

CRI 48-60

Drag Type Offset Disc Harrow Remote Control



Presentation

e appreciate the preference and would like to congratulate you for excellent choice you just made, since you have acquired a product manufactured with **BALDAN**



IMPLEMENTOS AGRÍCOLAS S/A technology.

This manual will guide you through the procedures required since its acquisition until operational procedures of usage, safety and maintenance.

BALDAN assures that it has delivered this implement for resale in full and in perfect conditions.

Resale was responsible for the custody and maintenance during the period in its possession, and also for the assembly, retightening, lubrication and overhaul.

During the technical delivery, dealer should guide the user regarding maintenance, safety, their obligations in eventual technical assistance, strict compliance with the warranty term and reading the instructions manual.

Any technical assistance request while in warranty must be made to the dealer from whom you have purchased it.

We reiterate the need for a careful read of the warranty certificate and compliance of all items from this manual, because by doing so you will increase the life of your device.



CRI 48-60

Drag Type Offset Disc Harrow Remote Control

BALDAN IMPLEMENTOS AGRÍCOLAS S/A. CNPJ: 52.311.347/0009-06

CNPJ: 52.311.347/0009-06 Insc. Est.: 441.016.953.110



Scan the QR Code on the identification plate of your device and access this Instruction Manual online.







■ <u>Index</u>

PRESENTATION	03
BALDAN WARRANTY	07
GENERAL INFORMATION	08
To the owner	08
SAFETY RULES	09-12
To the operator	09
PPE Equipment	12
WARNINGS	13-14
COMPONENTS	15
CRI - Drag Type Offset Disc Harrow Remote Control	15
DIMENSIONS	16
CRI 48 / 52 / 56 / 60 Discs	16
SPECIFICATIONS	17
CRI - Drag Type Offset Disc Harrow Remote Control	17
ASSEMBLY	18
Discs section assembly	18
Discs section assembly - CRI 48 discs	19
Discs section assembly - CRI 52 discs	20
Discs section assembly - CRI 56 discs	21
Discs section assembly - CRI 60 discs	22
Assembly of the right main frame in te left main frame	23
Gangs assembly	24
Assembly of the gangs in the main frame	25
Assembly of the disc sections in the gangs	26
Scrappers Assembly	27
Wheel shaft support assembly	28
Assembly do suporte do eixo da roda no montante	29
Wheels assembly	30
Hitch drawbar assembly	31
Hydraulic cylinder assembly on the hitch drawbar	32
Hydraulic cylinder assembly on the main frames	33
Signpost assembly	34
HITCH	36
LEVELING	37-38
REGULATIONS	39
Regulation for transportation - Part I	39
Regulation for transportation - Part II	40
Regulation for transportation - Part III	41
Adjustment of disc harrow opening	42



Index

Working depth adjustment - Part I	43
Working depth adjustment - Part II	44
Adjustment of disc harrow displacement - Part I	45
Adjustment of disc harrow displacement - Part II	46
OPERATION	48
Recommendations for operation - Part I	47
Recommendations for operation - Part II	48
Direction of maneuvers	48
How to start harrowing	49
Harrow from the outside in	49
Harrow from the inside out	50
Blocks with contour lines	50
CALCULATIONS	51
Approximate hourly production	51
MAINTENANCE	52
Tire pressure	52
Lubrication	53
Greases and equivalents table	53
Lubricate every 24 hours of work	54
Disc section bearings adjustments	55
Bearing oil	55
Operational Maintenance	56
Care	<i>57</i>
General cleaning	57-58
Conservation of the harrow - Part I	58
Conservation of the harrow - Part II	58
LIFTING	60
Lifting points	60
OPCIONAL	60
Cutting Disc	60
IDENTIFICATION	61



Baldan Warranty

BALDAN IMPLEMENTOS AGRÍCOLAS S/A ensures the dealer normal performance of the implement for a period of six (6) months as of the delivery date on the retail invoice to the first final consumer.

During this period, **BALDAN** undertakes to repair defects in material and/or of manufacture of its liability, including labor, freight and other expenses of the dealer's liability.

In the warranty period, request and replacement of eventual defective parts shall be made to the dealer of the area, who will submit the faulty piece for **BALDAN** analysis.

When this procedure is not possible and the resolving capacity of the dealer is exhausted, the dealer will request the support of **BALDAN** Technical Assistance through a specific form distributed to dealers.

After analyzing the replaced items by **BALDAN** Technical Assistance, and concluding that it is not a warranty, then the dealer will be responsible for the costs related to the replacement; as well as material expenses, travel including accommodation and meals, accessories, lubricant used and other expenses arising from the call out to Technical Assistance, and **BALDAN** company is authorized to carry the respective invoice in the name of the resale.

Any repair carried out in the product within the dealer warranty deadline will only be authorized by **BALDAN** upon previous budget presentation describing parts and workforce to be executed.

The product is excluded from this term if it is repaired or modified by representatives not belonging to the **BALDAN** dealer network, as well as the application of non-genuine parts or components to the user's product.

This warranty is void where it is found that the defect or damage is caused by improper use of the product, failure to follow instructions or inexperience of the operator.

It is agreed that this warranty does not cover tires, polyethylene tanks, cardan shafts, hydraulic components, etc., which are equipment guaranteed by their manufacturers.

Manufacturing and/or material defects, object of this warranty term, will not constitute, under any circumstances, grounds for termination of a purchase agreement, or for indemnification of any nature.

BALDAN reserves the right to change and/or perfect the technical characteristics of its products, without previous notice, and without obligation to proceed in the same way with the products previously manufactured.



General Information

To the owner

BALDAN IMPLEMENTOS AGRÍCOLAS S/A is not responsible for any damaged caused by accident due to usage, transportation, or in the improper or incorrect transportation of its implement, whether by negligence and/or inexperience of any person.

Only people with complete knowledge of the tractor and the implement should carry their transportation and operation.

BALDAN is not responsible for any damaged caused in unpredictable or unrelated situations to the normal use of the implement.

The incorrect handling of this equipment may result in severe or fatal accidents. Before starting the equipment, carefully read the instructions contained in this manual. Make sure that the person responsible for the operation is instructed as the correct and safe handling. Also make sure that the operator has read and understood the instructions manual of the product.



NR-31 - SAFETY AND HEALTH AT WORK IN AGRICULTURE, LIVESTOCK FORESTRY, FOREST EXPLORATION AND AQUACULTURE.

The purpose of this Regulatory Standard is to establish the precepts to be observed in the organization and in the work environment, in a manner compatible with the planning and development of agriculture, livestock, forestry and aquaculture activities with the safety and health and environment work environment.

MR. OWNER OR OPERATOR OF THE EQUIPMENT. Read and carefully comply with provisions of NR-31.

For more information, refer to the site and read in full NR-31. http://portal.mte.gov.br/legislacao/normas-regulamentadoras-1.htm



Safety Rules

To the operator



THIS SYMBOL INDICATES IMPORTANT SAFETY WARNING. IN THIS MANUAL, WHENEVER YOU FIND IT, READ THE FOLLOWING MESSAGE CAREFULLY AND PAY ATTENTION TO THE POSSIBILITY OF PERSONAL ACCIDENTS.



ATTENTION



Carefully read the instructions manual to learn about the recommended safety practices.



ATTENTION



Only start to operate the tractor when you are properly seated and with the seat belt locked.



ATTENTION



Do not transport people or equipment on the tractor.



!\ ATTENTION



There are risks of severe injuries due to tipping when working sloped terrains. Do not over speed.



ATTENTION



Do not work with the tractor if the front has insufficient ballast to the rear equipment. Should there be a trend to lift, add weights or ballasts to the front or the front wheels.



ATTENTION



Before performing any maintenance in your equipment, make sure it is properly stopped. Avoid being run over.



?\ ATTENTION



Be careful when handling the CRI support leg, as there is a risk of accidents.



Safety Rules



FOLLOW ALL RECOMMENDATIONS, WARNINGS AND SAFE PRACTICES RECOMMENDED IN THIS MANUAL. UNDERSTAND THE IMPORTANCE OF YOUR SAFETY. ACCIDENTS MAY LEAD TO DISABILITY OR INCLUDING **DEATH. REMEMBER, ACCIDENTS CAN BE AVOIDED!**

ATTENTION



Do not make adjustments with the CRI in operation. When doing any service on the CRI, turn the tractor Use appropriate tools.

ATTENTION



When looking for possible leaks in hoses, use a cardboard or wood. never use your hands. Avoid fluid incision into the skin.

ATTENTION



When transporting the CRI, do not exceed the speed of 25Km/h or 15 MPH, avoiding risks of damages and accidents.

?∖ Attention





When working with the CRI, do not exceed the speed of 12Km/h or 7 MPH, avoiding risk of damages and accidents.

ATTENTION



Remove the ignition key before performing any maintenance on the CRI. Protect yourself from possible injury or death caused by an unforeseen CRI start up. If the CRI is not properly engaged, do not start the tractor.

ATTENTION



Hydraulic oil works under pressure and may cause serious injuries if there are any leakages.

Periodically check hoses for conservation. If there are any sign of leakage, replace them immediately. Before connecting or disconnecting hydraulic hoses, relief system pressure by activating the command with the tractor power switched off.



Safety Rules

ATTENTION



Always maintain places of access and work free of residues such as oil or grease to prevent accidents.

ATTENTION



Before commencing work or transportation to CRI, check for any nearby persons or obstructions.

ATTENTION



Avoid heating parts near the fluid lines. Heating may generatee fragility in the mate-

rial, rupture and exit of the pressurized fluid, causing burns and injuries

ATTENTION



Keep the joint area free while the CRI is in operation.

In closed curves, prevent tractor wheels

from touching the head.

ATTENTION



Never weld the tiremounted wheel, the heat may cause increased air pressure and cause the tire to burst.

When filling the tire, position yourself besides the tire, never in front of it. To inflate a tire, always use a containment device (inflation cage).

ATTENTION



Always stay away from the active elements of the CRI (discs), they are sharp and can cause acci-

dents.

When performing any service in the discs, wear safety gloves.

A

ATTENTION



Disposing of waste improperly affects the environment and the environment, as it will pollute rivers, canals or the soil. Inform yourself about the proper way of recycling or disposing residues.

PROTECT THE ENVIRONMENT!



Safety Rules

PPE Equipment

ATTENTION

DO NOT WORK WITH THE CRI WITHOUT WEARING PPE (SAFETY EQUIPMENT). IGNORING THIS WARNING MAY CAUSE DAMAGES TO HEALTH, SEVERE ACCIDENTS OR DEATH.

When performing certain procedures with the **CRI**, wear the following Safety Equipment (PPE):





O IMPORTANT

Safety practice must be performed in all stages of working with the CRI, thus avoiding accidents such as impact of objects, fall, noise, cuts and ergonomics, in other words, the person responsible for operating the CRI is subject to internal and external bodily damage.

OBSERVATION

All PPEs (Safety Equipment) should have certificate of authenticity.











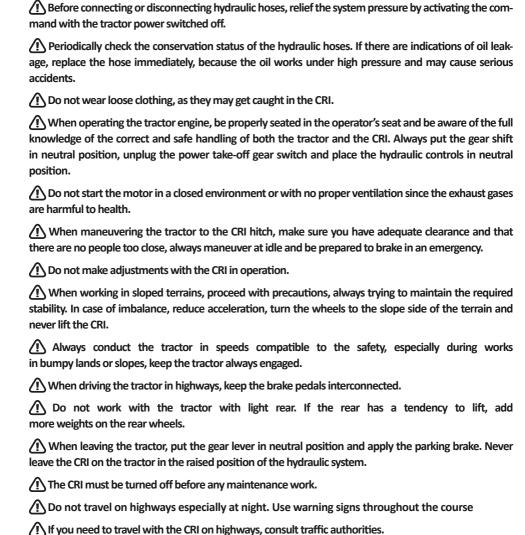






When operating with the CRI, do not let people stay close or on it.
When performing any maintenance service, use PPEs equipment.

Warnings





Warnings

1 The CRI must not be operated by untrained people, i.e. people who do not know to properly operate it.

① Do not transport or work with the CRI near obstacles, rivers or streams.

The transportation of people on self-propelled machines and implements is forbidden.

⚠ Changes to the original CRI characteristics are not allowed, as they may alter the safety, operation and life of the CRI.

Read all safety information contained in this manual and the CRI carefully.

Read or explain all the procedures of this manual to the operator who cannot read.

Always check that the CRI is in perfect conditions of use. In the event of any irregularity that may interfere with the operation of the CRI, ensure proper maintenance before any work or transportation.

Maintenance and especially inspection in CRI risk areas should be done only by a qualified or qualified worker, observing all safety guidelines. Before starting maintenance, disconnect all CRI drive systems.

Periodically check all components of the CRI before using it.

① Due to the equipment used and work conditions on field or in maintenance areas, precautions are required. Baldan has no direct control over precautions, so it is the owner's responsibility to implement safety procedures while working with CRI.

• Check the recommended minimum tractor power for each CRI model. Only use tractor with power and ballast compatible with the load and topography of the terrain.

(1) When transporting the CRI, travel at speeds compatible with the terrain and never exceed 16 km/h, as this reduces maintenance and consequently increases the life of the CRI.

Alcoholic beverage or some medications may cause loss of reflexes and change the operator's physical conditions. Therefore, never operate this CRI under the influence of these substances.

Read or explain all the procedures of this manual to the operator who cannot read.

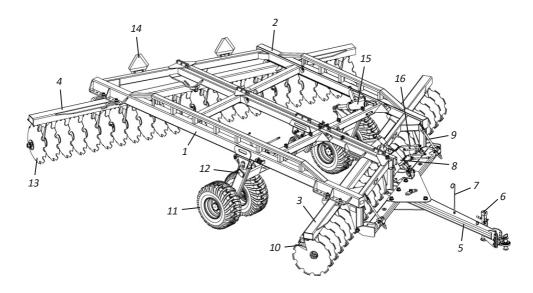


Components

• CRI - Drag Type Offset Disc Harrow Remote Control

- 1. Right main frame
- 2. Left main frame
- 3. Front gang
- 4. Rear gang
- 5. Hitch drawbar
- 6. Lifting Support
- 7. Hoses support
- 8. Cylinder of drawbar articulation

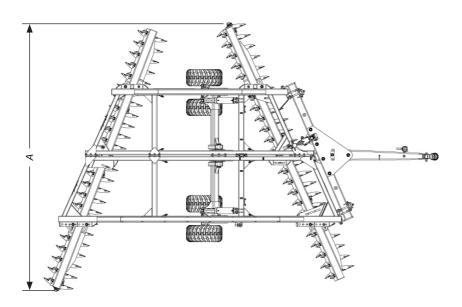
- 9. Stabilizer rod
- 10. Scrapper
- **11.** Tyre
- 12. Wheel shaft support
- **13.** Disc
- 14. Signpost
- 15. Cylinder of wheel articulation
- 16. Hydraulic hoses

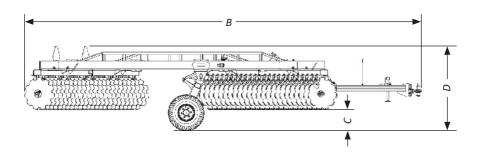




Dimensions

• CRI 48 / 52 / 56 / 60 Discs





Model	No. of Discs	Measure A (mm)	Measure B (mm)	Measure C (mm)	Measure D (mm)
CRI	48	6322	9430	502	1865
CRI	52	6694	9862	502	1865
CRI	56	7200	9974	502	1865
CRI	60	7690	11050	502	1865



Specifications

• CRI - Drag Type Offset Disc Harrow Remote Control

Model	No. of Discs	Width of Job (mm)	Diameter of the Discs (ø)	Discs Concave (mm)	Diameter Axis (ø)
CRI	48	6230	28" - 30"	7,5	1.5/8"
	52	6745	28" - 30"	7,5	1.5/8"
	56	7235	28" - 30"	7,5	1.5/8"
	60	7745	28" - 30"	7,5	1.5/8"

Model	No. of Discs	Approx	ight ximate g)	Wattage Tractor (HP)	Tire	S
		28"	30"		Quantity	Model
CRI	48	7300	7470	310 à 330	04	400x60
	52	7720	7900	340 à 360	04	400x60
	56	7910	8100	365 à 380	04	400x60
	60	8270	8480	390 à 415	04	400x60

Disc spacing	270 mm
Working depth	
Recommended maximum working speed	
Recommended maximum transport speed	

Baldan reserves the right to change and or improve the technical characteristics of its products, without prior notice, and without obligation to do so with previously manufactured products. Technical specifications are approximate and reported under normal working conditions.

EXPECTED USE OF CRI

- CRI was developed for soil preparation works in large areas and in various types of terrain.
- The **CRI** must be driven and operated only by a properly instructed operator.

NOT ALLOWED USE OF CRI

- To avoid damage, serious accident or death, DO NOT transport people over any part of the CRI.
- It is NOT allowed to use the CRI to attach, tow or push other implements or accessories.
- **CRI** must NOT be used by an inexperienced operator who does not know all the driving, command and operation techniques.



Assembly

CRI leaves the factory dismantled. To assemble it, follow the instructions below:

The **CRI** Assembly must be done by resale, through trained, qualified and qualified people for this work.

⚠ Before starting the **CRI** Assembly, look for an ideal location, where it will facilitate the identification of the parts and the Assembly thereof.

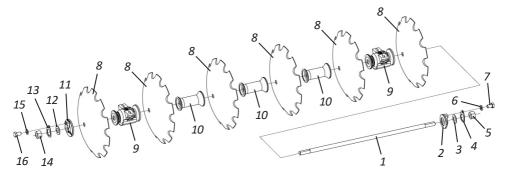
① Do not wear loose clothing, as they may get caught in the CRI.

Assembly

Discs section assembly

When starting the **CRI** Assembly, always start with the disk set for this, proceed as follows:

- 01 Place on the shaft (1) the concave thrust washer (2), flat washer (3), lock (4), nut (5), fixing it with the pressure washer (6) and the screw (7).
- **02** Then place the disc (8), bearing (9), another disc (8), separator spool (10) on the shaft (1), and so on.
- 03 When the set is complete with all the discs, bearings, separating reels, place the convex thrust washer (11), flat washer (12), lock (13), nut (14), tightening it with the key until it is firm the set.
- 04 Once this is done, put on the disc set and tighten the nut (14) with impacts. When you are almost getting maximum tightness, adjust the lock (13) with the convex washer (11), always tightening the nut until the drilling coincides, fix it with the pressure washer (15) and the screw (16).



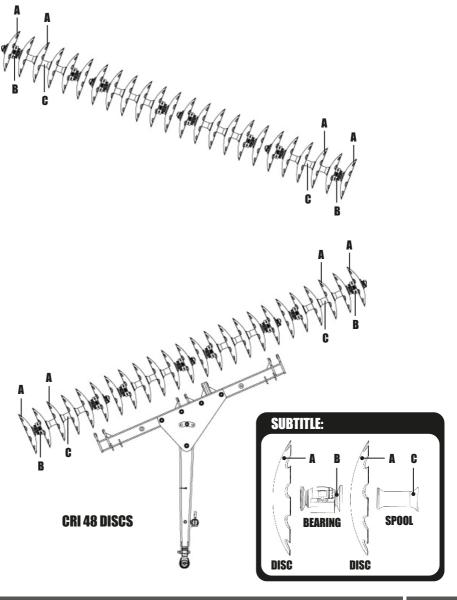


Check the right side of the separator spools and bearings, according to the concavity of the discs.



• Discs section assembly - CRI 48 discs

Check below the Assembly of the CRI 48 discs sections.

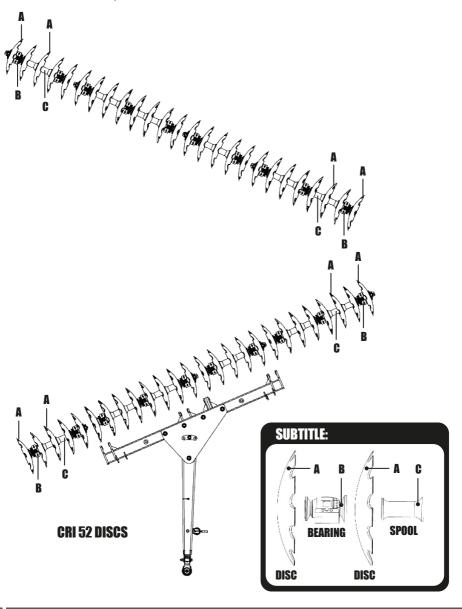




Assembly

• Discs section assembly - CRI 52 discs

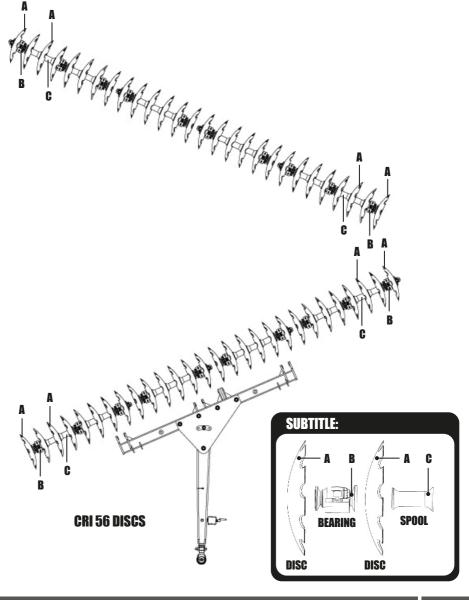
Check below the Assembly of the CRI 52 discs sections.





• Discs section assembly - CRI 56 discs

Check below the Assembly of the CRI 56 discs sections.

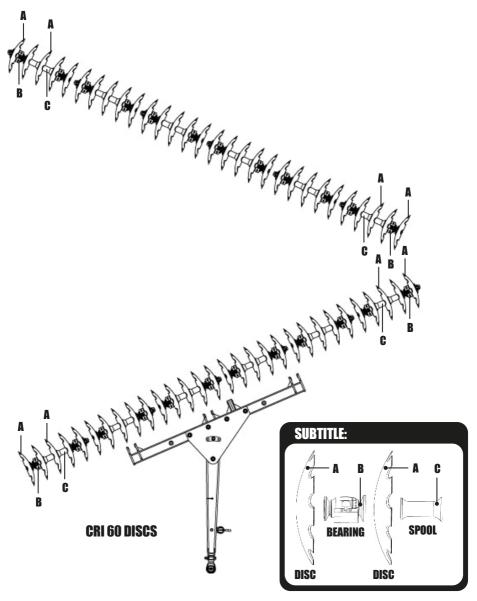




Assembly

• Discs section assembly - CRI 60 discs

Check below the Assembly of the CRI 60 discs sections

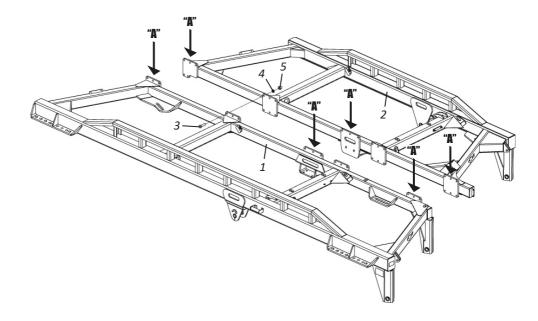




· Assembly of the right main frame in te left main frame

Start the CRI Assembly by the main frame. For this, proceed as follows:

01 - Couple the right upright (1) with the left upright (2), fixing using the screws (3), lock washers (4) and nuts (5).



NOTE Fix the main frames with the screws (3), lock washers (4) and nuts (5) at all other points "A".

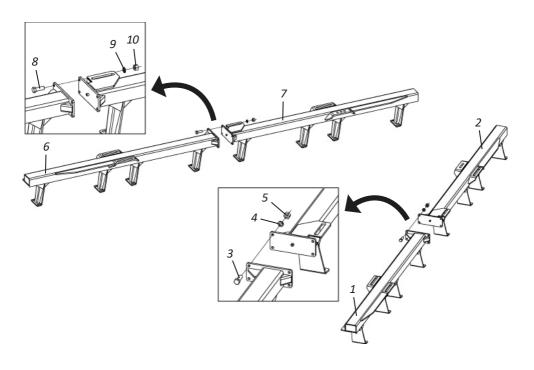


Assembly

Gangs assembly

After coupling the main frames, attach the gangs. For this, proceed as follows:

- 01 Place the front and rear gangs in a flat, clean place.
- **02** Then, attach the right front frame (1) to the left front frame (2) by fixing using the screws (3), lock washers (4) and nuts (5).
- **03** Then, attach the right rear frame (6) to the left rear frame (7) by fixing using the screws (8), lock washers (9) and nuts (10).

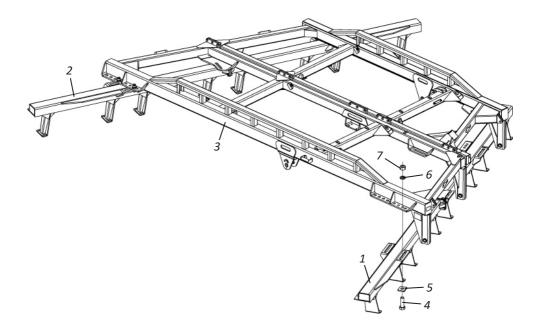




• Assembly of the gangs in the main frame

After attaching the gangs, fix the frames to the main frames. For this, proceed as follows:

- 01 Place the front (1) and rear (2) gangs in a flat, clean place.
- 02 Then, place the main frame (3) on the front (1) and rear (2) gangs, fixing them through the screw (4), lock (5), lock washer (6) and nut (7).





NOTE Repeat the above procedure for the assembly of the gangs in the right central main frame.

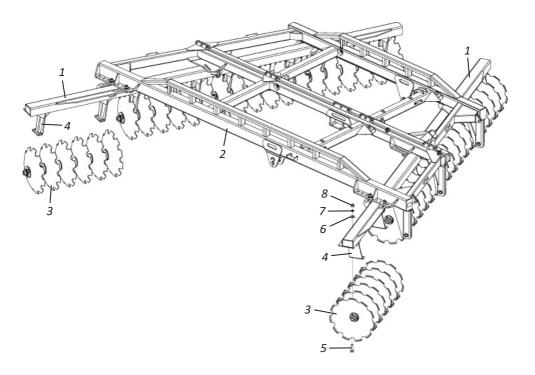


Assembly

Assembly of the disc sections in the gangs

After fixing the gangs (1) on the main frame (2), fix the disc sections (3) for this, proceed as follows:

- **01** Lift the front or rear of the disc harrow and place the disc section (3) in line and match the drilling of the shoes (4) with those of the bearings and make the fixation using the screws (5), flat washers (6), lock washers (7) and nuts (8).
- **02** Then, lift the other part of the grid and repeat the operation, checking the concavity of the disks from one section to the other, which should be opposite.
- 03 When finishing the Assembly, check that the shoes (4) were facing the concavity of the discs.





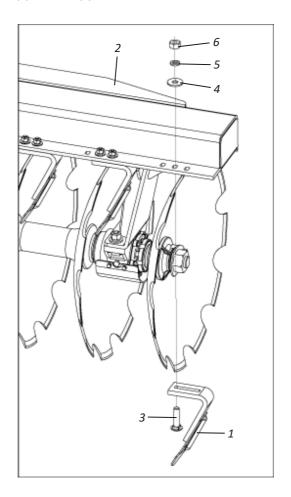
When mounting the disc sections on the frames, note that the frame shoes should face the disc's concavity.



Scrappers Assembly

After mounting the disk sections on the gangs, fix the wipers (1), to do this, proceed as follows:

01 - Place the scrappers (1) on the frames (2), fixing using the screws (3), plain washers (4), pressure washers (5) and nuts (6).





When installing the cleaners, they should be 0.5 to 1.0 cm away from the discs.

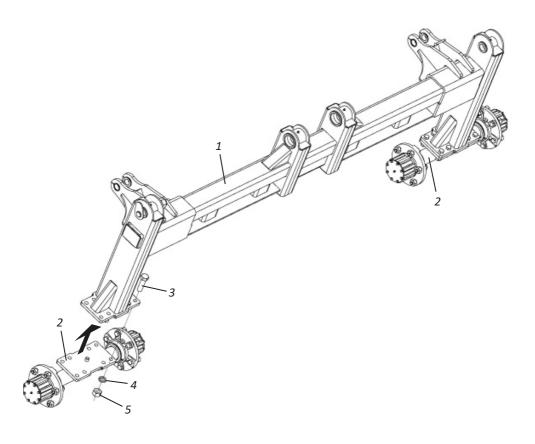


Assembly

• Wheel shaft support assembly

To mount the wheel shaft support (1), proceed as follows:

01 - Couple the wheel shaft (2), to the wheel shaft support (1) by fixing through the screws (3), lock washers (4) and nuts (5).

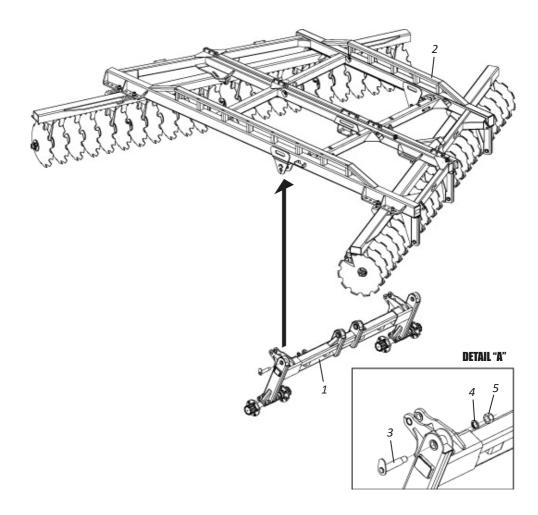




• Assembly do suporte do eixo da roda no montante

After assembling the wheel shaft support, fix the wheel shaft support (1) to the main frame (2) for this, proceed as follows:

01 - Attach the wheel shaft support (1) to the main frame (2) fixing through the pins (3), lock washers (4) and nuts (5), as shown in detail "A".



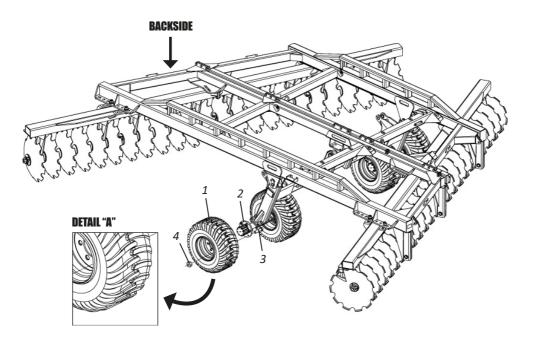


Assembly

Wheels assembly

After assembling the wheel shaft support, fix the tires (1) for this, proceed as follows:

01 - Couple the tires (1) on the wheel shaft support (2) using the screws (3) and nuts (4).





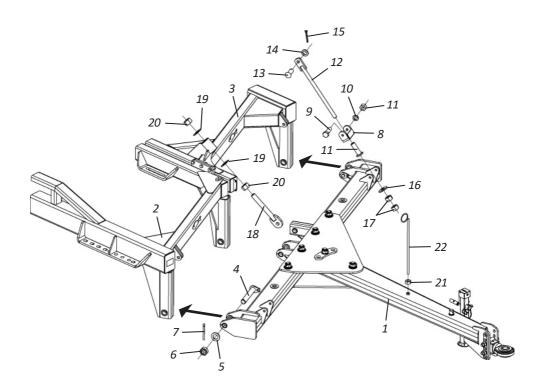
All tires must be mounted with anti-traction, that is, with the jaws facing the front of the CRI as shown in detail "A".



Hitch drawbar assembly

To assemble the hitch drawbar, proceed as follows:

- **01** Engage the hitch drawbar (1), on the main frames (2 and 3) fixing through the pins (4), flat washers (5), nuts (6) and cotter pins (7).
- **02** Then, fix the support (8), through the screws (9) and nuts (10) and place the bushing (11) the rod (12), fixing with the pin (13), flat washer (14), cotter pin (15), plain washers (16) and nuts (17).
- 03 Then, place the rod (18) and secure with the flat washers (19) and nuts (20).
- 04 Finish by placing the nut (21) and the hose support (22).



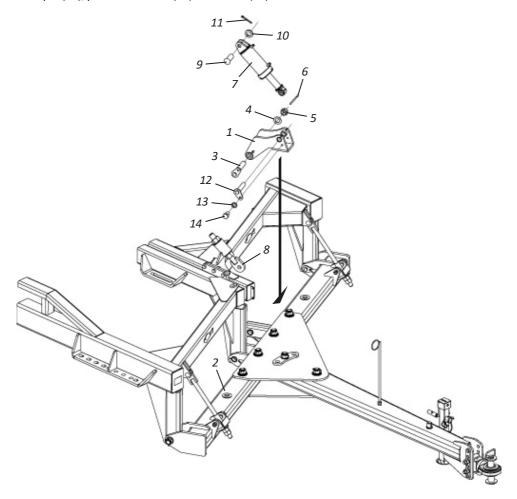


Assembly

• Hydraulic cylinder assembly on the hitch drawbar

To mount the hydraulic cylinder on the hitch drawbar, proceed as follows:

- **01** Place the articulation support (1) on the crossbar (2) fixing with the pin (3), washer (4), castle nut (5) and cotter pin (6).
- **02** Then, attach the base of the hydraulic cylinder (7) to the regulator (8) fixing through the pin (9), washer (10) and cotter pin (11).
- **03** Then, attach the hydraulic cylinder rod (7) to the articulation support (1), fixing through the pin (12), pressure washer (13) and screw (14).

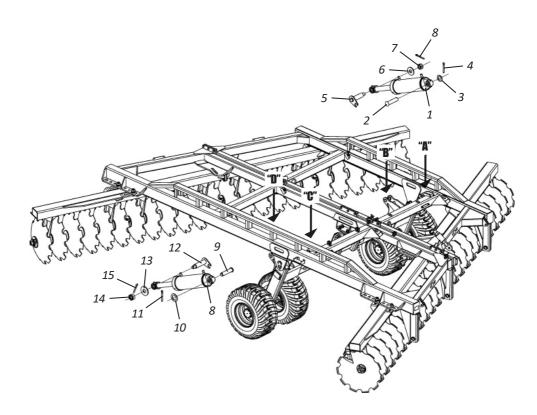




• Hydraulic cylinder assembly on the main frames

To mount the hydraulic cylinders on the uprights, proceed as follows:

- 01 Couple the base of the hydraulic cylinder (1) at point "A", fixing through the pin (2), flat washer (3), cotter pin (4) and the hydraulic cylinder rod (1) at point "B", through the pin (5), plain washers (6), castle nut (7) and cotter pin (8).
- 02 Then, attach the hydraulic cylinder base (8) to point "C", fixing through the pin (9), flat washers (10), cotter pin (11) and the hydraulic cylinder rod (8) to point "D", through the pin (12), flat washer (13), castle nut (14) and cotter pin (15).



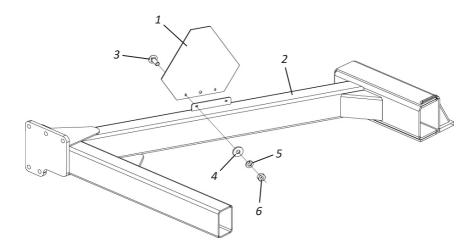


Assembly

Signpost assembly

To mount the signposts on the uprights, proceed as follows:

01 - Attach the sign plate (1) to the left central post (2) using the screws (3), plain washers (4), lock washers (5) and nuts (6).



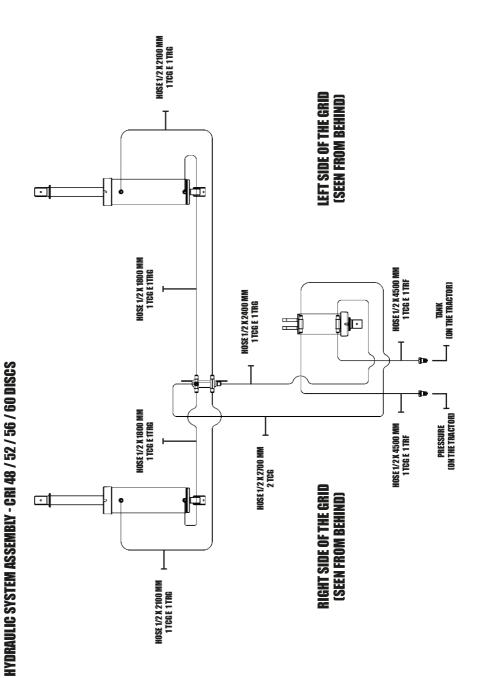


DO NOT work or transport the CRI mainly on highways without signposts.



Repeat the above procedure to mount the signpost on the right post.





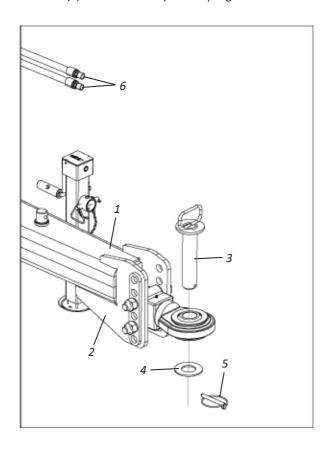


Hitch

DISC HARROW HITCH IN THE TRACTOR DRAWBAR

To couple the **CRI**, proceed as follows:

- 01 Level the CRI coupling header (1) in relation to the tractor coupling through adjustments (2) of the coupling wheel. Then, slowly approach the harrow in reverse with the tractor, paying attention to the application of the brakes.
- **02** Proceed with the coupling of the **CRI** to the tractor fixing it through the coupling pin (3), flat washer (4) and lock (5).
- 03 Finally, attach the hoses (6) to the tractor's quick coupling.





When engaging the CRI, look for a safe and easily accessible place. Always use low gear with low acceleration.

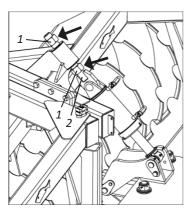


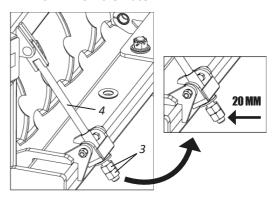
Leveling

DISC HARROW LEVELING - PART I

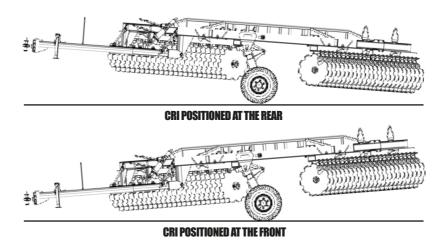
To level the CRI, proceed as follows:

- 01 Place the tractor and CRI in a flat location.
- **02-** Then, before lifting the **CRI**, loosen the nuts (1) of the central rods (2) halfway through.
- 03 Then, loosen the nuts and locknuts (3) of the header rods (4) leaving them at a distance of 20 mm from their face.





04 - Then, actuate to lift the grid and observe if the CRI is positioned in the front or rear.



05 - Depending on the position of the CRI, make the following adjustments:

CRI 48-60 37

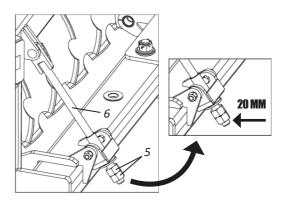


Leveling

DISC HARROW LEVELING - PART II

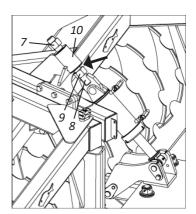
06 - REAR POSITION:

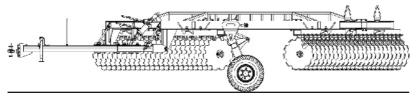
With the CRI in this position, first lower it by relieving the hydraulic system. Then tighten the nuts and locknuts (5) of the header rods (6) every 10 mm. Then, activate the hydraulic system to lift the CRI and check its position. If you still need to adjust it, lower it again, tighten the nuts and locknuts (5) + 10 mm and again lift it up and check again. Repeat this procedure until the CRI is level.



07 - FRONT POSITION:

With the **CRI** in this position, first lower it by relieving the hydraulic system. Then, loosen the upper nuts (7) of the central bars (8) every 10 mm. Then, tighten the lower nuts (9) until they touch the face of the bushing (10). Then, activate the hydraulic system to lift the CRI and check its position. If you still need to adjust it, lower it again, loosen the upper nuts (7) + 10 mm and again lift it up and check again. Repeat this procedure until the **CRI** is level.





CRI LEVEL POSITION



The measures mentioned in the leveling are initial parameters for leveling the CRI.

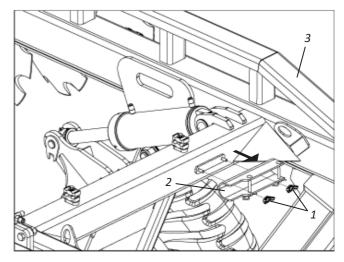


Regulations

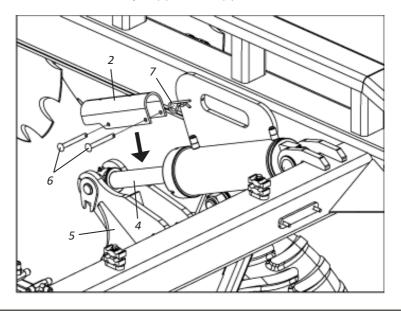
• Regulation for transportation - Part I

Before transporting the CRI, proceed as follows:

01 - Loosen the wing nuts (1) and remove the latches(2) from the upright (3).



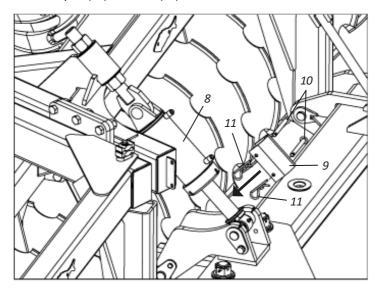
02 - Then, fully activate the stroke of the hydraulic cylinders (4) of the wheel (5), place the locks (2) and secure them with the pins (6) and locks (7).



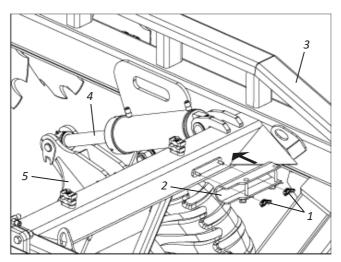


Regulations

- Regulation for transportation Part II
- **03** Then, fully activate the stroke of the hydraulic cylinder (8) of the header, place the lock (9) and fix it with the pins (10) and locks (11).



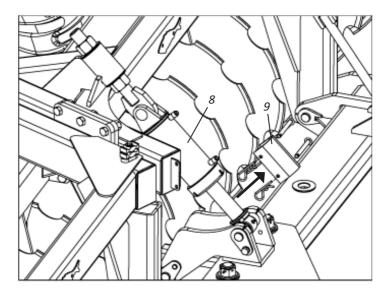
04 - When the transport is finished, remove the locks (2) of the hydraulic cylinders (4) from the wheel (5) and fix them again on the upright (3) using the wing nuts (1).





Regulations

- Regulation for transportation Part III
- 05 Then, also remove the lock (9) of the hydraulic cylinder (8) from the header.





Do not transport the CRI without placing the locks (2) on the hydraulic cylinders (4) of the wheel (5) and on the hydraulic cylinder (8) of the header. Ignoring this warning could damage the hydraulic cylinders.

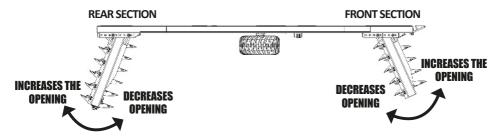


Regulations

Adjustment of disc harrow opening

To obtain the ideal penetration of the discs, the opening of the grid must be regulated, which varies according to the type of soil:

- TERRAIN WITH GREATER DIFFICULTY OF PENETRATION: The grid opening must be increased.
- LIGHT AND LOOSE TERRAIN: The grid opening must be decreased.



OPENS UP: Greater Depth.

DECREASES OPENING: Less Depth.

To increase or decrease the opening of the grid, proceed as follows:

- 01 Loosen the nuts (1), lock washers (2), plain washers (3), remove the locks (4) and screws (5).
- 02 Then adjust the frames (6) by decreasing or increasing their opening.
- **03** Then, fix the frame (6) upstream again (7) using the screws (5), locks (4) flat washers (3), lock washers (2) and nuts (1).

O IMPORTANT

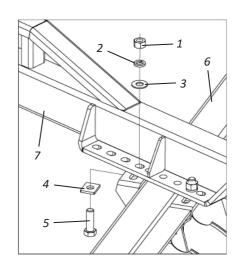
To start the work we recommend using a medium opening in the disc sections. If you need more penetration, increase the opening angle of the rear section.

The front section generally does not operate with a larger opening than the rear section.

The wheels also assist in disc depth control.



We advise you to control the working depth of the CRI by opening the disc sections and using the tires only in places where the CRI penetrates too much.



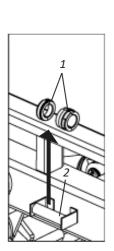


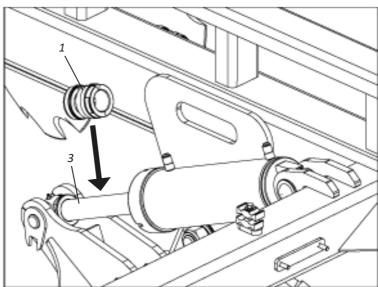
Regulations

• Working depth adjustment - Part I

To adjust the working depth through the tires, the limiting rings (1) that are placed on the rods of the hydraulic cylinders are used, obtaining numerous working depth regulations. To adjust the working depth, proceed as follows:

- 01 Remove the limiting rings (1) from the amount (2).
- 02 Then, actuate the rods of the hydraulic cylinders (3) of the wheel until the necessary measure.
- **03** Then, place the limiting rings (1) on the rods of the hydraulic cylinders (3) until the entire space between the coupling of the rod and the piston of the hydraulic cylinder (3) is filled.



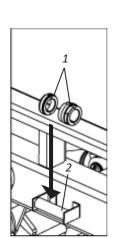


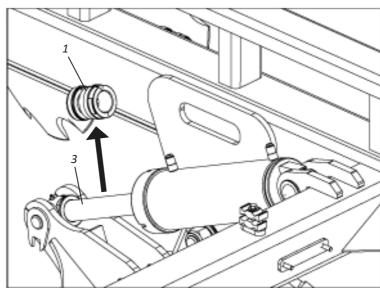
Always place the same number of limit rings (1) on the hydraulic cylinders (3) of the wheel.



Regulations

- Working depth adjustment Part II
- **04** After finishing the work with **CRI**, remove the limiting rings (1) from the hydraulic cylinders (3) of the wheel and place them in the upright (2).





O IMPORTANT

After adjustment, CRI will always operate at the same depth, both in hard and loose terrain, this is because the limit rings (1) are limiting the travel of the hydraulic cylinder (3) of the wheel, that is, preventing the wheels from oscillating.

NOTE

The limiting rings (1) that come with the CRI, have different sizes that, in combination, offer various depth regulations.

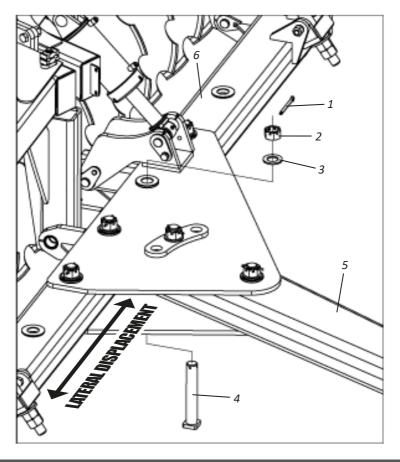


Regulations

• Adjustment of disc harrow displacement - Part I

The displacement of the harrow must be done when the harrow is not giving a perfect finish, that is, leaving a trail of the tractor. For the harrow to work centrally with the tractor's traction line, proceed as follows:

- **01** Remove the cotter pins (1), loosen the castle nuts (2), flat washers (3) and remove the screw (4).
- 02 Then, move the coupling header (5) on the crossbar (6), making the ideal adjustment.
- 03 Finish by fixing the screws (4), flat washers (3), castle nuts (2) and cotter pins (1).

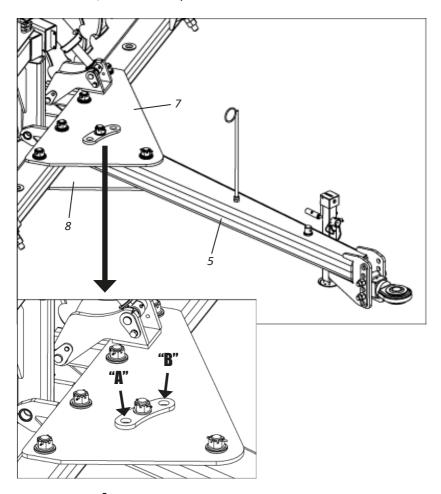




Regulations

· Adjustment of disc harrow displacement - Part II

Under normal working conditions and during transport, the coupling header (5) must remain in the central hole of the upper (7) and lower (8) plates. By changing the coupling header (5) to the other holes "A" and "B", small lateral displacements of the CRI are obtained.



O IMPORTANT

The CRI header and the tractor drawbar must be as aligned as possible with the working direction.

The tractor drawbar must remain loose during work and secure during transport.



Operations

• Recommendations for operation - Part I

The preparation of the **CRI** and the tractor will save you time in addition to a better result in field work. The following suggestions may be useful to you.

STRUCTURE

After the first day of work with the **CRI**, retighten all screws, nuts and check the condition of the pins and locks of the grid structure. Then perform a general tightening on all the screws and nuts of the grid structure every 24 hours of work.

DISC SECTIONS

Special attention to the **CRI** disc sections. Retighten all bolts and nuts on the disc sections daily during the first week of use. Then, retighten the bolts and nuts of the disk sections periodically.

GENERAL RECOMMENDATIONS

- **01** Aadjust the tractor according to the contents of the instruction manual, always using the front and rear weights to stabilize the equipment.
- 02 Always do the coupling to the tractor at slow speed and with great care.
- 03 When using the CRI it is important to check the coupling and cross leveling system to make sure that the discs will have the same depth of penetration into the ground.
- 04 After coupling and leveling, the next Regulations will be made directly in the field of work, analyzing the terrain in its texture, humidity and the types of operations to be done with CRI.
- **05** On the tractor, choose a gear that allows you to maintain a certain reserve of power, ensuring against unforeseen efforts.
- 06 Observe the working and transport speeds specified on page 10. We do not recommend exceeding speeds to maintain service efficiency and avoid possible damage to the CRI.
- **07** When executing maneuvers at the headlands, first activate the hydraulic cylinders gradually, lifting the disk sections.
- **08** Do not disconnect any hoses without first relieving the pressure in the circuit. To do this, operate the control levers a few times with the engine off.
- 09 Remove sticks or any other object that may get caught in the discs.

CRI 48-60 47



Operation

- Recommendations for operation Part II
- 10 In compacted terrain where disc penetration is difficult, the depth can be minimal, making work unsatisfactory. In these cases, the application of other more suitable products is recommended.
- 11 During work or transportation, the tractor drawbar must remain fixed.
- **12** When carrying out any maintenance on the **CRI**, it must be lowered to the ground and the engine turned off.
- 13 CRI has several Regulations, however, only local conditions can determine the best regulation.

In case of doubt, never operate or handle CRI, consult the After Sales. Telephone: 0800-152577 / E-mail: posvenda@baldan.com.br

Direction of maneuvers

During harrowing (with the discs on the ground), DO NOT maneuver to the right, as the angles formed by the disc sections will transmit great effort to the equipment, especially the traction components.



With the disk sections on the ground it is necessary to perform maneuvers on the left (closed side of the CRI) avoiding overloads.



Operations

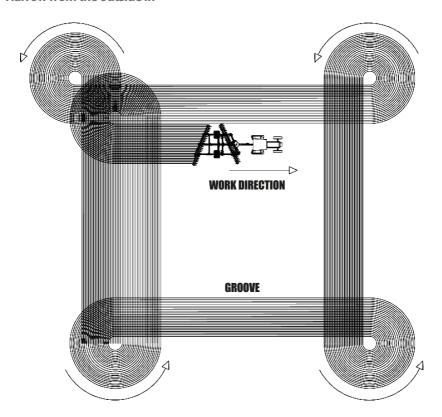
How to start harrowing

When starting the railing, one must always follow the terraces or contour cord, starting the operation in the sense that the terrace is always on the left side of the tractor.



NOTE Before starting operations with CRI, check it completely, retightening all screws, nuts, hose terminals, shafts and especially the disk sections.

Harrow from the outside in





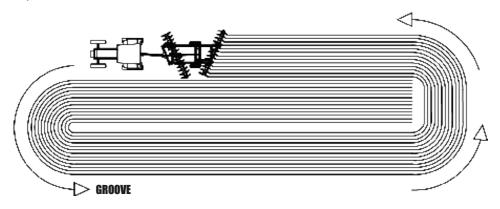
Try to drive the tractor for good performance between CRI passes. Avoid forming non-harrowed tracks.



Operations

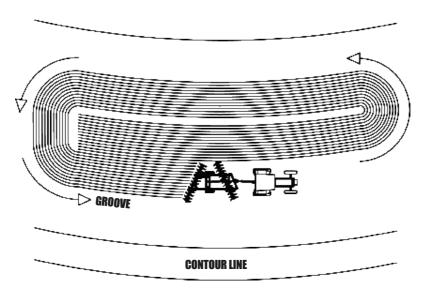
Harrow from the inside out

In this direction, greater perfection is obtained. When walking on headers too much, you may want to start another block.



Blocks with contour lines

For terrains with contour line, it is usual to start with two blocks at a time, starting the work with the contour line on the left side of the tractor. When you reach the middle of the contour line, you may want to start another block to reduce fuel consumption.





Calculations

Approximate hourly production

To calculate the approximate hourly production of the **CRI**, use the following formula:

$$A = \frac{L \times V \times F}{Y}$$

A = Area to be worked
 L = Working width of the harrow (in meters)
 V = Average speed of the tractor (in meters/hour)
 F = Production factor: 0.90

X = Value of the hectare: 10.000 m²

Example: A CRI 48 discs, how much Ha it will produce in an hour of work at an average speed of 7 km / h.

$$A = ?$$

 $L = 6.23 \, \text{m}$

V = 7.000 m/h

F = 0.90

 $X = 10.000 \text{ m}^2$ (Calculated in hectare)

Model	Nr of Discs	Working Width (mm)	Average Speed (m/h)	Production Factor	Approximate Production in Hectare Hour
CRI	48	6230	7.000	0,90	3,92
	52	6745	7.000	0,90	4,24
	56	7235	7.000	0,90	4,55
	60	7745	7.000	0,90	4,87

The formula for calculating the approximate production, refers to the calculation of areas to work or worked by CRI. If you want to know the time it will take to work an area of known value, just divide the value of this area by the hourly production of **CRI**.

Example: How much time "X" will it take for a 48-disk CRI grid to produce 35 hectares, at an average speed of 7km / h?

$$X = 35 \text{ Ha} = 8,92 \text{ hours approximately to work 35 hectares.}$$

3,92 Ha/h



CRI's hourly production can vary due to factors that change the pace of work such as (humidity and hardness of the soil, slope of the ground, inadequate regulations and speed of work).



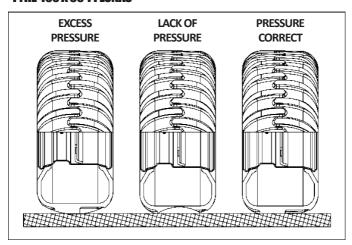
Maintenance

CRI was developed to provide you with the maximum return on land conditions. Experience has shown that periodic Maintenance of certain parts of the **CRI** is the best way to help you avoid problems, so we suggest checking.

Tire pressure

The tires must always be correctly calibrated, avoiding premature wear due to excess or lack of pressure.

TYRE 400 X 60 14 LONAS



USE: 52 LBS/POL²

ATTENTION

Never weld the tire-mounted wheel, heat can cause an increase in air pressure and cause the tire to explode.

When inflating the tire, position yourself next to the tire, never in front of it.

When inflating the tire, always use a containment device (inflation cage).

Assemble the tires with suitable equipment. The service should only be performed by people trained for the job.





When inflating tires, do not exceed the recommended inflation.

The tire pressure of the tractor must be made according to the manufacturer's recommendation.



Maintenance

CRI was developed to provide you with the maximum return on land conditions. Experience has shown that periodic Maintenance of certain parts of the CRI is the best way to help you avoid problems, so we suggest checking.

Lubrication

Lubrication is indispensable for the good performance and durability of CRI's moving parts, helping to save maintenance costs.

Before starting the operation, carefully lubricate all grease fittings, always observing the lubrication intervals on the next page. Make sure the quality of the lubricant, as to its efficiency and purity, avoiding using products contaminated by water, earth and other agents.

• Greases and equivalents table

Manufacturer	Types of grease recommended	
Petrobrás	Lubrax GMA-2	
Atlantic	Litholine MP 2	
Ipiranga	Ipiflex 2	
Castrol	LM 2	
Mobil	Grease MP	
Texaco	Marfak 2	
Shell	Alvania EP 2	
Esso	Multi H	
Bardahl	Maxlub APG-2EP	
Valvoline	Palladium MP-2	
	Tutela Jota MP 2 EP	
Petronas	Tutela Alfa 2K	
	Tutela KP 2K	

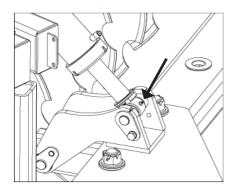


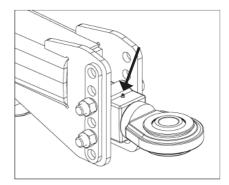
ATTENTION If there are manufacturers and / or equivalent brands that are not listed in the table, consult the manufacturer's technical manual.

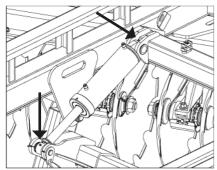


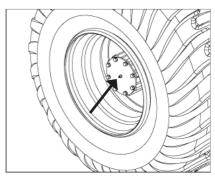
Maintenance

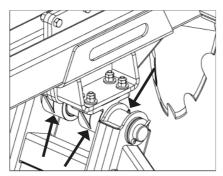
• Lubricate every 24 hours of work











ATTENTION

When lubricating the CRI, do not exceed the amount of new grease. Enter a sufficient amount.

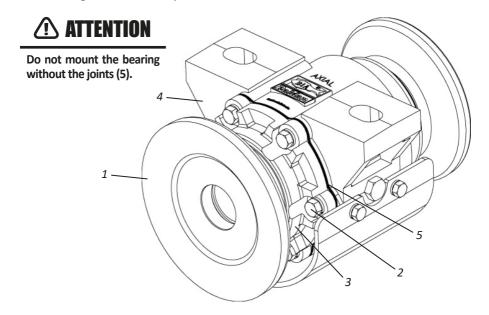


Maintenance

Disc section bearings adjustments

When the disc section bearings have gaps, proceed as follows to adjust them:

- 01 Remove the washer (1).
- 02 Then, loosen the screws (2) and remove the cover (3) from the bearing (4).
- **03** Then, remove one or two gaskets (5) from the bearing cover (3) (4). Replace the cover (3) and retighten it.
- **04** If the gap persists, you can face the cover (3) to increase the adjustment, then mount it on the bearing with as many joints as necessary.
- 05 The bearing must rotate freely, that is, without looseness.



Bearing oil

In the first days of work with **CRI**, check the oil level of the bearings daily, then check every 120 hours of work.

The oil change must be done every 1200 hours of work. Use 90 API GL4 transmission oil, MIL-L-2105; SAEJ306, May / 81: SAE 80W, 90 and 140.



The ideal oil level is when it reaches the plug hole. To check the oil level of the bearing, look for a flat place.

CRI 48-60 55



Maintenance

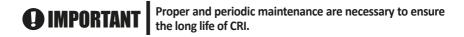
• Operational Maintenance

PROBLEMS	PROBABLE CAUSES	SOLUTIONS	
Tires are	Work area with rocks, stubs or crop remains with stems that shred the tire.	Eliminate elements that damage tires before using the CRI.	
damaged.	Improper tire pressure, creating deformations.	Maintain proper tires pressure.	
Weird noise on	Loosen wheels or gap in wheel hub.	Retighten the wheel nuts and adjust wheel hub bearings.	
wheels.	Breaking of bearings.	Identify the occurrence and females of the same type.	
Quick coupling is not fitting.	Couplings of different types.	Change them for males and females of the same type.	
Leakage in	Lack of sealing material on the thread.	Use sealing tape and retighten carefully.	
hydraulic hose.	Insufficient tightening.	Retighten carefully.	
	Damaged repairs.	Replace hubs.	
Leakage in	Insufficient tightening.	Retighten carefully without excess.	
quick couplings.	Damaged repairs.	Replace hubs.	
	Couplings of different brands.	Use a quick coupling of the same brand.	
Quick coupling is not coupling.	Mixing of needle-type coupling with sphere-type coupling.	Always use quick coupling of the same type.	
	Pressure on the system.	Relief the pressure to couple.	



Maintenance

- Care
- **01** Before each job, check the condition of all hoses, pins, bolts, bearings, discs and sections. Where necessary, retighten them.
- 02 The displacement speed should be carefully controlled according to the land's conditions.
- 03 The CRI is used in several applications, requiring knowledge and attention during handling.
- 04 Only local conditions can determine the best method of operation of CRI.
- 05 When assembling or dismantling any part of the CRI, employ appropriate methods and tools.
- **06** Carefully observe the lubrication intervals in the various lubrication points of the **CRI**. Respect the lubrication intervals.
- **07** Always check if the parts have wears. If there is a need for replacement, always demand Baldan original parts.
- 08 Keep the CRI discs always sharp.



Maintenance

- General cleaning
- 01 When storing the CRI, make a general cleaning and wash it thoroughly with water only. Make sure the paint has not worn out, if it did, give a general coat, pass the protective oil and fully lubricate the CRI. Do not use burned oil or other abrasive.
- 02 Fully lubricate the CRI. Check all moving parts of the CRI for wear and tear, make the necessary adjustment or replacement of the parts, leaving the harrow ready for the next job.
- **03** After all maintenance work, store the harrow in a covered and dry place, properly supported.

Avoid: - That the discs come into direct contact with the ground.

- The compression of the springs.
- That the hydraulic hoses be properly capped.

CRI 48-60 57



Maintenance

- General cleaning
- 04 When connecting or disconnecting hydraulic hoses, do not let the terminals touch the ground. Before connecting the hydraulic hoses, wipe the connections with a clean. lint-free cloth. Do not use tow!
- 05 Replace all adhesives, especially those about warnings, that are damaged or missing. Make everyone aware of the importance and risks of accidents when instructions are not followed.
- 06 After all maintenance care, store your CRI on a flat, covered, dry surface, away from animals and children.
- 07 We recommend washing the CRI with water only at the start of work.



ATTENTION Do not use chemicals or abrasives to rinse the CRI, this may damage the paint and adhesives.

Conservation of the harrow - Part I.

To prolong the life and appearance of the **CRI** for longer, follow the instructions below:

- 01 Wash and clean all harrow components during and at the end of the work season.
- 02 Use neutral products to clean the harrow, following the safety and maintenance instructions provided by the manufacturer.
- 03 Always carry out maintenance during the periods indicated in this manual.
 - Conservation of the harrow Part II

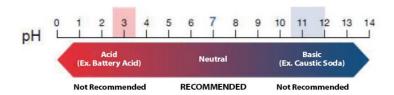
The practices and care below if adopted by the owner or operator make a difference to the conservation of the CRI.

- 01 Be careful when performing high-pressure washing; do not direct the water jet directly into the connectors and electrical components. Isolate all electrical components;
- 02 Use only NEUTRAL detergent and water (pH equal to 7);
- 03 Apply the product, following the manufacturer's instructions strictly, on the wet surface and in the correct sequence, respecting the time of application and washing;
- 04 Stains and dirt not removed with the products should be removed with the aid of a sponge.
- **05** Rinse the machine with clean water to remove any chemical residues.



Maintenance

- 06 Do not use: Detergents with a basic active ingredient (pH greater than 7), can attack/stain the paint on the harrow.
 - Detergents with acid active ingredient (pH less than 7), act as stripper/remover of zinc coating (the protection of parts against oxidation).



- 07 Allow the machine to dry in the shade so that it does not accumulate water in its components. Very fast drying can cause stains on your paint.
- 08 After drying, lubricate all chains and greases according to the recommendations in the operator's manual.
- 09 Spray all the machine, especially the zinc parts, with protective oil, following the manufacturer's application guidelines. The protective also prevents dirt from adhering to the machine, facilitating subsequent washings.
- 10 Observe curing (absorption) time and application intervals as recommended by the manufacturer

ATTENTION Do not use any other type of oil to protect the harrow (used hydraulic oil, "burnt" oil, diesel oil, castor oil, kerosene, etc.).

We recommend the following protective oils: - Bardahl: Agro protective 200 or 300 - ITWChemical: Zoxol DW - Series 4000

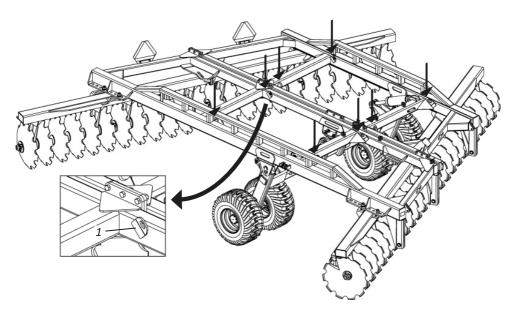
Ignoring the conservation measures mentioned above may result in the loss of warranty for painted or zinc-coated components which may exhibit oxidation



Lifting

Lifting points

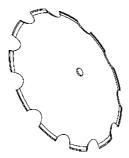
CRI has several lifting points located in the uprights. When mounting or maintaining **CRI**, if you have to hoist with a winch, it is essential to engage the chains at the lifting points.



Opcional

Cutting Disc

CRI can be optionally purchased with 28 "or 30" cutting discs.



NOTCHED DISC



Identification

Nameplate

To consult the parts catalog or request technical assistance from Baldan, always indicate the model (01), serial number (02) and date of manufacture (03), which can be found on the identification plate of your **CRI**.



ATTENTION

The drawings contained in this Instruction Manual are for illustrative purposes.



In case of doubt, never operate or handle your equipment without consulting After Sales.

Phone: 0800-152577

e-mail: posvenda@baldan.com.br

PUBLICATIONS

Código: 60550108154 | CPT: CRI486000615



CRI 48-60 61



Identification

Product Identification

Please make the correct identification of the data below, to always have information about the service life of your equipment.

Owner:
Dealer:
Property:
City:
State:
Certificate of Warranty no.:
Implement:
Serial No:
Purchase Date:
Invoice:





• Notes	

CRI 48-60 63



BALDAN IMPLEMENTOS AGRÍCOLAS S/A ensures the dealer normal performance of the implement for a period of six (6) months as of the delivery date on the retail invoice to the first final consumer. During this period, BALDAN undertakes to repair defects in material and/or of manufacture of its liability, including labor, freight and other expenses of the dealer's liability.

In the warranty period, request and replacement of eventual defective parts shall be made to the dealer of the area, who will submit the faulty piece for **BALDAN** analysis. When this procedure is not possible and the resolving capacity of the dealer is exhausted, the dealer will request the support of **BALDAN Technical Assistance** through a specific form distributed to dealers. After analyzing the replaced items by Baldan Technical Assistance, and concluding that it is not a warranty, then the dealer will be responsible for the costs related to the replacement; as well as material expenses, travel including accommodation and meals, accessories, lubricant used and other expenses arising from the call out to Technical Assistance, and Baldan company is authorized to carry the respective invoice in the name of the resale. Any repair carried in the product within the dealer warranty deadline will only be authorized by **BALDAN** upon previous budget presentation describing parts and work to be performed.

The product is excluded from this term if it is repaired or modified by representatives not belonging to the **BALDAN** dealer network, as well as the application of non-genuine parts or components to the user's product. This warranty is void where it is found that the defect or damage is caused by improper use of the product, failure to follow instructions or inexperience of the operator.

It is agreed that this warranty does not cover tires, polyethylene tanks, cardan, hydraulic components, etc., which are equipment guaranteed by their manufacturers. Manufacturing and/or material defects, object of this warranty term, will not constitute, under any circumstances, grounds for termination of a purchase agreement, or for indemnification of any nature.

BALDAN reserves the right to change and/or perfect the technical characteristics of its products, without previous notice, and without obligation to proceed in the same way with the products previously manufactured.



Inspection and Delivery Certificate

SERVICE BEFORE DELIVERY: This implement was carefully prepared by the sale organization, with all its parts inspected according to the manufacturing prescriptions.

DELIVERY SERVICE: The user was informed about the current warranty terms and instructed on the usage maintenance precautions.

I confirm that the user has been informed about the current warranty terms and instructed on the usage maintenance precautions.

Implement:	Serial Number:
Date:	Tax Number:
Dealer:	
Telephone:	CEP:
City:	State:
Owner:	
	Number:
City:	State:
E-mail:	
Sale date:	
Signature / Dealer Stamp	



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Implement:	Serial Number:
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Date:	Tax Number:	
Dealer:		
Telephone:	CEP:	
City:	State:	
Owner:		
Telephone:		
	Number:	
City:	State:	
E-mail:		
Sale date:		
Signature / Dealer Stamp		

3rd copy - Manufacturer (Please send completed within 15 days).

1.74.05.0059-5

AC MATÃO ECT/DR/SP

RESPONSE CARD

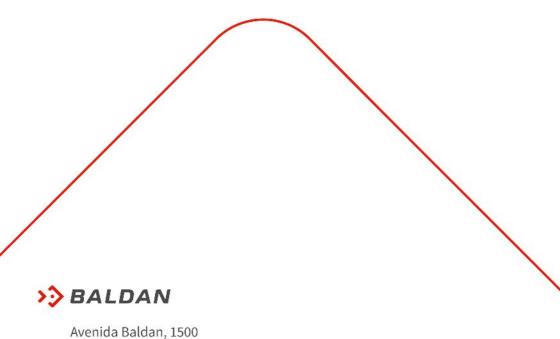
NO STAMPING IS REQUIRED

THE STAMP WILL BE PAID BY:



BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

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