
D = *Marker distance*

2- Adjust the line marker disc with 1.53 mts to the center of the first planting line.

3- The line markers are alternative, lower one after the other, so if during the planting before finishing the line 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 the line markers.

When activating the seeder, check if there are no people under line markers or in their area of action.

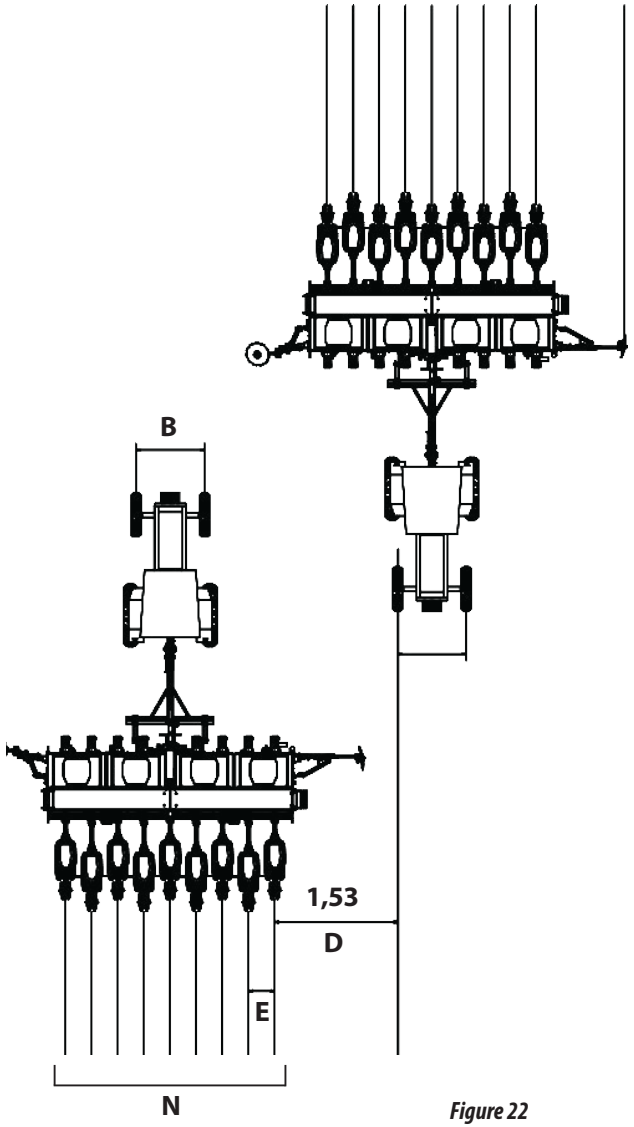


Figure 22

CHOOSING THE RIGHT DISC (FIGURE 23)

As a parameter for selecting the appropriate disc, always use the largest seeds.

The grains must not get stuck in the holes. To make sure of this, place the disc on a flat place and insert a seed in each hole. Then, lift the disc, all seeds should be on the table.

To avoid damage to the seed, the thickness of the distributor discs (1) must be equal to or slightly greater than the seed.

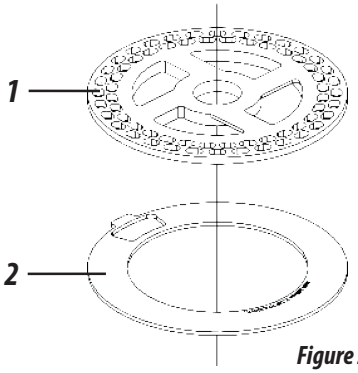


Figure 23

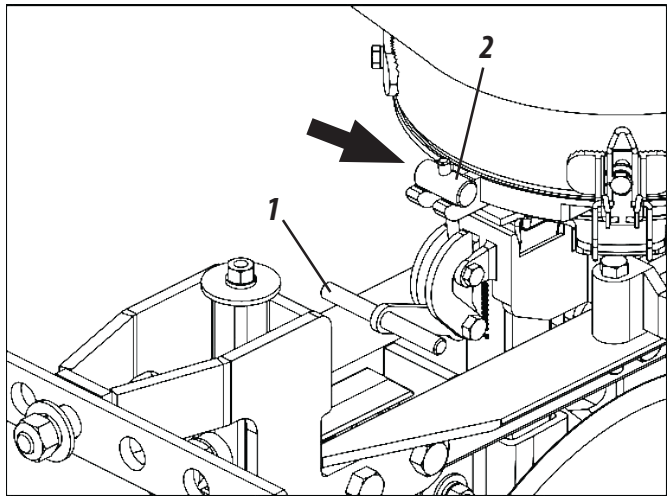
IMPORTANT

Always use the spacer ring (2) next to the distributor discs (1). The sum of the set, seed disk and ring must always be equal to 8.5mm in thickness for the perfect adjustment of the system.

EXCHANGE OF SEED DISCS (FIGURES 24)

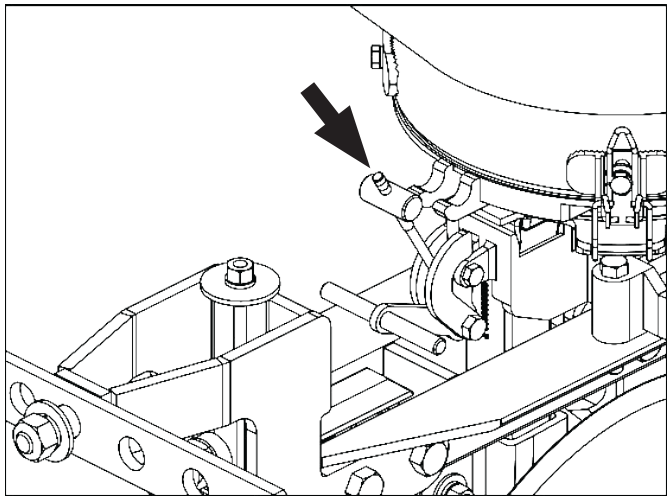
To change or replace the seed distributor discs, proceed as follows:

Lift the lever (1) to disarm the latch (2) of the seed tank**, as shown in details "A" and "B".**



Figures 24

Detail "A"

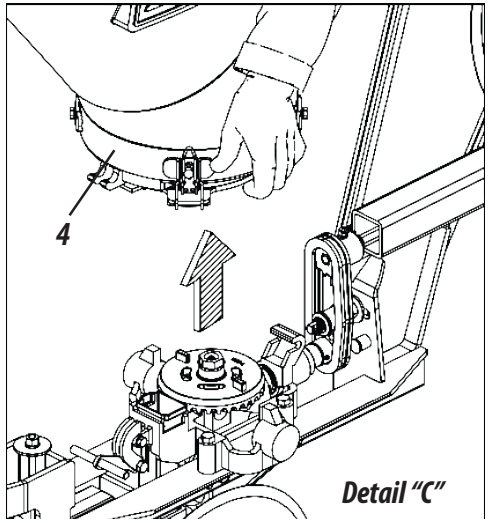

Detail "B"

NOTE

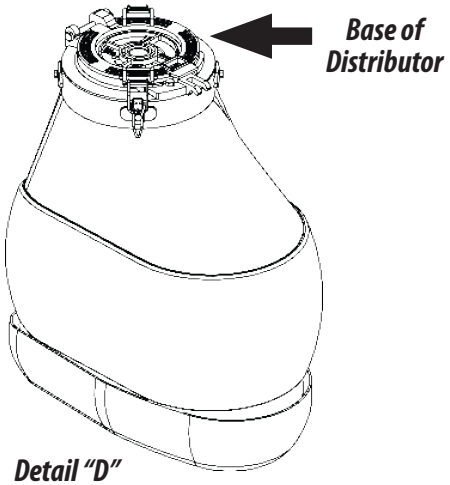
If there are seeds in the tank, remove them before changing the disc and ring, preventing them from spreading on the floor or locking the system.

SEED DISTRIBUTION SYSTEM

3rd Step: Then, remove the seed box (4) from the line and rotate, leaving the base of the distributor upwards, **as shown in Details "C" and "D".**

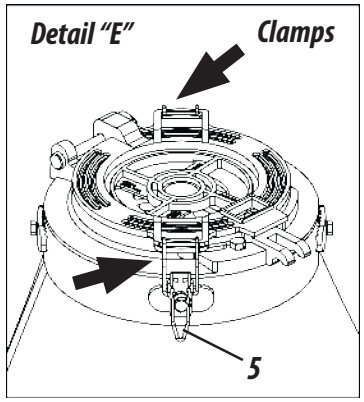


Detail "C"

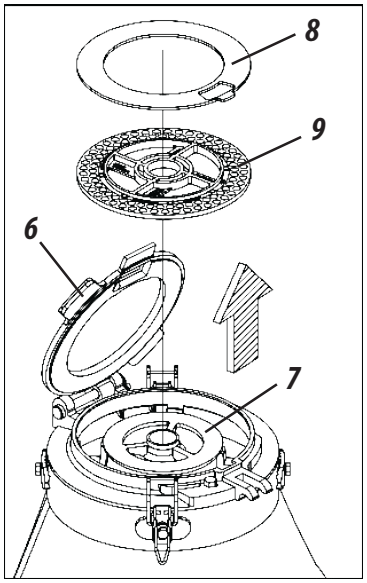


Detail "D"

4th Step: Then, loosen the clips (5), tilt the base (6) and remove the ring (8) and disc (9) from the distributor base (7), replacing them with the ring and disc suitable for the culture that will work, **as shown in Details "E" and "F".**



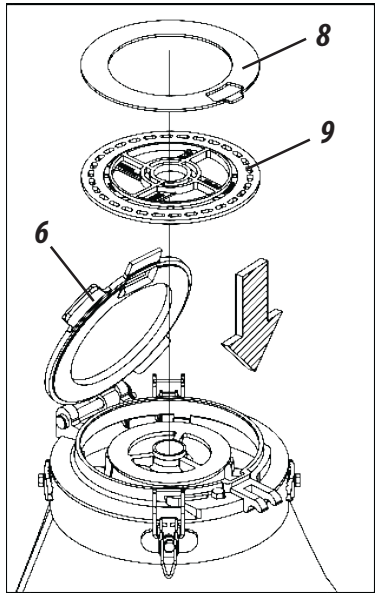
Detail "E"



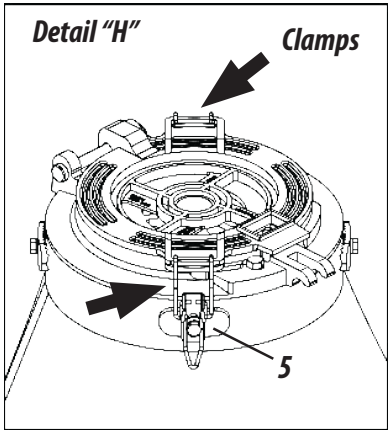
Detail "F"

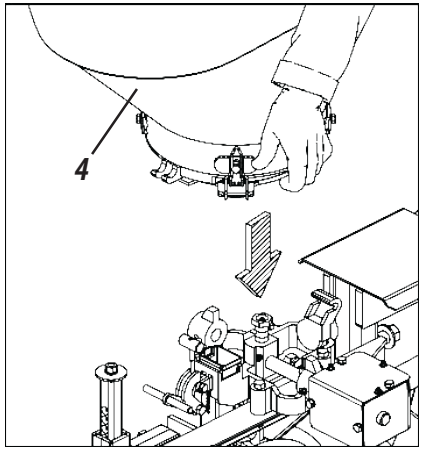
5th Step: When changing the ring (8) and the disc (9), tilt the base (6) by closing it. Then, lock the clips (5) again, **as shown in Details "G" and "H".**

Figures 24



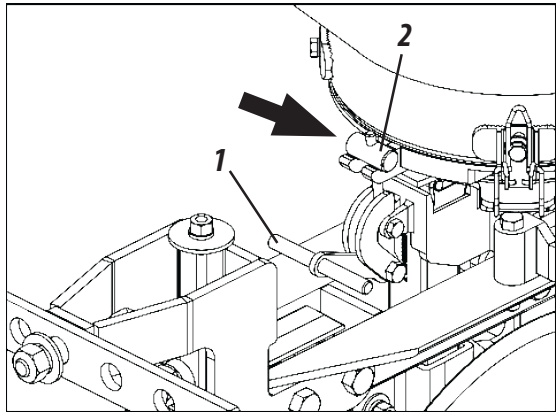
Detail "G"



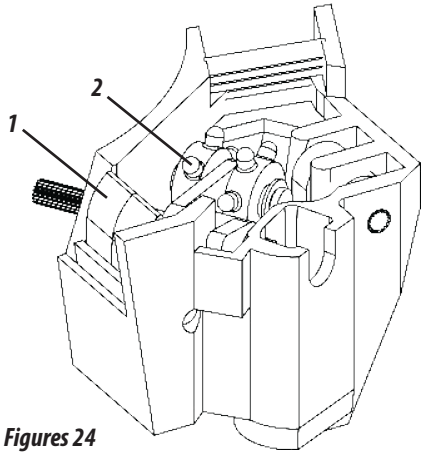


Detail "I"

6th Step: Finish by replacing the seed box (4) in the line and reset the lock (3), fixing the lever (1) through the pin (2), **as shown in Details "I" and "J".**



Detail "J"



Figures 24

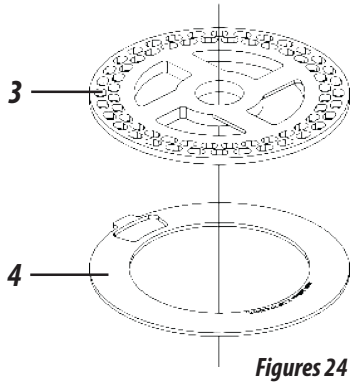
Seed Dosing Box

ATTENTION

Before changing the disk and ring to work with the new seed, check the condition of the trigger (1) and the rosette (2), as the wear of these items, compromise the dosage. If necessary, replace them.

IMPORTANT

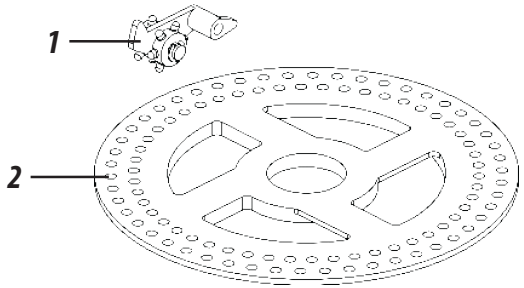
Change the distributor discs (3) and the spacer rings (4) when they show excessive wear.



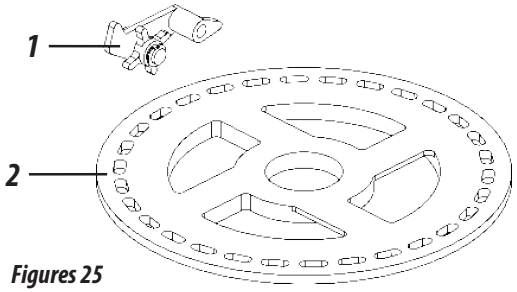
Figures 24

SEED DOSING GEAR (FIGURES 25)

The seed distribution box leaves the factory with the trigger mounted with double gears (1), for double row discs (2).



For single row discs (1), change the trigger with double rosettes to the single gear trigger (2), **as shown in the Figure below.**



Figures 25

IMPORTANT

The seed distribution box has triggers and rosettes that must be cleaned internally at least once a day, for untreated seeds and twice a day for planting with treated seeds.

CHANGE OF DOUBLE GEAR FOR SIMPLE (FIGURE 26)

To change the trigger with double gears, for the trigger with single gear, proceed as follows:

1- Remove the pin (1), the trigger with double gear (2), place the spring (3) in the socket and insert the trigger with single gear (4) in the distribution box (5) and lock with the pin (1).

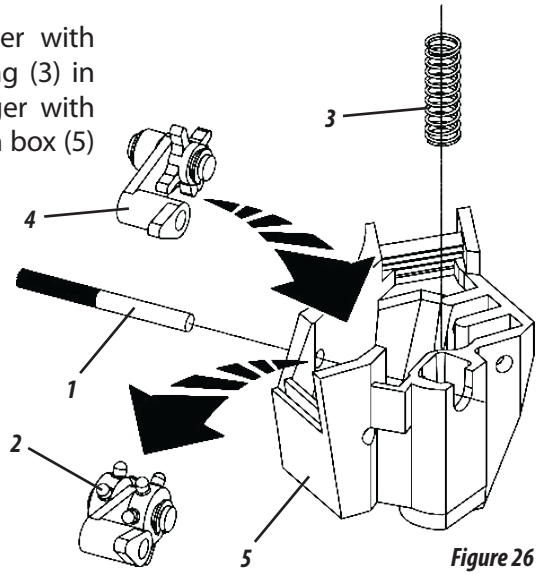


Figure 26

SEED DISTRIBUTION SYSTEM

SEED DISTRIBUTION SYSTEM

DISCS AND RINGS SEED DISTRIBUTORS (TABLES 03)

The **SPE Top Line** seeder leaves the factory with some standard discs and rings, and other loose models can be optionally purchased.

Culture	*Code*	*Standard Discs*
Corn	60200717980	Disc w/ 28 holes ø 11,5mm (ø189 x 4,00mm) **Rampflow**
	60200717999	Disc w/ 28 holes ø 12,5mm (ø189 x 4,00mm) **Rampflow**
	60200718006	Disc w/ 28 holes ø 13,5mm (ø189 x 4,00mm) **Rampflow**
Sorghum	52200101049	Disc w/ 100 holes ø 5mm (ø35,5 x 189 x 3,00mm) w/Ring
Soy	60200718014	Disc w/ 90 holes ø 8mm (ø35,1 x 189 x 4,50mm) **Rampflow**
	60200718022	Disc w/ 90 holes ø 9mm (ø35,1 x 189 x 5,50mm) **Rampflow**
Disc	52200101316	Blind Disc (ø35,5 x 189 x 5,50mm) w/Ring

Tables 03

Culture	*Code*	*Standards Rings*
Corn	60200158094	Corn Ring Mod. U 4mm with recess 1mm **Rampflow**
	60200158140	Corn Ring Mod. U 4mm with recess 2mm **Rampflow**
	60200158159	Corn Ring Mod. U 4mm Smooth **Rampflow**
Soy	60200158108	Soy Ring Mod. U 4mm Smooth **Rampflow**
	60200158116	Soy Ring Mod. U 3mm Smooth **Rampflow**
	60200158124	Soy Ring Mod. U 3mm with recess 0,8mm **Rampflow**
	60200158132	Soy Ring Mod. U 4mm with recess 1mm **Rampflow**

Tables 03

Culture	*Code*	*Optional Discs and Rings*
Corn	60200718162	Disc w/ 28 holes ø 10,5mm (ø189 x 4,00mm) **Rampflow**
	60200718170	Disc w/ 28 holes ø 11mm (ø189 x 4,00mm) **Rampflow**
	60200718189	Disc w/ 28 holes ø 12mm (ø189 x 4,00mm) **Rampflow**
	60200718197	Disc w/ 28 holes ø 13mm (ø189 x 4,00mm) **Rampflow**
Sorghum	52200101200	Disc w/ 50 holes ø 5mm (ø35,5 x 189 x 3,00mm) w/Ring
Bean	60200700905	Disc w/ 34 holes ø 10,5 x 20mm (ø35,5 x 189 x 8,50mm) w/Ring
	52200101219	Disc w/ 64 holes ø 8 x 12,5mm (ø35,5 x 189 x 5,50mm) w/Ring
Sunflower	52200101235	Disc w/ 30 holes ø 5,5 x 13,4mm (ø35,5 x 189 x 4,50mm) w/Ring
soy	60200718200	Disc w/ 90 holes ø 7,3mm (ø35,1 x 189 x 4,50mm) **Rampflow**
	60200758167	Soy ring Mod. U 4mm Liso **Rampflow**
Canola / Sorghum	52200101278	Disc w/ 76 holes ø 5mm (ø35,5 x 186 x 3,00mm) c/ anel
Cotton	52200101286	Disc w/ 64 holes ø 7 x 12mm (ø35,5 x 189 x 5,50mm) c/ anel
Rice	52200101294	Disc w/ 40 holes ø 6,5 x 19,5mm (ø35,5 x 189 x 5,50mm) c/ anel
Blind	52200101324	Blind Disc (ø35,5 x 189 x 4,00mm) c/ anel
	60200700891	Blind Disc (ø35,5 x 189 x 8,00mm) c/ anel

Tables 03

DISCS AND RINGS OF THE CONVERSION SYSTEM FOR PEANUTS PLANTING (TABLE 04)

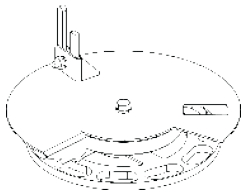
The peanut discs from the table on the right can only be purchased when the customer already has the conversion system for planting peanuts in his **SPE Top Line** seeder.

Culture	*Code*	*Optional Discs and Rings*
Peanut	60200700921	Disc w/ 11 holes ø 20 x 40mm (ø35,5 x 189 x 8,00mm) w/ring
	60200708876	Disc w/ 22 holes ø 20mm (ø35,5 x 189 x 8,50mm) w/ring

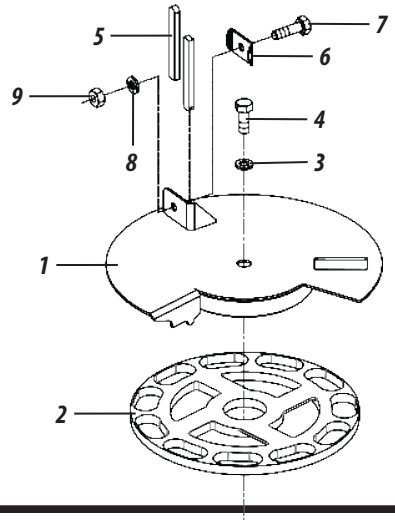
Table 04

CONVERSION SYSTEM FOR PEANUTS PLANTING (UNIVERSAL SYSTEM) - OPTIONAL (FIGURES 27)

For the peanut culture, two conversion systems for planting peanuts (universal system) can be purchased, which are composed of the following items:



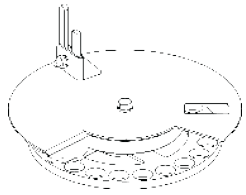
Complete Conversion System
Code: 5528010694-0



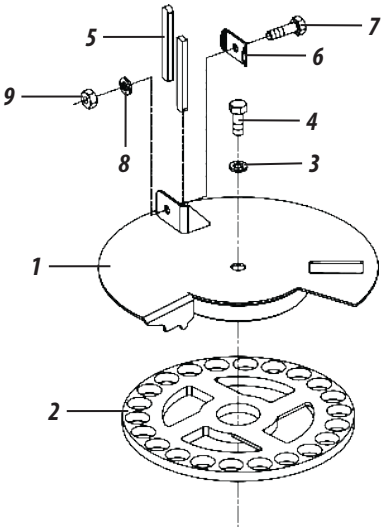
Figures 27

Conversion system for peanuts planting w/disc 11H 20 x 40mm

Items	*Code*	*Description*
01	5220010092-1	Welded distribution baffle disc
02	6020070092-1	Peanut Distributor Disc 11H ø20x40 mm
03	6020010404-0	Pressure washer ø 5/16" Media
04	6020311019-0	Hexagonal Head Bolt ø 5/16" x 7/8" 18F UNC1A GR2 RT
05	5212010001-7	Seed Dispenser
06	5460040003-0	Seed Dispenser clip
07	6020311004-1	Hexagonal Head Bolt ø 1/4" x 7/8" 20F UNC1A GR2 RT
08	6020010402-4	Pressure washer ø 1/4"
09	6020310742-3	Hexagonal Nut 1/4" 20F UNC GR5



Complete Conversion System
Código: 5528010693-2



Figures 27

Sistema de Conversão p/ plantio de Amendoim c/ Disco de 22F 20mm

Itens	*Código*	*Discriminação*
01	5220010092-1	Welded distribution baffle disc
02	6020070887-6	Peanut Distributor Disc 22H ø20 mm
03	6020010404-0	Pressure washer ø 5/16" Media
04	6020311019-0	Hexagonal Head Bolt ø 5/16" x 7/8" 18F UNC1A GR2 RT
05	5212010001-7	Seed Dispenser
06	5460040003-0	Seed Dispenser clip
07	6020311004-1	Hexagonal Head Bolt ø 1/4" x 7/8" 20F UNC1A GR2 RT
08	6020010402-4	Pressure washer ø 1/4"
09	6020310742-3	Hexagonal Nut 1/4" 20F UNC GR5

SEED DISTRIBUTION SYSTEM

USE OF POWDER GRAPHITE OR INDUSTRIAL TALK (TABLE 05)

To facilitate distribution and increase the service life of the dispensing mechanism, powdered graphite or industrial talc should be mixed with the seeds.

Amount of graphite per kg of seed			
Seeders with system type distribution:	*Seeds previously treated with insecticide*		
	Small Round	*Large Round*	*Flat*
Discos Horizontais	04 grams	02 grams	04 grams

Table 05

IMPORTANTE

Graphite must not be mixed before seed treatment.
Graphite should not be mixed with the insecticide for application.
For untreated seeds, use only half of the graphite mentioned in the Table opposite.

SPEED BOX (FIGURE 28)

The seeders are equipped with the Speed Box system (1), which activates the distribution system with simple ADJUSTMENTS, guaranteeing the exchange of fast rotations. To adjust the seeds, proceed as follows:

1- 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, **as shown in Figure 28.**

2- To move the levers, remove the lock (3), pull the handle (4), then adjust the levers as shown above. When finishing the combination, return the handle (4) and replace the lock (3).

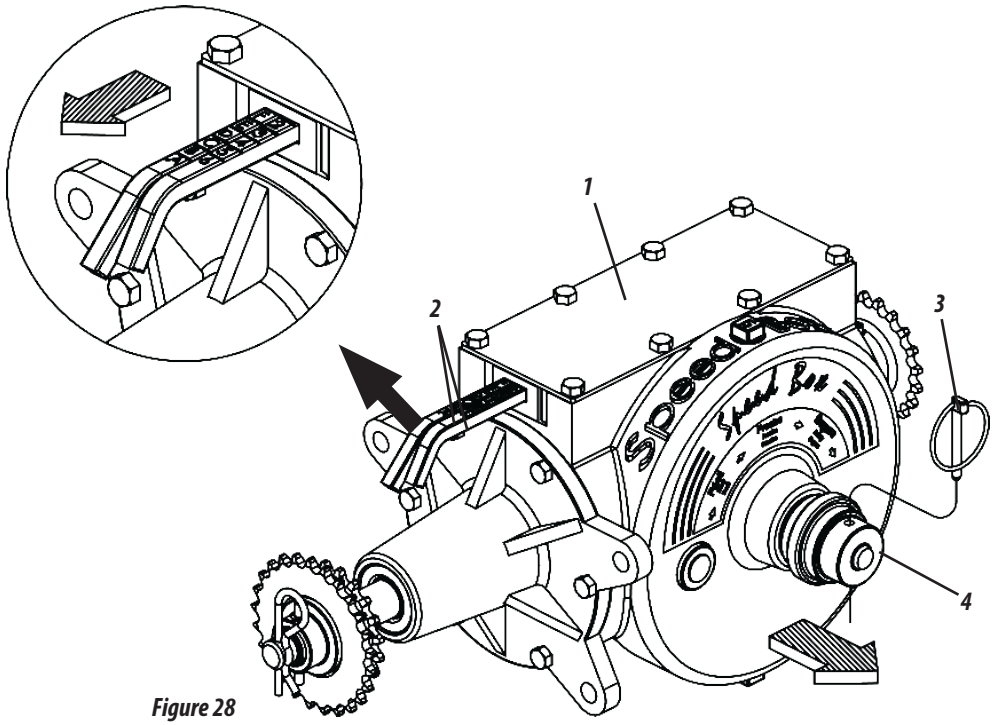


Figure 28

ADJUSTMENT FOR DISTRIBUTION OF SEEDS (FIGURE 29)

1- Seed adjustment is done through the Speed Box (1). To obtain more ADJUSTMENTS, invert the current in the motor gears "A" and moved "B", **as shown in Figure 29.**

2- After changing the gears, check the chain tension. The tensioner (2) is equipped with a torsion spring (3) for greater flexibility. If more pressure is needed on the stretcher, proceed as instructed on page 57, **Figure 58.**

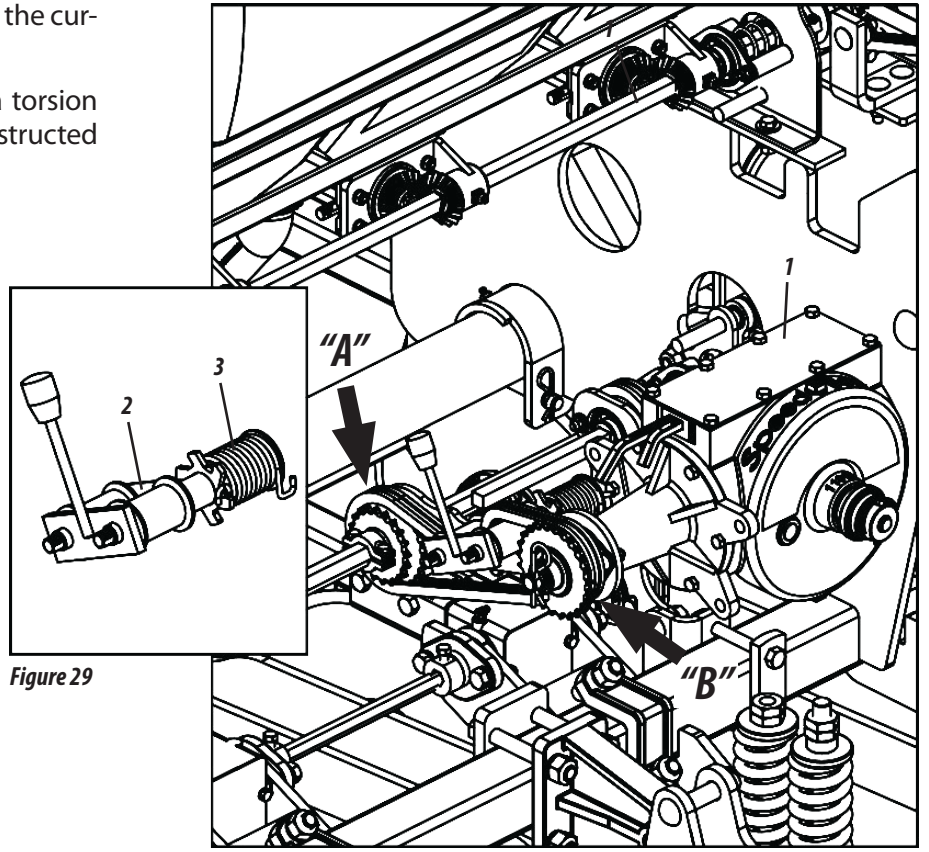


Figure 29

DISTRIBUTION OF SEEDS TABLE (TABLES 06/07)

The seed distribution table is made according to the number of holes in the distributor disk, gear changes and number of seeds to be distributed.

ATTENTION ***If there is a need to check the seeds distributed on the ground, open the furrow and count the first seed found 5 linear meters. Then, take the result and divide by the 5 linear meters and you will have the result of distribution of the seeds per linear meter.***

SEED DISTRIBUTION SYSTEM

Table 06

Seed Distribution Table per linear meter - SPE Top Line																	
Ratchet Shaft output gear (Z3)								*20*	*Input Gear of Speed Box (Z4)*								*25*
Combination	*Number of holes in the Seed Distributor Disc*																
	17	*18*	*19*	*20*	*24*	*26*	*28*	*30*	*38*	*40*	*48*	*50*	*62*	*64*	*72*	*90*	*100*
F - 1	1,3	1,4	1,5	1,5	1,9	2,0	2,2	2,3	2,9	3,1	3,7	3,9	4,8	4,9	5,6	7,0	7,7
F - 2	1,5	1,6	1,7	1,7	2,1	2,3	2,4	2,6	3,3	3,5	4,2	4,3	5,4	5,6	6,3	7,8	8,7
E - 1	1,6	1,7	1,8	1,9	2,3	2,5	2,7	2,9	3,7	3,9	4,6	4,8	6,0	6,2	7,0	8,7	9,7
F - 3	1,7	1,8	1,9	2,0	2,4	2,6	2,8	3,0	3,8	4,0	4,8	5,0	6,2	6,4	7,2	8,9	9,9
E - 2	1,8	2,0	2,1	2,2	2,6	2,8	3,0	3,3	4,1	4,3	5,2	5,4	6,7	7,0	7,8	9,8	10,9
D - 1	2,0	2,1	2,2	2,3	2,8	3,0	3,2	3,5	4,4	4,6	5,6	5,8	7,2	7,4	8,3	10,4	11,6
F - 4	2,0	2,1	2,2	2,3	2,8	3,0	3,2	3,5	4,4	4,6	5,6	5,8	7,2	7,4	8,3	10,4	11,6
E - 3	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	7,9	8,9	11,2	12,4
D - 2	2,2	2,3	2,5	2,6	3,1	3,4	3,7	3,9	5,0	5,2	6,3	6,5	8,1	8,3	9,4	11,7	13,0
C - 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 - 5	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 - 4	2,5	2,6	2,8	2,9	3,5	3,8	4,1	4,3	5,5	5,8	7,0	7,2	9,0	9,3	10,4	13,0	14,5
D - 3	2,5	2,7	2,8	3,0	3,6	3,9	4,2	4,5	5,7	6,0	7,2	7,5	9,2	9,5	10,7	13,4	14,9
C - 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
B - 1	2,6	2,8	2,9	3,1	3,7	4,0	4,3	4,6	5,9	6,2	7,4	7,7	9,6	9,9	11,1	13,9	15,5
A - 1	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	15,6	17,4
A - 2	3,3	3,5	3,7	3,9	4,7	5,1	5,5	5,9	7,4	7,8	9,4	9,8	12,1	12,5	14,1	17,6	19,6
B - 3	3,4	3,6	3,8	4,0	4,8	5,2	5,6	6,0	7,6	7,9	9,5	9,9	12,3	12,7	14,3	17,9	19,9
C - 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 - 5	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
E - 6	3,7	3,9	4,1	4,3	5,2	5,7	6,1	6,5	8,3	8,7	10,4	10,9	13,5	13,9	15,6	19,6	21,7
A - 3	3,8	4,0	4,2	4,5	5,4	5,8	6,3	6,7	8,5	8,9	10,7	11,2	13,9	14,3	16,1	20,1	22,4
B - 4	3,9	4,2	4,4	4,6	5,6	6,0	6,5	7,0	8,8	9,3	11,1	11,6	14,4	14,8	16,7	20,9	23,2
C - 5	4,1	4,4	4,6	4,9	5,8	6,3	6,8	7,3	9,2	9,7	11,7	12,2	15,1	15,6	17,5	21,9	24,3
D - 6	4,4	4,7	5,0	5,2	6,3	6,8	7,3	7,8	9,9	10,4	12,5	13,0	16,2	16,7	18,8	23,5	26,1
A - 4	4,4	4,7	5,0	5,2	6,3	6,8	7,3	7,8	9,9	10,4	12,5	13,0	16,2	16,7	18,8	23,5	26,1
B - 5	4,7	5,0	5,3	5,6	6,7	7,2	7,8	8,3	10,6	11,1	13,4	13,9	17,2	17,8	20,0	25,0	27,8
C - 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 - 5	5,3	5,6	5,9	6,3	7,5	8,1	8,8	9,4	11,9	12,5	15,0	15,6	19,4	20,0	22,5	28,2	31,3
B - 6	5,9	6,3	6,6	7,0	8,3	9,0	9,7	10,4	13,2	13,9	16,7	17,4	21,6	22,3	25,0	31,3	34,8
A - 6	6,6	7,0	7,4	7,8	9,4	10,2	11,0	11,7	14,9	15,6	18,8	19,6	24,3	25,0	28,2	35,2	39,1

Seed Distribution Table per linear meter - SPE Top Line																	
Ratchet Shaft output gear (Z3)								25	Input Gear of Speed Box (Z4)								20
Combinação	Number of Holes of the Seed Distributor Disc																
	17	18	19	20	24	26	28	30	38	40	48	50	62	64	72	90	100
F - 1	2,1	2,2	2,3	2,4	2,9	3,1	3,4	3,6	4,6	4,8	5,8	6,0	7,5	7,7	8,7	10,9	12,1
F - 2	2,3	2,4	2,6	2,7	3,3	3,5	3,8	4,1	5,2	5,4	6,5	6,8	8,4	8,7	9,8	12,2	13,6
E - 1	2,6	2,7	2,9	3,0	3,6	3,9	4,2	4,5	5,7	6,0	7,2	7,5	9,4	9,7	10,9	13,6	15,1
F - 3	2,6	2,8	2,9	3,1	3,7	4,0	4,3	4,7	5,9	6,2	7,5	7,8	9,6	9,9	11,2	14,0	15,5
E - 2	2,9	3,1	3,2	3,4	4,1	4,4	4,8	5,1	6,5	6,8	8,1	8,5	10,5	10,9	12,2	15,3	17,0
D - 1	3,1	3,3	3,4	3,6	4,3	4,7	5,1	5,4	6,9	7,2	8,7	9,1	11,2	11,6	13,0	16,3	18,1
F - 4	3,1	3,3	3,4	3,6	4,3	4,7	5,1	5,4	6,9	7,2	8,7	9,1	11,2	11,6	13,0	16,3	18,1
E - 3	3,3	3,5	3,7	3,9	4,7	5,0	5,4	5,8	7,4	7,8	9,3	9,7	12,0	12,4	14,0	17,5	19,4
D - 2	3,5	3,7	3,9	4,1	4,9	5,3	5,7	6,1	7,7	8,1	9,8	10,2	12,6	13,0	14,7	18,3	20,4
C - 1	3,6	3,8	4,0	4,2	5,1	5,5	5,9	6,3	8,0	8,5	10,1	10,6	13,1	13,5	15,2	19,0	21,1
F - 5	3,7	3,9	4,1	4,3	5,2	5,7	6,1	6,5	8,3	8,7	10,4	10,9	13,5	13,9	15,6	19,6	21,7
E - 4	3,8	4,1	4,3	4,5	5,4	5,9	6,3	6,8	8,6	9,1	10,9	11,3	14,0	14,5	16,3	20,4	22,6
D - 3	4,0	4,2	4,4	4,7	5,6	6,1	6,5	7,0	8,8	9,3	11,2	11,6	14,4	14,9	16,8	21,0	23,3
C - 2	4,0	4,3	4,5	4,8	5,7	6,2	6,7	7,1	9,0	9,5	11,4	11,9	14,7	15,2	17,1	21,4	23,8
B - 1	4,1	4,3	4,6	4,8	5,8	6,3	6,8	7,2	9,2	9,7	11,6	12,1	15,0	15,5	17,4	21,7	24,1
A - 1	4,6	4,9	5,2	5,4	6,5	7,1	7,6	8,1	10,3	10,9	13,0	13,6	16,8	17,4	19,6	24,4	27,2
A - 2	5,2	5,5	5,8	6,1	7,3	7,9	8,6	9,2	11,6	12,2	14,7	15,3	18,9	19,6	22,0	27,5	30,6
B - 3	5,3	5,6	5,9	6,2	7,5	8,1	8,7	9,3	11,8	12,4	14,9	15,5	19,2	19,9	22,4	27,9	31,0
C - 4	5,4	5,7	6,0	6,3	7,6	8,2	8,9	9,5	12,0	12,7	15,2	15,8	19,6	20,3	22,8	28,5	31,7
D - 5	5,5	5,9	6,2	6,5	7,8	8,5	9,1	9,8	12,4	13,0	15,6	16,3	20,2	20,9	23,5	29,3	32,6
E - 6	5,8	6,1	6,5	6,8	8,1	8,8	9,5	10,2	12,9	13,6	16,3	17,0	21,1	21,7	24,4	30,6	34,0
A - 3	5,9	6,3	6,6	7,0	8,4	9,1	9,8	10,5	13,3	14,0	16,8	17,5	21,7	22,4	25,1	31,4	34,9
B - 4	6,2	6,5	6,9	7,2	8,7	9,4	10,1	10,9	13,8	14,5	17,4	18,1	22,5	23,2	26,1	32,6	36,2
C - 5	6,5	6,8	7,2	7,6	9,1	9,9	10,6	11,4	14,5	15,2	18,3	19,0	23,6	24,3	27,4	34,2	38,0
D - 6	6,9	7,3	7,7	8,1	9,8	10,6	11,4	12,2	15,5	16,3	19,6	20,4	25,3	26,1	29,3	36,7	40,7
A - 4	6,9	7,3	7,7	8,1	9,8	10,6	11,4	12,2	15,5	16,3	19,6	20,4	25,3	26,1	29,3	36,7	40,7
B - 5	7,4	7,8	8,3	8,7	10,4	11,3	12,2	13,0	16,5	17,4	20,9	21,7	26,9	27,8	31,3	39,1	43,5
C - 6	8,1	8,6	9,0	9,5	11,4	12,4	13,3	14,3	18,1	19,0	22,8	23,8	29,5	30,4	34,2	42,8	47,5
A - 5	8,3	8,8	9,3	9,8	11,7	12,7	13,7	14,7	18,6	19,6	23,5	24,4	30,3	31,3	35,2	44,0	48,9
B - 6	9,2	9,8	10,3	10,9	13,0	14,1	15,2	16,3	20,6	21,7	26,1	27,2	33,7	34,8	39,1	48,9	54,3
A - 6	10,4	11,0	11,6	12,2	14,7	15,9	17,1	18,3	23,2	24,4	29,3	30,6	37,9	39,1	44,0	55,0	61,1

Table 07

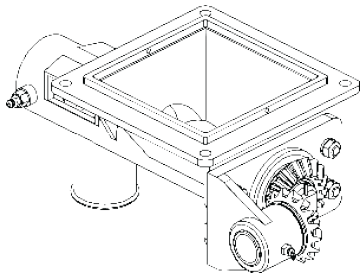
SEED DISTRIBUTION SYSTEM

FERTILIZER DISTRIBUTION SYSTEM

POLYETHYLENE FERTILIZER HOPPER (FIGURES 30/31)

FERTILIZER CONDUCTOR - INDEPENDENT SYSTEM

- To carry the fertilizer from the distributor to the ground, fit the spouts in degree (1) to the outlets of the distributor (2) through the clips (3). Then place the hoses (4) in the spouts in degree (1) through the clips (5), **as shown in Figure 30.**



CROSS CONDUCTOR

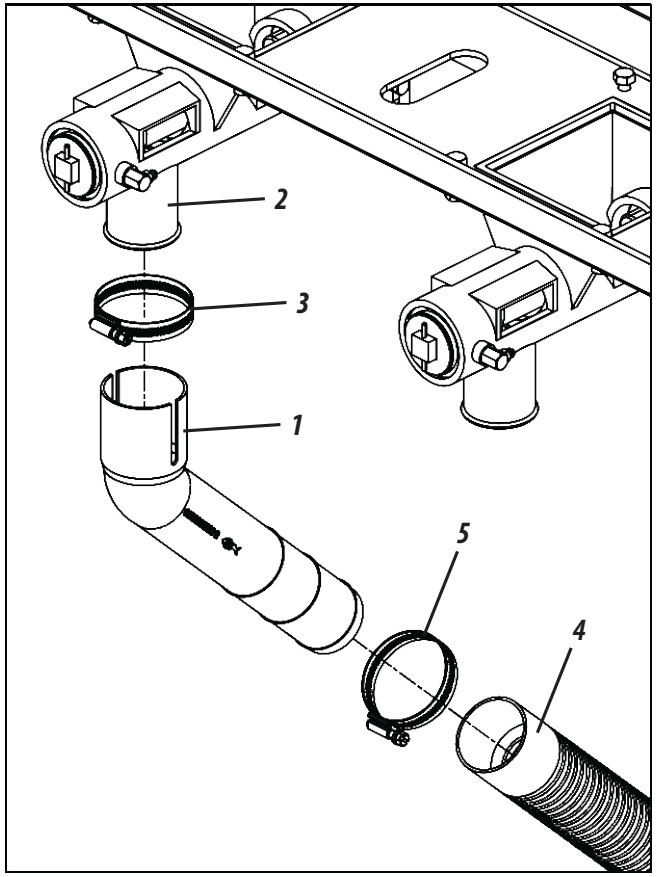
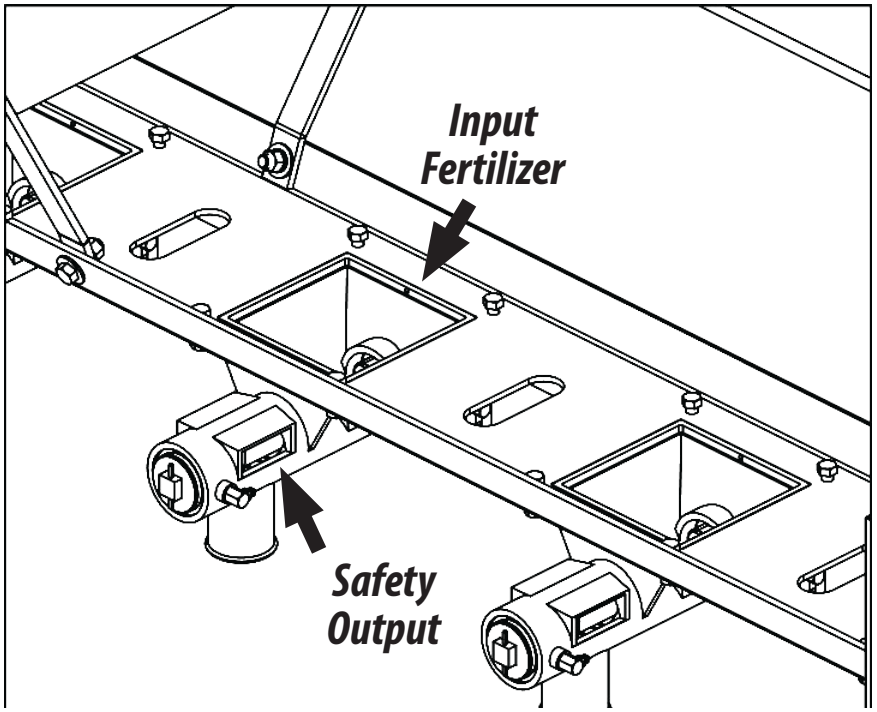


Figure 30

- The independent distribution system has safety outputs that guarantee the smooth functioning of the system without damaging it. In case of clogging of the hose and the doser, clean the doser until the end of the hose near the furrow or double disc, as the system can clog by roots, pieces of plastic and other objects, **as shown in Figure 31 .**

Figure 31



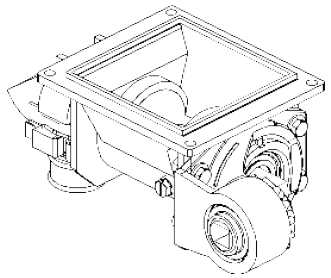
⚠ ATTENTION

Check the distributors and hoses daily and clean them. When the fertilizer has impurities or is wet, clean it more often.

POLYETHYLENE FERTILIZER HOPPER (FIGURES 32/33)

FERTILIZER CONDUCTOR - FERTISYSTEM SYSTEM

- To carry the fertilizer from the distributor 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 spouts in degree (1) through the clips (5), **as shown in Figure 32.**



FERTISYSTEM CONDUCTOR

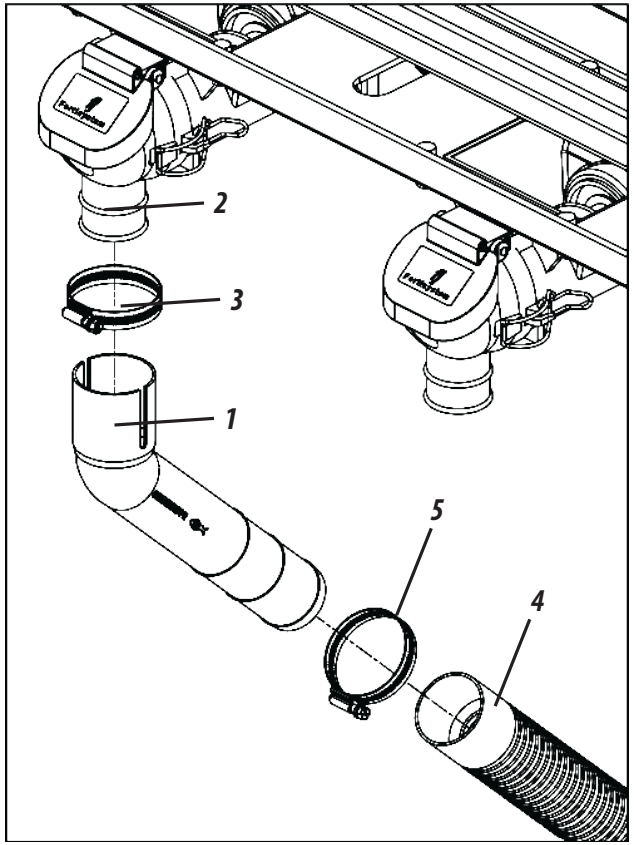


Figure 32

- The fertisystem distribution system has safety outputs that guarantee the smooth operation of the system without damaging it. In case of clogging of the hose and the doser, clean the doser until the end of the hose near the furrow or double disc, as the system can clog by roots, pieces of plastic and other objects, **as shown in Figure 33 .**

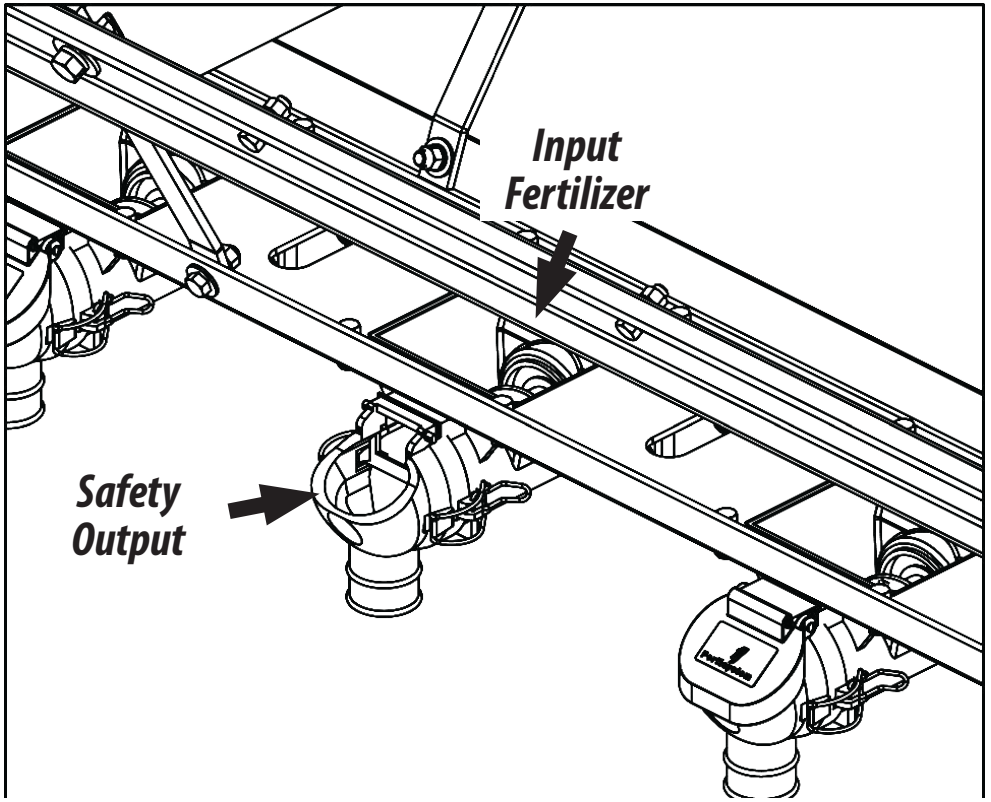


Figure 33

ATTENTION

Check the distributors and hoses daily and clean them. When the fertilizer has impurities or is wet, clean it more often.

FERTILIZER DISTRIBUTION SYSTEM

FERTILIZER DISTRIBUTION SYSTEM

SPEED BOX (FIGURE 34)

The seeders are equipped with the Speed Box system (1), which activates the distribution system with simple ADJUSTMENTS, guaranteeing the exchange of fast rotations. To adjust the seeds, proceed as follows:

1- 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, **as shown in Figure 34.**

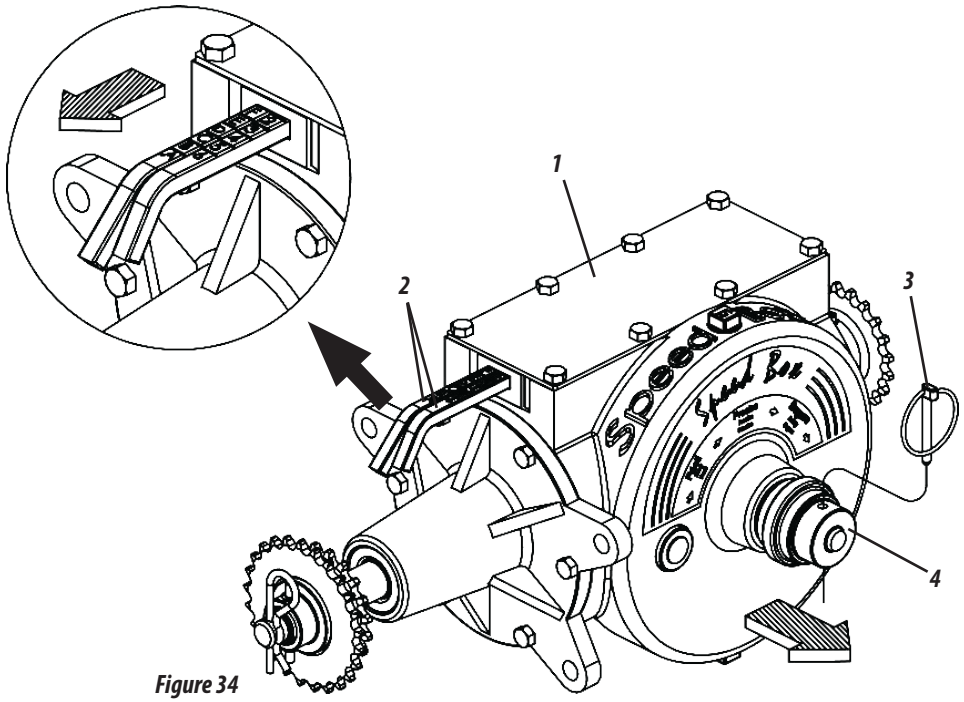


Figure 34

2- To move the levers, remove the lock (3), pull the handle (4), then adjust the levers as shown above. When finishing the combination, return the handle (4) and replace the lock (3).

ADJUSTMENT FOR FERTILIZER DISTRIBUTION (FIGURE 35)

1- The fertilizer is adjusted through the Speed Box (1). To obtain more ADJUSTMENTS, invert the current in the motor gears "A" and moved "B", **as shown in Figure 35.**

2- After changing the gears, check the chain tension. The tensioner (2) is equipped with a torsion spring (3) for greater flexibility. If more pressure is needed on the stretcher, proceed as instructed **in Figure 57, page 58.**

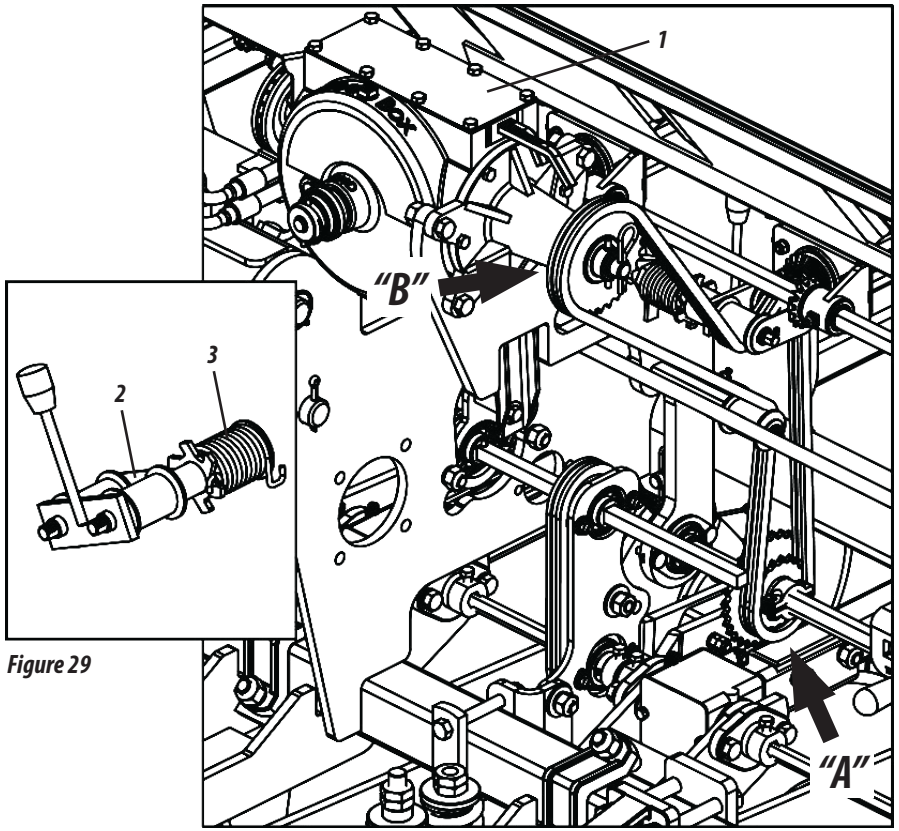


Figure 29

Fertilizer Distribution Table - SPE Top Line															
Ratchet hex shaft gear				20		Speed Box Input Gear								31	
Combination	Grams 50 m	415	430	450	500	550	600	650	700	750	800	850	900	950	1000
F - 1	313	151	146	139	125	114	104	96	89	83	78	74	70	66	63
F - 2	352	170	164	157	141	128	117	108	101	94	88	83	78	74	70
E - 1	391	189	182	174	157	142	130	120	112	104	98	92	87	82	78
F - 3	402	194	187	179	161	146	134	124	115	107	101	95	89	85	80
E - 2	440	212	205	196	176	160	147	135	126	117	110	104	98	93	88
D - 1	470	226	218	209	188	171	157	144	134	125	117	110	104	99	94
F - 4	470	226	218	209	188	171	157	144	134	125	117	110	104	99	94
E - 3	503	242	234	224	201	183	168	155	144	134	126	118	112	106	101
D - 2	528	255	246	235	211	192	176	163	151	141	132	124	117	111	106
C - 1	548	264	255	243	219	199	183	169	157	146	137	129	122	115	110
F - 5	563	272	262	250	225	205	188	173	161	150	141	133	125	119	113
E - 4	587	283	273	261	235	213	196	181	168	157	147	138	130	124	117
D - 3	604	291	281	268	241	220	201	186	172	161	151	142	134	127	121
C - 2	616	297	287	274	247	224	205	190	176	164	154	145	137	130	123
B - 1	626	302	291	278	250	228	209	193	179	167	157	147	139	132	125
A - 1	704	339	328	313	282	256	235	217	201	188	176	166	157	148	141
A - 2	792	382	369	352	317	288	264	244	226	211	198	186	176	167	158
B - 3	805	388	374	358	322	293	268	248	230	215	201	189	179	169	161
C - 4	822	396	382	365	329	299	274	253	235	219	205	193	183	173	164
D - 5	845	407	393	376	338	307	282	260	241	225	211	199	188	178	169
E - 6	880	424	409	391	352	320	293	271	252	235	220	207	196	185	176
A - 3	906	436	421	402	362	329	302	279	259	241	226	213	201	191	181
B - 4	939	453	437	417	376	341	313	289	268	250	235	221	209	198	188
C - 5	986	475	459	438	394	359	329	303	282	263	247	232	219	208	197
D - 6	1056	509	491	470	423	384	352	325	302	282	264	249	235	222	211
A - 4	1056	509	491	470	423	384	352	325	302	282	264	249	235	222	211
B - 5	1127	543	524	501	451	410	376	347	322	301	282	265	250	237	225
C - 6	1233	594	573	548	493	448	411	379	352	329	308	290	274	259	247
A - 5	1268	611	590	563	507	461	423	390	362	338	317	298	282	267	254
B - 6	1409	679	655	626	563	512	470	433	402	376	352	331	313	297	282
A - 6	1585	764	737	704	634	576	528	488	453	423	396	373	352	334	317

Obs: Spring with pitch 2"

Table 08

FERTILIZER DISTRIBUTION SYSTEM

Obs: Spring with pitch 2"

Table 09

Fertilizer Distribution Table- SPE Top Line															
Ratchet hex shaft gear				*31*		*Speed Box Input Gear*								*20*	
Combination	*Grams 50 m*	*415*	*430*	*450*	*500*	*550*	*600*	*650*	*700*	*750*	*800*	*850*	*900*	*950*	*1000*
F - 1	752	362	350	334	301	273	251	231	215	201	188	177	167	158	150
F - 2	846	408	394	376	338	308	282	260	242	226	212	199	188	178	169
E - 1	940	453	437	418	376	342	313	289	269	251	235	221	209	198	188
F - 3	967	466	450	430	387	352	322	298	276	258	242	228	215	204	193
E - 2	1058	510	492	470	423	385	353	325	302	282	264	249	235	223	212
D - 1	1128	544	525	501	451	410	376	347	322	301	282	265	251	237	226
F - 4	1128	544	525	501	451	410	376	347	322	301	282	265	251	237	226
E - 3	1209	582	562	537	483	440	403	372	345	322	302	284	269	254	242
D - 2	1269	612	590	564	508	461	423	390	363	338	317	299	282	267	254
C - 1	1316	634	612	585	526	479	439	405	376	351	329	310	292	277	263
F - 5	1354	652	630	602	541	492	451	417	387	361	338	319	301	285	271
E - 4	1410	680	656	627	564	513	470	434	403	376	353	332	313	297	282
D - 3	1450	699	675	645	580	527	483	446	414	387	363	341	322	305	290
C - 2	1481	714	689	658	592	538	494	456	423	395	370	348	329	312	296
B - 1	1504	725	700	668	602	547	501	463	430	401	376	354	334	317	301
A - 1	1692	815	787	752	677	615	564	521	483	451	423	398	376	356	338
A - 2	1904	917	885	846	761	692	635	586	544	508	476	448	423	401	381
B - 3	1934	932	899	859	774	703	645	595	553	516	483	455	430	407	387
C - 4	1974	951	918	877	790	718	658	607	564	526	494	465	439	416	395
D - 5	2031	979	944	902	812	738	677	625	580	541	508	478	451	427	406
E - 6	2115	1019	984	940	846	769	705	651	604	564	529	498	470	445	423
A - 3	2176	1048	1012	967	870	791	725	669	622	580	544	512	483	458	435
B - 4	2256	1087	1049	1003	902	820	752	694	645	602	564	531	501	475	451
C - 5	2369	1142	1102	1053	948	861	790	729	677	632	592	557	526	499	474
D - 6	2538	1223	1181	1128	1015	923	846	781	725	677	635	597	564	534	508
A - 4	2538	1223	1181	1128	1015	923	846	781	725	677	635	597	564	534	508
B - 5	2707	1305	1259	1203	1083	985	902	833	774	722	677	637	602	570	541
C - 6	2961	1427	1377	1316	1184	1077	987	911	846	790	740	697	658	623	592
A - 5	3046	1468	1417	1354	1218	1108	1015	937	870	812	761	717	677	641	609
B - 6	3384	1631	1574	1504	1354	1231	1128	1041	967	902	846	796	752	712	677
A - 6	3807	1835	1771	1692	1523	1384	1269	1171	1088	1015	952	896	846	802	761

PRACTICAL CALCULATION FOR FERTILIZER DISTRIBUTION

- To distribute other amounts of fertilizer in spacing and areas other than those shown in the Distribution Tables, use the formula below. To do this, proceed as follows:

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

2- ***Example: S***eeder with a spacing of 0.45 m, to distribute 500 kg of fertilizer per Ha, use the formula below:

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

Formula Data:
E = Line spacing (m)
Q = Amount of fertilizer to be distributed [kg]
A = Area to be fertilized [m^2]
D = Distance of 50 meters (teste)
X = Fertilizer grams in 50 meters

Resolv: $X = \frac{0{,}45 \times 500 \times 50}{10.000}$

$X = 22.50 \times 50 = 1.125$

X = 1.125 grams at 50 meters per line.

NOTE

When obtaining the result, adjust the seeder to distribute the quantity found, or the one closest to the predetermined space for the test.

PRACTICAL TEST TO MEASURE THE AMOUNT OF FERTILIZER AND SEED DISTRIBUTION

1- For greater precision in the distribution of fertilizer or seed, test the quantity to be distributed at the planting site, since for each land there is a condition. Proceed as follows:

2- As far as possible, always use the same tractor and operator who will carry out the planting.

3- Always check and maintain the correct calibration in the seeder tires. (70 lb / in^2 for each tire).

4- Mark the test distance in the Table, we chose 50 linear meters.

5- Fill the seeder tanks at least halfway. Go on average 10 meters outside the test area, so that the fertilizer and seeds fill the dosers.

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

7- 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 amount. If necessary, increase or decrease the amount of seed and fertilizer to be distributed, check the Table.

8- When reaching the desired quantity, still in the area, move the tractor at the same speed, however, letting the fertilizer and seed reach the soil to check for uniformity in distribution later.

IMPORTANT

We suggest that a practical test be carried out on the distribution of fertilizer and seed, over 50 meters, to later compare the results of the fertilizer and the seed.

CALCULATION / ENDING SYSTEM

ATTENTION ***The variation in working speed affects the uniform distribution of seeds.***
When changing the seed lot or the fertilizer manufacturer, it is necessary to check again.
After the first day of planting, double check all ADJUSTMENTS.

EINDING SYSTEM (FIGURE 36)

The **SPE Top Line** seeder has a finishing system (1), allows planting with only one side of the machine, that is, half of the lines. To activate the locking system, proceed as follows:

1- First choose the side of the seeder to be finished off.
2- Then, manually activate the lever (2), referring to the chosen side (left or right).
3- Finally lock the lever (2) to start work.

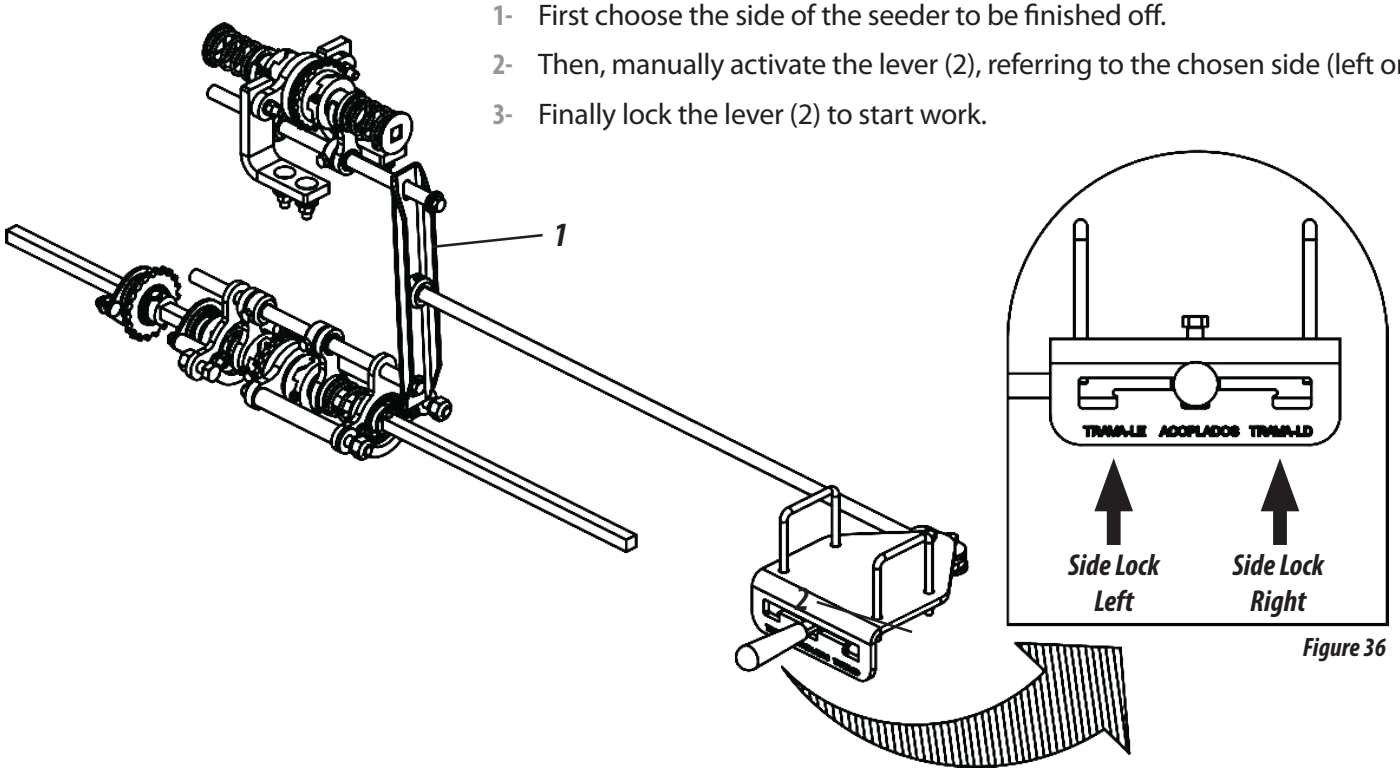
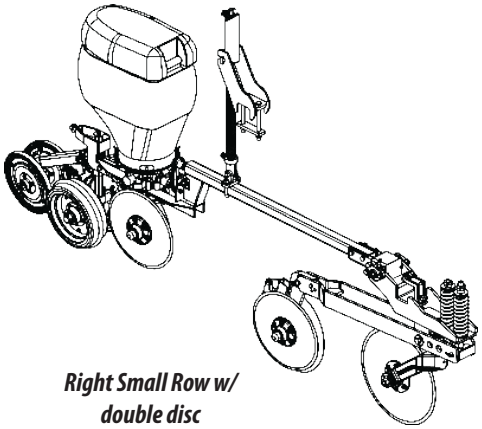


Figure 36

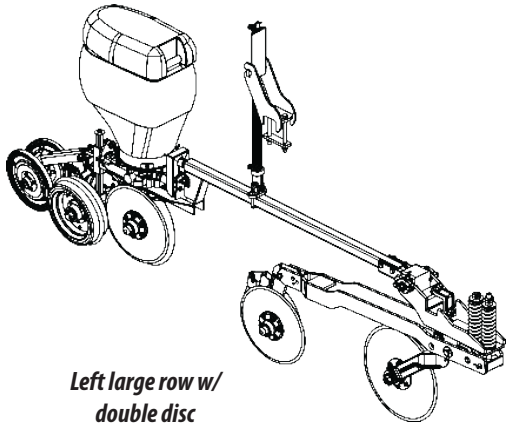
ATTENTION ***Before adding the lever (2), get off the tractor and make sure that the seeder is stationary. Do not operate the lever (2) with the seeder in motion. Ignoring this warning could result in serious accidents.***

MODELS OF ROWS AND FURROWERS - OPTIONALS (FIGURES 37)

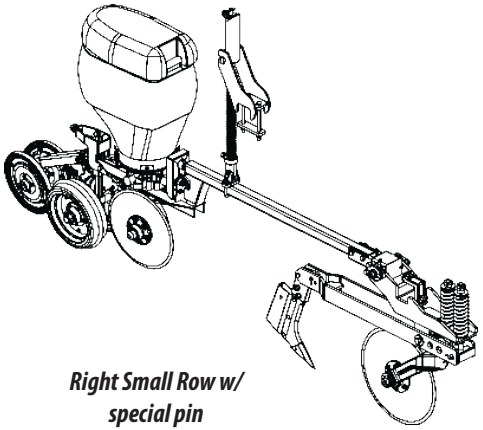
Figures 37



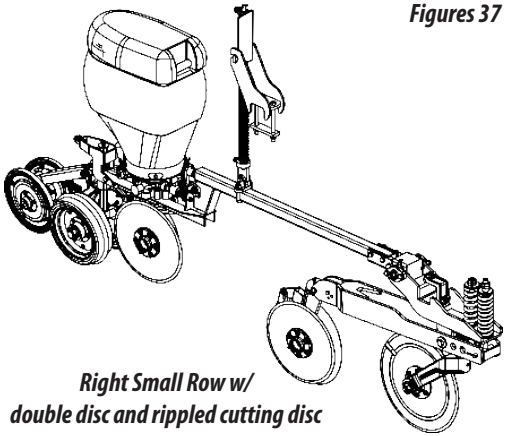
Right Small Row w/ double disc



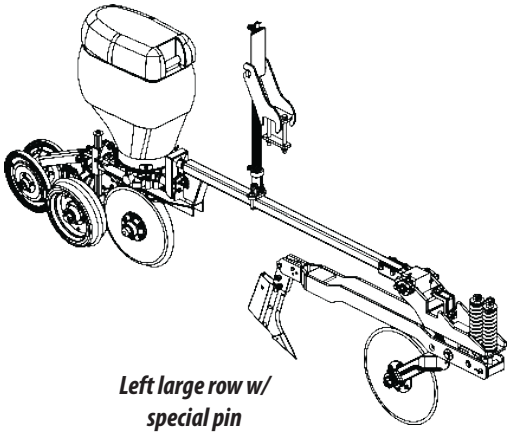
Left large row w/ double disc



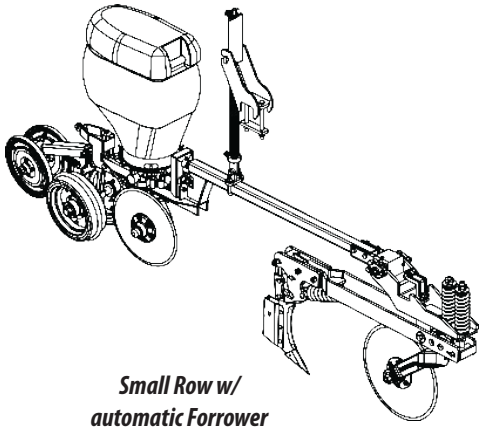
Right Small Row w/ special pin



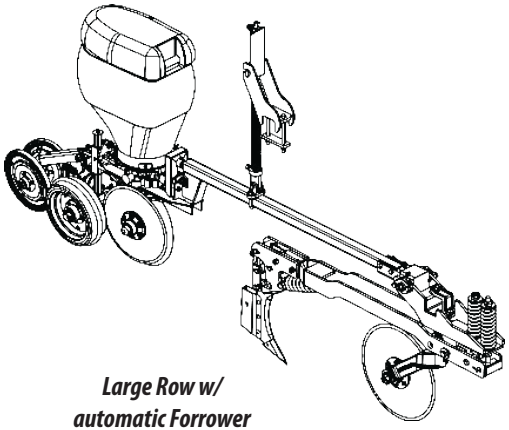
Right Small Row w/ double disc and rippled cutting disc



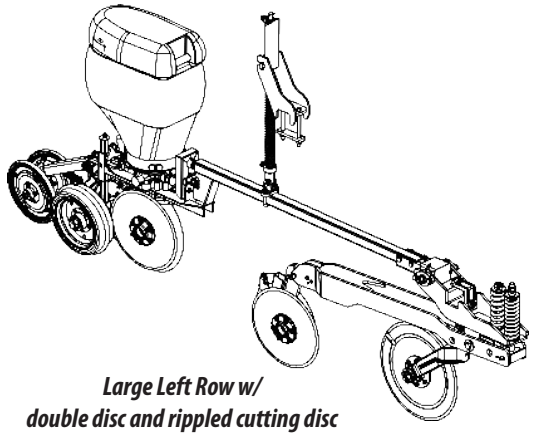
Left large row w/ special pin



Small Row w/ automatic Forrower



Large Row w/ automatic Forrower



Large Left Row w/ double disc and rippled cutting disc

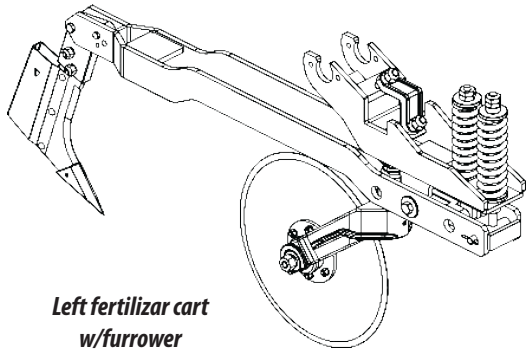
PLANTERS ROWS

PLANTERS ROWS

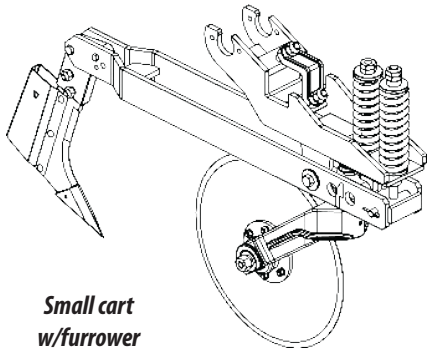
MODELS OF CARTS AND COMPACTATION WHEEL - OPTIONALS (FIGURES 38)

The **SPE Top Line** seeder has options that can be purchased according to the need for work. Among the options available are the trolleys and compacting wheels.

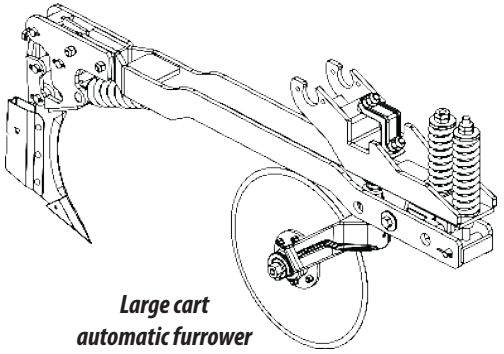
Figures 38



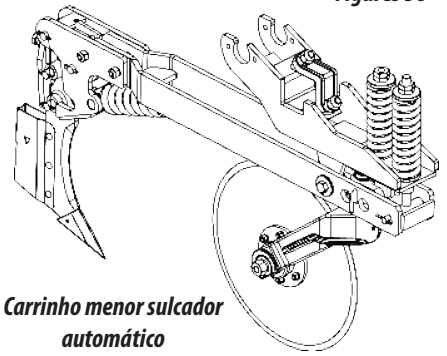
Left fertilizar cart w/furrower



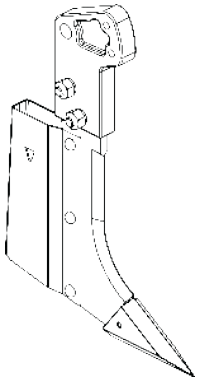
Small cart w/furrower



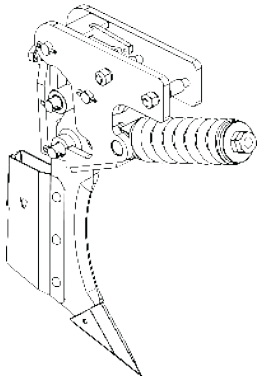
Large cart automatic furrower



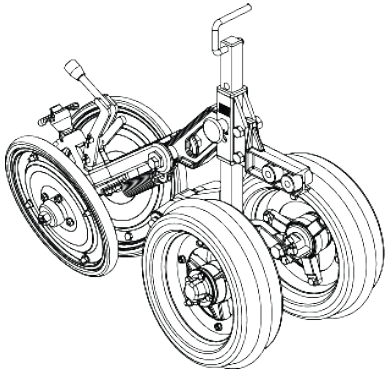
Carrinho menor sulcador automático



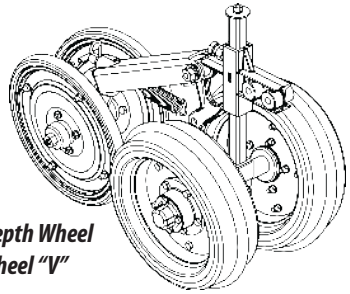
Furrower W/Support



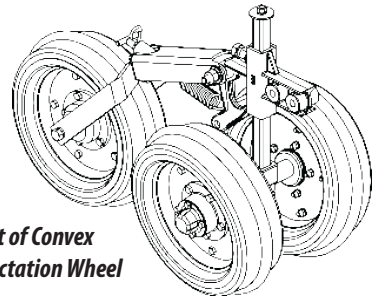
Automatic Disarm And Reset Furrower



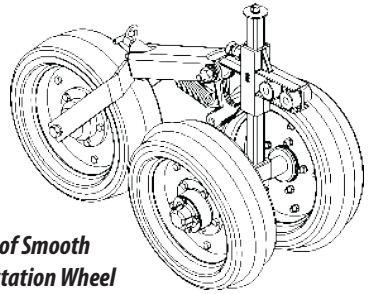
Cart Of Depth Wheel Excentric/Oscilating and Wheel "V"



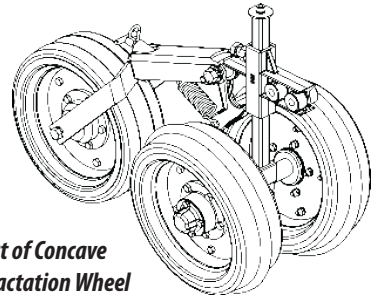
Cart Of Depth Wheel and Wheel "V"



Cart of Convex compactation Wheel



Cart of Smooth compactation Wheel



Cart of Concave compactation Wheel

CUTTING DISC PRESSURES ADJUSTMENT (FIGURE 39)

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

1- Turn the nut (2) clockwise for greater pressure on the spring (3).

2- Turn the nut (2) counterclockwise to lower the spring pressure (3).

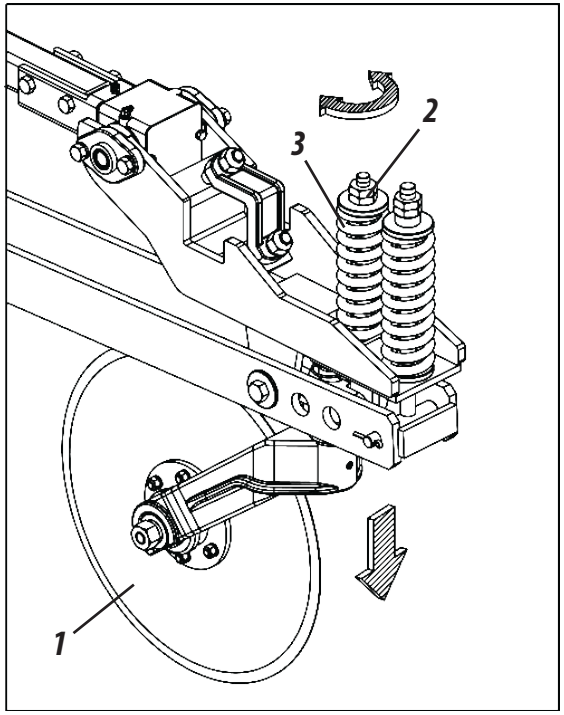


Figure 39

PRESSURE AJUSTMENT

MORE SPRING PRESSURE:

The greater the pressure of the cutting disc on the ground.

LESS SPRING PRESSURE:

Lower the pressure of the cutting disc on the ground.

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

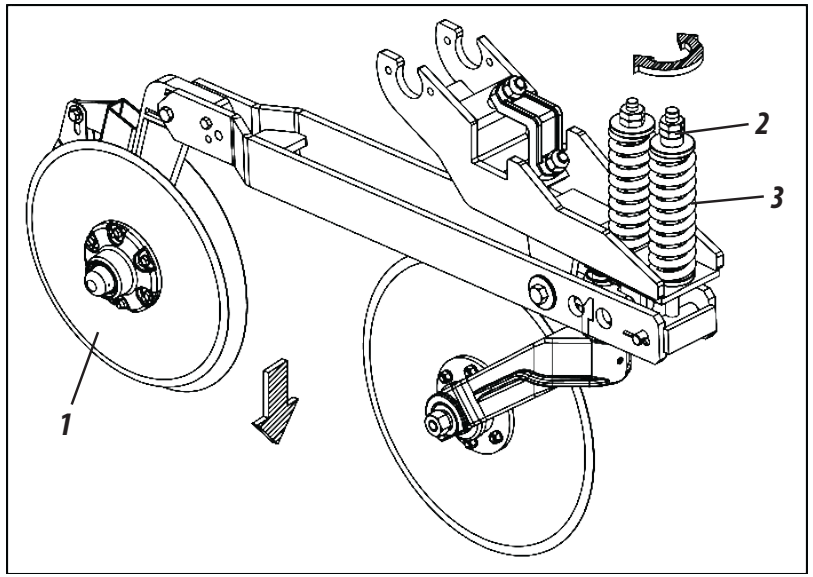
FERTILIZER PRESSURE ADJUSTMENT (FIGURE 40)

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

1- Turn the nut (2) clockwise to increase the pressure on the spring (3).

2- For the nut (2) counterclockwise, for less pressure on the spring (3).

Figure 40



PRESSURE AJUSTMENT

MORE SPRING PRESSURE:

The greater the pressure of the cutting disc on the ground.

LESS SPRING PRESSURE:

Lower the pressure of the cutting disc on the ground.

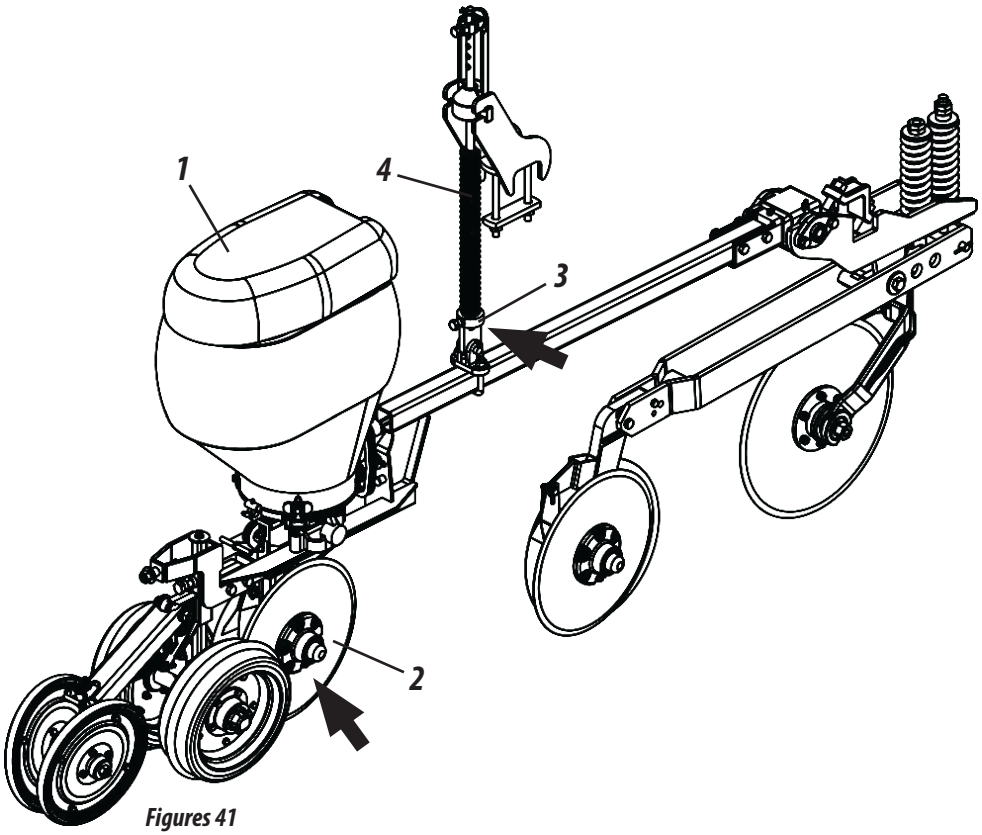
IMPORTANT ***These ADJUSTMENTS giving greater or lesser pressure to the springs, should be made in the field before starting the works observing the type of soil to be worked, to obtain a better performance of the seeder.***

ROWS ADJUSTMENTS

ROWS ADJUSTMENTS

FERTILIZER PRESSURE ADJUSTMENT (FIGURES 41)

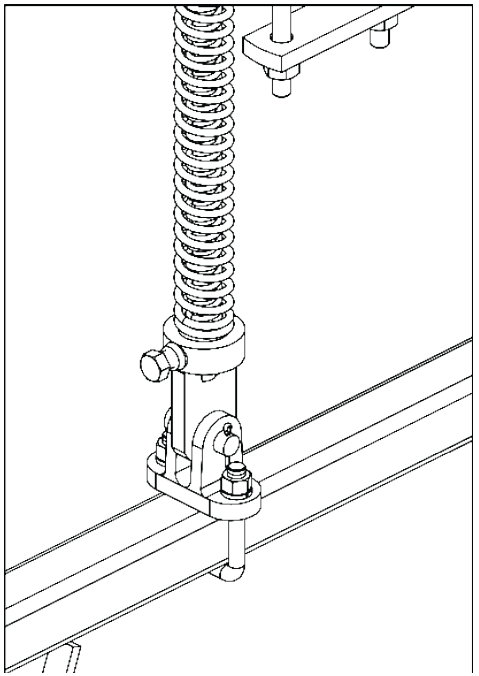
The planting lines (1) have pressure regulation of the double seed disk (2) which are adjusted through the bushing (3) compressing or decompressing the spring (4). To adjust the pressure of the double seed disk, proceed as follows:

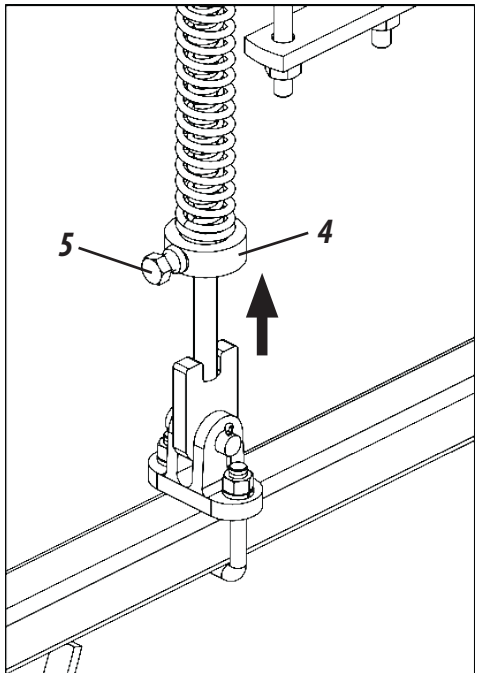


Figures 41

1- Loosen the screw (5), move the bushing (4) and retighten the screw (5).

Figures 41





LOWEST SPRING PRESSURE:	*HIGHEST SPRING PRESSURE:*
Less pressure on the seed.	*Higher seed pressure.*

ATTENTION

When regulating the seed pressure in one of the lines, all the others must have the same adjustment.

IMPORTANT

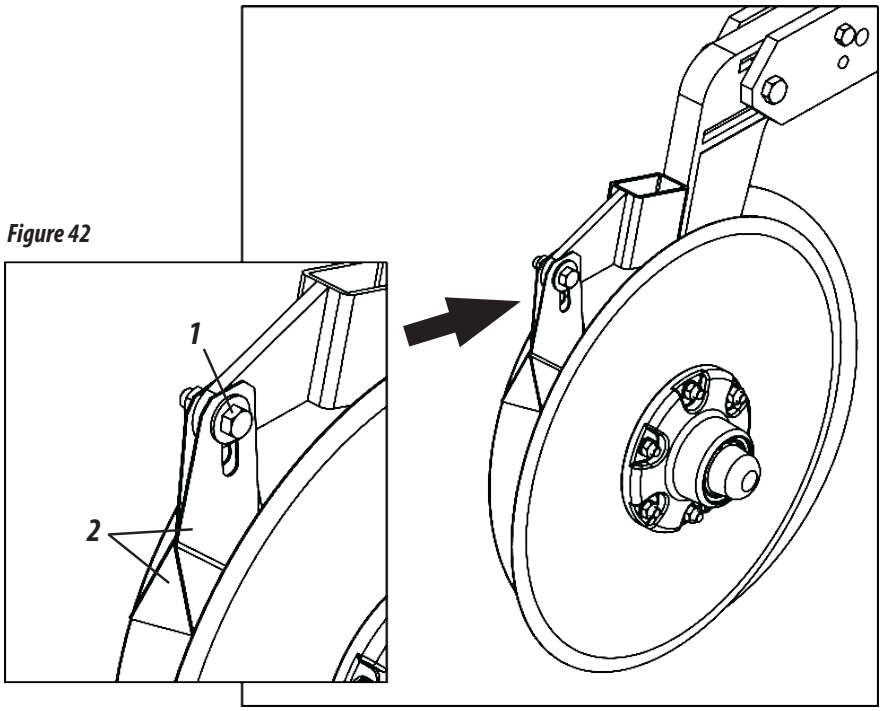
This adjustment, giving more or less pressure on the spring, should be done in the field before starting the works observing the type of soil to be worked, to obtain a better performance of the seeder.

ADJUSTMENT OF DOUBLE DISC WIPERS (FIGURE 42)

The double disc has cleaners that are flexible and adjustable to remove the dirt that sticks to the discs. To adjust the cleaners, proceed as follows:

1- Loosen the screw (1), adjust the wipers (2) to the ideal position and retighten the screw.

Figure 42



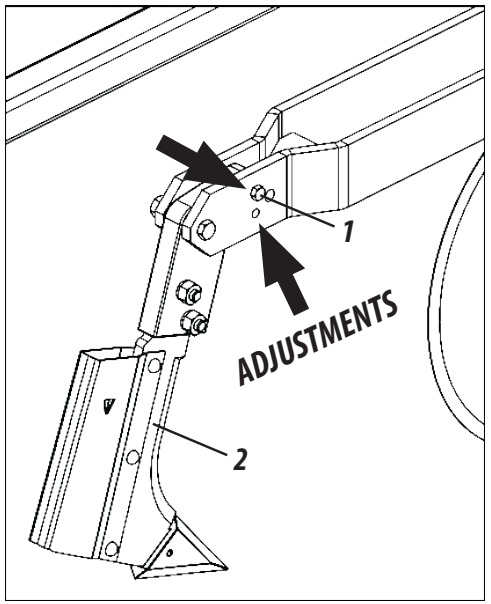
IMPORTANT

When adjusting the double disk cleaners in one of the lines, all the others must have the same adjustment, avoiding variations between them.

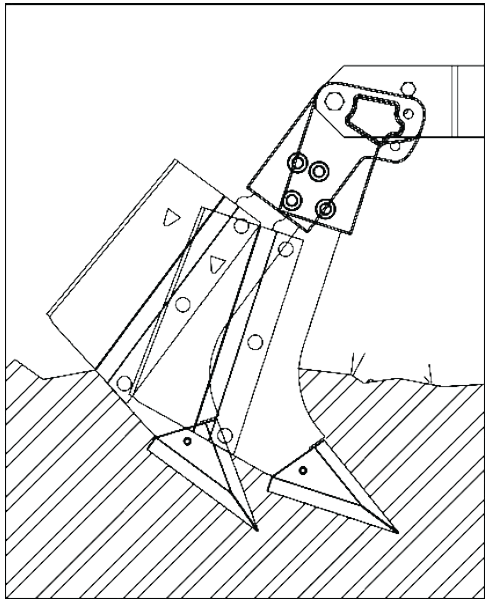
ADJUSTMENT OF THE ANGLE OF ATTACK OF THE FURROWER(FIGURES 43)

The fertilizer furrow has several ADJUSTMENTS of work, for better adjustment to the type of soil to be worked. To adjust the angle of attack of the furrowers, proceed as follows:

1- Remove the screw (1), articulate the groove (2) in the ideal setting and replace the screw (1), according to the drawings below.



Figures 43



IMPORTANT

When adjusting the furrowers in one of the lines, all the others must have the same adjustment, avoiding variations between them.

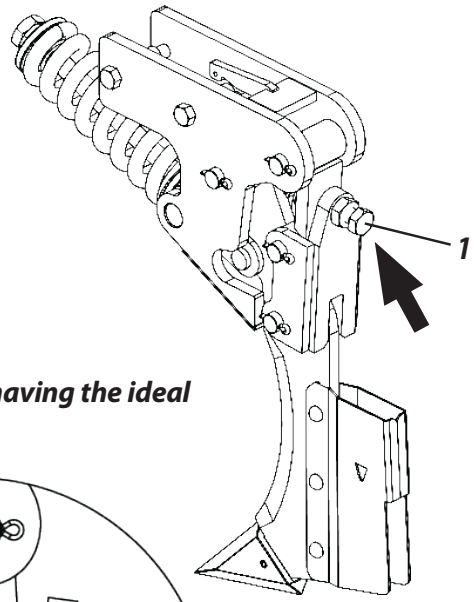
ROWS ADJUSTMENT

ROWS ADJUSTMENT

FURROW ADJUSTMENT FOR DISARMING AUTOMATIC - OPTIONAL (FIGURES 44)

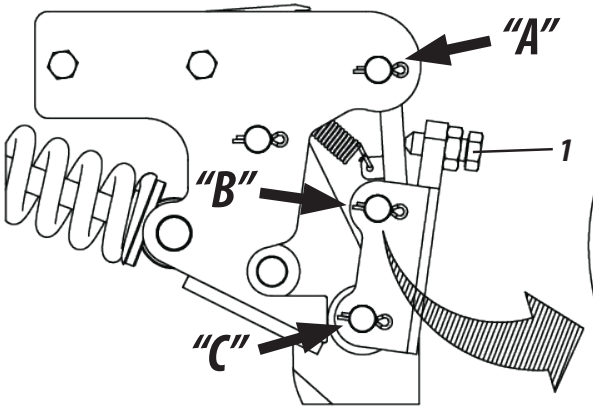
The furrower with automatic disarm has several ADJUSTMENTS of work, for better adjustment to the type of soil to be worked. To adjust the sensitivity of the plow disarm, proceed as follows:

FOR GREATER DISARM FURROWER.	*FOR LESS DISARM OF THE FURROWER.*
Tighten the screw (1) by turning clockwise.	*Loosen the screw (1) by turning it counterclockwise.*

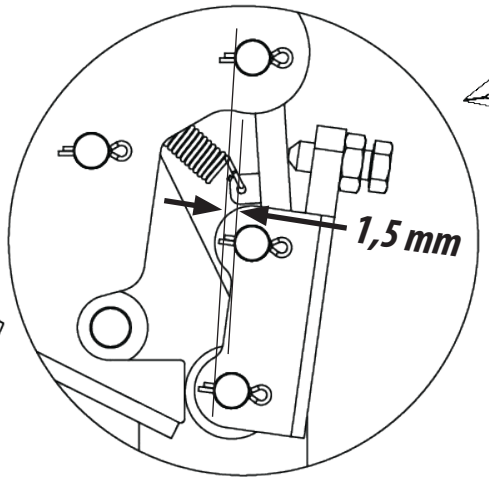


Figures 44

ATTENTION ***This adjustment is minimal, thus having the ideal adjustment with the screw or less.***



Figures 44



ATTENTION ***When adjusting the screw (1), make sure that the three pins (A, B and C) are not in the same alignment so that the system is not rigid (without disarming). The minimum distance is 1.5 mm.***

REGULATING THE LOADING OF THE FURROWER - OPTIONAL (FIGURE 45)

The furrower automatic reset system leaves the factory with the pre-load regulation in the spring determined that can vary between 170 to 180mm in its length.

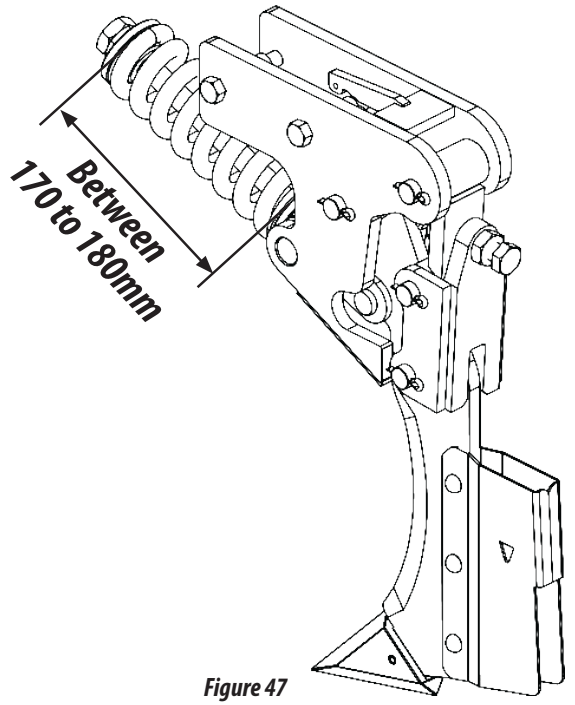


Figure 47

ATTENTION

Do not proceed with other ADJUSTMENTS on the plow spring. If you are constantly disarming, check the soil conditions, which may be harder or have a high compaction rate.

DEPH LIMITER WHEEL (FIGURE 46)

The seed depth control is individually regulated by the depth limiting wheels (1). To obtain these ADJUSTMENTS, proceed as follows:

1- Loosen the screw (2), make the ideal adjustment, raising or lowering the perforated bar (3). Then retighten the screw (2).

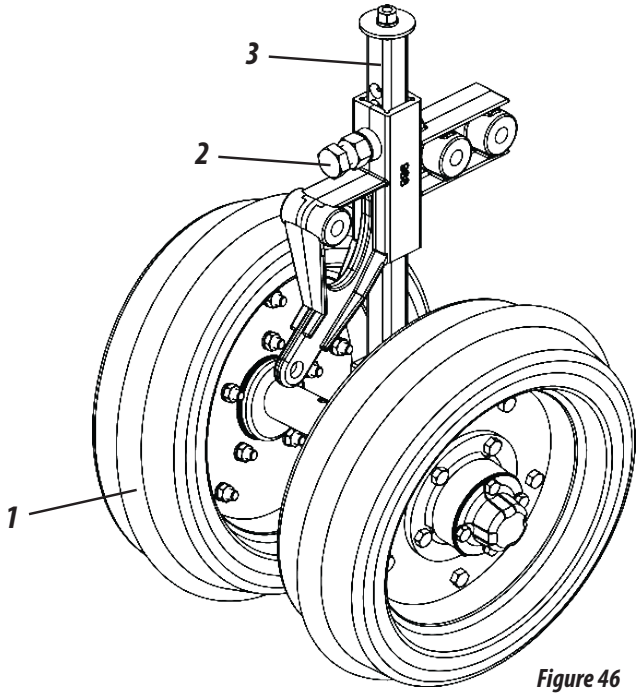


Figure 46

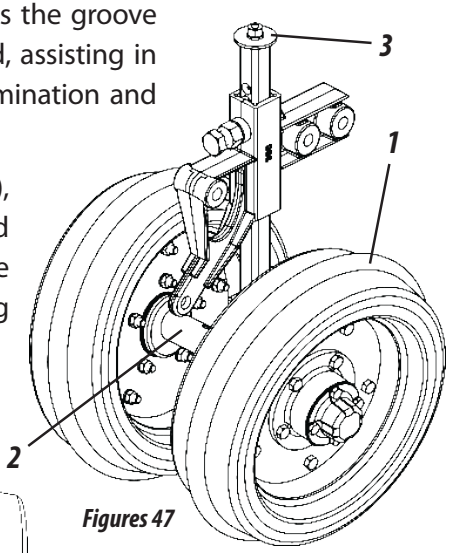
ATTENTION

When adjusting the depth limit wheel on one of the lines, all the others must have the same adjustment, avoiding variations between the lines.

ADJUSTMENT OF THE ANGLE OF THE LIMITER WHEEL DEPTH (FIGURES 47)

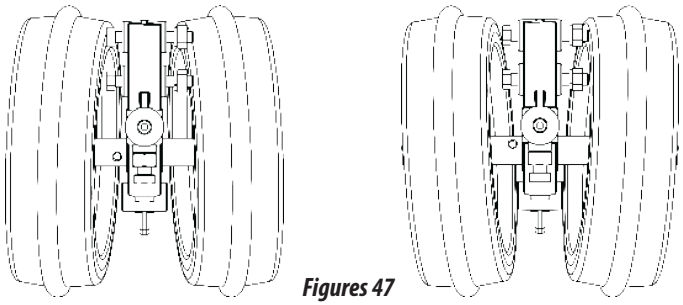
The angle of the depth limiting wheels (1), aims to press the groove causing the soil to be immediately replaced on the seed, assisting in compaction through angular regulation, facilitating germination and plant development.

The wheels are fixed on an axis with the ends in degree (2), specially designed to allow compaction, depth control and burying the seed. To obtain these ADJUSTMENTS on the wheel, loosen the nut (3) and turn the axle (2), observing the movements of the wheel.



Figures 47

Wheel angle positions



Figures 47

ANGLE POSITION FULLY CLOSED (Less land on the seed).	*ANGLE POSITION FULLY OPEN (More land on the seed).*

ATTENTION

When finishing the adjustment, repeat the procedure on all lines, avoiding the variation between them. Consider the type of soil, seed and depth of planting, so as not to affect the free emergence of the plants.

ROWS ADJUSTMENT

ROWS ADJUSTMENT

WHEEL ADJUSTMENT ECCENTRIC OSCILLATING DEPTH - OPTIONAL (FIGURE 48)

The seed depth control is individually regulated by the depth limiting wheels (1). To obtain these ADJUSTMENTS, proceed as follows:

1- First release the lock (2) and remove the pin (3).

2- Then, make the ideal adjustment, raising or lowering the cover (4).

3- Finish by locking the bar (4) by replacing the pin (3) and the lock (2).

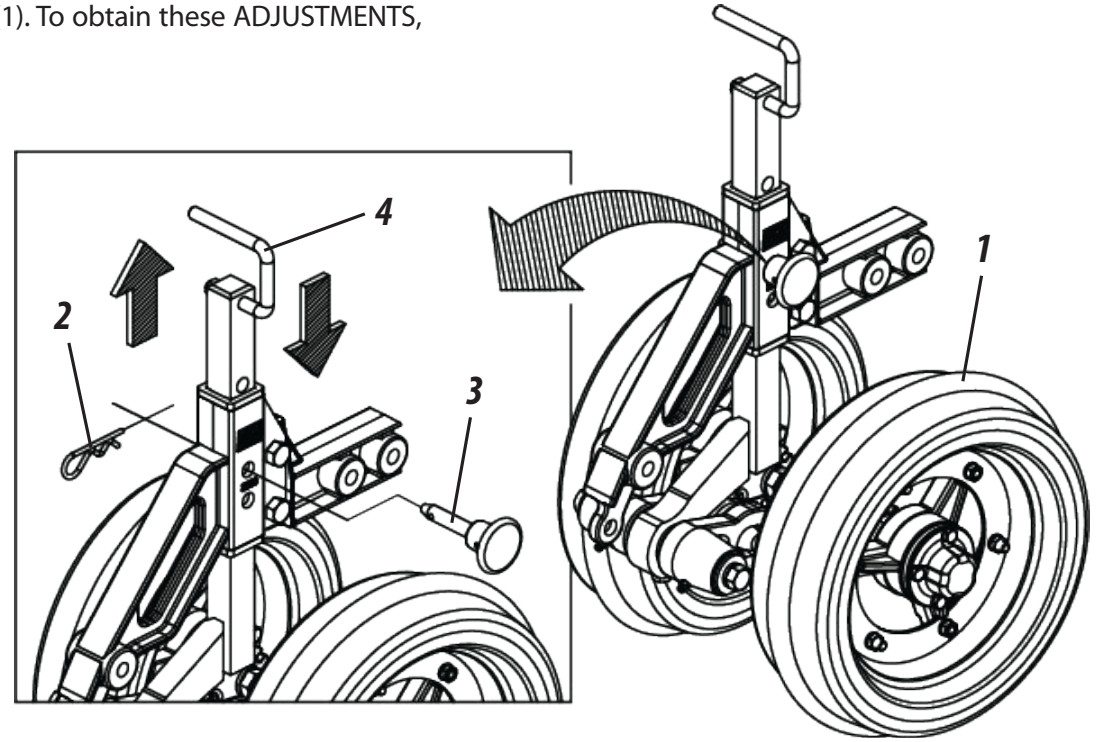


Figure 48

ATTENTION | ***When you finish adjusting the depth stop wheel (1), repeat this procedure on all lines, avoiding variation between them.***

ADJUSTMENT OF COMPACTATION WHEEL TYPE "V" (FIGURE 49 / 50)

The "V" compacting wheels (1) are used to close the groove laterally, making the soil immediately placed on the seed, avoiding excessive 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 lever (2) upwards, move the regulator (3) to the desired point, then lower the lever (2) locking the regulator (3), as shown in Figure 49. The "V" compactor wheels have 5 adjustment points.

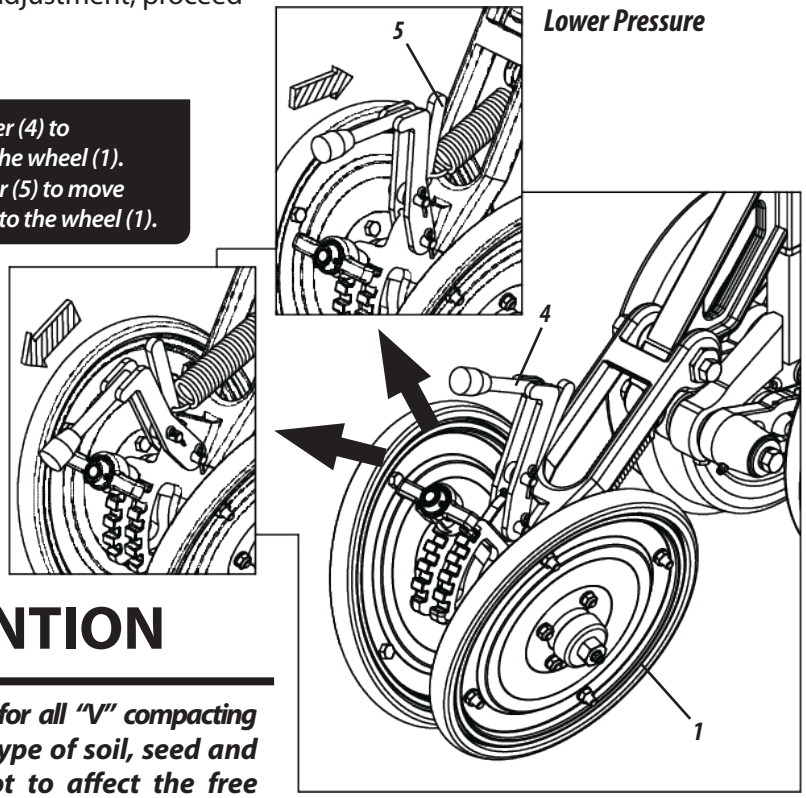
HIGHER PRESSURE: Move the lever (4) backwards, giving greater pressure to the wheel (1).
LOWER PRESSURE: Move the lever (4) forward, giving less pressure to the wheel (1).

- The "V" compactor wheel (1) can also be regulated by the lever (4). For this adjustment, proceed **as shown in Figures 50.**

HIGHER PRESSURE: Move the lever (4) to rear, giving greater pressure on the wheel (1).
LOWER PRESSURE: Press the lever (5) to move the lever (4), giving less pressure to the wheel (1).

Higher Pressure

Lower Pressure

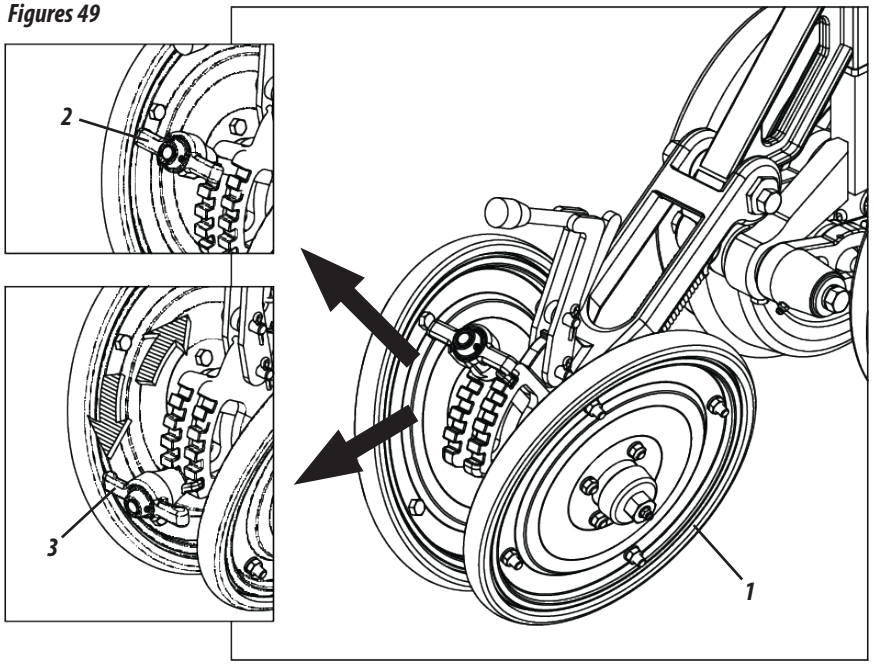


Figures 50

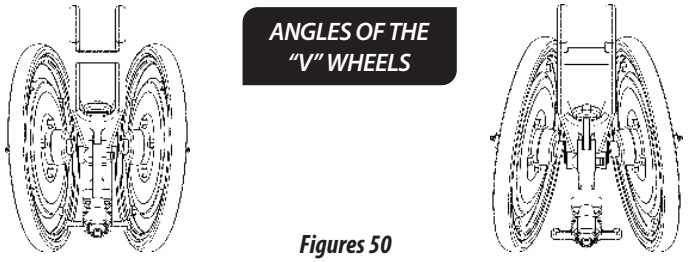
ATTENTION

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.

Figures 49



ANGLES OF THE "V" WHEELS



Figures 50

ANGLE POSITION FULLY CLOSED (Less land on the seed).

ANGLE POSITION FULLY OPEN (More land on the seed).

ROWS ADJUSTMENT

ROWS ADJUSTMENT

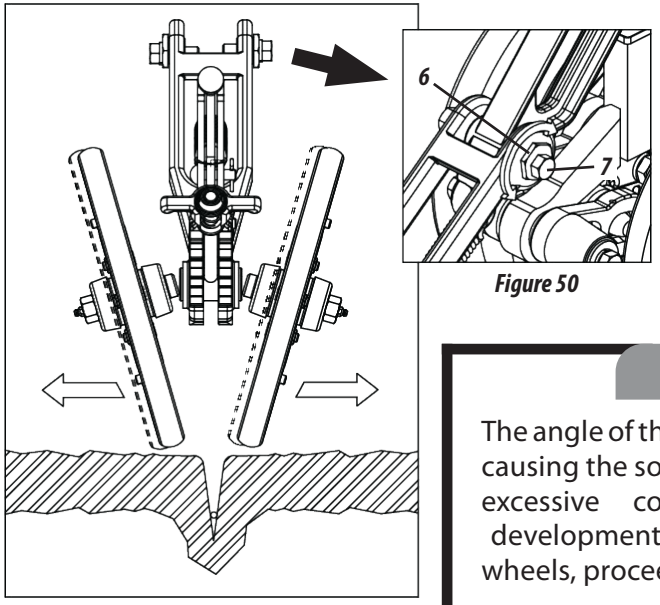


Figure 50

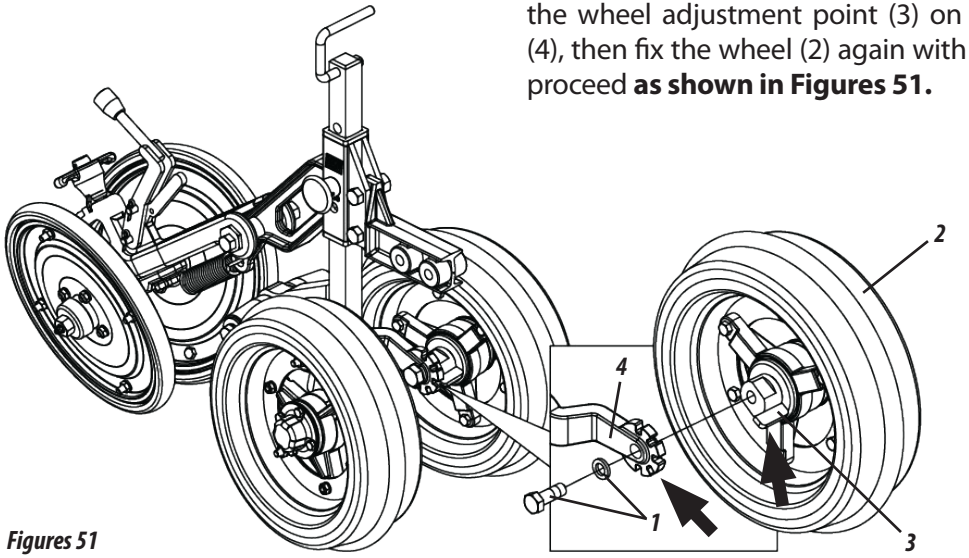
For horizontal displacement of the wheels, they were developed with eccentric bushings (5). For this adjustment, proceed as follows:

1- Loosen the screws (7), rotate the said bushings (6), with a wrench to actuate the wheels and align them with a groove, placing more or less soil on the side of the seed, **as shown in Figure 50.**

REGULATING WHEEL WITH OSCILLATING DEPTH (FIGURE 51)

The angle of the depth limiting wheels (1), aims to press the groove 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:

1- Loosen the screws and washers (1), remove the wheel (2), adjust the wheel adjustment point (3) on the wheel axle adjustment (4), then fix the wheel (2) again with the washers and screws (1), proceed **as shown in Figures 51.**

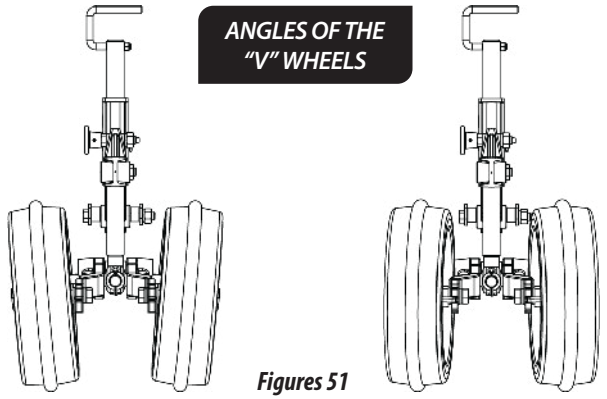


Figures 51

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.

ANGLES OF THE "V" WHEELS



Figures 51

ANGLE POSITION CLOSED (Less land over the seed).

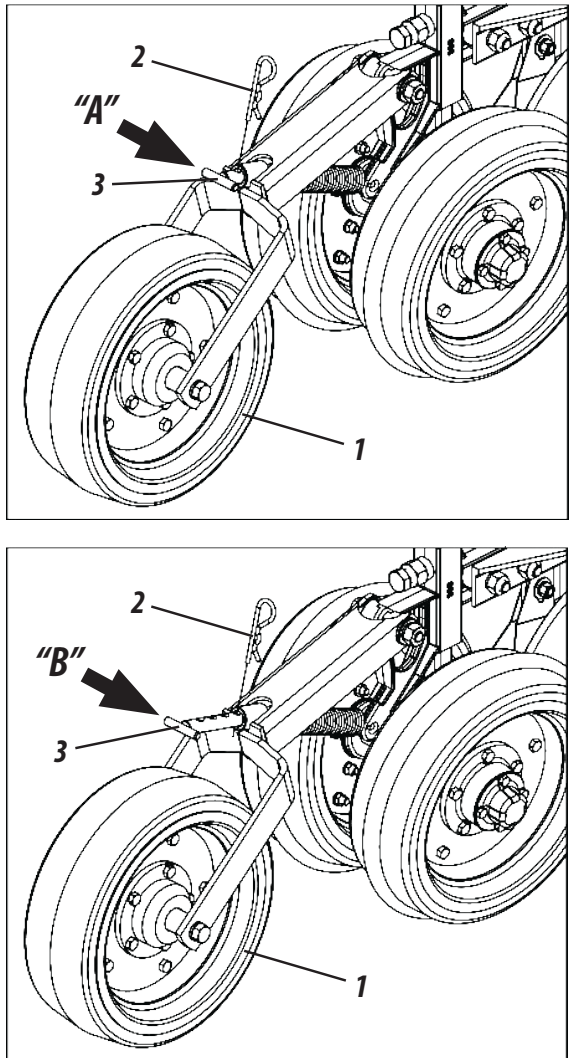
ANGLE POSITION OPEN (More land over the seed).

SMOOTH, CONCAVE WHEEL ADJUSTMENT AND CONVEX (FIGURES 52)

The compacting wheels (smooth, concave and convex), have the purpose of pressing the groove causing the soil to be immediately placed on the seed, being possible to regulate the pressure to obtain the ideal compaction according to the type of soil, facilitating the germination of the plant. To adjust the pressure of the compacting wheels, proceed as follows:

- **HIGHER PRESSURE: Remove the lock (2), pull the pin (3) out and lock again, as shown in Detail "A".**

- **LOWER PRESSURE: Remove the lock (2), push the pin (3) inwards and lock again, as shown in Detail "B".**



Figures 52

FIXATION AND ARTICULATION ADJUSTMENT OF THE WHEELS (FIGURE 53)

The system of fixing and articulating the tires makes them free from the pressure of the springs of the pantographic system on the soil, thus allowing them to oscillate and follow the irregularities of the terrain, making the distribution of fertilizer and seed not interrupted.

1- For conventional planting, lock the wheels (1) through the pin (2) and locks (3).

2- For direct planting, the wheels operate free and if necessary, add 3/4 "of water to the tires.

3- The wheels (1) are equipped with traction springs (4), for greater adherence to the ground. Do not operate the seeder without them, **as shown in Figure 53.**

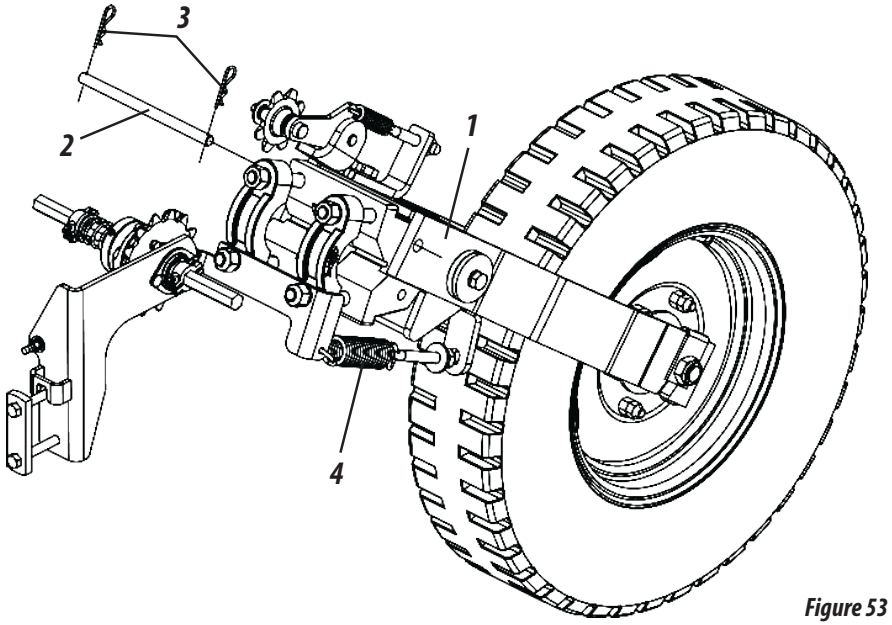


Figure 53

ROWS ADJUSTMENT

ADJUSTMENTS AND OPERATIONS

ADJUSTMENT OF THE RATCHET(FIGURE 54)

In cases in which the shims are placed on the hydraulic cylinder to limit the depth of the discs and in cases where the locking system is to be activated, adjust the ratchet (1), thus ensuring the activation of the transmission system. To adjust the ratchet, proceed as follows:

1- Loosen the nuts and counter nuts (2), adjust the rod (3) for the correct activation of the ratchet release system (1).

2- Then, retighten the nuts and against nuts (2).

ATTENTION | ***Failure to comply with this regulation may result in the ratchet disarming.***

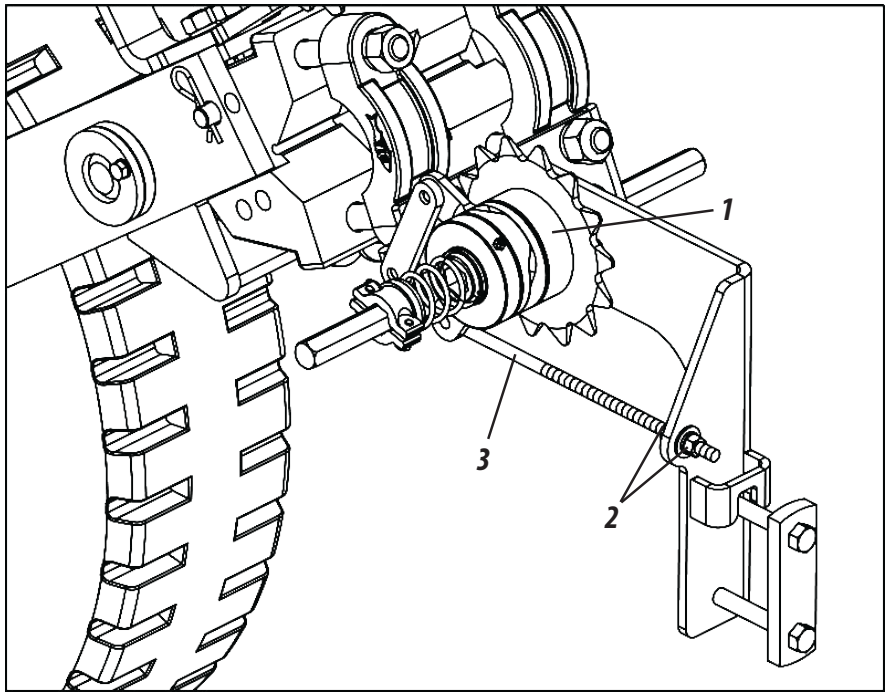


Figure 54

OPERATIONS

01 - After the first day of work with the seeder, retighten all screws and nuts. Check the condition of the pins, and latches.

02 - Do not maneuver or reverse with the lines lowered to the ground.

03 - Observe the lubrication intervals.

04 - When filling the tanks, check that there are no objects inside them, such as nuts, screws, etc. Always use seeds and fertilizer free of impurities.

OPERATIONS

05 - Always observe the functioning of the seed, fertilizer and also the ADJUSTMENTS distribution mechanisms established at the beginning of planting.

06 - Always keep the seeder level, the tractor drawbar must remain fixed and the working speed must remain constant.

07 - Always check the depth of the seed, the fertilizer and the pressure of the compacting wheels.

08 - Observe the position of the fertilizer in relation to the seed in the soil.

09 - When carrying out any checks or maintenance on the seeder, it must be lowered to the ground and the tractor engine shut down.

10 - Do not make sharp turns with the seeder during work, especially in no-till. Line components can be damaged.

11 - Do not partially activate the hydraulic cylinders. The drive for both raising and lowering the seeder must always be complete.

12 - The seeder has several ADJUSTMENTS but only local conditions can determine the best fit.

13 - Fill the seeder only at the job site.

14 - Do not transport or work with an overload on the seeder.

15 - The right and left side indications are made by looking at the sower from behind.

16 - The SPE Top Line seeder operates more efficiently in the 5 to 7 km / h range.

17 - In case of doubt, never operate or handle the seeder, consult the After Sales.

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MAINTENANCE

WHEELS PRESSURE (FIGURE 55)

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

2- The sowing tires should be calibrated to 70 lb / in^2 for each.

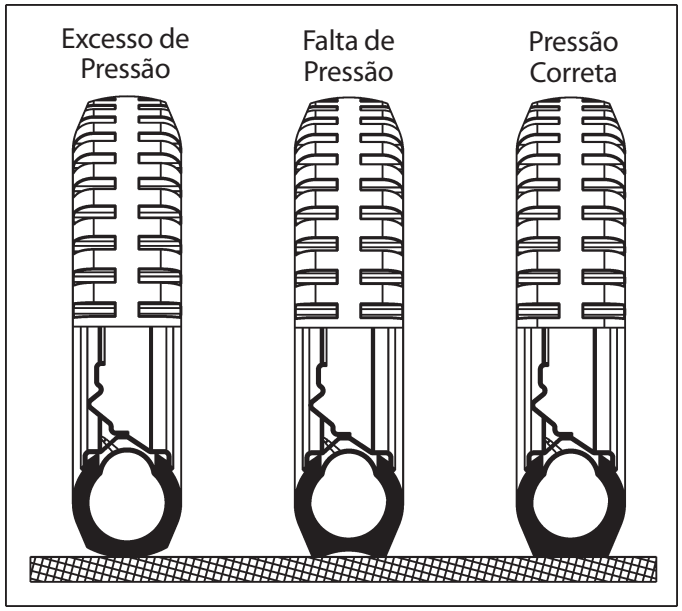


Figure 55

ATTENTION

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

Always keep tires with the same calibration 70lb / in^2, to avoid wear and maintain uniformity of planting.

LUBRICATION

3- Lubrication is essential for good performance and longer durability of the moving parts of the seeder, contributing to savings in maintenance costs.

4- Before starting the operation, carefully lubricate all grease fittings, always observing the lubrication intervals on the following pages. Make sure the quality of the lubricant, as to its efficiency and purity, avoiding using products contaminated by water, earth and other agents.

GREASE TABLE AND EQUIVALENTS (TABLE 10)

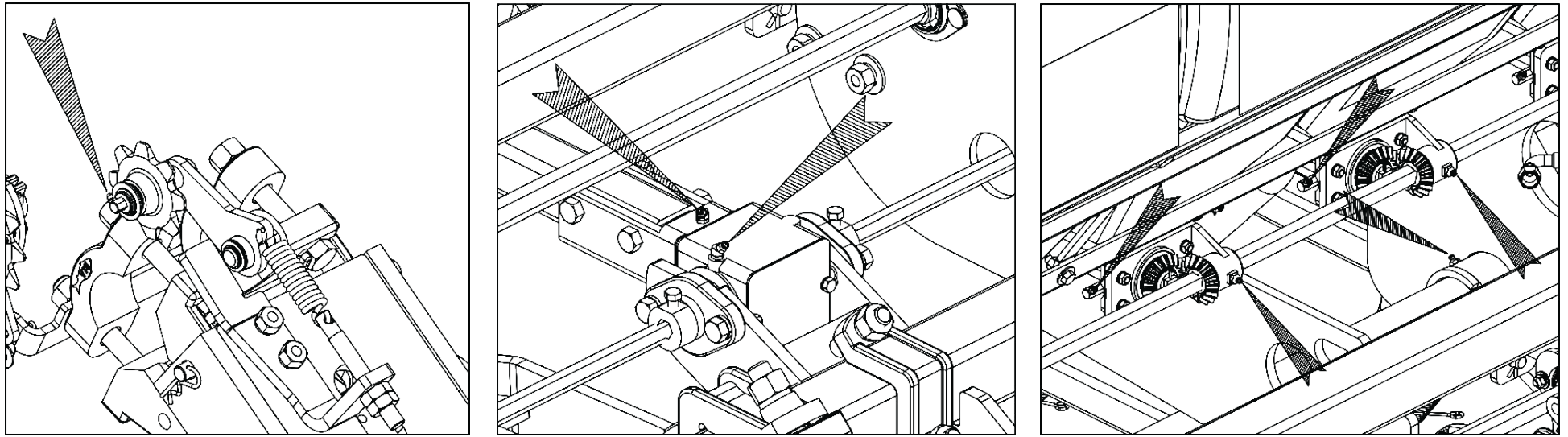
MANUFACTURER	*RECOMMENDED Grease TYPE*
Petrobrás	Lubrax GMA 2
Atlantic	Litholine MP 2
Ipiranga	Super Graxa Ipiranga Ipíranga Super Graxa 2 Ipiflex 2
Castrol	LM 2
Mobil	Mobilgrease MP 77
Texaco	Marfak 2 Agrotex 2
Shell	Retinax A Alvania EP 2
Esso	Multipurpose grease H
Bardahl	Maxlub APG 2 EP

Table 10

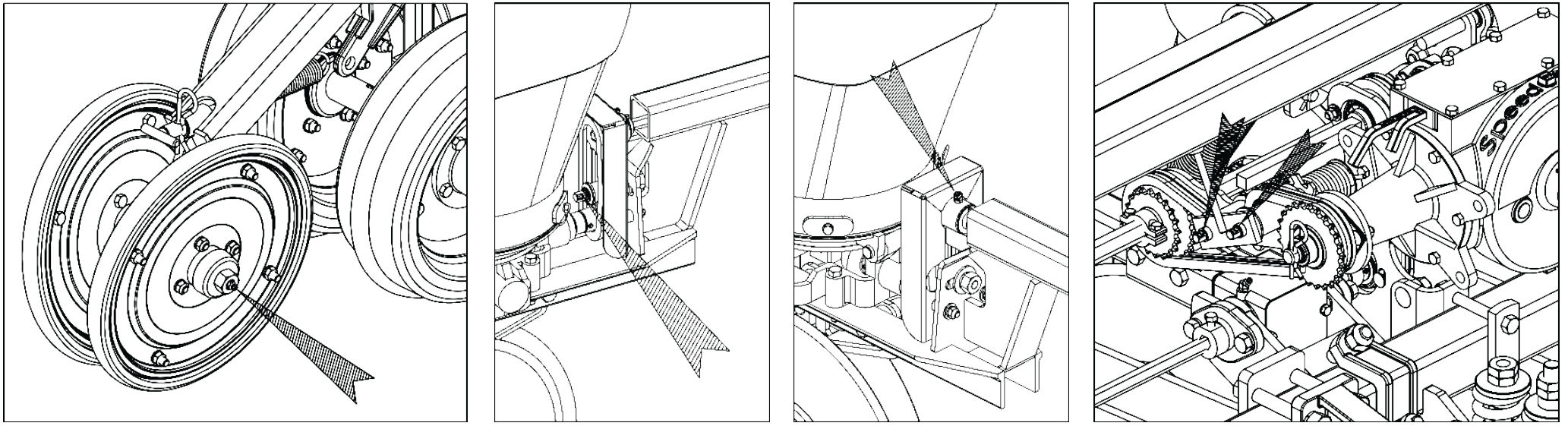
IMPORTANTE

If there are other lubricants and / or equivalent grease brands listed in this Table, consult the technical manual of the lubricant manufacturer.

LUBRICATE EVERY 10 HOURS OF WORK (FIGURES 56)

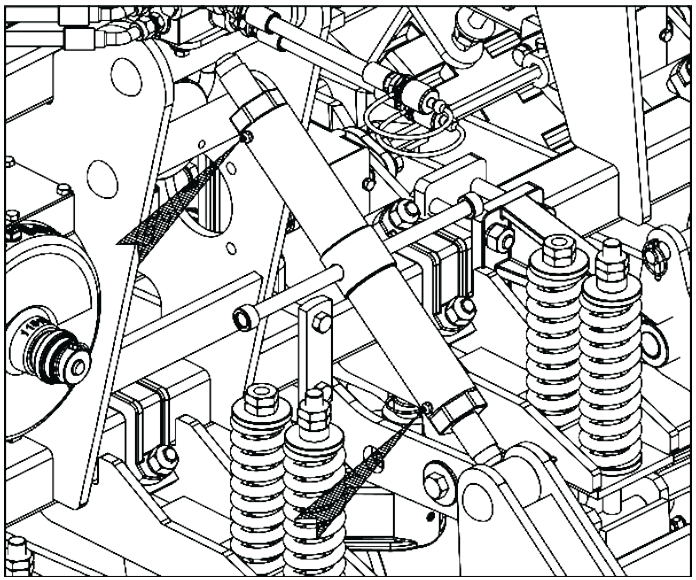


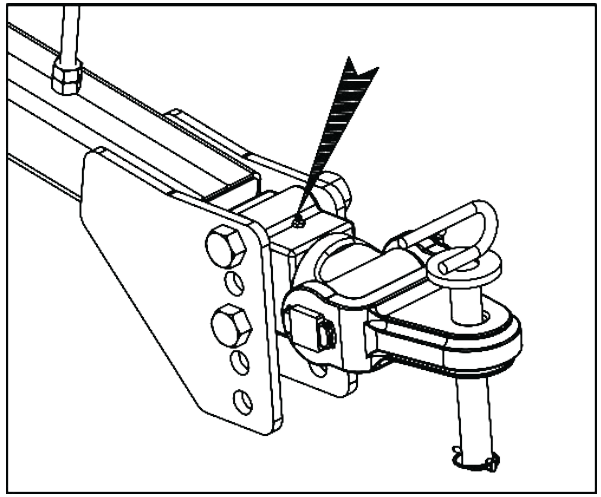
Figures 56



MAINTENANCE

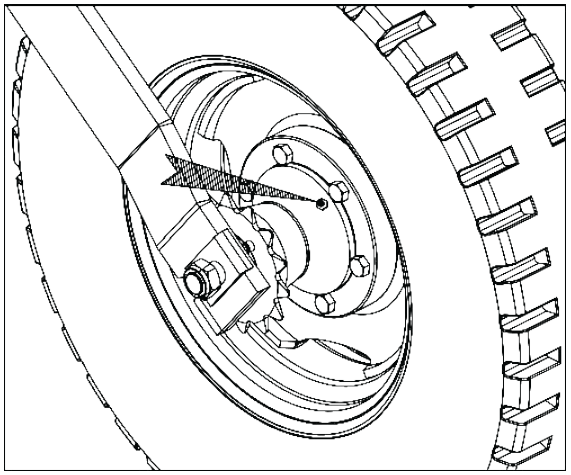
LUBRICATE EVERY 30 HOURS OF WORK (FIGURES 57)

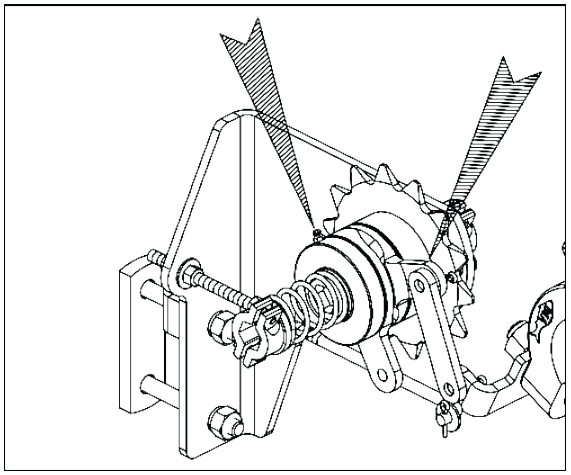




Figures 57

LUBRICATE EVERY 60 HOURS OF WORK (FIGURES 58)





Figures 58

ATTENTION | ***Do not put excess grease on the ratchet, respect the 60-hour interval to re-lubricate.***

LUBRICATE EVERY 200 HOURS OF WORK (FIGURES 59 / 60)

Periodically lubricate the hubs of the double discs (1) approximately every 200 hours and at the end of the season, to do this follow the sequence and at the end of each season as follows:

1- Remove the retaining ring (2) from the hub (3). Examine the bearings, if there are gaps, adjust through the castle nut (4). Insert new grease into the cap (5). Replace the hubcap on the hub and secure it with the retaining ring (1), **as shown in Figure 59.**

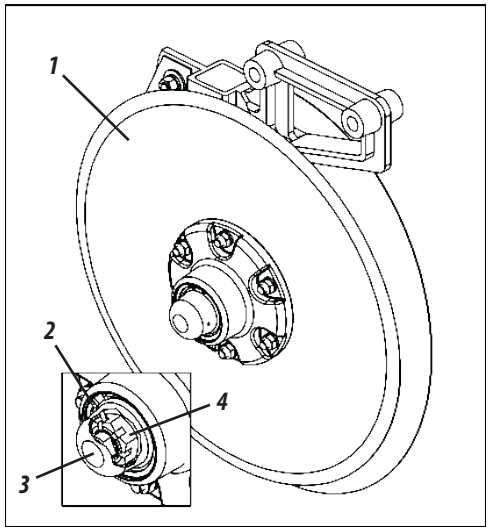
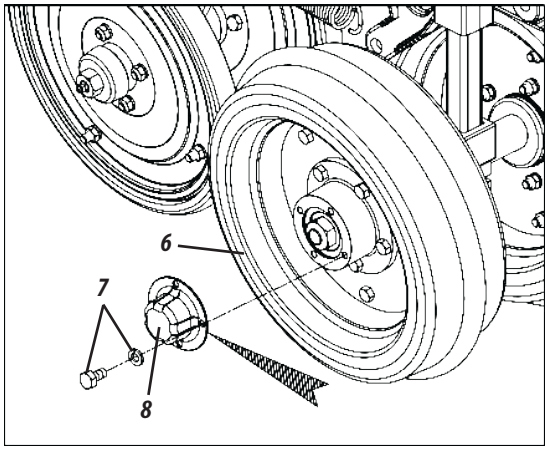


Figure 59

2- On the compacting wheels (6) loosen the screws and washers (7), remove the cap (8) and add new grease. Replace the hub (8) on the compactor wheels (6) and secure it with the screws and washers (7), **as shown in Figure 60.**



Figures 60

CHAIN TENSION (FIGURE 61)

- To tension the chain, proceed as follows:

1- Loosen the screw (1), slide the tensioner (2) until the necessary tension. Then, retighten the nut, as shown in Figure 61.

⚠ ATTENTION

Check the chain tension daily, the normal clearance should be + - 1cm in the center.

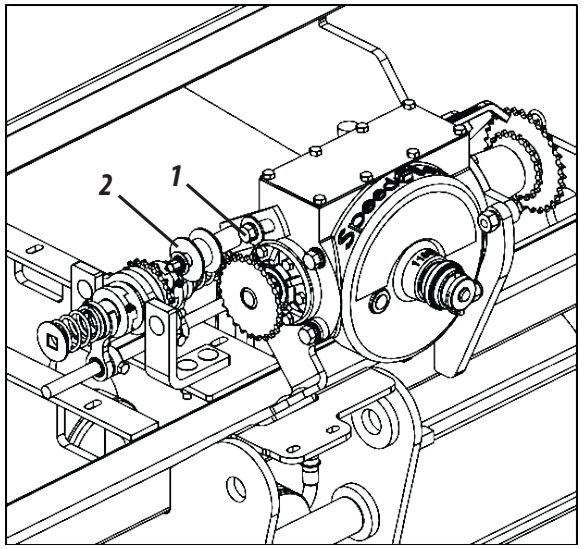


Figure 61

OSCILLATING STRETCHER (FIGURE 62)

The tensioner (1) is equipped with a torsion spring (2) for greater flexibility. If greater pressure is required on the tensioner, loosen the inner nut (3) of the same, turn the shaft (4) passing the spring coupling (2) to the other tooth of the shaft rosette and retighten the inner nut (3), **as shows Figure 62.**

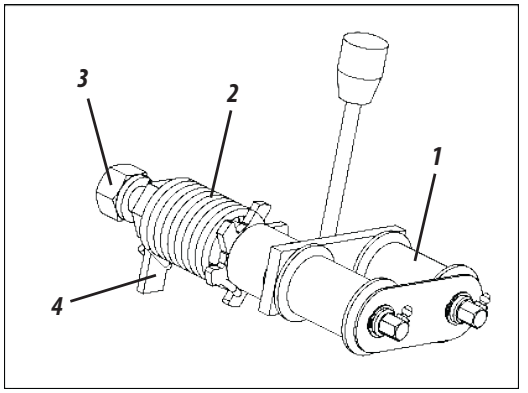


Figure 62

MAINTENANCE

OPERATIONAL MAINTENANCE

PROBLEMS	*PROBABLE CAUSES*	*SOLUTIONS*
During planting, fertilizer starts to leak through the safety exits.	Clogged hoses or pieces of plastic in the conductive fertilizer coils.	Unclog the hoses or remove the upper channel that gives access to the spiral, turn the shaft upside down until the foreign body that is screwed out comes out.
Fertilizer hub shaft does not rotate.	Spiral blocked with wet fertilizer or excess fertilizer in the closed line.	Unclog the spirals, check if there is loose gutter and the fertilizer may be entering from the sides of them.
One planting line is less shallow than the other.	ADJUSTMENTS other than pressure on the depth limiting wheels or line springs.	Adjust all wheels of equal depth and the pressure of the line springs.
The furrow is opening too much during planting.	Sticky soil and sticks to discs or excessive work speed.	Decrease the working speed.
Strange noise when operating or walking with a loaded seeder.	Loose wheels or wheel hub with game.	Retighten the wheel nuts. Adjust the wheel hub bearings.
The sower leaves the planting line, sometimes on one side, sometimes on the other side.	Tractor drawbar loose.	Use the pin that comes with the seeder. Attach the tractor's drawbar to the central hole.
It is not covering the groove.	Poorly adjusted cover wheels or wet terrain.	Adjust the covering wheel, moving it laterally in relation to the groove.
The hydraulic cylinders stop operating, raise the seeder and then do not lower or vice versa.	Different quick coupling, ball type male and needle type female or vice versa.	Change the quick coupling, placing both of the same type.
Broken seeds.	High planting speed.	Decrease the working speed.
	Inadequate disk thickness.	Use suitable disc (thickness and diameter of holes).
	Disc misplaced. The seed sieve is not suitable for the disc used.	Insert the disc properly (Observe the phrase: **THIS SIDE DOWN).**
	Be using moist seed.	Use dry seeds.

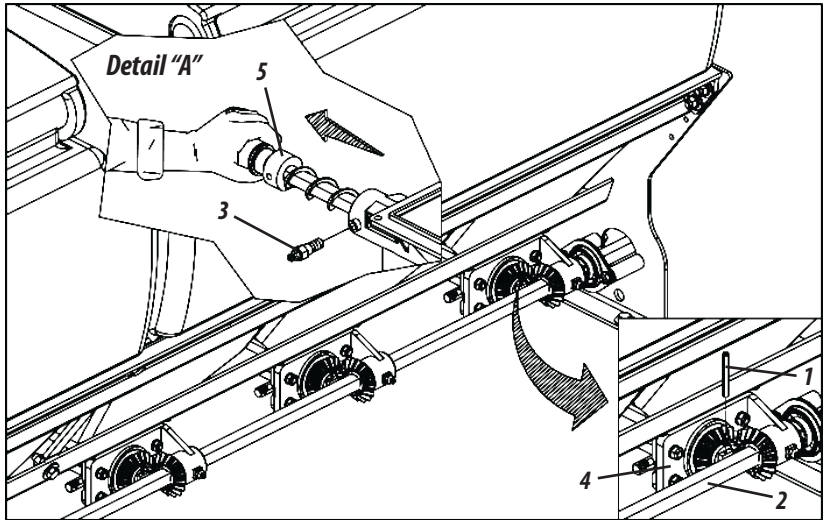
CLEANING THE CROSS CONDUCTOR (FIGURE 63)

After planting, do not leave fertilizer in the deposit. To do the cleaning, proceed as follows:

1- Remove the elastic pin (1) from the shaft (2) and the screw (3) from the distributor gun (4). Then, pull the shaft (5) backwards, as shown in **Detail "A", Figure 63.**

2- Then, reassemble the shaft, observing the correct Assembly of the fertilizer distribution system.

Figure 63



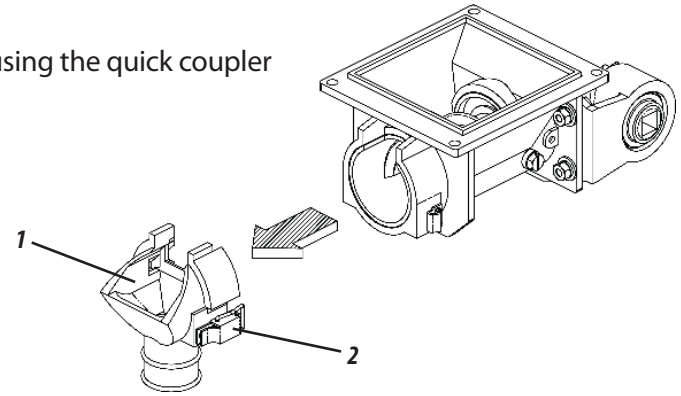
ATTENTION ***Do not use chemical detergents to wash the seeder, as this may damage the painting.***

CLEANING THE FERTISYSTEM CONDUCTOR - OPTIONAL (FIGURES 64)

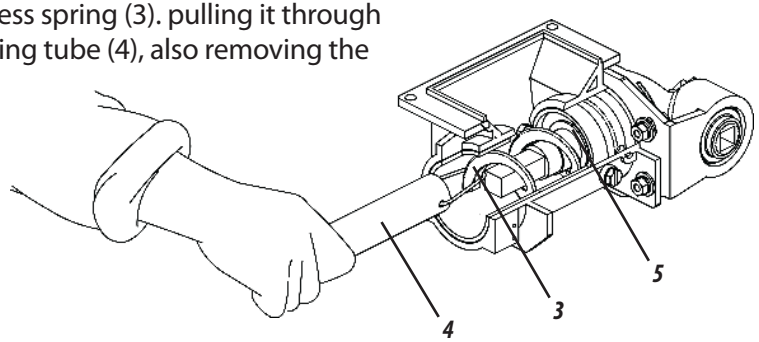
After planting, do not leave fertilizer in the deposit. To do the cleaning,

proceed as follows:

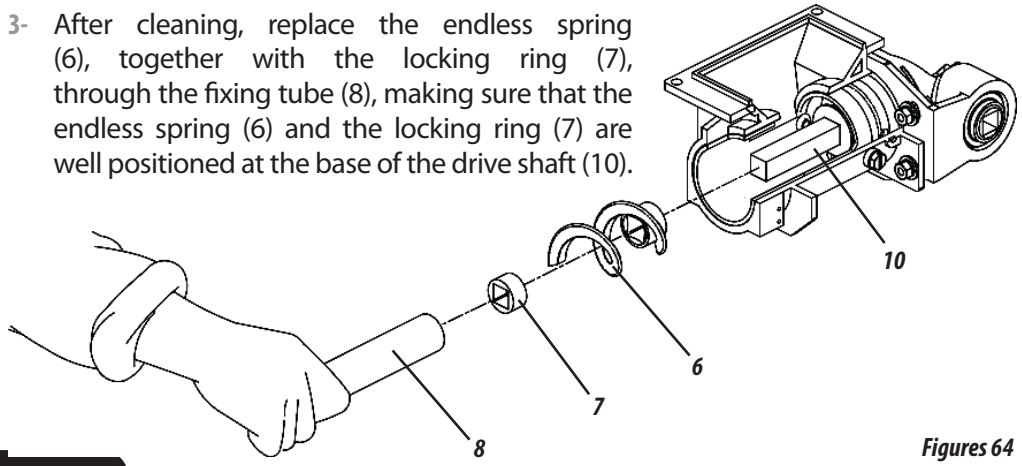
1- Remove the nozzle (1) using the quick coupler (2).



2- Remove the endless spring (3). pulling it through the ring of the fixing tube (4), also removing the locking ring (5).



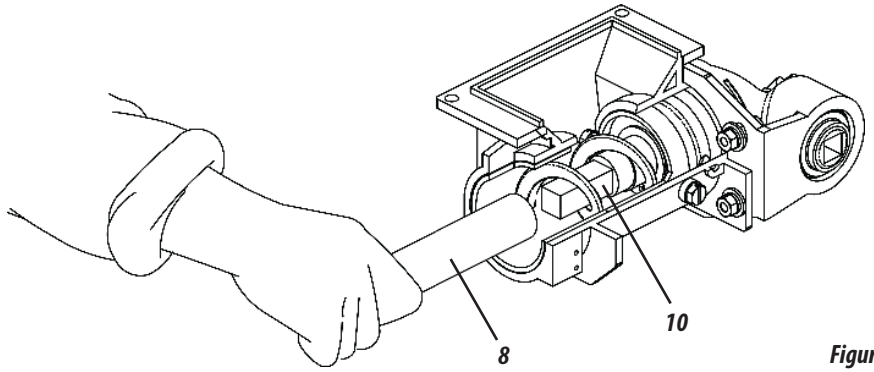
3- After cleaning, replace the endless spring (6), together with the locking ring (7), through the fixing tube (8), making sure that the endless spring (6) and the locking ring (7) are well positioned at the base of the drive shaft (10).



Figures 64

MAINTENANCE

MAINTENANCE



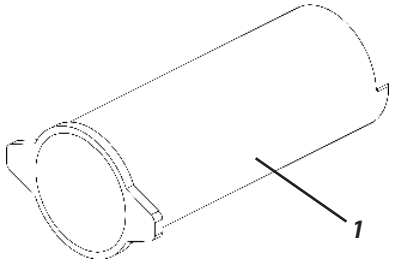
Figures 64

⚠ ATTENTION

Keep the auger in position with the lock ring. This procedure will prevent damage to the transverse cover when the doser is not used with the fertilizer or when transporting the seeder. The lack of the locking ring can cause damage to the fertilizer distribution and / or seeder transmission.

MAINTENANCE TUBE FOR FERTISYSTEM CONDUCTOR (FIGURES 65)

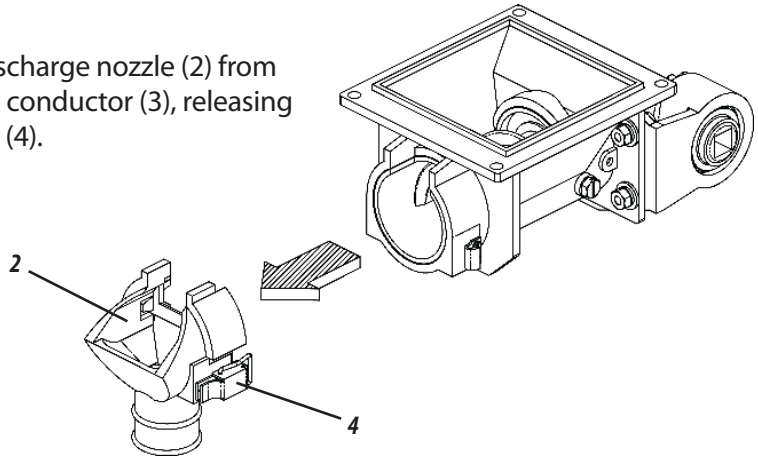
The SPE Top line seeder, when sold with the Fertisystem driver, comes with a maintenance tube (1) to carry out maintenance or changes to the endless spring, without the need to remove the fertilizer from the box.



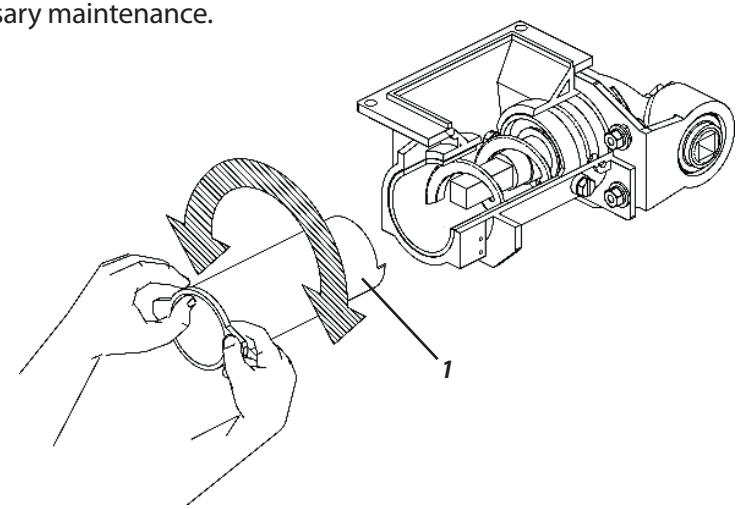
Maintenance Tube
Código: 60203900930

To perform maintenance on the fertisystem driver, proceed as follows:

1- Remove the discharge nozzle (2) from the fertisystem conductor (3), releasing the quick locks (4).



2- Then, introduce the maintenance tube (1) in rotating movements, promoting the displacement of the fertilizer to the bottom of the feeder. Then do the necessary maintenance.



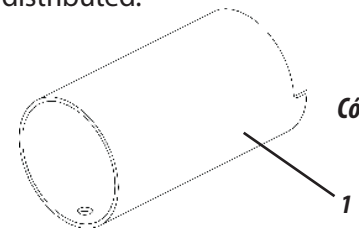
Figures 65

NOTE

The maintenance tube (1) has a cutting angle at the end to facilitate this operation.

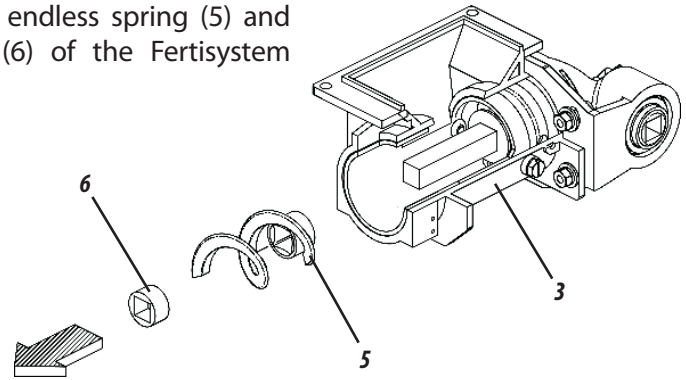
BLOCKING TUBE FOR FERTISYSTEM DRIVER (FIGS. 66)

The **SPE Top line** seeder when sold with the Fertisystem driver comes with a blocking tube so that when you need to isolate some planting lines, the fertilizer is not distributed.

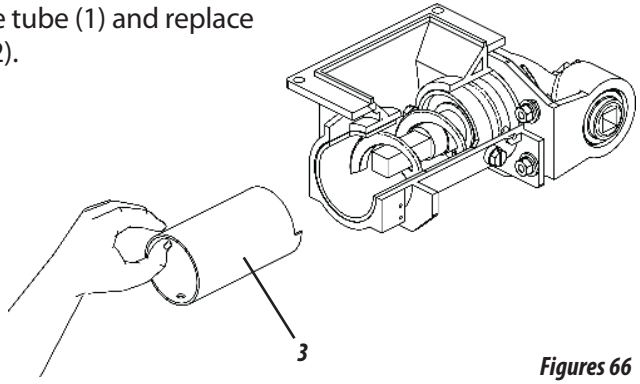


Blocking Tube
Código: 60203900913

Then, remove the endless spring (5) and the locking ring (6) of the Fertisystem conductor (3).



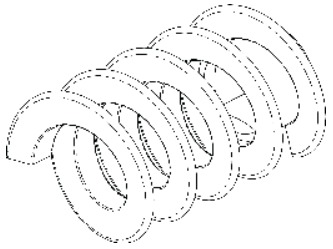
Then, insert the release tube (1) and replace the discharge nozzle (2).



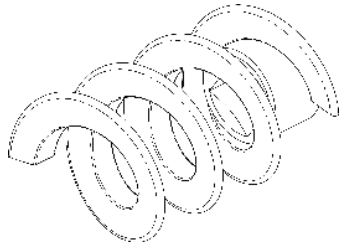
Figures 66

SPRING AND COVERS (OPTIONAL) CONDUCTOR FERTISYSTEM (FIGURES 67)

The **SPE Top line** seeder leaves the factory assembled with a step 2 ”endless spring, however the seed The SPE Top line seeder leaves the factory with the transverse flow cap (standard), however the seeder can be supplied with two other flow cap models (optional). er comes with a step 1” endless spring in its packaging. The seeder can also be supplied as a 3/4 ”pitch spring (optional).



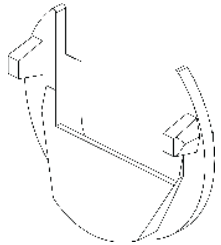
Endless Spring (Pitch 3/4”)
Código: 60203700418



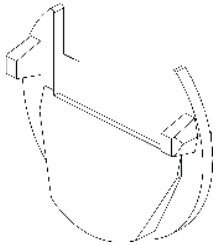
Endless Spring (Pitch 1”)
Código: 60203700426

Figures 67

The **SPE Top line** seeder leaves the factory with the transverse flow cap (standard), however the seeder can be supplied with two other flow cap models (optional).



Cover Fertipó
Código: 60203900530



High Flow Cover
Código: 60203900522

Figures 67

NOTE

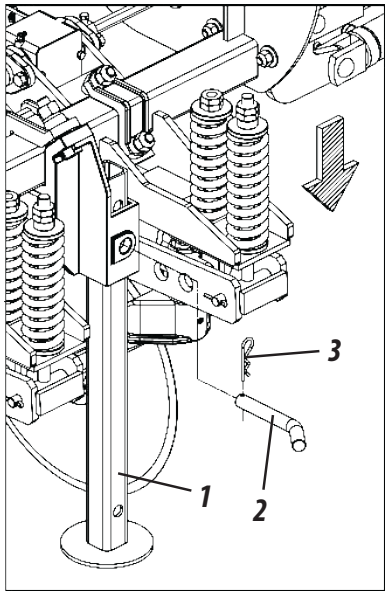
Always fill the fertilizer tank at the workplace.
Avoid any type of impurity inside the fertilizer tank.
Measure the dosage daily.

MAINTENANCE

TIRE CHANGE (FIGURE 68)

If necessary, change or repair the tires for this, proceed as follows:

1- First, support the seeder at the rear so that it is stabilized.



2- Then, lower the support brackets (1) on the front of the seeder and secure them with the pin (2) and lock (3).

3- Then, fully retract the hydraulic cylinder by suspending the tire from the ground.

4- Finally, remove the chain (4), loosen the nuts (5) and the lock (6) to remove the tire.

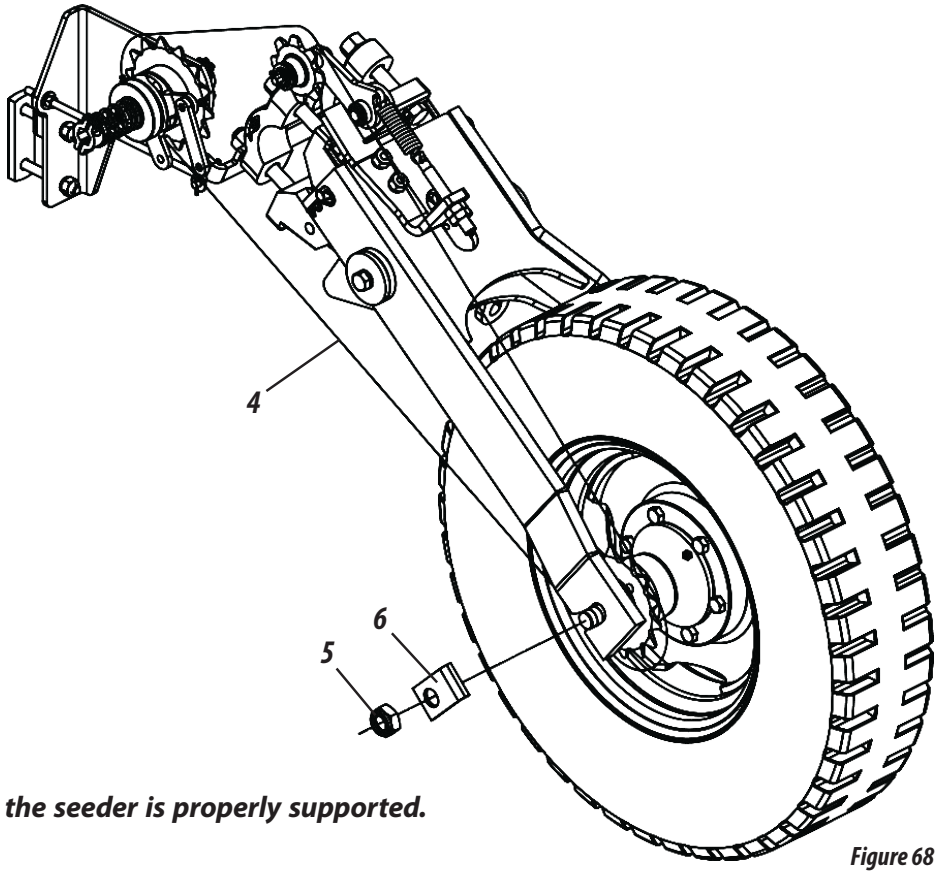


Figure 68

ATTENTION ***Before changing or repairing the tires, make sure that the seeder is properly supported. Avoid accidents.***

CARE

1- Check the condition of all pins and screws before starting to use the seeder.

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

3- Baldan seeders are used in various applications, requiring knowledge and attention during handling.

CARE

4- Only local conditions can determine the best way of operating the seeder.

5- When assembling or disassembling any part of the seeder, use suitable methods and tools.

6- Observe the lubrication intervals carefully at the different points of the seeder.

7- Always check if the parts show wear. If replacement is required, **always require original Baldan parts.**

GENERAL CLEANING

1- When storing the seeder, do a general cleaning and wash it only with water. Check that the paint has not worn out, if this has happened, apply a general coat, apply protective oil and lubricate the seeder completely. Do not use burnt oil.

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

- Remove the transmission chains and keep them bathed in oil until the next planting.
- Remove all hoses by immediately washing them with mild soap and water. Do not use other chemicals.
- Remove the regulator and articulate the header upwards, locking it.

3- Lubricate the seeder completely. Check all moving parts of the same, if they show wear or looseness, make the necessary adjustment or replacement of the parts, leaving the seeder ready for the next planting.

4- After all maintenance care, store the seeder in a covered and dry place, properly supported. Prevent the discs from being directly in contact with the ground.

5- When connecting or disconnecting the hydraulic hoses of the seeder, do not let the ends touch the ground. Before connecting the hydraulic hoses, clean the connections with a clean, lint-free cloth **(do not use burlap)**.

6- Replace any stickers, especially those that are damaged or missing. Make everyone aware of their importance and the dangers of accidents when instructions are not followed.

7- We recommend washing the seeder only with water at the beginning of the new planting.

⚠ ATTENTION | ***Do not use chemicals to wash the seeder, as this may damage the painting.***

MAINTENANCE

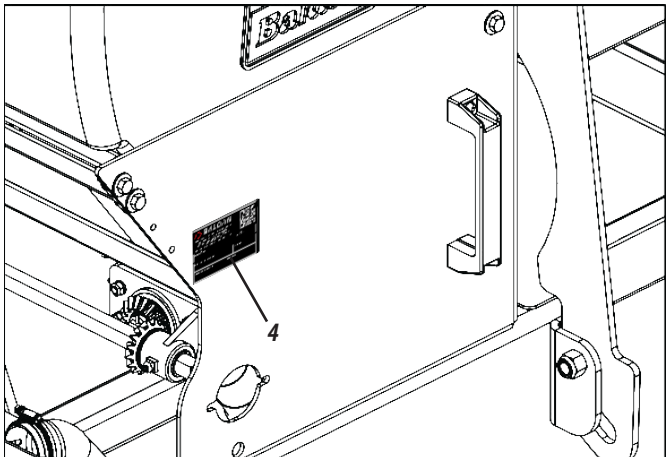
IDENTIFICATION

PRODUCT IDENTIFICATION (FIGURES 69)

1- To consult the parts catalog or request technical assistance at Baldan, always identify the model (1), serial number (2) and manufacturing date (3), which can be found on the identification tag (4) of the seeder.

2- **ALWAYS DEMAND BALDAN ORIGINAL PARTS.**

Figures 69



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

Owner: _____

Resale: _____

Farm: _____

City: _____ *State:* _____

Warranty Certificate No.: _____

Model: _____

Serial No.: _____

Purchase Date: _____ *NF. Nº:* _____

ATTENTION

The drawings contained in this instruction manual are for illustrative purposes only.

In order to provide a better view and detailed instructions, some drawings in this manual have removed the safety devices (covers, guards, etc.). Never operate the seeder without these devices.

PUBLICATIONS

Códe: 60550107280
CPT: SPE11119A

CONTACT

If in doubt, consult the After Sales.
Phone: 0800-152577
Email: posvenda@baldan.com.br

ANNOTATIONS

ANNOTATIONS

WARRANTY CERTIFICATE

BALDAN IMPLEMENTOS AGRÍCOLAS S/A, guarantees normal operation of the implement to the reseller for a period of 6 (six) months counted from the delivery date on the reseller's bill of sale to the first final consumer.

During this period BALDAN is committed to repair any defects in materials and/or manufacturing at its own responsibility, as labor, shipping, and other expenses are the responsibility of the reseller.

During the warranty period, the request and replacement of any defective parts will be done at the regional reseller, and thereafter ship the defective part to BALDAN for analysis.

When it is not possible to perform such procedure and the capacity for resolving the problem Is exhausted by the reseller, the same shall request support from the BALDAN Technical Support Service, by filling out the specific form distributed to resellers.

After analysis of the replaced items by the BALDAN Technical Support Services is concluded and the replacement is not covered by the warranty, then it will be the responsibility of the reseller to pay all the related costs for the replacement; as well as expenses on materials, travel, including lodging and meals, accessories, lubricates used, and other expenses originating from the Technical Support Service call, thereby the BALDAN company is authorized to charge for the respective bill to the reseller's name.

Any repair done on the product within the validity date of the warranty period, will only be authorized by BALDAN by previous presentation of the quotation describing the parts and labor charges that will be performed.

It is excluded from this agreement, whenever the product undergoes official repairs or modifications from service centers that do not belong to the BALDAN reseller network, as well as the installation of aftermarket parts or components in the user's product.

This warranty will be nullified if the defect or damage is the result from improper usage that is non-compliant to the instructions or inexperience of the operator.

It is agreed to that this present warranty does not cover tires, polyethylene storage compartments, drive shafts, hydraulic components, etc. as the warranty coverage is from their own manufacturers.

Manufacturing or material defects, as stated in the purpose of this warranty agreement, does not constitute, under any hypothesis, a reason for purchase and sale contract termination, or the payment of indemnities of any nature.

BALDAN reserves the right to change and or perfect the technical characteristics of its products, and without any obligation to proceed in previously manufactured products.

INSPECTION AND DELIVERY CERTIFICATE

- **SERVICE BEFORE DELIVERY:** This implement was carefully prepared by the sales organization; all it parts were inspected according to the instructions from the manufacturer.
- **DELIVERY SERVICE:** The user was informed as to the terms of the applicable warranty and instructed on its usage and maintenance procedures.
- I hereby confirm I have been informed on the terms of the applicable warranty and instructed on its usage and maintenance procedures of the implement.

Implement: _____

Serial Number: _____

Data: _____ *Invoice:* _____

Reseller: _____ *City:* _____

State: _____ *Postal Code:* _____

Owner: _____ *Phone:* _____

Address: _____ *Number:* _____

City: _____ *State:* _____

E-mail: _____

Sales Date: _____

Signature / Reseller Stamp _____

1ª - Owner

CERTIFICATE

CERTIFICATE

INSPECTION AND DELIVERY CERTIFICATE

- **SERVICE BEFORE DELIVERY:** This implement was carefully prepared by the sales organization; all it parts were inspected according to the instructions from the manufacturer.
- **DELIVERY SERVICE:** The user was informed as to the terms of the applicable warranty and instructed on its usage and maintenance procedures.
- I hereby confirm I have been informed on the terms of the applicable warranty and instructed on its usage and maintenance procedures of the implement.

Implement: _____

Serial Number: _____

Data: _____ *Invoice:* _____

Reseller: _____ *City:* _____

State: _____ *Postal Code:* _____

Owner: _____ *Phone:* _____

Address: _____ *Number:* _____

City: _____ *State:* _____

E-mail: _____

Sales Date: _____

Signature / Reseller Stamp _____

2ª - Reseller

INSPECTION AND DELIVERY CERTIFICATE

- **SERVICE BEFORE DELIVERY:** This implement was carefully prepared by the sales organization; all it parts were inspected according to the instructions from the manufacturer.
- **DELIVERY SERVICE:** The user was informed as to the terms of the applicable warranty and instructed on its usage and maintenance procedures.
- I hereby confirm I have been informed on the terms of the applicable warranty and instructed on its usage and maintenance procedures of the implement.

Implement: _____

Serial Number: _____

Data: _____ *Invoice:* _____

Reseller: _____ *City:* _____

State: _____ *Postal Code:* _____

Owner: _____ *Phone:* _____

Address: _____ *Number:* _____

City: _____ *State:* _____

E-mail: _____

Sales Date: _____

Signature / Reseller Stamp _____

3ª - Manufacturer

Please send a filled out copy in a maximum period of 15 days to BALDAN.

1.74.05.0059-5

AC MATÃO
ECT/DR/SP

ANSWER CARD

NO SEALING NEEDED

POSTAGE WILL BE PAID BY:

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

Av. Baldan, 1500 | Nova Matão | Zip code: 15993-900 | Matão-SP | Brasil

Fone: (016) 3221-6500 | Fax: (0**16) 3382-6500**

Home Page: www.baldan.com.br | e-mail: sac@baldan.com.br

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