NSH

Séries 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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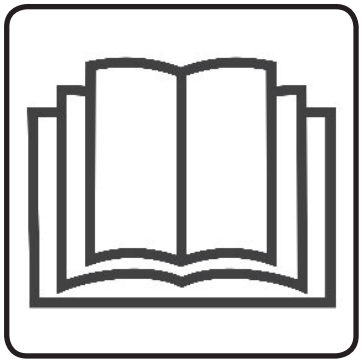
INDEX

01. SAFETY STANDARDS

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

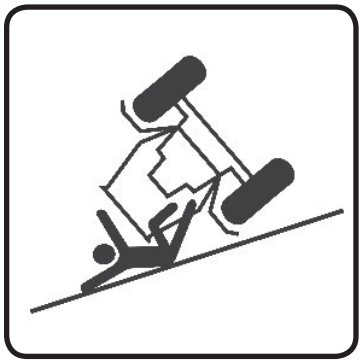
- *Do not operate the tractor if the front is light. With a tendency to rise, add weights on the front of the tractor or front wheels.*

ATTENTION

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

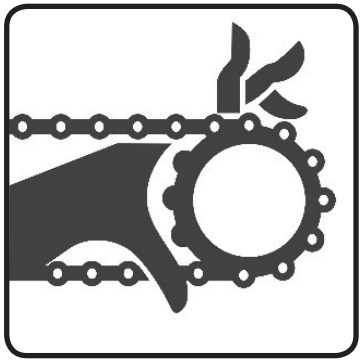
ATTENTION

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



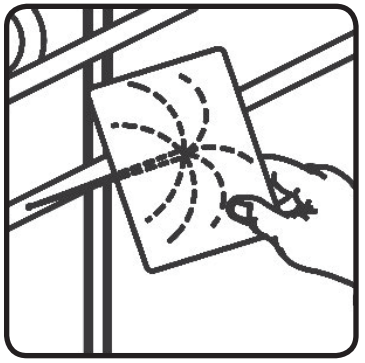
⚠ ATTENTION

- *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.*

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.**

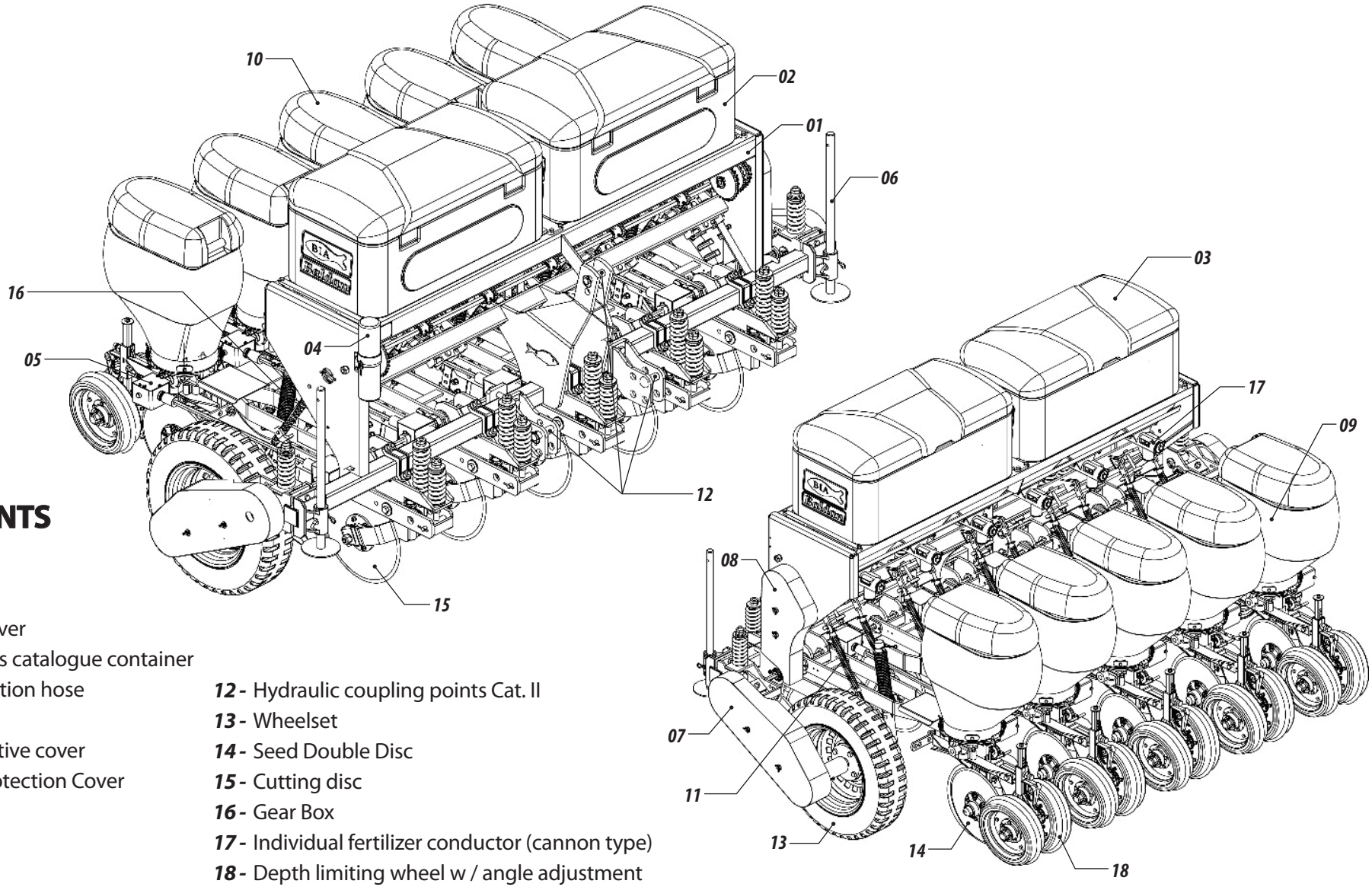
12- **When driving the tractor on roads, keep the brake pedals connected and use of safety signs.**

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 HYDRAULIC SEED DRILL - NSH 2000 / 2500 / 3000

Figure 1



02. COMPONENTS

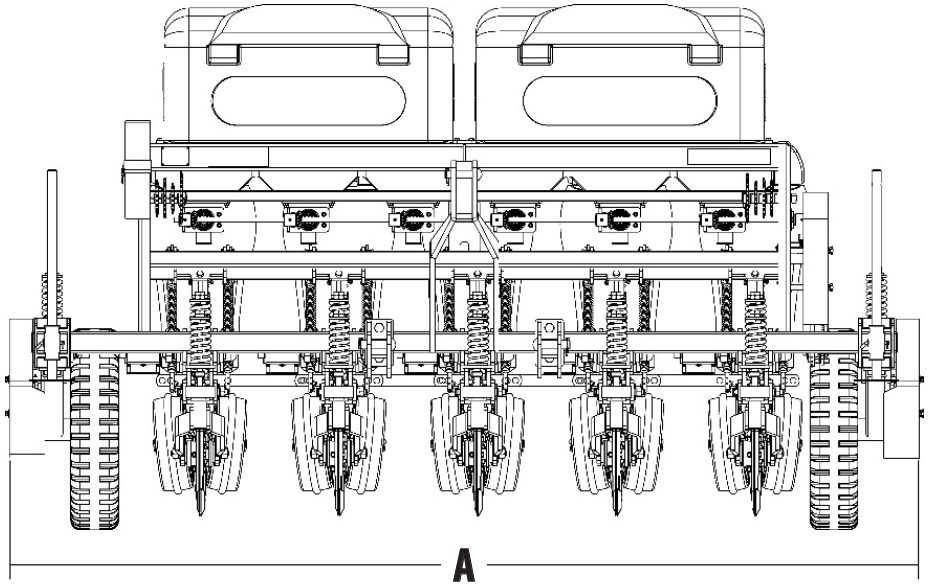
01 - Chassis
02 - Fertilizer tank
03 - Fertilizer tank cover
04 - Manual and parts catalogue container
05 - Fertilizer conduction hose
06 - Support leg
07 - Wheelset protective cover
08 - Transmission protection Cover
09 - Seed Tank
10 - Seed tank cover
11 - Spring rods
12 - Hydraulic coupling points Cat. II
13 - Wheelset
14 - Seed Double Disc
15 - Cutting disc
16 - Gear Box
17 - Individual fertilizer conductor (cannon type)
18 - Depth limiting wheel w / angle adjustment

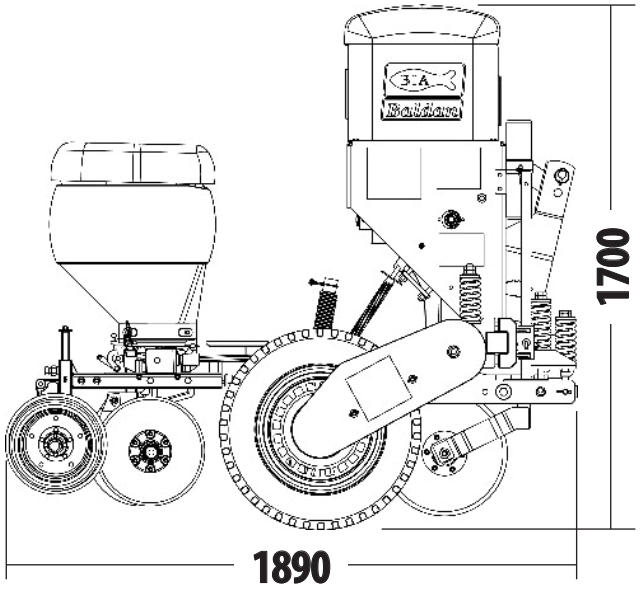
03. TECHNICAL SPECIFICATIONS

Model	Nr of lines soybean (mm)	Nr of lines corn (mm)	Working width (mm)	Useful width (mm)	Total width (mm)	Hopper Capacity (L)		Uprising capacity (Kg)	Average yield (Ha / Day)	Approx. height (Kg)	Tractor Power (HP)
						Fertilizer	Seed				
2000	3 of 450	2 of 900	1350	900	2050	200	45	1065	730	730	50
2500	5 of 450	3 of 900	2250	1800	2950	400	45	1705	1085	1085	60
3000	6 of 450	4 of 900	3240	2800	3850	400	45	1990	1315	1315	70

Table 1

- Minimum spacing between lines ..... 400 mm
- Working depth fertilizer / seed ..... 0 a 120 mm





Figures 2

Considering the average yield calculation, work speed of 6 km / hour for 10 hour work day

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

04. TRACTOR HOOKUP

- Before connecting the seed drill to the tractor, make sure the tractor is ready to work by observing the following items:

01 - 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.

02 - Adjust the eye of the tractor's lower arms.

- To couple the seed drill, proceed as follows:

03 - Slowly bring the tractor near the seed drill in reverse gear, being ready for applying the brakes. Use the lever that controls the hydraulic position when approaching the seed drill, leaving the lower left arm at the level of the coupling point.

04 - Engage the lower left arm of the tractor through the hitch pin (1) in support "A" of the seed drill.

05 - Engage the tractor 3rd point on support in "B" of the seed drill.

06 - Finally with the aid of the adjustment lever "C", couple the right lower arm of the tractor on support "D" of the seed drill.

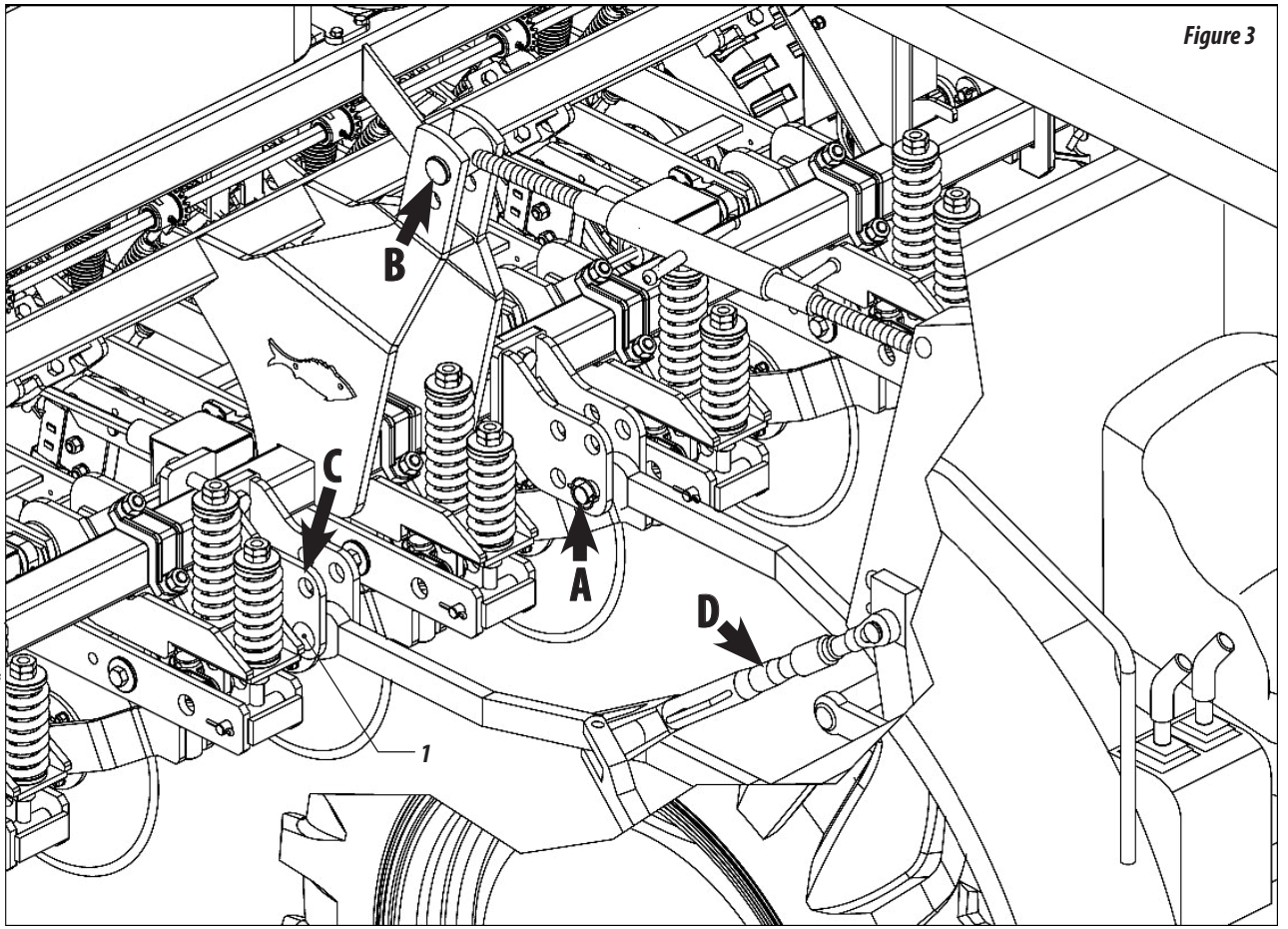


Figure 3

⚠ ATTENTION

By coupling the seed drill, find a safe and accessible place, always use low gear with low acceleration. Make sure to relieve the hydraulic tractor, no one is near the area of movement of the equipment.

IMPORTANT

Do not carry the seeder if it is loaded, which could damage the equipment. We recommend only load it in the workplace. If the machine is to remain in the field for any reason, we recommend covering it with tarp to prevent moisture.

WORK / 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). With the seed drill lowered, make sure it is leveled in relation to the ground, otherwise, proceed as on next page.

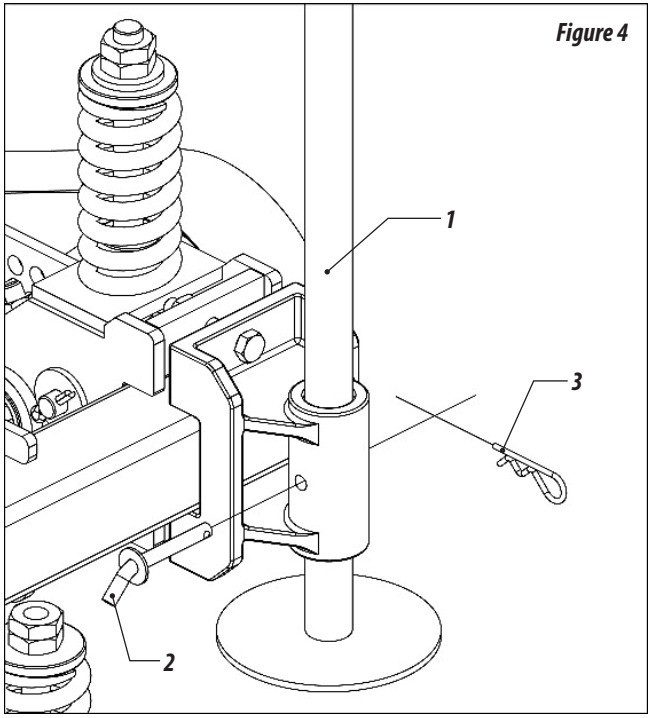


Figure 4

CENTERING THE SEED DRILL

- To centralize the drill NSH seed drill in elation to the longitudinal axis of the tractor, proceed as follows:

02 - Align the upper couple of the seed drill to the 3rd point of the tractor, checking if the distance "E" of the lower hydraulic arms are equal in relation to the tires of the tractor. The lower arms must be leveled with each other.

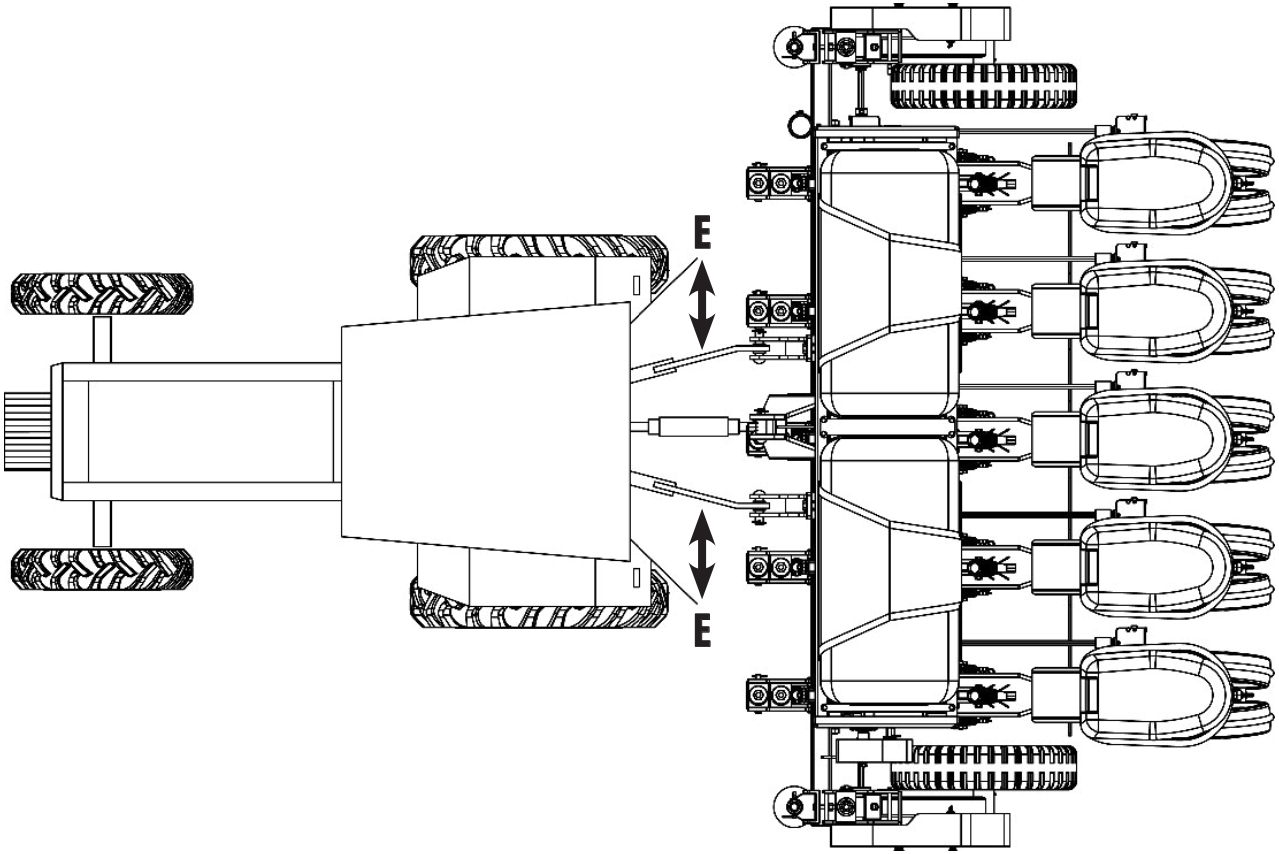


Figure 5

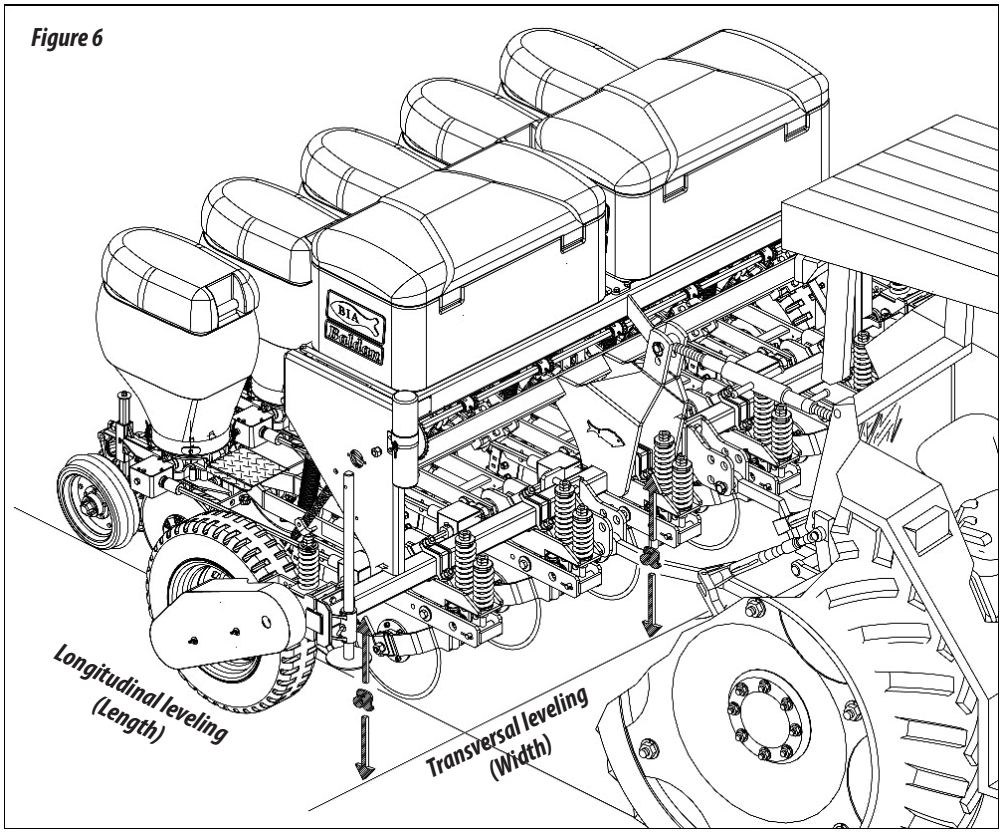
NIVELAMENTO DA SEMEADORA

03 - To level the NSH seed drill, proceed as follows:

04 - The tractor must be on a flat place, then level the seed drill in transverse order
05 - (width) by the crank of the hydraulic coupling right lower arm. Observe the "a" measures that must be equal.

06 - The longitudinal leveling (length) is done through the arm at the 3rd point. Note that the lines should be parallel to the ground.

Figure 6

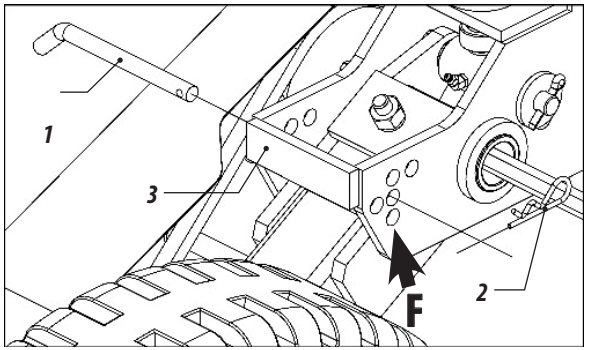


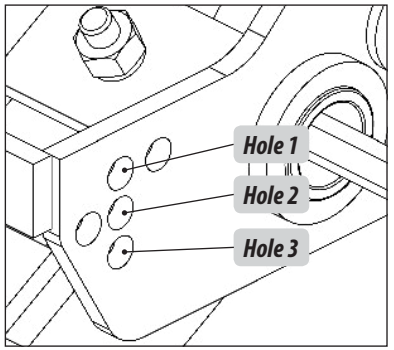
05. ADJUSTMENTS

ADJUSTING THE WHEELSET

- To adjust the wheelset, proceed as follows:

07 - Remove the pin (1) and lock (2) of the wheelset (3), choose the ideal adjustment according to the work to be done, then replace them, as shown in detail "F" on the following page.





Figures 7

WHEELSET ADJUSTMENT	
Hole 1	*Maximum Limitation*
Hole 2	*Medium Limitation*
Hole 3	*Minimum Limitation*

Table 2

⚠ ATTENTION

Before adjusting the cutting discs, furrowers and double disc of fertilizer and seed, make the adjustment of the wheelset on both sides, since this adjustment interferes with their depth.

IMPORTANT

When transporting the seed drill, load or unload the truck, leaving the adjustment of wheelset on hole 3 on both sides, avoiding the contact of discs with the soil and leaving the seed drill stabilized.

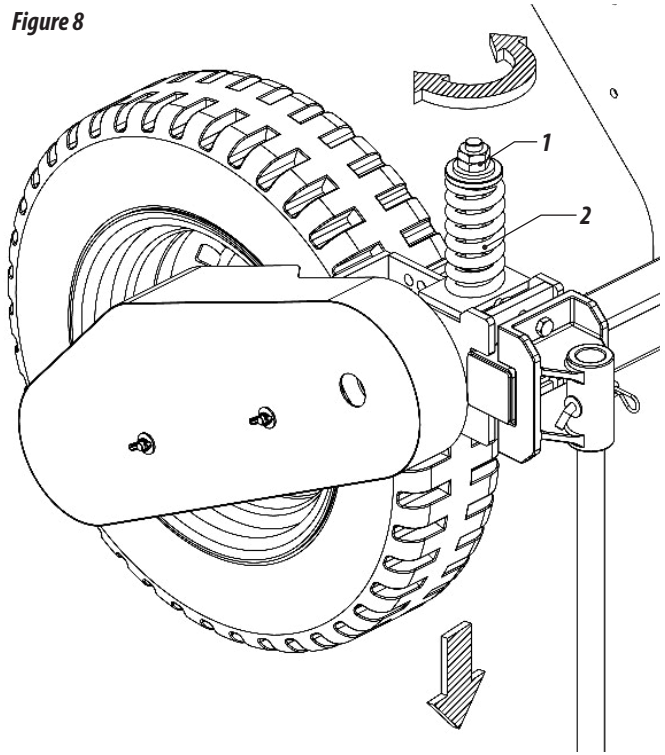
ADJUSTING THE WHEELSET PRESSURE

• To adjust the wheelset pressure, proceed as follows:

08 - Turn the nut (1) clockwise for higher pressure on the spring (2).

09 - Turn the nut (1) in counterclockwise for less pressure on the spring (2).

Figure 8



PRESSURE REGULATION
More pressure on the spring
Higher adhesion of the tire on the ground
Less pressure on the spring
Minor adhesion of the tire to the ground, therefore higher skating

Table 3

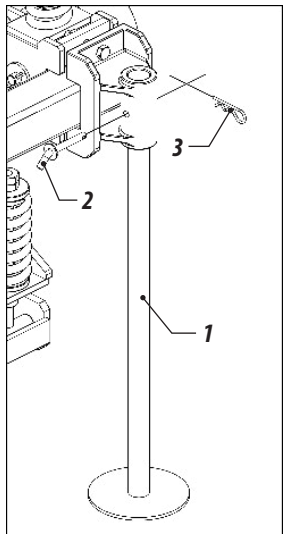
IMPORTANT

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.

06. OPERATIONS

NEW SPACING

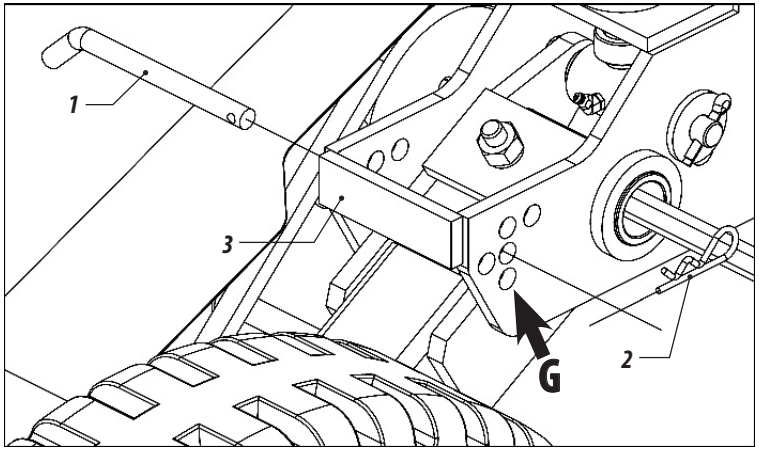
• To make new spacing between lines, if necessary, remove some lines to increase spacing for this, proceed as follows:



10 - Lower the support foot (1) and fix with pin (2) and lock (3). Then, lift the seed drill driving the tractor's hydraulic and unlock the wheel set (4) through the pin (5) and lock (6). Then, lock the wheelset again on the last hole of regulation, as shown in detail "G". Make this adjustment on both sides of the seed drill.

11 - Soon after, lower the tractor's hydraulic, leaving the seed drill completely on the ground. After completing the above procedures, the lines are suspended, ready for new spacing to be regulated.

Figures 9



12 - 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 (14) and remove the spacing bars (13). Then, release the washers (11) and nuts (12).

13 - Finally, remove the complete planting lines by pulling them back;

14 - Replace the hexagon axle and locks (8). Align the gear (10) and replace the elastic pin (9). Then, adjust the spacing of lines and tighten the washers (11), nuts (12) and screws (7);

15 - Replace the spacing bars (13), to fit the new spacing and tighten the screws with sleeves, washers and nuts (14).

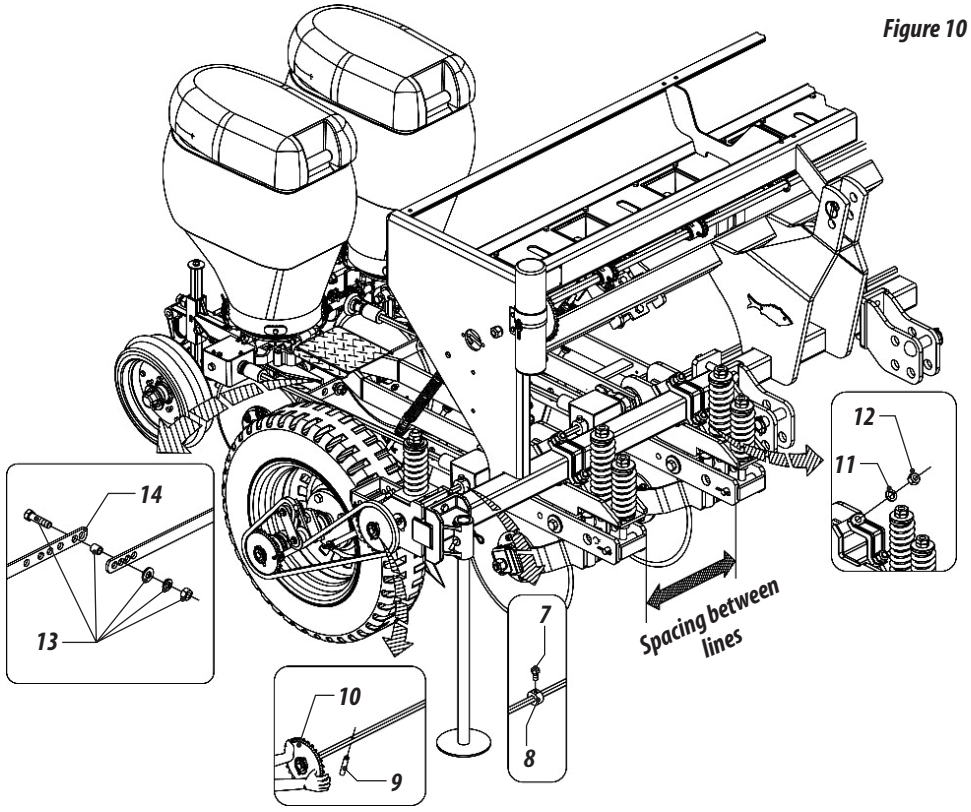


Figure 10

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

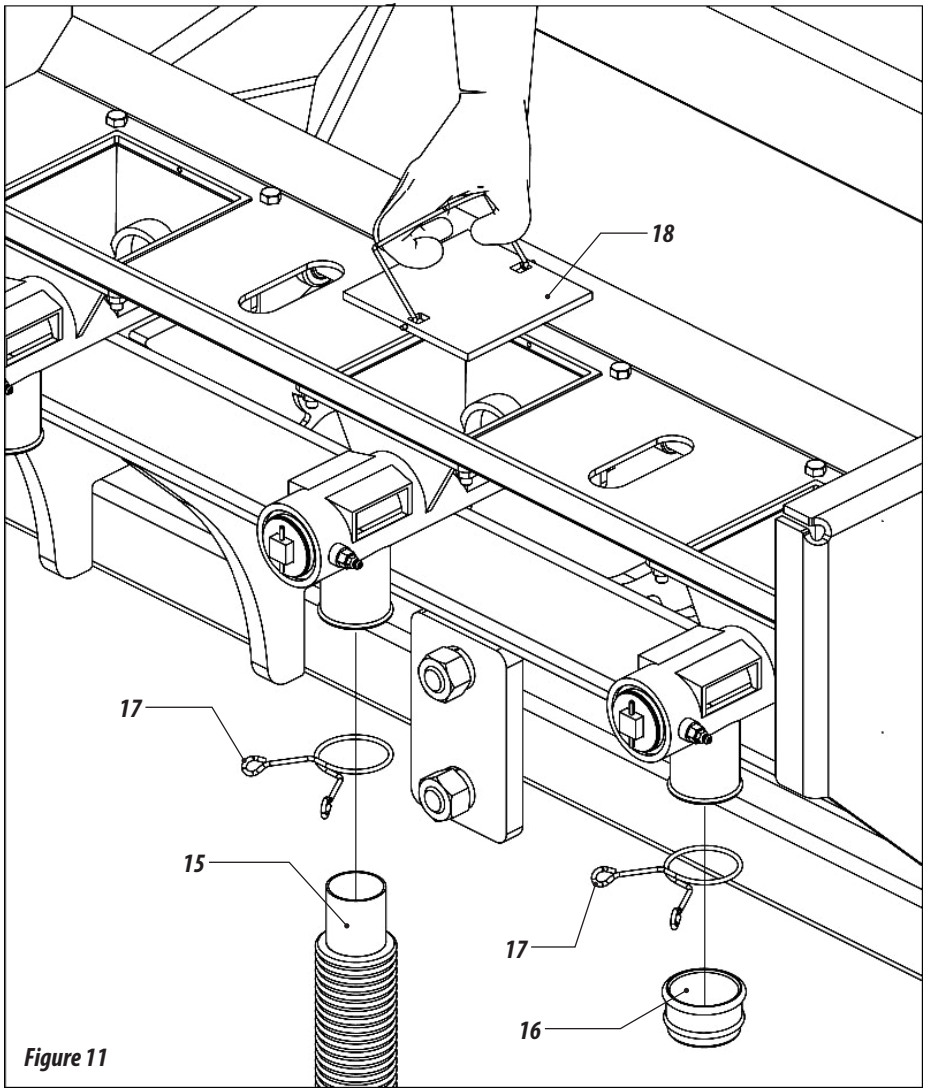


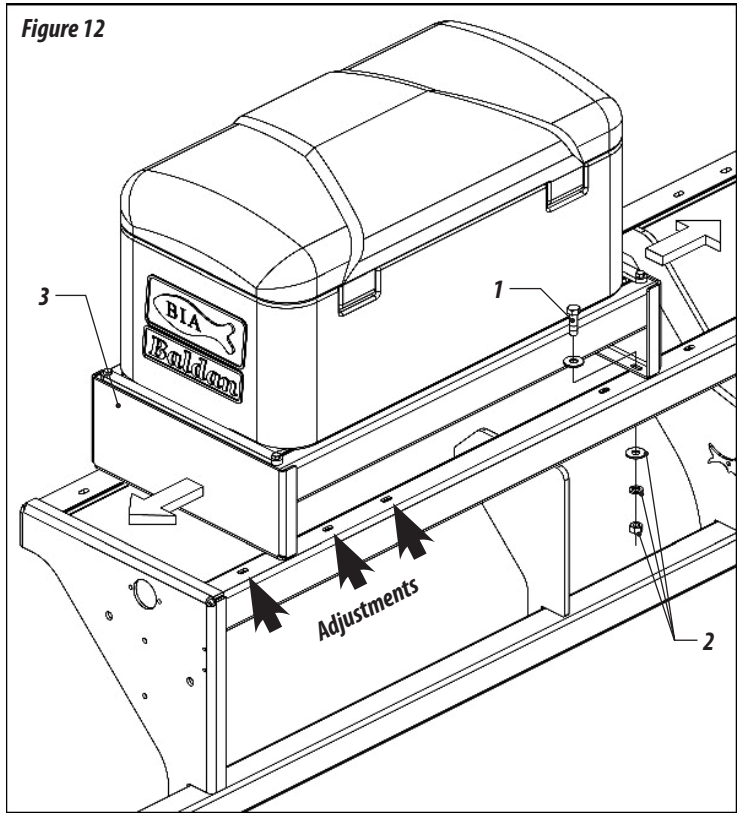
Figure 11

TANK ADJUSTMENT - NSH 3000

- The seed drill model NSH 3000, has an adjusting system in the position of fertilizer tanks, which when making new spacing between lines, if their hoses become misaligned in relation to the fertilizer outputs, do the adjustment so that the fertilizer outputs align with the hoses. To do so, proceed as follows:

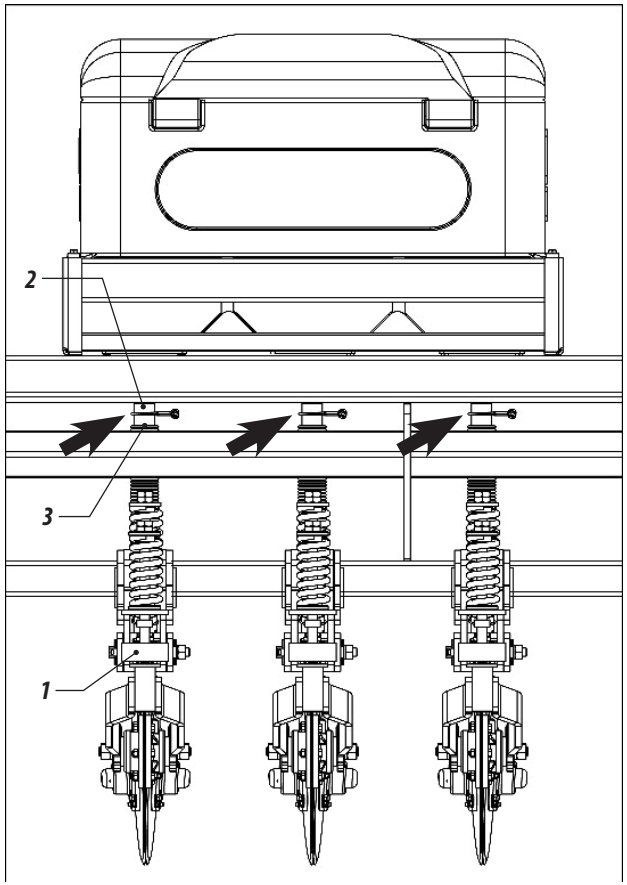
17 - Remove the screws (1), washers and nuts (2) from the box (3). Make the adjustment to the right or left until you find the alignment between the hose and the fertilizer output. Then, retighten the screws (1), washers and nuts (2).

Figure 12



18 - The figure below shows the alignment between the lines (1) and the fertilizer output (2), leaving the hose (3) with the minimum possible angle.

Figure 13



IMPORTANT

Perform this adjustment in both tanks of the seed drill Model NSH 3000, leaving all hoses aligned with the fertilizer outputs.

SPACING BETWEEN LINES

19 - 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.

TABLE OF SPACING IN MM

Model	Nr of rows	Spacing (mm)
2000	2	550/600/650/700/750/800/850/900
	3	450/500
2500	3	650/700/750/800/850/900
	4	450/500/550/600
	5	450
3000	4	700/750/800/850/900
	5	450/675
	6	450/500/550*

Table 4

(*) At this spacing the 2 lateral rows of the equipment have 530mm.

PREPARING THE SEED DRILL FOR PLANTING

20 - Before planting, it is important to prepare the seed drill.

ADJUSTING THE TRACTOR HOOKUP

- For planting on grounds with steep slopes, it is necessary to leave the connecting bar of the tractor's lower arms with its oblong uprising support, to do so, proceed as follows:

21 - Remove the pin (1) of the round hole and make the connection in the oblong hole (2).

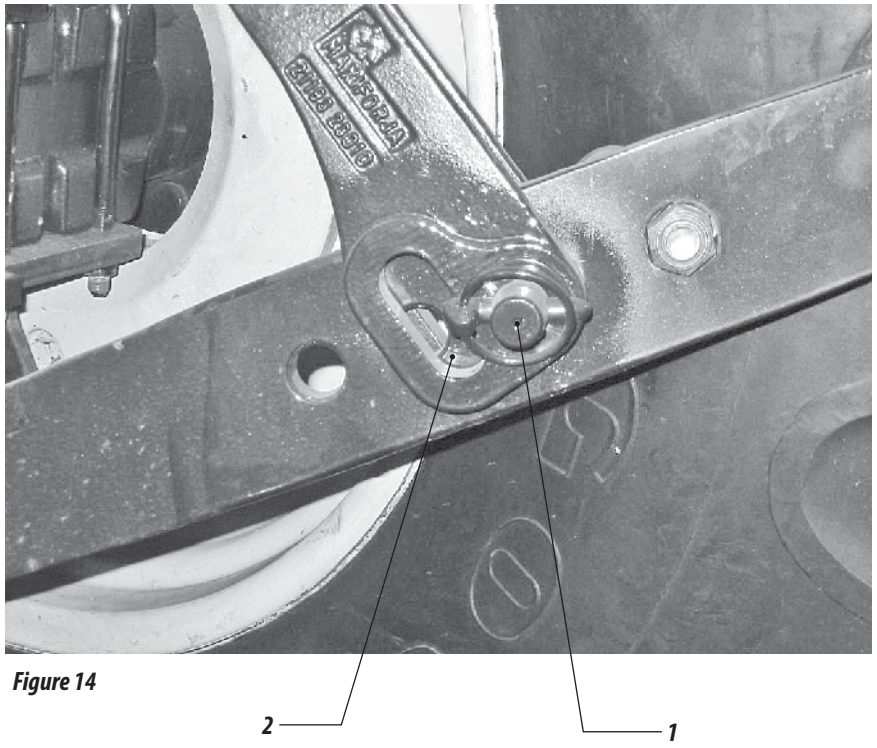


Figure 14

NOTE

This procedure causes the seed drill to float on the ground, avoiding the lines to have different work limitations due to the ground declivity.

07. ADJUSTMENT FOR SEED DISTRIBUTION

CHOOSING THE PROPER 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.

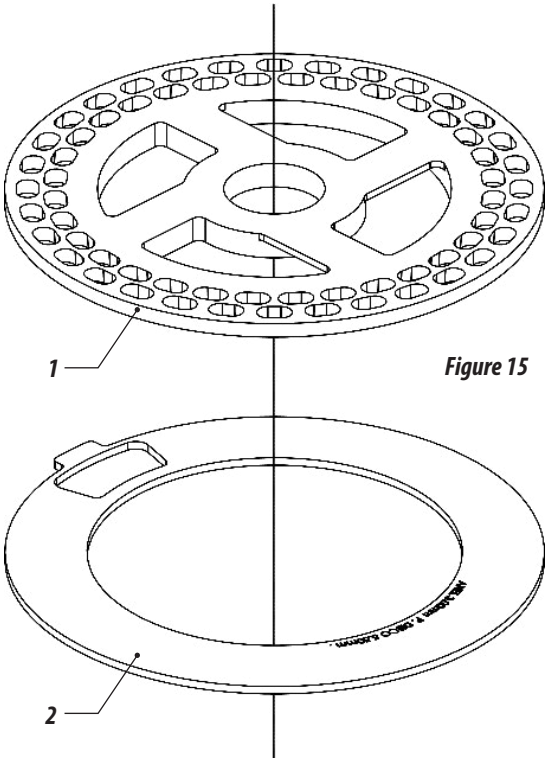


Figure 15

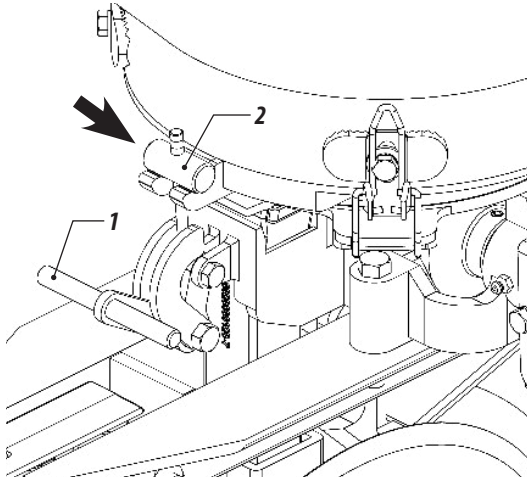
IMPORTANT

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.

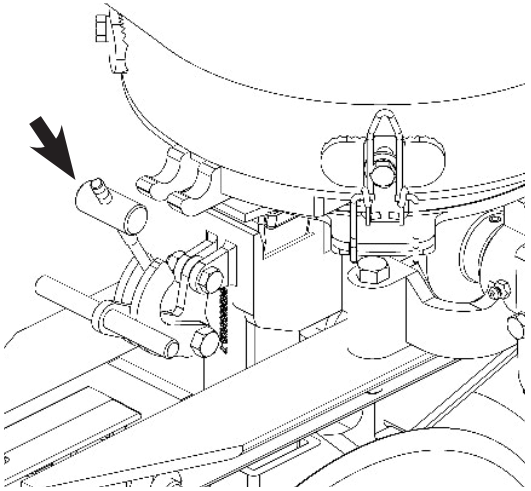
EXCHANGING THE SEED DISC

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

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



Detail "A"



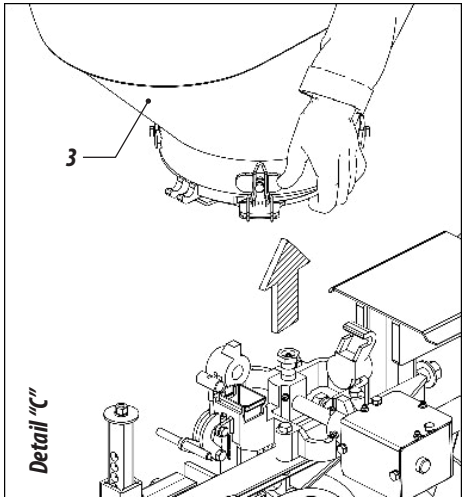
Detail "B"

Figures 16

IMPORTANT

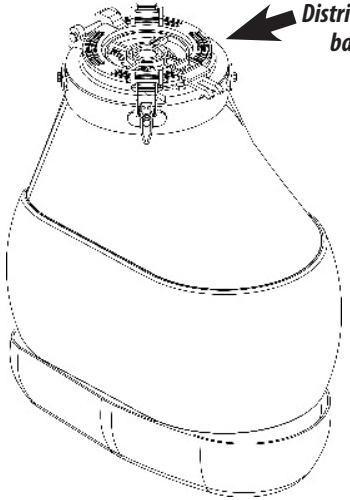
If seeds remain in the tank, remove them before replacing the disc and ring, preventing them from spreading on the floor or locking the system.

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



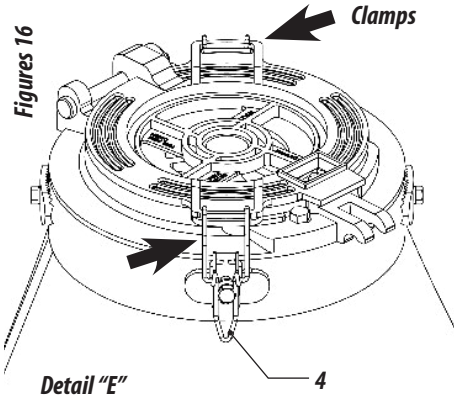
Detail "C"

Figures 16



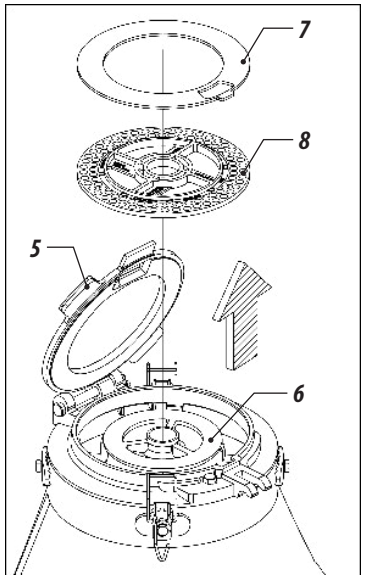
Detail "D"

06 - 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".

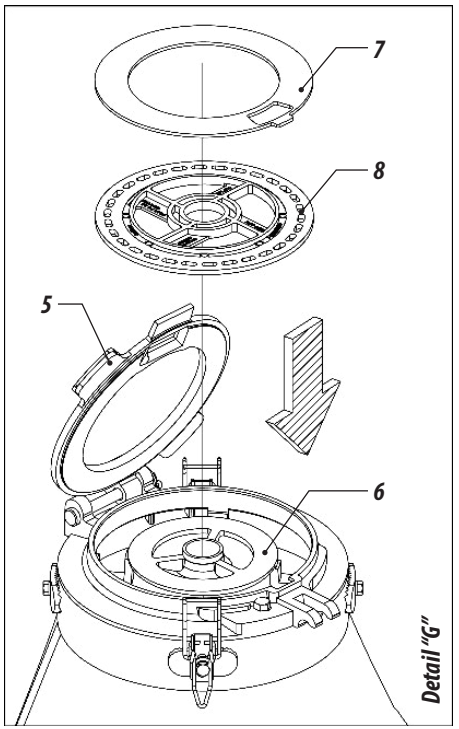


Figures 16

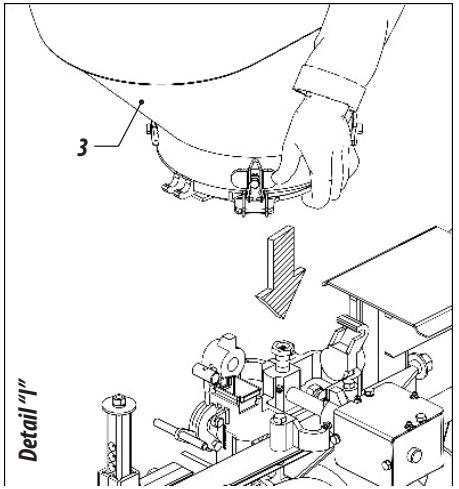
Detail "E"



Detail "F"

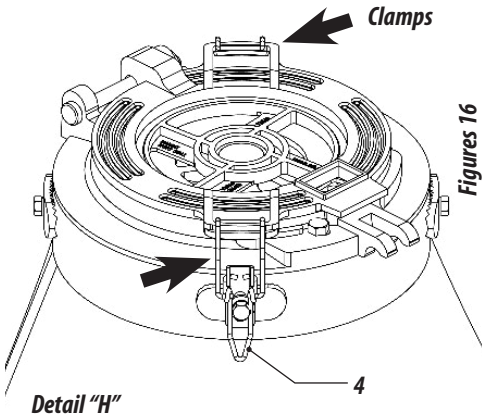


Detail "G"



Detail "I"

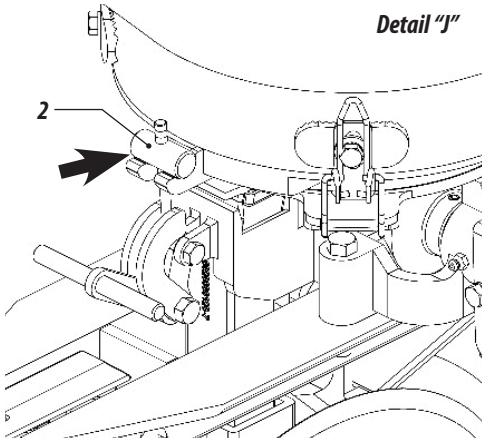
07 - When replacing the ring (7) and the disc (8), swivel the base (5) and shut it. Then, lock the clamps (4) again, as shown in detail "G" and "H".



Figures 16

Detail "H"

08 - 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 16

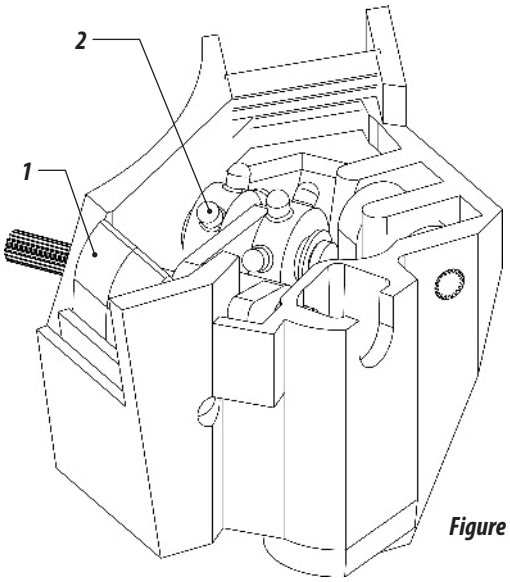


Figure 17

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.

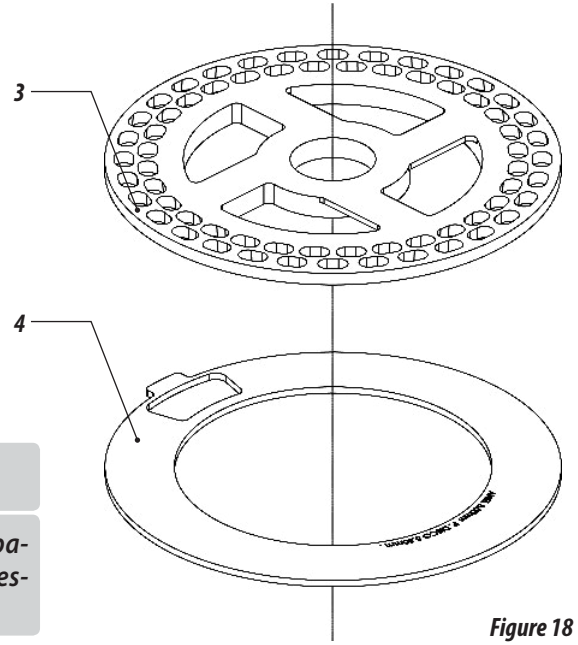


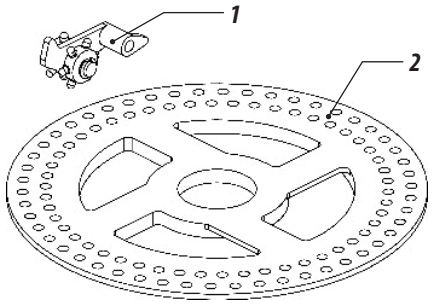
Figure 18

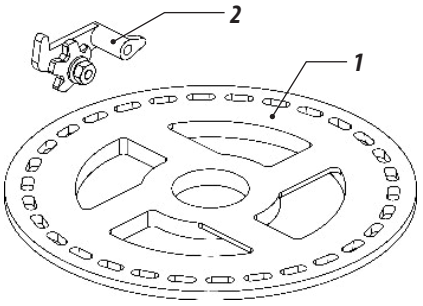
IMPORTANT

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

SEED METERING ROSETTE

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





Figures 19

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

EXCHANGING FROM DOUBLE ROSETTE TO SINGLE ROSETTE

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

11 - 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).

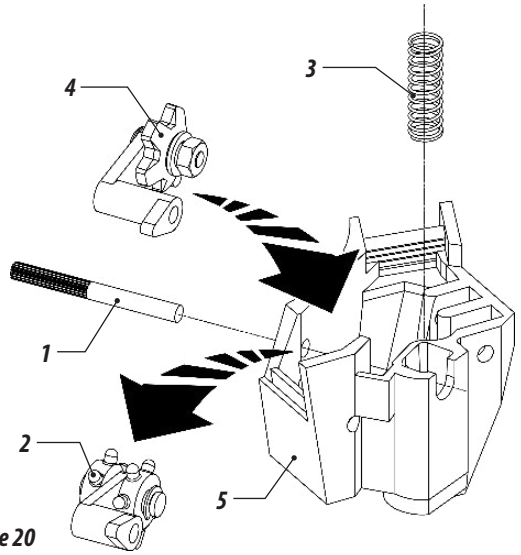


Figure 20

SEED DISTRIBUTION DISC

12 - The seed drill leaves the factory with 2 models of standard discs and rings, which can optionally be purchased loose.

CULTURE	STANDARD DISCS AND RINGS
Soy	Disc of 5.5 mm thickness w / 90 holes Ø 8mm
	Ring of Ø 189 x 3mm
CORN	Disc of 4.5 mm thickness w / 28 holes Ø 12.5 mm
	Ring of Ø 189 x 4mm c / recess
CULTURE	**OPTIONAL DISCS AND RINGS**
BEAN	Disc of 5.5 mm thickness w / 64 holes Ø 8 x 12.5 mm
SORGHUM	Disc of 3mm thickness w / 100 holes Ø 5mm
	Ring of Ø 189 x 5,5 mm w / locking for sorghum
SUNFLOWER	Disc of 4.5 mm thickness w / 30 holes Ø 4.5 x 13mm
COTTON	Disc of 5.5 mm thickness w / 64 holes Ø 7 x 12mm
RICE	Disc of 5.5 mm thickness w / 40 holes Ø 6.5 x 19.5 mm

Table 5

OPTION KIT FOR PEANUTS

- Peanut culture uses an optional kit which is composed of the following:

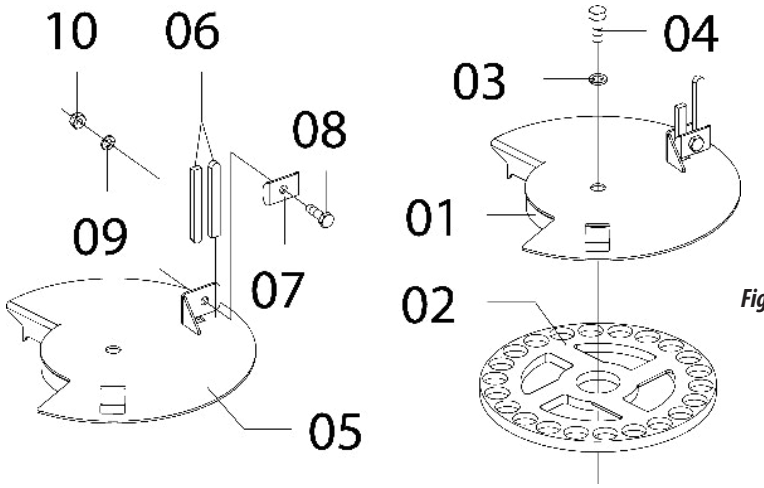


Figure 21

ITEM	DISCRIMINATION
01	Full Deflector
02	Distribution disc for peanut of 8.0mm 22F Ø 20mm
03	Pressure washer Ø 5/16 "(bichromatic)
04	Hexagon screw Ø 5/16 "x 7/8" 18F UNC1A GR2 RT
05	Distribution deflection disc
06	Seed distributor
07	Seed distributor clamp
08	Hexagon screw. Ø 1/4 "x 7/8" 20F UNC1A GR2 RT
09	Pressure washer Ø 1/4 "(bichromatic)
10	Hexagon Nut 1/4 "20F UNC GR5

Table 6

USE OF POWDERED GRAPHITE OR INDUSTRIAL TALC

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

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

Table 7

IMPORTANT

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

TABLE DE DISTRIBUIÇÃO DE SEMENTES

13 - The seed distribution table is made in accordance with the number of holes in the distribution disc, gear change and number of seed 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.

Seed Distribution Table – NSH NANO Hydraulic Seed drill — Table 8

Grains per Linear Meter					
Wheel	Axle	Soybeans	Corn	Beans	Sorghum
Z	Z	90 Holes	28 Holes	64 Holes	100 Holes
16	32	10,2	3,0	7,3	11,0
18	32	11,4	3,5	8,0	12,6
18	30	12,2	3,8	8,7	13,5
20	30	13,5	4,2	9,6	15,0
18	26	14,0	4,4	10,0	15,5
22	30	14,9	4,6	10,6	16,5
20	26	15,6	4,9	11,0	17,3
24	30	16,2	5,0	11,5	18,0
20	24	16,9	5,3	12,0	18,7
26	30	17,6	5,5	12,5	19,5
20	22	18,4	5,7	13,0	20,4
26	28	18,9	5,9	13,4	21,0
28	26	21,8	6,8	15,5	24,2
22	20	22,3	7,0	15,8	24,8
32	28	23,2	7,2	16,5	25,8
26	22	24,0	7,5	17,0	26,7
22	18	24,8	7,7	17,6	27,5
28	22	25,8	8,0	18,3	28,7
24	18	27,0	8,4	19,0	30,0
22	16	28,0	8,7	20,0	31,0
26	18	29,3	9,1	20,8	32,5
28	18	31,5	9,8	22,4	35,0

08. FERTILIZER DISTRIBUTION SYSTEM

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.

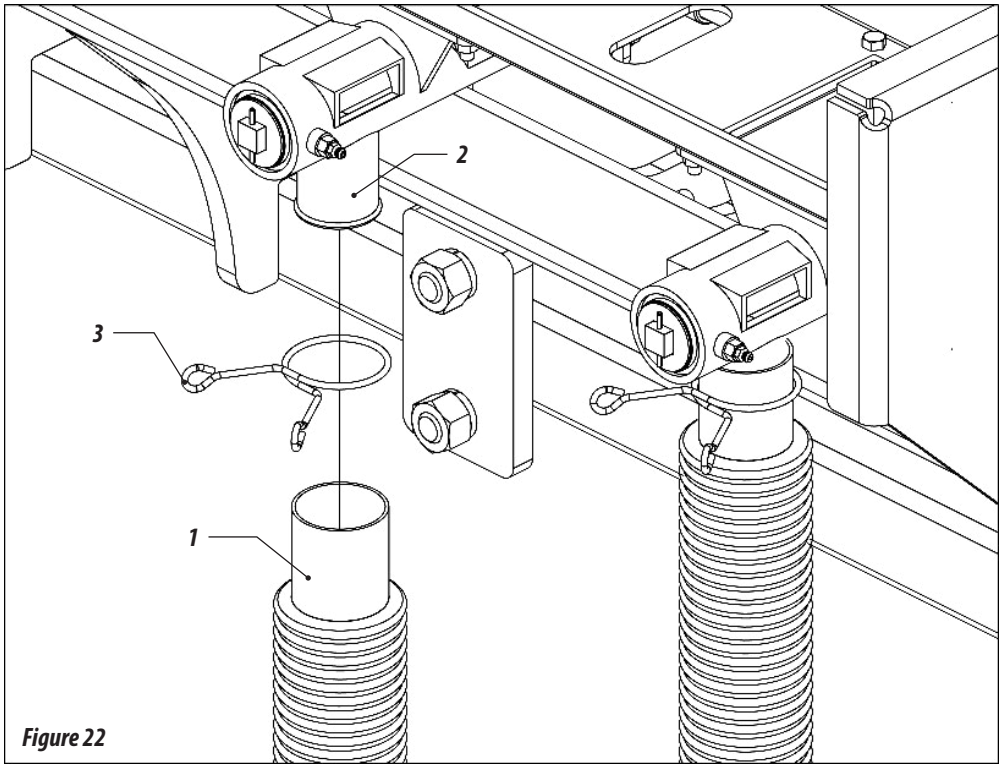


Figure 22

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.

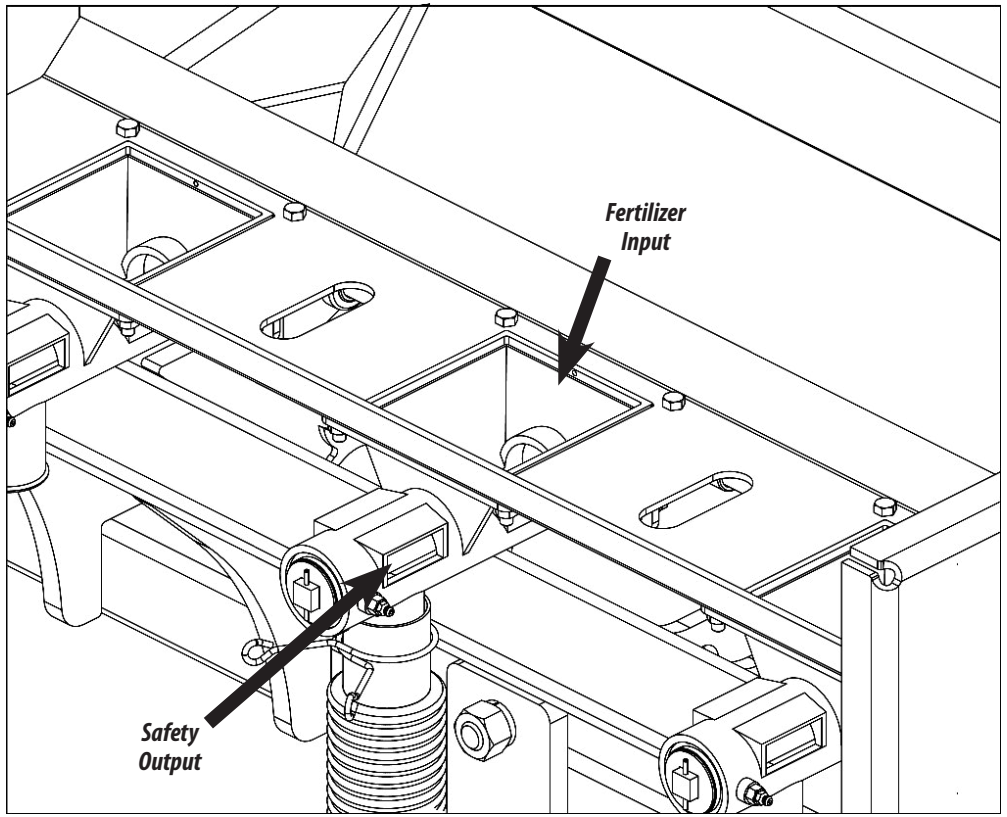


Figure 23

IMPORTANT

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

FERTILIZER DISTRIBUTION TABLE

Table 9

Fertilizer Distribution Table of the NSH - Nano Hydraulic Seed drill																									
Spring Step 2"																									
Z1 (wheel)		16	16	18	18	22	18	22	24	16	18	26	24	28	20	18	26	28	24	26	22	26	24	26	
Z2 (External gear)		26	24	26	24	28	22	26	28	28	20	28	26	26	16	16	24	24	20	20	16	18	16	16	
Z3 (Internal gear)		18	18	20	20	20	20	20	22	20	22	22	20	24	24	22	22	26	22	28	24	28	26	28	
Z4 (Shaft)		28	26	28	26	26	24	24	26	22	24	24	22	22	22	20	18	22	18	22	18	20	18	18	
GRAMS / 50mts		**390**	**480**	**510**	**560**	**610**	**680**	**700**	**710**	**780**	**800**	**820**	**850**	**940**	**1140**	**1180**	**1250**	**1280**	**1380**	**1540**	**1700**	**1880**	**1980**	**2410**	← 5th line
SPACINGS	400	195	240	255	280	305	340	350	355	390	400	410	425	470	570	590	625	640	690	770	850	940	990	1205	
	450	173	213	226	249	271	302	311	315	346	355	364	377	417	506	524	555	568	613	684	755	835	879	1070	
	500	156	192	204	224	244	272	280	284	312	320	328	340	376	456	472	500	512	552	616	680	752	792	964	
	550	142	175	186	204	222	247	255	258	284	291	298	309	342	415	430	455	466	502	560	619	684	721	877	
	600	130	160	170	186	203	226	233	236	260	266	273	283	313	380	393	416	426	460	513	566	626	659	803	
	650	120	148	157	172	188	209	216	219	240	246	650	650	650	650	650	650	650	650	650	650	650	650	650	
	700	112	137	146	160	174	194	200	203	223	229	235	243	269	326	337	358	366	395	440	486	538	566	689	
	750	104	128	136	150	163	182	187	190	208	214	219	227	251	304	315	334	342	368	411	454	502	529	643	
	800	98	120	128	140	153	170	175	178	195	200	205	213	235	285	295	313	320	345	385	425	470	495	603	
	850	92	113	120	132	143	160	165	167	183	188	193	200	221	268	277	294	301	324	362	400	442	465	566	
	900	87	107	113	124	135	151	155	158	173	178	182	189	209	253	262	278	284	306	342	377	417	440	535	
	950	82	101	108	118	129	143	148	150	165	169	173	179	198	241	249	264	270	291	325	359	397	418	509	
	1000	78	96	102	112	122	136	140	142	156	160	164	170	188	228	236	250	256	276	308	340	376	396	482	

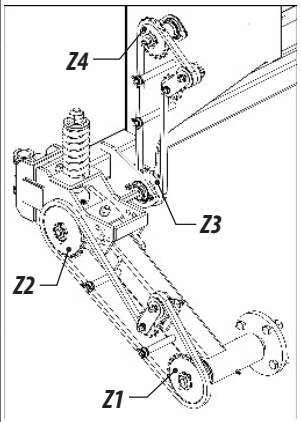


Figure 24

IMPORTANT

We suggest carrying a practical test for fertilizer distribution over 50m, to later compare the results with the values of the 5th line indicated in the table above.

NOTE

With test weight of 1,200 grams per liter

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 your NSH 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.

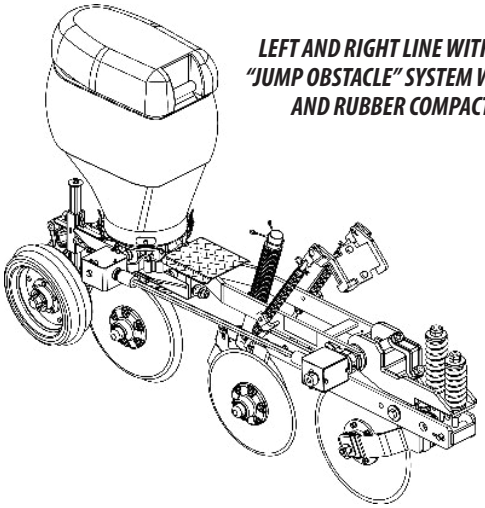
⚠ ATTENTION

The manufacturer recommends that you take a practice test for seed and fertilizer, running 50 meters, and then compare the results with the values in Table fertilizer distribution.

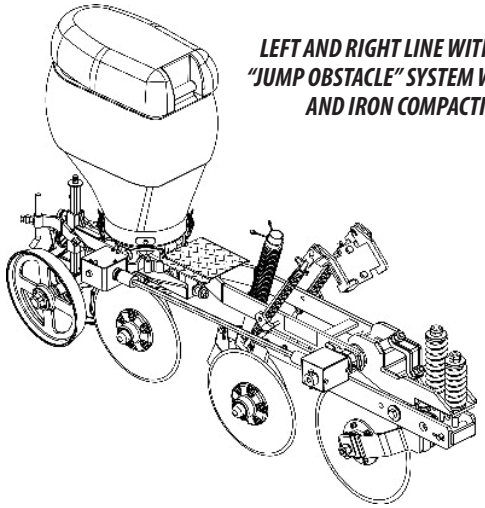
10. PLANTING LINES

LINE MODELS

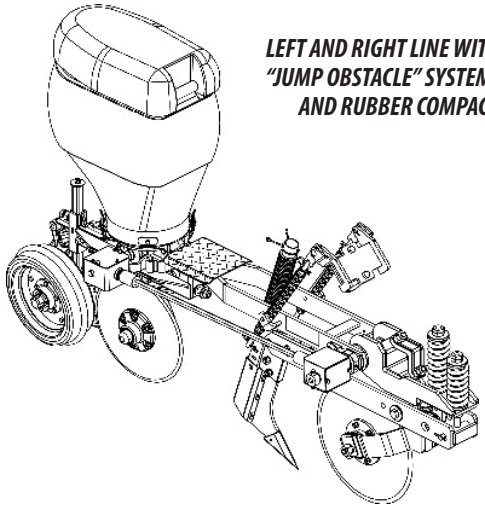
01 - The planting line can be found in many models as follows:



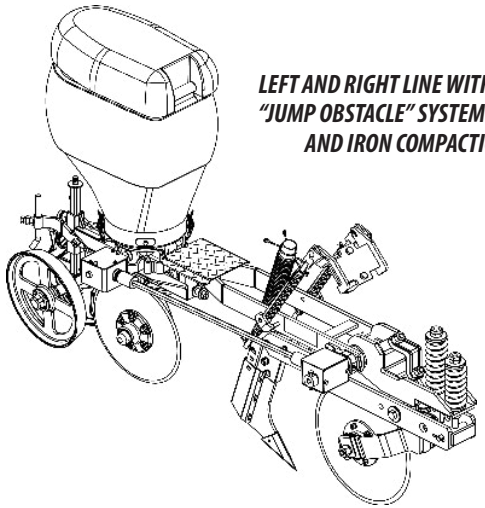
LEFT AND RIGHT LINE WITH AND WITHOUT "JUMP OBSTACLE" SYSTEM W / DISCO DOUBLE AND RUBBER COMPACTION WHEEL



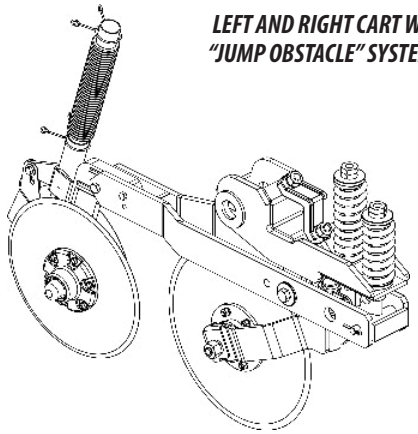
LEFT AND RIGHT LINE WITH AND WITHOUT "JUMP OBSTACLE" SYSTEM W / DISCO DOUBLE AND IRON COMPACTION WHEEL



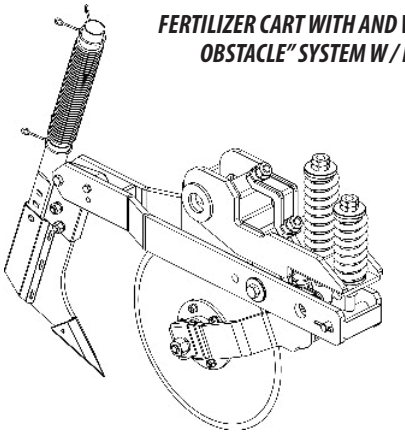
LEFT AND RIGHT LINE WITH AND WITHOUT "JUMP OBSTACLE" SYSTEM W / FURROWER AND RUBBER COMPACTION WHEEL



LEFT AND RIGHT LINE WITH AND WITHOUT "JUMP OBSTACLE" SYSTEM W / FURROWER AND IRON COMPACTION WHEEL



LEFT AND RIGHT CART WITH AND WITHOUT "JUMP OBSTACLE" SYSTEM W / DOUBLE DISC



FERTILIZER CART WITH AND WITHOUT "JUMP OBSTACLE" SYSTEM W / FURROWER

Figures 25

11. DEPTH ADJUSTMENT

CUTTING DISC PRESSURE ADJUSTMENT

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

01 - Turn the nut (2) clockwise for higher pressure on the spring (3).

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

PRESSURE ADJUSTMENT
More pressure on the spring
Higher pressure of the cutting disc on the ground
Less pressure on the spring
Lower pressure of the cutting disc on the soil

Table 10

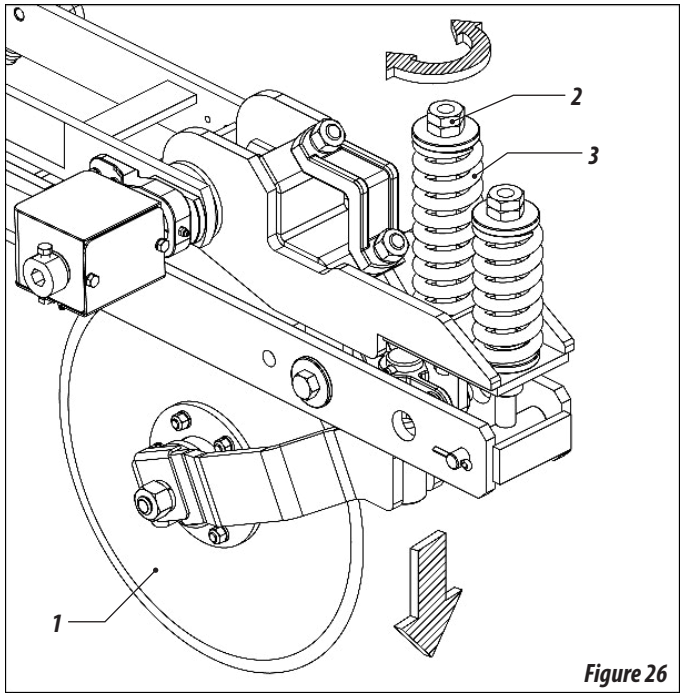


Figure 26

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.

ADJUSTING THE DOUBLE DISC PRESSURE

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

03 - Turn the nut (2) clockwise for higher pressure on the spring (3).

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

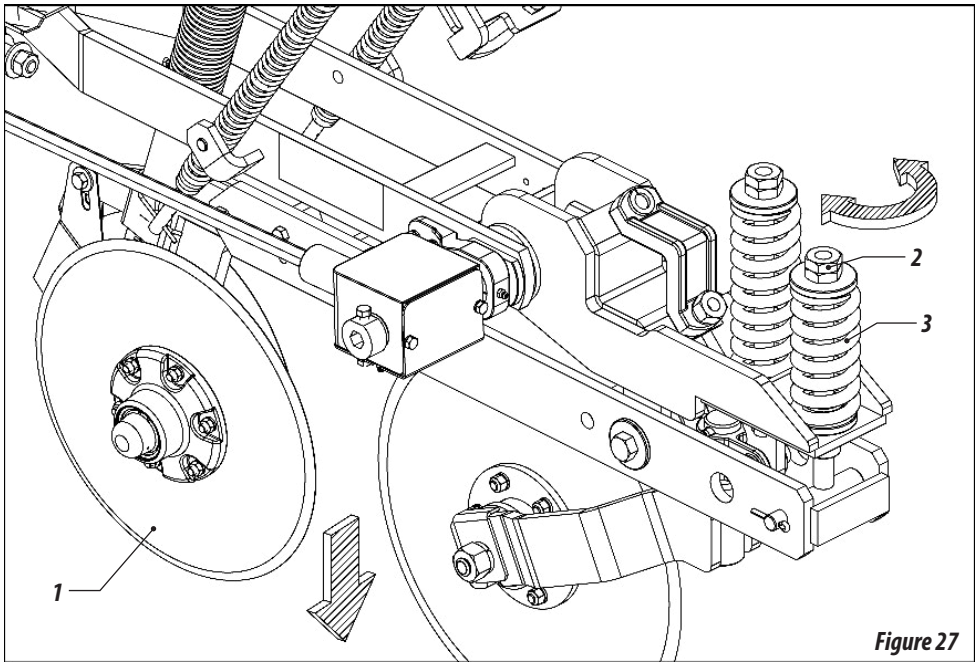


Figure 27

PRESSURE ADJUSTMENT
More pressure on the spring
Higher pressure of the cutting disc on the ground
Less pressure on the spring
Lower pressure of the cutting disc on the soil

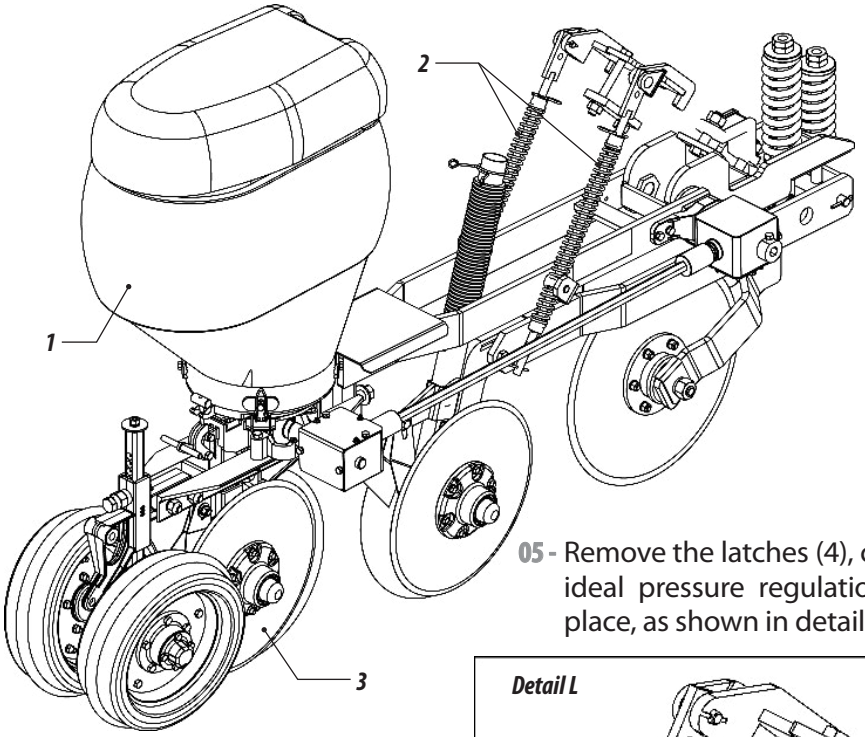
Table 11

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.

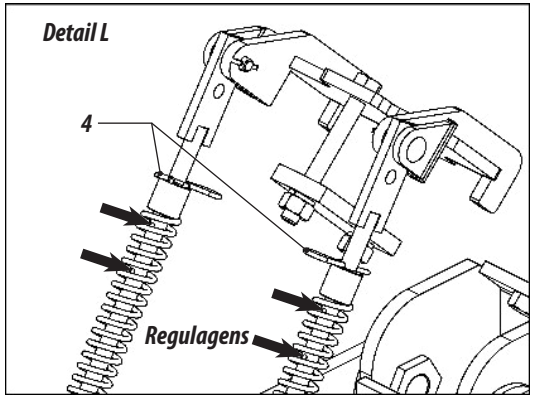
ADJUSTING THE PRESSURE ON SPRINGS

- The line (1) has pressure springs (2) to be adjusted with greater or lesser pressure, they will increase or decrease the pressure on the double disc (3). To adjust the spring pressure, do as follows:



Figures 28

05 - Remove the latches (4), choose the ideal pressure regulation and replace, as shown in detail "L".



ATTENTION

When you finish adjusting the springs, repeat this procedure on all lines.

IMPORTANT

Excess pressure on the springs causes the machine to be lifted by the reaction to penetration.

- Then make the adjustment of line oscillation (1). To do this, proceed as follows:

06 - Remove the latches (5), choose ideal pressure regulation for the line oscillation and replace it, as shown in detail "M".

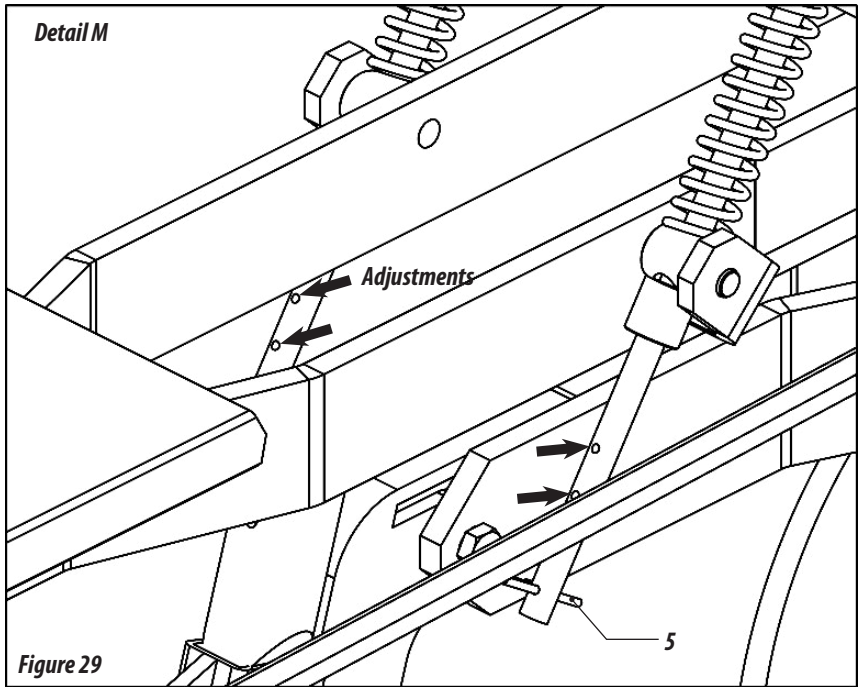


Figure 29

ATTENTION

When you finish adjusting the springs, repeat this procedure on all lines.

NOTE

During planting on land with great variations in humidity, soil or others, check repeatedly the working depth of each line.

ADJUSTING THE DOUBLE DISC WIPERS

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

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

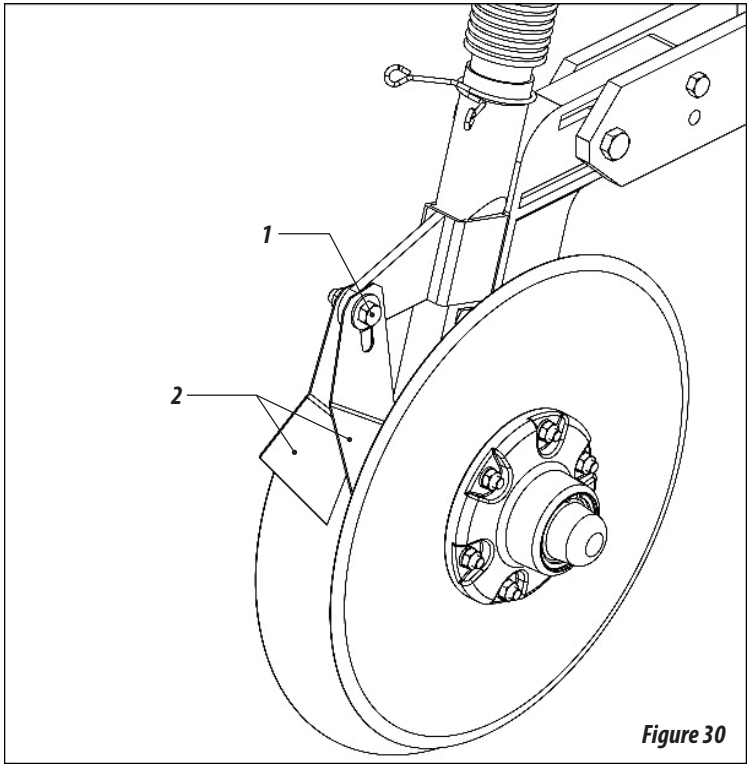


Figure 30

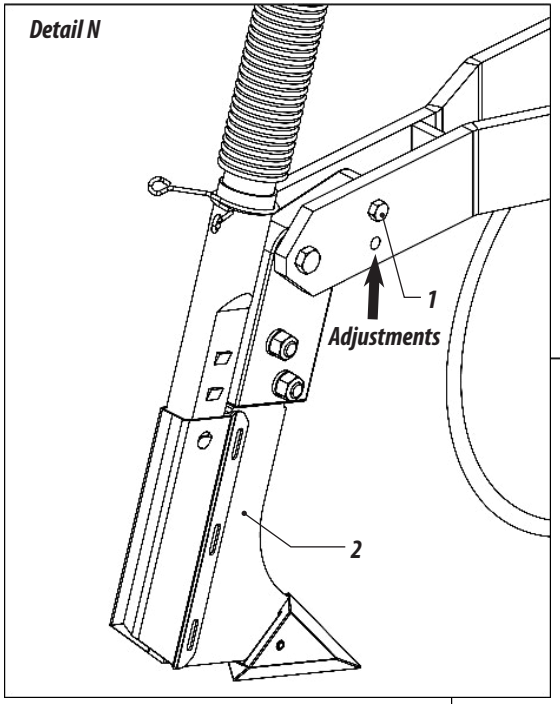
ADJUSTING THE FURROWER

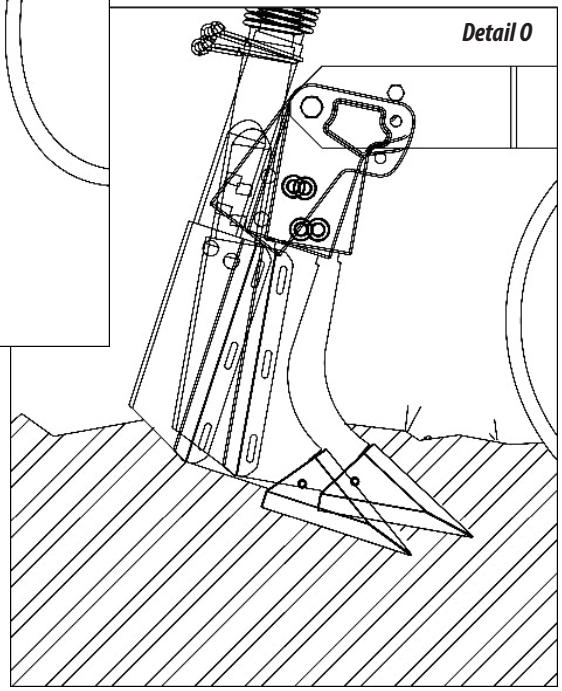
09 - The fertilizer furrow has several work adjustments to best fit the type of soil to be worked.

ADJUSTING THE FURROWER ATTACK ANGLE

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

10 - Remove the screw (1), articulates the furrower (2) to the ideal regulation and replace the screw (1), as shown in detail "N" and "O".



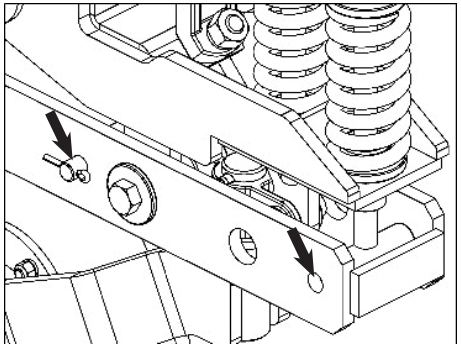


Figures 31

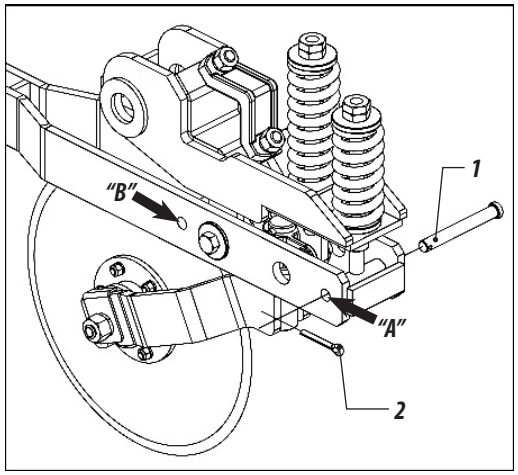
"JUMP-OBSTACLE" SYSTEM

- 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:

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



"Jump-obstacle" system activated



Figures 32

12 - 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."

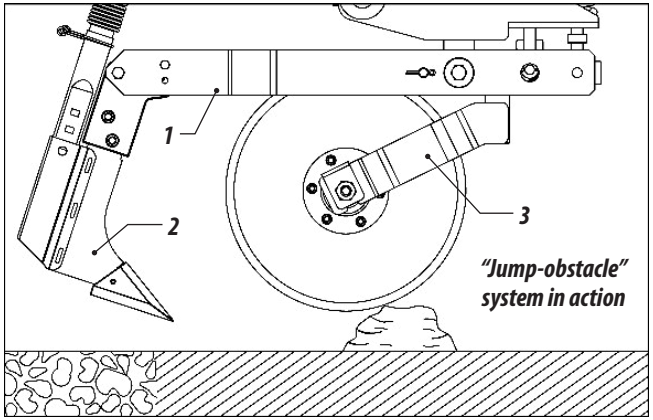


Figure 33

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:

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

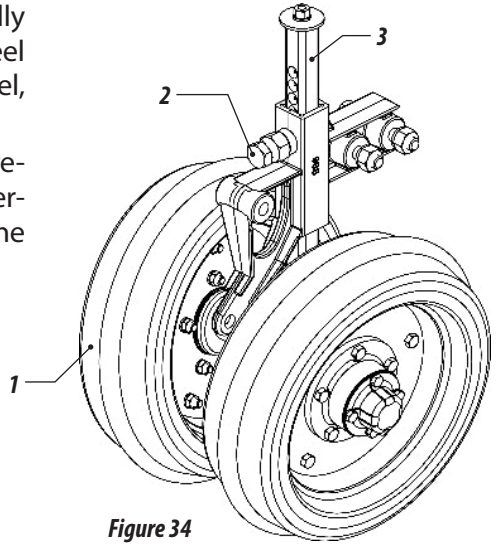


Figure 34

Make this adjustment on all wheels of the other lines.

WIPERS

- The iron depth limiting wheel (1) is optional. When purchased, its wipers must be adjusted when there is any height adjustment, so that its ends are near the surface of the wheels. To make this adjustment, proceed as follows:

14 - Loosen the lock nut (2) and screw (3), adjust the wipers (4) and tighten the screw (3) and nut (2).

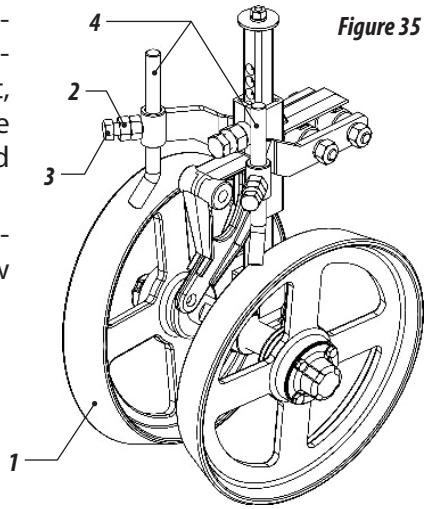


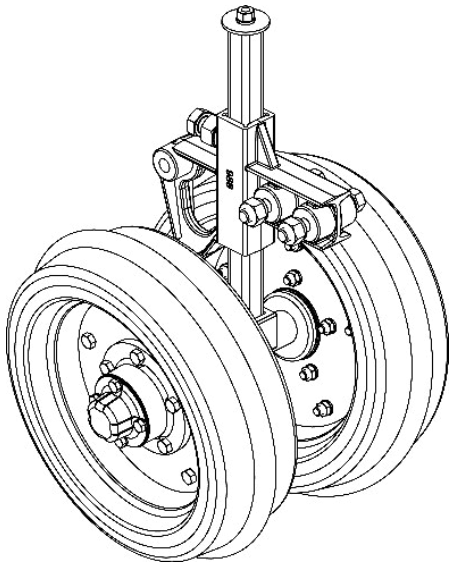
Figure 35

Make this adjustment on all wheels of the other lines.

DEPTH LIMITING WHEEL ANGLE

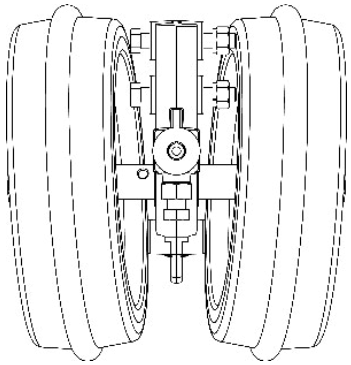
15 - The depth limiting wheel angle (1) is intended to press the furrow so that the soil is immediately placed back over the seed, avoiding excessive compression, facilitating germination and plant growth.

16 - 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.

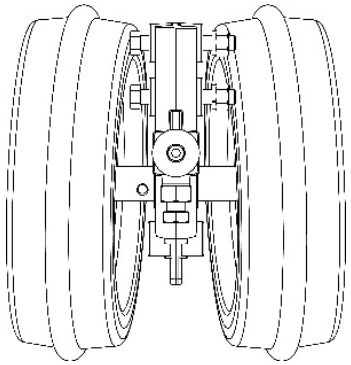


Figures 36

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.

12. OPERATIONS

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

02- Always keep the tires with the same calibration of 70 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.

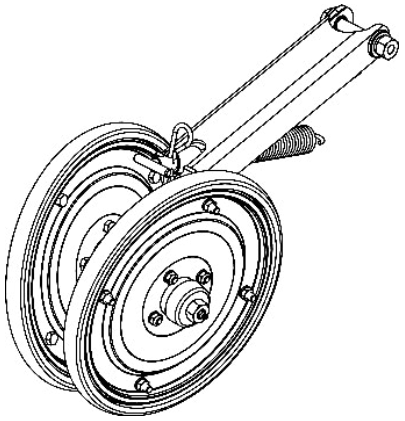
07- Always check depth of seed the fertilizer and the pressure of the compaction wheels.

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

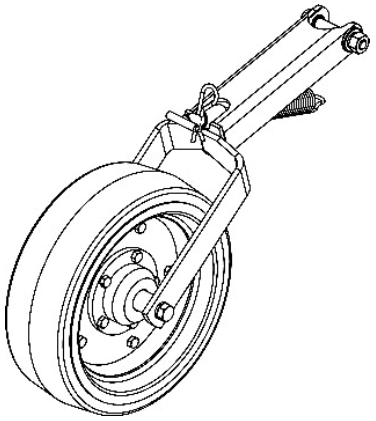
13. COMPACTION WHEELS (OPTIONAL)

MODELS OF COMPACTION WHEELS

01 - To assemble the compaction wheels on the lines of the planter model NSH, proceed as follows:

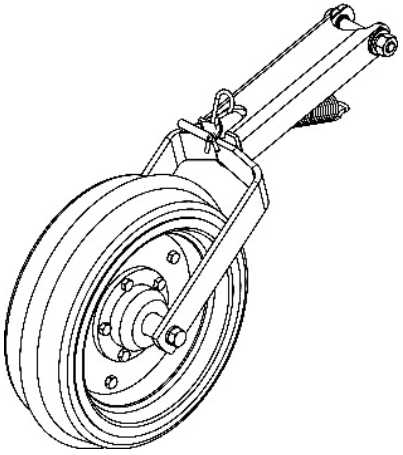


"V" COMPACTION WHEEL CART

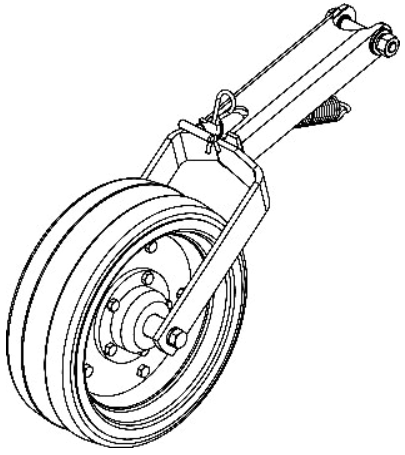


FLAT COMPACTION WHEEL CART

Figures 37



CONVEX COMPACTION WHEEL CART



CONCAVE COMPACTION WHEEL CART

COMPACTION WHEEL ASSEMBLY

- To mount the compacting wheels (1) line (2), proceed as follows:

02 - Insert the compaction wheel support (1) in the planting line (2), fixing with screws (3) lock nut (4) and lock (5).

03 - Then, remove the latch (6), push the handle (7) all the way forward, replace the latch (6) and engage the spring (8) on the handle (7) and on the line (2).

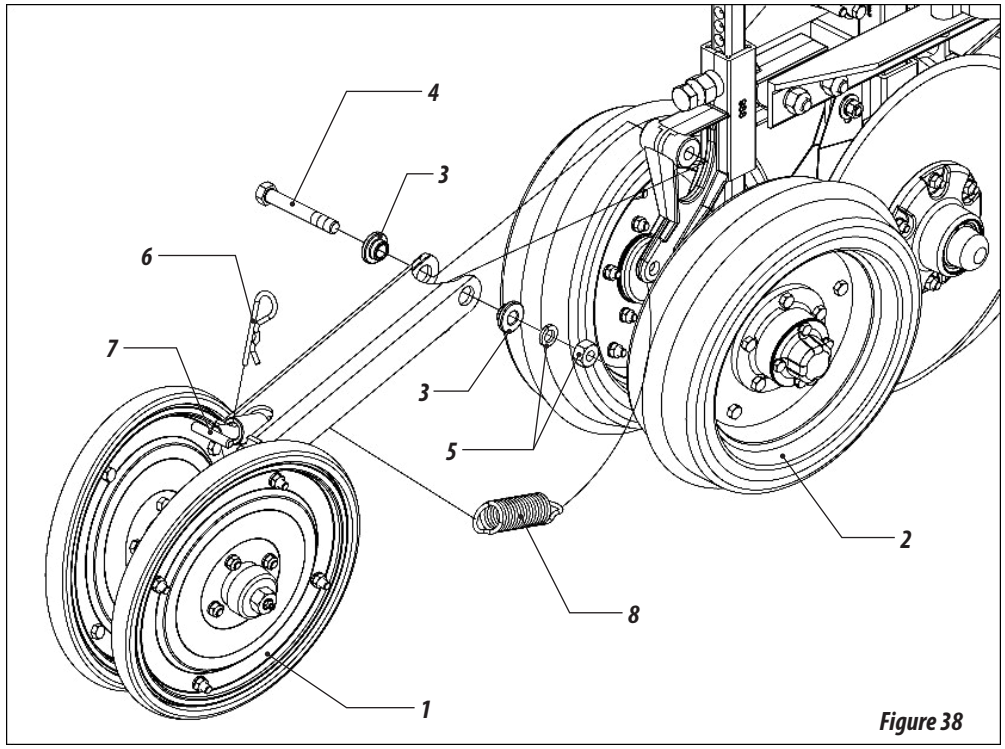


Figure 38

⚠ ATTENTION

Perform the same procedure for the other lines.

ADJUSTING THE "V" COMPACTION WHEELS

- 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 higher or lower closing angle of "v" compaction wheels, proceed as follows:

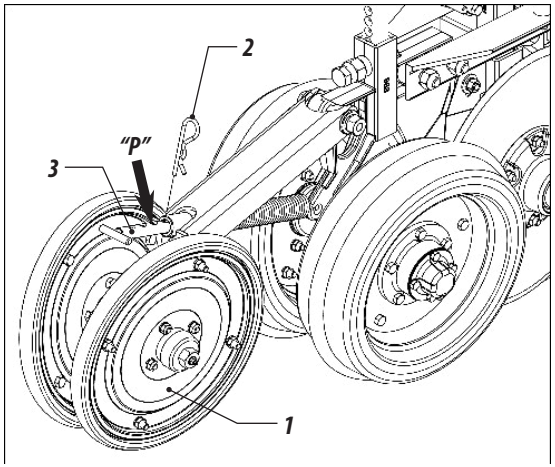


Figure 39

04 - ***Higher Pressure***: Move the lever (2) back, giving greater pressure on the wheel (1).

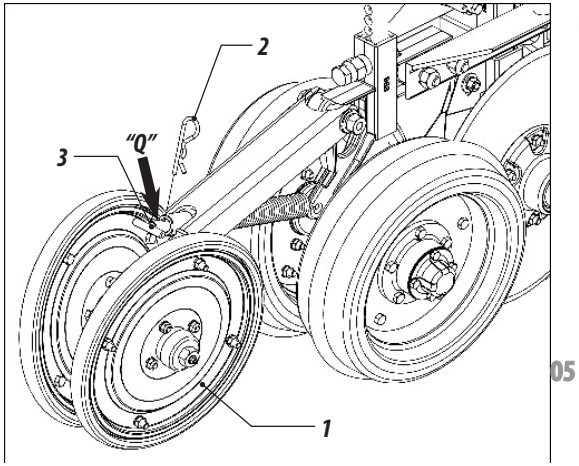


Figure 40

05 - ***Lower Pressure***: Move the lever (2) forward, giving less pressure on the wheel (1).

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:

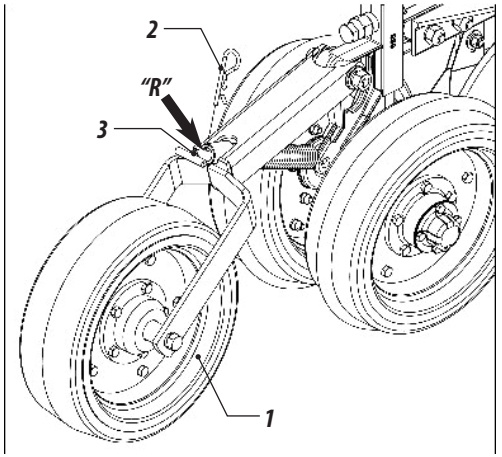


Figure 41

06 - ***GREATER PRESSURE***: Remove the lock (2), pull the pin (3) out and lock again, as shown in detail "R".

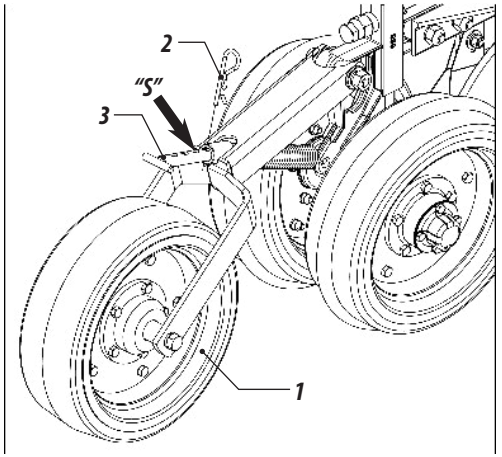


Figure 42

07 - ***LOWER PRESSURE***: Remove the lock (2), pull the pin (3) inside and lock again, as shown in detail "S".

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 calibration of the seeder tires must be 52 lb/in^2. Do not calibrate above the recommended pressure.

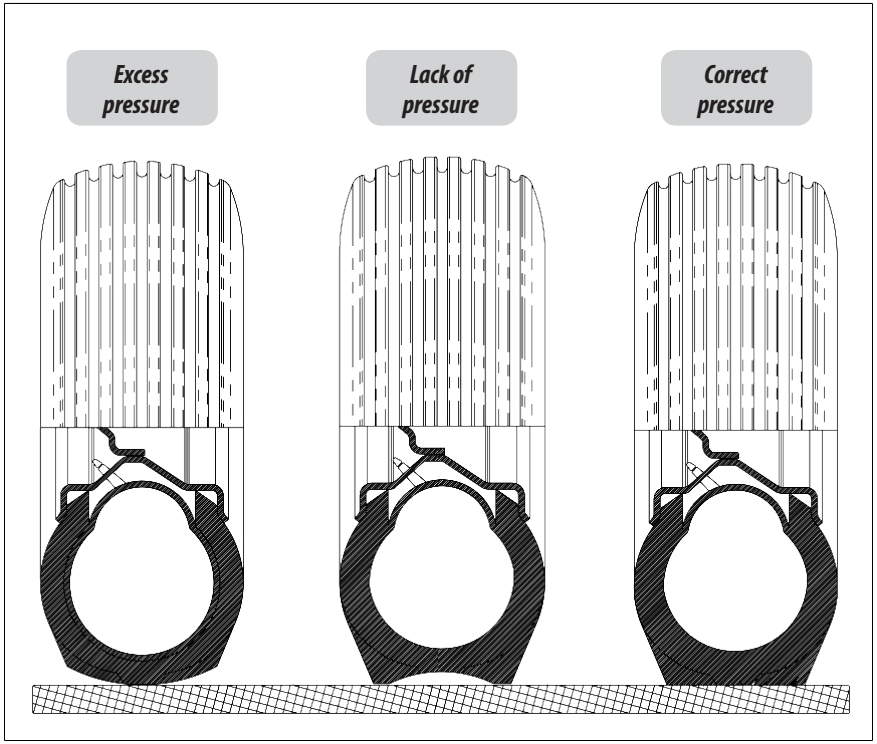


Figure 43

LUBRICATION

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

04 - 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 EQUIVALENTS

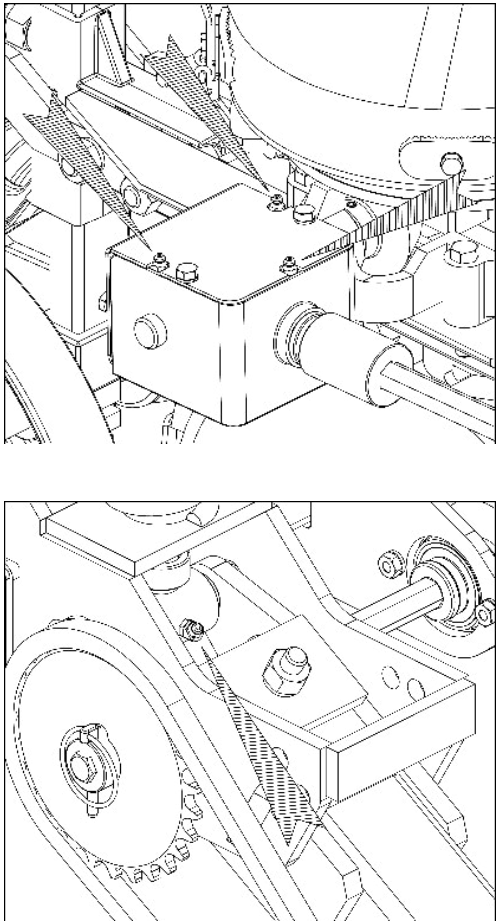
MANUFACTURER	TYPE OF RECOMMENDED GREASE
Petrobrás	Lubrax GMA 2
Atlantic	Litholine MP 2
Ipiranga	Super Graxa Ipiranga Ipíranga Super Graxa 2 Ipiflex 2
Castrol	LM 2
Mobil	Mobilgrease MP 77
Texaco	Marfak 2 Agrotex 2
Shell	Retinax A Alvania EP 2
Esso	Multipurpose grease H
Bardahl	Maxlub APG 2 EP

Table 12

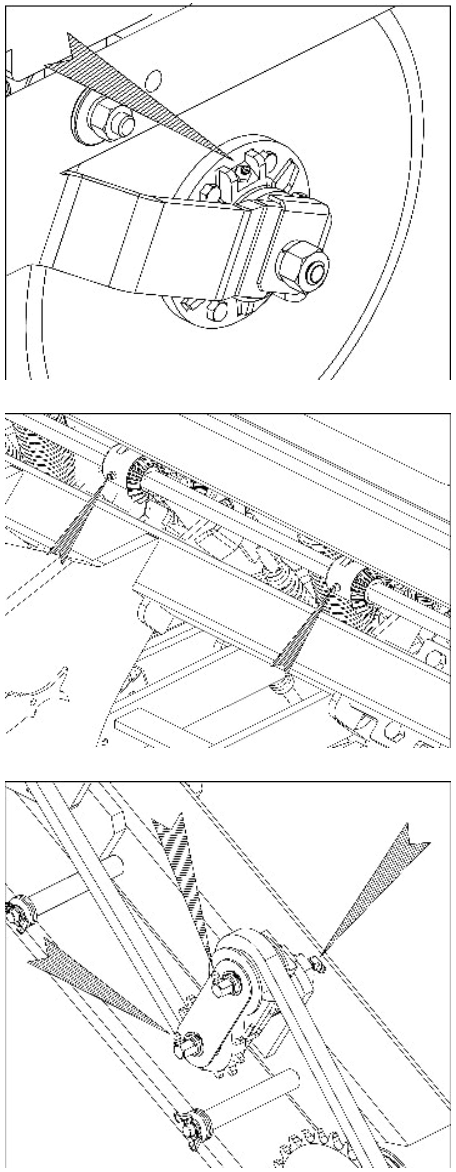
IMPORTANT

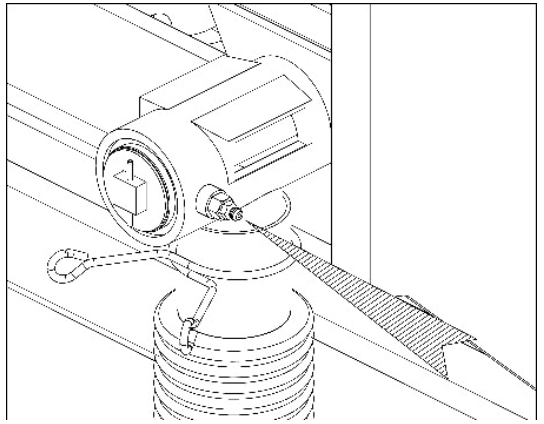
**** If there are other lubricants and / or equivalent greases not listed in this table, refer to the manufacturer's technical handbook.***

LUBRICATE EVERY 10 HOURS



Figures 44





Figures 44

LUBRICATE EVERY 30 HOURS

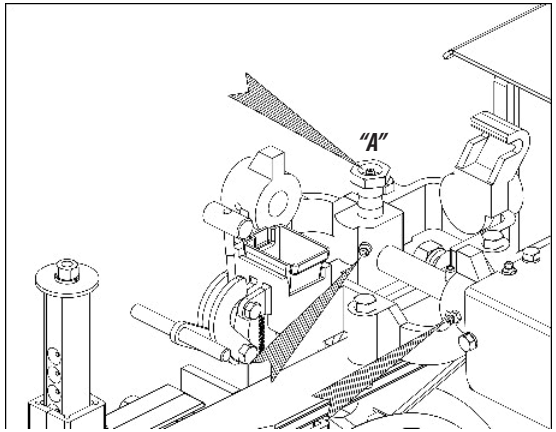


Figure 45

IMPORTANT

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

LUBRICATE EVERY 60 HOURS

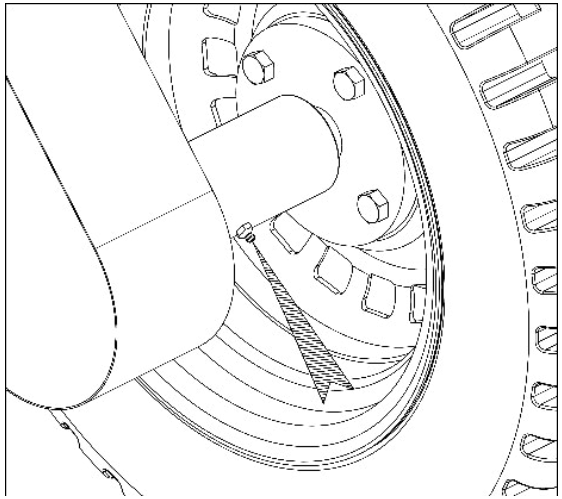
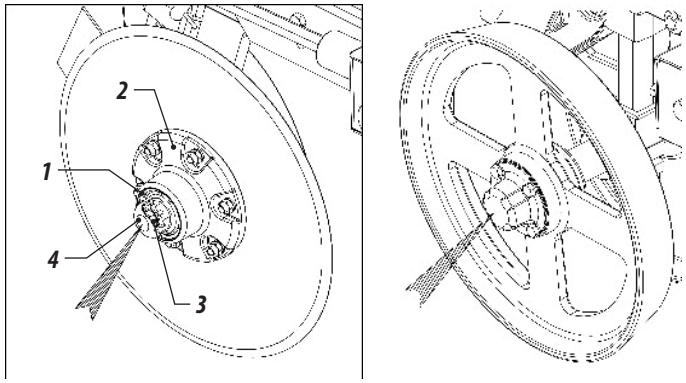


Figure 46

LUBRICATE EVERY 200 HOURS OF WORK

05 - 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:

06 - 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).



Figures 47

CHAIN TENSION

07 - 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) and tighten the nut (3).

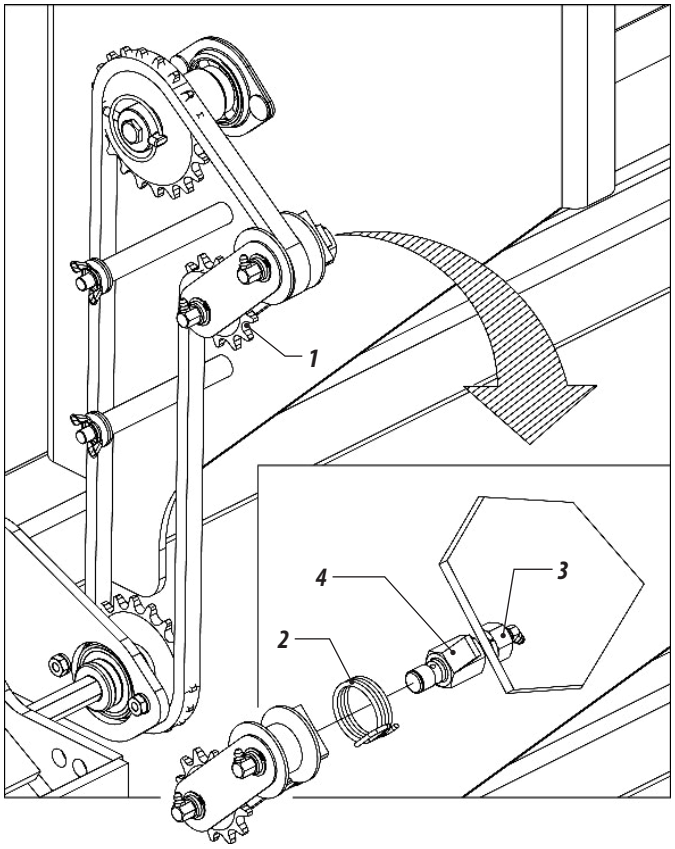


Figure 48

IMPORTANT

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

15. MAINTENANCE OPERATIONS

Table 13

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.*
Unable to make the coupling of quick couplers of hoses on the tractor.	*The hoses were disengaged with pressure or it is bearing the weight of the seeder in the hydraulic system.*	*Drain hoses or place the seeder on the support feet and finally release the pressure.*
A planting line shows depth different from the other.	*Different settings of pressure on the depth limiting wheels or in the line springs.*	*Set all the depth wheels and the pressure of the springs evenly.*
The groove is opening too much during planting.	*Soil that sticks to the discs or excessive working speed.*	*Decrease the work speed.*
Pistons stop operating, raise the seeder and do not go down or vice versa.	*Different quick coupler, ball-type male and needle-type female or vice - versa.*	*Replace the quick coupling, placing both of the same type.*
Strange noise when operating or riding with the seeder loaded.	*Loose wheels or hub with clearance.*	*Retighten the nuts of the wheel. Adjust the bearings of the wheel hub.*
The seeder 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.*
The wheel ratchet disengages or does not engage completely.	*The spring loses action by accumulation of grease or dust.*	*Disassemble the ratchet and wash the springs with diesel oil and grease them with a little grease, as specified in the chapter lubrication of the handbook.*
Soil too compressed and increases the pressure of the discs and they do not operate in the desired depth.	*Lacks ballast in the seed drill.*	*Place the weights, add water in the tires and lock the joint system of the wheels.*
Discs touch the ground during transportation.	*Bushing of rod or spring looses or disc set in the upper holes.*	*Fix the bushing of the spring rod and place the disc support in the lower holes, so that they become higher.*

16. CLEANING

FERTILIZER SYSTEM

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

01 - Remove the cotter pin (1) from the shaft (2) and the screw (3) from the distributiin cannon (4). Then, pull the shaft (5) back, as shown in detail "T", FIGURE 49.

02 - Then, reassemble the shaft, noting the correct fitting of the fertilizer distribution system, as shown in detail "T".

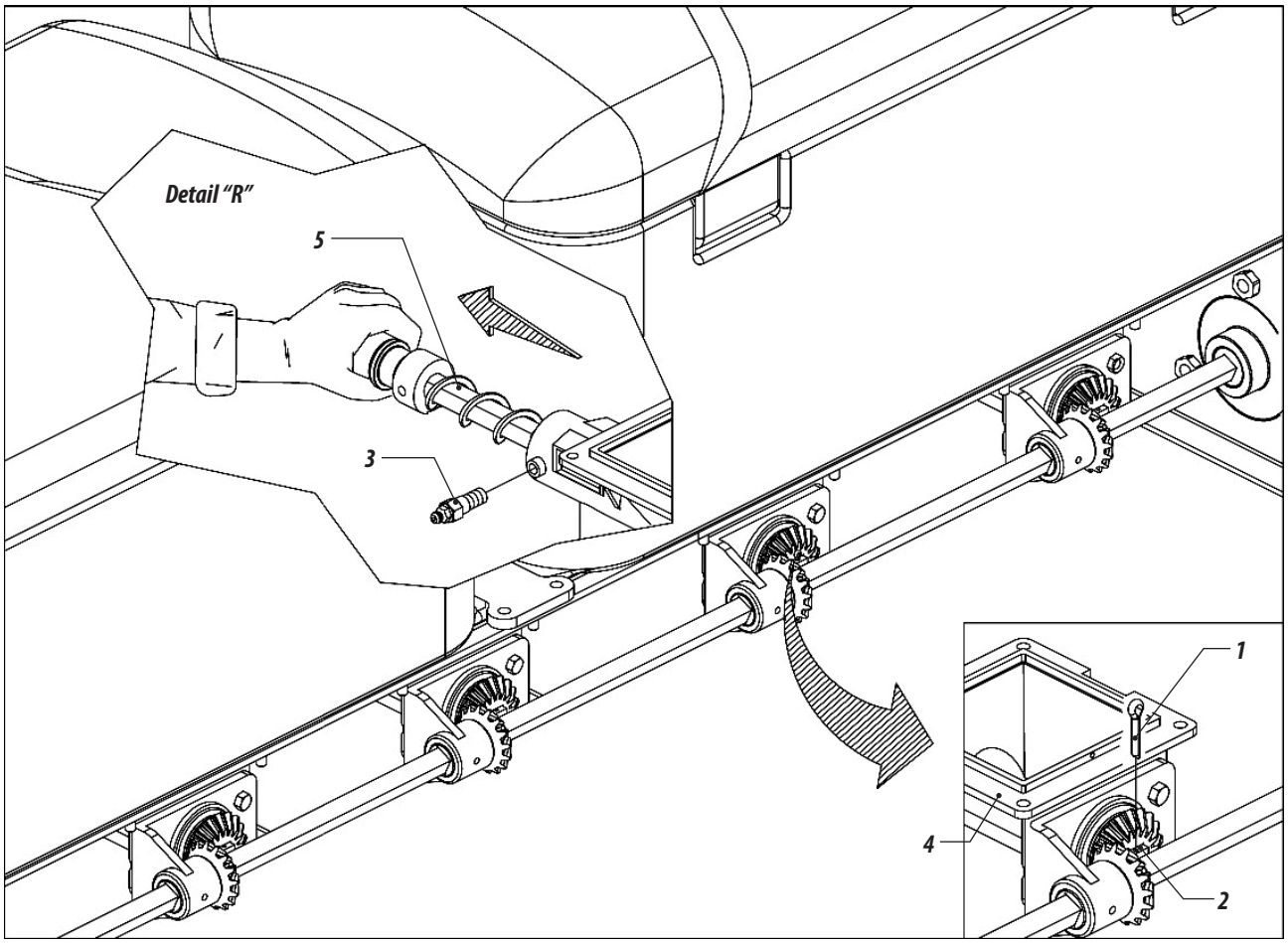


Figure 49

⚠ ATTENTION

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

IMPORTANT

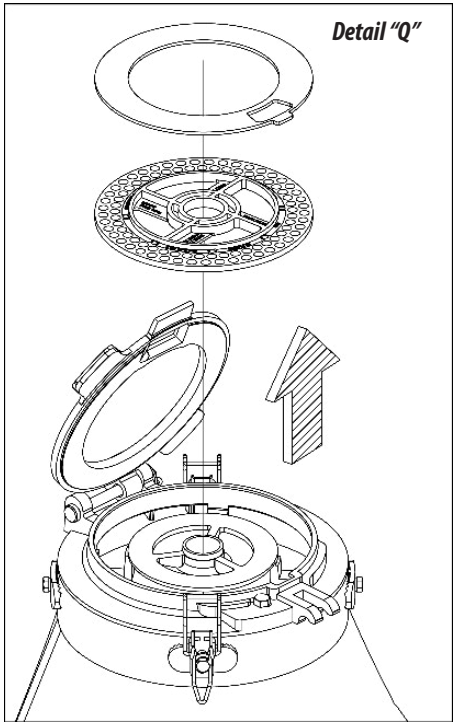
Do not use chemical cleaners to wash the seed drill, as this may damage its painting.

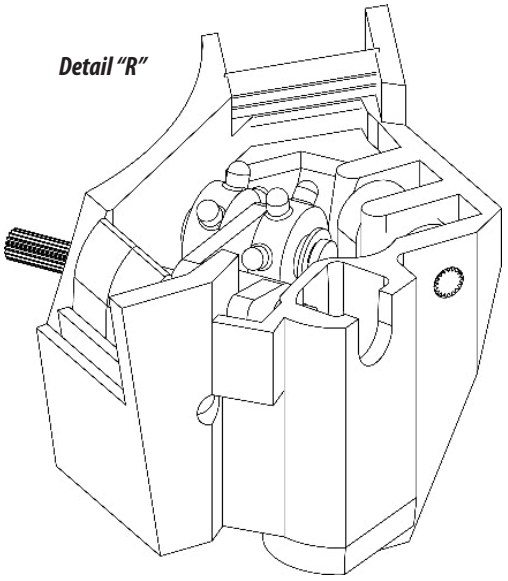
NOTE

- Fill the fertilizer tank always at the work place.
- Avoid any kind of impurity inside the fertilizer tank.
- Take daily dosing measurement.

SEED SYSTEM

03 - At the end of each working day, we recommend emptying the seed tanks, removing the distribution discs (1) and clean them, as shown in detail "Q".





Figures 50

04 - Then, observe the operation of the seed distribution box (2), checking the pressure of the trigger spring (3), thus ensuring the maximum precision in the seed distribution, as shown in detail "R".

NOTE

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

GENERAL CLEANING

05 - 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.

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

07 - 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.

08 - 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.

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

17. IDENTIFICAÇÃO

- 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: 60550104418
Revision: 01
CPT: NSH01418

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.***
Phone: 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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