GAMB-DF / SAB-DF



Instruction Manual





PRESENTATION

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

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

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

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

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



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

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

Instruction Manual





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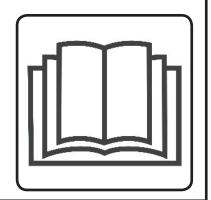
01. SAFETY RULES



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

A ATTENTION

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



A ATTENTION

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



A ATTENTION

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



A ATTENTION

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



A ATTENTION

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



A ATTENTION

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



ATTENTION

- Whenever the seed machine is being operated, watch out for surrounding people.
- Do not transport people on the tractor nor in or on the equipment.



A ATTENTION

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





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



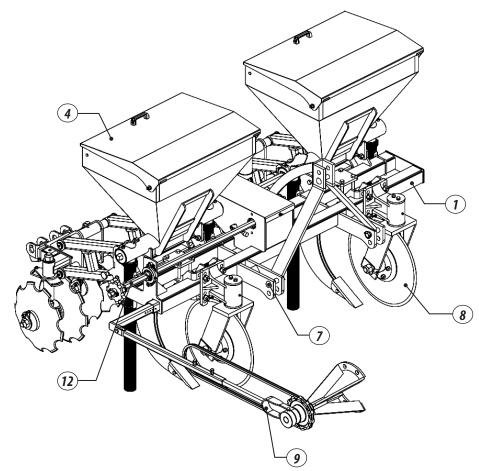




THE MISMANAGEMENT OF THIS EQUIPMENT CAN RESULT IN SERIOUS OR FATAL ACCIDENTS. BEFORE PLACING THE EQUIPMENT IN OPERATION, CAREFULLY READ THE INSTRUCTIONS IN THIS HANDBOOK. MAKE SURE THAT THE PERSON RESPONSIBLE FOR THE OPERATION IS INSTRUCTED ON THE PROPER AND SAFE HANDLING, IF HE HAS READ AND UNDERSTOOD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

- 01- Mhen operating the equipment, do not allow people to stay very close or on it.
- 02- A In making any assembling and disassembling service in the discs, always use safety gloves.
- 03- A Before connecting or disconnecting hydraulic hoses, relieve the system pressure by moving the command with the tractor off.
- 04- APPeriodically check the conservation status of the hoses. If there is evidence of leaks, immediately replace them because the oil works under high pressure and can cause serious injury.
- 05- **A** Do not wear loose clothing as they can become entangled in moving parts.
- When turning the tractor engine on, be properly seated on the operator's seat and aware of the correct and safe management of both tractor and implement. Always put the selector lever in neutral, turn off the power take-off command and place the hydraulic commands in the neutral position.
- 07- A Do not run the engine in indoor environments without adequate ventilation, as the exhaust fumes are harmful to health.
- 08- When maneuvering the tractor to the implement hitch, make sure that there is plenty of room and that there is nobody very close, always do the maneuvers in low gear and be prepared to brake in emergency situations.
- 09- A Do not make adjustments with the implement in operation.
- 10- When working on slopes, proceed with caution when trying to maintain the necessary stability. In case of early imbalance, reduce the acceleration, turn the tractor wheels to the side of the terrain slope.
- 11- Always drive the tractor at speeds compatible with safety, especially when working on uneven ground or slopes, always keep the tractor engaged.
- 12- A When driving the tractor on roads, keep the brake pedals connected and use of safety signs.
- 13- A Do not operate the tractor if its front is light. If there is a tendency to rise, add weights on the front or front wheels.
- 14- Leaving the tractor, put the selector lever in neutral and pull the parking brake.
- 15- 📤 Alcohol or drugs can generate some loss of reflexes and change the operator's physical conditions. So, never operate this equipment under use of these substances.
- 16- Read or explain all the procedures above to the operator who cannot read.

CULTIVADOR ADUBADOR MÚLTIPLO BALDAN - DESARME POR FUSÍVEL (CAMB-DF)



Figures 1

02. COMPONENTS

01 - Chassis

02 - Furrower rod

03 - Fertilizer tank

04 - Fertilizer tank cap

05 - Handbook and Catalog container

06 - Fertilizer conductor hose

07 - Coupling pin cat. II

08 - Cutting Disc

09 - Ratchet disarming rod

10 - Gear Support

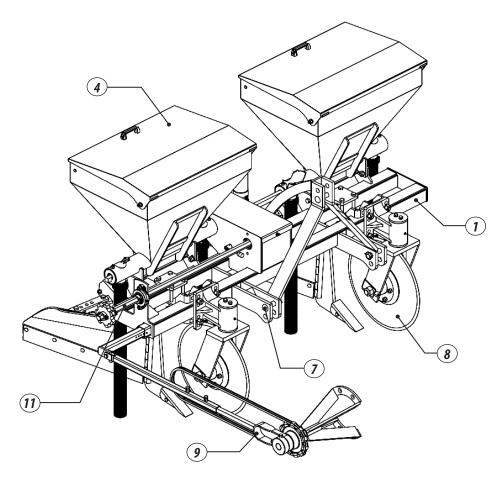
11 - Cart

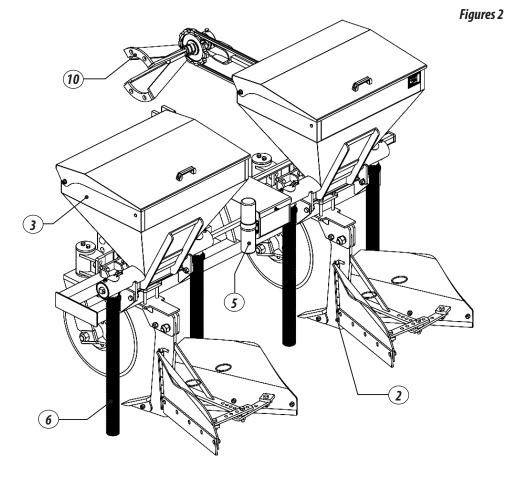
12 - Transmission system shaft





SULCADOR ADUBADOR BALDAN - DESARME POR FUSÍVEL (SAB-DF)





03. COMPONENTS

- 01 Chassis
- 02 Furrower rod
- 03 Fertilizer tank
- 04 Fertilizer tank cap

- **05** Handbook and Catalog container
- **06** Fertilizer conductor hose
- 07 Coupling pin cat. II
- 08 Cutting Disc

- 09 Ratchet disarming rod
- 10 Gear Support
- 11 Transmission system shaft

04. TECHNICAL SPECIFICATIONS

Table 1

Model	Nr. of lines	Spacing between lines (mm)	Total length (mm)	Total width (mm)	Total height (mm)	Fertilizer hopper (L)	Fertilizer flow (Kg/ha)	Hitch	Approx. Weight (Kg)	Minimum Tractor Power (Hp)
CAMB-DF	2	1300 1400 1500	1800	2750	1700	400	200 - 1200	Cat. II	1100	75
SAB-DF	2	1300 1400 1500	1300	2750	1700	400	200 - 1200	Cat. II	900	75

^{*} Yield calculated considering working speed of 5 km / hour workday of eight hours per day and equipment yield of 85%.

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



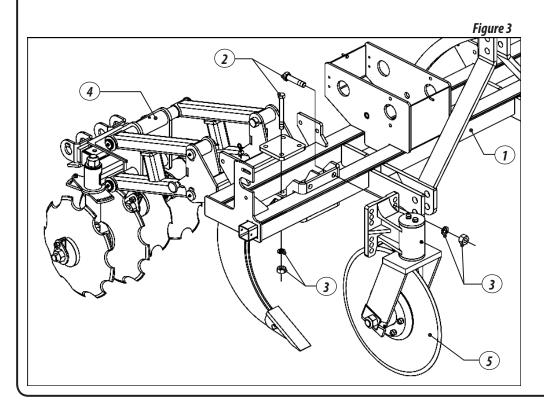


05. ASSEMBLY

01 - The grower is factory assembled, but it is necessary to prepare it for use.

POSITION OF LINES ON THE SUPPORT

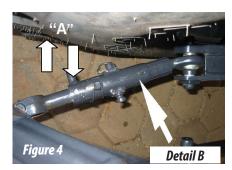
- **02** The cultivator or furrower is provided with two lines and their spacing can be changed as required.
- **03** Mark the position on the frame where the carts will be set, then loosen the screws (2), washers and nuts (3), move the cart (4) and the cutting disc (5) to the desired position, retighten after the nuts (3). Repeat this procedure for the furrower.



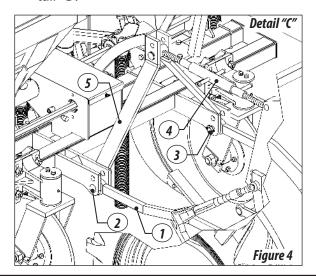
06. TRACTOR COUPLING

CENTERING THE GROWER - CAMB-DF / SAB-DF

- To center the grower in relation to the longitudinal axis of the tractor, find a flat place and proceed as follows:
- **01** Align the upper hitch of the furrow with the 3rd point of the tractor, checking if the distances "A" of the lower arms of the hydraulic are equal in relation to the tractor tires as detail "B". The lower arms must be leveled with each other.



02 - Align the tractor to the furrower in idling speed. Approach the tractor in reverse until the hydraulic arms (1) of the tractor in lowered position are as aligned as possible to the coupling pins (2). Fit the eye of the tractor arms to the hitch pins (2) and place the lock (3). Then, connect the arm of the third point of the tractor (4) to the coupling header (5) of the grower according to detail "C".

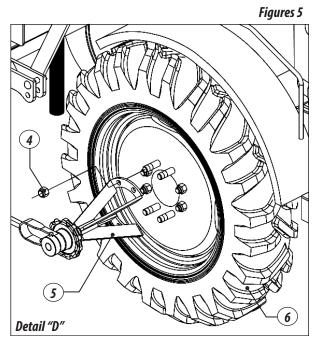


IMPORTANT

If it is necessary to increase the arm length of the third point (4), you must do so by turning the body of the arm and not just the part of the eye. The arm of the third point (4) adjusts the attack angle of the rods to the ground, increasing or decreasing their depth.

TRANSMISSION SYSTEM DRIVE

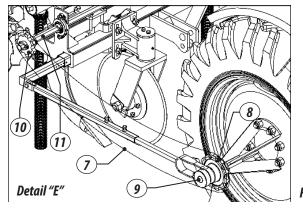
- To operate the transmission system, proceed as follows:
- **01** Remove the nuts (4) from the tractor right wheel (5), then place the support (6) on the tractor wheel prisoners, after tighten the nuts (4), as shows the detail "D".



A ATTENTION

Before engaging the ratchet disarm rod, check its length in relation to the tractor model that will pull the grower or furrower. If necessary, proceed the cutting of the rod to prevent damage to equipment.

02 - Finally, place the chain (7) connecting the gear (8) of the ratchet (9) with gear (10) transmission shaft (11), as shown in detail "E".



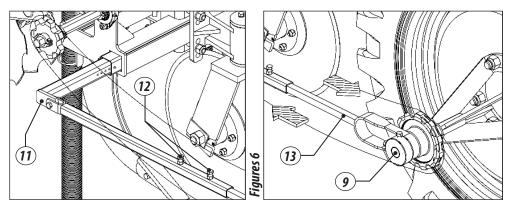


When assembling the wheel support, make sure it is compatible with the tractor model. If in doubt, refer to the manufacturer for each tractor model.

Figures 5

AUTOMATIC RATCHET DIASRM

- **03** To start or stop the fertilizer distribution, the ratchet (9) has automatic disarm that is driven by a rod (13) raising or lowering the equipment on the tractor hydraulic.
- **04-** To adjust the distance of the ratchet (9) in the support (11), loosen the screws (12) that lock the rod (13), after re-tighten the screws (12).



IMPORTANT

The motor chain (7) must not be too tight, not to damage the transmission system.

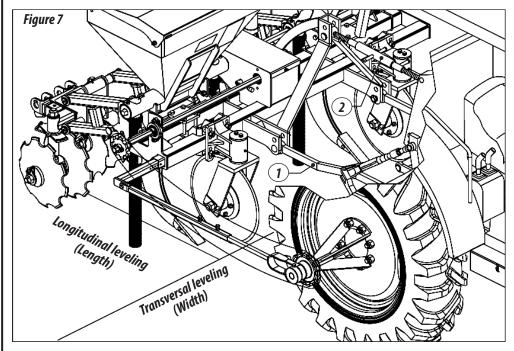


07.ADJUSTMENTS

LEVELING THE GROWER - CAMB-DF / SAB-DF

INSTRUCTION MANUAL

- For the CAMB to work well, it must be leveled in both directions (transversal / longitudinal). The leveling in the transversal direction (width) is achieved by operating both arms of the tractor hydraulic (1), so that they remain with the same length. Then, do its longitudinal leveling (length) by operating on the connecting arm of the third point (2), decreasing or increasing its length. After having performed the operations above, proceed as follows:
- 01 Note that the rods must be parallel to the ground.
- **02** The working speed varies with soil conditions. An average speed of 4-5 Km / hour is recommended.

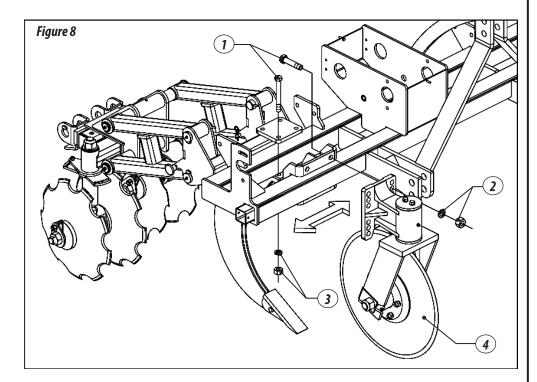




The chassis of the implement must be properly leveled in relation to the ground when in depth work.

ADJUSTING THE SPACING BETWEEN RODS - CAMB-DF / SAB-DF

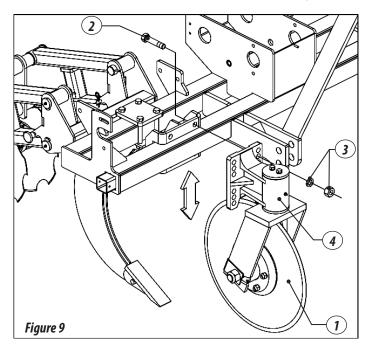
01 - To increase or decrease the spacing between rods and cutting discs of CAMB-DF / SAB-DF, you must loosen the screws (1), washers and nuts (2) and move the rod (3) and cutting discs (4) to the desired position. Then, retighten them.



ADJUSTING THE CUTTING DISC DEPTH

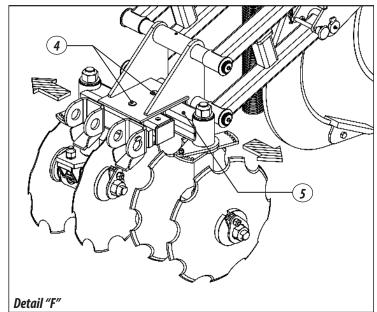
01 - The CAMB-DF and SAB-DF have cutting discs from 23 " to work in areas of reduced preparation or of remnants of annual crops used in rotation in reform areas, facilitating their cutting.

02 - To adjust the cutting disc depth (1), loosen the screws (2), washers and nuts (3) and move the set (4) to the desired position. Then, tighten them.

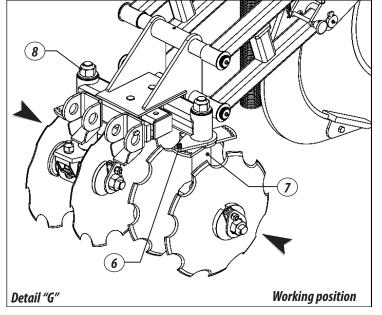


ADJUSTMENT OF THE PANTOGRAPH KIT

- **01** Intended to make the area cultivation after sugarcane planting through Kit composed of two pantographic sets of 18 "discs and leveler (optional).
- **02** To adjust the disc harrow width, loosen the nuts and screws (4) that secure the tubes (5), moving them to the desired width. Then, retighten
- 03 nuts and screws (4), as shown in the detail "F".
- **04** Then, adjust the cutting angle of the discs, release nuts and screws (6) than, fix the shoe (7) of the disks, loosen the nut (8), after, rotate the disc section to the desired position. After, retighten the screws and nuts (6), as shown in detail "G".



Figures 10

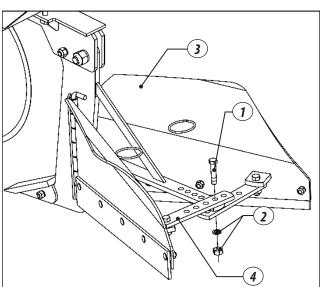




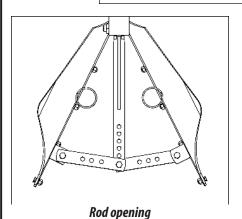


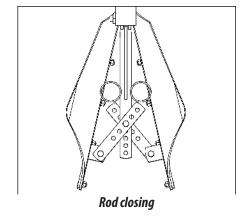
ADJUSTING THE OPENING OF THE FURROWING ROD

- **01** To adjust the furrow opening, proceed as follows:
- **02** Remove the screw (1), washer and nut (2), move the moldboard (3) to the desired setting, through the adjustment bar (4). Then, replace the screw (1), washer and nut (2).



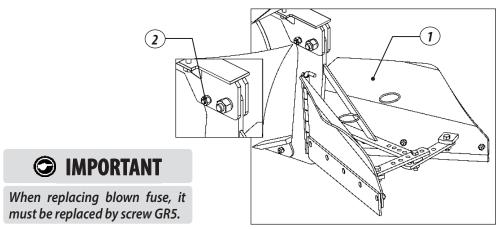
Figures 11





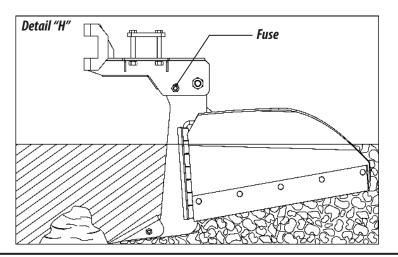
08. AUTOMATIC DISARM SYSTEM BY FUSE

01 - SAB-DF has in its rods (1) a system of automatic disarm by fuse (2).



Figures 12

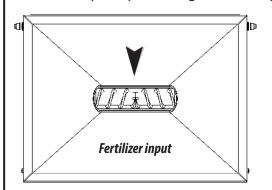
02- This system works through a security screw that when suffering excessive load during operation as shown in detail "H", it breaks giving the necessary discharge to the equipment, avoiding damaging it.

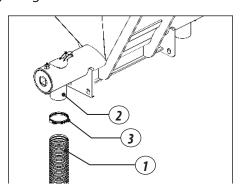


09. FERTILIZER DISTRIBUTION SYSTEM

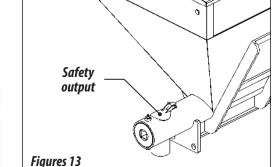
FERTILIZER DISTRIBUTION SYSTEM

01 - To conduct the fertilizer from the distributor to the ground, connect the hoses (1) to the high-flow fertilizer distribution spouts (2) by fixing them with the clamps (3) preventing them from getting bent or folded.





- **02** The high-flow individual distribution system has safety output because if the hose is clogged when the fertilizer gets into the feeder, it will start to leak through this safety output, ensuring operating without damaging the system.
- **03** If this occurs, proceed to clean the feeder up to the end of the hose near the furrower. Clogging can occur due to the presence of roots, pieces of plastic and other objects.



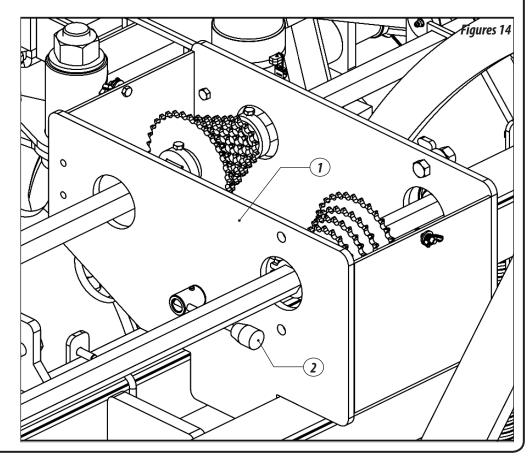
IMPORTANT

Check the daily distribution spouts, hoses and proceed to clean the outputs of the same if necessary.

10. RE-TRANSMISSION SYSTEM

ADJUSTING THE FERTILIZER FLOW

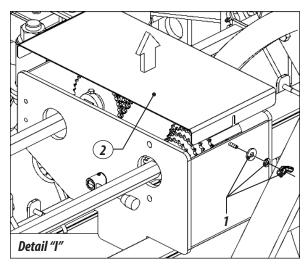
- **01 -** The fertilizer flow adjustment is made through the re-transmission system (1). The re-transmission system triggers the fertilizer distribution system through the lever (2) guaranteeing rapid gear exchange.
- **02** The re-transmission system consists of several gears synchronized with the gear set of the drive shaft of deposits, allow various combinations in the fertilizer distribution.



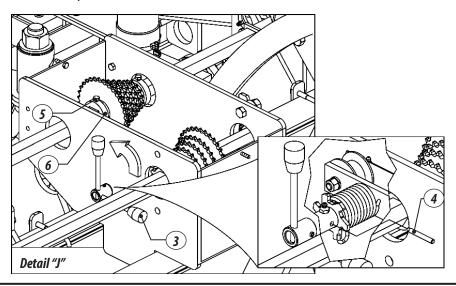


03 - To change the re-transmission speed, remove the wing nuts and washers (1) and the re-transmission cover (2), as shown in the detail "I".

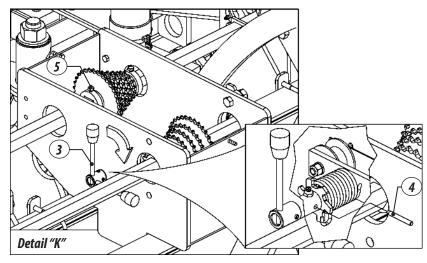
Figures 14



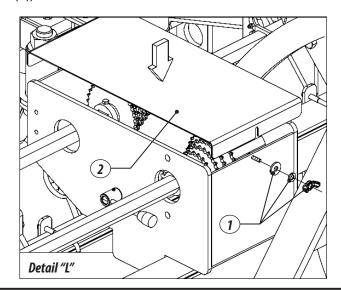
04- Then, push the lever (3) and lock with the pin (4), releasing the chain, then loosen the screws (5) from the support gear sleeves (6) and move them to the desired position, as shown in the detail "J".



05 - Align the gears, tighten the screws (5) and place the chain in the selected gears according to the distribution to be made, remove the pin (4) and release lever (3), as shown in the detail "K".

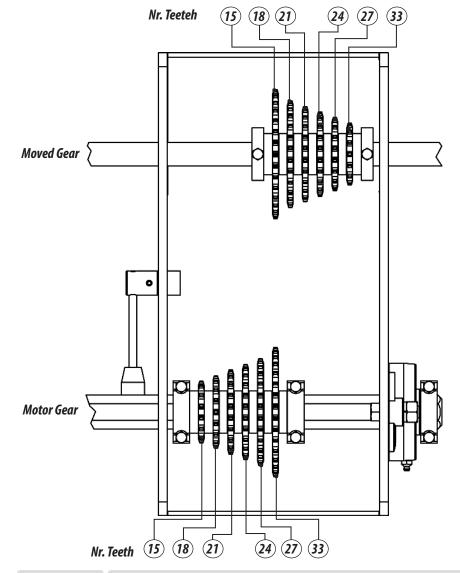


06 - Finish by assembling the re-transmission cover (2), fixing it with washers and wing nuts (1), as shown in the detail "L".



11. APPROXIMATE TABLE FOR FERTILIZER DISTRIBUTION, RE-TRANSMISSION - CAMB-DF / SAB-DF

Fertilizer Distribution Table - CAMB-DF / SAB-DF						
Motor Gear	Moved Gear	Grams/50m	Spacing (mm) Ka/Ha			
		per line	1300	1400	1500	
15	33	1055	162	151	141	
15	27	1168	180	167	156	
18	33	1253	193	179	167	
15	24	1308	201	187	174	
18	27	1387	213	198	185	
13	18	1398	215	200	186	
21	33	1451	223	207	193	
15	21	1486	229	212	198	
18	24	1553	239	222	207	
21	27	1606	247	229	214	
24	33	1648	254	235	220	
15	18	1721	265	246	229	
18	21	1765	272	252	235	
21	24	1799	277	257	240	
24	27	1825	281	261	243	
27	33	1846	284	264	246	
21	21	2044	314	292	273	
33	27	2263	348	323	302	
27	24	2289	352	327	305	
24	21	2323	357	332	310	
21	18	2367	364	338	316	
18	15	2427	373	347	324	
33	24	2534	390	362	338	
27	21	2601	400	372	347	
24	18	2689	414	384	359	
21	15	2810	432	401	375	
33	21	2880	443	411	384	
27	18	3012	463	430	402	
24	15	3194	491	456	426	
33	18	3335	513	476	445	
27	15	3577	550	511	445	
33	15	3960	609	566	528	





It is recommended to do a collection test at a distance of 50 meters before starting using the implement.





12. PRACTICAL CALCULATION FOR FERTILIZER DISTRIBUTION

- **01** Determine the spacing between lines and the amount of fertilizer to be distributed per bushel (Aa) or hectare (Ha).
- **Example**: Seed drill with spacing of 1500 mm to distribute 400 kg of fertilizer per hectare, use the formula below:
- Formula:

$$X = \underbrace{E \times Q}_{A} \times D$$

• Formula data:

• E = Spacing between lines (mm)

• Q = Amount of fertilizer to be distributed (Kg)

• A = Area to be fertilized (m²)

• D = Distance of 50 meters (test)

• X = Grams of fertilizer in 50 meters

Solve:

$$X = 1500 \times 400 \times 50$$

• $X = 60,00 \times 50 = 3000 \text{ grams}$

• X= 3000 grams in 50 meters per fertilizer tank

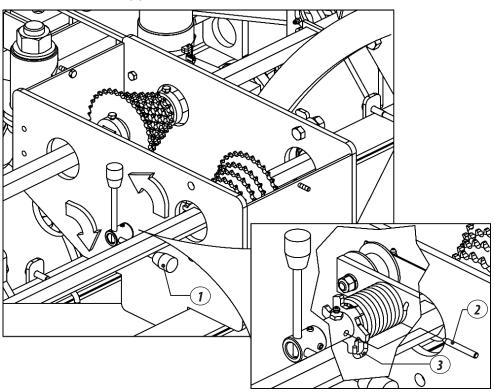
PRACTICAL TEST TO MEASURE THE FERTILIZER DISTRIBUTION AMOUNT

- **01** For greater accuracy in the fertilizer or seed distribution, do the test to find the amount to be distributed on the planting site, because for each type of soil, there is a different condition.
- 02 Check the test distance in the table, we chose 50 linear meters.
- **03** Fill the seed tanks at least halfway. Run at least 10 meters outside the testing area, so that the seeds and fertilizer fill the feeders.
- **04** Place containers for collection in the fertilizer outputs. Move the tractor in the testing area, always at the same speed that will be used in planting, from 7 to 9 km / h.
- **05** After running the delimited space, collect the fertilizer for weighing. If it is necessary to increase or decrease the amount of fertilizer, proceed through re-transmission system.

13. MAINTENANCE AND OPERATION

CHAIN TENSIONER

- The chain tensioner is provided with a torsion spring for higher flexibility, and if greater pressure is necessary, proceed as follows:
- **01** Push the lever (1) and lock it with the pin (2), releasing the chain. Then, release the spring (3) and engage in the next adjustment, giving it greater pressure on the tensioner. Then, position the chain again, remove the pin (2) and release the lever (1).





Check the chain tension every day, the normal clearance should be 1 cm in their center.

LUBRICATION

- **01 -** Lubrication is essential for a good performance and higher durability of moving parts of your grower, helping reducing maintenance cost.
- **02** Before beginning operation, thoroughly lubricate all grease fittings, always observing lubrication intervals on the following pages. Make sure the lubricant is of good quality; avoid using products contaminated by water, dirt and other agents.

TABLE OF GREASE AND EQUIVALENTS

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

IMPORTANT

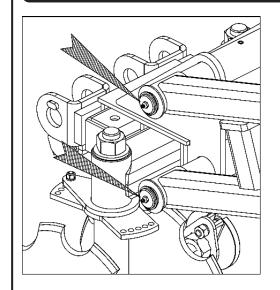
If there are other lubricants and / or equivalent greases not listed in this table, refer to the manufacturer's technical handbook.

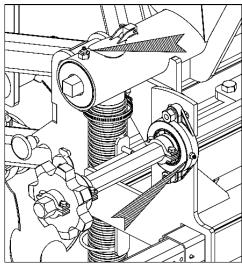


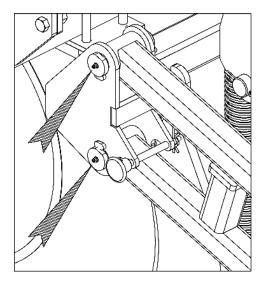


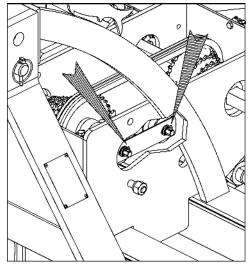
14.LUBRICATION POINTS

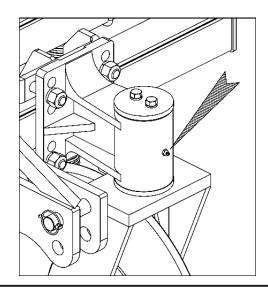
LUBRICATE EVERY 10 HOURS

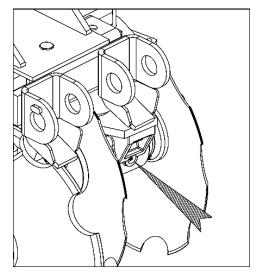


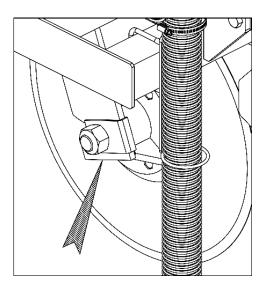












15.OPERATIONAL MAINTENANCE

Table 4

PROBLEMS	PROBABLE CAUSES	SOLUTIONS	
During planting, fertilizer leaks through the safety outputs.	Hoses are clogged or there are pieces of plastic in the spiral hoses that conduct the fertilizer.	Unclog the hoses or remove the upper gutter that gives access to coil, rotate the shaft to the opposite side until the foreign body is removed.	
Hub shaft of the fertilizer tank does not turn.	Spiral blocked with wet fertilizer or excess fertilizer in closed line.	Unclog the coils, check if there is loose gutter and if the fertilizer is coming in through their sides.	
Front of the tractor raises when it lifts the grower.	Lack of ballast in the front of the tractor.	Ballast to the front of the tractor.	
The grower moves aside during cultivation in hilly terrain.	Lower arms of the tractor are loose coupling with side displacement.	Attach the lower arms of the tractor hitch to eliminate side movement.	
	Improper adjustment of springs.	Apply the correct adjustment on the springs.	
Rods often disarm.	Area with obstacles (wood, stone). Soil too compressed.	Reduce work speed or avoid them.	





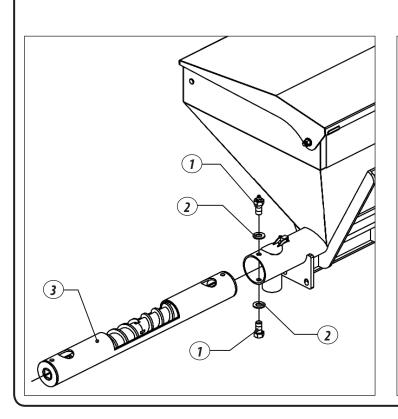
16. CLEANING

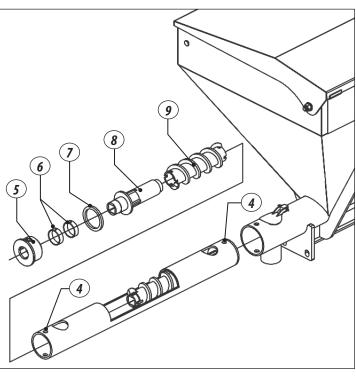
FERTILIZER SYSTEM

- After work, do not leave fertilizer in the tank, the tank should be cleaned as follows:
- **01** Loosen the screws (1), washers (2), remove the fertilizer conductor (3). Then, loosen the screws (4), remove the sleeves (5), guide rings (6), bushing (7), conductive sleeve (8) and the conductor (9).
- **02** Proceed to clean the tank, shaft and also the distributing spouts and then rinse them under running water.
- **03** Reassemble all components observing the correct assembly of the fertilizer distribution system.

A ATTENTION

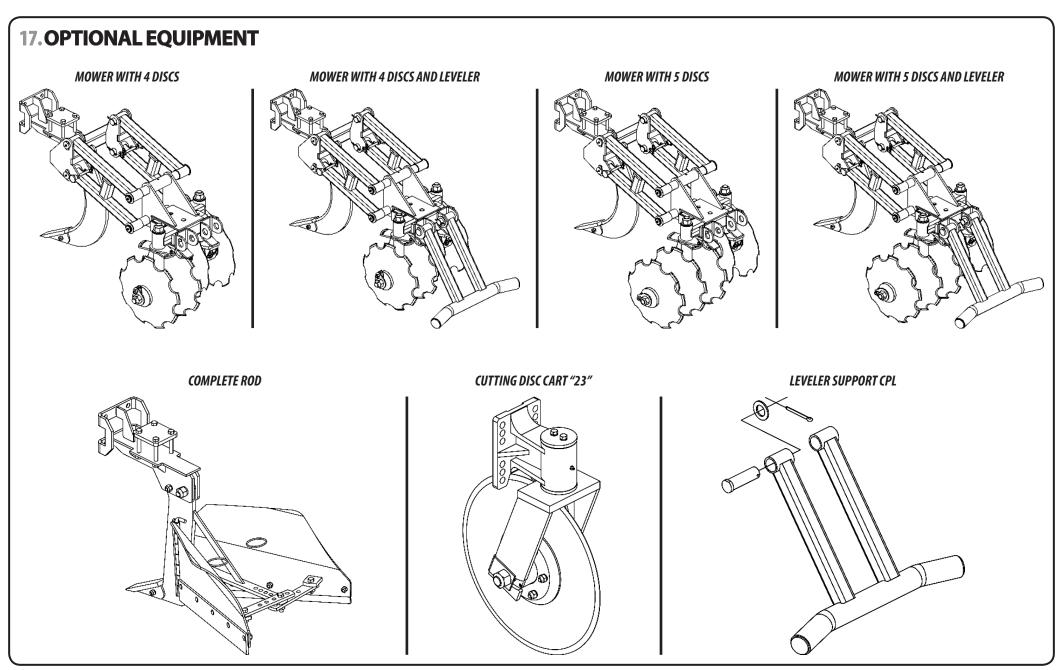
- * Fill the fertilizer tank always at the workplace.
- * Avoid any kind of impurity inside the fertilizer tank.
- * Make dosage measurement daily.
- * Do not insert fingers or objects into holes or in the inner tank in motion because the helical conductor can cause serious injuries.





IMPORTANT

- 01- Wash the CAMB-DF or SAB-DF. Do not use chemical cleaners as they may damage its paint.
- **02-** Give an overall paint coat at points where there is need.
- **03-** Spray it with oil or any other type of anticorrosion agent.
- **04-** Check all moving parts of the CAMB-DF or SAB-DF, if the present wear or clearance, make the necessary adjustment or the replacement of parts, leaving it ready for use.
- **05** Use original Baldan original parts.
- **06-** Store the CAMB-DF or SAB-DF in a dry place, protected from sun and rain.







18. IDENTIFICATION

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

ALWAYS REQUIRE BALDAN ORIGINAL PARTS





MARKETING EDITION OF INSTRUCTION MANUALS AND PART CATALOGS

Revision: 01 CPT: SABDF01917 CPT: CAMBDF12917

Code: 6055010446-9



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



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

PRODUCT IDENTIFICATION

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

Owner's name:	
Dealer:	
Farm:	
City:	State:
Model:	Warranty:
Inovice number:	
Date of purchase://	Serial number:
NOTES:	









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