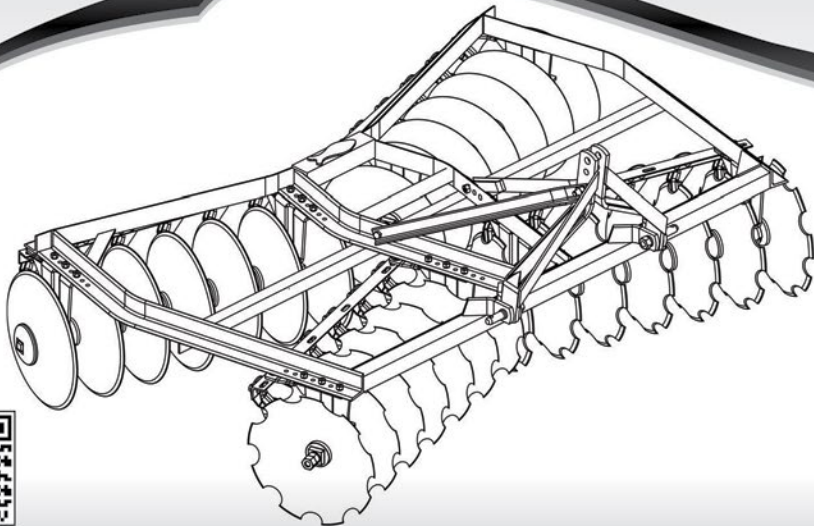


HI

• Mounted Disc Harrow



www.baldan.com.br

Instruction Manual

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



TABLE OF CONTENTS

01 - Safety Rules	4
02 - Components.....	8
03 - Technical Specifications.....	9
04 - Assembly	10
05 - Hitching	14
06 - Adjustmens and Operations	16
07 - Lubrifications.....	17
08 - Cleaning.....	17
09 - Replacement Parts.....	18
10 - Hourly Production of the Mounted Disc Harrow.....	18
11 - Storage	20
12 - Identification	21

01 - SAFETY RULES

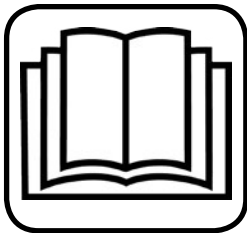


THIS ALERT SYMBOL INDICATES IMPORTANT SAFETY NOTES. WHENEVER YOU FIND IT IN THIS MANUAL, READ THE MESSAGE WITH ATTENTION TO AVOID ANY ACCIDENT.



ATTENTION

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



ATTENTION

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



ATTENTION

- Never carry people over the tractor or equipment.



ATTENTION

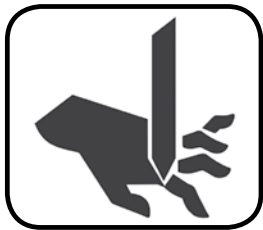
- There are risks of serious injury by tipping when working on slopes
- Never use excessive speed.





ATTENTION

- *Keep always away from the machine's active elements (discs), they are sharp and can cause accidents.*
- *When carrying out any service on the discs, use safety gloves on his hands.*



ATTENTION

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



ATTENTION

- *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.*










ALCOHOL AND DRUGS MAY GENERATE LOSS OF REFLEX AND CHANGING OF OPERATOR FISICAL CONDITIONS. SO DO NOT WORK WITH THIS EQUIPMENT, IN USE OF THIS SUBSTANCE.



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.

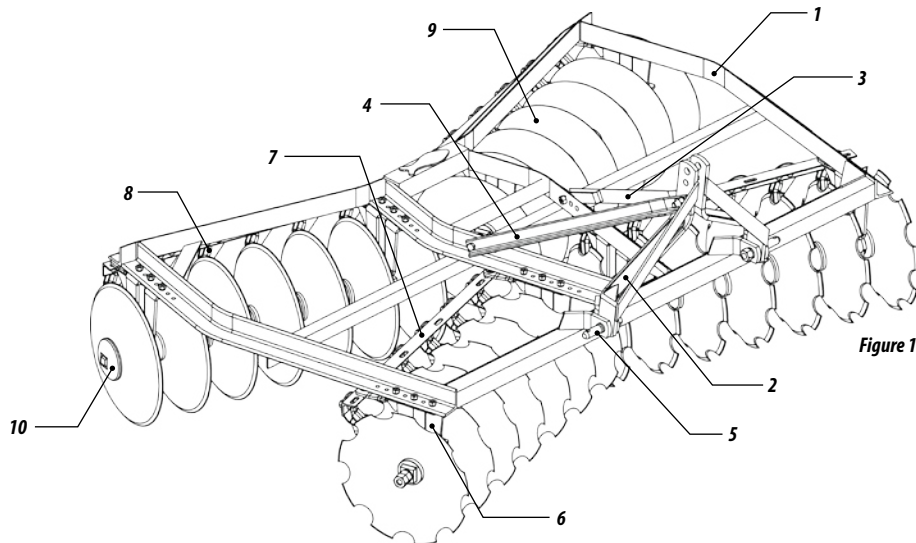
- 01-  When operating the implement do not allow people to stand close or on the implement.
- 02-  During assembly or disassembly of the discs section use protective gloves.
- 03-  When coupling or uncoupling the hydraulic hose relieve the hydraulic circuit pressure.
- 04-  Check out periodically the 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.

MOUNTED DISC HARROW - HI

02-COMPONENTS

- 01 - Frame
- 02 - Hydraulic Hitch Plate
- 03 - Left Arm Adjustment
- 04 - Right Arm Adjustment
- 05 - Hitch Pin
- 06 - Shoe With Friction Roller Bearing
- 07 - Cleaner Supports
- 08 - Disc Cleaner
- 09 - Disc
- 10 - Axle



03 - TECHNICAL SPECIFICATIONS

Table 1

Model	No. of discs	Disc diameter (ø)	Disc Spacing (mm)	Axle diameter (ø)	Working width (mm)	Work depth (mm)	Approximate weight (Kg)				Required Tractor Power (HP)
							16"	18"	20"	22"	
HI	10	16" - 20"	185	1"	1505	50 a 150	236	-	258	-	25 - 35
HI	16	16" - 18" - 20"	185	1"	1800	50 a 150	350	370	390	-	35 - 40
HI	20	16" - 18" - 20"	185	1"	1875	50 a 150	385	400	450	-	44 - 48
HI	24	16" - 18" - 20"	185	1"	2245	50 a 150	465	480	550	-	51 - 61
HI	28	16" - 18" - 20"	185	1"	2615	50 a 150	-	545	610	645	61 - 75
HI	32	16" - 18" - 20" - 22"	185	1"	2985	50 a 150	605	615	695	735	75 - 85

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

04-ASSEMBLY

- 01 - Check if all the components listed are in the box.
- 02 - Before starting the assembly, put on the gloves.
- 03 - The assembly should start with the disc set.
- 04 - Put on the axle (1) the washer (Fig.2).
- 05 - First, put a disc (3), a roller bearing (4), another disc (3), a splitting spool (5), according to figure 2.
- 06 - When the set is finished (complete) with all the elements (discs, roller bearings, and splitting spools) put a convex washer (6), a flat washer (7) and finally put the nut and the conewasher (8), tightening all the set according to figure 2.
- 07 - Next, underset the disc sets firmly, and tighten all the nuts (8).

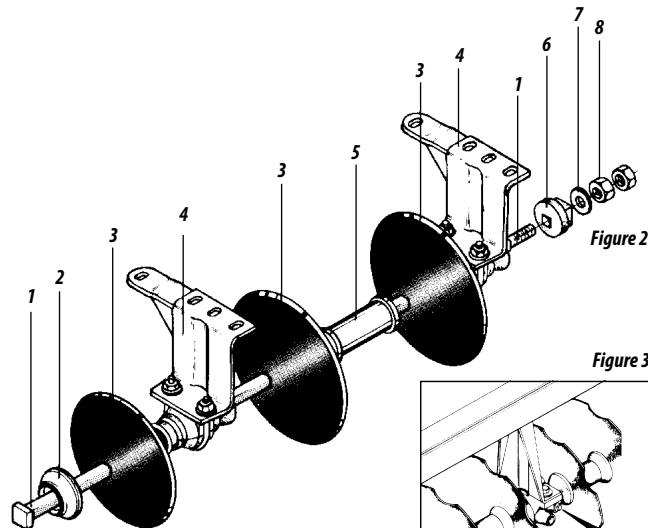


Figure 2

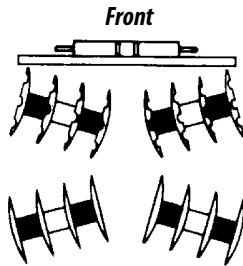
Figure 3

When assembling the roller bearings, they should be mounted with the lubrication system (fat or oil) facing to the rear part of the implement, according to figure 3.

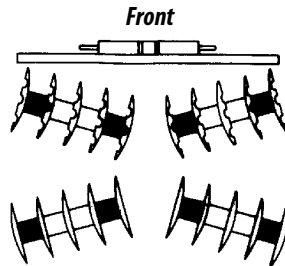
It is shown the front and rear part of the implement with the lubrication system to the back of the implement to get for it a better protection.

08-Check figure 4 which shows the assembly of the discs sections to each grade model.

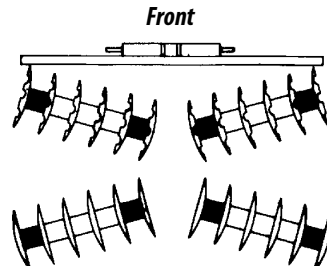
09-Watch that the front disc section must stay on the opposite side of the rear section.



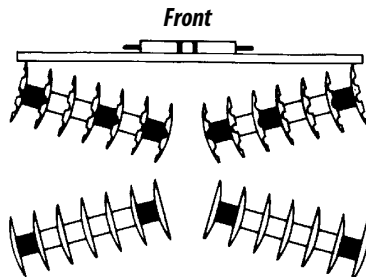
HI 16 Discs



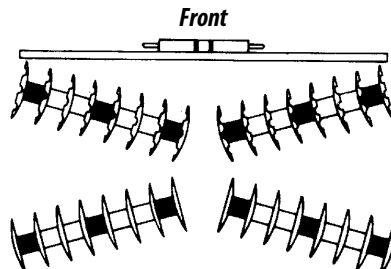
HI 20 Discs



HI 24 Discs



HI 28 Discs



HI 32 Discs

LEGEND:

 **Roller Bearing**

 **Splitting Spacer**

- 10 - Assembly the frame (1), figure 5, with the disc section through the bolt (2). Watch that the support of the bearing fixation shoe must face the disc concavity according to figure 5.
- 11 - Put the frame (1) figure 6 the hydraulic hitch plates (2) with the pins (3), washers and nuts (4).
- 12 - Put the adjusting right and left arm (5 and 6) in the frame with bolts (7) and nuts (8), and at the hydraulic hitch bolt (9), the spacer sleeve (10), and lock it with the nut (11) according to figure 6.

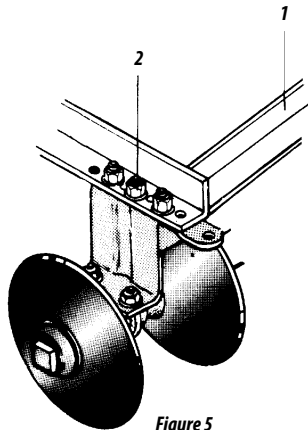


Figure 5

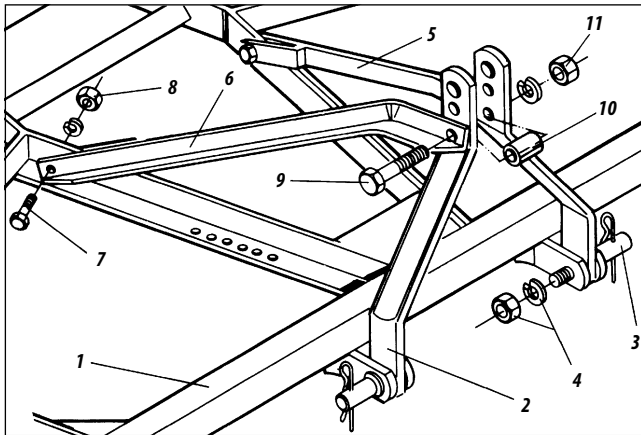
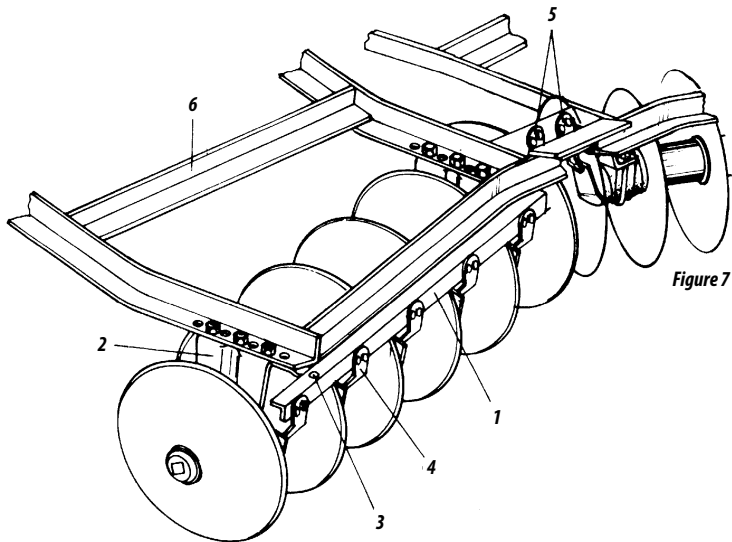


Figure 6

13 - Fix the cleaner support (1), figure 7, into the roller bearing shoe (2) with the bolt (3), put the cleaner (4) in the support.

14 - Fix the cleaner (5) of the last discs into the frame (6).



05 - HITCHING

- 01 - Before coupling the grade to the tractor, check if is ready to be operated taking out the traction bar.
- 02 - Hitch the left inferior arm of the tractor with the hitch pin (1), figure 8, into the "A" support of the grade.
- 03 - Hitch the 3rd point arm of the tractor support into the "B" support of the grade.
- 04 - Finally, with the height adjustment level "D", hitch the inferior right arm of the tractor into the "C" support of the grade according to figure 8.

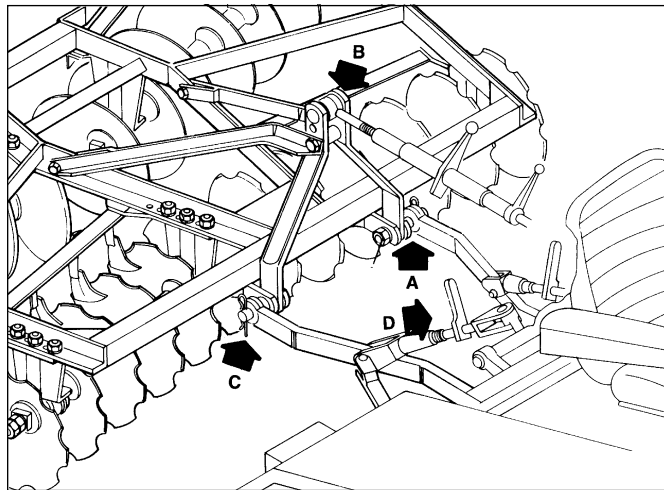


Figure 8

HYDRAULIC GRADE CENTRALIZATION

- 05 - To centralize the grade, in relation to the longitudinal axle of the tractor, align the superior hitch of the grade with the 3rd point arm of the tractor, checking if the distances of the inferior arm of the hydraulic support are equal to the tires. The inferior arms should be leveled one with the other.

HYDRAULIC GRADE LEVELLING

- 06 - To level the grade, the tractor must be in a flat ground, then level the grade in a transversal levelling (width) by the handle of the right inferior arm of the hydraulic hitch according to figure 9. The longitudinal levelling (length) is done by the 3rd point arm. Watch that the grade front discs should be approximately 2 cm above the ground, according to figure 9.

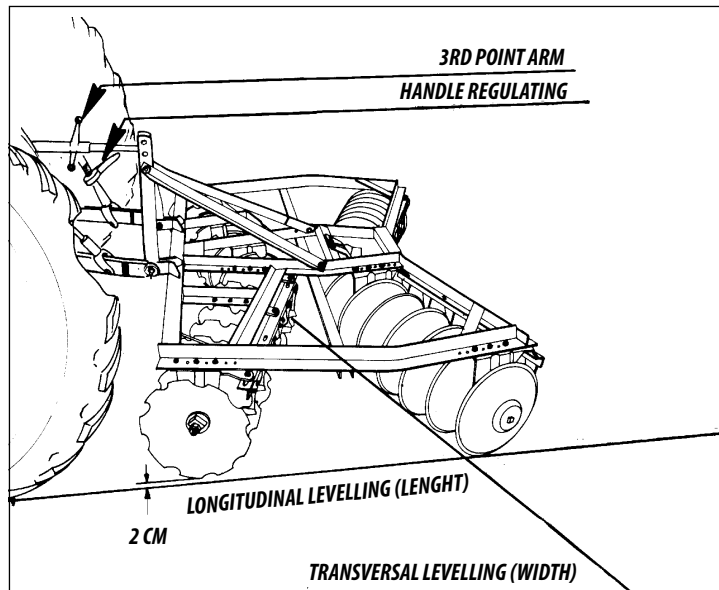
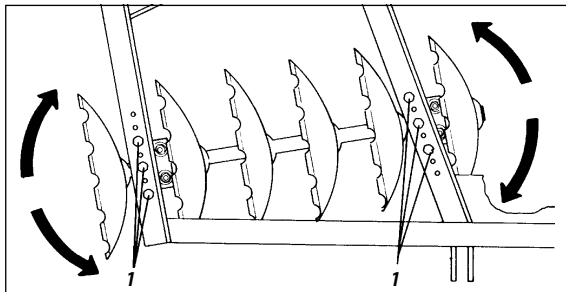


Figure 9

06 - ADJUSTMENS AND OPERATIONS

- 01 - Adjustments of the grade opening according to fig. 10.
- 02 - To obtain the proper disc penetration in the soil, regulate the grade opening that varies according to the soil type:
- in grounds with difficult penetration, increase the grade opening.
 - In soft grounds, decrease the grade opening. Hitch the 3rd point arm of the tractor support into the "B" support of the grade.
- 03 - To open or close the grade, take out the bolts (1) that fix the frame into the shoes and remove the disc sections to obtain an ideal adjustment.

Figure 10



- 04 - Cleaners Adjustment.

- 05 - Regulate the cleaners in a 10 mm distance between the disc and the cleaner, according to figure 11.

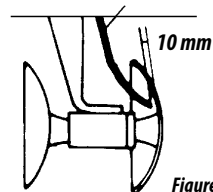


Figure 11

OPERATIONS

- 01 - Before starting the operations with the grade, check it over, re-tightening all the bolts, nuts, washers, axles, and the disc sections.
- 02 - Breaking Clods Operation is done after plowing or harrowing the soil to break the clods becoming them smaller and the planting easier.
- 03 - Weeding Operation is done in soil with seeds, small vegetation, or rows among the orange groves or coffee plantations.

07 - LUBRIFICATIONS

LUBRIFICATION BEARING FRICTION

- 01 - Clean all grease nipple and when it is replace damaged.
- 02 - The bearing friction must lubricated every 12 working hours in accordance with the table beside.

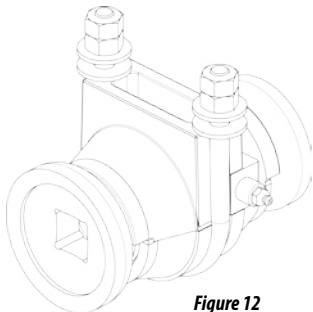


Figure 12



IMPORTANT

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

TABLE OF EQUIVALENT AND GREASES

Manufacturer	Grease Type
Petrobrás	Lubrax GMA 2
Atlantic	Litholine MP 2
Ipiranga	Super Grasa Ipiranga Ipiranga Super Grasa 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 02

08 - 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.

09 - REPLACEMENT PARTS

01 - Look for a Baldan Authorized Dealer, he will have all the genuine parts of the implement.

10 - HOURLY PRODUCTION OF THE MOUNTED DISC HARROW

01 - To calculate the hourly production of the Mounted Disc Harrow, it is necessary to use the following calculation:

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

WHERE:

A = Area

L = Width of the plow (meters)

V = Speed

F = Production Factor - 0,90

X = Land Measure approx. - 10.000 m²

Example: A harrow with 20 discs, how many Ha or Aa will it produce in an working hour, in an average speed of 7 km/h?

A = ?

L = 1,87m

V = 7.000m/h

F = 0,90

X = 10.000 m² (Hectare)

$$\frac{A = 1,87 \times 7.000 \times 0,90}{10.000} = 1,17 \text{ Ha/h}$$



02 - APPROXIMATE HOURLY PRODUCTION TABLE.

Model	Working Width (m)	Average Speed (m/h)	Production Factor	Estimate Hourly Production
				Hectares
HI 10 Disc	1,50	7.000	0,90	0,94
HI 16 Disc	1,80	7.000	0,90	1,13
HI 20 Disc	1,87	7.000	0,90	1,17
HI 24 Disc	2,24	7.000	0,90	1,41
HI 28 Disc	2,61	7.000	0,90	1,64
HI 32 Disc	2,98	7.000	0,90	1,87

Table 03

01 - The formula to calculate the approximate production refers to the work area performed by the harrow.

02 - 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.

Example: How long will it take the hydraulic grade with 20 discs to produce 35 hectares, in a average speed of 7 km/h?

$$X = \frac{35 \text{ Ha}}{1,17 \text{ Ha/h}} = 29 \text{ hours approximately.}$$

03 - Daily production varies with the pace of work such as moist or dry soils, topography, inadequate machine adjustments etc.

04 - These factors are not considered in the table which are based on normal working conditions.

11 - STORAGE

- 01 - At the end of the work period, the equipment must be cleaned and inspected, checking for worn or broken parts. Apply a layer of oil on all surfaces showing signs of wear or corrosion.
- 02 - Check the chassis, the cleansers and the coupling bar and paint them whenever necessary. Store the implement on a flat surface in a protected location away from animals and children.

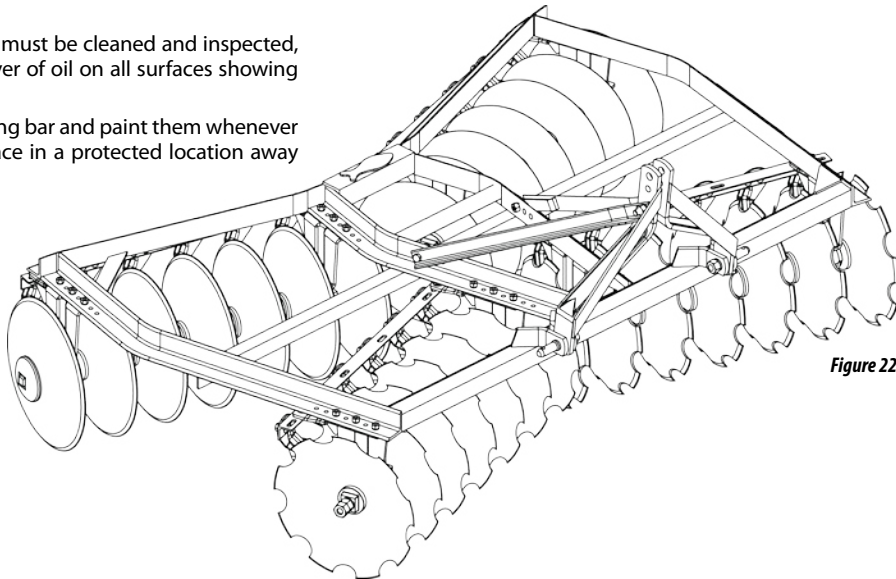


Figure 22

12 - 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

- Look in your local, a reseller BALDAN, he will have in stock genuine parts.

BIA Baldan
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CNPJ: 52.311.347/0009-06 | INSCR. EST.: 441.016.953.110

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MARKETING
Edition of
Catalogs and Manuals

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Revision: 01
CPT: HI02310



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: 08000-152577
e-mail: export@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: _____

Model: _____

Serial number: _____

Purchase date: ____/____/____ *Invoice. Nr:* _____



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Baldan



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