VENCE TUDO

FORTE ATÉ NO NOME

OPERATION MANUAL

SEEDER FERTILIZER HYDRAULIC

SA HIDRÁULICA Super Série

08/2014
Review 00

PRESENTATION

The Industry of Agricultural Implements **VENCE TUDO** was founded in 1964 in Alfredo Brenner, District of Ibirubá in Rio Grande do Sul. It has been following a mission determined by the founder Nelson Lauxen, which is to look for the agricultural development indefatigably, through resistant agricultural implements, of easy handling, with great quality and productivity earnings for the farmer.

VENCE TUDO, as years go by, from generation to generation has led faithfully this mission; seeking to develop its products from the users' needs by partnerships with universities, research centers and with its engineering group; constantly improving its products in the most technologically advanced concepts.

After being developed by the company, the products are exhaustively tested for months, by the farmers themselves in the most different regions, being placed under several use conditions, to evaluate their resistance and functioning level. After the product has been approved in its field tests, it will start to be produced on a large scale to the market within the most modern industrial and quality control methods.

The customer's satisfaction with **VENCE TUDO** products is our main concern.

The purpose of this manual is to familiarize you with the equipment functioning and with a little care so it lasts a long time, without problems. In addition, as important as learning to take care and handle it correctly is to know some aspects that may compromise with the warranty, due to negligence, bad use, not authorized adaptations that you may have. This way, we advise the careful reading of the Warranty Certificate.

The parts catalogue contains all the necessary information for parts replacement. The correct interpretation of this manual, will give you conditions to do the necessary replacement according to the equipment models identified and described.

If any doubts come over during any work operation, get in touch with **VENCE TUDO LTDA**; therefore, we can solve your doubts through the CUSTOMER TECHNICAL ASSISTANCE so that we can improve our customer service, being sure of a strong relationship between **VENCE TUDO** and **YOU**.

We take the opportunity to congratulate you on having chosen a **VENCE TUDO** product, and we can assure that we have great interest in satisfying you.

VENCE TUDO
Industry, Trade, Import
and Export Ltd.

TO THE VENCE TUDO CUSTOMER

*Farming friend, you are from congratulations when acquiring a product **VENCE TUDO**; the development of our products is based mainly on the user's satisfaction. Your satisfaction in the hour of picking the profits generated through our implements is ours also. Our thought is to assist with the largest seriousness and our trust partner, you farmer, because it is through your profitability that we are in no doubt of building a strong and lucrative agriculture.*

For a production inside of the considered concepts of the high agricultural technology this product was developed. The most modern equipment is used for the industrial manufacture, aiming at the development of a strong and resistant product, which it comes to take care of your needs, with high durability and long useful life.

GUARANTEE #_____

The warranty of VENCE TUDO products is assured to the acquirer for the period of one year since the acquisition date, against manufacture or material defect that may cause the operational danger of the product, except for components acquired from mediators, which have their own manufacturer's warranties.

CONDITIONS

1- The product has warranty on any registered fabrication defect, as long as all the parts and components have been supllied by VENCE TUDO Limited, and delivered by duly authorized companies or people;

2- The parts and/or components covered by the warranty will only be replaced or compensated if defects are verified by the Technical Assistance or by a person duly authorized by VENCE TUDO Limited. Parts which suffer slow wear and tear, because of operational conditions and factors relate to formation and characteristics of each soil are excluded. The presentation of the technical delivery certificate correctly filled up and the purchase bill are essential.

3- If the conditions of the Warranties Terms are satisfied, VENCE TUDO Limited assures the repair of the defect or component's replacement, for free. In case of canceling or expiration of the warranty terms, the technical assistance will be charged by the price of the service rendered and reposition of parts and components, if necessary.

WARRANTY CANCELLATION

The warranty loses its effectiveness in the following cases:

- Damages caused to the equipment by bad use, abuse, negligence or lack of apropriate maintainance, in disagreement with the manufacturer's instructions published in the corresponding operation manual;
- Damages caused by accidents or natural agents;
- Repairs, modifications or violation of parts and components performed by a non-authorized person.
- Amendments, erasures or exclusion of data in the Technical Delivery certificate, in the Warranty certificate, in the purchase bill or in the identification plaque.

IMPORTANT

If your product shows any problem during the warranty period, contact exclusively your retailer or the manufacturer. The same only should be repaired or dismounted in the presence of a person duly accredited by the manufacturer, as well as the use of original replacement parts, under penalty of warranty loss.

KEEP THE PURCHASE BILL IN A SAFE PLACE, IT IS THE PROOF OF THE WARRANTY TERMS.

CUSTOMER:_____
ADDRESS:_____CITY: _____ STATE: _____
MODEL: _____SERIES:_____ YEAR:_____
DELIVERY DATE: _____/_____/_____
RETAILER: _____ CITY: _____STATE: _____

I declare faithfully and with incontestable effect that I received, on this date the PRODUCT model:_____ as it is above specified in perfect conservation conditions and the warranty model used was accepted by me.

CUSTOMER: _____
RETAILER: _____

TECHNICAL DELIVERY CERTIFICATE NUMBER:_____

CUSTOMER: _____ CITY: _____
ADDRESS: _____ STATE: _____
MODEL: _____ SERIES: _____
RETAILER: _____ CITY: _____
Purchase bill number: _____ Sale's date: _____/_____/_____

REMIT THIS CERTIFICATE TO THE FACTORY SOON AFTER DELIVERY.

I declare having received on this date, the model described previously, according to the specifications above in perfect condition and that the warranty modality is accepted by me.

DATE: ____/____/____

CUSTOMER: _____

DELIVERY DATE: _____/_____/_____

ÍNDICE

IDENTIFICATION

When getting in contact with the *VENCE TUDO* Technical Assistance Service, please inform the following data: MODEL, manufacture YEAR and SERIAL NUMBER of the product. These data are located in the product's Identification Plate, fixed on the chassis, always on the left side.

When need to replace any parts, always use original VENCE TUDO parts. To make the identification of each part easier, see the PARTS CATALOGUE.

All the information in this Operation Manual is liable to alteration. Weight, dimensions and specifications are only approximate, and the illustrations do not reflect, necessarely, the equipment in its standart condition. To obtain exact information about any specific model, please contact your VENCE TUDO retailer.

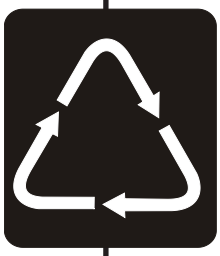
The Agricultural Implements Industry VENCE TUDO LTDA. in constant improvement, reserves the right to at any time to introduce changes in their products to best to meet the needs and expectations of their customers; without the obligation of doing the same on the previously sold products.

CARE WITH THE ENVIRONMENT

Mr. User !

Let us value nature.

The uncontrollable spilling of residues on the soil and in the water harms the life of all living beings of the planet.



To spill on the soil and in the water lubricating and combustible oils, agrichemical and plastic packings, etc, interferes directly with ecosystem balance from the superficial layer of the soil the underground sheets of water.

Do the appropriate handling of these residues, finding out how to recycle them or to reuse them.

Acting that way you will be contributing to the conservation and the balance of the ecosystem.

IMPORTANT

The straw cuting is a fundamental factor for the efficiency in the planting and establishment of the crop. In no may use handling methods that are not recommended by the technical assistance.

Avoid burning: burning the straw is a crime against the ecosystem, because life on earth depends on it.

Use the straws chopper well regulated and if necessary change the razors.

Use the straws spreader to maintain the uniformity of distribution of the straw layer.

If necessary use straw crushers.

Avoid the use of disk grid in the straw rolling.

SAFETY RULES

⚠ WARNING

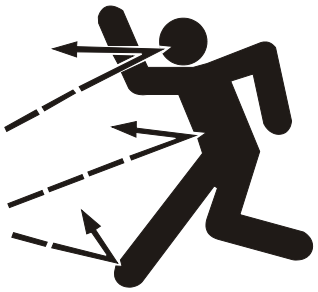
- The improper operation of this equipment can cause serious wounds or death. Before using it, be sure that the operator.

- Was instructed for safe and appropriate use;
- Read and understood the operation manual of the product;
- Removed people close to the operational area;
- Has knowledge and practice in the safe use of machines, its controls and its work place.

⚠ WARNING

- Avoid falls. Keep the access to platforms clean. Use the supports to go up.

⚠ WARNING



- Stay away when the equipment is in operation.

⚠ WARNING

- The contact with dented wheels and chains in operation can cause serious accidents. Stop the motor to avoid wounds.
- Don't open the protections until all the mechanisms have stopped.

ATTENTION

THIS INDICATIVE SYMBOL SHOWS SITUATIONS OF SECURITY IN THIS OPERATION MANUAL. OBSERVE AND READ WITH ATTENTION THE MESSAGES TO PREVENT PERSONAL ACCIDENTS.

- **Only people with the complete knowledge of the tractor-seeder group should operate it and to do repairs in the components and kits; with the maximum security;**
- **The farmers should follow the recommendation on the use of chemical products in doses recommended by the manufacturer and the responsible agronomist always. People, animals and the environment can be affected by excess and the bad use of chemical substances;**
- **Keep arms and legs away from cutting discs and furrowers, because these can cause serious wounds;**
- **Keep in your mind always: that a careful and responsible operator is the best safety against accidents;**
- **Safety demands attention, caution, concentration and prudence during the transport, planting, maintenance and storage operations. In addition, this should be kept in your mind all the time;**
- **Only the presence the tractor's operator is allowed to keep on; during the transport operations and operation of the tractor-seeder group;**
- **Do not allow any children to play close to or on the equipment; during the maintenances, transport, operation and storage;**
- **Wear appropriate clothes and shoes before and during any type of operation. Avoid wearing wide clothes that can be twisted by moveable parts of the seeder;**
- **Have complete knowledge of the land, where you will work with the seeder. In case, it is necessary, demarcates the place in possible dangerous points that can put in risk the life of the operator and your work safety;**
- **Appropriate speeds during the plantation, transport and maneuvers with the seeder should be used all the time. High speeds can cause damages to the kits, and still can put in risk people and animals lives;**
- **Never work without the protection devices and safety;**

ATTENTION

- **Have the maximum of care when making the coupling of the tractor to the seeder. Do not allow anybody to stay between the seeder and the tractor;**
- **Be sure that there is not anybody or animals close to the seeder neither whenever you lift nor lower it to the ground;**
- **Never try to alter the adjustments, to clean, to lubricate or to remove any material from inside the seeder; when it is in movement;**
- **Keep the access platform to the seeder clean always and free from oils and greases;**
- **Always turn the engine off before leaving the tractor's seat and be sure that the parking brake was applied;**
- **Work with the seeder always in the speed and potency suitable;**
- **Be moved with caution and attention in narrow places;**
- **Do not travel on roads or highways, mainly during the night. You should use signs of alert and forerunners, when make long travels with the machine;**
- **When decoupling the seeder, make this in plane and firm place. Be sure that the seeder is very leaning and firm on the ground before accomplishing the decoupling;**
- **Be sure that there is not anybody close to the seeder or tools left inside theirs hoppers, before operating it;**
- **Keep the shield plates in their places;**
- **Read the OPERATION'S MANUAL, before any operation and follow the warnings fixed on the machines;**
- **After repairs, be sure that all the parts are running correctly;**
- **Do not transport the seeder loaded. Fill it, when it is in the field.**

TECHNICAL SPECIFICATIONS SA-H									
BASIC FEATURES	**SA 7300**				**SA 9400**				
Crop	**Soy**	**Corn**	**Wheat/Rice**	**Native Field**	**Soy**	**Corn**		**Wheat/Rice**	**Native Field**
Number of Rows	3	2	7	5	4	3	2	9	7
Row Spacing in cm	40	55	17	22.5	40	55	80	17	22.5
	42.5	60	19	25	42.5	60	85	19	25
	45	65	-	-	45	65	90	-	-
	47.5	70	-	-	47.5	70	-	-	-
	50	75	-	-	50	75	-	-	-
	-	80	-	-	-	-	-	-	-
	-	85	-	-	-	-	-	-	-
	-	90	-	-	-	-	-	-	-
Seed Capacity Lts	31/Row		113		31/Row			147	
Seed Capacity Kg	25/Row		84		25/Row			109	
Fertilizer Capacity Lts	198				270				
Fertilizer Capacity Kg	222				302				
Pastures Lts	-	-	22		-	-		28	
Pastures Kg	-	-	15		-	-		19	
Recommended Speed Km/h	6 to 8	4 to 6	7 to 9		6 to 8	4 to 6		7 to 9	
Weight kg	720	589	555	615	808	677	546	573	636
Minimum Power Motor	35		45	60	45	35		55	85
Tire Gauge	500/12								
Work Pressure	20 Pounds/Inch								
Wheel Perimeter	1,81m (Perimeter with base in the nominal high of the pneumatic)								

NOTE:

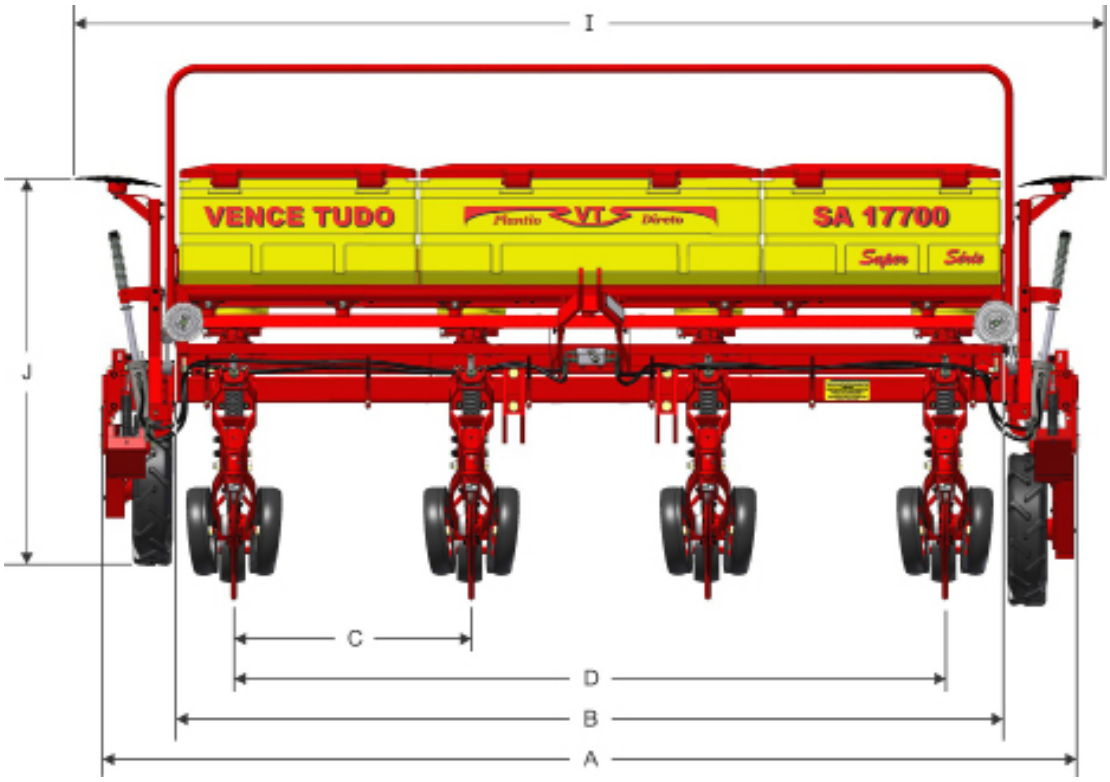
- The dimensions, weights and capacities; as well as of any other information shown in this manual, are subject to changes at any time without prior notice.

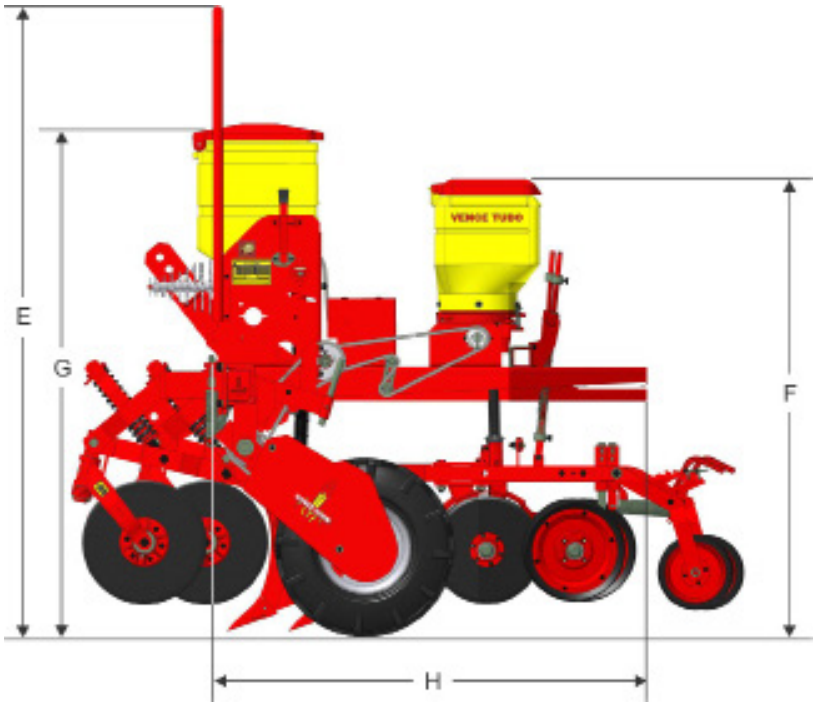
TECHNICAL SPECIFICATIONS SA-H													
BASIC FEATURES	**SA 11500**				**SA 14600**				**SA 17700**				
Crop	**Soy**	**Corn**		**Wheat/Rice**	**Soy**	**Corn**		**Wheat/Rice**	**Soy**		**Corn**		**Wheat/Rice**
Number of Rows	5	4	3	11	6	4	3	14	7	6	5	4	17
Row Spacing in cm	40	50	60	17	42.5	60	85	17	40	50	60	75	17
	42.5	55	65	19	45	65	90	19	42.5	55	70	80	-
	45	60	70	-	47.5	70	-	-	45	-	-	85	-
	47.5	-	75	-	-	75	-	-	47.5	-	-	90	-
	-	-	80	-	-	80	-	-	-	-	-	-	-
	-	-	85	-	-	-	-	-	-	-	-	-	-
	-	-	90	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-
Seed Capacity Lts	31/Row			182	31/Row			226	31/Row				297
Seed Capacity Kg	25/Row			136	25/Row			117	25/Row				212
Fertilizer Capacity Lts	333				396				468				
Fertilizer Capacity Kg	373				444				525				
Pastures Lts	-	-		-	-	-		-	-	-	-	-	-
Pastures Kg	-	-		-	-	-		-	-	-	-		-
Recommended Speed Km/h	6 to 8	4 to 6		7 to 9	6 to 8	4 to 6		7 to 9	6 to 8		4 to 6		7 to 9
Weight kg	1110	979	848	810	1303	1040	909	927	1618	1444	1270	1096	1194
Minimum Power Motor	55	45	35	65	65	45	35	75	80	75	70	65	85
Tire Gauge	500/12												
Work Pressure	20 Pounds/Inch												
Wheel Perimeter	1,81m (Perimeter with base in the nominal high of the pneumatic)												

NOTE:

- The dimensions, weights and capacities; as well as of any other information shown in this manual, are subject to changes at any time without prior notice.

Basic Dimensions





WINTER:

MODELOS	A	B	C	D	E	F	G	H	I	J
SA 7300	1840	1400	170/190	1020/1140	1840	1430	1460	1420	-	-
SA 9400	2320	1840	170/190	1360/1520	1840	1430	1460	1420	-	-
SA 11500	2680	2200	170/190	1700/1900	1840	1430	1460	1420	-	-
SA 14600	3220	2740	170/190	2210/2470	1840	1430	1460	1420	-	-
SA 17700	3800	3220	170	2720	1840	1430	1460	1420	-	-

SUMMER:

MODELOS	A	B	C	D	E	F	G	H	I	J
SA 7300	1840	1400	400/900	800/1000	1840	1340	1460	1420	-	-
SA 9400	2310	1840	400/900	1200/1500	1840	1340	1460	1420	-	-
SA 11500	2680	2200	400/900	1600/1860	1840	1340	1460	1420	-	-
SA 14600	3220	2740	400/900	1850/2375	1840	1340	1460	1420	-	-
SA 17700	3800	3220	400/900	2250/2820	1840	1340	1460	1420	3930	1630

General Characteristics

COUPLING: Through the three-point hitch of the tractor.

CHASSIS: Monoblock type.

WHEELED: It is composed of wheels with 100 mm free travel. Flanged rims, attached by screws, form this wheeled and special tires 500/6-12" model too.

FERTILIZER HOPPER: Modulated. Built in anti-corrosive structural polyethylene of medium density.

SEED HOPPER: Individually assembled in each planting line, in medium density polyethylene.

FERTILIZER METERING MECHANISM: Mechanical feeder type rotor carrier with adjustment millimeter self-cleaning driven by endless worm.

SEED METERING MECHANISM: The horizontal mechanical feeder consists of metal plate and horizontal drilled discs. The mechanical feeder runs through fluted rotor with continuous flow system for fine seeds.

TRANSMISSION RELATION: It is carried out through of an arrangement of the transmission sprockets.

CUTTING MECHANISM OF THE STRAW: A vertical cutting disc with side oscillation composes it, and its pressure comes through of a helical spring pre-tensioned by threaded element (S.S.).

PLACER AND CONVEYOR MECHANISM OF THE FERTILIZER: It is a furrower opener knife-type with replaceable point and safety fuse. It has adjustments for different depths. Its work pressure is obtained through of the action of helical springs.

SEED PLACEMENT: The seed placement system is made by means of two discs assembled in "V" shape defased with different diameter and curved conveyor. The work pressure is obtained through the helical springs.

SEED / FERTILIZER PLACEMENT (WHEAT): The fertilizer/seed placement (wheat) system is made by means of two discs assembled in "V" shape, defased and curved conveyors for a better deposition the seeds and fertilizer. The work pressure is obtained through the action of the helical springs.

LIMITER / COMPACTOR MECHANISM: It has free depth control wheels in "V" shape; furthermore, the 3rd press wheel is coating flexible rubber.

COVERING MECHANISM: Two 12" concave discs in "V" shape compose it, which are responsible by covering of the furrow where the seeds are deposited helping in the emergence of them. The work pressure is obtained through increasing the pressure in the helical spring.

GENERAL INFORMATION

1 – *When receiving your seeder, check the product's conditions and the attachments box. This is of great importance; mainly in relation to the use of original components;*

2 – *The right and left-hand is considered taking into account that the observation of the machine is made backwards ahead;*

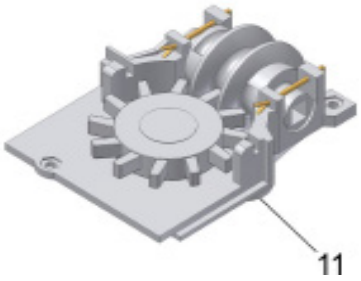
3 - *To withdraw any plantation kit for the placing on the other, it must be always careful to separate the parts withdrawn with their respective components or parts. Thus, those parts are not used in other machines or equipments of your property;*

4 – *Due to the seeder design to be with internal tires, the minimum spacing among the wheels is of 450 mm for all of the models;*

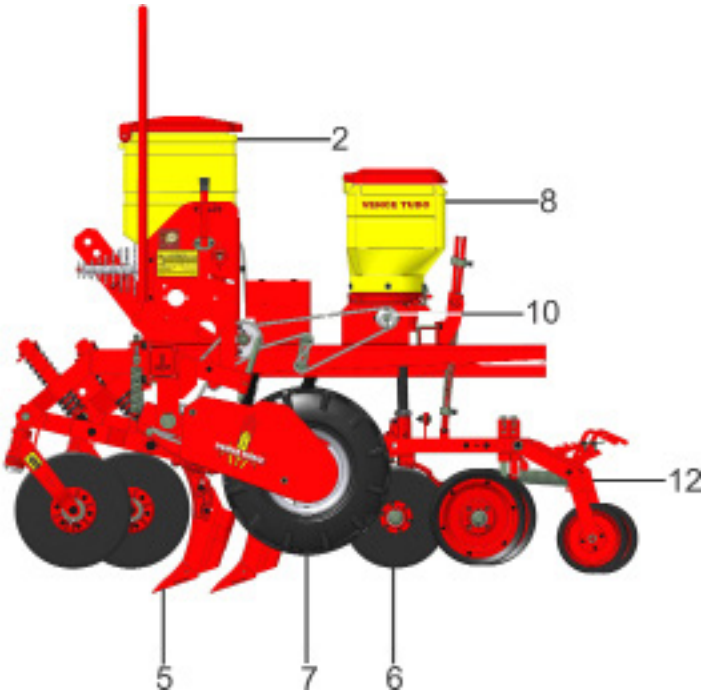
5 – *The crop of the soybean is used in this manual, identifying the operations for the summer crops, as corn, sorghum and others.*

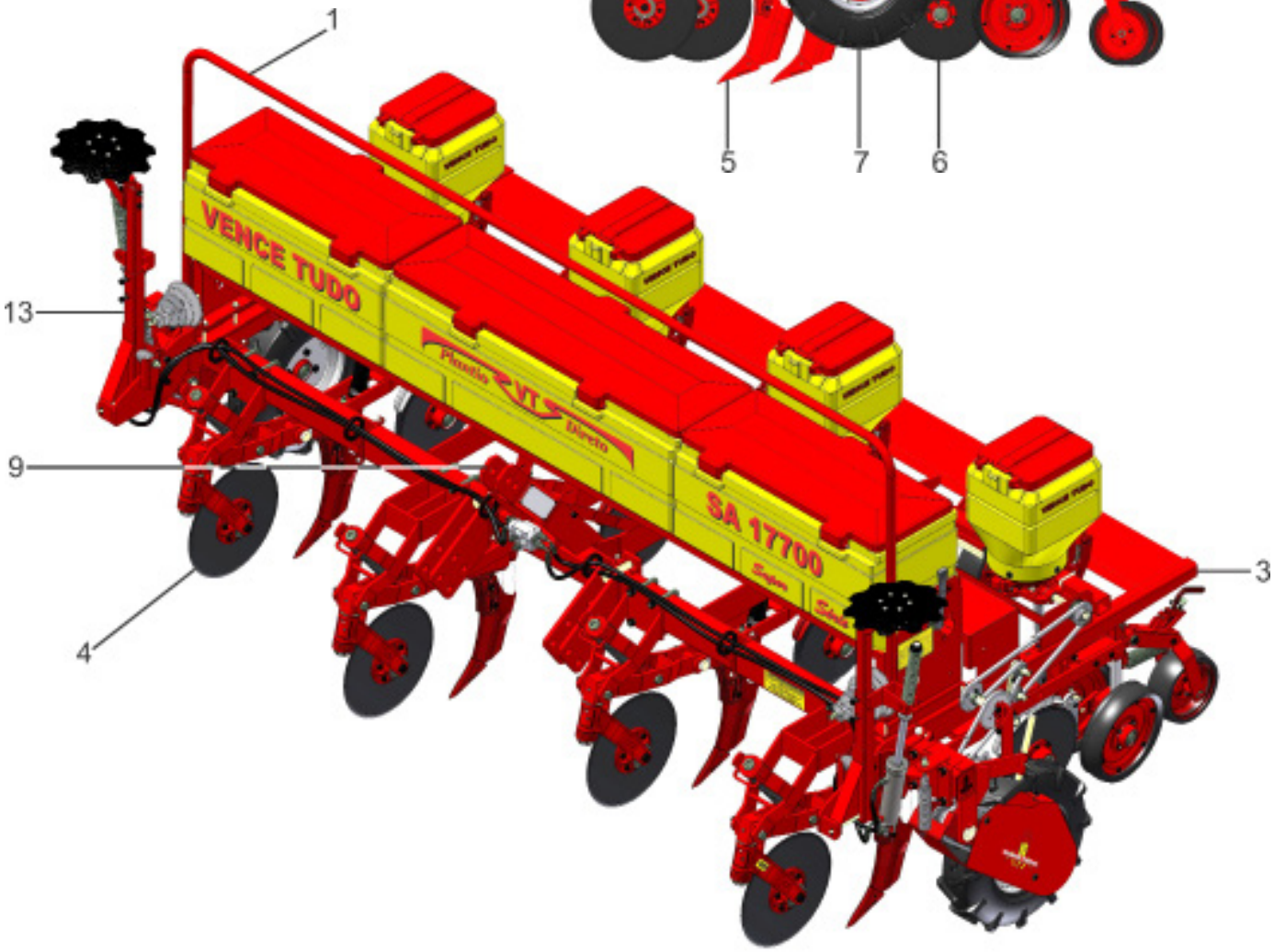
6 - *The disposition of the planting lines varies in accordance with the seeders models. Be sure that is making the assembly or maintenance of the correct model.*

COMPONENTS IDENTIFICATION
SUMMER VERSION



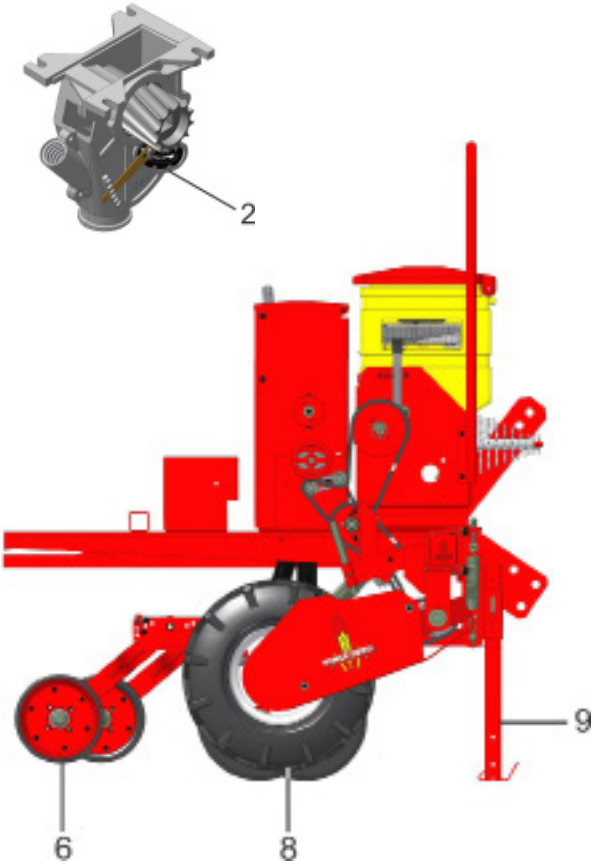
01- HANDRAIL
02- FERTILIZER RESERVATION
03- CHASSIS
04- CUTTING DISC STRAW SYSTEM
05- FURROW OPENER KNIFE AND FERTILIZER CONVEYOR
06- SEED PLACEMENT SYSTEM
07- WHEELED
08- SEED RESERVOIR
09- COUPLING
10- TRANSMISSION RELATION
11- SELF-CLEANING FEEDER (METER)
12- COMPACTION SYSTEM
13- ROW MARKER

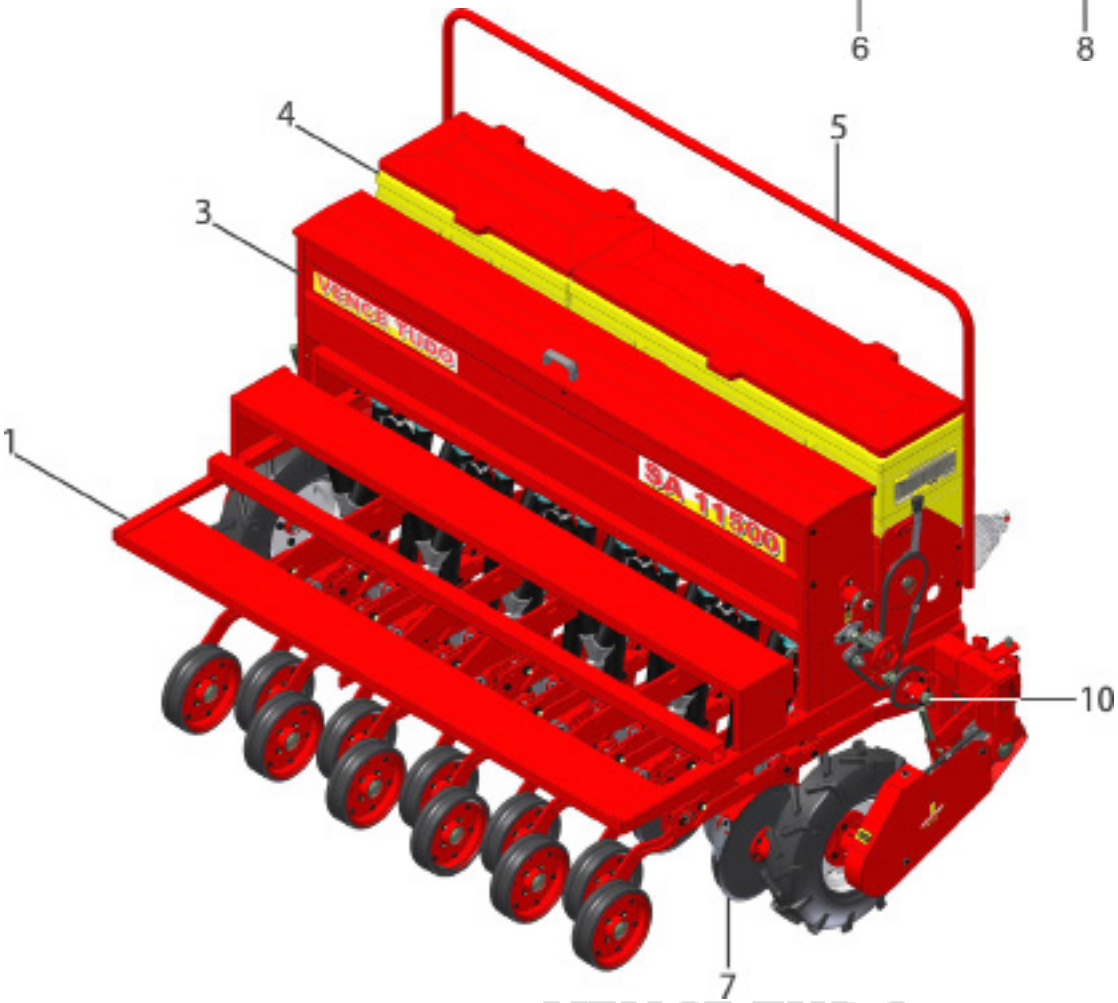




COMPONENTS IDENTIFICATION
WINTER VERSION

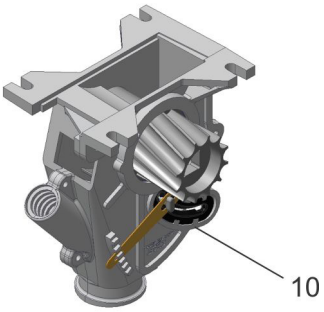
01- CHASSIS
02- SEED FEEDER MECHANISM
03- SEED RESERVATION
04- FERTILIZER RESERVATION
05- HANDRAIL
06- COMPACTOR
07- SEED PLACEMENT SYSTEM
08- WHEELED
09- SUPPORT STAND
10- TRANSMISSION RELATION

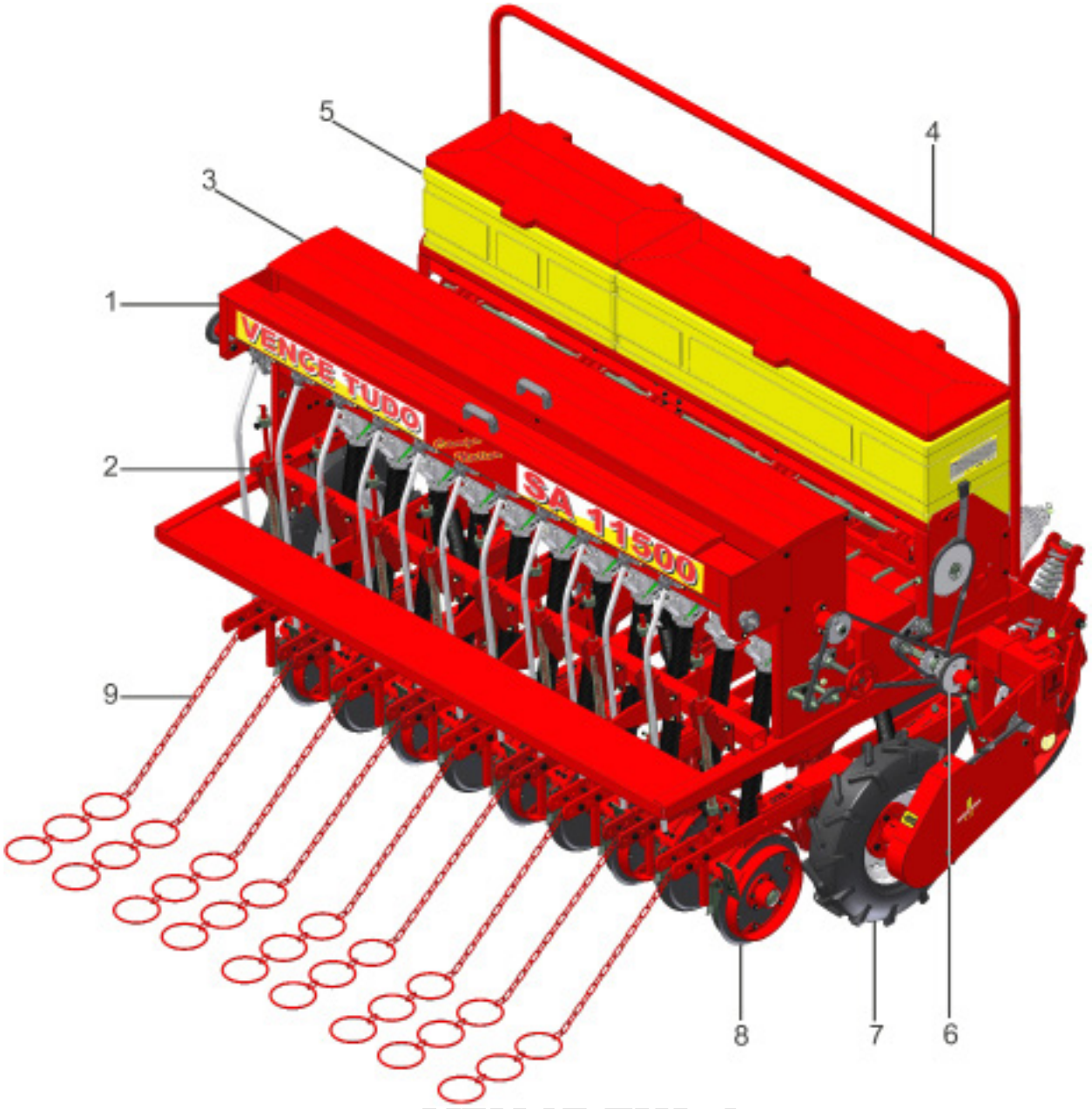




COMPONENTS IDENTIFICATION
FORAGE VERSION

01- SMALL SEED RESERVOIR
02- ROD SUPPORT
03- SEED RESERVOIR (WHEAT)
04- HANDRAIL
05- FERTILIZER RESERVOIR
06- TRANSMISSION RELATION
07- WHEELED
08- SEED PLACEMENT SYSTEM (FORAGE)
09- COVERING CHAINS
10- SEED FEEDER MECHANISM (WHEAT)





PREPARING

Coupling Seeder – Tractor

Always make the coupling and decoupling of the seeder from the tractor in level and firm place:

1- Perform the displacement with the tractor in slow gear in the direction to the seeder and be always paying special attention to stop the movement of the tractor (to brake).
2- When approaching to the seeder, use the control lever of the height the hydraulic arms allowing they be closer the 3-point hitch of the seeder.
3- Make the coupling of the left lower arm (A) (fig. 01) (not adjustable) placing the pin with safety lock.
4- Place the 3rd point (B) with the pin and the safety lock.
5- Make the coupling of the right lower arm (C) (adjustable).
6- After making coupling the seeder, center it in relation to the half the tractor using the stabilizers (F) for the alignment of lower arms, checking their distance in relation to the tractor wheeled.
7- Lift the support feet of the seeder.

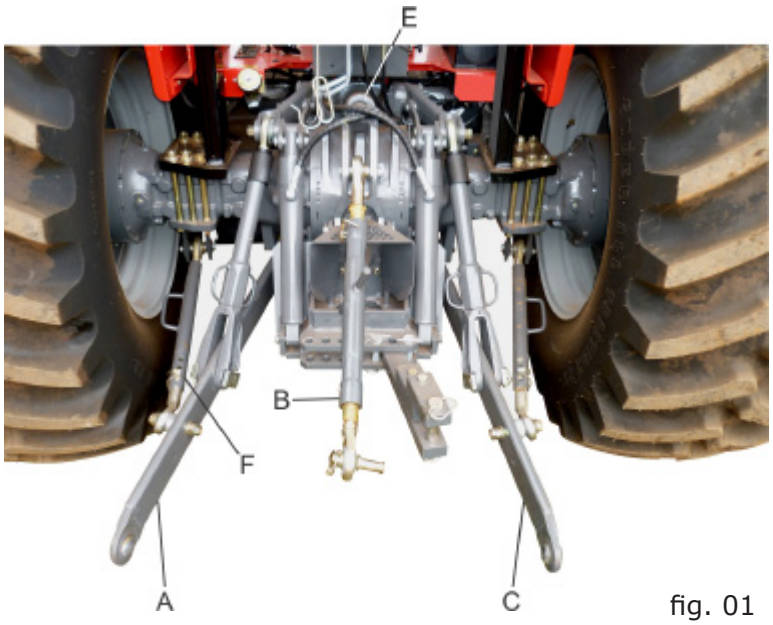


fig. 01

IMPORTANT

Check the position the hitch of the 3rd point (B) (fig. 01) in the tractor so that the relief valve (E) does not be driven. Do the attachment of the 3rd point (B) in the opposite position to the relief valve (E) always; so that does not occur worn on the tractor's hydraulic system out.

Tractor

It is recommended the use of ballast weights in an adequate amount for the accomplishment the planting work with the better efficiency. This amount should be in relation to the machinery's weight and slope of the land.

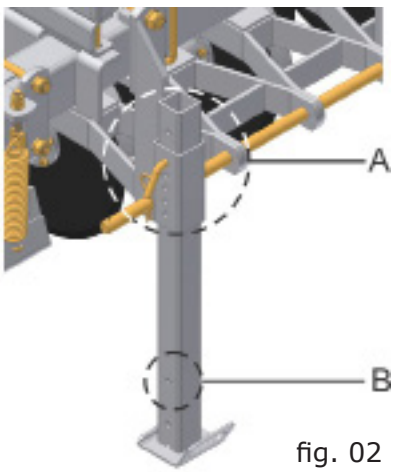


fig. 02

Wheat Version

The support foot is in standing position (A) (fig. 02). It should be used to stand the seeder in flat and firm place.

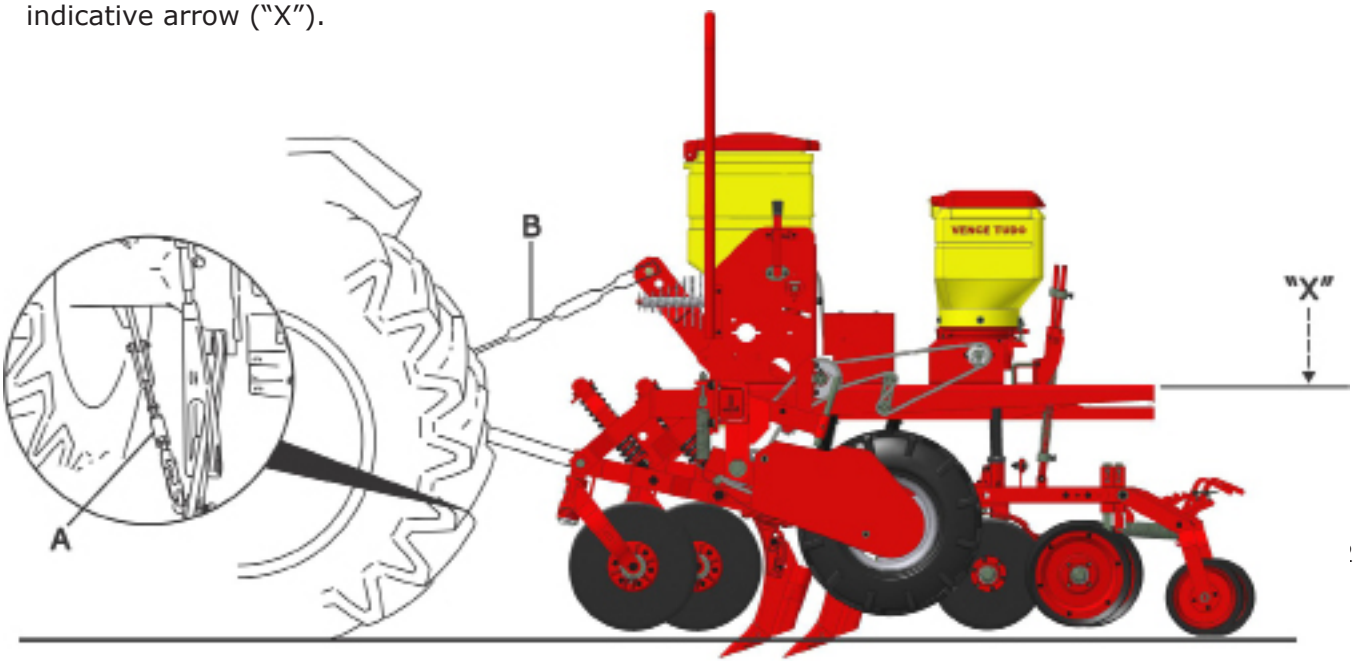
Lift the support foot until the last hole (B) so that the seeder is in the transporting position.

Leveling of the Seeder

To level the transverse and longitudinal seeder, as follows:

Transverse or Side Leveling: Turn the screw (A) (fig.02), the tractor right arm until the centralization.

Longitudinal Leveling: Take the turning of the arm the 3rd point (B) until to reach the leveling indicative arrow ("X").



Planting Operation

Read correctly and follow the instructions together with this in the **operation manual.**

Clean completely up the seeder before starting the planting operation. Check, if all the mechanisms are moving freely and retighten all the components of fastening.

Concerning the **planting furrowers lines,** be sure that all the shear bolts are under conditions of use. Check, if the **internal scrapers** of the double discs are in perfect conditions and adjusted correctly. Note the **furrower knife points** if necessary replace them.

Check always the **springs**' conditions. Replace them in the case of break and lack of pressure. During the idle time of the seeder, keep the springs without pressure.

Free or broken **screws, nuts, pins** can loosen some part of high cost, which probably will curve or break, damaging other components of the equipment. Due to these causes replace and retighten them, when necessary.

Maintain the **chains** aligned and always in an appropriated tension for the work which corresponds to an oscillating equal to the width of the chain. Never add a new link in a chain used. Do not use a new chain in a used sprocket.

Check the alignment of **sprockets**; they should be maintained free of sludges before, during and after planting operation. Accomplish the lubrication so that the dry work is avoided.

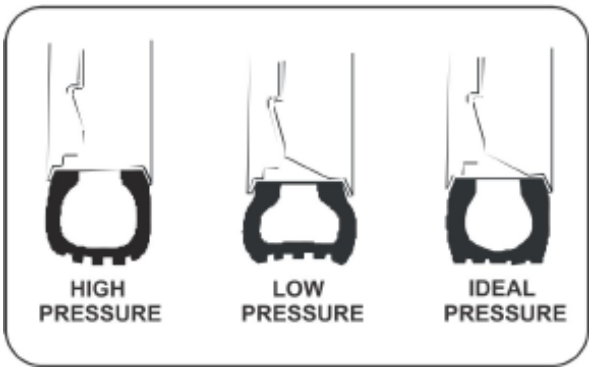
Before planting, lubricate all **grease fittings** cleaning them with a soft cloth to prevent the dirt can provoke the blockage of the channel. If they present defect, replace them.

Before planting, lubricate all grease fittings cleaning them with a soft cloth to avoid dirt may cause clogging of the channel. If they show, defects replace them.

Before starting to work with the seeder, make a **general retighten** in all the components: nuts and bolts. Check the placement of pins, stop pins and holdfasts "R", to avoid possible losses during the working operation. Repeat the operation of **retighten** after the first hours of work.

Tires Pressure

For a great contact with soil use, an ideal pressure pro the work, so the essential flexibility for the long durability of the tires will be getting. The use of low or high pressures may cause serious and irreversible damage to the tires. It is recommended for tires **500/6-12 the pressure of 20 lbs/pol²**, according to the manufacturer for the normal conditions of use.



Lubrication

Be sure that the seeder is lubricated properly. Depending directly on this procedure is the revenue, conservation and the productivity of it.

Sets for Planting

Support bars compose these sets, where are attached the plastic reservoirs with seed distributor mechanisms kits, horizontal and vertical, and motor system of set. These sets are attached on the planting lines.

For planting with 90cm row spacing should be isolated the unused reservoirs making removal the distributor discs of the lines.

Adjustment of the Row Spacings (SUMMER)

PROCEDURES FOR CHANGING OF ROW SPACING:

1 - Make the change of the row spacing in plane, firm and clean place.
2 - Lift the seeder through the tractor's hydraulic control.
3 – Remove the spacer bars (A) (fig. 03), loosening the screws, bushings and washers.
4 – Loose the fixing bolts of the furrower line kit (B) (fig. 04), letting it loose in relation the chassis frame. Move until the desired spacing.
5 – Loose the rod jointer (C) (fig. 05) through the attaching nuts of the clamps (D). Align the rods with the furrower line. Attach the rods jointer and the furrower line kit.
6 – Assemble the spacer bars (A) according to the desired option.
7 – Loose the nut from fixers of the seed reservoirs (E) (fig. 05) and do the alignment of them in relation to the furrower lines.

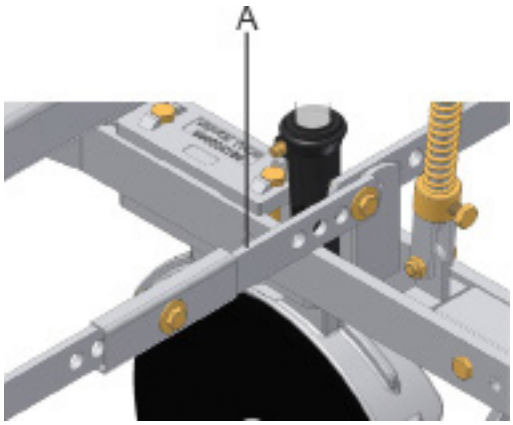


fig.03

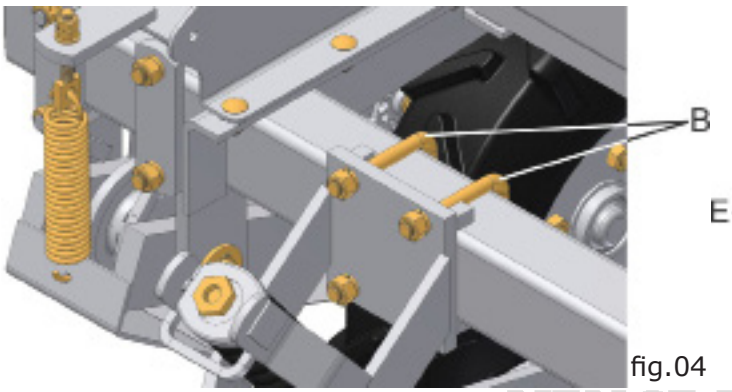


fig.04

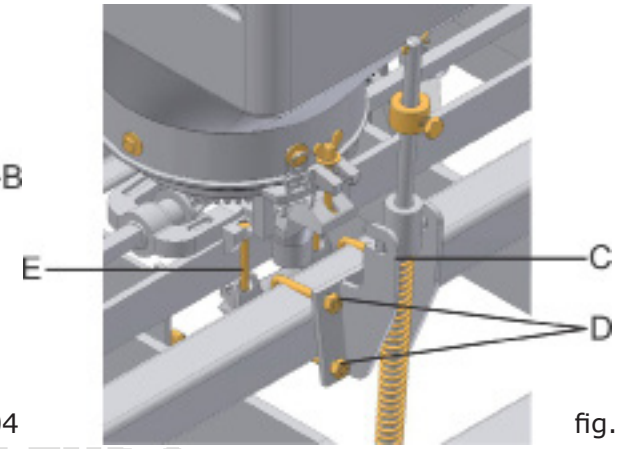


fig.05

Assembly of the planting lines (WINTER)

PROCEDURES FOR ASSEMBLY:

1 - Make the change of the row spacing in plane, firm and clean place.
2 - Lift the seeder through the tractor's hydraulic control.
3 – Lock the seeder putting trestles under the chassis.
4 – Insert the clamping axle (A) (fig.06) the lines making they are together to each other, and the centerline (B) must have a support (C) for fixing the axle. Always taking care that **the lines nearest to wheeled should be long lines**, regardless of the type or number of lines that make up the seeder.
5 – After assembling of the lines on the supports, lock the clamping axle (A) using the cotter pins (D) (fig. 07) on their ends.

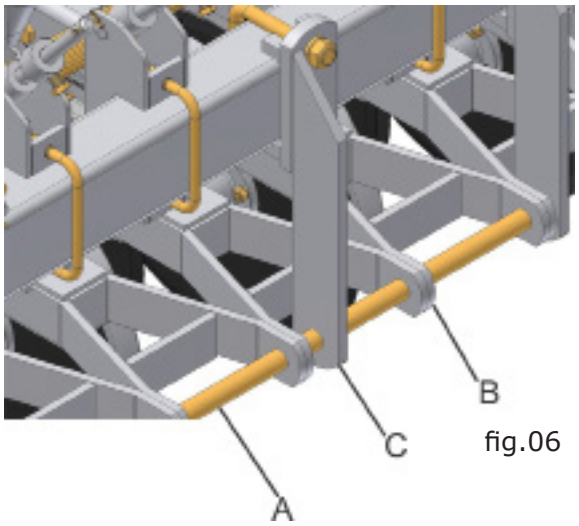


fig.06

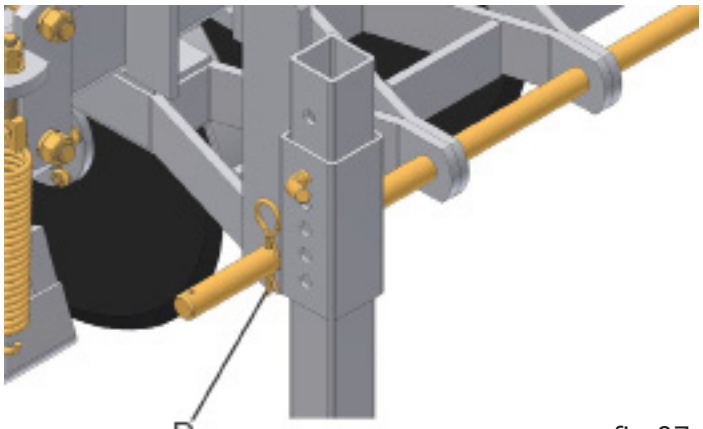


fig.07

Assembly of the planting lines with two sections

PROCEDURES FOR ASSEMBLY

For assembling the models in which the kit of wheat lines is formed by two sections is similar to the previous one, with certain features:

1- Attach the two central metal plates (E) (fig. 08) on the center of chassis.
2- Put the clamping axle of the lines in (A) (fig. 06), noting the position of the intermediate support (C) (fig. 06).
3- Move the first kit line on the chassis.
4- Put the central line (F) (fig. 08), align the intermediate support (C) (fig. 06) in the line kit.
5- Assemble the second kit in the same way of the first one.
6- After assembling the planting lines on the supports, lock the clamping axle (A) (fig. 06) using the cotter pins (D) (fig. 07) on their ends.

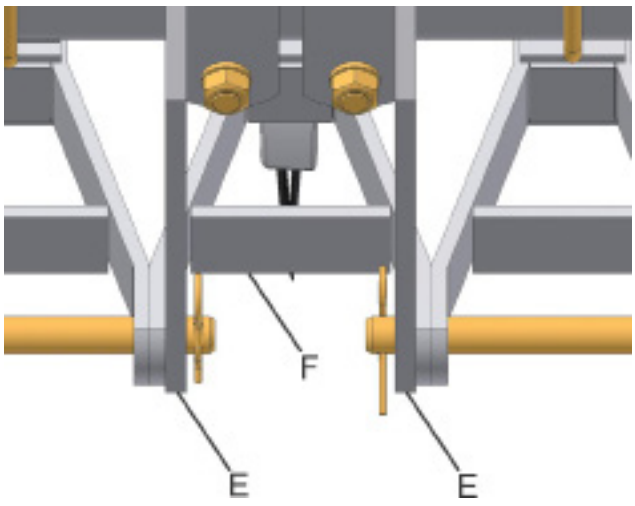


fig.08

IMPORTANT

Make sure that the centerline of the kit (F) (fig.08) is centered in the chassis, through metric measurement (measuring tape or meter).

Lines mounted near the wheeled and the end of the chassis should always be long lines for all models for wheat seeders.

After the conference the kits, make the attaching of the parties and fix the axle in supports by cotter pins.

For SA 14600 models (14 lines and two clamping axles), the centerline of the chassis should be long and the central supports of each line should be set in the third line on both sides, and the first line should be as next wheeled.

Assembly of the Supporting Articulators the Lines

1- Assemble the articulators of the lines (A) (fig. 09) on the rear tube of chassis, letting them tighten lightly.
2- With the seeder lifted on the trestles put the rods (C) with the springs (D) in the articulator hole (F) and after attached the rods on the furrower line through of the screws and nuts.
3- Align the rods and supports so that they are positioned in the horizontal and vertical position in relation to the furrower line; then, tighten the nuts clamp and supporting articulators.
4- Remove the trestles and low the seeder until the soil. Do final retight all components, attach the bushings (E), and put the stop pins in the upper hole of the rods.
5- Put the fertilizer and seed hoses on their feeders attaching them through the clamps and after in their conveyors on the furrowers lines.

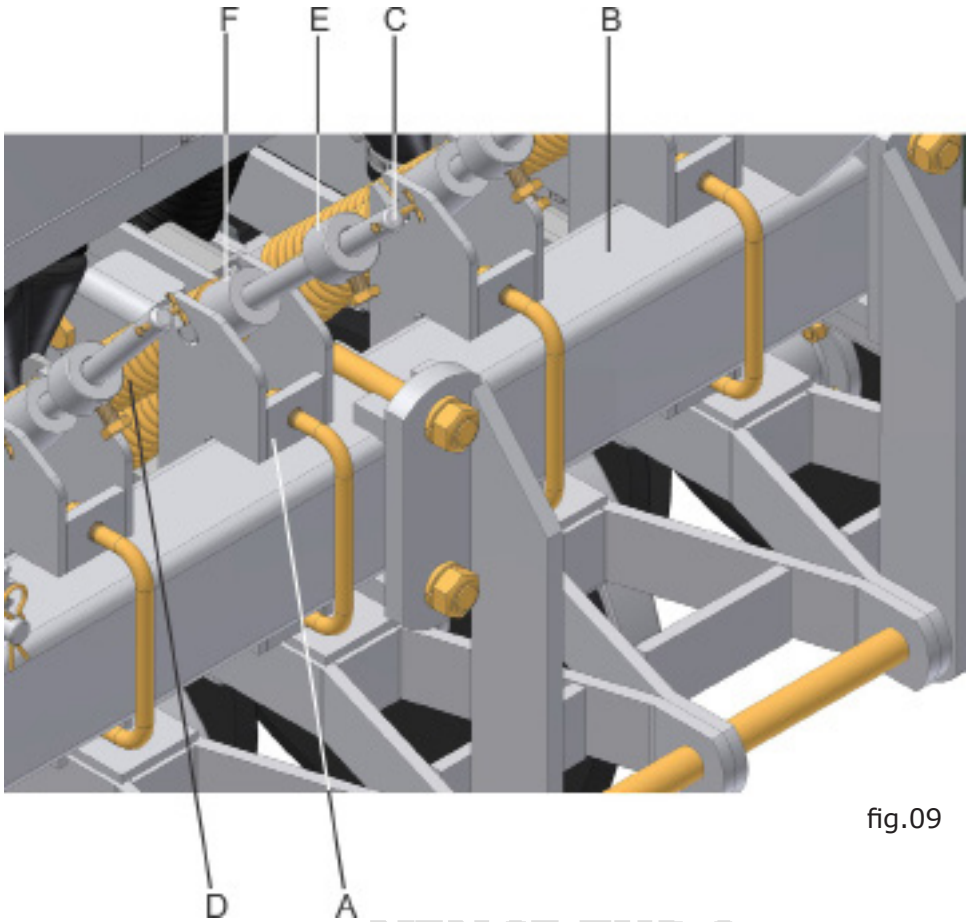


fig.09

ATTENTION

Do not allow during operations children or people without knowledge keep on near work area.

Be sure that all components were withdrawn from prior set before lifting the seeder.

Check if seeder be well stopped and turn engine off the tractor. This is very important for your safe.

Seed Distribution System

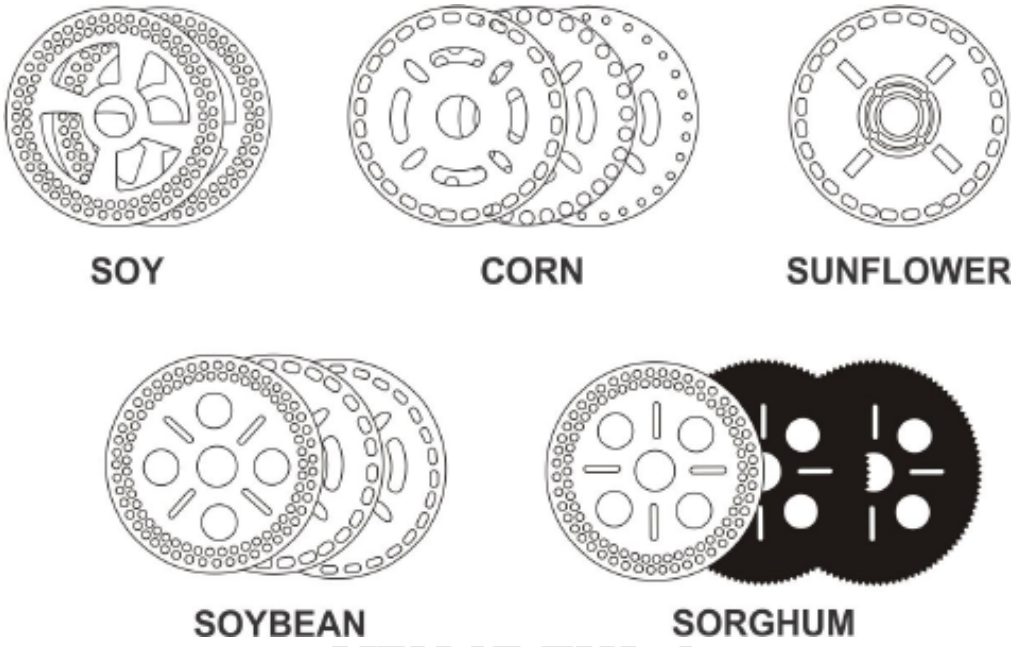
The correct adjustment of the seeder to obtain a final stand suitable for the crop to be established should be considered the variety to be sown, the germinal power (GP) and effect of seed.

The correct choice of the seed distributor discs should be determined from the size and shape of the seeds.

SEED FEEDER DISCS

If you already have the discs set, make the choice of seeds to be planted so that they can be distributed from the discs that came with the accessory box or the seeder. However, if the seed type to be distributed does not fit any of the kits, that accompany the seeder, it is required to acquire optional discs for this, just get in touch with a reseller VENCE TUDO.

AVAILABLE MODELS FOR SEEDS FEEDER DISCS:



CULTURA	COLOR DISC	HOLES NUMBER	HOLE	HOLE TYPE
SOYBEAN GRAIN BY GRAIN	GREY	90	8 mm	Round double row
SOYBEAN GRAIN BY GRAIN	GREY	90	9 mm	Round double row
CORN	RED	28	10x14,5 mm	Oblong
CORN	GREEN	28	9x13,5 mm	Oblong
CORN	GREY	28	8,5x11,5 mm	Oblong
CORN	BLUE	28	12 mm	Oblong
BEANS**	GREY	28	12 mm	Round

* For soybean, the model disc grain by grain the seed must have uniform size and shape so that two seeds do not occupy the same hole in the disc.

** For bean, uses the same discs for corn plus the option for beans (disc grain by grain).

MODELS OF THE SEED FEEDER DISCS OPTIONALS:

CULTURA	COLOR DISC	HOLES NUMBER	HOLE	HOLE TYPE
SOYBEAN GRAIN BY GRAIN	GREY	90	7 mm	Round double row
BEAN GRAIN BY GRAIN	LIGHT GREY	72	7x12 mm	Round double row
SORGHUN	RED	86	5,5 mm	Round double row
SORGHUN	GREEN	86	4,5 mm	Round double row
SUNFLOWER	DARK GREEN	28	5,5x11 mm	Oblong
SUNFLOWER	TURQUOIS BLUE	28	5x13 mm	Oblong
SUNFLOWER	LIGHT TURQUOIS BLUE	28	7,5x11,5 mm	Oblong
SUNFLOWER	PURBLE	28	5,9x11 mm	Oblong
SUNFLOWER	LILAC	28	5x11,5 mm	Oblong

IMPORTANT

1- Choose a batch or variety of crop that has the best uniformity and quality of the seeds, which will be planted.

2- When choosing the seed distributor disc the form and size of the seeds should be noted.

3- When the seed receives treatment with: insecticides, fungicides and other inoculants, and this application has water added, seeds will grow in size due to the formed film by these treatments and by absorption water by the seed.

4- After noting the all-prior items adding the technical recommendation for the crop, the seed to be sowed should have a certain slack within the alveoli or disc hole. This gap should be considered the outer diameter of the seed.

5- It is important the use of graphite powder with seeds. It is acts like a lubricant of the feeder discs, reducing the friction between the parts that make up the distributor mechanism and helps keeping the seeds fall conveyor seeds smooth. The use of graphite powder does not cause damage to or interfere with seed germination; it is a product inert and non-phyto-toxic. **Use 100 grams of graphite powder per 100 kg of seeds.**

The correction of the germinal power of seed and the percentage of slippage determine an adequate stand to planting.

The correct adjustment of the seeder is a fundamental factor for crop yield, since the number of plants per meter determines the final stand of the crop. Use the table of setting seed as a reference.

SEED DISTRIBUTION DISCS

Choose the correct disc and make the replacements needed. As the same way do the clean up frequently.

Loose the wing nuts (A) (fig. 10) to check or replace the discs. Move the screw from supporting base (C), turn and lift the reservoir (B), turn the reservoir to the opposite position and loose the plate (D) (fig. 11) through the quick latches (E). After assembling the correct disc, turn the disc with hand to be certain that the disc is turning freely.

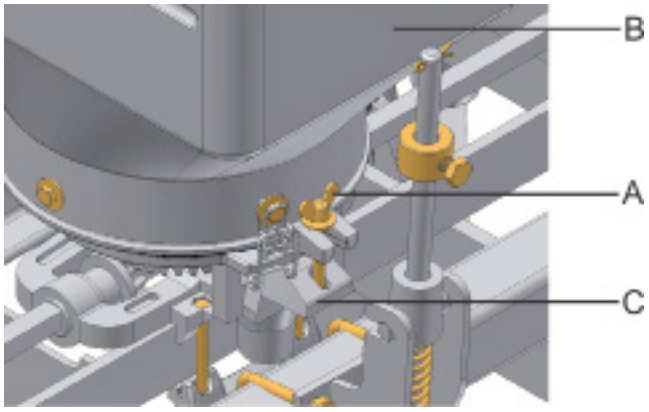


fig. 10

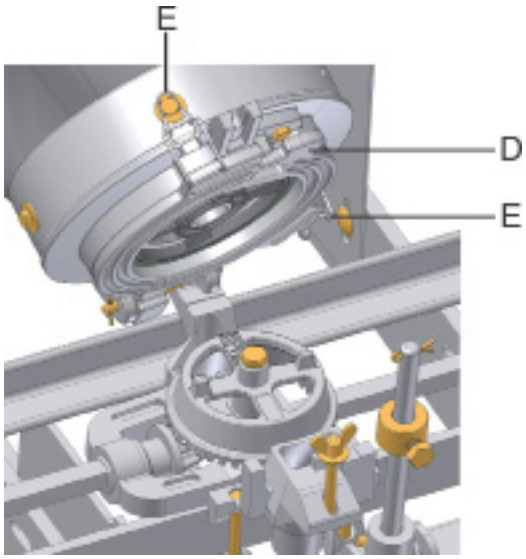


fig. 11

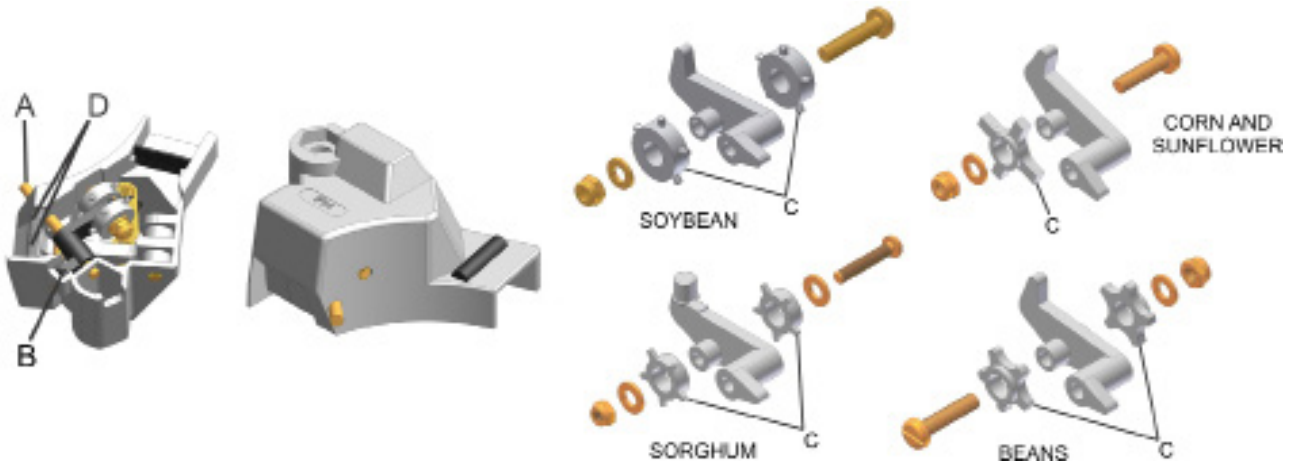
Disc Thickness	Ring
8,5mm	-
5,5mm	3,0mm
4,5mm	4,0mm
3,0mm	5,5mm

IMPORTANT

The space the disc occupies in the plate is ***8,5 mm***. The sum between the disc and ring should be 8.5 mm. If disc is 8.5 mm is not needed using the ring. Check the table above.

ASSEMBLY OF THE SEED BOXES AND CHANGE OF THE ROLLERS

1- Loose the fixing bolt from seed box, removing it.
2- Remove the holding pin from jointer of roller (A) .
3- Withdraw the jointer and change the roller model if necessary (B).
4- Note the roller model (C) to be used. It should be compatible with the holes of the disc to be used, with single or double row.



IMPORTANT

The working position of the roller must be in the center hole of the distributor disc. If it is used out of the working position will cause wear on the discs and distribution problems of seeds.

Check, if scrapers triggers (D) are free after assembling seed boxes.

Proceed to clean inner seed box, at least, once a day for untreated seeds and twice a day when using treated seeds.

Setting the Seed Distribution

TABLE TO HELP IN THE PRIOR SETTING OF SEEDS

LINE SA Polyethylene
Length of the drive wheel 1,81m

	Drive	16	19	21	24	29
	Driven	Seed number by lineal meter				
Soybean Disc 90 Holes	14	13,0	11,0	10,0	8,5	7,5
	24	23,5	20,0	17,5	11,0	13,0
	38	37,0	31,0	28,5	24,0	20,5
Corn Disc 28 Holes	14	4,5	4,2	3,5	3,0	2,3
	24	8,0	6,5	5,7	5,2	4,5
	38	12,0	10,5	9,2	8,5	7,0

The values stated in the above table may be varied due to possible differences in form of seeds and specific weight /1000 seeds.

LEGEND:
DRIVE:(Sprocket Hexagonal Hole)
DRIVEN:(Sprocket Square Hole).

NOTE:
These values serve only as a refence to the previous setting of the row spacing. For values that are more exact, refer to the technical assistant.

IMPORTANT:
For an efficient distribution of seeds, use discs suitable to the size and shape for seed, since the seeds after being treated; they have approximately 1mm in diameter off the seed disc within thealveoli. Always, use 100gr powdered graphite for every 10 Kg of seed. This is so that there is no wear of feeder discs and mechanical damage to the seeds.

SEED TRANSMISSION (SUMMER)

The setting of the amount of seeds per hectare is performed through the exchange of drive (A) and driven (B) sprockets.

To make exchanges of sprockets, it is necessary to loosen the stretcher (C).

To obtain the desired quantity of seeds, choose the distributor disc and make the arrangement of sprockets according to the scale provided on the side of the machine.

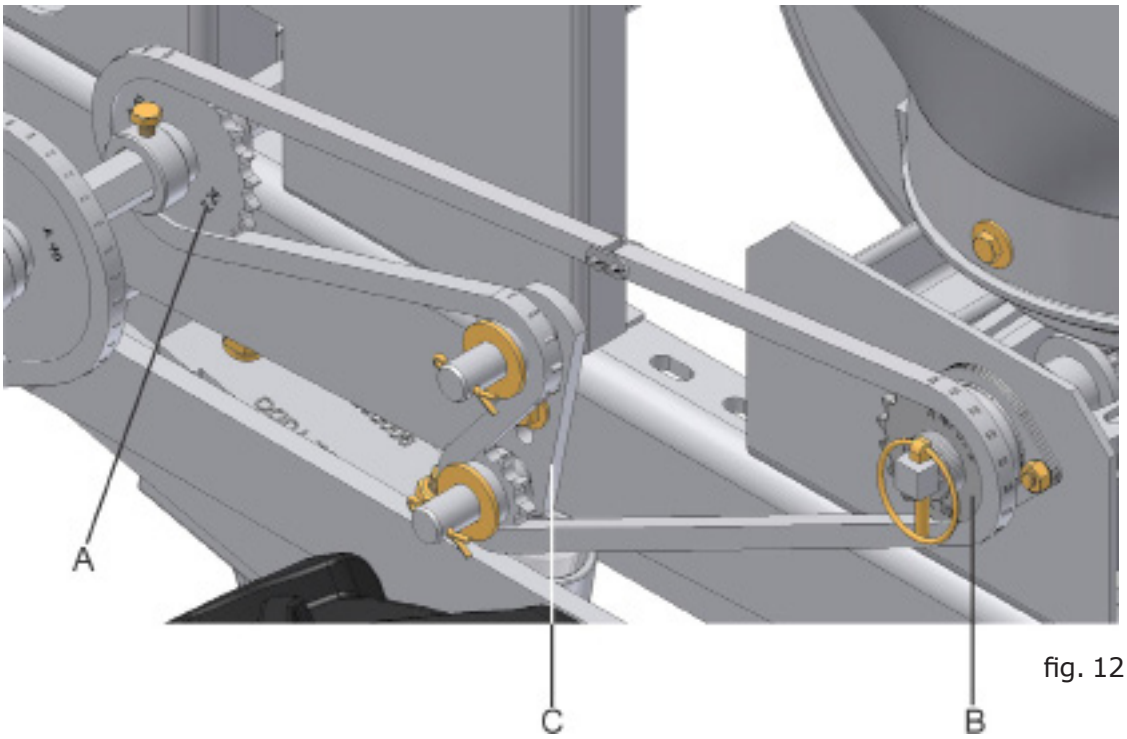


fig. 12

ESTIMATE FOR DETERMINING THE POPULATION OR NUMBER OF PLANTS / Ha.

EXAMPLE

Number of Plants by Lineal Meter	**N**
Final Population by Hectare (Estimated)	**50.000 Plants**
Row Spacing	**0,80 m (80 cm)**
1 Hectare	**10.000 m**
Germinal Power of the Seed (GP)	**96%**
Approximate Percentage of Slippage	**5%**
Wheel Perimeter	**1,81 m**

1 ha = 10.000 m2_____ 50.000 plants
***14,48 m2_____ N**

***14,48 m2** = Row spacing x wheel perimeter x number of turns of the wheel
***14,48 m2** = 0,80m x 1,81m x 10

N= 14,48 m2 x 50.000
10.000m

N= 72,4m **N= 72,4m = 4 plants / lineal meter**
****18,1m**

****18,1** = 10 turns of drive wheeel x wheel perimeter 1,81m

IMPORTANT

Determining the amount of pounds of seed per hectare use the same method to calculate the amount of fertilizer if necessary.

CORRECTION OF THE GERMINAL POWER (PERCENTAGE)

N = 4 plants / lineal meter _____ 96%
N _____ 100%

N = 4

CORRECTION OF SLIPAGGE (PERCENTAGE)

N = 4

4 is the number of plants / lineal meter should be used
In the setting of seeder.

Seed Distribution System - Wheat

A fluted rotor makes the seed distribution. It is assembled on feeder box being driven by a square axle. It presents the option to slip on this axle, allowing a bigger or smaller quantity of seeds to be distributed.

Each feeder box has free adjustment through a latch, allowing, this way, adjusting according to the seed size. The hole closer of the rotor allows the setting of smaller seeds (wheat and forage) and the farther one of bigger seeds (rice, oats and barley). In addition, the latch allows being loosening of the holes of setting so that the cleaning of the feeder box can be done.

The displacement of axle (A) (fig. 13) allows doing the setting procedure, thus increasing or decreasing the work gap the rotors (B) inside the feeder box, being made through the handle (C) (fig. 14). After getting the desired flow of seed, attach the regulator handle through the holding nut (D).

Note the position of the indicator (E) (fig. 13) in millimeter scale (F) to obtain approximate setting through the indicative tables as the crop to be established.

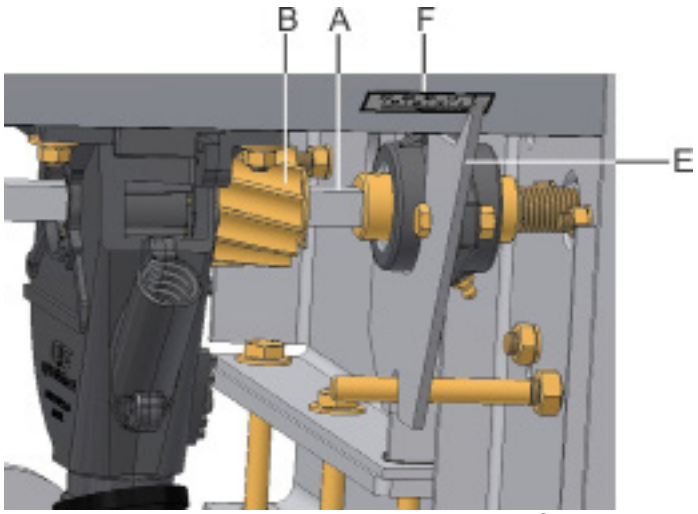


fig.13

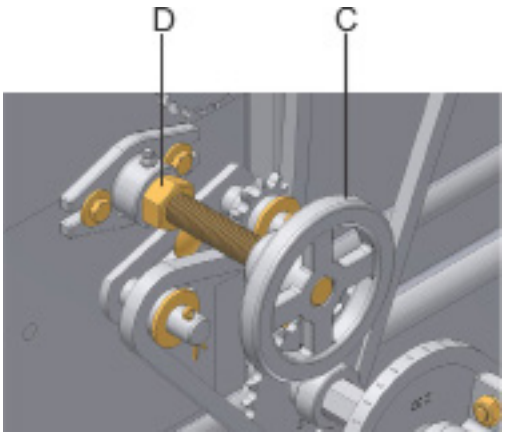


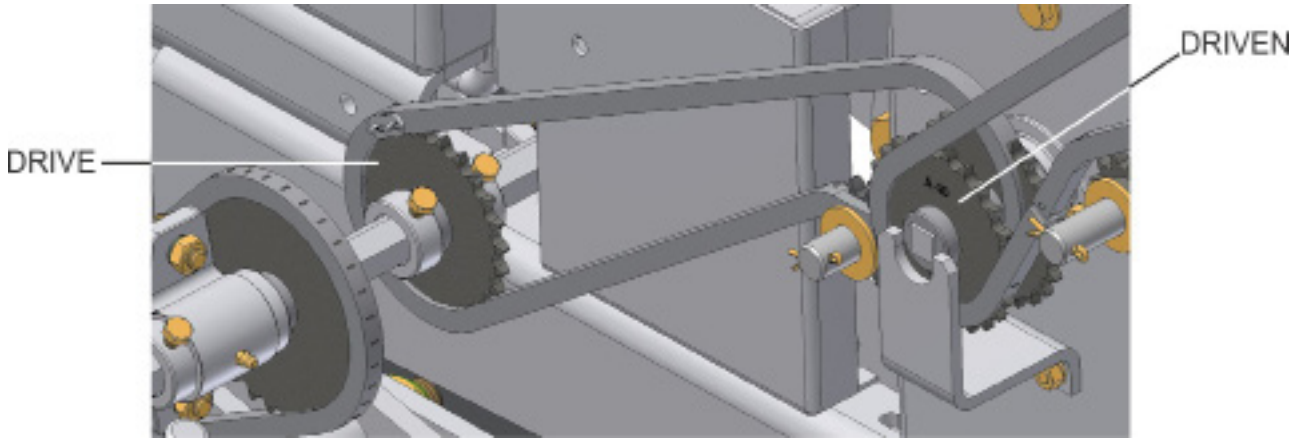
fig.14

IMPORTANT

Verify the rotors set that do not force the dislocator supporting in order that gap adjustment do not be changed.

Do not do the adjustment with the seed box filled.

Do the inspection of distribution by displacement and movement the rotors through the drive sprocket, observing the efficiency the set.



ESTIMATE FOR DETERMINING THE FINAL AMOUNT IN KG/HA OF SEEDS

EXEMPLO

Mount of seeds by hectare	**130 Kg**
Row spacing (m)	**0,17m (17cm)**
Drive wheel perimeter	**1,81 m**
Number of turns of drive wheel	**10**
1 Hectare	**10.000 m**
Germinative power of seed (G.P.)	**93%**
Grams by line in 10 turns of wheel	**5%**

130 Kg/ha_____ 10.000 m2
X_____ 3,07 m2

***3,07 m2** = Row spacing x wheel perimeter x number of turns of the wheel
***3,07 m2** = 0,17m x 1,81m x 10

$$X = \frac{130\ Kg/ha \times 3{,}07\ m2}{10.000m}$$

X= 0,0399 Kg/ha

X= 0,0399 Kg x 1000g = 39,9 grams by line in 10 turns of drive wheel.

CORRECTION OF THE GERMINATIVE POWER (PERCENTAGE)

39,9 grams _____ 93%
X _____ 100%

X= 42,9 grams by line in 10 tuns of drive wheel.

IMPORTANT

SO THAT THE FINAL STAND OF CROP DOES NOT DAMAGED, BE SURE TO MAKE THE CORRECTION OF THE GERMINAL POWER THE SEEDS.

IF HAPPEN THE ROTORS BROKE THE SEEDS, CHANGE THE POSITION OF THE LATCH FROM SEED DISTRIBUTING BOX OF FLUTED ROTORS.

DURING THE PLANTING, CHECK THREE TIMES A DAY, AT LEAST, THE SEED AND FERTILIZER DEPTH AS WELL AS THE COMPACTION OR WHEN HAPPEN CHANGES OF THE PLANTING AREA OR CHANGES OF MULCH (FODDER).

Seed Mover – Wheat

In order to move the wheat seed, and favor the displacement to the rotor, keep the movers (A) (fig.15) in the mounting position as close to the opening window of the rotor (B), keeping them the mounting position to 90º as in Figure 15.

The transmission axle (C) is carried out by sprockets (D) and (E) (fig.16), driven by the drive axle (F).

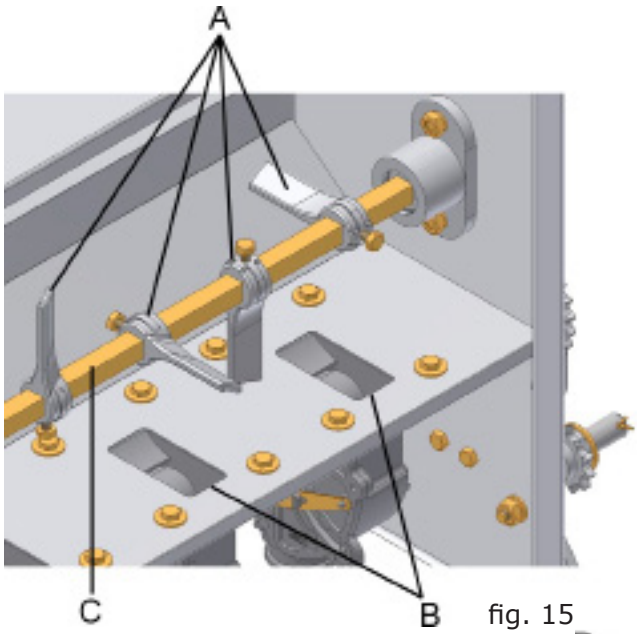


fig. 15

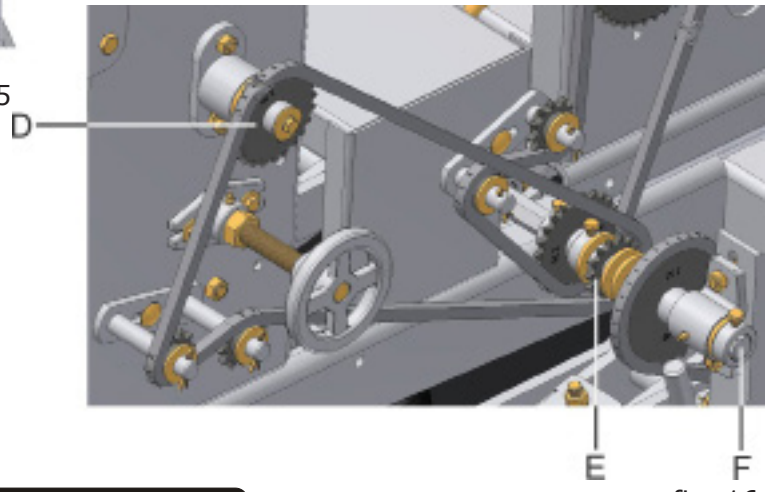


fig. 16

ATTENTION

AVOID ACCIDENTS; DO NOT PUT THE HANDS INTO THE RESERVOIR WHEN THE MACHINE IS RUNNING.

Seed Distribution System – Small Seeds (Optional)

A fluted rotor (A) mounted on a small seed feeder kit (E) which is driven by a square axle (B), with sliding motion on this axle does the distribution of small seeds shaping a bigger or smaller quantity of seeds to be distributed.

The setting procedure is performed by displacing the axle (B) (Fig. 17) increasing or decreasing the work opening of the rotors within the feeder kit (E) through the knob (C). To start the setting loosen the nut (D) (fig.17) after the metering of seed chosen; lock the system tightening the nut (D).

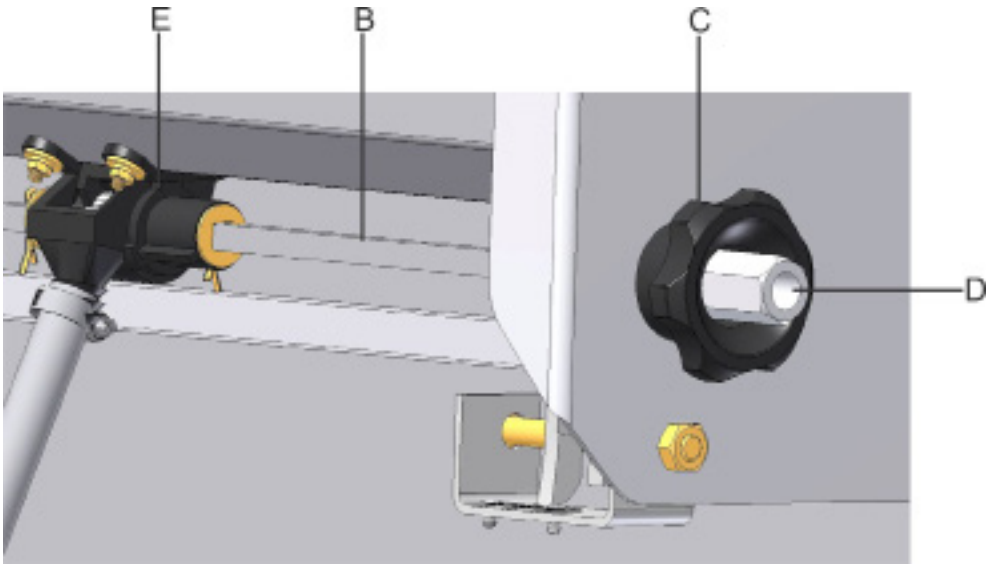


fig.17

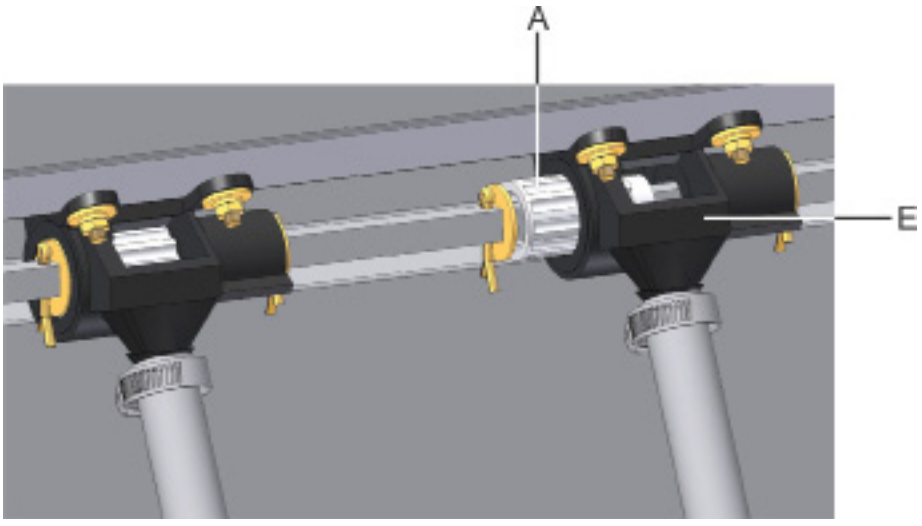


fig.18

IMPORTANT

Do not change the adjustment of opening; be sure that the rotors kit does not force the displacer support.

Do not the adjustment with the seed reservoir filled.

Do checking the distribution for the displacement and movement of rotors through drive wheel, noting always the efficiency of kit.

Fertilizer Distribution System

SELF CLEANING FERTILIZER DISTRIBUTION

The adjusting levers (A) (fig. 19), exchange of drive (B) and driven sprockets (C) perform the setting of amount the fertilizer in kg/ha and the fertilizer is carry out the rotor (G) (fig. 20).

Move regulating levers the proper position according to the specification table and verification of the correct number of teeth of the drive and driven sprockets so it is obtained the desired fertilizer amount.

Make changes to get the flow desired.

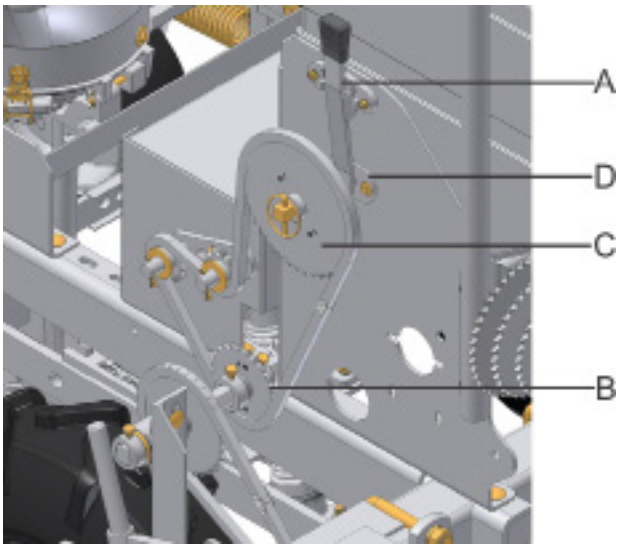


fig. 19

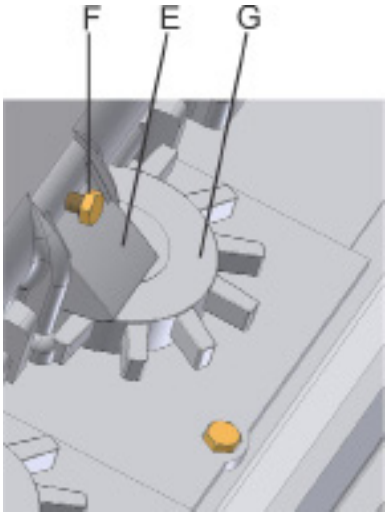


fig. 20

Adjust the transmission relation by means of change the additional sprockets that come to the machine.

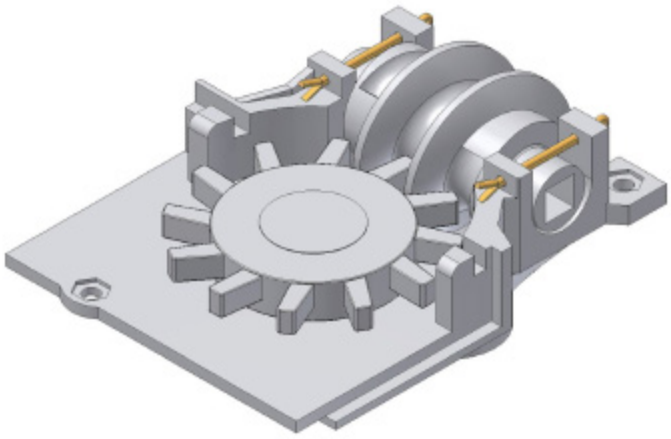
LIST OF SPROCKETS THAT COME TO THE MACHINE

HEXAGONAL: Z-14, Z-24, Z-38, Z-43
SQUARE: Z-16, Z-19, Z-21, Z-24, Z-28, Z-29, Z-32, Z-38

CALIBRATION OF THE FERTILIZER REGULATORS

1- First, check if the regulators (E) (fig. 20) are free, if not, loosening the fixing bolts (F).
2- Put the adjusting lever (A) (fig. 19) in the neutral position from scale (D).
3- With one hand press the regulator and with the other secure it by means of the screw (F), so that all regulators have the same height in relation to the rotor.
4- Make this operation in all lines; those are equipped with endless drivers.
5- Put the lever in zero position from scale (D).
6- When all the regulators are calibrated, move the lever to the position with the desired flow. These are figured on the setting tables.
7- Make sure the flow obtained is actually desired, if not, do this calibration again. Change the transmission ratio through exchange the transmission sprockets.

Fertilizer Feeder – Self Cleaning System



THEORICAL ESTIMATE – FERTILIZER AND SEED DISTRIBUTION

For a better purpose, proceed as follows:

1- Through 10 turns of the drive wheel, collect the amount of fertilizer or seed in a row, use more than one collection point, so do the average to make easy weighing.
2- At least, 5 points for 9 lines, 4 points for 7 lines models. If is desired to use all lines this can be possible, this raise the accuracy of the adjustment.
3- Weigh the amounts collected and get the averages by lines.
Note: This estimate is figured on 10 turns of drive wheel, to check the flow.

IMPORTANT

When the work speeds are high, they influence the uniformity seed distribution.
When take place the change of formulation, batch or maker, do the settings of quantities another time.

ESTIMATE OF THE QUANTITY THE FERTILIZER AS ROW SPACING

For a good distribution the quantities of fertilizer in different row spacings, it is suggested a quick estimate where all data used can be replaced for other ones; do the following with these data:

EXEMPLE:	***DATA:***
Quantity fertilizer by ha:	200Kg
Row spacing in m:	0,45 (m)
Perimeter drive wheel:	1,81 m
Number turns drive wheel:	10 turns
Grams line in 10 turns wheel:	X?

200 Kg/ha _____ 10000 m² = 1ha
X _____ *8,14 m²

***8,14 m² =** Number turns drive wheel x perimeter drive wheel x row spacing.
***8,14 m² =** 10 x 1,81 x 0,45m

X = 0,162 Kg/ha

0,162 x 1000g = 162 grams by row in 10 turns of drive wheel.

Fertilizer metering box through the fluted rotors (helical conveyors) carries out the fertilizer distribution. For unusual amounts of fertilizer, realize the exchange of transmission sprockets.

TABLE OF SETTING FERTILIZER

TABLE TO HELP IN THE PREVIOUS SETTING OF FERTILIZER IN ROW SPACING FOR WHEAT, SOYBEAN, CORN, SUNFLOWER, SORGHUM AND OTHER.

LINE SA HIDRÁULICA *Super Série* (Perimeter drive wheel 1,81m)

Kg / ha	17 TxM=N°	40 TxM=N°	45 TxM=N°	50 TxM=N°	55 TxM=N°	60 TxM=N°	65 TxM=N°	70 TxM=N°	75 TxM=N°	80 TxM=N°	85 TxM=N°	90 TxM=N°
100	43x24=2	24x43=2	24x38=2	24x32=0	24x32=2	24x28=1	24x28=3	24x24=1	24x24=3	24x24=4	38x28=0	38x28=0
125	14x43=1	24x32=0	24x28=0	24x28=2	24x24=1	24x24=2	24x24=4	24x24=5	24x16=0	24x16=0	38x24=0	38x24=1
150	14x38=1	24x28=1	24x24=1	24x24=3	24x24=4	38x28=0	24x16=0	24x16=1	24x16=3	38x24=3	38x24=4	38x24=5
175	14x38=4	24x24=1	38x32=0	38x32=2	24x16=0	24x16=1	24x16=3	24x16=4	38x24=4	43x24=3	38x16=0	38x16=0
200	14x32=3	24x24=4	38x28=0	24x16=0	24x16=2	24x16=4	38x24=4	38x24=5	38x16=0	38x16=0	38x16=2	38x16=3
225	14x24=0	38x28=0	43x28=0	38x24=1	24x16=4	38x24=5	43x24=4	38x16=0	38x16=1	38x16=3	38x16=4	38x16=5
250	14x24=3	24x16=0	43x28=2	43x24=1	38x24=5	43x24=5	38x16=1	38x16=2	38x16=4	43x16=2	43x16=4	43x16=5
275	24x38=2	24x16=2	38x24=3	43x24=3	38x16=0	38x16=1	43x16=0	38x16=4	43x16=3	43x16=4	43x16=5	43x16=6
300	24x32=1	43x28=3	38x24=5	43x24=4	38x16=1	38x16=2	43x16=2	43x24=4	43x16=5	43x16=6	43x16=6	43x16=7
325	24x32=2	38x24=4	43x24=4	38x16=1	43x16=0	38x16=4	43x16=3	43x16=4	43x16=6	43x16=7	43x16=8	43x16=9
350	24x28=1	43x24=3	38x16=0	38x16=2	43x16=1	43x16=3	43x16=5	43x16=5	43x16=7	43x16=8	43x16=9	43x16=10
375	14x16=2	24x16=7	38x16=1	43x16=1	43x16=3	43x16=5	43x16=6	43x16=6	43x16=8	43x16=9	43x16=10	-
400	38x43=3	24x16=8	43x16=0	43x16=2	43x16=4	43x16=6	43x16=7	43x16=7	43x16=9	43x16=10	-	-

Note: The values shown in the above table are approximate values, which may be varied depending on the particle size of the fertilizer on the market.

LEGEND:
T=Drive Gear (Hexagonal Hole)
M=Driven Gear (Square Hole)
N°=Scale Number

DRIVE 29 X 43 DRIVEN
DRIVE 29 X 32 DRIVEN

NOTE: 43x24=2
For these values, replace the gear by 43 hex 32 hex of the drive shaft.

IMPORTANT

Use the chain stretchers to keep the chains with the correct chain and alignment. This procedure will avoid damages and troubles of shaking to the system.

IMPORTANT

For increasing the productivity and reducing the loss of inputs, i.e. unevenness in the application alongside the cultivated area, the utmost care should be taken in the time to adjust the seeder. Make daily measurements in desired amounts of fertilizer and seed per hectare, because planting that is defined the production of the new crop to be harvested. For the quantities obtained, make the appropriate tests.

Note that the adjustment to changing flow is determined by changing the gear ratios by means of sprockets basic.

Use as a base for the start of the tables set out in regulation seeder and along with this manual.

For the corn crop in lines where the fertilizer metering is not being used, remove the movers (A) (fig.21), letting the feeders mounted and the regulator (B) (fig.22) closed to prevent leakage of fertilizer. The fixing bolt (C) must be loosened.

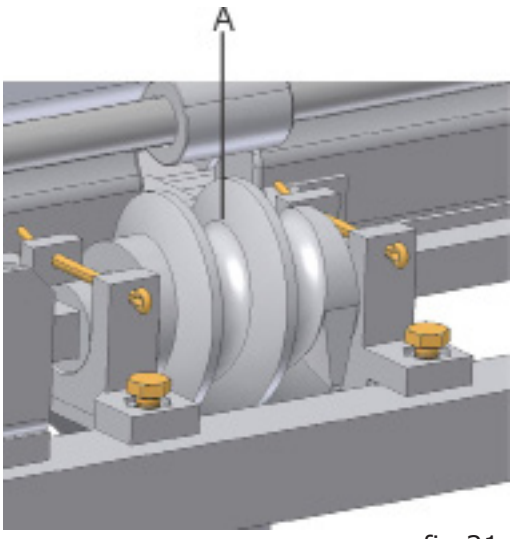


fig.21

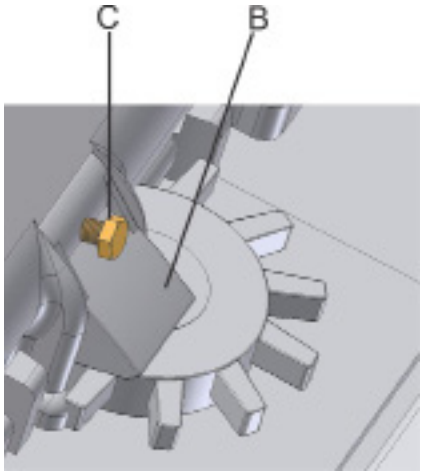


fig.22

IMPORTANT

When the work speeds are high, they influence the uniformity seed distribution.

When take place the change of formulation, batch or maker, do the settings of quantities another time.

TRANSMISSION CHAINS

The transmission chains are factory pre-adjusted according to the distance between the axles of the sprockets. Eventually if need some maintenance or repair connecting links (B) or reduction links (A), remove the cotter pin (C) (fig.23), making withdrawal of the number of connecting links, reduction links or free links.

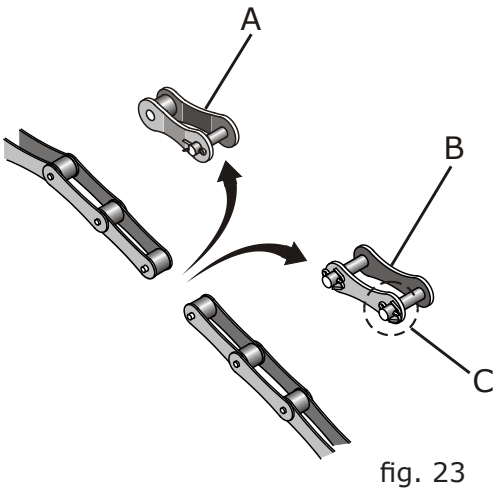


fig. 23

SAFETY RULES – TRANSPORT

TRANSPORT ON TRUCK OR TRAILER

- On trucks or trailers use adequate ramps to load or unload the seeder. Do not carry out these operations in unplanned ravines. It may take serious accidents.
- When using the hoists, use the adequate points to the lifting.
- To support correctly the seeder use the stands and lock the seeder wheels.
- Moorings (cables, chains, ropes, etc. …) should be used in enough amounts to bring to a halt the seeder during the transportation.
- Check the conditions the load in the first 10 km of transporting and after each 80 to 100 km. Note if the moorings are not loose. In bumpy roads, check the load frequently.
- Always be aware to the transporting height, especially in electrical networks and viaducts, etc...

  Check the laws in force on the height and width limits of the load. If necessary use flags, lights and reflectors to alert other drivers.
- The transport over long distances it will be made on trucks or trailers.

TRANSPORT WITH HITCH ON THE TRACTOR'S DRAWBAR.

When transporting the seeder with hitch on the tractor's drawbar, do it the following way:

- Do not transport the seeder filled.
- Note the seeder width in relation to the places narrower, mainly farm gates and roads with ditches.
- For a better preview, the tractor should be travel with the headlights on.
- In over long distances the transport do not should be made by tractor.
- The transport do not should be made at night.

OPERATION

IMPORTANT

The *SA HYDRAULIC* Seeders have different adjustments, which they have been observed. The local conditions should be considered to establish the better adjust those tunings.

Checking and adjusting the cutting parties (discs and furrowers), turn the ratchet off to avoid losses.

Check carefully: the seed depth, compaction pressure and fertilizer position in relation to the seed.

Keep the seeder leveled.

Check the seed distributors twice a day, making the removal and cleaning of the chemicals, if necessary.

Check the fertilizer distributors and verify the proper functioning of them.

Use always fertilizer and seed free from impurities.

Keep the invariable speed in the whole plantation.

Never perform maneuvers or do the reverse gear with planting lines downloaded on the soil.

The correct calibration of the tires is of the highest importance to maintain the homogeneity of planting.

Use the row spacings correctly to avoid future wastage.

Lubricate the seeder correctly, observing the lubrication intervals.

Retighten screws after planting, checking also the conditions of pins and stop pins.

IMPORTANT

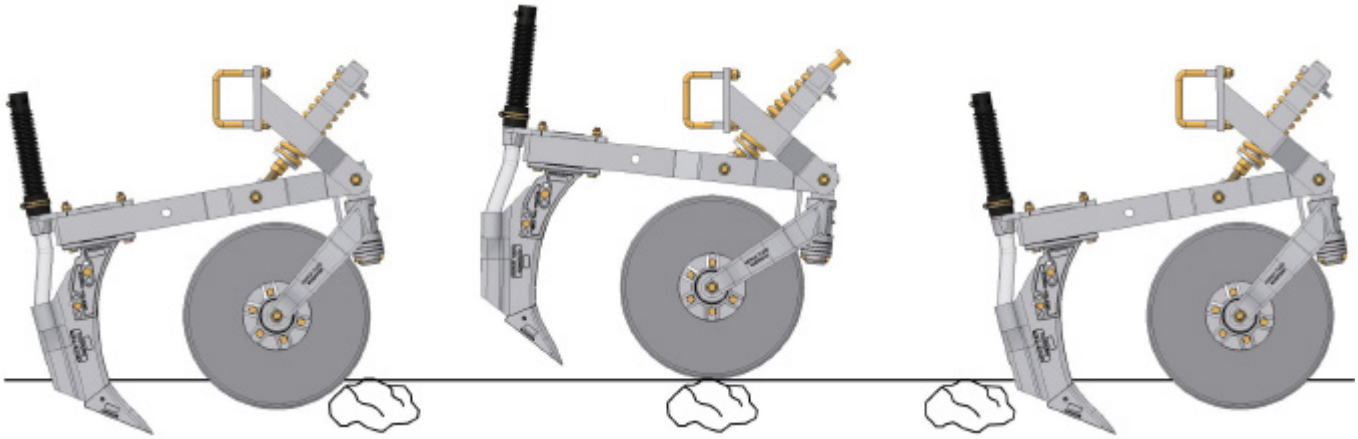
Check the tension of drive chain when occur changes on the adjustments.

Depth Adjustment

PLANTING SET WITH MOBILE FURROWER

VENCE TUDO LTDA. developed this planting kit, which is called "**SKIP STONE**", of a pioneer way for supply to the need for planting in a stony soil (many stones).

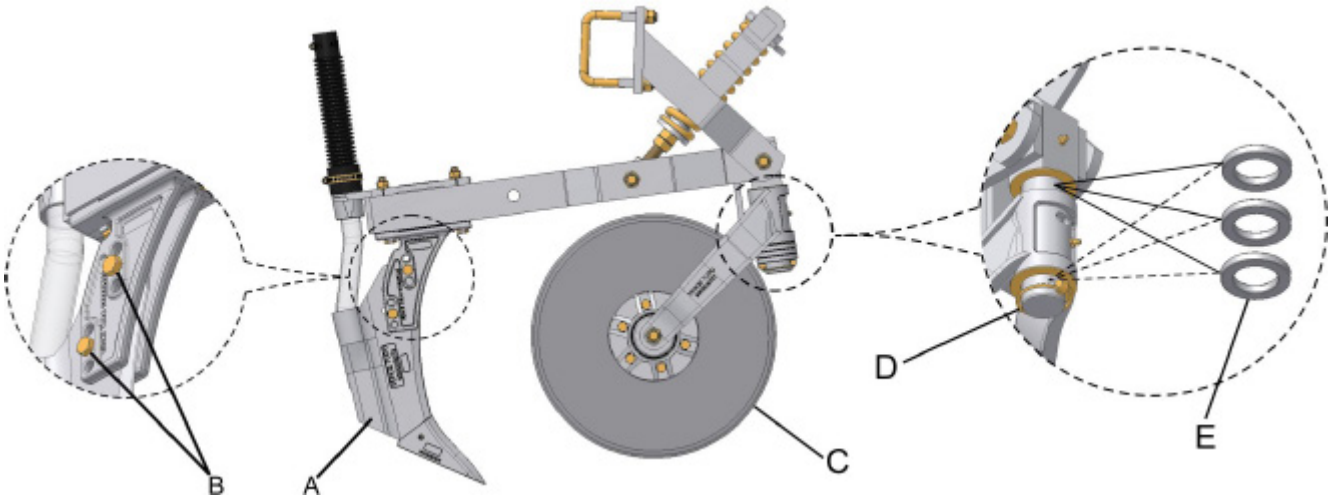
This mechanism placed on a kit, it is set out in the same device: the cutting disc and the furrower knife. This way, the cutting disc during the movement of displacement of the seeder makes the seeder puts upon to the obstacle when finding it. Thus, the opener knife is thrown and removed from the ground by means of a lever formed by the system. After the cutting disc overcomes the obstacle, the opener knife returns automatically to its original position of work without occurring the breaking of the safety fuse.



Depth and Position of the Fertilizer Furrower - S.S. (Skip Stone) and Height of the Cutting Disc

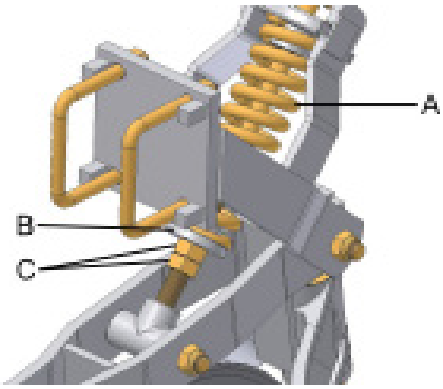
The position of the furrower can be adjusted vertically. For this, it is enough to release the furrower knife (A) and to modify the depth of the furrow by changing the position of the screws (B).

The position of the cutting disc (C) can also be adjusted in the vertical direction. To make this, the locking pin (D) should be removed and the height of the cutting disc should be changed by means of change the position of the washers (E).



DEPTH OF CUT AND FURROW OF THE FERTILIZER

The depth of the cutting disc is determined by the pressure of the spring (A) through the key shift of the guide (B) and the nut (C) will lock guide. Note that the measure set must be the same in all the springs of the lines.



IMPORTANT

USE ALWAYS THE DEPTHS RECOMMENDED FOR PLANTING THE CROP.

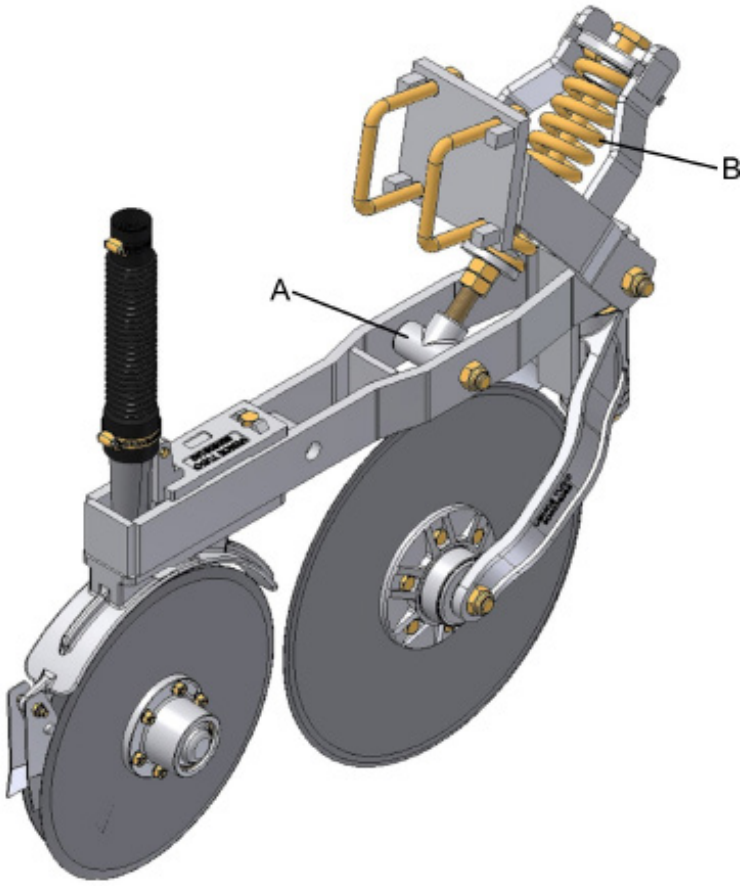
WHEN PLANTING SOYBEAN AND CORN, THE SEED AND FERTILIZER DISTRIBUTION IS IN THE SAME ROW. IT SHOULD BE OBSERVED A DISTANCE BETWEEN THE SEED AND THE FERTILIZER, ABOUT 5CM OF SOIL IN DEPTH; CONSEQUENTLY, THIS NOT CAUSES PROBLEMS IN THE GERMINATION.

Double Discs for Fertilizer

Designed to build a furrow in the "V" shape for placing the fertilizer at the bottom of it, in light soils and well drained.

A 13 and 14" offset double discs kit assembled on interchangeable frame fasten by screws on the furrower line makes this furrower system.

For a greater depth of penetration and higher fertilizer lift, the seeder and move the guide (A) of the helical spring (B).



ADJUSTING AMPLITUDE AND PRESSURE OF THE SPRINGS

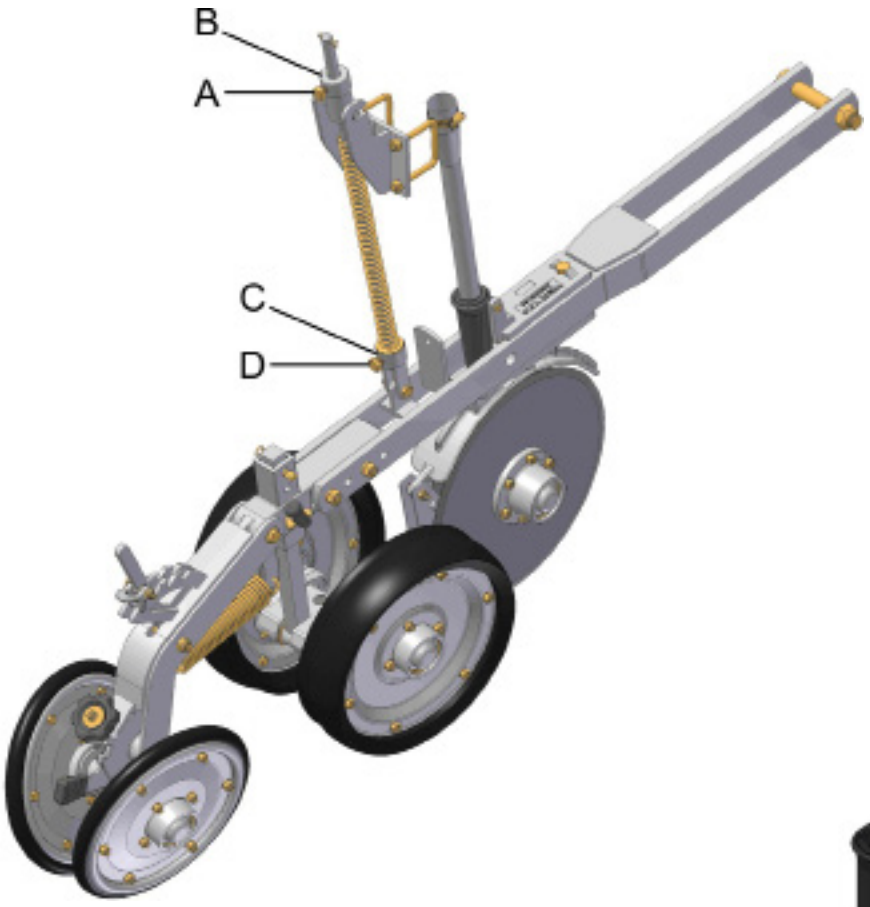
SEED DOUBLE DISCS

For getting of bigger amplitude (height oscillation) of seed double discs: lower the seeder, loose the screw (A) from the backstop (B), displacing it upwards to increase or downwards to decrease the amplitude.

When the desired height is chosen retight the screw (A) locking the backstop (B). These regulations depend on the unevennesses showed in the soil and on the planted area.

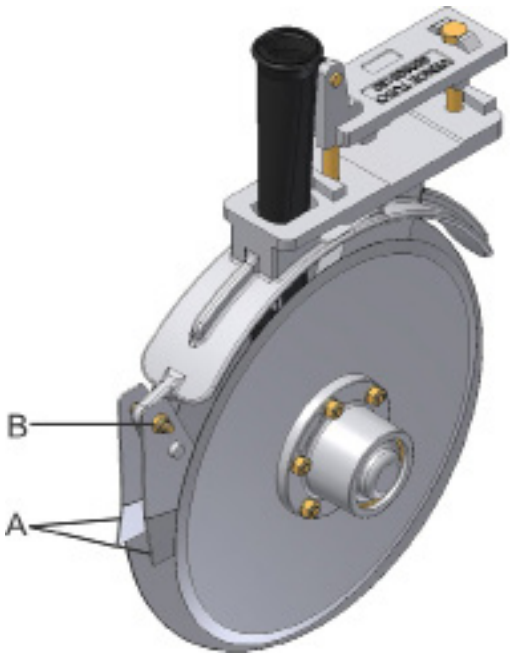
The seeder must be lifted to become more easy the adjustment of the pressure on the seed double discs.

The refore, loose the screw (D), displace the backstop (C) up or downwards, as the desired pressure. After retight the screw (D) and lock the backstop (C).



Internal Scraper of the Discs

Periodically accomplish the adjustment of the scrapers (A) from the defased double discs. To make the tuning of the scrapers, tight the bolt and nut (B). Adjust of such a way that be maintained the efficiency of cleaning. Not to cause excessive wear in the internal scrapers; it does not press them in surplus (A).



Free Limiter in "V" Shape

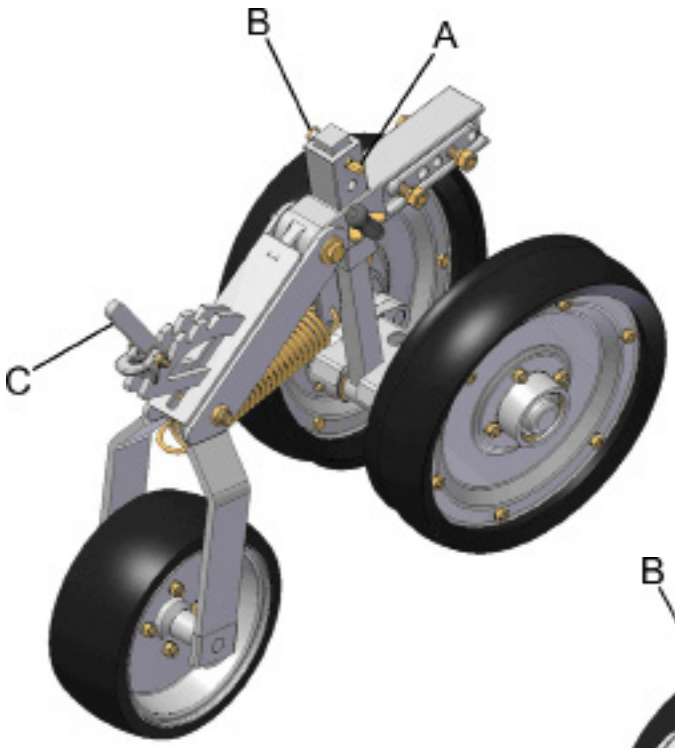
The depth gauges wheels copy the irregularities of the land, which allows maintain great homogeneity in depth. The wheels set is mounted in a position strategic, behind the defased seed double discs. In addition to the limiting function, the wheels assembled in the "V" shape put back the straw removed and make a lateral compaction in the seeds, avoiding the generation of air pockets in the furrow. The depth gauges wheels have a task to bring back the soil that the furrower knife and seed double disc removed.

In each line should be done the adjustment on the regulator pin (A), this way:

1 - Lift the lines from the soil, to relieve the weight on the depth gauges wheels.

2 - Withdraw the holdfast "R" (B) from the regulator pin (A).

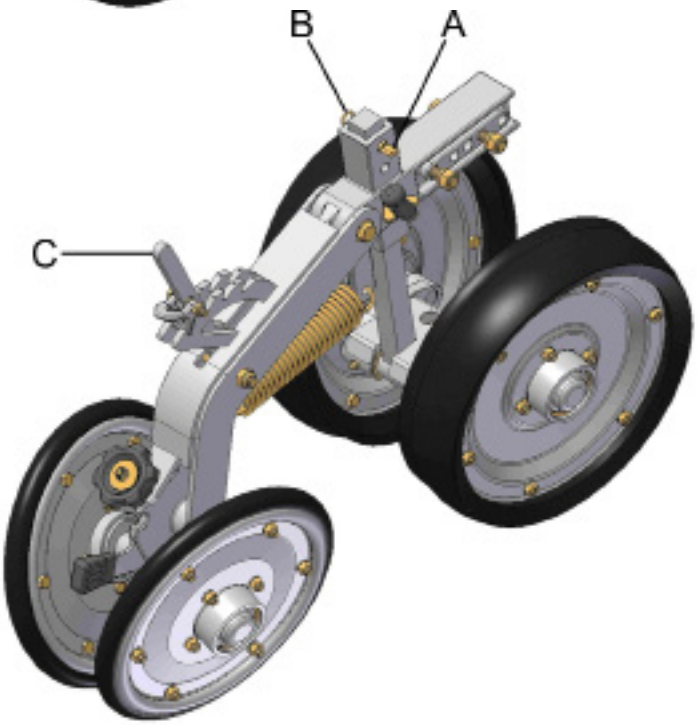
3 - Choose the position and the depth desired. Put again the pin and holdfast in the hole. For management, the depth limits (in relation to the seed double discs) are 5,0 cm (minimum) and 14,5 cm (maximum); and there are options of 6 holes at intervals de 20 cm between them.



Compaction Adjustment

To make pressure adjustment the press wheel; adjust the spring pressure, moving the lever (C). The greater the pressure of the spring, the greater the pressure exerted on the seed.

Always check this setting; since the conditions of soil, humidity, and straw, among others may vary in the same or another planting area. It should be adjusted for each situation.



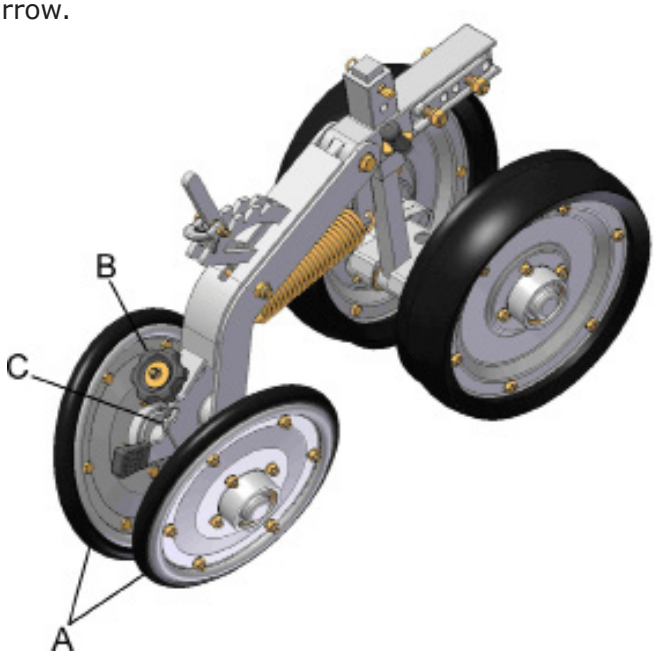
IMPORTANT

Note the regulator pin (A) is in the same position on all lines.

Compactor in "V" Shape

The press wheels in "V" shape (A) carry through the pressure of the soil laterally in the seed and work with various options, as conditions of the soil, straw layer, humidity, etc.

Make the adjustment pressure pulling the handle (B), changing the position regulator (C). Make the setting the opening angle between the press wheels, allowing removal or compaction approach in relation to the seed furrow.



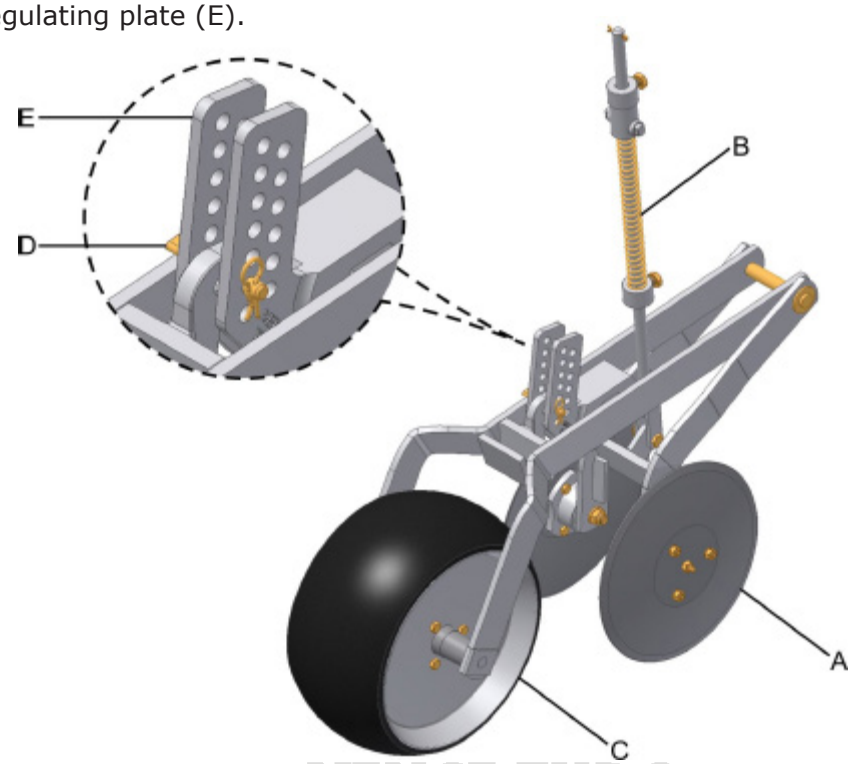
Covering Disc and Standard Compactor

Covering discs (A) have the function to bring back again the soil was removed by the furrower knife and the double disc so that the depth gauges and press wheels (C) close and compact the furrow.

Disc set is mounted in a strategic position just behind the defased seed double discs.

Pressure regulation of the covering discs is achieved by the helical spring (B) mounted on the rod.

The depth regulating of furrow can be adjusted by changing the position of regulating pin (D) in the regulating plate (E).

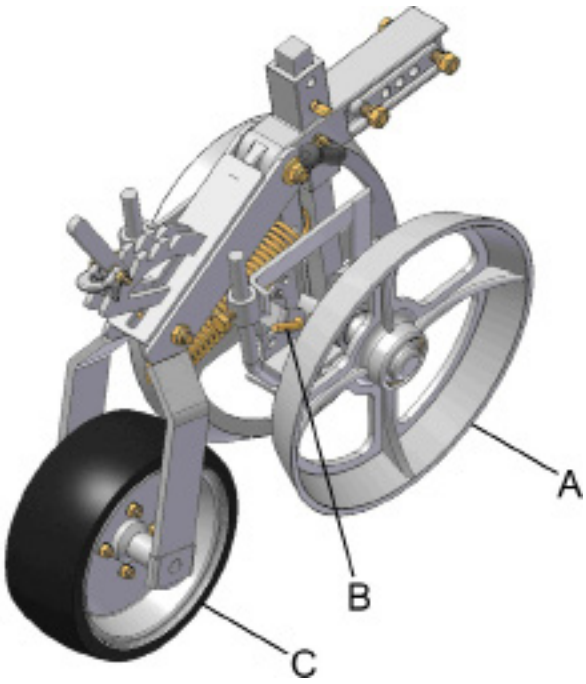


Iron Limiter in "V" shape

The iron depth gauges wheels (A) also have the function to bring back again the soil that the furrower knife and the seed double disc removed, soon the third press wheel (C) close and compact the furrow.

The depth gauges wheels in "V" shape are located just behind of the defased seed double discs.

Changing of the position the pin (B) the setting of wheels angle is accomplished on the frame.



Free Limiter in "V" Shape and Fixed with Scale

The depth gauges wheels copy the irregularities of the land, which allows maintain great homogeneity in depth. The wheels set is mounted in a position strategic, behind the lagged seed double discs. In addition to the limiting function, the wheels assembled in the "V" shape put back the straw removed and make a lateral compaction on the seeds, avoiding the generation of air pockets in the furrow.

In each planting line should be done adjusting the desired height of the depth gauge as follows:

1- Lift the lines from the soil, to relieve the weight on the depth gauges wheels;

2- Release the spring latch (A) (fig. 25/26) and turn knob (B) until the desired height on the indicator scale (C). Note that in all planting lines the scale indicator is in the same position;

3- Lock again the knob with the spring latch (A). Depth limits in relation to double discs are 0,5 cm (minimum) to 14 cm (maximum) must be observed.

Compaction Adjusting

To make pressure adjustment the press wheel, adjust the spring pressure, moving the lever (D) (fig. 25/26). The greater the pressure of the spring, the greater the pressure exerted under the seed.

Always check this setting, since the conditions of soil, humidity, and fodder, among others may vary in the same or another planting area. It should be adjusted for each situation.

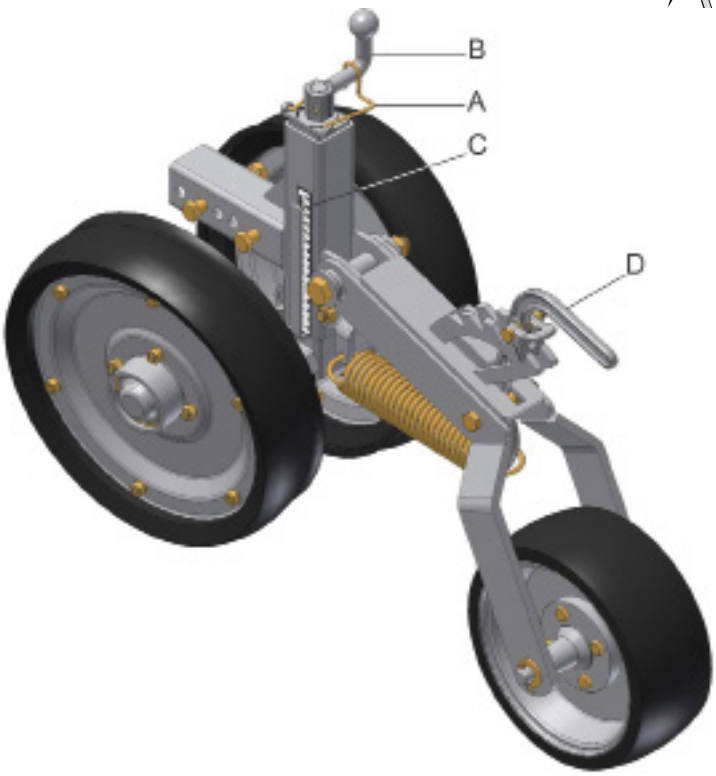


fig. 25

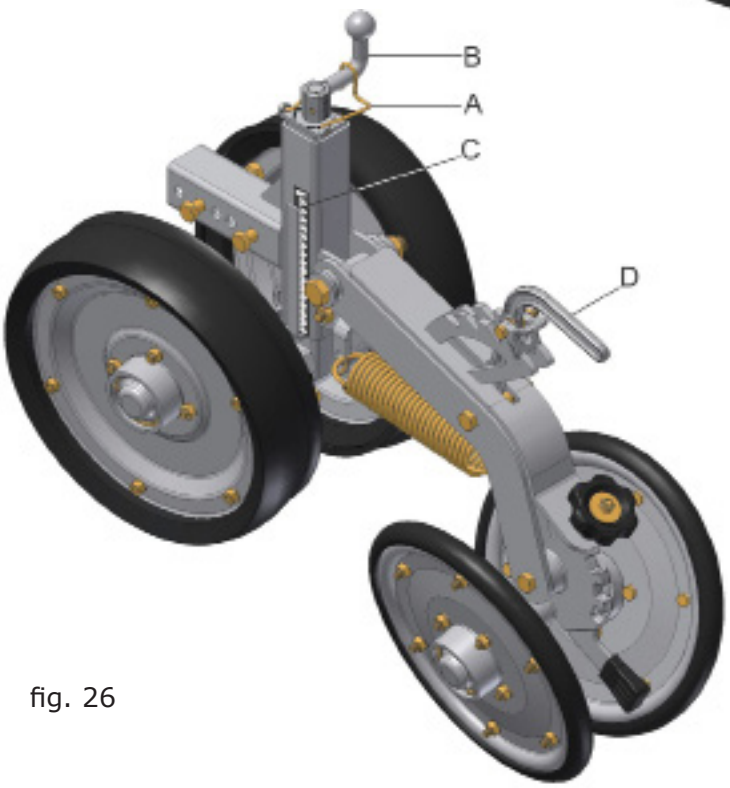


fig. 26

Compactor in "V" shape

The press wheels in "V" shape (A) (fig. 27) carry through the pressure of the soil laterally in the seed and work with various options, as conditions of the soil, fodder, humidity, etc.

Make the adjustment pressure pulling the handle (B), changing the position regulator (C). Make the setting the opening angle between the press wheels, allowing removal or compaction approach in relation to the seed furrow.

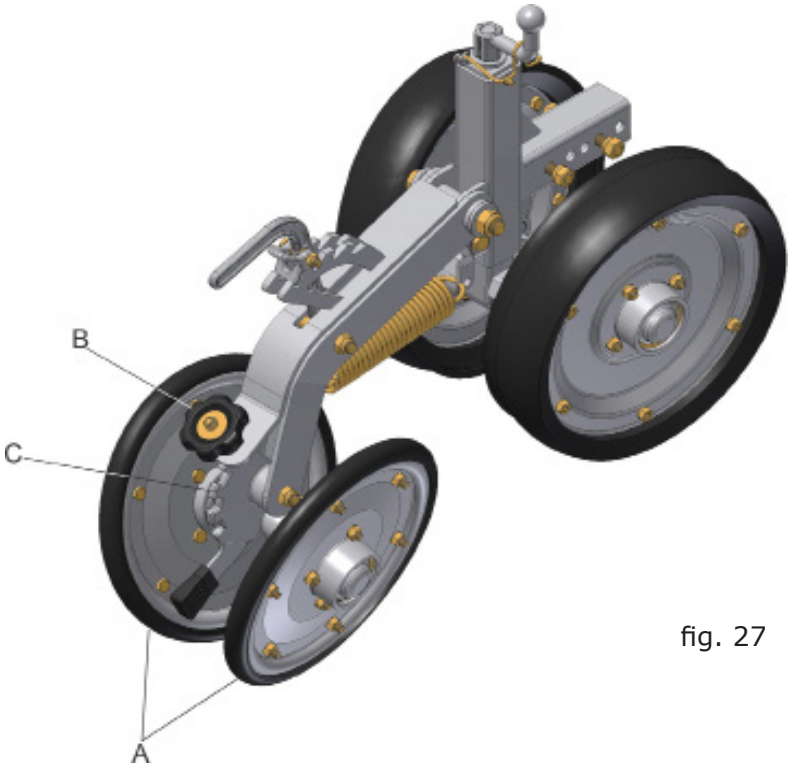


fig. 27

Height Adjustment of Planting and Oscillation

The seeder has a system with jointed wheels, which allow the planting is done on uneven ground.

This adjustment is determined by the height of the seeder comparative to the ground surface and it can be changed by shifting the backstop position (A); while increasing its sowing position the seeder will be closer to the work surface, thereby increasing the pressure work on the planting lines and consequently the depth.

The different positions of the seeding over the soil surface also affect the working pressure on the wheels. The pressure can be adjusted through tensor (B) nut and the spring (C); and tightening the nut obtains higher pressure increasing the contact wheel with the ground, ensuring turning traction and transmission system.

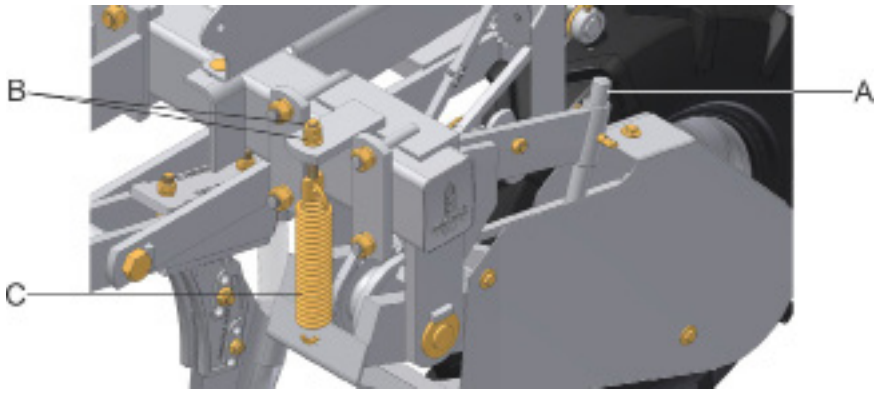


fig. 28

IMPORTANT

Check the spring tension of the drive wheel always occurring changes on the adjustments.

Change of the Wheels

The Seeder SA 14600 model allows the use of in-house drive wheels. To change these mechanisms, proceed as follows:

1 - Remove the fixing bushings and the drive sprockets (A), keeping in place the stretchers and seed and fertilizer driven sprockets. Move the drive axle (B) toward the center of the planter.

2 - Remove the transmission chains (C).

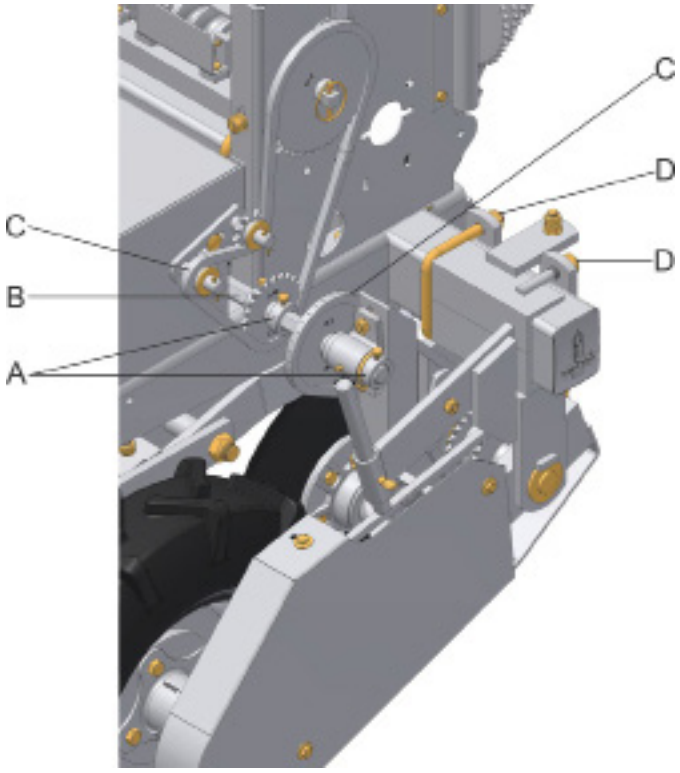
3 - Loosen and remove the nuts from the wheel bracket fasteners (D).

4 - Take away the drive wheel, removing it from the chassis.

5 - Travel the assembly until the desired location in the chassis.

6 - Position the wheeled kit so that it is a planting line between wheeled and end seeder. This line should be one long line.

7 - Assembly the axles, drive sprockets and chains making the attach assemblies. Note the alignment as with the use of tape.



ATTENTION

Ao fazer os procedimentos e alterações no rodado tenha o máximo de cuidado durante o trabalho, pois a semeadora deverá ser suspendida. Observe as normas de segurança descritas anteriormente.

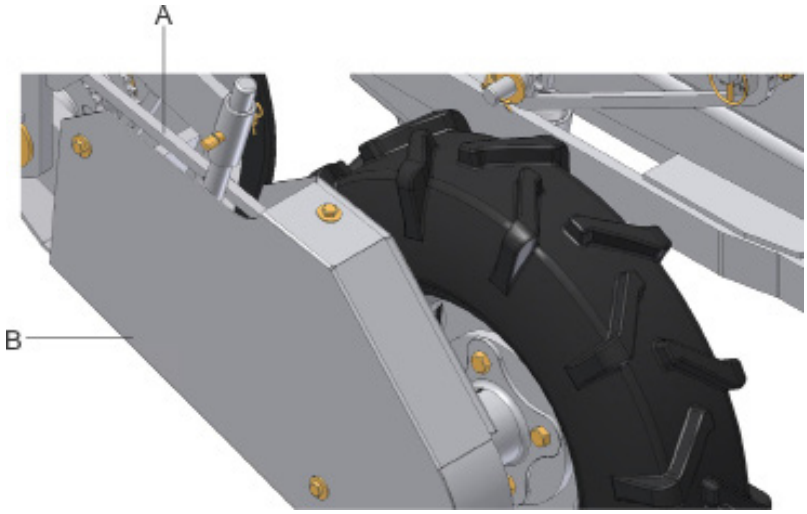
IMPORTANTE

CONJUNTO RODADO MONTADO NO LADO DIREITO EXTERNO DA SEMEADORA, DEVERÁ SER MONTADO NO LADO ESQUERDO QUANDO FOR USADO INTERNAMENTE. DA MESMA FORMA MONTE O CONJUNTO RODADO ESQUERDO NO LADO DIREITO INTERNO.

TROCA DE PNEUS

Para fazer a troca de pneus, engate a semeadora nos três pontos do trator. Retire a carenagem de proteção (A). Afrouxe os parafusos e porcas que fixam a roda junto ao cubo. Retire a corrente (B) da transmissão da roda, retirando também os esticadores da mesma.

Suspenda a semeadora retirando os parafusos, porcas e a roda.



ROW MARKER (OPTIONAL)

When starting to plant unlock the lock pin (A), from the marker (B), releasing the support (C) (Fig. 29).

When transporting, performing maintenance services or storing the seeder, lock the marker arm through pin (A) (Fig 29).

The discs markers allow large adjustments through the screws (D) (Fig 30).

To adjust the distance the disc marker, loosen the screws (E) from arm (F) (Fig. 30). This type of row marker consists of a copier spring system (G), and possesses pressure regulating through the nut (H), thus allowing a reading uniform and easy adjustment in various types of soil (Fig 29).

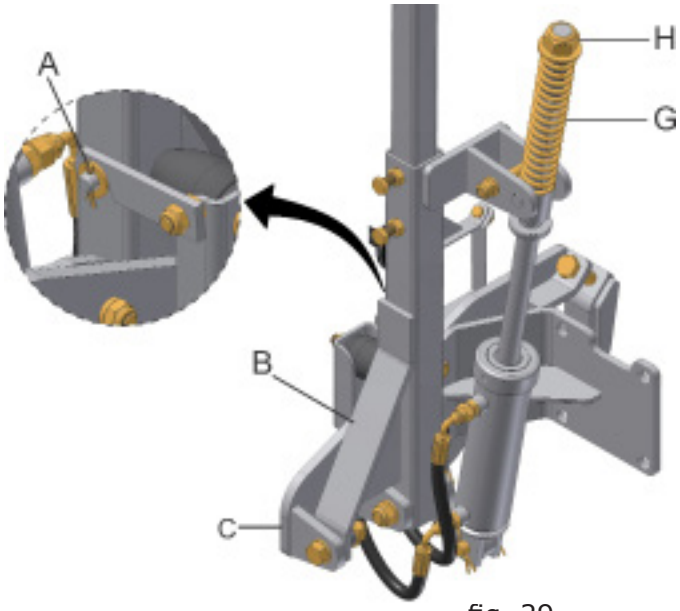


fig. 29

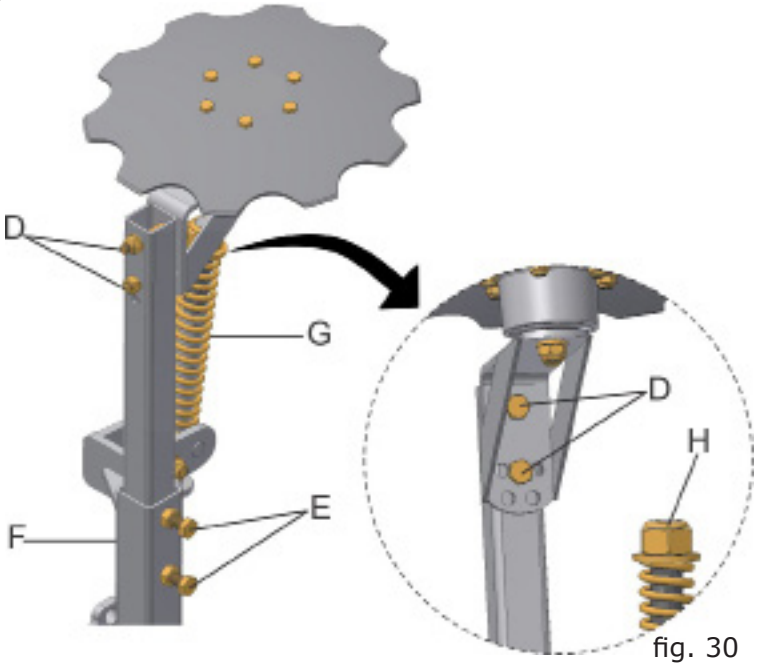
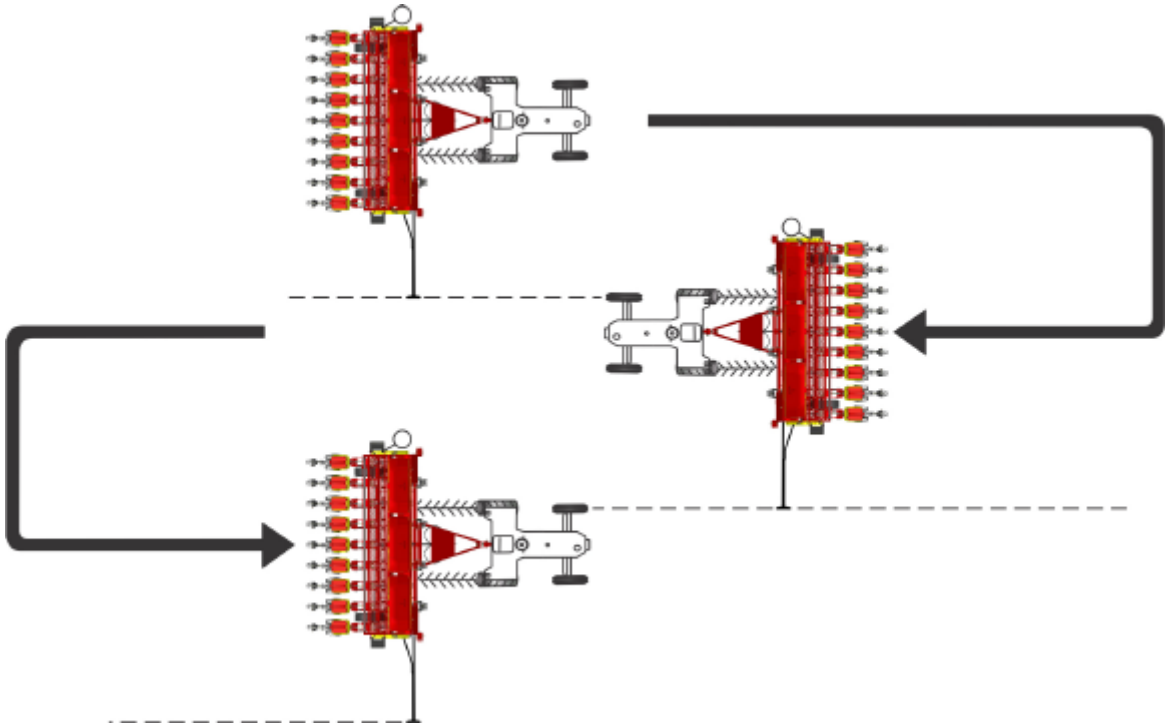


fig. 30

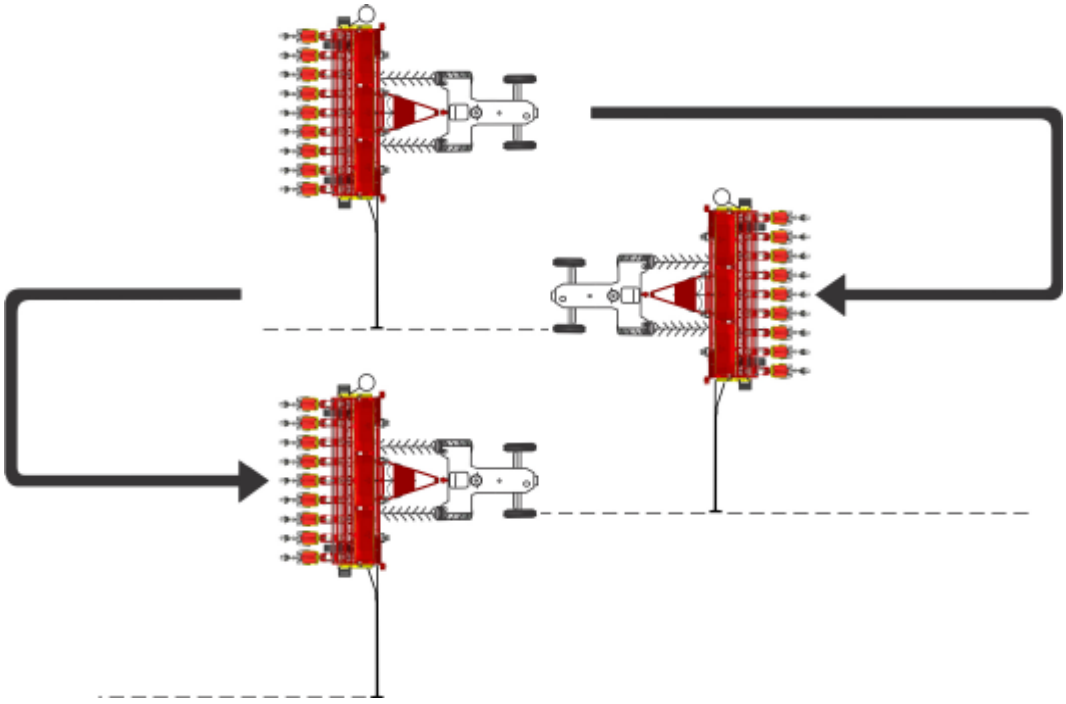
It is vital the use of markers in order to obtain a uniform spacing, thus facilitating the cultivation and harvesting. This way, the work and the operation of the drill are facilitated, making it comfortable and practical.

To regulate it, adjust the arm and the distance from the marker disc according to the following calculation:

OPTION 1: Making the marking the front tire of the tractor (on the inside).



OPTION 2: Making the marking by tire out. This marking option should only be used when the spacings require, otherwise always use option 1.



To determine and regulate the length of row marker arm in the fields, note the diagram below:

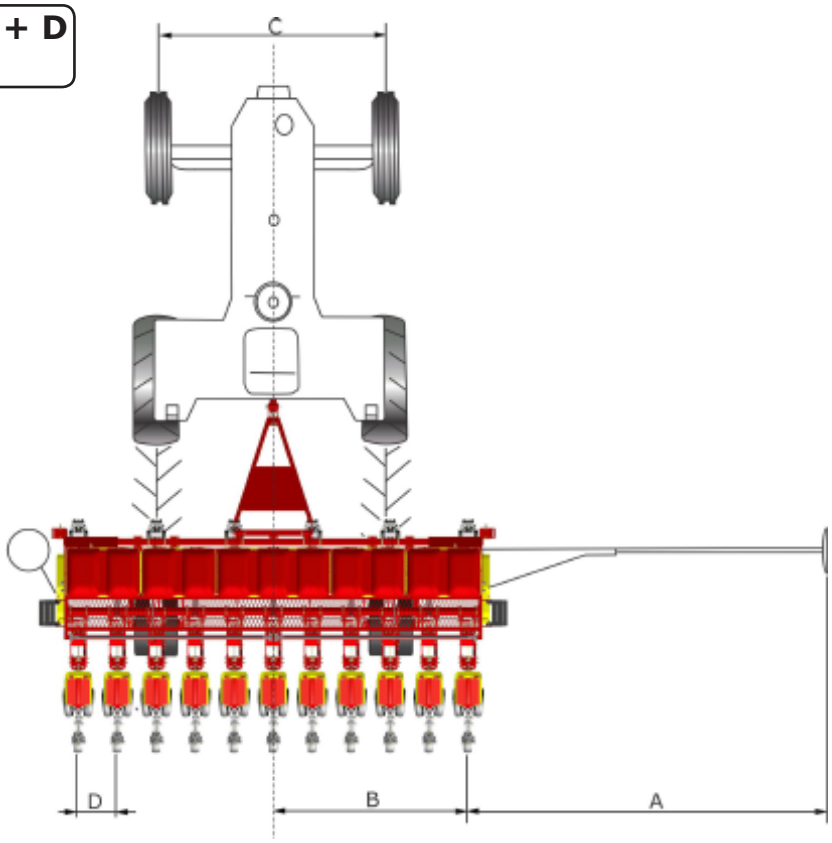
A= DISTANCE BETWEEN THE LAST ROW AND THE MARKER DISC.

B= DISTANCE BETWEEN THE CENTER OF THE CHASSIS OF THE SEEDER AND THE LAST ROW.

C= DISTANCE BETWEEN THE FRONT WHEELS.

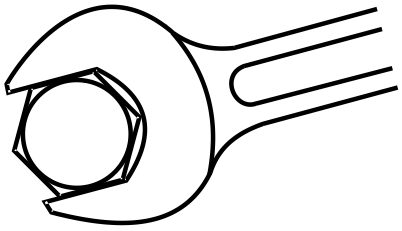
D= ROW SPACINGS.

$$A = B + \frac{C}{2} + D$$



MAITENANCE

ATTENTION



IT RETIGHTENS NUTS AND SCREWS AFTER FIRST THE 8 WORKING HOURS

In order to preserve, efficiently, an agricultural machine or implement, one should take cares to increase its useful life and to improve its operation and utilization. This way, one should follow certain conservation rules that will save certain troubles; because a simple free screw of a component can interrupt the operation of a mechanism, stopping the work with the seeder. These small cares is called periodic and preventive maintenance. It has low costs and provides large results in production and conservation.

IMPORTANT

Use original VENCE TUDO parts only. Using the improvised parts, will cause mischaracterize the product, avoiding the guarantee analysis of the equipment, this way.

Do not use burned oil or diesel oil for the cleaning or lubricating of the seeder.

Inspect the seeder checking if there are worn or broken parts, in case of the existence of them and if necessary, replace the defective parts.

When the seeder is idle use the time to make the due repairs on it.

Use vegetable oil for the total protection of the seeder. In case the use of vegetable oil is not possible, diesel oil, hydraulic or lubricant can be used only in the internal parts of the seeder and protection of the rubberized parts and distributing discs will be necessary.

Double Discs and Cutting Discs

Every 500 hours of planting or a crop, accomplish the maintenance of the double discs, bearings and ball bearings, as follows:

- Remove the external cap, loosening the adjusting screws.
- Wash the hub and remove the old grease.
- Check if there is spaces in the ball bearings, in such case adjust them.
- Replace the worn pieces that can affect the operation.
- Put new grease in the hubs and in the internal part of the cap, setting up them again.
- Every 200 working hours, verify the existing spaces in the bearings and ball bearings.

IMPORTANT

During the assembly, make the adjustment of the ball bearings so that the group of discs rotates freely.

Opener Knife

Check and verify the points of opener knives. In any case, of excessive wear, replace them.

Depth Gauge and Press Wheels

Check every 200 hours the distance of clearance of the bearings, if occur, proceed with the necessary maintenances.

Store the seeder in sheltered place and safe.

Maintain the seeder properly leaning and avoid contact of their discs and furrowers directly with the soil.

Covering Discs

Check every 300 hours of work that there is slack in the bearings of the covering discs, if so, do the required maintenance.

Store the seeder in a sheltered and safe place.

Maintain the seeder properly leaning and avoid contact of their discs and furrowers directly with the soil.

Seed Metering System

Carry out periodic maintenance and cleaning in seed boxes and precision metering (seed plates) for removing graphite powder, fungicides and inoculants in seeds.

During planting, also make periodic maintenance, especially for removing excess products used during the treatment according to need.

During operation and maintenance settings have the utmost care during labor, because the seeder should be lifted to carry out the work using safety devices. Follow the safety rules described above.

Maintenance at the End of Harvest

CLEANING OF THE HOPPERS

When finishing the plantation, do the cleaning of the hoppers removing the remains of fertilizer and seeds. Open the metering systems to do the washing of the components of it.

1- Remove all conveyors (fertilizers and seeds), washing them just with water and mild soap and storing them in a place apart.

2- Paint all parts that need a new one.

3- Lubricate the whole machine.

4- Wash the fully seeder and lubricate it with castor oil plant.

5- After performing all the operations of repairs and maintenance, store the seeder in a dry and sheltered place with all its parts in working conditions; so you can get the most out of your investment.

FERTILIZER METERING SYSTEM

After performing the cleaning of reservoirs, remove the protecting plates, through the displacement of the top latches that secure them.

Carry out the cleanup.

For removing of the drive endless worms, withdraw the fixing clamp of the driving axle from the endless worms, which is located on the same side of driven gear the fertilizer hopper. After axle being unlocked, withdraw the transmission chain and pull the sprocket, pulling the driving axle of the endless worms.

Withdraw the stop pin that is fixed on the fertilizer distributor plate to unlock the rotors.

After, remove the drives you want. If just maintenance do the cleaning of components system, lubricate and assemble them again.

Seed Metering System

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During planting, also make periodic maintenance, especially for removing excess products used during the treatment according to need.

Lubrication

The correct lubrication with grease consists of not allowing the excess or lack of it in any site, because both situations are injured.

The regular supply of grease associated to the appropriate amount is basic condition to be reached a better effectiveness during the work of the bearings and joints. The interval of grease supply should be smaller, when occur stringent operational conditions; such as, huge loads, regular collision of the bearings, influence of the environment with high temperatures, high dustiness and contact with the water.

Through a greasing pistol or bomb, lubricate the lubrication points so that the new grease enters and expels the deteriorated grease. Before lubricating, clean the grease fittings with a cloth, and if they are with defect, replace them.

TECHNICAL RECOMMENDATIONS

For a good quality operation of the seeder, meet the following procedures:

1 - AFTER THE FIRST 8 WORKING HOURS, ACCOMPLISH THE REFASTEN OF ALL ITS COMPONENTS.

2 - MAKE THE LUBRICATION IN ALL THE POINTS, BEFORE BEGINNING THE PLANTATION.

3 - BEFORE STARTING THE PLANTATION, ACCOMPLISH THE SETTINGS (ROW SPACING, SEED AND FERTILIZER).

4 – DO NOT ACCOMPLISH THE SETTINGS WITH THE SEEDER IN MOVEMENT.

5 – DO NOT MAKE THE DISPLACEMENT, SHED - CROP - SHED, WITH SEEDER LOADED.

6 – DO NOT STORAGE THE SEEDER WITH ITS HOPPERS FULL OF THE FERTILIZER AND SEEDS.

7 - WHEN RESTARTING THE PLANTATION, CHECK IF THE DISTRIBUTION MECHANISMS ARE NOT OBSTRUCTED.

8 – DO NOT DO THE REVERSE GEAR WITH THE SEEDER IN PLANTING POSITION.

9 – DO NOT ACCOMPLISH VERY CLOSED CURVES WHEN THE SEEDER BE IN THE OPERATION POSITION. ONLY MAKE MANEUVERS WITH THE SEEDER WHEN IT IS TOTALLY LIFTED AND OUT OF THE SURFACE OF THE SOIL.

10 - ACCOMPLISH THE OPERATION OF PLANTATION IN THE RECOMMENDED SPEED FOR EACH CROP.

11 – AT THE END OF THE PLANTATION, MAKE THE CLEANING, WASHING AND LUBRICATION OF THE EQUIPMENT (USING PULVERIZATION PRODUCTS WITHOUT THE PRESENCE OF DETERGENTS).

12 – SHELTER THE SEEDER AGAINST WEATHER DURING THE IDLE PERIOD.

13 - USE ONLY ORIGINAL VENCE TUDO PARTS FOR THE REPLACEMENT.

14 - READ CAREFULLY THE OPERATOR MANUAL.

THE NON-OBSERVATION OF THE RELATED ITEMS CAN GET SERIOUS DAMAGES TO THE OPERATION AND CONSERVATION OF THE SEEDER.

Estimate of the Work Speed

For the estimate of the work speed, do as follows:

1 - Determine the time in seconds spent by the tractor-seeder group to travel 50 meters, with the seeder loaded.

2 - Measure more than once to obtain an average.

3 – So, calculate according to the example below.

EXAMPLE:

Time: 32 seconds in 50 meters.

To travel 50 meters	**To travel 1 Km.**
50 m _____ 32 seg.	**1 Km _____ 640 seg.**
1000 m_____ X	**X _____ 3600 seg. (1h)**
X = 640 seg.	**X = $\frac{1 \times 3600}{640}$**

X = 5,6 Km/h - work speed

Measurements units:

1Kg.....1000g
1ha.....10000m²
1min.....60s
1hs.....3600s
1Km.....1000m

IMPORTANT

During the determination of the work speed, turn the ratchet off to avoid wastes of fertilizers and seeds.

ADDITIONAL PARTS BOX

The Vence Tudo Pull Fertilizer Seeders, SA HYDRAULIC model, comes from the factory with a box with additional parts, according to the option done by the customer to assist the most varied cultivation conditions. When receiving the seeder, check and verify the parts according to the assembly option with the reseller, in accordance with the below:

ADDITIONAL PARTS BOX
SA HYDRAULIC LINE

CODE	NAME
900100018	Corn plate (gray)
900100019	Corn plate (green)
900100013	Corn plate (red)
900100017	Corn plate (blue)
900100006	Soybean plate 90 holes (8mm)
900100005	Soybean plate 90 holes (9 mm)
900100191	Corn flat ring
900100192	Corn low spacer ring VD
200042003	Soybean smooth spacer ring (metal)
95007801	Roller 4 teeth (corn)
95007805	Double roller 6 teeth
900015017	Point
922013027	Roll pin 10X28
922012427	Roll pin 6X28
901312050	Hex. Head screw
920111001	Self-locking hex. Nut
013247000	Manual operation and catalogue parts kit
072087001	Stabilizer guide
922052050	Locking pin R 4,5x80
001001001	Pin

Note: The amount of the above parts varies in accordance with the arrangement of the seeder.