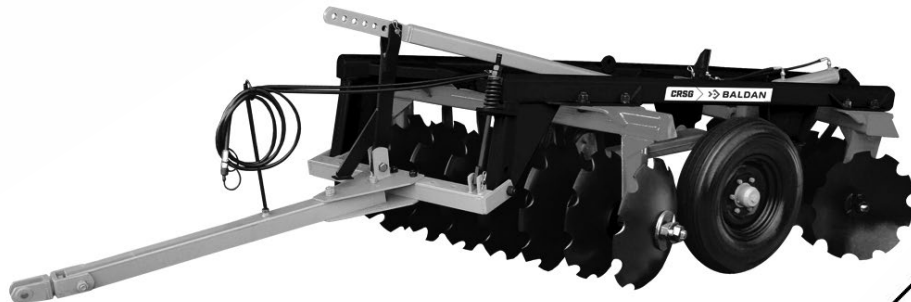


Instruction Manual



CRSG 32-48

Trailed Offset Disc Harrow

CRI 32-44

Drag Type Offset Disc Harrow Remote Control

CRSG-L 18-32

Trailed Offset Disc Harrow
Light

CRI-R 12-26

Drag Type Offset Disc Harrow Remote Control
Strong

 **BALDAN**

INTRODUCTION

We thank you for the preference and congratulate your excellent choice in acquiring an implement of outstanding quality, manufactured in accordance with the advanced technology of **BALDAN IMPLEMENTOS AGRÍCOLAS S/A**.

This manual will assist you, in proceeds necessities, since when you bought until the operational proceeds application, security and maintenance.

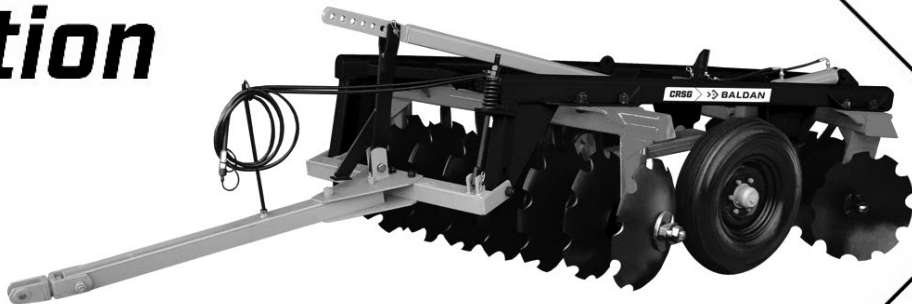
The **BALDAN** guarantees that deliver this implement to the dealer, working properly, and in perfect conditions.

The dealers it's under the responsibility to keep the protection and conservation while keep the implement in your stock, and than, to assembly, tighten, lubrication and overhaul.

On time of the technical deliver, the dealer must to have conducted the user customer about the manutentation, safety, and your obligations in a possible technical assistance, the obligation to see the warranty terms and read the instruction manual. Any solicitation of warranty, please contact our Baldan technical service, by your Baldan dealer that you bought our implement. Reaffirm the necessity to read carefully of warranty certificate and note all of items from this manual, therefore you will increase the working life of your equipment.



Instruction Manual



CRSG 32-48

Trailed Offset Disc Harrow

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Drag Type Offset Disc Harrow Remote Control

CRSG-L 18-32

Trailed Offset Disc Harrow Light

CRI-R 12-26

Drag Type Offset Disc Harrow Remote Control Strong

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

CNPJ: 52.311.347/0009-06

Insc. Est.: 441.016.953.110



Escaneie o Código QR Code na
plaqueta de identificação do seu
equipamento e acesse online este
Manual de Instruções.

BALDAN

INDEX

01. Safety rules.....	4 - 8
02. Components.....	9
03. Technical specifications	10 - 11
04. Assembly	13 - 15
<i>Assembly of front and rear gang.....</i>	16 - 17
<i>Mounting of the hydraulic system and articulating wheel assembly CRSG-L 18 - 32 / CRI-R 12 - 26 models with single wheels</i>	18
<i>Mounting of the hydraulic system and the articulating wheel assembly CRSG 32 - 48 / CRI 32 - 44 models with dual wheels.....</i>	19
<i>Mounting of the hitch system.....</i>	20
05. Hitch.....	21
<i>Hitching to the tractor.....</i>	21
<i>Hitching to the tractor (CRI 44 Discs)</i>	22-24
06. Adjustments and operations.....	25
<i>Transport</i>	25
<i>Transport/work.....</i>	25
<i>Disc harrow gangs adjustments.....</i>	26
<i>Displacement adjustment</i>	26
<i>Cross bar adjustment.....</i>	27
<i>Adjusting the stabilizer bar and stabilizer bar support</i>	27
<i>Operations</i>	28
07. Lubrication	29
08. Lubrication Points	30 - 31
09. Bearing adjustments	32
10. Cleaning.....	32
11. Hourly production of the CRSG/CRI/CRI-R.....	33 - 35
12. Identification	36 - 37
<i>Notes.....</i>	38 - 39
Certificate.....	40
<i>Certificate of warranty.....</i>	40 - 46

01. SAFETY RULES



THIS ALERT SYMBOL INDICATES IMPORTANT SAFETY NOTES. WHENEVER YOU FIND IT IN THIS MANUAL, READ THE MESSAGE WITH ATTENTION TO AVOID ANY ACCIDENT.



WARNING

- Read this instruction manual carefully to know the recommended safety rules.



WARNING

- Only start the tractor operations, when are you properly accommodated and with the seat belt fasted.



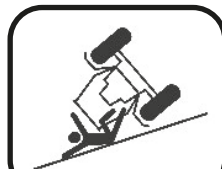
WARNING

- Never carry people over the tractor or equipment.



WARNING

- Há riscos de lesões graves por tombamento ao trabalhar em terrenos inclinados.
- Não utilize velocidade excessiva.



01. SAFETY RULES

WARNING

- Before any equipment maintenance, make sure that is properly stopped.
- Avoid getting hit.



WARNING

- Do not work with the tractor if the front is without enough weight to the rear equipment.
- There is tendency to lift, add weights at front or front wheels.



WARNING

- Never weld the wheel mounted with tire, the heat may cause air pressure increase and provoke the explosion of the tire
- When inflating the tire, position yourself besides the tire, never in front of it.



WARNING

- Before beginning the work or transportation of CRSG/CRI/CRI-R, check if there are people or blockages close to it.



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!

01. SAFETY RULES



WARNING

- Hydraulic oil works under pressure and may cause serious injuries if there are any leakages. Periodically check the conservation status of the hoses. If there are any sign of leakage, replace them immediately.
- Before connecting or disconnecting the hydraulic hoses, relief the system pressure by activating the control with the tractor power switched off.



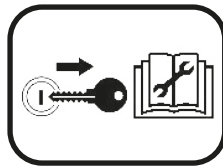
WARNING

- Always keep yourself distant from the active elements of the CRSG/CRI/CRI-R (discs), they are sharp and may cause accidents.
- When performing any service in the discs, use safety gloves on the hands.



WARNING

- Remove the ignition key before performing any type of maintenance in CRSG/CRI/CRI-R. Protect yourself against possible injuries or death by CRSG/CRI/CRI-R unexpected start-up.
- Do not start the tractor up if CRSG/CRI/CRI-R unexpected start-up.



ALCOHOLIC BEVERAGE OR SOME MEDICATIONS MAY CAUSE LOSS OF REFLEXES AND CHANGE THE OPERATOR'S PHYSICAL CONDITIONS. FOR THIS REASON, NEVER OPERATE THIS EQUIPMENT UNDER ANY OF THESE SUBSTANCES.



BALDAN









Instruction Manual









CRSG / CRI / CRI-R - 6



WARNING

The incorrect handling of the tractor engine can result in serious or fatal accidents. Before using the read carefully the instructions in this manual. Be sure that the person responsible for the operation is instructed about the correct handling and safety and has read and understood the instruction manual concerning this machine.

- 01-  When operating the implement do not allow people to stand close or on the implement.
- 02-  During assembly or disassembly of the discs section use protective gloves.
- 03-  When coupling or uncoupling the hydraulic hose relieve the hydraulic circuit pressure.
- 04-  Check out periodically the hoses condition. Where there is oil emptying change it immediately because the oil works under high pressure and may cause serious damage.
- 05-  Do not use large or daggy clothes because they can get caught on the implement.
- 06-  When you start the tractor engine, be correctly placed at the operator seat and be aware of the correct and safety handling of both tractor and implement. Always place the gearshift crank at the neutral position, turn off the gear of the power command and place the hydraulic commands at the neutral position.
- 07-  Do not turn on the tractor in a closed place without appropriate ventilation because the fumes from the fuel are is bad for health.
- 08-  While maneuvering the tractor to clamp the implement be sure that there is enough space and nobody is too close, maneuver always in slow gear and be ready to brake in case of emergency.

- 09-  Do not carry out adjustments with the implement working.
- 10-  When working over hilly areas try to keep the necessary stability. In case of instability reduce the acceleration, turn the wheels to the inclined side of the land and never lift the implement.
- 11-  Always use the tractor at safe speeds, especially when working in irregular or inclined areas, make sure the tractor is always in gear.
- 12-  When using the tractor on the road, keep the brake pedal connected.
- 13-  Do not work with the front tractor light. If there is a tendency to lift up add more weight in the front of the tractor at the front wheels.
- 14-  When leaving the tractor, place the gearshift at the neutral position and apply the park brake. Never let clamped implements be hitched to the tractor with the hydraulic system at the lifted position.
- 15-  Drugs and alcohol will affect an operator's alertness and coordination. Do not operate any engine under these conditions.
- 16-  Explain the operation, inspection and maintenance instructions to those users or operators who can not read.

TRAILED OFFSET DISC HARROW - CRSG DRAG TYPE OFFSET HARROW REMOTE CONTROL - CRI DRAG TYPE OFFSET HARROW REMOTE CONTROL - STRONG - CRI-R

02. COMPONENTS

- 01 - Front disc gang
- 02 - Rear disc gang
- 03 - Central main frame
- 04 - Stabilizer bar
- 05 - Hydraulic cylinder
- 06 - Hydraulic hoses
- 07 - Wheel articulation system
- 08 - Wheel
- 09 - Disc blades
- 10 - Stabilizer rod
- 11 - Stabilizer bar support
- 12 - Transversal bar
- 13 - Hitch beam
- 14 - Hitch shackle
- 15 - Hydraulic hoses support

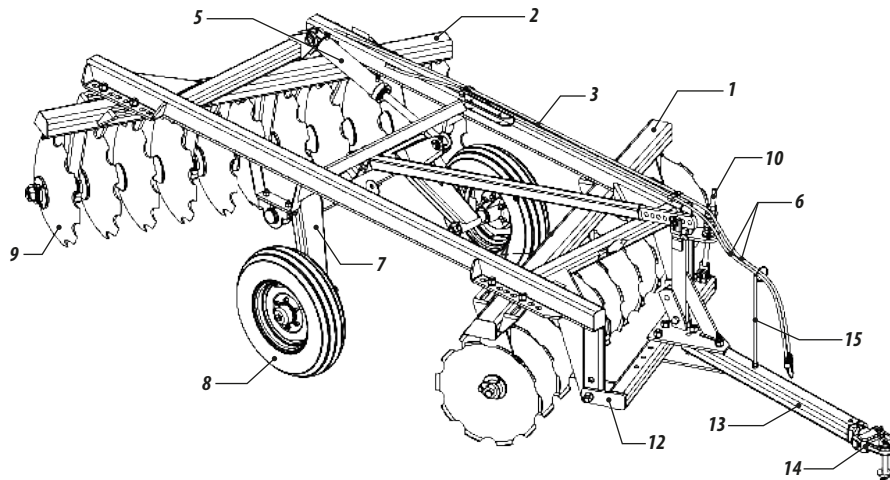


Figure 1

03. TECHNICAL SPECIFICATIONS

CRSG/CRSG-L

Model	Nr of Discs	Disc Diameter (ø)	Working Width (mm)	Axle Diameter (ø)	Disc Spacing (mm)	Working Depth (mm)	Approx. Weight (Kg)			Required Tractor Power (hp)	Ground Wheels
							24"	26"	28"		
CRSG	32	24" - 26" - 28"	3650	1.5/8"	235	150 - 250	-	3400	3500	169 - 185	Dual
CRSG	36	24" - 26" - 28"	4500	1.5/8"	235	150 - 250	-	3480	3590	190 - 208	Dual
CRSG	40	24" - 26" - 28"	4600	1.5/8"	235	150 - 250	-	3790	3910	212 - 232	Dual
CRSG	44	24" - 26" - 28"	5100	1.5/8"	235	150 - 250	4300	4400	4500	238 - 250	Dual
CRSG	48	24" - 26" - 28"	5600	1.5/8"	235	150 - 250	-	5500	5850	254 - 280	Dual

Model	Nr of Discs	Disc Diameter (ø)	Working Width (mm)	Axle Diameter (ø)	Disc Spacing (mm)	Working Depth (mm)	Approx. Weight (Kg)		Required Tractor Power (hp)	Ground Wheels
							24"	26"		
CRSG-L	18	24" - 26"	2000	1.5/8"	235	150 - 250	1170	1210	80 - 90	Single
CRSG-L	20	24" - 26"	2250	1.5/8"	235	150 - 250	1320	1365	90 - 100	Single
CRSG-L	22	24" - 26"	2420	1.5/8"	235	150 - 250	1430	1480	100 - 110	Single
CRSG-L	24	24" - 26"	2700	1.5/8"	235	150 - 250	1550	1605	110 - 120	Single
CRSG-L	28	24" - 26"	3200	1.5/8"	235	150 - 250	1984	2089	125 - 135	Single
CRSG-L	32	24" - 26"	3650	1.5/8"	235	150 - 250	2100	2260	140 - 150	Single

Baldan reserves the right to modify any technical specifications without prior notice.
The technical specifications it 's approximate and informed by regular conditions of work.

Tables 1

CRI

Model	Nr of Discs	Disc Diameter (ø)	Working Width (mm)	Axle Diameter (ø)	Disc Spacing (mm)	Working Depth (mm)	Approx. Weight (Kg)		Required Tractor Power (hp)	Ground Wheels
							26"	28"		
CRI	32	26" - 28"	4200	1.5/8"	270	150 - 250	3645	3702	189 - 202	Dual
CRI	36	26" - 28"	4700	1.5/8"	270	150 - 250	4122	4186	213 - 227	Dual
CRI	40	26" - 28"	5250	1.5/8"	270	150 - 250	4443	4514	236 - 252	Dual
CRI	44	26" - 28"	5800	1.5/8"	270	150 - 250	4664	4748	260 - 278	Dual

Table 2

Baldan reserves the right to modify any technical specifications without prior notice.
The technical specifications it's approximate and informed by regular conditions of work.

Model	Nr of Discs	Working Width (mm)	Axle Diameter (ø)	Disc Spacing (mm)	Working Depth (mm)	Approx. Weight (Kg)		Required Tractor Power (hp)	Ground Wheels
						28"	30"		
CRI-R	12	1650	2.1/4"	300	150 - 250	1730	-	85 - 96	Single
CRI-R	14	1950	2.1/4"	300	150 - 250	1840	1910	95 - 112	Single
CRI-R	16	2250	2.1/4"	300	150 - 250	2240	2310	114 - 128	Single
CRI-R	18	2550	2.1/4"	300	150 - 250	2460	2530	125 - 144	Single
CRI-R	20	2850	2.1/4"	300	150 - 250	2847	2910	135 - 160	Single
CRI-R	22	3150	2.1/4"	300	150 - 250	2965	3035	150 - 176	Single
CRI-R	24	3450	2.1/4"	300	150 - 250	3090	3160	160 - 192	Single
CRI-R	26	3750	2.1/4"	300	150 - 250	3200	3275	180 - 208	Single

Table 3

Baldan reserves the right to modify any technical specifications without prior notice.
The technical specifications it's approximate and informed by regular conditions of work.

04. ASSEMBLY

- 01 - Check the amount of parts in the box using the parts list.
- 02 - Before starting the assembly wear gloves.
- 03 - Install on the shaft (1) the washer from the disc (2), the nut (3) locking washer (4), using the bolt (5), keep the nut in the same position of the shaft edge.
- 04 - Instal on the shaft (1) the disc blade (6) the bearing (7), another disc blade (6), spools (8) then continue the assembly in this sequence as illustrated on the figure 2.
- 05 - When you have completed the assemble with all disc blades, spools and bearing, install the convex washer (9), the nut (3), then tighten the system.
- 06 - When you are almost finished the tightening procedure adjust the lock (4), with the convex washer until that the holes are aligned, then lock using the bolt (5).

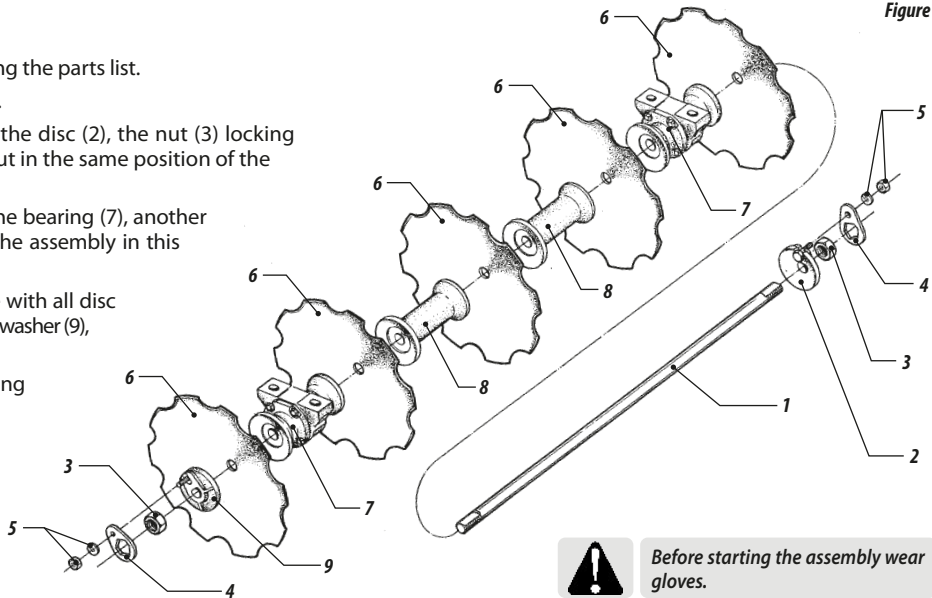
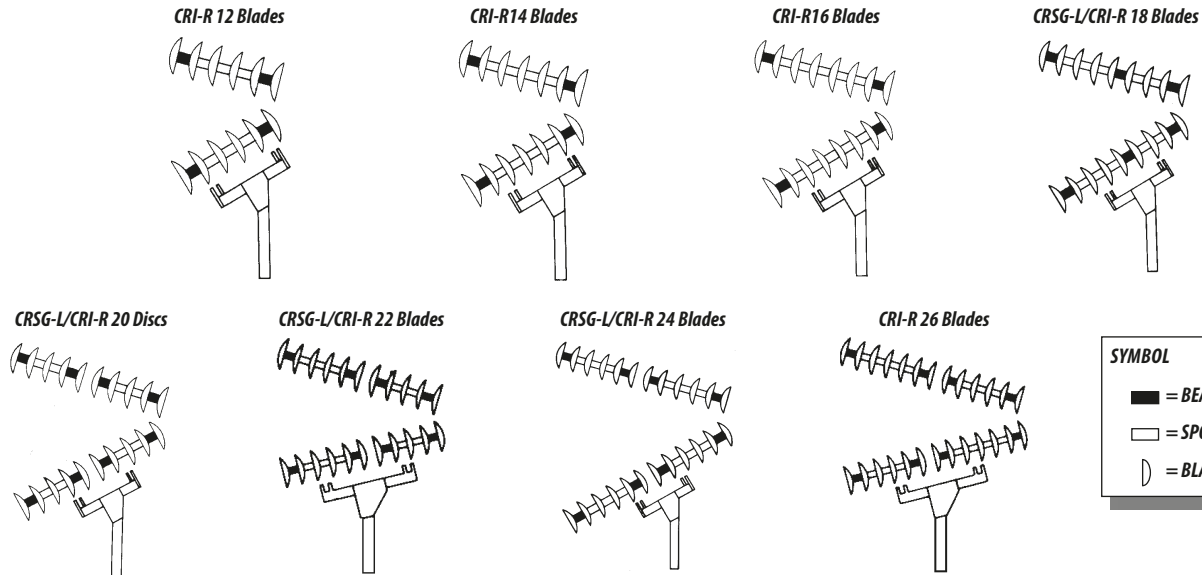


Figure 2



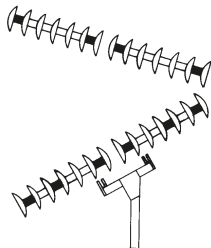
Before starting the assembly wear gloves.

07 - The figures 3 shows the assembly for each model of harrow.

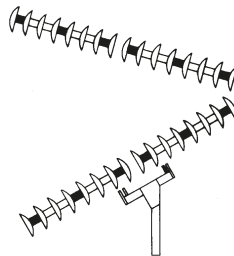


Figures 3

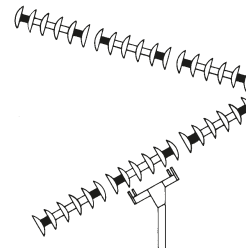
CRSG-L 28 Blades



CRSG/CRSG-L/CRI 32 Blades

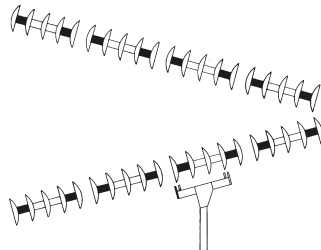


CRSG/CRI 36 Blades

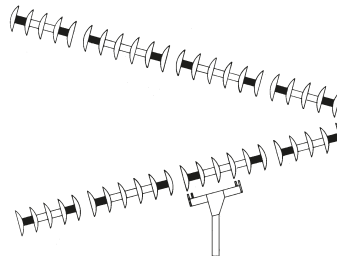


Figures 3

CRSG/CRI 40 Blades



CRSG/CRI 44 Blades



CRSG/CRI 48 Blades

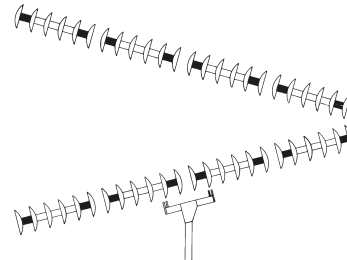
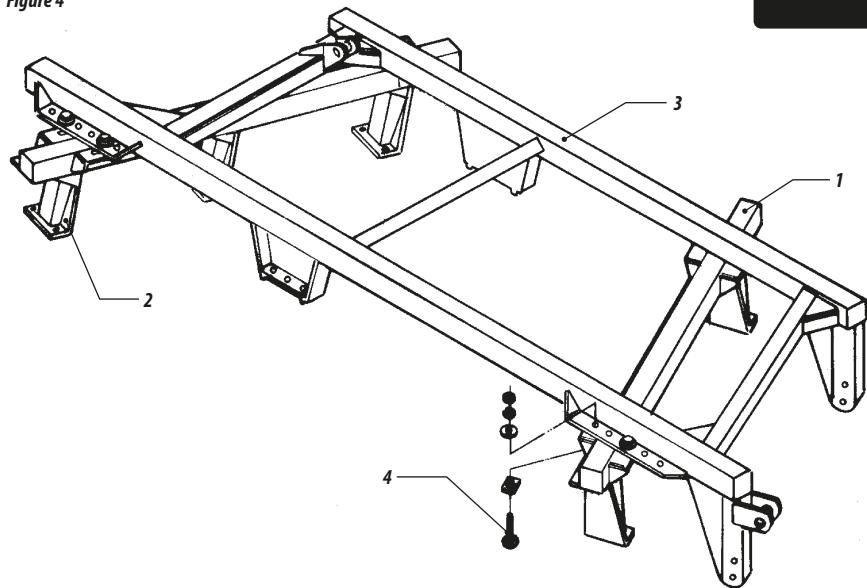


Figure 4



ASSEMBLY OF FRONT AND REAR GANG

- 08 - Insert the front gang (1) figure 4 and rear (2), in safety terrain.
- 09 - Install the frame (3) over the gangs and attach using the bolts (4), lock (5), washer (6) and nut (7).

- 10 - Lift a part of the grid (front or rear), place the set of discs in line, observing their arrangement in figure 5. Match the holes in the shoes with those in the bearings and assemble using the screws item 5 figure 5.
- 11 - Lift the other part of the harrow and repeat the operation on the side, checking that the concavity of the discs in one section must be opposite to the other.
- 12 - When assembling the frame with the disc sections, observe that the bearing support (shoe) must face the concavity of the discs, as shown in figure 6.
- 13 - When fixing the wipers item 6, they must be 5 to 10 mm away from the disc, as shown in figure 7.

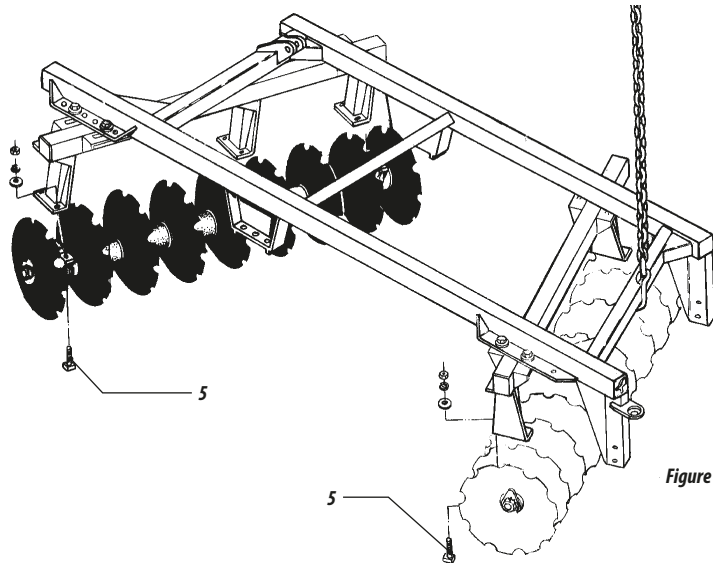


Figure 5

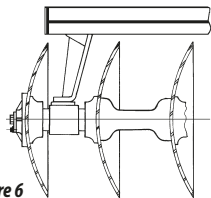


Figure 6

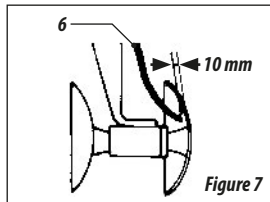
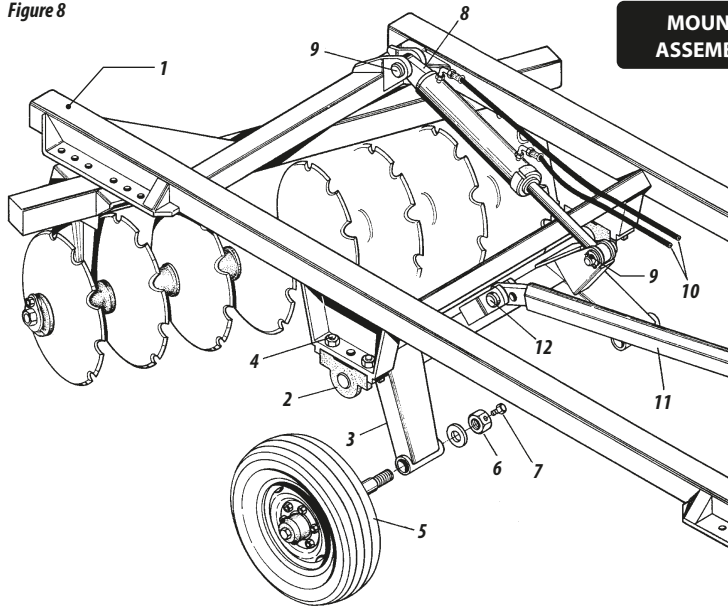


Figure 7

Figure 8



**MOUNTING OF THE HYDRAULIC SYSTEM AND ARTICULATING WHEEL
ASSEMBLY CRSG-L 18 - 32 / CRI-R 12 - 26 MODELS WITH SINGLE WHEELS**

- 14-Coupling the hubs item 2 figure 8 on the articulation axis of the tires item 3 and fix the hub on the frame item 1 with the screws item 4. Insert the mounted wheel item 5 on the articulation axis item 3, place the thrust washer and the nut item 6 locking with the screw item 7.
- 15-Place the articulation piston item 8 with the pins item 9, couple the hoses item 10 on the piston.
- 16-Place the cross bar item 11 on the articulation axis with the pin item 12, figure 8.

MOUNTING OF THE HYDRAULIC SYSTEM AND THE ARTICULATING WHEEL ASSEMBLY CRSG 32 - 48 / CRI 32 - 44 MODELS WITH DUAL WHEELS

- 17 - Couple the hubs item 2, figure 9, on the articulation shaft item 3, fix the hubs on the upright item 1 with the screws. Place the support of the articulation shaft item 4, on the shaft item 3 through the pins item 5 and lock with the screw. Place the plates item 6, from the axle support item 4 to the upright item 1, through the pin item 7 locking with the cotter pin item 8. Fix the axle item 9 on the axle support item 4, with the screws item 10.
- 18 - Fix the wheels item 11 on the axle item 9 through the nuts item 12.
- 19 - Place the articulation pistons item 13, with the cylinder base fixed on the upright using the pin item 14, and the rod fixed on the articulation shaft with the pin item 15.
- 20 - Fix the oil distributor item 16, on the item item 1 post. Couple the hoses item 17 from the piston to the distributor. Attach the hoses item 18 to the distributor and secure them to the frame using the clamp item 19, as shown in figure 9.
- 21 - Place the crossbar item 20 on the articulation axis item 3 through the pin item 21.

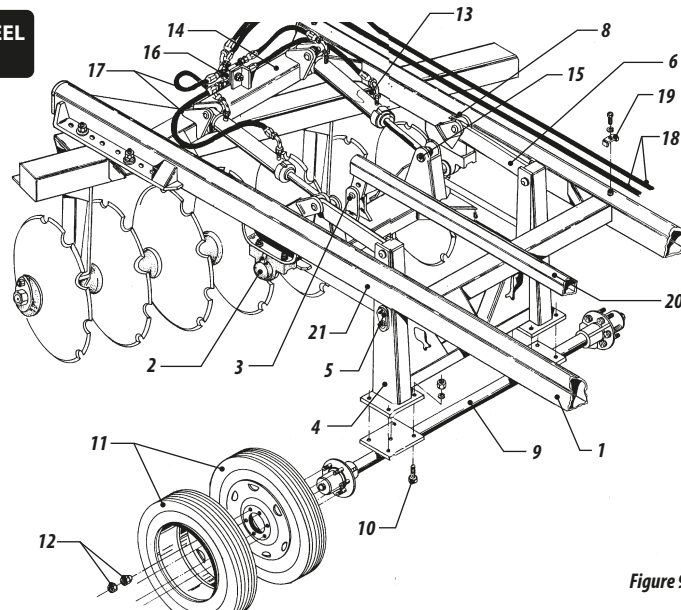
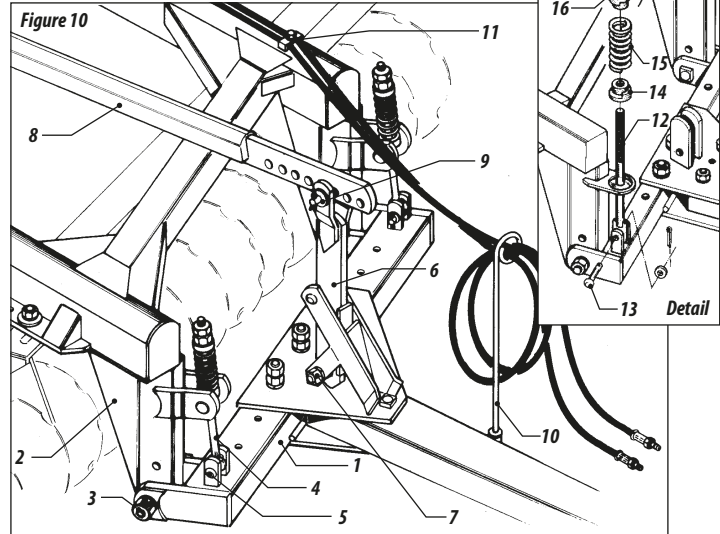


Figure 9

MOUNTING OF THE HITCH SYSTEM

- 22 - Fix the complete coupling header item 1 figure 10 on the frame item 2 with screws and nut item 3.
- 23 - For CRI/CRSG from 32 to 48, insert the complete stabilizer rod item 4 between the upright plates, and fix the lower part of the rod to the crossbar through pin item 5.
- 24 - For CRSG/CRI/CRI-R from 12 to 28 discs, insert the rod item 12 into the upright plate, fixing it with the pin item 13. Insert the spring stop item 14 the spring stop item 15 on the rod item 12 16 and the nuts item 17 according to the detail of figure 10.
- 25 - Place the stabilizer bar support item 6 on the upper header plate with the screw item 7. Attach the front part of the stabilizer bar item 8 to the support through the pin item 9.
- 26 - Attach the hose support item 10 to the coupling header and insert the hoses through the hole in the header.
- 27 - Place the hose clamp item 11 on the upright beam, as shown in figure 10.



05. HITCH

HITCHING TO THE TRACTOR

- 01 - To hitch the harrow to the tractor drawbar, observe their alignment, adjust the exact height on the harrow hitch and use hitch pin item 1, flat washer item 2 and cotter pin item 3, figure 11.
- 02 - Attach hoses item 4 to the tractor's quick coupler.



ATTENTION

Before connecting and disconnecting the hydraulic hoses, stop the engine and relieve the circuit pressure, activating the control levers fully. Make sure that, when relieving the system pressure, no one is injured by moving the equipment.

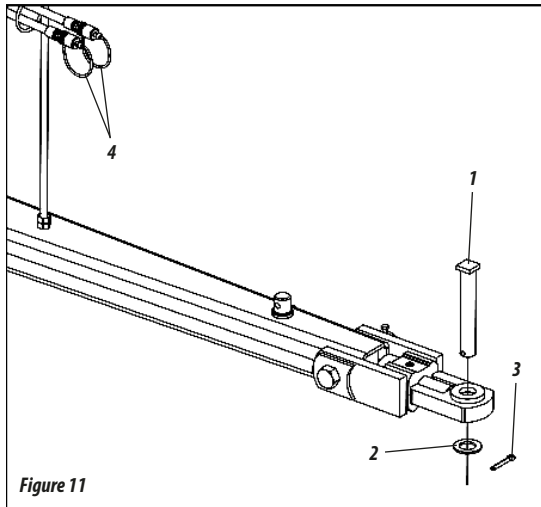


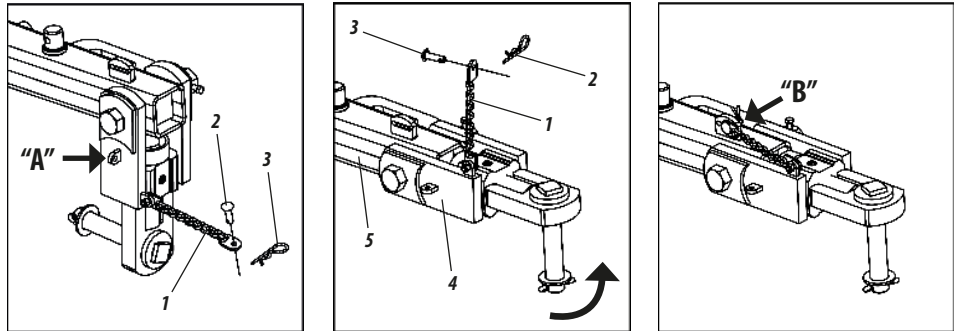
Figure 11

HITCHING TO THE TRACTOR (CRI 44 DISCS) - PART I

The **CRI 44 discs** can be optionally purchased with header with traction chain; To attach it to the tractor drawbar, proceed as follows:

- 01 - Slowly approach the tractor to **CRI 44 discs** in reverse gear, paying attention to applying the brakes. Then, turn off the tractor engine, relieve the control pressure by activating the lever a few times and check if the couplings are clean, if not, clean them.
- 02 - Then, release the chain (1) from point "A" through the pin (2) and lock (3), figures 12.
- 03 - Then, articulate the shackle (4) and fix the chain (1) through the pin (2) and latch (3) at one of the points "B" so as to keep the shank (4) parallel to the hitch header (5) .

Figures 12



HITCHING TO THE TRACTOR (CRI 44 DISCS) - PART II

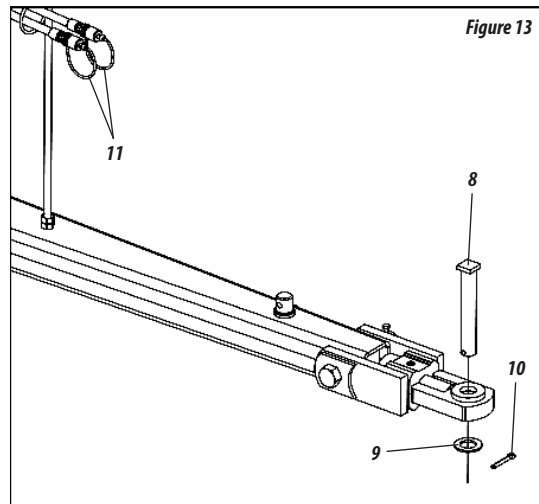
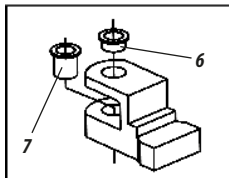
- 04 - Then, take the smaller (6) and larger (7) adapter bushings from the packaging box that come with the **CRI 44 discs** and place them on the tractor hitch, as per **detail "A"**.
- 05 - Then slowly approach the tractor to **CRI 44 discs** in reverse gear, paying attention to the application of the brakes and hitch the **CRI 44 discs** to the tractor, fixing it through the hitch pin (8), flat washer (9) and cotter pin (10), figure 13.
- 06 - Then couple the hydraulic hoses (11) to the tractor's quick coupling.



ATTENTION

Before connecting and disconnecting the hydraulic hoses, stop the engine and relieve the circuit pressure, activating the control levers fully. Make sure that, when relieving the system pressure, no one is injured by moving the equipment.

Detail "A"



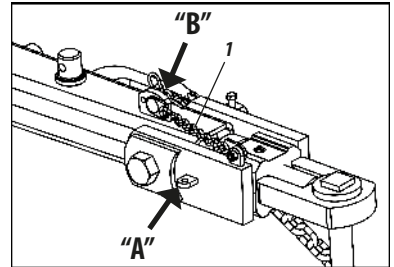
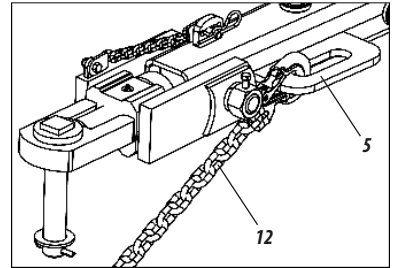
07 - Afterwards, fix the traction chain (12) on the hitch header (5) and on the tractor only when transporting or working with the **CRI 44 discs**, figures 14.



ATTENTION

The traction chain (12) provides greater safety during work or transport, preventing the CRI 44 discs from uncoupling from the tractor in case of breakage of the hitch pin (8). Do not work or transport the CRI 44 discs without securing the traction chain (12). Ignoring this warning could result in serious injury or death.

Before starting work or transporting the CRI 44 discs, release the chain (1) from point "B" and fix it to point "A". Ignoring this warning could result in damage to CRI 44 discs.



Figures 14

06. ADJUSTMENTS AND OPERATIONS

TRANSPORT

- 01-To transport the harrow install the rod guide (1) figure 15, on the hydraulic cylinder, lock with the pin (3) and hairpin (4).
- 02-To discing remove the rod guide and lock over the frame.

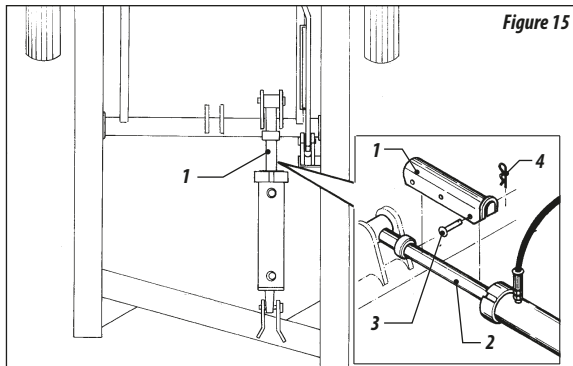
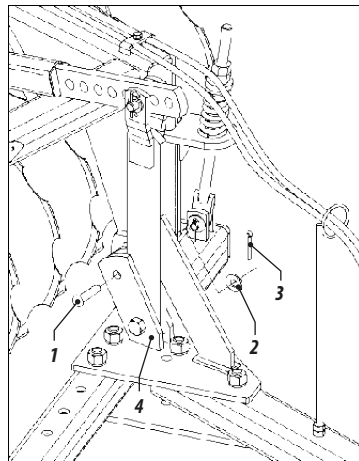


Figure 15

TRANSPORT / WORK

- 01 - Before transporting or working with the harrow, do the following:
- 02 - Remove the pin (1), flat washer (2) and cotter pin (3) from the header (4).

Figure 16



ATTENTION

Do no transport or work the harrow without first removing the pin (1) from the header (4). Failure to observe this will cause serious injury or damage to the equipment.

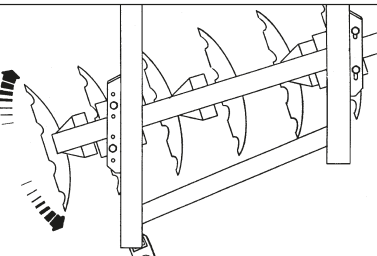
DISK HARROW GANGS ADJUSTMENTS

- 01 - The following adjustments can be made for a better disk blade penetration. In certain soil conditions, less penetration on gangs may occur, to avoid it adjust the angle of the disc.
- Nor hard ground conditions, or when more penetration is desired increase the angling of the discs as illustrated on the figure 17.
 - For normal ground conditions decrease the angling for disking.
- 02 - To increase or decrease the angle of the disc remove the bolts from the frame and adjust to the desired position.
- 03 - The ground wheel helps on the depth control.

Figure 17

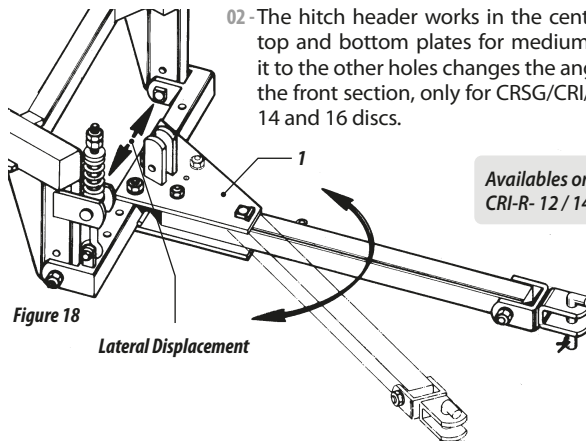
Decrease the
angling for disking

Increasing the
angling for disking



DISPLACEMENT ADJUSTMENT

- 01 - This displacement must be adjusted when the harrow is not giving a perfect finish, that is, leaving a trace of the tractor. The harrow must work centered with the tractor's traction line, to do so, move the upper and lower plates item 1 figure 18 of the header to the right or left as shown in figure 18.



- 02 - The hitch header works in the center hole of the top and bottom plates for medium soils; moving it to the other holes changes the angle of attack of the front section, only for CRSG/CRI/CRI-R with 12, 14 and 16 discs.

Availables only for CRSG-L /
CRI-R- 12 / 14 and 16 Discs)

Figure 18

CROSS BAR ADJUSTMENT

01 - The hitch arms are welded to the upright, which have two holes as shown in figure 19, whose main purpose is to level the harrow header in relation to the tractor's drawbar.

1 - MORE PENETRATION

2 - LESS PENETRATION



NOTE

When engaged in the upper hole, penetration will be greater and, consequently, in the lower hole, penetration will be smaller.

ADJUSTING THE STABILIZER BAR AND STABILIZER BAR SUPPORT

01 - Leave a gap of 10 to 20 mm between the nut and the stabilizer rod spring stop; also observe a gap of 10 to 20 mm between the stabilizer rod support and the back of the upper header plate according to the letter "A" in figure 19.

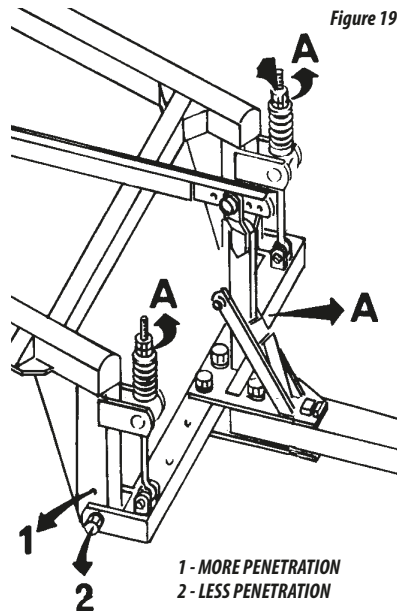


Figure 19

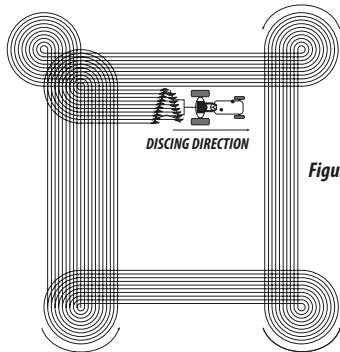
OPERATIONS

- 01 - Before the beginning of the season use clean off any dirt or grease that may have accumulated on moving parts. This will prevent abrasive action that could cause excessive wear, thoroughly inspect the disc for loose parts and adjust as necessary.

HOW TO START THE DISC

- 02 - Before starting the disc be sure that the harrow is following the contour plowing in order to it stay in left side of the tractor.
- 03 - Do not turn to the right side, as illustrated on figure 20, the discing area must be in the left side of the tractor.
- 04 - The next drawing show some operations.

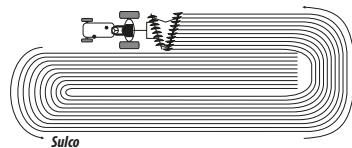
DISC FROM OUTSIDE TO INSIDE



Figures 20

DISC FROM INSIDE TO OUTSIDE

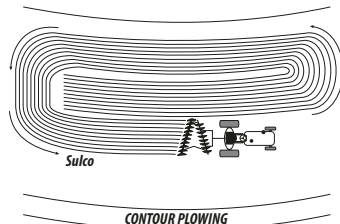
- 05 - In this direction obtain more accurate discing, when you are working on the edge you should start a new block.



Figures 20

WORKING IN TERRAIN WITH CONTOUR PLOWING

- 06 - In terrain with contour plowing you should start two blocks each time, be sure that the contour is located on the left side of tractor. When you arrive on half the block you should start a new block to save fuel.



Figures 20

07. LUBRICATION

- 01 - The correct lubrication is very important for providing a high durability and good working of the rotating parts of the engine which will result in years of trouble-free from the disc Harrow.
- 02 - Before running the engine, lubricate all-grease nipples in accordance with the schedule on the next pages. Use good quality lubrication recommended by the manufacturers.

LUBRICATION OF GREASE BEARING

- 03 - Clean all grease nipple and when it is replace damaged.
- 04 - The amount of grease for each bearing is 200 grams.
- 05 - The grease bearing must lubricated every 12 working hours in accordance with the table below.

LUBRICATION OF OIL BATH BEARING

- 06 - When you start to use the harrow check the oil level and the rings from the bearing daily.
- 07 - After several weeks inspect the oil level every 120 working hours.
- 08 - Replace the oil every 1200 working hours. Use oil SAE 90.

TABLE OF EQUIVALENT AND GREASES

<i>Manufacturer</i>	<i>Grease Type</i>
<i>Petrobrás</i>	<i>Lubrax GMA 2</i>
<i>Atlantic</i>	<i>Litholine MP 2</i>
<i>Ipiranga</i>	<i>Ipiflex 2</i>
<i>Castrol</i>	<i>LM 2</i>
<i>Mobil</i>	<i>Grease MP</i>
<i>Texaco</i>	<i>Marfak 2</i>
<i>Shell</i>	<i>Alvania EP 2</i>
<i>Esso</i>	<i>Multi H</i>
<i>Bardahl</i>	<i>Maxlub APG-2EP</i>
<i>Valvoline</i>	<i>Palladium MP-2</i>
<i>Petronas</i>	<i>Tutela Jota MP 2 EP</i>
	<i>Tutela Alfa 2K</i>
	<i>Tutela KP 2K</i>

Table 3



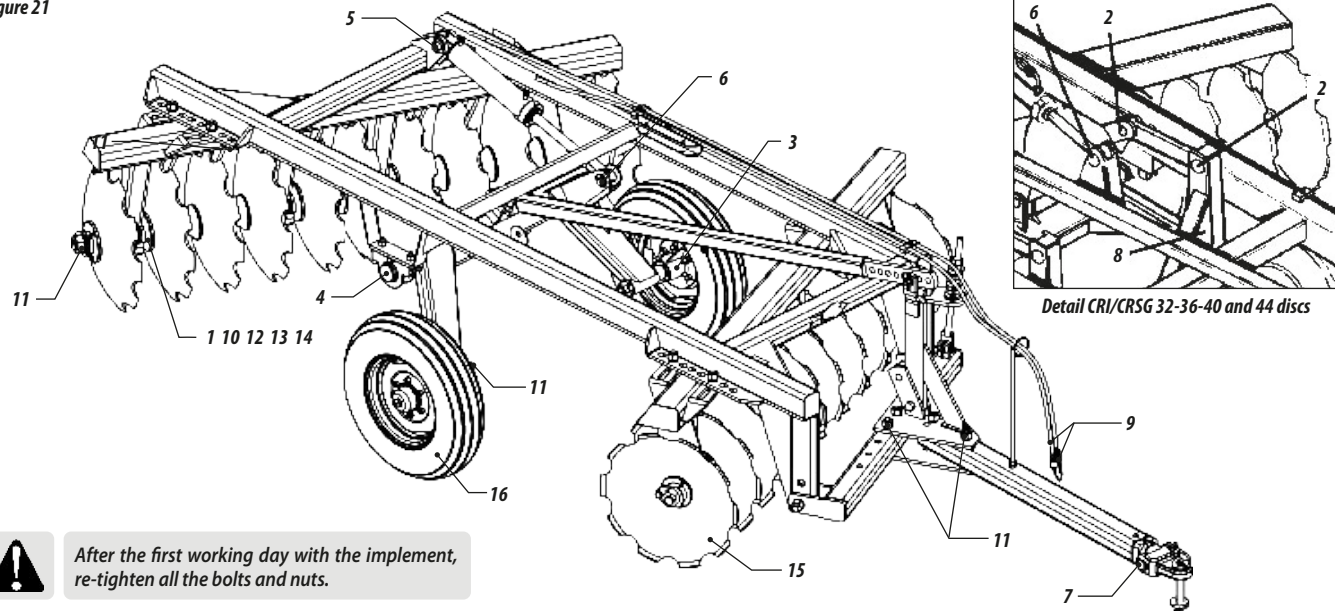
If there were other manufacturers or and other. Equivalent trends that are not listed in this. Table, consult the manufacturer's technical manual.

08. LUBRICATION POINTS

Table 4

Item	Part Name	Number of Grease Nipple						Oil replacement	Lubricate with grease	Re-tighten	Replace	Inspect	MAINTENANCE SCHEDULE
		CRI-R 12 and 14 Discs	CRI-R 16 and 18 Discs	CRI-R 20 to 26 Discs	CRI/CRSG 32 and 36 Discs	CRI/CRSG 40 and 44 Discs	CRSG 48 Discs						
1	Bearing	4	6	8	12	16	16		X				12 working hour
2	Articulation shaft pins	2	-	-	2	2	2		X				
3	Wheel Rubs	2	2	2	2	2	2		X				
4	Shaft hub	2	2	2	2	2	2		X				60 working hour
5	Clevis	1	1	1	2	2	2		X				
6	Rod	1	1	1	1	1	1		X				
7	Hitch point	1	1	1	1	1	1		X				
8	Support Plate	4	-	-	4	4	4		X				
9	Articulation											X	
10	Hydraulic System											X	120 working hour
11	Oil from the Bearing									X			
12	Nuts, Bolts, Pin							X					1200 working hour
13	Bearing										X		1500 working hour
14	Seal Ring										X		
15	Bearing										X		When Necessary
16	Blades / Tyre										X		

Figure 21



After the first working day with the implement, re-tighten all the bolts and nuts.

09. BEARING ADJUSTMENTS

- When the bearings present looseness, adjust them on the following way:

- 01 - Take the washer out item 1 figure 22.
- 02 - Release the bolts item 2 and take the lid item 3 out.
- 03 - Take the joints 1 or 2 item 4, out of the lid bearing. Put it again and tighten it.
- 04 - If the looseness is still, turn the lid item 3, to increase the adjustment after assemble the lid on the bearing with as many joints as it is necessary.
- 05 - The bearing should turn freely, that is, without radial and axial looseness.

10. CLEANING

- 01 - When the grade remains inactive for a long period, make a general cleaning, check if the painting didn't get spoiled. If it happened, pass a protecting oil and lubricate it totally. Check the discs, repaint them and pass a protecting oil on them.

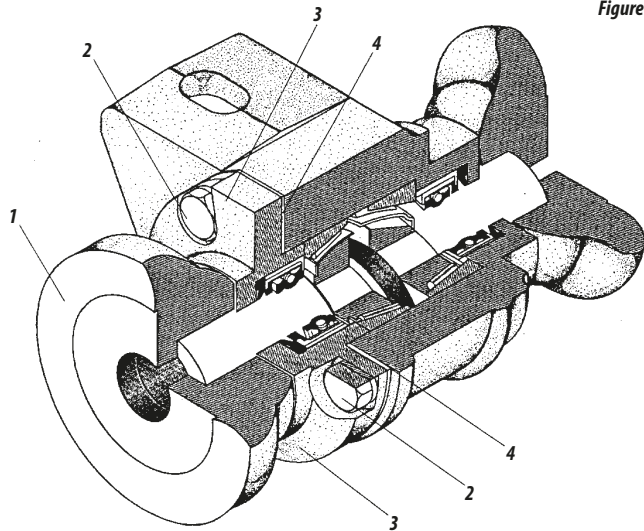


Figure 22



NOTE

Don't assemble the bearing without a joint.

11. HOURLY PRODUCTION OF THE CRSG / CRI / CRI-R

01 - To calculate daily production of the CRSG / CRI / CRI-R level harrow, use the following formula:

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

FORMULA DATA:

A = Area to be worked

L = Cutting width (meters)

V = Average tractor (meters)

F = Work hours

X = Number of hectares (10.000 m²)

Ex.: A harrow with 32 discs, how many hectares can it harrow in one hour at an average speed of 7 km per hour.

A = ?

L = 4,20m

V = 7.000m/h

F = 0,90

X = 10.000m²

$$\frac{A = 4,20 \times 7.000 \times 0,9}{10.000} = 2,65 \text{ Ha/h}$$

02 - APPROXIMATE HOURLY PRODUCTION TABLE.

Model	Working Width (mm)	Average Speed (m/h)	Working Hours	Approximate Production
				Hectares
CRSG - 32	3,65	7000	0,90	2,30
CRSG - 36	4,50	7000	0,90	2,83
CRSG - 40	4,60	7000	0,90	2,89
CRSG - 44	5,10	7000	0,90	3,21
CRSG - 48	5,60	7000	0,90	3,52

Table 5

Model	Working Width (mm)	Average Speed (m/h)	Working Hours	Approximate Production
				Hectares
CRI - 32	4,20	7000	0,90	2,65
CRI - 36	4,70	7000	0,90	2,96
CRI - 40	5,25	7000	0,90	3,30
CRI - 44	5,80	7000	0,90	3,65

Table 6

Model	Working Width (mm)	Average Speed (m/h)	Working Hours	Approximate Production
				Hectares
CRI-R - 12	1,65	7000	0,90	1,04
CRI-R - 14	1,95	7000	0,90	1,23
CRI-R - 16	2,25	7000	0,90	1,42
CRI-R - 18	2,55	7000	0,90	1,60
CRI-R - 20	2,85	7000	0,90	1,80
CRI-R - 22	3,15	7000	0,90	1,98
CRI-R - 24	3,45	7000	0,90	2,17
CRI-R - 26	3,75	7000	0,90	2,36

Table 7

- 03 - The formula to calculate the approximate production refers to the work area performed by the harrow.
- 04 - If it is wished to know many hours it will take to harrow a known area, just divide the area by the hourly production of the equipment.
- 05 - **Example:** What is the time (X) necessary for a harrow with 32 discs to prepare 35 hectares at a medium tractor speed of 7 Km/hour?

$$\frac{X = 35 \text{ Ha}}{2,65} = 13 \text{ hours approximately}$$

- 06 - Daily production varies with the pace of work such as moist or dry soils, topography, inadequate machine adjustments etc.
- 07 - These factors are not considered in the table which are based on normal working conditions.

12. IDENTIFICATION

PRODUCT IDENTIFICATION

01 - In order to refer parts catalogues or apply technical support from Baldan, always indicate model (1), serial number (2), manufacture date (3) located on the identification tag.

ALWAYS REQUIRE BALDAN ORIGINAL PARTS

			
BALDAN IMPLEMENTOS AGRÍCOLAS S/A. AV. BALDAN, 1500 NOVA MATÃO CEP 15.993-900 MATÃO-SP BRASIL FONE: (16) 3221-6600 CNPJ: 52.311.347/0009-06 CREA/SP 0170977			
01	Modelo / Model	Date / Date	03
02	Nº de Série / Serial Number	Tipo / Type	
Capacidade / Load Capacity		Peso / Weight	



PUBLICATIONS

Code: 6055010377-2
CPT: CRI324409222A



WARNING

The draws contained in this instruction manual are merely illustrative.



CONTACT

In case of doubt do not operate the equipment, please contact our After-sales Service.
Phone: 0800-152577
e-mail: posvenda@baldan.com.br

PRODUCT IDENTIFICATION

- Do the identification below to always have the properly informations about your equipment life time.

Owner: _____

Dealer: _____

Farm: _____

City: _____ Country: _____

Warranty certified number: _____ Serial number: _____

Model: _____

Purchase date: ____ / ____ / ____

Invoice. Nr: _____

NOTES:

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NOTES:

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CERTIFICATE OF 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 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 THE DELIVERY:** This equipment was very carefully prepared by the dealer's organization, inspected in all its parts in agreement with the manufacture's prescription.
- **DELIVERY SERVICE:** The user was informed about the current guarantee terms and instructed about maintenance care and utilization.
- I confirm that I was informed about the current guarantee terms and instructed about the correct utilization and maintenance of this product.

Product: _____ *Serial number:* _____

Date: _____ *Bill of sale:* _____ *Store:* _____

City: _____ *State:* _____ *Zip code:* _____

Owner: _____ *Phone:* _____

Adress: _____ *Number:* _____

City: _____ *State:* _____

E-mail: _____ *Date of sale:* _____

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Product: _____ Serial number: _____

Date: _____ Bill of sale: _____ Store: _____

City: _____ State: _____ Zip code: _____

Owner: _____ Phone: _____

Address: _____ Number: _____

City: _____ State: _____

E-mail: _____ Date of sale: _____

3ª Page - Manufacturer

Please send this filled copy to Baldan, until 15 days after the purchase.

Signature / Store's stamp _____

1.74.05.0059-5

AC MATÃO
ECT/DR/SP

RESPONSE CARD

NOT REQUIRED SEAL

SEAL WILL BE PAID BY:



BALDAN

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.

Av. Baldan, 1500 | Nova Matão | CEP: 15993-900 | Matão-SP | Brasil

Phone: (0**16) 3221-6500 | Fax: (0**16) 3382-6500

Home Page: www.baldan.com.br | e-mail: sac@baldan.com.br

Export: Phone: 55 16 3321-6500 | Fax: 55 16 3382-4212 | 3382-2480

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