

# ***Instruction Manual***



**GHO**

Mounted Offset Disc Harrow

**GHO-R**

Mounted Offset Disc Harrow Robust

 **BALDAN**



# INTRODUCTION

**W**e 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***



## **GHO**

Mounted Offset Dis Harrow

## **GHO-R**

Mounted Offset Dis Harrow Robust

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.  
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.

**> BALDAN**

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## WARRANTY

### PRODUCT WARRANTY

**BALDAN IMPLEMENTOS AGRÍCOLAS S/A** guarantees the dealer the normal functioning of the equipment for a period of 6 (six) months as from the date of delivery on the sales invoice to the first end consumer.

During this period **BALDAN** is committed to repairing material and/or manufacturing defects under its responsibility, which includes manual labor, freights and other expenses under the responsibility of the dealer.

During the warranty period, the request and replacement of eventual defective parts should be executed by the regional dealer, who will send the defective part to **BALDAN** for analysis.

When this procedure is not possible and the problem solving capacity of the dealer is exhausted, the dealer must request the support from **BALDAN** Technical Assistance through the specific form distributed to dealers.

After **BALDAN** Technical Assistance analyzes the replaced items and concludes that it is not a warranty issue, the dealer becomes responsible for the costs related to the replacement as well as the expenses with material, trip including accommodation and meals, accessories, lubrication used and other expenses resulting from calling Technical Assistance, and **BALDAN** is authorized to make the respective billing in the name of the dealer.

Any repair made by the dealer on the product during the warranty period will only be authorized by **BALDAN** through prior



presentation of the budget describing the parts and manual labor to be executed.

This deed does not include the product subjected to repairs or modifications at official dealers not belonging to the network of **BALDAN** dealers as well as the application of non genuine parts or components to the user product.

The present warranty becomes void when it is confirmed that the defect or damage is the result of undue use of the product, non-observation of the instructions or the inexperience of the operator.

It is agreed that the present warranty does not cover tires, polyethylene hoppers, cardans, hydraulic component, etc, which are equipments under warranty by their manufacturers.

The manufacturing and/or material defects subject to this warranty deed will not include, under any circumstance, reason for termination of purchase and sales contract or for indemnification of any kind.

**BALDAN** reserves the right to change and/or improve the technical characteristics of its products without prior warning and without obligation of doing so with the previously manufactured products.

## GENERAL INFORMATION

### OWNER

**BALDAN IMPLEMENTOS AGRÍCOLAS S/A** is not responsible for any accidental damage caused by the undue use, transport or storage of your equipment, be it due to the negligence and/or inexperience of any person.

Only persons with full knowledge of the tractor and the equipment should execute the transport and operation.

**BALDAN** is not responsible for any damage caused in unpredictable or abnormal situations during the normal use of the equipment.

*Incorrect use of this equipment may result in serious or fatal accidents. Before placing equipment into operation, carefully read manual's instructions. Ensure that the person responsible for the operation is instructed on the correct and safe handling. Also ensure that the operator read and understood the product's instruction manual.*



#### **NR-31 - OCCUPATIONAL SAFETY AND HEALTH IN AGRICULTURE, LIVESTOCK, SILVICULTURE, FOREST EXPLORATION AND AQUACULTURE.**

*The objective of this Regulatory Standard is to establish the principles to be observed in the organization and in the work environment, compatible with the planning and development of agricultural, livestock, silviculture, forest exploration and aquaculture activities with occupational safety, health and environment. Also ensure that the operator read and understood the product instruction manual.*

#### **THE OWNER OR OPERATOR OF THE EQUIPMENT.**

*Carefully read and observe the provision in NR-31.*

*For more information, consult site and read the NR-31 fully.*

*<http://portal.mte.gov.br/legislacao/normas-regulamentadoras-1.htm>*

## SAFETY RULES



THE SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT MESSAGE ON THE MESSAGE ON THE ENGINE, WHEN YOU SEE THIS SYMBOL, BE ALERT TO THE POSSIBILITY OF DEATH OR PERSONAL INJURY. FOLLOW THE INSTRUCTIONS IN THE SAFETY MESSAGE.



### 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 fastened.



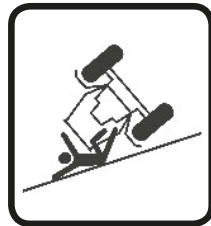
### WARNING

- Never carry people over the tractor or equipment.



### WARNING

- There are risks of serious injury by tipping when working on slopes.
- Never use excessive speed.



## SAFETY RULES



THE SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT MESSAGE ON THE MESSAGE ON THE ENGINE, WHEN YOU SEE THIS SYMBOL, BE ALERT TO THE POSSIBILITY OF DEATH OR PERSONAL INJURY. FOLLOW THE INSTRUCTIONS IN THE SAFETY MESSAGE.



### WARNING

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



### WARNING

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



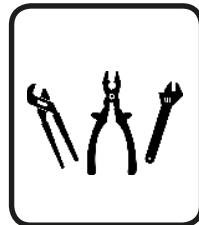
### WARNING

- Keep away from the active seeder elements (discs), they are sharp and can cause accidents.
- Whenever performing any work on the discs, wear safety gloves on your hands.



### WARNING

- Do not perform adjustments while GHO/GHO-R is running.
- When performing any service on GHO/GHO-R, switch off the tractor first. Use appropriate tools.



## SAFETY RULES

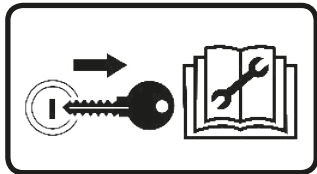


**ALCOHOLIC BEVERAGE OR SOME MEDICATIONS MAY CAUSE LOSS OF REFLEXES AND CHANGE THE OPERATOR'S PHYSICAL CONDITIONS. FOR THIS REASON, NEVER OPERATE THIS EQUIPMENT UNDER ANY OF THESE SUBSTANCES.**



### WARNING

- Remove the ignition key before performing any type of maintenance in GHO/GHO-R. Protect yourself against possible injuries or death caused by Fertiliza unexpected start-up.
- Do not start the tractor up if GHO/GHO-R is not properly engaged.



### WARNING

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



### WARNING

- Dispose residues inappropriately affects the environment and the ecology since you will be polluting rivers, canals or the soil.
- Inform yourself about the proper way of recycling or disposing residues.

### PROTECT THE ENVIRONMENT!












### WARNING







- Do not exceed the speed of 16 km/h or 10 MPH when transporting this equipment in order to avoid the risk of damages and accidents.



## WARNINGS

- 01-  When operating the harrow, prevent people from staying too close to or over the equipment.
- 02-  Use gloves during the mounting or dismounting of disc sections.
- 03-  Do not use very loose clothing as it may get caught on the harrow.
- 04-  Do not drive on highways, especially at night. Do not drive on highways, especially at night.
- 05-  Do not start the tractor engine in a closed setting without suitable ventilation because the exhaust gases are dangerous to health.
- 06-  Do not make adjustments while the harrow is in motion.
- 07-  When activating the tractor engine, be properly seated on the operator seat and have complete knowledge of the correct and safe handling of the tractor as well as the harrow. Always keep the gear stick in the neutral position, switch o the power take-o control gearing and place the hydraulic controls in the neutral position.
- 08-  When maneuvering the tractor to the coupler of the harrow, make sure there is enough space and no one too close to it, always maneuver at reduced speed and be prepared to brake in an emergency.
- 09-  When working on sloped lands, proceed carefully, always maintaining the necessary stability. In the case of misbalance, reduce the speed, and turn the wheels towards the slope side of the land.

## WARNINGS

- 10-  Always drive the tractor at speeds compatible with safety, especially in works on uneven lands or slopes, always keep the tractor engaged.
- 11-  When driving the tractor on roads, keep the brake pedals interconnected and use the safety sign.
- 12-  Do not work with the tractor if its front is light. Add weights to the front or front wheels in case it may be raised.
- 13-  When leaving the tractor, put the brake handle in the neutral position and use the parking brake. Do not leave the harrow coupled to the tractor with the hydraulic system in the raised position.
- 14-  Alcoholic drinks or some drugs may cause loss of reflexes and change the physical conditions of the operator. Therefore, never operate this equipment when under the influence of these substances.
- 15-  Read or explain all the procedure above to users that cannot read.

*In case of doubts, refer to Post-Sale.  
Telephone: 0800-152577 / E-mail: posvenda@baldan.com.br*

## COMPONENTS

### GHO MOUNTED OFFSET DISC HARROW

- 01- Front Frame
- 02- Coupling Header
- 03- Rear Frame
- 04- Cutout Disc
- 05- Smooth Disc
- 06- Cleaner
- 07- Cat. II Coupling Pins
- 08- Spool
- 09- Bearing

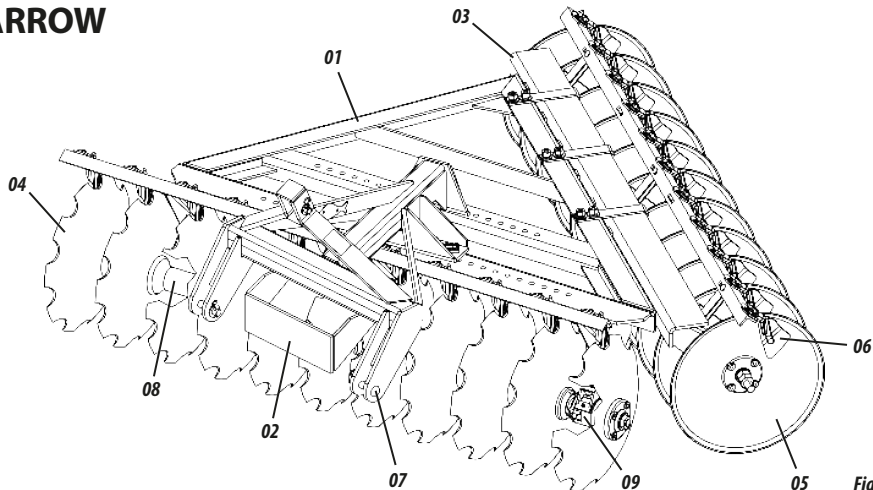


Figure 01



## COMPONENTS

### GHO-R MOUNTED OFFSET DISC HARROW ROBUST

- 01- Front Frame
- 02- Coupling Header
- 03- Rear Frame
- 04- Cutout Disc
- 05- Smooth Disc
- 06- Cleaner
- 07- Cat. II Coupling Pins
- 08- Spool
- 09- Bearing
- 10- Frame Lock

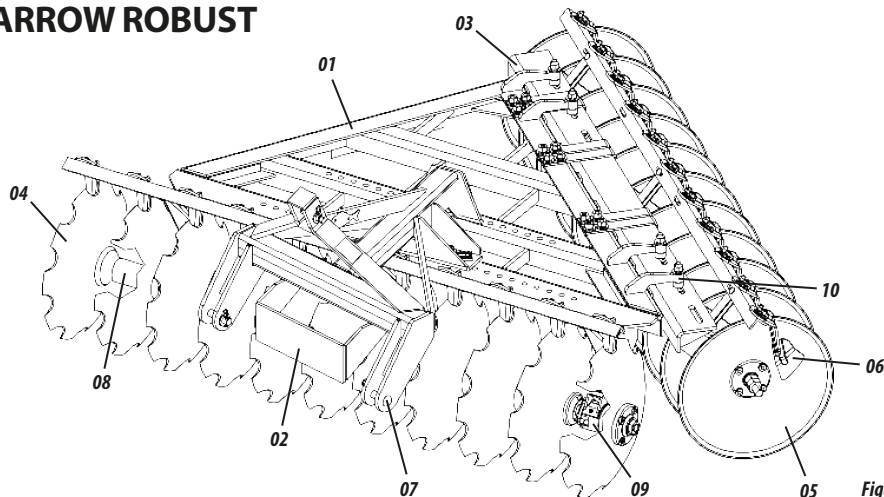


Figure 02

## TECHNICAL SPECIFICATIONS

### GHO MOUNTED OFFSET DISC HARROW

Table 01

Model	Number of Discs	Working Width (mm)	Approximate Weight (Kg)			Tractor Power (Hp)
			20"	22"	24"	
<b>GHO</b>	12	1145	535	553	590	40-51
<b>GHO</b>	14	1374	586	606	650	40-51

Disc Diameter (Ø) ..... 20"-22"-24"  
 Shaft Diameter (Ø) ..... 1.1/4"  
 Working Depth ..... 50-250 mm  
 Disc Spacing ..... 228 mm

Baldan reserves the right to change and/or improve the technical characteristics of its products without prior warning and without obligation of doing so with the previously manufactured products. The technical specifications are approximate and informed in the normal working conditions.

### GHO-R MOUNTED OFFSET DISC HARROW ROBUST

Table 02

Model	Number of Discs	Working Width (mm)	Approximate Weight (Kg)			Tractor Power (Hp)
			20"	22"	24"	
<b>GHO-R</b>	16	1603	627	650	700	55-66
<b>GHO-R</b>	18	1832	687	714	770	66-75
<b>GHO-R</b>	20	2061	748	777	840	70-80
<b>GHO-R</b>	22	2290	789	821	890	75-85

## MOUNTING

Before mounting the **GHO** and **GHO-R** harrows, open the components box, separate and identify each part contained in it and check through the packing list found inside the box.

### COMPONENT IDENTIFICATION (FIGURES 3/4/5/6/7)

The **GHO** or **GHO-R** harrows consist of:

- 2 Mounted rollers containing: Shafts, bearings, spools, washers and nuts (Figure 3).
- 1 Coupling header (Figure 4).
- 1 Front frame. The rear disc section is already attached to the frame (Figure 5).
- 1 Rear disc section, ready to be cutout, smooth or mixed, totaling the number of discs of the harrow (Figure 6).
- 1 Component box containing: Pins, screws, washers, nuts, locks and wrenches (Figure 7).

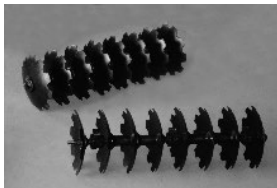


Figure 03

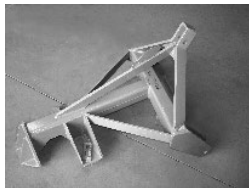


Figure 04



Figure 05

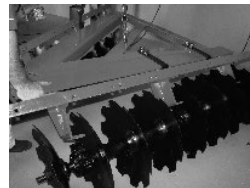


Figure 06



Figure 07

## MOUNTING

### MOUNTING OF DISC SECTION (FIGURE 8)

- When mounting the **GHO** or **GHO-R**, always start with the set of discs, proceeding as follows:

- 01- First take the shaft (1) and place the concave thrust washer (2).
- 02- Then put the disc (3), bearing (4), another disc (3) and separator spool (5) on the shaft (1) and so on successively, as shown in gure 8.
- 03- When the set is complete with all the discs, bearings, separator spools, put the convex thrust washer (6) and the nuts (3), tightening with the wrench until the entire set is rmly secured.
- 04- Then wedge the set of discs and tighten the nuts (7) by impact means.



### WARNING

*Use safety gloves on your hands when performing any mounting and dismounting services on the discs.  
Do not use loose clothing as it can get caught on the equipment.*

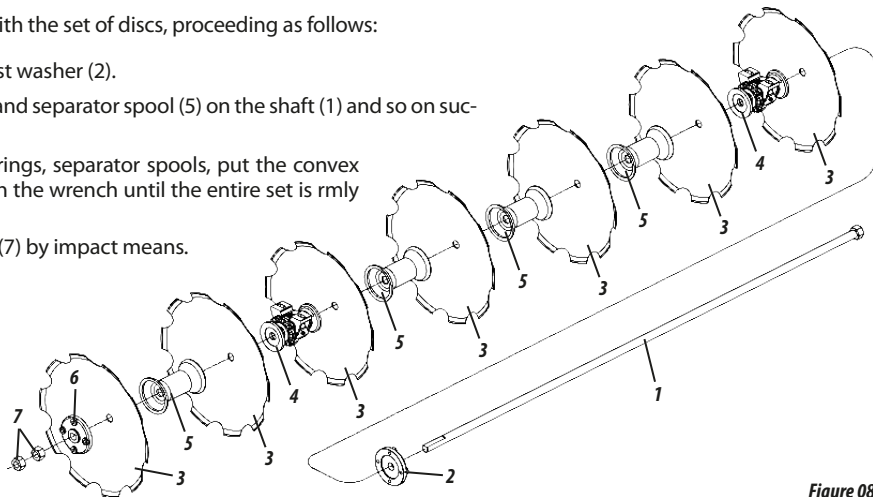


Figure 08



**BALDAN**

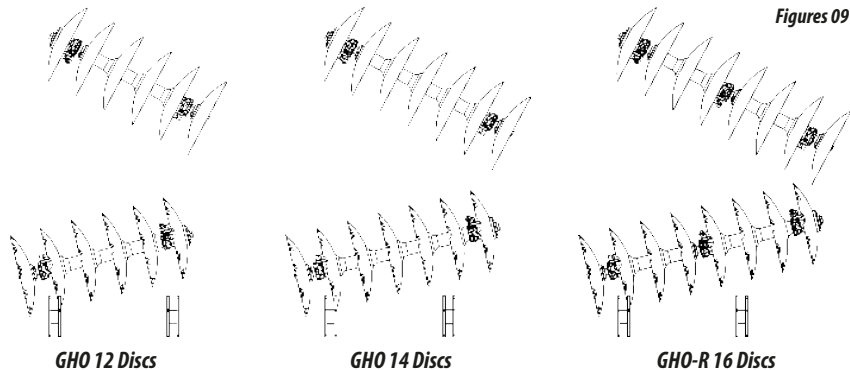
**Instruction Manual**

**GHO/GHO-R - 18**

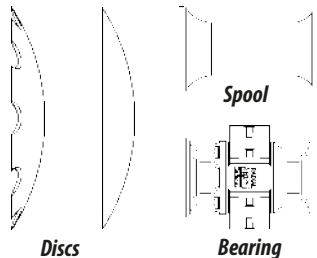
## MOUNTING

### MOUNTING OF DISC SECTION PER MODEL (FIGURES 9)

Figures 9 shows the mounting of disc sections for each model of **GHO** and **GHO-R** harrows.



#### LEGEND:



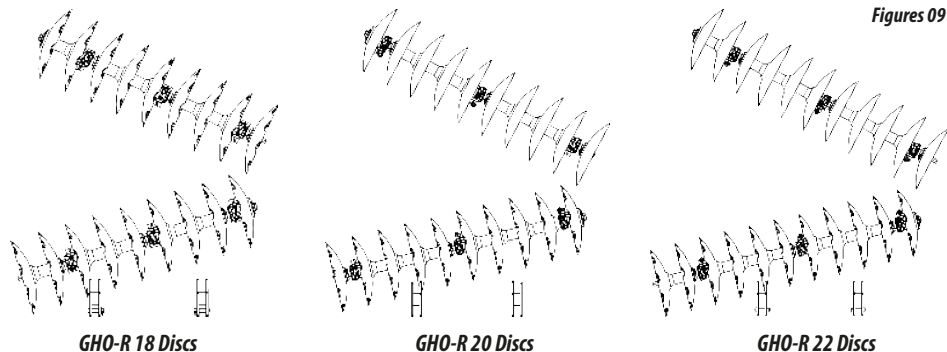
#### WARNING

Before mounting the disc sections, seek an ideal place that facilitates the identification of the components and their mounting.

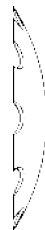
## MOUNTING

### MOUNTING OF DISC SECTION PER MODEL - CONTINUATION (FIGURES 9)

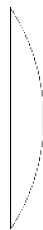
Figures 9 shows the mounting of disc sections for each model of **GHO** and **GHO-R** harrows.



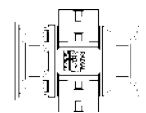
#### LEGEND:



*Discs*



*Spool*



*Bearing*



#### WARNING

Before mounting the disc sections, seek an ideal place that facilitates the identification of the components and their mounting.



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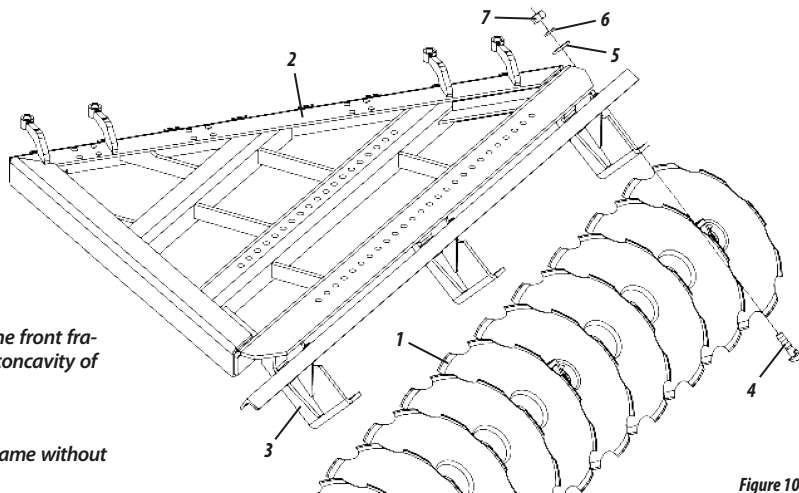
**GHO/GHO-R - 20**

## MOUNTING

### MOUNTING OF DISC SECTION ON FRONT FRAME (FIGURE 10)

- In order to mount the disc section (1) on the front frame (2), proceed as follows:

- 01- Raise the front frame (2) and place the disc section (1) in row aligning the holes of the wedges (3) with the bearings and then secure by using the screws (4), at washers (5), pressure washers (6) and nut (7).
- 02- After mounting, check to see if the wedges (3) are facing the concavity of the discs.



#### WARNING

*When mounting the disc section on the front frame, ensure that the wedges face the concavity of the discs.*



#### NOTES

*The front disc section is attached to the frame without adjustments.*

Figure 10

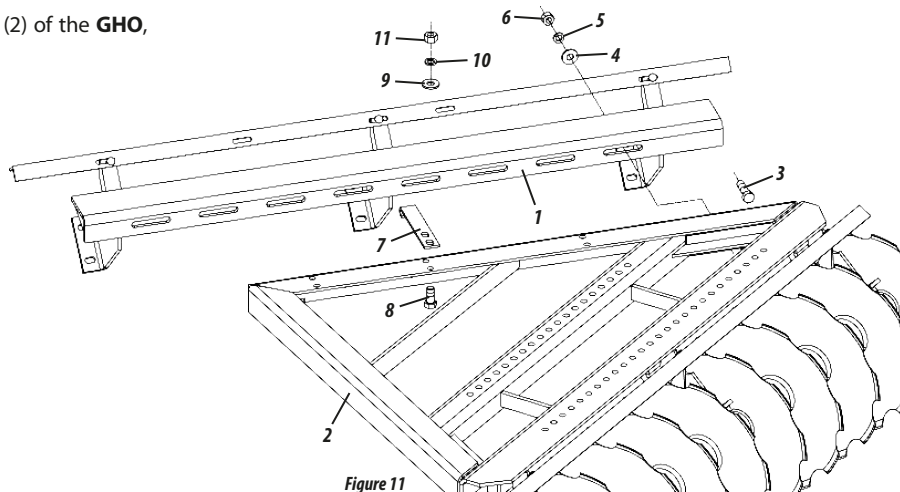


## MOUNTING

### MOUNTING OF REAR FRAME - GHO (FIGURE 11)

- To mount the rear frame (1) on the front frame (2) of the **GHO**, proceed as follows:

- 01- Raise the front frame (2), lean against the rear frame (1) and attach with the screws (3), at washers (4), pressure washer (5) and nut (6).
- 02- Then place the plates (7), locking the rear frame (1) to the front frame (2) through screws (8), at washers (9), pressure washer (10) and nuts (11).





## MOUNTING

### MOUNTING OF REAR FRAME - GHO-R (FIGURE 12)

- To mount the rear frame (1) on the front frame (2) of the **GHO-R**, proceed as follows:

- 01- Raise the front frame (2), lean against the rear frame (1) and attach with the screws (3), at washers (4), pressure washer (5) and nut (6).
- 02- Then place the bushings (7), securing with the screws (8), at washers (9), pressure washers (10) and nuts (11).
- 03- After, place the plates (12), locking the rear frame (1) to the front frame (2) through screws (13), at washers (14), pressure washer (15) and nuts (16).

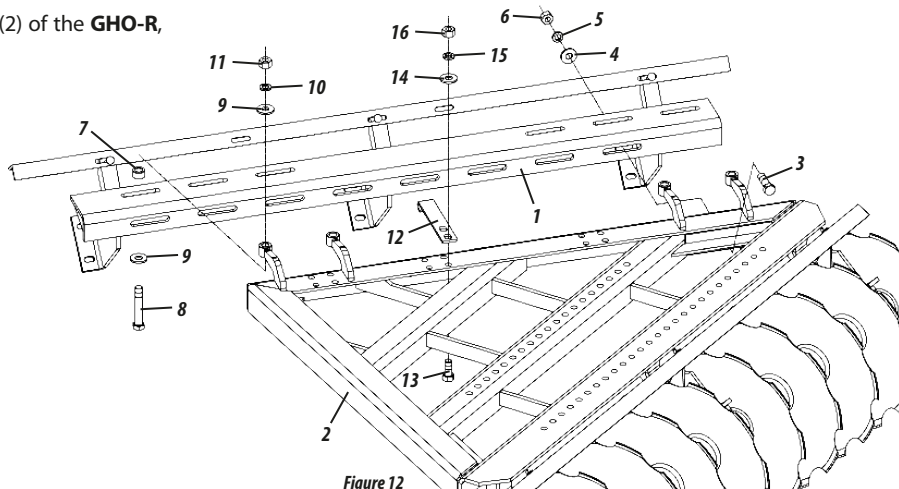


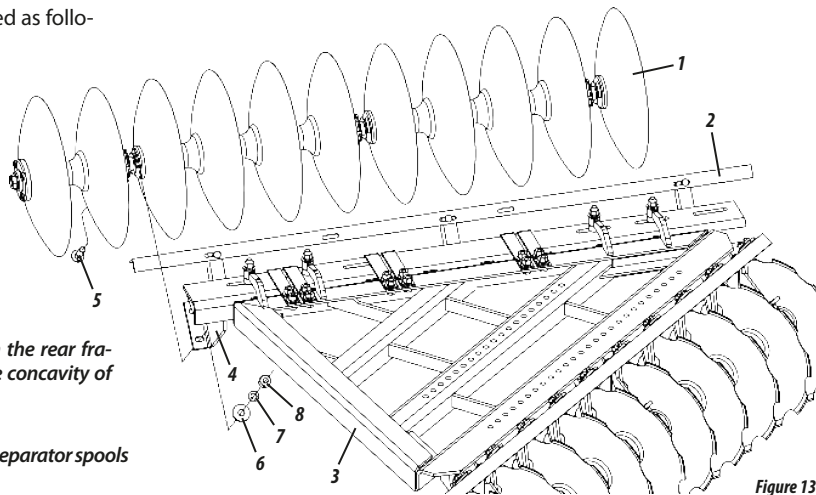
Figure 12

## MOUNTING

### MOUNTING OF DISC SECTION ON REAR FRAME (FIGURE 13)

- To mount the disc section (1) on the rear frame (2), proceed as follows:

- 01- Raise the front frame (3) and place the disc section (1) in row aligning the holes of the wedges (4) with the bearings and then secure using the screws (5), at washers (6), pressure washers (7) and nut (8).
- 02- After mounting, check to see if the wedges (4) are facing the concavity of the discs.



#### WARNING

*When mounting the disc section on the rear frame, ensure that the wedges face the concavity of the discs.*



#### NOTE

*The rear discs should be at the center of the separator spools of the front section.*



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Figure 13

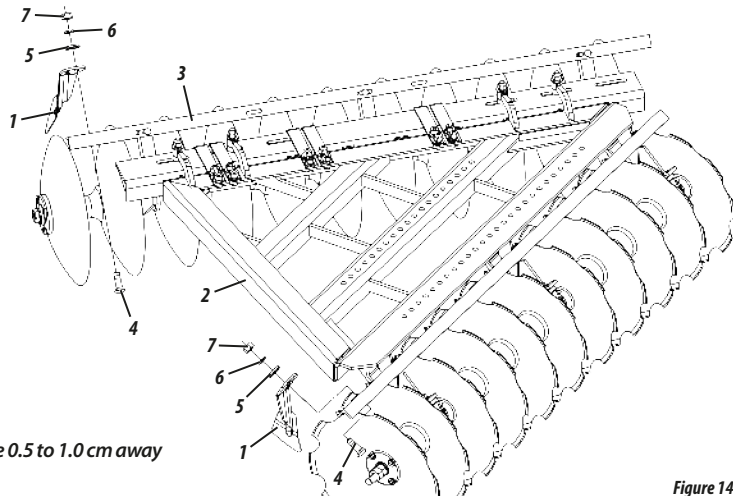
**GHO/GHO-R - 24**

## MOUNTING

### MOUNTING OF CLEANERS (FIGURE 14)

- After mounting the disc sections on the frames, attach the cleaners (1), proceeding as follows:

- 01- Put the cleaners (1) on the front frame (2) and rear frame (3), securing them with screws (4), special washers (5), pressure washers (6) and nuts (7).



#### WARNING

*When mounting the cleaners, these should be 0.5 to 1.0 cm away from the discs.*

Figure 14

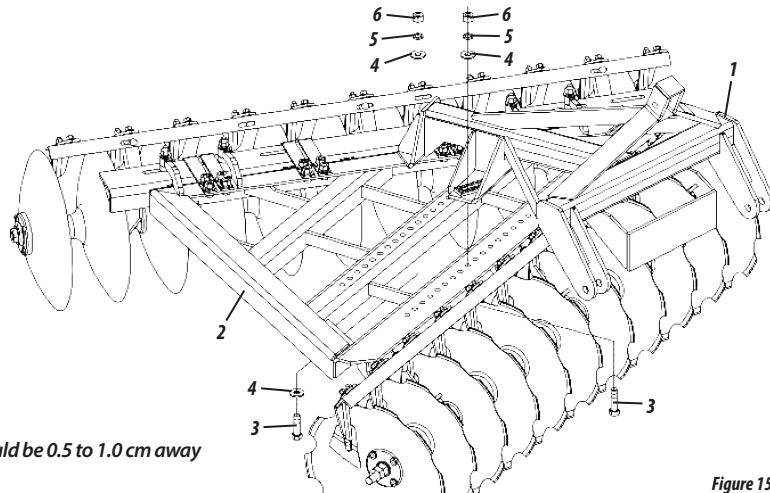


## MOUNTING

### MOUNTING OF COUPLING HEADER (FIGURE 15)

- To mount the coupling header (1), proceed as follows:

- 01- Attach the coupling header (1) to the bars and to the 3rd point of the tractor's hydraulic system.
- 02- Then raise the coupling header (1) and position it on top of the front frame (2).
- 03- Afterwards, fasten the coupling header (1) to the front frame (2) through screws (3), at washers (4), pressure washers (5) and nuts (6).



#### WARNING

*When mounting the cleaners, these should be 0.5 to 1.0 cm away from the discs.*



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Figure 15

**GHO/GHO-R - 26**

## MOUNTING

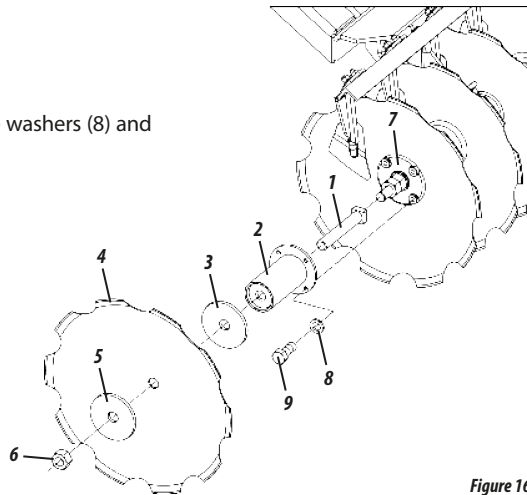
### MOUNTING OF DISC SPREADER (FIGURE 16)

- To mount the disc spreader, proceed as follows:

01- Insert the shaft (1) in the disc spreader (2).

02- Then place the thrust washer (3), disc (4), another thrust washer (5) and nut (6).

03- Afterwards, fasten the disc spreader (2) to the thrust washer (7) through the pressure washers (8) and screws (9).



#### WARNING

*The disc spreader should be mounted on the right side of the front disc section and on the left side of the rear disc section, always viewing the harrow in the working direction.*

Figure 16

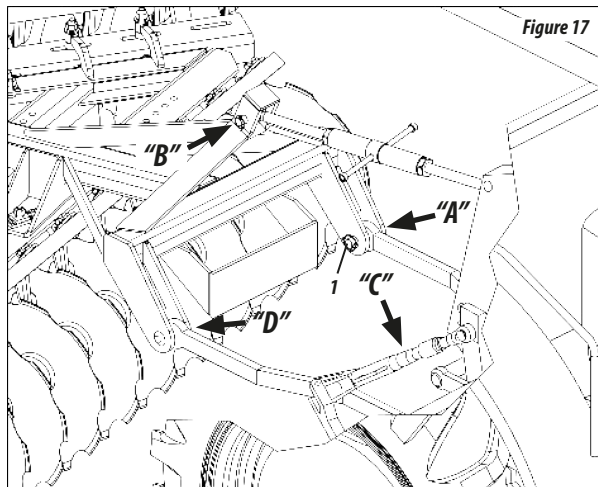
## COUPLING

### HARROW COUPLING (FIGURE 17)

- Before coupling the **GHO/GHO-R**, check if the tractor is prepared for work by observing the following items:
- Check if the tractor is equipped with a set of weights at the front or on the front or rear wheels to keep the tractor from being raised. On the rear wheels, it will give the tractor more stability and traction on the soil.
- Adjust the eyelet of the lower arms of the tractor.

- To couple the **GHO/GHO-R**, proceed as follows:

- 01- Slowly bring the tractor close to the harrow on reverse, paying attention to the application of the brakes. Use the position control lever of the hydraulic when drawing close to the harrow, laving the left lower arm at the level of the coupling of the seed drill.
- 02- Couple the left lower arm of the tractor through the coupling pin (1) to support "A" of the harrow.
- 03- Couple the 3rd point of the tractor to support "B" of the harrow.
- 04- Last, with the aid of the regulating lever "C", couple the right lower arm of the tractor to support "D" of the harrow.



## SETTINGS

### DISC HARROW CENTRALIZATION (FIGURE 18)

- To centralize the **GHO/GHO-R** in relation to the longitudinal axis of the tractor, proceed as follows:

- 01- Align the upper coupler of the harrow with the 3rd point of the tractor, checking to see if the distances "E" of the lower arms of the hydraulic system are the same in relation to the tractor tires.
- 02- The lower arms should be leveled with one another.

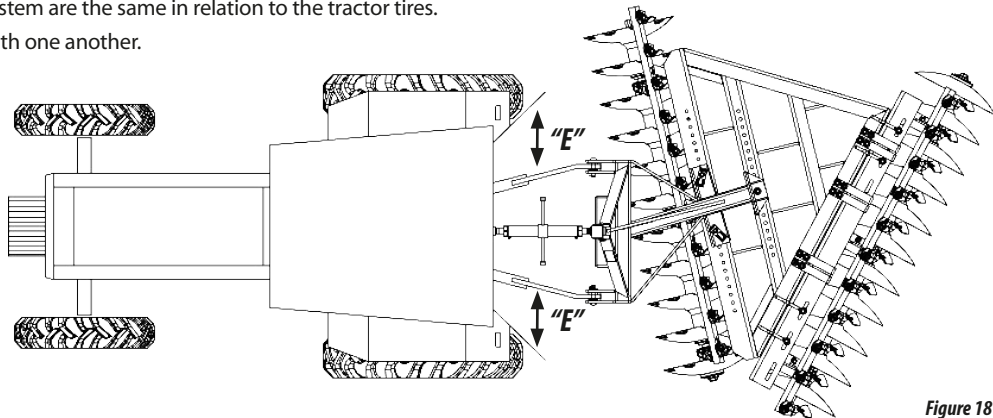


Figure 18

## SETTINGS

### DISC HARROW LEVELING (FIGURE 19)

- In order to level the **GHO/GHO-R**, proceed as follows:

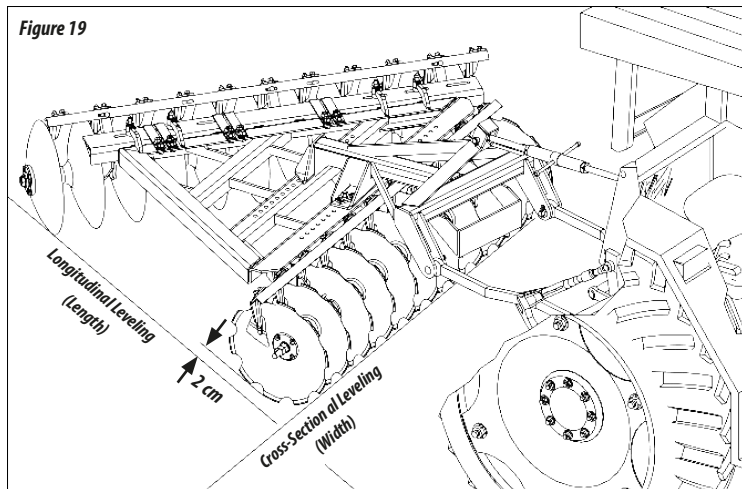
- 01- First, the tractor should be on a flat plane.
- 02- Then, level the harrow in the cross-sectional direction (width) through the handle of the right lower arm of the hydraulic coupler.
- 03- Después, realizar el nivelado longitudinal (longitud). After, execute longitudinal leveling (length). This is executed through the 3rd point arm. Observe that the rear discs of the harrow should be approximately 2 cm above ground level, **as shown in figure 19**.



### IMPORTANT

Ensure that the rear discs are approximately 2 cm above ground level in order for the discs to have the same penetration depth in the soil.

Figure 19





## SETTINGS

### DISPLACEMENT ADJUSTMENT (FIGURE 20)

The **GHO/GHO-R** can work in the central or lateral position in relation to the tractor. To change the position of the header (1), proceed as follows:

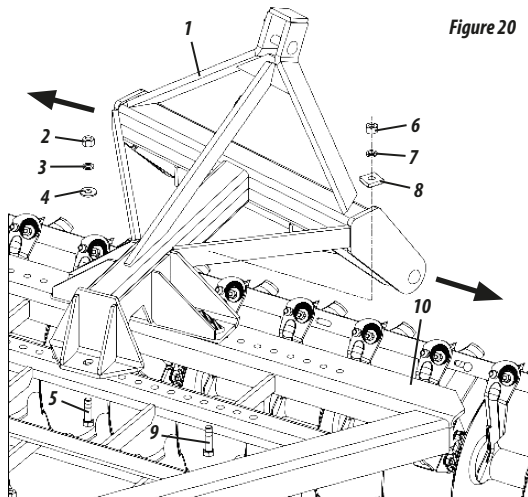
- 01- First, before loosening the head (1), ensure that it is supported or attached to the tractor.
- 02- Then, loosen the nut (2), pressure washer (3), at washer (4) and screw (5).
- 03- Afterwards, loosen the nuts (6), pressure washers (7), plates (8) and screws (9).
- 04- Lastly, displace the header (1) over the front frame (10), adjusting according to the work necessity.
- 05- Finish by attaching back the header (1).



#### WARNING

*Do not loosen the head (1) before ensuring that it is supported or attached to the tractor. Ignoring this warning may cause serious accidents or even death.*

Figure 20



## SETTINGS

### ADJUSTMENT OF REAR DISC SECTION - GHO (FIGURE 21)

The rear disc section of the **GHO** has lock adjustments (in order to overlap the rear discs to the front discs). The bigger the lock the bigger the cut produced and working depth. To adjust the rear disc sections, proceed as follows:

- 01- Loosen the nuts (1), pressure washers (2), at washers (3) and screws (4) to release the locks (5).
- 02- Then, loosen the nuts (6), pressure washers (7), at washers (8) and screws (9), releasing the rear frame (10) to move it, adjusting the rear disc section.
- 03- Finish by tightening back all the items above.



#### IMPORTANT

*The ideal position of the rear discs should be at the center of the separator spools of the front section.*



#### NOTE

*The front disc section is attached to the front frame, therefore it does not have adjustments.*

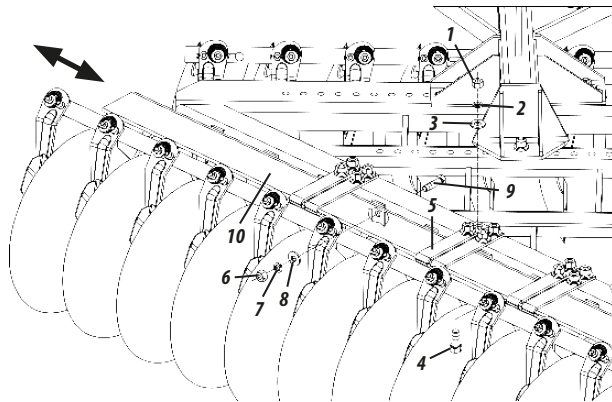


Figure 21



**BALDAN**

**Instruction Manual**

**GHO/GHO-R - 32**

## SETTINGS

### ADJUSTMENT OF REAR DISC SECTION - GHO-R (FIGURE 22)

The rear disc section of the **GHO-R** has lock adjustments (to overlap the rear discs to the front discs). The bigger the lock the bigger the cut produced and working depth. To adjust the rear disc sections, proceed as follows:

- 01- Loosen the nuts (1), pressure washers (2), at washers (3) and screws (4) to release the locks (5).
- 02- Then, loosen the nuts (6), pressure washers (7), at washers (8) and screws (9) to release the rear frame (10).
- 03- Afterwards, loosen the nuts (11), pressure washers (12), at washers (13) and screws (14), releasing the rear frame (10) to move it, adjusting the rear disc section.
- 04- Finish by tightening back all the items above.



#### IMPORTANT

*The ideal position of the rear discs should be at the center of the separator spools of the front section.*



#### NOTE

*The front disc section is attached to the front frame, therefore it does not have adjustments.*

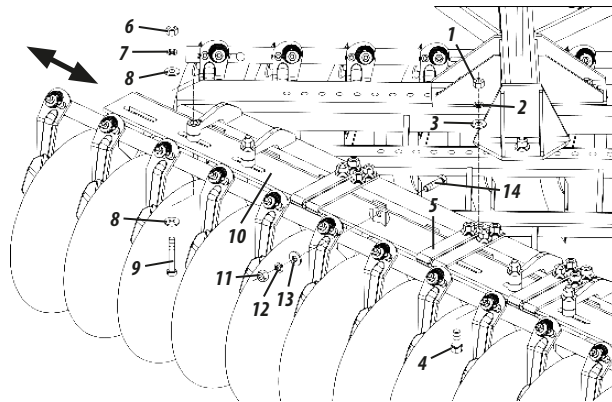


Figure 22



## OPERATIONS

The preparation of the tractor will enable you to save time besides having a better result in the eld works. The suggestions below may be useful.

- 01 - Adjust the tractor according to the content of the manufacturer's instruction manual, always using the front and back weights to stabilize the equipment.
- 02 - Before working with the harrow, carry out a complete revision, checking the following points:
  - Lubricate the components (when the harrow is equipped with the grease bearing).
  - Tighten the nuts and screws.
  - Lock the pins and retaining pins.
- 03 - After the rst day of work with the **GHO/GHO-R**, retighten all the screws and nuts and check the conditions of the pins and lock. Then carry out general retightening of all the screws and nuts after every 10 hours of work.
- 04 - The displacement speed of the harrow must be carefully controlled according to the conditions of the land.
- 05 - The harrow has various adjustments but only the site conditions (texture, humidity of the land and types of operations) can determine the best adjustment.
- 06 - Ensure that the harrow operator is trained and skilled to operate the harrow.
- 07 - In case of doubts, never operate or handle the harrow, consult Post-Market.  
Telephone: 0800-152577 or e-mail: posvenda@baldan.com.br

## OPERATIONS

### GROOVE FILLING (FINISHING)

After harrowing the 1st row on the field, adjust the side movement of the frame in order for the **GHO/GHO-R** to finish filling the groove and covering the track of the tractor; in this case, behind the rear tires (central adjustment).

For work in perennial crop orchards, execute side adjustment in order for the harrowing work to be under the crown of the trees (lateral adjustment).

The adjustments above are executed through the displacement of the coupling header in relation to the frame of the **GHO/GHO-R**, as shown in the instructions on page 31.

### HARROWING

When harrowing, always follow the terraces or contour line, starting operation with the terrace on the left side of the tractor operator.

Do not turn to the right, the harrowed land must always be to the left of the tractor operator.



### WARNING

*Before operating the harrow, carry out complete revision, retightening all screws, nuts, hose terminals, shafts and especially the disc sections.*

### HARROWING FROM INSIDE TO OUTSIDE (FIGURE 23)

Greater perfection is obtained in this direction. Start another plot when moving a lot on the headers.

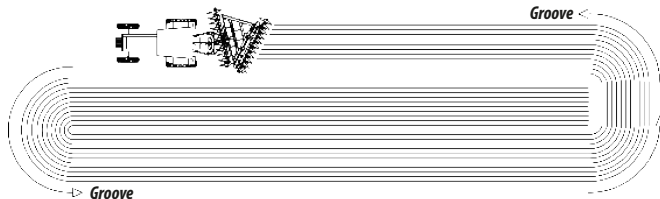


Figure 23

## OPERATIONS

### HARROWING FROM OUTSIDE TO INSIDE (FIGURE 24)

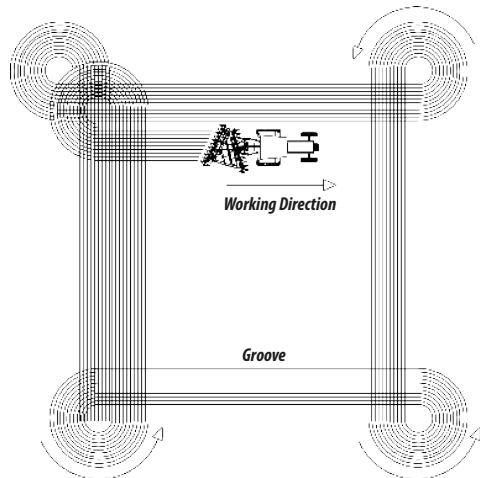


Figure 24

### PLOTS WITH CONTOUR LINES (FIGURE 25)

On lands with contour line, it is normal to start two plots at a time, carefully starting the work with the level curve on the left side of the tractor operator. When reaching the middle of the level curve, start the other half of the level curve, and start another plot to reduce the use of fuel.

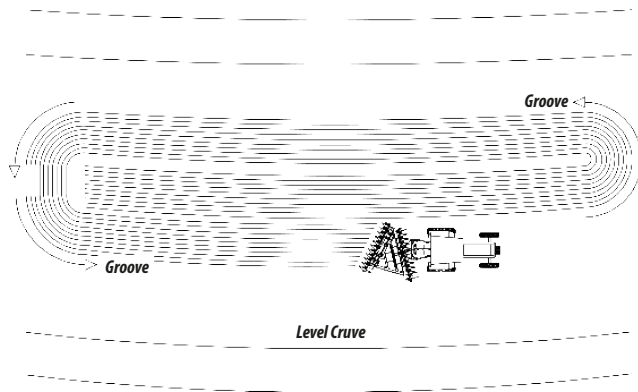


Figure 25

## CALCULATIONS

### APPROXIMATE HOURLY PRODUCTION

Use the formula below to calculate the approximate hourly production of the GHO/GHO-R harrows:

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

#### WHERE:

<b>A =</b>	Area to be worked
<b>L =</b>	Working width of the harrow (in meters)
<b>V =</b>	Average speed of the tractor (in meters/hour)
<b>F =</b>	Production factor - 0.90
<b>X =</b>	Value of the hectare - 10,000 m <sup>2</sup> (the value varies according to the region)

**Example: A GHO-R has 22 discs, how many ha will it produce in one working hour at an average speed of 7 km/h?**

**A = ?**

**L = 2,29 m**

**V = 7.000 m/h**

**F = 0,90**

**X = 10.000 m<sup>2</sup> (Calculated in hectares)**

$$A = \frac{2,29 \times 7.000 \times 0,90}{10.000} = 1,44 \text{ Ha/h}$$



#### WARNING

*The hourly production of the GHO/GHO-R can vary due to factors that change the rhythm of work such as wetness and hardness of the soil, declivity of the land, inadequate adjustments and working speed).*

## CALCULATIONS

### APPROXIMATE HOURLY PRODUCTION TABLE

#### GHO MOUNTED OFFSET DISC HARROW

Table 03

Model	Number of Discs	Working Width (m)	Average Speed (m/h)	Production Factor	Approximate Production in Hectares/Hour
GHO	12	1,14	7.000	0,90	0,71
GHO	14	1,37	7.000	0,90	0,86

The formula to calculate the approximate production refers to the calculation of areas to be worked or areas worked per harrow. To know the time spent working an area of known value, divide the value of this area by the hourly production of the harrow.

**Example: What is the time "X" spent for a GHO-R of 22 discs to produce 35 hectares at an average speed of 7km/h?**

$$X = \frac{35 \text{ Ha}}{1,44 \text{ Ha/h}} = 24,30 \text{ approximate hours to work 35 hectares.}$$

#### GHO-R MOUNTED OFFSET DISC HARROW ROBUST

Table 04

Model	Number of Discs	Working Width (m)	Average Speed (m/h)	Production Factor	Approximate Production in Hectares/Hour
GHO-R	16	1,60	7.000	0,90	1,00
GHO-R	18	1,83	7.000	0,90	1,15
GHO-R	20	2,06	7.000	0,90	1,29
GHO-R	22	2,29	7.000	0,90	1,44



#### WARNING

The hourly production of the GHO/GHO-R can vary due to factors that change the rhythm of work such as wetness and hardness of the soil, declivity of the land, inadequate adjustments and working speed, factors that are different from the table above, which were obtained with eld work on soils with normal conditions.



## MAINTENANCE

### MAINTENANCE

The GHO/GHO-R was developed to provide the maximum yield on the land conditions. Experience has shown that periodic maintenance of certain parts of the harrow is the best way to prevent problems; hence we suggest the check.

### DISCS

Keep the discs of the GHO/GHO-R always sharp.



### WARNING

*Constantly check the nuts and bolts, and retighten if necessary. General retightening maintenance of the harrow should be performed every 8 working hours.*

### DISC SECTION

Before every work, check all the bearings, discs, sections, screws and angles and retighten when necessary.

### LUBRICATION

Lubrication is indispensable for a good performance and higher durability of the moving parts of the harrow, which helps save maintenance costs.

Before executing the operation, carefully lubricate all greasers, always observing interval lubrication. Check the quality of the lubricant in relation to its efficiency and purity, avoiding the use of products contaminated with water, soil. Constantly check the nuts and bolts, and other agents.



### IMPORTANT

*In the case of other manufacturers and/or equivalent brands that are not listed on this table, consult the technical manual of the manufacturer.*

TABLE OF GREASE AND EQUIVALENT PRODUCTS

<i>Manufacturer</i>	<i>Types of grease recommended</i>
Petrobrás	Lubrax GMA 2
Atlantic	Litholine MP 2
Ipiranga	Super Graxa Ipiranga Ipíanga Super Graxa 2 Ipiflex 2
Castrol	LM 2
Mobil	Mobilgrease MP 77
Texaco	Marfak 2 Agrotex 2
Shell	Retinax A Alvania EP 2
Esso	Multipurpose grease H
Bardahl	Maxlub APG 2 EP

Table 05

## MAINTENANCE

### BEARINGS

The **GHO/GHO-R** can be purchased with the oil or grease bearings.

#### LUBRICATION - OIL BEARING

On the first days of work with the **GHO/GHO-R**, check the oil level of the bearings daily and then check it after every 120 hours of work.

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

#### LUBRICATION - GREASE BEARING

Before lubricating the grease bearings, clean the greasers with a clean and lint-free cloth and replace the damaged ones.

The grease bearings should be lubricated every 8 working hours, using the greases specified on table 5 on the previous page.



#### WARNING

*The ideal oil level is the level at which it reaches the hole of the plug.  
Find a place when checking the oil level of bearing.*



#### WARNING

*When lubricating the bearings, do not use excess quantity of new grease. Add a sufficient amount.*

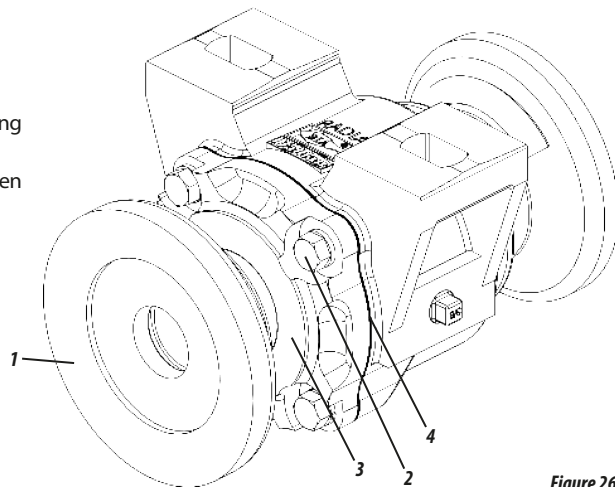


## MAINTENANCE

### ADJUSTMENT OF BEARINGS (FIGURE 26)

When the bearings become slack, proceed as follows to adjust them:

- 01 - Remove the washer (1).
- 02 - Then loosen the screws (2) and remove the cover from the bearing (3).
- 03 - After, remove one or two joints (4) from the bearing cover (3). Put back the bearing cover (3) and retighten.
- 04 - If the slackness persists, face the bearing cover (3) to increase the adjust, and then mount it on the bearing with as many joints considered necessary.
- 05 - The bearing should rotate freely without slacks.



#### WARNING

*Do not mount the bearing without joints (4).*

Figure 26



## MAINTENANCE

### GENERAL CLEANING

- 01 - When storing the **GHO/GHO-R**, carry out a general cleaning and wash it completely only with water. Check if the paint is not worn, otherwise, apply a general coat, rub protector oil and completely lubricate the **GHO/GHO-R**.
- 02 - Check all the moving parts of the **GHO/GHO-R** for wear or looseness and perform the necessary adjustments or replacement of the parts, leaving the harrow ready for the next operation.
- 03 - Replace all the main warning stickers that are damaged or missing. Inform everyone of the importance of the stickers and on the dangers of accidents when the instructions are not followed.
- 04 - After all the maintenance cares, keep your **GHO/GHO-R** on a flat surface, in a sheltered and dry location away from animals and children.
- 05 - We recommend washing the **GHO/GHO-R** only with water at the start of the operations.



#### WARNING

*Do not use chemical detergents to wash the harrow because they can damage the painting and stickers.*

## MAINTENANCE

### PRECAUTIONS

- 01 - Before each work, check the conditions of all pins and screws. Change them when necessary.
- 02 - The displacement speed must be carefully controlled according to the conditions of the land.
- 03 - The **GHO/GHO-R** is used in various applications, demanding know-how and attention during its handling. Only the site conditions can determine the best way of operating the equipment.
- 04 - Retighten the nuts daily during the rst week of use. After, retighten periodically.
- 05 - Use the suitable methods and tools to mount or dismount any part of the **GHO/GHO-R**.
- 06 - Always check if the parts do not present wears. If replacement is required, always demand for original Baldan parts.
- 07 - Keep the discs of the **GHO/GHO-R** always sharp.



**IMPORTANT**

*Appropriate and periodic maintenance are necessary to ensure the long life of your equipment.*



## IDENTIFICATION

### PRODUCT IDENTIFICATION

- 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

 <b>BALDAN IMPLEMENTOS AGRÍCOLAS S/A.</b> AV. BALDAN, 1500   NOVA MATÃO CEP 15.993-900   MATÃO-SP   BRASIL FONE: (16) 3221-6500 CNPJ: 52.311.347/0009-06   CREA/SP 0170977		
01 — Modelo / Model	Data / Date — 03	
02 — Nº de Série / Serial Number	Tipo / Type	
Capacidade / Load Capacity	Peso / Weight	



### WARNING

*The drawings in this instructions manual are for illustrative purposes only. To enable a better overview and detailed instructions, on some drawings in this manual, safety devices (covers, shields, etc..) were removed. Never operate the agricultural wagon without these devices.*



### PUBLICATIONS

**Code:** 6055080056-2  
**CPT:** GHO00615



### CONTACT

*If you have questions, never operate the GHO/ GHO-R, see the post sale.  
Phone: 0800-152577  
e-mail: posvenda@baldan.com.br*

## IDENTIFICATION

### 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: \_\_\_\_\_

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Purchase Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Invoice. Nr: \_\_\_\_\_

### NOTES

# CERTIFICATE OF WARRANTY

- 01 - **BALDAN IMPLEMENTOS AGRÍCOLAS S/A**, guarantee the normal operation of the product for a 6 (six) months period dated from the dealers's bill of sale to the first final customer.
- 02 - During this period, **Baldan** compromise itself to repair the material or manufacturing defects, but the labour, the freight and other expenses are the dealer's responsibility.
- 03 - At the guarantee period, all the request and replacement of any defective part must be made to the dealer of the region, which will send the defective part for analysis at **Baldan**.
- 04 - When this procedure won't be possible and the dealer couldn't have the ability to solve the problem, the dealer can ask for **Baldan's Technical Assistance** using the specific form delivered to them.
- 05 - After the analysis of the items replaced by **Baldan Technical Assistance** and if we conclude that it wasn't a guarantee problem, then the dealer will be the responsible for all costs related to the replacement; as well as material expenses, travel including accommodation and meals, also the accessories, lubricant used or any other expenses after having called the Technical Assistance. And, withal, the company Baldan is authorized to issue the billing in name of the respective reseller.
- 06 - Any repair made to the product which is in warranty period by the dealer, will only be authorized by Baldan after budget previous presentation describing pieces and labour to be accomplished.
- 07 - It is out of this term the product which has repairs or modifications not made by dealers from Baldan's network, as well as pieces applications or not authentic components to the product by the user.
- 08 - This certificate of guarantee will become invalid when notice that the damage or defect is the result of incorrect use of the product, of instructions non-observance or operator's inexperience.



- 09 - It's stipulated that this guarantee don't cover tires, polyethylene deposits, universal joints, hydraulic components, etc, wich equipments are guarantee by their manufacturers.
- 10 - The material or manufacture defects, object of this certificate of guarantee, will not be, by any hypotesis, reason for cancellation of the contract of sale, or indemnity of any kind.
- 11 - For a warranty solicitation to the distributor, you have to proceed in the following manner:
- 12 - Send the technical informe detailed telling the problem (technical assistance request form to the client), you can find it send us an email to **after-sales@baldan.com.br** or acessing our website.
- 13 - If it's possible send films and fotos from the requested spare parts.
- 14 - To point at the form: serial number, manufacture year, etc, that is, all information asked at the form. The damage spare parts should be available for analysis of the the after sales department in a future visit (in case of requested).
- 15 - **Baldan** keeps the right of changing and or improve the technical characteristics of its products, without notice and without the obligation of act like this way with its previously manufactured products.



## 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: \_\_\_\_\_

Address: \_\_\_\_\_ 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: \_\_\_\_\_



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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 \_\_\_\_\_









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