PSH³

INSTRUCTIONS MANUAL

TATU
MARCHESAN

IDENTIFICATION

Dealer: _____

Owner: _____

Firm / Farm: _____

City: _____ State: _____

No. of the Certificate of Guarantee: _____

Serial / No.: _____

Date: ____ / ____ / ____ Invoice No.: _____

Product: _____

Notes: _____

Introduction

The PSH³ Hydraulic Seeder is intended for conventional seeding of many small grain crops, such as wheat, rice, soybean, oats, barley, rye, pasture, etc., and features the following advantages: greater uniformity in the distribution of seeds and fertilizer, greater versatility in the operations, and accessories to suit your needs.

The exclusive fertilizer distribution system, by means of a helical type auger screw (auger), features internal PVC-coating and blades with special profile edges, ensuring greater uniformity throughout the seeding.

The different dosages of fertilizer are easily obtained by switching the transmission gear wheels.

The seeds are distributed by channeled rotors, providing continuous and uniform rows. Dosages are achieved with the millimetric adjustment on the rotors opening. Each rotor has three adjustment points for different grain sizes. Built-in seed agitator.

The anti-slip rear deck makes replenishment easy.

The depth adjustment is made by a screw knob which actuates on the shaft which lifts the row units.

The 3-point hitching improves the operations, making maneuvers easier.

This instruction manual includes the required information for the proper performance of your seeder. The seeder operator should read the contents of this manual before operating the equipment and should make sure to follow the safety guidelines.

In order to clear any other points, or in the event of any technical problem that may arise during your work, please contact your Dealer, that, in alliance with our own Technical Assistance Department, can assure the full operation of your TATU seeder.

TATU
MARCHESAN

Index

To the owner

The acquisition of any TATU product assures to the original purchaser the following rights:

- Warranty certificate;
- Instructions manual;
- Technical assistance by the dealer on equipment delivery .

The owner has the obligation of inspect the conditions of the product on delivery, as well as knowing the warranty terms.

Special attention should be given to safety recommendations, operation cares and maintenance of equipment.

Be sure to read and understand this instructions for adjusting and operating the equipment as reported in this manual. Check each item referred to obtain an efficient operation and maximum trouble free performance. Remember an equipment which is properly lubricated and adjusted saves your time, labor and fuel. This manual should be read by Operators and maintenance personel.

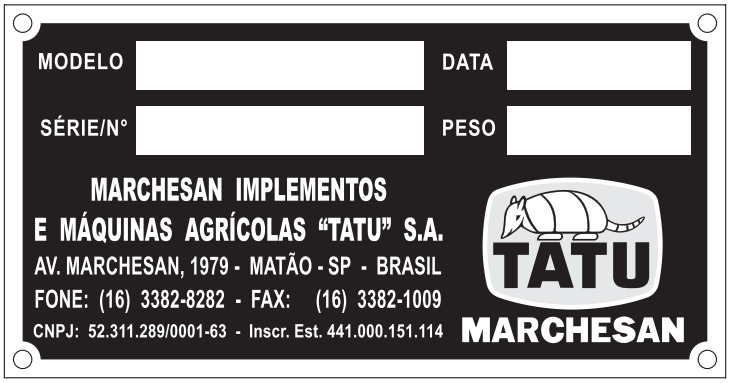
Important

- **Only people who own a full knowledge of the tractor and equipment, must operate them;**
- **Marchesan is not responsible for any damage caused by accident on transporting, incorrect utilization or inadequate storage;**
- **After the operating season, clean and inspect your equipment, preventive maintenance pays dividends.**
- **Your Dealer has original equipment parts, which assure proper fit and best performance.**

General information

Right and left hand side indication is made observing the disc plow from the rear.

To order any parts or request technical assistance services it is required to provide the data contained on the nameplate, which is located on the chassis of the equipment.



NOTE **The warranty shall not be applied to any equipment, or any part thereof which has been altered elsewhere than at the place of manufacture, or which the original purchaser thereof at retail, has used or allowed to be used parts, not made or supplied by Marchesan S/A.**

To the operator

Dear User!

Respect the ecology. Don't throw trash away. This gesture of goodwill helps to protect our environment.

Be careful with environment

Don't spill combustible oil, batteries and filters. These trashes in contact with soil reach the sub – layer, which directly damage the environment. Look for information to delivery this contaminate elements, to who knows to re-cycle or re-use them.

Operation Safety

- **Only with the complete cooperation of the equipment operator, accidents can be prevented.**
- **This symbols is a warning device which should be kept in place, always clean and visible, when transporting the equipment during day or night, use accessory lights and other devices in order to give adequate warning to another vehicles operators.**

The PSH³ hydraulic seeder is easy to operate, however it requires basic and essential care for the proper handling.

Keep always in mind that Safety requires Continuous Attention, Observation, and Caution; while in transportation, maintenance, and storage of the seeder.

Read and understand the information about before realizing adjustments and maintenance.

When working near the (PTO) shaft heve a special care.

Never come closer to rotating psrts.

To the operator

Never use your hands to check hydraulic leaks, escaping oil under pressure, may have sufficient pressure and may have sufficient force to penetrate the skin, maybe cause several injuries.

Never attempt to change the adjustments, clean or lubricate the equipment, when the same is turned on or in movement.

Be careful when moving in steep graders. Risk of overturn.

Be careful about the use of fertilizer or chemicals. These products in any contact with skin, can be cause any serious injury to the body.

Keep the entrances and work places clean and safe from oil, grease. Risk of accidents.

Never transport the equipment on rough roads. When operating, avoid to make sharp turns, that may cause tire contact with the equipment.

Never allow people on the tractor or equipment if the additional seat is not available.

Use extreme caution when circulating with the equipment under electrical power lines, any contact may result severe shocks, injuries or death.

For your protection and safety, always wear adequate clothes and shoes during operation of the equipment.

Always use the cylinder transport locks when transporting the equipment.

To the operator

- While at work or during transportation, only the presence of the operator is allowed on the tractor.
- Do not allow children to play near or over the seeder, while it is in operation, during transportation or stored.
- Have full knowledge of the land area before you start seeding.Provide the delineation of obstacles or hazardous locations.
- Use the speed which is suitable to the conditions of the ground or pathways to be covered.
- Use individual protection equipment.
- Wear appropriate clothes and footwear. Avoid clothes that are either loose or hanging from the body, which may become entangled in moving parts.
- Never operate the equipment without its proper protective devices.
- Be careful while hitching the seeder to the 3 points of the tractor.
- While lifting or lowering the seeder, make sure there are no people or animals near or under the equipment.
- Carefully check the transport width on narrow locations.
- Whenever you unhitch the seeder, either in the field or shed, do it on a flat and firm surface and use the parking stands. Make sure the equipment is properly supported.
- Please observe the general safety instructions on the back of this manual.

When transporting the equipment by truck or trailer

To transporting the equipment for long distances use truck or trailer, however, the safety instructions should be followed carefully.

- Always use an adequate loading dock to load or unload the equipment, never use a ditch bank, because this practice is very dangerous and could be result in serious injuries or may causing death.
- Use a suitable Hoist when lifting the equipment to the truck or trailer.
- Use the park standing for correct support the equipment.
- Tie the tops of deposits and other moving parts that can come loose and cause accidents.
- Please Blocking suitable the wheels of the equipment.
- Use sufficient fastenings (cables, ropes, chains, cord, etc.) to immobilize the equipment during transportation.
- After 8 to 10 kilometers of transporting, please inspect the cargo conditions. Always Repeat this procedure for every 80 to 100 kilometers of transporting. Give more attention when transporting on rough roads, steep graders, and other adverse conditions.
- Be careful with transport height, specially when passing under electrical power lines and bridges. Risk of shock and serious injuries.
- Observe all the laws and regulations about the height and width limits of cargo. When transporting the equipment by truck or trailer. If necessary, use banners, lights and other devices to give the adequate warning for the drivers/operators of another vehicles.

Safety stickers

The safety stickers are a warning of some points that require more attention in the equipment. The safety stickers always should be kept in good conditions. If they are damaged or become illegible, should be replaced. Marchesan supplies this stickers upon indication of the respective part numbers.

0503031428

0503032061

Adhesive label set

Model	Code
PSH³	**05.03.06.1924**

No. of row units	Working width	Hopper capacity		General dimensions (mm)	Weight (kg)	HP Rating
		Seed Liters – Kg	Fertilizer Liter – (kg)	Width - Length – Height		
11	1750	160 - (128)	Liter – (kg)	2770 - 1450 - 1200	690	60
13	2100	186 - (149)	297 - (332)	3120 - 1450 - 1200	898	65 - 70
15	2450	212 - (170)	338 - (378)	3470 - 1450 - 1200	988	75

- Spacing between row units: 175 mm
- Diameter of double or single-disc openers: 330 mm (13")
- Fertilizer distribution (Approximate): 64 to 580 grams / 50 meters / row unit
- Hitch pins: Category II
- * Weight with double-disc openers and drag chain

Components

01 - Chassis

02 - Drawbar

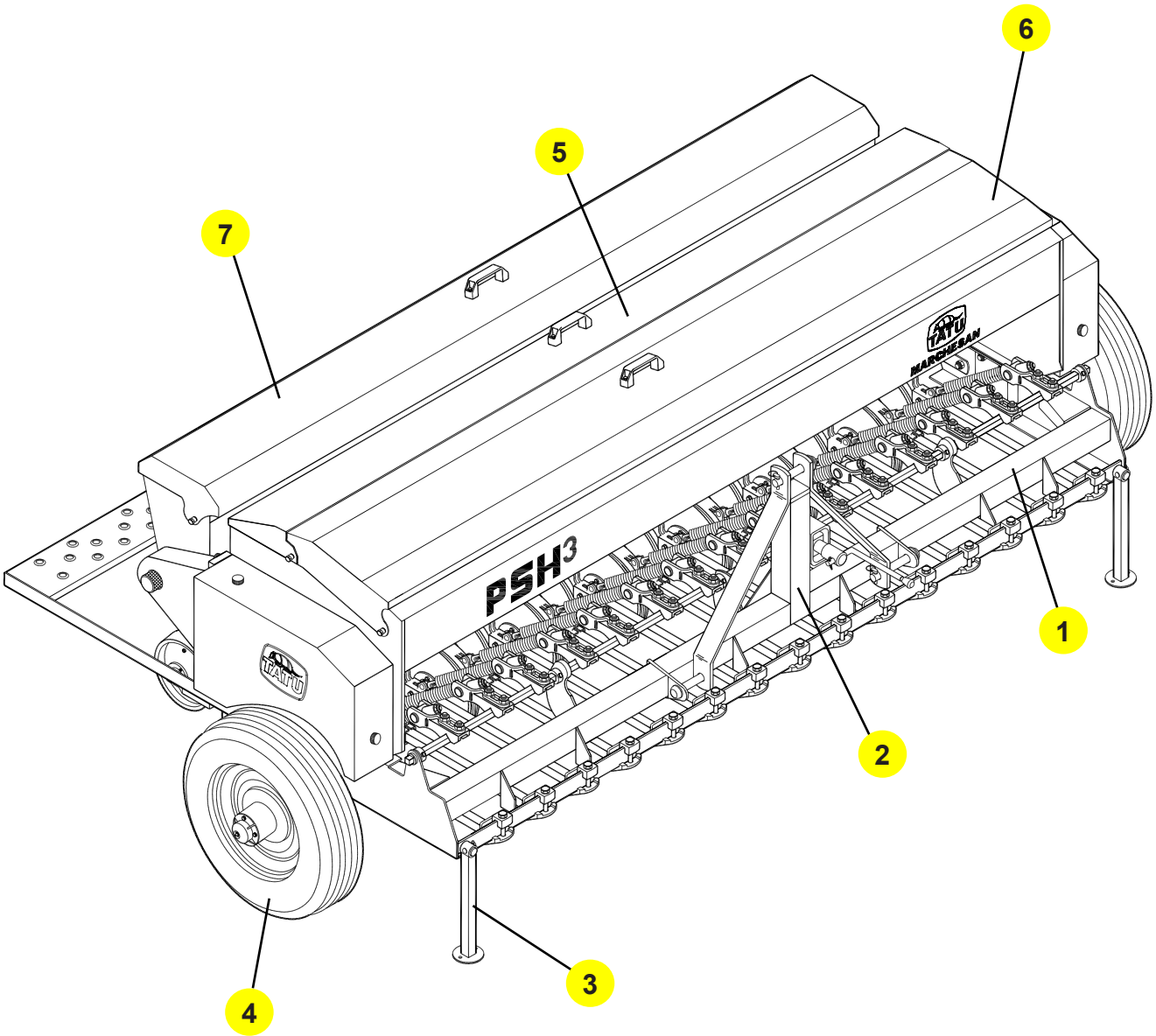
03 - Parking stands

04 - Carrying wheels

05 - Seed hopper

06 - Fertilizer hopper

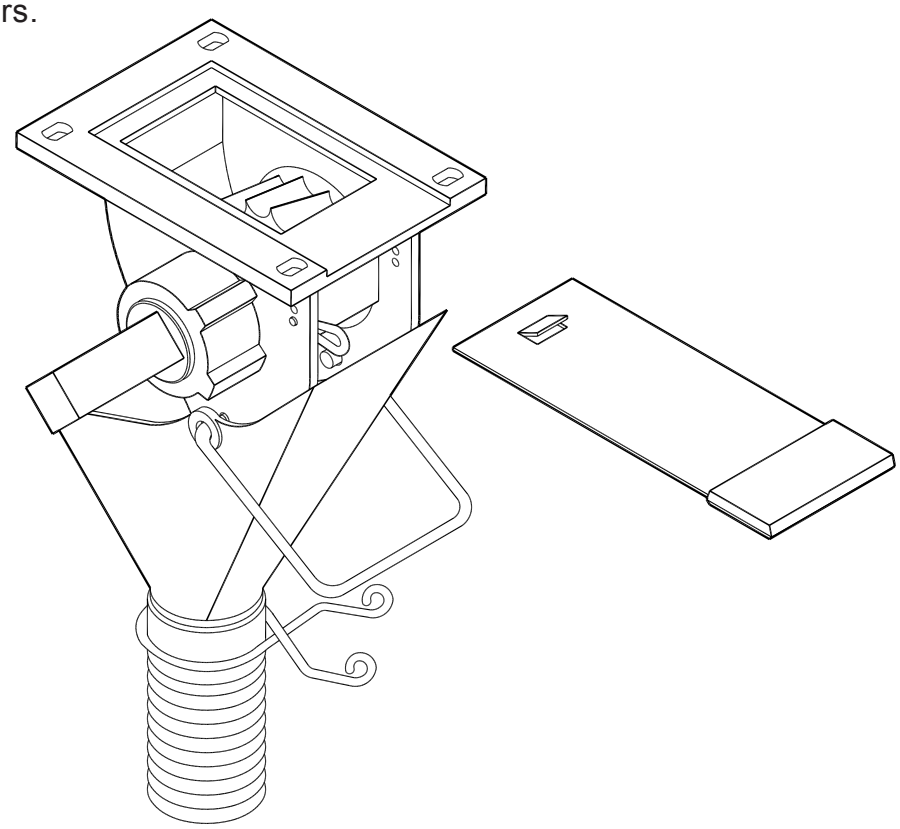
07 - Fine seed hopper (Optional item)



Seeds distribution system

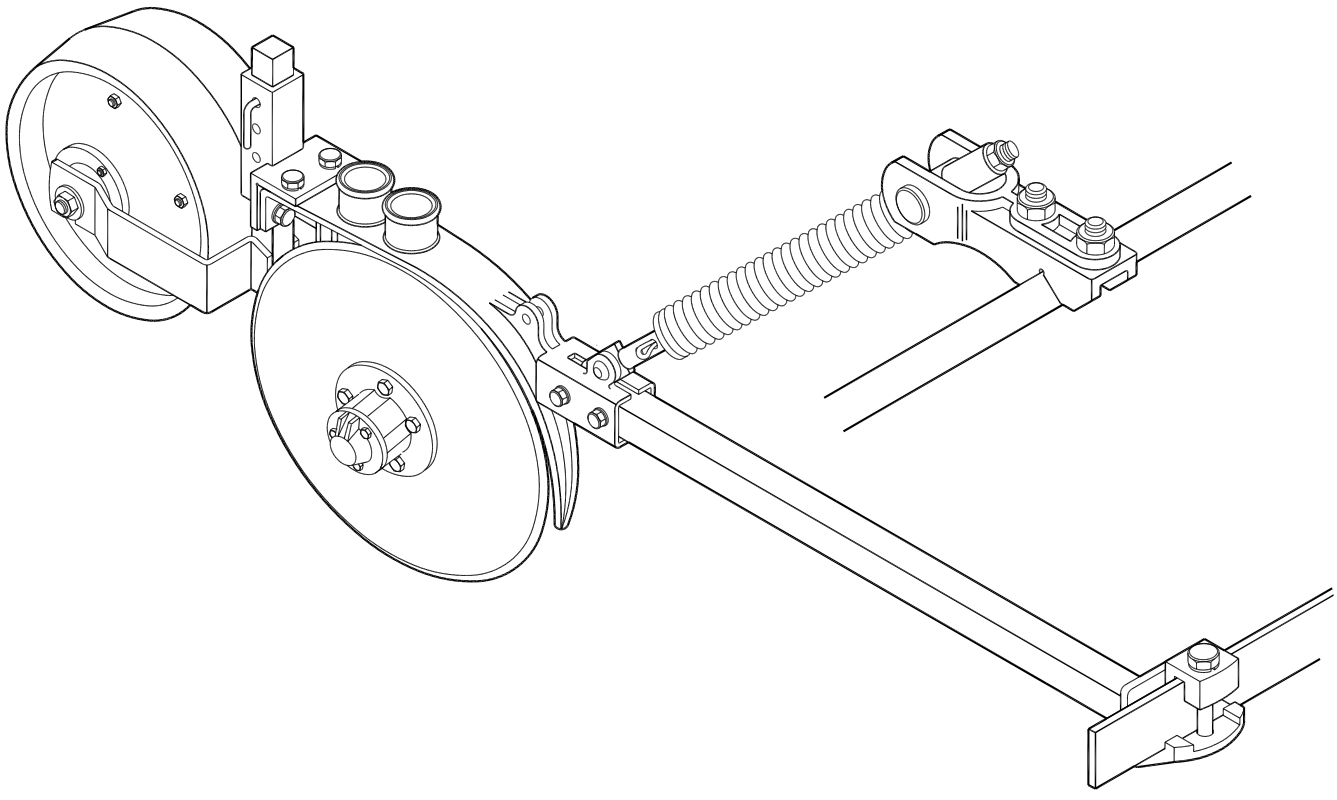
- Helical channeled rotors.

Usually used for seeding wheat, rice, oats, soybean, etc.



Fitted as standard

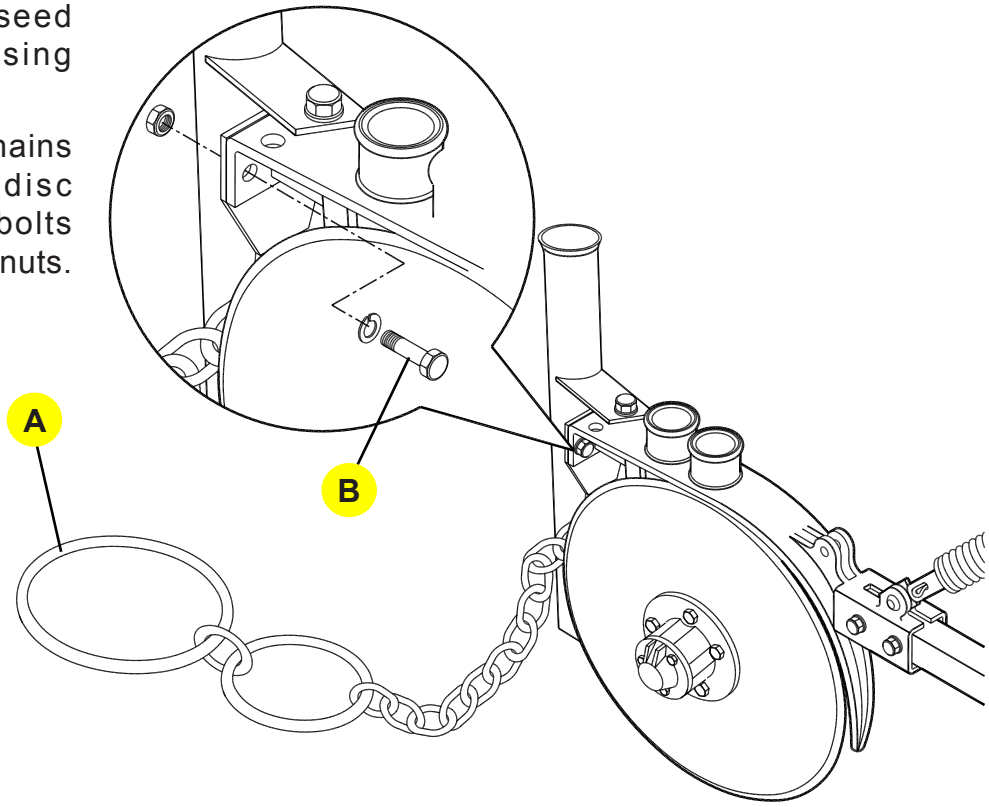
- Double disc-openers and single press closing wheels.



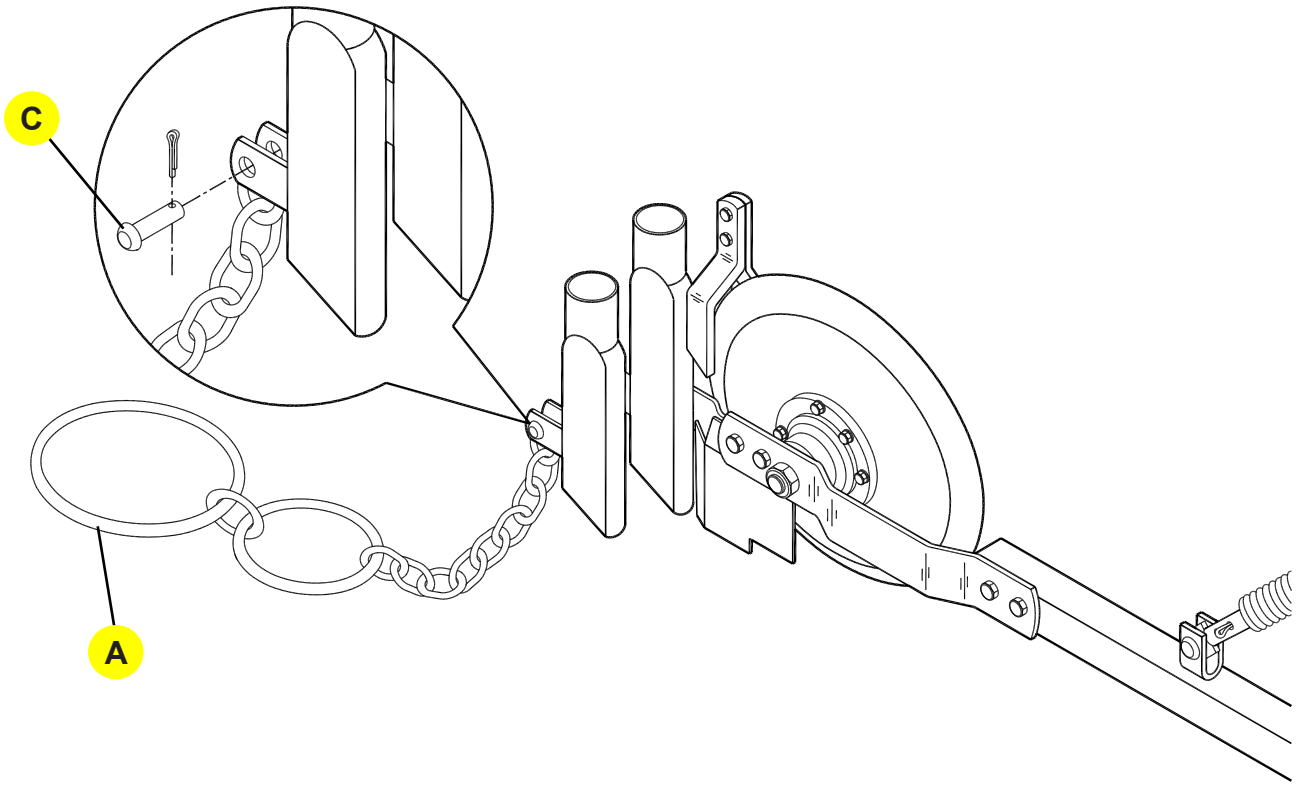
Final assembly

I order to make transportation easy to do, TATU PSH³ seeders are factory semi-assembled, and you only have to install the seed covering/furrow closing drag chain.

Assemble the chains (A) on the double-disc openers, using the bolts (B), lock washers, and nuts.



Assemble the chains (A) on the single-disc openers, using pins (C) and cotter pins..



The following guidelines should be carefully observed in order to achieve correct seeding and provide the best results.

Preparing

We recommend the use of large rear tires without water or counterweights in order to avoid excessive compaction of soil on the rows left behind them.

Hitching to the Tractor

To hitch the seeder to the tractor, choose a location as flat as possible.

Slowly pull the tractor backwards and towards the seeder, carefully using the brakes. When you get close to the seeder, position the lower left arm at the same level of the seeder hitch pin.

1) Engage the lower left arm and place the locking cotter pin.

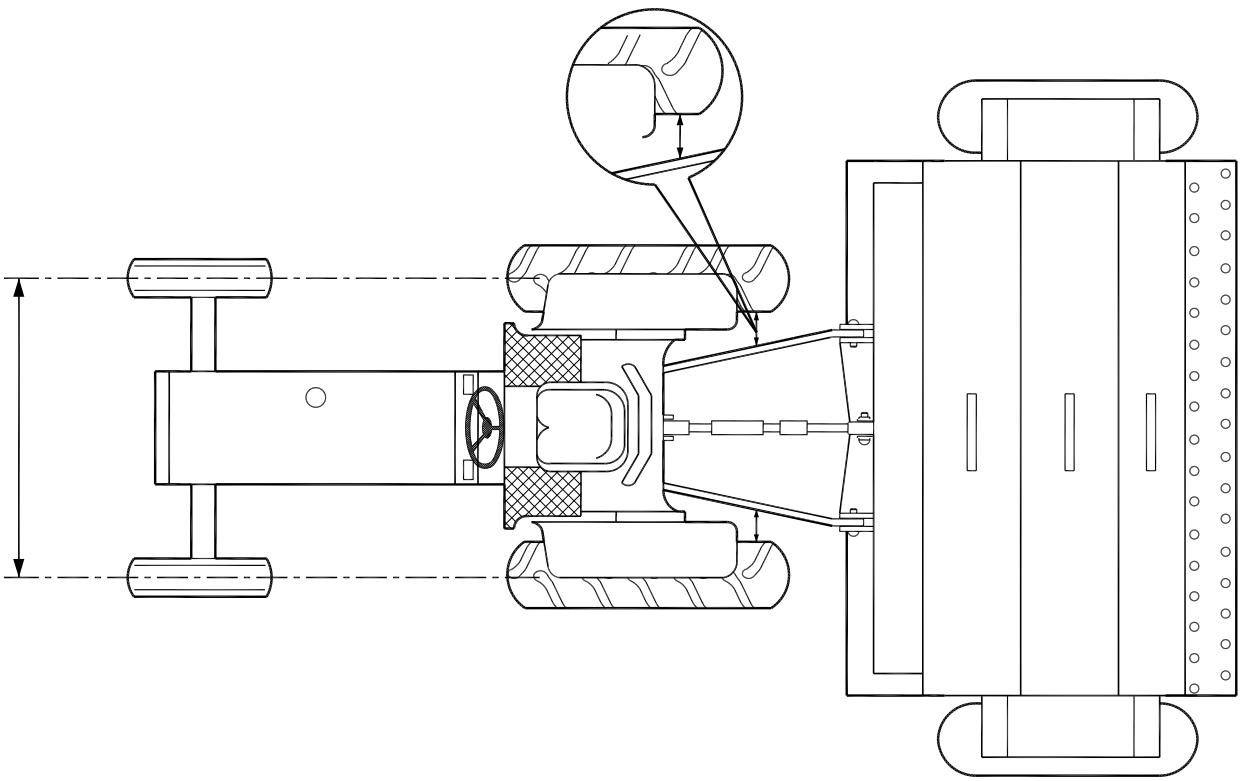
2) Engage the upper arm (third point) to the drawbar and place the locking cotter pin.

3) Engage now the lower right arm which allows up and down movements with the leveling crank. At this moment, the third point threaded rod can be used to move the seeder closer to, or further from the tractor, making it easy to hitch.

For a perfect hitching, the seeder should be centered with the longitudinal shaft of the tractor, the following way:

• Align the seeder's drawbar with the third point of the tractor.

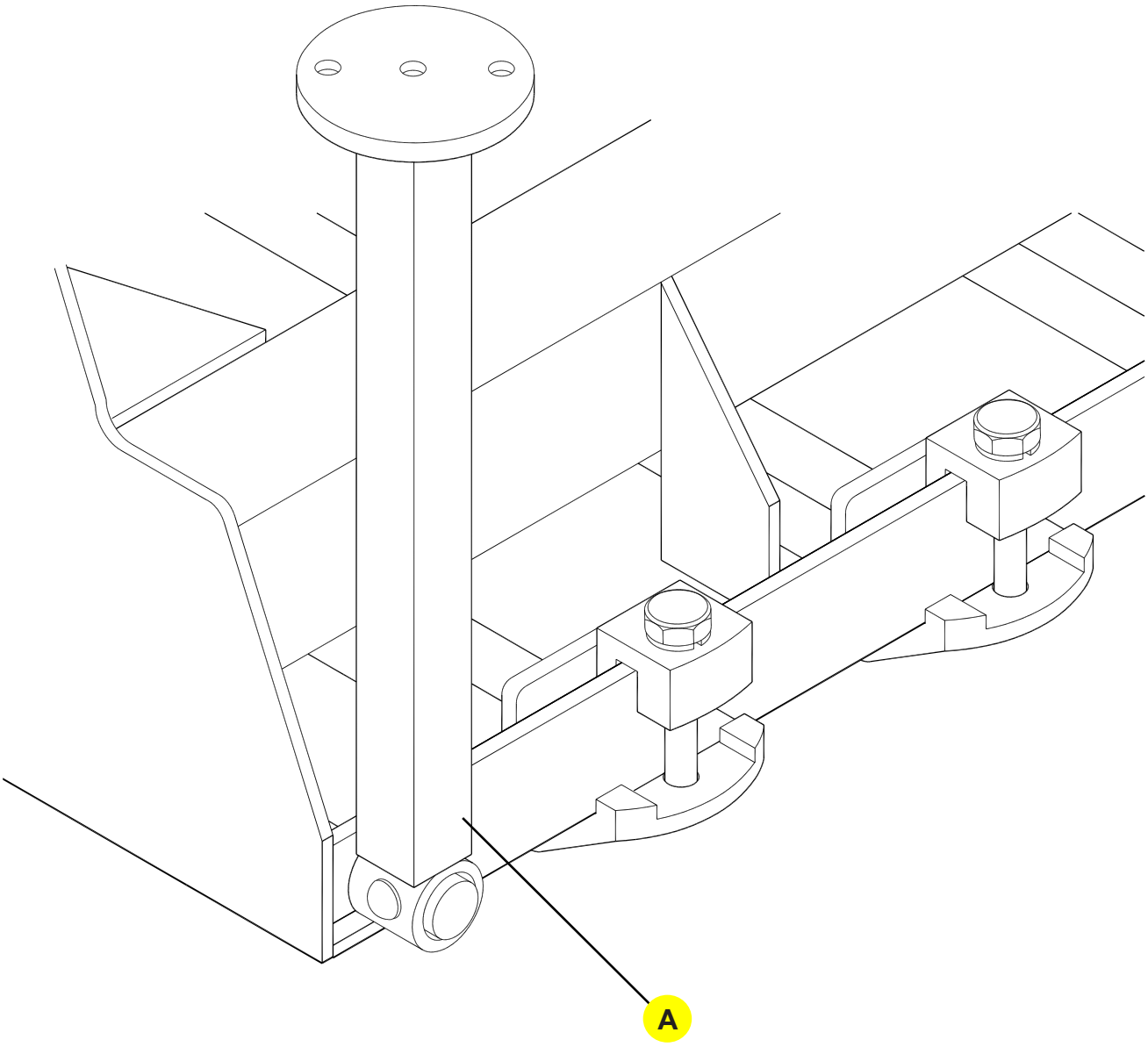
• Check if the distances between the lower arms of the tractor hydraulic system are the same in relation to the corresponding tires, and the arms should be leveled with each other.



Seeder position for transportation

Lift the row units completely using the crank handle.

Lift the parking stands (A).



Procedures to change spacing

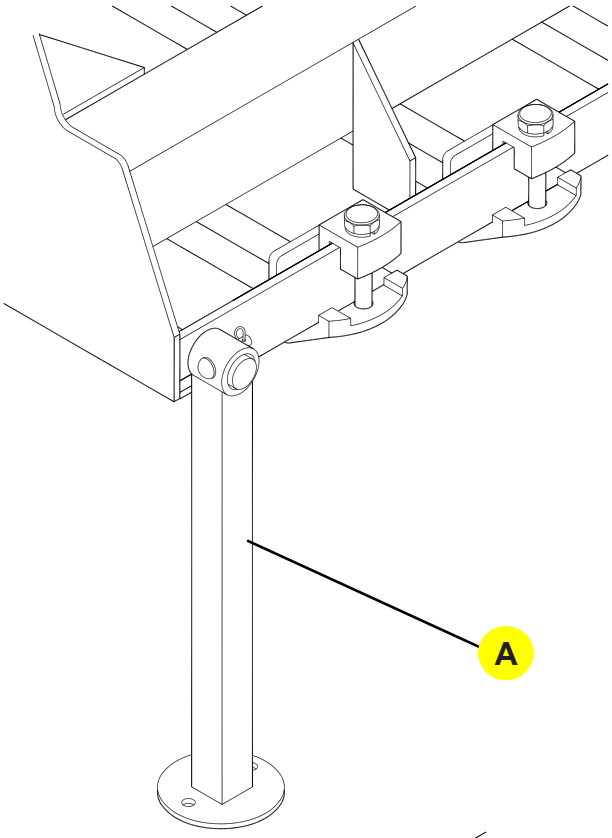
TATU seeders, in their several models, are factory fitted with 175 mm spacing for seeding wheat, rice, oats, etc..., and other spacing can be used according to the table below:

Main Spacing Table:

Model	Number of row units	Spacing (mm)
PSH³ 11	03	700
	04	525
	06	350
	07	262,5
	11	175
PSH³ 13	04	700
	05	525
	07	350
	09	262,5
	13	175
PSH³ 15	04	700
	05	525
	08	350
	09	262,5
	15	175

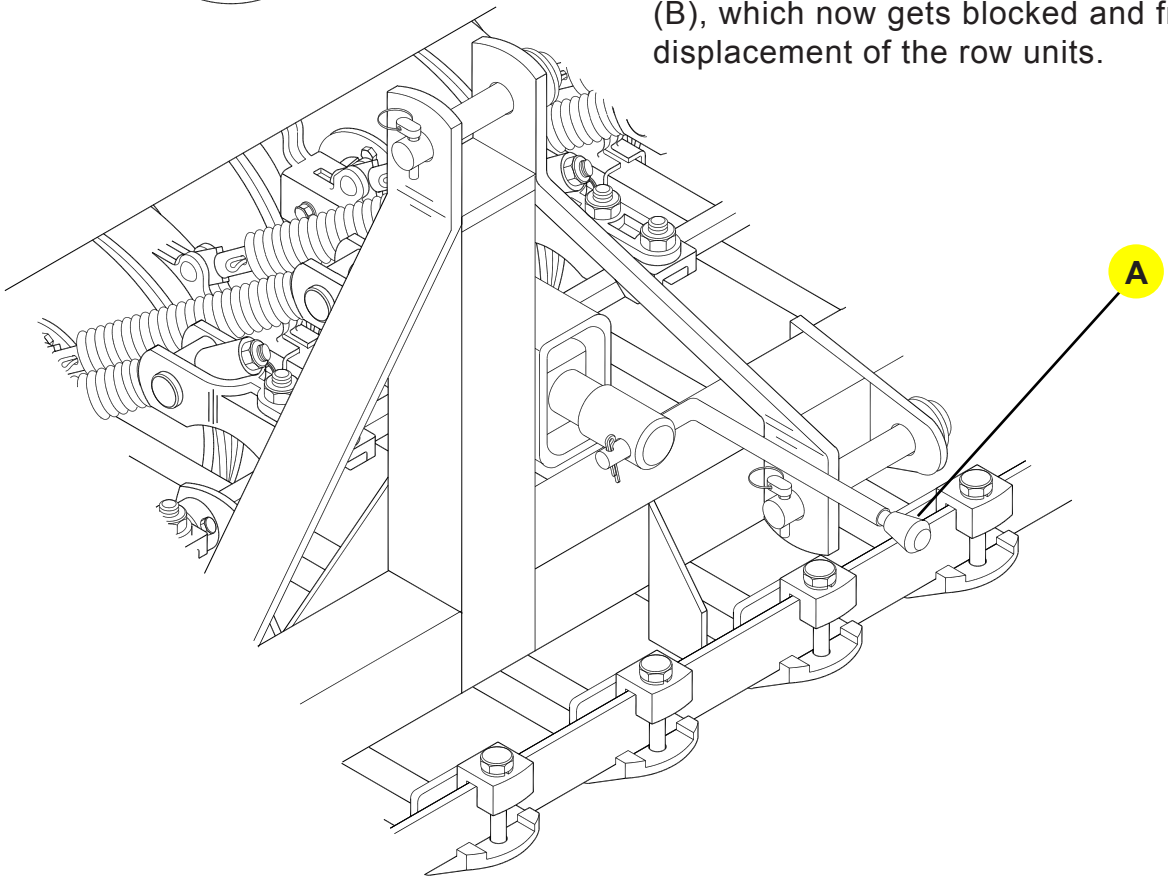
Procedures to change spacing

Carry out the changing of spacing on a clean, flat and firm location.



• Lower the parking stands (A).

1) Lift the seeder using the crank handle (B), which now gets blocked and free allowing displacement of the row units.



Procedures to change spacing

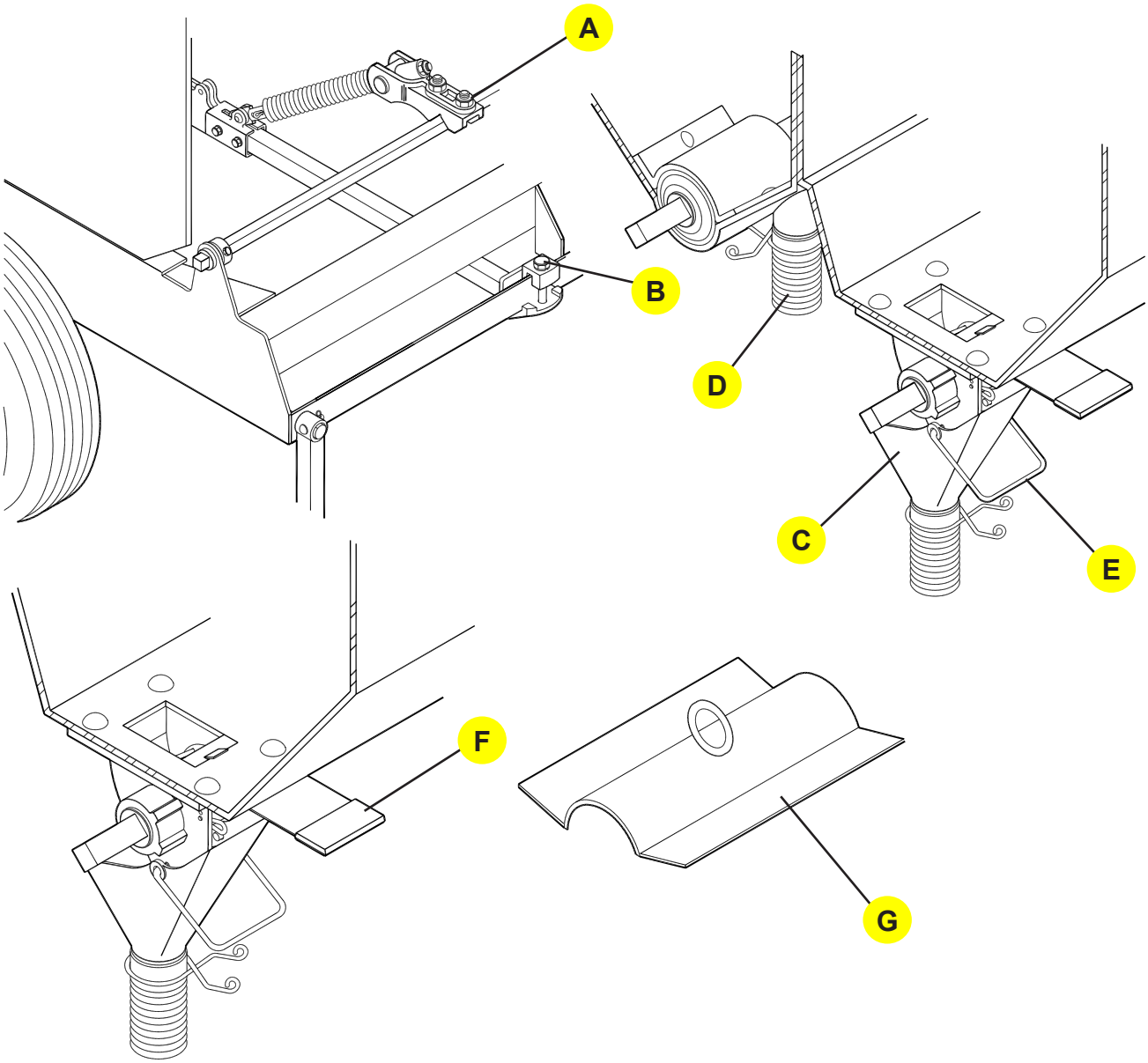
2) Make sure the seeder is properly supported.

- Loosen the row units unscrewing the nuts (A) and bolts (B). Remove only the row units which will not be used, the other ones should be kept or displaced in the equipment.

- Remove seed (C) and fertilizer (D) tubes, along with the row units, releasing the clamps (E) that hold the nozzles.

- Close the seed outlets with the shut-off devices (F), on the row units to be removed.

- To close the fertilizer outlets just place the cap (G) over the auger.



ATTENTION **WARNING: Make sure the seeder is properly supported. Avoid accidents.**

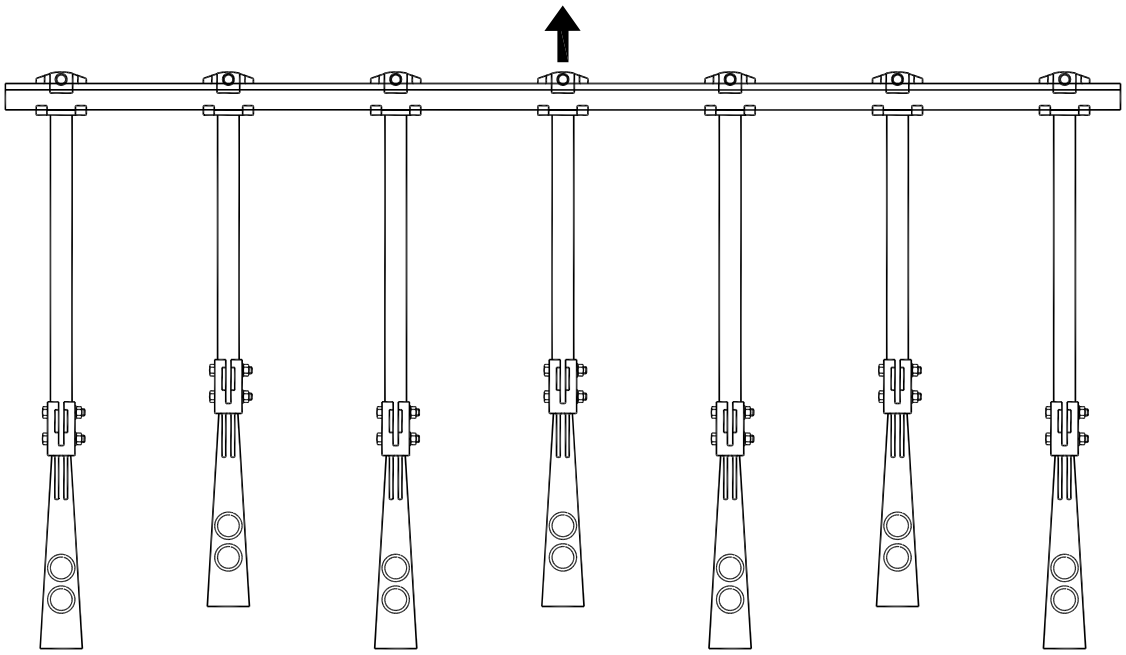
Procedures to change spacing

3) Position of the row units on the chassis:

Check if the number of row units to be assembled on the seeder is odd or even and follow the instructions below.

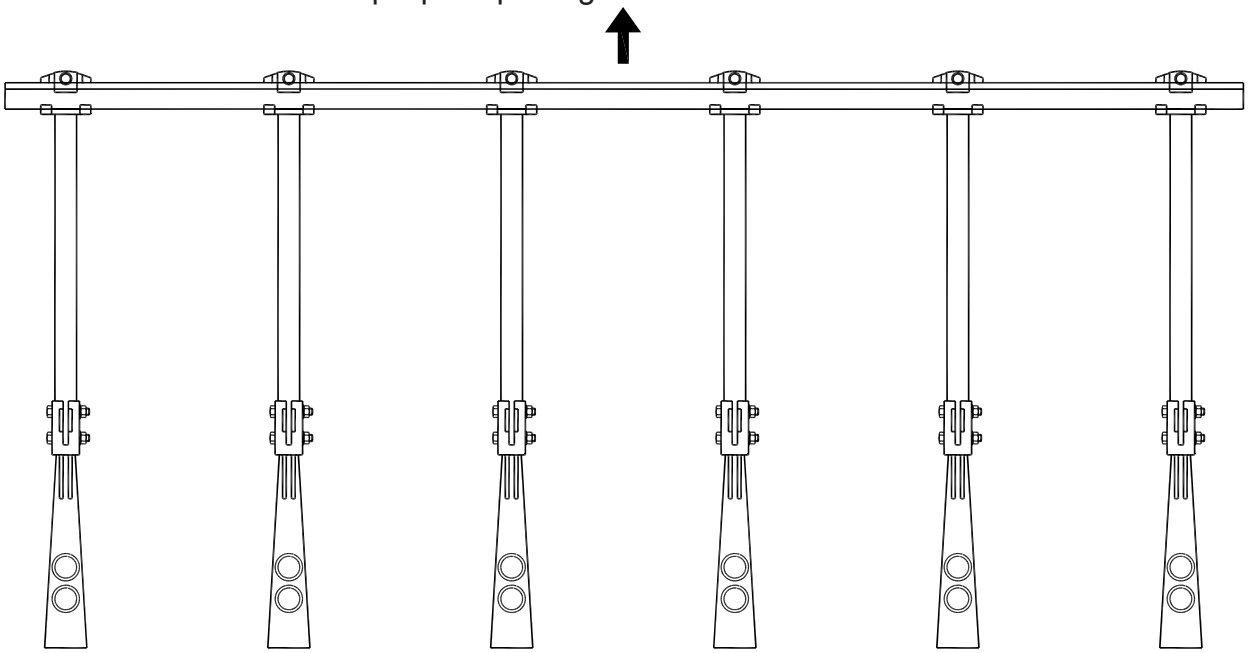
- Odd number of row units.

Attach one row unit in the center of the chassis, and from this attached row unit, start attaching the other row units with the desired spacing.



- Even number of row units

Set the center of the chassis and measure half spacing to the right and half spacing to the left, attaching on these points the first two row units; and from them start attaching the other row units with the proper spacing between them.



Tables for Spacing

Please find below all the possible spacing, following the example of the assembling instructions on the figures on page 17.

Chassis	No. of row units	Spacing (mm)
11	3*	700
	4*	525
	6*	350
	7	262,5
	11	175

* Assemble with all long row units.

Chassis	No. of row units	Spacing (mm)
13	4*	700
	5*	525
	7*	350
	9	262,5
	13	175

* Assemble with all long row units.

Chassis	No. of row units	Spacing (mm)
15	4*	700
	5*	525
	8*	350
	9	262,5
	15	175

* Assemble with all long row units.

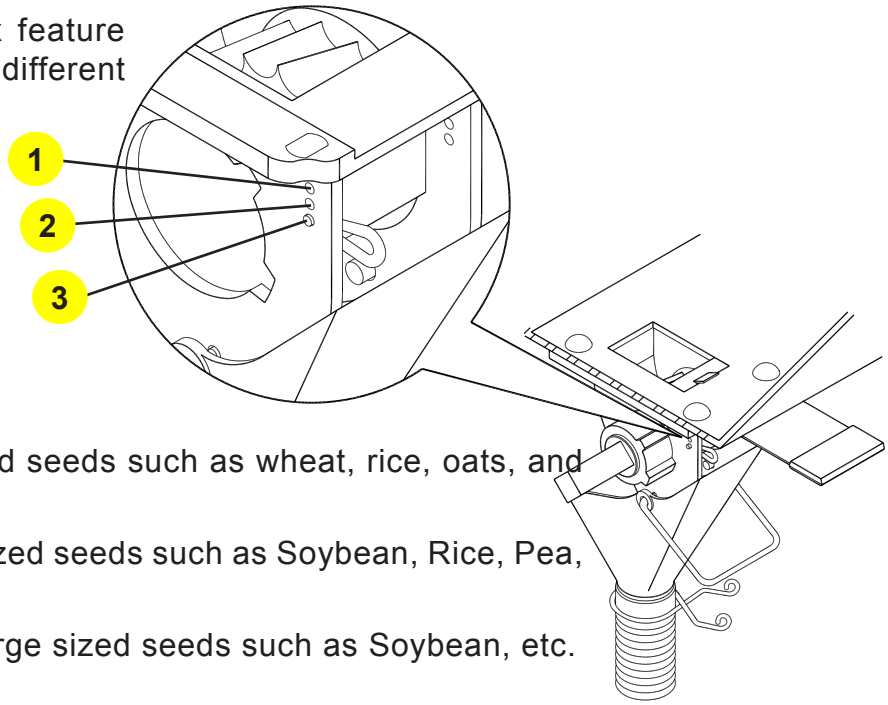
Procedure before seeding

- Before you start seeding, carry out a general inspection of the seeder, retightening all bolts and nuts, and also verifying the conditions of pins and cotter pins in order to prevent future damage. Repeat the same procedures after the first day of work.

- Lubricate all grease fittings properly. (See lubrication instructions on pages 34 and 35).

Adjusting the amount of seeds

The seed metering box feature 3-point adjustment, used for different grain sizes, as follows:



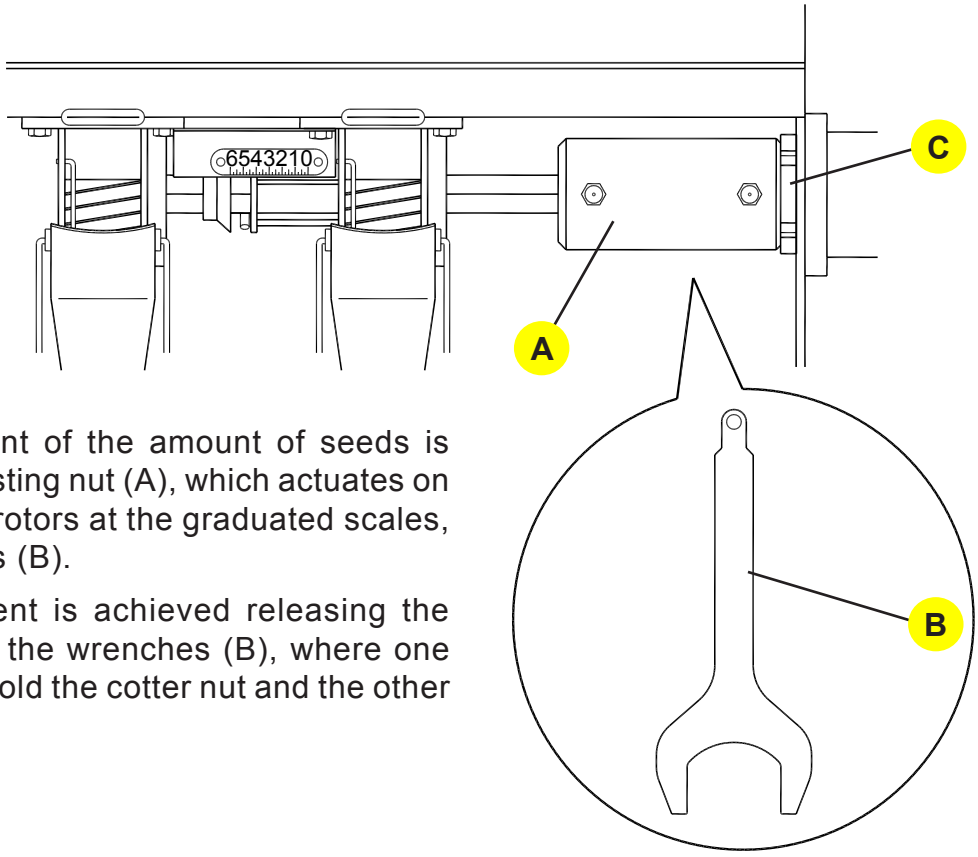
Point 1 - For small sized seeds such as wheat, rice, oats, and similar ones.

Point 2 - For medium sized seeds such as Soybean, Rice, Pea, etc.

Point 3 Point 3 - For large sized seeds such as Soybean, etc.

ATTENTION **Failure to follow these instructions may cause:**

- **Damages to the seeds.**
- **Changes in the amount distributed.**



The adjustment of the amount of seeds is made with the adjusting nut (A), which actuates on the opening of the rotors at the graduated scales, using the wrenches (B).

This adjustment is achieved releasing the lock nut (C), using the wrenches (B), where one wrench is used to hold the cotter nut and the other to turn the nut.

Observe the approximate amount of seeds in kilograms per hectare (kg/ha) for wheat and rice, according to the scale opening and the spacing used.

Seed distribution table (Wheat)

Amount in kg/hectare –Opening of Rotors = Point 1 (page 19).

Scale	Grams in 50 meters per row	Amount in Kg per hectare for different spacing between row units				
		175 mm	262,5 mm	350 mm	525 mm	700 mm
0,5	**31**	35	24	18	12	09
1,0	**63**	72	48	36	24	18
1,5	**94**	107	72	54	36	27
2,0	**127**	145	97	73	48	36
2,5	**157**	179	120	90	60	45
3,0	**189**	216	144	108	72	54
3,5	**223**	255	170	127	85	64
4,0	**256**	293	195	146	98	73
4,5	**290**	331	221	166	110	83
5,0	**324**	370	247	185	123	93
5,5	**357**	408	272	204	136	102
6,0	**391**	447	298	223	149	112
Hectare = 10.000 m² Average speed = 08 Km/h Note: Check how to run the practical test for the seed drop on page 23.						

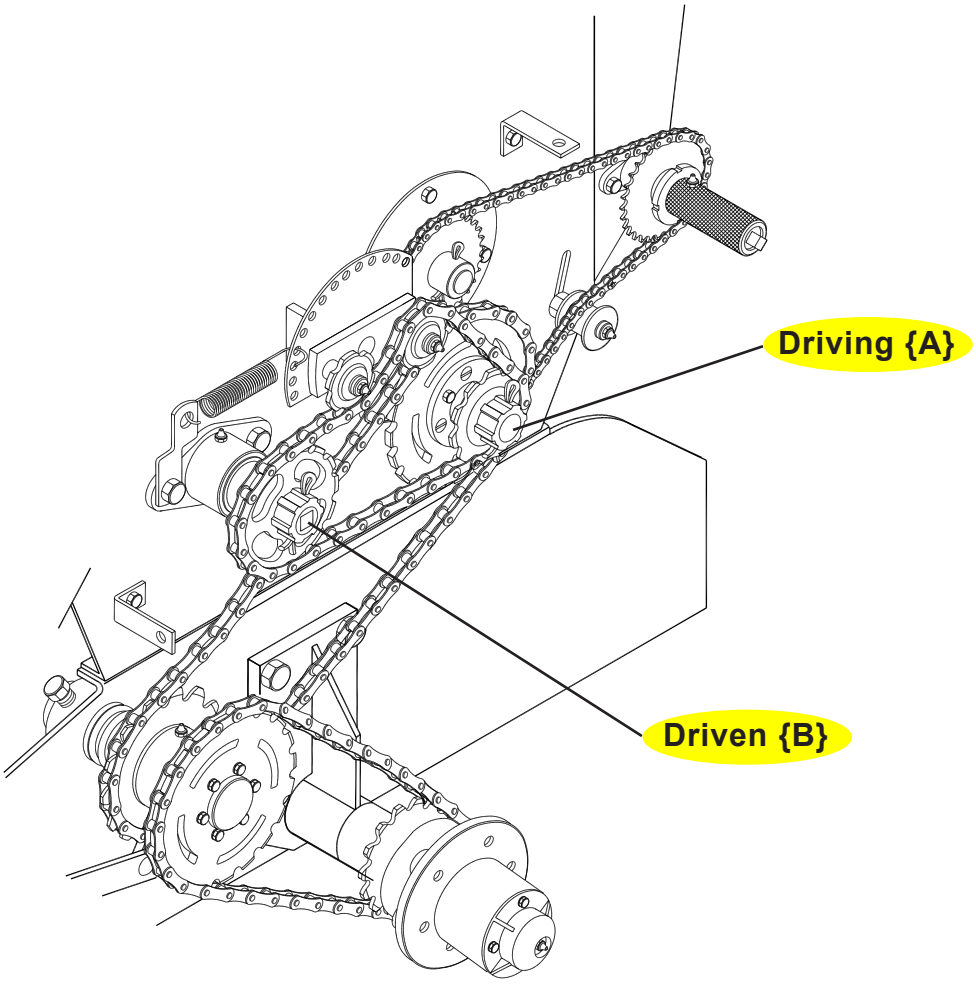
Seed distribution table (Rice)

Amount in kg/hectare –Opening of Rotors = Point 1 (page 19).

Scale	Grams in 50 meters per row	Amount in Kg per hectare for different spacing between row units				
		175 mm	262,5 mm	350 mm	525 mm	700 mm
0,5	**15**	17	11	09	06	04
1,0	**30**	34	23	17	11	09
1,5	**44**	50	34	25	17	13
2,0	**59**	67	45	34	22	17
2,5	**74**	85	56	42	28	21
3,0	**89**	102	68	51	34	25
3,5	**104**	119	79	59	40	30
4,0	**118**	135	90	67	45	34
4,5	**133**	152	101	76	51	38
5,0	**148**	169	113	85	56	42
5,5	**163**	186	124	93	62	47
6,0	**178**	203	136	102	68	51
Hectare = 10.000 m² Average speed = 08 Km/h. Note: Check how to run the practical test for the seed drop on page 23.						

Fertilizer distribution and dosage

Fertilizer distribution is made by means of individual Helical type auger screw (auger), and different amounts are obtained exchanging the driving {A} and driven {B} sprockets.



IMPORTANT

- **The 1-inch coil pitch auger carries approximately 17 g of granular commercial fertilizer at each turn.**
- **As an optional a ¾-inch coil pitch auger can be provided. It carries approximately 10 grams of granular commercial fertilizer at each turn.**

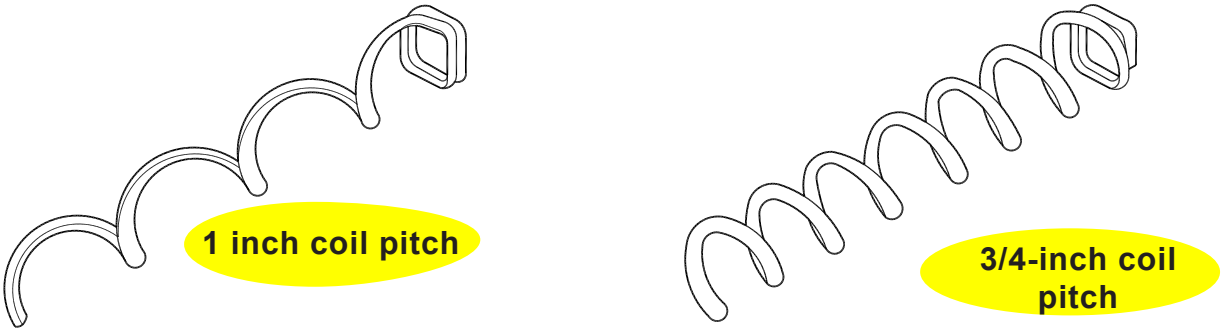


TABELA PARA DISTRIBUIÇÃO DE ADUBO COMERCIAL GRANULADO
TABLA DE DOSIFICACION DE FERTILIZANTE COMERCIAL GRANULADO

Quantidades Aproximadas em kg/ha (Quilograma por Hectare) para os diferentes espaçamentos entre Linhas — Roscas Sem-Fim com Passo de 1" (Standard) — **PSH³ com Pneus 600 x 16**
Cantidades Aproximadas en kg/ha (kg por Hectare) para los diferentes espacios entre lineas — Roscas Sin-Fin con Paso de 1" (Standard) — **PSH³ con Rodado 600 x 16**

RODAS DENTADAS MOTORA x MOVIDA / RUEDAS DENTADAS CONDUCTORA x CONDUCIDA		6x18	6x16	6x14	8x18	8x16	6x11	10x18	8x14	6x10	10x16	8x12	11x16	10x14	8x11	12x16	14x18	8x10	10x12	12x14	14x16	10x11	12x12	11x10	18x16	16x14	14x12	12x10	10x8	18x14	16x12	11x8	14x10	16x11	18x12	16x10	18x11	10x6	14x8	18x10	11x6	16x8	18x8	14x6	16x6	18x6
GRAMAS EM 50 m POR LINHA / GRAMAS EN 50 m POR LINEA		***64***	***73***	***83***	***86***	***97***	***105***	***107***	***110***	***116***	***121***	***129***	***132***	***138***	***141***	***145***	***150***	***154***	***161***	***166***	***169***	***176***	***193***	***212***	***217***	***220***	***225***	***232***	***242***	***249***	***257***	***265***	***271***	***281***	***290***	***309***	***316***	***322***	***338***	***348***	***354***	***386***	***435***	***451***	***515***	***580***
ESPAÇAMENTOS / ESPACIOS ENTRE LINEAS	175 mm	73	83	95	98	111	120	122	126	133	138	147	151	158	161	166	171	176	184	190	193	201	221	242	248	251	257	265	277	285	294	303	310	321	331	353	361	368	386	398	405	441	497	515	589	663
	350 mm	37	42	47	49	55	60	61	63	66	69	74	75	79	81	83	86	88	92	95	97	101	110	121	124	126	129	133	138	142	147	151	155	161	166	177	181	184	193	199	202	221	249	258	294	331
	525 mm	24	28	32	33	37	40	41	42	44	46	49	50	53	54	55	57	59	61	63	64	67	74	81	83	84	86	88	92	95	98	101	103	107	110	118	120	123	129	133	135	147	166	172	196	221
	700 mm	18	21	24	25	28	30	31	31	33	35	37	38	39	40	41	43	44	46	47	48	50	55	61	62	63	64	66	69	71	73	76	77	80	83	88	90	92	97	99	101	110	124	129	147	166

NOTA:
RECOMENDAMOS EFETUAR UM TESTE PRÁTICO NA DISTRIBUIÇÃO DE ADUBO AO LONGO DE 50 m LINEARES E COMPARAR COM A 2ª LINHA DESTA TABELA **(Gramas em 50 metros).**
O TESTE DEVE SER FEITO NO LOCAL DE PLANTIO E EM VELOCIDADE NORMAL DE TRABALHO. HECTARE = 10.000 m² VELOCIDADE MÉDIA UTILIZADA - 08 Km/h

RECOMENDAMOS EFECTUAR UN TEST PRACTICO EN LA DISTRIBUCION DE FERTILIZANTE A LO LARGO DE 50 m LINEALES Y COMPARAR CON LA 2ª LINEA DE ESTA TABLA **(GRAMAS EN 50 m).**
EL TEST DEBE SER REALIZADO EN EL LOCAL DE SIEMBRA Y EN VELOCIDAD DE TRABAJO. HECTARE = 10.000 m² VELOCIDAD MEDIA UTILIZADA - 08 Km/h

0503030611

TABELA PARA DISTRIBUIÇÃO DE ADUBO COMERCIAL GRANULADO
TABLA DE DOSIFICACION DE FERTILIZANTE COMERCIAL GRANULADO

Quantidades Aproximadas em kg/ha (Quilograma por Hectare) para os diferentes espaçamentos entre Linhas — Roscas Sem-Fim com Passo de 3/4" (Opcional) — **PSH³ com Pneus 600 x 16**
Cantidades Aproximadas en kg/ha (kg por Hectare) para los diferentes espacios entre lineas — Roscas Sin-Fin con Paso de 3/4" (Opcional) — **PSH³ con Rodado 600 x 16**

RODAS DENTADAS MOTORA x MOVIDA / RUEDAS DENTADAS CONDUCTORA x CONDUCIDA		6x18	6x16	6x14	8x18	8x16	6x11	10x18	8x14	6x10	10x16	8x12	11x16	10x14	8x11	12x16	14x18	8x10	10x12	12x14	14x16	10x11	12x12	11x10	18x16	16x14	14x12	12x10	10x8	18x14	16x12	11x8	14x10	16x11	18x12	16x10	18x11	10x6	14x8	18x10	11x6	16x8	18x8	14x6	16x6	18x6
GRAMAS EM 50 m POR LINHA / GRAMAS EN 50 m POR LINEA		***38***	***43***	***49***	***51***	***57***	***62***	***63***	***65***	***68***	***71***	***76***	***78***	***81***	***82***	***85***	***88***	***91***	***94***	***97***	***100***	***103***	***114***	***125***	***127***	***130***	***133***	***136***	***142***	***146***	***151***	***156***	***159***	***165***	***171***	***182***	***186***	***190***	***199***	***204***	***208***	***227***	***256***	***265***	***303***	***341***
ESPAÇAMENTOS / ESPACIOS ENTRE LINEAS	175 mm	43	49	56	58	65	71	72	74	78	81	87	89	93	94	97	101	104	107	111	114	118	130	143	145	149	152	155	162	167	173	178	182	189	195	208	213	217	227	233	238	259	293	303	346	390
	350 mm	22	25	28	29	33	35	36	37	39	41	43	45	46	47	49	50	52	54	55	57	59	65	71	73	74	76	78	81	83	86	89	91	94	98	104	106	109	114	117	119	130	146	151	173	195
	525 mm	14	16	19	19	22	24	24	25	26	27	29	30	31	31	32	34	35	36	37	38	39	43	48	48	50	51	52	54	56	58	59	61	63	65	69	71	72	76	78	79	86	98	101	115	130
	700 mm	11	12	14	15	16	18	18	19	19	20	22	22	23	23	24	25	26	27	28	29	29	33	36	36	37	38	39	41	42	43	45	45	47	49	52	53	54	57	58	59	65	73	76	87	97

NOTA:
RECOMENDAMOS EFETUAR UM TESTE PRÁTICO NA DISTRIBUIÇÃO DE ADUBO AO LONGO DE 50 m LINEARES E COMPARAR COM A 2ª LINHA DESTA TABELA **(Gramas em 50 metros).**
O TESTE DEVE SER FEITO NO LOCAL DE PLANTIO E EM VELOCIDADE NORMAL DE TRABALHO. HECTARE = 10.000 m² VELOCIDADE MÉDIA UTILIZADA - 08 Km/h

RECOMENDAMOS EFECTUAR UN TEST PRACTICO EN LA DISTRIBUCION DE FERTILIZANTE A LO LARGO DE 50 m LINEALES Y COMPARAR CON LA 2ª LINEA DE ESTA TABLA **(GRAMAS EN 50 m).**
EL TEST DEBE SER REALIZADO EN EL LOCAL DE SIEMBRA Y EN VELOCIDAD DE TRABAJO. HECTARE = 10.000 m² VELOCIDAD MEDIA UTILIZADA - 08 Km/h

0503030615

IMPORTANT **Data in the previous tables (Seed and Fertilizer) may vary due to many factors. Therefore, we request that you carefully notice the following item.**

Practical test for the distribution of seed and fertilizer

The most appropriate way to assess the amount of seed and fertilizer to be distributed is on the actual ground where seeding will be carried out, as follows:

- Whenever possible, use the same tractor and operator for seeding.
- Correct calibration of the seeder tires is important. Maintain the same pressure. (52 psi).
- Check the covering distance for the test. Follow the example in the fertilizer table, 50 linear meters.
- Fill at least half the seeder hoppers and run a few meters so the distribution units can be filled completely before entering into the marked area.
- Place containers at the fertilizer outlets. (Use preferably plastic bags). At the seed transporting units use cotton waste to seal the outlets.
- Move the tractor along the marked area, using the same speed that you will work throughout the seeding.
- Now just weigh the fertilizer and seed in the containers and compare them with the 2nd line of the tables (grams in 50 meters per row). If necessary, run the test again changing the adjustments.
- After achieving the desired amounts and still at the terrain, move the tractor at the same speed; but now letting the fertilizer and the seed reach the soil to better check the uniformity of the distribution.
- The assessment of soybean distribution can be carried out by the number of seeds per meter, whose adjustment can be made using the same setting already mentioned.

ATTENTION

- **The variation of the working speed affects the uniformity of seed distribution.**
- **Every time you change the batch of seeds or the fertilizer manufacturer, it is necessary to assess again.**
- **It is important to assess all the settings again after the first day of work.**
- **Never change the adjustments while the seeder is moving.**

Auxiliary calculation for seed and fertilizer distribution

In order to distribute other amounts of seed and fertilizer with spacing and areas which are different from those depicted in the tables, we suggest a quick calculation, in which all data used may be replaced by data of your own interest simply using the formula below, which contains the following elements:

A = area to be seeded or fertilized (m²).

B = spacing between rows of the crop (m).

C = amount of seed and fertilizer to be distributed in the area (Kg).

D = Distance to cover for the test (m).

X = the amount of grams that should be dropped on "D"?

Formula:

$$X = \frac{B \times C \times D}{A}$$

Example

A = 10.000 m²

B = 175 mm

C = 300 kg

D = 50 m

X = ?

$$X = \frac{175 \times 300 \times 50}{10.000}$$

X = 262,5

X = 262.5 grams in 50 meters per row.

Then adjust the equipment to a setting to distribute the amount you calculated, or a setting which is closest to the desired one; in the predetermined distance for the test.

Hectare counter

The hectare counter allows you to know the approximate seeded area.

See calculation factor in the table below which should be used according to the types of tires, row spacing and number of row units of the seeder.

ATTENTION • **Never forget to "reset" the counter for a new job step.**

HECTARES COUNTER - PSH³

"F" factors for the calculation of the seeded area in Hectares

No. OF ROW UNITS	ROW UNIT SPACING (mm) (6.00 X 16 Tires)			
	175	350	525	700
03				8,31
04			8,31	11,08
05			10,39	
06		8,31		
07		9,70		
08		11,08		
11	7,62			
13	9,01			
15	10,39			

Formula

$$\text{Area} = \frac{\text{No. on Counter X “F”}}{10.000}$$

Example:
PSH³ 15 with 8 row units, 350 mm Spacing

Calculation:

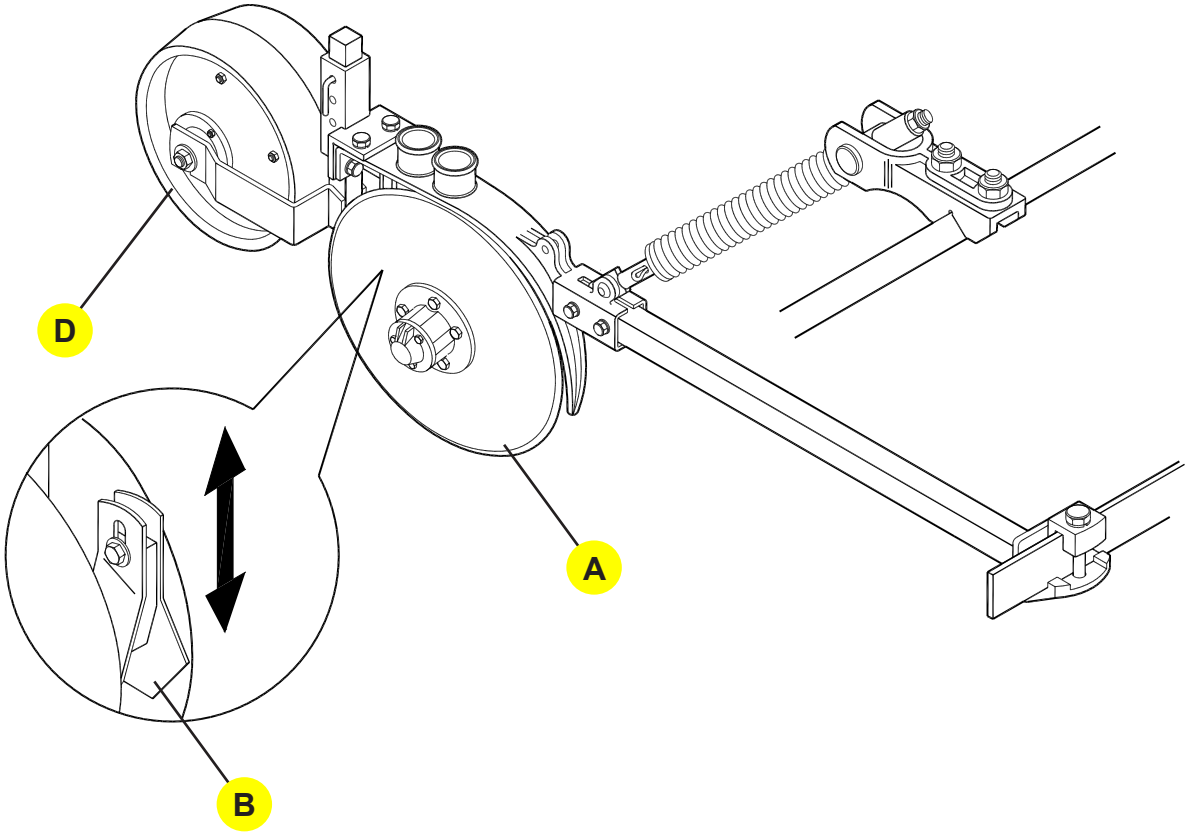
$$A = \frac{12600 \times 11,08}{10.000}$$

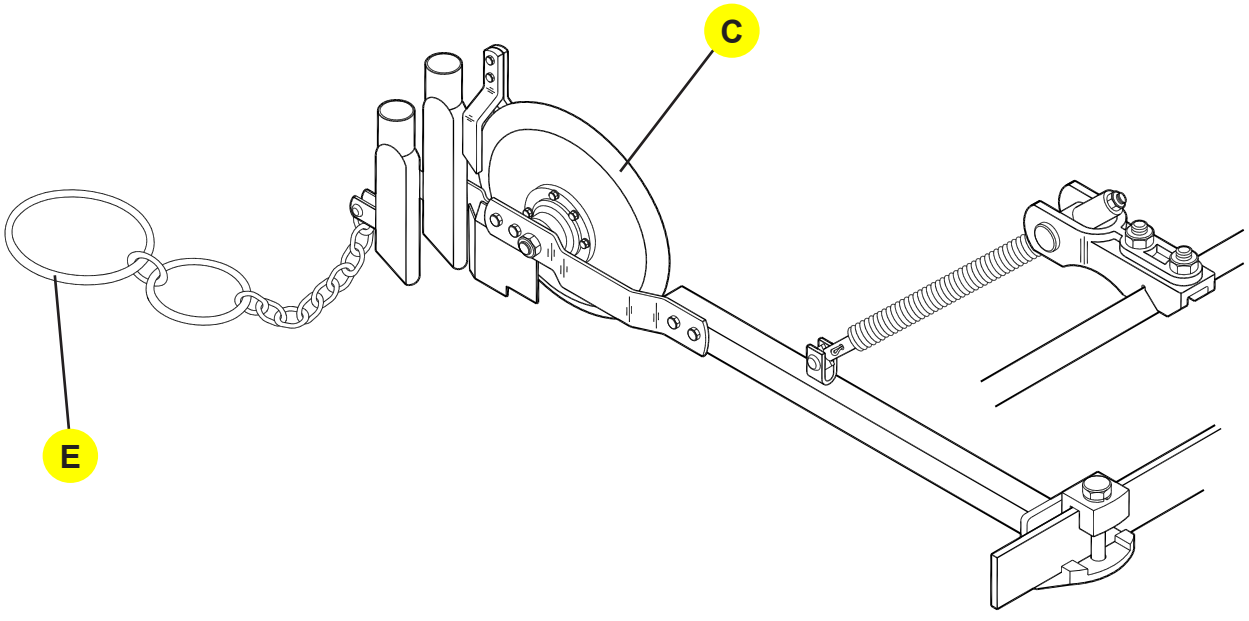
A= 13,96 Hectares

Opening the furrows and covering the seeds/closing the furrows

The opening of the furrows is made using the double-disc openers (A), which also feature adjustable internal scrapers (B), or using the single-disc openers (C).

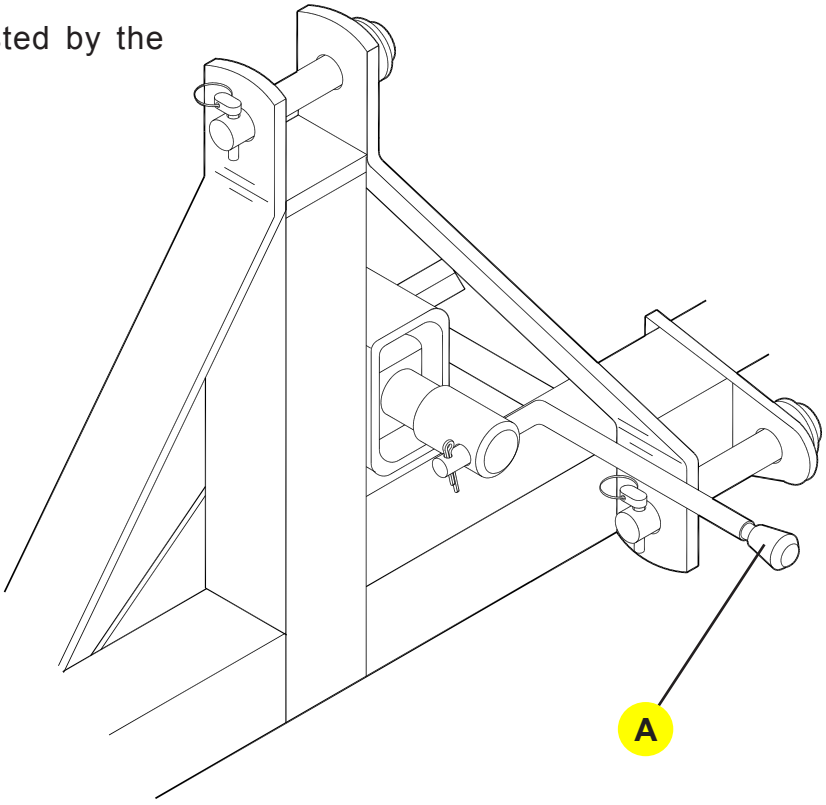
Covering of the seeds/closing of the furrows can be made either by the covering wheel (D) or by the drag chains (E).

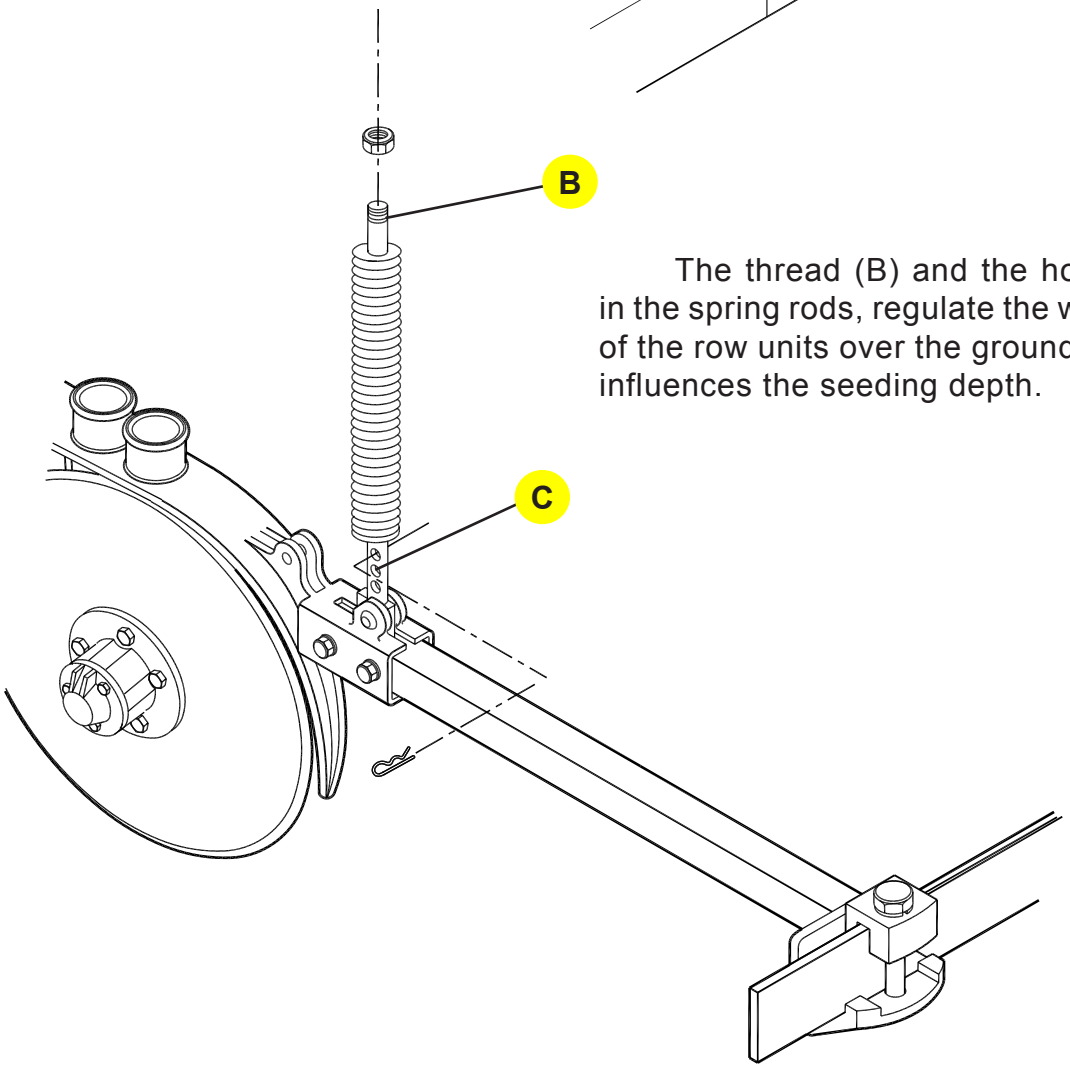




Seeding depth

The seeding depth is adjusted by the crank handle (A).

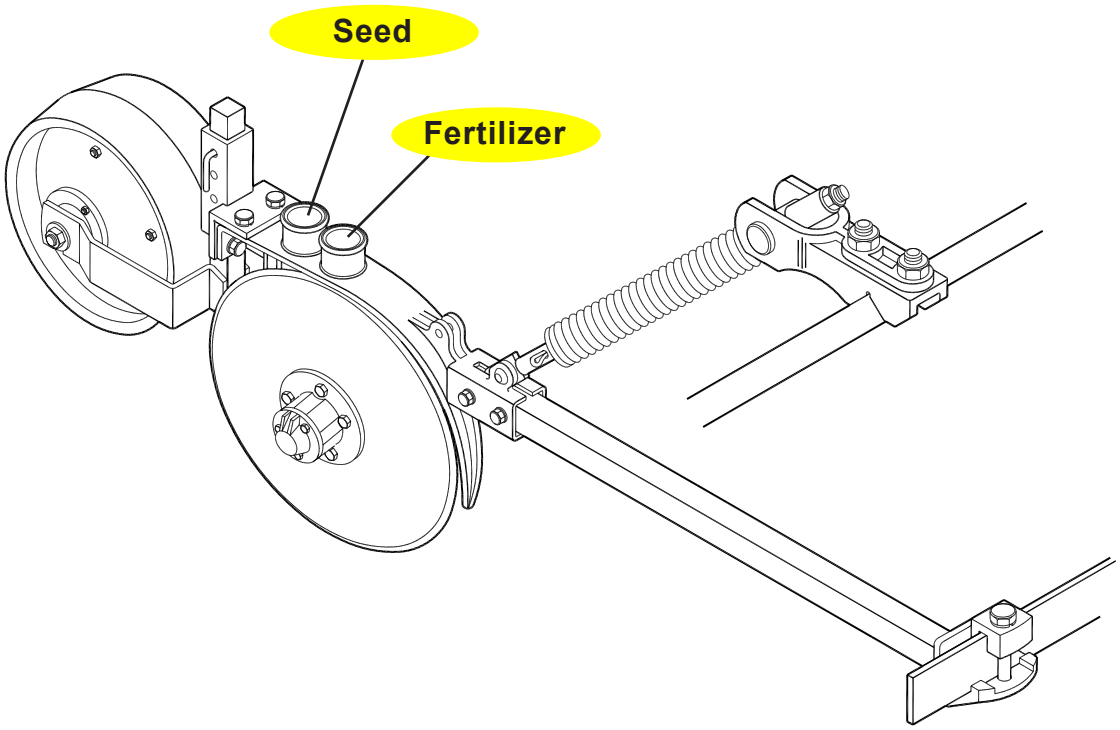


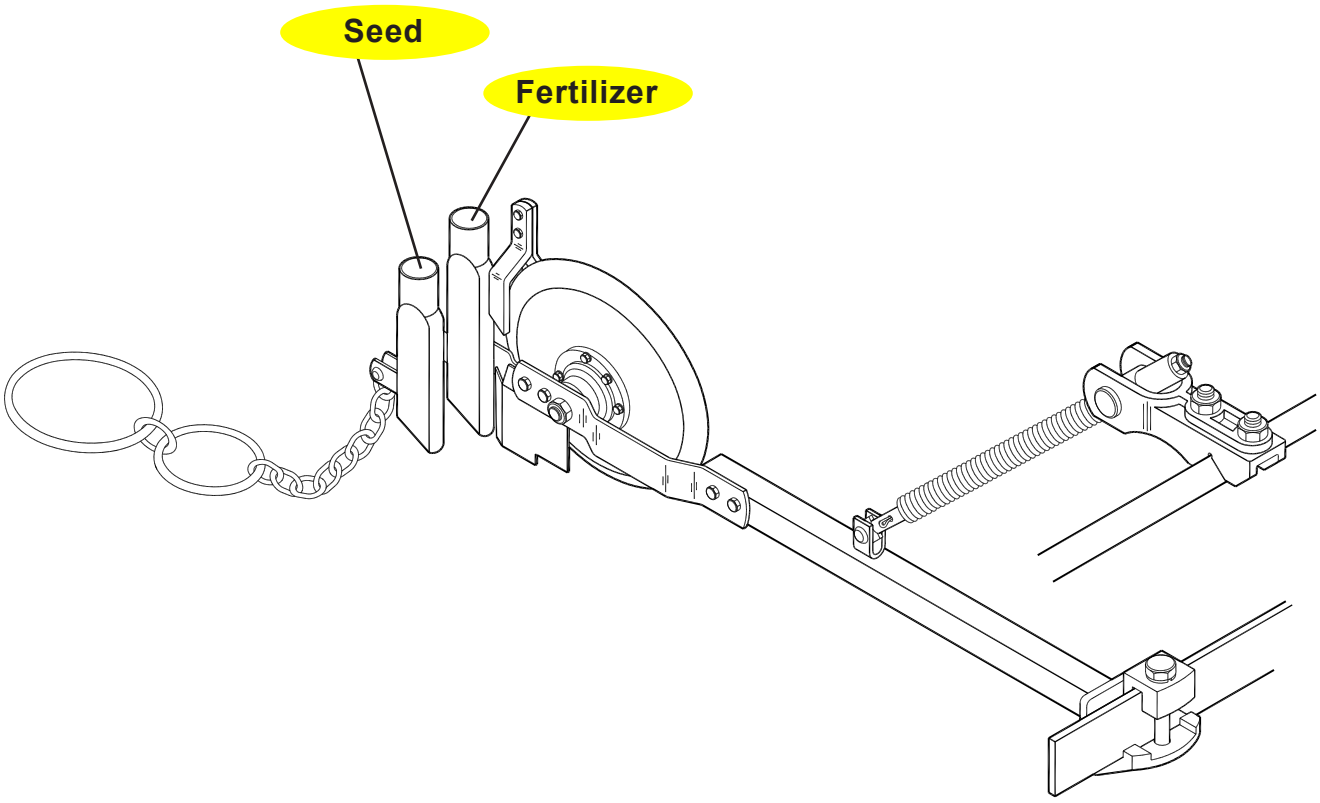


The thread (B) and the holes (C), located in the spring rods, regulate the working pressure of the row units over the ground. Such pressure influences the seeding depth.

Placing the fertilizer on the soil

The fertilizer is deposited on soil with the double-disc opener, or with the single-disc opener, remaining practically together with the seed.





Operations - Important aspects

- Before you start your seeder, retighten all bolts and nuts after the first day of work. Check the conditions of pins and cotter pins.
- Observe lubrication intervals carefully.
- The correct calibration of the 600 x 16 tires is **(52 psi)**, the same for both, it's important to keep the uniformity of the seeding.
- While filling the seeder, check if it is properly hitched to the tractor. Also check if there are not any objects inside the hoppers, which may damage the distribution assemblies.
- Always use seeds and fertilizer which are impurity-free.
- Inspect the seed metering boxes twice a day and if necessary, remove adhesions of chemicals thereof.
- Observe the proper functioning of the fertilizer distribution system at least twice a day.
- Keep the equipment leveled.
- Periodically check the adjustments set forth at the beginning of seeding.
- Carefully check the depth of the deposited seed and compacting pressure.
- It is important to maintain a constant speed throughout the seeding.
- Never do maneuvers or pull the tractor backwards with the row units lowered to the ground.
- In order to perform any check on the equipment, you should lower it to the ground and switch off the tractor engine.
- As previously mentioned, PSH³ seeders feature many adjustments; however, only the local conditions should guide their best adjustments

Hopper for distribution of fine seeds (Pasture)

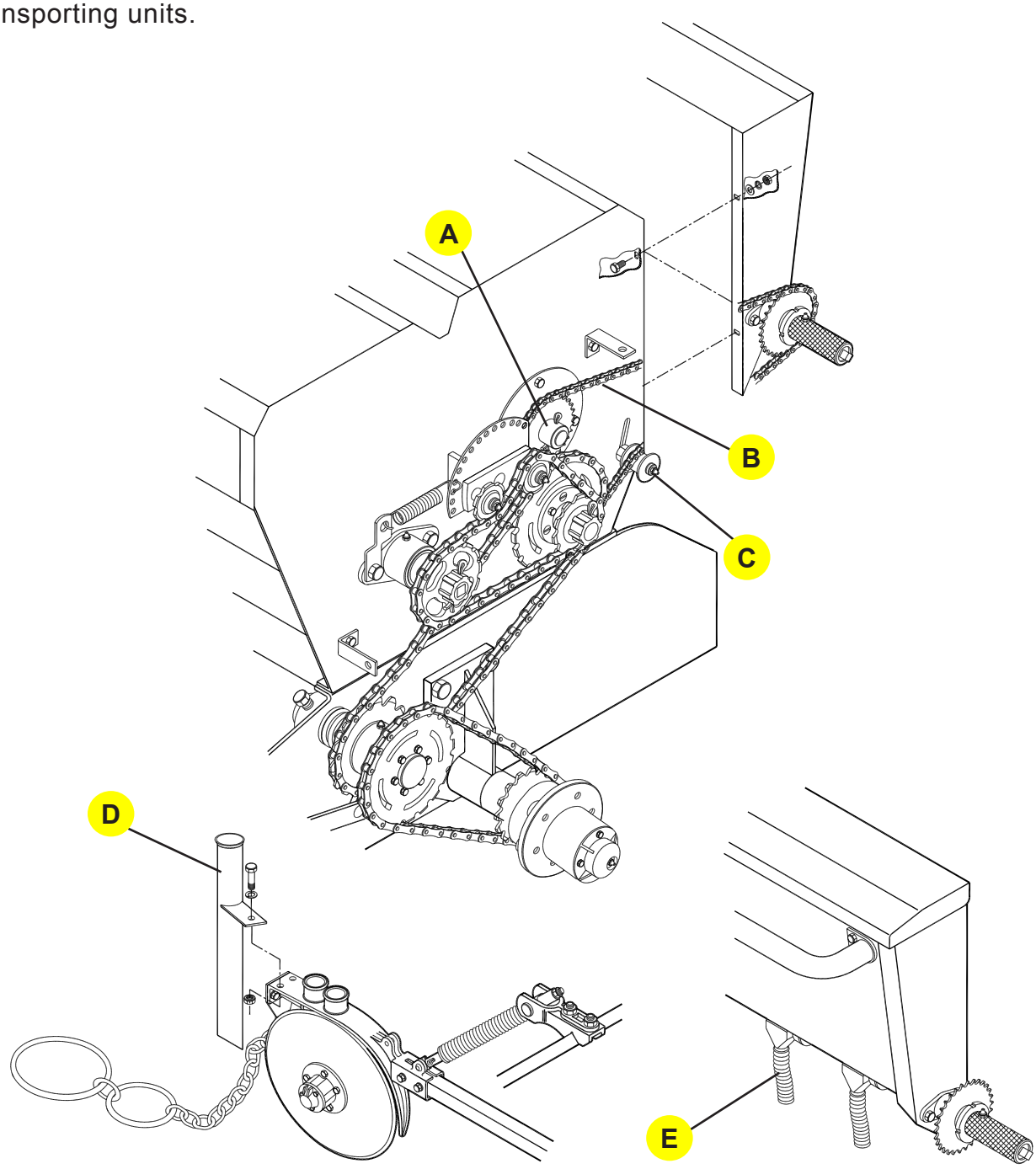
Assembly:

- Attach the hopper for distribution of fine seeds to the seeder's seed hopper, using bolts, lock washers and nuts.

- Attach the sprockets (A) on the hopper side, along with the chain (B).

- Assemble the tensioner (C), using bolt, flat washer and nut.

- Engage the tubes of fine seeds (D) to the double-disc opener support, using bolts, lock washers and nuts; then attach the hoses (E) to the distribution assemblies and transporting units.

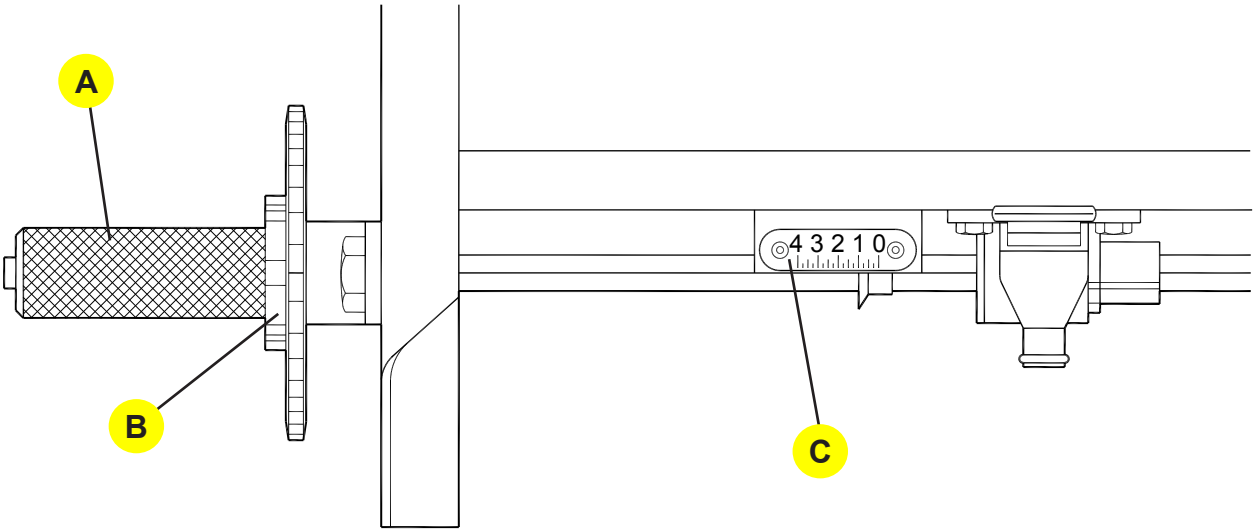


Optional Items

The amount of seeds:

The amount of seeds to be distributed is determined by the adjusting knob (A), which actuates on the opening of the rotors at the graduated scales.

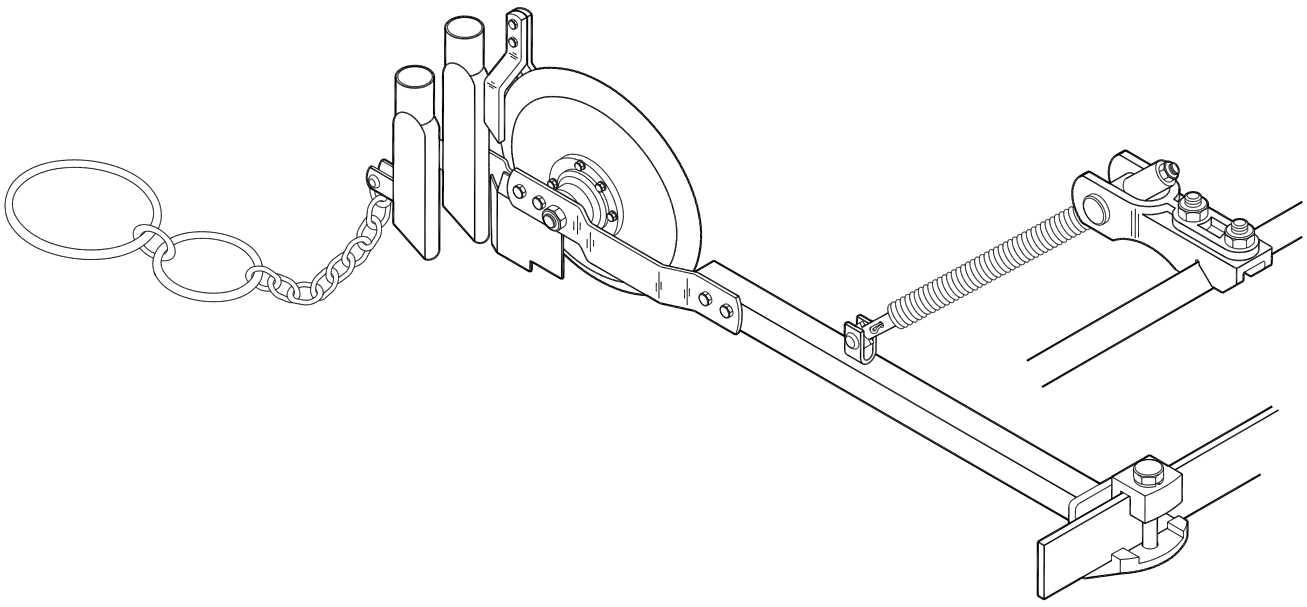
This adjustment is achieved by unscrewing the lock nuts (B) and turning the adjustment knob, observing the graduated scale (C).



NOTE **Run the distribution practical test to adjust the opening with the desired amount.**

Never make any adjustments with the seeder in motion.

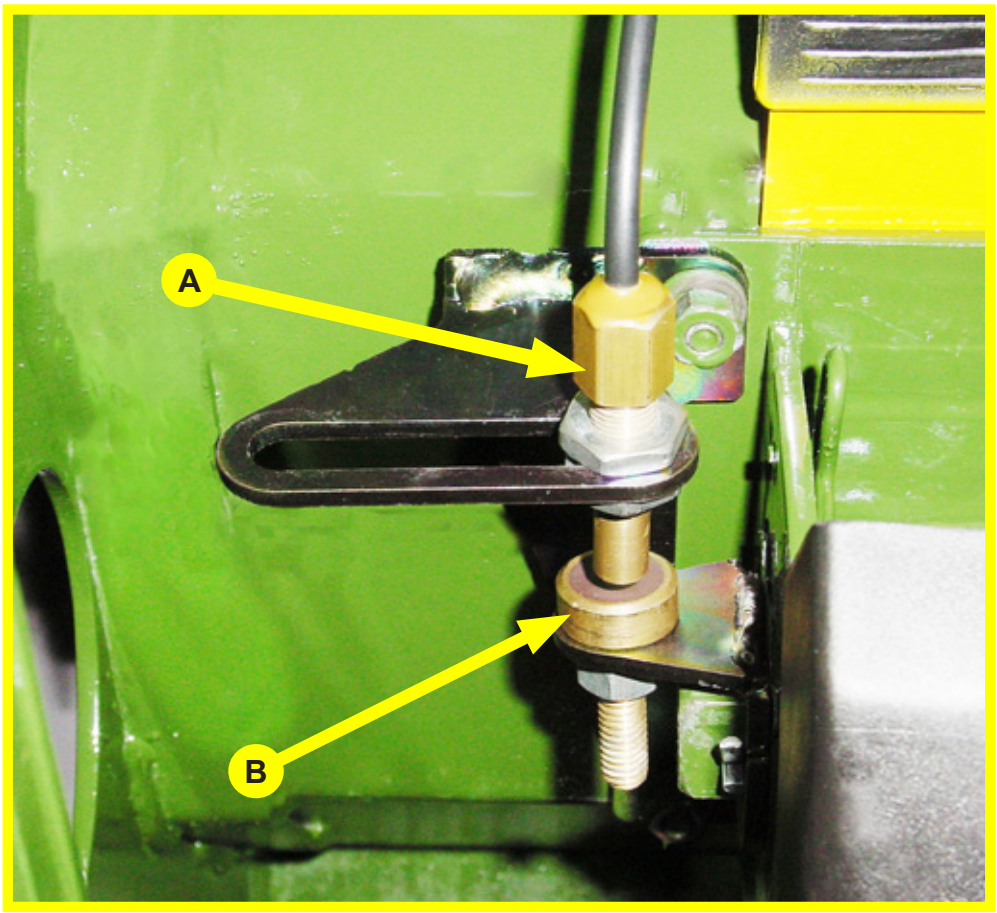
Single-disc opener and drag chain



Tatu electronic hectarimeter

Tatu electronic hectarimeter is a device to measure areas in **hectares** and which applies technology at agriculture's service. With the hectarimeter you can measure **partial hectare, total hectare and number of turns of the transmission shaft.**

OBS. **After adjusting the amount of seeds, it is necessary to adjust the sensor (A), so that it gets aligned with the magnet (B) of the seed row shaft, at a distance of 3 to 5 mm.**



On the next page, we describe how to operate and how to set the hectarimeter.

Optional items

Tatu electronic hectarimeter

How to operate to consult partial hectare and total hectare:

When pressing the MENU key the display is turned on and the name Marchesan and battery status are displayed for five (05) seconds. After this time the display exhibits the message partial hectare.

If the MENU key is pressed again the display shows the message total hectare. If no key is pressed for thirty (30) seconds the system returns automatically to sleep mode (off).

How to set the equipment:

Press the MENU key. The display will turn on and the name Marchesan and battery status will be displayed for five (05) seconds. After this time the display will exhibit the message partial hectare. To reset partial hectare, press and hold the ENTER key down for four (04) seconds. The reset options will be displayed, confirm reset by pressing the + key, otherwise press the - to cancel it.

By pressing the MENU key again the display will show total hectare. Press and hold both the "-" and the + keys down, simultaneously, for five (05) seconds and the display will enter the settings menu. The number of turns is display now. By pressing the MENU key the display offers you the option to enter the number of rows using the + and - keys. After entering the number of rows press the MENU key, to adjust the spacing between rows (in mm) use the - and + keys. After entering the data wait for thirty (30) seconds so the system returns automatically to the sleep mode (off), now adopting the entered values.

Lubrication

In order to reduce wear and tear caused by friction between moving parts of the equipment, a correct lubrication must be carried out, as indicated below:

- Check the quality of the lubricant concerning its efficiency and purity, avoiding the use of products contaminated by water, land, etc...

- Use medium consistency grease.

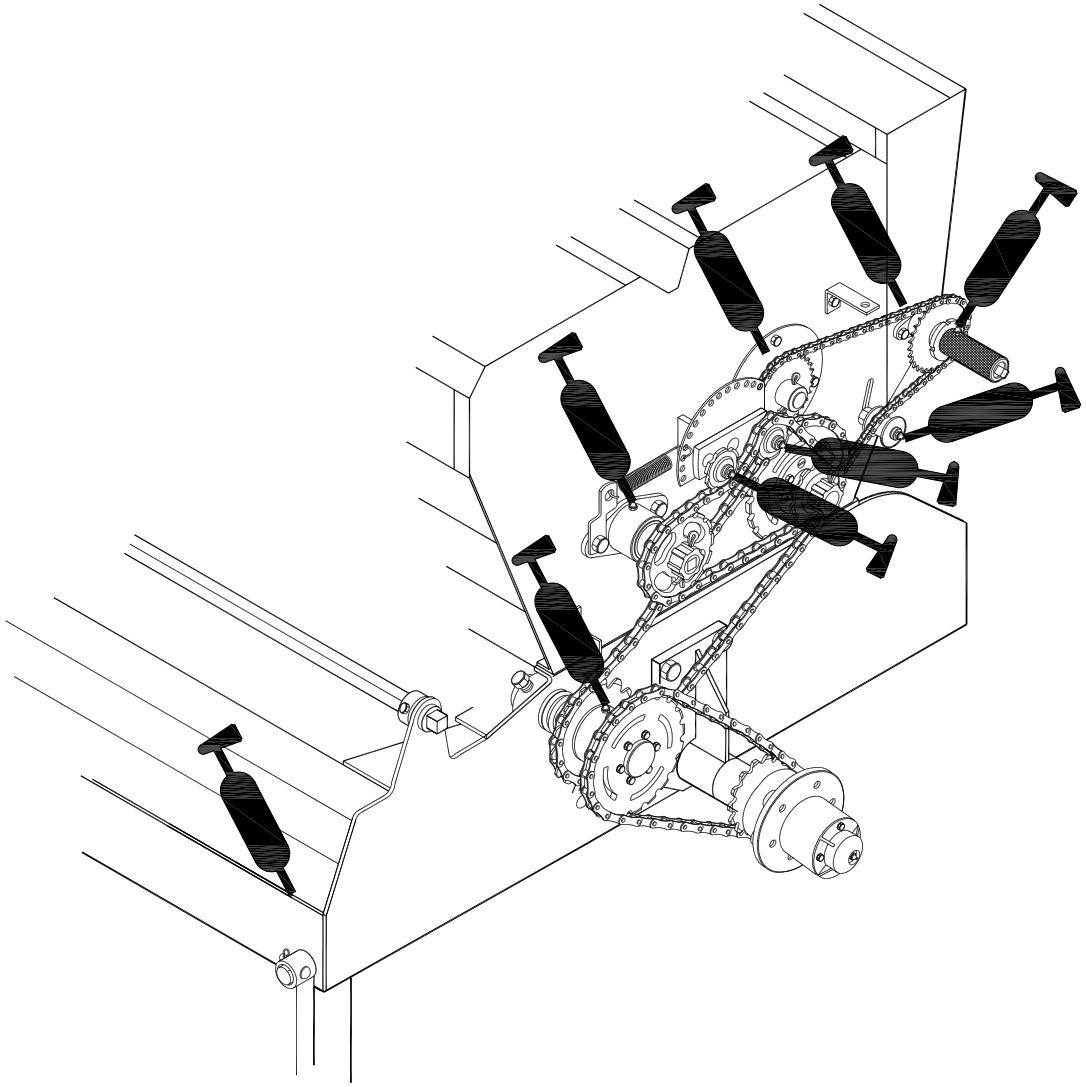
- Remove the crown of old grease around the joints.

- Clean the grease fittings with a cloth before inserting the lubricant and replace those which are defective.

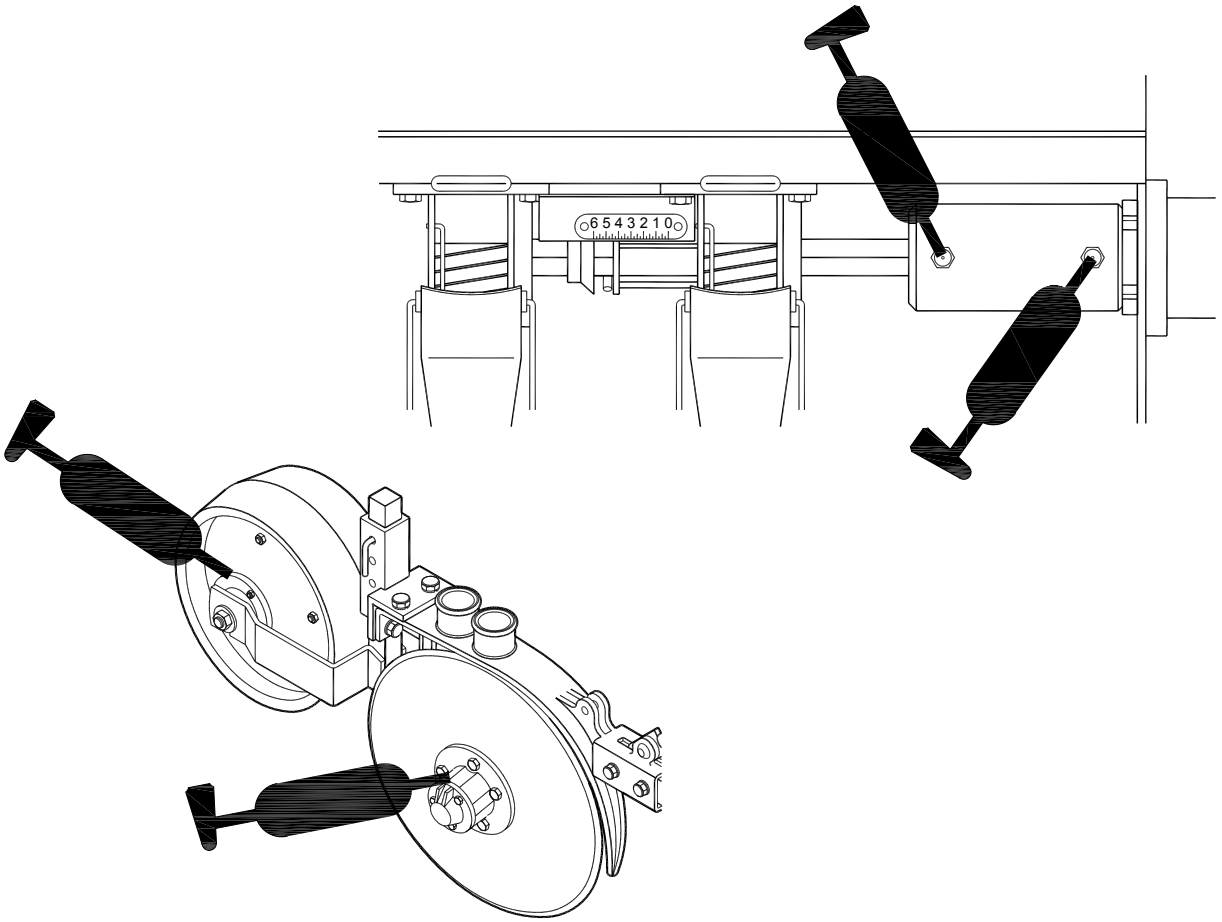
- Insert a sufficient amount of fresh grease.

ATTENTION **Check lubrication intervals closely, at different points of the seeder.**

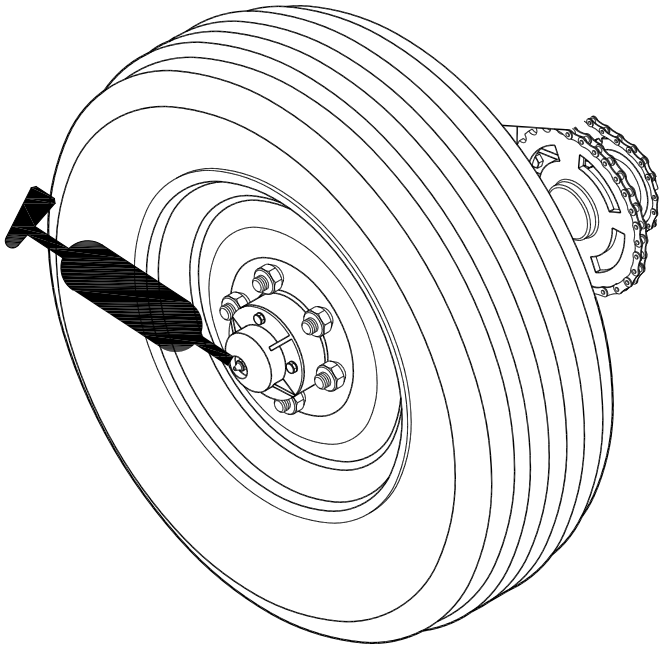
Lubricate every 10 hours of work



Lubricate every 20 hours of work



Lubricate every 30 hours of work



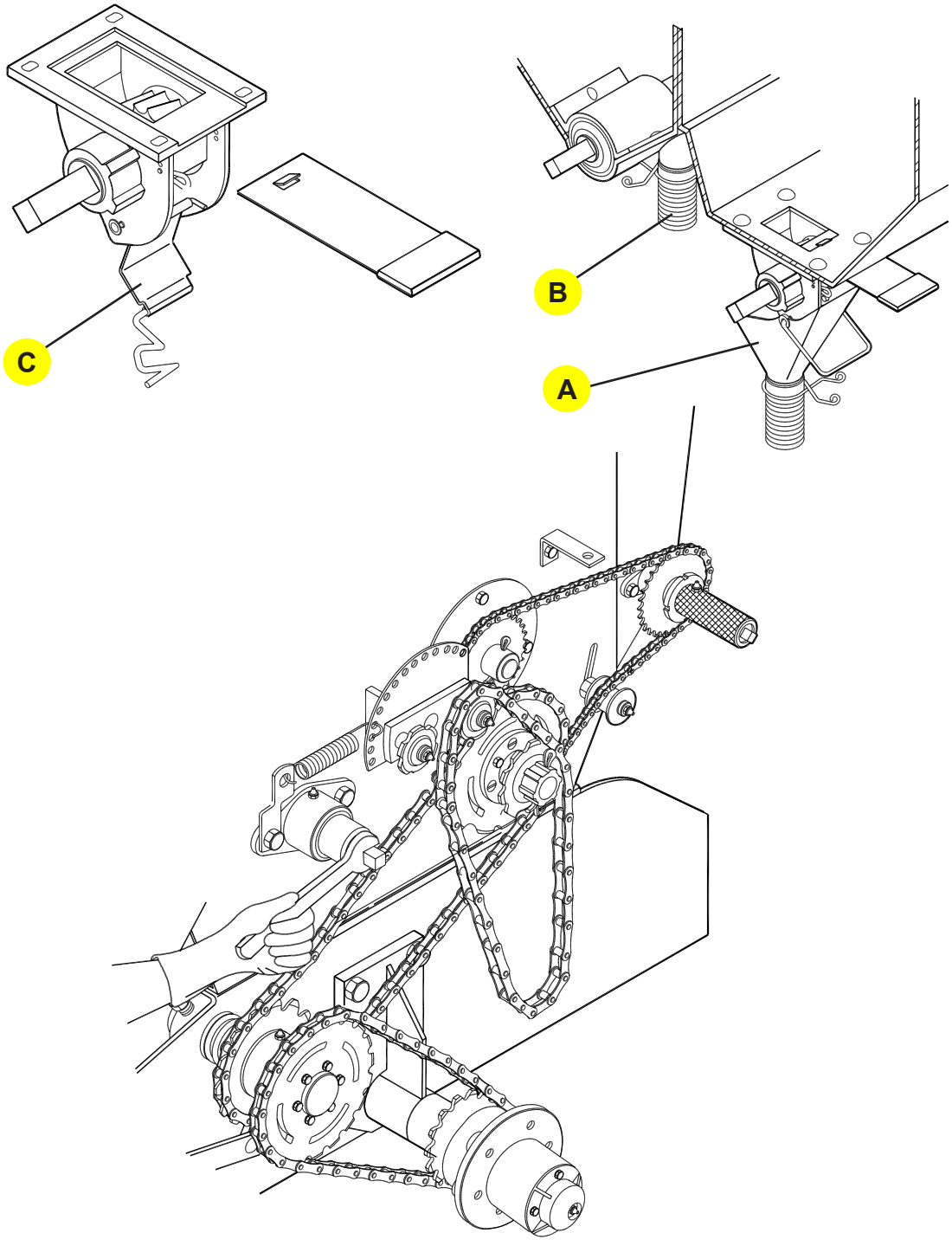
Cleaning fertilizer and seed hoppers

• Remove completely the tubes of seeds (A) and fertilizer (B), rinse them out with water.

• Detach the seed dosing units (C), leaving the outlet free.

• Remove all side transmission chains of the seeder and keep them in oil bath.

• Wash all the equipment, especially the seed and fertilizer hoppers. Using a 19 mm (3/4") wrench, turn the fertilizer hopper shaft and apply a water jet once more.



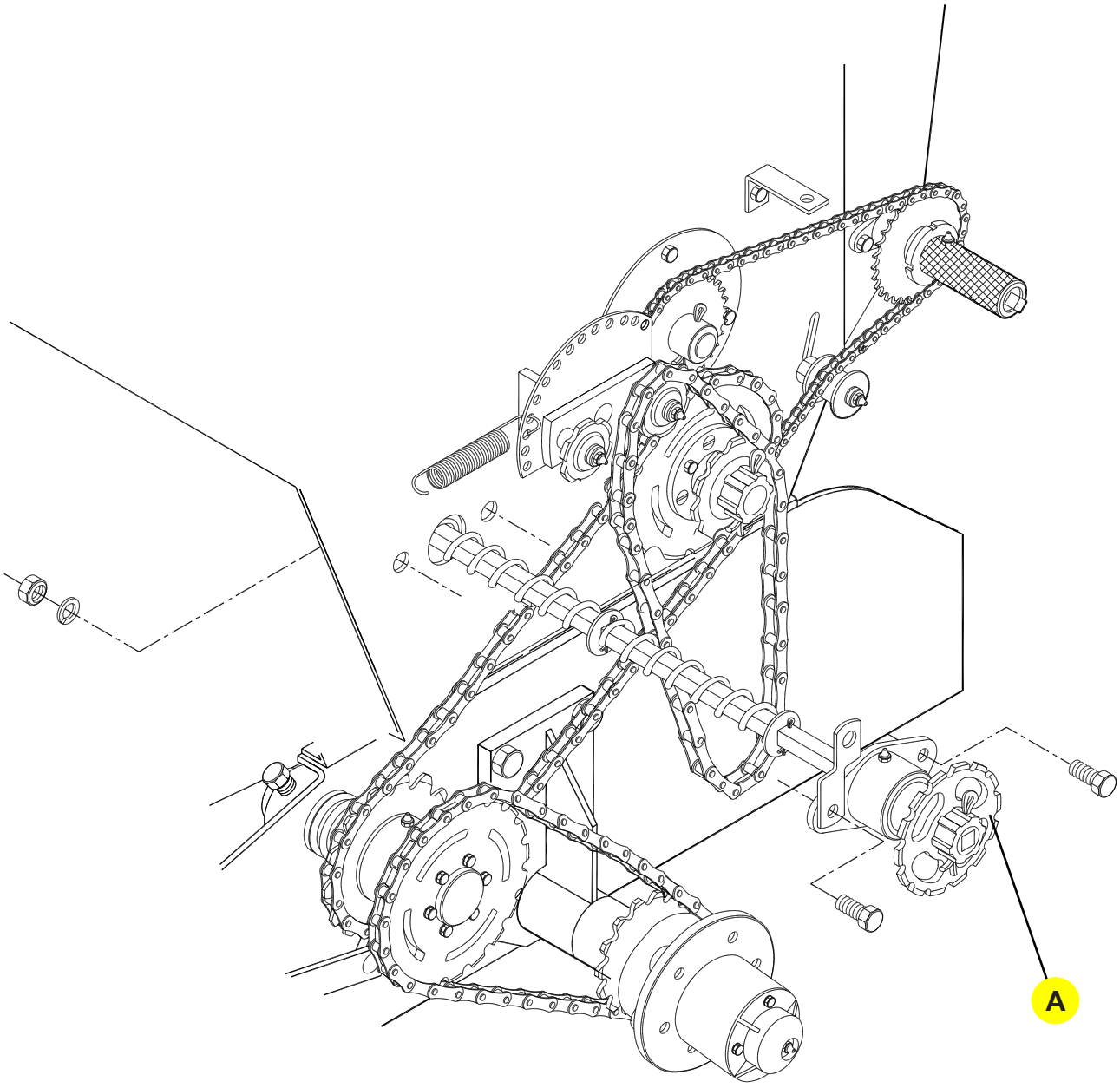
Maintenance of the fertilizer distribution unit

For the proper maintenance of the fertilizer distribution system, or to carry out any type of repair internally, proceed as follows:

• Detach the fertilizer chain tensioner;

• Remove the driven sprockets chain;

• Unscrew bolts, washers and nuts, removing the whole assembly (A), as seen in the figure below.



OBS. **Do not forget. Lubricate the distribution unit daily as per the item lubrication, thus avoiding future problems.**

Use only TATU original parts.

Maintenance of the seeder

• Check all the moving parts of the seeder for wear. If it is required, replace the parts, leaving the equipment ready for the next seeding.

• Retouch any damaged paintwork of the seeder, especially on the hoppers.

• Spray all the equipment with preservative oil, but never use burnt oil.

• Clean and lubricate all grease fittings

• After all repair work and maintenance is carried out, store the equipment in an appropriate place, i.e. clean, sheltered, and dry.

• Keep the seeder properly supported and preferably prevent tires and disc openers from directly touching the ground.

OBS. **Use TATU original parts only.**

Important

ATTENTION

Marchesan S/A reserves the rights at anytime to make improvements in the design, material or specifications of the machinery equipment or parts without thereby becoming liable to make similar changes in machinery, equipment or parts previously sold.

The Drawings are simply illustrations.

Some pictures of this manual appear without the safety devices (Covers, protections, etc...) to facilitate detailed instructions. Never operate the planter without those devices.

Technical Publication Division

Elaboration/Diagram: Valson Hernani

Supervision: Aparecido Miranda

Illustration: Luiz Loureiro

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MARCHESAN IMPLEMENTOS E MÁQUINAS AGRÍCOLAS "TATU" S.A.
Av. Marchesan, 1979 - P. O Box 131 - Zip Code 15994-900 - Matão - SP - Brasil
Telephone 16. 3382.8282 - Fax 16. 3382.3316
Fax: Sales 16. 3382.1009 - Pieces 16. 3382.8297 - Exportation 16. 3382.1003
e-mail: tatu@marchesan.com.br www.marchesan.com.br

Annotations