NSA Speed Box

Series 2000 / 2500 / 3000

Instruction Manual

BIA® Baldan

www.baldan.com.br

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

BIA®

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INDEX

01. SAFETY RULES

THIS SYMBOL INDICATES IMPORTANT SAFETY WARNING. WHENEVER YOU FIND IT IN THIS HANDBOOK, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE AWARE AS FOR THE POSSIBILITY OF PERSONAL INJURY.

⚠ ATTENTION

- *Read the instruction manual carefully, so you can learn the recommended safety practices.*

⚠ ATTENTION

- *Do not operate the tractor if the front is light. With a tendency to rise, add weights on the front of the tractor or front wheels.*

⚠ ATTENTION

- *Only begin operating the tractor when are properly accommodated and with the seat belt fastened.*

⚠ ATTENTION

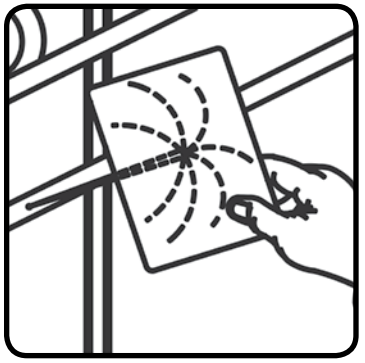
- *There are risks of serious injury by tumbling when working on slopes.*
- *Do not use excessive speed.*

⚠ ATTENTION

- *Do not operate the seed drill if the transmission hoods are not properly fixed.*
- *Only remove the hoods to make the replacement of gears, put them back immediately.*
- *When doing any work in the machine transmission, turn the ratchets off.*
- *Do not make adjustments with the machine in motion.*

⚠ ATTENTION

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



⚠ ATTENTION

- *Keep yourself away from the active elements of the machine (discs), they are sharp and can cause accidents.*
- *When carrying any service on discs, use safety gloves on hands.*

⚠ ATTENTION

- *Before performing any maintenance on your equipment, make sure it is turned off. Avoid getting hit.*

⚠ ATTENTION

- *The hydraulic fluid is under pressure and can cause serious injuries in case of leaks. Periodically check the conservation condition of the hoses. If there is evidence of leaks, replace them immediately.*
- *Before connecting or disconnecting hydraulic hoses, relieve the pressure of the system, triggering the command with the tractor off.*

⚠ ATTENTION

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

⚠ ATTENTION

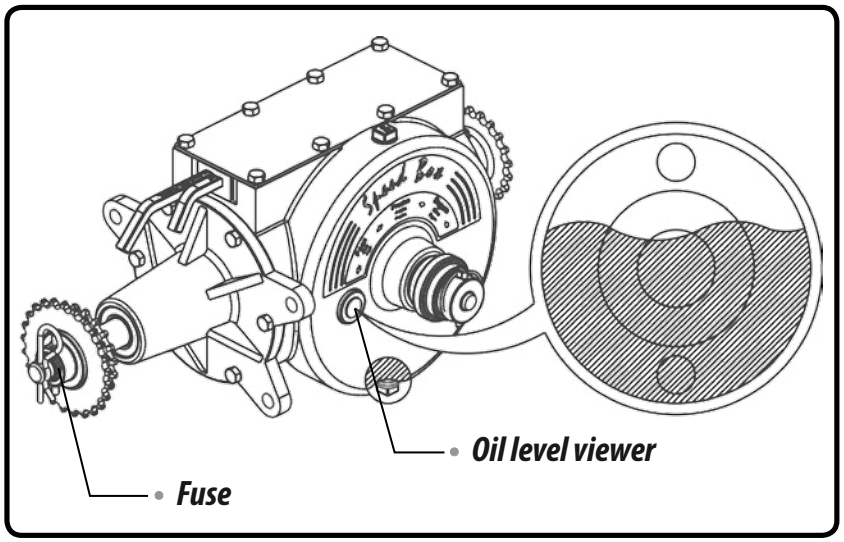
- *When operating the seed drill, do not allow the permanence of people on the machine.*
- *Do not stay on the platforms with the machine in motion.*

⚠ ATTENTION

- *Whenever the seed machine is being operated, watch out for surrounding people.*
- *Never stay over a plataform with the machine in movement.*

⚠ 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.*



⚠ ATTENTION

- *Turbine can spread toxic products used for seed treatment.*
- *Do not remain close to the turbine while in use.*
- *Read carefully the seed treatment product instruction, before use.*
- *Use protection equipments while dealing with chemical products. (EPI)*
- *Wash your hands after working with chemical products.*
- *Treated seed should not be exposed to people outside the service, domestic animals, birds, and not in contact with products of human or animal consumption.*
- *In case of poisoning by inhalation or aspiration, keep the person in a cool place and see a doctor immediately, taking the label or packaging of the chemical.*

⚠ *SYMPTOMS OF POISONING: Weakness, headache, chest tightness, blurred vision, nonreactive pupils, salivation, sweating, nausea, vomiting and abdominal cramps.*

⚠ ***ALCOHOL OR DRUGS CAN GENERATE SOME LOSS OF REFLEXES AND CHANGE THE OPERATOR'S PHYSICAL CONDITIONS. SO, NEVER OPERATE THIS EQUIPMENT UNDER USE OF THESE SUBSTANCES.***

WARNING

THE MISMANAGEMENT OF THIS EQUIPMENT CAN RESULT IN SERIOUS OR FATAL ACCIDENTS. BEFORE PLACING THE EQUIPMENT IN OPERATION, CAREFULLY READ THE INSTRUCTIONS IN THIS HANDBOOK. MAKE SURE THAT THE PERSON RESPONSIBLE FOR THE OPERATION IS INSTRUCTED ON THE PROPER AND SAFE HANDLING, IF HE HAS READ AND UNDERSTOOD THE HANDBOOK OF THIS PRODUCT.

01- **When operating the equipment, do not allow people to stay very close or on it.**

02- **In making any assembling and disassembling service in the discs, always use safety gloves.**

03- **Before connecting or disconnecting hydraulic hoses, relieve the system pressure by moving the command with the tractor off.**

04- **Periodically check the conservation status of the hoses. If there is evidence of leaks, immediately replace them because the oil works under high pressure and can cause serious injury.**

05- **Do not wear loose clothing as they can become entangled in moving parts.**

06- **When turning the tractor engine on, be properly seated on the operator's seat and aware of the correct and safe management of both tractor and implement. Always put the selector lever in neutral, turn off the power take-off command and place the hydraulic commands in the neutral position.**

07- **Do not run the engine in indoor environments without adequate ventilation, as the exhaust fumes are harmful to health.**

08- **When maneuvering the tractor to the implement hitch, make sure that there is plenty of room and that there is nobody very close, always do the maneuvers in low gear and be prepared to brake in emergency situations.**

09- **Do not make adjustments with the implement in operation.**

10- **When working on slopes, proceed with caution when trying to maintain the necessary stability. In case of early imbalance, reduce the acceleration, turn the tractor wheels to the side of the terrain slope.**

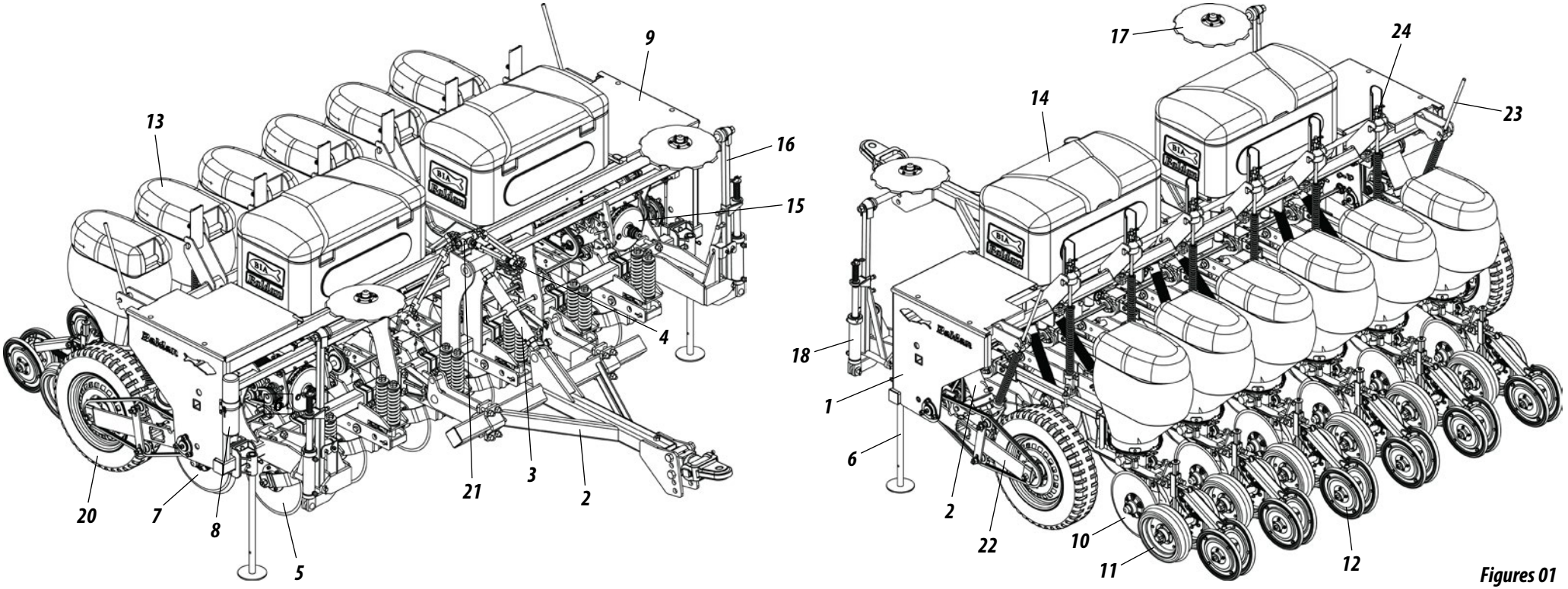
11- **Always drive the tractor at speeds compatible with safety, especially when working on uneven ground or slopes, always keep the tractor engaged.**

12- **When driving the tractor on roads, keep the brake pedals connected and use of safety signs.**

13- **Do not operate the tractor if its front is light. If there is a tendency to rise, add weights on the front or front wheels.**

14- **Leaving the tractor, put the selector lever in neutral and pull the parking brake.**

NANO DRAGGING SEEDER - NSA SPEED BOX



Figures 01

02. COMPONENTS

01 - Chassis
02 - Coupling Header
03 - Regulator
04 - Hydraulic Hose
05 - Cutting Disc
06 - Support Bracket
07 - Fertilizer Double Disc
08 - Manual and parts catalogue container
09 - Platform
10 - Seed Double Disc
11 - Depth Limiting Wheel
12 - "V" Wheel
13 - Seed Tank
14 - Fertilizer Tank
15 - Speed Box
16 - Marker
17 - Marker disc
18 - Marker Cylinder
19 - Spring Rod
20 - Tires
21 - Valve
22 - Wheel Support
23 - Wheel Support Rod
24 - Line Rod

03. TECHNICAL SPECIFICATIONS

Table 01

Model	No. of Lines for soybeans	No. of Lines for corn	Useful Width (mm)	Fertilizer tank capacity (L)	Seed tank capacity (L)	Approximate Weight (kg)	Approximate Power (hp)
				Polyethylene			
NSA 2000	3 de 450 mm / 500 mm	2 de 900 mm / 1000 mm	1000	200	45	700	50
NSA 2500	5 de 500 mm / 450 mm	5 de 500 mm / 450 mm	2000	400	45	1030	60
NSA 3000	6 de 450 mm / 500 mm	4 de 870 mm	2610	400	45	1200	70

Minimum spacing between lines (mm) ***450***

Wheelset ..... ***Military 5.60 x 15 x 10L***

No. of Wheels ***2***

The Baldan reserves the right to change technical specifications of this product without previous notice.
The technical specifications are approximate and applied under normal working conditions.

04. ASSEMBLY

- The Baldan seed drill model NSS Speed box leave the factory semi-assembled, with only some components that must be assembled as indicated below:

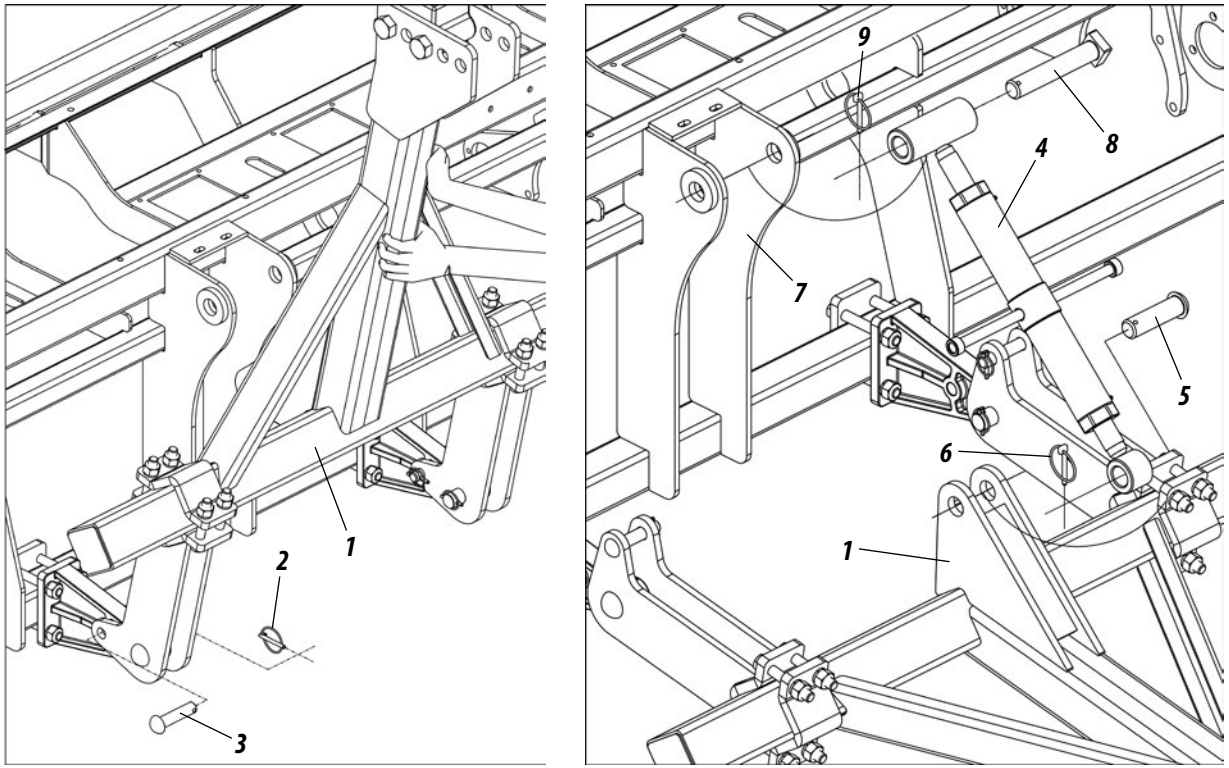
ASSEMBLING THE COUPLING HEADER

- To assemble the coupling header in NSA Speed Box seed drill, proceed as follows:

01 - Place the coupling header (1) in the work position, removing the latch w / ring (2) and pin (3) that were placed for the transport of the seed drill.

02 - Then, put the regulator (4) in the coupling header (1), fixing it with the pin (5) and lock w / ring (6) and in the structure support (7) with the pin (8) and lock w / ring (9).

Figures 02



IMPORTANT

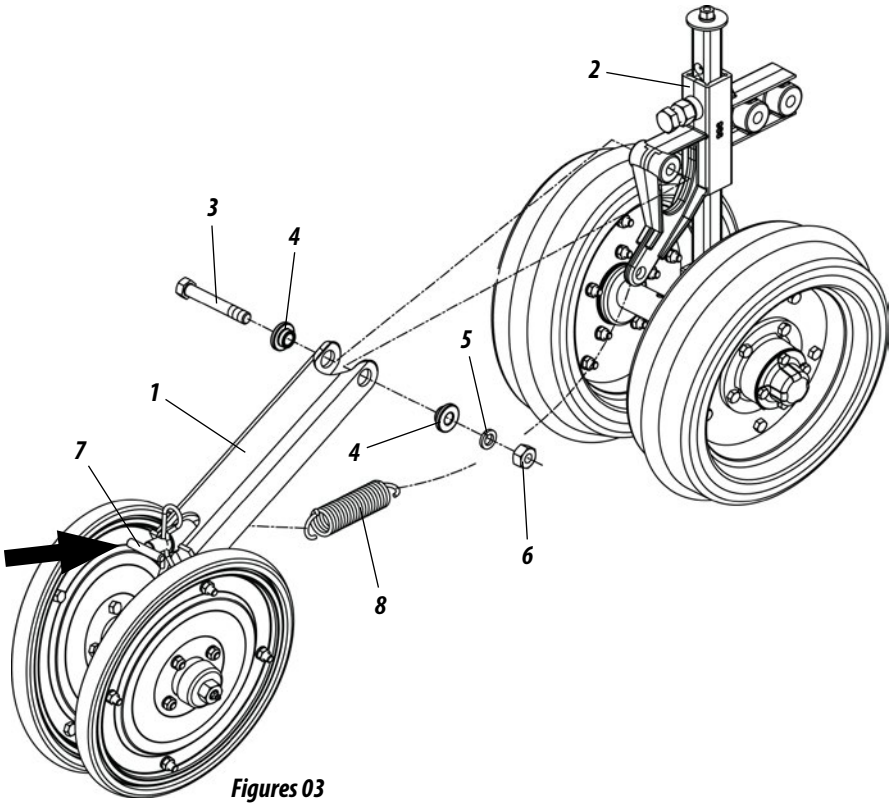
Before starting assembling the coupling header, look for an ideal place to facilitate the identification of components and assemblage of the coupling header.

ASSEMBLY OF COMPACTION WHEELS

- To assemble the "V" wheel bracket (1), proceed as follows:

01 - Couple the "V" wheel bracket (1) in the depth wheel cart (2), fixing it with the screw (3), sleeve (4), washer (5) and nut (6).

02 - Then, put the lever (7) all the way forward and engage the spring (8) on the bracket (2).



Figures 03

NOTE *Perform the same procedure to assemble the other carts.*

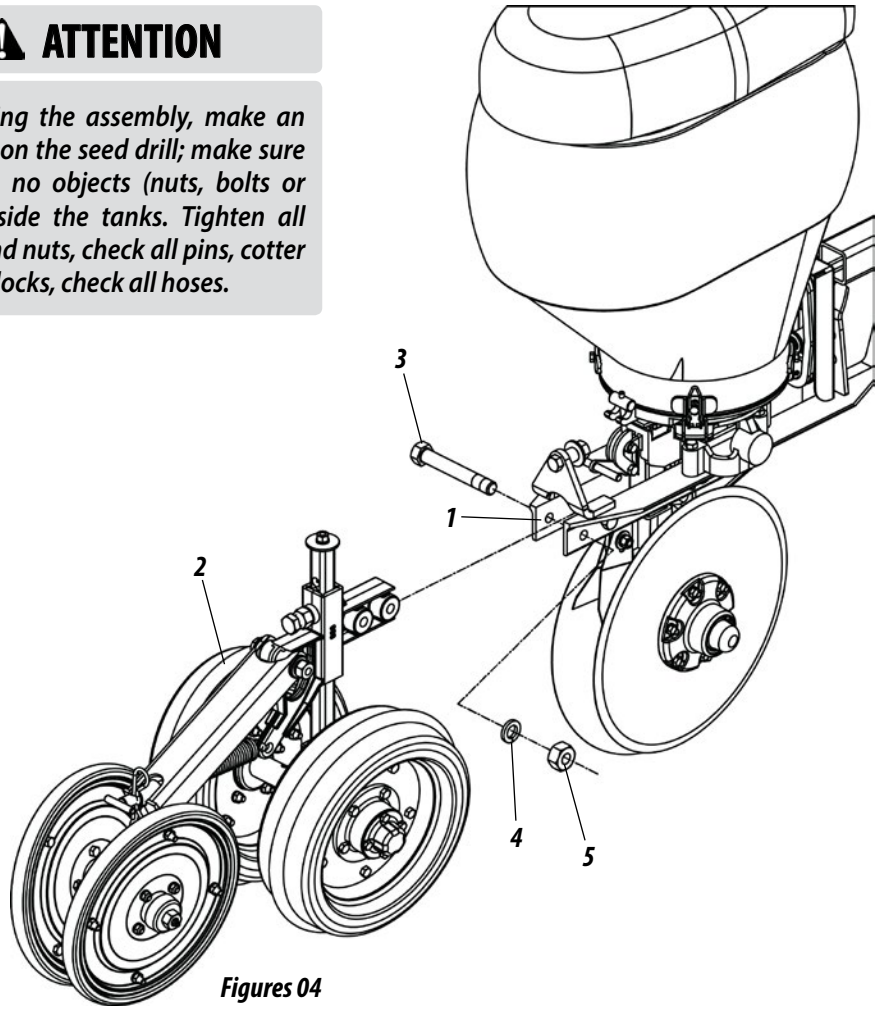
ASSEMBLY OF LINES

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

01 - Insert the cart (2) between the line plates (1), fixing it with screws (3), washers (4) and nuts (5).

ATTENTION

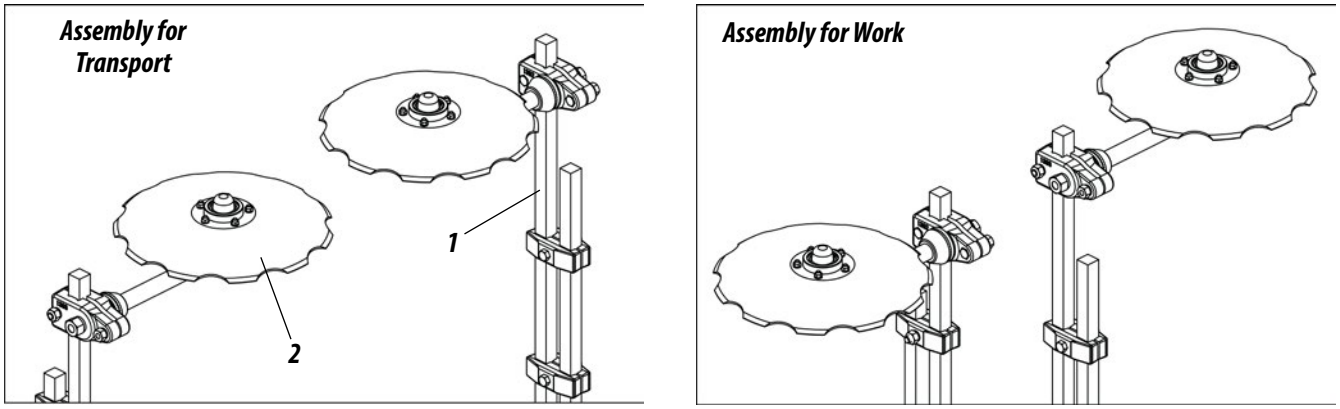
By finishing the assembly, make an overhaul on the seed drill; make sure there are no objects (nuts, bolts or other) inside the tanks. Tighten all screws and nuts, check all pins, cotter pins and locks, check all hoses.



Figures 04

ASSEMBLY OF THE LINE MARKER CUTTING DISC - OPTIONAL

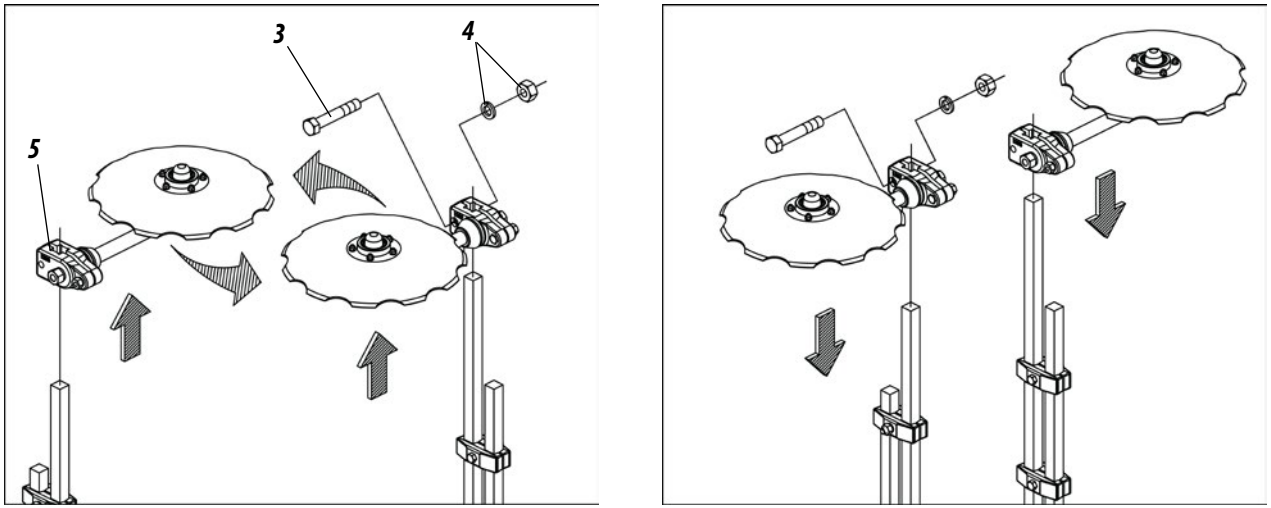
01 - The Baldan seed drills leave the factory with optional line markers (1), cutting discs (2) are assembleed inversely to their respective markers to avoid the risk of accidents in transporting the drill, as shown in ***Figures 05.***



Figures 05

- Before you begin working with the seed drill, exchange discs (2) in line markers (1), for this do the following:

02 - Loosen the screws (3), washers and nuts (4), remove the disc brackets (5) and assemble them on markers contrary to what they were originally assembled, as shown in ***Figures 06.***



Figures 06

IMPORTANT

Before starting the assembly of line markers, find a safe and easily accessible place which facilitates the assemblage.

05. TRACTOR COUPLING

- Before connecting the planter to the tractor, check if the tractor is equipped with the set of weights on the front or front wheels to keep it down. The rear wheels will give the tractor higher stability and traction to the ground:
- To couple the planter, do the following:

01 - Level the coupling header (1) in relation to the tractor coupling through the regulator (2). Then, slowly close the seeder to the tractor in reverse gear, being aware to applying the brakes.

02 - Couple the planter to the tractor by fixing it with the hitch pin (3) and lock (4).

03 - Connect the hoses (5) in the quick tractor hitch, as shown in ***figure 07.***

⚠ ATTENTION

Before connecting or disconnecting the hydraulic hoses, turn off the engine and relieve the pressure of the hydraulic system by moving command levers completely. Make sure that, by relieving the pressure of the system, no one is near the area.

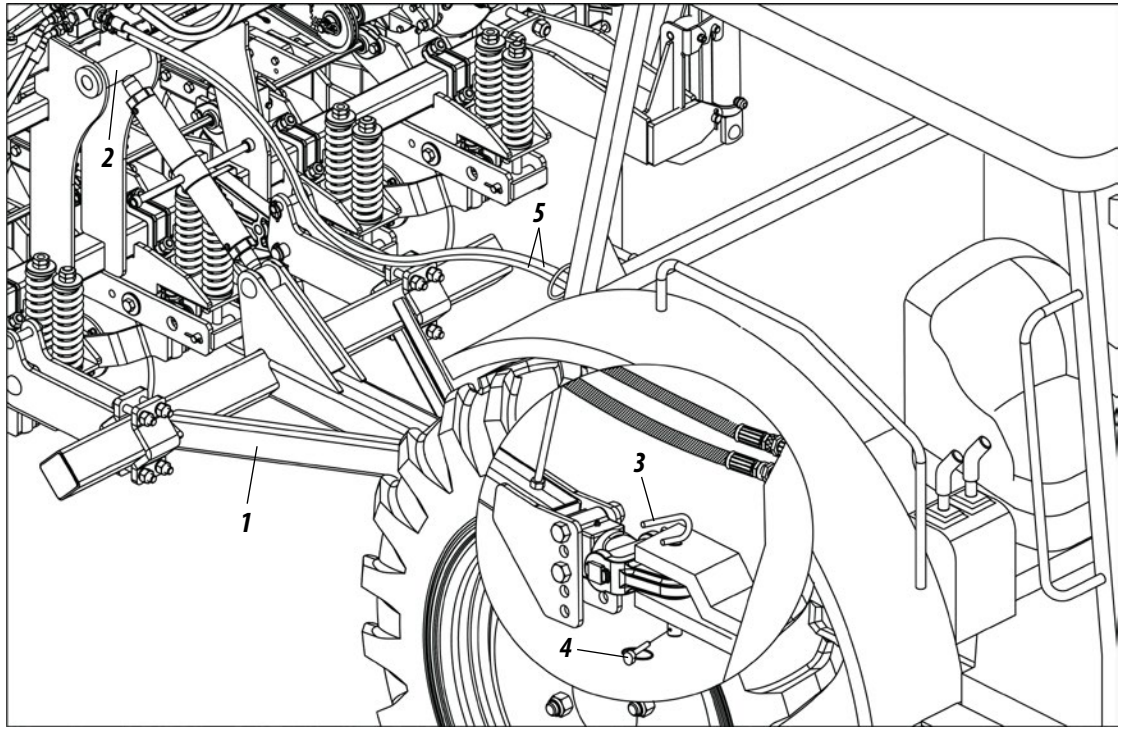
⚠ ATTENTION

By coupling the planter, find a safe and accessible place, and always use reduced gear with low acceleration.

NOTE

Before connecting or disconnecting the hydraulic hoses, shut off the engine and relieve the hydraulic system pressure by fully activating the command levers.

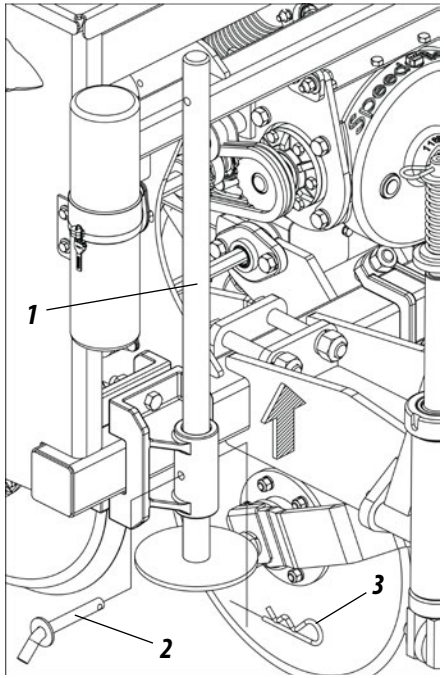
Figures 07



TRANSPORTATION

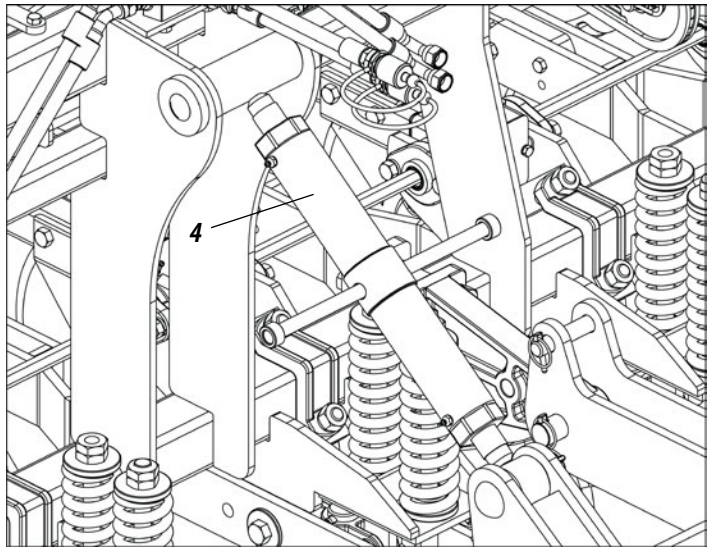
- Before working or moving the seed drill, do the following:

01 - Retract the support bracket (1) and fix it with the pin (2) and lock (3), as shown in figure 08.



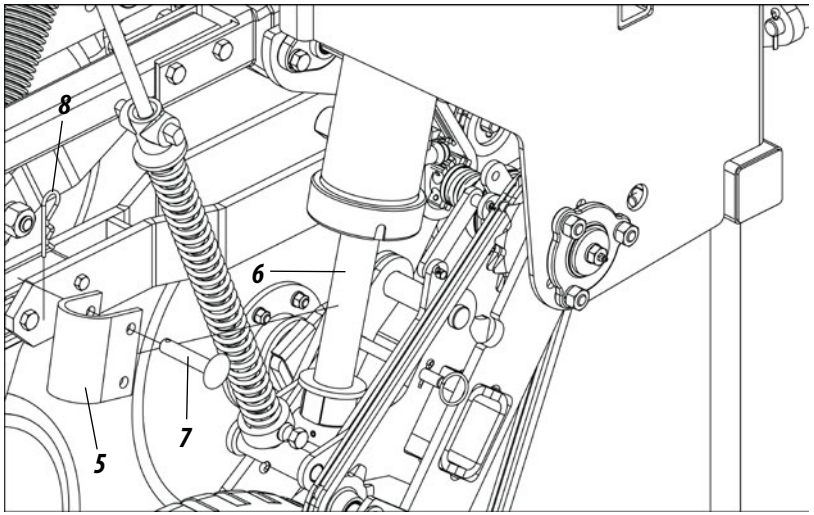
Figures 08

02 - With the planter lowered, make sure it is leveled in relation to the ground, otherwise, level it through the header regulator (4), as shown in figure 10.



Figures 10

03 - Then, lift lines by pushing the total triggering of the hydraulic cylinder and put the lock (5) on the piston rod (6) locking with the pin (7) and lock (8), as shown in figure 09.



Figures 09

IMPORTANT

Do not transport the planter if it is loaded, since it may damage the equipment. Supplying it only in at the workplace is recommend. If the planter is to remain on the field for any reason, we recommend covering it with impermeable canvas tarpaulin to prevent moisture.

ATTENTION

Do not transport the seeder without checking all the procedures above

06. ADJUSTMENTS

ADJUSTING WHEELSET PRESSURE

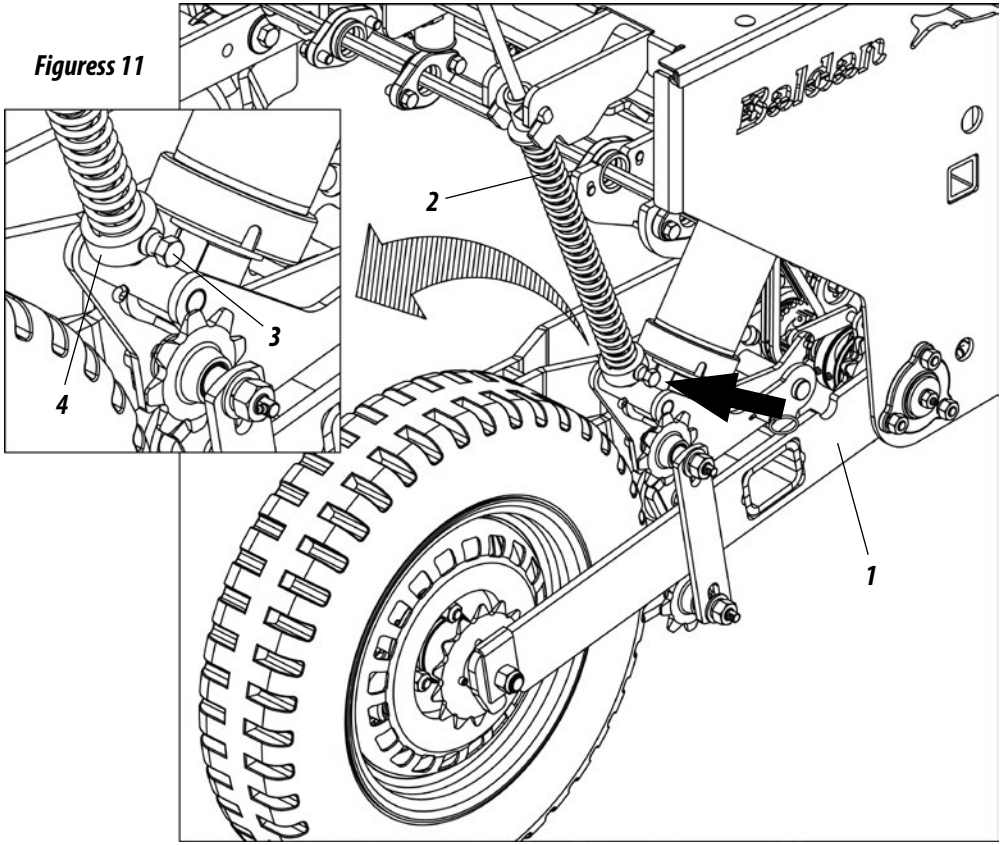
- When the wheelset (1) are dragging on the ground, raise the pressure of the spring rod (2). To control the pressure on the spring rod, proceed as follows:

01 - First, lift the tractor's hydraulic by lifting the seed drill.

02 - Then, loosen the screw (3), lift the fixation sleeve (4) in order to pressure the spring (2).

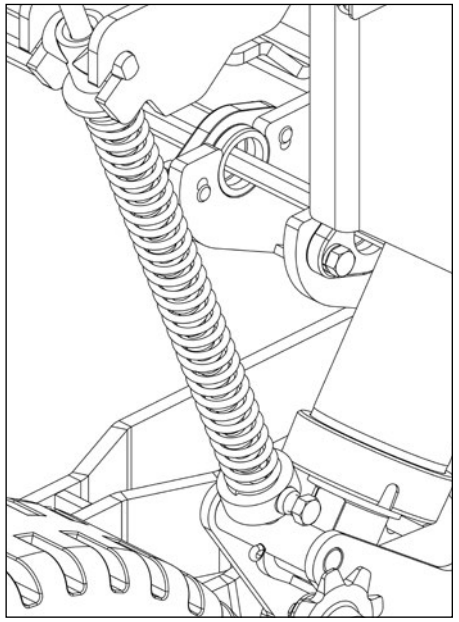
03 - Then tighten the screw (3) fighting the spring (2).

Figuress 11



LOWER PRESSURE ON SPRING

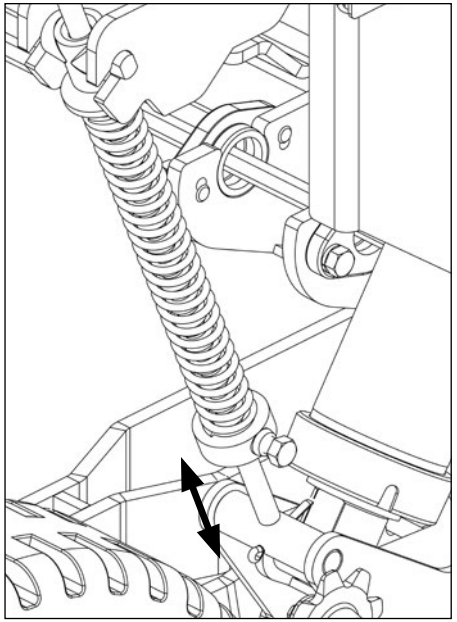
Lower adhesion of the tire to the ground.



GREATER PRESSURE ON SPRING

Greater adhesion of the tire to the ground.

Figuress 11



⚠ ATTENTION

When making the wheelset pressure adjustment, make this adjustment on both sides of the seed drill.

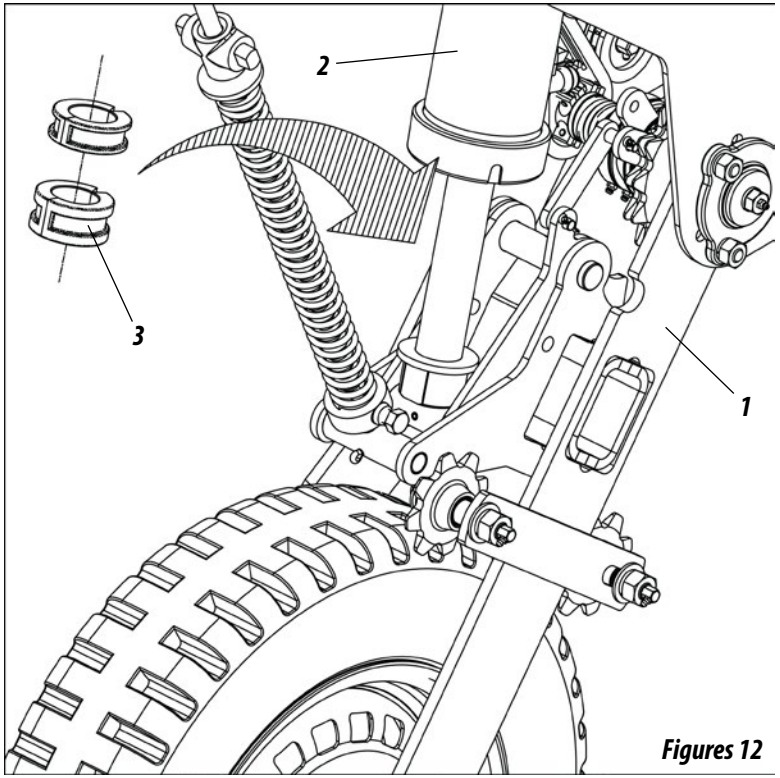
IMPORTANT

This adjustment giving higher or lower pressure on the spring should be done before starting work, according to the type of soil to be worked to obtain better performance of the seed drill.

ADJUSTING THE WHEELSET DEPTH

- To adjust the wheelset depth (1), proceed as follows:

01 - Pull the hydraulic cylinder (2) place the depth limiters (3) on its shaft, according to the need of work.



Figures 12

IMPORTANT

By placing wedges on the hydraulic cylinder, verify ratchet adjustment, and if necessary, make the same adjustment as instructed below.

ATTENTION

When performing a depth adjustment, repeat this procedure on both sides of the Drill.

RATCHET ADJUSTMENT

- By placing wedges on the hydraulic cylinder to limit the depth of discs, adjust the ratchet (1) according to the need to work, thereby ensuring the drive transmission system. To adjust the ratchet (1), proceed as follows:

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

02 - Then, retighten the nuts and counter nuts (2).

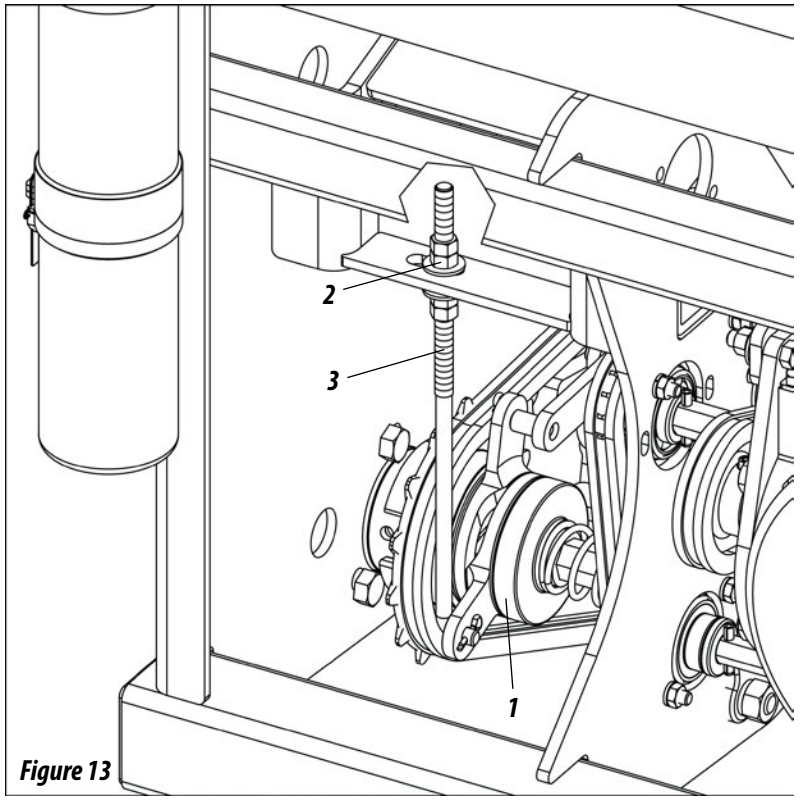


Figure 13

ATTENTION

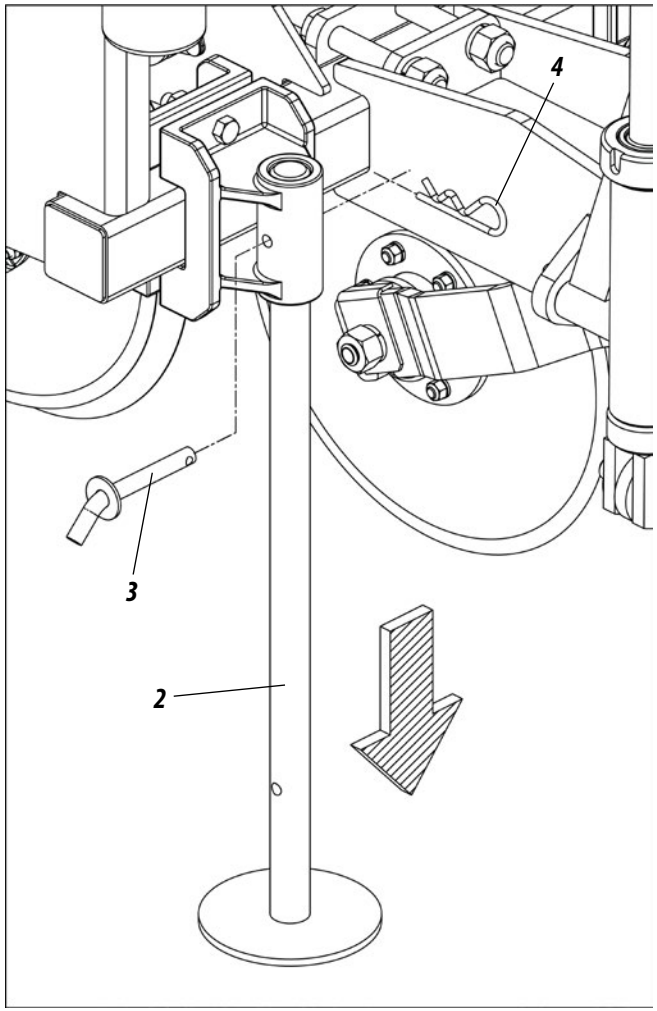
The lack of observance of this adjustment may result in disarming the ratchet.

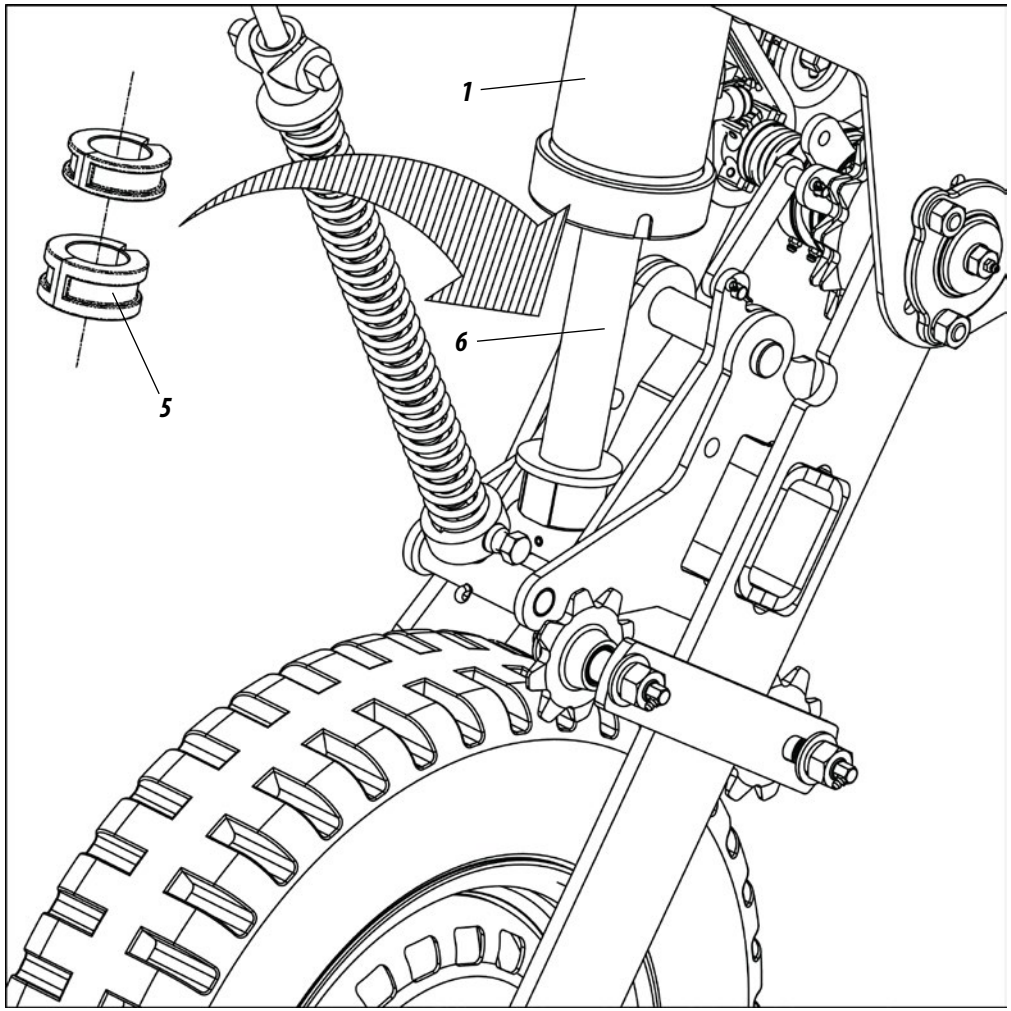
NEW SPACING

- To make new spacing between lines, if necessary, remove some lines to increase spacing for this, proceed as follows:

01 - Raise the seed drill through the activation of the hydraulic cylinder (1). Lower support brackets (2) and fix it with pins (3) and locks (4).

02 - Then, before lowering the hydraulic cylinders (1), place the limiting rings (5) in the rods (6) of the hydraulic cylinder (1), this will prevent the weight suspended of lines becomes larger.





Figures 14

03 - Loosen the nuts and locknuts (2), adjust the rod (3) to the correct functioning of the ratchet disarming system (1). Lift the seed drill through the activation of the hydraulic cylinder (1). Lower the support brackets (2) and fix them with pins (3) and locks (4).

04 - Then, before lowering the hydraulic cylinders (1), place the limiting rings (5).

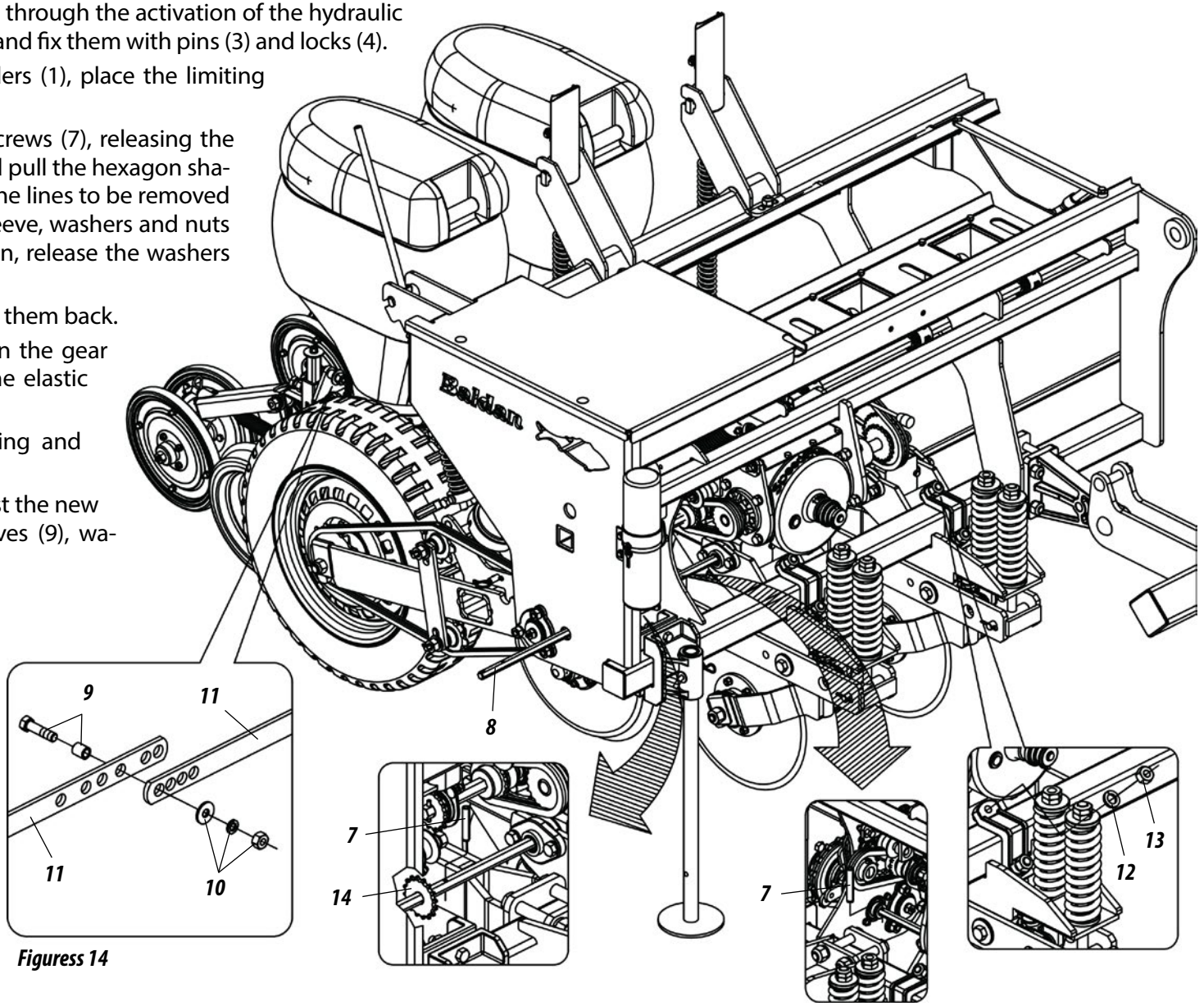
05 - To regulate the new spacing, loosen the screws (7), releasing the locks (8), then remove the elastic pin (9) and pull the hexagon shaft through the gear (10). Soon after, check the lines to be removed or displaced and loosen the screws with sleeve, washers and nuts (10) and remove the spacing bars (11). Then, release the washers (12) and nuts (13).

06 - Finally, remove the entire plant lines pulling them back.

07 - Then, replace the hexagonal shaft (8), align the gear (14) and lock the hexagon axle (8) with the elastic pins (7).

08 - Then, slide the lines to the desired spacing and tighten the washers (12) and nuts (13).

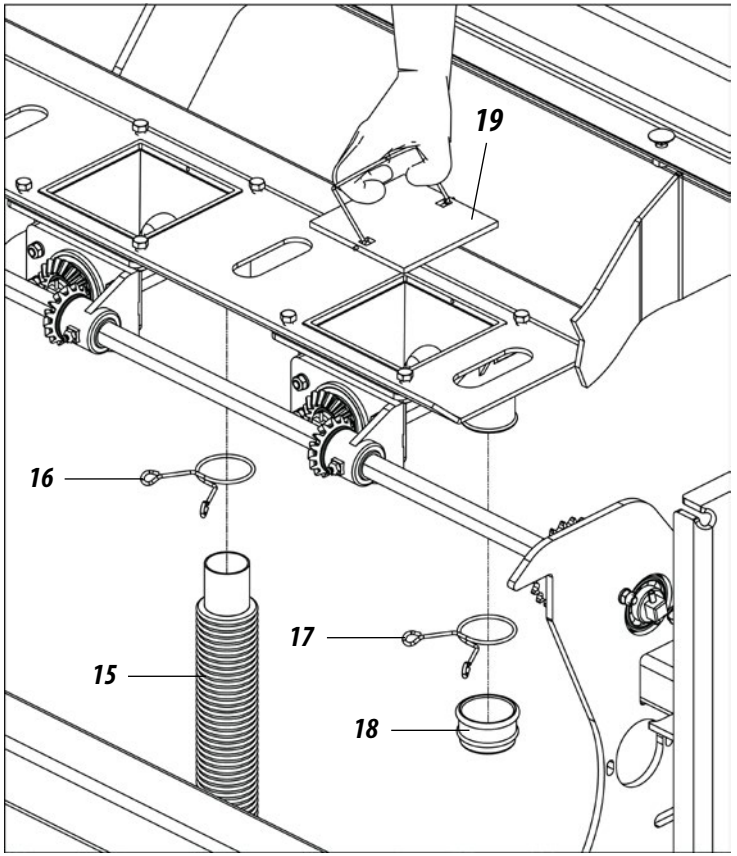
09 - Then, replace the spacing bars (11), to adjust the new spacing and tighten the screws with sleeves (9), washers and nuts (10).



Figuress 14

10 - When removing the lines to adjust the new spacing, also remove the fertilizer conduction hoses (15) through clamps (16) and close the tank outputs, placing the cap (17) and locking with the clamp (18). Then close the tank inputs, putting the lid (19).

NOTE ***Perform daily cleaning of closed outputs, removing the cap (30) so that the fertilizer is not compressed.***



Figuress 14

SPACING TABLE IN MM

01 - The seed drills are provided with spacing according to the number of lines required and new spacing can be performed according to the type of desired culture.

Model	*No. Rows*	*Spacing (mm)*	*Working width (mm)*
3000	*6*	*450 / 500*	*2700 / 3000*
	5	*550 / 600*	*2750 / 3000*
	4	*700 / 750 / 800 / 850 / 870*	*2800 / 3000 / 3200 / 3400 / 3480*

Model	*No. Rows*	*Spacing (mm)*	*Working width (mm)*
2500	*5*	*450 / 500*	*2250 / 2500*
	4	*550 / 600 / 650*	*2200 / 2400 / 2600*
	3	*700 / 750 / 800 / 850 / 900 / 950 / 1000*	*2100 / 2250 / 2400 / 2550 / 2700 / 2850 / 3000*

Model	*No. Rows*	*Spacing (mm)*	*Working width (mm)*
2000	*3*	*450 / 500*	*1350 / 1500*
	2	*600 / 650 / 700 / 750 / 800 / 850 / 900 / 950 / 1000*	*1200 / 1300 / 1400 / 1500 / 1600 / 1700 / 1800 / 1900 / 2000*

Tables 02

ADJUSTING THE LINE MARKERS

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

01 - To adjust the line markers, one should know the spacing between lines, the number of lines to be used in the operation and the tractor's front gauge. Use the formula below, followed by an example.

- Example: For a planting with 06 lines in the seed drill, spacing of 0.54 mts and tractor's front gauge with 1.43 mts, determine:

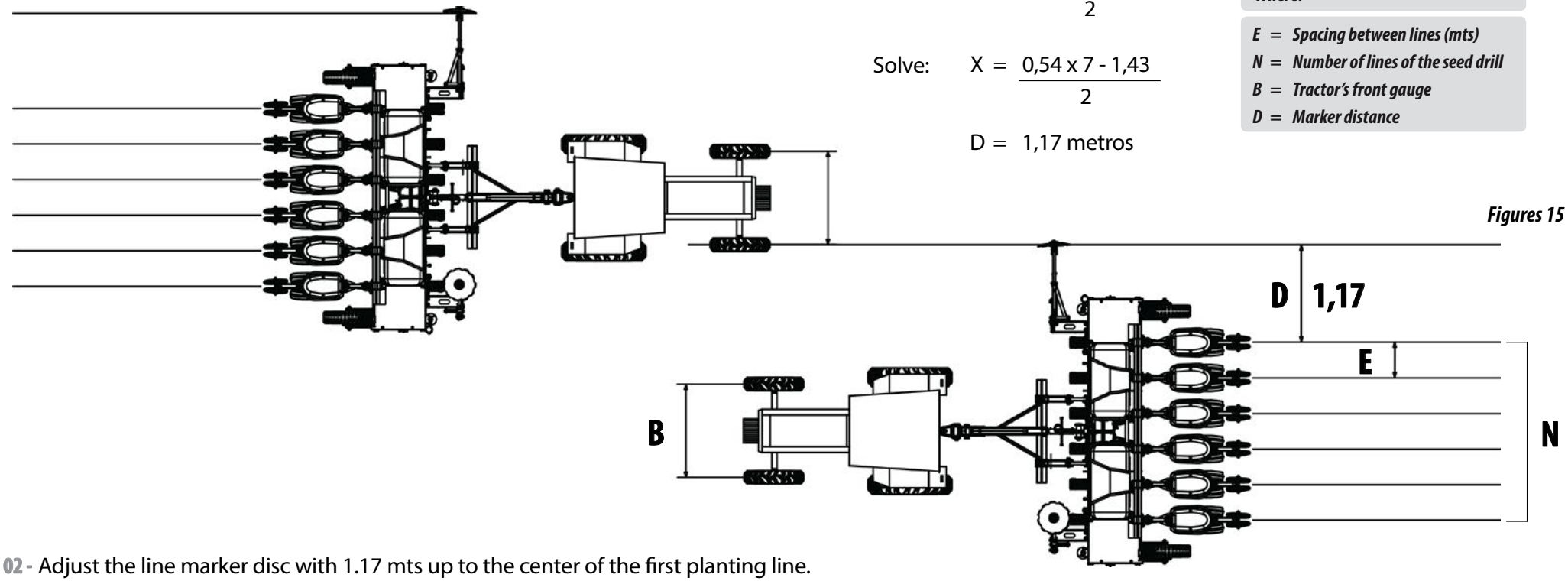
Fórmula: $D = \frac{E \times (N+1) - B}{2}$

Solve: $X = \frac{0{,}54 \times 7 - 1{,}43}{2}$

$D = 1{,}17$ metros

Where:

E = Spacing between lines (mts)
N = Number of lines of the seed drill
B = Tractor's front gauge
D = Marker distance



Figures 15

02 - Adjust the line marker disc with 1.17 mts up to the center of the first planting line.

03 - The line markers are alternative, lower one after the other, so if during planting before ending the line there is the need to stop work, turn the piston so the seed drill goes up and down twice to continue working with the marker on the right side.

07. SEED DISTRIBUTION SYSTEM

CHOOSING THE APPROPRIATE DISC

01 - Use large seeds as a parameter for selecting the appropriate disc.

02 - The grains should not get stuck in the holes. To ensure this, place the disc on a flat place and put a seed in each hole. Then, lift the disc, all seeds should be on the table.

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

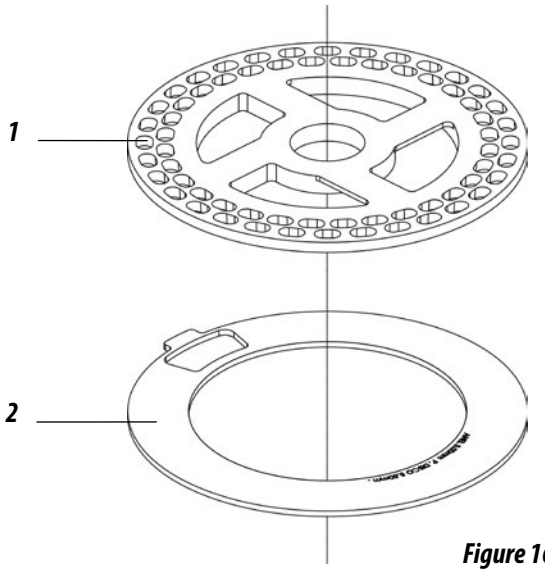


Figure 16

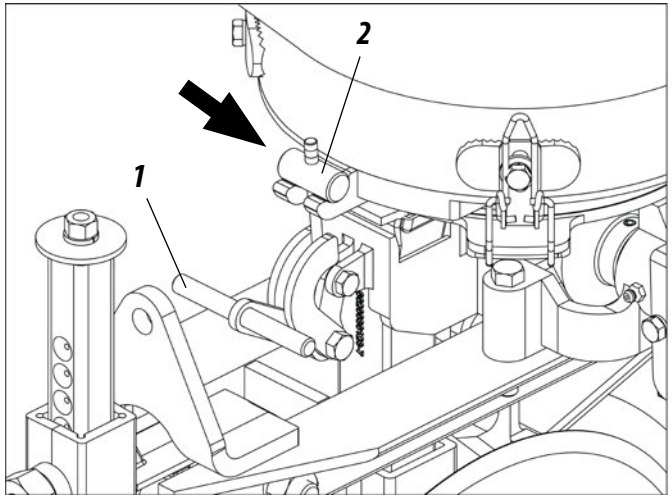
IMPORTANT

Always use the spacer ring (2) with the distribution disc (1). The sum of the set, seed disc and ring should always be equal to 8.5 mm in thickness for perfect adjustment of the system.

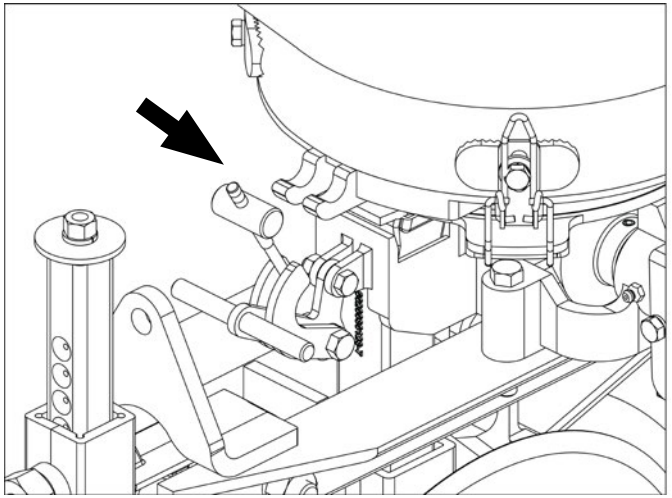
EXCHANGING THE SEED DISC

- To exchange or replace the seed distribution discs, proceed as follows:

01 - Lift the lever (1) to release the lock (2) of the seed tank, as shown in detail "A" and "B".



Figures 17 — Detail "A"

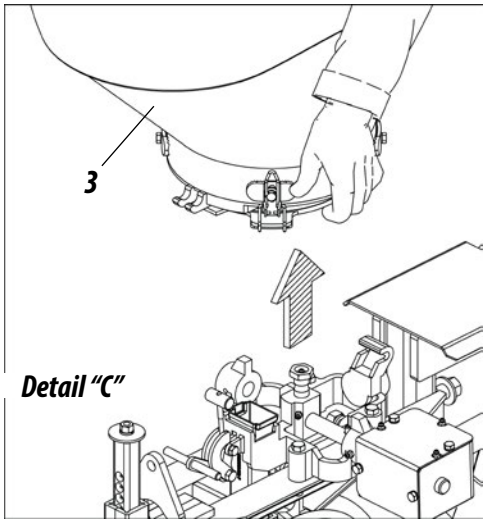


Detail "B"

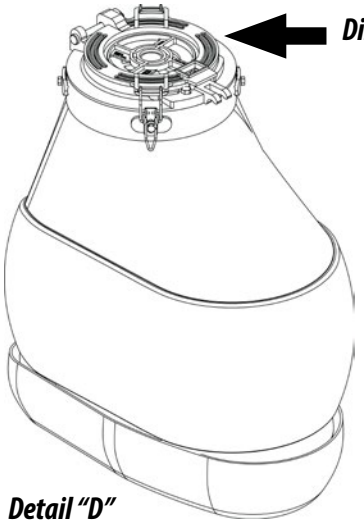
NOTE

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

02 - Then, remove the seed box (3) from the line and rotate it, leaving the distributor base upward, as shown in detail "C" and "D".

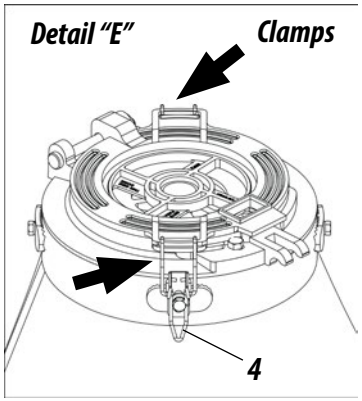


Detail "C"

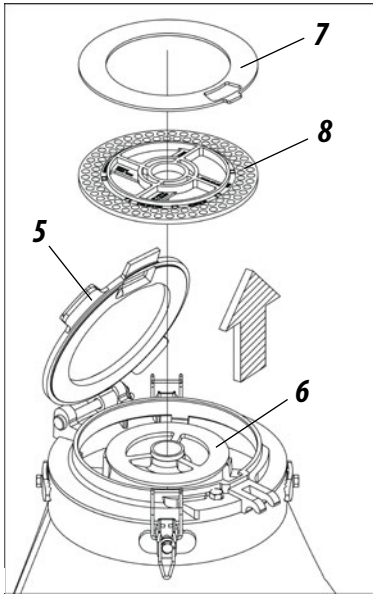


Detail "D"

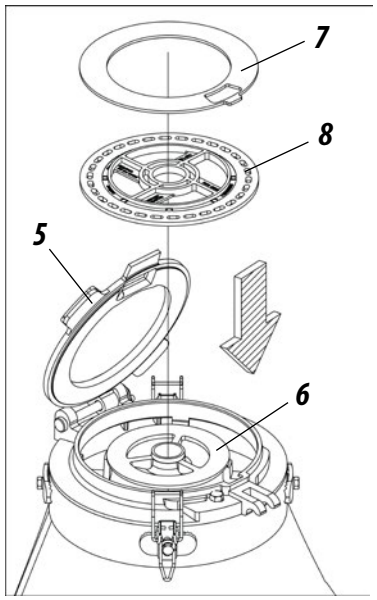
03 - Then release the clips (4), swivel the base (5) and remove the distributor base (6), the ring (7) and the disc (8), replacing them by the appropriate disc and ring to the desired culture, as shown in the details "E" and "F".



Detail "E"

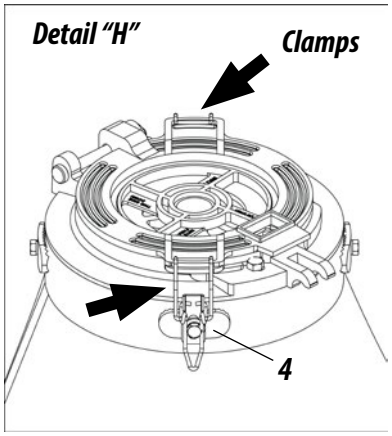


Detail "F"

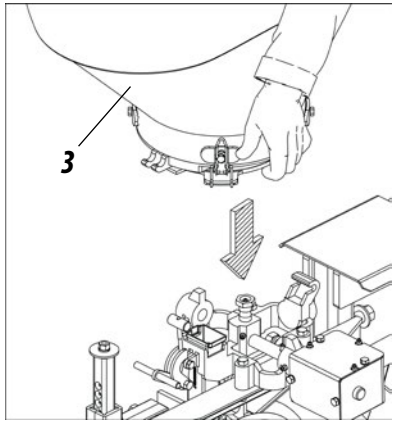


Detail "G"

04 - When replacing the ring (7) and the disc (8), swivel the base (5) and shut it. Then, lock the clamps (4) again, as shown in detail "G" and "H".



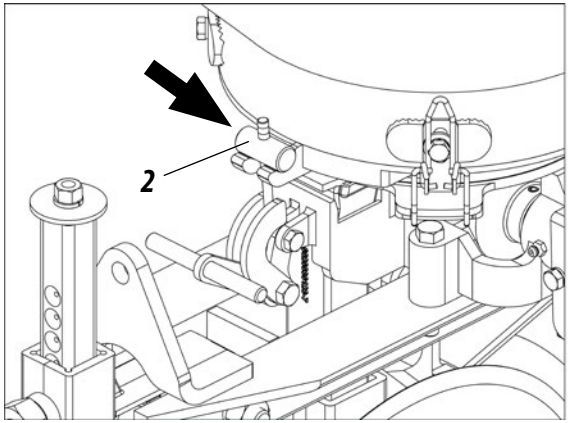
Detail "H"



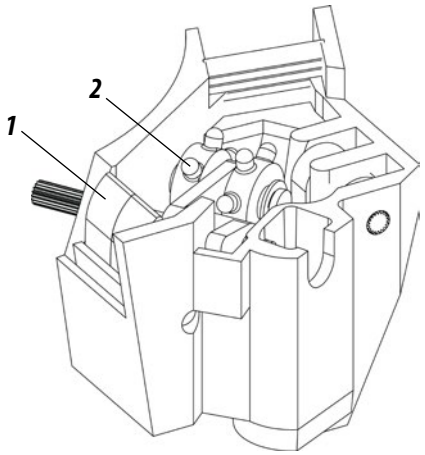
Detail "I"

05 - Finalize by placing the seed box (3) on the line and place the latch (2), fixing it as shown in the details "I" and "J".

Detail "J"



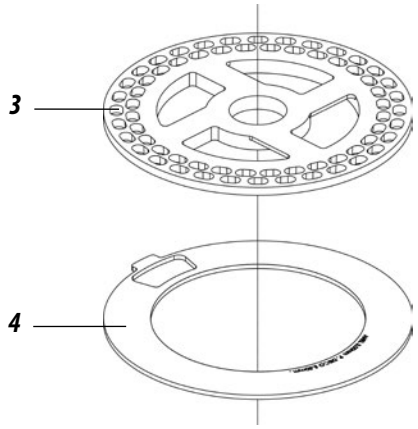
Figures 17



Seed Dispenser box

⚠ ATTENTION

Before replacing the disc and ring to work with the new seed, check the condition of the trigger (1) rosette (2), because the wear of these items impairs adequate dosage. As appropriate, replace them.



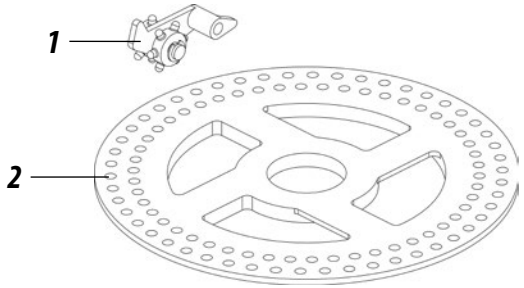
Figures 17

IMPORTANT

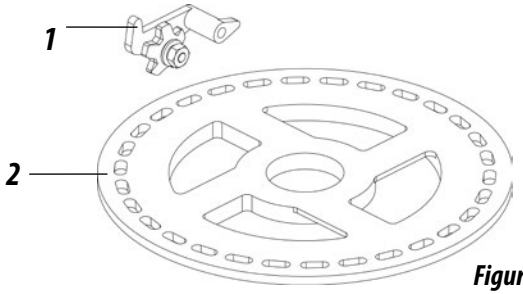
Replace distribution discs (3) and spacer rings (4), when they present excessive wear.

SEED METERING ROSETTE

01 - The seed distribution box leaves the factory with the trigger assembled with double rosettes (1), for double-row discs (2).



02 - For single-row discs (1), change from trigger with double rosettes to trigger with single rosettes (2) as shown below.



Figures 18

EXCHANGING FROM DOUBLE ROSETTE TO SINGLE ROSETTE

- To replace the double-rosette trigger to single-rosette trigger, do the following:

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

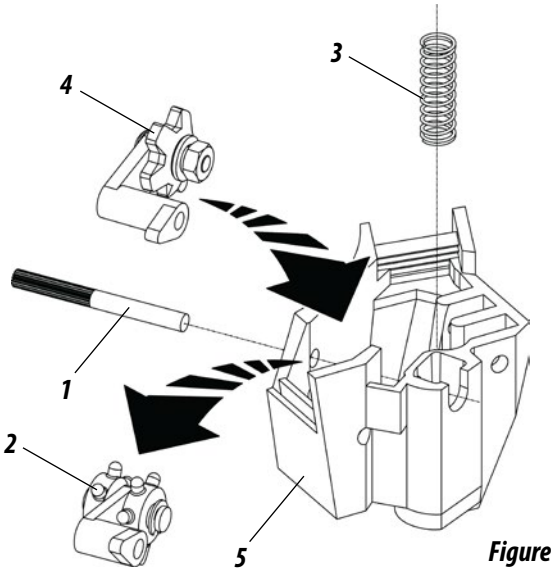


Figure 19

SEED DISTRIBUTION DISCS AND RINGS

01 - The NSA seed drill leaves the factory w / some standard discs and rings and other loose models can be purchased optionally.

Table 05

Culture	Code	Standard Discs and Rings
Corn	52200101030	Disc 28 holes ø 11.5 mm (ø35. 5 x 189 x 4.50 mm) w / ring
	52200101189	Disc 28 holes ø 13.5 mm (ø35. 5 x 189 x 4.50 mm) w / ring
	52200101197	Disc 28 holes ø 12.5 mm (ø35. 5 x 189 x 4.50 mm) w / ring
Sorghum	52200101049	Disc 100 ø 5mm hole (ø35. 5 x 189 x 3.00 mm) w / ring
Soybean	52200101243	Disc 90 holes ø 7mm (ø35.5 x 189 x 5.50 mm) w / 3 mm ring
	60200701359	Disc 90 holes ø 8mm (ø35, 5 x 189 x 5.50 mm) w / ring
Disc	52200101316	Blind Disc (ø35.5 x 189 x 5.50 mm) w / ring

Tables 03

Culture	Code	Standard Discs and Rings
Corn	52200101103	Disc w / 26 holes ø 12.5 mm (ø35.5 x 189 x 5.50 mm) w / ring
	52200101111	Disc w / 30 holes ø 10 x 14.5 mm (ø35.5 x 189 x 4.50 mm) w / ring
	52200101120	Disc w / 30 holes ø 11 x 15.5 mm (ø35.5 x 189 x 4.50 mm) w / ring
	52200101138	Disc w / 30 holes ø 8.5 x 12mm (ø35.5 x 189 x 4.50 mm) w / ring
	52200101146	Disc w / 30 holes ø 9 x 13.5 mm (ø35.5 x 189 x 4.50 mm) w / ring
	52200101154	Disc w / 26 holes ø 13.5 mm (ø35.5 x 189 x 5.50 mm) w / ring
	52200101162	Disc w / 30 holes ø 11.5 mm (ø35.5 x 189 x 4.50 mm) w / ring
	52200101170	Disc w / 48 holes ø 7mm (ø35.5 x 189 x 5.50 mm) w / ring
	52200101332	Disc w / 28 holes ø 9mm (ø35.5 x 189 x 4.50 mm) w / ring
Sorghum	52200101200	Disc w / 50 holes ø 5mm (ø35.5 x 189 x 3.00 mm) w / ring
Beans	60200700905	Disc w / 34 holes ø 10.5 x 20mm (ø35.5 x 189 x 8.50 mm) w / ring
	52200101219	Disc w / 64 holes ø 8 x 12.5 mm (ø35.5 x 189 x 5.50 mm) w / ring
Sunflower	52200101235	Disc w / 30 holes ø 5,5 x 13,4 mm (ø35.5 x 189 x 4.50 mm) w / ring
Soybean	52200101260	Disc w / 90 holes ø 8 (ø35.5 x 189 x 5.50 mm) w / ring 3mm
	52200101251	Disc w / 40 holes ø 7.5 x 15mm (ø35.5 x 189 x 5.50 mm) w / ring 3mm
Canola / Sorghum	52200101278	Disc w / 76 holes ø 5mm (ø35.5 x 186 x 3.00 mm) w / ring
Cotton	52200101286	Disc w / 64 holes ø 7 x 12mm (ø35.5 x 189 x 5.50 mm) w / ring
Rice	52200101294	Disc w / 40 holes ø 6,5 x 19,5 mm (ø35.5 x 189 x 5.50 mm) w / ring
Blind	52200101324	Blind disc (ø35, 5 x 189 x 4.00 mm) w / ring
	60200700891	Blind disc (ø35, 5 x 189 x 8.00 mm) w / ring

DISCS AND RINGS OF THE CONVERSION SYSTEM FOR PEANUT PLANTING

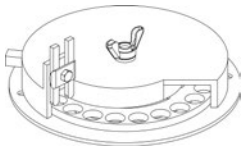
01 - The peanut discs in the next table can only be acquired when the customer already has the conversion system for peanut planting.

Table 06

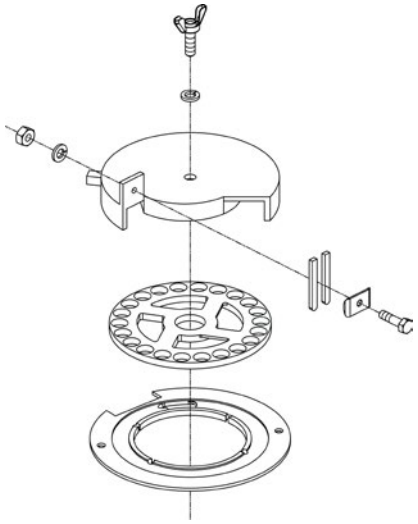
Culture	Code	Optional discs and rings
Peanut	60200700921	Disc w / 11 holes ø 20 x 40mm (ø35.5 x 189 x 8.00 mm) w / ring
	60200708876	Disc w / 22 holes ø 20mm (ø35.5 x 189 x 8.50 mm) w / ring

CONVERSION SYSTEM FOR PEANUT PLANTING (UNIVERSAL SYSTEM) - OPTIONAL

- For peanut planting, two optional conversion system for peanut planting can be obtained (universal system), which are composed of the following items:



Conversion System Cpl
Code: 5528010665-7

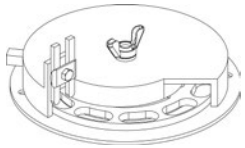


Conversion System for Peanut planting w / Disc 11F 20 x 40mm

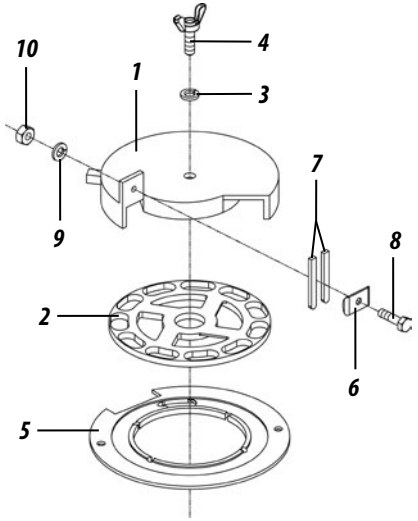
Table 07

Items	Code	Discrimination
01	5220010094-8	Full Defetor
02	6020070092-1	Peanut distribution cisc 11F ø20x40 mm
03	6020010404-0	Pressure Washer ø 5/16 "Medium (bichromatic)
04	6020311019-0	Hexagon screw. ø 5/16 "x 7/8" 18F UNC1A GR2 RT
05	5220010092-1	Defetor distribution disc
06	5212010001-7	Seed dumper
07	5460040003-0	Seed dumper clamp
08	6020311004-1	Hexagon screw. ø 1/4 "x 7/8" 20F UNC1A GR2 RT
09	6020010402-4	Pressure Washer ø 1/4 "(bichromatic)
10	6020310742-3	Hexagon nut 1/4 "UNC 20F GR5

Figures 20



Conversion System Cpl
Code: 5528010439-5



Conversion System for Peanut planting w / Disc 22F 20mm

Table 08

Items	Code	Discrimination
01	5220010094-8	Full Defetor
02	6020070887-6	Peanut distribution cisc 11F ø20x40 mm
03	6020010404-0	Pressure Washer ø 5/16 "Medium (bichromatic)
04	6020311019-0	Hexagon screw. ø 5/16 "x 7/8" 18F UNC1A GR2 RT
05	5220010092-1	Defetor distribution disc
06	5212010001-7	Seed dumper
07	5460040003-0	Seed dumper clamp
08	6020311004-1	Hexagon screw. ø 1/4 "x 7/8" 20F UNC1A GR2 RT
09	6020010402-4	Pressure Washer ø 1/4 "(bichromatic)
10	6020310742-3	Hexagon nut 1/4 "UNC 20F GR5

TABLE OF THE AMOUNT OF GRAPHITE OR INDUSTRIAL

01 - Para facilitar a distribuição e aumentar a vida útil do mecanismo distribuidor, o grafite em pó ou talco industrial deve ser misturado as sementes.

Seed drills with distribution system	*Seeds previously treated with insecticide*
Horizontal discs	*04 grams per kg of seed*

Table 09

IMPORTANT

Graphite should not be mixed prior to seed treatment.
Graphite should not be mixed with insecticide for application in seeds.

SPEED BOX

- The seed drills are equipped with the Speed Box gearbox system that drives the distribution system with easy adjustments, ensuring exchange of fast rotations.

01 - For seed regulation, select the desired quantity in the tables and check the corresponding combination in levers (1). Example: position F 2 indicates that the cursor of letters must be in position "F" and the cursor of numbers must be in position "2" as detailed in Figure 21.

02 - To move the levers, remove the lock (3), pull the handle (4) and adjust them. At the end of the combination, return the handle (4) and replace the lock (3).

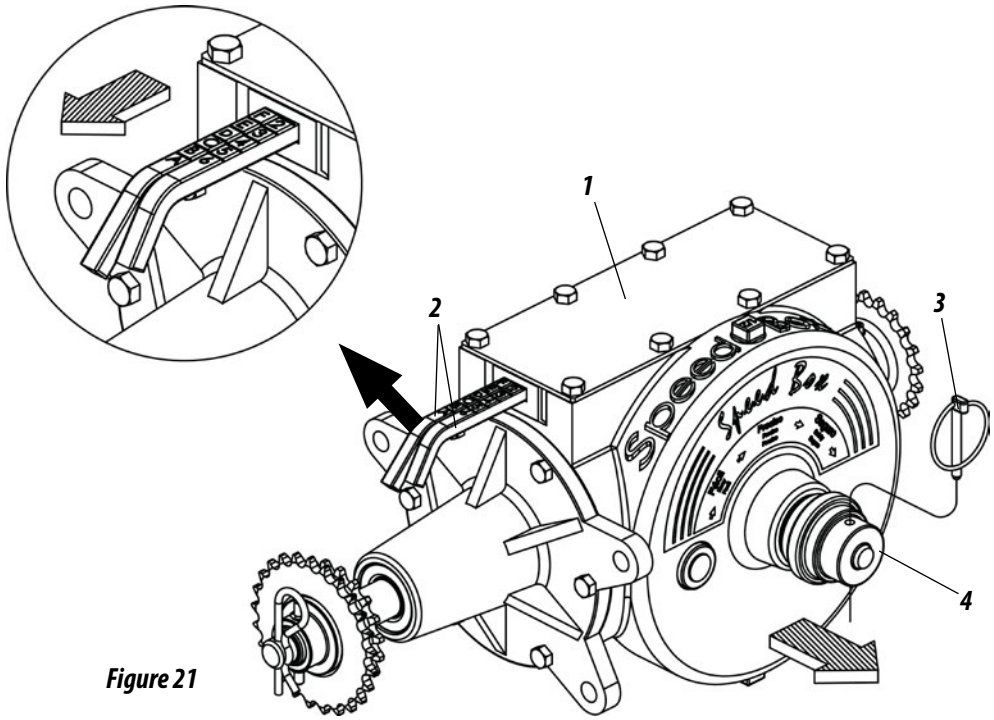


Figure 21

SEED DISTRIBUTION ADJUSTMENT

01 - The seed distribution adjustment is made by Speed Box (1). For other adjustments, re-position the chain in motor gear "A" and moved gear "B", as shown in Figure 22.

02 - After you make the change of gears, check the chain tension. The tensioner (2) is provided with a torsion spring (3) to greater flexibility. If you need more pressure on the tensioner, proceed as Instruction of Figure 53, page 53.

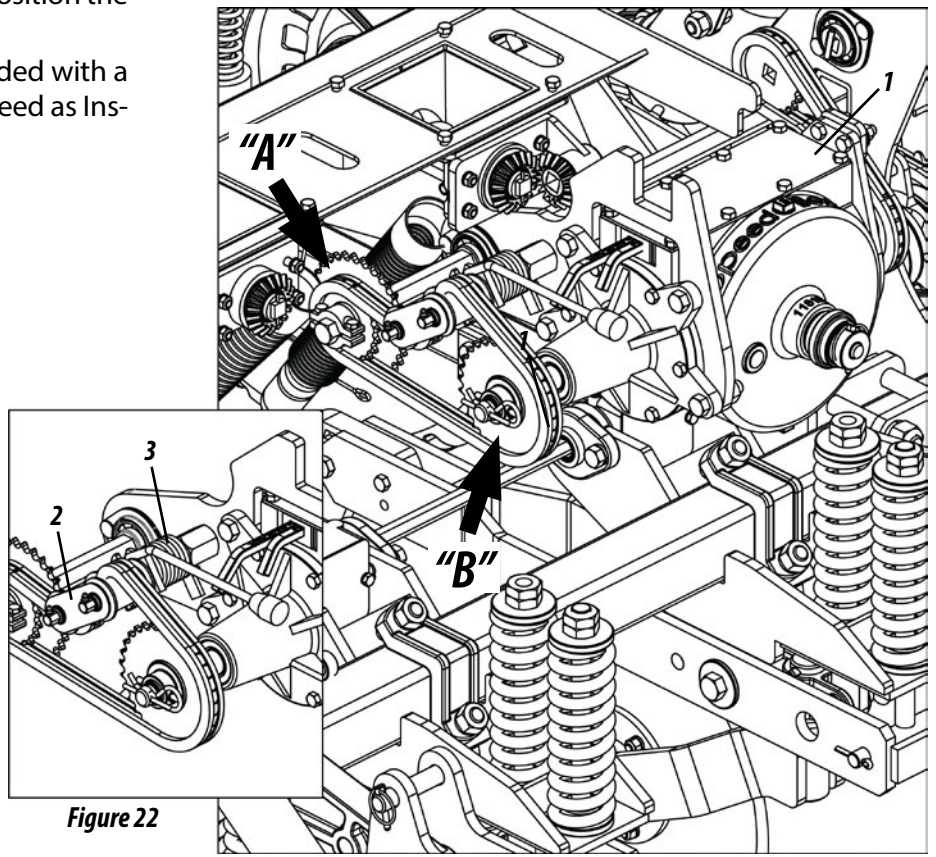


Figure 22

SEED DISTRIBUTION TABLE

01 - The seed distribution table is made in accordance with the number of holes in the distribution disc, gear change and the number of seeds to be distributed.

⚠ ATTENTION

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

Table 10

Seed distribution Table per linear meter - NSA Speed Box								
Ratchet Shaft Output Gear			20	Speed Box Input Gear				31
Combination	Number of Holes of the Seed Distribution disc							
	28	30	40	50	64	72	90	100
F - 1	2,5	2,7	3,6	4,5	5,7	6,4	8,0	8,9
F - 2	2,8	3,0	4,0	5,0	6,4	7,2	9,0	10,1
E - 1	3,1	3,4	4,5	5,6	7,1	8,0	10,1	11,2
F - 3	3,2	3,4	4,6	5,7	7,4	8,3	10,3	11,5
E - 2	3,5	3,8	5,0	6,3	8,0	9,0	11,3	12,6
D - 1	3,8	4,0	5,4	6,7	8,6	9,6	12,1	13,4
F - 4	3,8	4,0	5,4	6,7	8,6	9,6	12,1	13,4
E - 3	4,0	4,3	5,7	7,2	9,2	10,3	12,9	14,4
D - 2	4,2	4,5	6,0	7,5	9,6	10,9	13,6	15,1
C - 1	4,4	4,7	6,3	7,8	10,0	11,3	14,1	15,6
F - 5	4,5	4,8	6,4	8,0	10,3	11,6	14,5	16,1
E - 4	4,7	5,0	6,7	8,4	10,7	12,1	15,1	16,8
D - 3	4,8	5,2	6,9	8,6	11,0	12,4	15,5	17,2
C - 2	4,9	5,3	7,0	8,8	11,3	12,7	15,8	17,6
B - 1	5,0	5,4	7,1	8,9	11,4	12,9	16,1	17,9
A - 1	5,6	6,0	8,0	10,1	12,9	14,5	18,1	20,1
A - 2	6,3	6,8	9,0	11,3	14,5	16,3	20,4	22,6
B - 3	6,4	6,9	9,2	11,5	14,7	16,5	20,7	23,0
C - 4	6,6	7,0	9,4	11,7	15,0	16,9	21,1	23,5
D - 5	6,8	7,2	9,6	12,1	15,4	17,4	21,7	24,1
E - 6	7,0	7,5	10,1	12,6	16,1	18,1	22,6	25,1
A - 3	7,2	7,8	10,3	12,9	16,5	18,6	23,3	25,8
B - 4	7,5	8,0	10,7	13,4	17,2	19,3	24,1	26,8
C - 5	7,9	8,4	11,3	14,1	18,0	20,3	25,3	28,1
D - 6	8,4	9,0	12,1	15,1	19,3	21,7	27,1	30,2
A - 4	8,4	9,0	12,1	15,1	19,3	21,7	27,1	30,2
B - 5	9,0	9,6	12,9	16,1	20,6	23,2	28,9	32,2
C - 6	9,9	10,6	14,1	17,6	22,5	25,3	31,7	35,2
A - 5	10,1	10,9	14,5	18,1	23,2	26,1	32,6	36,2
B - 6	11,3	12,1	16,1	20,1	25,7	28,9	36,2	40,2
A - 6	12,7	13,6	18,1	22,6	28,9	32,6	40,7	45,2

Table 11

Seed distribution Table per linear meter - NSA Speed Box								
Ratchet Shaft Output Gear			31	Speed Box Input Gear				20
Combination	Number of Holes of the Seed Distribution disc							
	28	30	40	50	64	72	90	100
F - 1	6,0	6,4	8,6	10,7	13,7	15,5	19,3	21,5
F - 2	6,8	7,2	9,7	12,1	15,5	17,4	21,7	24,1
E - 1	7,5	8,0	10,7	13,4	17,2	19,3	24,1	26,8
F - 3	7,7	8,3	11,0	13,8	17,7	19,9	24,8	27,6
E - 2	8,5	9,1	12,1	15,1	19,3	21,7	27,2	30,2
D - 1	9,0	9,7	12,9	16,1	20,6	23,2	29,0	32,2
F - 4	9,0	9,7	12,9	16,1	20,6	23,2	29,0	32,2
E - 3	9,7	10,3	13,8	17,2	22,1	24,8	31,0	34,5
D - 2	10,1	10,9	14,5	18,1	23,2	26,1	32,6	36,2
C - 1	10,5	11,3	15,0	18,8	24,0	27,0	33,8	37,6
F - 5	10,8	11,6	15,5	19,3	24,7	27,8	34,8	38,6
E - 4	11,3	12,1	16,1	20,1	25,8	29,0	36,2	40,2
D - 3	11,6	12,4	16,6	20,7	26,5	29,8	37,3	41,4
C - 2	11,8	12,7	16,9	21,1	27,0	30,4	38,0	42,3
B - 1	12,0	12,9	17,2	21,5	27,5	30,9	38,6	42,9
A - 1	13,5	14,5	19,3	24,1	30,9	34,8	43,5	48,3
A - 2	15,2	16,3	21,7	27,2	34,8	39,1	48,9	54,3
B - 3	15,5	16,6	22,1	27,6	35,3	39,7	49,7	55,2
C - 4	15,8	16,9	22,5	28,2	36,1	40,6	50,7	56,3
D - 5	16,2	17,4	23,2	29,0	37,1	41,7	52,2	58,0
E - 6	16,9	18,1	24,1	30,2	38,6	43,5	54,3	60,4
A - 3	17,4	18,6	24,8	31,0	39,7	44,7	55,9	62,1
B - 4	18,0	19,3	25,8	32,2	41,2	46,4	58,0	64,4
C - 5	18,9	20,3	27,0	33,8	43,3	48,7	60,9	67,6
D - 6	20,3	21,7	29,0	36,2	46,4	52,2	65,2	72,4
A - 4	20,3	21,7	29,0	36,2	46,4	52,2	65,2	72,4
B - 5	21,6	23,2	30,9	38,6	49,5	55,6	69,5	77,3
C - 6	23,7	25,4	33,8	42,3	54,1	60,9	76,1	84,5
A - 5	24,3	26,1	34,8	43,5	55,6	62,6	78,2	86,9
B - 6	27,0	29,0	38,6	48,3	61,8	69,5	86,9	96,6
A - 6	30,4	32,6	43,5	54,3	69,5	78,2	97,8	108,7

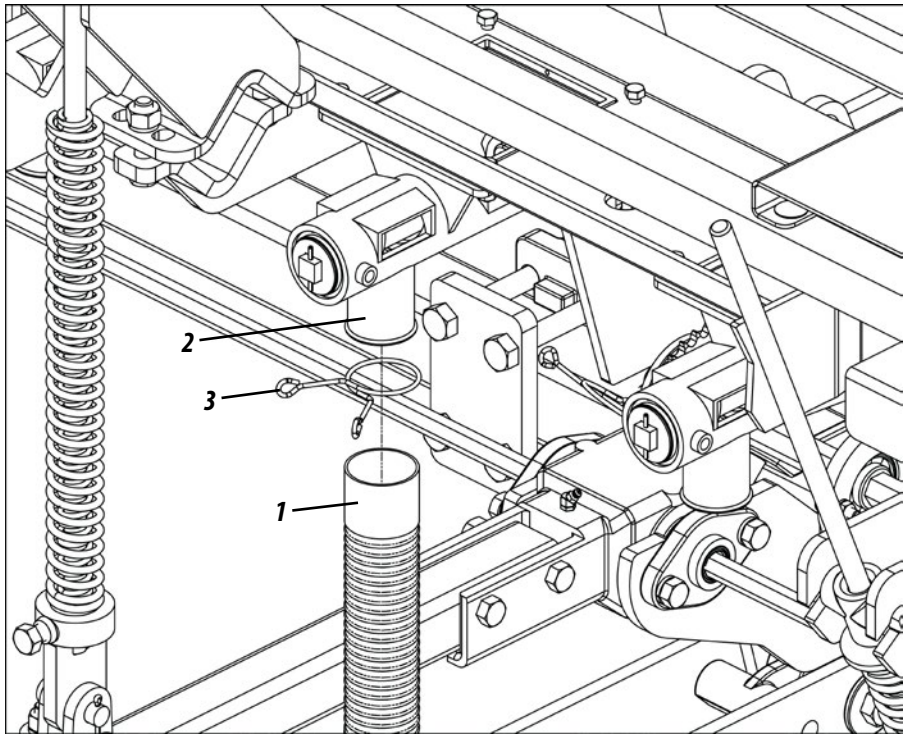
08. FERTILIZER DISTRIBUTION SYSTEM

POLYETHYLENE FERTILIZER TANK

- **FERTILIZER CONDUCTOR - INDEPENDENT SYSTEM**

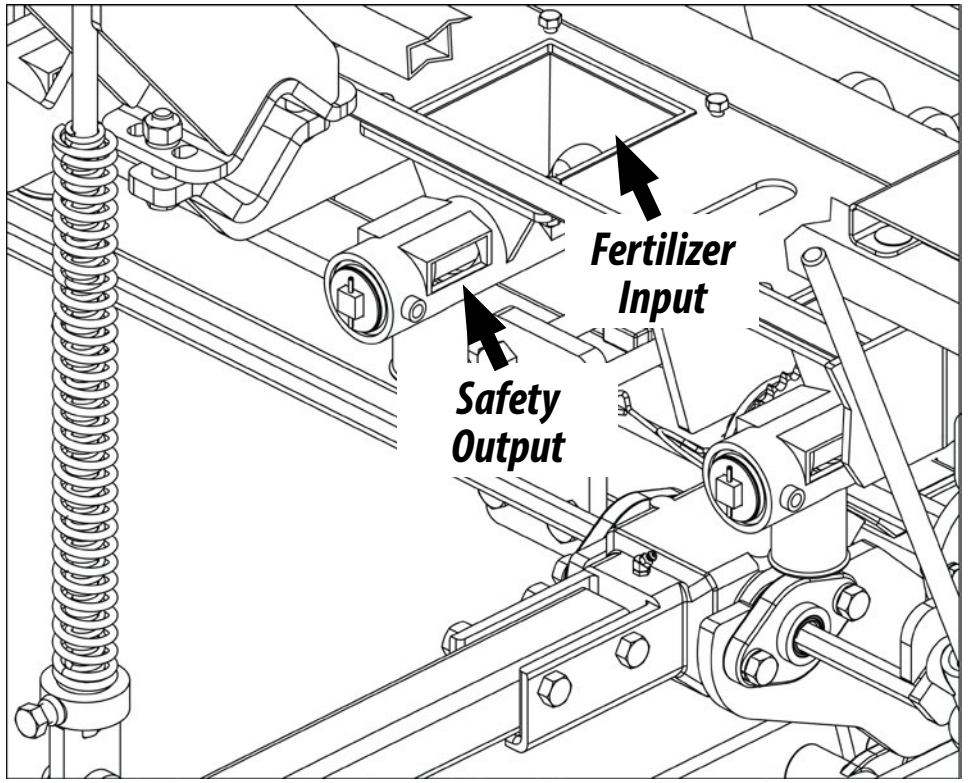
01 - To conduct the fertilizer from the distribution tank to the ground, attach the hoses (1) to the fertilizer distribution spouts (2) through the clamps (3), preventing them from getting bent or folded, as in figure 23.

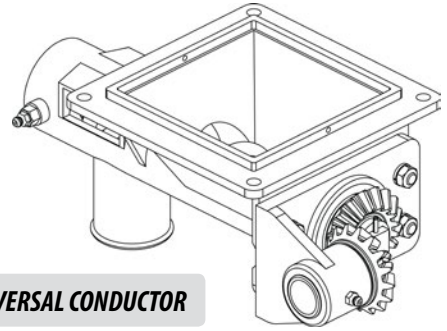
Figure 23



02 - The independent distribution system has safety outputs that, ensuring the system operation without damaging it. In case of clogging proceed the cleaning of the feeder up to the end of the hose near the furrow rod or double disc, because clogging can occur due to roots, pieces of plastic and other objects, as in figure 24.

Figures 24





TRANSVERSAL CONDUCTOR

⚠ ATTENTION

Check distributors and hoses daily, and clean their outputs. When the fertilizer is wet or has impurities, proceed to clean more often.

SPEED BOX

- Seed drills are equipped with the Speed box Gear Box system, which drives the distribution system with simple settings, ensuring fast gear exchange. To make the seed adjustment, proceed as follows:

01 - For seed adjustments, select the desired quantity in tables and check the corresponding combination of levers (2). Example: position F2 indicates that the cursor with letters must be at position "F" and the cursor with numbers must be at position "2" as shown in Figure 25.

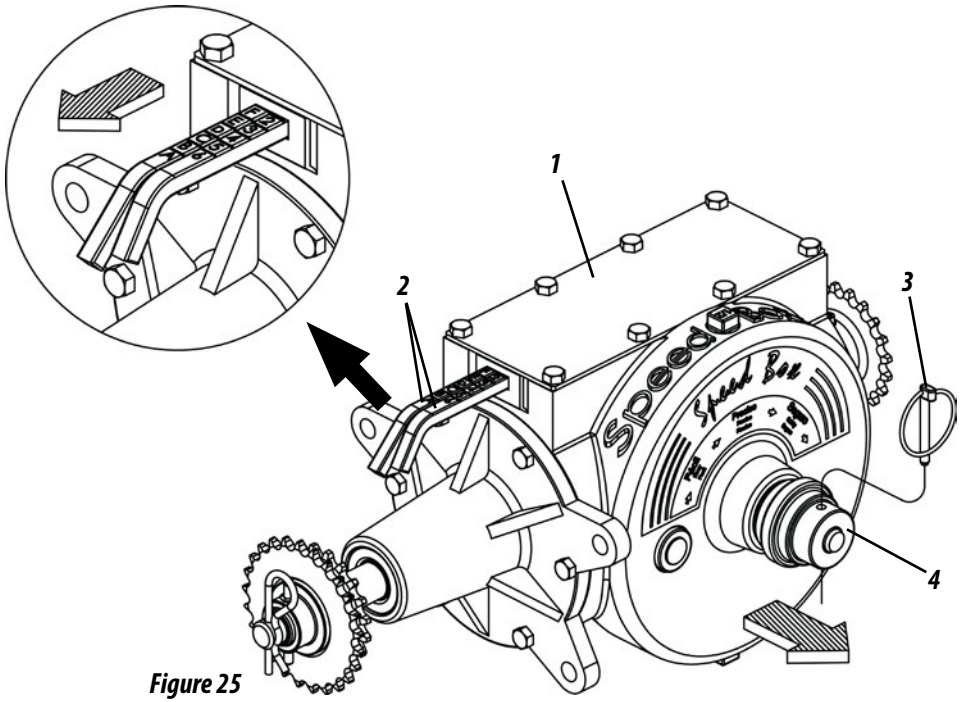


Figure 25

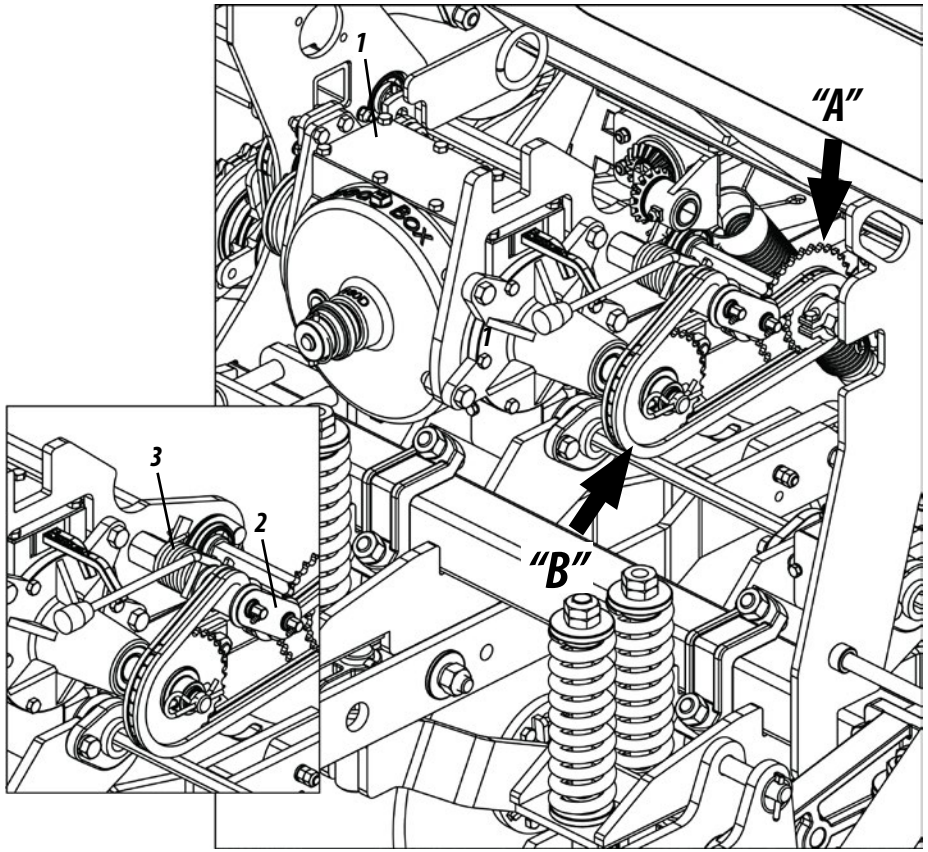
02 - To move the levers, remove the lock (3), pull the handle (4) and adjust them. At the end of the combination, return the handle (4) and replace the lock (3).

FERTILIZER DISTRIBUTION ADJUSTMENT

01 - The fertilizer adjustment is made through the Speed Box. For other adjustments, re-position the chain in motor gear "a" and moved gear "b", as shown in figure 26.

02 - After the repositioning of the gears, check the chain tension. The tensioner (1) is provided with a tension spring for greater flexibility. If you need more pressure on the tensioner, proceed as Instruction of Figure 53, page 52.

Figure 26



Note: Spring with step 2"

Fertilizer distribution Table per linear meter - NSA Speed Box															
Ratchet Shaft Output 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	287	138	134	128	115	104	96	88	82	77	72	68	64	60	57
F - 2	323	156	150	144	129	118	108	99	92	86	81	76	72	68	65
E - 1	359	173	167	160	144	131	120	110	103	96	90	84	80	76	72
F - 3	369	178	172	164	148	134	123	114	106	98	92	87	82	78	74
E - 2	404	195	188	180	162	147	135	124	115	108	101	95	90	85	81
D - 1	431	208	200	191	172	157	144	133	123	115	108	101	96	91	86
F - 4	431	208	200	191	172	157	144	133	123	115	108	101	96	91	86
E - 3	462	222	215	205	185	168	154	142	132	123	115	109	103	97	92
D - 2	485	234	225	215	194	176	162	149	138	129	121	114	108	102	97
C - 1	503	242	234	223	201	183	168	155	144	134	126	118	112	106	101
F - 5	517	249	240	230	207	188	172	159	148	138	129	122	115	109	103
E - 4	539	260	250	239	215	196	180	166	154	144	135	127	120	113	108
D - 3	554	267	258	246	222	201	185	170	158	148	138	130	123	117	111
C - 2	565	273	263	251	226	206	188	174	162	151	141	133	126	119	113
B - 1	574	277	267	255	230	209	191	177	164	153	144	135	128	121	115
A - 1	646	311	301	287	259	235	215	199	185	172	162	152	144	136	129
A - 2	727	350	338	323	291	264	242	224	208	194	182	171	162	153	145
B - 3	739	356	344	328	295	269	246	227	211	197	185	174	164	155	148
C - 4	754	363	351	335	302	274	251	232	215	201	188	177	168	159	151
D - 5	776	374	361	345	310	282	259	239	222	207	194	182	172	163	155
E - 6	808	389	376	359	323	294	269	249	231	215	202	190	180	170	162
A - 3	831	400	386	369	332	302	277	256	237	222	208	196	185	175	166
B - 4	862	415	401	383	345	313	287	265	246	230	215	203	191	181	172
C - 5	905	436	421	402	362	329	302	278	259	241	226	213	201	190	181
D - 6	969	467	451	431	388	353	323	298	277	259	242	228	215	204	194
A - 4	969	467	451	431	388	353	323	298	277	259	242	228	215	204	194
B - 5	1034	498	481	460	414	376	345	318	295	276	259	243	230	218	207
C - 6	1131	545	526	503	452	411	377	348	323	302	283	266	251	238	226
A - 5	1163	561	541	517	465	423	388	358	332	310	291	274	259	245	233
B - 6	1293	623	601	574	517	470	431	398	369	345	323	304	287	272	259
A - 6	1454	701	676	646	582	529	485	447	415	388	364	342	323	306	291

Table 12

Note: Spring with step 2″

Fertilizer distribution Table per linear meter - NSA Speed Box															
Ratchet Shaft Output 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	690	333	321	307	276	251	230	212	197	184	173	162	153	145	138
F - 2	776	374	361	345	311	282	259	239	222	207	194	183	173	163	155
E - 1	863	416	401	383	345	314	288	265	246	230	216	203	192	182	173
F - 3	887	428	413	394	355	323	296	273	254	237	222	209	197	187	177
E - 2	970	468	451	431	388	353	323	299	277	259	243	228	216	204	194
D - 1	1035	499	481	460	414	376	345	319	296	276	259	244	230	218	207
F - 4	1035	499	481	460	414	376	345	319	296	276	259	244	230	218	207
E - 3	1109	534	516	493	444	403	370	341	317	296	277	261	246	233	222
D - 2	1165	561	542	518	466	423	388	358	333	311	291	274	259	245	233
C - 1	1208	582	562	537	483	439	403	372	345	322	302	284	268	254	242
F - 5	1242	599	578	552	497	452	414	382	355	331	311	292	276	262	248
E - 4	1294	624	602	575	518	471	431	398	370	345	323	304	288	272	259
D - 3	1331	641	619	592	532	484	444	410	380	355	333	313	296	280	266
C - 2	1359	655	632	604	543	494	453	418	388	362	340	320	302	286	272
B - 1	1380	665	642	613	552	502	460	425	394	368	345	325	307	291	276
A - 1	1553	748	722	690	621	565	518	478	444	414	388	365	345	327	311
A - 2	1747	842	812	776	699	635	582	537	499	466	437	411	388	368	349
B - 3	1775	855	825	789	710	645	592	546	507	473	444	418	394	374	355
C - 4	1811	873	843	805	725	659	604	557	518	483	453	426	403	381	362
D - 5	1863	898	867	828	745	678	621	573	532	497	466	438	414	392	373
E - 6	1941	935	903	863	776	706	647	597	555	518	485	457	431	409	388
A - 3	1996	962	929	887	799	726	665	614	570	532	499	470	444	420	399
B - 4	2070	998	963	920	828	753	690	637	592	552	518	487	460	436	414
C - 5	2174	1048	1011	966	870	790	725	669	621	580	543	511	483	458	435
D - 6	2329	1122	1083	1035	932	847	776	717	665	621	582	548	518	490	466
A - 4	2329	1122	1083	1035	932	847	776	717	665	621	582	548	518	490	466
B - 5	2484	1197	1155	1104	994	903	828	764	710	662	621	585	552	523	497
C - 6	2717	1310	1264	1208	1087	988	906	836	776	725	679	639	604	572	543
A - 5	2795	1347	1300	1242	1118	1016	932	860	799	745	699	658	621	588	559
B - 6	3105	1497	1444	1380	1242	1129	1035	956	887	828	776	731	690	654	621
A - 6	3494	1684	1625	1553	1397	1270	1165	1075	998	932	873	822	776	735	699

Table 13

09. PRACTICAL CALCULATION FOR FERTILIZER DISTRIBUTION

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

- Example: Seed drill with spacing of 450 mm to distribute 500 kg of fertilizer per hectare, use the formula below:

- ***Fórmula:***

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

- ***Fórmula data:***
- E = Spacing between lines (mm)
- Q = Amount of fertilizer to be distributed
- A = Area to be fertilized (m^2)
- D = Distance of 50 meters (test)
- X = Grams of fertilizer in 50 meters

- ***Solve:***

$$X = \frac{450 \times 500}{10.000} \times 50$$

- X = 22,50 x 50 = 1125 grams

- X= 1125 grams in 50 meters per line

PRACTICAL TEST TO MEASURE THE AMOUNT OF SEED AND FERTILIZER DISTRIBUTION

01 - For greater accuracy in the fertilizer or seed distribution, do the test to find the amount to be distributed on the planting site, because for each type of soil, there is a different condition.

02 - Check and keep the tire calibration of you SAB and SHB seed drill.

03 - Check the test distance in the table, we chose 50 linear meters.

04 - Fill the seed tanks at least halfway. Run at least 10 meters outside the testing area, so that the seeds and fertilizer fill the feeders.

05 - Seal the seed spout outlets and place containers for collection in the fertilizer outputs. Move the tractor in the testing area, always at the same speed that will be used in planting, from 5 to 7 km / h.

06 - After running the delimited space (fertilizer table) in the column (grams per line in 50 meters), remove the sealing of the seed spout and collect them for counting and weighing of the fertilizer collected. If it is necessary to increase or decrease the amount of fertilizer and seed, refer to the table.

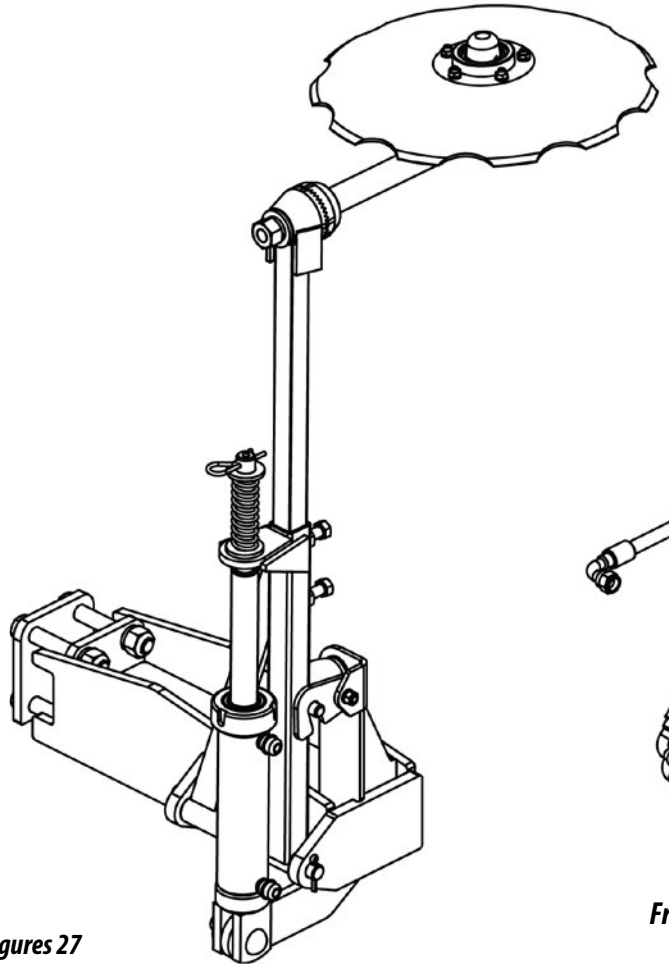
IMPORTANT

We suggest carrying a practical test for fertilizer distribution over 50m, to later compare the fertilizer and seed results

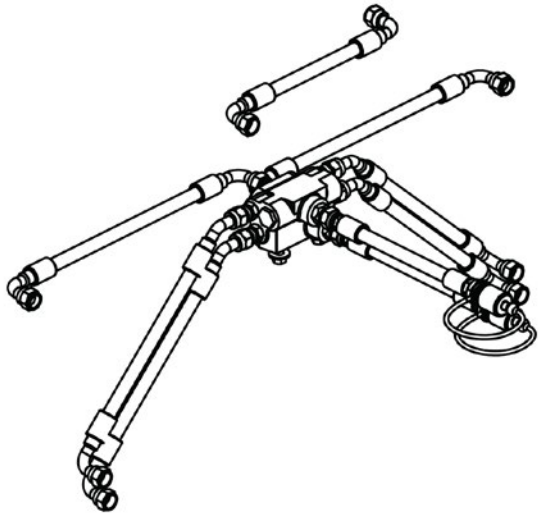
10. MARKER LINE

FRONT LINE MARKER - OPTIONAL

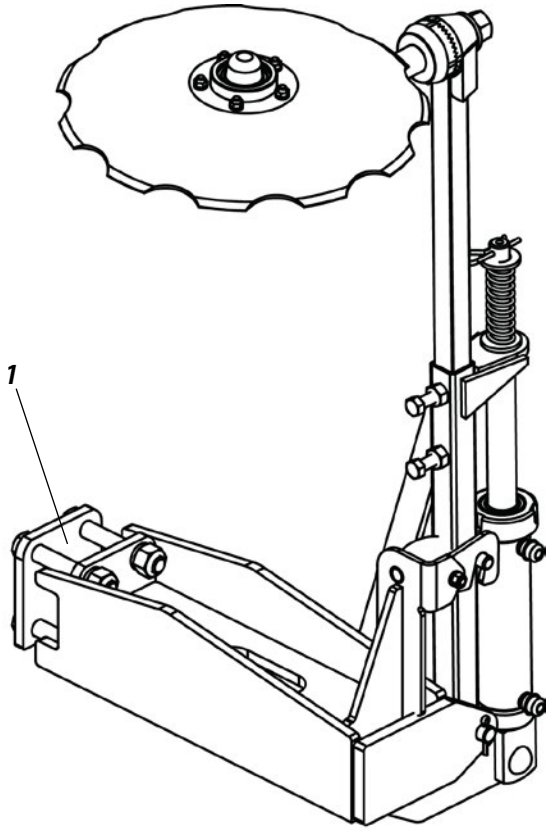
01 - The NSA Speed Box seed drill has optional components that can be acquired according to need of work. The front line marker is among the options available (1).



Figures 27



Front Line Marker Cpl - NSA 2000
Code: 5528010631-2



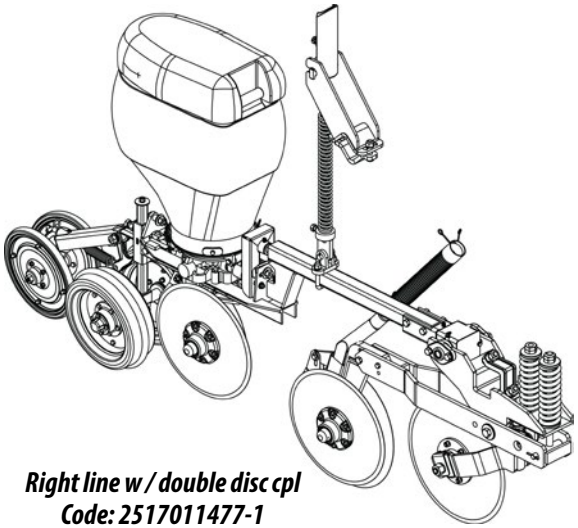
Front Line Marker Cpl - NSA 2500
Code: 5528010589-8

Front Line Marker Cpl - NSA 3000
Code: 5528010633-9

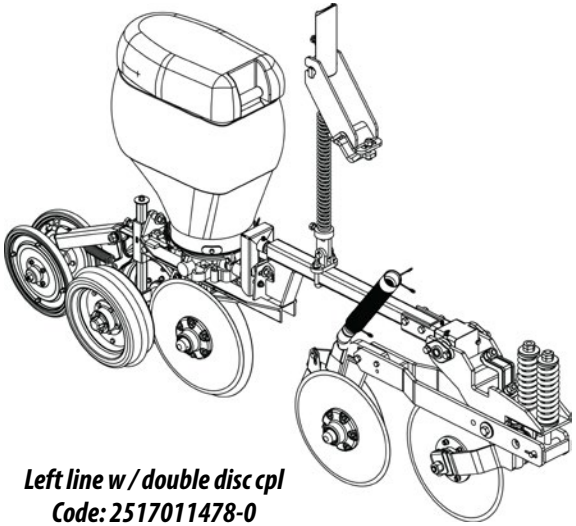
11. PLANTING LINES

LINE MODELS - OPTIONAL

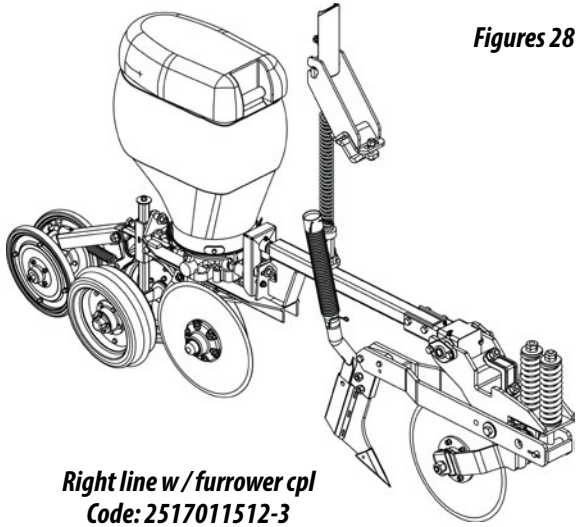
Figures 28



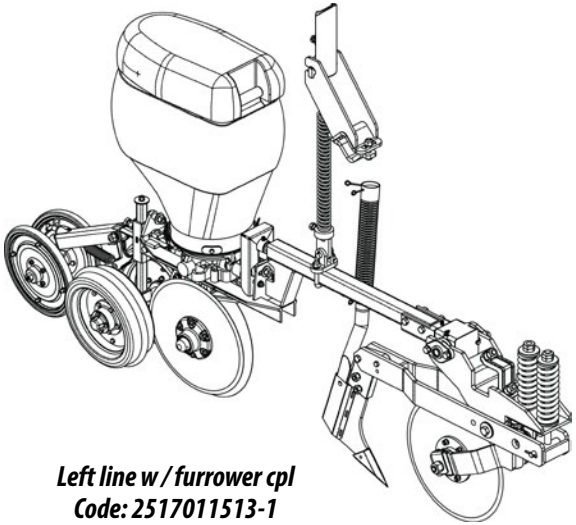
Right line w / double disc cpl
Code: 2517011477-1



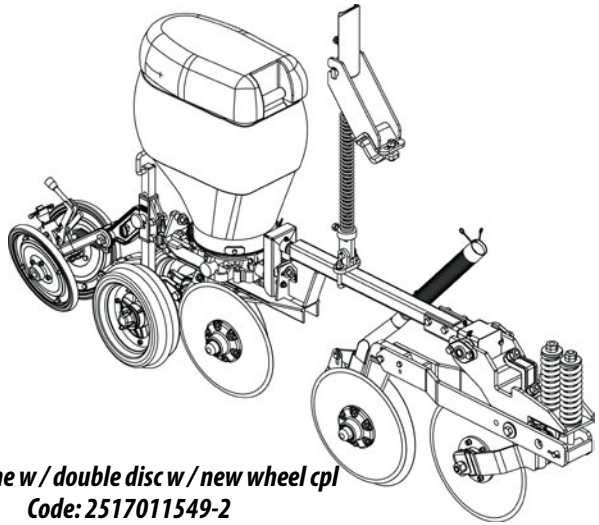
Left line w / double disc cpl
Code: 2517011478-0



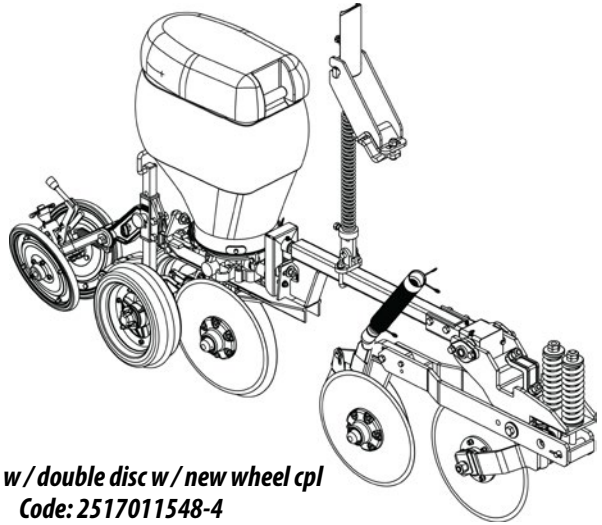
Right line w / furrower cpl
Code: 2517011512-3



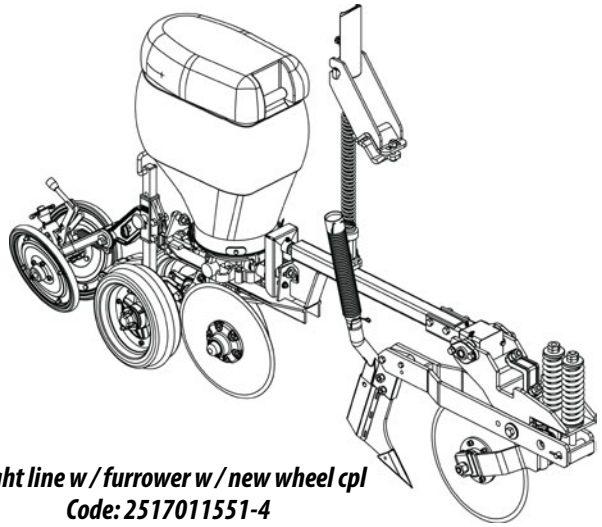
Left line w / furrower cpl
Code: 2517011513-1



Right line w / double disc w / new wheel cpl
Code: 2517011549-2

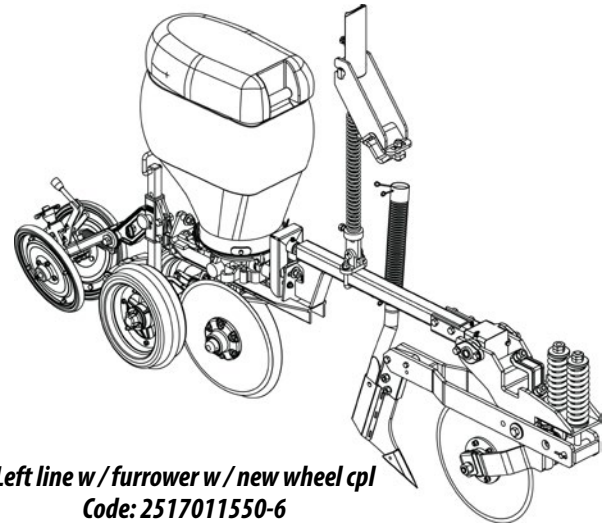


Left line w / double disc w / new wheel cpl
Code: 2517011548-4



Right line w / furrower w / new wheel cpl
Code: 2517011551-4

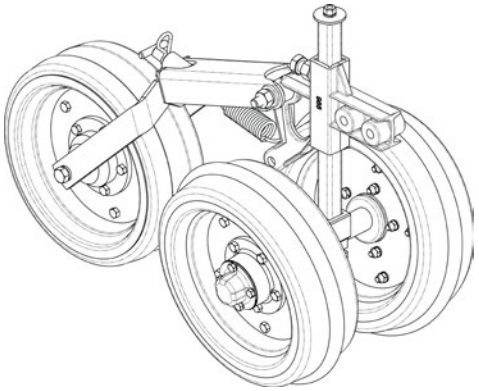
Figures 28



Left line w / furrower w / new wheel cpl
Code: 2517011550-6

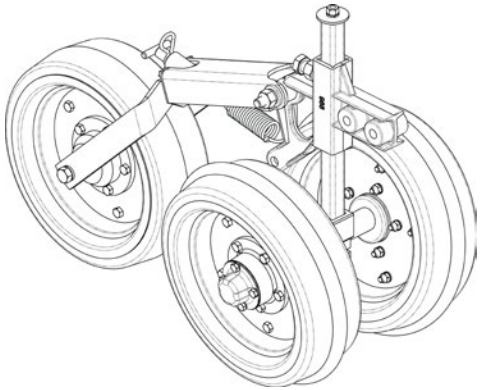
MODELS OF COMPACTION WHEELS - OPTIONAL

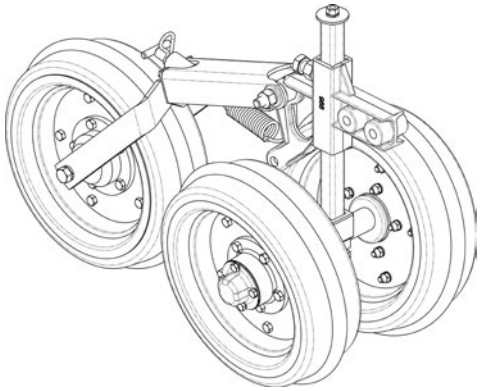
01 - The NSA Speed Box seed drill has can be acquired with optional components that can be acquired according to need of work. The compaction wheels with oscillating carts are among the options available.



Concave compaction wheel cart cpl
Code: 5124010051-0

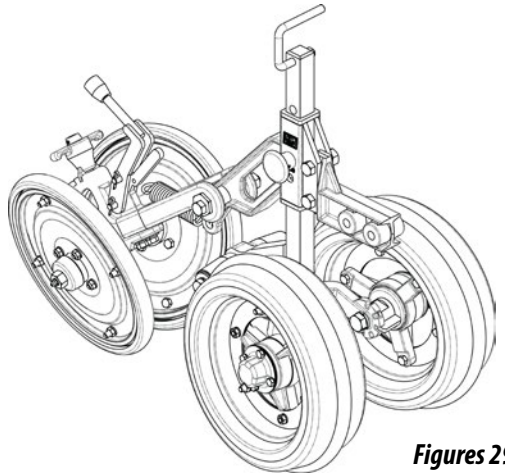
Flat compaction wheel cart cpl
Code: 5124010113-4





Convex compaction wheel cart cpl
Code: 5124010341-2

Oscillating eccentric depth wheel cart cpl
Code: 5124010557-1



Figures 29

12. LINE ADJUSTMENT

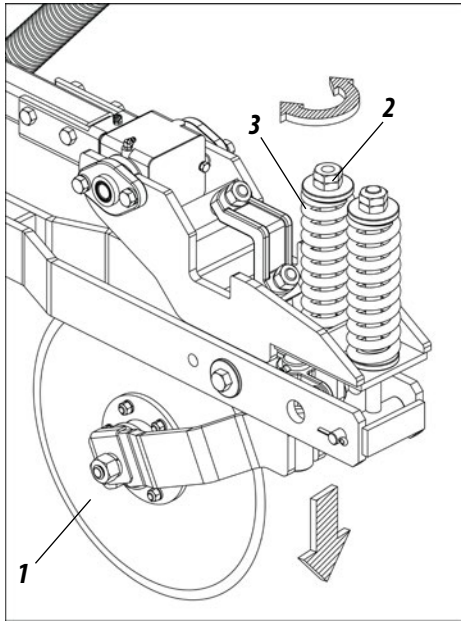
CUTTING DISC PRESSURE ADJUSTMENT

- To control the pressure on the cutting disc (1), proceed as follows:

01 - Turn the nut (2) clockwise to increased pressure on the spring (3).

02 - Turn the nut (2) counterclockwise to decrease the pressure on the spring (3).

Figure 30



- **PRESSURE REGULATION**

More pressure on the spring	*Higher the pressure of the disc on the soil*
Less pressure on the spring	*Lower pressure of the disc on the soil*

IMPORTANT

This adjustment giving higher or lower pressure on the spring should be done in the field before starting the work, noting the type of soil to be worked in order to obtain a better performance of your seed drill.

PRESSURE REGULATION OF FERTILIZER

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

01 - Turn the nut (2) clockwise to increased pressure in the spring (3).

02 - Turn the nut (2) in counterclockwise for less pressure on the spring (3).

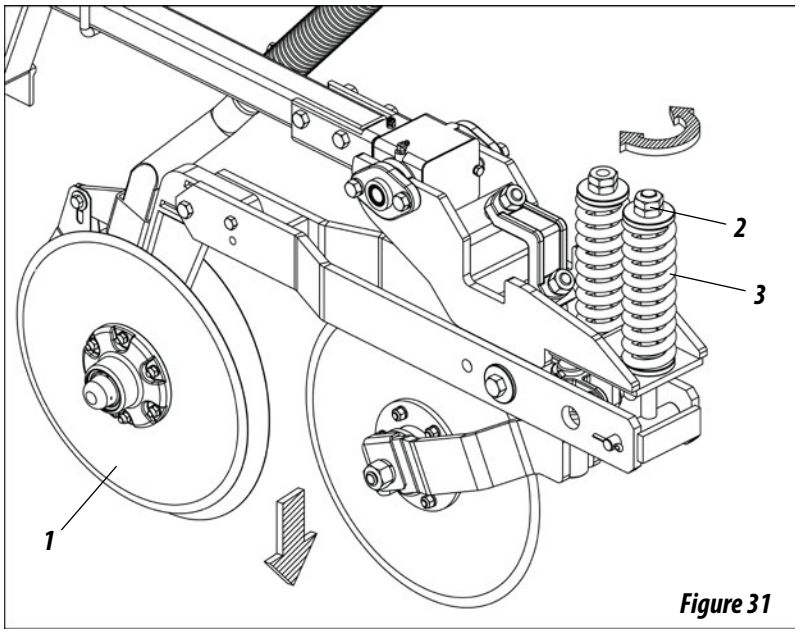


Figure 31

- **PRESSURE REGULATION**

More pressure on the spring	*Higher the pressure of the blade on the ground*
Less pressure on the spring	*The lower the pressure of the blade on the soil*

IMPORTANT

This adjustment giving higher or lower pressure in the spring should be done before starting work, noting the type of soil to be worked, to get a better performance of the seeder.

SEED PRESSURE ADJUSTMENT

01 - The adjustment of the seed double disc pressure (1) is made by the spring (2) of the planting line (3). This adjustment is made through the sleeve (4). To control the seed pressure, do the following:

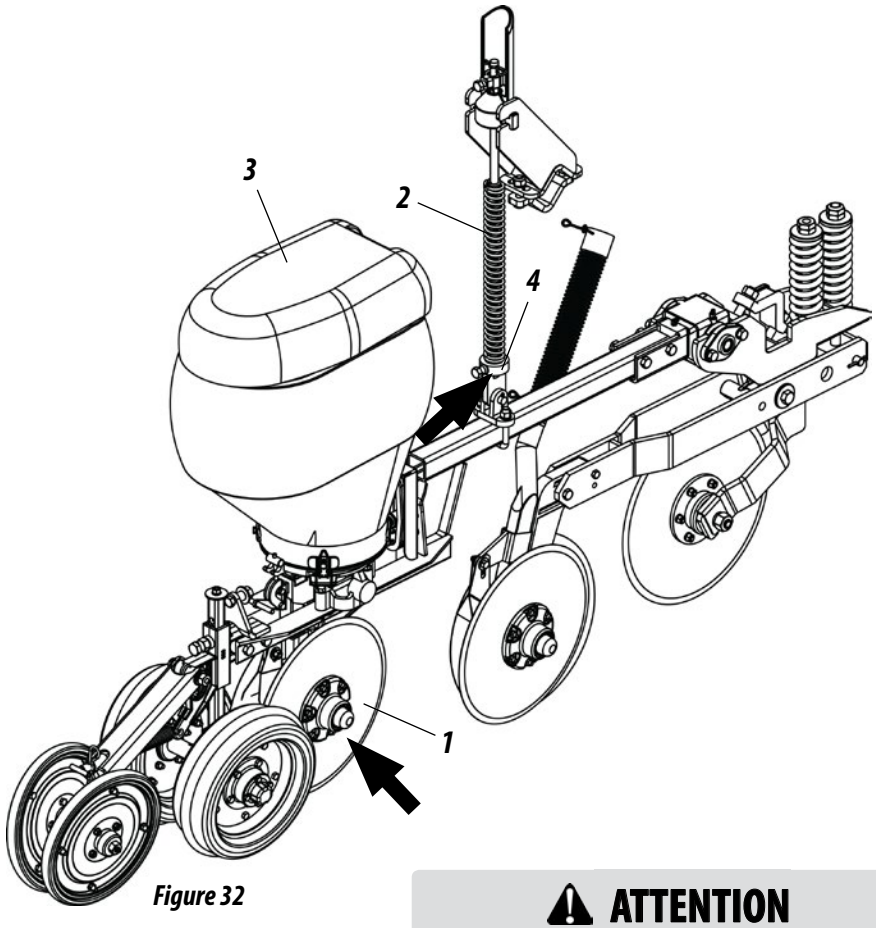


Figure 32

02 - Loosen the screw (5), slide the sleeve (4) and tighten the screw (5).

- **LOWER PRESSURE ON SPRING**
- **Lower pressure on seed**

- **GREATER PRESSURE ON SPRING**
- **Increased pressure in the seed.**

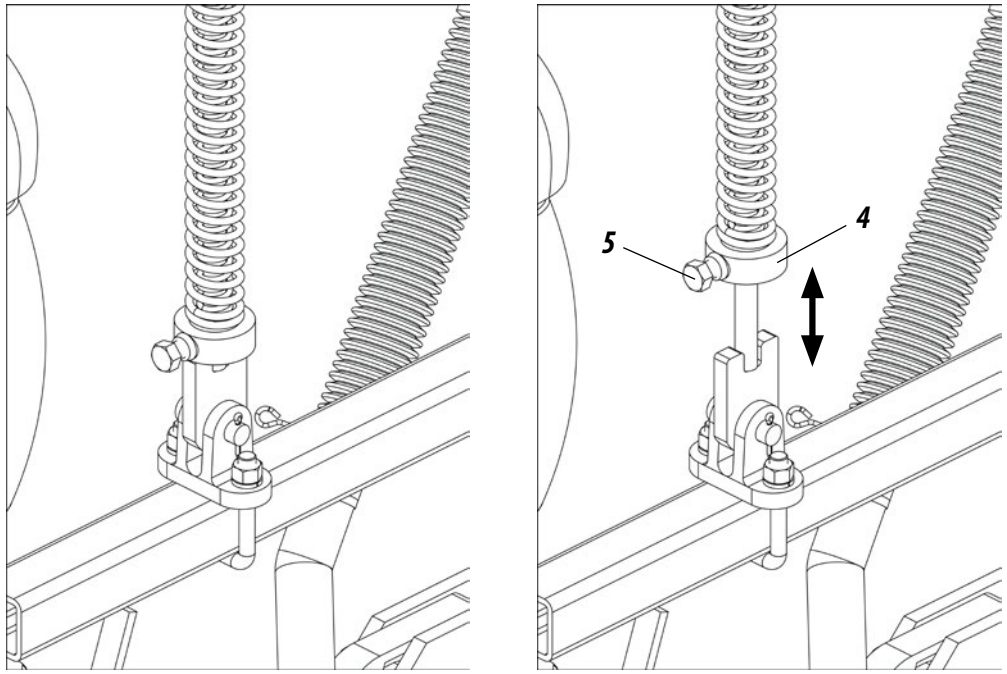


Figure 32

⚠ ATTENTION

By adjusting the pressure in one seed line, all other must have the same adjustment.

IMPORTANT

This adjustment giving higher or lower pressure in the spring should be done in the field before starting the work, noting the type of soil to be worked, to get a better performance of the seeder.

DOUBLE DISC WIPER ADJUSTMENT

- The double disc has flexible and adjustable wipers to remove the dirt that adheres to the discs. To adjust the wipers, proceed as follows:

01 - Loosen the screw (1), adjust the cleaners (2) into the ideal position and re-tighten the screw.

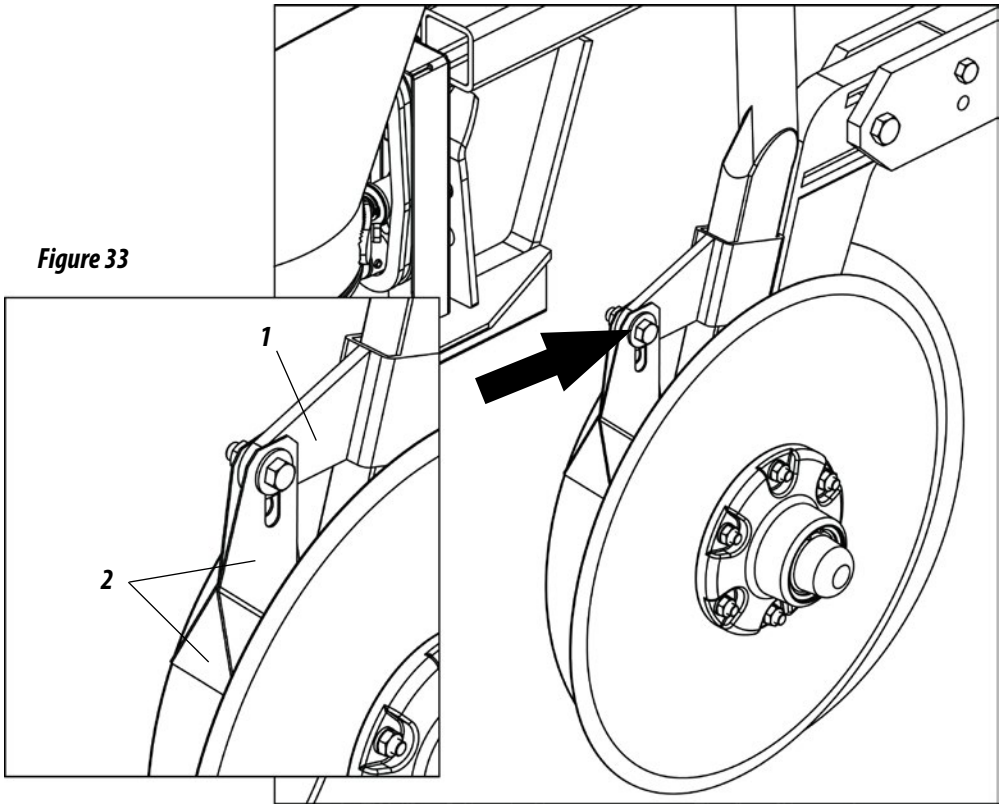


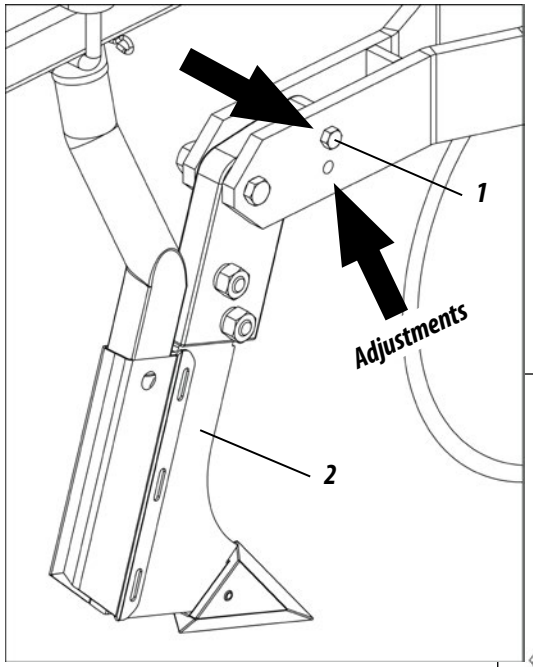
Figure 33

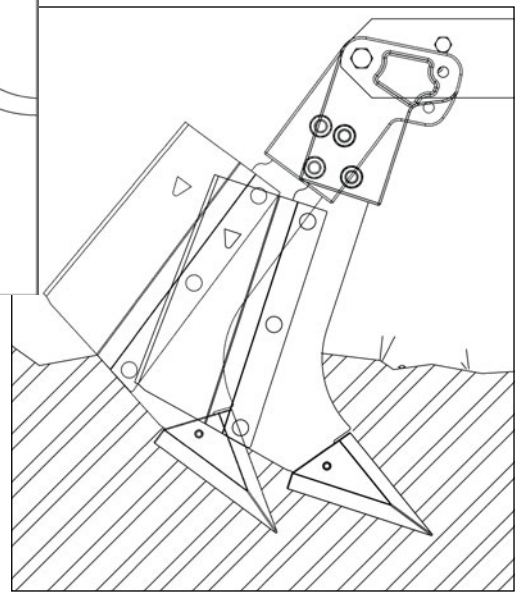
ADJUSTING THE FURROWER ATTACK ANGLE

01 - The fertilizer furrower has several work adjustments to best fit the type of soil to be worked.

- To adjust the furrower attack angle, proceed as follows:

02 - Remove the screw (1), articulate the furrower (2) to the ideal regulation and replace the screw (1), as drawings alongside.





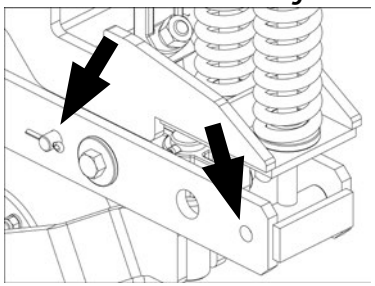
Figures 34

"JUMP-OBSTACLE" SYSTEM

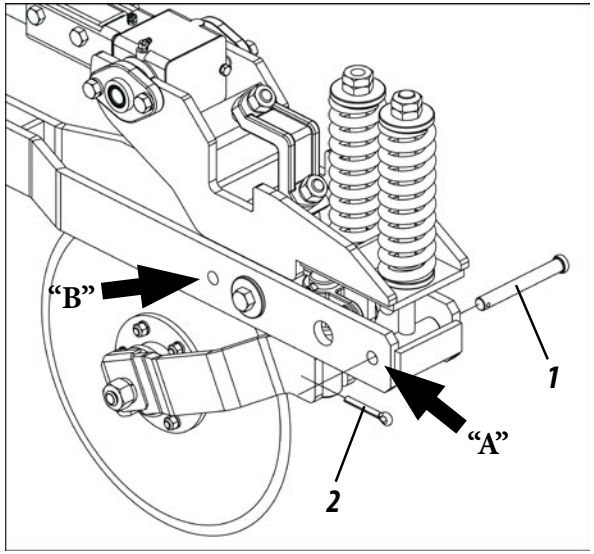
01 - The "jump-obstacle" system is used in soils with the presence of stones and / or roots. This feature allows the double disc or furrower to "escape" from obstacles. To activate the "jump-obstacle" system, proceed as follows:

02 - Remove pin (1) and lock (2) from hole "A" and transfer it to hole "B".

Figures 31

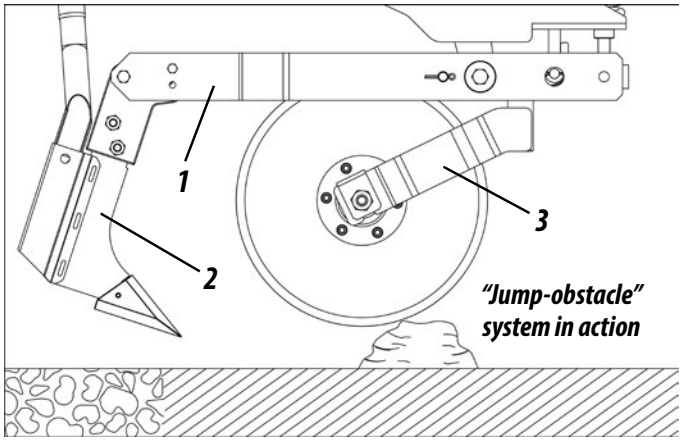


"Jump-obstacle" system activated



03 - Activating the "jump--obstacle" system, the arm (1) of the furrower (2) is firmly attached to the double disc support (3). Thus, when an obstacle emerges, the cutting disc is forced upward, lifting the furrower, i.e. "jumping the obstacle."

Figure 35



"Jump-obstacle" system in action

DEPTH LIMITING WHEEL

- The seed depth control is individually controlled by the depth limiting wheel (1). To adjust the depth limiting wheel, proceed as follows:

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

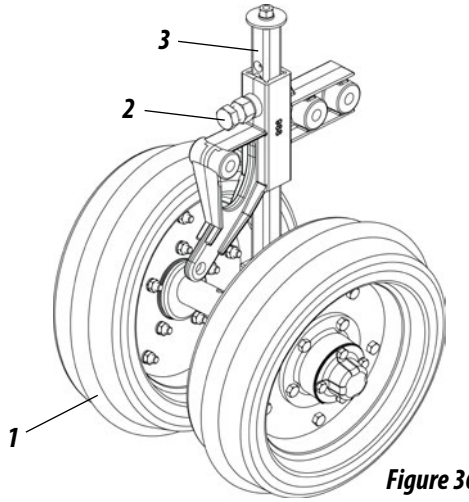


Figure 36

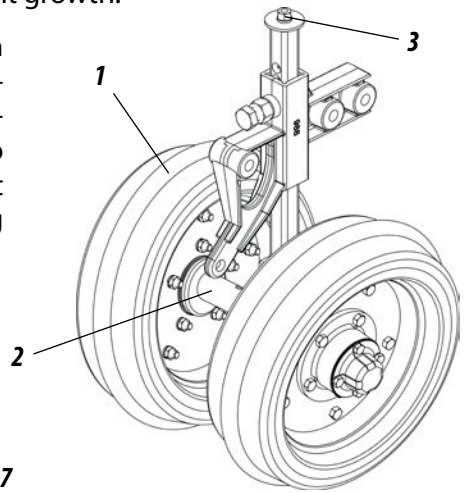
⚠ ATTENTION

When you finish the settings on this page, repeat this procedure in all lines, thus avoiding variation between lines.

ADJUSTING THE LIMITING WHEEL ANGLE

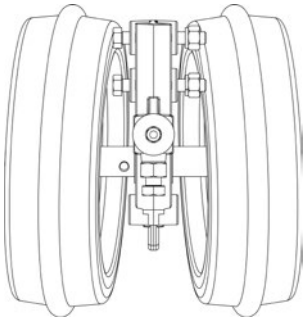
01 - The depth limiting wheel angle (1) is intended to press the furrow so that the soil is immediately placed back over the seed, avoiding excessive compression, facilitating germination and plant growth.

02 - The wheels are fixed on a shaft with ends in degree (2), specially designed to enable compression, controlling the depth and bury the seed. To make this adjustment, loosen the nut (3) and rotate the shaft (2), watching the movements of the wheel.

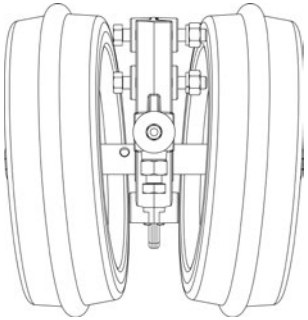


Figures 37

- **ANGLE POSITIONS**



Fully closed angle position
(Less soil on the seed)



Fully open angle position
(More soil on the seed)

⚠ ATTENTION

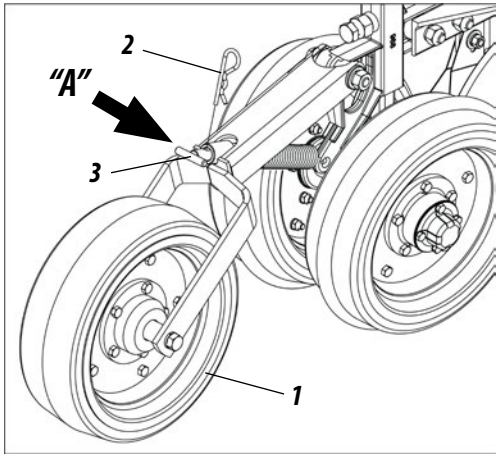
Make the same adjustment for all depth limiting wheels and consider the type of soil, seed and planting depth, not to affect the free emergence.

ADJUSTING THE FLAT, CONCAVE AND CONVEX COMPACTION WHEELS

- The compacting wheels (flat, concave and convex) have the purpose of pressing the furrow causing the soil to be immediately placed on the seed, avoiding excessive compression, facilitating germination and plant growth. To control the pressure of the press wheels, proceed as follows:

- ***GREATER PRESSURE:***

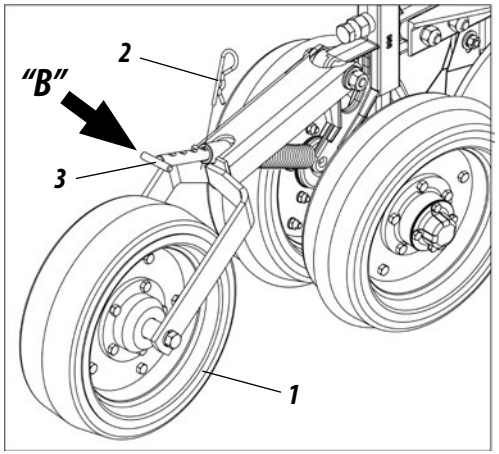
01 - Remove the lock (2), pull the pin (3) out and lock again, as shown in detail "A".



Figures 38

- ***LOWER PRESSURE:***

02 - Remove the lock (2), pull the pin (3) inside and lock again, as shown in detail "B".



ADJUSTING THE DOUBLE DISC WIPERS

- The double disc has flexible and adjustable wipers to remove the dirt that adheres to the discs. To adjust the wipers, proceed as follows:

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

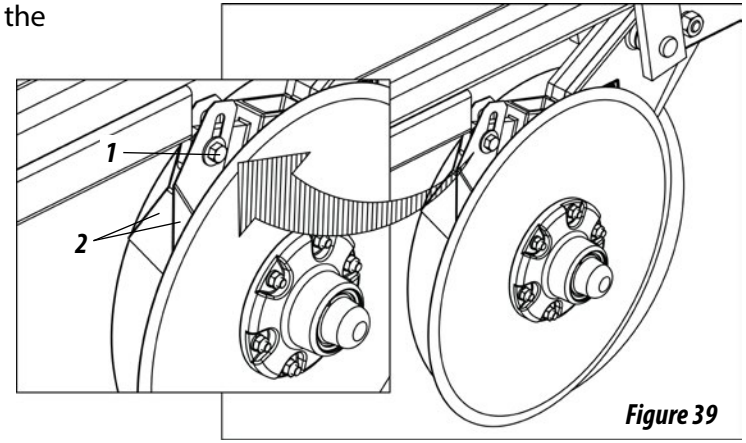


Figure 39

⚠ ATTENTION

When you finish adjusting the wipers (1), make the adjustment on the double discs of the seed drill.

ADJUSTING THE ECCENTRIC OSCILATING DEPTH WHEEL - OPTIONAL

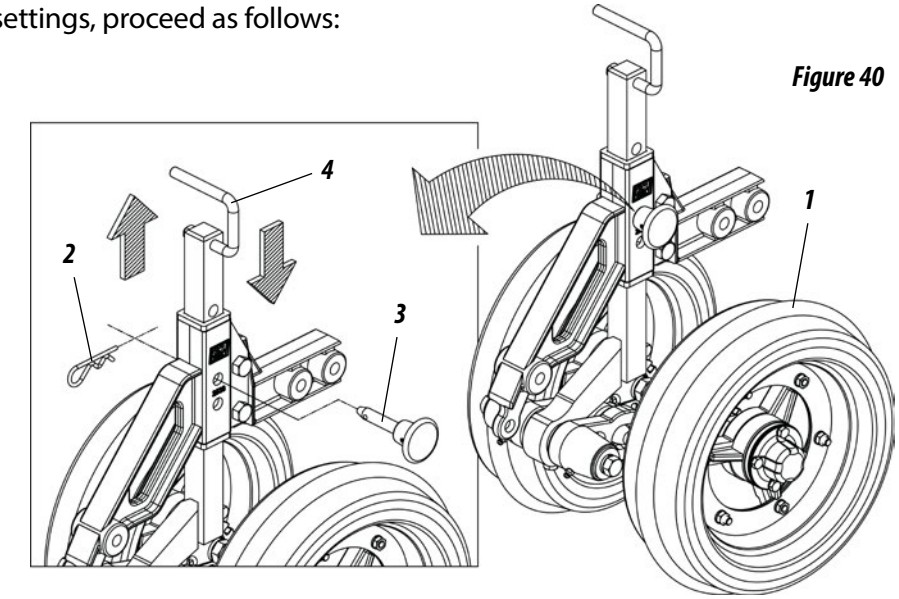
- The seed depth control is individually controlled by the depth limiting wheel (1). For these settings, proceed as follows:

01 - First release latch (2) and remove the pin (3).

02 - Then, make the ideal regulation, raising or lowering the bar (4).

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

Figure 40



⚠ ATTENTION

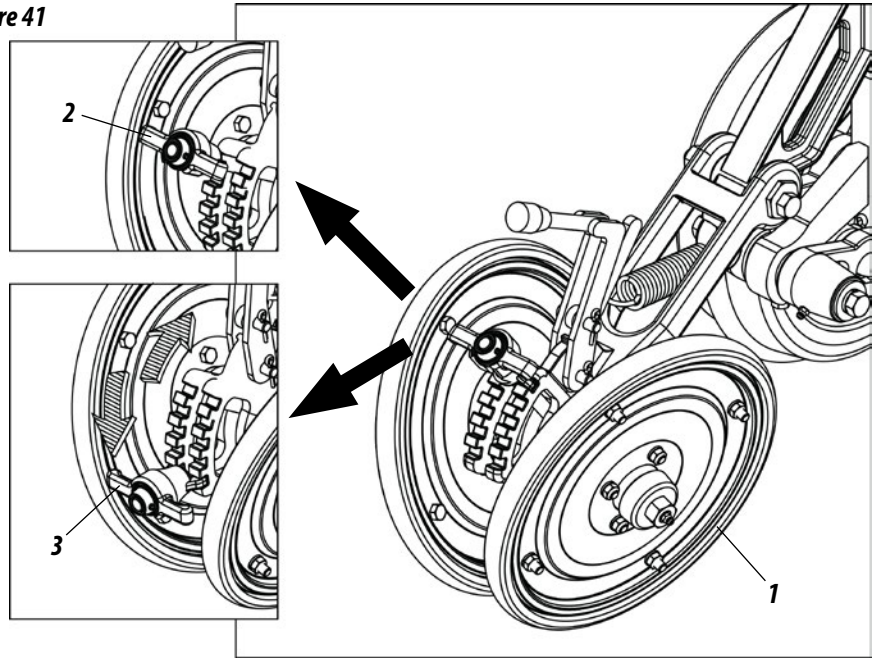
At the end of the adjustment wheel limiting depth (1), repeat this procedure on all lines, avoiding variation between them.

ADJUSTING THE "V" COMPACTION WHEELS - OPTIONAL

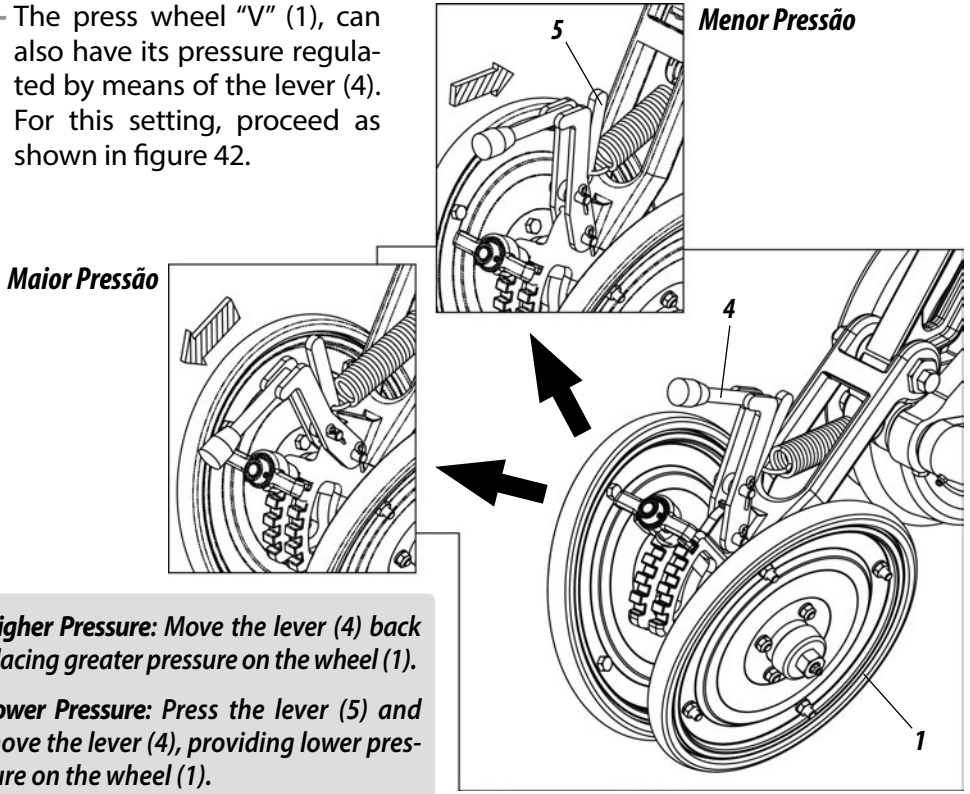
01 - The "V" compaction wheels are used to close the furrow laterally, causing the land to be immediately placed on the seed, preventing excess compaction and removing air bubbles, thus facilitating germination and plant growth. To adjust the angle more or less closing the press wheels "V" (1), pull the lever (2) up, move the controller (3) to the desired point, then lower the lever (2) locking the regulator (3), as shown in Figures 41. The "V" compaction wheels have 5 points of adjustment.

Higher Pressure: Move the lever (2) back, giving greater pressure on the wheel (1).
Lower Pressure: Move the lever (2) forward, giving less pressure on the wheel (1).

Figure 41



01 - The press wheel "V" (1), can also have its pressure regulated by means of the lever (4). For this setting, proceed as shown in figure 42.



Higher Pressure: *Move the lever (4) back placing greater pressure on the wheel (1).*

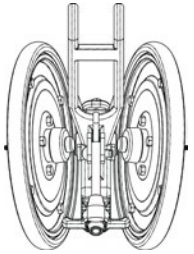
Lower Pressure: *Press the lever (5) and move the lever (4), providing lower pressure on the wheel (1).*

Figures 42

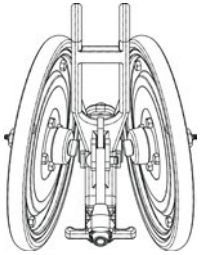
⚠ ATTENTION

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

ANGLES OF "V" WHEELS



Position angle closure *(Less land on the seed).*



Position angle *(More land on the seed).*

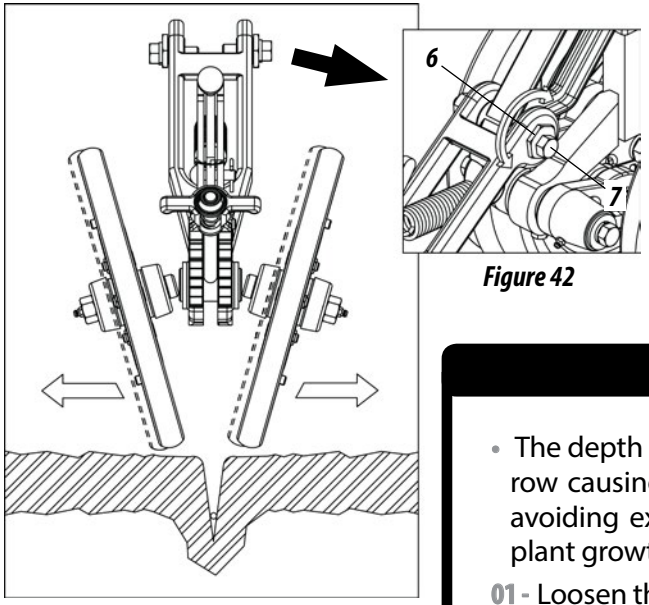


Figure 42

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

01 - Loosen the screws (7), turn the sleeves (6), with a key role for the alignment of the wheels with the furrow, placing greater or lesser amount of soil laterally to the seed as shown in Figure 42.

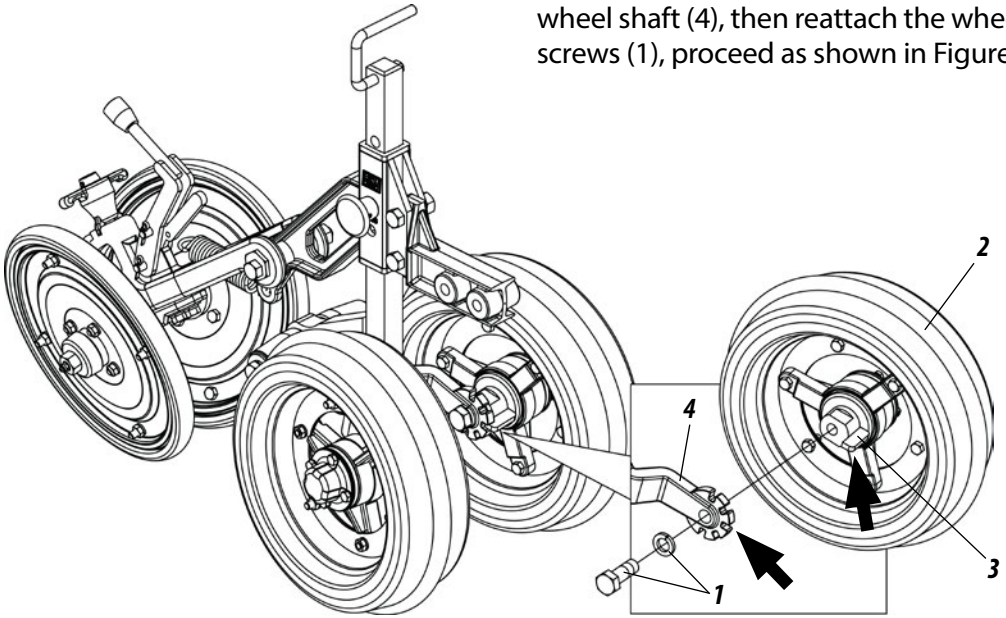
ADJUSTING THE DEPTH LIMITING WHEEL

- The depth limiting wheel angle (1) is intended to press the furrow causing the soil to be immediately replaced on the seed avoiding excessive compression, facilitating germination and plant growth. For these settings, proceed as follows:

01 - Loosen the screws and washers (1), remove the wheel (2), adjust the wheel adjustment point (3) in the adjustment of the wheel shaft (4), then reattach the wheel (2) with washers and screws (1), proceed as shown in Figures 43.

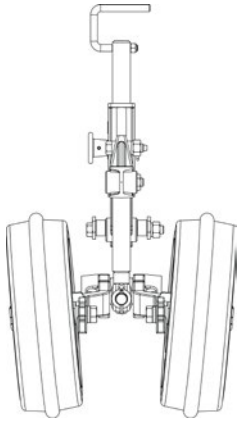
⚠ ATTENTION

Make the same adjustment to all oscillating eccentric depth wheel, considering the type of soil, seed and planting depth, not to affect the free plant emergence.

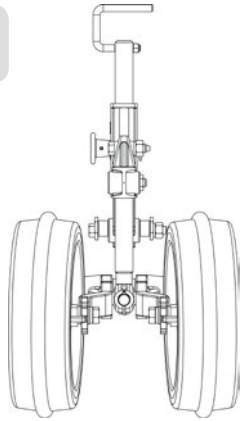


Figures 43

ANGLES OF WHEELS



Fully closed angle position (Less soil on the seed)



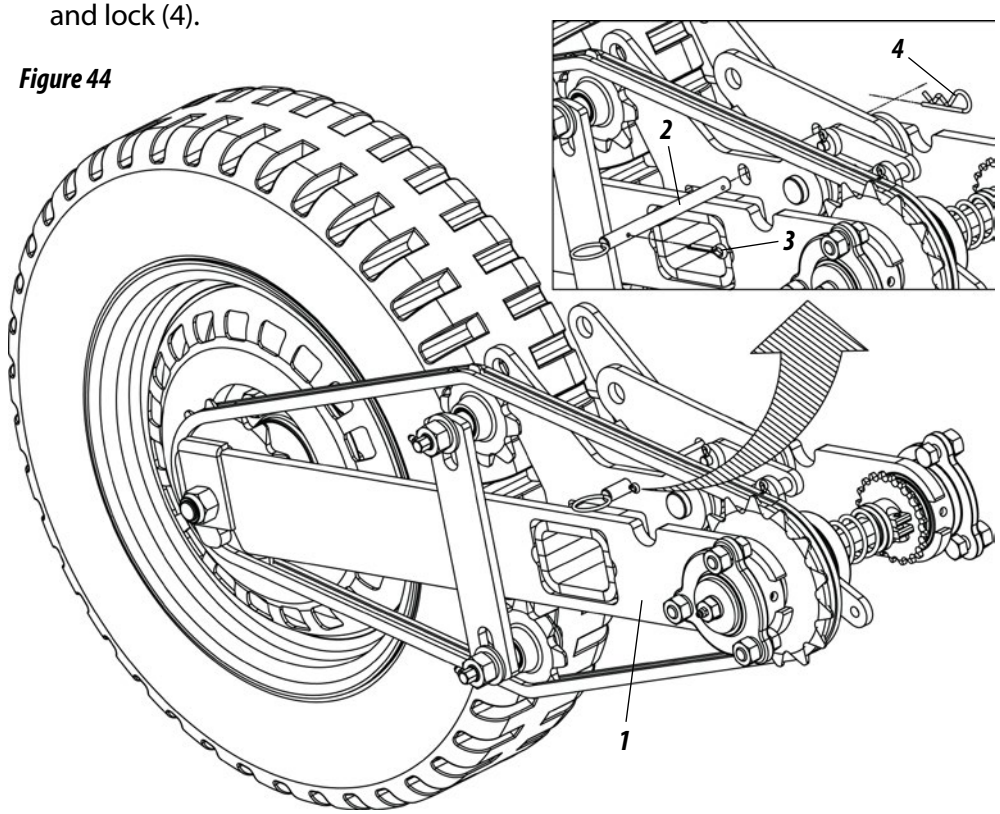
Fully open angle position (More soil on the seed)

WHEEL ARTICULATION SYSTEM

01 - The system of tire fixation and articulation makes them become free of the pressure from springs of the pantograph system on the soil, allowing them to oscillate and follow the soil irregularitiesn, making the seed and fertilizer distribution not to be disrupted.

02 - For conventional planting, lock the wheelset (1) with the pin (2), cotter pin (3) and lock (4).

Figure 44



⚠ ATTENTION

For no-tillage system, unlock the wheelset (1) removing the pin (2) releasing the cotter pin (3) and lock (4).

13. OPERATIONS

01- After the first day of work with the planter, tighten all screws and nuts. Check the conditions of pins and locks.

02- Always keep the tires with the same calibration of 20 lb / in 2, to avoid wear and maintain planting uniformity.

03- Observe lubrication intervals.

04- When filling the seed and fertilizer tanks, check if there are no objects within them, such as nuts, bolts, etc.. Always use seed and fertilizer free of impurities.

05- Always observe the functioning of mechanisms that distribute seeds and fertilizer and also the settings established at the beginning of planting.

06- Keep the planter always leveled, the tractor drawbar must remain stable and working speed should remain constant.

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

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

09- If case of doubts, do not operate or handle the planter, refer to the After Sales. Phone: + 55 0800-152577 or e-mail: posvenda@baldan.com.br

14. MAINTENANCE

TIRE PRESSURE

01 - Tires should always be properly calibrated to avoid premature wear due to excess or lack of pressure and ensuring accuracy in the distribution.

02 - The tire pressure must be 44 lb / in ^{2} each.

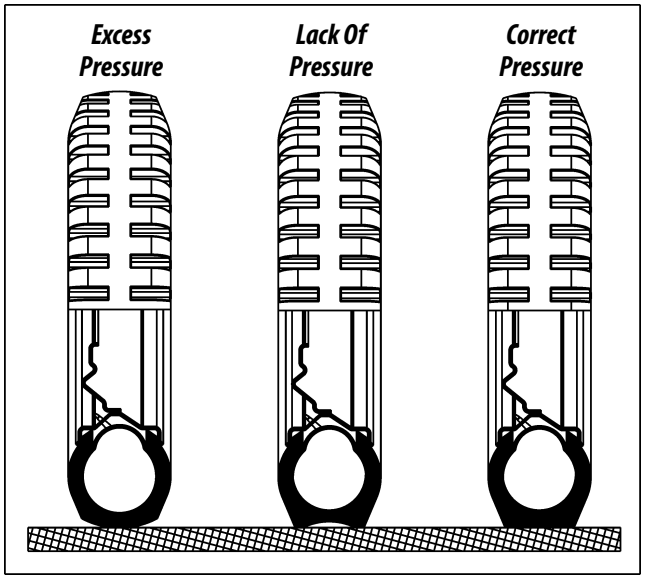


Figure 45

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

LUBRICATION

01 - Lubrication is essential for good performance and durability of the seeder moving parts, helping to reduce maintenance costs.

02 - 4 - Before starting operation, lubricate all grease fittings carefully always observing lubrication intervals in the following pages. Make sure the lubricant is of good quality; avoid using products contaminated by water, dirt and other agents.

TABLE OF GREASE AND EQUIVALENT

Table 14

MANUFACTURER	TYPE OF RECOMMENDED GREASE
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

IMPORTANTE

If there are other lubricants and / or equivalent greases not listed in this table, refer to the manufacturer's technical handbook.

CENTRALIZED LUBRICATION SYSTEM

- The centralized lubrication system makes maintenance quick and easy, allowing lubricating all moving parts of the machine without removing the covers. To lubricate, proceed as follows:

01 - Before starting lubrication, clean all grease fittings (1) with a lint-free soft cloth and replace the damaged ones.

02 - Lubricate all grease fittings (1) of the centralized system (2) every 10 hours, as shown in Figure 46.

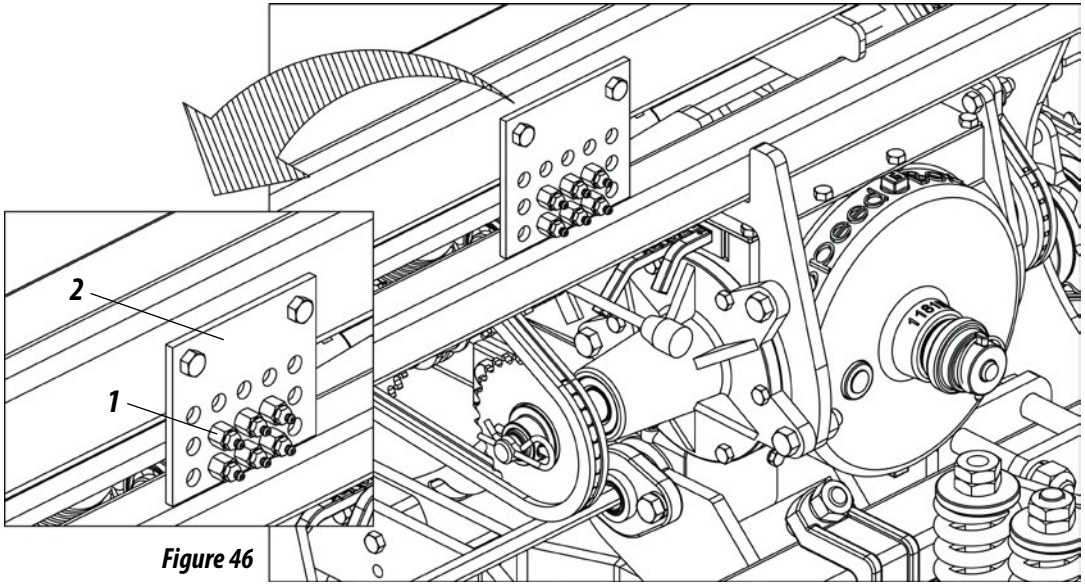
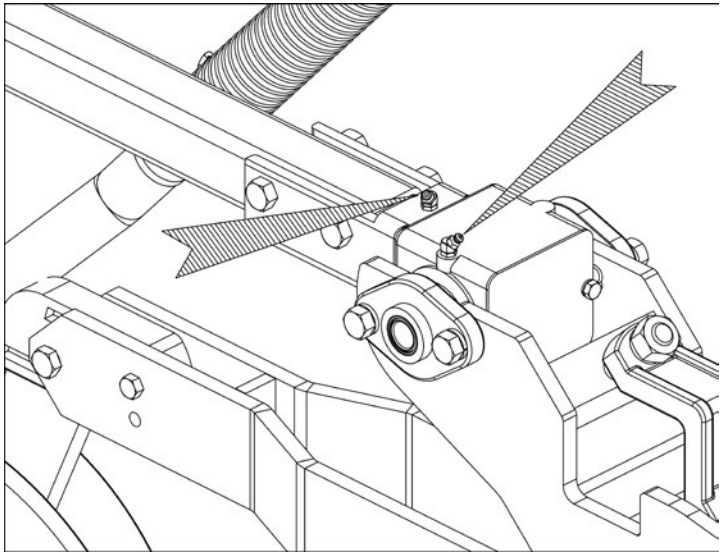
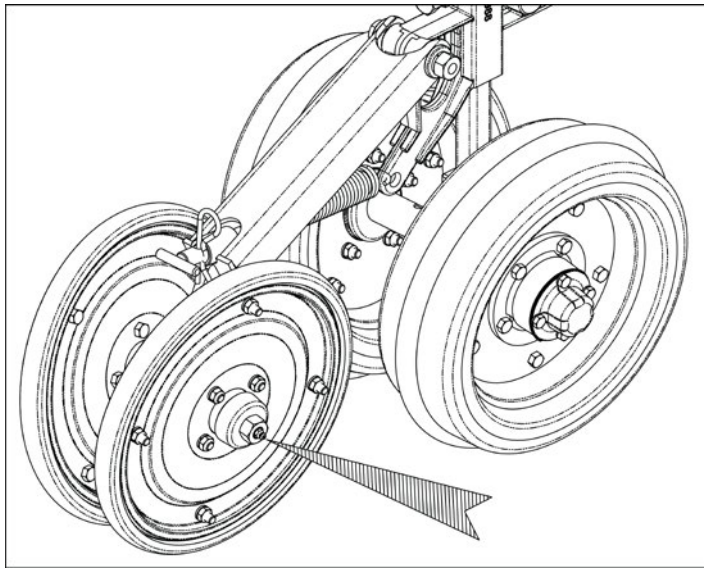


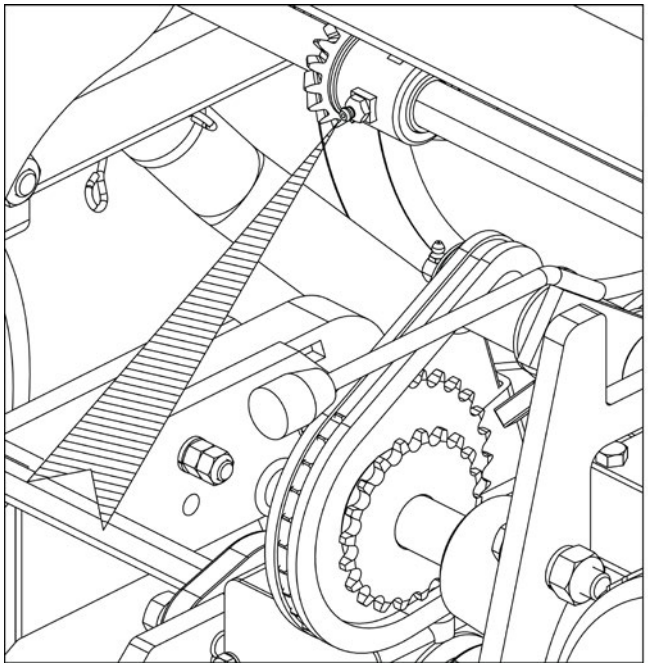
Figure 46

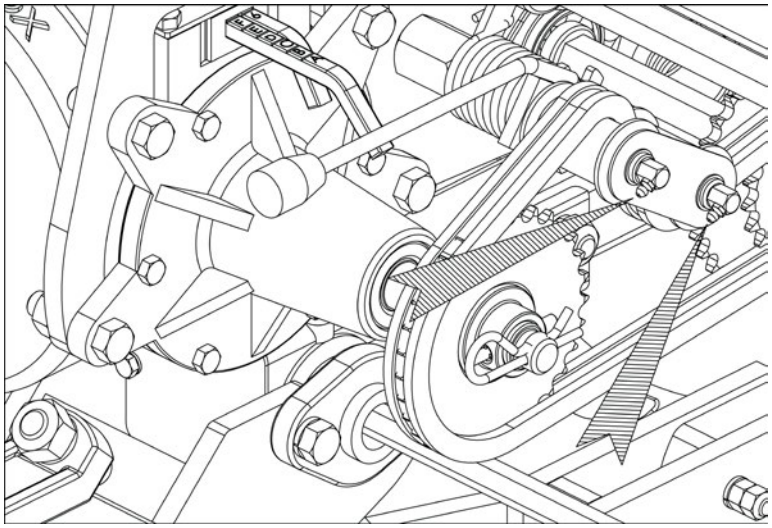
LUBRICATE EVERY 10 HOURS

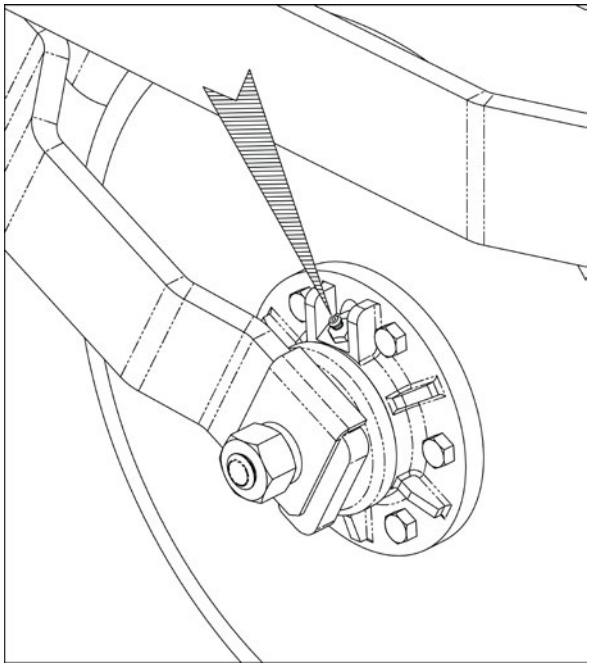


Figures 47

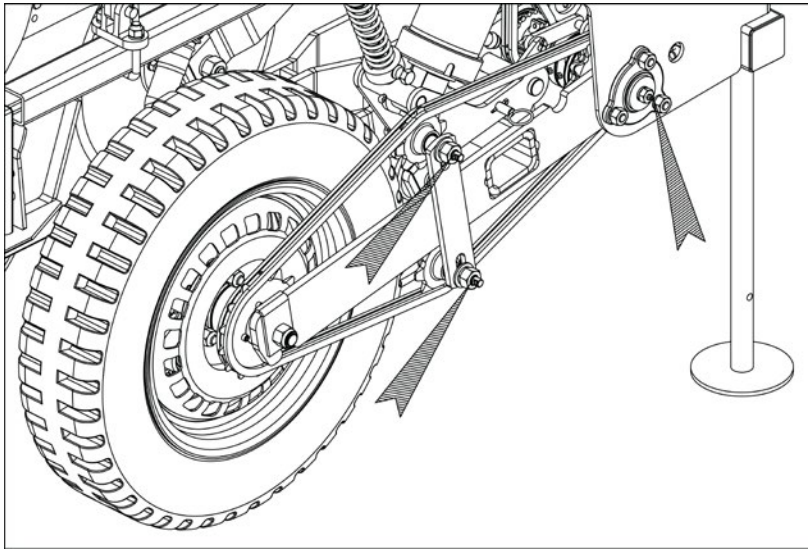


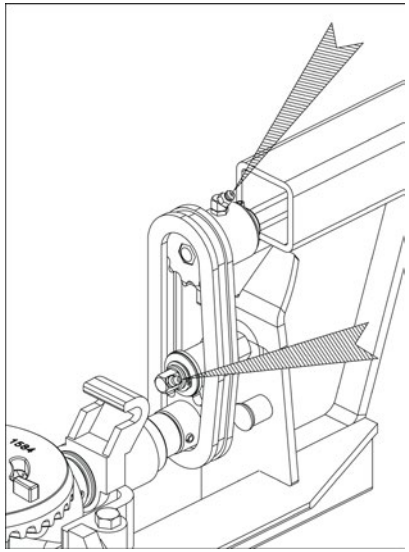


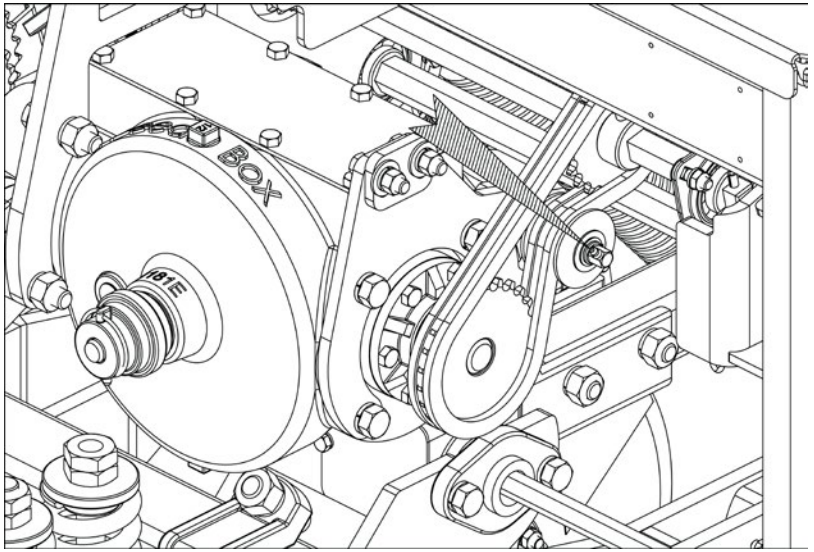




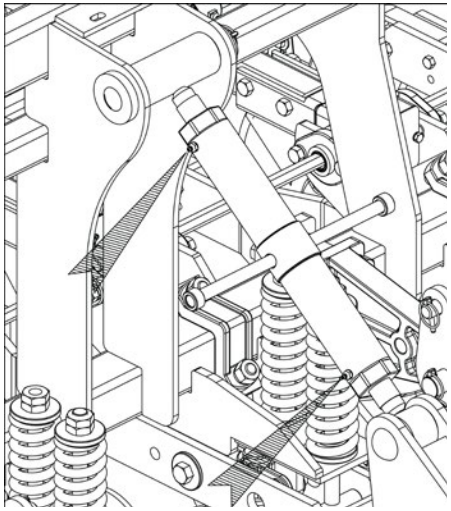
Figures 47

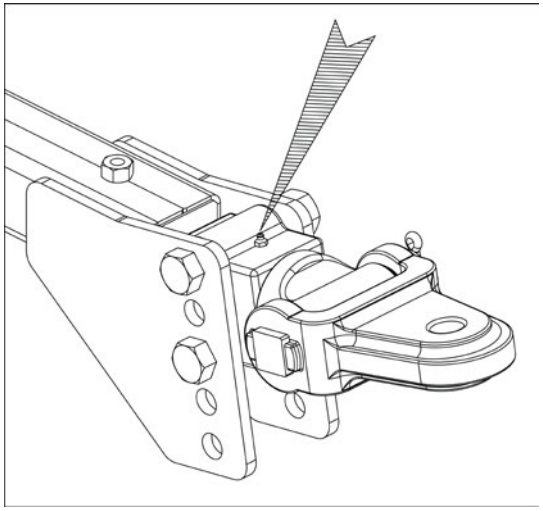


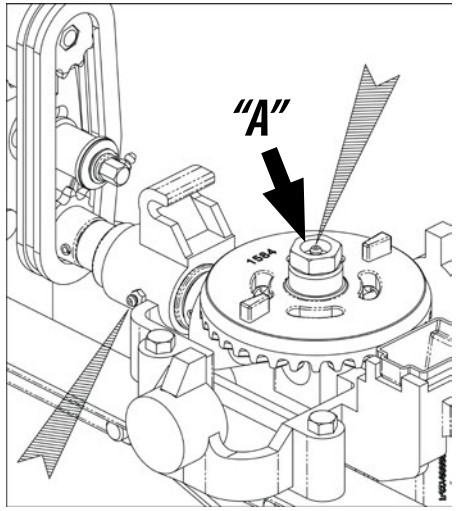




LUBRICATE EVERY 30 HOURS





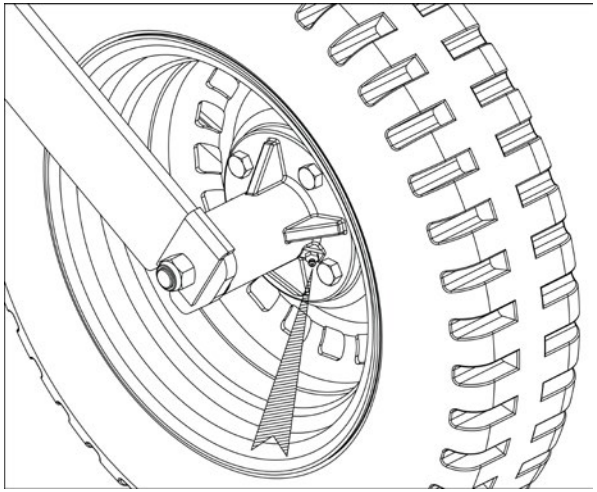


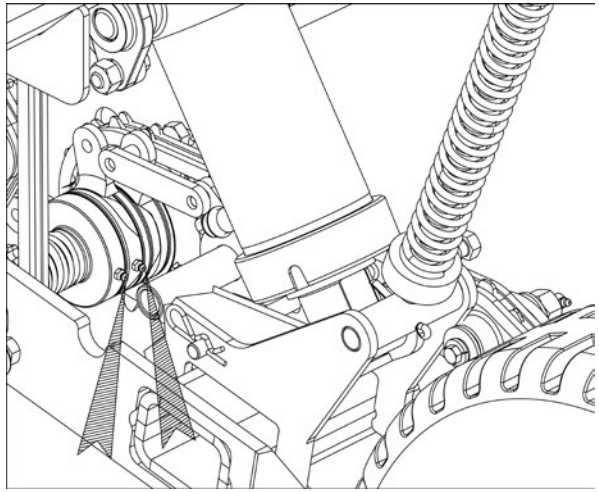
Figures 48

⚠ ATTENTION

Do not over-grease the seed distribution crown "A", this can clog the seed conductor.

LUBRICATE EVERY 60 HOURS





Figures 49

⚠ ATTENTION

Do not put too much grease in the ratchet, respect the interval of 60 hours for relubrication.

LUBRICATE EVERY 200 HOURS

• Periodically lubricate the hubs of the double discs (1) approximately every 200 hours and at the end of the season. To do so, proceed at the end of each season as follows:

01 - Remove the seal ring (2) from the hub (3). Examine the bearings, if there are clearances, adjust through the castle nut (4). Put new grease in the cap (5). Replace the cap on the hub and fix it with the seal ring (1), as figure 50.

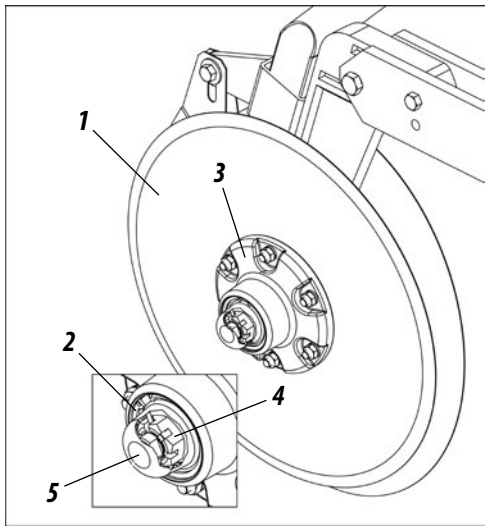


Figure 50

02 - In oscillating wheels (6) loosen the screws and washers (7), remove the cap (8) and put some new grease. Replace the cap on the wheel and fix it with the screws and washers (8), as shown in Figure 51.

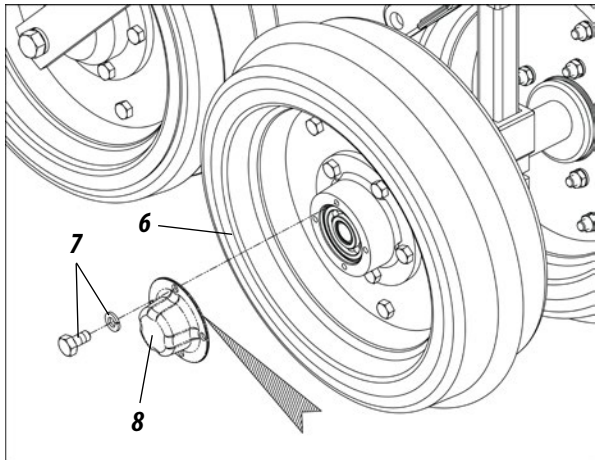


Figure 51

CHAIN TENSION

• To strengthen the chain, proceed as follows:

01 - Loosen the screw (1), slide the tensioner up to the desired position. Then, retighten the nut , as in figure 52.

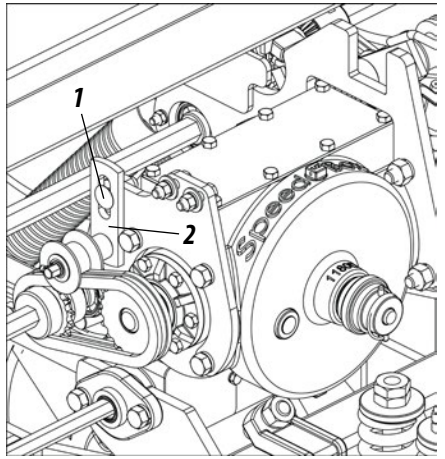


Figure 52

IMPORTANT

Check the chain tension every day, the normal clearance must be ± 1 cm in its center.

OSCILLATING TENSIONER

01 - The stretcher (1) is provided with a torsion spring (2) for increased flexibility. If you need more pressure on the tensioner, loosen the inner nut (3), rotate the shaft (4), passing the spring hook (2) to the other side of the rosette and tighten the inner nut (3), as in figure 53.

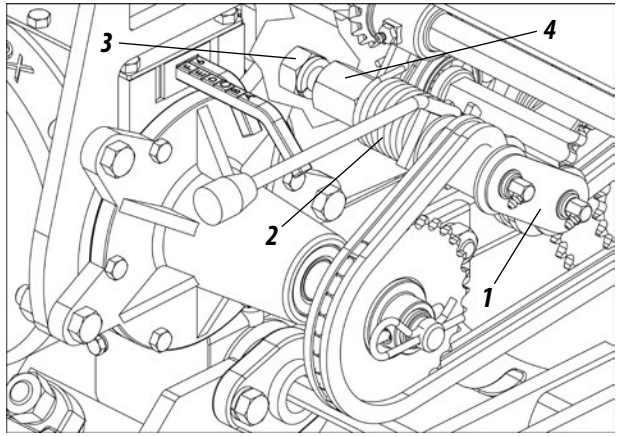


Figure 53

OPERATIONAL MAINTENANCE

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
During planting, fertilizer leaks through the safety outputs.	*Hoses are clogged or there are pieces of plastic in the spiral hoses that conduct the fertilizer.*	*Unclog the hoses or remove the upper channel that gives access to coil, rotate the shaft to the opposite side until the foreign body is removed.*
Hub shaft of the fertilizer tank does not turn.	*Spiral blocked with wet fertilizer or excess fertilizer in closed line.*	*Unclog the coils, check if there is loose gutter and if the fertilizer is coming in through their sides.*
A planting line shows depth different from the other.	*Different settings of pressure on the depth limiting wheels or in the line springs.*	*Adjust all depth wheels and the pressure of the line springs*
Furrow opens too much during planting	*Soil that sticks to the discs or excessive working speed.*	*Reduce the work speed.*
Strange noise when operating or riding with the planter loaded.	*Loose wheels or hub with clearance.*	*Retighten the nuts of the wheel. Adjust the bearings of the wheel hub.*
The planter leaves the planting line, sometimes on one side, sometimes on the other.	*Tractor drawbar loose.*	*Use the pin that came with the seeder. Attach the tractor drawbar in the center hole.*
Tractor lifts when machine lifts	*Lack of weight on the front of the tractor*	*Put some weight on the front of the tractor*
Machine goes aside during planting on slopes	*Lower arms of tractor coupling are loose with side displacement*	*Fix the arms of tractor coupling in order to avoid side displacement*
Hydraulic cylinders stop operating; planter lifts and does not com down and vice-versa	*Different quick coupler; ball-type male and needle-type female or vice-versa*	*Replace the quick coupler, placing both of the same type.*
Broken seeds	*Too high planting speed.*	*Reduce the work speed.*
	Inadequate disc thickness.	*Use adequate disc (thickness and diameter of the holes).*
	Disc improperly assembled. *The seed sieve is not suitable for the disc selected.*	*Place the disc properly (see the phrase: THIS SIDE DOWN).*
	Wet seed.	*Use dry seeds.*

Table 15

15. CLEANING

CLEANING THE TRANSVERSAL CONDUCTOR

- After planting, do not leave fertilizer in the tank. To clean, proceed as follows:

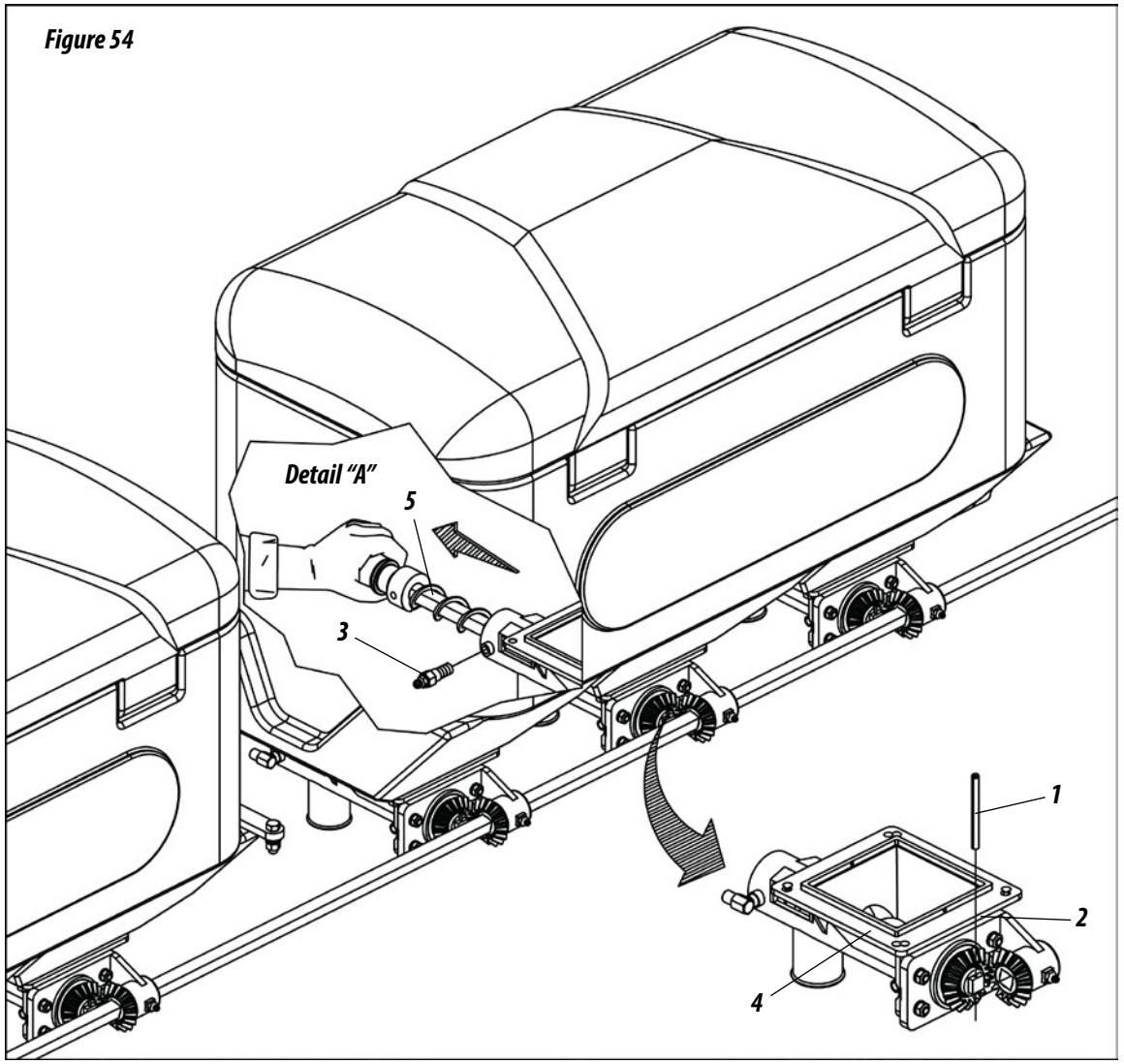
01 - Remove the elastic pin (1) from the shaft (2) and screw (3) of the distribution cannon (4). Then pull the shaft (5) back, as shown in detail "A", Figure 54.

02 - Then reassemble the shaft, noting the correct assembly of the fertilizer distribution system.

⚠ ATTENTION

Do not insert fingers or objects into the holes inside the tank, since the helical conductor can cause injuries of serious proportions.

Figure 54



CLEANING THE SEED SYSTEM

01 - At the end of each working day, we recommend emptying the seed tanks (1), remove the distribution discs (2) and clean them as shown in Figure 55.

02 - Then, observe the operation of the seed metering box (2), checking the spring pressure (3), thus ensuring the maximum precision in seed distribution, as shown in Figure 56.

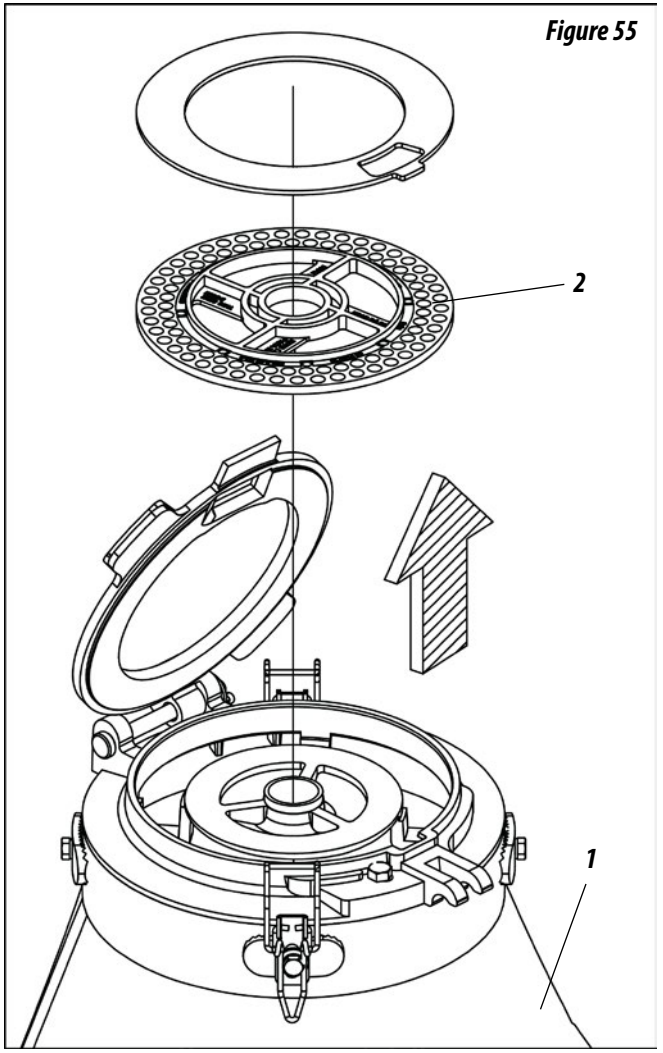


Figure 55

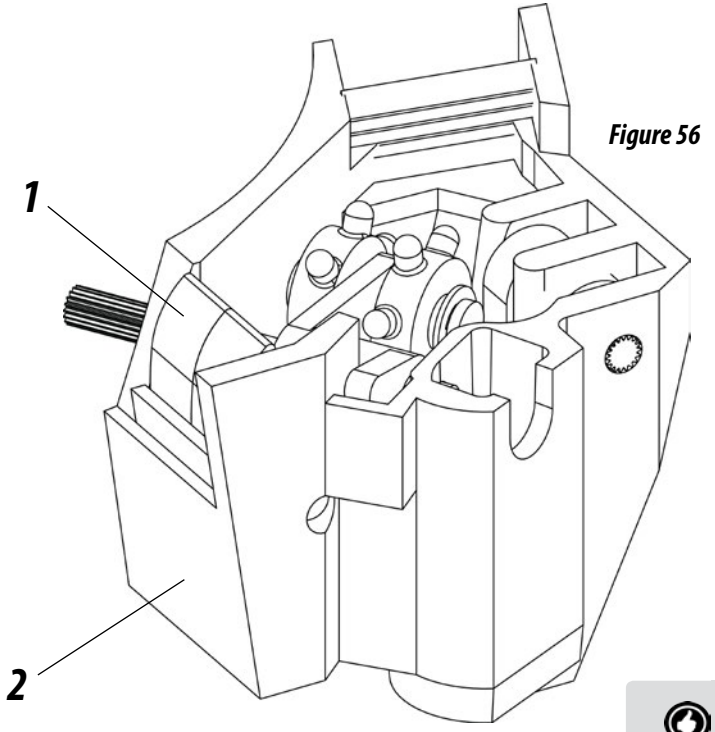


Figure 56

Seed distribution box

NOTE

When using the products for seed treatment (inoculants, graphite, etc.), it is necessary to clean the system twice a day.

CARE

01 - Check the conditions of all nuts and screws before starting the use of the transshipment equipment.

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

03 - The Baldan seed drills are used in various applications, requiring knowledge and attention during handling.

04 - Only local conditions will determine the best mode of operation of the seed drill.

05 - When assembling or disassembling any part of the seed drill, use adequate methods and tools.

06 - Check always parts that may show wear. If you need replacement, always ask for Baldan original parts.

GENERAL CLEANING

01 - When storing the seeder, make a general clean and wash it. Make sure the paint did not wear off, if so, give an overall coat, pass protective oil and completely lubricate the seeder.

02 - Remove the transmission chains, and keep them immersed in oil until the next use.

03 - Lubricate the machine completely. Check all moving parts, if they show signs of wear and clearances, make the necessary adjustment or replacement of parts, leaving the machine ready for the next use.

04 - After all the maintenance procedures, store your seeder in a covered and dry place, properly supported. Avoid the discs to be in direct contact with the ground.

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

06 - We recommend washing the seed drill at the beginning of a new planting.

⚠ ATTENTION *Do not use chemical cleaners to wash the planter, this may damage its painting.*

16. IDENTIFICATION

- To view the parts catalog or request technical assistance from Baldan, always indicate the model (1), serial number (2) and date of manufacture (3), which are on the identification label of your equipment.

ALWAYS REQUIRE BALDAN ORIGINAL PARTS

MARKETING
EDITION OF INSTRUCTION MANUALS AND PART CATALOGS

Code: 6055010058-7
Revision: 01
CPT: NSA01418

ATTENTION — *The drawings in this instruction manual are of illustrative purposes only.*

CONTACT — *In case of doubt **do not** operate the equipment, please contact our **after-sales service.***
Telefone: 08000-152577
e-mail: posvenda@baldan.com.br

PRODUCT IDENTIFICATION

- Make the identification of the data below to always have correct information about the life time of your equipment.

Owner's name: _____

Dealer: _____

Farm: _____

City: _____ *State:* _____

Model: _____ *Warranty:* _____

Inovice number: _____

Data da Compra: _____/_____/_____ *Serial number:* _____

NOTES:

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